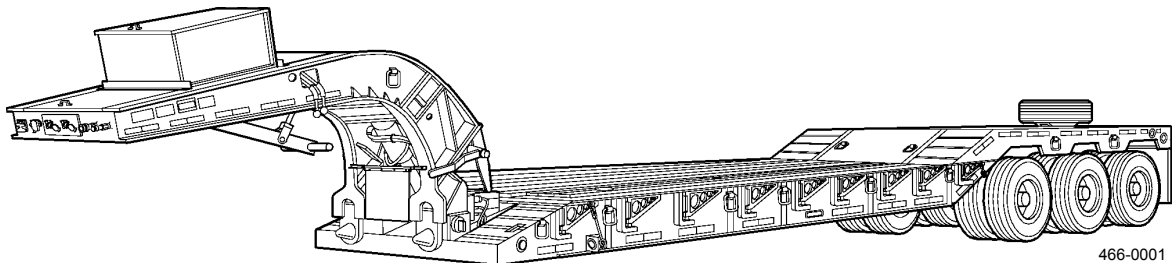


***TM 5-2330-325-13&P**

**TECHNICAL MANUAL
OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING REPAIR
PARTS AND SPECIAL TOOLS LIST (RPSTL)
FOR
SEMITRAILER, MEDIUM HEAVY EQUIPMENT
TRANSPORTER (MHET), 40 TON, M870A3
NSN 2330-01-458-2061 (EIC CFJ)**



466-0001

*This manual supersedes TM 5-2330-325-14&P dated 30 June 2004, including all changes.

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

**HEADQUARTERS, DEPARTMENT OF THE ARMY
23 JUNE 2014**

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.

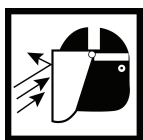
FIRST AID

FOR FIRST AID INFORMATION, FM 4-25.11.

EXPLANATION OF SAFETY WARNING ICONS



ELECTRICAL - Electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.



FLYING PARTICLES - arrows bouncing off face with face shield show that particles flying through air may harm face.



HEAVY OBJECTS - human figure stooping over with lines above back shows physical injury potential from improper lifting technique.



HEAVY PARTS - heavy object on human figure shows that heavy parts present danger to life and limb.



HEAVY PARTS - heavy object pinning figure against wall shows that heavy, moving parts present a danger to life or limb.



HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.

WARNING SUMMARY - Continued

EXPLANATION OF SAFETY WARNING ICONS - Continued



HOT AREA - hand over object radiating heat shows that part is hot and can burn.



SAFETY ALERT SYMBOL - indicates a potential personal injury hazard.



SHARP OBJECT - hand with object touching palm shows that sharp objects are present that could pose a danger and could cause harm.



SHARP OBJECT - pointed object in hand shows that a sharp object presents a danger to limb.



SHARP OBJECT - foot with object hitting foot shows that sharp objects are present that could pose a danger and could cause harm.



SLICK FLOORS - feet at an angle shows that liquids could be present, causing slick floor conditions that could pose a danger and cause harm.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION

WARNING

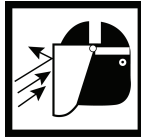


- Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Although battery cable must be connected in order to test electrical circuit voltage, disconnect battery ground cable from towing vehicle before performing resistance tests or replacing parts. This will prevent shock and damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Secure kingpin stowage box lid open prior to removing 24-volt receptacles. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Anti-lock Braking System (ABS) is an electrical system. When working on ABS the same precautions must be taken as with any electrical system. The danger of electrical shock or sparks exists which could ignite flammable substances. ALWAYS disconnect the power to the system before any repairs are made. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- Compressed air used for cleaning or drying purposes, or for cleaning restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing and eye protection, and use caution. Do NOT point compressed air at other personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when checking for air leaks. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when using electric drill. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when removing rivets. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when releasing all pressure from air system before you disconnect components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when dump valve is not operating properly, as air pressure may not be relieved from air tank. Use extreme caution when removing dump valve. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Brake chamber contains a spring under high pressure. Never work directly behind brake chamber. If caging bolt will not engage properly, the spring may be broken; do not continue caging procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when cleaning with high-pressure water. Do not direct high-pressure water at other personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- Outriggers are only designed to stabilize payload. Payload must be fully supported by semitrailer load bed. Supporting a payload on outriggers may result in damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The tool box lid is secured by two pneumatic openers. Caution should be used when opening the tool box. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The tool box weighs 250 lb (113.39 kg). The tool box replacement requires a lifting device rated at a minimum of 500 lb (226 kg) and two personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Front tires must be chocked and brakes released or caged. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer must be supported at front and rear to prevent shifting. All weight must be taken off the suspension components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Secure kingpin stowage box lid open prior to removing gladhands. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- The semitrailer should ALWAYS have the wheels chocked, with or without a load, during coupling or uncoupling to towing vehicle and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Never stand between gooseneck and semitrailer when the towing vehicle is being backed up to the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- All personnel not involved in coupling/uncoupling operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Place towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid pressurizing the hydraulics system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- To prevent injury or death to personnel or damage to equipment, coupling should be done by two people, the first person in the towing vehicle cab and the second acting as a ground guide. Operator must know where ground guide is at all times. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The use of a step stool may be required if operator cannot reach the hydraulic system control levers. Failure to be at the proper operating height may cause improper lever and semitrailer movement. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer and towing vehicle may roll when brakes are released. To prevent injury to personnel or damage to equipment, the operator must remain in the cab of the towing vehicle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The operator of the towing vehicle should exercise extreme caution when moving the towing vehicle with the gooseneck attached. Operator must know where observer/ground guide is at all times. The observer/ground guide should direct the operator under these circumstances. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Extreme caution should be taken when releasing the fifth wheel lock handles. Observers must stand clear of the towing vehicle rear wheels before operator moves vehicle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- TRAVEL LOCK MUST BE FULLY ENGAGED to prevent gooseneck and semitrailer from disconnecting. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The air brake system is operated with less than 100 psi (690 kPa). Personnel must take precautions to maintain adequate air pressure so brakes will function properly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- To avoid damage to equipment, make sure brakes are caged prior to performing maintenance on slack adjusters. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Ensure brake drum moves freely after adjustment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Visibility from towing vehicle is significantly reduced when backing, whether the semitrailer is loaded or not. When backing, use the assistant operator as ground guide. Operator must know where ground guide is at all times. Proper procedures must be followed and extreme caution used when backing to prevent damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING



- The tool box lid is secured by two pneumatic openers. Caution should be used when opening the tool box. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- DO NOT touch heat shrinkable tubing for at least 30 seconds after heating. Heat shrinkable tubing is hot and will burn you. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Hub may be hot. Before putting hand to hub, hold hand close to hub to check for excessive heat radiation. This will prevent skin burns caused by hot metal. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of injury.

WARNING



- Use only approved bolts and nuts for the torque rod to joint fasteners. Do not re-use or use other fasteners. Doing so may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING

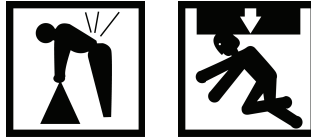


- Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



- DO NOT lift spare tire assembly. Spare tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- ALWAYS support semitrailer when removing wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The axle weight is approximately 275 lb (124.73 kg). Use extreme caution when handling the axle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The cylinder weight is approximately 150 lb (68 kg). Use extreme caution when handling the cylinder. Assistance will be needed when handling the cylinder. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Each lift cylinder weighs 350 lb (158.75 kg). A lifting device rated at 500 lb (226 kg) and an assistant may be needed to perform this task. Both lift cylinders must be supported. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Suitable lifting device and suitable support need to be rated at no less than 20,000 lb (9,071 kg). Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wheel and tire assembly requires two personnel to remove or install spare tire carrier. Refrain from lifting spare tire into position. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Weight of semitrailer, 16,500 lb (7,484.27 kg) to 19,000 lb (8,618.25 kg) must be supported on suitable supports at all times. Actual weight of semitrailer model can be found on in (WP 0002). Do not support weight of semitrailer on lifting device. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING

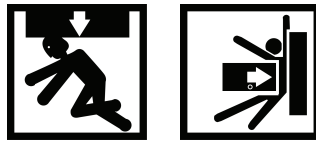


- Due to dimensions and center of gravity of some loads, refer to the loading and unloading section in the TM of the equipment being loaded, to prevent damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Outriggers are only designed to stabilize payload. Payload must be fully supported by semitrailer load bed. Supporting a payload on outriggers may result in damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Improper load placement can have a detrimental effect on braking, evasive maneuvers, and handling characteristics of a tractor semitrailer vehicular combination. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Use a speed of less than 2 mph when loading and unloading vehicles, especially tracked vehicles. Higher speeds will exaggerate motions and create hazardous conditions which could damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Do not work under gooseneck without lock pins securely in place. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- ALWAYS ensure semitrailer is coupled to towing vehicle and all parking brakes are set prior to attempting to free lock pins that will not retract. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Unless otherwise specified, perform all Preventive Maintenance Checks and Services (PMCS) with semitrailer on level ground, uncoupled, and brakes set. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer must be disconnected from towing vehicle to replace kingpin. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Lower semitrailer to ground to allow gooseneck to fully lower. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Failure to torque fasteners to the specified torque may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

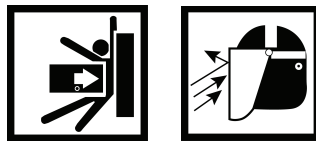
GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING



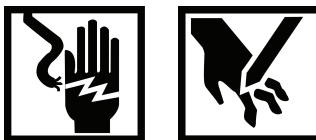
- All personnel not involved in the loading or unloading operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING



- Caging the brakes releases the brakes and prevents operation of semitrailer braking system. When brakes have been caged, semitrailer should only be moved under emergency circumstances and then only with extreme caution and at speeds not greater than 10 mph. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Spring inside brake chamber is under very high pressure. DO NOT loosen or remove any nuts or bolts from brake chamber except caging bolt and its associated hardware. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING

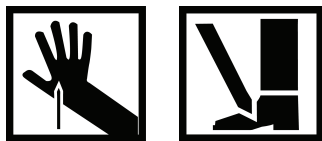


- Do not direct water or steam, under pressure, against self, personnel, electrical wires, or any exterior opening. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL SAFETY WARNINGS DESCRIPTION - Continued

WARNING

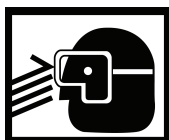


Note appropriate location where holes will be drilled in boards. DO NOT place hands or feet in this area when holding boards. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

GENERAL HAZARDOUS MATERIALS ICONS



CHEMICAL - drop of liquid on hand shows that material will cause burning or irritation to human skin or tissue.



EYE PROTECTION - person with goggles shows that the material will injure the eyes.



FIRE - flame shows that a material may ignite and cause burns.



HYDRAULIC FLUID PRESSURE - hydraulic fluid spraying human hand shows that fluid escaping under great pressure can cause injury or death to personnel.



POISON - skull and cross bones shows that a material is poisonous or is a danger to life.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS ICONS - Continued



VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.

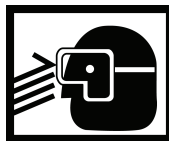
GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION

WARNING



- When servicing this vehicle, performing maintenance, or disposing of materials such as lubricants or Chemical Agent Resistant Coating (CARC) paint, consult your Unit/Local Hazardous Waste Disposal Center or safety office for local regulatory guidance. If further information is needed, please contact the Army Environmental Hotline at 1-800-872-3845. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING



- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING



- The hydraulic system operates under extremely high pressure. Before disconnecting the hydraulic inlet and outlet lines check the hydraulic gage to ensure there is no pressure in the lines. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- DO NOT exceed 1,100 psi (7,584.2 kPa) to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING



- Chemical Agent Resistant Coating (CARC) paint debris may be considered environmentally hazardous during removal. Consult local procedures prior to removal of CARC paint to ensure compliance with local laws. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

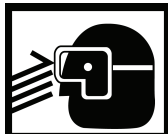
GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING



- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING

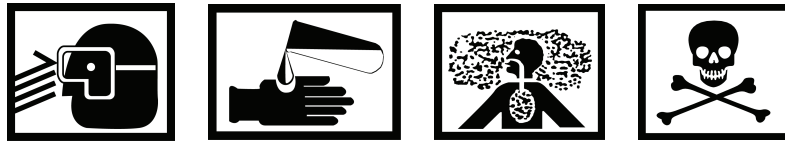


- Ensure proper protective clothing is worn when handling solvents, sealants, and cleaning compounds. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING

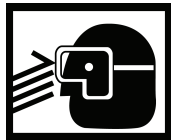


- When servicing this vehicle, performing maintenance, or disposing of materials such as lubricants of Chemical Agent Resistant Coating (CARC) paint, consult your Unit/Local Hazardous Waste Disposal Center or safety office for local regulatory guidance. If further information is needed, please contact the Army Environmental Hotline a 1-800-872-3845. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Improper cleaning methods and use of unauthorized cleaning liquids or solvents can injure personnel and damage equipment. To prevent this, refer to your unit's authorized cleaning and solvents list for further instructions. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The following must be done before grinding, cutting, or welding any equipment that has been CARC-coated:
 - Wear protective equipment (e.g., protective eyewear, gloves, apron) when grinding or sanding CARC-coated equipment. Do not leave any skin exposed.
 - Use high-efficiency air purifying respirators when grinding or sanding CARC-coated equipment.
 - Never weld or cut CARC-coated equipment; grind or sand off CARC paint completely before welding. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals. Protective clothing, eye protection, and respirator must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby; and requirements of TC 9-237 strictly followed. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- CARC paint contains Hexamethylene Diisocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat, and nose and watering of the eyes. In extreme concentrations HDI can cause coughing, shortness of breath, pain during respiration, increased sputum production, and chest tightness. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

WARNING SUMMARY - Continued

GENERAL HAZARDOUS MATERIALS WARNING DESCRIPTION - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eyewear. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680, Type III is an environmentally compliant and low toxic material. However, it may be irritating to eyes and skin. Use protective gloves and eye protection. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 5-2330-325-14&P dated 30 June 2004, including all changes. Zero in the "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original 23 JUNE 2014

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 44 AND TOTAL NUMBER OF WORK PACKAGES IS 144, CONSISTING OF THE FOLLOWING:

Page/WP No.	Change No.	Page/WP No.	Change No.
Front Cover	0	WP 0032 (4 pgs)	0
a-r	0	WP 0033 (6 pgs)	0
i-xvii/blank	0	WP 0034 (4 pgs)	0
Chapter 1 title page	0	Chapter 5 title page	0
WP 0001 (6 pgs)	0	WP 0035 (2 pgs)	0
WP 0002 (8 pgs)	0	WP 0036 (2 pgs)	0
WP 0003 (2 pgs)	0	WP 0037 (2 pgs)	0
Chapter 2 title page	0	WP 0038 (6 pgs)	0
WP 0004 (6 pgs)	0	WP 0039 (2 pgs)	0
WP 0005 (32 pgs)	0	WP 0040 (4 pgs)	0
WP 0006 (4 pgs)	0	WP 0041 (2 pgs)	0
Chapter 3 title page	0	Chapter 6 title page	0
WP 0007 (2 pgs)	0	WP 0042 (4 pgs)	0
WP 0008 (2 pgs)	0	WP 0043 (8 pgs)	0
WP 0009 (2 pgs)	0	WP 0044 (2 pgs)	0
WP 0010 (2 pgs)	0	WP 0045 (2 pgs)	0
WP 0011 (2 pgs)	0	WP 0046 (2 pgs)	0
WP 0012 (2 pgs)	0	WP 0047 (4 pgs)	0
WP 0013 (2 pgs)	0	WP 0048 (2 pgs)	0
WP 0014 (2 pgs)	0	WP 0049 (2 pgs)	0
WP 0015 (2 pgs)	0	WP 0050 (2 pgs)	0
WP 0016 (2 pgs)	0	WP 0051 (12 pgs)	0
WP 0017 (2 pgs)	0	WP 0052 (4 pgs)	0
WP 0018 (2 pgs)	0	WP 0053 (6 pgs)	0
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**HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 23 JUNE 2014**

**OPERATOR AND FIELD MAINTENANCE MANUAL INCLUDING
REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)
FOR**

**SEMITRAILER, MEDIUM HEAVY EQUIPMENT
TRANSPORTER (MHET), 40 TON, M870A3
NSN 2330-01-458-2061 (EIC CFJ)**

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Current as of 31 January 2014

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HOW TO USE THIS MANUAL

This manual contains instructions for safe and efficient operation of the semitrailer. These instructions provide the user with a general knowledge of the equipment, characteristics, and operating procedures. Troubleshooting and maintenance procedures are provided at Operator and Field Maintenance levels.

WARNINGS, CAUTIONS, AND NOTES

Warning, caution, and note headings, and certain essential information are printed in bold type for clarity. This is critical data to ensure personal safety, prevent damage to the vehicle, and clarify unique data or procedures used.

CHAPTER 1 GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND DATA, AND THEORY OF OPERATION

This chapter describes, locates, and illustrates the semitrailer and its components. General information needed for maintaining records and reporting equipment recommendations are listed. Also listed in this chapter is a table of specific equipment data.

CHAPTER 2 OPERATOR INSTRUCTIONS

This chapter shows and describes the semitrailer controls and indicators. There are instructions for coupling, driving, stopping, and backing in both usual and unusual conditions, and other information to help you understand and better operate the semitrailer.

CHAPTER 3 TROUBLESHOOTING PROCEDURES

The troubleshooting index lists the common malfunctions/symptoms which you may find during use of the semitrailer. You should perform the troubleshooting and corrective actions in the order listed within each individual work package. The troubleshooting index is a quick reference to the troubleshooting work packages.

CHAPTER 4 PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

This chapter contains operator and field level Preventive Maintenance Checks and Services (PMCS). Semitrailer components must be inspected periodically to find and correct defects, and regular services are needed to keep the semitrailer operational.

CHAPTER 5 OPERATOR MAINTENANCE INSTRUCTIONS

This chapter contains all of the maintenance authorized to be performed by Operator Maintenance.

CHAPTER 6 FIELD MAINTENANCE INSTRUCTIONS

This chapter contains all of the maintenance authorized to be performed by Field Maintenance. Included are Service Upon Receipt of Material, Field Maintenance instructions, and detailed maintenance tasks that Field Maintenance personnel may perform to maintain the semitrailer.

CHAPTER 7 REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

This chapter covers the Repair Parts and Special Tools List (RPSTL) for the semitrailer. It includes instructions and descriptions needed to effectively use the RPSTL.

HOW TO USE THIS MANUAL - Continued

CHAPTER 8 SUPPORTING INFORMATION

This chapter includes supporting information pertaining to the semitrailer. It includes the Maintenance Allocation Chart, Components of End Item, and Basic Issue Items Lists, along with other important information.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND DATA, AND THEORY OF OPERATION

FIELD MAINTENANCE GENERAL INFORMATION

SCOPE

Type of Manual. Operator and Field Maintenance Manual with Repair Parts and Special Tools List.

Equipment Name and Model Number. Semitrailer, Medium Heavy Equipment Transporter (MHET), 40 Ton, M870A3.

Purpose of Equipment. This semitrailer is intended for use in transporting engineer equipment, tracked vehicles, wheeled vehicles on highways, unimproved roads (graded gravel), and cross country.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 750-8 (The Army Maintenance Management System (TAMMS) Users Manual), as contained in the Maintenance Management Update.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your semitrailer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance.

All non-Aviation/Missile EIRs and PQDRs must be submitted through the Product Data Reporting and Evaluation Program (PDREP) Web site. The PDREP site is: <https://www.pdrep.csd.disa.mil/>.

If you do not have Internet access, you may submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 using email, regular mail, or fax using the addresses/fax numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. The term "corrosion" means the deterioration of a material or its properties due to a reaction of that material with its chemical environment. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking. Plastics, composites, and rubbers can also degrade (also considered to be corrosion based on the above definition of corrosion). Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically ultraviolet) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking. The US Army has defined the following nine (9) forms of corrosion used to evaluate the deterioration of metals. These shall be used when evaluating and documenting corrosion.

UNIFORM (or general attack): Affects a large area of exposed metal surface, like rust on steel or tarnish on silver. It gradually reduces the thickness of the metal until it fails.

CREVICE: Occurs in crevices created by rubber seals, gaskets, bolt heads, lap joints, dirt or other surface deposits. It will develop anywhere moisture or other corrosive agents are trapped and unable to drain or evaporate.

SELECTIVE LEACHING: One element, usually the anodic element of an alloy, corrodes away, leaving the cathodic element. This can create holes in metal.

INTERGRANULAR: Metal deterioration caused by corrosion on the bonds between or across the grain boundaries of the metal. The metal will appear to be peeling off in sheets, flaking, or being pushed apart by layers. A particular type of intergranular corrosion is exfoliation.

CORROSION PREVENTION AND CONTROL (CPC) - Continued

PITTING: This can result from conditions similar to those for crevice corrosion. Pits can develop on various materials due to their composition. Rifle boxes are big victims of pitting.

EROSION: Results when a moving fluid (liquid or gas) flows across a metal surface, particularly when solid particles are present in the fluid. Corrosion actually occurs on the surface of the metal, but the moving fluid washes away the corrosion and exposes a new metal surface, which also corrodes.

FRETTING: Occurs as a result of small, repetitive movements (e.g., vibration) between two surfaces in contact with each other. It's usually identified by a black powder corrosion product or pits on the surface.

GALVANIC: Occurs when two different types of metal come in contact with each other, like steel bolts on aluminum, for example. This is a common problem on aircraft because of their mix of metals.

STRESS: Term used to describe corrosion cracking and corrosion fatigue.

Where an item is not ready/available due to one of these forms of corrosion, it shall be recorded as a corrosion failure in the inspection record and the appropriate code (170) for corrosion shall be used when requesting/performing maintenance.

SF Form 368, Product Quality Deficiency Report should be submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

For procedures for destruction of Army materiel to prevent enemy use, refer to TM 750-244-3.

PREPARATION FOR STORAGE OR SHIPMENT

For instructions on preparing the semitrailer for storage or shipment, refer to (WP 0092).

WARRANTY INFORMATION

The M870A3 has a one year limited warranty from Kalyn Siebert. The warranty begins on the date of delivery to the United States Government. Kalyn Siebert parts are identified under Commercial and Government Entity Code (CAGEC) 63576, located in the Repair Parts and Special Tools List (RPSTL) (WP 0097). Contact Kalyn Siebert at 1505 West Main Street, P.O. Box 1078 Gatesville, Texas U.S.A. 76528. Phone: 1-800-525-9689 or 254-865-7235 Fax: 254-865-7235 or www.kalynsx.com.

OFFICIAL NOMENCLATURE, NAMES, DESIGNATIONS, AND ABBREVIATIONS

NOTE

For standard abbreviations, refer to MIL-STD-12D.

Table 1. Abbreviations List.

Abbreviation	Common Name
ACE	Advanced Collaborative Environment
AAL	Additional Authorization List
ABS	Anti-lock Braking System
BII	Basic Issue Item
BOI	Basis of Issue

OFFICIAL NOMENCLATURE, NAMES, DESIGNATIONS, AND ABBREVIATIONS - Continued

Table 1. Abbreviations List - Continued.

bt	Bottle
C	Celsius, Crew
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CG	Center of Gravity
CL	Center Line
cm	Centimeter
cn	Can
COEI	Components of End Item
CPC	Corrosion Prevention and Control
ea	Each
EIR	Equipment Improvement Recommendations
ECU	Electronic Control Unit
EMP	Electromagnetic Pulse
EWf	Empty Weight at Front
EWR	Empty Weight at Rear
F	Fahrenheit, Maintainer
ft	Foot, Feet
GAA	Grease, Automotive and Artillery
gal	Gallon
GVW	Gross Vehicle Weight
IAW	In Accordance With
in.	Inch
kg	Kilogram
km	Kilometer

OFFICIAL NOMENCLATURE, NAMES, DESIGNATIONS, AND ABBREVIATIONS - Continued

Table 1. Abbreviations List - Continued.

km/h	Kilometers Per Hour
kPa	Kilopascal
lb/lbs	Pound and Pounds
lb ft	Pounds Force Foot
lb in	Pounds Force Inch
m	Meter
mm	Millimeter
MAC	Maintenance Allocation Chart
MHET	Medium Heavy Equipment Transporter
mph	Miles Per Hour
MTOE	Modified Tables of Organization and Equipment
MWO	Modification Work Order
N·m	Newton Meters
NIIN	National Item Identification Number
NSN	National Stock Number
oz	Ounce
PDREP	Product Data Reporting and Evaluation Program
POL	Petroleum, Oil, and Lubricants
PTO	Power Take-Off
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
psi	Pounds Per Square Inch
pt	Pint
qt	Quart
Qty Recm	Quantity Recommended

OFFICIAL NOMENCLATURE, NAMES, DESIGNATIONS, AND ABBREVIATIONS - Continued**Table 1. Abbreviations List - Continued.**

Qty Rqr	Quantity Required
RPSTL	Repair Parts and Special Tools List
SAE	Society of Automotive Engineers
SMR	Source, Maintenance, and Recoverability
SRA	Specialized Repair Activity
TAMMS	The Army Maintenance Management System
TB	Technical Bulletin
TMDE	Test, Measurement, and Diagnostic Equipment
TOE	Tables of Organization and Equipment
U/I	Unit of Issue
UNC	Unified Coarse
UNF	Unified Fine
UOC	Usable on Code
V dc	Volts, Direct Current
WB	Wheelbase
WP	Work Package

SAFETY, CARE, AND HANDLING**First Aid**

For first aid information, refer to FM 4-25.11, First Aid.

Personal Safety Precautions

- Read and become familiar with all WARNINGS in the warning summary at the front of this manual.
- Pay attention to WARNING decals on the semitrailer. These provide safety instructions and identify specific hazards which, if not followed, may result in serious injury or death to personnel.
- Throughout this manual, WARNINGS and CAUTIONS are given immediately preceding the procedural steps to which they apply. Read these WARNINGS and CAUTIONS and follow them exactly.
- When performing maintenance, protect yourself against injury. Wear protective gear such as protective eyewear, safety shoes, rubber apron, gloves, etc.
- Notify others in the area if you are handling flammable materials. Know the location of fire extinguishers and emergency procedures in case of accident or fire.

SAFETY, CARE, AND HANDLING - Continued

- Before performing maintenance, ensure that semitrailer is secured against movement.
- When lifting heavy parts, have someone help you. Ensure that lifting or jacking equipment is working properly, is of sufficient capacity for the assigned task, and is secure against slipping.

COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Maintenance Allocation Chart (MAC) (WP 0139) and to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Special tools are listed and illustrated in the RPSTL (WP 0097). TMDE and support equipment are listed in the Maintenance Allocation Chart (MAC) (WP 0139).

REPAIR PARTS

Repair parts are listed and illustrated in the RPSTL (WP 0097).

END OF WORK PACKAGE

**FIELD MAINTENANCE
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

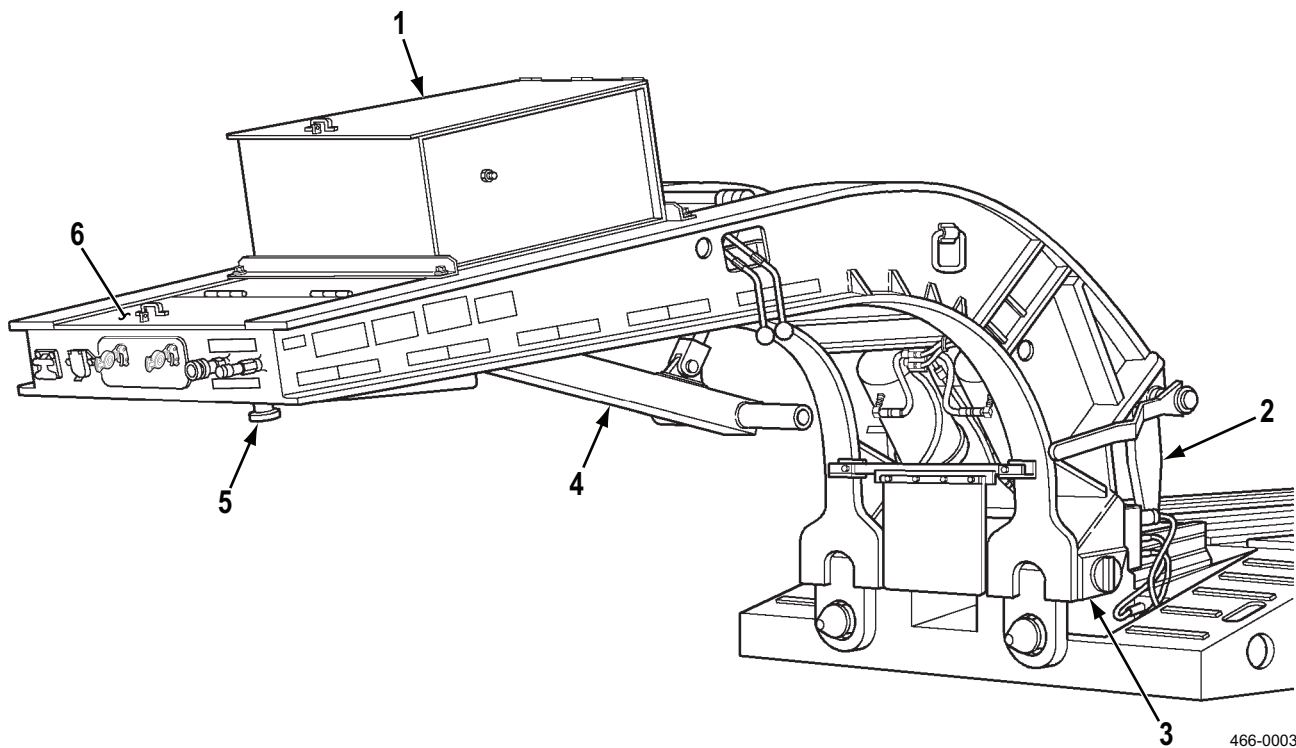
This semitrailer is designed to transit engineer equipment, tracked vehicles, wheeled vehicles, containerized cargo on highways, unimproved roads (grade level), and cross-country.

NOTE

The M916, M916A1, M916A2, and M920 require hydraulic kits to correctly operate the semitrailer. Kits are identified in the Additional Authorized List (AAL) (WP 0142).

The towing vehicles for the semitrailer are the M916A1/ M916A2/ M916A3/M920 truck tractors, as these towing vehicles are equipped with an air brake system.

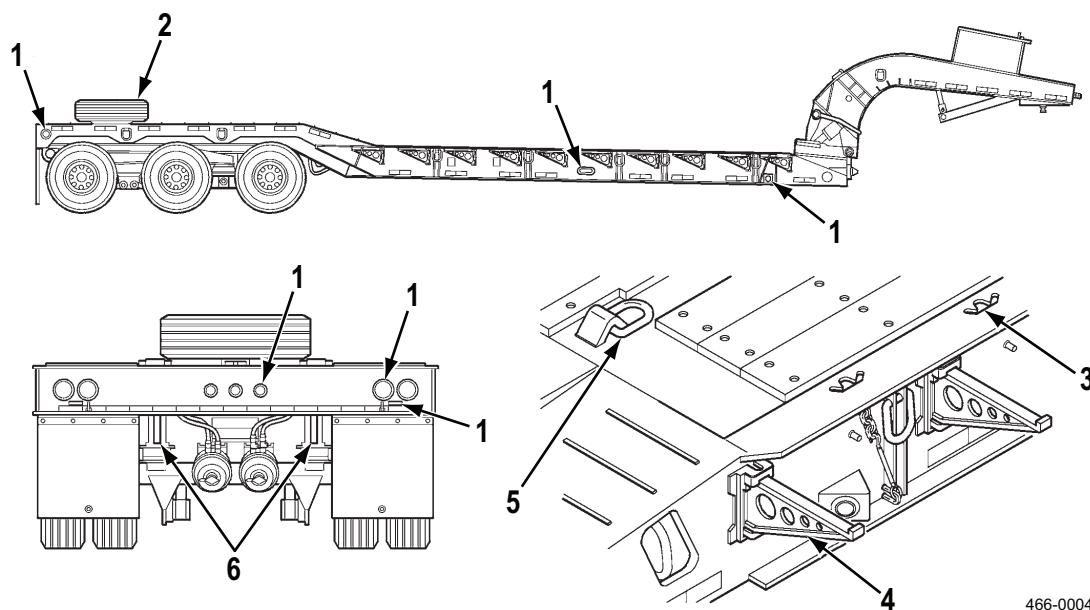
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Table 1. Major Components of Gooseneck.

KEY	COMPONENT	DESCRIPTION
1	Tool Box	Houses equipment such as cargo, tiedown chains, load binders, and wheel jack.
2	Shim Assembly	Provides a shimming action between the gooseneck and the semitrailer to allow for raising of the semitrailer bed.
3	Neck Base Assembly	Connects the gooseneck to the semitrailer via lifting pins and lugs and is locked in position by a slide bar rod.
4	Tilt Arm	Acts as a stabilizing force between the gooseneck and the tractor platform.
5	Kingpin	A removable kingpin is inserted from the top side of the semitrailer's gooseneck and extends below the gooseneck to attach to the towing vehicle's fifth wheel plate for towing. Two kingpins are provided for use with different towing vehicles.
6	Kingpin Box	Houses both the towing kingpin and the second kingpin. The base of the box serves as the kingpin plate.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

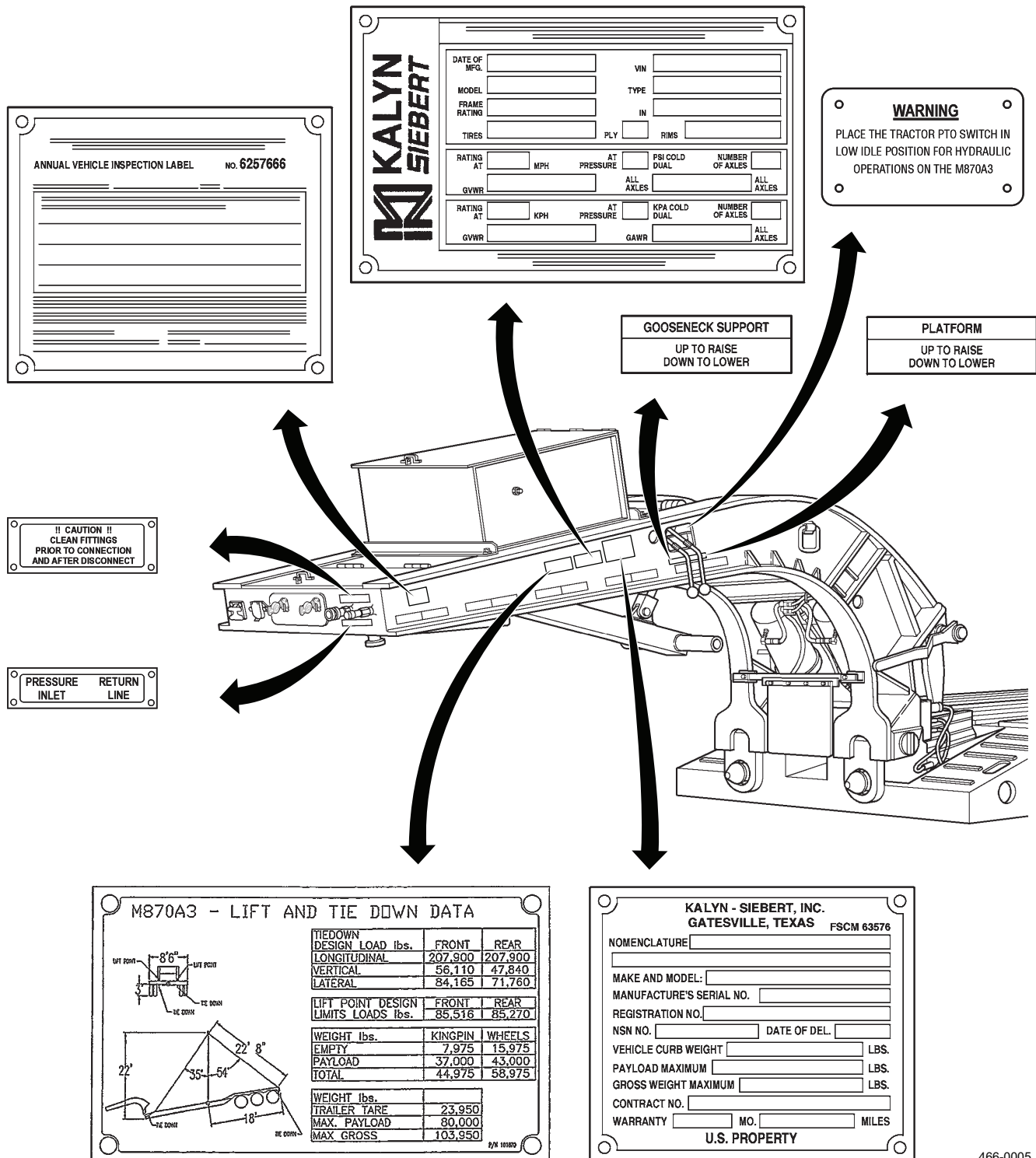
Table 2. Equipment Description - Major Components.



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KEY	COMPONENT	DESCRIPTION
1	Lights	Amber clearance lights are located on the front corner and mid-point of the semitrailer side. Four combination stop, turn, and tail lights, three red running lights, and two blackout lights are located on the rear of the semitrailer. An amber Anti-lock Brake System (ABS) light is located on the left rear corner of the semitrailer.
2	Spare Tire Assembly	Secured to rear raised portion of semitrailer deck.
3	Chain Slots	14 chain slots are provided on the frame rails of the semitrailer, seven on each side of the load bed. The chain slots are to be used with outrigger loads so that tie downs do not cross the boards and prevent secure tie down of the payload. The chain slots may also be used for loads not requiring outriggers.
4	Folding Outriggers	20 permanent outriggers swing out from the side of the semitrailer, 10 on each side.
5	D-Rings	D-rings are provided on the semitrailer to tie down payloads. D-rings are located on each side of the load bed, on each side of the upper gooseneck deck, on the upper surface of the gooseneck, and on the bed of the semitrailer.
6	Lifting Shackles	Two located on the underside of the rear semitrailer deck.

LOCATION AND CONTENTS OF PLATES, DECALS, AND STENCILS



466-0005

Figure 1. Plates, Decals, and Stencils.

EQUIPMENT DATA**Table 3. Equipment Specification Table**

Semitrailer Dimensions	
Length	45 ft 5.3 in. (1,385.1 cm)
Width	8 ft 6 in. (259.2 cm)
Height	105 in. (266.7 cm)
Kingpin to Front	16 in. (40.6 cm)
Kingpin to Center Axle	455 in. (11.5 m)
Ground Clearance	
Frame Rail	1 ft 10 in. (55.9 cm)
Axle	1 ft 2.75 in. (37.5 cm)
Fording Depth	20 in. (50.8 cm)
Vehicle Weights	
Gross Combined Vehicle Weight (GCVW)	131,8000 lb (59,783 kg)
Maximum Payload for Highway or Improved Roads	80,000 lb (36,287 kg)
Maximum Payload for Cross Country	80,000 lb (36,287 kg)
Weight on Kingpin (empty)	7,975 lb (3,617 kg)
Weight on Wheels (empty)	15,975 lb (7,246 kg)
Empty net weight	23,950 lb (10,863 kg)
Deck Dimensions	
Length	33 ft 4.75 in. (1,017.9 cm)
Width (without outriggers)	8 ft 6 in. (259.2 cm)
Width (with outriggers)	10 ft 6 in. (320.2 cm)
Height (no load)	35.8 in. (90.0 cm)

EQUIPMENT DATA - Continued

Table 3. Equipment Specification Table

Axles	
Type	Non-Driving Tubular
Quantity	3
Weight	25,000 lb (11,340 kg)
Wheel Bearings	
Type	Tapered Roller
Wheels	
Type	Hub Pilot
Rim Size	22.5 x 9 in. (57.2 x 22.9 cm)
Rim Type	Tubeless
Tires	
Quantity	13
Ply	16
Type	Commercial tubeless radial
Size	0.275/70 R22.5
Design	On-road/Off-road tread
Tires Air Pressure	
Highway	115 psi (792.93 kPa)
Unimproved Roads .	115 psi (792.93 kPa)
Sand, Mud, or Snow	70 psi (482.6 kPa)
Air Brake System	
Type	S-Cam, Two-Shoe, Expanding, Self-Centering
Actuation	Air
Brake Chambers, Spring	6
ABS Sensors	4

EQUIPMENT DATA**Table 3. Equipment Specification Table**

Electrical System	
Voltage - Military	24-volt dc
Voltage - Commercial	12-volt dc
Power Source	Towing Vehicle
Suspension	
Type	Walking Beam
Speed with 40-ton (36.3 metric ton) Load	
Highway and Primary Paved Roads	55 mph (88.5 km/h)
Secondary/Gravel Roads	30 mph (48.3 km/h)
Hydraulics	
Tilt Cylinder	(1) 3 in. bore x 10 in. stroke
Deck Lift Cylinder	(2) 9 in. bore x 10 in. stroke
Control Valve	2 spool with heavy springs
Relief Valve	Adjustable
Regulator Valve	Poppet-type
Dual Regulator Valve	Poppet-type
Hydraulic Oil	OE/HDO-10

END OF WORK PACKAGE

**FIELD MAINTENANCE
THEORY OF OPERATION**

GOOSENECK

Removable Kingpin. Two provided, primary is 3.5 in. (88.9 mm), alternate is 2 in. (50.8 mm), for fifth wheel plate and kingpin coupling.

Gooseneck

- Hydraulic detachable for vehicle or equipment loading.
- Integrated tool box at front of gooseneck for storage of the tiedown chains, binders, jack, etc.

SUSPENSION

1. Three rear axles on walking beam suspension support highway and improved roads payload of 80,000 lb (36,320 kg) at 55 mph (88.5 km/h), and unimproved road (graded gravel) payload of 80,000 lb (36,320 kg) at 30 mph (48.3 km/h).
2. Towing vehicle supplies brake air pressure for control of brakes, hydraulic power for operation of gooseneck, and electric power for semitrailer lighting.
3. Hub mileage meter located on left front wheel records semitrailer mileage.
4. Spare tire mounting location on the rear deck of the semitrailer.

END OF WORK PACKAGE

CHAPTER 2

OPERATOR INSTRUCTIONS

OPERATOR MAINTENANCE
DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

CONTROLS AND INDICATORS

The figures show the location, and the tables describe the function of the controls and indicators on the semitrailer.

Table 1. Air Brake Controls and Indicators.

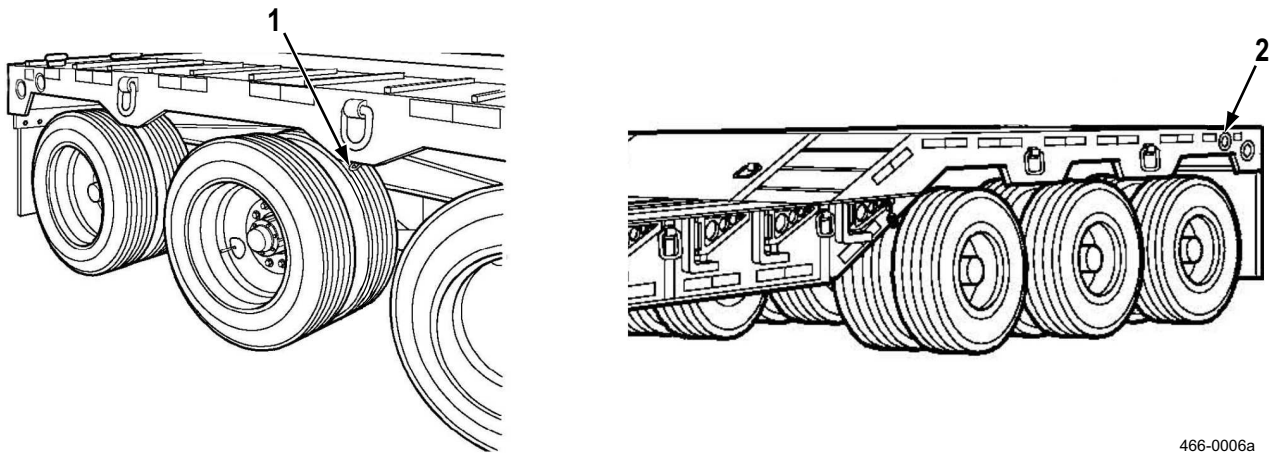


Figure 1. Location of Air Tank Dump Valve Release Cable and Anti-lock Brake System (ABS) Light.

Key	Control/Indicator	Function
1	Air Tank Dump Valve Release Cable	Provides remote point for air to be drained from reservoirs.
2	Anti-lock Brake System (ABS) Light	Provides indication the anti-lock brake system is active.

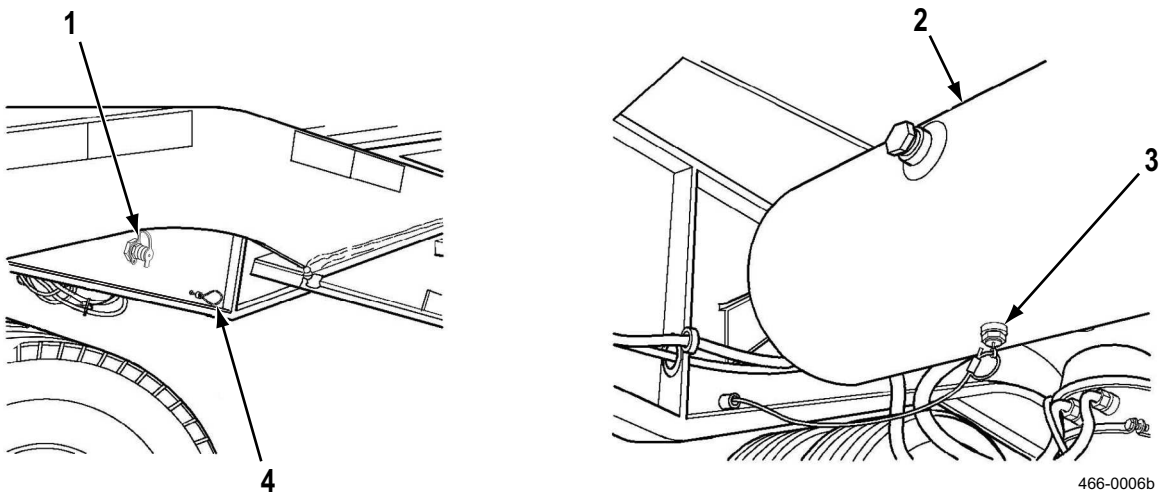
Table 2. Air Brake Controls and Indicators.

Figure 2. Location of Air Supply, Air Reservoirs, Air Tank Dump Valve, and Air Tank Dump Valve Release Cable.

Key	Control/Indicator	Function
1	Air Supply	Provides a source of air to inflate semitrailer tires.
2	Air Reservoirs (2)	Stores semitrailer's air supply.
3	Air Tank Dump Valve	Releases air pressure from reservoir.
4	Air Tank Dump Valve Release Cable	Provides remote point for air to be drained from reservoir.

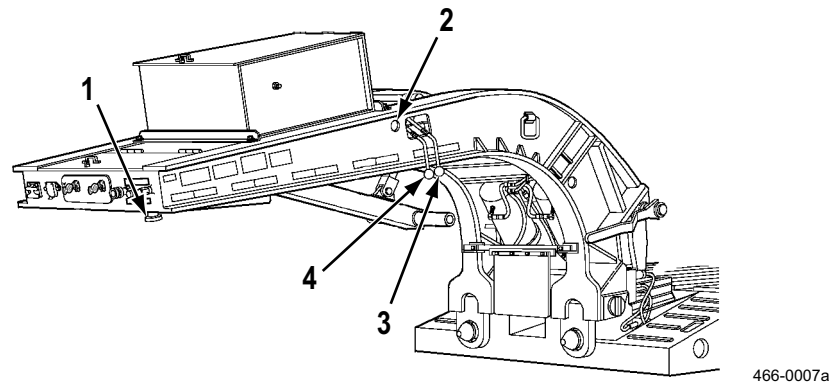
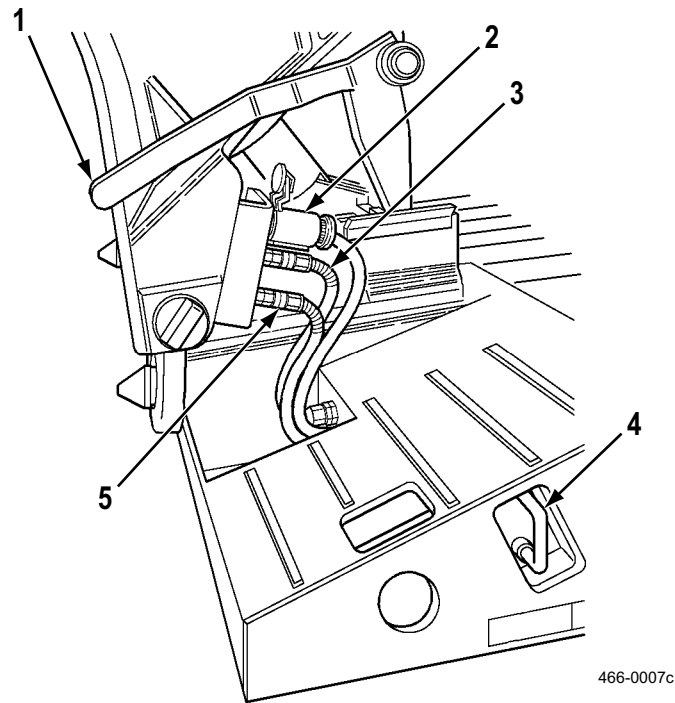
Table 3. Gooseneck Components, Controls, and Indicators.

Figure 3. Location of Kingpin, Hydraulic Pressure Gage, Platform Lift Arm Control Lever, and Tilt Arm Control Lever.

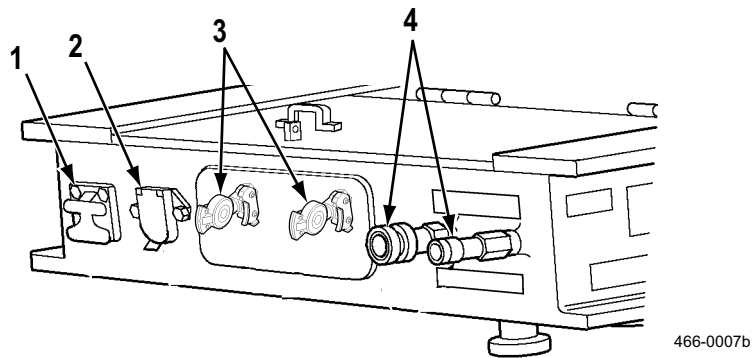
Key	Control/Indicator	Function
1	Kingpin (Removable)	Secures semitrailer to fifth wheel towing vehicle. Kingpin is removable. Two kingpins are provided.
2	Hydraulic Pressure Gage	Measure pressure in gooseneck hydraulic system.
3	Platform Lift Arm Control Lever	Actuates platform lift arm hydraulic cylinder.
4	Tilt Arm Control Lever	Actuates tilt arm hydraulic cylinder.

Table 4. Gooseneck Components, Controls, and Indicators.

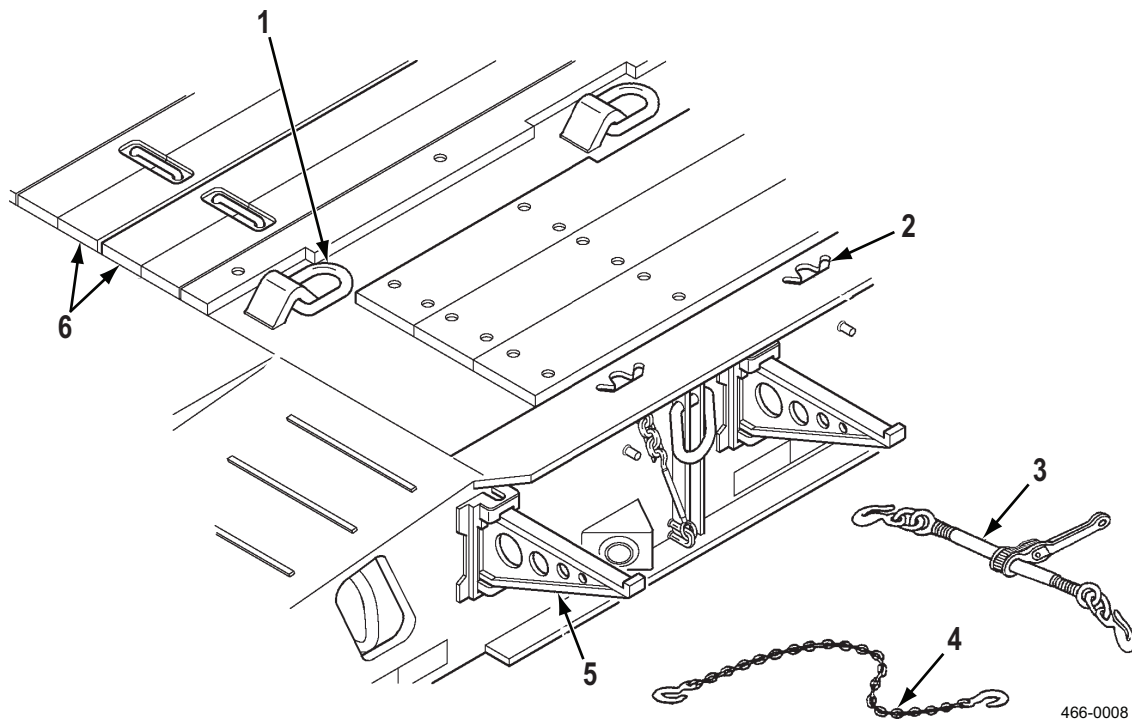
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Figure 4. Location of Shim Lever, Electrical Connector, Air Line Connectors, and Neck Base Slide Bar Rod Lock.

Key	Control/Indicator	Function
1	Shim Lever	Position shims between neckbase and gooseneck to support semitrailer in raised position.
2	Semitrailer Electrical Connector	Connection joint for semitrailer 12/24-volt power source.
3	Semitrailer Air Line Connector	Gooseneck to semitrailer emergency air line for braking system.
4	Neck Base Slide Bar Rod Lock	Locks gooseneck to semitrailer.
5	Semitrailer Air Line Connector	Gooseneck to semitrailer service line connection for braking system.

Table 5. Gooseneck Components, Controls, and Indicators.**Figure 5. Location of Hydraulic and Electrical Connectors, and Gladhands.**

Key	Control/Indicator	Function
1	Gooseneck Electrical Connector	Connection joint for the 24-volt power source.
2	Gooseneck Electrical Connector	Connection joint for the 12-volt power source.
3	Gladhands (Blue-Service, Red-Emergency)	Connection to the towing vehicle to supply air for the semitrailer brakes.
4	Hydraulic Connectors	Connection joint for gooseneck hydraulic source.

Table 6. Tiedown and Accessory Items.**Figure 6. Location of Tiedown and Accessory Items.**

Key	Control/Indicator	Function
1	D-Rings	Provide tiedown points for chains to secure loads.
2	Chain Slots (14)	Ends of chains are inserted to secure chains for tiedown purposes.
3	Load Binder	Tightens chains used to secure loads to semitrailer.
4	Chain Assemblies	Used to secure loads to semitrailer.
5	Outrigger (Fold Out)	Supports outrigger boards.
6	Outrigger Boards (4 Center Boards)	Positioned on outriggers to support oversized payloads.

END OF WORK PACKAGE

OPERATOR MAINTENANCE OPERATION UNDER USUAL CONDITIONS

INITIAL SETUP:

Personnel Required

Two

References

WP 0006

References (cont.)

WP 0033

WP 0040

WP 0060

WP 0093

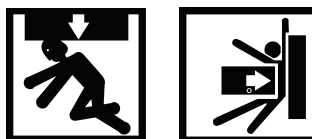
SCOPE

- This work package provides instructions on operating the semitrailer under usual conditions.
- Types of loads, load distribution, and Center of Gravity (CG) are included in this work package.
- For operating instructions under unusual conditions, refer to (WP 0006).
- Before, during, and after operation, perform applicable Operator Preventive Maintenance Checks and Services (PMCS) (WP 0033).

END OF TASK

TYPES OF LOADS

WARNING



Improper load placement can have a detrimental effect on braking, evasive maneuvers, and handling characteristics of a towing vehicle semitrailer vehicular combination. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

The following provides descriptions of loads and information on proper load placement.

Concentrated Loads. A load that is localized over a short distance is a concentrated load. Semitrailer frame members are subject to damage or yielding when subjected to concentrated loads beyond their capacity. Generally, avoid knife-edged interfaces between the load and the semitrailer. Load spreading devices such as timbers or steel beams are recommended when this type of interface exists.

Distributed Loads. A load that bears continuously along its length of engagement with the semitrailer is a distributed load.

Self-Supporting Loads. A load that has its own rigid base is considered to be a self-supported load. It may also be referred to as a "rigid load" or "rigid base load."

Compound Loads. A load that is a combination of two or more types of loads on one semitrailer is considered to be a compound load.

TYPES OF LOADS - Continued

Eccentric Loads. A load that has its CG positioned off to one side is an eccentric load. The degree of offset is a critical factor to the stability of the semitrailer. Problems encountered may vary from leaning of the semitrailer, to severe leaning, instability, and/or damage or yielding of the semitrailer frame.

High CG Loads. A load with a high CG poses additional stability concerns. Reduce speed with this type of load.

Outrigger Loads. Outrigger provides additional stability to wide-based loads. However, due to the spacing of the outriggers, no concentrated loads are permitted on them. Some of the load, by design, must bear on the semitrailer bed itself and only part of the load on the outriggers.

Divisible Loads. A load which has components that can be physically separated (such as two pieces of equipment or vehicles) is considered a divisible load.

END OF TASK

LOAD DISTRIBUTION

WARNING



Improper load placement can have a detrimental effect on braking, evasive maneuvers, and handling characteristics of a towing vehicle semitrailer vehicular combination. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

General

Load distribution is an important factor in the safe use of a semitrailer. It is more critical as the maximum load of the semitrailer is approached. However, even a load that is significantly less than the overall limit of the semitrailer can cause an overload situation if not distributed properly.

Vehicles and Equipment

The CG of the vehicles or equipment being loaded should be positioned as close as possible to the CG of the semitrailer for the best weight distribution. The load deck should be considered to be the bed space between the base of the gooseneck and the forward axle.

LOAD DISTRIBUTION - Continued

Capabilities

The following information is provided for the purpose of calculating weight distribution and to ensure that the semitrailer and towing vehicle are not overloaded.

- The semitrailer is rated to carry 80,000 lb (40 ton, 36,320 kg). The rear axle group is capable of supporting a maximum weight of 103,320 lb (52 ton, 46,907.3 kg) total (semitrailer weight and payload).
- The M916 towing vehicle is capable of supporting a maximum weight of 40,000 lbs (20 ton, 18,160 kg) total at the kingpin.

END OF TASK

CALCULATING CG

1. Generally, military vehicles and equipment have data plates that provide embarkation or loading information including the location of the CG. When the CG of the payload is known, the portion of the load is known, the portion of the load that is bearing on the kingpin and the portion that is bearing on the axles can be determined.
2. To determine if the semitrailer and towing vehicle combination is within its load bearing capability, this data should be compared to the semitrailer and towing vehicle limitations listed in the appropriate manuals and found on the embarkation/load data plates.
3. Use the data and formulas provided in (Figure 1) to determine if the semitrailer is loaded properly and within its limits. Known information for the semitrailer is provided. Information for the payload will need to be calculated through measurements and from data contained on the payload, vehicle, or equipment.

CG = Center of Gravity	M870A3 Data
CL = Center Line	WB = 448.06 in. (37 ft 4-1/16 in.)
EWf = Trailer Empty Weight at Front	EWf = 7,840 lb (3,556 kg)
EWr = Trailer Empty Weight at Rear	EWr = 15,320 lb (6,940.0 kg)
WB = Wheelbase	
	$\frac{(Y) \times \text{Payload Weight}}{WB} + \text{EWr} = \text{Axle Load}$
	$\frac{(X) \times \text{Payload Weight}}{WB} + \text{EWf} = \text{Kingpin Load}$

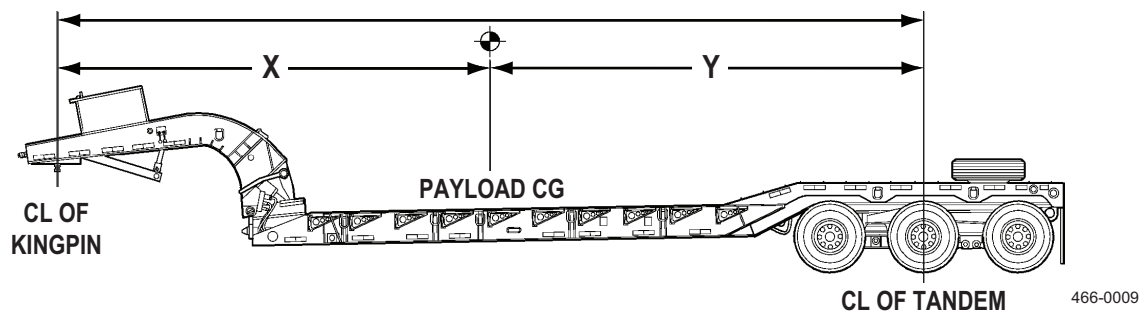


Figure 1. Calculating Semitrailer CG with Payload.

END OF TASK

PAYLOAD CONFIGURATIONS

Permit Requirements

Although operation aboard Federal Installations may not require permits, operations on public roads will require permits for loads that exceed the legal highway limits. Each state highway authority sets its own oversize/overweight limits. In general, operations without permits are allowed for vehicles that do not exceed 80,000 lb (36,320 kg) Gross Vehicle Weight (GVW). Any load that exceeds 80,000 lb (36,320 kg) GVW will require a permit. Loads are evaluated on the basis of the Federal Bridge Formula which provides acceptable limits for weights on axles and groups of axles. The Bridge Formula allows maximum axle weights of 20,000 lb (9,080 kg) for a single axle, 34,000 lb (15,436 kg) for a tandem axle, and 42,000 (19,068 kg) for a tri-axle. Some states may allow a tri-axle load of 60,000 lb (27,240 kg) on the semitrailer with the proper permit. Divisible loads are restricted to 80,000 lb (36,320 kg) GVW and are rarely permitted above that limit.

Before operating on public roads, check applicable state laws with regard to payload, bridge requirements, and oversized loads, if applicable. Ensure that proper permits have been received prior to conducting operation on public roads.

PAYLOAD CONFIGURATIONS - Continued

Table 1 provides information on common equipment and vehicle payloads that will be transported on this semitrailer. This information is provided as a guide and should be used to determine whether or not a permit is required for use on public roads. Payload configurations not covered in this table may require a permit. Check local regulations for permit requirement.

NOTE

Table 1 provides examples only.

Table 1. Common Equipment and Vehicle Payload Information.

PAYLOAD	PAYLOAD WEIGHT	GROSS VEHICLE WEIGHT (GVW)		BRIDGE FORMULA	REQUIRES STATE PERMIT
		W/M916	W/M920		
4000 Forklift	11,808 lb (5,356 kg)	91,128 lb (41,335 kg)	110,128 lb (49,953 kg)	OK	NO
EBFL Forklift	22,870 lb (10,374 kg)	102,190 lb (46,353 kg)	121,190 lb (54,971 kg)	OK	YES
1150E Dozer w/Blade	25,100 lb (11,385 kg)	104,420 lb (47,364 kg)	123,420 lb (55,982 kg)	OK	YES
LRT 7.5 Crane	26,000 lb (11,793 kg)	105,320 lb (47,772 kg)	124,320 lb (56,391 kg)	OK	YES
1155 Front-End Loader	27,750 lb (12,587 kg)	107,070 lb (48,566 kg)	126,070 lb (57,184 kg)	OK	YES
TRAM Forklift/Front-End Loader	36,686 lb (16,640 kg)	116,006 lb (52,619 kg)	135,006 lb (61,238 kg)	OK	YES
D7G Dozer	50,000 lb (22,680 kg)	129,320 lb (58,659 kg)	148,320 lb (67,277 kg)	NO ⁽¹⁾	YES
M9 ACE Armored Combat Earthmover	54,000 lb (24,494 kg)	133,320 lb (60,473 kg)	152,320 lb (69,091 kg)	NO ⁽¹⁾	YES
621B Scraper	65,000 lb (29,484 kg)	144,320 lb (65,462 kg)	163,320 lb (74,081 kg)	NO ⁽¹⁾	YES
Note: (1) Exceeds Bridge Formula tri-axle weight limit 42,000 lb (19,050 kg). D7G tri-axle weight is 47,554 lb (21,570.1 kg). M9 ACE tri-axle weight is 51,706 lb (23,453.5 kg).					

PAYLOAD CONFIGURATIONS - Continued

Table 2 provides information concerning some equipment combinations. The table indicates if the criteria for a divisible load of 80,000 lb (36,287 kg) max GVW has been met. A “NO” in this column indicates that the combination exceeds the divisible load criteria and may not be permitted under state and Federal guidelines. All combinations except the D7G/1150E combination are within the capability of the semitrailer, however, and may be able to be transported in countries with less stringent weight requirements. The D7G/1150E combination cannot be transported on this semitrailer.

Check height of payload/semitrailer combination. Overall height exceeding 13 ft 6 in. (4.12 m) may require permits and special routing.

NOTE

Table 2 provides examples only.

Table 2. Common Equipment Combination Payload Information.

PAYLOAD COMBINATION	TOLERANCE		GROSS VEHICLE WEIGHT (GVW)	DIVISIBLE LOAD CRITERIA MET
	AXLE	KINGPIN		
EBFL/4000	OK	OK	94,166 lb (42,713 kg)	NO
1150E/4000	OK	OK	96,369 lb (43,712 kg)	NO
1155/4000	OK	OK	99,046 lb (44,927 kg)	NO
TRAM/4000	OK	OK	107,982 lb (48,980 kg)	NO
1155/1150E	OK	OK	112,850 lb (51,188 kg)	NO
D7G/1150E	NO ⁽¹⁾	OK	135,100 lb (61,280 kg)	NO
Note: (1) Exceeds semitrailer axle tolerance by 17,000 lb (7,711 kg).				

Configuration Examples

The payload configuration for the semitrailer is determined by the operational requirements and the loading information provided in the previous section.

Some examples of typical payload configurations are shown in (Figures 2 through 4).

PAYLOAD CONFIGURATIONS - Continued

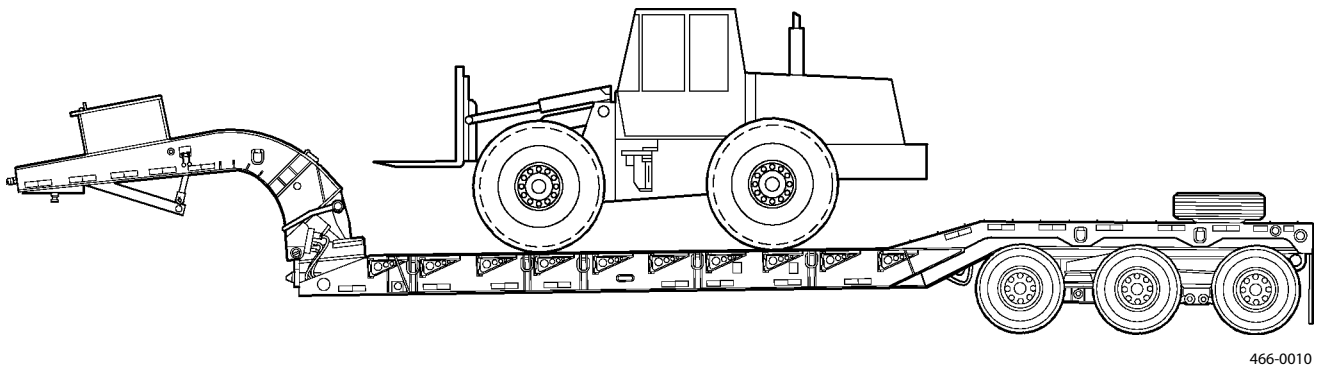


Figure 2. Typical Payload Configurations - TRAM.

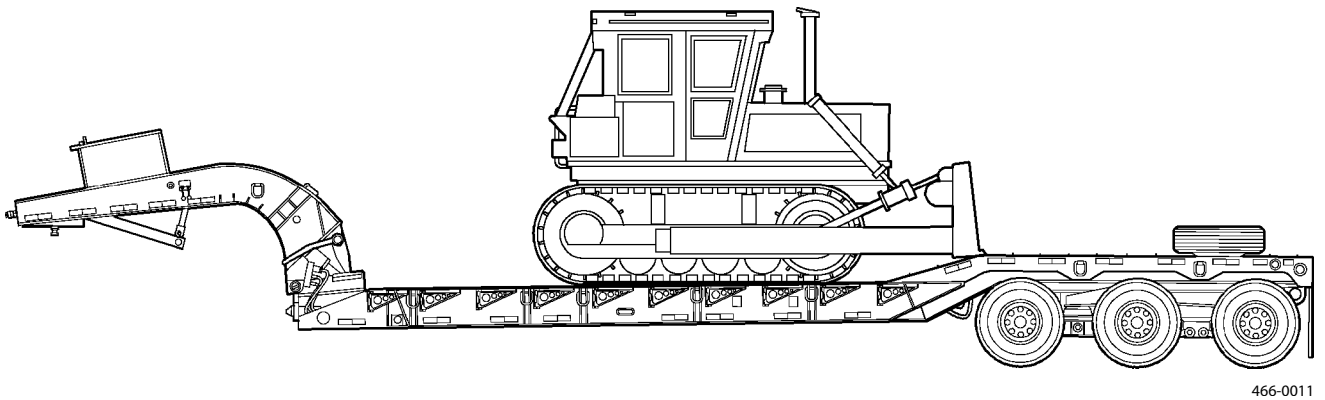


Figure 3. Typical Payload Configurations - D7G.

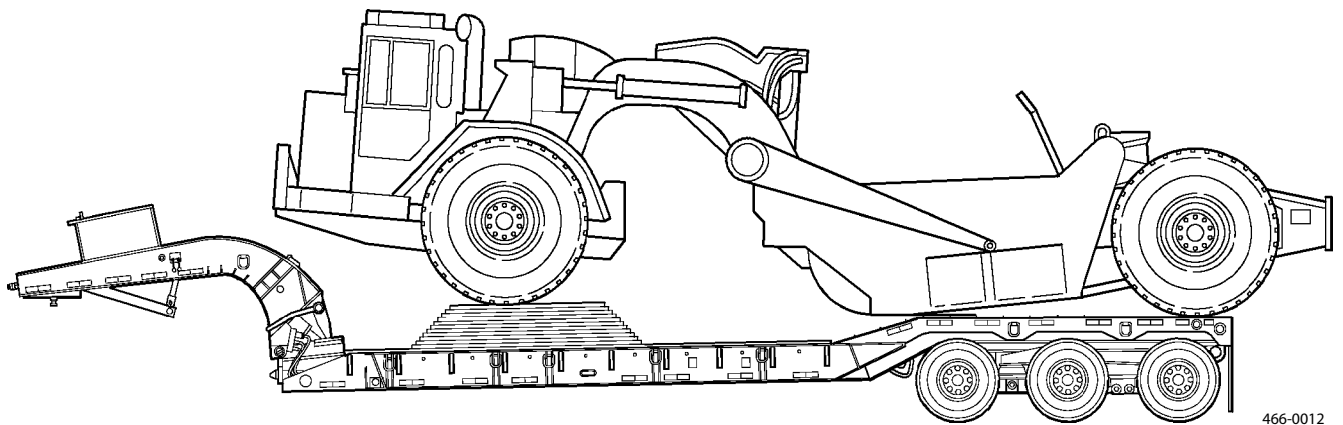


Figure 4. Typical Payload Configurations - 621C.

END OF TASK

COUPLING GOOSENECK TO TOWING VEHICLE AND RAISING SEMITRAILER**WARNING**

- The semitrailer should ALWAYS have the wheels chocked, with or without a load, during coupling or uncoupling to towing vehicle and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Never stand between the towing vehicle and the semitrailer when the towing vehicle is being backed up to the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- All personnel not involved in coupling/uncoupling operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- To prevent injury or death to personnel or damage to the equipment, coupling should be done by two people, the first person in the towing vehicle cab and the second acting as a ground guide. Operator must know where ground guide is at all times. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Place the towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid pressurizing the hydraulics system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

To prevent damage to the semitrailer and the towing vehicle, do not connect the hydraulic lines to a towing vehicle that does not use the approved military lubricants. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Coupling operations must be conducted with the gooseneck attached to the semitrailer.

1. Line up towing vehicle with semitrailer and note whether height of the gooseneck kingpin is sufficient to couple with towing vehicle bed plate.

COUPLING GOOSENECK TO TOWING VEHICLE AND RAISING SEMITRAILER - Continued**NOTE**

- A reading of 900 psi (6,205.3 kPa) is only on gage (Figure 5, Item 1) when hydraulic controls are in use. Readings will drop to 500 psi (3,447.4 kPa) when levers are disengaged.
 - The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.4-6,205.3 kPa) under normal operation, and will reach a maximum of 900-1,100 psi (6,205.3-7,584.2 kPa) under full load.
 - Be sure the level for hydraulic fluid in the reservoir of the towing vehicle is above the minimum level to avoid getting air in the hydraulic lines.
2. If the gooseneck height is too low:
 - a. Connect hydraulic lines from towing vehicle to the gooseneck.
 - b. Pressurize system to a minimum of 900 psi (6,205.3 kPa) on pressure gage (Figure 5, Item 1) and raise gooseneck by holding platform lever (Figure 5, Item 3) up as required until kingpin and bedplate are approximately parallel.

NOTE

- Be sure the gooseneck shim is positioned so as not to obstruct movement of the gooseneck base assembly.
 - Hydraulic pressure is not required to lower the gooseneck since the weight of the gooseneck will allow it to drop under these conditions.
3. If gooseneck height is too high, lower gooseneck by moving platform lever (Figure 5, Item 3) to down position until gooseneck drops to desired height.
 4. Ensure gooseneck tilt arm is fully raised to clear towing vehicle bedplate and position it as required with gooseneck support lever (Figure 5, Items 2 and 4).

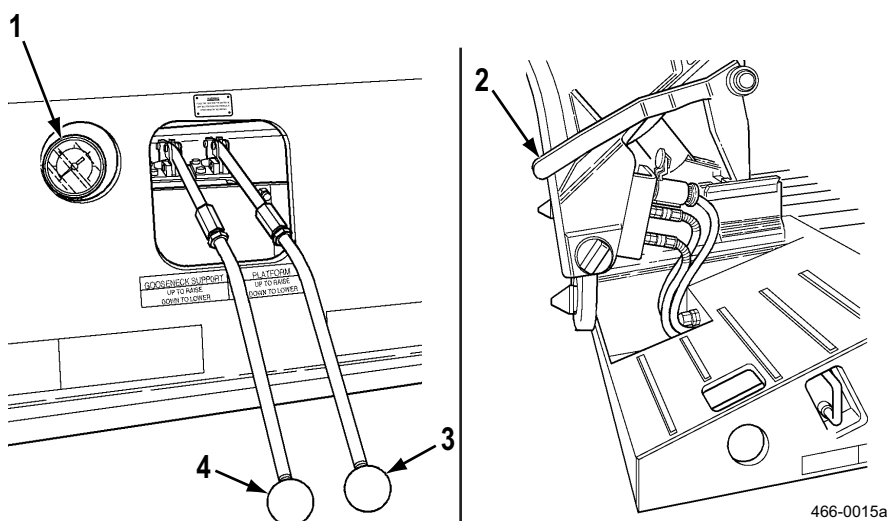


Figure 5. Gooseneck Controls.

COUPLING GOOSENECK TO TOWING VEHICLE AND RAISING SEMITRAILER - Continued**CAUTION**

On towing vehicles equipped with a fifth wheel lockout device, ensure that the lockout is disengaged before traveling off-road. Failure to comply may result in damage to, or destruction of, equipment or mission.

5. Unlock fifth wheel by pulling secondary lock handle (Figure 6, Item 2) out and lifting up on handle until it locks in place. Then pull primary lock handle (Figure 6, Item 1) out and lift up until it locks in place.

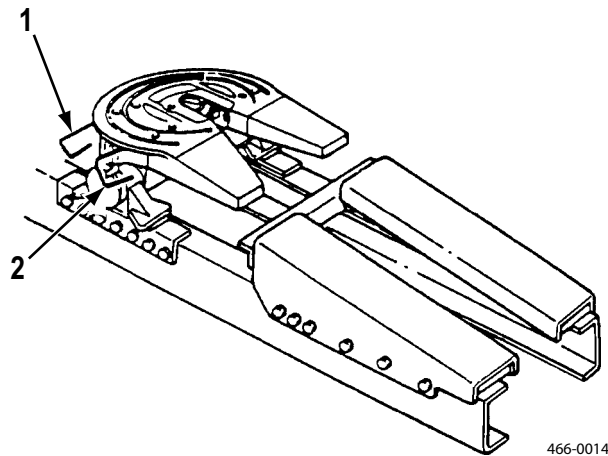


Figure 6. Fifth Wheel Handles.

6. Slowly back towing vehicle under semitrailer, allowing semitrailer to slide up approach ramps to fifth wheel plate until kingpin engages and locks in place.

NOTE

Ensure 12/24-volt electrical cable (Figure 7, Item 1) is connected between semitrailer and gooseneck.

7. Connect 12-volt (Figure 7, Item 9) or 24-volt (Figure 7, Item 10) electrical cables from towing vehicle to gooseneck electrical connectors.

NOTE

Ensure air lines (Figure 7, Item 2 and 4) are connected between semitrailer and gooseneck.

8. Connect blue service and red emergency air lines from towing vehicle to respective gooseneck blue (Figure 7, Item 8) and red (Figure 7, Item 7) gladhands.

CAUTION

Rotate female hydraulic connector 90 degrees after connecting to gooseneck to avoid possible damage during transport. Failure to comply may result in damage to, or destruction of, equipment or mission.

9. Remove hydraulic return line connector dust cover and wipe connector clean. Connect hydraulic return line from towing vehicle to gooseneck hydraulic return connector (Figure 7, Item 6).
10. Remove hydraulic inlet line connector dust cover and wipe connector clean. Connect hydraulic inlet line from towing vehicle to gooseneck hydraulic inlet connector (Figure 7, Item 5).

COUPLING GOOSENECK TO TOWING VEHICLE AND RAISING SEMITRAILER - Continued**CAUTION**

Ensure the level of hydraulic fluid in the towing vehicle's reservoir is above the minimum level to avoid getting air in the hydraulic lines. Failure to comply may result in damage to, or destruction of, equipment or mission.

11. Ensure neck base slide bar road lock (Figure 7, Item 3) is in locked position with rod end dropped into rod hole.

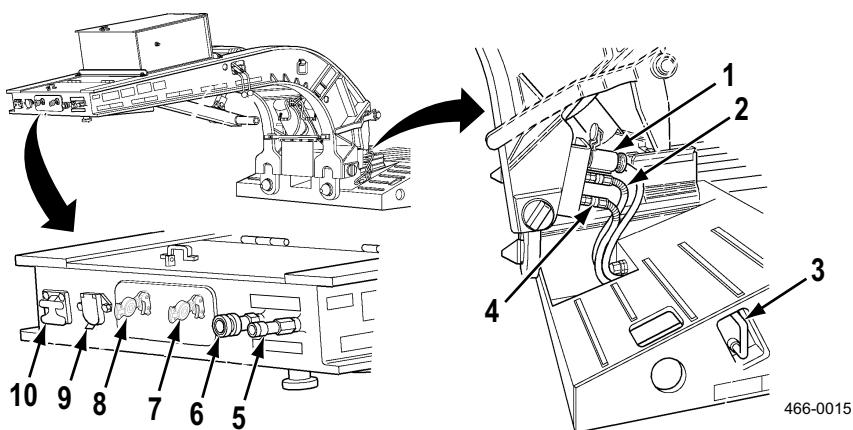


Figure 7. Electrical Cables and Air Lines.

WARNING

- The use of a step stool may be required if operator cannot reach the hydraulic system control levers. Failure to be at the proper operating height may cause improper lever and semitrailer movement. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer and towing vehicle may roll when brakes are released. To prevent injury to personnel or damage to equipment, the operator must remain in the cab of the towing vehicle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

The semitrailer is equipped with an Electronic Control Unit (ECU)/modulator valve that provides air to the reservoirs first. The spring brakes will remain set until the air pressure reaches 80-82 psi (551.6 kPa-565.4 kPa), then the modulator portion of the ECU/modulator valve allows air to begin flowing to release the spring brakes and operate the service brakes.

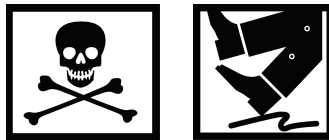
12. Turn on towing vehicle lights and ensure all semitrailer clearance, running, tail, turn signal, Anti-lock Brake System (ABS), and brake lights operate properly.

COUPLING GOOSENECK TO TOWING VEHICLE AND RAISING SEMITRAILER - Continued

13. With hydraulic system pressurized, move platform lever (Figure 8, Item 3) to up position to raise semitrailer bed to a position slightly above desired height. Position shim lever (Figure 8, Item 3) in appropriate slot to maintain semitrailer height and lower semitrailer bed slightly to lock shims in position.
14. Move towing vehicle and semitrailer forward slowly and apply brakes to ensure proper braking action.
15. System is ready for operation.

END OF TASK**DISCONNECTING GOOSENECK FROM SEMITRAILER FOR LOADING OR UNLOADING**

Disconnecting the gooseneck from the semitrailer for loading or unloading must be conducted with the gooseneck coupled to the towing vehicle and the semitrailer raised.

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

To prevent damage to the equipment, the procedure to disconnect the gooseneck should be performed by an operator working in cooperation with a ground observer. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

- A reading of 900 psi (6,205.3 kPa) is only on gage (Figure 8, Item 1) when hydraulic controls are in use. Readings will drop to 500 psi (3,447.4 kPa) when levers are disengaged.
 - The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.4-6,205.3 kPa) under normal operation, and will reach a maximum of 900-1,100 psi (6,205.3-7,584.2 kPa) under full load.
1. Start up hydraulic system on towing vehicle and observe appropriate psi on hydraulic gage (Figure 8, Item 1).
 2. Raise semitrailer using platform lever (Figure 8, Item 2) until shim lever (Figure 8, Item 3) is free to rotate shim clear of detents.

DISCONNECTING GOOSENECK FROM SEMITRAILER FOR LOADING OR UNLOADING - Continued

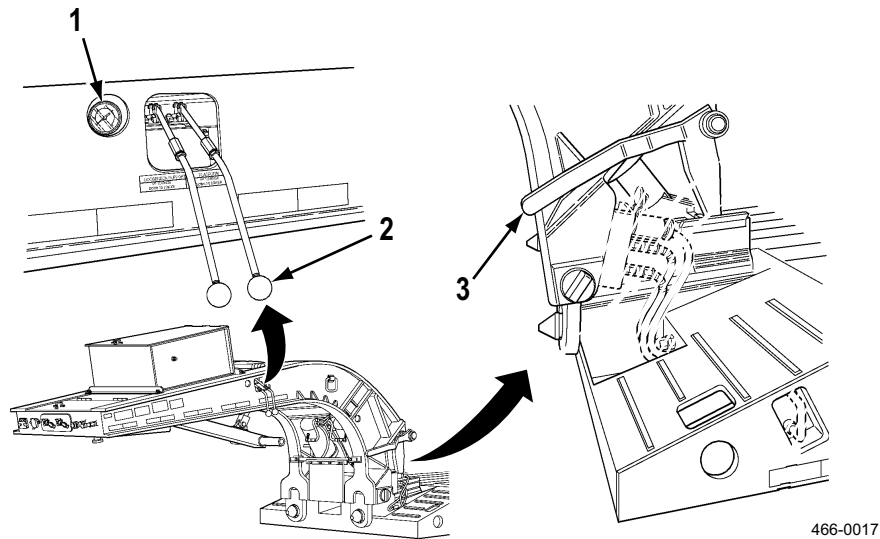


Figure 8. Gooseneck.

NOTE

Disconnecting the air lines will set the brakes on the semitrailer.

3. Disconnect 12/24-volt cable (Figure 9, Item 1) connecting gooseneck to semitrailer, as well as two air lines (Figure 9, Items 2 and 3) connecting gooseneck to semitrailer.

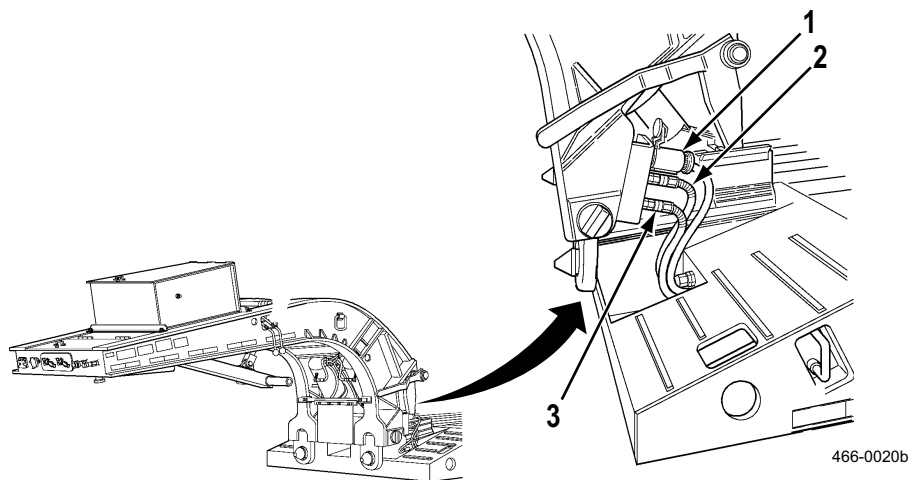


Figure 9. Controls for Gooseneck.

DISCONNECTING GOOSENECK FROM SEMITRAILER FOR LOADING OR UNLOADING - Continued**NOTE**

Two personnel are required for the following step.

4. Have one person hold shim lever (Figure 10, Item 1) in raised position, and the other person lower semitrailer by holding platform lever (Figure 11, Item 1) in down position until front of semitrailer rests evenly on ground or wooden blocks.

NOTE

Lifting pins (Figure 10, Item 3) should be centered in holes of gooseneck lifting lugs.

5. Slightly lower gooseneck an additional amount to release pressure on lifting pins (Figure 10, Item 3) located on front of semitrailer.

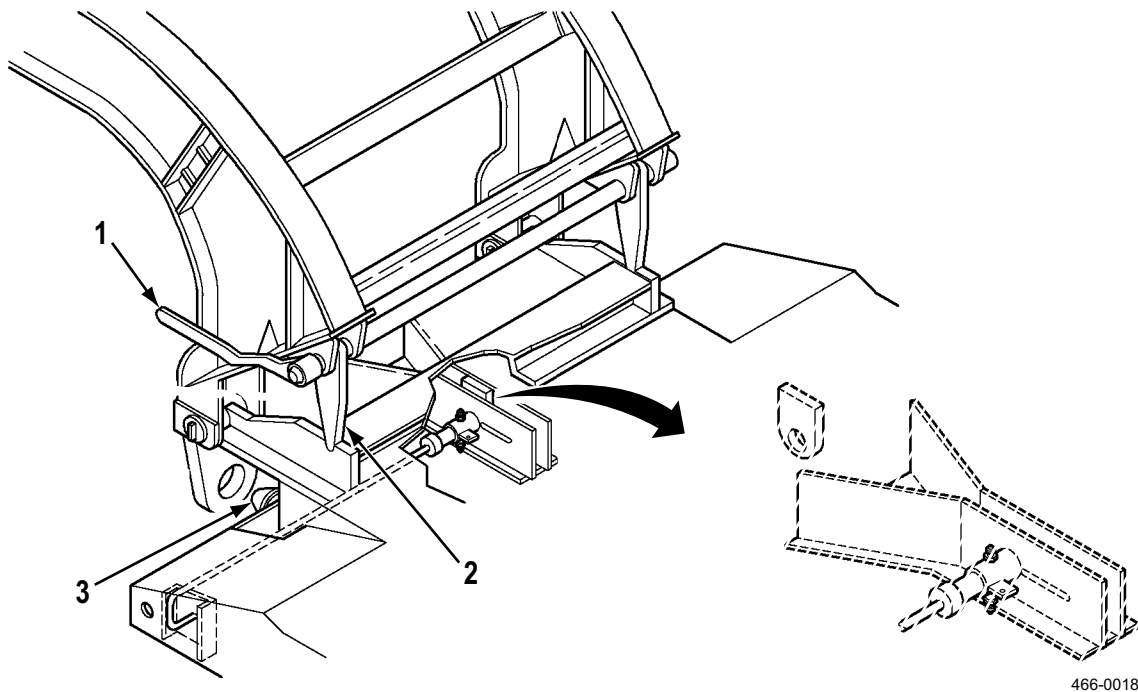


Figure 10. Disconnecting Gooseneck.

NOTE

- It may be necessary to back bump the gooseneck to release the neck base slide bar.
 - If the handle is hard to pull, lubricate zerks(WP 0093).
6. Pull neck base slide bar handle (Figure 11, Item 2) fully out until end clears bar recess hole, and rotate side bar handle counterclockwise to lock in released position.

NOTE

The tilt support arm is used only when the gooseneck is disconnected from the semitrailer to provide support and stability for the gooseneck while it is attached to the towing vehicle.

7. Lower gooseneck tilt support arm (Figure 11, Item 3) by pulling down on gooseneck support

DISCONNECTING GOOSENECK FROM SEMITRAILER FOR LOADING OR UNLOADING - Continued

lever (Figure 10, Item 1) until arm contacts towing vehicle rear bumper or approach ramps of towing vehicle bedplate.

WARNING

The operator of the towing vehicle should exercise extreme caution when moving the towing vehicle with the gooseneck attached. Operator must know where the observer/ground guide is at all times. The observer/ground guide should direct the operator under these circumstances. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

8. Slowly pull towing vehicle forward until gooseneck base clears semitrailer, and park towing vehicle and gooseneck in a location clear of semitrailer to permit loading or unloading of semitrailer.

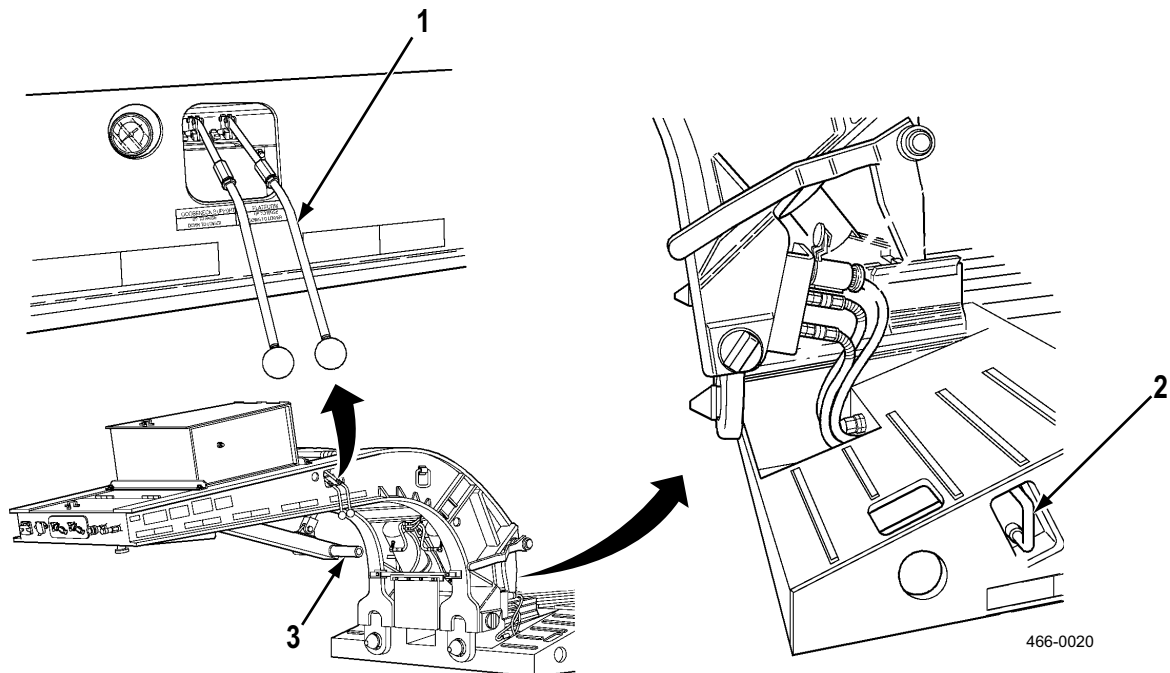


Figure 11. Controls for Disconnecting Gooseneck.

END OF TASK**CONNECTING GOOSENECK TO SEMITRAILER**

Connecting the gooseneck to the semitrailer must be conducted with the gooseneck coupled to the towing vehicle and the semitrailer lowered to ground level or resting evenly on wood blocks.

WARNING

- All personnel not involved in the coupling/uncoupling operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Never stand between gooseneck and semitrailer when towing vehicle is being backed up to semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

To prevent damage to the equipment, the procedure to connect the gooseneck should be performed by an operator working in cooperation with a ground observer. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Line up towing vehicle with semitrailer and note whether holes in lifting lugs (Figure 12, Item 5) on bottom of gooseneck base align and are centered with lifting pins (Figure 12, Item 4) on front of semitrailer. Center lug (Figure 12, Item 1) on bottom of gooseneck base should also be aligned with receiver "V" slot (Figure 12, Item 2) of semitrailer deck.

NOTE

If the handle is hard to pull, lubricate zerks (WP 0093).

2. Unlatch gooseneck base travel lock by pulling base slide bar handle (Figure 12, Item 3) fully out until end clears bar recess hole and rotate bar handle counterclockwise to lock in released positioned.

CONNECTING GOOSENECK TO SEMITRAILER - Continued**WARNING**

TRAVEL LOCK MUST BE FULLY ENGAGED to prevent gooseneck and semitrailer from disconnecting. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

It may be necessary to raise or lower the gooseneck tilt support arm with the gooseneck support lever to assist in aligning the gooseneck base to the semitrailer deck. It may also be necessary to back bump the gooseneck slightly to engage the neck base slide bar. The bar is fully engaged when the end of the bar resides in the bar recess hole.

3. Slowly back up towing vehicle until gooseneck lifting lugs (Figure 12, Item 5) contact front of semitrailer. Rotate slide bar handle (Figure 12, Item 3) clockwise so that travel lock latches.

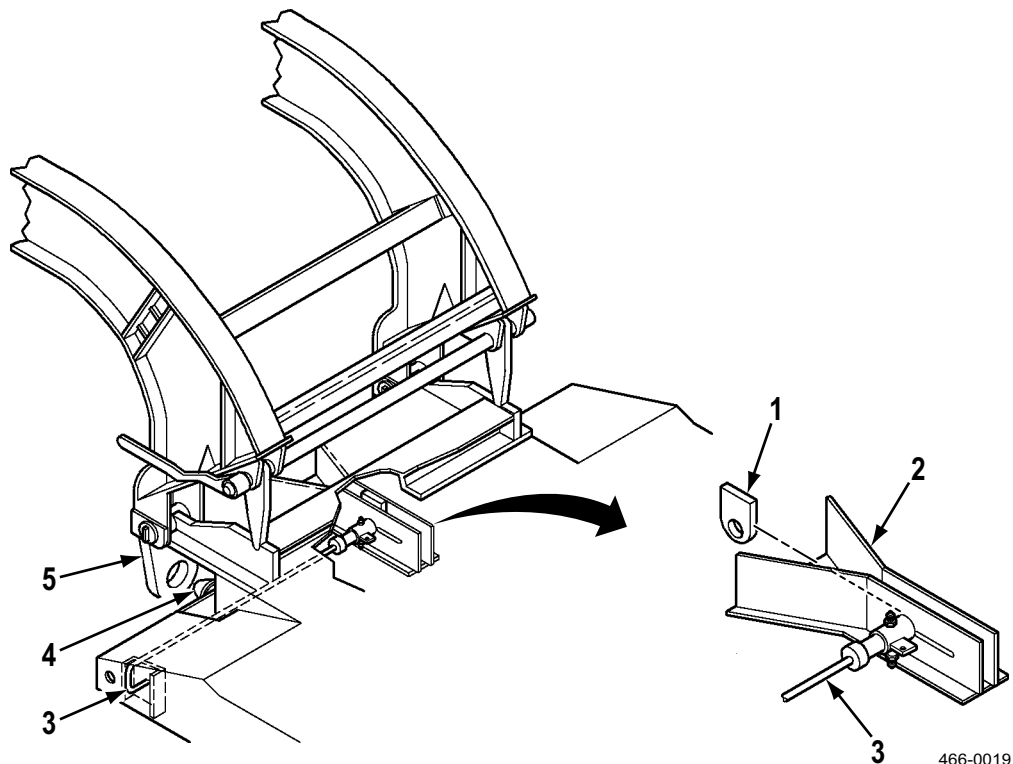


Figure 12. Connecting Gooseneck.

CONNECTING GOOSENECK TO SEMITRAILER - Continued

4. Connect air lines (Figure 13, Item 4 and 5) between semitrailer and gooseneck.
5. Connect 12/24-volt electrical cable (Figure 13, Item 3) between semitrailer and gooseneck.

WARNING

Place towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- A reading of 900 psi (6,205.3 kPa) is only on gage when hydraulic controls are in use. Readings will drop to 500 psi (3,447.4 kPa) when levers are disengaged.
 - The psi will vary due to load. Hydraulic pressures will vary from 300 to 900 psi (2,068.4-6,205.3 kPa) under normal operation, and will reach a maximum of 900 to 1,100 psi (6,205.3-7,584.2 kPa) under full load.
6. With hydraulic system pressurized to appropriate psi on gage (Figure 13, Item 1), move platform lever (Figure 13, Item 8) to up position to raise semitrailer bed to a position slightly above desired height.
 7. Using shim lever (Figure 13, Item 2), position shims in appropriate notch of baseplate (Figure 14, Item 1) to maintain semitrailer height and lower semitrailer bed slightly to lock shims in place.

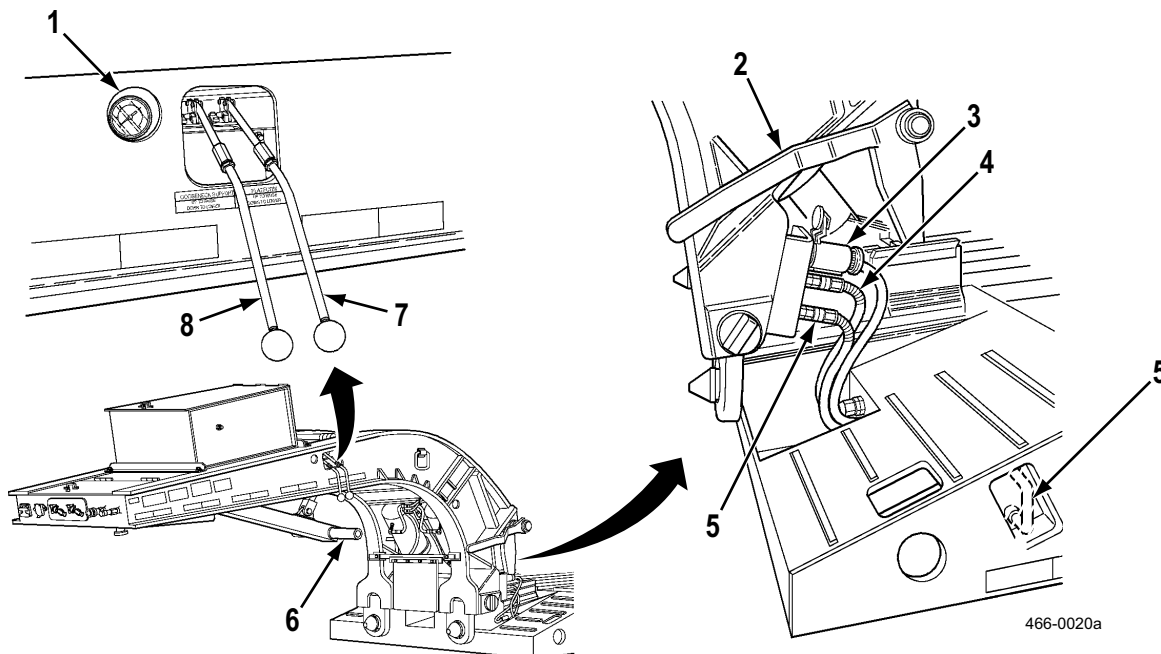


Figure 13. Controls Used for Connecting Gooseneck.

CONNECTING GOOSENECK TO SEMITRAILER - Continued

8. Using gooseneck support lever (Figure 13, Item 7), raise tilt arm (Figure 13, Item 6).
9. Move towing vehicle and semitrailer forward slowly and apply brakes to check for proper braking action.
10. The system is ready for operation.

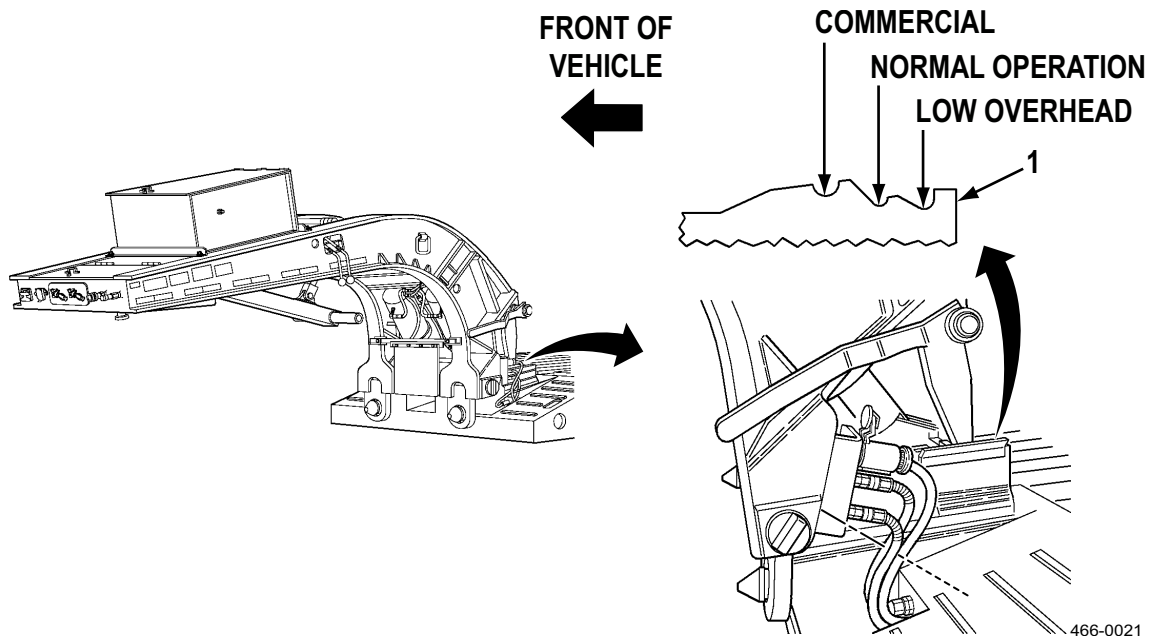


Figure 14. Baseplate.

END OF TASK

UNCOUPLING GOOSENECK FROM TOWING VEHICLE

Uncoupling the gooseneck from the towing vehicle must be conducted with the semitrailer lowered to the ground or resting evenly on wooden blocks.

WARNING



- All personnel not involved in the coupling/uncoupling operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - To prevent injury or death to personnel or damage to the equipment, coupling should be done by two people, the first person in the towing vehicle cab and the second acting as a ground guide. Operator must know where ground guide is at all times. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - The semitrailer should ALWAYS have the wheels chocked, with or without a load, during coupling or uncoupling to towing vehicle and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
1. Disconnect 12-volt and 24-volt electrical cables from towing vehicle to gooseneck electrical connectors (Figure 15, Item 2) at front of gooseneck.
 2. Disconnect service (blue) and emergency (red) air lines from towing vehicle to gooseneck gladhands (Figure 15, Item 1).

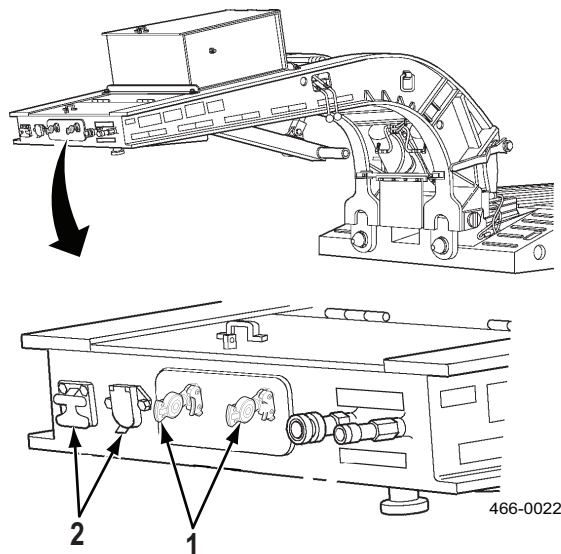


Figure 15. Electrical and Air Connectors.

UNCOUPLING GOOSENECK FROM TOWING VEHICLE - Continued

3. Release downward pressure of gooseneck kingpin on towing vehicle fifth wheel bedplate by lowering gooseneck a slight amount beyond resting point where semitrailer contacts ground or wooden blocks.

CAUTION

Remove chains before operating semitrailer by raising gooseneck as with instructions earlier in this work package and then sliding chains out of D-rings. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

The next two steps are tieback procedures to perform if semitrailer will not be used for 10 days or longer.

4. Attach one end of chain (Figure 16, Item 6) to roadside gooseneck D-ring (Figure 16, Item 1) and other end of chain to curbside semitrailer D-ring (Figure 16, Item 4), as tight as possible.
5. Attach one end of another chain (Figure 16, Item 3) to curbside gooseneck D-ring (Figure 16, Item 2) and other end of chain to roadside semitrailer D-ring (Figure 16, Item 5), as tight as possible.

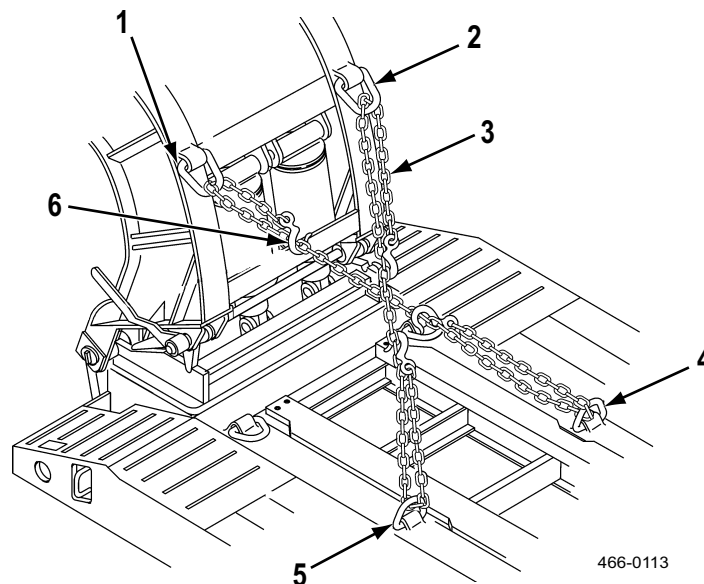


Figure 16. Chain Tieback Positions.

UNCOUPLING GOOSENECK FROM TOWING VEHICLE - Continued**WARNING**

The hydraulic system operates under extremely high pressure. Before disconnecting the hydraulic inlet and outlet lines check the hydraulic gage to ensure there is no pressure in the lines. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

6. Disengage PTO on towing vehicle to relieve hydraulic pressure.
7. Disconnect hydraulic inlet and outlet lines from towing vehicle to gooseneck hydraulic connectors (Figure 17, Item 1), wipe connectors clean, install dust covers, and store lines in gooseneck forward storage box.

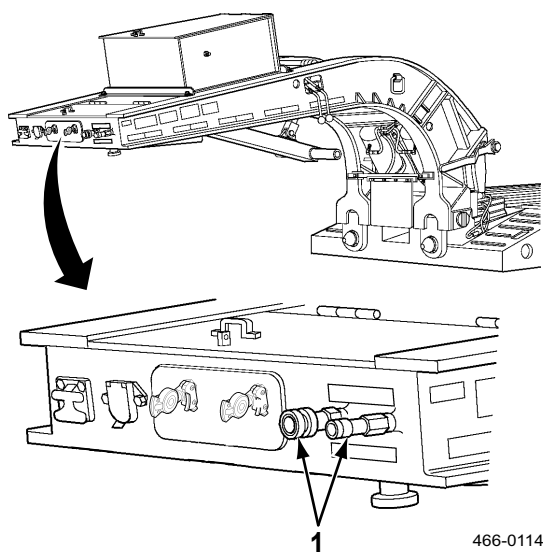


Figure 17. Hydraulic Connections.

UNCOUPLING GOOSENECK FROM TOWING VEHICLE - Continued**WARNING**

Extreme caution should be taken when releasing the fifth wheel lock handles. Observers must stand clear of the towing vehicle rear wheels before operator moves vehicle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

8. Unlock fifth wheel by pulling secondary lock handle (Figure 18, Item 2) out and lifting up on handle until it locks in place. Then pull primary lock handle (Figure 18, Item 1) out and lift up until it also locks in place.

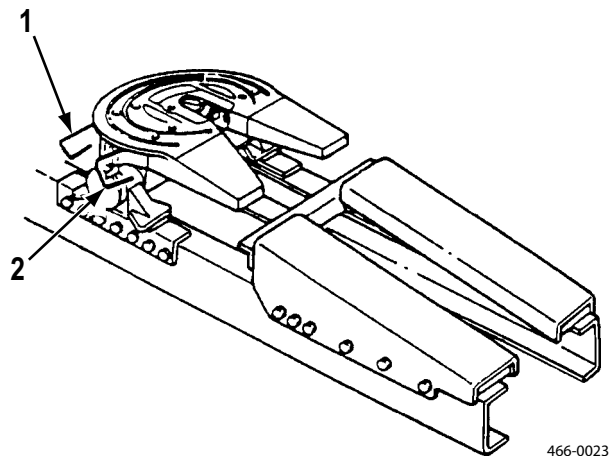


Figure 18. Gooseneck Handles.

NOTE

If the kingpin does not clear the rear bumper of the towing vehicle, it may momentarily be lifted out of the gooseneck kingpin recess to complete the uncoupling procedure.

9. Slowly drive towing vehicle forward from under gooseneck kingpin while ensuring kingpin clears fifth wheel and rear bumper of towing vehicle.

END OF TASK

LOADING EQUIPMENT AND CARGO

Loading Procedures

WARNING



- All personnel not involved in the loading or unloading operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Due to dimensions and center of gravity of some loads, refer to the loading and unloading section in the TM of the equipment being loaded, to prevent damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Use a speed of less than 2 mph when loading and unloading vehicles, especially tracked vehicles. Higher speeds will exaggerate motions and create hazardous conditions which could damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
1. If outriggers will be required to stabilize payload, see **Outrigger Usage** in this work package.
 2. If load will require usage of rear deck, remove spare tire stowed on rear deck (WP 0040) and place spare tire where it will not interfere with loading.
 3. Align equipment to be loaded with semitrailer so equipment can be driven straight onto semitrailer. This is particularly important if equipment being loaded is a tracked vehicle or a vehicle with a wide track width. Turning vehicles while on semitrailer can present hazardous conditions and/or damage semitrailer.

NOTE

If equipment is not aligned properly during loading, stop the loading procedure, back the equipment off the semitrailer, align it properly, and begin loading procedure again.

4. Prepare and secure equipment with procedures in this work package.
5. Replace spare tire on rear deck mounting location (WP 0040) if access is available, otherwise secure tire in an alternate position on semitrailer as available.

Outrigger Usage

WARNING



Outriggers are only designed to stabilize payload. Payload must be fully supported by semitrailer load bed. Supporting a payload on outriggers may result in damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

LOADING EQUIPMENT AND CARGO - Continued**CAUTION**

When loading equipment, ensure that the forward edge of the semitrailer is on level ground that allows full ground contact. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

- Emplacement of outriggers and deck boards requires two personnel.
 - If the cargo or equipment to be loaded exceeds 96 in. (2.4 m) in width at the contact points with the semitrailer, the outriggers should be used to increase stability. Outriggers should also be used for wheeled vehicles that are near 96 in. (2.4 m) in width (ex. TRAM), or are difficult to maneuver (ex. grader) to provide additional stability and safety during loading.
 - If outriggers are used to stabilize loaded equipment, ensure main weight of equipment is located on load bed of semitrailer. Outriggers are not designed to bear weight of payload but are designed to provide stability to oversized equipment (especially vehicles with tires). If outriggers are bearing weight of payload, equipment is too wide to be transported on this semitrailer.
1. Fold out outriggers (Figure 19, Item 4) by lifting up slightly and rotating outriggers 90 degrees from semitrailer.
 2. Pull up on center board handles (Figure 19, Item 1) and remove two sets of boards from center of semitrailer and place a set of boards on outriggers on each side of semitrailer. Ensure joining brackets on boards are on bottom when boards are placed on outriggers.
 3. Secure boards in position by attaching turnbuckle chains (Figure 19, Item 3) to loops on underside of boards and tightening turnbuckle (Figure 19, Item 2).

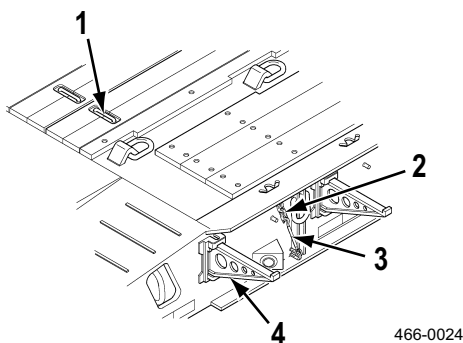


Figure 19. Outriggers.

END OF TASK

TIEDOWN PROCEDURES

NOTE

Rear loading of the semitrailer is possible if a loading dock or berm is available to use as a ramp to gain access to the semitrailer rear.

Preparing Equipment for Loading

1. Ensure all shackles are on the equipment. Do not use bumpers, axles, towing pintles, or towing hooks as points of attachment for chains.
2. Protect windshields of payload equipment.
3. Reduce payload equipment to lowest height configuration consistent with the operational requirements.
4. Secure any materials or equipment loaded in the beds of payload equipment.
5. When loaded, shut down payload equipment, turn off all switches, close doors and hatches, and swing in mirrors.

Securing Equipment

1. Use wood dunnage on gooseneck when a portion of the payload contacts the gooseneck.
2. Select a tiedown point on the semitrailer that allows the chain to be at a 45 degree angle front and rear and provides sufficient room for positioning a loadbinder.
3. Tighten chains using the loadbinders.
4. Secure excess chain to the tension-bearing part of the chain.
5. Set brakes and put transmissions in neutral on payload equipment.
6. Make sure rotating parts are properly secured.
7. Make sure all Basic Issue Items (BII) are properly stowed on the semitrailer.
8. Check all tiedowns at halts and any time you suspect a problem.

END OF TASK

TRANSPORTING LOADS

WARNING



The semitrailer should ALWAYS have the wheels chocked, with or without a load, during coupling or uncoupling to towing vehicle and when parked. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

TRANSPORTING LOADS - Continued

General

- The semitrailer, with its towing vehicle, will have different operational characteristics based on gross weight, differences between loaded and unloaded weight and suspension characteristics. Safe operating limits are affected by the interaction of the vehicle characteristics, load, road surface, weather, operator skill, and vehicle speed.
- Before operating the semitrailer, ensure that all the operating procedures contained in this manual are fully understood.

Pre-Trip Inspection

Appropriate procedures for services and PMCS (WP 0033) will be completed prior to operating the semitrailer.

Permits

See Payload Configurations at the beginning of this work package to determine if a permit is required prior to operation.

Driving

General. When driving the towing vehicle and semitrailer, the overall length must be kept in mind, both when passing other vehicles and when turning. Because the unit pivots at the fifth wheel, backing is also affected.

Road Surfaces. Uneven terrain, steep grades, crowned roads, and unimproved road surfaces can introduce forces that will make handling difficult. Even a vehicle that is properly maintained and loaded can be hazardous when excessive speed and certain road conditions are combined.

Grades. Operation on grades requires caution. Use the same gear in descending a long grade as when ascending. Gear selection should be made before descending a grade to minimize the chance of a missed shift. Avoid excessive use of brakes on long down-grades in order to maintain air pressure and prevent overheating of the brakes.

Side Slopes. This semitrailer is not designed to be operated on excessive (15 percent) side slopes. The semitrailer can be safely operated, with or without payloads, on side slopes commonly encountered on highways or unimproved roads.

Turning. When turning corners, allow extra room. The semitrailer wheels will follow a track that is inside the radius of the towing vehicle wheels. For right turns, drive about halfway into the intersection and then cut sharply to the right. The forces affecting the stability of a tractor semitrailer combination are increased during turning. The smaller the radius, the greater the force trying to pull the vehicle over. Therefore, the tighter the curve, the slower the speed must be in order to avoid a rollover.

Stopping

In normal operation, when the operator applies the brakes, the towing vehicle and the semitrailer brakes are applied at the same time. Brake pressure should be applied gradually and smoothly. The semitrailer brakes may be applied separately by using the semitrailer hand brake control lever in the towing vehicle. (Check towing vehicle TM for proper stopping operation.) Extreme caution should be exercised when using only the semitrailer brakes. Some benefit may be gained on slippery surfaces by slowly applying the semitrailer brakes before the towing vehicle brakes, reducing the possibility of jackknifing the semitrailer. However, it is very dangerous to use only the semitrailer brakes on long down-grades. Doing so will cause the semitrailer brakes to heat up and fade. The towing vehicle brakes alone will not be able to stop the combined vehicle load. Selecting a lower gear before beginning a long downgrade is the safest, most effective way to maintain control of the vehicle combination.

TRANSPORTING LOADS - Continued**Parking**

When the towing vehicle and semitrailer are to be parked and left unattended, set the parking brake on the towing vehicle. Apply the semitrailer parkbrake control, and turn off the engine before leaving the cab. Block the semitrailer wheels with chock blocks. Block behind front wheels on uphill grades and in front of back wheels on downhill grades.

Backing**WARNING**

Visibility from towing vehicle is significantly reduced when backing, whether the semitrailer is loaded or not. Operator must know where ground guide is at all times. Proper procedures must be followed and extreme caution used when backing to prevent damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

When backing, use the assistant operator as a ground guide. Adjust rearview mirrors before backing. Use slow speed and extreme caution when backing this combination.

END OF TASK**ANTI-LOCK BRAKING SYSTEM (ABS)**

- The ABS is an electronic system that monitors and controls wheel speed during braking and wheel lock situations. The system improves vehicle stability and control by reducing wheel lock during braking. The ABS includes an ECU that is combined with a dual modulator valve assembly. Four-wheel speed sensors provide input to the ECU. When the ECU detects a wheel lockup during a hard braking situation, the ECU activates the appropriate modulator valve to control air pressure to the braking system. The ECU is to be replaced and is not serviced.
- In the event of a malfunction in the ABS, the ABS in the affected wheel is disabled and that wheel still has normal brakes. The other wheels keep the ABS function.
- An ABS indicator lamp located on the left rear corner of the semitrailer lets the operator know through a series of blink codes the status of the system on initial startup. For blink codes, refer to (WP 0060) .

END OF TASK

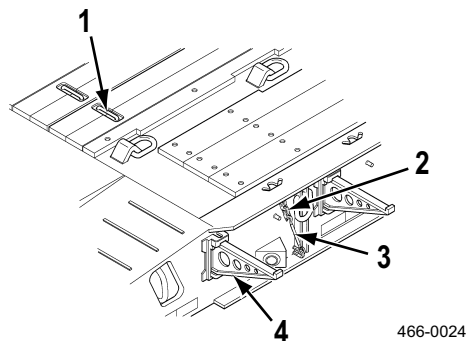
UNLOADING EQUIPMENT AND CARGO**WARNING**

All personnel not involved in the loading or unloading operation must stand clear of towing vehicle and semitrailer to prevent serious injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

When unloading equipment, ensure that the edge of the semitrailer is on even, level ground that allows full ground contact along the edge of the semitrailer. Failure to comply may result in damage to, or destruction of, equipment or mission.

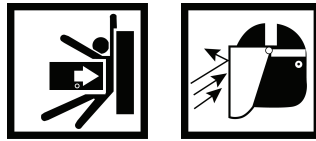
1. Unload equipment by driving equipment straight off the semitrailer.
2. Replace spare tire at spare tire mounting location on raised portion of semitrailer bed (WP 0040) if it was not previously secured.
3. If outriggers (Figure 20, Item 2) were used to stabilize load, remove boards from outriggers and replace on semitrailer deck surface. Push board handles (Figure 20, Item 1) into recesses on boards.
4. Fold outriggers (Figure 20, Item 2) against semitrailer and properly secure.



466-0024

Figure 20. Outriggers.

END OF TASK

CAGING BRAKES**WARNING**

- Caging the brakes releases the brakes and prevents operation of semitrailer braking system. When brakes have been caged, semitrailer should only be moved under emergency circumstances and then only with extreme caution and at speeds not greater than 10 mph. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Spring inside brake chamber is under very high pressure. DO NOT loosen or remove any nuts or bolts from brake chamber except caging bolt and its associated hardware. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

This procedure is used to manually release the brakes in the event that the air supply to the semitrailer has been lost or interrupted. This procedure should be performed only under extreme circumstances when the semitrailer must be moved.

1. Place blocks under semitrailer wheels to prevent semitrailer from rolling during procedure.
2. Remove dust cover (Figure 21, Item 3) from caging bolt keyhole (Figure 21, Item 2) in center of spring brake chamber (Figure 21, Item 4).

CAUTION

If the inside of the spring brake chamber is clogged with mud, sand, or dirt, do not proceed with the caging procedure unless the chamber can be cleared. Notify Field Maintenance if chamber cannot be cleared.

3. Visually inspect the inside of the spring brake chamber (Figure 21, Item 4) for mud, sand, or dirt.
4. Remove nut (Figure 21, Item 5), washer (Figure 21, Item 6), and caging bolt (Figure 21, Item 1) from side of the spring brake chamber (Figure 21, Item 4) being caged.

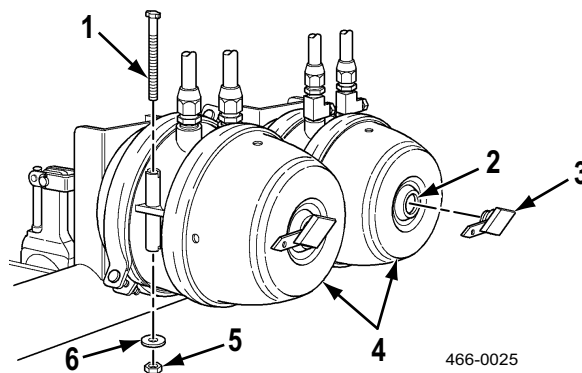
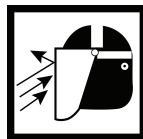


Figure 21. Caging the Brakes.

CAGING BRAKES - Continued**WARNING**

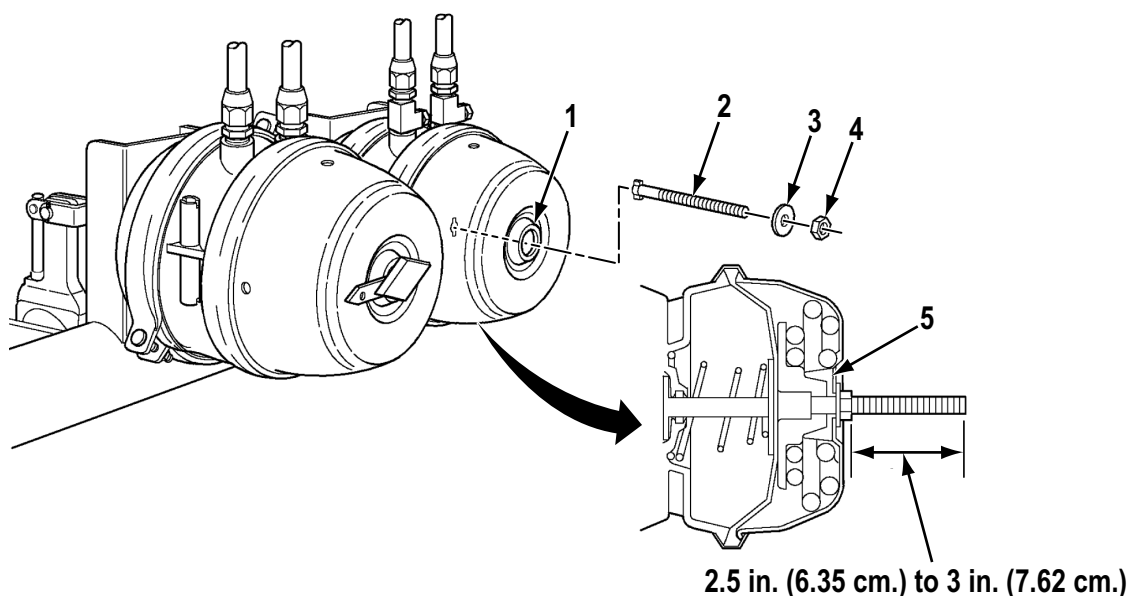
Brake chamber contains a spring under high pressure. Never work directly behind brake chamber. If caging bolt will not engage properly, the spring may be broken; do not continue caging procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

5. Insert T-end of caging bolt (Figure 22, Item 2) into keyhole (Figure 22, Item 1) in brake chamber. T-end should be inserted into keyway of metal diaphragm (Figure 22, Item 5) inside brake chamber. Turn caging bolt one-quarter turn clockwise until caging bolt contacts stop inside diaphragm.

NOTE

The caging bolt is properly positioned when it cannot be removed by pulling straight out.

6. Pull on caging bolt (Figure 22, Item 2) to seat it properly.
7. Place washer (Figure 22, Item 3) and nut (Figure 22, Item 4) onto threaded end of caging bolt (Figure 22, Item 2).
8. To cage main spring, tighten nut (Figure 22, Item 4) on caging bolt (Figure 22, Item 2). Visually check to ensure service push rod is retracting into spring brake chamber. This procedure will compress brake spring inside brake chamber and release brake at wheel position.
9. Do not over-torque the caging bolt assembly (35 lb ft [47.46 N·m] maximum).



466-0026

Figure 22. Caging Bolt.

CAGING BRAKES - Continued

10. When spring is fully compressed and brakes are released, threaded portion of caging bolt (Figure 23, Item 1) should extend 2.5 in. (6.35 cm) to 3 in. (7.62 cm) beyond nut (Figure 23, Item 3).
11. Brakes should remain caged until proper maintenance personnel can inspect the brake system.
12. Repeat procedures as necessary for remaining wheel positions.
13. To uncage brakes, release nut (Figure 23, Item 3) on caging bolt (Figure 23, Item 1), return caging bolt, washer (Figure 23, Item 2), and nut (Figure 23, Item 3) to original location on side of spring brake chamber (Figure 23, Item 4), and close dust cover (Figure 23, Item 5).

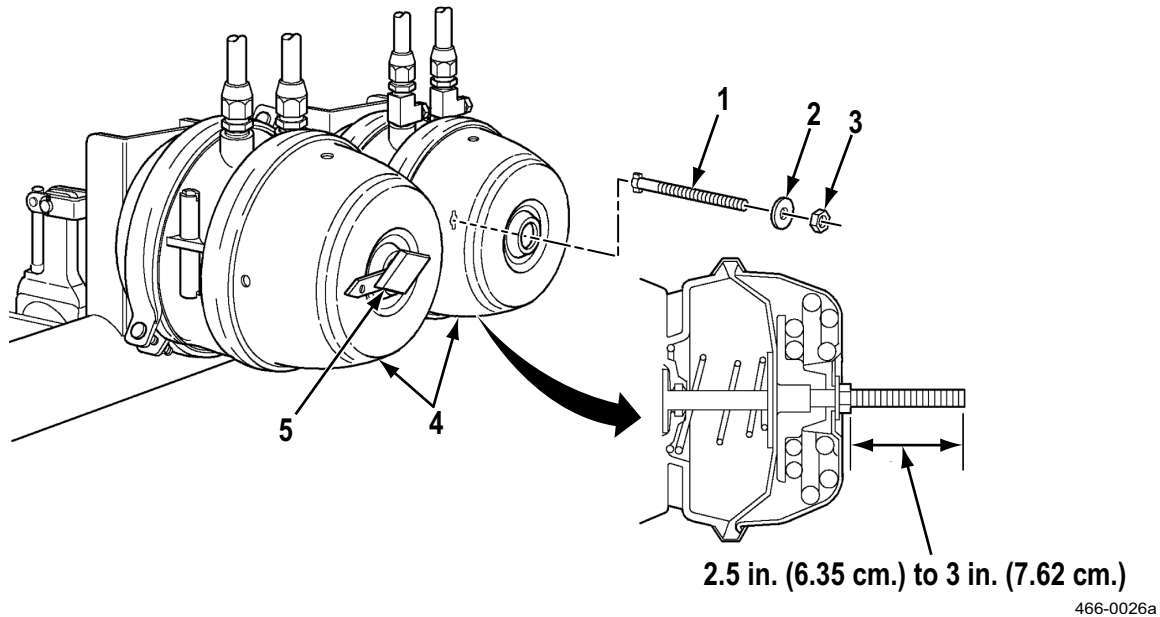


Figure 23. Uncaging Brakes.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

References

FM 9-207
FM 21-305
WP 0093

GENERAL

1. This work package contains special instructions for operating and servicing the semitrailer under unusual conditions.
2. In addition to performing all the usual Preventive Maintenance Checks and Services (PMCS) procedures, special care must be taken in regard to cleaning and lubrication when extremes in temperature, humidity, and terrain conditions are present or anticipated. Proper cleaning, lubrication, storage, and handling ensures proper operation and function and also guards against excessive wear.
3. When failure of material results from extreme conditions, report the condition on SF Form 368.

END OF TASK

OPERATION IN EXTREME COLD

1. Operation
 - a. Insulation may crack and cause electrical short circuits.
 - b. Tires may freeze to the ground or have a flat spot if under-inflated.
 - c. Brake shoes may freeze to brake drums and may need to be preheated to prevent damage to mating surfaces.
 - d. For special instructions on driving in extreme cold weather conditions, refer to FM 9-207 and FM 21-305.
 - e. For proper lubrication during extreme cold weather conditions, refer to (WP 0093).
2. At-Halt Parking
 - a. When parking short term, park in a sheltered area out of the wind.
 - b. When parking long term, prepare a footing of planks or brush if high, dry ground is not available.
 - c. Remove all buildup of ice and snow as soon as possible after shutdown.
 - d. Cover and shield the semitrailer with canvas covers if available. Keep ends of covers off the ground to keep them from freezing to the ground.

END OF TASK**OPERATION IN EXTREME HEAT AND HIGH HUMIDITY**

1. For proper lubrication during extreme heat conditions, refer to (WP 0093). Adequate lubrication is essential. Extreme heat will cause oil films to evaporate, resulting in inadequate lubrication.
2. Keep tires protected from direct sunlight to prevent increases in air pressure and deterioration of rubber.
3. Cover inactive semitrailer with tarpaulins if they are available, and if there is no other available shelter. For several hours each week, shake out and air canvas covers or other items subject to deterioration from mildew or attacks by insects or vermin.
4. If inactive for long periods in hot, humid weather, semitrailers are subject to rapid rusting and accumulation of fungi growth. Frequently inspect, clean, and lubricate to prevent excessive deterioration.

END OF TASK**OPERATION IN SANDY OR DUSTY AREAS****CAUTION**

Do not tow, pull, or push semitrailer by rear bumper. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Inspect, clean, and lubricate semitrailer frequently when operating in dusty or sandy areas. For proper lubrication instructions, refer to (WP 0093).
2. Reduce pressure to 70 psi (482.6 kPa) for operation on beach or desert sand.
3. Make sure no dust or sand enters exposed mechanisms or lubrication fittings during inspections and repair operations. Cover exposed parts with tarpaulins or other suitable cover during disassembly and assembly.
4. Be sure to return tire pressure to normal 115 psi (792.93 kPa) for the M870A3 after operation in sand.

END OF TASK**OPERATION IN MUD AND SNOW****CAUTION**

Do not tow, pull, or push semitrailer by rear bumper. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

For special instructions for operation in snow, refer to FM 21-305.

1. Frequently clean, inspect, and lubricate semitrailer. For proper lubrication instructions, refer to (WP 0093).
2. Reduce tire pressure to 70 psi (482.6 kPa) while operating in soft mud, if practical.
3. If one or more wheels sink into mud, you may need to jack up mired wheel and put planking or matting under it.
4. After each operation remove ice, snow, and mud from underneath semitrailer and from hoses, lines, tubes, and electrical connections.
5. Return tire pressure to normal 115 psi (792.93 kPa) after operation in mud.

END OF TASK

OPERATION IN SALT WATER AREAS

1. Wash salt deposits from all equipment with fresh water.
2. Moist and salty areas can destroy the rust-preventative qualities of oils and greases. When equipment is active, exposed surfaces should be cleaned and lubricated daily (WP 0093).
3. When equipment is inactive, unpainted parts should be coated with lubricating oil as specified in the lubrication chart key (WP 0093). All covers and caps should be in place.

END OF TASK**OPERATION IN ROCKY TERRAIN**

1. Tires must be fully inflated to 115 psi (792.93 kPa) when moving on rough or rocky terrain. Under-inflated tires will cause internal ruptures of tires and damage to tubes.
2. Before driving over stumps or rocks, make sure the semitrailer can clear them. Such objects can damage components on the underside of the semitrailer. Beware of low hanging limbs that can damage cargo.
3. Be sure you have a serviceable spare tire and rim assembly because there is a greater than usual chance of tire puncture.

END OF TASK**END OF WORK PACKAGE**

CHAPTER 3

TROUBLESHOOTING PROCEDURES

OPERATOR MAINTENANCE TROUBLESHOOTING INTRODUCTION

GENERAL

1. This chapter provides information for identifying and correcting malfunctions that you may find while operating and maintaining the semitrailer.
2. The Troubleshooting Index (WP 0008) lists common malfunctions that may occur and refer you to the proper page in (WP 0009) through (WP 0031) for a troubleshooting procedure.
3. If you are unaware of the location of an item mentioned in troubleshooting, refer to (WP 0002) or (WP 0004).
4. Before performing troubleshooting, read and follow all safety instructions found in the warning summary at the front of this manual.
5. These chapters cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed, or is not corrected by the listed corrective actions, notify Field Maintenance or Supervisor.
6. When troubleshooting a malfunction:
 - a. Locate the symptom or symptoms in (WP 0008) that best describes the malfunction. If the appropriate symptom is not listed, notify Field Maintenance or Supervisor.
 - b. Turn to the page in (WP 0008) where the troubleshooting procedures for the malfunction in question are described. Headings at the top of each page show how each troubleshooting procedure is organized: Symptom, Malfunction, and Corrective Action.
 - c. Perform each symptom in the order listed until the malfunction is corrected and the item being inspected is operational. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

EXPLANATION OF COLUMNS

The columns in (WP 0009) through (WP 0031) are defined as follows:

1. **SYMPTOM.** A visual or operational indication that something is wrong with the equipment.
2. **MALFUNCTION.** Equipment defect that may cause the symptom.
3. **CORRECTIVE ACTION.** A procedure to correct the problem.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
TROUBLESHOOTING INDEX**

Malfunction/Symptom**Troubleshooting Procedure****OPERATOR**

1. ALL LIGHTS INOPERABLE.....	WP 0009
2. ONE OR MORE LIGHTS INOPERABLE.....	WP 0010
3. BRAKES WILL NOT RELEASE.....	WP 0011
4. BRAKES GRAB.....	WP 0012
5. BRAKES FAIL TO ENGAGE.....	WP 0013
6. GOOSENECK TILT OR LIFT CYLINDERS WILL NOT EXTEND/RETRACT.....	WP 0014
7. EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES.....	WP 0015

FIELD

8. AIR RESERVOIRS FAIL TO FILL WITH AIR.....	WP 0016
9. BRAKES WILL NOT RELEASE.....	WP 0017
10. BRAKES GRAB OR BIND.....	WP 0018
11. BRAKES MAKE EXCESSIVE SQUEALING OR GRINDING NOISE WHEN APPLIED.....	WP 0019
12. BRAKES FAIL TO ENGAGE.....	WP 0020
13. SLOW BRAKE APPLICATION OR SLOW RELEASE.....	WP 0021
14. BRAKE DRUM RUNNING HOT.....	WP 0022
15. UNEVEN BRAKING.....	WP 0023
16. ALL LIGHTS ARE INOPERABLE.....	WP 0024
17. ONE OR MORE LIGHTS INOPERABLE.....	WP 0025
18. GOOSENECK TILT CYLINDER IS INOPERABLE.....	WP 0026
19. PLATFORM LIFT CYLINDERS ARE INOPERABLE.....	WP 0027
20. KINGPIN FAILS TO LOCK IN FIFTH WHEEL.....	WP 0028
21. BOARDS LOOSE.....	WP 0029
22. SEMITRAILER DOES NOT TRACK STRAIGHT BEHIND TOWING VEHICLE.....	WP 0030
23. HUB GENERATES EXCESSIVE HEAT.....	WP 0031

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ALL LIGHTS INOPERABLE**

INITIAL SETUP:**References**WP 0035

TROUBLESHOOTING PROCEDURE**SYMPTOM**

ALL LIGHTS INOPERABLE

MALFUNCTION

ELECTRICAL CONNECTION IMPROPER

CORRECTIVE ACTION

1. Check lights on towing vehicle, including turn signals and stop lights.
If towing vehicle lights are inoperable, notify Field Maintenance.
2. Check electrical connection at cable receptacle.
Reconnect cable if not properly connected.

MALFUNCTION

DAMAGED OR CORRODED PINS

CORRECTIVE ACTION

1. Clean. Refer to (WP 0035).
2. If pins are damaged, notify Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ONE OR MORE LIGHTS INOPERABLE**

INITIAL SETUP:

References

WP 0035

TROUBLESHOOTING PROCEDURE

SYMPTOM

ONE OR MORE LIGHTS INOPERABLE

MALFUNCTION

BURNED OUT OR DEFECTIVE LIGHTS

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

BROKEN LEAD WIRES OR LOOSE CONNECTIONS

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

DIRTY OR CORRODED CONNECTORS

CORRECTIVE ACTION

1. Clean. Refer to (WP 0035).
2. If cleaning does not correct malfunction, notify Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
BRAKES WILL NOT RELEASE**

INITIAL SETUP:**References**

WP 0036
WP 0037

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES WILL NOT RELEASE

MALFUNCTION

AIR SUPPLY NOT FLOWING

CORRECTIVE ACTION

Release towing vehicle parking brake to start air flow to semitrailer.

MALFUNCTION

LOW AIR PRESSURE

CORRECTIVE ACTION

Build air pressure up to required level.

MALFUNCTION

PACKING IS LEAKING

CORRECTIVE ACTION

Check air line connection at gladhands.

- a. Clean. Refer to (WP 0036).
- b. If packing is leaking, notify Field Maintenance.

MALFUNCTION

DIRTY OR LEAKING GLADHAND CONNECTIONS

CORRECTIVE ACTION

1. If gladhand is dirty, clean gladhand.
2. If gladhand is leaking, notify Field Maintenance.

MALFUNCTION

DUMP VALVE DOES NOT CLOSE

CORRECTIVE ACTION

1. If dump valve is open, release any binding of cable and see if valve snaps shut.
2. If dump valve does not snap shut, notify Field Maintenance.

MALFUNCTION

AIR LINE CONNECTIONS ARE LEAKING

CORRECTIVE ACTION

Notify Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
BRAKES GRAB**

INITIAL SETUP:

Not Applicable

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES GRAB

MALFUNCTION

MOISTURE PRESENT IN AIR RESERVOIR

CORRECTIVE ACTION

1. If moisture is present, allow air reservoir to drain.
2. If no moisture is present, notify Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
BRAKES FAIL TO ENGAGE**

INITIAL SETUP:**References**WP 0036

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES FAIL TO ENGAGE

MALFUNCTION

CONTROL AIR LINE NOT CONNECTED

CORRECTIVE ACTION

1. If line is not properly connected, remove and reconnect.
2. If no air is flowing from towing vehicle, notify Field Maintenance and use another towing vehicle.

MALFUNCTION

DIRTY OR DAMAGED PACKING

CORRECTIVE ACTION

1. Clean. Refer to (WP 0036).
2. If packing is leaking, notify Field Maintenance.

MALFUNCTION

DAMAGED CONTROL AIR LINE

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

DAMAGED OR MISSING BRAKE SYSTEM COMPONENTS

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

LOW AIR PRESSURE

CORRECTIVE ACTION

1. Build up pressure.
2. If pressure remains low, notify Field Maintenance.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
GOOSENECK TILT OR LIFT CYLINDERS WILL NOT EXTEND/RETRACT

INITIAL SETUP:

Not Applicable

WARNING



- Place towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid over pressurizing the hydraulic system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Do not work under gooseneck without lock pins securely in place. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- ALWAYS ensure semitrailer is coupled to towing vehicle and all parking brakes are set prior to attempting to free lock pins that will not retract. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- A reading of 900 psi (6,205.28 kPa) is only on gage when the hydraulic controls are in use. For the raising/lowering of the deck, readings will go down to 300 psi (2,068.43 kPa) when the lever is disengaged.
- The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.43-6,205.28 kPa) under normal operation and will reach a maximum of 900-1,100 psi (6,205.28-7,584.23 kPa) under full load.

TROUBLESHOOTING PROCEDURE**SYMPTOM**

GOOSENECK TILT OR LIFT CYLINDERS WILL NOT EXTEND/RETRACT

MALFUNCTION

HYDRAULIC FLUID LEVEL LOW

CORRECTIVE ACTION

Ensure that towing vehicle hydraulic fluid is at appropriate level.

MALFUNCTION

PTO NOT ENGAGED

CORRECTIVE ACTION

Ensure that PTO is engaged.

MALFUNCTION

HYDRAULIC PRESSURE NOT SUFFICIENT

CORRECTIVE ACTION

1. Pressure will vary from 300-900 psi (6,205.28 kPa) for normal operation and from 900-1,100 psi (6,205.28-7584.23 kPa) under a full load.
2. If pressure reads below 300 psi (2,068.43 kPa), notify Field Maintenance.

MALFUNCTION

WALL PITTING OR OIL LEAKAGE PRESENT

CORRECTIVE ACTION

If severe wall pitting or oil leakage is evident, notify Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES**

INITIAL SETUP:

Not Applicable

TROUBLESHOOTING PROCEDURE

SYMPTOM

EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES

MALFUNCTION

IMPROPER TIRE PRESSURE

CORRECTIVE ACTION

Inflate or deflate tires as required for proper pressure.

MALFUNCTION

CRACKED OR BROKEN WHEEL

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

SUSPENSION SYSTEM IS LOOSE OR DAMAGED

CORRECTIVE ACTION

Notify Field Maintenance.

MALFUNCTION

AXLE IS MISALIGNED

CORRECTIVE ACTION

Notify Field Maintenance.

END OF WORK PACKAGE

FIELD MAINTENANCE
AIR RESERVOIRS FAIL TO FILL WITH AIR

INITIAL SETUP:**References**

WP 0063
WP 0064
WP 0065

References (cont.)

WP 0067
WP 0070
WP 0071

TROUBLESHOOTING PROCEDURE**SYMPTOM**

AIR RESERVOIRS FAIL TO FILL WITH AIR

MALFUNCTION

AIR RESERVOIRS NOT FILLING CORRECTLY

CORRECTIVE ACTION

1. If open, close dump valve.
2. If damaged, repair (WP 0067).
3. Inspect parking brake on towing vehicle. If engaged, release parking brake.
4. Inspect gladhands for damage or incorrect coupling. If damaged, refer to (WP 0063).
5. Inspect air lines and connections for leaks. Feel for escaping air and/or use soapy water solution to detect leaks.
 - a. If loose, tighten connections.
 - b. If damaged, repair air lines or connections (WP 0070) and (WP 0071).
6. Inspect air reservoirs for damage or leaks.
 - a. If loose, tighten connections.
 - b. Repair or replace reservoirs as necessary (WP 0064) or (WP 0065).

END OF WORK PACKAGE

**FIELD MAINTENANCE
BRAKES WILL NOT RELEASE**

INITIAL SETUP:**References**

WP 0057
WP 0059
WP 0060

References (cont.)

WP 0061
WP 0069
WP 0071

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES WILL NOT RELEASE

MALFUNCTION

BRAKES FAIL TO RELEASE

CORRECTIVE ACTION

1. Ensure intervehicular air hoses are properly connected and preformed packing is not damaged or missing.
 - a. If hoses are improperly connected, connect them properly.
 - b. If preformed packing is missing or damaged, replace packing.
2. Ensure dump valve is closed. If open, close dump valve.
3. Ensure shutoff valves in towing vehicle are open. If closed open valve.
4. Ensure there are not restrictions in air lines or hoses. If air lines or hoses are restricted replace them (WP 0070).
5. Test brake adjustment (WP 0058). If brakes do not adjust, check return spring on brakes (WP 0056).
6. Test Electronic Control Unit (ECU) valve (WP 0059). If defective, replace (WP 0060).
7. Coat air chamber flange with soapy water at all air fittings. If leaks are detected, tighten securing hardware sufficiently to stop leaks.
8. Apply soapy water in holes to non-pressure side of air chamber body. If leaks are detected, replace air chamber (WP 0069).

END OF WORK PACKAGE

**FIELD MAINTENANCE
BRAKES GRAB OR BIND**

INITIAL SETUP:**References**

WP 0057
WP 0069

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES GRAB OR BIND

MALFUNCTION

DAMAGE OR EXCESSIVE WEAR OF BRAKE SHOES

CORRECTIVE ACTION

Replace brake shoes (WP 0057).

MALFUNCTION

LEAKS ARE PRESENT

CORRECTIVE ACTION

1. Tighten securing hardware sufficiently to stop leaks.
2. Apply soapy water in holes to non-pressure side of air chamber body. If leaks are detected, replace air chamber (WP 0069).

END OF WORK PACKAGE

FIELD MAINTENANCE
BRAKES MAKE EXCESSIVE SQUEALING OR GRINDING NOISE WHEN APPLIED

INITIAL SETUP:

References

WP 0057
WP 0072

TROUBLESHOOTING PROCEDURE

SYMPTOM

BRAKES MAKE EXCESSIVE SQUEALING OR GRINDING NOISE WHEN APPLIED

MALFUNCTION

WEAR OR DAMAGE TO BRAKE DRUM

CORRECTIVE ACTION

Replace brake drum (WP 0072).

MALFUNCTION

WEAR OR DAMAGE TO BRAKE SHOE

CORRECTIVE ACTION

Replace brake shoes (WP 0057).

END OF WORK PACKAGE

**FIELD MAINTENANCE
BRAKES FAIL TO ENGAGE**

INITIAL SETUP:**References**

WP 0056
WP 0059

References (cont.)

WP 0068
WP 0071

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKES FAIL TO ENGAGE

MALFUNCTION

AIR LINE CONNECTION NOT FUNCTIONING PROPERLY

CORRECTIVE ACTION

1. Ensure air is flowing from towing vehicle. If no air is flowing, troubleshoot towing vehicle.
2. Ensure control air line is not damaged.
If damaged, repair air lines or fittings (WP 0071).

MALFUNCTION

SPRING BRAKE VALVE NOT FUNCTIONING PROPERLY

CORRECTIVE ACTION

1. Replace valve (WP 0068).
2. If functioning properly, proceed to next Malfunction.

MALFUNCTION

BRAKE SYSTEM HARDWARE DAMAGED OR MISSING COMPONENTS

CORRECTIVE ACTION

Replace or repair (WP 0056).

MALFUNCTION

BRAKES OUT OF ADJUSTMENT

CORRECTIVE ACTION

Adjust brakes (WP 0059).

END OF WORK PACKAGE

**FIELD MAINTENANCE
SLOW BRAKE APPLICATION OR SLOW RELEASE**

INITIAL SETUP:**References**

WP 0057
WP 0060
WP 0061

References (cont.)

WP 0069
WP 0071

TROUBLESHOOTING PROCEDURE**SYMPTOM**

SLOW BRAKE APPLICATION OR SLOW RELEASE

MALFUNCTION

AIR LINE OR HOSES RESTRICTED

CORRECTIVE ACTION

Replace air lines or hoses (WP 0071).

MALFUNCTION

ELECTRONIC CONTROL UNIT (ECU) IS DEFECTIVE

CORRECTIVE ACTION

1. Test ECU valve operation (WP 0060).
2. If ECU is defective, replace (WP 0061).

MALFUNCTION

WEAK OR BROKEN BRAKE SHOE RETURN SPRING

CORRECTIVE ACTION

Replace the brake shoe return spring (WP 0057).

MALFUNCTION

AIR FITTINGS LEAKING

CORRECTIVE ACTION

1. Coat air chamber flange with soapy water at all air fittings. If leaks are detected, tighten securing hardware sufficiently to stop leaks.
2. Apply soapy water in holes to non-pressure side of air chamber body. If leaks are detected, replace air chamber (WP 0069).

MALFUNCTION

LOW AIR PRESSURE

CORRECTIVE ACTION

Perform leakage test. Repair or replace leaking air lines, hoses, or connections (WP 0071).

END OF WORK PACKAGE

**FIELD MAINTENANCE
BRAKE DRUM RUNNING HOT**

INITIAL SETUP:**References**

WP 0057
WP 0059
WP 0072

WARNING

Hub may be hot. Before putting hand to hub, hold hand close to hub to check for excessive heat radiation. This will prevent skin burns caused by hot metal. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BRAKE DRUM RUNNING HOT

MALFUNCTION

BRAKE ADJUSTMENT IS INCORRECT

CORRECTIVE ACTION

If brakes are out of adjustment, adjust brakes (WP 0057).

MALFUNCTION

WEAK OR BROKEN BRAKE SHOE RETURN SPRING

CORRECTIVE ACTION

If return spring is weak or broken, replace return spring (WP 0059).

MALFUNCTION

BRAKE DRUM OUT OF ROUND

CORRECTIVE ACTION

Replace brake drum (WP 0072).

END OF WORK PACKAGE

**FIELD MAINTENANCE
UNEVEN BRAKING**

INITIAL SETUP:**References**

WP 0057
WP 0059
WP 0072

TROUBLESHOOTING PROCEDURE**SYMPTOM**

UNEVEN BRAKING

MALFUNCTION

BRAKE ADJUSTMENT INCORRECT

CORRECTIVE ACTION

If brakes are out of adjustment, adjust brakes (WP 0059).

MALFUNCTION

GREASE ON BRAKE LINING

CORRECTIVE ACTION

Replace grease seal (WP 0072) and brake shoe (WP 0057).

END OF WORK PACKAGE

**FIELD MAINTENANCE
ALL LIGHTS ARE INOPERABLE**

INITIAL SETUP:

References

WP 0035
WP 0050

TROUBLESHOOTING PROCEDURE

SYMPTOM

ALL LIGHTS ARE INOPERABLE

MALFUNCTION

CORRODED, DAMAGED, OR DIRTY PINS

CORRECTIVE ACTION

1. Clean connection(s) (WP 0035).
2. If damaged, repair (WP 0050).

MALFUNCTION

IMPROPER ELECTRICAL CONNECTION

CORRECTIVE ACTION

1. Reconnect cable if not properly connected.
2. If towing vehicle has no power, consult appropriate TM for troubleshooting.

END OF WORK PACKAGE

**FIELD MAINTENANCE
ONE OR MORE LIGHTS INOPERABLE**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0035
WP 0044

References (cont.)

WP 0045
WP 0046
WP 0047
WP 0048
WP 0050
WP 0096

TROUBLESHOOTING PROCEDURE**SYMPTOM**

ONE OR MORE LIGHTS INOPERABLE

MALFUNCTION

BURNED OUT OR DEFECTIVE LEDS/LIGHTS

CORRECTIVE ACTION

Replace burned out or defective LEDS/lights (WP 0044), (WP 0045), or (WP 0046).

MALFUNCTION

VOLTAGE IS LOW

CORRECTIVE ACTION

1. Test receptacle for proper voltage at receptacle. If voltage is low, clean receptacle and wires (WP 0035).
2. If there is no power at receptacle, unplug wires at receptacle and test for proper voltage (WP 0047) and (WP 0050). If proper voltage exists, replace receptacle (WP 0047) and (WP 0048).
3. If there is no power at wires, test voltage at next check point. See schematic (WP 0096).
4. If proper voltage exists, repair or replace wiring (WP 0050).
5. If there is no power at check point, continue to next check point. Continue testing unit reaching 24-volt receptacle. Repair or replace wire as required for wires between test points (WP 0050).

END OF WORK PACKAGE

FIELD MAINTENANCE
GOOSENECK TILT CYLINDER IS INOPERABLE

INITIAL SETUP:

References

WP 0079
WP 0080
WP 0082

WARNING



Place towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- A reading of 900 psi (6,205.28 kPa) is only on gage when the hydraulic controls are in use. For the raising/lowering of the deck, readings will go down to 300 psi (2,068.43 kPa) when the lever is disengaged.
- The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.43-6,205.28 kPa) under normal operation and will reach a maximum of 900-1,100 psi (6,205.28-7,584.23 kPa) under full load.

TROUBLESHOOTING PROCEDURE**SYMPTOM**

GOOSENECK TILT CYLINDER IS INOPERABLE

MALFUNCTION

LEAKS ARE PRESENT

CORRECTIVE ACTION

Replace tilt cylinder (WP 0080).

MALFUNCTION

HYDRAULIC PRESSURE IS LOW

CORRECTIVE ACTION

Set hydraulic pressure (WP 0079).

MALFUNCTION

HYDRAULIC FLUID LEVEL IS LOW

CORRECTIVE ACTION

If low, consult appropriate TM to fill to proper level.

MALFUNCTION

THROTTLE VALVE IS CLOGGED

CORRECTIVE ACTION

Clean throttle valve (WP 0082).

MALFUNCTION

INTERNAL LEAKS ARE PRESENT

CORRECTIVE ACTION**WARNING**

Do NOT exceed 1,100 psi (7,584.2 kPa) to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Fully retract cylinder rod. Disconnect and cap hydraulic hose connected opposite of rod end cylinder port.
2. Apply pressure to rod end port and inspect for leakage out of open port. (Small drops more than 10 seconds apart are acceptable.) If more significant leakage is present, replace tilt cylinder (WP 0080).

END OF WORK PACKAGE

**FIELD MAINTENANCE
PLATFORM LIFT CYLINDERS ARE INOPERABLE**

INITIAL SETUP:**References**

WP 0005
WP 0077

References (cont.)

WP 0081
WP 0082

TROUBLESHOOTING PROCEDURE**SYMPTOM**

PLATFORM LIFT CYLINDERS ARE INOPERABLE

MALFUNCTION

LEAKS ARE PRESENT

CORRECTIVE ACTION**WARNING**

Place towing vehicle Power Take-Off (PTO) switch in low idle position for hydraulic operations to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

Replace lift cylinder (WP 0081).

MALFUNCTION

HYDRAULIC PRESSURE IS LOW

CORRECTIVE ACTION**NOTE**

- A reading of 900 psi (6,205.28 kPa) is only on gage when the hydraulic controls are in use. For the raising/lowering of the deck, readings will go down to 300 psi ((2,068.43 kPa) when the lever is disengaged.
- The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.34-6,205.28 kPa) under normal operation and will reach a maximum of 900-1,000 psi (6,205.28-7,584.23 kPa) under full load.

Set hydraulic pressure (WP 0077).

MALFUNCTION

HYDRAULIC FLUID LEVEL IS LOW

CORRECTIVE ACTION

If low, consult appropriate TM to fill to proper level.

MALFUNCTION

HYDRAULIC PRESSURE SETTING IS INCORRECT

CORRECTIVE ACTION

Disconnect gooseneck from towing vehicle (WP 0005), lowering platform to the ground and keeping lever engaged until the cylinder dead ends. If psi reads more or less than 300-500 psi, reset hydraulic pressure (WP 0077).

MALFUNCTION

THROTTLE VALVE IS CLOGGED

CORRECTIVE ACTION

Check throttle valve for obstruction.

- a. If throttle valve is clogged, clean throttle valve (WP 0082).
- b. If throttle valve is not clogged, proceed to next Malfunction.

MALFUNCTION

INTERNAL LEAKS ARE PRESENT

CORRECTIVE ACTION**WARNING**

Do NOT exceed 1,100 psi (7,584.2 kPa) to avoid over pressurizing the hydraulic system on the semitrailer. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Fully retract cylinder rod. Disconnect and cap hydraulic hose connected opposite of rod end cylinder port. Apply pressure to rod end port and inspect for leakage out of open port. (Small drops more than 10 seconds apart are acceptable.)
2. If more significant leakage is present, replace lift cylinder (WP 0081).

END OF WORK PACKAGE

**FIELD MAINTENANCE
KINGPIN FAILS TO LOCK IN FIFTH WHEEL**

INITIAL SETUP:

References
WP 0071

TROUBLESHOOTING PROCEDURE

SYMPTOM

KINGPIN FAILS TO LOCK IN FIFTH WHEEL

MALFUNCTION

DAMAGED KINGPIN

CORRECTIVE ACTION

Replace kingpin (WP 0071).

MALFUNCTION

DAMAGED GOOSENECK

CORRECTIVE ACTION

Repairs to gooseneck are structural in nature. Decision to repair must be made at higher maintenance level.

END OF WORK PACKAGE

**FIELD MAINTENANCE
BOARDS LOOSE**

INITIAL SETUP:

References
WP 0088

TROUBLESHOOTING PROCEDURE**SYMPTOM**

BOARDS LOOSE

MALFUNCTION

DAMAGED OR MISSING HARDWARE

CORRECTIVE ACTION

Replace hardware (WP 0088).

MALFUNCTION

WARPED OR DAMAGED BOARDS

CORRECTIVE ACTION

Replace boards (WP 0088).

END OF WORK PACKAGE

FIELD MAINTENANCE
SEMITRAILER DOES NOT TRACK STRAIGHT BEHIND TOWING VEHICLE

INITIAL SETUP:

References

TB 9-2510-242-40
WP 0052

TROUBLESHOOTING PROCEDURE

SYMPTOM

SEMITRAILER DOES NOT TRACK STRAIGHT BEHIND TOWING VEHICLE

MALFUNCTION

SUSPENSION COMPONENTS ARE DAMAGED

CORRECTIVE ACTION

Replace damaged components (WP 0052).

MALFUNCTION

AXLE IS MISALIGNED

CORRECTIVE ACTION

Align axles (WP 0052).

MALFUNCTION

DAMAGED FRAME

CORRECTIVE ACTION

Inspect frame TB 9-2510-242-40.

END OF WORK PACKAGE

**FIELD MAINTENANCE
HUB GENERATES EXCESSIVE HEAT**

INITIAL SETUP:**References**WP 0072

TROUBLESHOOTING PROCEDURE**SYMPTOM**

HUB GENERATES EXCESSIVE HEAT

MALFUNCTION

HUB IS DAMAGED OR HAS IMPROPER BINDING

CORRECTIVE ACTION**WARNING**

Hub may be hot. Before putting hand to hub, hold hand close to hub to check for excessive heat radiation. This will prevent skin burns caused by hot metal. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Inspect hub for damage. If damaged, replace hub (WP 0072).
2. Inspect hub for improper binding or excessive end play. If binding is improper or hub has excessive end play, adjust hub and bearings (WP 0072).

MALFUNCTION

BEARINGS ARE WORN OR DAMAGED

CORRECTIVE ACTION

Replace worn or damaged components (WP 0072).

END OF WORK PACKAGE

CHAPTER 4

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

FIELD MAINTENANCE PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

1. To ensure that the semitrailer is ready for operation at all times, it must be inspected on a regular basis so that defects may be found before they result in serious damage, equipment failure, or injury to personnel. This section contains systematic instructions on inspections, adjustments, and corrections to be performed by the Operator and Field Maintenance personnel.
2. While performing PMCS read and follow all safety instructions found in the Warning Summary at the beginning of this manual. Keep in mind all WARNINGS and CAUTIONS.

SERVICE INTERVALS

Perform the PMCS procedures listed in (WP 0033) or (WP 0034) at the following intervals.

- Perform **Before** PMCS just before operating the semitrailer.
- Perform **During** PMCS while operating the semitrailer.
- Perform **After** PMCS after operating the semitrailer.
- Perform **Weekly** PMCS once each week.
- Perform **Monthly** PMCS once each month.
- Perform **Semiannual** PMCS procedures once every six months.
- Perform **Annual** PMCS procedures once each year.

REPORTING REPAIRS

All defects that the operator cannot fix must be reported on a DA Form 2404 or DA Form 5988E Equipment Inspection and Maintenance Worksheet, immediately after completing PMCS. If a serious problem is found, IMMEDIATELY report it to your Supervisor.

GENERAL PMCS PROCEDURES

1. Keep equipment clean. Dirt, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use cleaning compound, solvent (WP 0143, Table 1, Item 24) on all metal surfaces. Use general purpose detergent (WP 0143, Table 1, Item 8) and water on rubber, plastic, and painted surfaces.
2. While performing specific PMCS procedures, inspect the following components:
 - a. **Bolts, Nuts, and Screws.** Make sure they are not loose, missing, bent, or broken. Tighten any that are loose. Report loose or missing bolts, nuts, and screws to Field Maintenance.
 - b. **Welds.** Inspect for gaps where parts are welded together. Check for loose or chipped paint, rust, and cracks. Report bad welds to Field Maintenance.
 - c. **Wiring Harness, Wires, and Connectors.** Inspect for cracked or broken wiring harness insulation, bare wires, and loose or broken connectors. Repair or replace as necessary. Report loose connections and faulty wiring to Field Maintenance.
 - d. **Hydraulic Brake Lines and Fittings.** Inspect for wear, damage, and leaks. Make sure fittings are tight. Report any damage, leaks, or loose fittings to Field Maintenance. If a leak originates from a loose fitting, tighten it. If a component is broken or worn, correct the problem if authorized by the Maintenance Allocation Chart (MAC) (WP 0140). If not authorized, report it to your Supervisor.

GENERAL PMCS PROCEDURES - Continued

3. Check to see that components are adequately lubricated (WP 0093).
4. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.
While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.
If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.
The form should be submitted to the address specified in DA PAM 738-751, Functional Users Manual for The Army Maintenance Management System (TAMMS).

SPECIFIC PMCS PROCEDURES

NOTE

The WARNINGS and CAUTIONS appearing in your PMCS table should always be observed. WARNINGS and CAUTIONS appear before applicable procedures. You must observe these WARNINGS to prevent injury or death to yourself and others, and CAUTIONS to prevent your equipment from being damaged.

1. Operator and Field PMCS procedures are provided in (WP 0033) and (WP 0034). Always perform PMCS procedures in the order listed. Once the procedures become routine, problems can be easily recognized.
2. Before performing PMCS, read all the checks required for the applicable interval and prepare all the tools needed for the task. Have several wiping rags ready for use. Perform ALL inspections at the applicable intervals.
3. If any problems are discovered through PMCS, perform the appropriate troubleshooting task (WP 0008) or (WP 0009). If any component or system is not serviceable, or if a given service does not correct the problem, notify your Supervisor.
4. Explanations of the column headings in (WP 0033) and (WP 0034) are as follows:
 - **Item No.** The item number column of your PMCS table is to be used for reference. When completing DA Form 2404 or DA Form 5988E, Equipment Inspection and Maintenance Worksheet, include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the interval listed.
 - **Interval.** This column of your PMCS table tells you when to do a certain check or service.
 - **Item To Check/Service.** This column names the item to be checked or serviced.
 - **Procedure.** This column tells you how to do the required checks and services. Follow these instructions carefully. If tools are not available or if the procedure says to, have Field Maintenance do the work.

SPECIFIC PMCS PROCEDURES - Continued**NOTE**

The term mission capable refers to equipment being on hand and able to perform its combat mission, refer to AR 700-138, Army Logistics Readiness and Sustainability.

- **Not Fully Mission Capable If:** Information in this column tells you what faults will keep the equipment from being capable of performing its mission. If PMCS reveals faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failures.

LEAKAGE DEFINITIONS

It is necessary for you to know how fluid leakage affects the status of the semitrailer. Following are types/classes of leakage you need to know to be able to determine the status of the semitrailer. Learn these leakage definitions and remember - when in doubt, notify your Supervisor. Equipment operation is allowed with minor leakage (Class I or II). Consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your Supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS.

Class III: leaks should be reported immediately to your Supervisor.

1. **Class I:** Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
2. **Class II:** Leakage of fluid great enough to form drops, but not enough to cause drops to drip from item being checked/inspected.
3. **Class III:** Leakage of fluid great enough to form drops that fall from item being checked/inspected.

Equipment operation is allowed with minor (Class I or II) leakage. Fluid levels in an item/system affected with such leakage must be checked more frequently than required in PMCS. When in doubt, notify your Supervisor.

Report Class III leaks IMMEDIATELY to your Supervisor or Field Maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) PROCEDURES**

INITIAL SETUP:**Materials/Parts**

Grease, Automotive and Artillery
(WP 0143, Table 1, Item 10)
Rag, Wiping (WP 0143, Table 1, Item 21)

References (cont.)

WP 0005
WP 0060
WP 0093

Personnel Required

Two

References

DA Form 2404/5988E

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			NOTE Review all WARNINGS, CAUTIONs, and NOTEs before performing PMCS and operating the semitrailer. Perform all PMCS checks if: a. You are the assigned operator but have not operated the semitrailer since the last inspection. b. You are operating the semitrailer for the first time.	
1	Before	Chassis	Visually inspect chassis for damaged or missing components.	Excessive wear, cracks, damage, or missing components.
2	Before	Suspension	Inspect suspension and related hardware for serviceability.	Any component or hardware is broken, worn, or missing.
3	Before	Gooseneck	1. Inspect gooseneck for cracks, damage, or excessive wear. 2. Inspect hydraulic components for leakage.	Excessive wear, cracks, or damage. Any Class III leaks are evident.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Before	Kingpin	Visually inspect kingpins for cracks or excessive wear. Inspect for chips, nicks, gouges, and wear.	Excessive wear, cracks, or damage. Nick or chip deeper than 0.125 in. (3.017 mm) is found anywhere on wear surface, or wear exceeds 0.0625 in. (1.59 mm) over 25% of wear surface.
5	Before	Kingpin Plate	Inspect kingpin plate for cracks and dents.	Kingpin plate is cracked or dented.
6	Before	Gladhands	Inspect all gladhands and rubber grommets for serviceability.	Any gladhand or rubber grommet is missing or unserviceable.
7	Before	Air Tanks	Check for leaks in air reservoir tanks.	Any leaks are evident.
8	Before	Dump Valves	Momentarily, check air tank dump valve release cable.	Inoperative or leaking dump valve.
9	Before	Brake Air Lines	Have an assistant operate service brakes. Listen for air leaks at gladhands and air reservoir.	Semitrailer brakes fail to hold or air leaks are found.
10	Before	Tire Pressure	Check tire pressure when tires are cool.	
11	Before	Tires	Check tires for gouges, cracks, tread separation, and foreign objects lodged in tread or tire.	Any tire is flat, missing, or unserviceable.
12	Before	Wheels	Check wheels for damage.	Any wheel is damaged.
13	Before	Lug Nuts	Check lug nuts for tightness and ensure all lugs are installed.	Any lug nuts are missing.
14	Before	Spare Tire Crane (Tool Box)	Check crane for worn, rusted, broken cable, or damage to crane parts.	
15	Before	Hub Mileage Meter	Inspect hub mileage meter (Figure 1) for damage. Note mileage on DA Form 2404/5988E.	

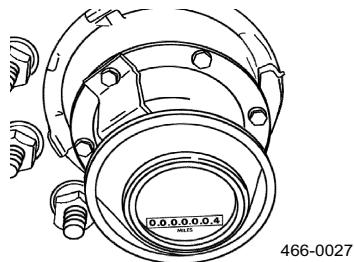
**Figure 1. Hub Mileage Meter.**

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
16	Before	Tool Box	Check tool box cover for proper operation and serviceability.	
17	Before	Deck Planking	Inspect planking (Figure 2, Item 1) for damaged or broken boards.	Planks are missing.
18	Before	Deck Hardware	Check for missing or damaged bolts and fastening hardware (Figure 2, Item 2).	
19	Before	Outriggers	Check for proper operation of folding outriggers (Figure 2, Item 5).	Outrigger load prohibited if any outriggers or boards are unserviceable.
20	Before	Tiedown Points	Check D-rings (Figure 2, Item 3) and chain slots (Figure 2, Item 4) for serviceability.	Tiedown points are damaged or unusable.
21	Before	Chains and Loadbinders	Check chains (Figure 2, Item 6), load binders (Figure 2, Item 7), and other tiedowns for serviceability and proper quantity.	Loadbinders or chains not sufficient for proper securing of payload.

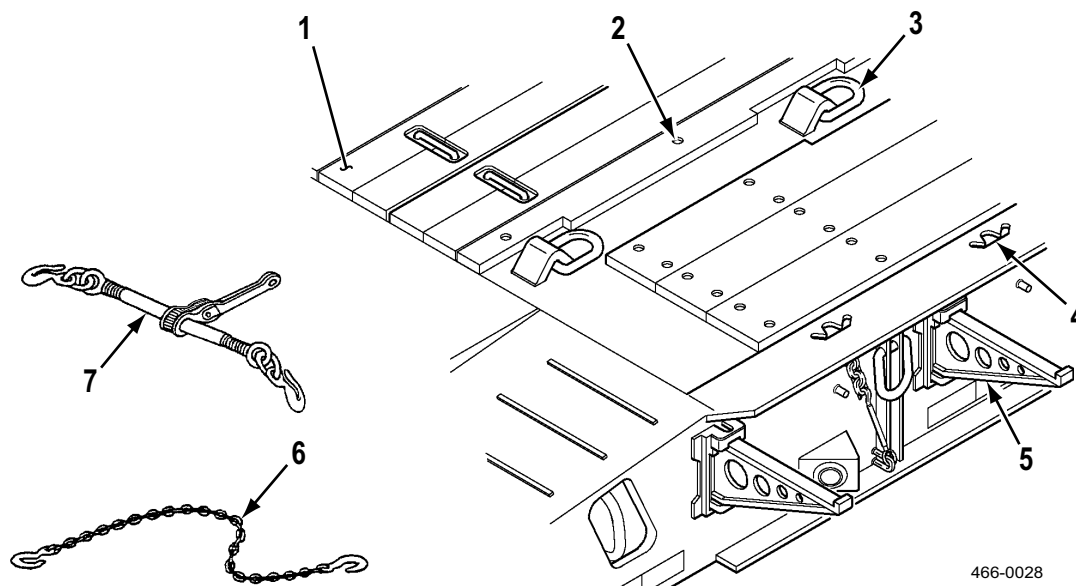
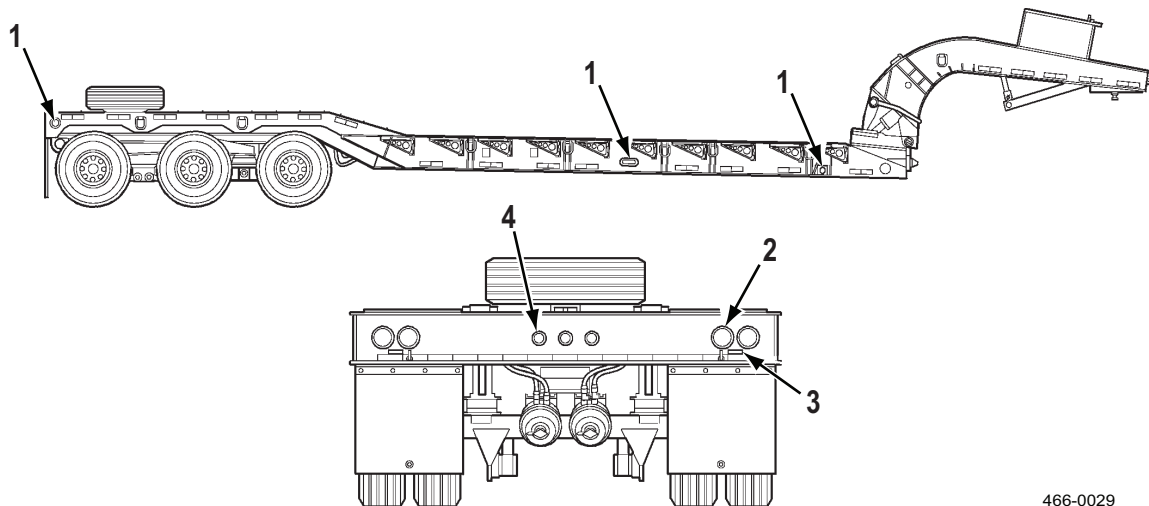


Figure 2. Deck Planking, Outriggers, and Tiedowns.

22	Before	Brakes	NOTE Any drop in air pressure will indicate an air leak. Check for leaks in air brake system by shutting off truck tractor engine when air pressure is at maximum. Observe air pressure gage for 1 minute.	Any leaks are evident.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
23	Before	Anti-lock Brake System (ABS) Indicator Lamp	NOTE - If ABS indicator lamp stays on during mission until system can be properly diagnosed by Field Maintenance, braking capacity will not be impaired. The only effect will be no modulation at wheel or wheels that have a fault. - Semitrailer is mission-capable if during mission ABS is inoperable and there is no time to diagnose problem(s). - During blackout mode conditions, tape over ABS indicator lamp. Do not remove or otherwise disable lamp. Ensure ABS indicator lamp does not stay on.	ABS indicator lamp does not come on or ABS indicator lamp remains on with blink codes (WP 0060).
24	Before	Lights	Check all semitrailer lights including brake and taillights (Figure 3, Item 2), blackout lights (Figure 3, Item 3), running lights (Figure 3, Item 4), and clearance lights (Figure 3, Item 1) for proper operation and cleanliness.	Any damaged components.



466-0029

Figure 3. Semitrailer Lights.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
25	Before	Hydraulics	Wipe connectors clean, connect hydraulic lines from gooseneck to towing vehicle (WP 0005), and check for leaks.	Any Class III leaks are evident.
26	Before	Gooseneck	Check gooseneck operation (WP 0005).	Gooseneck does not operate correctly (WP 0005).
27	During	Hydraulics	NOTE If semitrailer will not be used for 72 hours or more, lightly coat exposed cylinders with grease. Check for leaks.	Any Class III leaks are evident.
28	During	Gooseneck	Check gooseneck operation (WP 0005).	Gooseneck does not operate correctly (WP 0005).
29	During	Gladhands	Check for leaks at gooseneck gladhand connections.	Any leaks are evident.
30	During	Brakes	Operate semitrailer brakes and ensure brakes at all six wheel positions are operating properly.	Semitrailer brakes inoperative.
31	After	Tires	Check tire pressure when tires are cool.	Any tire is flat, missing, or unserviceable.
32	After	Wheels	Check wheels for damage. Check for debris or foreign objects lodged between wheels.	A wheel is damaged or unserviceable.
33	After	Lug Nuts	Check lug nuts for tightness and ensure all lug nuts are installed.	A lug nut is missing.
34	After	Hub Mileage Meter	Inspect hub mileage meter (Figure 4) for damage. Note mileage and check for proper operation.	

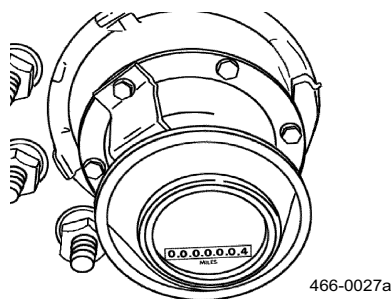


Figure 4. Hub Mileage Meter Check.

Table 1. Operator Preventive Maintenance Checks and Services (PMCS) Procedures - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
35	After	Hubs	WARNING  Hub may be hot. Before putting hand to hub, hold hand close to hub to check for excessive heat radiation. This will prevent skin burns caused by hot metal. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury. Check hubs for discoloration or blistered paint that may indicate excessive heat condition.	Excessive heat, indicating worn wheel bearing.
36	After	Air System	Open dump valve to vent accumulated moisture.	
37	Weekly	Gooseneck	Inspect grease points for damage to fittings and sufficient grease (WP 0093).	
38	Weekly	Kingpin	Apply grease to kingpin (WP 0093).	
39	Weekly	Pickup Plate	Lubricate pickup plate (WP 0093).	
40	Monthly	Hydraulics	NOTE If semitrailer will not be used for 72 hours or more, completely drain air tanks. Lightly coat exposed cylinders with grease.	

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) PROCEDURES

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Wrench, Torque

Materials/Parts (cont.)

(WP 0143, Table 1, Item 20)

Personnel Required

Two

Materials/Parts

Grease, Automotive Artillery
(WP 0143, Table 1, Item 10)
Oil, Lubricating

References

TM 9-2610-200-14
WP 0093

Table 1. Field Preventive Maintenance Checks and Services (PMCS).

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Weekly	Gooseneck Tilt Arm	WARNING  Unless otherwise specified, perform all Preventative Maintenance Checks and Services (PMCS) with semitrailer on level ground, uncoupled, and brakes set. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury. NOTE Perform Operator PMCS prior to, or in conjunction with, Field PMCS if there is a delay between daily operation of the equipment and the Field PMCS or regular operator is not assisting/participating. Lubricate gooseneck tilt arm (WP 0093).	
2	Monthly	Outboard Camshaft	Lubricate outboard camshaft (WP 0093).	
3	Monthly	Inboard Camshaft	Lubricate inboard camshaft (WP 0093).	

Table 1. Field Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Monthly	Electrical Connector Hinges	Lubricate electrical connector hinges (WP 0093).	
5	Monthly	Slack Adjuster	Lubricate slack adjuster (WP 0093).	
6	Semiannual	Wheels and Tires	1. Measure tread depth. Measurements should be taken at random locations on tire. 2. To rotate and match tires. Refer to TM-9-2610-200-14. 3. Check wheel nuts for tightness. Torque nuts to 450-500 lb ft (610-678 N·m).	
7	Semiannual	Brake Air System	Check all air hoses for leaks, kinks, bends, cracks, and missing mounting clamps.	
8	Semiannual	Brakes	Check for proper operation and adjustment.	Failure to operate properly or are out of adjustment.
9	Semiannual	Brake Drums	Visually inspect brake drums for cracks, scoring, gouging, or abnormal wear.	Excessive wear, cracks, or damage.
10	Annual	Brake Linings	1. Check brake linings for sufficient material. 2. Check brake linings for damage.	Brake shoes show excessive wear (less than 0.0625 in. [1.59 mm]). Lining thickness less than 0.25 in. (6.4 mm) or to the wear indicator if the lining is so marked (measured at the shoe center for drum brakes).
11	Annual	Brake Drums	Measure brake drums to check for excessive wear.	Should not exceed 0.120 in. (3.04 mm) over the original diameter. When reboring brake drums, the finished diameter should not exceed .080 in. (2.03 mm) over the original diameter.
12	Annual	Wheel Bearing and Seals	1. Remove wheel bearings and visually inspect for wear or damage. 2. Visually inspect bearing seal for wear or damage. 3. Lubricate wheel bearing (WP 0093).	Excessive wear or damage. Excessive wear or damage. Excessive leakage or cracks in seal.
13	Annual	Lift Cylinder Pin	Lubricate lift cylinder pin (WP 0093).	

Table 1. Field Preventive Maintenance Checks and Services (PMCS) - Continued.

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
14	Annual	Gooseneck Lifting Lugs	Lubricate gooseneck lifting lugs (WP 0093).	
15	Annual	Gooseneck Shim Support Shaft	Lubricate gooseneck shim support shaft (WP 0093).	

END OF TASK**END OF WORK PACKAGE**

CHAPTER 5

OPERATOR MAINTENANCE INSTRUCTIONS

OPERATOR MAINTENANCE ELECTRICAL CONNECTORS SERVICE

INITIAL SETUP:

Materials/Parts

- Brush, Scrub (WP 0143, Table 1, Item 5)
 - Rag, Wiping (WP 0143, Table 1, Item 21)
-

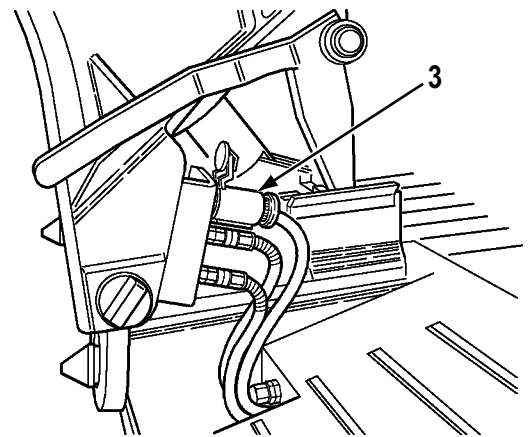
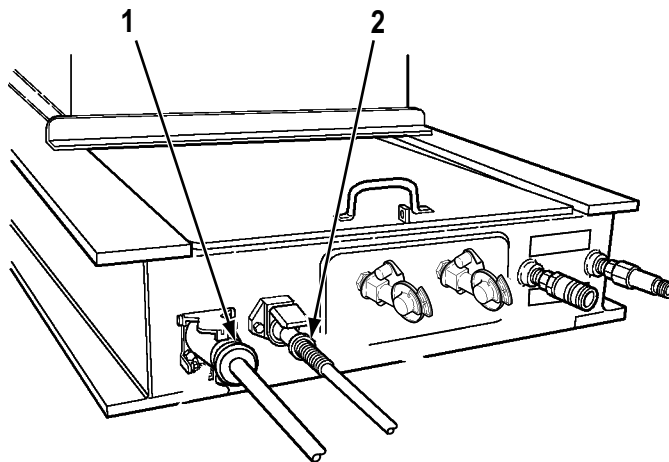
CLEANING

WARNING



Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Disconnect inter-vehicular electrical cables (Figure 1, Items 1 and 2) from towing vehicle to semitrailer and from semitrailer to gooseneck (Figure 1, Item 3).
2. Use a rag to remove any buildup of grease or dirt from exterior of connector and receptacle.
3. Use a brush to clean metal surfaces.



466-0030

Figure 1. Electrical Connectors.

END OF TASK

INSPECTION

1. Inspect connector and pins for damage.
2. Notify Field Maintenance if any damage is found.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
GLADHAND SERVICE**

INITIAL SETUP:**Materials/Parts**

Detergent, General Purpose, Liquid
(WP 0143, Table 1, Item 8)
Rag, Wiping

Materials/Parts (cont.)

(WP 0143, Table 1, Item 21)

CLEANING

1. Use a rag to remove any buildup of grease and dirt from gladhands.
2. Use a rag, detergent, and water to thoroughly clean gladhand connecting surfaces (Figure 1, Item 1) to include packing ring (Figure 1, Item 2).
3. Allow parts to dry thoroughly.

END OF TASK**INSPECTION**

1. Inspect gladhands for damage.
 - a. Check rubber grommet and screen for damage.
 - b. Use a soapy solution to check for air leaks.
2. Notify Field Maintenance if any damage is found.

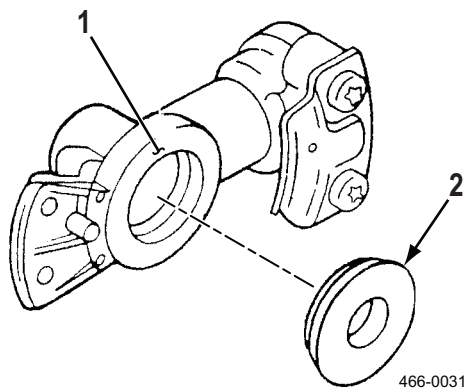


Figure 1. Gladhands.

END OF TASK**END OF WORK PACKAGE**

OPERATOR MAINTENANCE
AIR RESERVOIR TEST

INITIAL SETUP:**Materials/Parts**

Detergent, General Purpose

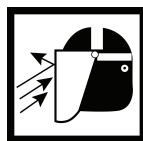
Materials/Parts (cont.)

(WP 0143, Table 1, Item 8)

Rag, Wiping (WP 0143, Table 1, Item 21)

AIR RESERVOIR SERVICE CHECK

1. Turn off air supply to semitrailer.

WARNING

Wear eye protection when checking for air leaks. Failure to comply may result in death or injury to personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Disconnect gladhands.
3. Pull on front and rear air reservoir dump valve release cables (Figure 1, Items 1 and 2) and allow air reservoir to drain fully, then release dump valve cables (Figure 1, Items 1 and 2).

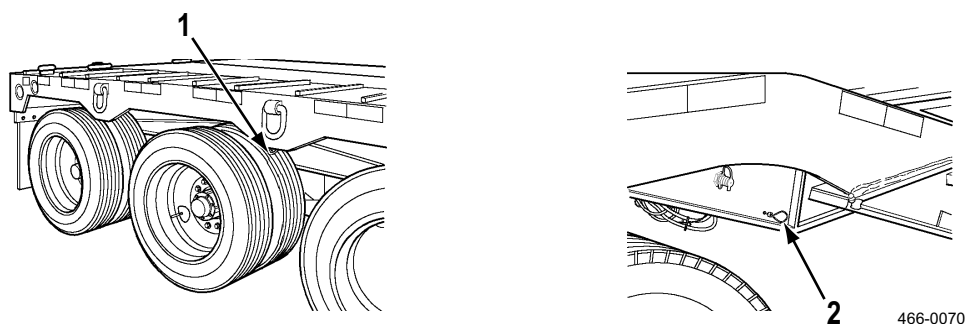


Figure 1. Air Reservoir Dump Valve Release Cables.

4. Connect gladhands.
5. Turn on air supply to semitrailer at towing vehicle.
6. Check for air leaks. Listen for hissing sounds and feel for escaping air. A soapy water solution will aid in detecting air leaks.

AIR RESERVOIR SERVICE CHECK - Continued

7. If air leaks are detected, notify Field Maintenance.

END OF TASK**END OF WORK PACKAGE**

OPERATOR MAINTENANCE WHEEL AND TIRE ASSEMBLY REPLACEMENT

INITIAL SETUP:

Personnel Required

Two

Equipment Condition

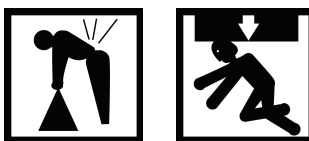
Semitrailer parked on level ground (WP 0005)

References

WP 0002

WP 0040

WARNING



- Weight of semitrailer, 16,500 lb (7,484.27 kg) to 19,000 lb (8,618.25 kg) must be supported on suitable supports at all times. Actual weight for the semitrailer model can be found in (WP 0002). Do not support weight of semitrailer on lifting device. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of injury.
- DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wheel and tire assembly requires two personnel to remove or install spare tire to carrier. Refrain from lifting spare tire into position. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- ALWAYS support semitrailer when removing wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

A 2.375 in. (60.33 mm) x 7.5 in. (184.15 mm) x 2 ft (60.96 cm) block of wood is provided in the tool box to be used under the suitable lifting device in loose soil conditions.

REMOVAL**NOTE**

If tire is visibly unable to hold air, begin with Step 2.

1. Check tire assembly for proper air pressure (WP 0002). Adjust air pressure as required. Semitrailer air supply may be used by attaching air hose to valve (Figure 1, Item 1) located next to air reservoir dump valve.

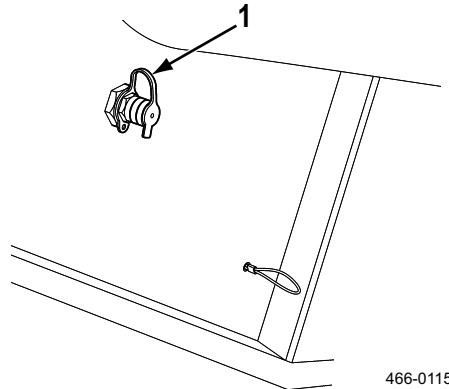


Figure 1. Tire Inflation Valve.

2. Loosen 10 lug nuts.
3. For rear axle mounted tires, chock opposite tire and place suitable lifting device under axle between torque rod bracket and inner wheel (Figure 2, Item 1). Raise axle until tire assembly is off ground.

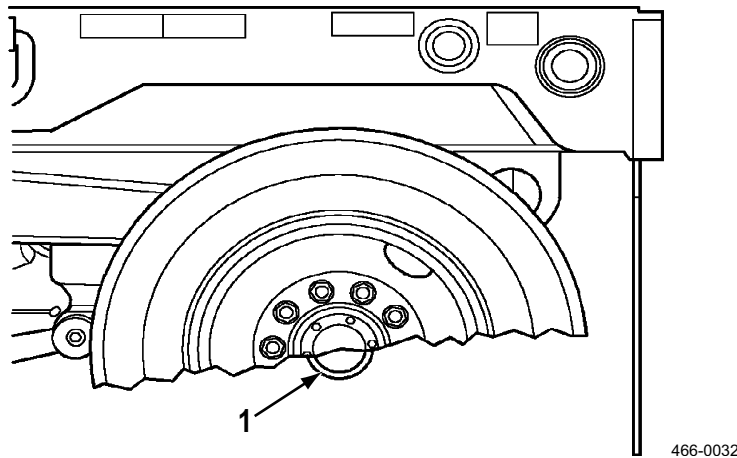


Figure 2. Rear Axle Mounted Tires Removal.

4. For mid and front axle tires, chock opposite tire and place suitable lifting device under tandem beam (Figure 3, Item 1) at point closest to tire assembly being removed. Raise tandem beam (Figure 3, Item 1) until tire assembly is off ground.
5. Place suitable support under axle from which tire assembly is being removed and lower axle to rest on suitable support. Leave suitable lifting device in position as a secondary support.

REMOVAL - Continued

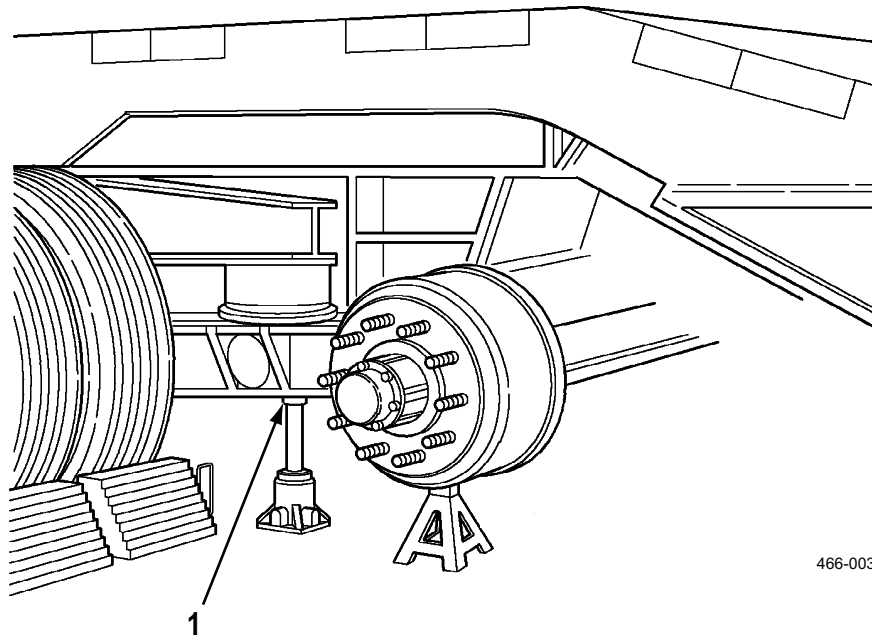
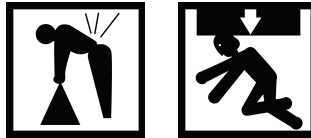


Figure 3. Mid and Front Axle Mounted Tire Removal.

REMOVAL - Continued

6. Remove 10 lug nuts (Figure 4, Item 1).

WARNING

DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

7. With assistance, remove outer tire assembly (Figure 4, Item 3).

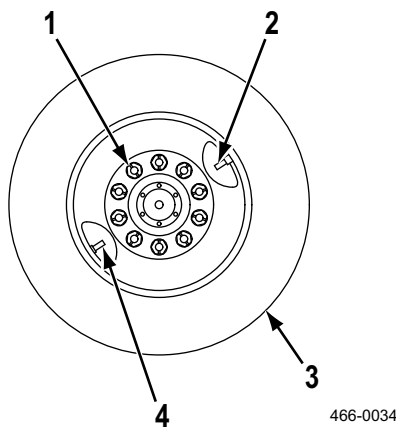


Figure 4. Mid and Front Axle Mounted Tire Lug Nut Removal.

NOTE

If removing only the outer tire assembly, do not perform Steps 8 and 9.

8. With assistance, remove inner tire assembly.

CAUTION

Remove the valve stem extension prior to mounting the spare tire to the stowage area. If valve stem extension is not removed the entire valve will break off due to the extended length. Failure to comply may result in damage to, or destruction of, equipment or mission.

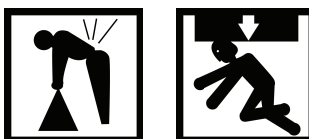
9. Remove inner valve stem extension (Figure 4, Item 4).

END OF TASK

INSTALLATION**NOTE**

- If spare tire is required, refer to (WP 0040)
- If only the outer tire assembly is being installed, go to Step 3.

1. Install inner valve stem extension (Figure 4, Item 4).

WARNING

DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. With assistance, install inner tire assembly.
3. With assistance, install outer tire assembly (Figure 4, Item 3). Ensure outer valve stem (Figure 4, Item 2) is opposite (180 degrees) from inner valve stem (Figure 4, Item 4).
4. Using handle and wrench, install 10 lug nuts (Figure 4, Item 1) and tighten according to tightening sequence shown in Figure 5.

NOTE

Tighten the lug nuts. Have Field Maintenance check for proper torque at earliest availability.

5. As soon as possible, have Field Maintenance torque lug nuts to 450-500 lb ft (610-678 N·m). Refer to lug nut tightening sequence shown in Figure 5.

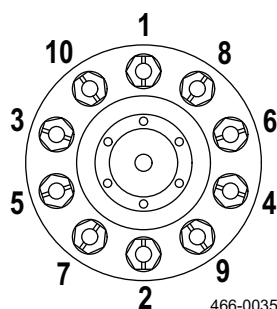


Figure 5. Tightening Sequence for Lug Nuts.

6. Check alignment of tire assembly by placing a block of wood or other object on ground at side of tire and rotate wheel.
7. If distance between block of wood and tire varies by more than 0.125 in. (3.18 mm), tire assembly is not properly mounted.
8. To correct, loosen nuts and re-tighten nuts in tightening sequence shown in Figure 5.
9. Recheck alignment.

INSTALLATION - Continued**NOTE**

Lug nuts should be checked for proper torque by Field Maintenance after the first 50 mi. (80.5 km) to 100 mi. (160.9 km) of operation after wheel installation.

10. Remove suitable supports.
11. Lower axle and remove suitable lifting device.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE
KINGPIN REPLACEMENT**

INITIAL SETUP:**Equipment Condition**

Semitrailer parked on level ground (WP 0005)

WARNING

Semitrailer must be disconnected from towing vehicle to replace kingpin. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

Remove kingpin (Figure 1, Item 1) from gooseneck recess (Figure 1, Item 2).

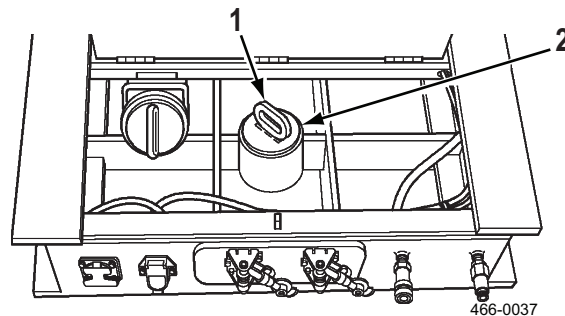


Figure 1. Kingpin.

END OF TASK**INSTALLATION**

Install kingpin (Figure 1, Item 1) in gooseneck recess (Figure 1, Item 2).

END OF TASK**END OF WORK PACKAGE**

OPERATOR MAINTENANCE
SPARE WHEEL AND TIRE ASSEMBLY REPLACEMENT

INITIAL SETUP:

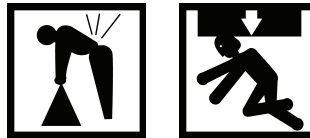
Personnel Required

Two

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

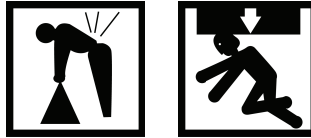


- DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wheel and tire assembly requires two personnel to remove or install spare tire to carrier. Refrain from lifting spare tire into position. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL**NOTE**

One carrier location is provided for securing the spare tire assembly on the semitrailer. The spare tire is located on the raised loadbed at rear of semitrailer.

1. Remove boom crane (Figure 1, Item 6) from tool box.
2. Install boom crane (Figure 1, Item 6) on rear of semitrailer.
3. Remove security chain (Figure 1, Item 2) from spare tire retaining bolt (Figure 1, Item 1).

WARNING

DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

4. Remove retaining bolt (Figure 1, Item 1) and retaining bar (Figure 1, Item 4) from the spare tire assembly (Figure 1, Item 5) and semitrailer deck.

NOTE

If chain assembly is not routed correctly, tire will not clear rear of semitrailer.

5. With assistance, turn spare tire assembly (Figure 1, Item 5) over as shown.
6. Connect spare tire (Figure 1, Item 5) to boom crane (Figure 1, Item 6) by feeding chain through wheel openings (Figure 1, Item 3) and secure chain.

CAUTION

Ensure cable is winding straight on roller to avoid damage to cable assembly. Failure to comply may result in damage to, or destruction of, equipment or mission.

7. With assistance, raise spare tire (Figure 1, Item 5) from semitrailer and lower to ground.

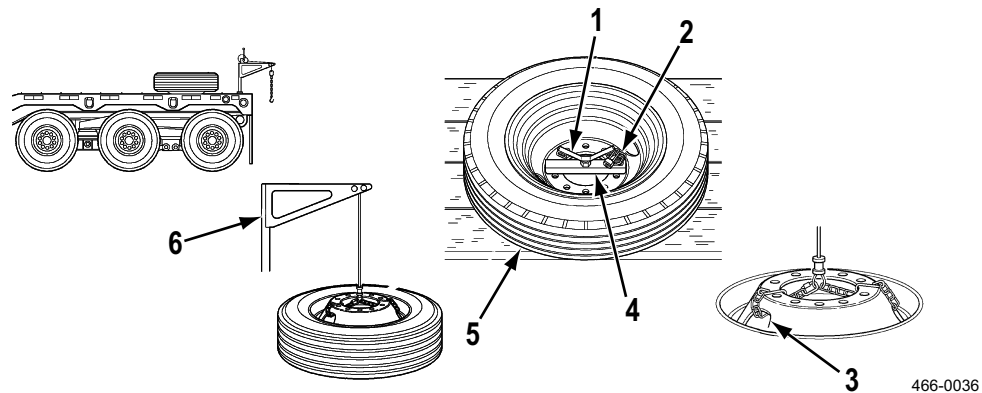
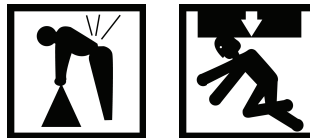
REMOVAL - Continued

Figure 1. Spare Tire Assembly Replacement.

END OF TASK**INSTALLATION****NOTE**

If chain assembly is not routed correctly, tire will not clear rear of semitrailer.

1. Connect spare tire (Figure 1, Item 5) to boom crane (Figure 1, Item 6) by feeding chain through wheel openings (Figure 1, Item 3) and secure chain. Raise tire to deck of semitrailer, lower in position, and remove chain.

WARNING

DO NOT lift wheel and tire assembly. Wheel and tire assembly weighs 250 lb (113 kg). Use two or more personnel to roll or slide wheel and tire assembly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. With assistance, turn spare tire assembly (Figure 1, Item 5) over.
3. Center spare tire (Figure 1, Item 5) over threaded hole on raised loadbed at rear of semitrailer.
4. Secure tire to semitrailer deck with retainer bar (Figure 1, Item 4) and retaining bolt (Figure 1, Item 1).
5. Attach security chain (Figure 1, Item 2) to retaining bolt (Figure 1, Item 1) and secure.
6. Return boom crane (Figure 1, Item 6) to tool box.

END OF TASK**END OF WORK PACKAGE**

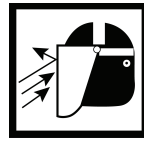
**OPERATOR MAINTENANCE
SEMITRAILER CLEANING**

INITIAL SETUP:**Materials/Parts**

Brush, Scrub (WP 0143, Table 1, Item 5)
Detergent, General Purpose, Liquid

Materials/Parts (cont.)

(WP 0143, Table 1, Item 8)

WARNING

Wear eye protection when cleaning with high-pressure water. Do not direct high-pressure water at other personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

Be especially careful when cleaning electrical system components including lighting. Failure to comply may result in damage to, or destruction of, equipment or mission.

CLEANING

1. Use a high-pressure stream of water to clean semitrailer exterior.
2. Use a stiff broom or brush and detergent to remove remaining dirt from semitrailer exterior.
3. Use a stiff broom or brush and detergent to remove remaining dirt from underside of semitrailer.
4. Use a high-pressure stream of water to finish cleaning semitrailer.

END OF TASK**END OF WORK PACKAGE**

CHAPTER 6

FIELD MAINTENANCE INSTRUCTIONS

**FIELD MAINTENANCE
SERVICE UPON RECEIPT**

INITIAL SETUP:**Tools and Special Tools**

Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound
(WP 0143, Table 1, Item 24)

References (cont.)

DA PAM 750-8
DD Form 314
DD Form 1397
WP 0034
WP 0093
WP 0141

References

DA Form 2407/5990-E

GENERAL

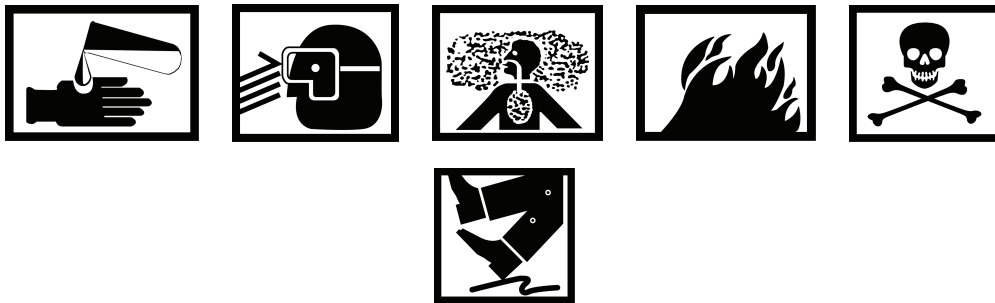
When a new, used, or reconditioned semitrailer is first received, determine whether it has been properly prepared for service and is in condition to perform its mission. Follow the inspection instructions and servicing instructions specified in this work package.

INSPECTION INSTRUCTIONS

1. Read and follow all instructions on DD Form 1397 attached to conspicuous part of semitrailer.
2. Remove all straps, plywood, tape, seals, wrapping, and any other shipping materials.

INSPECTION INSTRUCTIONS - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

INSPECTION INSTRUCTIONS - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
3. If any exterior parts are coated with rust-preventive compound, remove with cleaning compound solvent and wiping rags.
 4. Inspect the equipment for damage incurred during shipment. Also, check to see if the equipment has been modified.
 5. Check equipment against packing list to ensure that shipment is complete. Report any discrepancies. Refer to DA PAM 750-8.
 6. Inventory Basic Issue Items (BII) (WP 0141).

END OF TASK**SERVICING INSTRUCTIONS**

1. Perform all Field Preventive Maintenance Checks and Services (PMCS) (WP 0034). Schedule next PMCS on DD Form 314.
2. Lubricate all lubrication points as described in (WP 0093) regardless of interval.
3. Report any problems on DA Form 2407/5990-E.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE WIRING HARNESS AND CABLE REPAIR

INITIAL SETUP:

Tools and Special Tools

Tool Kit, Electrical (WP 0144, Table 1, Item 15)
 Tool Kit, General Mechanic's
 (WP 0144, Table 1, Item 16)
 Die Set, Metal Stamping
 (WP 0144, Table 1, Item 3)
 Soldering Iron (WP 0144, Table 1, Item 14)

Materials/Parts (cont.)

(WP 0143, Table 1, Item 8)
 Rag, Wiping (WP 0143, Table 1, Item 21)
 Solder (WP 0143, Table 1, Item 23)
 Tag, Marker (WP 0143, Table 1, Item 28)
 Tape, Electrical (WP 0143, Table 1, Item 31)

Materials/Parts

Brush, Acid Swabbing
 (WP 0143, Table 1, Item 4)
 Detergent, General Purpose

References

WP 0096
 WP 0005

WARNING



Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

The Semitrailer is equipped with two intervehicular cable receptacles, located on the front of the semitrailer.

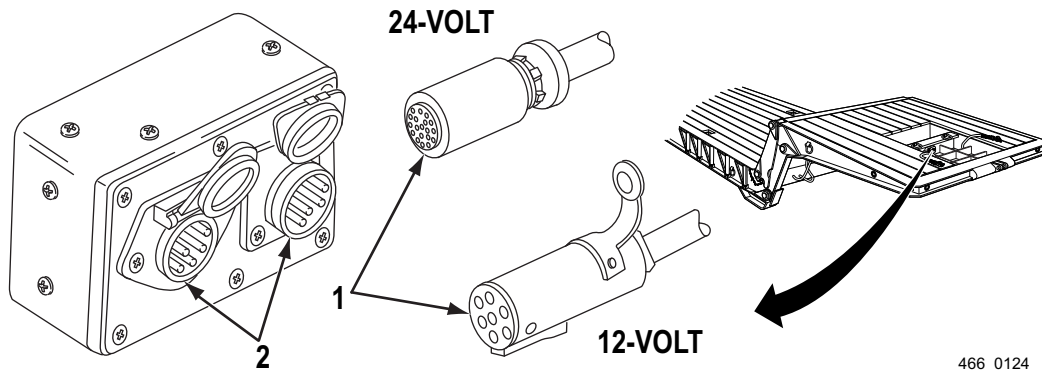
The 12-pin, 24-volt receptacle is located to the right of the 7-pin, 12-volt receptacle.

The Semitrailer is equipped with four taillights, two on each side. The outer set of taillights include both turn signals and running lights. The inner set of taillights include brake lights and running lights. The Semitrailer is also equipped with two rear blackout lights, one on each side. Each blackout light includes running lights, brake lights, and turn signals (both left and right). Amber clearance lights are located on each front corner of the semitrailer side and on each side of the midpoint of the semitrailer. Red clearance lights are located on each side at the rear of the semitrailer. Three red running lights are also located at the center of the rear of the semitrailer. An amber Anti-lock Brake System (ABS) light is located on the left rear corner of the semitrailer.

For locating any untagged, disconnected wires, refer to wiring diagrams (WP 0096).

CLEANING

1. Using a rag, remove any buildup of dirt and grease from electrical cable connectors (Figure 1, Item 1) and connector receptacles (Figure 1, Item 2).
2. Using brush and detergent, clean metal surfaces.
3. Allow to dry.



466 0124

Figure 1. Electrical Connectors Cleaning.

END OF TASK**SOLDERING****CAUTION**

Use low wattage soldering gun when soldering electrical wires, connectors, terminal lugs, and receptacles. High wattage soldering guns may damage parts by overheating. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Solder connection must be bright and clean before soldering. Remove dirt and grease with a wire brush or a pocket knife. Solder used must be of lead alloy with soldering flux. All wires, parts, and soldering gun must be tinned for good connection and maximum transfer of heat.
2. To prevent overheating damage to electrical parts when soldering and unsoldering connections, hold bare wire, lead, or terminal lug close to soldering point with long roundnose pliers. Pliers act as heat sink and absorb excess heat.

END OF TASK

HEAT SHRINKABLE TUBING

Use the heat shrinkable tubing to insulate soldered and crimped electrical connections as follows:

1. Cut desired length of new heat shrinkable tubing twice the length of the connection to be covered.
2. Slide the heat shrinkable tubing onto the wire and out of the way before making electrical connection.
3. After making electrical connection, slide heat shrinkable tubing into place over electrical connection.

WARNING



DO NOT touch heat shrinkable tubing for at least 30 seconds after heating. Heat shrinkable tubing is hot and will burn you. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

4. Hold hot air blow gun 4 to 5 in. (10.2 to 12.7 cm) away from heat shrinkable tubing and apply heat for approximately 30 seconds. Stop applying heat as soon as heat shrinkable tubing forms to the shape of the electrical connection.

END OF TASK

ELECTRICAL GROUND POINTS

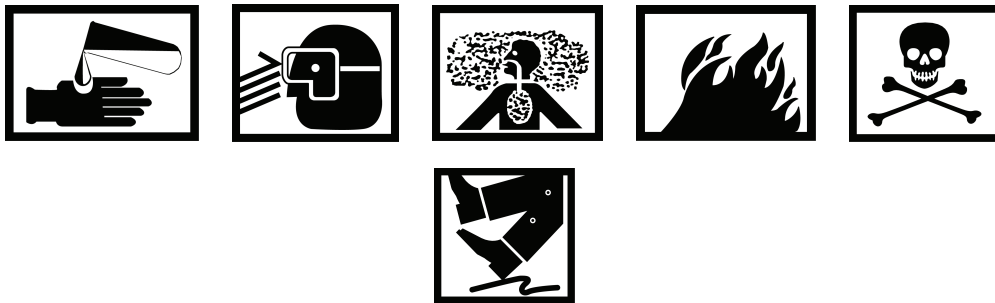
Many electrical problems are the result of poor ground connection. You can ensure that ground connections are good by performing the following steps.

WARNING



Although battery cable must be connected in order to test electrical circuit voltage, disconnect battery ground cable from towing vehicle before performing resistance tests or replacing parts. This will prevent shock and damage to equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Remove hardware connecting ground cable terminal lug to ground point.

ELECTRICAL GROUND POINTS - Continued**WARNING**

- Solvent cleaning compound MIL-PRF-680, Type III is an environmentally compliant and low toxic material. However, it may be irritating to eyes and skin. Use protective gloves and eye protection. Use in well-ventilated areas. Keep away from open flames and other sources of ignition. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
2. Clean mounting hardware, ground cable terminal lugs, and ground point.
 3. Look for cracks, loose terminal lugs, and stripped threads. Replace any defective parts.
 4. Install hardware connecting ground cable terminal lug to ground point. Ensure that all hardware is tight.

END OF TASK

IDENTIFICATION BAND REPLACEMENT

1. Remove identification band (Figure 2, Item 2) from wire lead (Figure 2, Item 1). Discard identification band (Figure 2, Item 2).
2. Using electrical etcher, mark new identification tag (Figure 2, Item 2).
3. Install new identification band (Figure 2, Item 2) on wire lead (Figure 2, Item 1).
4. Secure new identification band (Figure 2, Item 2) to wire lead (Figure 2, Item 1) by bending tab (Figure 2, Item 3).

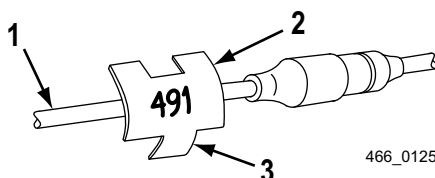


Figure 2. Identification Band Replacement.

END OF TASK**TERMINAL REPLACEMENT**

1. Remove terminal (Figure 3, Item 1) from wire lead (Figure 3, Item 2). Discard terminal (Figure 3, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in damage to, or destruction of, equipment or mission.

2. Remove insulation (Figure 3, Item 3) from wire lead (Figure 3, Item 2).
3. Using crimp tool, install new terminal (Figure 3, Item 1) on wire lead (Figure 3, Item 2).
4. Connect intervehicular connector and check for proper operation (WP 0005).

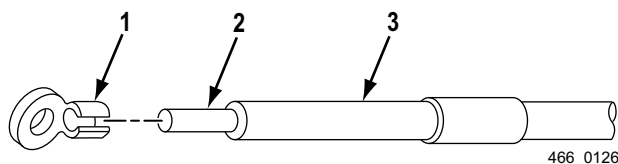


Figure 3. Terminal Replacement.

END OF TASK

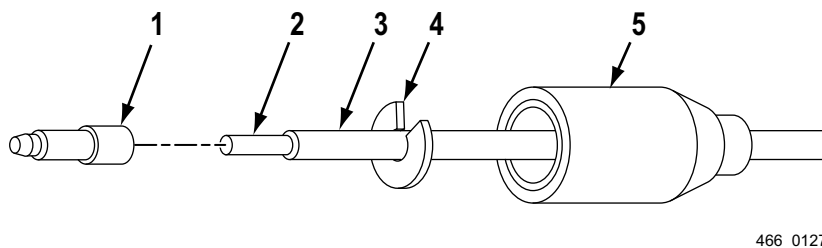
MALE CONNECTOR REPAIR

1. Position shell (Figure 4, Item 5) from contact (Figure 4, Item 1) and remove washer (Figure 4, Item 4) from insulation (Figure 4, Item 3).
2. Remove wire contact (Figure 4, Item 1) from wire lead (Figure 4, Item 2). Discard contact (Figure 4, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in damage to, or destruction of, equipment or mission.

3. Remove insulation (Figure 4, Item 3) from wire lead (Figure 4, Item 2).
4. Using crimp tool, install new contact (Figure 4, Item 1) on wire lead (Figure 4, Item 2).
5. Install washer (Figure 4, Item 4) on insulation (Figure 4, Item 3) and position shell (Figure 4, Item 5) over contact (Figure 4, Item 1).
6. Connect intervehicular connector and check for proper operation (WP 0005).



466_0127

Figure 4. Male Connector Repair.

END OF TASK

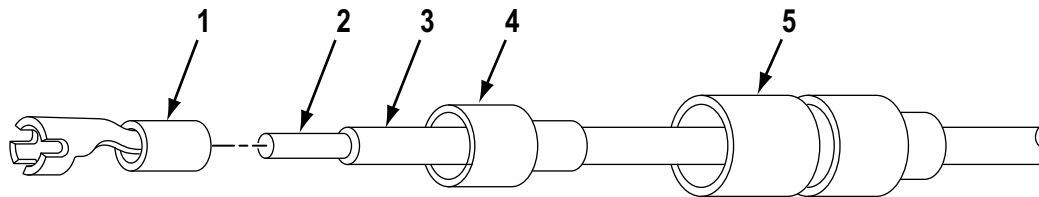
FEMALE CONNECTOR REPAIR

1. Position shell (Figure 5, Item 5) from insulator (Figure 5, Item 4) and terminal (Figure 5, Item 1) on wire lead (Figure 5, Item 2).
2. Remove terminal (Figure 5, Item 1) from wire lead (Figure 5, Item 2). Discard terminal (Figure 5, Item 1).

CAUTION

Remove only enough insulation to fill cavity on new terminal. Failure to comply may result in damage to, or destruction of, equipment or mission.

3. Remove insulation (Figure 5, Item 3) from wire lead (Figure 5, Item 2).
4. Using crimp tool, install new terminal (Figure 5, Item 1) on wire lead (Figure 5, Item 2).
5. Position insulator (Figure 5, Item 4) and shell (Figure 5, Item 5) over terminal (Figure 5, Item 1) on wire lead (Figure 5, Item 2).
6. Connect intervehicular connector and check for proper operation (WP 0005).



466_0128

Figure 5. Female Connector Repair.

END OF TASK

RECEPTACLE REPAIR

1. Remove nut (Figure 6, Item 1) and grommet (Figure 6, Item 2) from connector (Figure 6, Item 5).
2. Remove terminals (Figure 6, Item 4) from grommet (Figure 6, Item 2).

NOTE

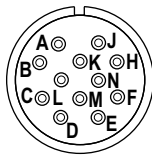
Only unsolder leads that need to be repaired.

3. Remove terminals (Figure 6, Item 4) from wire leads (Figure 6, Item 3). Discard terminal (Figure 6, Item 4).

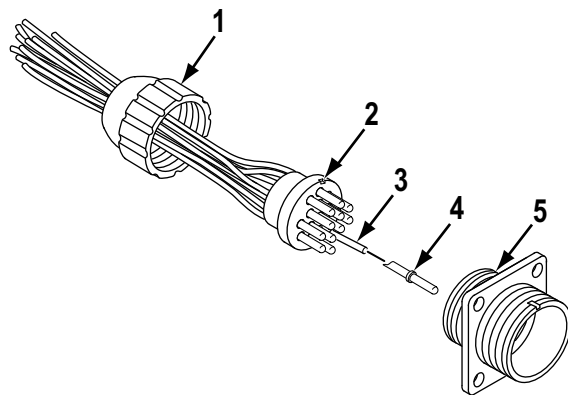
CAUTION

Insert terminals in proper location according to chart in (Figure 6). Failure to comply may result in damage to, or destruction of, equipment or mission.

4. Install wire lead (Figure 6, Item 3) through grommet (Figure 6, Item 2).
5. Heat the solder well in terminal (Figure 6, Item 4). While solder is hot, insert wire lead (Figure 6, Item 3) into terminal (Figure 6, Item 4).
6. Install terminals (Figure 6, Item 4) in grommet (Figure 6, Item 2).
7. Install grommet (Figure 6, Item 2) in connector (Figure 6, Item 5) with nut (Figure 6, Item 1).
8. Connect intervehicular connector and check for proper operation (WP 0005).



TERMINAL DESIGNATOR	CIRCUIT NO.	TERMINAL DESIGNATOR	TERMINAL DESIGNATOR
A	24-484	H	BLANK
B	22-461	J	22-480
C	24-483	K	BLANK
D	90	L	BLANK
E	21-489	M	BLANK
F	23	N	BLANK



466 0129

Figure 6. Receptacle Repair.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
BLACKOUT LIGHT REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (2) (WP 0098, Figure 1, Item 2)

Materials/Parts

Strap, Tiedown (WP 0143, Table 1, Item 27)
Washer, Lock

Equipment Condition

Taillight removed (WP 0045)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system.
Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Remove two nuts (Figure 1, Item 3) and lockwashers (Figure 1, Item 2) holding blackout light (Figure 1, Item 5) to semitrailer frame (Figure 1, Item 1). Discard lockwashers (Figure 1, Item 2).
2. Partially pull blackout light (Figure 1, Item 5) away from semitrailer frame (Figure 1, Item 1).
3. Remove tiedown straps from wiring harness. Discard tiedown straps.
4. Disconnect connectors (Figure 1, Items 4 and 6) from main wiring harness.
5. Remove blackout light (Figure 1, Item 5) from semitrailer.

END OF TASK**INSTALLATION**

1. Thread blackout light wires through semitrailer mounting holes and semitrailer electrical harness clip and connect blackout light and harness connectors (Figure 1, Items 4 and 6) to main wiring harness.
2. Install new tiedown straps to wiring harness.
3. Install blackout light (Figure 1, Item 5) on semitrailer frame (Figure 1, Item 1) with two nuts (Figure 1, Item 3) and new lockwashers (Figure 1, Item 2).

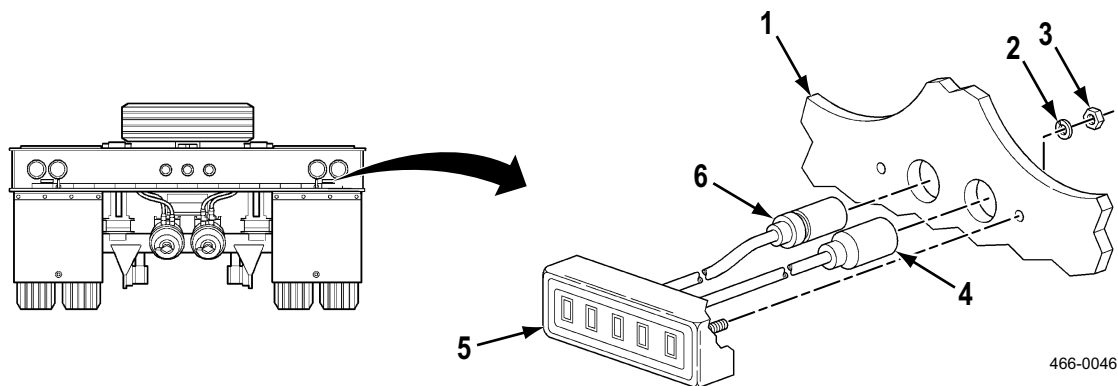


Figure 1. Blackout Light Replacement.

END OF TASK**FOLLOW ON TASK**

1. Connect power source and test electrical system for proper operation.
2. Install taillight (WP 0045).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
TAILLIGHT REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0033

Materials/Parts

Detergent, General Purpose
(WP 0143, Table 1, Item 8)

Equipment Condition

Disconnect electrical power from towing vehicle
(WP 0005)

Semitrailer parked on level ground (WP 0005)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

There are four taillights on semitrailer, this procedure replaces one taillight. All other taillights are replaced the same.

REMOVAL

1. Push taillight lens (Figure 1, Item 1) inward until it pushes through rubber grommet (Figure 1, Item 2) and falls into semitrailer body.
2. Separately withdraw rubber grommet (Figure 1, Item 2) and lens (Figure 1, Item 1) through taillight mounting opening.
3. Release electrical connector locking tab (Figure 1, Item 4) and separate lens (Figure 1, Item 1) from connector (Figure 1, Item 3).

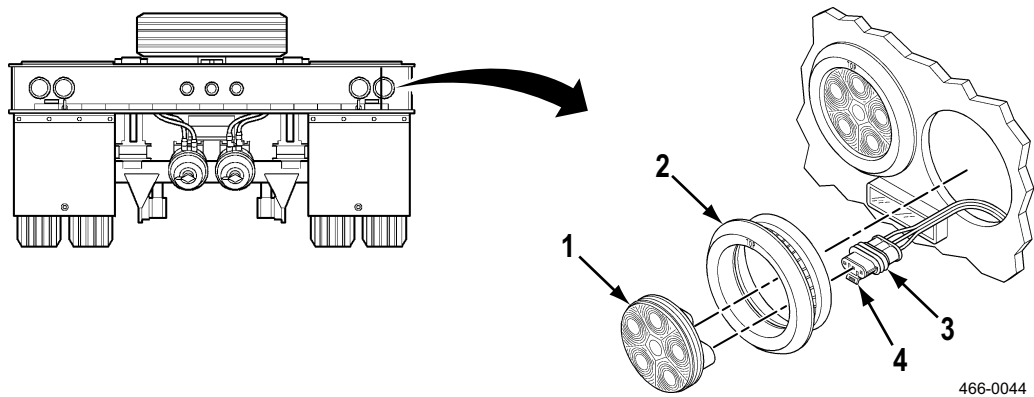


Figure 1. Taillight Replacement.

END OF TASK**INSTALLATION**

1. Position rubber grommet (Figure 1, Item 2) in taillight mounting opening and rotate rubber grommet so that word "TOP" is uppermost.
2. Connect electrical connector (Figure 1, Item 3) to rear of taillight lens (Figure 1, Item 1) and secure with locking tab (Figure 1, Item 4).

NOTE

Lens should be evenly aligned with grommet before pushing. Liquid soap may be used to lubricate the grommet.

3. Align taillight so that electrical connector is at bottom and push lens (Figure 1, Item 1) into rubber grommet (Figure 1, Item 2) until it seats in place.

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE CLEARANCE AND RUNNING LIGHTS REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0033

Materials/Parts

Detergent, General Purpose
(WP 0143, Table 1, Item 8)

Equipment Condition

Disconnect electrical power from towing vehicle
(WP 0005)

Semitrailer parked on level ground (WP 0005)

WARNING



Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

There are seven running lights and clearance lights on semitrailer, this procedure replaces one running light and clearance light. All other running lights and clearance lights are replaced the same.

REMOVAL

1. Grasp lens (Figure 1, Item 1 or 7) and work or pry lens away from grommet (Figure 1, Item 2 or 6).
2. Release locking tabs (Figure 1, Item 5) if present and disconnect lens (Figure 1, Item 1 or 7) from electrical connector (Figure 1, Item 3 or 4).

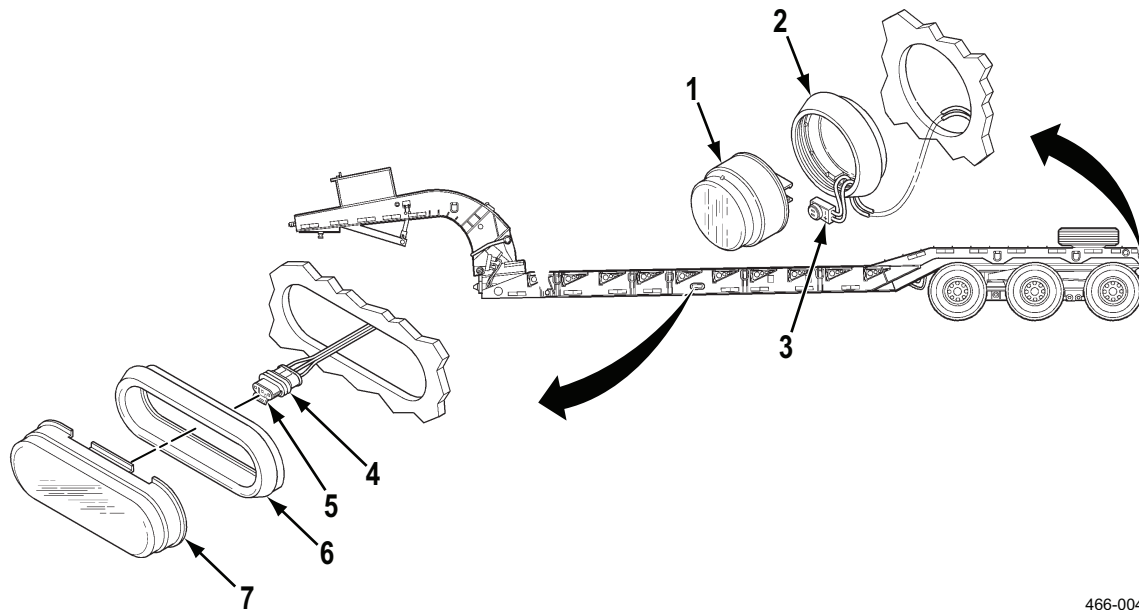
END OF TASK**INSTALLATION**

1. Connect electrical connector (Figure 1, Item 3 or 4) to rear of lens (Figure 1, Item 1 or 7) and ensure locking tab (Figure 1, Item 5), if present, engages.

NOTE

To facilitate seating of lens in grommet, liquid soap may be used to lubricate grommet.

2. Position lens (Figure 1, Item 1 or 7) on grommet (Figure 1, Item 2 or 6) and evenly push on lens until it seats in place.



466-0045

Figure 1. Clearance and Running Lights Replacement.

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
FRONT AND REAR 24-VOLT RECEPTACLE REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (8) (WP 0101, Figure 4, Item 8)
Strap, Tiedown (WP 0143, Table 1, Item 27)

Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked and lowered to ground
(WP 0005)
Gooseneck gravel guard removed (WP 0074)

WARNING

- Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Secure kingpin stowage box lid open prior to removing 24-volt receptacles. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Lower semitrailer to ground to allow gooseneck to fully lower. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL**NOTE**

- For front 24-volt receptacle, follow Steps 1 through 4.
- For rear 24-volt receptacle, follow Steps 5 through 8.

1. Lower semitrailer to ground and raise platform lever (Figure 1, Item 1) to allow gooseneck to drop to its lowest position.
2. Remove tiedown straps (Figure 1, Item 19) and clips (Figure 1, Item 18) from wiring harness. Discard tiedown straps (Figure 1, Item 19).
3. Remove keeper pin (Figure 1, Item 20) and unplug receptacle harness (Figure 1, Item 16).
4. Remove four bolts (Figure 1, Item 14), self-locking nuts (Figure 1, Item 17), washers (Figure 1, Item 13), and receptacle (Figure 1, Item 15) from frame (Figure 1, Item 9). Discard self-locking nuts (Figure 1, Item 17).
5. Remove two nuts (Figure 1, Item 4), clamps (Figure 1, Item 6), and four tiedown straps (Figure 1, Item 3) securing harness. Discard tiedown straps (Figure 1, Item 3).
6. Remove four bolts (Figure 1, Item 12), self-locking nuts (Figure 1, Item 8), flat washers (Figure 1, Item 11), and separate receptacle cover (Figure 1, Item 10) from frame (Figure 1, Item 9). Discard self-locking nuts (Figure 1, Item 8).
7. Remove keeper pin (Figure 1, Item 2), unplug harness (Figure 1, Item 7), and remove from gooseneck.
8. Remove grommet (Figure 1, Item 5) from gooseneck.

END OF TASK**INSTALLATION****NOTE**

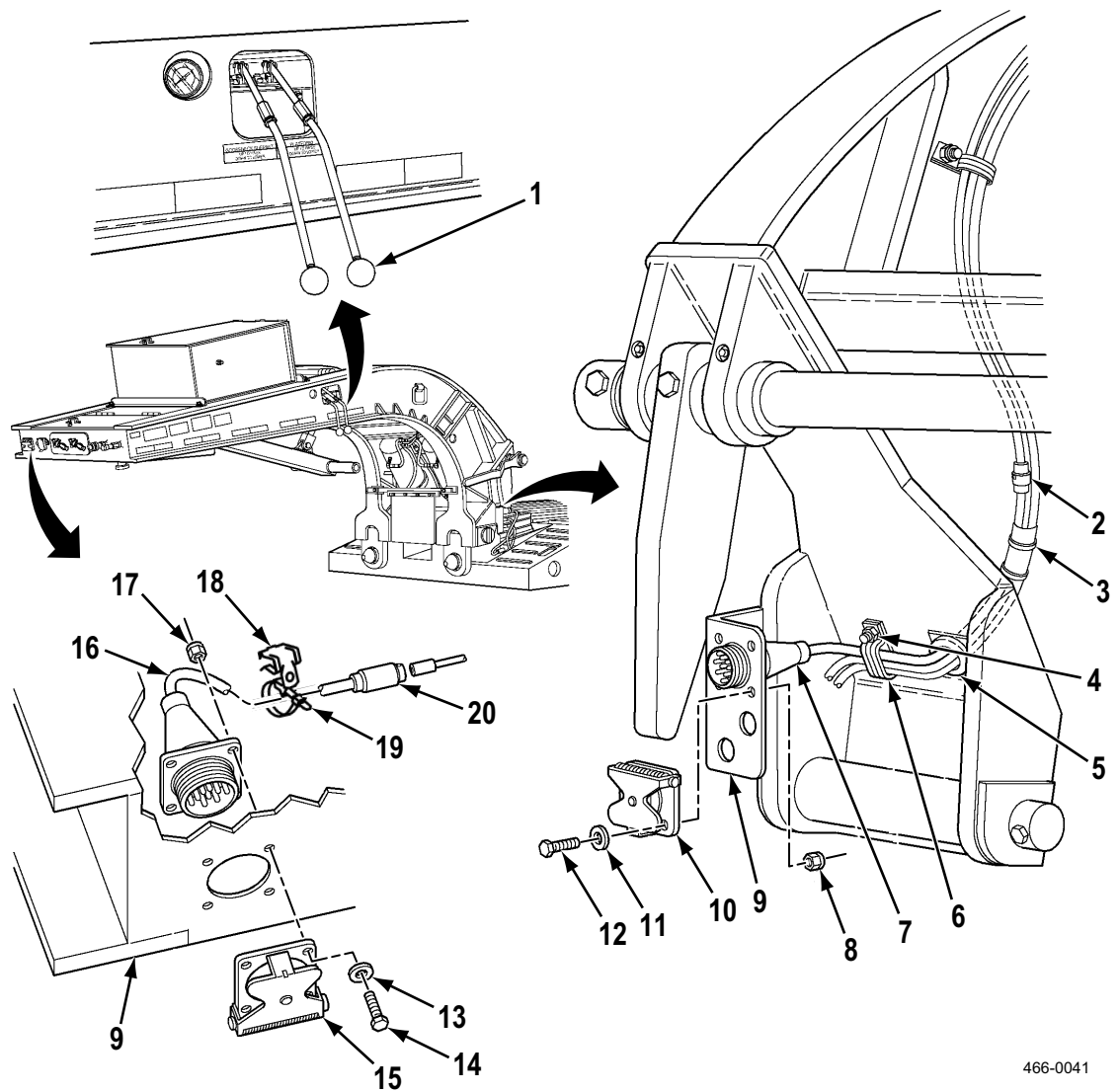
- For front 24-volt receptacle, follow Steps 1 through 4.
- For rear 24-volt receptacle, follow Steps 5 through 8.

1. Position receptacle harness (Figure 1, Item 16) on gooseneck frame (Figure 1, Item 9).
2. Connect receptacle harness (Figure 1, Item 16) to main wiring harness and install keeper pin (Figure 1, Item 20).
3. Install new tiedown straps (Figure 1, Item 19) and clips (Figure 1, Item 18) to wiring harness.
4. Install receptacle cover (Figure 1, Item 15) on gooseneck frame (Figure 1, Item 9) with four screws (Figure 1, Item 14), washers (Figure 1, Item 13), and new self-locking nuts (Figure 1, Item 17).
5. Install receptacle harness (Figure 1, Item 7) on gooseneck frame (Figure 1, Item 9) and feed through grommet (Figure 1, Item 5). Install grommet (Figure 1, Item 5) on gooseneck frame (Figure 1, Item 9).
6. Connect receptacle harness (Figure 1, Item 7) to main wiring harness and install keeper pin (Figure 1, Item 2).

NOTE

Be sure receptacle is installed with the keyway in the down position.

7. Install receptacle cover (Figure 1, Item 10) on gooseneck frame (Figure 1, Item 9) with four bolts (Figure 1, Item 12), washers (Figure 1, Item 11), and new self-locking nuts (Figure 1, Item 8).
8. Install two clamps (Figure 1, Item 6), nuts (Figure 1, Item 4), and four new tiedown straps (Figure 1, Item 3).

INSTALLATION - Continued

466-0041

Figure 1. 24-volt Receptacles Replacement.

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
12-VOLT RECEPTACLE REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (2) (WP 0101, Figure 4, Item 8)
Tag, Marker (WP 0143, Table 1, Item 28)

Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system.
Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Slide boot (Figure 1, Item 3) off of connector (Figure 1, Item 5) at rear of receptacle (Figure 1, Item 6).
2. Remove two self-locking nuts (Figure 1, Item 1) from rear of receptacle (Figure 1, Item 6). Discard self-locking nuts (Figure 1, Item 1).
3. Turn connector (Figure 1, Item 5) clockwise and remove from receptacle (Figure 1, Item 6).
4. Tag and disconnect wires (Figure 1, Item 4) from connector (Figure 1, Item 5).
5. Remove two screws (Figure 1, Item 8), washers (Figure 1, Item 7), and receptacle (Figure 1, Item 6) from gooseneck (Figure 1, Item 2).

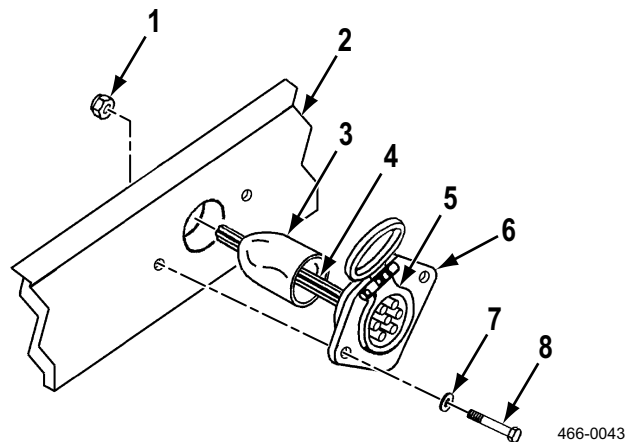


Figure 1. 12-volt Receptacle Replacement.

END OF TASK**INSTALLATION**

1. Install receptacle (Figure 1, Item 6) on gooseneck (Figure 1, Item 2) with two screws (Figure 1, Item 8), washers (Figure 1, Item 7), and new self-locking nuts (Figure 1, Item 1).
2. Connect wires (Figure 1, Item 4) to connector (Figure 1, Item 5) as tagged during removal.
3. Insert connector (Figure 1, Item 5) in receptacle (Figure 1, Item 6) and turn counterclockwise to set.
4. Slide boot (Figure 1, Item 3) over connector (Figure 1, Item 5).

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
RECEPTACLE CONVERTER BOX REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (4) (WP 0101, Figure 4, Item 12)

Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system.
Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Disconnect connector (Figure 1, Item 6).
2. Remove four self-locking nuts (Figure 1, Item 3), washers (Figure 1, Item 2), and screws (Figure 1, Item 1), disconnect ground wire (Figure 1, Item 5), and remove receptacle converter box (Figure 1, Item 4). Discard self-locking nuts (Figure 1, Item 3).

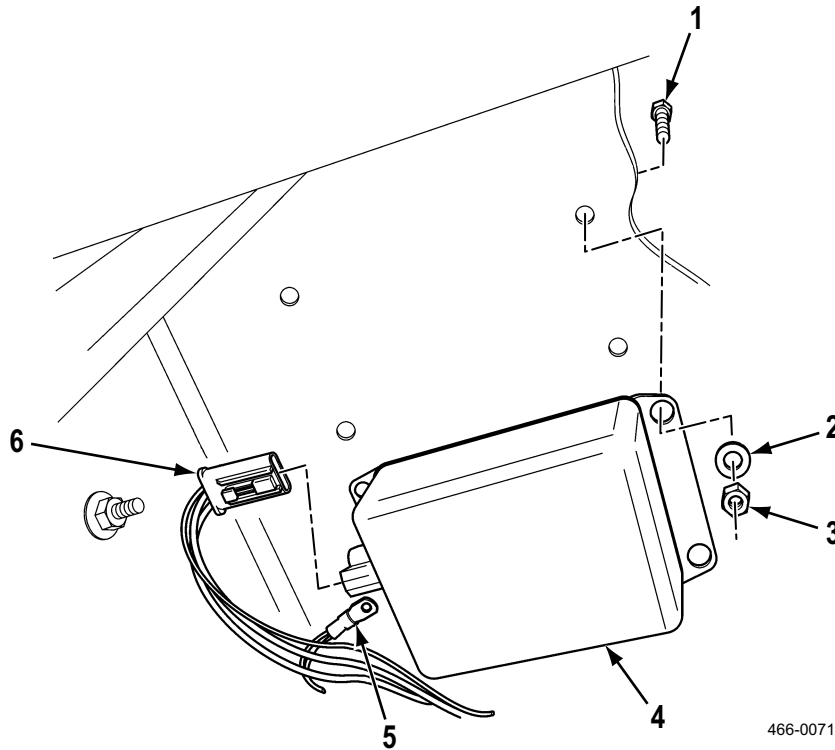


Figure 1. Receptacle Converter Box Replacement.

END OF TASK**INSTALLATION**

1. Install receptacle converter box (Figure 1, Item 4) and connect ground wire (Figure 1, Item 5) with four screws (Figure 1, Item 1), washers (Figure 1, Item 2), and new self-locking nuts (Figure 1, Item 3).
2. Connect connector (Figure 1, Item 6).

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
WIRING HARNESS REPLACEMENT**

INITIAL SETUP:**References**

WP 0043
WP 0096

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- Wiring harnesses can be replaced or repaired depending on the type of damage. Broken wires can be spliced and sealed with heat shrink tubing or electrical tape.
- For Wiring Harness and Cable Repair, see (WP 0043).

REPLACEMENT

Wiring harnesses are not ordinarily removed unless they are badly damaged and must be replaced. Wiring harness connections must be tightly attached and connected. For additional information, see wiring diagrams (WP 0096).

END OF TASK**FOLLOW ON TASK**

Connect power source and test electrical system for proper operation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE GENERAL MAINTENANCE INSTRUCTIONS

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Cutting and Flaring Kit, Tube
(WP 0144, Table 1, Item 2)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Adhesive, Loctite (WP 0143, Table 1, Item 1)
Brush, Scrub (WP 0143, Table 1, Item 5)
Brush, Wire (WP 0143, Table 1, Item 6)
Detergent, General Purpose
(WP 0143, Table 1, Item 8)
Flux, Soldering (WP 0143, Table 1, Item 9)
Oil, Lubricating (WP 0143, Table 1, Item 19)
Rag, Wiping (WP 0143, Table 1, Item 21)

Materials/Parts (cont.)

Solder, Lead (WP 0143, Table 1, Item 23)
Solvent, Cleaning Compound
(WP 0143, Table 1, Item 26)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)
Tape, Duct (WP 0143, Table 1, Item 30)
Tubing, Heat Shrinkable
(WP 0143, Table 1, Item 32)

References

TB 43-209
TC 9-237
TM 9-214
TM 43-0139
WP 0093

WARNING



Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

GENERAL INFORMATION

1. These general maintenance instructions contain general shop practices and specific methods with which you must be familiar to properly maintain the equipment. You should read and understand these practices and methods before performing any maintenance procedures.
2. Before beginning a task, find out how much repair, modification, or replacement is needed to fix the equipment. Sometimes the reason for equipment failure can be seen right away and complete tear down is not necessary. Disassemble equipment only as far as necessary to repair or replace damaged parts.
3. In some cases, a part may be damaged during removal. If the part appears to be good, and other parts behind it are not defective, leave it in place and continue with the procedure. Here are a few simple rules:
 - a. Do not remove dowel pins or studs unless loose, bent, broken, or otherwise damaged or if damaged parts are behind them.
 - b. Do not remove bearings or bushings unless damaged. If you need to remove them to access parts behind, carefully pull out bearings and bushings.
 - c. Replace all gaskets, lockwashers, self-locking nuts, seals, cotter pins, and preformed packings.
4. The following "Initial Setup" information applies to all maintenance procedures.
 - a. Resources are not listed unless they apply to the procedure.
 - b. "Personnel Required" is listed only if more than one mechanic is required to complete the procedure.
5. All tags and forms attached to the equipment must be checked to learn the reason for removal of equipment from service. Modification Work Orders (MWOs) and Technical Bulletins (TBs) must also be checked for equipment changes and updates.

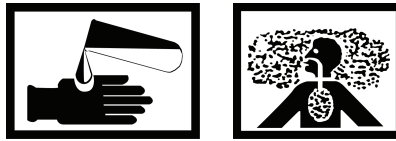
END OF TASK**WORK SAFETY**

1. Review all Warnings, Cautions, and Notes prior to doing the maintenance task.
2. Before beginning a procedure, think about the safety risks and hazards to yourself and to others. Wear protective gear such as eye protection, safety shoes, or gloves.
3. Before beginning a procedure, ensure that the following conditions have been observed, unless otherwise specified:
 - a. Semitrailer, if coupled, should be parked on level ground with towing vehicle parking brake set.
 - b. Engine must be off if towing vehicle is coupled to semitrailer, unless otherwise indicated.
 - c. Components must be at operating temperature to be tested.
4. Immediately clean up spilled fluids to avoid slipping.
5. When lifting heavy parts, have someone help you. Ensure that lifting equipment or jack is working properly, that it meets weight requirement of part being lifted, and that it is securely fastened to part.
6. Always use power tools carefully.

END OF TASK

CLEANING INSTRUCTIONS

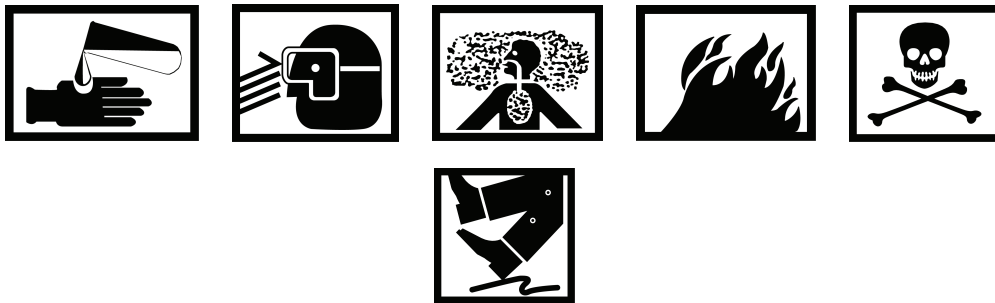
WARNING



- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
1. **General.** Cleaning instructions will be the same for the majority of parts and components which make up the equipment. The following applies to all cleaning operations:
 - a. Clean all parts before inspection, after repair, and before assembly.
 - b. Keeps hands free of grease, which can collect dust, dirt and grit.
 - c. After cleaning, all parts should be covered or wrapped to protect them from dust and dirt. Parts that are subject to rust should be lightly oiled after cleaning.
 2. **Cleaning.**
 - a. Before cleaning exterior of semitrailer, protect all electrical equipment that could be damaged by moisture.
 - b. Place disassembled parts in a suitable container to clean. Parts that are subject to rust should be dried and lightly oiled after cleaning.

CLEANING INSTRUCTIONS - Continued

WARNING



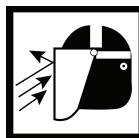
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING INSTRUCTIONS - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

3. Castings, Forgings, and Machined Metal Parts.

- a. Clean inner and outer surfaces with solvent cleaning compound and dry with clean rags.
- b. Remove grease and accumulated deposits with a scrub brush.

WARNING

Compressed air used for cleaning or drying purposes, or for cleaning restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing and eye protection, and use caution. Do NOT point compressed air at other personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

- c. Clear all threaded holes with compressed air to remove dirt and cleaning fluids.

CAUTION

DO NOT wash electrical cables or flexible hoses with solvent cleaning compound or mineral spirits. Serious damage or destruction of material will result. Failure to comply may result in damage to, or destruction of, equipment or mission.

4. **Flexible Hoses.** Wash flexible hoses with a solution of detergent and water, and wipe dry with a clean rag.
5. **General Cleaning Covered by Other Manuals.** Refer to your Unit's authorized cleaning and solvents list.

END OF TASK

PRESERVATION OF PARTS

Unpainted metal parts that will not be installed immediately after cleaning should be covered with a thin coat of lubricating oil.

END OF TASK**PAINTING**

On painted areas where paint has been removed, paint in accordance with procedures outlined in TM 43-0139 and TB 43-209.

END OF TASK**INSPECTION INSTRUCTIONS****NOTE**

All damaged areas should be marked for repair or replacement.

1. All components and parts must be carefully checked to determine if they are serviceable for use, can be repaired, or must be scrapped.
2. Inspect drilled and tapped (threaded) holes for the following:
 - a. Wear, distortion, cracks, and any other damage in or around holes.
 - b. Threaded areas for wear distortion (stretching) and evidence of cross-threading.
3. Inspect metal lines, flexible lines or hoses, and metal fittings and connectors for the following:
 - a. Metal lines for sharp kinks, cracks, bad bends, and dents.
 - b. Flexible lines or hoses for fraying, evidence of leakage, and loose metal fittings or connectors.
 - c. Metal fittings and connectors for thread damage and worn or rounded hex heads.
4. Inspect castings, forgings, and machined metal parts for the following:
 - a. Machined surfaces for nicks, burrs, scoring, grooves, raised metal wear, and other damage.
 - b. Inner and outer surfaces for breaks and cracks.
5. Inspect bearings in accordance with TM 9-214.

END OF TASK**DISASSEMBLY AND ASSEMBLY INSTRUCTIONS**

Follow these general practices when performing disassembly and assembly procedures.

1. Keep major components together whenever possible and practical.
2. Tag hoses, electrical wires, cables, and harnesses to identify them and aid during installation.
3. Keep related parts together for identification purposes.
4. Temporarily install attaching hardware such as screws, bolts, washers, and nuts to prevent loss.
5. Only disassemble to the point of the problem.
6. Ensure that parts are clean, serviceable, and lubricated before assembly.

END OF TASK

LUBRICATION INSTRUCTIONS

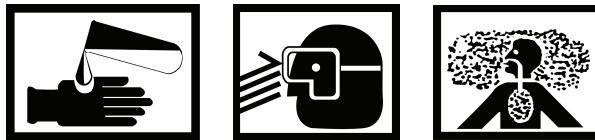
For detailed illustrated instructions on proper lubrication, refer to (WP 0093). The following are some general practices to use:

1. Always use the correct lubricant.
2. Keep lubricants clean.
3. Clean all fittings prior to lubrication.
4. Lubricate clean, disassembled, and new parts to prevent rust.

END OF TASK

APPLICATION OF ADHESIVES

WARNING



Ensure proper protective clothing is worn when handling solvents, sealants, and cleaning compounds. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. **General.** Adhesives are recommended in some tasks to ensure and strengthen seals. The following information describes their correct use and application.
2. **Silicone Sealant.** Silicone sealant is used to seal parts against moisture. Use the following instructions when applying:
 - a. Any time a seal is broken, the part must be thoroughly cleaned to remove any remaining sealing compound and dirt.
 - b. Thoroughly clean surface before applying sealant.
 - c. When applying sealant, ensure that the area is completely covered. Press sealant into and around parts as necessary.
 - d. Silicone sealant will set in 15 to 30 minutes depending on temperature and humidity.
3. **Loctite Adhesive.** Loctite adhesive provides a seal against leakage and a resistance to loosening when used in the assembly of threaded, slip-fitted, or press-fitted parts. Always use grade of Loctite adhesive specified and never use when other retaining means are provided, such as lockwires, lockwashers, lockplates, and fasteners. DO NOT use Loctite adhesive on brass fittings, plugs, or items that need frequent servicing, or when operating temperature exceeds 300°F (149°C). Apply Loctite adhesive as follows:
 - a. Before application, clean threads to remove oil, grease, and metal chips.
 - b. Apply Loctite adhesive to second and third threads. DO NOT apply to first thread to ensure system cleanliness.
 - c. Loctite adhesive will dry in 6 to 24 hours at ambient temperature.
 - d. Adjustments for elbows, gages, and valves can be made up to 24 hours after application without affecting the seal.

END OF TASK

STANDARD TOOL REQUIREMENTS

1. The following are general practices regarding the use of tools:
 - a. Always use the proper tool kit and tools for the procedure being performed.
 - b. Ensure that tools are clean and lubricated to reduce wear and to prevent rust.
 - c. Keep track of tools. Do not be careless with them.
 - d. Return tools to tool box when finished with repair or maintenance.
 - e. Return tool boxes and tools to tool storage when not in use.
 - f. Inventory tools before and after each use.
2. Some maintenance tasks may require special or fabricated tools. The "Initial Setup" of the procedure will specify any special or fabricated tools needed to perform that procedure. Use these special tools only for the maintenance procedures for which they are designed or called out. If you are unfamiliar with a required tool, see your supervisor.

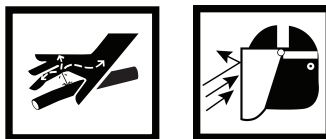
END OF TASK**TAGGING WIRES AND HOSES**

1. Use marker tags to identify all electrical wires, lines, and any other parts which may be hard to identify or replace later. Fasten tags to parts during removal by wrapping wire fasteners around or through parts and twisting ends together. Position tags to be out of the way during cleaning, inspection, and repair. Mark tags with a pencil, pen, or marker.
2. Whenever possible, identify electrical wires with the number of the terminal or wire to which it connects. If no markings can be found, tag both wires, or wire and terminal, and use the same identifying mark for both. If you cannot tag a wire because it must fit through a small hole or you cannot reach it, write down the description of the wire and the point to which it connects or draw a simple diagram on paper. Be sure to write down enough information so you will be able to properly connect the wires during assembly. If you need to identify a loose wire, look for identifying numbers near the end of the wire, stamped on a permanent metal tag. Compare this number to wire numbers on the appropriate electrical schematic.
3. Identify lines when you are taking off more than one line at the same time. Mark tags with points to which lines and hoses must be connected. If it is not obvious which end of a line goes where, tag each end of the line.
4. Identify and tag other parts as required by name and installed location.

END OF TASK

LINES AND PORTS

WARNING



- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

To keep dirt from contaminating fluid systems when removing and installing lines, perform the following steps:

- a. Clean fittings and surrounding area before disconnecting lines.
- b. Cover, cap, plug, or tape lines and ports after disconnecting lines. When these are not available, use hand-carved wooden plugs, clean tags, duct tape, or other similar materials to prevent dirt from entering system.
- c. Ensure that new and used parts are clean before installing.
- d. Wait to remove covers, caps, plugs, or tape from lines and ports until just before installing new lines.

END OF TASK

ANTISEIZING TAPE

CAUTION

Only apply antiseizing tape to pipe threads on male fittings of the air system. Failure to comply may result in damage to, or destruction of, equipment or mission.

When connecting air lines and fittings without compression sleeves or packings, antiseizing tape may be used to keep connections from leaking. Use as follows:

1. Ensure that threads are clean and dry.
2. Start antiseizing tape one or two threads from small or leading edge of fitting, joining tape together with an overlap of about 0.125 in. (3.18 mm) for fittings with fine threads. For fittings with coarse threads, tape should be wrapped around threads two or three times.
3. Tightly wrap antiseizing tape in same direction as you would tighten a nut. Tape must be pressed into threads without cutting or ripping.

CAUTION

DO NOT exceed specified torque or use power tools to tighten fittings taped with antiseizing tape. Over-tightening could damage fitting threads and cause connection to leak. Failure to comply may result in damage to, or destruction of, equipment or mission.

4. Using hand tools, tighten fittings to specified torque.

END OF TASK

TUBES AND COMPRESSION FITTINGS

1. **Standard Compression Fittings:** Tubes with inverted nuts and compression fittings are designed for one-time assembly. Once assembled or disassembled, they must be replaced as a unit if any parts are found defective. Used parts may not seal properly when used with new ones. Used tube assemblies in good condition can be reinstalled to their original location without leaking. Assemble new tubes, compression sleeves, and inverted nuts as follows:
 - a. Slide inverted nut (Figure 1, Item 2) on end of tube (Figure 1, Item 3).
 - b. Slide compression sleeve (Figure 1, Item 1) on end of tube (Figure 1, Item 3).
 - c. Repeat Steps a and b for other end of tube as required.
 - d. Insert end of tube as far as it will go in compression fitting to which tube is being installed.
 - e. Twist inverted nut (Figure 1, Item 2) in compression fitting and tighten inverted nut against compression sleeve (Figure 1, Item 1) with open-end wrench. Compression sleeve will clamp down around tube and conform to internal surface of compression fitting and inverted nut.
 - f. Repeat Steps d and e for other end of tube as required.

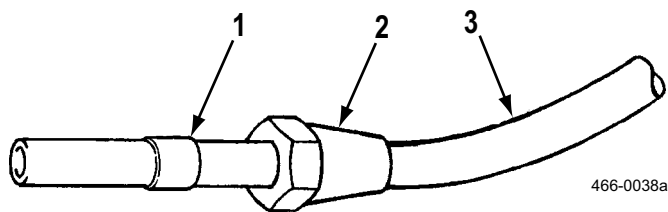


Figure 1. Compression Fitting.

2. **Push-In Fittings:** Fittings are used for some of the connections at the spring brake control valve. A push-on collet collar grips or releases the tubing as required to provide a quick disconnect/ connect feature of the air line tubing to the fitting, without the use of tools. To separate tubing from fitting, depress the fitting collar until it bottoms against the fitting and withdraw the tubing. To assemble tubing onto fitting, insert the tubing into the fitting until it bottoms, pushing on tubing twice to verify that tubing is inserted past collet and O-ring. Pull fitting collar out to lock tubing and pull on tubing to verify it is locked in place. Tubing cut for insertion into the fitting must be squarely cut. The maximum allowable angle is 15 degrees. Use of a tube cutting tool is recommended.

END OF TASK

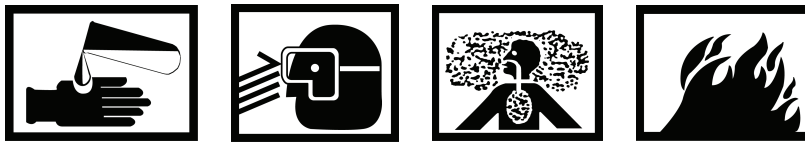
FLUID DISPOSAL**WARNING**

When servicing this vehicle, performing maintenance, or disposing of materials such as lubricants or Chemical Agent Resistant Coating (CARC) paint, consult your Unit/Local Hazardous Waste Disposal Center or safety office for local regulatory guidance. If further information is needed, please contact the Army Environmental Hotline at 1-800-872-3845. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

END OF TASK**SERVICE REPLACEMENT PARTS AND KITS**

Many service replacement parts are available in standard sizes as well as various undersized and/or oversized sizes. Service kits for reconditioning certain parts and service sets, which include all parts necessary to complete a procedure, are also available.

END OF TASK

WELDING**WARNING**

- The following must be done before grinding, cutting, or welding any equipment that has been Chemical Agent Resistant Coating (CARC)-coated:
 - Wear protective equipment (e.g., eye protection, gloves, apron) when grinding or sanding CARC-coated equipment. DO NOT leave any skin exposed.
 - Use high-efficiency air purifying respirators when grinding or sanding CARC-coated before welding.
 - Never weld or cut CARC-coated equipment; grind or sand off CARC paint completely before welding.
 - Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals. Protective clothing, eye protection, and respirator must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby; and requirements of TC 9-237 strictly followed. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- CARC paint contains Hexamethylene Diisocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin. A burning sensation in throat, and nose and watering of the eyes. In extreme concentrations HDI can cause coughing, shortness of breath, pain during respiration, increased sputum production, and chest tightness. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

If welding semitrailer, it must be uncoupled from towing vehicle. Failure to follow this caution may damage electronic components. Failure to comply may result in damage to, or destruction of, equipment or mission.

Refer to TC 9-237, Operator's Circular Welding Theory and Application, for instructions on welding components.

END OF TASK**ELECTRICAL REPAIR**

Specific electrical system maintenance tasks are covered later in this manual.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
AXLE ALIGNMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Wrench, Torque (WP 0144, Table 1, Item 19)

Equipment Condition (cont.)

Wheel and tire assemblies removed (WP 0038)
Suspension free and loose with no binding
All weight taken off suspension components
Suitable supports installed on both ends of axle

Personnel Required

Two

Equipment Condition

Brakes caged (WP 0005)

WARNING

Semitrailer must be supported at front and rear to prevent shifting. All weight must be taken off the suspension components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CHECKING AXLE ALIGNMENT**NOTE**

For proper tracking and reduced tire wear, the axles must be properly aligned in relation to the kingpin. Prior to alignment, make certain the suspension is free and loose and the axles have not been placed in a binding condition due to sharp turns or unusual maneuvers. Axles can be relaxed (neutralized) by simply moving the semitrailer back and forth in a straight line or raising the axle(s) off the ground to allow them to straighten out. Alignment can be accomplished with an optical device designed for this purpose, or it can be accomplished manually by use of a steel tape measure.

1. Measure distance "D" (Figure 1) from kingpin centerpoint (Figure 1, Item 2) to centerline of axle spindle (Figure 1, Item 1).
2. Measure distance "D1" (Figure 1) from kingpin centerpoint (Figure 1, Item 2) to centerline of the axle spindle (Figure 1, Item 1) for opposite side of axle.
3. Compare dimensions taken in Steps 1 and 2. If dimensions "D" and "D1" are equal, axle is aligned. If dimensions are not equal, axle must be aligned. Subtract difference between dimension "D" and "D1" and divide difference in half. This is amount of change required to bring axle into square with kingpin.

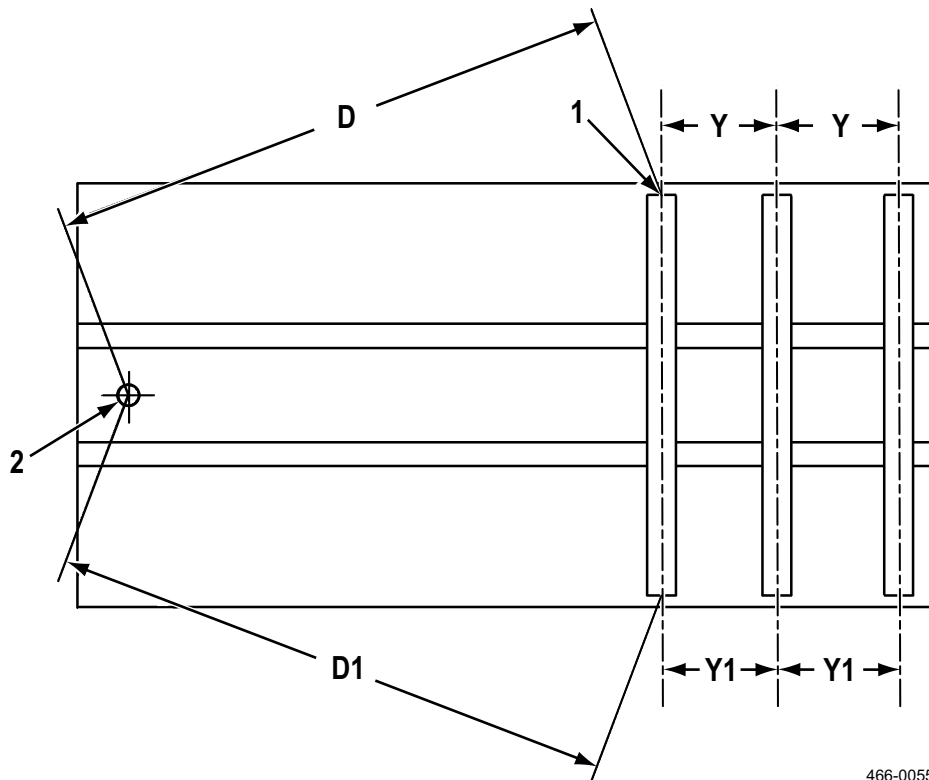


Figure 1. Axle Alignment.

END OF TASK

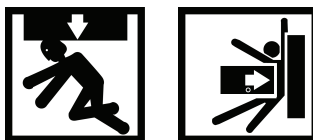
ALIGNING AXLES**NOTE**

- On Semitrailer 1100 Series tri-axle suspension system only one of lower torque rods for each axle is adjustable for axle alignment procedures. The other three torque rods for each axle are fixed. Only one of the adjustable torque rods is adjusted at a time
 - If the pinch bolt fasteners are badly corroded or damaged, remove and discard the bolts and replace with new bolts.
1. Starting with front axle, loosen torque rod eye pinch bolts on both ends of adjustable torque rod.

NOTE

If difficulty is encountered rotating the torque rod tube, the threaded ends may have become corroded. Apply a quality penetrating oil to the threads. If difficulty is still encountered, wedges may be driven between the eye lugs to release the clamping effect. A chain type wrench is suggested when rotating the torque rod.

2. Attach a pipe wrench to torque rod tube and rotate tube to either lengthen or shorten torque rod as required until dimensions "D" and "D1" are equal within a tolerance of 0.166 in. (4.233 mm).
3. Visually check rubber bushings to be sure that they are not distorted and are evenly distributed around torque rod eye. If distortion is seen, neutralize (relax) bushing as previously described and recheck dimension.

WARNING

Failure to torque fasteners to the specified torque may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

4. Tighten and torque, torque rod eye pinch bolts. If bolts were discarded, replace with new fasteners. Torque 0.5 in. UNC bolts to 65 lb ft (88.1 N·m) and 0.625 in. UNC bolts to 135 lb ft (183 N·m).
5. Check distances "Y" and "Y1" between aligned axle and next rearward axle. If dimensions "Y" and "Y1" are equal, no alignment is necessary. If dimensions "Y" and "Y1" are not equal, repeat Steps 1 through 4 to align next axle.
6. Repeat Step 5 for rear axle.

END OF TASK**FOLLOW ON TASK**

Install wheel and tire assemblies (WP 0038).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE FRONT AND MIDDLE AXLE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Jack, Dolly Type (WP 0144, Table 1, Item 10)
Jack Stand (WP 0144, Table 1, Item 11)

References

WP 0052

Equipment Condition

Wheel and tire assemblies removed (WP 0038)
Brake shoes removed (WP 0057)
Slack adjusters removed (WP 0059)
Air brake chambers removed (WP 0069)
Brake camshafts removed (WP 0058)
ABS sensor removed (WP 0062)

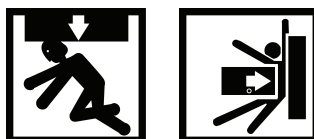
Materials/Parts

Bolt Qty: (16) (WP 0104, Figure 7, Item 4)
Nut, Self-Locking
Qty: (16) (WP 0104, Figure 7, Item 1)

Personnel Required

Two

WARNING



- Suitable lifting device and suitable support need to be rated at no less than 20,000 lb (9,071 kg). Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer must be supported at front and rear to prevent shifting. All weight must be taken off the suspension components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL**NOTE**

Front and middle axles are removed the same way. This procedure covers the front axle.
Repeat procedure for middle axle.

1. Using a suitable lifting device (Figure 1, Item 2), raise end of tandem beam (Figure 1, Item 3) supporting axle being removed approximately 3 in. (76.2 mm).

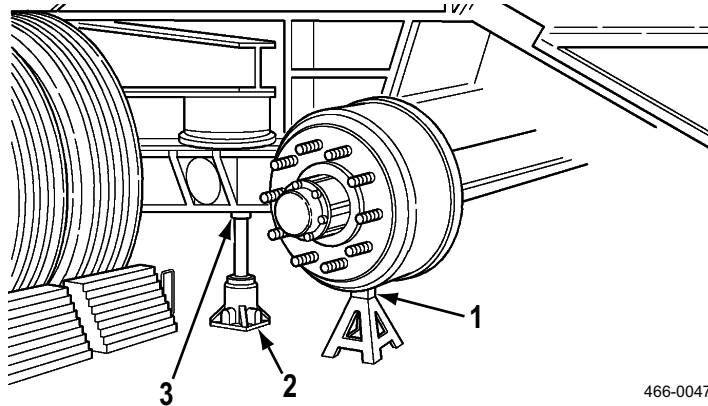
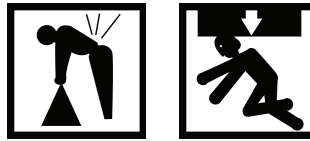


Figure 1. Front and Middle Axle Removal.

2. Place suitable support (Figure 1, Item 1) under tandem beam and lower beam to rest on support. Repeat Step 1 for tandem beam on opposite side, but leave support in position as a secondary support.
3. Position a dolly jack under balance point of front axle and raise dolly until dolly comes in contact with axle.
4. Remove 16 bolts (Figure 2, Item 2) and self-locking nuts (Figure 2, Item 7) securing both ends of four upper and lower torque rods securing axle. Discard bolts (Figure 2, Item 2) and self-locking nuts (Figure 2, Item 7).

NOTE

- For torque rods attached to the axle tower, pry off the metal plug caps from the towers to gain access to the torque rod self-locking bushing nuts.
 - Mark one end of the torque rod tube relative to installation location and orientation prior to removal of the torque rods to avoid possible reversing of torque rod during reinstallation.
5. Remove spigot caps (Figure 2, Item 3) and torque rods (Figure 2, Item 4).
 6. Using dolly jack, withdraw torque rod saddle axle brackets (Figure 2, Item 5) and axle (Figure 2, Item 1) from tandem beam (Figure 2, Item 6) and lower axle (Figure 2, Item 1) while an assistant balances axle.

REMOVAL - Continued**WARNING**

The axle weight is approximately 275 lb (124.73 kg). Use extreme caution when handling the axle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

7. Pull axle out from under semitrailer and place on dunnage.

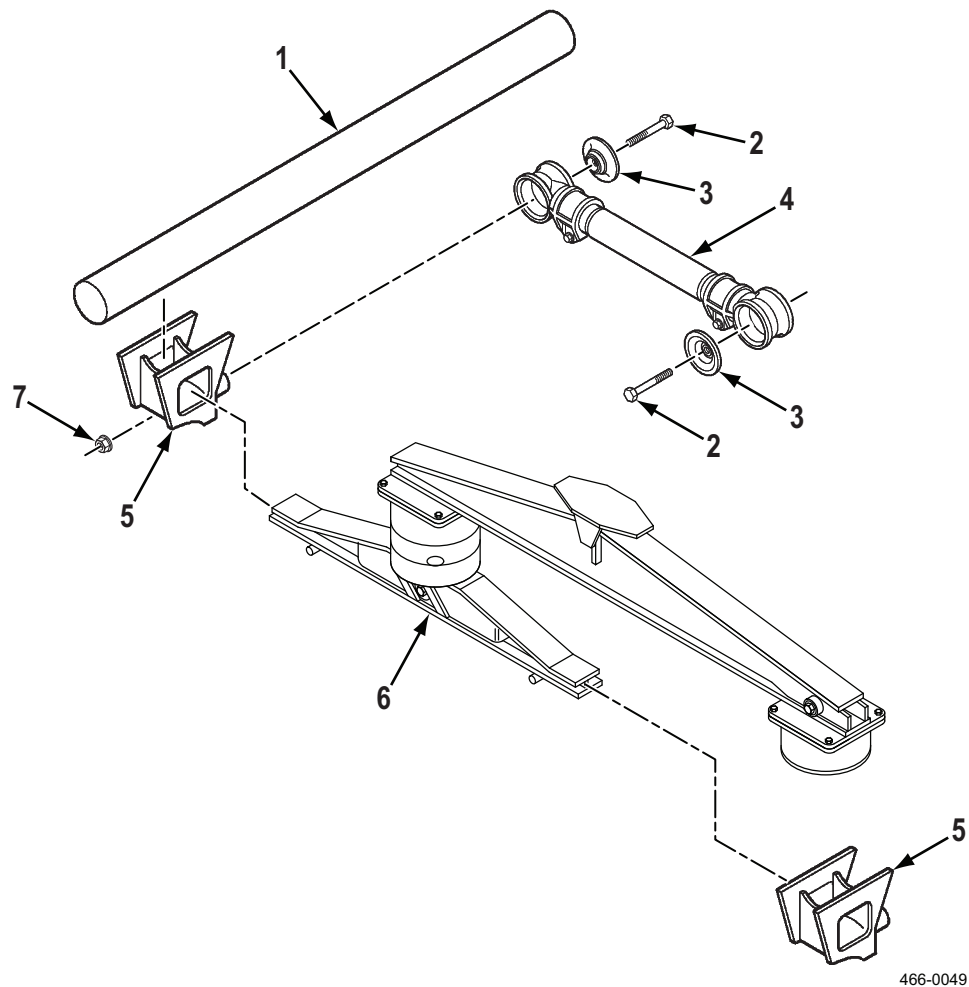
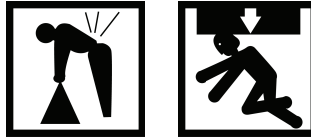


Figure 2. Torque Rod and Axle Removal.

END OF TASK

INSPECTION

Inspect torque rods and bushings (WP 0052) and replace torque rods and bushings as needed.

END OF TASK**INSTALLATION****WARNING**

The axle weight is approximately 275 lb (124.73 kg). Use extreme caution when handling the axle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Place axle (Figure 3, Item 1) on dolly jack and position on tandem beam (Figure 3, Item 6).
2. Connect torque rods (Figure 3, Item 4) to spigots on torque rod saddle axle brackets (Figure 3, Item 5) and semitrailer suspension towers and hanger frames.

WARNING

Use only approved bolts and nuts for the torque rod to joint fasteners. Do not re-use or use other fasteners. Doing so may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

3. Secure torque rods (Figure 3, Item 4) in position with spigot caps (Figure 3, Item 3), 16 new bolts (Figure 3, Item 2), and 16 new self-locking nuts (Figure 3, Item 7).
4. If previously removed, replace tower metal plug caps.

NOTE

Lug nuts should be rechecked for proper tightness after the first 50 mi. (80.5 km) to 100 mi. (160.9 km) of operation after wheel reinstallation.

5. Remove suitable lifting device and support from tandem beams (Figure 3, Item 6).

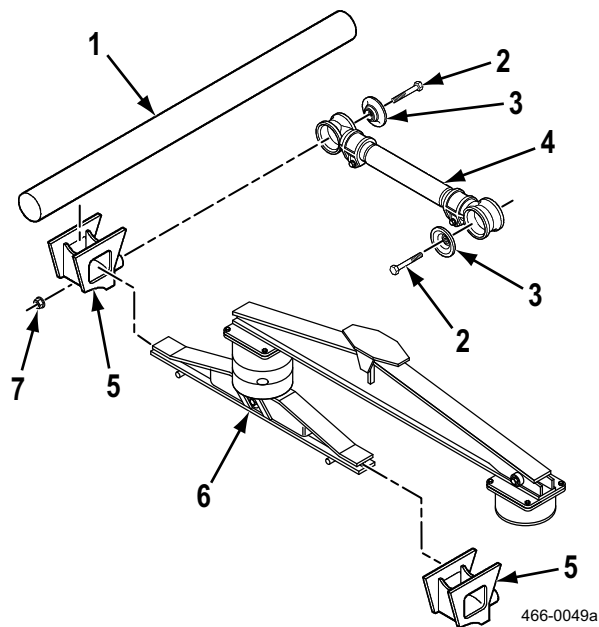
INSTALLATION - Continued

Figure 3. Torque Rod and Axle Installation.

END OF TASK**FOLLOW ON TASK**

1. Install brake camshafts (WP 0058).
2. Install air brake chambers (WP 0069).
3. Install slack adjusters (WP 0059).
4. Install brake shoes (WP 0057).
5. Align axle(s) as required (WP 0052).
6. Install ABS sensor (WP 0062).
7. Install wheel and tire assembly (WP 0038).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
REAR AXLE REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Jack, Dolly Type (WP 0144, Table 1, Item 10)
Jack Stand (WP 0144, Table 1, Item 11)
Wrench, Torque (WP 0144, Table 1, Item 19)

References

WP 0052

Equipment Condition

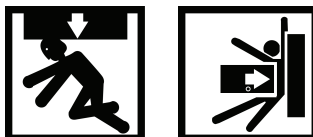
Wheel and tire assemblies removed (WP 0038)
ABS sensor removed (WP 0062)
Brake shoes removed (WP 0057)
Slack adjusters removed (WP 0059)
Air brake chambers removed (WP 0069)
Brake camshafts removed (WP 0058)

Materials/Parts

Bolt Qty: (8) (WP 0104, Figure 7, Item 5)
Bolt Qty: (2) (WP 0104, Figure 7, Item 10)
Nut, Self-Locking
Qty: (10) (WP 0104, Figure 7, Item 1)

Personnel Required

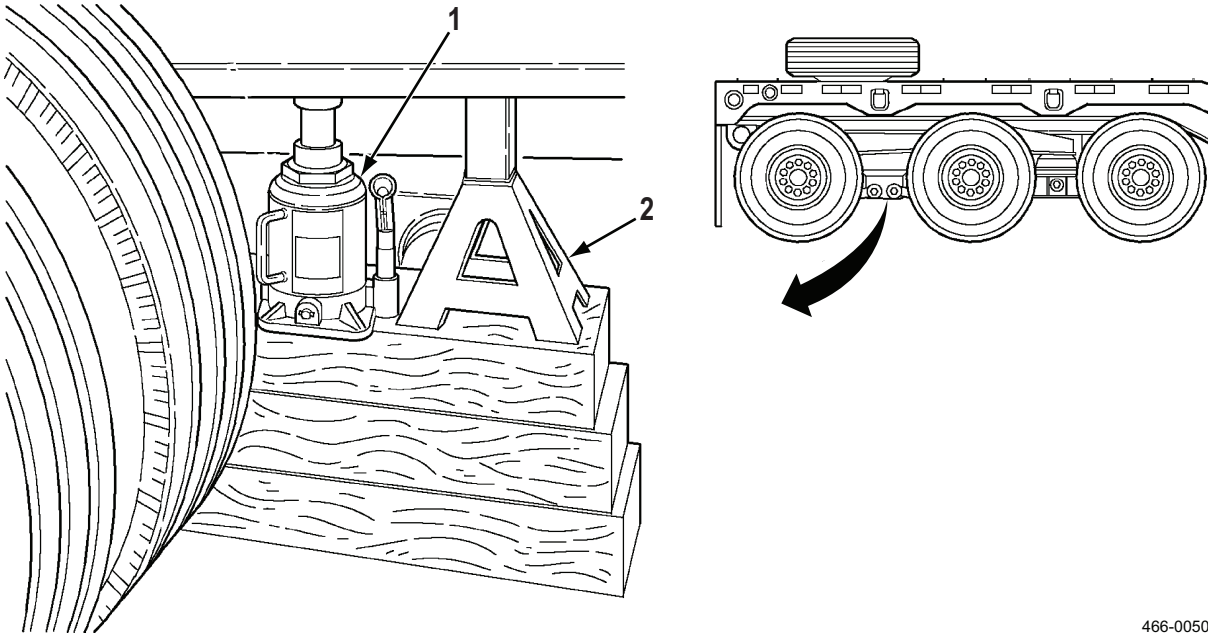
Two

WARNING

- Suitable lifting device and suitable support need to be rated at no less than 20,000 lb (9,071 kg). Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer must be supported at front and rear to prevent shifting. All weight must be taken off the suspension components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Using a suitable lifting device (Figure 1, Item 1) appropriately raised to contact equalizing beam, lift equalizing beam approximately 3 in. (76.2 mm) and place a suitable support (Figure 1, Item 2) under equalizing beam. Lower beam to rest on suitable support. Lower beam to rest on suitable support.
2. Repeat Step 1 for opposite equalizing beam but leave the suitable support in position as a secondary support.



466-0050

Figure 1. Raise and Support Equalizing Beam.

3. Position a suitable lifting device under balance point of axle and raise until suitable lifting device comes in contact with axle.

REMOVAL - Continued**NOTE**

- For torque rods attached to the axle tower, pry off the metal plug caps from the towers to gain access to the torque rod self-locking bushing nuts.
 - Mark one end of the torque rod tube relative to installation location and orientation prior to removal of the torque rods to avoid possible reversing of torque rod during reinstallation.
4. Remove eight bolts (Figure 2, Item 2) and self-locking nuts (Figure 2, Item 5) securing both ends of four upper and lower torque rods securing axle. Discard bolts (Figure 2, Item 2) and self-locking nuts (Figure 2, Item 5).
 5. Remove spigot caps (Figure 2, Item 1) and torque rods (Figure 2, Item 3) from spigot (Figure 2, Item 4).

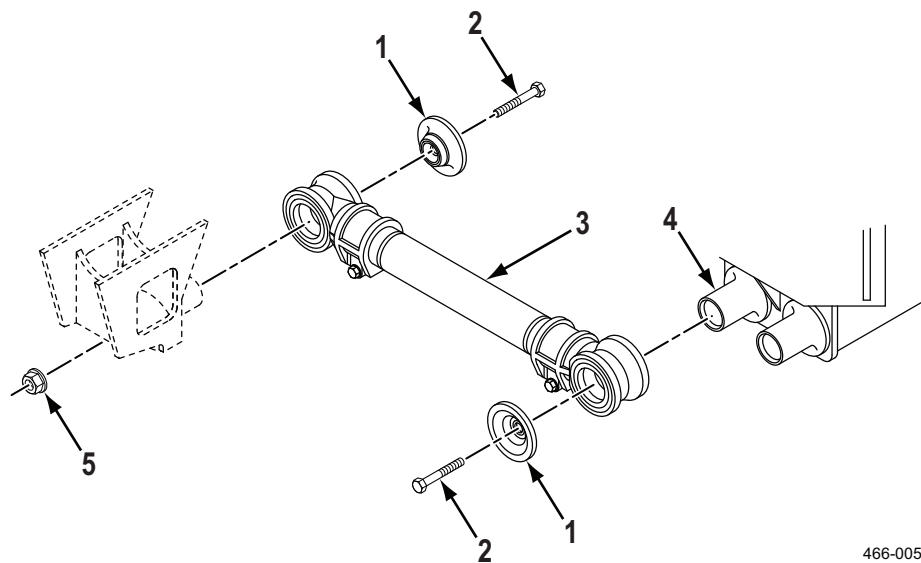


Figure 2. Torque Rod Removal.

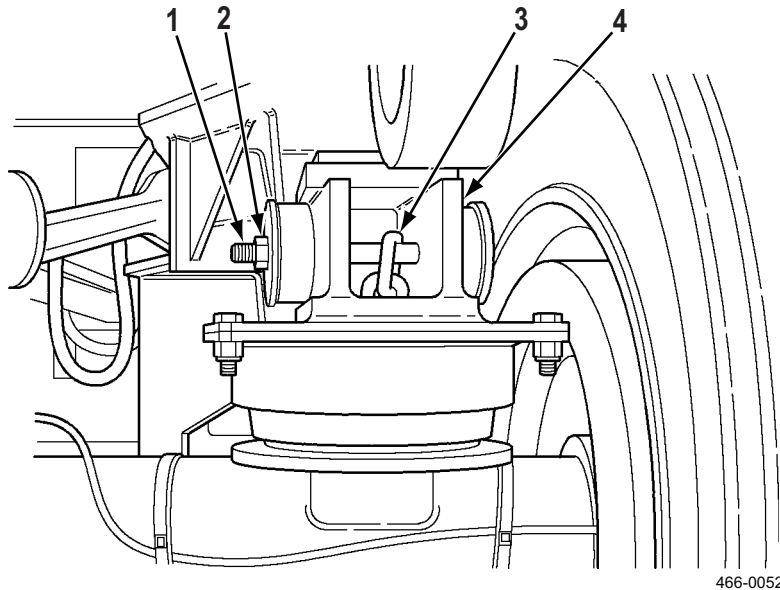
REMOVAL - Continued

6. Remove two bolts (Figure 3, Item 1) and self-locking nuts (Figure 3, Item 2) securing rebound chains (Figure 3, Item 3) to right and left equalizing beams (Figure 3, Item 4). Discard bolts (Figure 3, Item 1) and self-locking nuts (Figure 3, Item 2).

WARNING

The axle weight is approximately 275 lb (124.73 kg). Use extreme caution when handling the axle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

7. Using suitable lifting device, lower axle while an assistant balances axle, pull axle out from under semitrailer, and place it on dunnage.



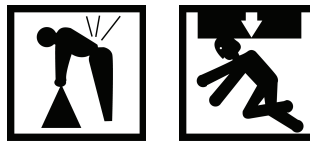
466-0052

Figure 3. Rebound Chain.

END OF TASK

INSTALLATION

WARNING



The axle weight is approximately 275 lb (124.73 kg). Use extreme caution when handling the axle. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

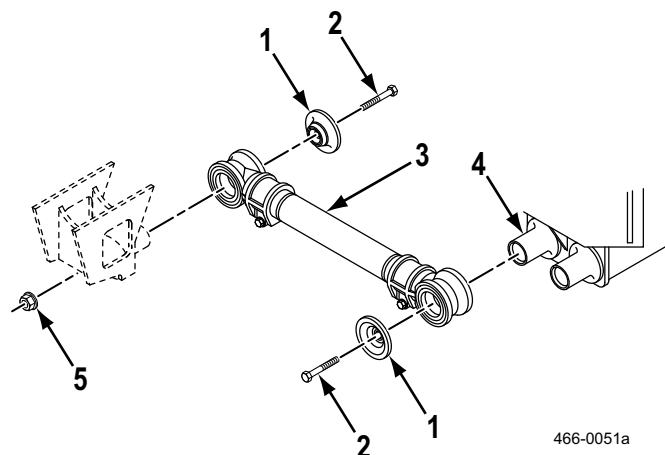
1. Place axle on suitable lifting device and position under semitrailer aligned with rear rubber springs.

WARNING



Use only approved bolts and nuts for the torque rod to joint fasteners. Do not re-use or use other fasteners. Doing so may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Raise axle and connect rebound chains (Figure 3, Item 3) to equalizing beams (Figure 3, Item 4) with two bolts (Figure 3, Item 1) and new self-locking nuts (Figure 3, Item 2). Torque self-locking nuts to 175 lb ft (237 N·m).
3. Connect torque rods (Figure 4, Item 3) to spigots (Figure 4, Item 4) on torque rod axle brackets, semitrailer suspension towers, and hanger frames.
4. If previously removed, replace tower metal plug caps.
5. Secure torque rods (Figure 4, Item 3) in position with spigot caps (Figure 4, Item 1), eight bolts (Figure 4, Item 2), and new self-locking nuts (Figure 4, Item 5).



466-0051a

Figure 4. Torque Rod Installation.

INSTALLATION - Continued**NOTE**

Lug nuts should be rechecked for proper tightness after the first 50 mi. (80.5 km) to 100 mi. (160.9 km) of operation after wheel reinstallation.

6. Lower semitrailer and remove suitable lifting device and suitable support from equalizing beams.

END OF TASK**FOLLOW ON TASK**

1. Install brake camshafts (WP 0058).
2. Install air brake chambers (WP 0069).
3. Install slack adjusters (WP 0059).
4. Install brake shoes (WP 0057).
5. Align axles as required (WP 0052).
6. Install ABS sensor (WP 0062).
7. Install wheel and tire assemblies (WP 0038).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

TORQUE ROD BUSHING MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Wrench, Torque (WP 0144, Table 1, Item 19)

Materials/Parts (cont.)

Lubricant, Rubber (WP 0143, Table 1, Item 16)
Nut, Self-Locking
Qty: (2) (WP 0104, Figure 7, Item 1)

Materials/Parts

Bolt Qty: (2) (WP 0104, Figure 7, Item 5)
Brush, Wire (WP 0143, Table 1, Item 6)
Bushing Qty: (2) (WP 0104, Figure 7, Item 2)

Equipment Condition

Torque rod ends cleaned (WP 0051)
Brakes caged (WP 0005)
Front wheels chocked (WP 0005)

WARNING



- Front tires must be chocked and brakes released or caged. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Semitrailer must be supported at front and rear to prevent shifting. All weight must be taken off the suspension components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

- Replacement of torque rod bushings may be accomplished without the use of a press or special tools. Hand check torque rods for free play at the ends to determine the need for replacement. Do not use a pry bar or lever to check for free play. Failure to comply may result in damage to, or destruction of, equipment or mission.
- Work on only one torque rod at a time in order to avoid possible altering of axle alignment. In addition, by completely removing and refitting only one torque rod at a time, the chance of torque rod mix-up (which could lead to re-alignment of the suspension or loss of axle planing angle and consequent axle damage) will be eliminated. Prior to removal, mark one end of torque rod relative to installation location and orientation to avoid possibly reversing torque rod during reinstallation. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

There are 12 torque rods on semitrailer, this procedure replaces one torque rod. All other torque rods are replaced the same.

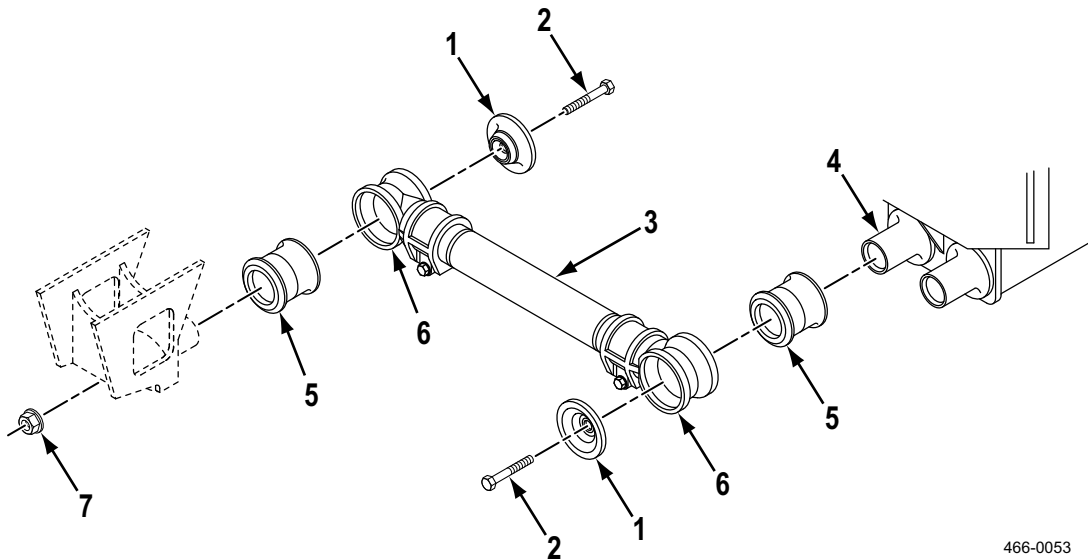
REMOVAL

1. Remove two bolts (Figure 1, Item 2), self-locking nuts (Figure 1, Item 7), and spigot caps (Figure 1, Item 1). Discard bolts (Figure 1, Item 2) and self-locking nuts (Figure 1, Item 7).

NOTE

For torque rods attached to the axle towers, pry off the metal plug caps from the towers to gain access to the torque rod self-locking bushing nuts.

2. Remove torque rod (Figure 1, Item 3) from spigot (Figure 1, Item 4) by prying at each end of rod until it separates from spigot.
3. Support torque rod end with bushing end facing up. Remove bushing (Figure 1, Item 5). Discard bushing (Figure 1, Item 5).



466-0053

Figure 1. Torque Rod Removal.

END OF TASK**CLEANING****NOTE**

Particular attention should be paid to cleaning the inside taper of the spigot.

Clean all rust, scale, and rubber accumulations from torque rod eyes (Figure 1, Item 6), spigot caps (Figure 1, Item 1), and spigots (Figure 1, Item 4).

END OF TASK

INSPECTION**NOTE**

- If torque rod eyes or spigot caps show visible cracks, they must be discarded and replaced. If spigots show visible cracks, inform your Supervisor.
- Oversize replacement bushings are available.
- The standard bushing should be used until the spigot diameter is below 2.530 in. (6.426 cm). To determine wear, take two measurements 90 degrees apart (i.e., "A-A" and "B-B") as shown in Figure 2, or measure over visible wear area. The smaller of the two dimensions is to be taken as the wear limit (see Table 1 for values). If spigot is below the minimum dimension shown in Table 1, inform your Supervisor.

Inspect torque rod eyes (Figure 1, Item 6), spigots (Figure 1, Item 4), and spigot caps (Figure 1, Item 1) for visible cracks and wear.

Table 1. Spigot Wear Limits.

PART NO.	SPIGOT	STD. BUSHING WEAR LIMIT	WEAR LIMIT FOR OVERSIZE BUSHING
800021	Spigot #2	2.530 in. (6.426 cm) Min. (800010 Bushing)	2.530 in. (6.426 cm) Max. 2.500 in. (6.35 cm) Min. (800009* Bushing)
*Oversized Service Bushing			

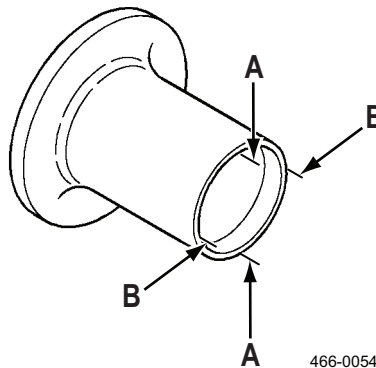


Figure 2. Joint Assembly.

END OF TASK

INSTALLATION**CAUTION**

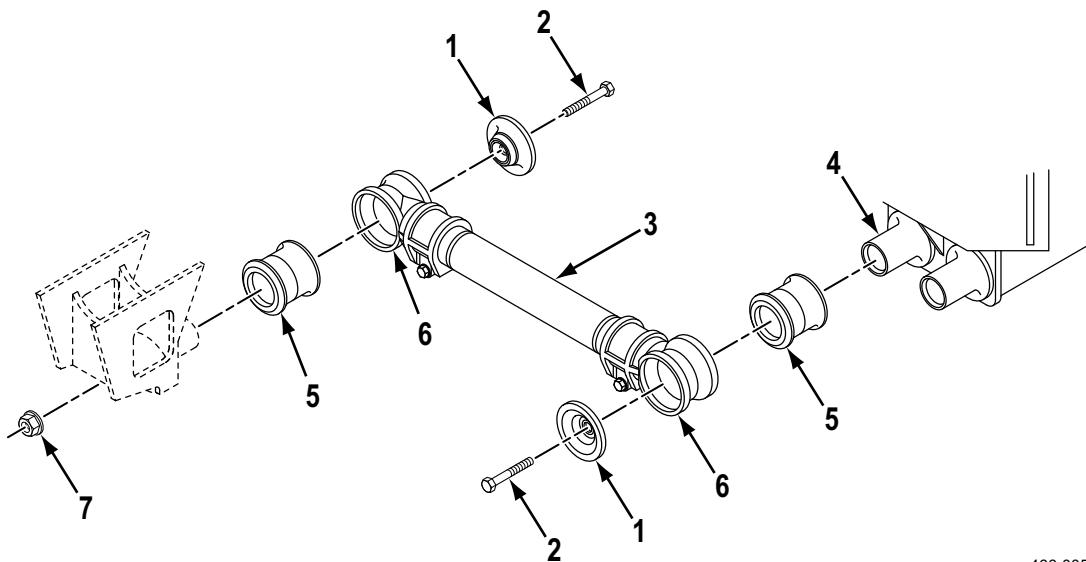
Never use any mineral-based oils, greases, jellies, or solvent soaps as a lubricant. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Lubricate inside diameter of torque rod eye (Figure 3, Item 6) and outside diameter of replacement rubber bushing (Figure 3, Item 5) with a quality rubber lubricant.
2. Support end of torque rod (Figure 3, Item 3) with torque rod eye (Figure 3, Item 6) facing up and evenly place new rubber bushing (Figure 3, Item 5) onto torque rod eye so that outside tapered end of bushing just enters eye. Using a soft-faced tool, drive bushing (Figure 3, Item 5) into torque rod eye (Figure 3, Item 6). Bushing should be evenly positioned front and back within torque rod eye (Figure 3, Item 6).
3. Repeat Steps 1 and 2 for second bushing.
4. Lubricate spigot ends and inside diameter of bushing and install torque rod (Figure 3, Item 3) as originally installed onto spigots (Figure 3, Item 4).

WARNING

Use only approved bolts and nuts for the torque rod to joint fasteners. Do not re-use or use other fasteners. Doing so may lead to fastener failure and consequent loss of vehicle control. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

5. Secure torque rod (Figure 3, Item 3) in position with spigot caps (Figure 3, Item 1) and two new bolts (Figure 3, Item 2) and new self-locking nuts (Figure 3, Item 7). Torque self-locking nuts to 135 lb ft (183 N·m).



466-0053a

Figure 3. Torque Rod Installation.

INSTALLATION - Continued

6. If previously removed, replace tower metal plug caps (not shown).
7. Repeat Steps 4 through 6 for opposite torque rod.

END OF TASK**FOLLOW ON TASK**

Uncage brakes (WP 0005).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
BRAKE SYSTEM MAINTENANCE GENERAL INSTRUCTIONS**

INITIAL SETUP:

Not Applicable

GENERAL INSTRUCTIONS

WARNING



The air brake system is operated with less than 100 psi (690 kPa). Personnel must take precautions to maintain adequate air pressure so brakes will function properly. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. The following work packages cover procedures for testing, removal, and installation of braking system components. These also cover cleaning, inspection, and repair of air lines.
2. The service brakes are straight air anti-lock type with automatic break-away protection. When the semitrailer brake system is properly connected to the service brake system of the towing vehicle, the towing vehicle brake pedal operates the brakes on both vehicles.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
BRAKE SHOE MAINTENANCE**

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

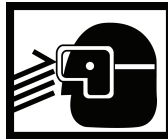
Equipment Condition

Hub and drum assembly removed (WP 0072)

References

WP 0059

WARNING



Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

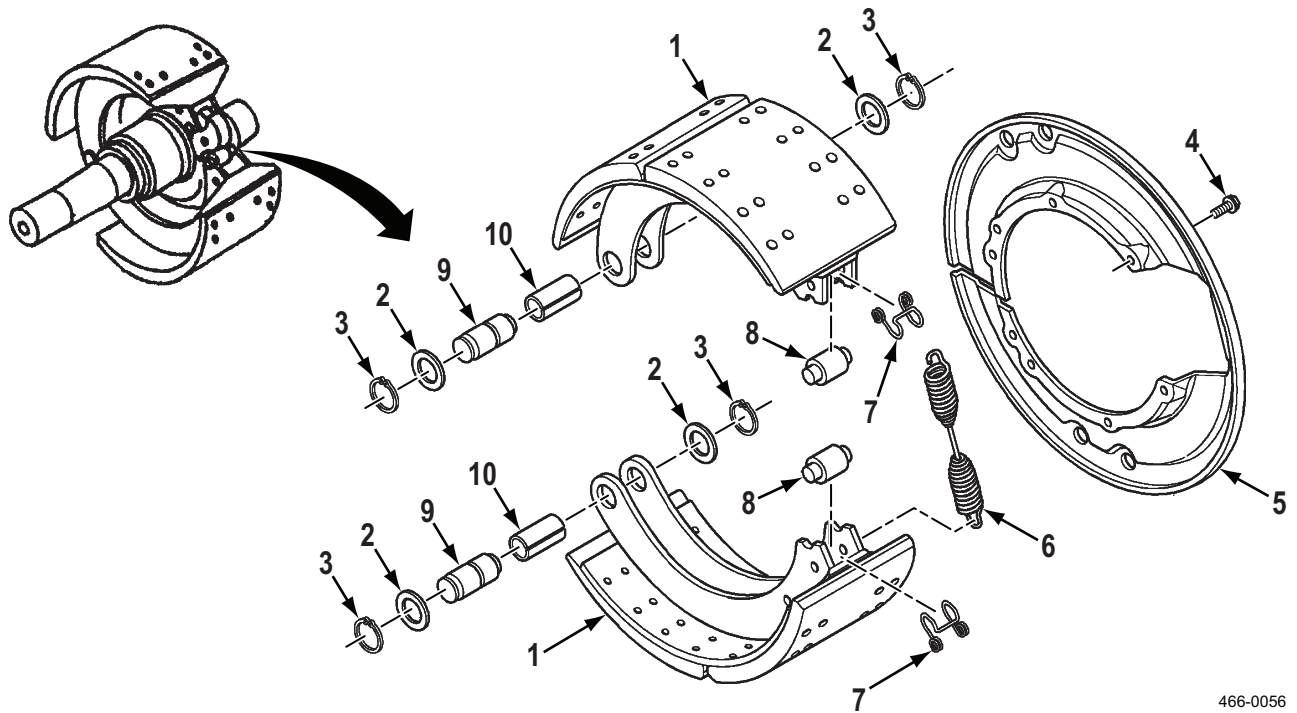
1. Remove four retainer rings (Figure 1, Item 3) and flat washers (Figure 1, Item 2) and withdraw two grooved pins (Figure 1, Item 9) and bushings (Figure 1, Item 10).
2. Remove two sleeved bushing retainer clips (Figure 1, Item 7).
3. Swing back brake shoes (Figure 1, Item 1) and remove brake shoes with return spring (Figure 1, Item 6).
4. Remove two sleeved bushings (Figure 1, Item 8).
5. Remove six screws (Figure 1, Item 4) and dust shield (Figure 1, Item 5).

END OF TASK**INSPECTION**

1. Inspect springs for rust, obvious defects, and excessive wear. Replace defective spring.
2. Inspect brake shoe lining for wear. If braking surface is within 0.1875 in. (0.48 cm) of rivet heads or grease is present, replace brake shoes.

END OF TASK**INSTALLATION**

1. Install dust shield (Figure 1, Item 5) and six screws (Figure 1, Item 4).
2. Assemble return spring (Figure 1, Item 6), two retainer clips (Figure 1, Item 7), and sleeve bushings (Figure 1, Item 8) with brake shoes (Figure 1, Item 1).
3. Position brake shoes (Figure 1, Item 1) on axle spider and complete connection of return spring (Figure 1, Item 6) to both brake shoes.
4. Spread each brake shoe (Figure 1, Item 1) apart and insert two bushings (Figure 1, Item 10), grooved pins (Figure 1, Item 9), four flat washers (Figure 1, Item 2), and retaining rings (Figure 1, Item 3).

INSTALLATION - Continued

466-0056

Figure 1. Brake Shoe Maintenance.

END OF TASK**FOLLOW ON TASK**

1. Install hub and drum assembly (WP 0072).
2. Adjust slack adjuster (WP 0059).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE BRAKE CAMSHAFT MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Rag, Wiping (WP 0143, Table 1, Item 21)
Seal Qty: (2) (WP 0103, Figure 6, Item 3)
Screw, Self-Tapping

Materials/Parts (cont.)

Qty: (4) (WP 0106, Figure 9, Item 5)
Solvent, Cleaning Compound
(WP 0143, Table 1, Item 24)

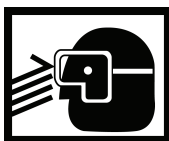
References

WP 0093

Equipment Condition

Brake shoe assembly removed (WP 0057)
Slack adjuster assembly removed (WP 0059)

WARNING



Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

Make sure not to damage machined surface of camshaft when removing retaining ring. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

There are six camshafts on semitrailer, this procedure replaces one camshaft. All other camshafts are replaced the same.

REMOVAL

1. Expand retaining ring (Figure 1, Item 1) and remove from camshaft (Figure 1, Item 3).
2. Remove flat washer (Figure 1, Item 2) from camshaft (Figure 1, Item 3).

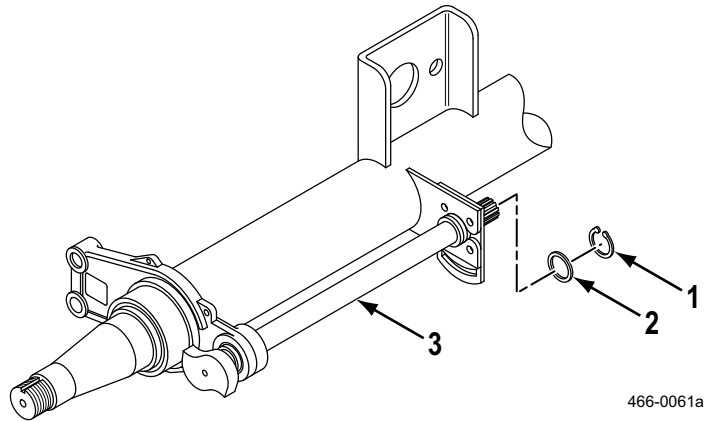


Figure 1. Retaining Ring Removal.

3. Expand retaining ring (Figure 2, Item 7) and remove camshaft (Figure 2 Item 10), flat washer (Figure 2, Item 11), spider seal (Figure 2, Item 9), and flat washer (Figure 2, Item 8) from axle spider (Figure 2, Item 1) and cam bracket (Figure 2, Item 6). Discard spider seal (Figure 2, Item 9).
4. Remove four self-tapping screws (Figure 2, Item 5) and cam bracket (Figure 2, Item 6) from axle bracket (Figure 2, Item 2). Discard self-tapping screws (Figure 2, Item 5).

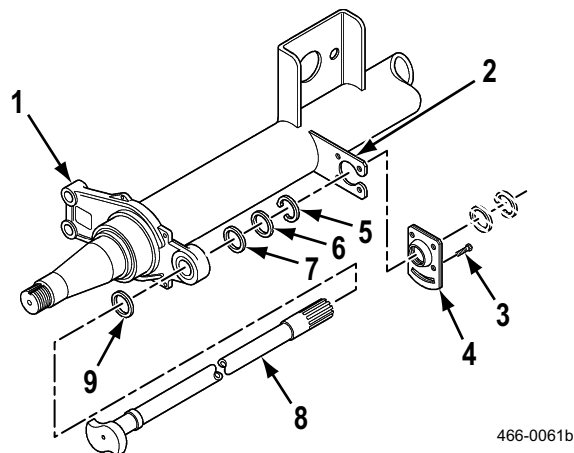


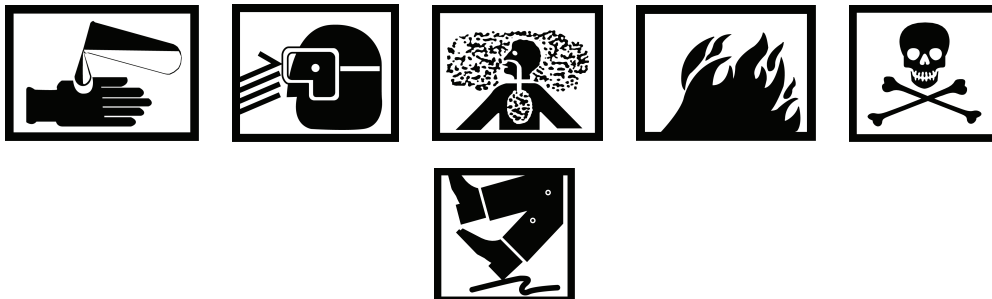
Figure 2. Brake Camshaft Removal.

END OF TASK**CLEANING**

1. Remove dirt and mud with water and brush.

CLEANING - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Remove grease and oil with cleaning compound solvent and a rag. Dry thoroughly.
3. Lubricate (WP 0093).

END OF TASK**INSPECTION**

1. Inspect for damage and condition of splines.
2. Inspect for rust or corrosion.
3. Replace defective parts.

END OF TASK**INSTALLATION**

1. Install cam bracket (Figure 3, Item 6) on axle bracket (Figure 3, Item 2) with four new self-tapping screws (Figure 3, Item 5).
2. Align new spider seal (Figure 3, Item 9), flat washers (Figure 3, Items 8 and 11), and retaining ring (Figure 3, Item 7) and install camshaft (Figure 3, Item 10) in axle spider (Figure 3, Item 1) and cam bracket (Figure 3, Item 6).
3. Install flat washer (Figure 3, Item 4) on camshaft (Figure 3, Item 10).
4. Expand retaining ring (Figure 3, Item 3) and install on camshaft (Figure 3, Item 10).

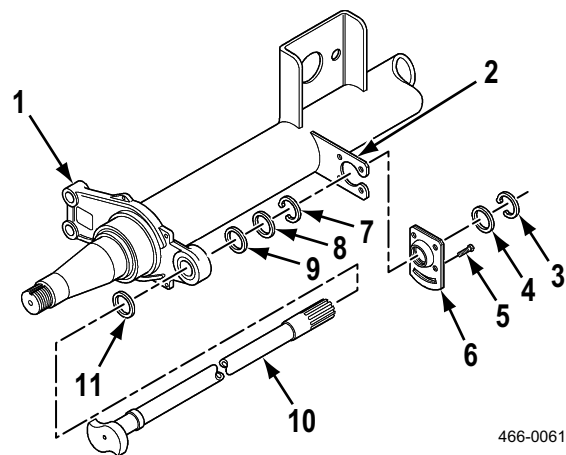
INSTALLATION - Continued

Figure 3. Brake Camshaft Installation.

END OF TASK**FOLLOW ON TASK**

1. Install slack adjuster (WP 0059).
2. Install brake shoe assembly (WP 0057).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE SLACK ADJUSTER MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Clevis Installation Gage
(WP 0144, Table 1, Item 1)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts (cont.)

Qty: (2) (WP 0107, Figure 10, Item 2)
Solvent, Cleaning Compound
(WP 0143, Table 1, Item 24)

References

WP 0093

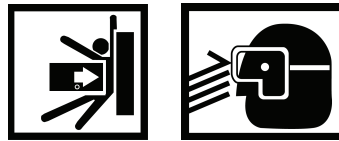
Materials/Parts

Adhesive, Loctite (WP 0143, Table 1, Item 1)
Brush, Scrub (WP 0143, Table 1, Item 5)
Pin, Cotter

Equipment Condition

Wheels chocked (WP 0005)

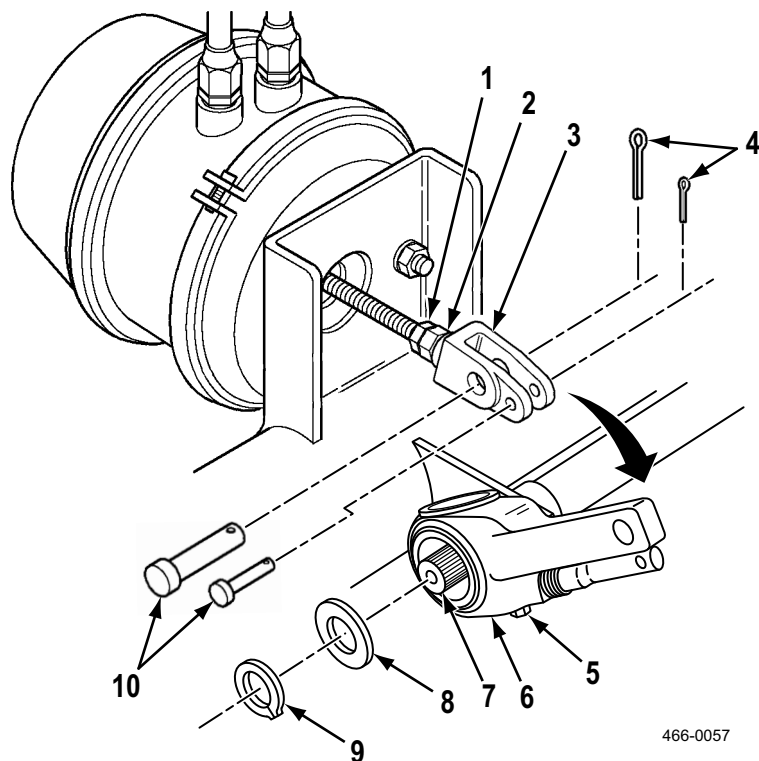
WARNING



- To avoid damage to equipment, make sure brakes are caged prior to performing maintenance on slack adjusters. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when removing and installing retaining rings to prevent them from flying off and hitting your face. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Turn adjusting screw (Figure 1, Item 5) counterclockwise to release tension on slack adjuster (Figure 1, Item 6).
2. Remove cotter pins (Figure 1, Item 4) and clevis pins (Figure 1, Item 6) from slack adjuster clevis (Figure 1, Item 3) and clevis. Discard cotter pins (Figure 1, Item 6).
3. Remove retaining ring (Figure 1, Item 9) and flat washer (Figure 1, Item 8) from camshaft (Figure 1, Item 7).
4. Loosen jamnut (Figure 1, Item 1).
5. Back off slack adjuster nut (Figure 1, Item 2) until it separates from slack adjuster clevis (Figure 1, Item 3).
6. Slide slack adjuster (Figure 1, Item 6) off camshaft (Figure 1, Item 7).



466-0057

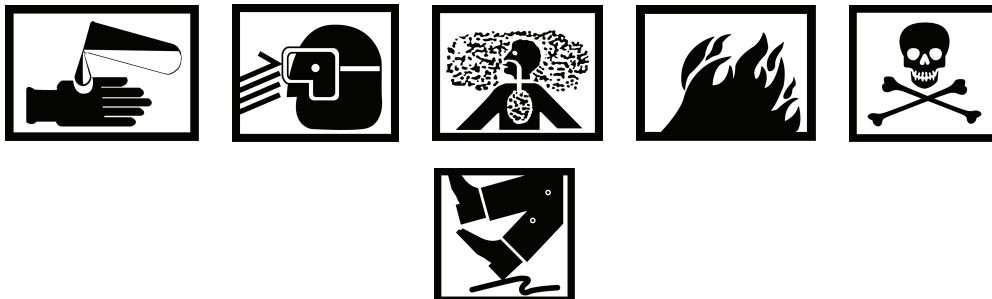
Figure 1. Slack Adjuster Removal.

END OF TASK**CLEANING**

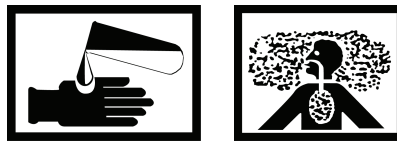
1. Remove surface dirt with water and brush.

CLEANING - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
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CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

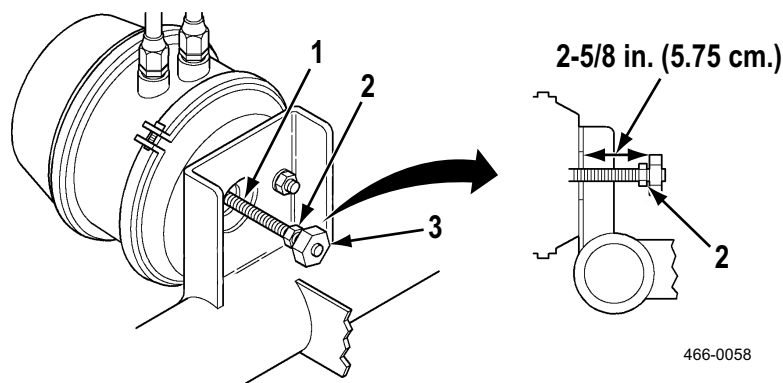
2. Remove grease and oil with solvent cleaning compound. Dry thoroughly.
3. Lubricate. Refer to (WP 0093).

END OF TASK**INSPECTION**

1. Inspect for damage and condition of splines.
2. Inspect for rust or corrosion.
3. Replace defective or missing parts.

END OF TASK**INSTALLATION**

1. Set jamnut (Figure 2, Item 2) 2.62 in. (5.75 cm) from air chamber.
2. Slide slack adjuster nut (Figure 2, Item 3) on air chamber shaft (Figure 2, Item 1) until it contacts jamnut (Figure 2, Item 2).



466-0058

Figure 2. Jamnut Adjustment.

INSTALLATION - Continued

3. Install slack adjuster (Figure 3, Item 6) on camshaft (Figure 3, Item 7).
4. Install flat washer (Figure 3, Item 8) and retaining ring (Figure 3, Item 9).

NOTE

Turn adjusting screw clockwise to align clevis with air chamber shaft.

5. Using adjusting screw (Figure 3, Item 5), align clevis (Figure 3, Item 3) with air chamber shaft (Figure 2, Item 1).
6. Turn slack adjuster nut (Figure 3, Item 2) counterclockwise to thread onto clevis until handtight.

NOTE

Cotter pin securing slack adjuster to clevis should be installed facing wheel.

7. Install new cotter pins (Figure 3, Item 4) and clevis pins (Figure 3, Item 10) to slack adjuster clevis (Figure 3, Item 3) and clevis.
8. Apply Loctite to threads and tighten jamnut (Figure 3, Item 1).

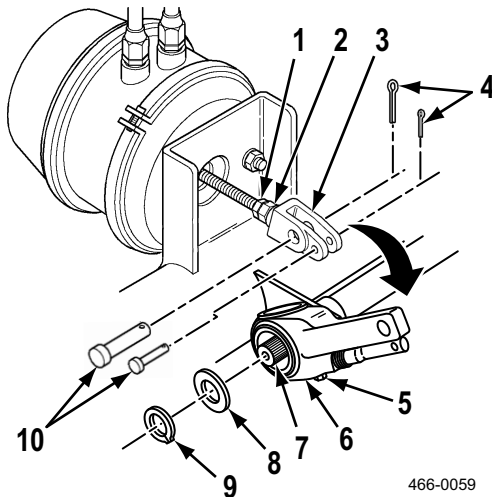


Figure 3. Slack Adjuster Installation.

END OF TASK

ADJUSTMENT**NOTE**

Slack adjusters are self-adjusting. Use this procedure when installing new slack adjusters or when slack adjusters have been disconnected.

1. Place clevis installation gage (Figure 4, Item 4) so it fits over body of larger clevis pin (Figure 4, Item 3).
2. If slack adjuster is properly adjusted, a pencil can be placed into center of camshaft (Figure 4, Item 7) through 6.0 in. (15.24 cm) slack hole (Figure 4, Item 8) of gage (Figure 4, Item 4). Notch in gage and smaller clevis pin (Figure 4, Item 5) should also be aligned.
3. Loosen jamnut (Figure 4, Item 9).
4. Adjust the 0.75 in. slack adjuster nut (Figure 4, Item 2) in or out on air chamber shaft (Figure 4, Item 1) until centers of 6.0 in. (15.24 cm) slack hole (Figure 4, Item 8) and camshaft (Figure 4, Item 7) are aligned. Tighten jamnut (Figure 4, Item 9).
5. Lubricate, refer to (WP 0093).

WARNING

Ensure brake drum moves freely after adjustment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

6. Turn adjusting screw (Figure 4, Item 6) clockwise until brake drum does not move. Back off adjusting screw 3/4 of a turn. Brake drum should move freely.

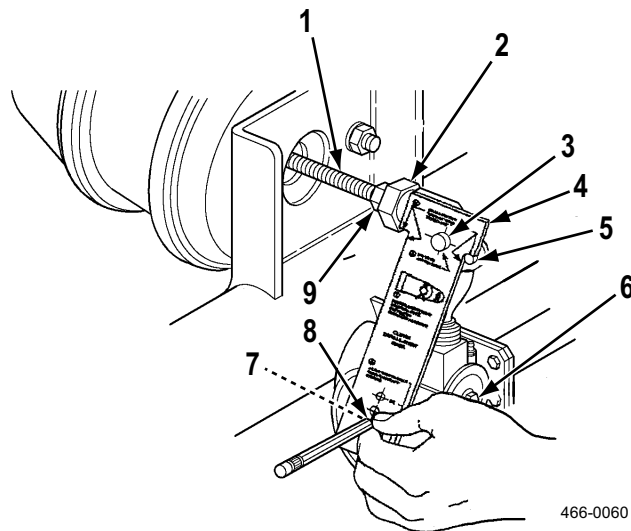


Figure 4. Slack Adjusters Adjustment.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
ELECTRONIC CONTROL UNIT (ECU) OPERATING TEST**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Equipment Condition

Semitrailer parked on level ground (WP 0005)

References

WP 0061
WP 0062

ECU OPERATING TEST

1. Apply 12 V dc power to Anti-lock Braking System (ABS).
2. ECU/dual modulator valve assembly should click four times.
3. If ABS indicator lamp comes on for three seconds and then goes out, this indicates a proper installation. Operating Test is complete.
4. If ABS indication lamp comes on and stays on, check sensor installation by removing power from ABS and raising sensed wheels so they may be rotated.
5. Apply emergency air to fill air tanks and release spring brakes so that wheels may be rotated.
6. Repeat Steps 1 and 2.
7. Rotate each sensed wheel, one at a time and at a rate of 1/2 revolution per second. This rate equals a wheel speed of approximately 4 mph (7 km/h). If ABS indicator lamp goes out and stays out, a proper installation is indicated and Operating Test is complete.
8. If ABS lamp does not go out, there is a sensor gap problem or hardware fault. Adjust sensor gap and, if necessary, perform a fault code check (Step 18).
9. Test sensors at each wheel location by disconnecting power to ECU assembly.

ECU OPERATING TEST - Continued

10. Disconnect sensor electrical connector (Figure 1, Item 1) from ECU assembly.
11. Connect leads of a multimeter to two wire component terminals inside disconnected connector.
12. When checking resistance, meter must read 900-2,000 Ohms.
13. Check and replace sensor (Figure 1, Item 2) and cables as required.
14. To perform a sensor gap adjustment, push sensor (Figure 1, Item 2) into its holder (Figure 1, Item 3) until it contacts tooth wheel (Figure 1, Item 4).

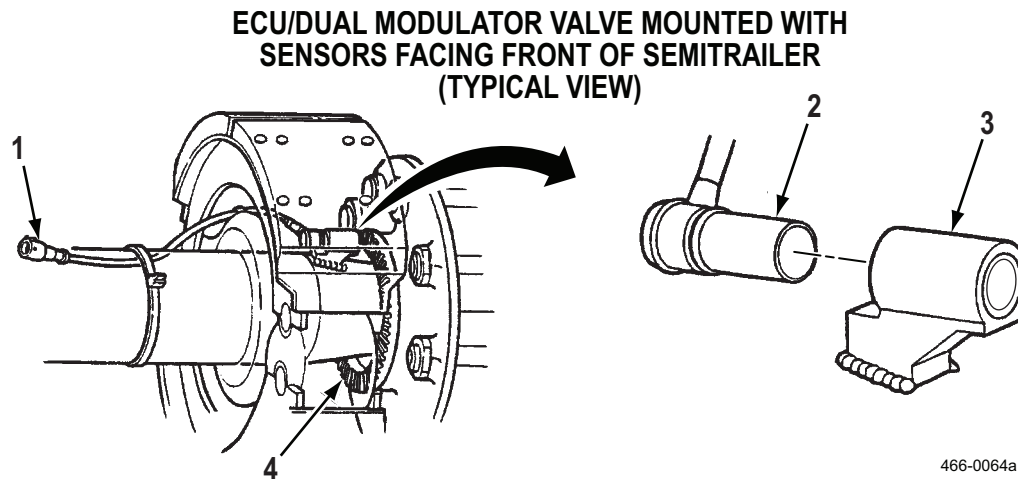


Figure 1. ECU Operating Test.

15. There must be no gap between sensor and tooth wheel.
16. Ac voltage should measure 0.2 V ac when wheel is rotated at a rate of 1/2 revolution per second.
17. Make necessary repairs and repeat Steps 1 through 7.
18. To perform fault code check, apply constant power to ECU/dual modulator valve assembly for more than 1, but less than 5 seconds.
19. Remove power and then reapply power.
20. ABS indicator lamp should repeat appropriate blink code (Table 1) three times.
21. Find problem in Table 1, repair as required, and repeat Steps 1 through 7.

ECU OPERATING TEST - Continued

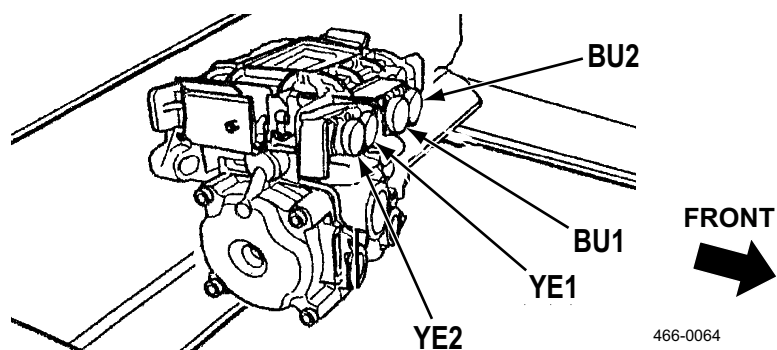


Figure 2. ECU Operations.

Table 1. Fault Blink Code Chart.

BLINK CODE	PROBLEM AREA	ACTION
3	Sensor BU1	- Determine sensor location - Check sensor installation - Conduct sensor test - Replace sensor (WP 0062) - Check sensor extension installation
4	Sensor YE1	- Determine sensor location - Check sensor installation - Conduct sensor test - Replace sensor (WP 0062) - Check sensor extension installation
5	Sensor BU2	- Determine sensor location - Check sensor installation - Conduct sensor test - Replace sensor (WP 0062) - Check sensor extension installation
6	Sensor YE2	- Determine sensor location - Check sensor installation - Conduct sensor test - Replace sensor (WP 0062) - Check sensor extension installation

ECU OPERATING TEST - Continued

Table 1. Fault Blink Code Chart - Continued.

7	External ABS modulator valve	• Verify proper electrical installation • Check power supply • Replace ECU (WP 0061)
9	Internal modulator failure, inlet valve #2	• Verify proper installation • If code continues, replace ECU (WP 0061)
10	Internal modulator failure, inlet valve #1	• Verify proper installation • If code continues, replace ECU (WP 0061)
11	Internal modulator failure, outlet valve	• Verify proper installation • If code continues, replace ECU (WP 0061)
14	Power supply	• Verify proper electrical installation • Check power supply • Check for voltage readings of 11 to 16 Volts • Replace ECU (WP 0061)
15	ECU failure	• Verify proper installation • If code continues, replace ECU (WP 0061)
16	SAE J1708 failure	• Internal failure • Replace ECU (WP 0061)
17	SAE J2497 failure	• Internal failure • Replace ECU (WP 0061)

ECU OPERATING TEST - Continued**Table 1. Fault Blink Code Chart - Continued.**

18	Generic I/O failure	• Verify proper electrical installation • Check power supply • Check for voltage readings of 11 to 16 Volts • Replace ECU (WP 0061)

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE ELECTRONIC CONTROL UNIT (ECU) REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0060
WP 0066

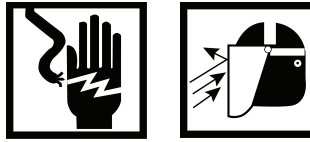
Materials/Parts

Detergent, General Purpose
(WP 0143, Table 1, Item 8)
Nut, Self-Locking
Qty: (2) (WP 0108, Figure 11, Item 1)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Air reservoirs drained (WP 0037)

WARNING



- Wear eye protection when releasing all pressure from air system before you disconnect components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Release all air pressure from air lines.
2. Identify and tag all electrical cables and air lines connected to ECU.

NOTE

The ECU/dual modulator valve is supplied with black protective caps on each sensor port. When a sensor cable is not plugged into a sensor port, the black cap must remain on the connector port to protect it from dirt and contamination.

3. Disconnect air lines from ECU and seal openings to lines with tape. Also seal ECU air ports with tape or protective caps if available.
4. Disconnect electrical cables from ECU sensor ports and seal ports with tape or protective caps if available.
5. Disconnect main ECU power source (Figure 1).
6. Loosen and remove two mounting bolts and self-locking nuts securing ECU to bracket and remove ECU. Discard self-locking nuts.

END OF TASK**INSTALLATION****NOTE**

The ECU/dual modulator valve is supplied with black protective caps on each sensor port. When a sensor cable is not plugged into a sensor port, the black cap must remain on the connector port to protect it from dirt and contamination.

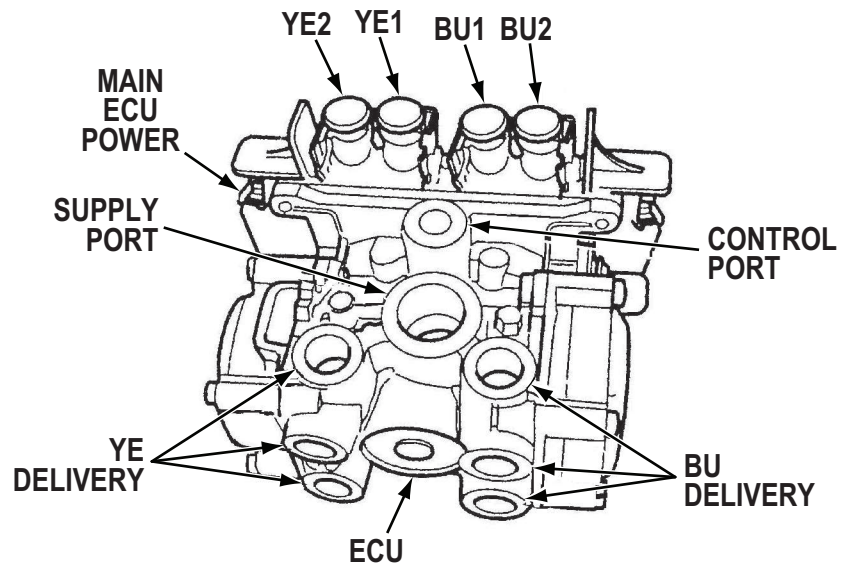
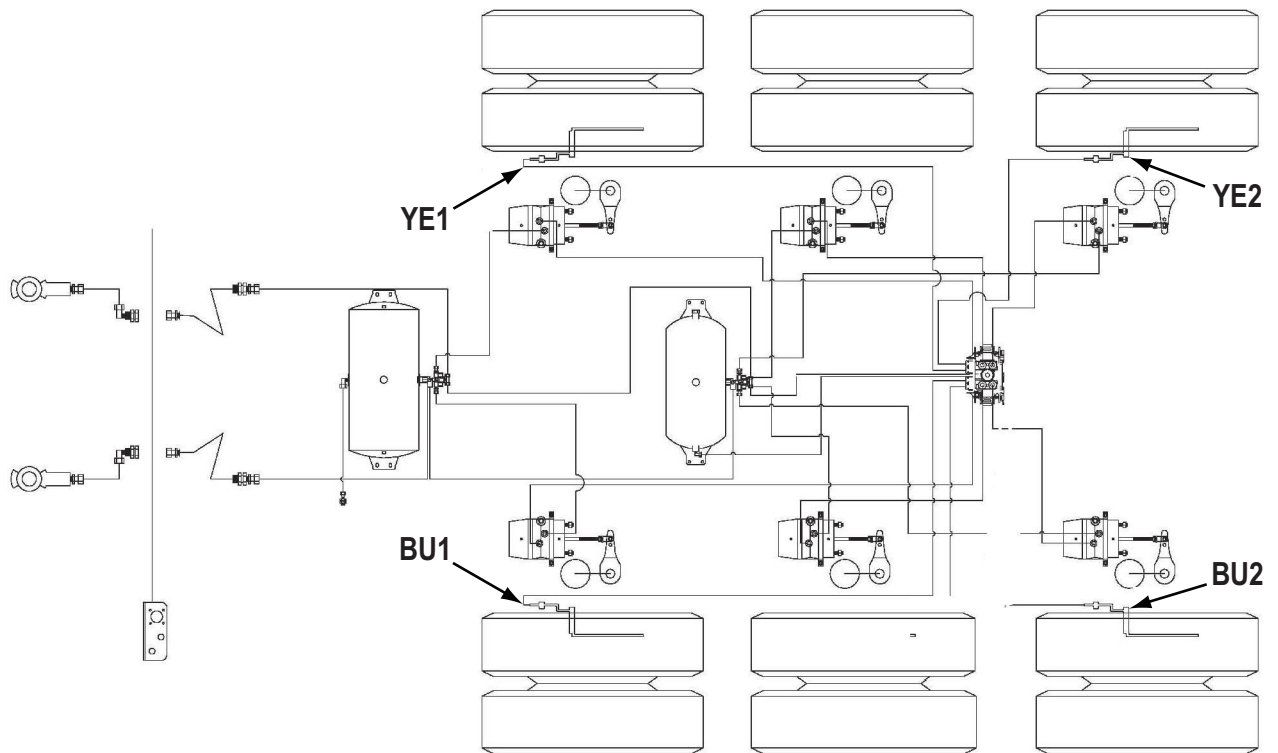
1. Mount ECU to semitrailer bracket and orient ECU so that exhaust port faces down. Secure using two grade 8 bolts and new self-locking nuts and torque self-locking nuts to 18 lb ft (24 N·m).
2. Clean threads to air lines and apply antiseizing tape to threads.
3. Connect air lines to ECU following tags applied during removal.

NOTE

When securing sensor cables to ECU the sensor retainer clip must be pushed down to secure connection. Retainer clips must fit in groove of sensor connectors to ensure proper connection.

4. Connect electrical sensor cables to ECU following tags applied during removal.
5. Connect main ECU power source.

INSTALLATION - Continued



466-0065

Figure 1. ECU Replacement.

END OF TASK

FOLLOW ON TASK

1. Test ECU (WP 0060).
2. Perform air reservoir serviceability test (WP 0066).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
ANTI-LOCK BRAKE SYSTEM (ABS) WHEEL SENSOR MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

(WP 0143, Table 1, Item 13)
Strap, Tiedown (WP 0143, Table 1, Item 27)

Materials/Parts

Grease, Automotive and Artillery

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Slack adjusters backed off (WP 0059)
Dust shield removed (WP 0057)

WARNING

Anti-lock Braking System (ABS) is an electrical system. When working on ABS the same precautions must be taken as with any electrical system. The danger of electrical shock or sparks exists which could ignite flammable substances. ALWAYS disconnect the power to the system before any repairs are made. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

When welding on an ABS equipped vehicle or semitrailer, disconnect the power connector from the Electronic Control Unit (ECU). Also disconnect the power from the ECU/Valve Assembly before removing any components. Failure to follow this caution can cause faults to be recorded and stored in the ECU memory. Failure to comply may result in damage to, or destruction of, equipment or mission.

REMOVAL

1. Grasp sensor (Figure 1, Item 4) (not sensor cable (Figure 1, Item 2)), and using a twisting motion, pull sensor out of mounting block sensor holder (Figure 1, Item 6).
2. Remove spring clip (Figure 1, Item 5) from sensor holder (Figure 1, Item 6).
3. Remove any tiedown straps (Figure 1, Item 10) holding sensor cable to other components. Discard tiedown straps (Figure 1, Item 10).
4. Disconnect sensor cable (Figure 1, Item 2) from extension cable.

END OF TASK**INSTALLATION**

1. Apply grease that contains molydisulfide to sensor spring clip (Figure 1, Item 5) and to body of sensor (Figure 1, Item 4). Grease must be anti-corrosive and contain adhesive properties that will continuously endure temperatures from -40° to 302° F (-40° to 150° C).
2. Push spring clip (Figure 1, Item 5) into sensor holder (Figure 1, Item 6) from inboard side until spring clip tabs (Figure 1, Item 7) are against sensor holder.
3. Push sensor (Figure 1, Item 4) into spring clip (Figure 1, Item 5) as far as possible.
4. Route sensor cable (Figure 1, Item 2) toward brake chamber, over brake spider (Figure 1, Item 9), and behind axle.
5. Use a new tiedown strap (Figure 1, Item 10) to secure cable to axle between brake spider (Figure 1, Item 9) and suspension brackets.
6. Place tiedown straps 1 in. (25.4 mm) from molded sensor plug (Figure 1, Item 1).
7. Continue to route sensor cable (Figure 1, Item 2) behind spring seats.
8. Install wheel hub (Figure 1, Item 3) carefully, so that tooth wheel (Figure 1, Item 8) pushes against sensor (Figure 1, Item 4) as you adjust wheel bearings.
9. After installation there should be no gap between sensor (Figure 1, Item 4) and tooth wheel (Figure 1, Item 8).
10. During normal operation, a gap of 0.040 in. (1.02 mm) is allowable.

END OF TASK**SENSOR OUTPUT VOLTAGE TEST**

1. Use a multimeter to check ac output voltage of sensors while rotating wheel at approximately one-half revolution per second.
2. Minimum output must be greater than 0.2 V ac.
3. If minimum output is less than 0.2 V ac, push sensor (Figure 1, Item 4) toward tooth wheel (Figure 1, Item 8).
4. Repeat sensor output voltage test.

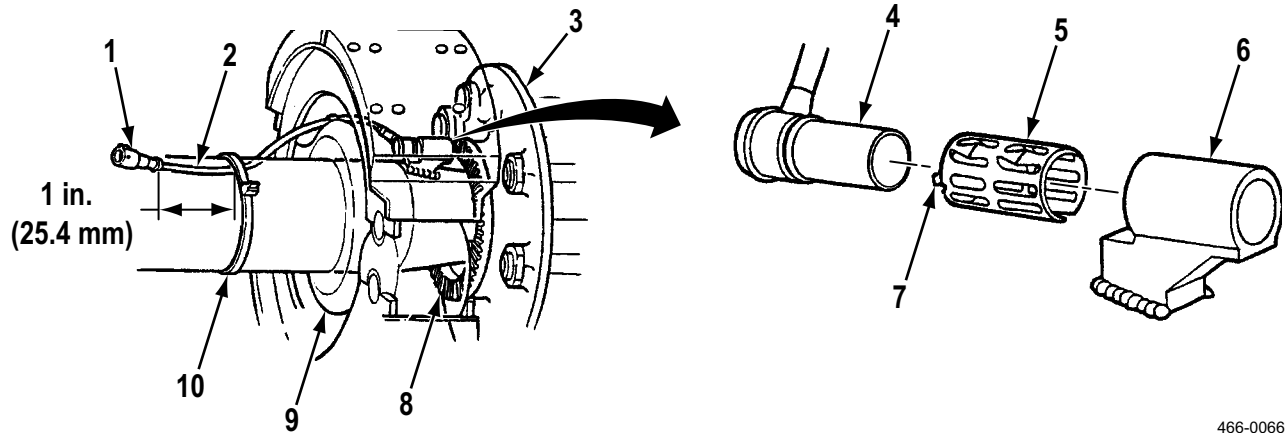
SENSOR OUTPUT VOLTAGE TEST - Continued

Figure 1. ABS Wheel Sensor Replacement.

END OF TASK**FOLLOW ON TASK**

1. Install dust shield (WP 0057).
2. Adjust slack adjuster (WP 0059).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
GLADHAND MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound

Materials/Parts (cont.)

(WP 0143, Table 1, Item 24)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

References

WP 0066

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Air reservoirs drained (WP 0037)

WARNING

Secure kingpin stowage box lid open prior to removing gladhands. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

There are two gladhands on semitrailer, this procedure replaces one gladhand. The other gladhand is replaced the same.

REMOVAL

1. Open kingpin stowage box lid (Figure 1, Item 3) and secure in open position.
2. Disconnect air line (Figure 1, Item 1) from gladhand (Figure 1, Item 5).
3. Remove gladhand (Figure 1, Item 5) from gooseneck (Figure 1, Item 4).

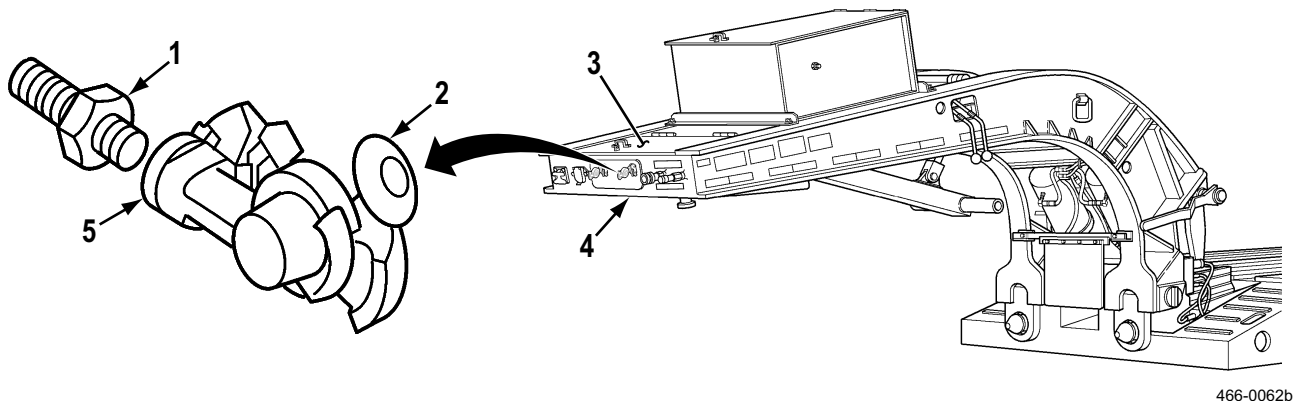


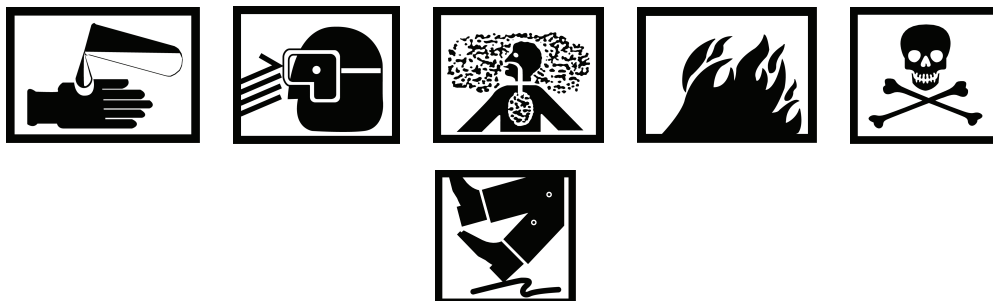
Figure 1. Gladhand Removal.

END OF TASK**CLEANING**

1. Remove mud and dirt from all exposed surfaces with water and brush.

CLEANING - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Remove grease with cleaning compound solvent and a clean rag.

END OF TASK**INSPECTION AND REPLACEMENT**

1. Inspect gladhand body for damaged threads, cracks, dents, holes, and warps.
2. Replace defective gladhand.
3. Pry out packing ring (Figure 2, Item 2) and check for wear and deterioration.

END OF TASK**PACKING RING INSTALLATION**

1. Clean packing ring groove in gladhand (Figure 2, Item 5).
2. Partially collapse packing ring (Figure 2, Item 2) with fingers and insert one side of ring flange into groove.

NOTE

Face of ring must lie flat with no twist or bulge.

3. Push packing ring (Figure 2, Item 2) into place.

END OF TASK**INSTALLATION**

1. Install gladhand (Figure 2, Item 5) on gooseneck (Figure 2, Item 4).
2. Apply antiseizing tape to threads of gladhand (Figure 2, Item 5) and air line (Figure 2, Item 1) coupling and connect air line to gladhand (Figure 2, Item 5).

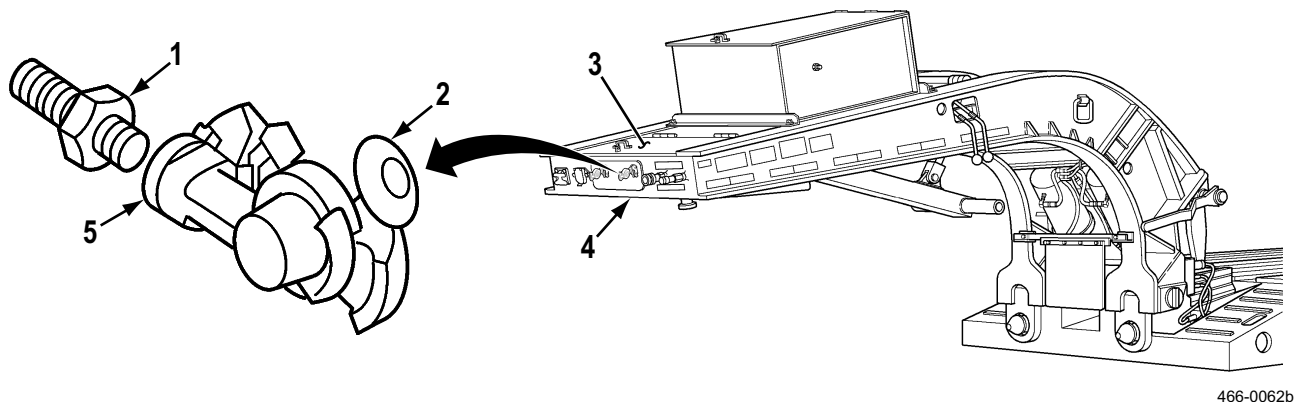
INSTALLATION - Continued

Figure 2. Gladhand Installation.

END OF TASK

FOLLOW ON TASK

Perform air reservoir serviceability test (WP 0066).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE
FRONT RESERVOIR MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Anchor Fitting (WP 0113, Figure 16, Item 8)
Brush, Scrub (WP 0143, Table 1, Item 5)
Gasket
Qty: (2) (WP 0110, Figure 13, Item 3)
Nut, Self-Locking
Qty: (4) (WP 0110, Figure 13, Item 4)
Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound

Materials/Parts (cont.)

(WP 0143, Table 1, Item 24)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)
Tape, Duct (WP 0143, Table 1, Item 30)

References

WP 0066

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Spring brake control valve removed (WP 0068)
Dump valve removed (WP 0067)

REMOVAL

1. Tag and disconnect air hose (Figure 1, Item 1) from elbow (Figure 1, Item 2) and seal air hose with tape.
2. Remove elbow (Figure 1, Item 2) from air reservoir (Figure 1, Item 4) and seal opening with tape.
3. Seal reservoir outlet (Figure 1, Item 3) to spring brake control valve with tape.

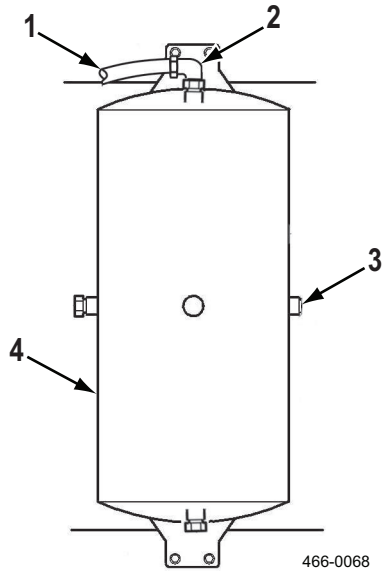


Figure 1. Front Reservoir Removal.

4. Remove four bolts (Figure 2, Item 9), eight washers (Figure 2, Item 7), four self-locking nuts (Figure 2, Item 6), and two gaskets (Figure 2, Item 8) from air reservoir (Figure 2, Item 2) and semitrailer frame (Figure 2, Item 1). Discard self-locking nuts (Figure 2, Item 6) and gaskets (Figure 2, Item 8).
5. Lower and remove reservoir (Figure 2, Item 2).

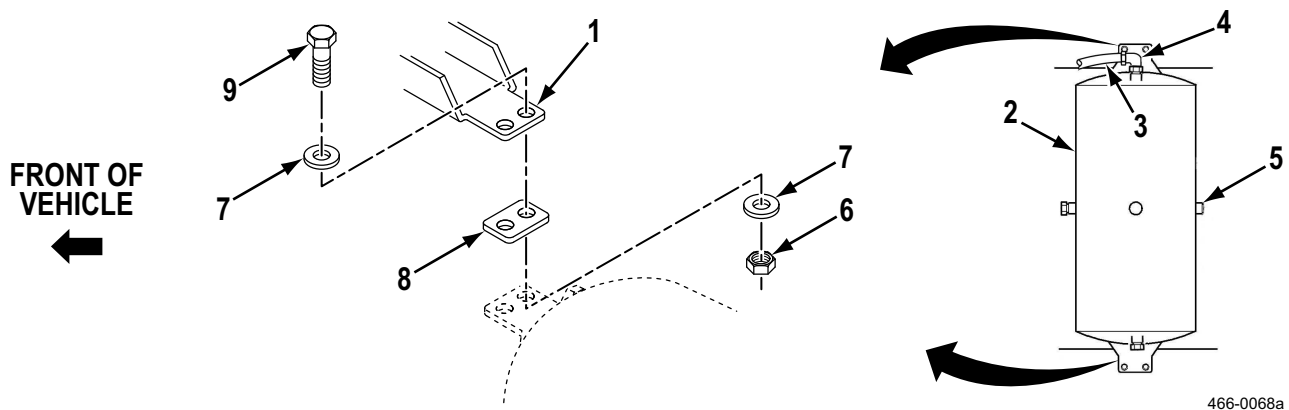


Figure 2. Front Reservoir.

REMOVAL - Continued

6. Disconnect hose assembly (Figure 3, Item 7) from adapter (Figure 3, Item 2).
7. Remove valve (Figure 3, Item 4) and protective cap (Figure 3, Item 3) from adapter (Figure 3, Item 2).

NOTE

Nut, starwasher, and adapter are all components of the anchor fitting.

8. Remove nut (Figure 3, Item 6), starwasher (Figure 3, Item 5), and adapter (Figure 3, Item 2) from semitrailer frame (Figure 3, Item 1). Discard anchor fitting.

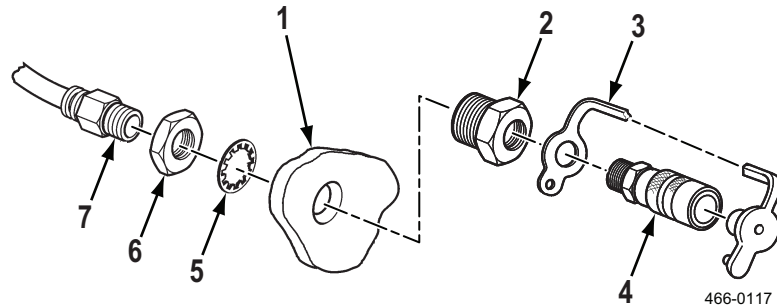


Figure 3. Secondary Air Supply Valve Removal.

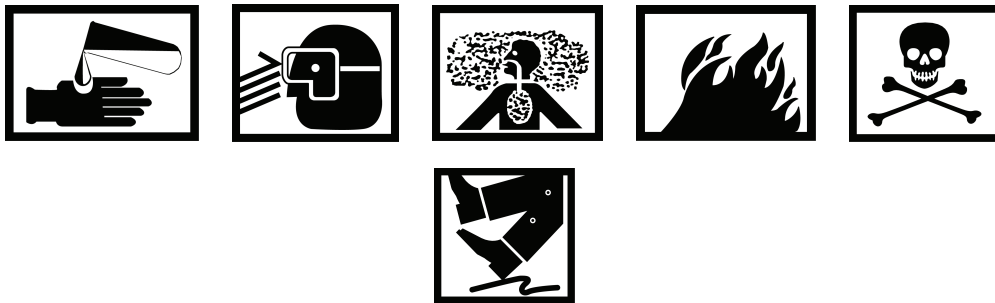
END OF TASK**CLEANING****CAUTION**

To prevent contamination of air system components, drain water from reservoir after cleaning. Failure to comply may result in damage to, or destruction of, equipment or mission.

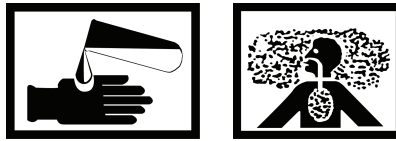
1. Clean mud and dirt from exposed surfaces with water and a stiff brush.

CLEANING - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
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- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
2. Remove grease and oil with cleaning compound solvent using a soft cloth. Dry thoroughly.

END OF TASK**INSPECTION**

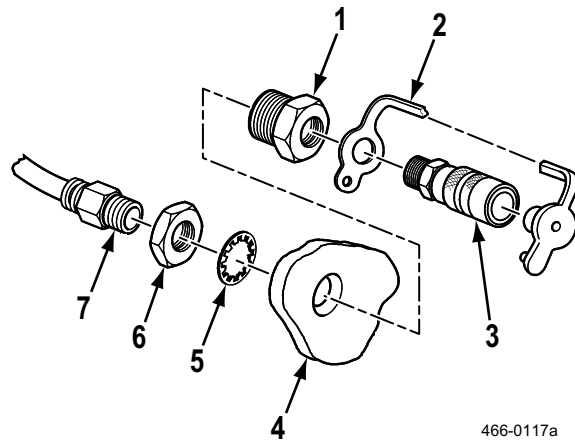
1. Inspect for loose, missing, or damaged parts.
2. Inspect air reservoir for cracks, dents, holes, and bulges.
3. Inspect mounting brackets for cracks, warps, and broken welds.
4. Inspect for rust or corrosion.
5. Replace defective parts.

END OF TASK

INSTALLATION**NOTE**

Nut, starwasher, and adapter are all components of the anchor fitting.

1. Install new adapter (Figure 4, Item 1), starwasher (Figure 4, Item 5), and nut (Figure 4, Item 6) on semitrailer body (Figure 4, Item 4).
2. Apply antiseizing tape to threads of valve (Figure 4, Item 3) and install protective cap (Figure 4, Item 2) and valve on adapter (Figure 4, Item 1).
3. Apply antiseizing tape to threads of hose assembly (Figure 4, Item 7) and connect hose assembly to adapter (Figure 4, Item 1).



466-0117a

Figure 4. Tire Inflation Valve Installation.

INSTALLATION - Continued

4. Install air reservoir (Figure 5, Item 2) and two new gaskets (Figure 5, Item 8) on semitrailer frame (Figure 5, Item 1) with four bolts (Figure 5, Item 9), eight washers (Figure 5, Item 7), and four new self-locking nuts (Figure 5, Item 6).
5. Apply antiseizing tape to threads of elbow (Figure 5, Item 4) and install elbow on air reservoir (Figure 5, Item 2).
6. Connect air hose (Figure 5, Item 3) to elbow (Figure 5, Item 4).
7. Remove tape from reservoir outlet (Figure 5, Item 5) to spring brake control valve.

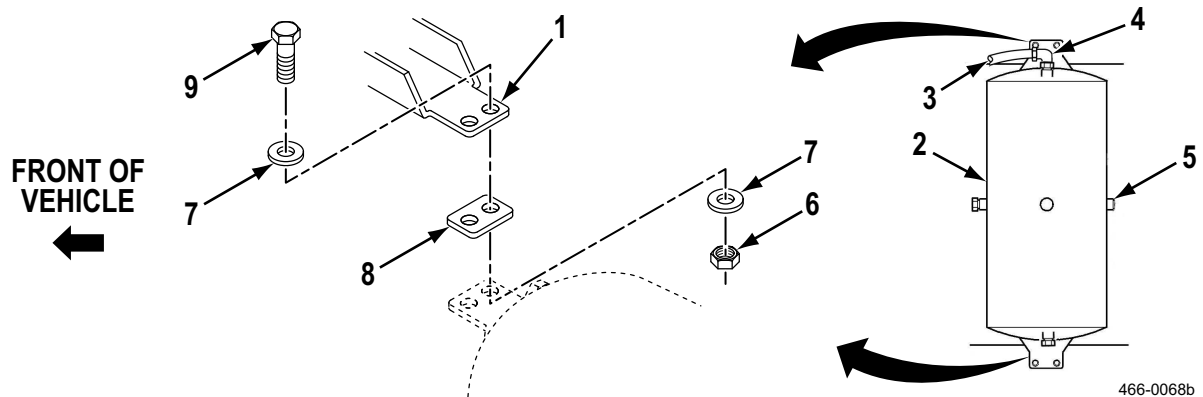


Figure 5. Front Reservoir Replacement.

END OF TASK**FOLLOW ON TASK**

1. Install spring brake control valve (WP 0068).
2. Install dump valve (WP 0067).
3. Perform air reservoir serviceability test (WP 0066).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
REAR RESERVOIR MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts (cont.)

(WP 0143, Table 1, Item 24)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing
(WP 0143, Table 1, Item 29)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Gasket
Qty: (2) (WP 0110, Figure 13, Item 3)
Nut, Self-Locking
Qty: (4) (WP 0110, Figure 13, Item 4)
Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound

References

WP 0066

Equipment Condition

Wheels chocked (WP 0005)
Spring brake control valve removed (WP 0068)
Dump valve removed (WP 0067)

REMOVAL

1. Tag and disconnect air hose (Figure 1, Item 6) from elbow (Figure 1, Item 5) and seal air hose with tape.
2. Remove elbow (Figure 1, Item 5) from air reservoir (Figure 1, Item 3) and seal opening with tape.
3. Seal reservoir outlet (Figure 1, Item 4) to spring brake control valve with tape.
4. Remove four bolts (Figure 1, Item 1), eight washers (Figure 1, Item 8), four self-locking nuts (Figure 1, Item 7), and two gaskets (Figure 1, Item 9) from air reservoir (Figure 1, Item 3) and semitrailer frame (Figure 1, Item 2). Discard self-locking nuts (Figure 1, Item 7) and gaskets (Figure 1, Item 9).
5. Lower and remove reservoir (Figure 1, Item 3).

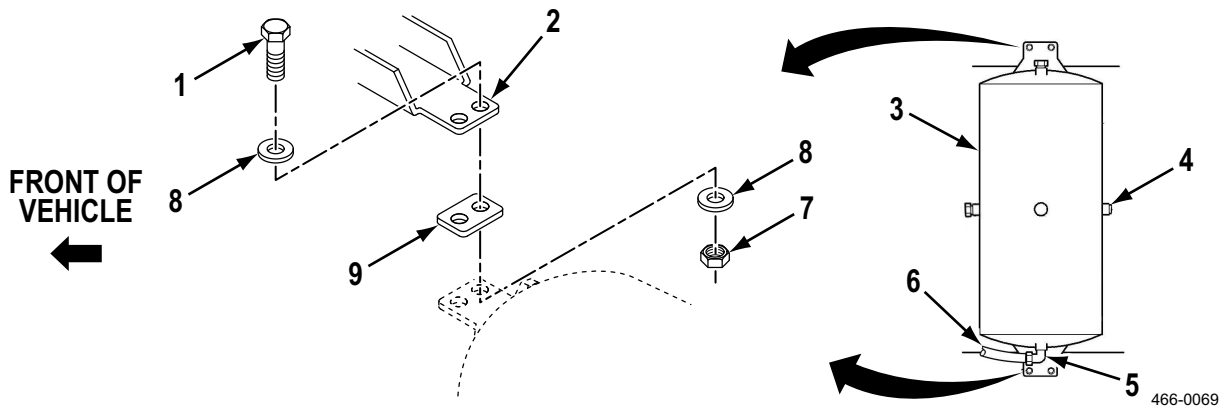


Figure 1. Rear Reservoir Removal.

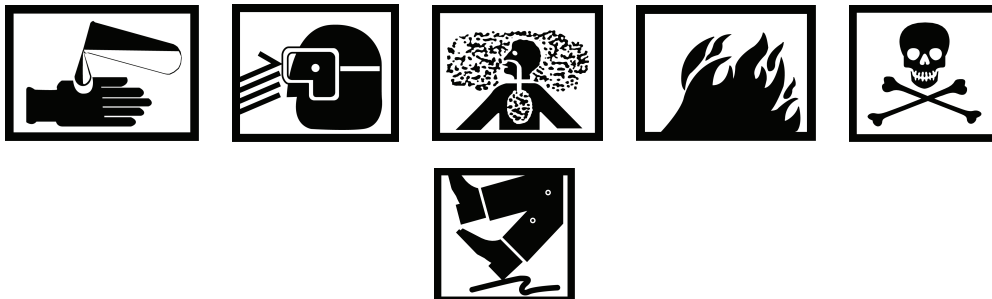
END OF TASK**CLEANING****CAUTION**

To prevent contamination of air system components, drain water from reservoir after cleaning. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Clean mud and dirt from exposed surfaces with water and a stiff brush.

CLEANING - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
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- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Remove grease and oil with cleaning compound solvent using a soft rag.

END OF TASK**INSPECTION**

1. Inspect for loose, missing, or damaged parts.
2. Inspect air reservoir for cracks, dents, holes, and bulges.
3. Inspect mounting brackets for cracks, warps, and broken welds.
4. Inspect for rust or corrosion.
5. Replace defective parts.

END OF TASK**INSTALLATION**

1. Install air reservoir (Figure 2, Item 2) and two new gaskets (Figure 2, Item 8) on semitrailer frame (Figure 2, Item 9) with four bolts (Figure 2, Item 1), eight washers (Figure 2, Item 7), and four new self-locking nuts (Figure 2, Item 6).
2. Remove tape from elbow opening, apply antiseizing tape to threads of elbow (Figure 2, Item 4), and install elbow on air reservoir (Figure 2, Item 2).
3. Connect air hose (Figure 2, Item 5) to elbow (Figure 2, Item 4).
4. Remove tape from reservoir outlet (Figure 2, Item 3) to spring brake control valve.

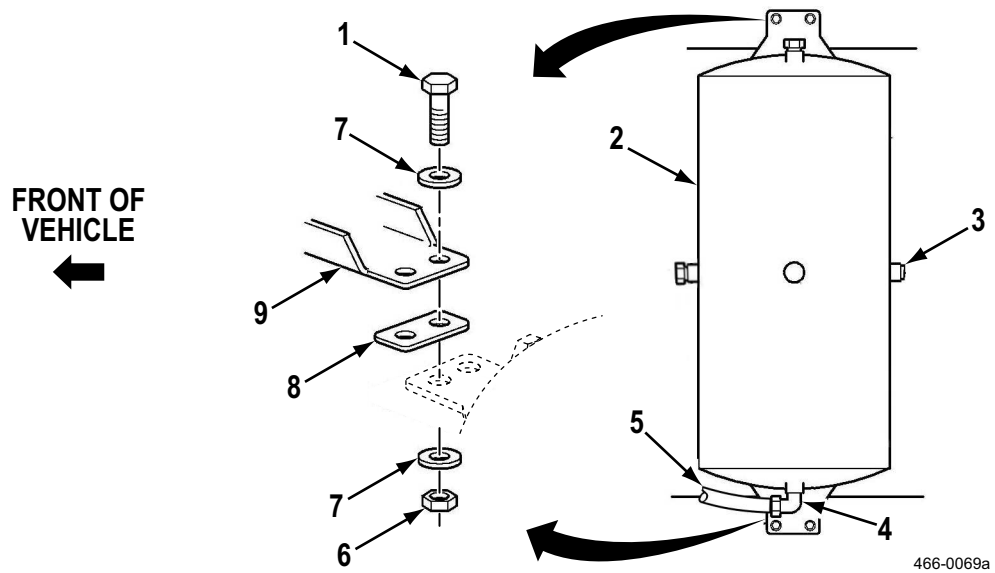
INSTALLATION - Continued

Figure 2. Rear Reservoir Installation.

END OF TASK**FOLLOW ON TASK**

1. Install dump valve (WP 0067).
2. Install spring brake control valve (WP 0068).
3. Perform air reservoir serviceability test (WP 0066).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
AIR RESERVOIR SERVICEABILITY TEST**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts

Detergent, General Purpose
(WP 0143, Table 1, Item 8)

SERVICEABILITY TEST

1. With air brake system connected to towing vehicle, coat connections with a solution of detergent and water. No leakage is permissible.
2. Tighten any leaking connections.
3. Inspect air reservoir for damage or corrosion. Replace air reservoir if it leaks or if there is any damage or corrosion that could weaken air reservoir.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE DUMP VALVE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound

Materials/Parts (cont.)

(WP 0143, Table 1, Item 24)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

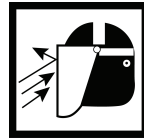
References

WP 0066

Equipment Condition

Wheels chocked (WP 0005)

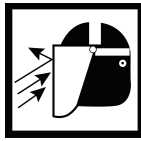
WARNING



Wear eye protection when releasing all pressure from air system before you disconnect components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

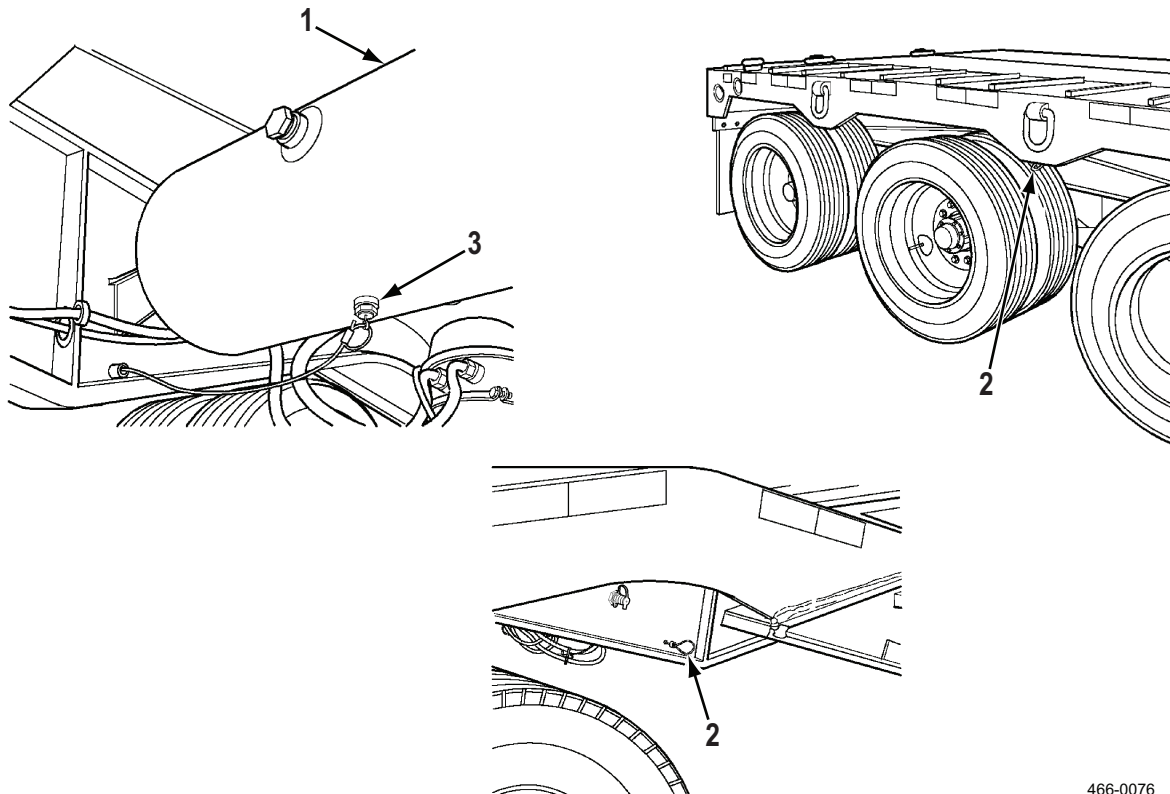
REMOVAL

1. Release all air pressure from air lines if possible.
2. Disconnect release cable (Figure 1, Item 2) from dump valve (Figure 1, Item 3).

WARNING

Wear eye protection when dump valve is not operating properly, as air pressure may not be relieved from air tank. Use extreme caution when removing dump valve. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

3. Remove dump valve (Figure 1, Item 3) from front or rear air reservoir (Figure 1, Item 1).



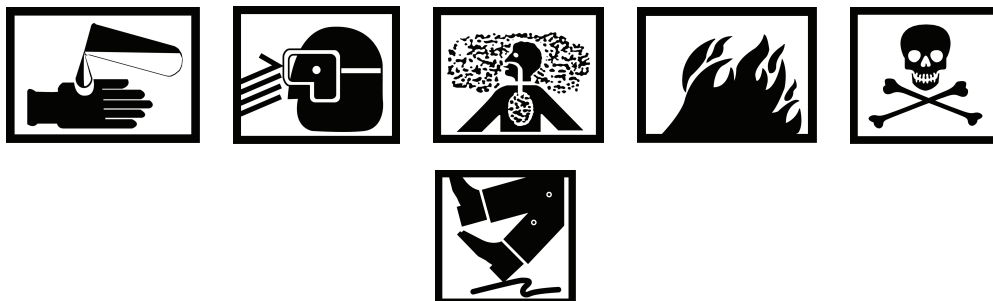
466-0076

Figure 1. Dump Valve Removal.

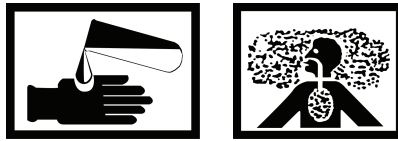
END OF TASK

CLEANING

WARNING



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- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
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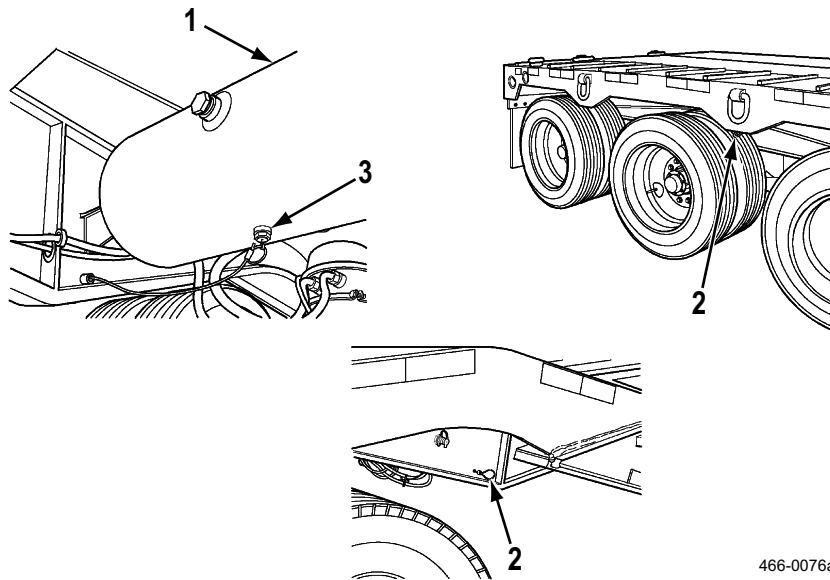
CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

Remove grease and oil with cleaning compound solvent and a clean rag.

END OF TASK**INSTALLATION**

1. Apply antiseizing tape to threads of dump valve (Figure 2, Item 3) and install valve onto air reservoir (Figure 2, Item 1).
2. Connect dump valve release cable (Figure 2, Item 2) to dump valve (Figure 2, Item 3).



466-0076a

Figure 2. Dump Valve Installation.

END OF TASK

FOLLOW ON TASK

Perform air reservoir serviceability test (WP 0066).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
SPRING BRAKE CONTROL VALVE MAINTENANCE

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Tape, Antiseizing (WP 0143, Table 1, Item 29)
Tape, Duct (WP 0143, Table 1, Item 30)

Materials/Parts

Detergent, General Purpose
(WP 0143, Table 1, Item 8)
Tag, Marker (WP 0143, Table 1, Item 28)

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Air reservoirs drained (WP 0037)

NOTE

Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.

REMOVAL**NOTE**

There are front and middle spring brake control valves. Step 1 applies to the front valve. Step 2 applies to the middle valve. Steps 3 through 5 apply to both valves.

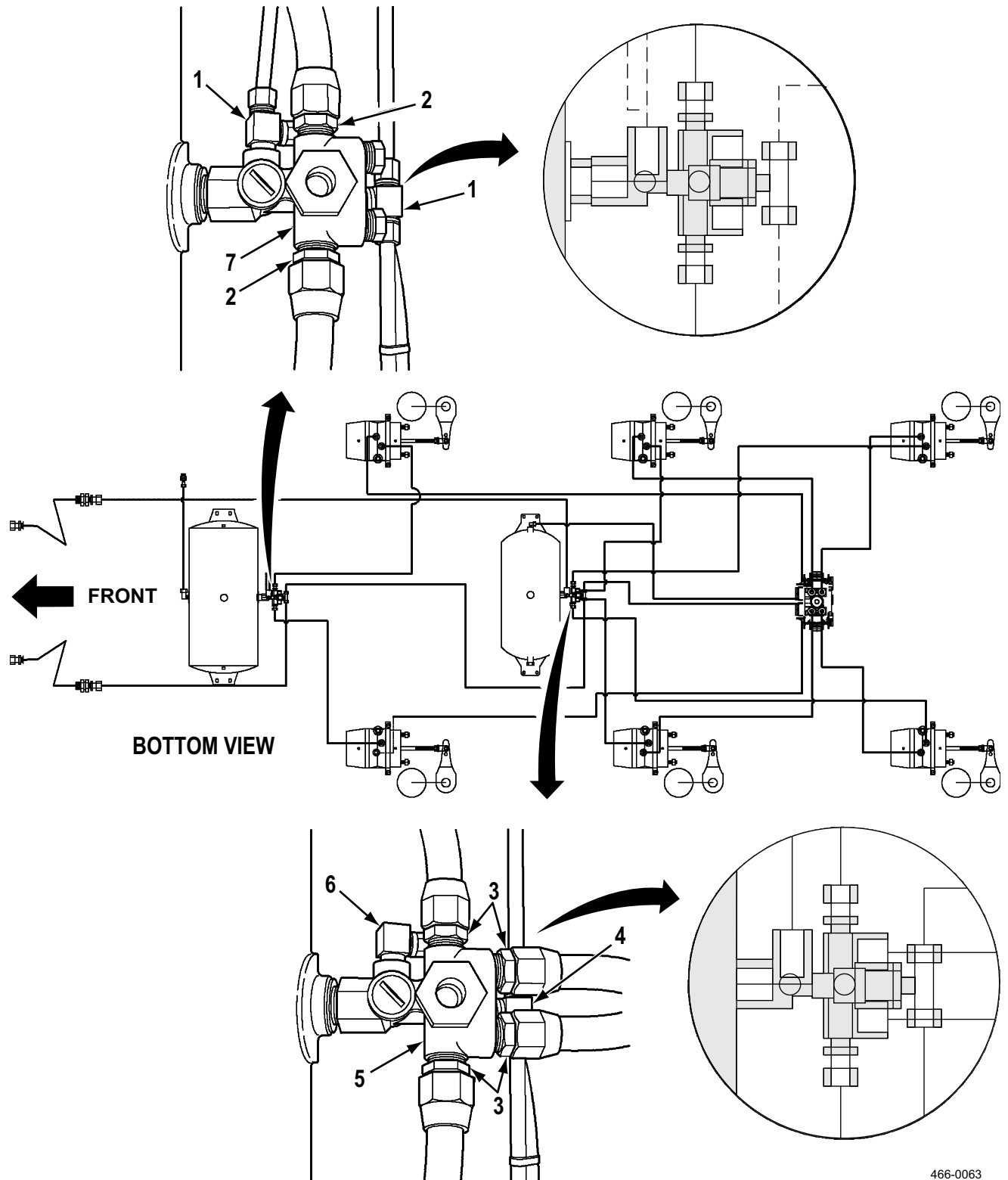
1. For front spring brake control valve (Figure 1, Item 7), disconnect six air lines from two tees (Figure 1, Item 1) and fittings (Figure 1, Item 2).
2. For middle spring brake control valve (Figure 1, Item 5), tag and disconnect seven air lines from tee (Figure 1, Item 4), four fittings (Figure 1, Item 3), and elbow (Figure 1, Item 6).
3. Remove spring brake control valve (Figure 1, Item 5 or 7) from air reservoir.
4. Remove tees (Figure 1, Item 1 or 4), fittings (Figure 1, Item 2 or 3), and elbow (Figure 1, Item 6) from spring brake control valve (Figure 1, Item 5 or 7).
5. Install plugs or tape closed all line openings to prevent dirt contamination of system.

END OF TASK**INSTALLATION****NOTE**

There are front and middle spring brake control valves. Steps 1 through 3 apply to both valves. Step 4 applies to the middle valve. Step 5 applies to the front valve.

1. Remove plugs or tape from air line openings.
2. Apply antiseizing tape to threads of fittings (Figure 1, Item 2 or 3), tees (Figure 1, Item 1 or 4), and elbow (Figure 1, Item 6) and install on spring brake control valve (Figure 1, Item 5 or 7).
3. Apply antiseizing tape to threads of spring brake control valve (Figure 1, Item 5 or 7) and install on air reservoir.
4. Connect air lines to elbow (Figure 1, Item 6), four fittings (Figure 1, Item 3), and tee (Figure 1, Item 4) for middle spring brake control valve (Figure 1, Item 5).
5. Connect air lines to two fittings (Figure 1, Item 2) and tees (Figure 1, Item 1) for front spring brake control valve (Figure 1, Item 7).

INSTALLATION - Continued



466-0063

Figure 1. Spring Brake Control Valves.

END OF TASK

LEAKAGE TEST**NOTE**

To locate shutoff valve, refer to towing vehicle TM.

1. Close shutoff valve to air lines.
2. With air system connected, apply a solution of detergent and water to flanges holding diaphragm in spring brake chamber, and to gladhands tagged SERVICE.
3. No leakage is permitted.
4. Tighten nuts on flanges and coupling on gladhands as required.
5. With brake system fully pressurized, close shutoff valve on emergency line in towing vehicle.
6. Disconnect gladhands tagged EMERGENCY from towing vehicle.
7. Make sure semitrailer brakes apply automatically.
8. Coat spring brake control valve exhaust port with a solution of detergent and water.
9. Leakage must not exceed a 1 in. (2.5 cm) bubble in three seconds.
10. If excess leakage is found, replace spring brake control valve.

END OF TASK**OPERATING TEST**

1. With gladhands connected to towing vehicle, apply brakes. Ensure brakes of all semitrailer wheels apply properly.
2. Release brakes. Ensure each brake releases properly.
3. With brake system fully pressurized, close shutoff valve on emergency hose in towing vehicle. Disconnect gladhands tagged EMERGENCY from towing vehicle. Make sure semitrailer brakes apply automatically.
4. Connect gladhands tagged EMERGENCY to towing vehicle. Open shutoff valve in towing vehicle. Ensure brakes release automatically.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
AIR BRAKE CHAMBER MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Detergent, General Purpose
(WP 0143, Table 1, Item 21)
Rag, Wiping (WP 0143, Table 1, Item 21)
Solvent, Cleaning Compound

Materials/Parts (cont.)

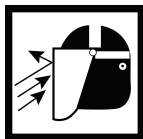
(WP 0143, Table 1, Item 24)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)
Washer, Lock
Qty: (2) (WP 0112, Figure 15, Item 2)

Equipment Condition

Slack adjusters disconnected from air brake
chamber (WP 0059)

NOTE

Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.

REMOVAL**WARNING**

Wear eye protection when dump valve is not operating properly, as air pressure may not be relieved from air tank. Use extreme caution when removing dump valve. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Open dump valve on all air reservoirs and allow air pressure to bleed off.
2. Remove clevis (Figure 1, Item 5) from air brake chamber (Figure 1, Item 6).
3. Disconnect two air lines (Figure 1, Item 1) from air chamber (Figure 1, Item 6).
4. Remove two fittings (Figure 1, Item 2) from air chamber (Figure 1, Item 6).
5. Remove two nuts (Figure 1, Item 4), lockwashers (Figure 1, Item 3), and air chamber (Figure 1, Item 6) from axle. Discard lockwashers (Figure 1, Item 3).

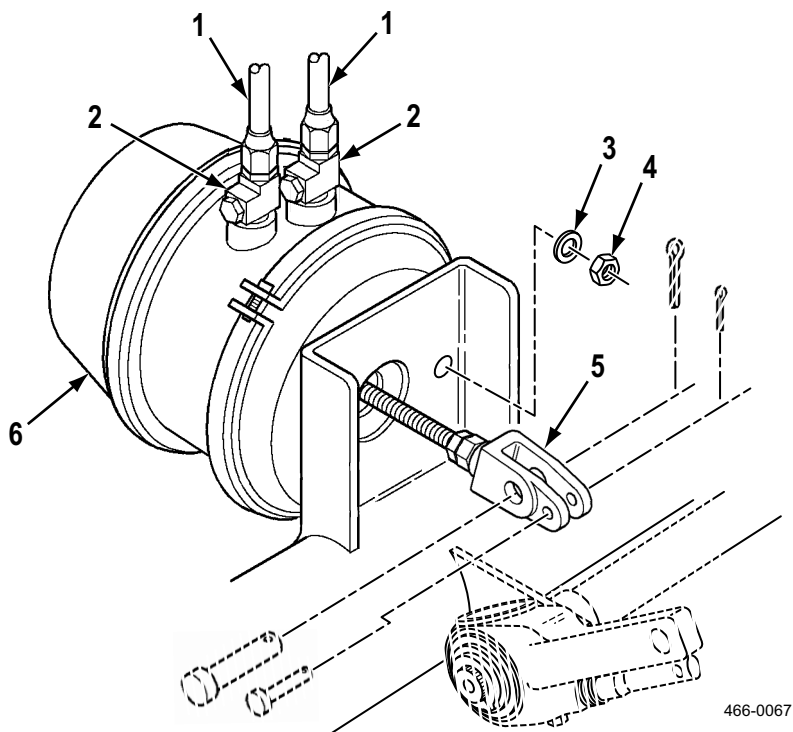
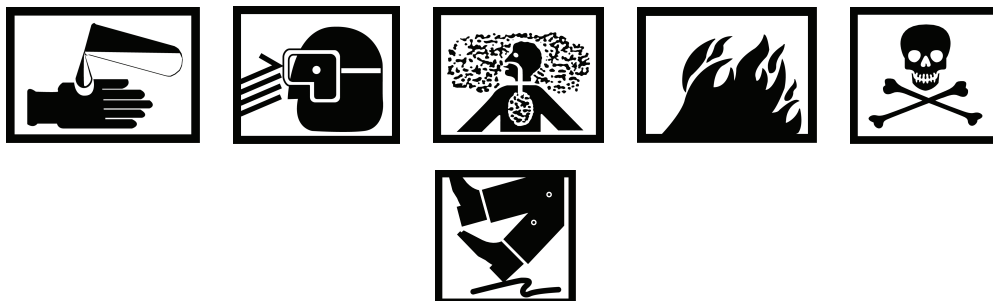


Figure 1. Air Brake Chamber Removal.

END OF TASK

CLEANING

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Clean mud and dirt from exposed surfaces with water and a stiff brush.
2. Remove grease and oil with cleaning compound solvent using a wiping rag. Dry thoroughly.

END OF TASK**INSPECTION**

1. Inspect for loose, missing, or damaged parts.
2. Inspect air chamber for cracks, dents, holes, and warps.
3. Inspect for rust or corrosion.
4. Replace defective parts.

END OF TASK**INSTALLATION****NOTE**

Ensure jamnut and slack adjuster nut are on brake chamber rod before clevis is installed.

1. Install jamnut (Figure 2, Item 6) and clevis (Figure 2, Item 5) onto brake chamber rod (Figure 2, Item 7).
2. Install air chamber (Figure 2, Item 8) on axle with two nuts (Figure 2, Item 4) and new lockwashers (Figure 1, Item 3).
3. Apply antiseizing tape to two fittings (Figure 2, Item 2) and install on air chamber (Figure 2, Item 8).
4. Apply antiseizing tape to two air lines (Figure 2, Item 1) and connect air lines.
5. Close all dump valves and pressurize air brake system.
6. Check for leaks.

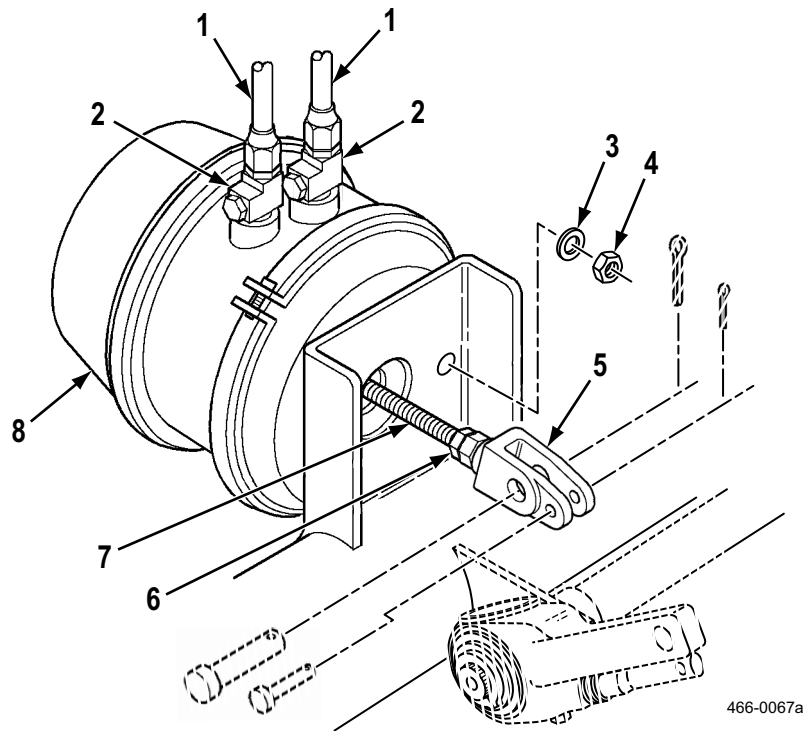
INSTALLATION - Continued

Figure 2. Air Brake Chamber Replacement.

END OF TASK**LEAKAGE TEST**

1. Coat air chamber flange with soap and water solution to all air fittings and inspect for leaks.
2. If any leaks are detected, tighten securing hardware sufficiently to stop leaks. No leakage is allowed.
3. Check non-pressure side of air chamber for leaks by applying soap and water solution to holes in chamber body. If leakage exists, replace air chamber.

END OF TASK**FOLLOW ON TASK**

Connect and adjust slack adjuster (WP 0059).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
AIR BRAKE SYSTEM DIAGRAM**

INITIAL SETUP:

Not Applicable

AIR BRAKE SYSTEM DIAGRAM

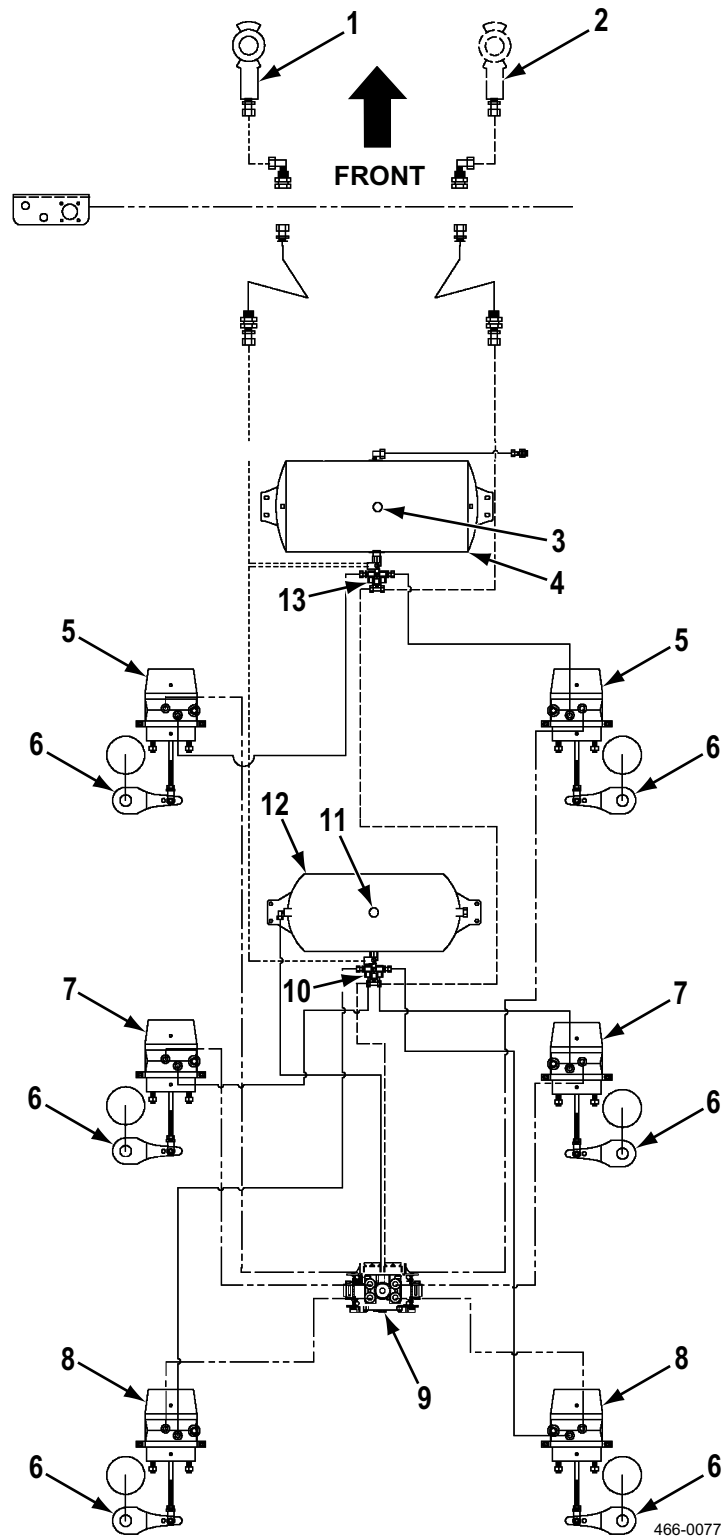


Figure 1. Air Brake System Diagram.

AIR BRAKE SYSTEM DIAGRAM - Continued**Table 1. Air Brake System.**

KEY	COMPONENT
1	Coupling – Gladhand, Emergency
2	Coupling – Gladhand, Service
3	Dump Valve – Front Reservoir
4	Air Reservoir – Front
5	Air Brake Chambers, Front Axle
6	Slack Adjusters
7	Air Brake Chambers, Middle Axle
8	Air Brake Chambers, Rear Axle
9	Electronic Control Unit (ECU)
10	Spring Brake Control Valve, Rear
11	Dump Valve – Rear Reservoir
12	Air Reservoir – Rear
13	Spring Brake Control Valve, Front

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
AIR BRAKE HOSE REPAIR**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References (cont.)

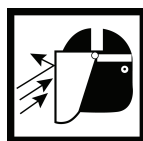
WP 0066
WP 0070

References

WP 0051

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Wear eye protection when releasing all pressure from air system before you disconnect components. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- Air hoses can be replaced or repaired, depending on the length of the damaged section.
- For general air brake hose maintenance instructions, see Lines and Ports, Antiseizing Tape, and Tubes and Compression Fittings (WP 0051).

REPAIR

Air hoses are not ordinarily removed unless they need to be replaced. Badly damaged air hoses must be replaced. Air hoses must be tightly attached and connected. For additional information, see Air Brake System Diagram (WP 0070).

END OF TASK**FOLLOW ON TASK**

Perform air reservoir serviceability test (WP 0066).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
HUB AND BRAKE DRUM REPAIR**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)
Wrench, Torque (WP 0144, Table 1, Item 21)
Wrench, Torque (WP 0144, Table 1, Item 19)

Materials/Parts

Brush, Scrub (WP 0143, Table 1, Item 5)
Gasket (WP 0115, Figure 18, Item 13)
Grease, Automotive and Artillery
(WP 0143, Table 1, Item 10)
Retainer, Oil Seal (WP 0115, Figure 18, Item 8)

Materials/Parts (cont.)

Solvent, Cleaning Compound
(WP 0143, Table 1, Item 24)
Washer, Lock
Qty: (6) (WP 0115, Figure 18, Item 15)

References

TM 9-214

Equipment Condition

Wheel and tire assembly removed (WP 0038)
Slack adjuster backed off (WP 0059)

REMOVAL

1. Back off brake drum (Figure 1, Item 15) from hub (Figure 1, Item 7).

NOTE

Steps 2 applies to right forward hub and drum only. Perform Step 3 if hub mileage meter or bracket is damaged and must be replaced.

2. Remove two bolts (Figure 1, Item 17), lockwashers (Figure 1, Item 18), and hub mileage meter (Figure 1, Item 16) from hub (Figure 1, Item 7). Discard lockwashers (Figure 1, Item 18).
3. Remove four bolts (Figure 1, Item 17), lockwashers (Figure 1, Item 18), hub cap (Figure 1, Item 14), and hub cap gasket (Figure 1, Item 13) from hub (Figure 1, Item 7). Discard lockwashers (Figure 1, Item 18) and gasket (Figure 1, Item 13).
4. Bend tabs on tabbed washer (Figure 1, Item 2) and remove outer bearing nut (Figure 1, Item 1), tabbed washer (Figure 1, Item 2), keyed washer (Figure 1, Item 3), and inner nut (Figure 1, Item 4).
5. Remove outer bearing set (Figure 1, Items 5 and 6).

CAUTION

DO NOT remove studs from hub unless stud(s) are damaged. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Perform Steps 7 and 8 if hub, inner bearing set, and/or seal are damaged and are to be replaced.

6. Remove hub (Figure 1, Item 7) from axle spindle (Figure 1, Item 12).
7. Remove grease seal (Figure 1, Item 10) and inner bearing set (Figure 1, Items 8 and 9).
8. Remove oil seal retainer (Figure 1, Item 11). Discard oil seal retainer (Figure 1, Item 11).

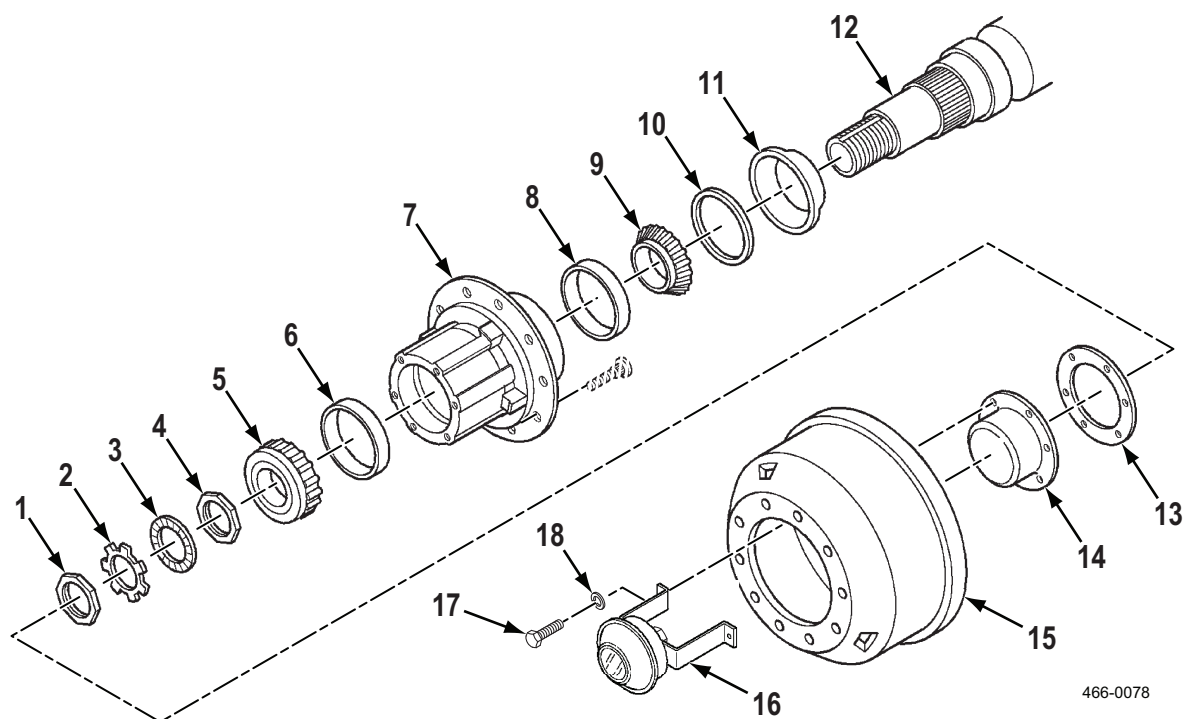
REMOVAL - Continued

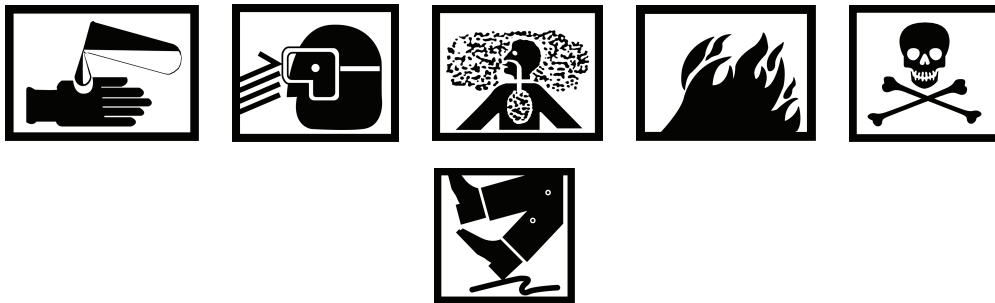
Figure 1. Hub and Brake Drum Removal.

END OF TASK**CLEANING AND INSPECTION**

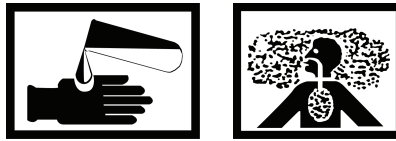
1. Remove surface dirt with water and brush.

CLEANING AND INSPECTION - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CLEANING AND INSPECTION - Continued**WARNING**

- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
2. Remove grease and oil with cleaning compound solvent. Dry thoroughly.
 3. Inspect for damage, rust, or corrosion.
 4. Inspect brake drum for out-of-roundness and scoring.
 5. Inspect bearings per TM 9-214.
 6. Inspect cones for cracks, wear, or other damage. Replace defective parts.
 7. Make sure contact material on grease seals is intact and pliable.

END OF TASK

INSTALLATION AND ADJUSTMENT OF WHEEL BEARINGS

NOTE

Perform Steps 1 and 2 if inner bearing set and seal were removed.

1. Pack inner bearing set (Figure 2, Items 8 and 9) with grease. Insert inner bearing into hub (Figure 2, Item 7) with large outside diameter of bearing toward grease seal.
2. Install new grease seal (Figure 2, Item 10) in hub (Figure 2, Item 7), with lip of seal next to inner bearing (Figure 2, Item 9).
3. Install new oil seal retainer (Figure 2, Item 11).

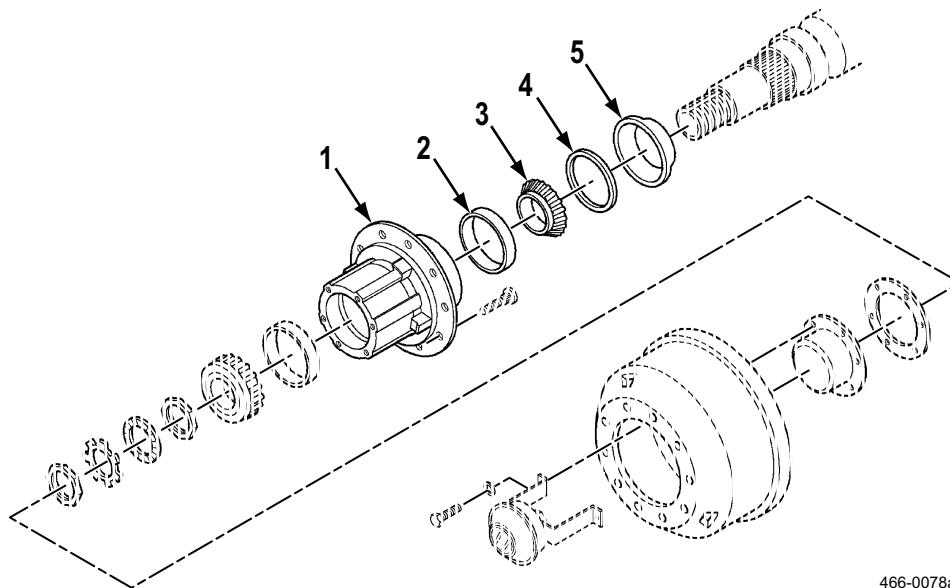


Figure 2. Hub and Brake Drum Installation.

CAUTION

To avoid damage to grease seal, use caution when sliding hub onto axle spindle. Failure to comply may result in damage to, or destruction of, equipment or mission.

4. Slide hub (Figure 3, Item 7) with studs (Figure 3, Item 9) onto axle spindle (Figure 3, Item 8).
5. Pack outer bearing set (Figure 3, Items 5 and 6) with grease. Insert into hub (Figure 3, Item 7) with large diameter of bearing facing out.
6. Install inner nut (Figure 3, Item 4).
7. While rotating hub (Figure 3, Item 7) slowly, tighten inner nut (Figure 3, Item 4) to a torque of 150 lb ft (203.4 N·m). Back off inner nut one turn. Re-torque inner nut to 50 lb ft (67.8 N·m).
8. Install keyed washer (Figure 3, Item 3). If necessary, back off inner nut (Figure 3, Item 4) so that alignment pin on inner nut mates into closest hole in keyed washer (Figure 3, Item 3).
9. Install tabbed washer (Figure 3, Item 2).
10. Install outer bearing nut (Figure 3, Item 1). Turn outer bearing nut (Figure 3, Item 1) tightly against keyed washer (Figure 3, Item 3). Torque outer bearing nut to 150 lb ft (203.4 N·m).

INSTALLATION AND ADJUSTMENT OF WHEEL BEARINGS - Continued**NOTE**

A minimum of two tabs must be bent down on tabbed washer.

11. Bend tabs on tabbed washer (Figure 3, Item 2) against outer bearing nut (Figure 3, Item 1).
12. Align brake drum holes with hub studs (Figure 3, Item 9) and slide brake drum (Figure 3, Item 12) onto hub (Figure 3, Item 7).
13. Install new cap gasket (Figure 3, Item 10).

NOTE

Only perform Step 14 if maintenance is not being performed on right-front hub.

14. Install hub cap (Figure 3, Item 11) with six bolts (Figure 3, Item 14) and new lockwashers (Figure 3, Item 15).
15. For right-front hub and drum only, if hub mileage meter (Figure 3, Item 13) was removed, install hub cap (Figure 3, Item 11) and hub mileage meter (Figure 3, Item 13) with two bolts (Figure 3, Item 14) and new lockwashers (Figure 3, Item 15).

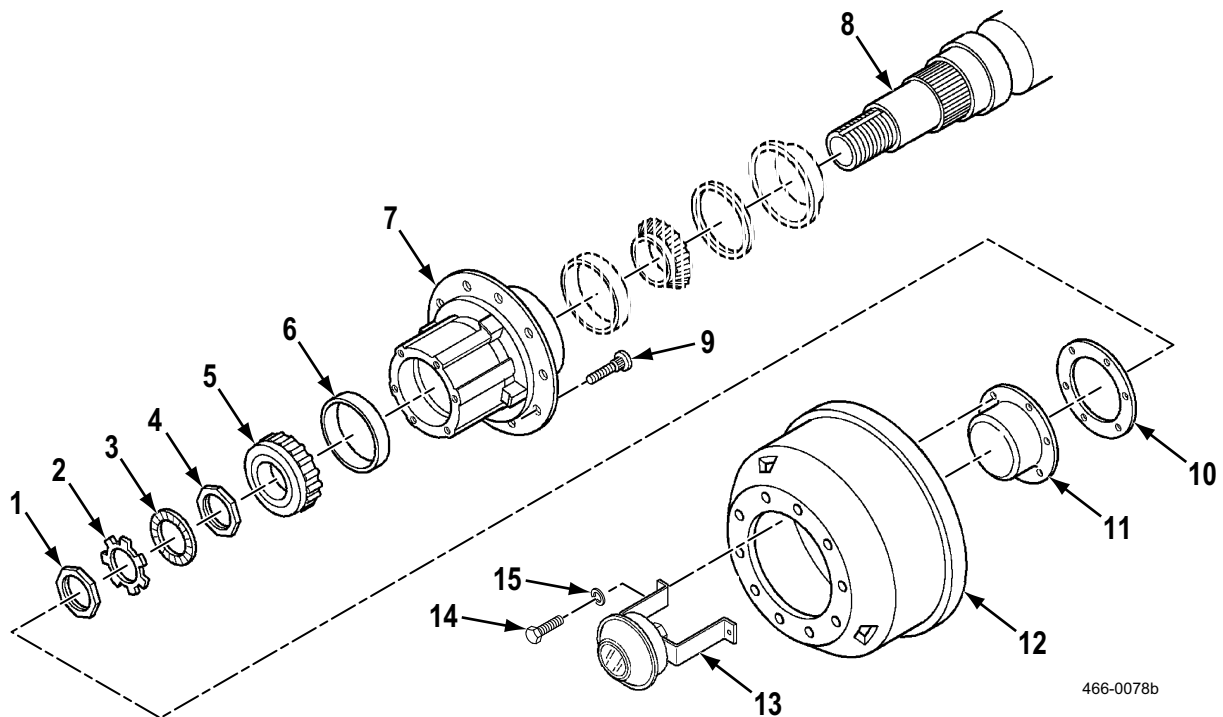


Figure 3. Hub and Brake Drum Installation.

END OF TASK

FOLLOW ON TASK

1. Install wheel and tire assembly (WP 0038).
2. Adjust brakes (WP 0059).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
WHEEL AND TIRE ASSEMBLY REPAIR**

INITIAL SETUP:

References

TM 9-2610-200-14

REPAIR

For instructions on tire repair, refer to TM 9-2610-200-14.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
GOOSENECK LOCKING ASSEMBLY REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Equipment Condition

Semitrailer parked on level ground (WP 0005)

References

WP 0093

REMOVAL**NOTE**

Steps 1 and 2 apply only if lubrication assembly needs replacement.

1. Remove lubrication fitting (Figure 1, Item 6), adapter bushing (Figure 1, Item 7), outer pipe reducer (Figure 1, Item 8), and inner pipe reducer (Figure 1, Item 12).
2. Remove two elbows (Figure 1, Item 12) and hose (Figure 1, Item 13) from semitrailer frame (Figure 1, Item 1).
3. Remove two nuts (Figure 1, Item 5), bolts (Figure 1, Item 3), washers (Figure 1, Item 4), and springs (Figure 1, Item 2) from semitrailer frame (Figure 1, Item 1).
4. Remove two springs (Figure 1, Item 9) and latch handle bar (Figure 1, Item 10) from semitrailer frame (Figure 1, Item 1).

END OF TASK**INSTALLATION**

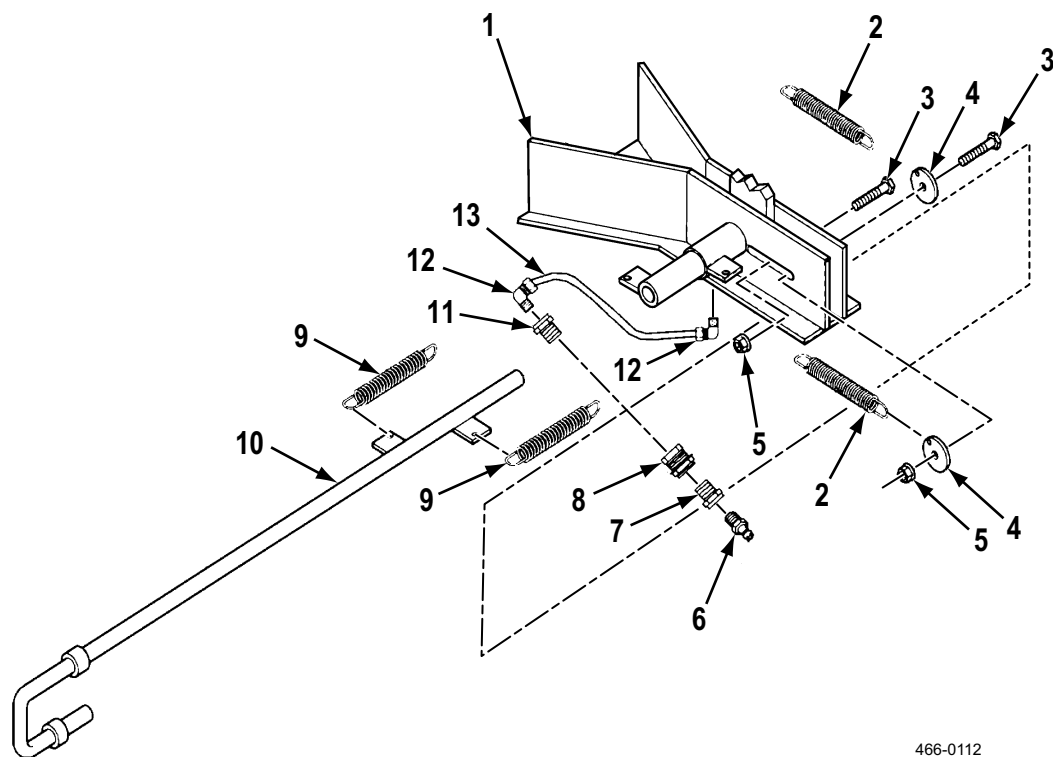
1. Install latch handle bar (Figure 1, Item 10) and two springs (Figure 1, Item 9) on semitrailer frame (Figure 1, Item 1).
2. Install two springs (Figure 1, Item 2), washers (Figure 1, Item 4), bolts (Figure 1, Item 3), and nuts (Figure 1, Item 5) on semitrailer frame (Figure 1, Item 1).

NOTE

Steps 3 and 4 apply only if lubrication assembly needs replacement.

3. Install hose (Figure 1, Item 13) and two elbows (Figure 1, Item 12) on semitrailer frame (Figure 1, Item 1).
4. Install outer pipe reducer (Figure 1, Item 8), inner pipe reducer (Figure 1, Item 11), adapter bushing (Figure 1, Item 7), and lubrication fitting (Figure 1, Item 6).
5. Lubricate per (WP 0093) and check for leaks.

INSTALLATION - Continued



466-0112

Figure 1. Gooseneck Locking Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

GOOSENECK GRAVEL GUARD REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (4) WP 0129, Figure 32, Item 4

Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked on level ground (WP 0005)

REMOVAL

1. Remove two pins (Figure 1, Item 3) and gravel guard assembly.
2. Remove four self-locking nuts (Figure 1, Item 4) and washers (Figure 1, Item 5) behind main mounting bracket (Figure 1, Item 6). Discard self-locking nuts (Figure 1, Item 4).
3. Remove four screws (Figure 1, Item 7), support bracket (Figure 1, Item 1), and gravel guard (Figure 1, Item 2) from main mounting bracket (Figure 1, Item 6).

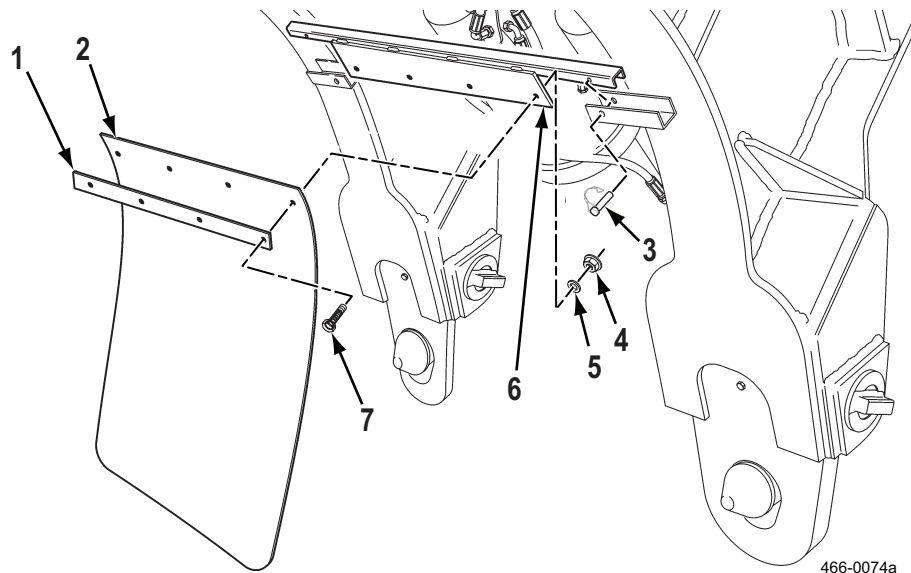


Figure 1. Gooseneck Gravel Guard Removal.

END OF TASK

INSTALLATION

1. Position gravel guard (Figure 2, Item 2) on main mounting bracket (Figure 2, Item 6).
2. Insert four screws (Figure 2, Item 7) through support bracket (Figure 2, Item 1), gravel guard (Figure 2, Item 2), and main mounting bracket (Figure 2, Item 6).
3. Secure support bracket (Figure 2, Item 1) and gravel guard (Figure 2, Item 2) to main mounting bracket (Figure 2, Item 6) with four washers (Figure 2, Item 5) and new self-locking nuts (Figure 2, Item 4).
4. Install gravel guard assembly and two pins (Figure 2, Item 3).

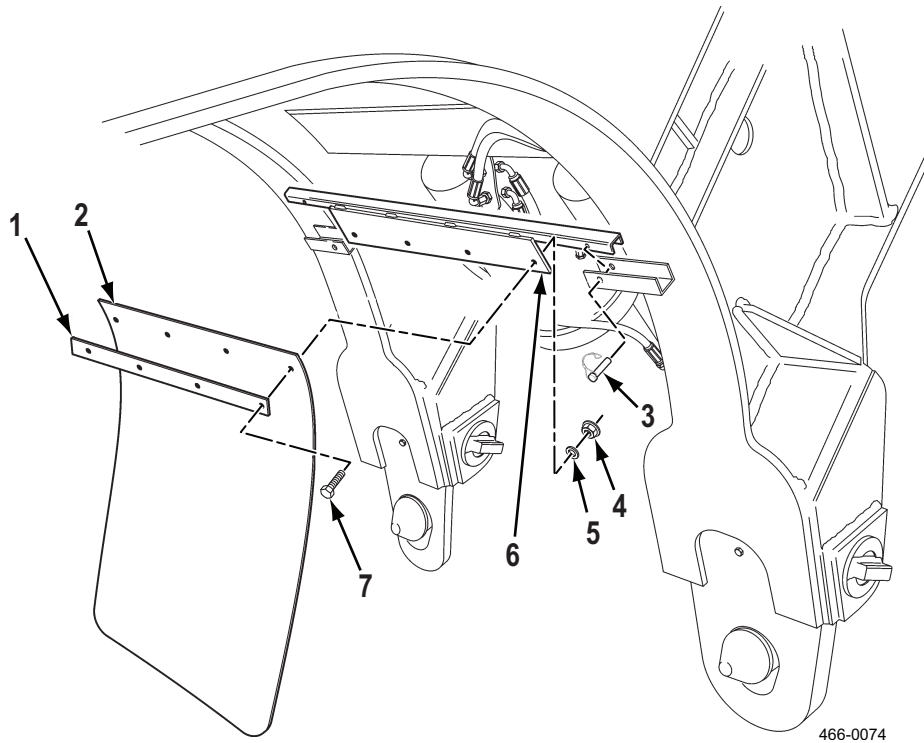


Figure 2. Gooseneck Gravel Guard Installation.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

HYDRAULIC CONTROL VALVE AND PRESSURE GAGE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)
Wrench, Torque (WP 0144, Table 1, Item 19)

Materials/Parts (cont.)

Qty: (3) (WP 0120, Figure 23, Item 15)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

References

WP 0066

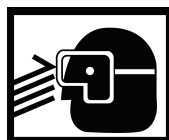
Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Release all pressure from hydraulic lines by disconnecting gooseneck hydraulics from power.

CAUTION

Cap or plug all ports and hose ends to prevent contamination of hydraulic oil. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.

2. Disconnect five hydraulic lines (Figure 1, Item 4) from rear and side of control valve (Figure 1, Item 1) inlet and outlet ports and cap or tape closed openings in ports and lines.
3. Tag and disconnect hydraulic line (Figure 1, Item 3) from pressure gage (Figure 1, Item 2).
4. Loosen and remove three mounting bolts (Figure 1, Item 5), washers (Figure 1, Item 6), and self-locking nuts (Figure 1, Item 7) securing hydraulic control valve (Figure 1, Item 1) to gooseneck and remove control valve (Figure 1, Item 1) and pressure gage (Figure 1, Item 2). Discard self-locking nuts (Figure 1, Item 7).
5. Loosen and separate pressure gage (Figure 1, Item 2) from control valve (Figure 1, Item 1).

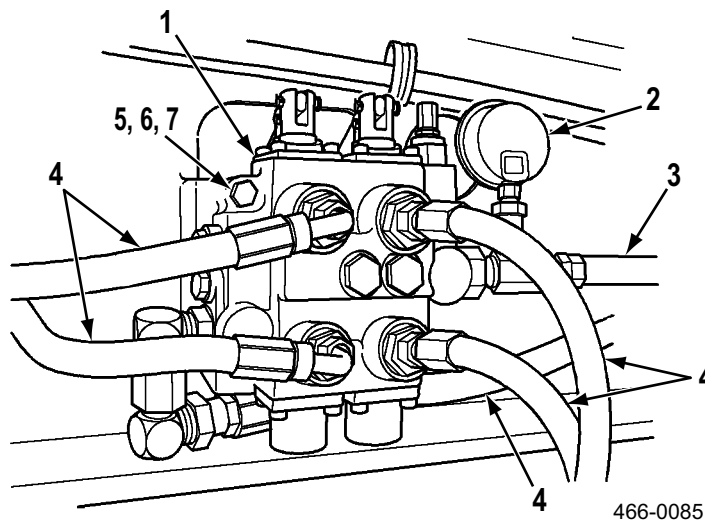


Figure 1. Hydraulic Control Valve and Pressure Gage Replacement.

END OF TASK**DISASSEMBLY**

Remove all fittings from hydraulic control valve.

END OF TASK

INSPECTION

Inspect fittings for damage and replace as needed.

END OF TASK**ASSEMBLY**

Install all fittings onto hydraulic control valve.

END OF TASK**INSTALLATION**

1. Remove tape or cap from control valve (Figure 1, Item 1) pressure gage port.
2. Apply antiseizing tape to threads of pressure gage (Figure 1, Item 2), thread gage onto control valve (Figure 1, Item 1), and orient gage to vertical position.
3. Install hydraulic control valve (Figure 1, Item 1) onto inside wall of gooseneck with three mounting bolts (Figure 1, Item 5), washers (Figure 1, Item 6), and new self-locking nuts (Figure 1, Item 7). Torque nuts to 35 lb ft (47.45 N·m).
4. Remove tape and/or cap from pressure gage hydraulic line (Figure 1, Item 3).
5. Apply antiseizing tape to threads of connector, and connect and tighten pressure gage hydraulic line (Figure 1, Item 3) to pressure gage (Figure 1, Item 2).
6. Remove tape and/or caps from five hydraulic lines (Figure 1, Item 4) to be connected to inlet and outlet ports of control valve (Figure 1, Item 1) and apply antiseizing tape to threads of connectors.
7. Connect and tighten five hydraulic lines (Figure 1, Item 4) to appropriate ports on control valve (Figure 1, Item 1) as directed by tags attached during removal procedure.
8. Pressurize system and check for leaks (WP 0066).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
SETTING HYDRAULIC DECK RAISING/LOWERING PRESSURE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Equipment Condition

Semitrailer coupled (WP 0005)
Wheels chocked (WP 0005)

CAUTION

Verify correct pressure reading on towing vehicle before making any adjustments. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

- A reading of 900 psi (6,205.28 kPa) is only on gage when the hydraulic controls are in use. For the raising/lowering of the deck, readings will go down to 300 psi (2,068.43 kPa) when the lever is disengaged.
- The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.43-6,205.28) under normal operation and will reach a maximum of 900-1,100 psi (6,205.28-7584.23 kPa) under full load.

ADJUSTMENT

1. Raise deck lever (Figure 1, Item 6) until deck is fully raised.
2. While continuing to hold deck lever (Figure 1, Item 6) in raised position, check psi reading on pressure gage (Figure 1, Item 1). Reading should be 900-1,100 psi (6,205.28-6,894.76 kPa). If reading is higher than 1,100 psi (7,584.23 kPa) or lower than 900 psi (6,205.28 kPa), adjust pressure by adjusting hydraulic relief valve (Figure 1, Item 5) as follows:
 - a. Remove small barrel nut (Figure 1, Item 3) on hydraulic relief valve (Figure 1, Item 5) and loosen jamnut (Figure 1, Item 4).

WARNING

DO NOT exceed 1,100 psi (7,584.2 kPa). Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

- b. Rotate six-sided Allen stud (Figure 1, Item 2) on hydraulic relief valve (Figure 1, Item 5) clockwise to raise pressure setting, or counterclockwise to lower pressure setting.
 - c. Retighten jamnut (Figure 1, Item 4) and reinstall barrel nut (Figure 1, Item 3).
 - d. Repeat Steps 1 and 2. If pressure reading is still not correct, verify pressure on towing vehicle supply system.

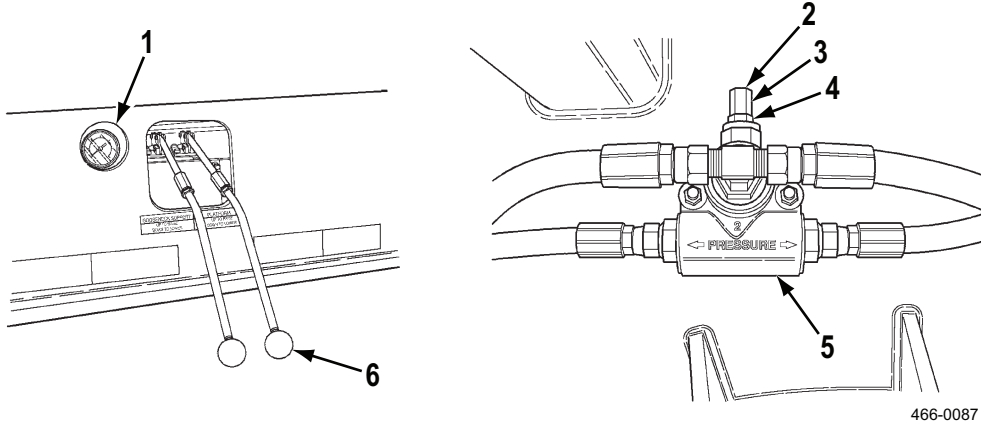


Figure 1. Hydraulic Deck Raising/Lowering Pressure Adjustment.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

HYDRAULIC PRESSURE RELIEF VALVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (2) (WP 0121, Figure 24, Item 4)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

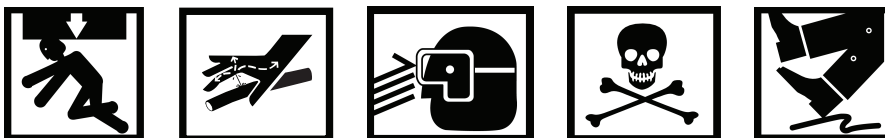
Materials/Parts

Nut, Self-Locking

Equipment Condition

Wheels chocked (WP 0005)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Release all pressure from hydraulic lines by disconnecting gooseneck hydraulics from power.

CAUTION

Cap or plug all ports and hose ends to prevent contamination of hydraulic oil. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.

2. Disconnect four hydraulic lines (Figure 1, Item 1) from pressure relief valve (Figure 1, Item 3) inlet and outlet ports and cap or tape closed openings in ports and lines.
3. Loosen and remove two self-locking nuts (Figure 1, Item 2) securing pressure relief valve (Figure 1, Item 3) to gooseneck and disconnect pressure relief valve from mounting studs. Discard self-locking nuts (Figure 1, Item 2).

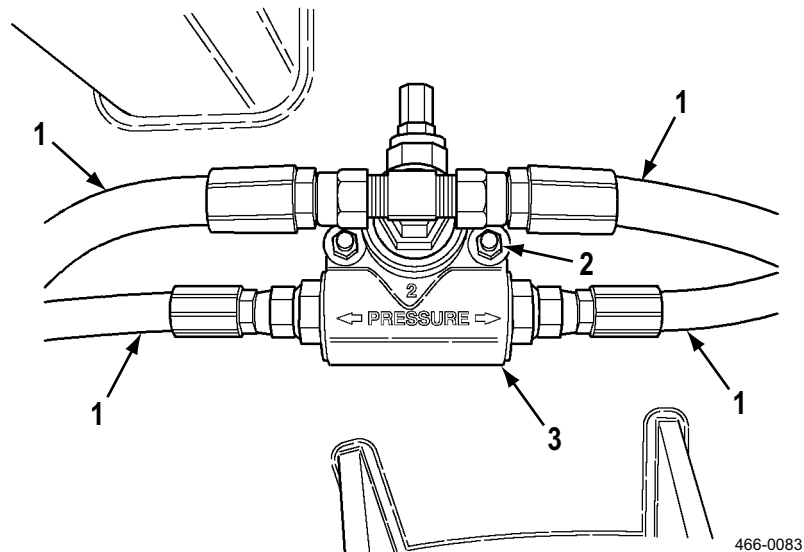


Figure 1. Hydraulic Pressure Relief Valve Replacement.

END OF TASK**DISASSEMBLY**

Remove all fittings from hydraulic pressure relief valve.

END OF TASK**INSPECTION**

Inspect fittings for damage and replace as needed.

END OF TASK

ASSEMBLY

Install all fittings onto hydraulic pressure relief valve.

END OF TASK**INSTALLATION**

1. Install pressure relief valve (Figure 1, Item 3) onto gooseneck mounting studs with two new self-locking nuts (Figure 1, Item 2). Torque nuts to 9 lb ft (12.2 N·m).
2. Remove tape and/or caps from four hydraulic lines (Figure 1, Item 1) and pressure relief valve (Figure 1, Item 3) inlet and outlet ports and apply anti-seizing tape to threads of hydraulic lines. Reconnect and tighten lines (Figure 1, Item 1) to appropriate ports as directed by tags during removal procedure.
3. Pressurize system and check for leaks.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE SETTING HYDRAULIC TILT ARM PRESSURE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Equipment Condition

Semitrailer coupled with no load (WP 0005)
Wheels chocked (WP 0005)

CAUTION

Verify correct pressure reading on towing vehicle before making any adjustments. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

- A reading of 900 psi (6,205.28 kPa) is only on gage when the hydraulic controls are in use. For the raising/lowering of the deck, readings will go down to 300 psi (2,068.43 kPa) when the lever is disengaged.
- The psi will vary due to load. Hydraulic pressures will vary from 300-900 psi (2,068.43-6,205.28 kPa) under normal operation and will reach a maximum of 900-1,100 psi (6,205.28-7584.23 kPa) under full load.

ADJUSTMENT

1. Raise tilt support lever (Figure 1, Item 6) until deck is fully raised.
2. While continuing to hold tilt support lever (Figure 1, Item 6) in raised position, check psi reading on pressure gage (Figure 1, Item 1). Reading should be 900-1,100 psi (6,205.3-7,584.2 kPa). If reading is higher than 1,100 psi (7,584.2 kPa) or lower than 900 psi (6,205.3 kPa), adjust pressure by adjusting hydraulic control valve (Figure 1, Item 5) as follows:
 - a. Remove small barrel nut (Figure 1, Item 3) on hydraulic control valve (Figure 1, Item 5) and loosen jamnut (Figure 1, Item 4).

WARNING

DO NOT exceed 1,100 psi (7,584.2 kPa). Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

- b. Rotate Allen stud (Figure 1, Item 2) located inside barrel nut (Figure 1, Item 3) on hydraulic control valve (Figure 1, Item 5) clockwise to raise pressure setting, or counterclockwise to lower pressure setting.
 - c. Retighten jamnut (Figure 1, Item 4) and reinstall barrel nut (Figure 1, Item 3).
 - d. Repeat Steps 1 and 2. If pressure reading is still not correct, verify pressure on towing vehicle supply system.

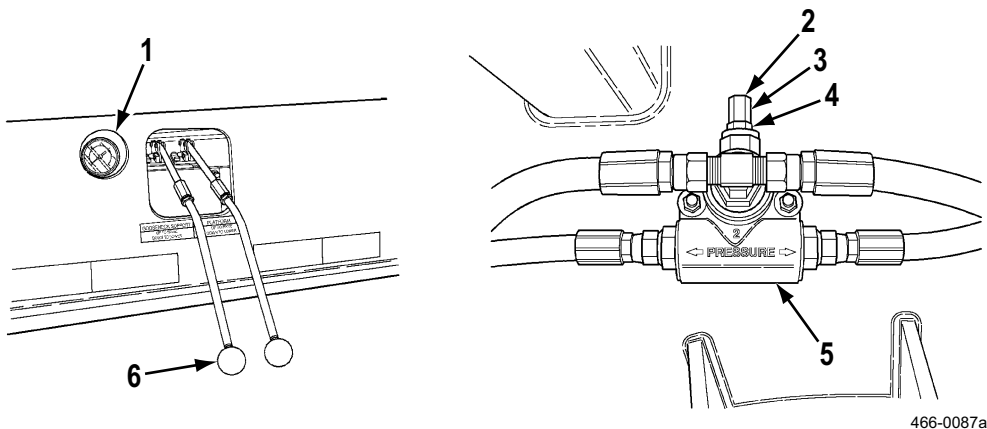


Figure 1. Hydraulic Lift Arm Pressure Adjustment.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE TILT CYLINDER MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Personnel Required

Two

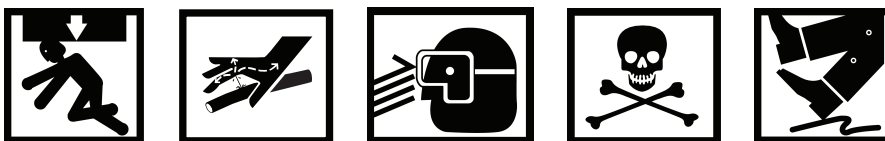
Equipment Condition

Wheels chocked (WP 0005)

Materials/Parts

Pin, Lock Qty: (2) (WP 0122, Figure 25, Item 2)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

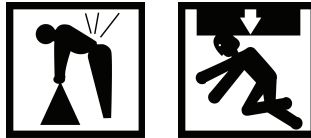
REMOVAL

1. Release all pressure from hydraulic lines by disconnecting gooseneck hydraulics from power source.

CAUTION

Cap or plug all ports and hose ends to prevent contamination of hydraulic oil. Failure to comply may result in damage to, or destruction of, equipment or mission.

2. Tag and disconnect two hydraulic lines (Figure 1, Item 4) from tilt cylinder (Figure 1, Item 3) and cap or seal lines.
3. Support gooseneck tilt arm (Figure 1, Item 5).

WARNING

The cylinder weight is approximately 150 lb (68 kg). Use extreme caution when handling the cylinder. Assistance will be needed when handling the cylinder. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

4. Remove upper and lower locking pins (Figure 1, Item 1) from tilt arm and withdraw cylinder attaching pins (Figure 1, Item 2). Discard locking pins (Figure 1, Item 1).
5. Remove tilt cylinder (Figure 1, Item 3).

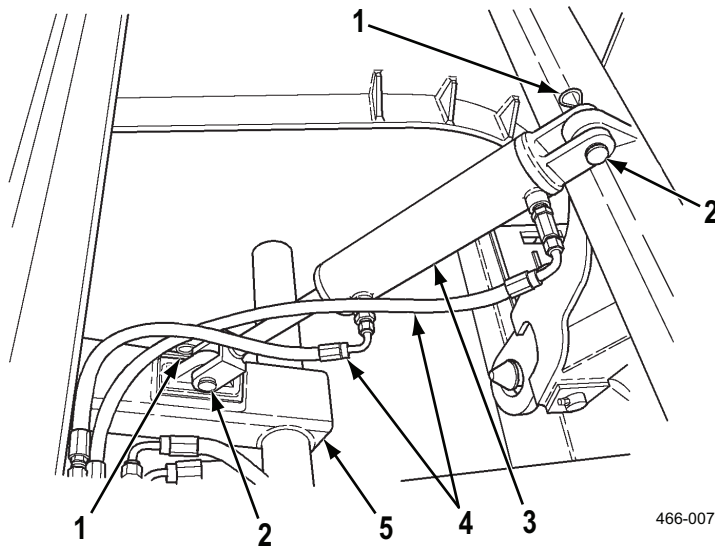


Figure 1. Tilt Cylinder Removal.

END OF TASK

DISASSEMBLY

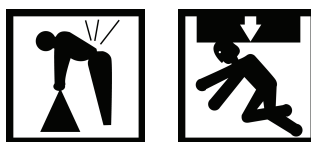
Remove all fittings from tilt cylinder.

END OF TASK**INSPECTION**

Inspect fittings for damage and replace as needed.

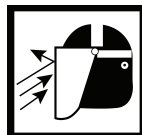
END OF TASK**ASSEMBLY**

Install all fittings onto tilt cylinder.

END OF TASK**INSTALLATION****WARNING**

The cylinder weight is approximately 150 lb (68 kg). Use extreme caution when handling the cylinder. Assistance will be needed when handling the cylinder. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Install tilt cylinder (Figure 1, Item 3) between gooseneck frame and tilt arm (Figure 1, Item 5) and secure upper and lower ends with cylinder attaching pins (Figure 1, Item 2).
2. Lock cylinder attaching pins (Figure 1, Item 2) in place by inserting two new locking pins (Figure 1 Item 1).
3. Remove caps or tape from ends of two hydraulic lines (Figure 1, Item 4) and apply antiseizing tape to threads of inlet and outlet ports of tilt cylinder (Figure 1, Item 3).

WARNING

Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

4. Connect two hydraulic lines (Figure 1, Item 4) to tilt cylinder (Figure 1, Item 3) and apply hydraulic pressure to test operation and check for leaks.
5. Extend and retract tilt cylinder (Figure 1, Item 3) 10 times to remove air from cylinder.

END OF TASK

FOLLOW ON TASK

Check hydraulic system for proper operation (WP 0079).

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
LIFT CYLINDER MAINTENANCE**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Personnel Required

Two

References

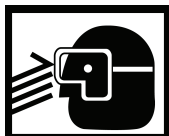
WP 0077

Materials/Parts

Oil, Lubricating (WP 0143, Table 1, Item 19)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

Equipment Condition

Gooseneck detached from semitrailer and resting
on firm pad (WP 0005)

WARNING

- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Allow gooseneck base to drop until gooseneck lifting lugs and center lug of gooseneck are firmly on ground to allow maximum extension of lift cylinders.

WARNING

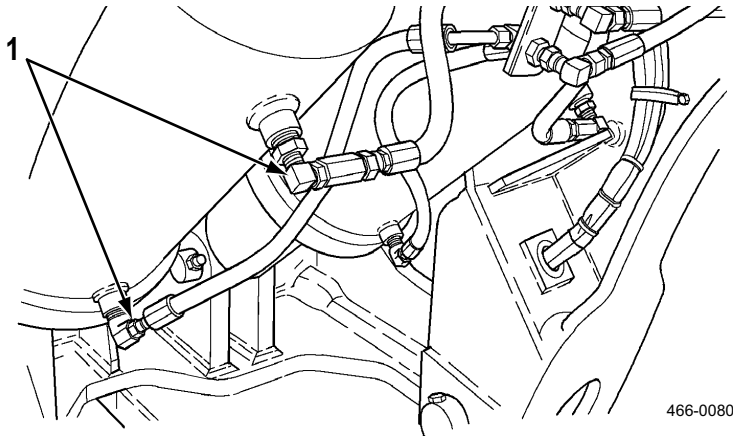
When servicing this vehicle, performing maintenance, or disposing of materials such as lubricants or Chemical Agent Resistant Coating (CARC) paint, consult your Unit/Local Hazardous Waste Disposal Center or safety office for local regulatory guidance. If further information is needed, please contact the Army Environmental Hotline at 1-800-872-3845. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

Cap or plug all ports and hose ends to prevent contamination of hydraulic fluid. Failure to comply may result in damage to, or destruction of, equipment or mission.

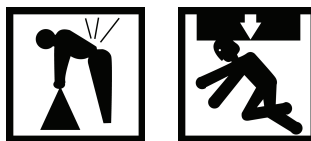
NOTE

- Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.
 - Remove lower hydraulic line first in order to drain hydraulic fluid from system.
 - Discard drained hydraulic fluid.
2. Disconnect and appropriately tag lower and upper hydraulic lines (Figure 1, Item 1) from lift cylinder inlet and outlet ports. Cap or tape closed openings in ports and lines.



466-0080

Figure 1. Hydraulic Lines Removal.

REMOVAL - Continued**WARNING**

Each lift cylinder weighs 350 lb (158.75 kg). A lifting device rated at a minimum of 500 lb (226 kg) and an assistant may be needed to perform this task. Both lift cylinders must be supported. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

3. Using a suitable lifting device, secure a chain around the upper portion of lift cylinder (Figure 2, Item 2) and draw up on hoist to remove slack.
4. Remove bolt and nut securing outer end of upper lift cylinder pin (Figure 2, Item 1) and remove washer from end pin.

NOTE

As cylinder pin is driven out, maintain sufficient tension on suitable lifting device supporting upper portion of lift cylinder so that cylinder does not suddenly shift as pin is removed.

5. Drive upper lift cylinder pin (Figure 2, Item 1) out from hangers through access hole in gooseneck wall to free upper portion of lift cylinder.

CAUTION

Do not use a chain to restrain movement of piston as a chain may score or damage piston surface. Failure to comply may result in damage to, or destruction of, equipment or mission.

6. Secure piston of lift cylinder (Figure 2, Item 2) to restrain movement of lower portion of cylinder when lower pin (Figure 2, Item 3) is removed.
7. Remove bolt and nut securing lower lift cylinder pin (Figure 2, Item 3), drive out pin, and raise suitable lifting device to remove lift cylinders (Figure 2, Item 2).
8. Repeat for other lift cylinder.

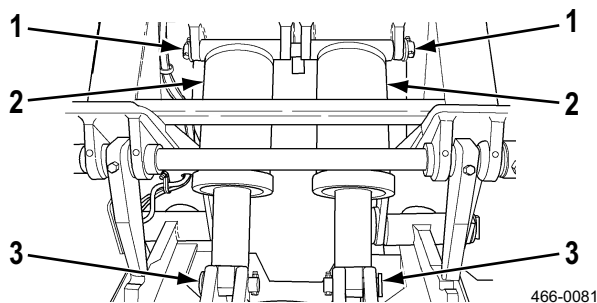


Figure 2. Lift Cylinders Replacement.

END OF TASK

DISASSEMBLY

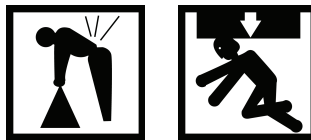
Remove all fittings from lift cylinder.

END OF TASK**INSPECTION**

Inspect fittings for damage and replace as needed.

END OF TASK**ASSEMBLY**

Install all fittings onto lift cylinder.

END OF TASK**INSTALLATION****WARNING**

Each lift cylinder weighs 350 lb (158.75 kg). A lifting device rated at 500 lb (226 kg) and an assistant may be needed to perform this task. Use extreme caution when handling lift cylinder. Provide adequate support and use assistance during procedure. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

Do not use a chain to restrain movement of piston as a chain may score or damage piston surface. Failure to comply may result in damage to, or destruction of, equipment or mission.

1. Using a suitable lifting device securing upper portion of lift cylinder and a second securing device around lift cylinder piston, position lift cylinder (Figure 3, Item 2) onto gooseneck so that end of piston is located between lugs of base plate and secure with pin (Figure 3, Item 1), washer, bolt, and nut.
2. Work upper portion of lift cylinder (Figure 3, Item 2) into position so that upper lift cylinder pin (Figure 3, Item 1) can be driven through lift cylinder hangers and lugs. Secure pin with bolt, washer, and nut.
3. Remove suitable lifting device and securing device from lift cylinder.
4. Repeat for other lift cylinder.

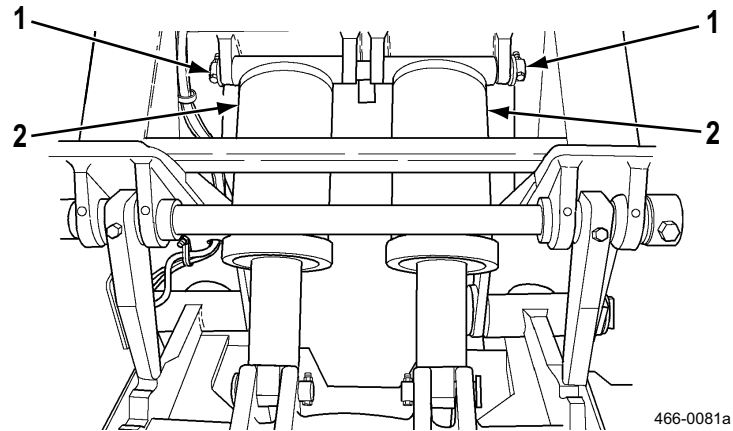
INSTALLATION - Continued

Figure 3. Lift Cylinders Installation.

5. Remove caps or tape from ends of hydraulic lines and lift cylinder ports and reconnect upper and lower hydraulic lines (Figure 4, Item 1).

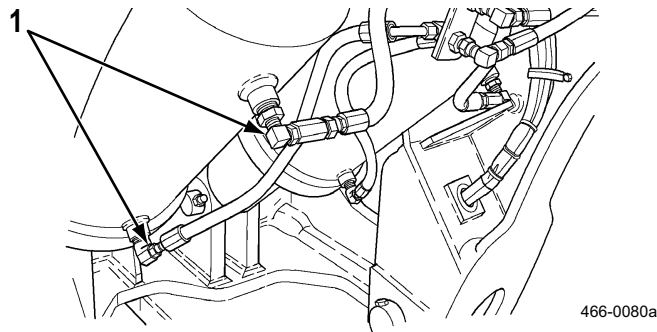
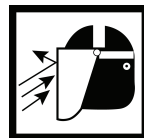


Figure 4. Hydraulic Lines Installation.

WARNING

Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

Ensure towing vehicle hydraulic fluid level remains at proper fill point through all system checks.

6. Apply hydraulic pressure to system and check for leaks.

INSTALLATION - Continued

7. Extend and retract lift cylinders 10 times to remove any air from hydraulic system.

END OF TASK**FOLLOW ON TASK**

Check hydraulic system for proper operation (WP 0077).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

HYDRAULIC CHECK VALVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts (cont.)

(WP 0143, Table 1, Item 7)
O-Ring (WP 0123, Figure 26, Item 10)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

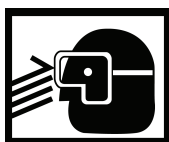
Materials/Parts

Corrosion, Preventive

Equipment Condition

Semitrailer parked on level ground (WP 0005)
Gooseneck gravel guard removed (WP 0075)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

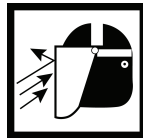
REMOVAL

1. Release all pressure from hydraulic lines by disconnecting gooseneck hydraulics from power source.
2. Disconnect hydraulic line (Figure 1, Item 2) from hydraulic check valve (Figure 1, Item 1).
3. Disconnect check valve (Figure 1, Item 1) from hydraulic lift cylinder fitting (Fitting 1, Item 4) and remove O-ring (Figure 1, Item 3). Discard O-ring (Figure 1, Item 3).

CAUTION

Cap or plug all fittings and hose ends to prevent contamination of hydraulic system. Failure to comply may result in damage to, or destruction of, equipment or mission.

4. Cap or plug open lift cylinder fitting (Figure 1, Item 4) and open hydraulic line end (Figure 1, Item 2).

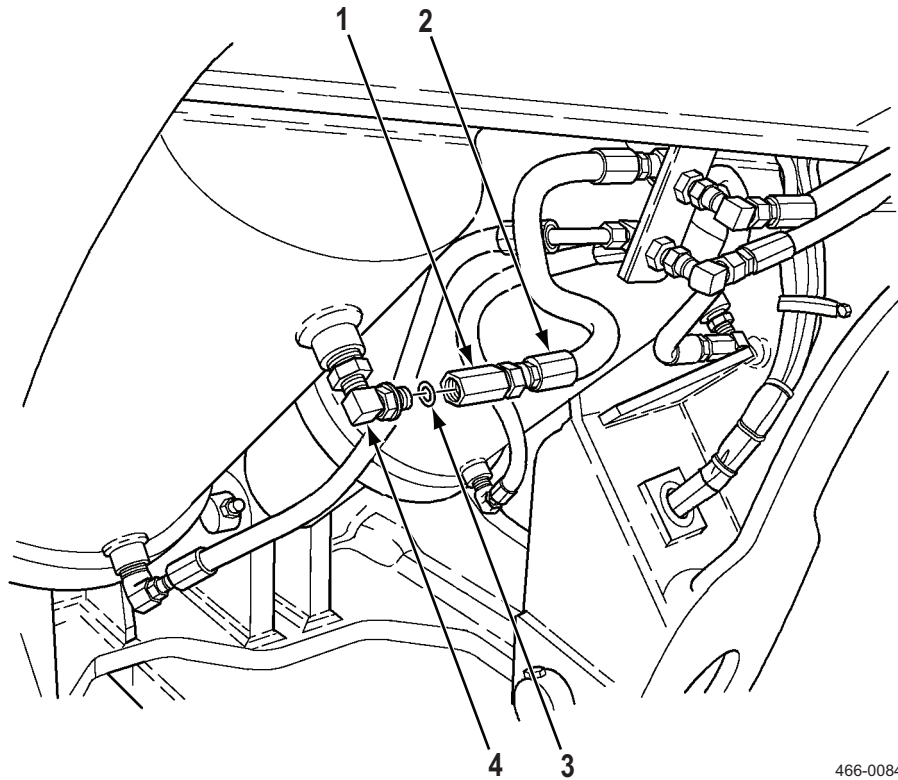
END OF TASK**CLEANING****WARNING**

Compressed air used for cleaning or drying purposes, or for cleaning restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing and eye protection, and use caution. Do NOT point compressed air at other personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

Clean check valve and blowout using compressed air.

END OF TASK**INSTALLATION**

1. Remove tape or caps from lift cylinder fitting (Figure 1, Item 4) and hydraulic line disconnected end (Figure 1, Item 2) and apply antiseizing tape to threads of check valve (Figure 1, Item 1) and lift cylinder fitting (Figure 1, Item 4).
2. Install new O-ring (Figure 1, Item 3) on lift cylinder fitting (Figure 1, Item 4).
3. Connect check valve (Figure 1, Item 1) to lift cylinder fitting (Figure 1, Item 4) and hydraulic line (Figure 1, Item 2) and tighten as appropriate.
4. Pressurize system and check for leaks.

INSTALLATION - Continued

466-0084

Figure 1. Hydraulic Check Valve Maintenance.

END OF TASK**FOLLOW ON TASK**

Install gooseneck gravel guard (WP 0075).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

GOOSENECK REGULATOR VALVES MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (2) (WP 0124, Figure 27, Item 24)
Tag, Marker (WP 0143, Table 1, Item 28)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

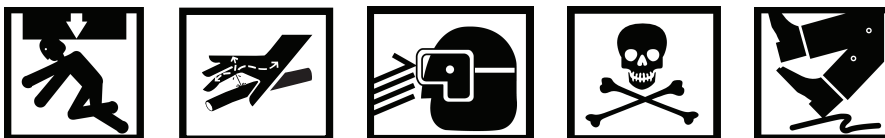
Materials/Parts

Nut, Self-Locking

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

There are two gooseneck regulator valves on semitrailer, this procedure replaces one valve. The other valve is replaced the same.

REMOVAL

1. Release all pressure from hydraulic lines by disconnecting gooseneck hydraulics from power source.

CAUTION

Cap or plug all fittings and hose ends to prevent contamination of hydraulic oil. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Tag all wires, hoses, tubing, and connections prior to removal for ease of installation.

2. Disconnect hydraulic lines (Figure 1, Item 1) from gooseneck regulator valve (Figure 1, Item 5) connectors and cap or tape closed openings in gooseneck regulator valve connectors and hydraulic lines.
3. Remove two self-locking nuts (Figure 1, Item 2), four washers (Figure 1, Item 3), two bolts (Figure 1, Item 4), and gooseneck regulator valve (Figure 1, Item 5) from inside wall of gooseneck. Discard self-locking nuts (Figure 1, Item 2).

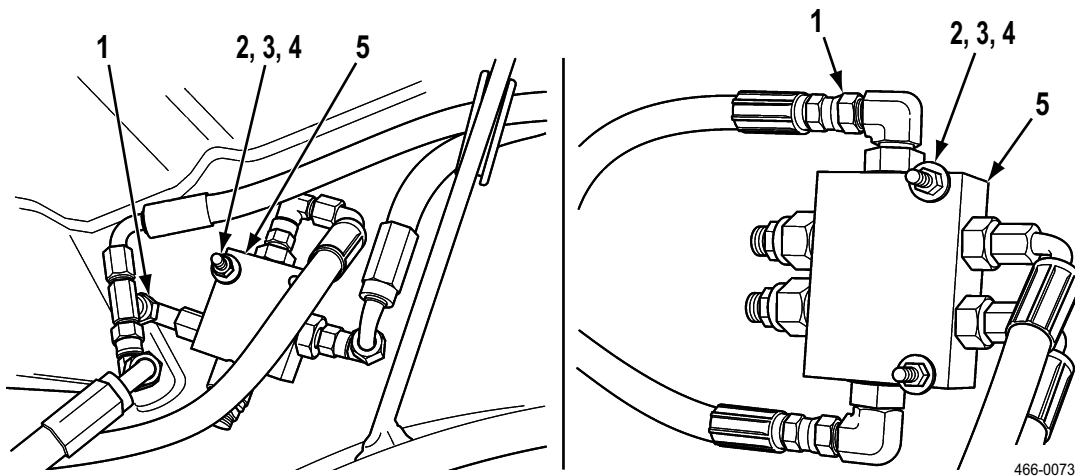


Figure 1. Gooseneck Regulator Valves Replacement.

END OF TASK**DISASSEMBLY**

Remove all fittings from gooseneck regulator valve.

END OF TASK**INSPECTION**

Inspect fittings for damage and replace as needed.

END OF TASK

ASSEMBLY

Install all fittings onto gooseneck regulator valve.

END OF TASK**INSTALLATION**

1. Install gooseneck regulator valve (Figure 1, Item 5) onto inside wall of gooseneck with two bolts (Figure 1, Item 4), four washers (Figure 1, Item 3), and two new self-locking nuts (Figure 1, Item 2).
2. Remove caps or tape from gooseneck regulator valve (Figure 1, Item 5) connectors and hydraulic lines (Figure 1, Item 1).
3. Apply anti-seizing tape to threads of gooseneck regulator valve (Figure 1, Item 5) connectors.
4. Reconnect and tighten hydraulic lines (Figure 1, Item 1) to appropriate connectors as directed by tags during removal procedure.
5. Pressurize system and check for leaks.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE HYDRAULIC LINE REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0051

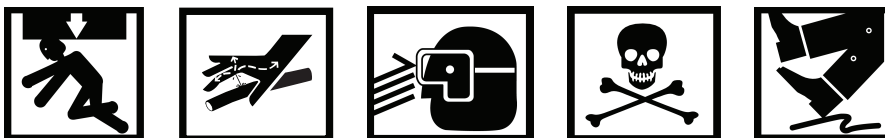
Equipment Condition

Wheels chocked (WP 0005)

Materials/Parts

Strap, Tiedown (WP 0143, Table 1, Item 27)
Tape, Antiseizing (WP 0143, Table 1, Item 29)

WARNING



- Gooseneck must be securely supported and resting on firm foundation during hydraulic maintenance procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- High pressure hydraulics used to operate equipment can pierce body tissue. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Wear eye protection when performing any hydraulic maintenance procedure or test. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils, and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

- Hydraulic lines can be replaced or repaired, depending on the length of the damaged section.
- For general gooseneck hydraulic line maintenance instructions, see Lines and Ports and Antiseizing Tape (WP 0051).

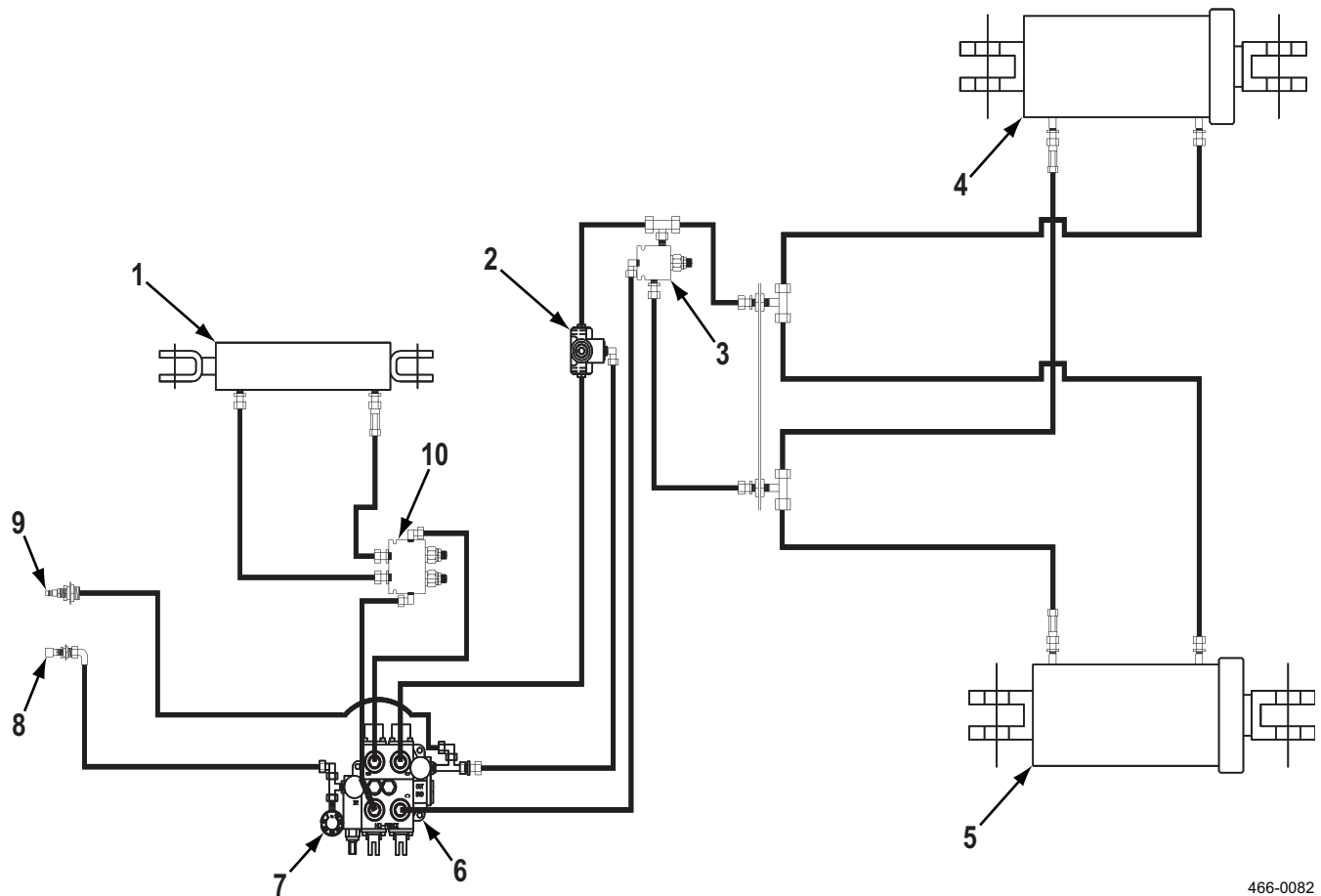
REPLACEMENT

Hydraulic lines and fittings are not ordinarily removed unless they need to be replaced. Badly damaged lines and fittings must be replaced. Hydraulic lines must be tightly connected. Refer to (Figure 1) for additional information.

Table 1. Key Components.

KEY COMPONENT	
1	Hydraulic Tilt Cylinder
2	Pressure Relief Valve
3	Gooseneck Regulator Valve (Lift Cylinders)
4	Hydraulic Lift Cylinder (Curb Side)
5	Hydraulic Lift Cylinder (Road Side)
6	Hydraulic Control Valve
7	Hydraulic Pressure Gage
8	Female Coupling
9	Male Coupling
10	Gooseneck Regulator Valve (Tilt Cylinders)

REPLACEMENT - Continued



466-0082

Figure 1. Gooseneck Hydraulic System Diagram.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
TOOL BOX REPAIR**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)
Torch, Cutting
(WP 0144, Table 1, Item 17)
Welder, Arc, Portable
(WP 0144, Table 1, Item 18)

Materials/Parts (cont.)

Qty: (6) WP 0125, Figure 28, Item 11
Remover, Paint (WP 0143, Table 1, Item 22)

Personnel Required

Two

References

TC 9-237

Materials/Parts

Hinge Pin Qty: (3) WP 0125, Figure 28, Item 2
Nut, Self-Locking
Qty: (10) WP 0125, Figure 28, Item 8
Nut, Self-Locking

Equipment Condition

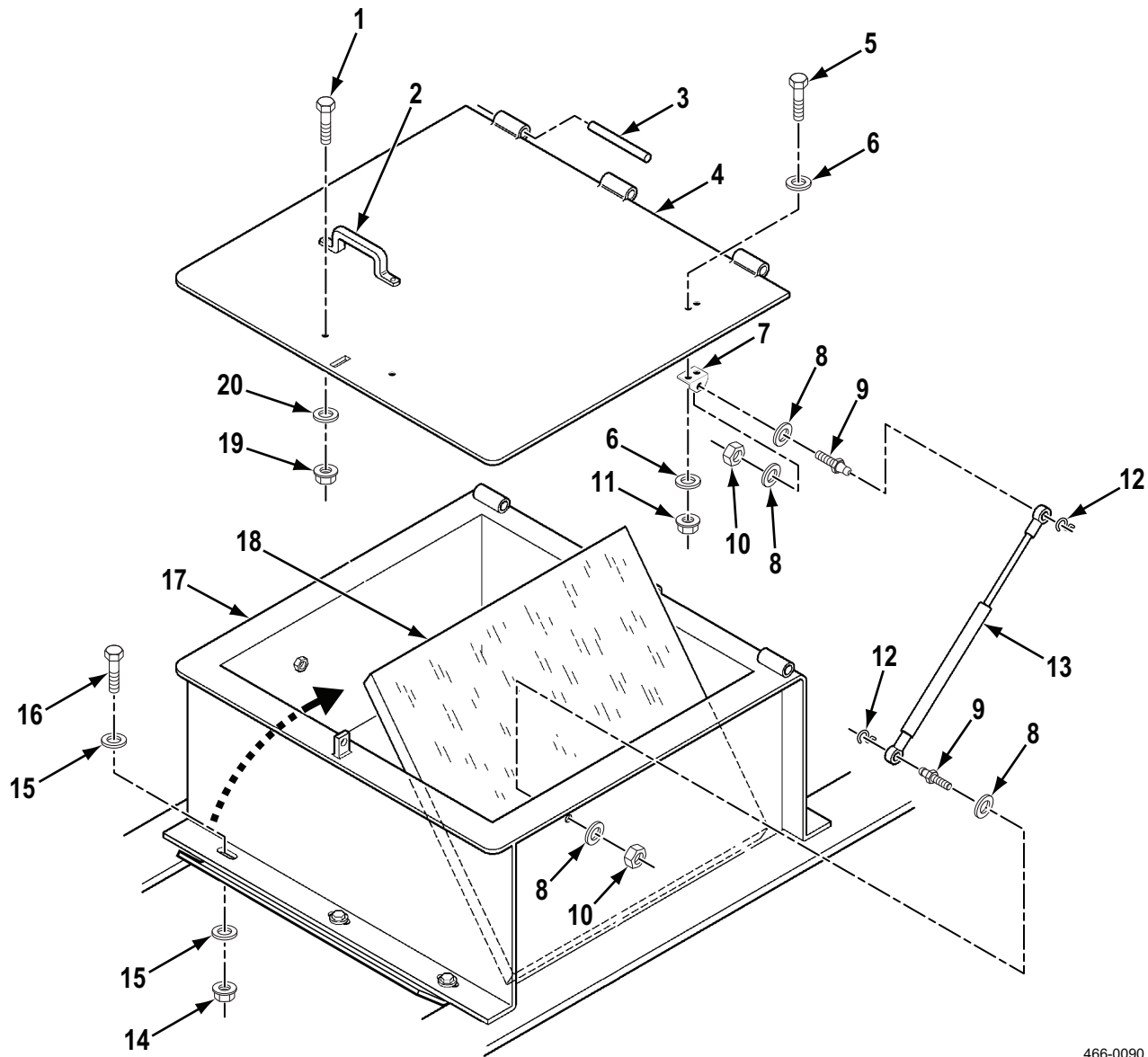
Semitrailer parked on level ground (WP 0005)

WARNING

- The tool box lid is secured by two pneumatic openers. Caution should be used when opening the tool box. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- The tool box weighs 250 lb (113.39 kg). The tool box replacement requires a lifting device rated at a minimum of 500 lb (226 kg) and two personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

Remove six self-locking nuts (Figure 1, Item 14), flat washers (Figure 1, Item 15), bolts (Figure 1, Item 16), and tool box (Figure 1, Item 17) from gooseneck. Discard self-locking nuts (Figure 1, Item 14).



466-0090

Figure 1. Tool Box Removal.

END OF TASK

DISASSEMBLY**WARNING**

Chemical Agent Resistant Coating (CARC) paint debris may be considered environmentally hazardous during removal. Consult local procedures prior to removal of CARC paint to ensure compliance with local laws. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

Read Disassembly and Assembly instructions first, and then perform only the steps needed to repair the tool box.

1. Fully open and secure tool box lid (Figure 1, Item 4), disconnect lower end of pneumatic cylinders (Figure 1, Item 13), and tilt wooden tool box floorboard (Figure 1, Item 18) up on one side to clear pneumatic cylinder ball studs (Figure 1, Item 9). Lift out floorboard (Figure 1, Item 18).
2. Remove four safety clips (Figure 1, Item 12) and pull to disconnect pneumatic cylinders (Figure 1, Item 13) from ball studs (Figure 1, Item 9) and remove pneumatic cylinders (Figure 1, Item 13). Remove four self-locking nuts (Figure 1, Item 10), eight washers (Figure 1, Item 8), and four ball studs (Figure 1, Item 9). Discard self-locking nuts (Figure 1, Item 10).
3. Remove four self-locking nuts (Figure 1, Item 11), eight washers (Figure 1, Item 6), four bolts (Figure 1, Item 5), and two brackets (Figure 1, Item 7). Discard self-locking nuts (Figure 1, Item 11).
4. Remove two self-locking nuts (Figure 1, Item 19), washers (Figure 1, Item 20), bolts (Figure 1, Item 1), and handle (Figure 1, Item 2). Discard self-locking nuts (Figure 1, Item 19).
5. Remove paint from area to be repaired. Refer to local procedures for CARC paint.
6. Using a cutting torch, release welds between hinges and tool box cover (Figure 1, Item 4) and remove cover.
7. Drive pins (Figure 1, Item 3) out of hinges. Discard hinge pins (Figure 1, Item 3).

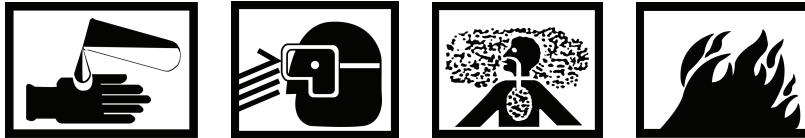
END OF TASK**ASSEMBLY****WARNING**

Chemical Agent Resistant Coating (CARC) paint debris may be considered environmentally hazardous during removal. Consult local procedures prior to removal of CARC paint to ensure compliance with local laws. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Install new hinge pins (Figure 1, Item 3) on portion of hinge attached to tool box (Figure 1, Item 17).
2. Install tool box cover (Figure 1, Item 4) hinges onto hinge pins (Figure 1, Item 3) and close tool box cover.

ASSEMBLY - Continued

3. Align tool box cover (Figure 2, Item 4) and clamp hinges in position.

WARNING

- The following must be done before grinding, cutting, or welding any equipment that has been Chemical Agent Resistant Coating (CARC)-coated:
 - Wear protective equipment (e.g., eye protection, gloves, apron) when grinding or sanding CARC-coated equipment. DO NOT leave any skin exposed.
 - Use high-efficiency air purifying respirators when grinding or sanding CARC-coated before welding.
 - Never weld or cut CARC-coated equipment; grind or sand off CARC paint completely before welding.
 - Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals. Protective clothing, eye protection, and respirator must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby; and requirements of TC 9-237 strictly followed. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- CARC paint contains Hexamethylene Diisocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin. A burning sensation in throat, and nose and watering of the eyes. In extreme concentrations HDI can cause coughing, shortness of breath, pain during respiration, increased sputum production, and chest tightness. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

CAUTION

When welding, semitrailer must be uncoupled from towing vehicle. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

Check alignment of tool box cover to tool box before completing welding procedure.

4. Weld tool box cover (Figure 2, Item 4) hinges to tool box cover.
5. Install handle (Figure 2, Item 2), two bolts (Figure 2, Item 1), washers (Figure 2, Item 20), and new self-locking nuts (Figure 2, Item 19).
6. Install two brackets (Figure 2, Item 7), four bolts (Figure 2, Item 5), eight washers (Figure 2, Item 6), and four new self-locking nuts (Figure 2, Item 11).
7. Tilt and lower tool box floorboard (Figure 2, Item 18) in place.

ASSEMBLY - Continued

8. Install four ball studs (Figure 2, Item 9) and secure with four new self-locking nuts (Figure 2, Item 10) and eight washers (Figure 2, Item 8).
9. Install pneumatic cylinders (Figure 2, Item 13) onto ball studs (Figure 2, Item 9) by pushing ends of cylinders over ball studs. Install four safety clips (Figure 2, Item 12).

END OF TASK**INSTALLATION**

Install tool box (Figure 2, Item 17) onto gooseneck with six bolts (Figure 2, Item 16), flat washers (Figure 2, Item 15), and new self-locking nuts (Figure 2, Item 14).

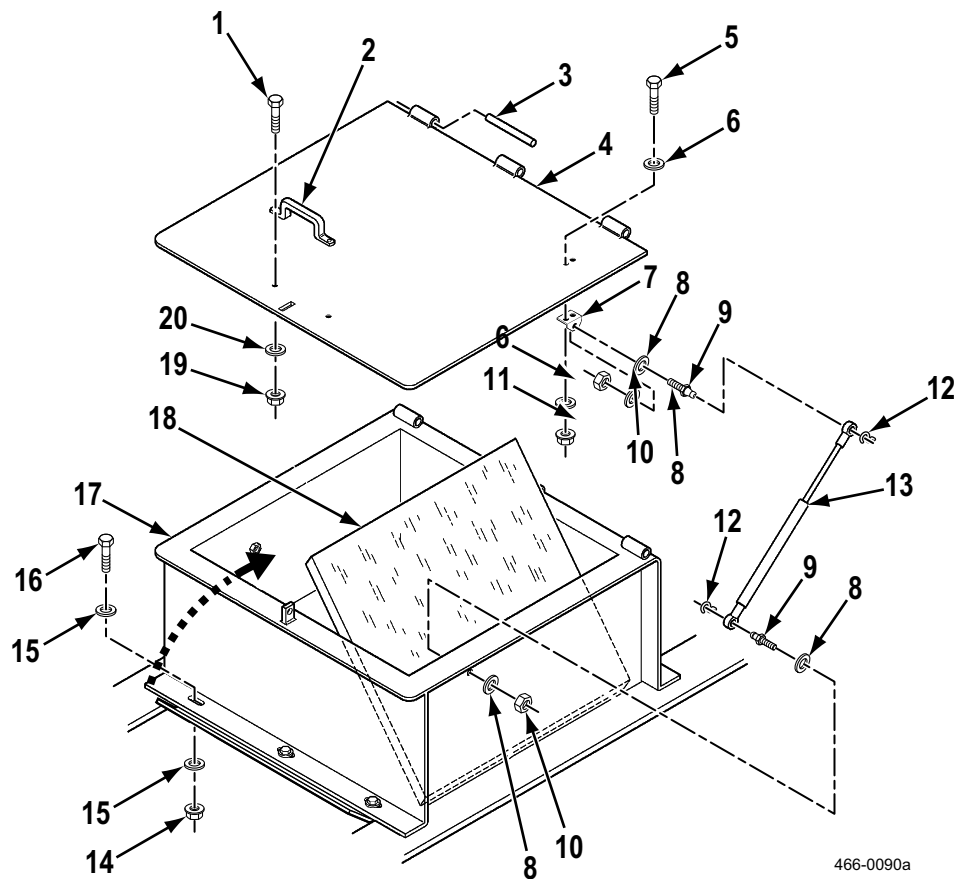


Figure 2. Tool Box Repair.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
OUTRIGGER REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

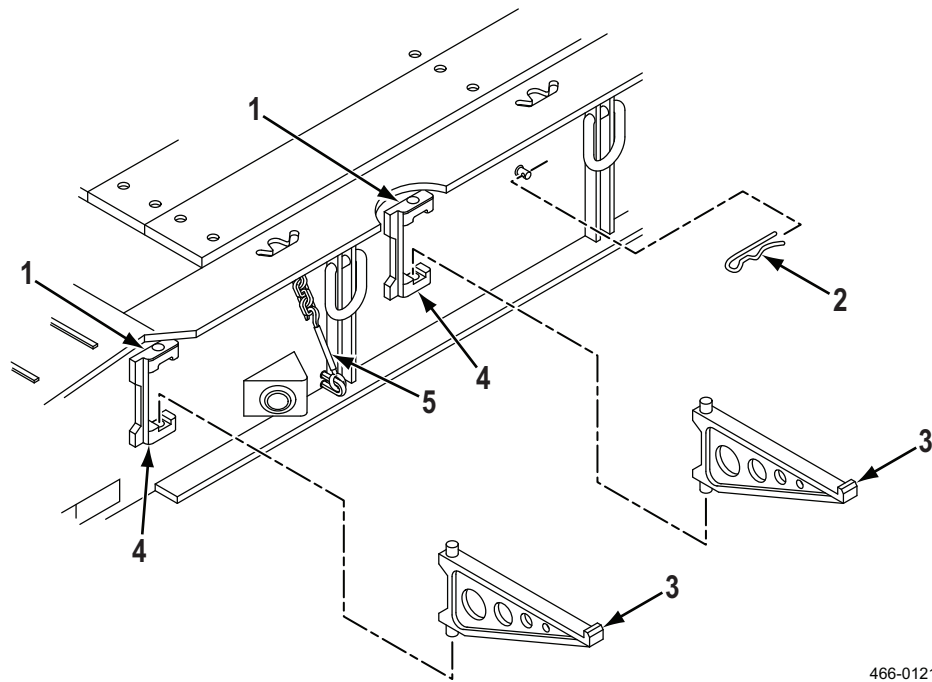
Tool Kit, General Mechanic's

Tools and Special Tools (cont.)

(WP 0144, Table 1, Item 16)

REMOVAL

1. Pull clip (Figure 1, Item 2) out of pin or loosen and unhook turnbuckle (Figure 1, Item 5) to release outrigger (Figure 1, Item 3).
2. Swing out outrigger (Figure 1, Item 3).
3. Lift outrigger upward and remove bottom of outrigger (Figure 1, Item 3) from lower yoke (Figure 1, Item 4). Lower outrigger (Figure 1, Item 3) to clear upper yoke (Figure 1, Item 1).



466-0121

Figure 1. Outrigger Replacement.

END OF TASK

INSTALLATION

1. Install outrigger (Figure 2, Item 3) in upper yoke (Figure 2, Item 1) and lift as high as possible.
2. Install outrigger (Figure 2, Item 3) in lower yoke (Figure 2, Item 4).
3. Swing outrigger (Figure 2, Item 3) in as far as possible.
4. Install clip (Figure 2, Item 2) in pin or hook and tighten turnbuckle (Figure 2, Item 5) to secure outrigger.

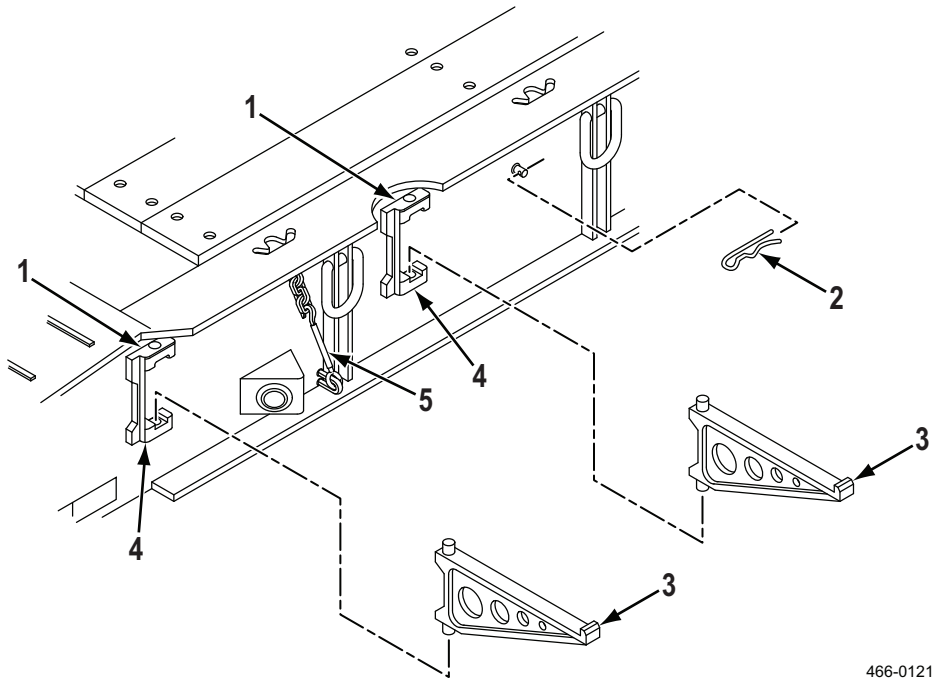


Figure 2. Outrigger Replacement.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
MUD FLAP REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

Qty: (4) WP 0129, Figure 32, Item 4

Equipment Condition

Semitrailer parked on level ground (WP 0005)

Materials/Parts

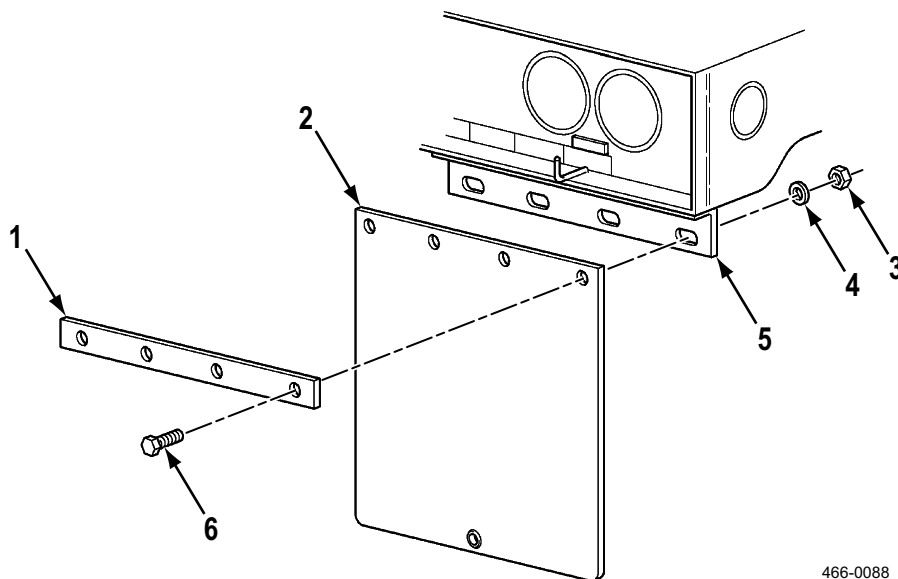
Nut, Self-Locking

NOTE

There are two mud flaps on semitrailer, this procedure replaces one mud flap. The other mud flap is replaced the same.

REMOVAL

1. Remove four self-locking nuts (Figure 1, Item 3) and washers (Figure 1, Item 4) behind bracket (Figure 1, Item 1). Discard self-locking nuts (Figure 1, Item 3).
2. Remove four screws (Figure 1, Item 6), bracket (Figure 1, Item 1), and mud flap (Figure 1, Item 2) from semitrailer frame (Figure 1, Item 5).



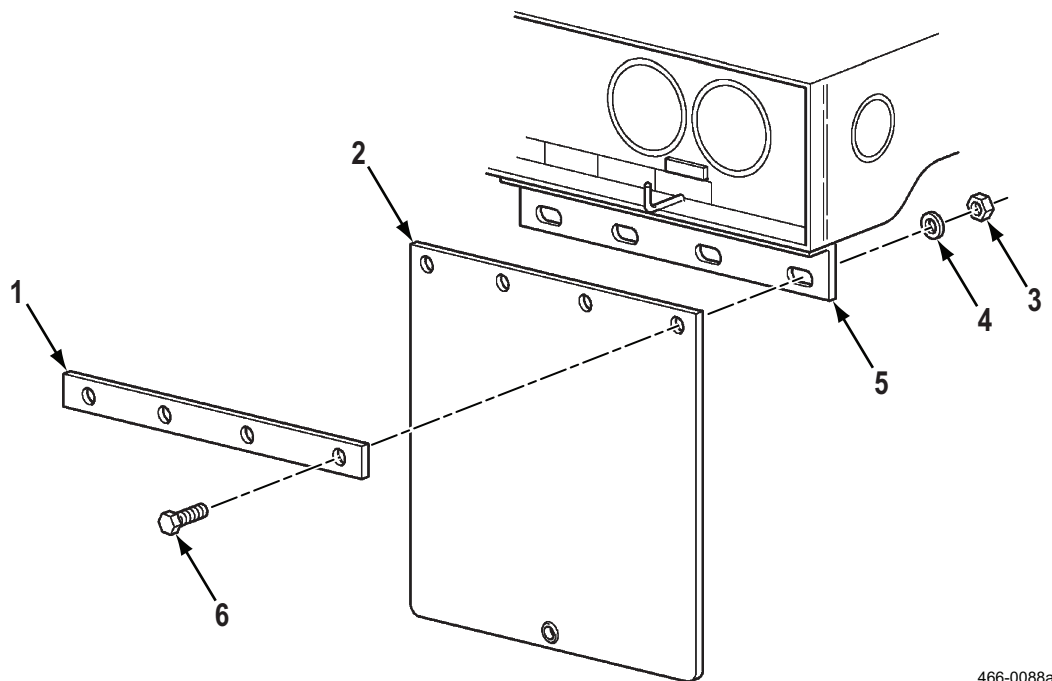
466-0088

Figure 1. Mud Flap Removal.

END OF TASK

INSTALLATION

1. Position mud flap (Figure 2, Item 2) on semitrailer frame (Figure 2, Item 5).
2. Install bracket (Figure 2, Item 1) and mud flap (Figure 2, Item 2) to semitrailer frame (Figure 2, Item 5) with four screws (Figure 2, Item 6), washers (Figure 2, Item 4), and new self-locking nuts (Figure 2, Item 3).



466-0088a

Figure 2. Mud Flap Installation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE FLOOR BOARD ASSEMBLY REPAIR

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Drill, Electric, Portable
(WP 0144, Table 1, Item 5)
Drill Set, Twist (WP 0144, Table 1, Item 4)

Personnel Required

Two

Equipment Condition

Semitrailer parked on level ground (WP 0005)

REMOVAL

1. From under semitrailer, remove nut (Figure 1, Item 4), and clip (Figure 1, Item 3) from screw (Figure 1, Item 1).
2. Drive out screw (Figure 1, Item 1) from board (Figure 1, Item 2).
3. Repeat Steps 1 and 2 for other nuts, clips, and screws in boards.
4. Remove old board (Figure 1, Item 2) from deck (Figure 1, Item 5).

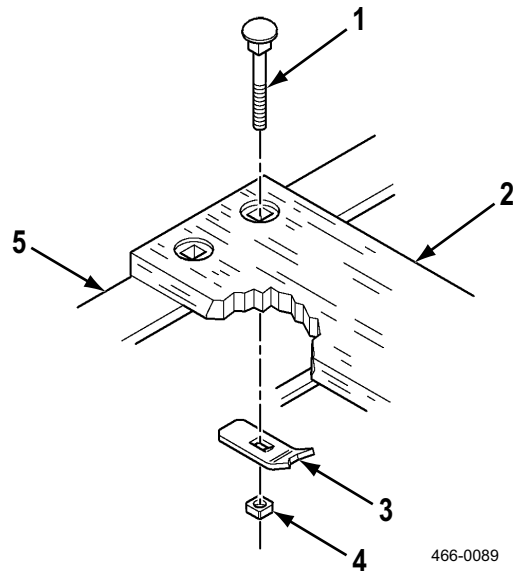
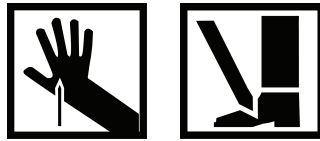


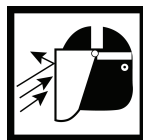
Figure 1. Floor Board Removal.

END OF TASK

INSTALLATION**WARNING**

Note appropriate location where holes will be drilled in boards. DO NOT place hands or feet in this area when holding boards. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. Install board (Figure 2, Item 2) in deck (Figure 2, Item 5). Check for proper fit.

WARNING

Wear eye protection when using electric drill. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. Drill holes in board (Figure 2, Item 2).
3. Drive screw (Figure 2, Item 1) into board (Figure 2, Item 2) as far as possible. Repeat for remaining holes.
4. Install clip (Figure 2, Item 3) and nut (Figure 2, Item 4) on screw (Figure 2, Item 1). Tighten nut (Figure 2, Item 4) until head of screw (Figure 2, Item 1) is fully sealed.
5. Repeat Step 4 for rest of clips, screws, and nuts.

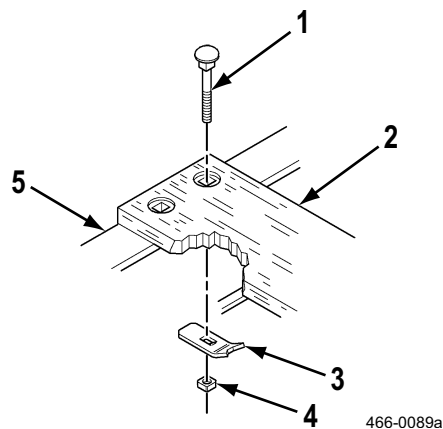


Figure 2. Floor Board Installation.

END OF TASK

END OF WORK PACKAGE

**FIELD MAINTENANCE
DATA PLATES REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

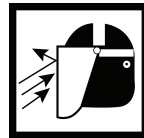
Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)
Tool Kit, Blind Fastener
(WP 0144, Table 1, Item 13)
Drill, Electric, Portable
(WP 0144, Table 1, Item 5)
Drill Set, Twist (WP 0144, Table 1, Item 4)

Materials/Parts

Rivet Qty: (10) (WP 0131, Figure 34, Item 2)

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Wear eye protection when removing rivets. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

NOTE

There are additional data plates not shown that are replaced the same way.

REMOVAL

1. Remove rivets (Figure 1, Item 2) from data plate (Figure 1, Item 1). Discard rivets (Figure 1, Item 2).
2. Remove data plate (Figure 1, Item 1).

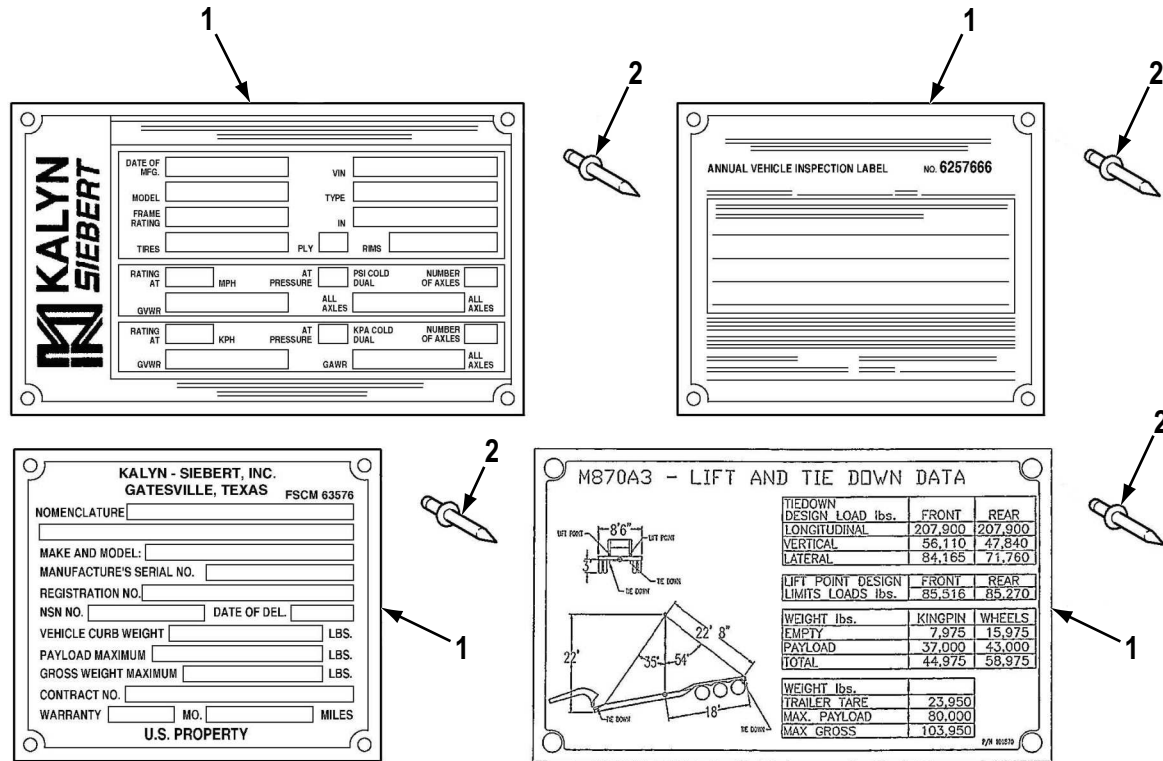


Figure 1. Data Plates.

END OF TASK**INSTALLATION**

1. Place data plate (Figure 1, Item 1) in position.
2. Install data plate (Figure 1, Item 1) with new rivets (Figure 1, Item 2).

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE
ANTI-LOCK BRAKE SYSTEM (ABS) WARNING LIGHT REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts (cont.)

(WP 0132, Figure 35, Item 2)

Materials/Parts

Grommet, Nonmetallic

Equipment Condition

Semitrailer parked on level ground (WP 0005)

WARNING

Remove all power to semitrailer prior to making any repairs on the electrical system. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

REMOVAL

1. Remove grommet (Figure 1, Item 2) from ABS warning light (Figure 1, Item 1). Discard grommet (Figure 1, Item 2).
2. Disconnect connectors from back of ABS warning light (Figure 1, Item 1) and remove ABS warning light (Figure 1, Item 1) from semitrailer.

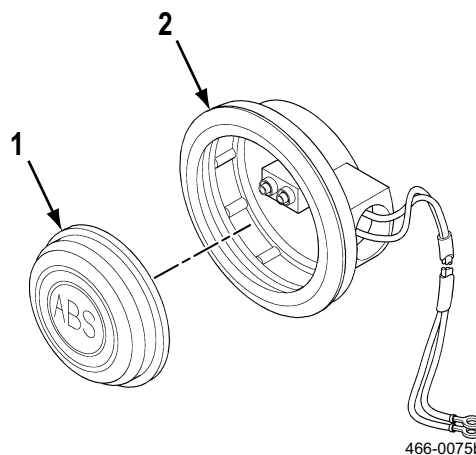


Figure 1. ABS Warning Light Removal.

END OF TASK

INSTALLATION

1. Connect connectors to back of ABS warning light (Figure 2, Item 1).
2. Install new grommet (Figure 2, Item 2) and ABS warning light (Figure 2, Item 1) at semitrailer bracket.

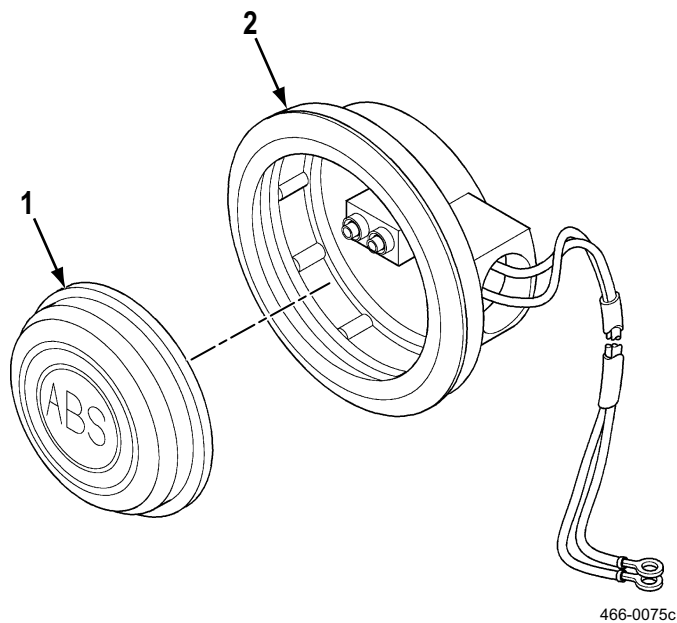


Figure 2. ABS Warning Light Installation.

END OF TASK**FOLLOW ON TASK**

Road test to ensure proper operation.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
HUB MILEAGE METER REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

References

WP 0073

Materials/Parts

Washer, Lock (WP 0133, Figure 36, Item 2)

Equipment Condition

Semitrailer parked on level ground (WP 0005)

CAUTION

Do not stand on hub mileage meter. Failure to comply may result in damage to, or destruction of, equipment or mission.

NOTE

If hub mileage meter bracket needs to be replaced, refer to (WP 0073).

REMOVAL

Remove nut (Figure 1, Item 3), lockwasher (Figure 1, Item 2), and hub mileage meter (Figure 1, Item 1) from vehicular bracket (Figure 1, Item 4). Discard lockwasher (Figure 1, Item 2).

END OF TASK**INSTALLATION**

Install hub mileage meter (Figure 1, Item 1), nut (Figure 1, Item 3), and new lockwasher (Figure 1, Item 2) on vehicular bracket (Figure 1, Item 4). Torque nut (Figure 1, Item 3) and lockwasher (Figure 1, Item 2) assembly to 15 lb ft (20 N·m).

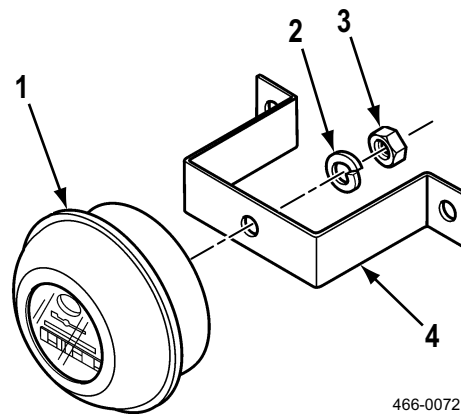


Figure 1. Hub Mileage Meter.

END OF TASK**FOLLOW ON TASK**

Road test to ensure proper operation.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE PREPARATION FOR STORAGE OR SHIPMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's
(WP 0144, Table 1, Item 16)

Materials/Parts

Barrier Material, Grease Proof
(WP 0143, Table 1, Item 3)
Tag, Marker (WP 0143, Table 1, Item 28)

References

DA Form 2404/5988E

References (cont.)

DA Form 2407/5990-E
DA Form 2408
DA PAM 750-8
DD Form 1397
SF Form 364
TM 38-400
TM 55-2220-058-14
WP 0005
WP 0034
WP 0042
WP 0093

GENERAL

1. This Work Package (WP) contains requirements and procedures for administrative storage of equipment that is issued to and in use by Army activities worldwide.
2. The requirements specified herein are necessary to maintain equipment in administrative storage in such a way as to achieve maximum readiness condition.
3. Equipment that is placed in administrative storage should be capable of being readied to perform its mission within a 24-hour period or as otherwise may be prescribed by approving authority. Before equipment is placed in administrative storage, a current Preventive Maintenance Checks and Services (PMCS) should be completed and deficiencies corrected.
4. Report equipment in administrative storage as prescribed for all reportable equipment using DA Form 2404, DA Form 2407, and/or DA Form 2408 or electronic equivalent.
5. Perform inspections, maintenances, services, and lubrication as specified herein.
6. Records and reports to be maintained for equipment in administrative storage are those prescribed by DA PAM 750-8 for equipment in use.
7. A 10 percent variance is acceptable on time used to determine the required maintenance actions.
8. Accomplishment of applicable PMCS, as mentioned throughout this WP, will be on a semiannual basis.

DEFINITION OF ADMINISTRATIVE STORAGE

The placement of equipment in administrative storage can be for short periods of time when a shortage of maintenance effort exists. Items should be ready for use within the time factors as determined by the directing authority. During the storage period, appropriate maintenance records must be kept.

PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE

Storage Site

1. Select the best available site for administrative storage. Separate stored equipment from equipment in use. Conspicuously mark area "ADMINISTRATIVE STORAGE."
2. Covered space is preferred.
3. Open sites should be improved hardstand, if possible. Unimproved sites should be firm, well drained, and free of excessive vegetation.

Storage Plan

1. Store equipment to provide maximum protection from the elements and to provide access for inspection, maintenance, and exercising. Anticipate removal or deployment problems and take suitable precautions.
2. Take into consideration environmental conditions, such as extreme heat or cold, high humidity, blowing sand or loose debris, soft ground, mud, heavy snows, or any combination thereof, and take adequate precautions.
3. Establish a fire plan and provide for adequate fire fighting equipment and personnel.
4. If semitrailer will not be used for 10 days or more, tie back gooseneck as specified in (WP 0005).

Maintenance Services and Inspection

1. **Maintenance Services.** Prior to storage, perform the next scheduled PMCS.
2. **Inspection.** Inspect and approve the equipment prior to storage. Do not place non-mission-capable equipment in storage.

Correction of Shortcomings and Deficiencies

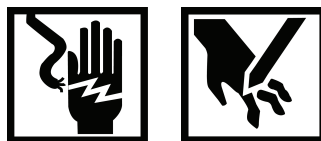
Correct all shortcomings and deficiencies prior to storage, or obtain a deferment from approving authority.

Lubrication

Lubricate equipment (WP 0093).

General Cleaning, Painting, and Preservation

WARNING



Do not direct water or steam, under pressure, against self, personnel, electrical wires, or any exterior opening. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

1. **Cleaning.** Clean all equipment for dirt, grease, and other contaminants. Refer to this manual. Do not use vapor degreasing. Remove foreign objects that are wedged in tire treads.

General Cleaning, Painting, and Preservation - Continued

WARNING



Chemical Agent Resistant Coating (CARC) paint debris may be considered environmentally hazardous during removal. Consult local procedures prior to removal of CARC paint to ensure compliance with local laws. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

2. **Painting.** Remove rust and damaged paint by scraping, wire brushing, sanding, or buffing. Sand to a smooth finish and spot paint as necessary.
3. **Preservation.** After cleaning and drying, immediately coat unpainted wear surfaces with oil or grease, as appropriate.

NOTE

- Place a piece of barrier material between desiccant bags and metal surfaces.
 - Air circulation under draped covers reduces deterioration from moisture and heat.
4. **Weatherproofing.** Sunlight, heat, moisture (humidity), and dirt tend to accelerate deterioration. Install all covers authorized for the equipment. Close and secure all openings except those required for venting and draining. Seal openings to prevent the entry of rain, snow, or dust. Insert desiccant when complete seal is required. Place equipment, and provide blocking or framing, to allow for ventilation and water drainage. Support cover away from item surfaces, which may rust, rot, or mildew.

Basic Issue Items (BII) and Additional Authorization List (AAL) Items

1. Process BII and AAL items simultaneously with the major item to which they are assigned.
2. If possible, store BII and AAL items with the major item.
3. If stored apart from the major item, mark BII and AAL items with tags indicating the major item, its registration or serial number, and location, and store in protective-type closures. In addition, place a tag or list indicating the location of the removed items in a conspicuous place on the major item.

MAINTENANCE SERVICES

After equipment has been placed in administrative storage, inspect, service, and exercise as specified in this manual.

Inspection

Inspection will usually be visual and must consist of at least a walk-around examination of all equipment to detect any deficiencies. Inspect equipment in open storage WEEKLY and equipment in covered storage MONTHLY. Inspect all equipment immediately after any severe storm or environmental change. The following are examples of things to look for during a visual inspection:

- a. Low or flat tires.
- b. Oil leaks.
- c. Condition of preservatives, seals, and wraps.

Inspection - Continued

- d. Corrosion or other deterioration.
- e. Missing or damaged parts.
- f. Water in components.
- g. Any other readily recognizable shortcomings or deficiencies.

Repair During Administrative Storage

Keep equipment in an optimum state of readiness. Accomplish the required services and repairs as expeditiously as possible. Whenever possible, perform all maintenance on-site.

Exercising

Exercise equipment with Table 1 and the following instructions:

- a. **Vehicle Major Exercise.** Depreserve equipment by removing only that material restricting exercise. Close all drains, remove blocks, and perform all BEFORE operational checks. Make several right and left 90-degree turns. Make hard-braking stops without skidding. While exercising, and when it is convenient and safe, operate all other functional components and perform all DURING and AFTER operational checks.
- b. **Scheduled Services.** Scheduled services will include inspection per *Inspection* in this WP, and will be conducted in accordance with Field PMCS (WP 0034). Lubricate in accordance with instructions in (WP 0093).
- c. **Corrective Action.** Immediately take action to correct shortcomings and deficiencies noted. Record inspection and exercise results on DA Form 2404/5988-E. Record and report all maintenance actions on DA Form 2407. After exercising, restore the preservation to the original condition. Replenish lubricants used during exercising and note the amount on DA Form 2408.

Table 1. Exercise Schedule.

Weeks	2	4	6	8	10	12	14	16	18	20	22	24
Scheduled Services												X
Major Exercise												X

Rotation

Rotate items with any rotational plan that will keep the equipment in an operational condition and reduce the maintenance effort.

Procedures for Common Components and Miscellaneous Items

1. **Tires.** Visually inspect tires during each walk-around inspection. This inspection includes checking tires with a tire gage. Inflate, repair, or replace as necessary those found to be low, damaged, or excessively worn. Mark inflated and repaired tires with a crayon for checking at the next inspection.
2. **Seals.** Seals may develop leaks during storage or shortly thereafter. If leaking persists, refer to the applicable maintenance section in this manual for corrective maintenance procedures.

REMOVAL OF EQUIPMENT FROM ADMINISTRATIVE STORAGE**Activation**

Restore the equipment to normal operating condition (WP 0042).

Servicing

Resume the maintenance service schedule in effect at the commencement of storage or service of equipment before the scheduled dates in order to produce a staggered maintenance workload.

PREPARATION OF EQUIPMENT FOR SHIPMENT

1. For additional instructions on processing, storage, and shipment of materiel, refer to TM 55-601 and TM 743-200-1.
2. Semitrailers that have been removed from storage for shipment do not have to be reprocessed if they will reach their destination within the administrative storage period. Reprocess only if inspection reveals any corrosion or if anticipated in-transit weather conditions make it necessary.
3. When semitrailer is received that has already been processed for domestic shipment, as indicated on DD Form 1397, the semitrailer does not have to be reprocessed for storage unless corrosion and deterioration are found during the inspection upon receipt. List on SF Form 364 all discrepancies found because of poor preservation, packaging, packing, marking, handling, loading, storage, or excessive preservation. Repairs that cannot be handled by the receiving unit must have tags attached listing needed repairs. A report of these conditions will be submitted by the unit commander for action by an ordnance maintenance unit.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE LUBRICATION INSTRUCTIONS

INITIAL SETUP:

Tools and Special Tools

Gloves, Chemical and Oil Protective
(WP 0144, Table 1, Item 7)

Materials/Parts

Corrosion Preventive Compound
(WP 0143, Table 1, Item 7)
Grease, Automotive and Artillery (GAA)
(WP 0143, Table 1, Item 10)

Materials/Parts (cont.)

Oil, Lubricating (WP 0143, Table 1, Item 20)
Oil, Lubricating (WP 0143, Table 1, Item 19)
Solvent, Cleaning Compound
(WP 0143, Table 1, Item 25)

References

DA PAM 750-8
FM 9-207

GENERAL

NOTE

These instructions are mandatory for lubrication of the semitrailers.

1. The Semitrailer must receive lubrication with approved lubricants at recommended intervals in order to be mission-ready at all times.
2. The Lubrication Chart (Figure 1) shows lubrication points, items to be lubricated, the required lubricants, and recommended intervals for lubrication. Any special lubrication instructions required for specific components are contained in the NOTES section of the chart.
3. The KEY provides information needed to select the proper lubricant for various temperature ranges and uses, and identifies the capacities and intervals.
4. Recommended intervals are based on normal conditions of operation, temperature, and humidity. When operating under extreme conditions, lubricants should always be changed more frequently. When in doubt, notify your Supervisor.

SPECIFIC LUBRICATION INSTRUCTIONS

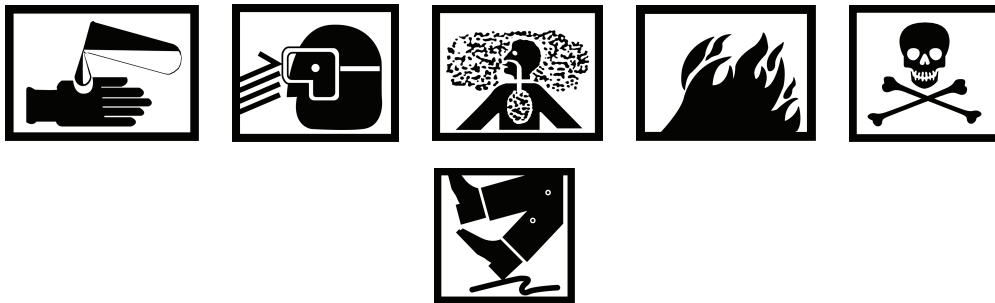
1. Keep all lubricants in a closed container and store in a clean, dry place away from extreme heat. Keep container covers clean and do not allow dust, dirt, or other foreign material to mix with lubricants. Keep lubrication equipment clean and ready for use.
2. Maintain a record of lubrication performed and report any problems noted during lubrication. For maintenance forms and procedures to record and report any findings, refer to DA PAM 750-8.
3. Keep all external parts of equipment not requiring lubrication free of lubricants. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter.
4. For lubrication instructions in cold weather, refer to FM 9-207.

LUBRICATION CHART AND DIAGRAMS

The Lubrication Chart is for operator/crew (C) and field maintenance (F). Lubrication intervals (on-condition or hard time) are based on normal operation. Lubricate more during constant use and less during inactive periods. Use correct grade of lubricant for seasonal temperature expected.

LUBRICATION CHART AND DIAGRAMS - Continued

WARNING



- Solvent cleaning compound MIL-PRF-680 Type II and Type III. May be irritating to the eyes and skin. Use protective gloves and eye protection. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid eye contact: flush with water for 15 minutes or until irritation subsides. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 Type II and Type III. 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 for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Solvent cleaning compound MIL-PRF-680 is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use. The flashpoint for Type II solvent cleaning compound is 141-198°F (61-92°C) and Type III is 200-240°F (93-116°C). Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army Petroleum, Oils and Lubricants (POL) for information concerning storage, use, and disposal of these liquids. Use a drain pan or appropriate containment equipment to capture any draining or leaking fluid. Refer to local procedures and plans for preventing and responding to fluid spills or leaks. Comply with local regulations when disposing of clean up material and leaked and spilled fluids. Failure to comply may cause damage to environment and health of personnel. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.

LUBRICATION CHART AND DIAGRAMS - Continued

WARNING



- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
 - Cloths or rags saturated with solvent cleaning compound must be disposed of using IAW authorized facilities procedures. Failure to comply may result in death or injury to personnel. Seek medical attention in the event of an injury.
1. Clean area around lubrication points with cleaning compound solvent or equivalent before lubricating equipment. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter.
 2. Before you start your lubrication service:
 - a. **Always** clean area around lubrication point before lubricating.
 - b. **Always** use the Lubrication Chart as your guide.
 - c. **Never** use wrong type/grade lubricant.
 - d. **Never** use too much lubricant.

Table 1. Lubrication Data.

LUBRICANT/COMPONENT	REFILL CAPACITY	EXPECTED TEMPERATURES*
OE/HDO (MIL-PRF-2104G) Oil, Lubricating, ICE, Tactical		OE/HDO-10: +6 to +122° F (-14 to +50° C) -4 to +50° F (-20 to +10° C)
Corrosion Preventive Compound	As Required	ALL TEMPERATURES
*For Arctic operation, refer to FM 9-207.		

LUBRICATION CHART AND DIAGRAMS - Continued

Table 2. Lubrication Chart Key.

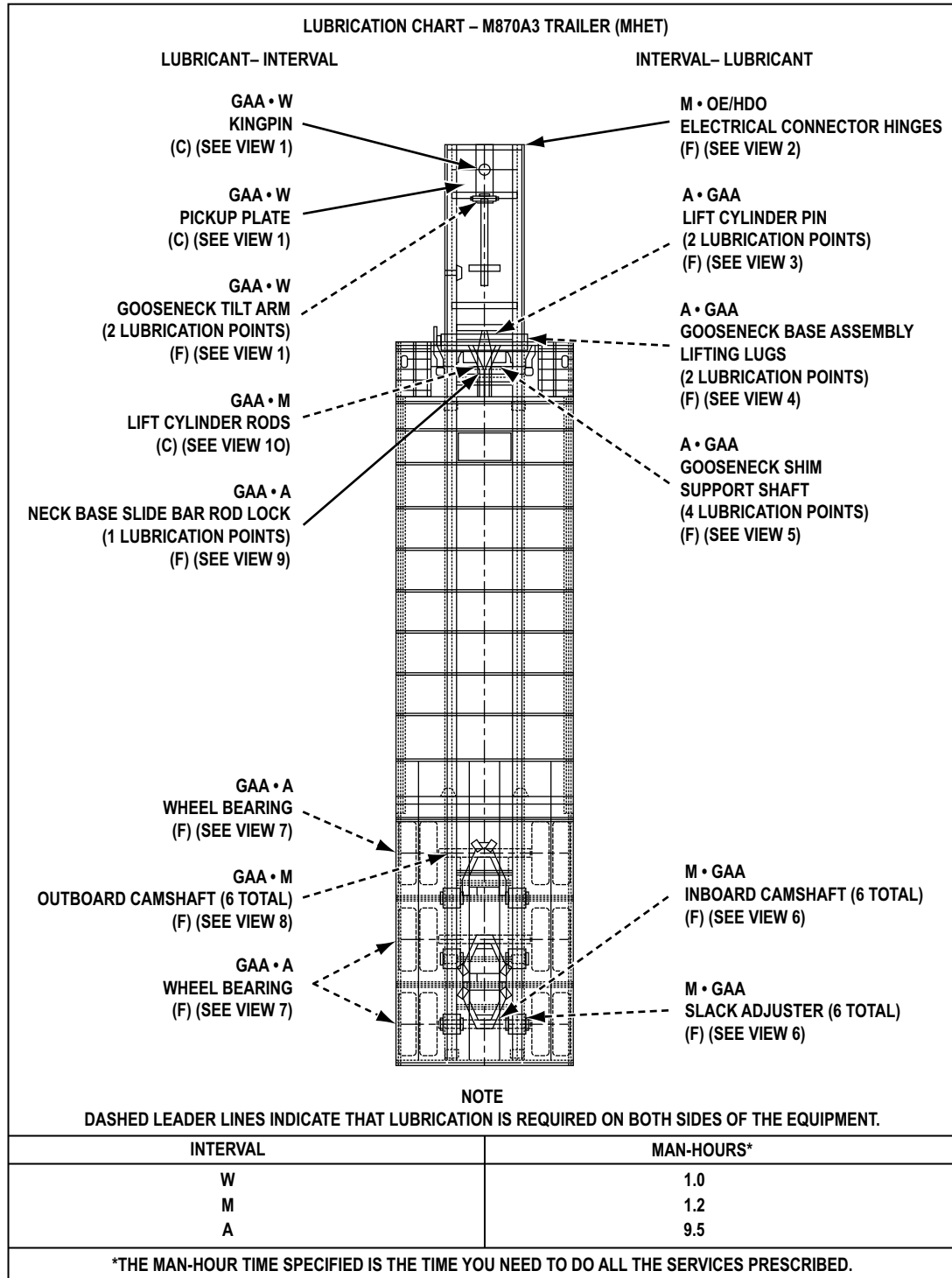
LUBRICANTS	EXPECTED TEMPERATURE*			INTERVALS
	Above +32° F (Above 0° C)	+40 to -10° F (+4 to -23° C)	0 to -65° F (-18 to -54° C)	
GAA (MIL-G-10924) Grease, Automotive and Artillery	GAA	GAA	GAA	W - Weekly M - Monthly A - Annually
GO/GOS Lubricating Oil, Multi-Purpose or Subzero	GO	GO	GOS	
PL-M/PL-S Lubricating Oil, Preservative	PL-M	PL-S	PL-S	
OE/HDO Lubricating Oil	OE/HDO 30	OE/HDO 10	OEA/AP6-PD-1	
*For Arctic operation, refer to FM 9-207.				

NOTE

When conducting the first annual inspection, wheel bearings must be thoroughly cleaned prior to packing with GAA approved grease because wheel bearings may have been packed by the manufacturer with other than GAA approved grease. Refer to View 7 in this work package.

- When operating in sandy areas, perform weekly intervals twice weekly, monthly intervals twice monthly, and annual intervals semiannually.

LUBRICATION CHART AND DIAGRAMS - Continued



466-0092

Figure 1. Lubrication Chart.

LUBRICATION CHART AND DIAGRAMS - Continued

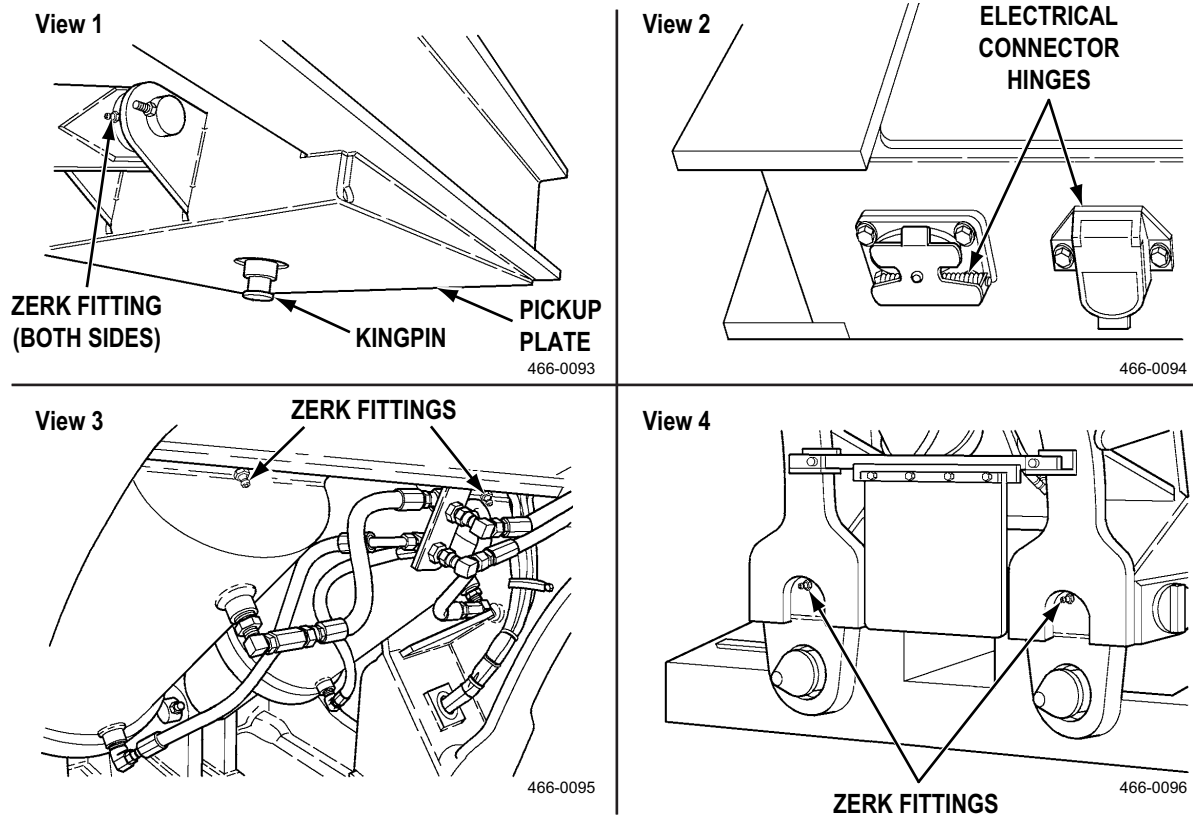


Figure 2. Lubrication Diagram: Zerk Fittings.

LUBRICATION CHART AND DIAGRAMS - Continued

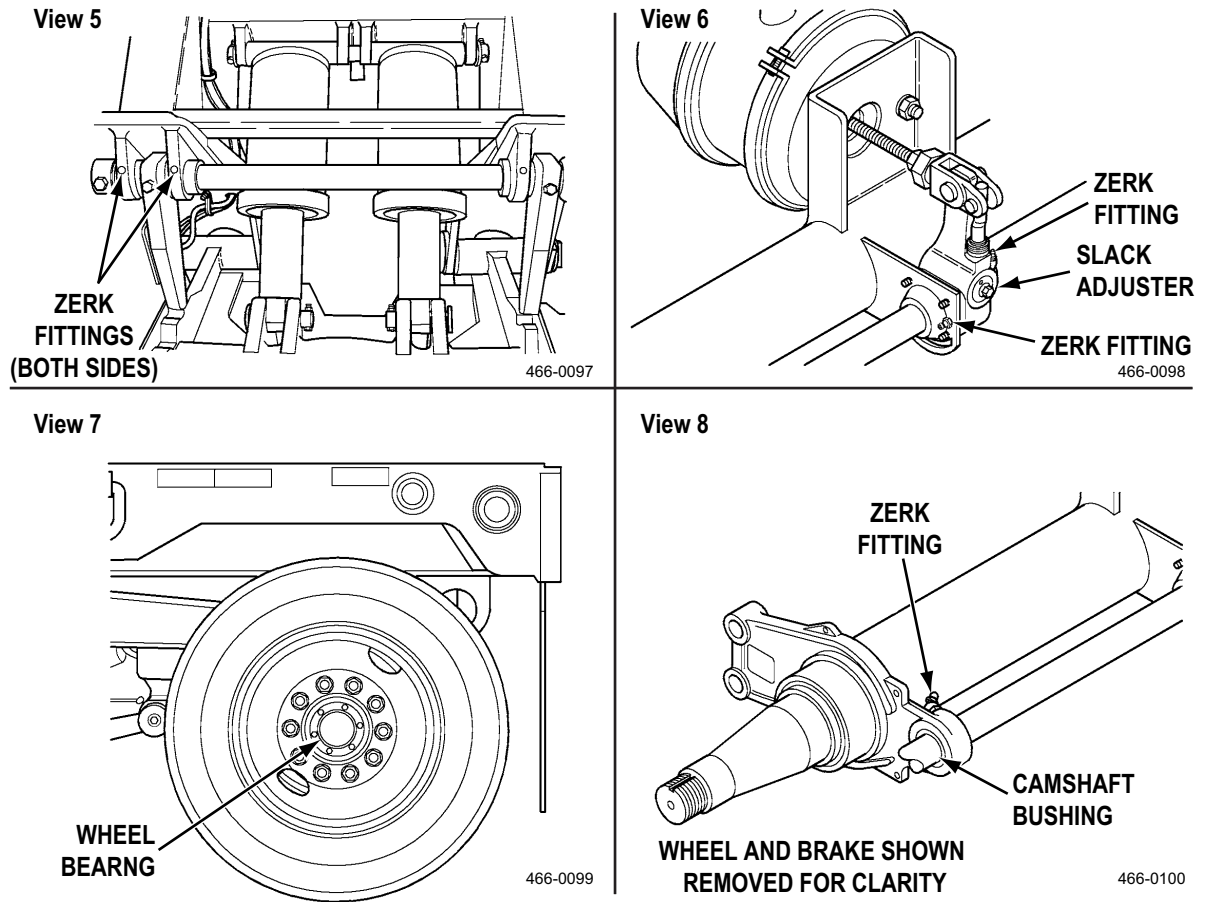


Figure 3. Lubrication Diagram: Slack Adjuster.

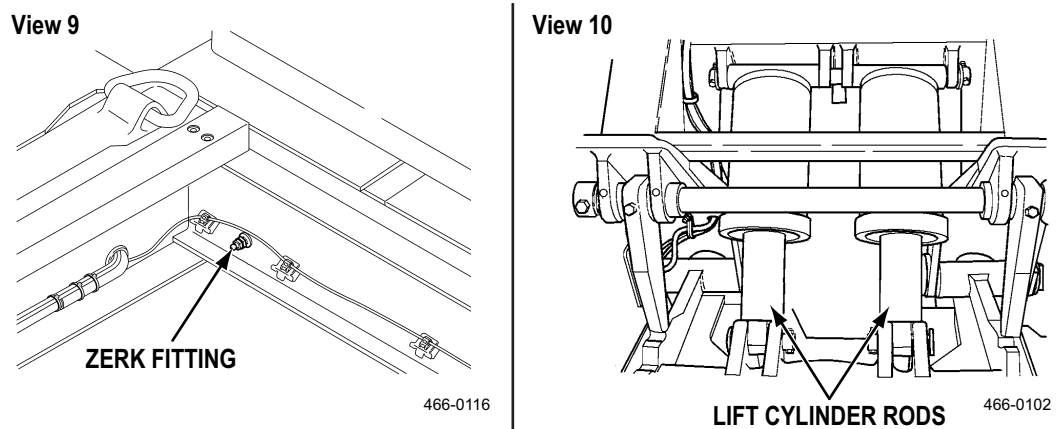


Figure 4. Lubrication Diagram: Lift Cylinder Rods.

END OF WORK PACKAGE

**FIELD MAINTENANCE
ILLUSTRATED LIST OF MANUFACTURED ITEMS**

INITIAL SETUP:

Not Applicable

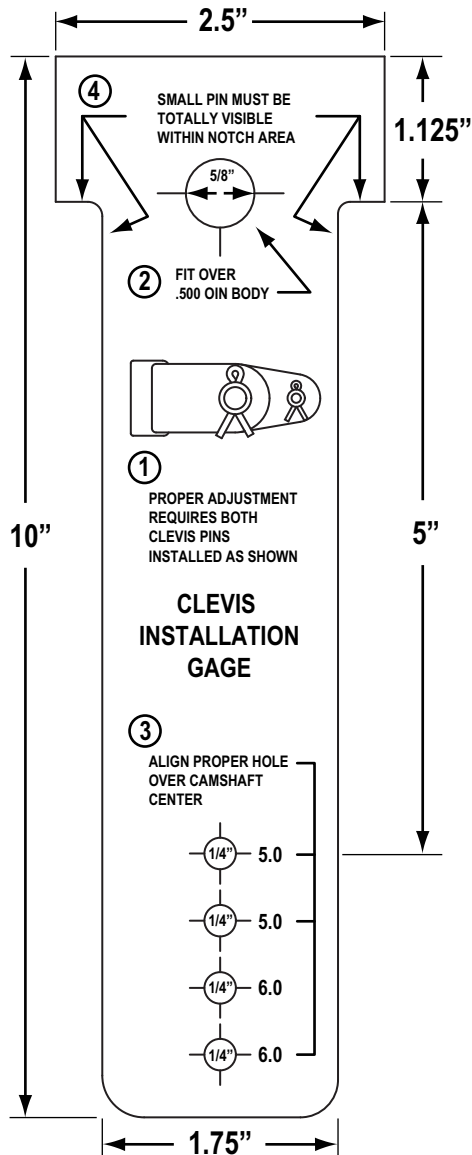
This work package provides instructions for making an item authorized to be manufactured or fabricated.

Table 1. Manufactured Items Cross-Reference Index.

PART NUMBER	NAME	FIGURE
73	Clevis Installation Gage	Figure 1

CAUTION

The clevis installation gage in (Figure 1) is not to scale. Make sure you make proper measurements when making gage. Failure to comply may result in damage to, or destruction of, equipment or mission.



1. FABRICATE FROM CARDBOARD, NATIONAL STOCK NUMBER 9310-00-641-4851, PART NUMBER 73, (CAGEC 74322).
2. CUT TO DIMENSIONS SHOWN.

466-0122

Figure 1. Clevis Installation Gage.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE TORQUE LIMITS

SCOPE

This work package lists standard torque values and provides general information for applying torque. Special torque values and tightening sequences are indicated in the maintenance procedures for applicable components.

GENERAL

1. Always use torque values listed in Tables 2 and 3 when a maintenance procedure does not give a specific torque value.
 - a. Table 2 provides torque limits for Society of Automotive Engineers (SAE) standard fasteners.
 - b. Table 3 provides torque limits for metric fasteners.
2. Unless otherwise indicated, standard torque tolerance shall be ± 10 percent.

CAUTION

If replacement capscrews are of higher grade than originally supplied, use torque specifications for the original. This will prevent equipment damage due to overtorquing. Failure to comply may result in damage to, or destruction of, equipment or mission.

3. Torque values listed in Table 2 are based on clean, dry threads. Reduce torque by 10 percent when engine oil is used as a lubricant. Reduce torque by 20 percent if new plated capscrews are used.

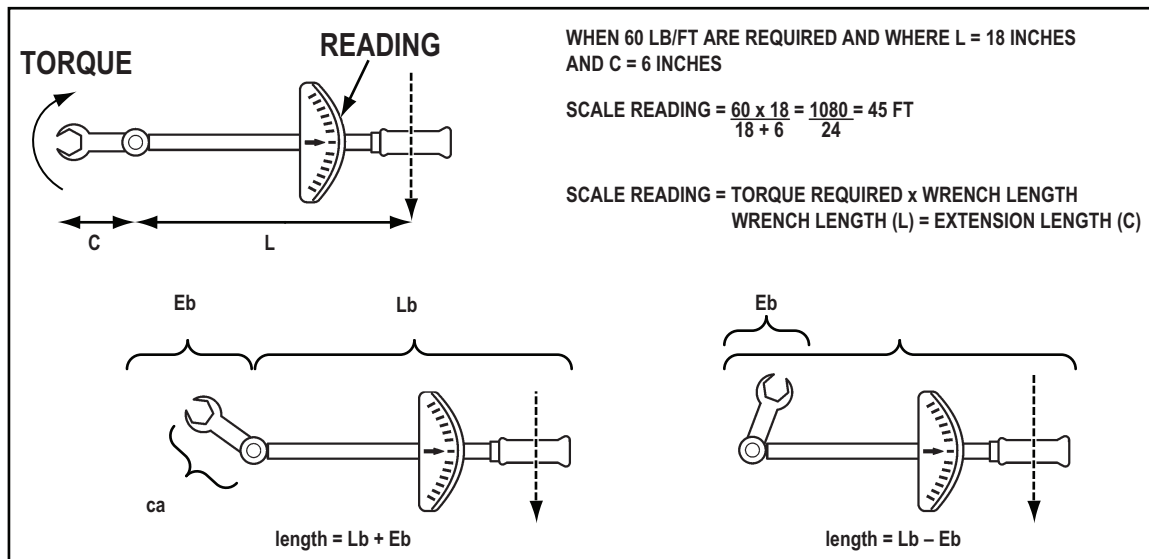
TIGHTENING METAL FASTENERS

When torquing a fastener, select a wrench whose range fits the required torque value. A torque wrench is most accurate from 25-75 percent of its stated range. A wrench with a stated range of 0-100 lb ft (0-136 N·m) will be most accurate from 25-75 lb ft (34-102 N·m). The accuracy of readings will decrease as you approach 0 lb ft or 100 lb ft (136 N·m). Ranges in Table 1 are based on this principle.

Table 1. Metal Fasteners.

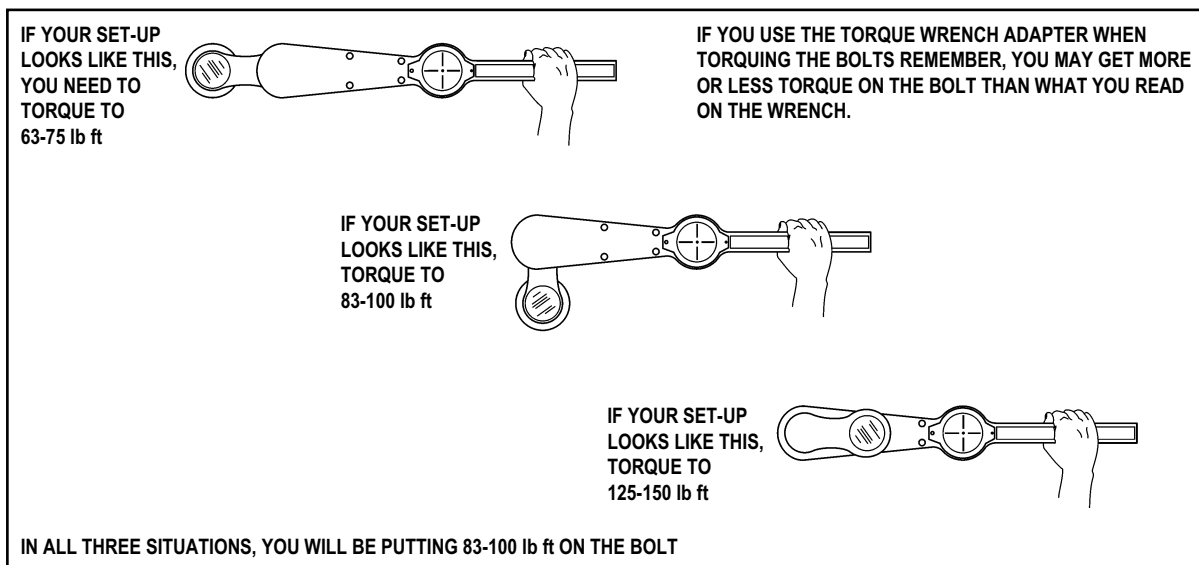
STATED RANGE		MOST EFFECTIVE RANGE	
0-200 lb in.	(0-23 N·m)	50-150 lb in.	(6-17 N·m)
0-600 lb ft	(0-813 N·m)	50-450 lb ft	(68-610 N·m)
0-170 lb ft	(0-230 N·m)	44-131 lb ft	(60-178 N·m)
15-75 lb ft	(20-102 N·m)	30-60 lb ft	(41-81 N·m)

TIGHTENING METAL FASTENERS - Continued



466-0104

Figure 1. Torque Wrench Formula.



466-0105

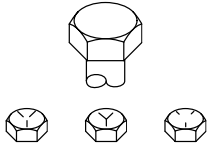
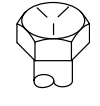
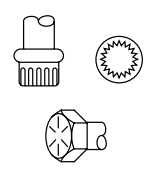
Figure 2. Torque Wrench Adapter Setups.

INSTALLATION AND TORQUING

1. **Matching Nuts.** Matching nuts require a minimum height equal to the basic diameter of the bolt. The same is true of tapped holes. In tapped softer materials, the depth of the tapped hole should be 1.5 times the basic diameter of the bolt.
2. **Threaded Protrusion.** In all installations, bolts, studs, and screws must extend through nut at least a length equivalent to two complete threads. This applies to both self-locking and plain nuts.
3. **Torquing Self-Locking Nuts.** To obtain the correct recommended torque value on self-locking nuts, nut must be tightened until it is one turn from the beginning of seating. At this point, if torque is less than 0.33 of recommended torque, it should be disregarded and the nut tightened to recommended torque value. If torque is 0.33 or more of the recommended torque, it should be added to recommended torque. Example: Recommended torque is 50-70 lb in. (6-8 N·m). The torque at one turn from seating is 30 lb in. (3 N·m). The correct torque wrench reading would be 80-100 lb in. (9-11 N·m).
4. **Re-torquing Fasteners.** Procedures intended for installing metal fasteners can cause incorrect readings when used to check or re-torque already installed fasteners during maintenance. Before checking or re-torquing an already installed threaded fastener, first mark the fastener and its companion components so the marks are in line. Second, back it off a 0.25 turn to loosen it. Torque it to specification with an even steady pull on torque wrench. The marks should be in line; if not, the marks will indicate fastener was under or over torqued.
5. **Standard Torque Charts.** Standard torque charts have been established for dry and wet torque conditions. Surface variations such as thread roughness, scale paint, lubrication (oil, grease, etc.), hardening, and plating may alter these values considerably. Tables 2 and 3 are standard torque charts.
6. To find the grade of the screw that is to be installed, match the markings on the head to the correct picture of CAPSCREW HEAD MARKINGS in Tables 2 and 3. Manufacturer's marks may vary.

INSTALLATION AND TORQUING - Continued

Table 2. Dry Torque Limits - SAE Standard Fasteners.

QUALITY OF MATERIAL	INDETERMINATE	MINIMUM COMMERCIAL	MEDIUM COMMERCIAL	BEST COMMERCIAL
SAE Grade Number	1 or 2	5	6 or 7	8
Capscrew Head Markings				
Manufacturer's Marks May Vary				
These are all SAE Grade 5 (3 line)				
CAPSCREW BODY SIZE IN. – THREAD	TORQUE lb ft (N·m)	TORQUE lb ft (N·m)	TORQUE lb ft (N·m)	TORQUE lb ft (N·m)
1/4 20	5 (7)	8 (11)	10 (14)	12 (16)
28	6 (8)	10 (14)		14 (19)
5/16 18	11 (15)	17 (23)	19 (26)	24 (33)
24	13 (18)	19 (26)		27 (37)
3/8 16	18 (24)	31 (42)	34 (46)	44 (60)
24	20 (27)	35 (47)		49 (66)
7/16 14	28 (38)	49 (66)	55 (75)	70 (95)
20	30 (41)	55 (75)		78 (106)
1/2 13	39 (53)	75 (102)	85 (115)	105 (142)
20	41 (56)	85 (115)		120 (163)
9/16 12	51 (69)	110 (149)	120 (163)	155 (210)
18	55 (75)	120 (163)		170 (231)
5/8 11	83 (113)	150 (203)	167 (226)	210 (285)
18	95 (129)	170 (231)		240 (325)
3/4 10	105 (142)	270 (366)	280 (380)	375 (508)
16	115 (156)	295 (400)		420 (569)
7/8 9	160 (217)	395 (536)	440 (597)	605 (820)
14	175 (237)	435 (590)		675 (915)
1 8	235 (319)	590 (800)	660 (895)	910 (1,234)
14	250 (339)	660 (895)		990 (1,342)

466-0118a

INSTALLATION AND TORQUING - Continued

Table 3. Lubricated or Plated Torque Limits - Metric Fasteners.

Torque values for metric thread fasteners with lubricated* or plated threads†				
Thread Diameter – Pitch				
	CLASS 8.8 BOLT	CLASS 8 NUT	CLASS 10.9 BOLT	CLASS 10 NUT
	TORQUE: lb ft (N·m)		TORQUE: lb ft (N·m)	
M6	5 (7)		7 (9)	
M8	12 (16)		17 (23)	
M8 x 1	13 (18)		18 (24)	
M10	24 (33)		34 (46)	
M10 x 1.25	27 (37)		38 (52)	
M12	42 (57)		60 (81)	
M12 x 1.5	43 (58)		62 (84)	
M14	66 (89)		95 (129)	
M14 x 1.5	72 (98)		103 (140)	
M16	103 (140)		148 (201)	
M16 x 1.5	110 (149)		157 (213)	
M18	147 (199)		203 (275)	
M18 x 1.5	165 (224)		229 (310)	
M20	208 (282)		288 (390)	
M20 x 1.5	213 (313)		320 (434)	
M22	283 (384)		392 (531)	
M22 x 1.5	315 (427)		431 (584)	
M24	360 (488)		498 (675)	
M24 x 2	392 (531)		542 (735)	
M27	527 (715)		729 (988)	
M27 x 2	569 (771)		788 (1,068)	
M30	715 (969)		990 (1,342)	
M30 x 2	792 (1,074)		1,096 (1,486)	

466-0119a

* All plated and unplated fasteners should be coated with oil before installation.

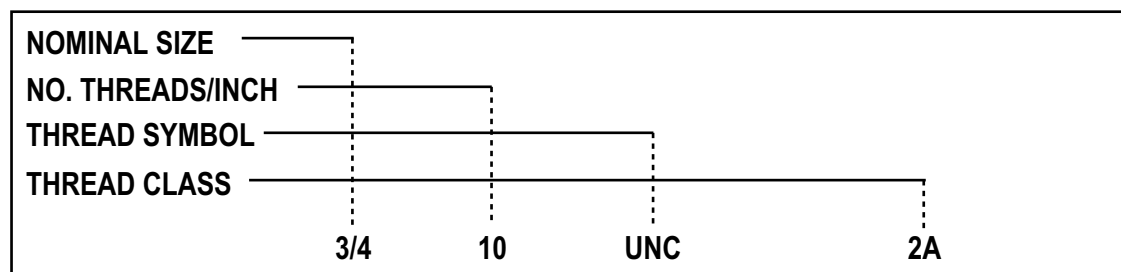
† Use these torque values if either the bolt or nut is lubricated or plated (zinc phosphate conversion-coated, cadmium-plated, or waxed).

FASTENER SIZE AND THREAD PATTERN**NOTE**

Unless followed with "LH" (e.g., 3/4-10 UNC-2A-LH), threads are right-hand.

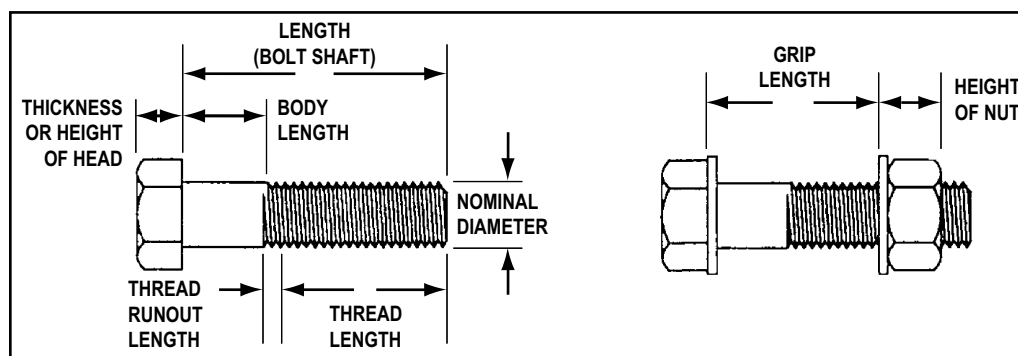
Threaded fasteners are categorized according to diameter of fastener shank. Thread styles are divided into broad groups, two most common being coarse (Unified Coarse-UNC) and fine (Unified Fine-UNF). These groups are defined by the number of threads per inch in the bolt shanks. In addition, threads are categorized by thread class, which is a measure of degree between threads of the bolt or screws (external threads) and threads of attaching nut or tapped hole (internal threads). The most common thread class for bolts and screws is Class 2.

Table H-4. Thread Classes and Description.		
EXTERNAL	INTERNAL	INTERNAL
1A	1B	LOOSE FIT
2A	2B	MEDIUM FIT
3A	3B	CLOSE FIT



466-0106

Figure 3. Fastener Size.



466-0107

Figure 4. Thread Pattern.

END OF TASK**END OF WORK PACKAGE**

**FIELD MAINTENANCE
WIRING DIAGRAMS**

INITIAL SETUP:

Not Applicable

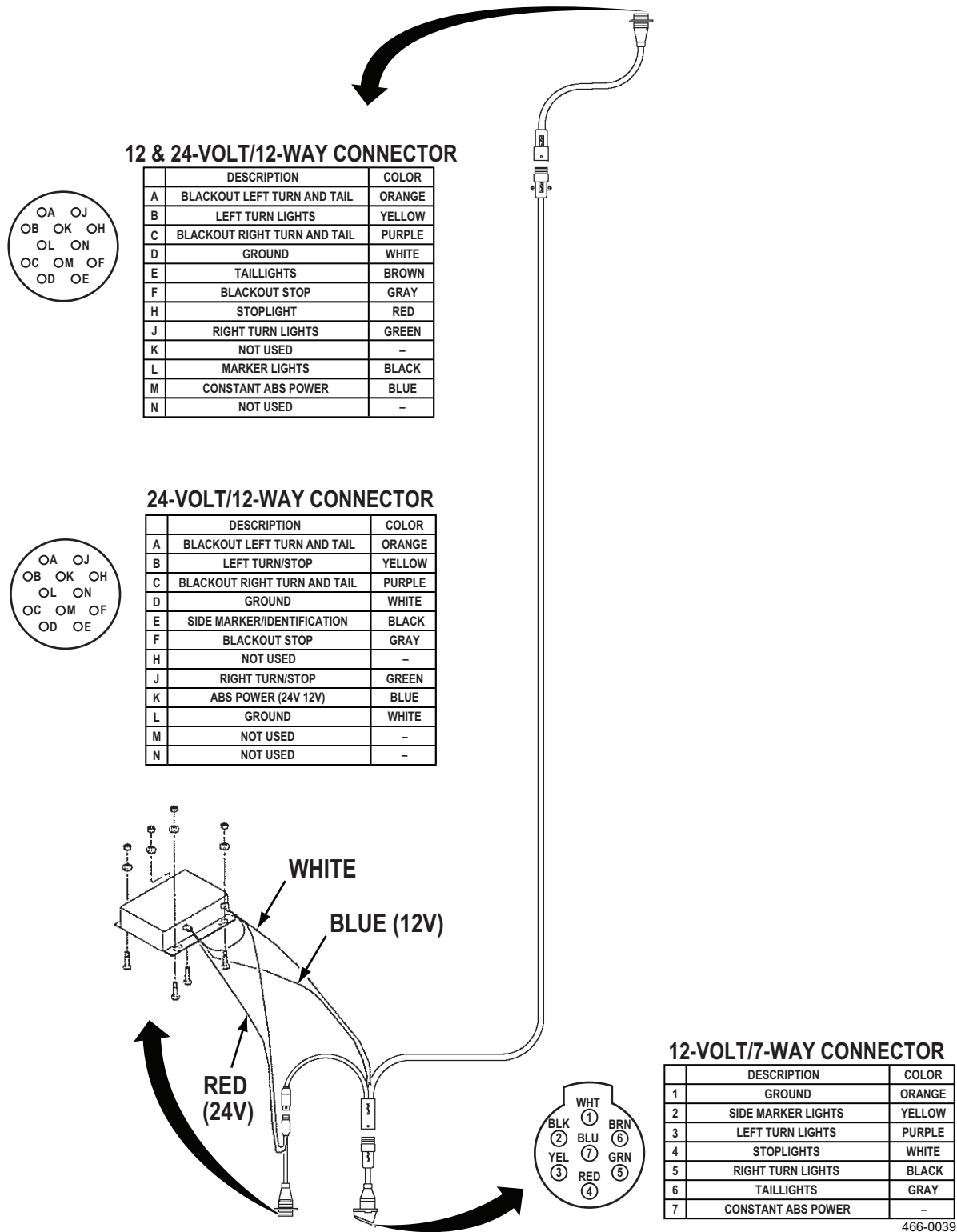


Figure 1. Gooseneck Harness.

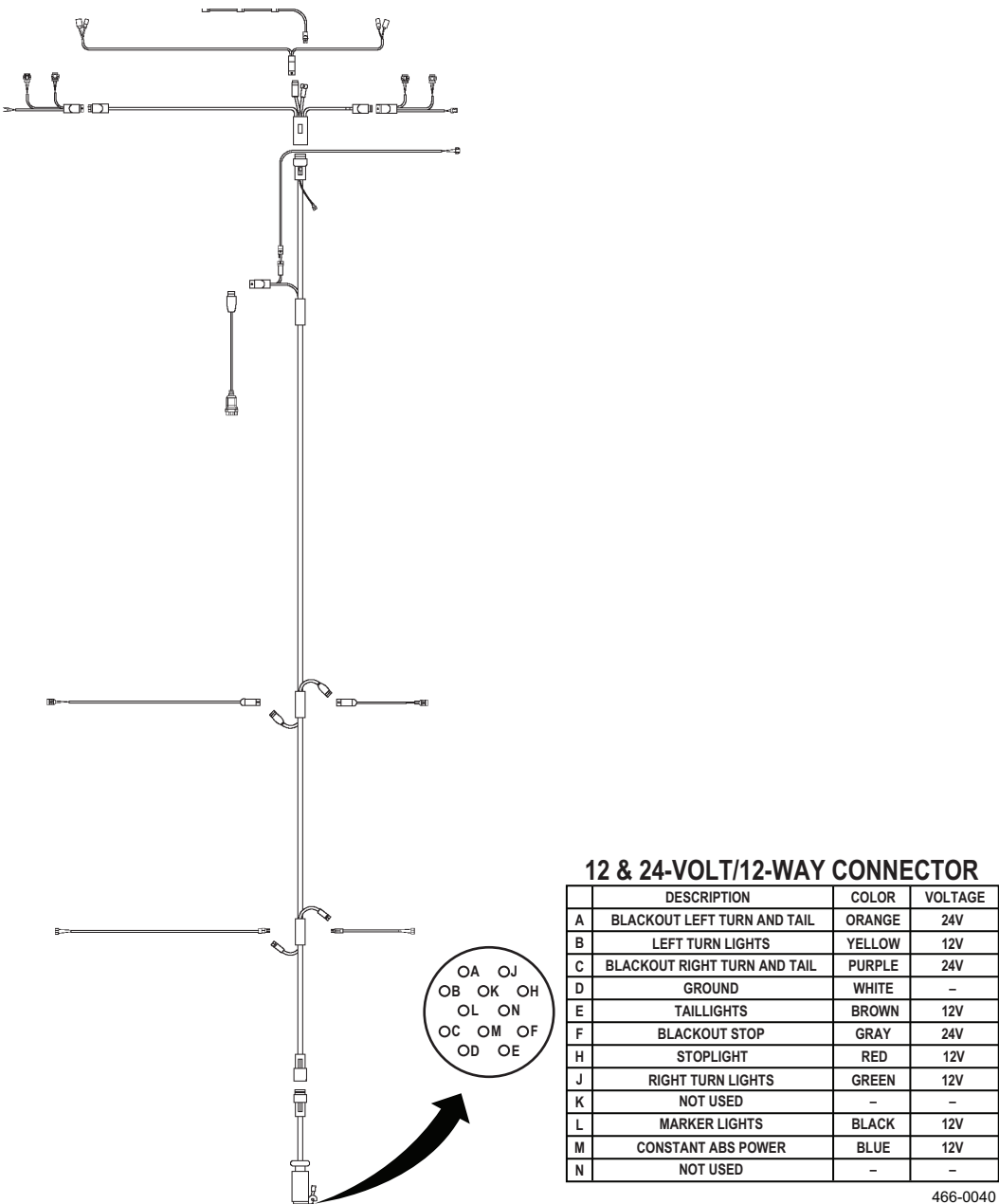


Figure 2. Semitrailer Harness.

END OF WORK PACKAGE

CHAPTER 7

REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)

FIELD MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of Field maintenance of the semitrailer. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages.

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in the FIG. BULK at the end of the work packages. Repair parts kits are listed separately in their own functional group and work package. Repair parts for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. **Special Tools List Work Packages.** Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column). Tools that are components of common tool sets and/or Class VII are not listed.
3. **Cross-Reference Indexes Work Packages.** There are two cross-reference indexes work packages in this RPSTL: The National Stock Number (NSN) Index work package, and the Part Number (P/N) Index work package. The National Stock Number Index work package refers you to the figure and item number. The Part Number Index work package refers you to the figure and item number.

MF-Made at field	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group work package of the RPSTL. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at higher level, order the item from the higher level of maintenance.
MH-Made at below depot/ sustainment level	
ML-Made at SRA	
MD-Made at depot	
MG-Navy only	
AF-Assembled by field	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
AH-Assembled by below depot sustainment level	
AL-Assembled by SRA	
AD-Assembled by depot	
AG-Navy only	
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's part number.
XD	Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

<u>Maintenance Code</u>	<u>Application/Explanation</u>

F -	Field maintenance can remove, replace, and use the item.
H -	Below Depot Sustainment maintenance can remove, replace, and use the item.
L -	Specialized repair activity can remove, replace, and use the item.
G -	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only).
K -	Contractor facility can remove, replace, and use the item.
Z -	Item is not authorized to be removed, replace, or used at any maintenance level.
D -	Depot can remove, replace, and use the item.

*NOTE - Army may use C in the third position. However, for joint service publications, Army will use O.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by Maintenance Allocation Chart (MAC) and SMR codes.

<u>Maintenance Code</u>	<u>Application/Explanation</u>

F -	Field is the lowest level that can do complete repair of the item.
H -	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L -	Specialized repair activity is the lowest level that can do complete repair of the item.
D -	Depot is the lowest level that can do complete repair of the item.
G -	Both afloat and ashore intermediate levels are capable of complete repair of item (Navy only).
K -	Complete repair is done at contractor facility.
Z -	Nonreparable. No repair is authorized.
B -	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

<u>Recoverability Code</u>	<u>Application/Explanation</u>
Z -	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the field level.
H -	Reparable item. When uneconomically reparable, condemn and dispose of the item at the below depot sustainment level.
D -	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level.
L -	Reparable item. Condemnation and disposal not authorized below Specialized Repair Activity (SRA).
A -	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G -	Field level reparable item. Condemn and dispose at either afloat or ashore intermediate levels (Navy only).
K -	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Column (3)). The NSN for the item is listed in this column.

CAGEC (Column (4)). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column (6)). This column includes the following information:

1. The federal item name, and when required, a minimum description to identify the item.
2. Part numbers of any bulk materials required are referenced in this column in the line entry to be manufactured or fabricated.
3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. The statement END OF FIGURE appears just below the last item description in column (6) for a given figure in both the repair parts list and special tools list work packages.

QTY (Column (7)). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. **National Stock Number (NSN) Index Work Package.** NSN's in this index are listed in National Item Identification Number (NIIN) sequence.
STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number.
For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.
FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.
ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.
2. **Part Number (P/N) Index Work Package.** Part numbers in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).
PART NUMBER Column. Indicates the part number assigned to the item.
FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.
ITEM Column. The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC..." in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models.

Code

Used on

TLC

M870A3

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk material are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in TM 5-2330-325-13&P.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN / Part Number (P/N) Index work packages and the bulk material list in the repair parts list work package.

Illustrations List. The illustrations in this RPSTL contain field authorized items.

Illustrations published in TM 5-2330-325-13&P that contain field authorized items also appear in this RPSTL. The tabular list in the repair parts list work package contains only those parts coded "F" in the third position of the SMR code, therefore, there may be a break in the item number sequence.

HOW TO LOCATE REPAIR PARTS

1. When NSNs or Part Numbers Are Not Known.
First. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.
Second. Find the figure covering the functional group or the subfunctional group to which the item belongs.
Third. Identify the item on the figure and note the number(s).
Fourth. Look in the repair parts list work packages for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.
2. When NSN Is Known.
First. If you have the NSN, look in the STOCK NUMBER column of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.
Second. Turn to the figure and locate the item number. Verify that the item is the one for which you are looking.
3. When Part Number Is Known.
First. If you have the part number and not the NSN, look in the PART NUMBER column of the part number index work package. Identify the figure and item number.
Second. Look up the item on the figure in the applicable repair parts list work package.

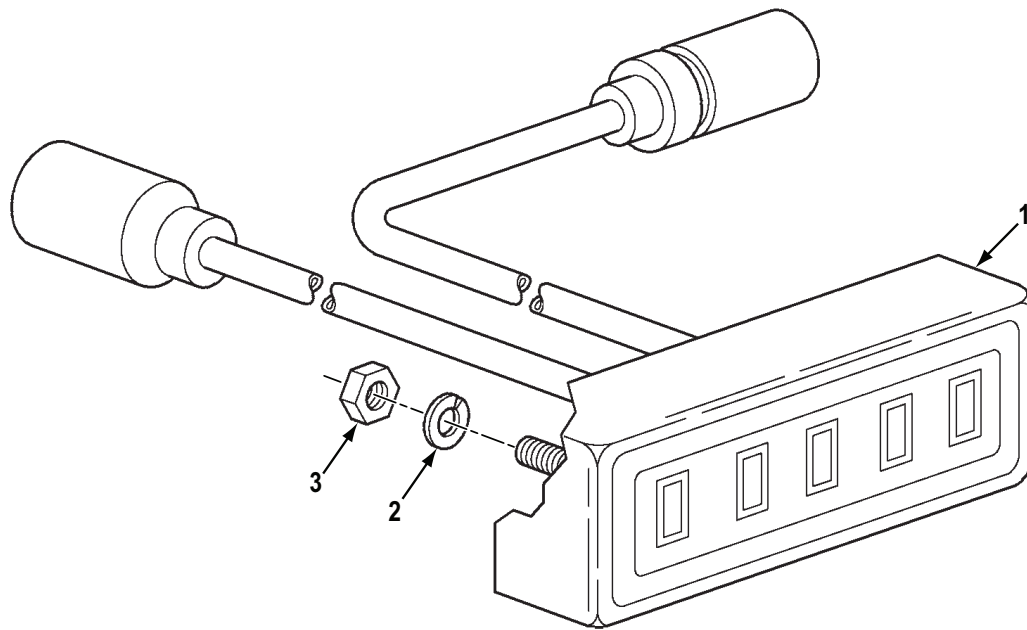
ABBREVIATIONS

For standard abbreviations, see ASME Y14.38-1999, *Abbreviations and Acronyms*.

Abbreviation	Explanation
NIIN	National Item Identification Number (consists of the last 9 digits of the NSN)
RPSTL	Repair Parts and Special Tools Lists
SMR	Source, Maintenance, and Recoverability Code
TMDE	Test, Measurement, and Diagnostic Equipment

END OF WORK PACKAGE

**FIELD MAINTENANCE
BLACKOUT, STOP, AND TAILLIGHT**



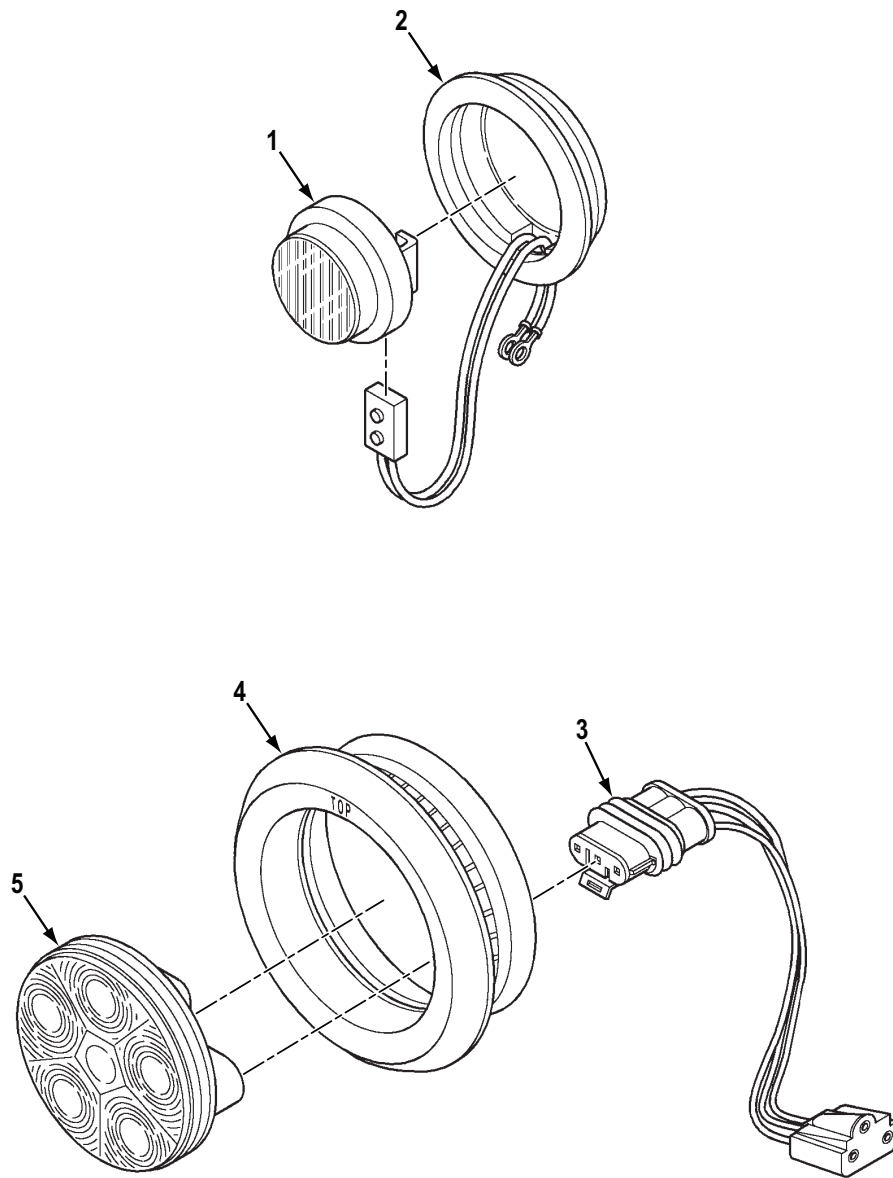
m466-5009

Figure 1. Blackout, Stop, and Taillight.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0609 LIGHTS						
FIG. 1. BLACKOUT, STOP, AND TAILLIGHT.						
1	PAFZZ	6220-01-088-5915	5A910	12258212	LIGHT,BLACKOUT CLEARANCE, 12 VOLT.....	2
2	PAFZZ	5310-00-045-3299	80205	MS35338-42	WASHER,LOCK #8.....	4
3	PAFZZ	5310-00-934-9757	80205	MS35649-282	NUT,PLAIN,HEXAGON #8-32 UNC.....	4

END OF FIGURE

FIELD MAINTENANCE
TAIL AND RUNNING LIGHTS



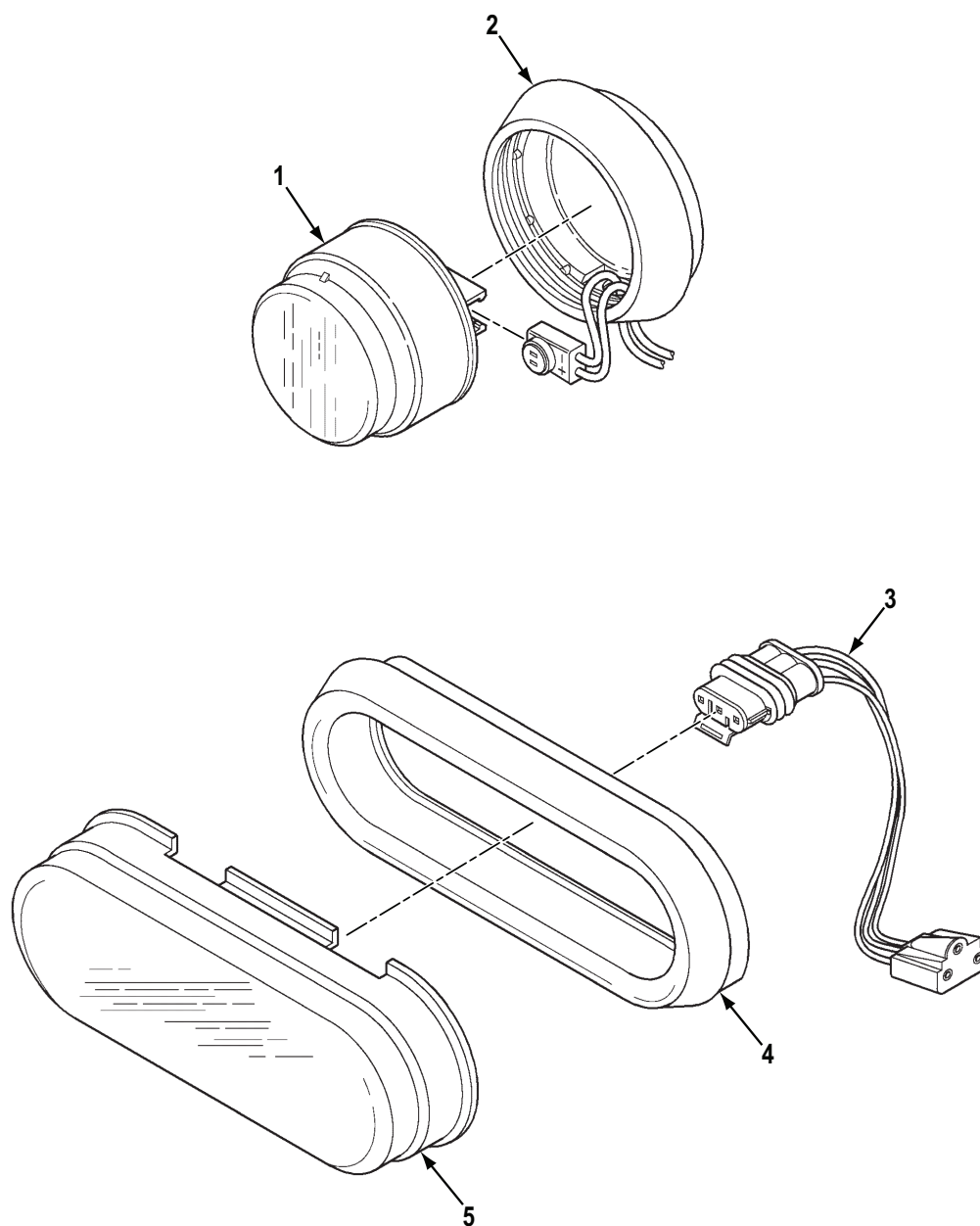
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Figure 2. Tail and Running Lights.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0609 LIGHTS						
FIG. 2. TAIL AND RUNNING LIGHTS.						
1	PAFZA	6240-01-518-6843	64678	CMG/405416	LAMP, INCANDESCENT RED, 12 VOLT....	5
2	PCFZZ	5325-01-519-2175	13548	10702	GROMMET, NONMETALLIC CLOSED BACK.....	5
3	PAFZZ	5935-01-518-3690	13548	94706	CONNECTOR ASSEMBLY, ELECTRICAL PART OF KIT P/N 44030R.....	4
4	PCFZZ	5325-01-067-5890	13548	40700	GROMMET, NONMETALLIC PART OF KIT P/N 44030R.....	4
5	KFFZZ		13548	44302R	LAMP, INCANDESCENT RED, TAILLIGHT PART OF KIT P/N 44030R.....	4

END OF FIGURE

FIELD MAINTENANCE
TURN SIGNAL AND CLEARANCE LAMPS



m466-5011

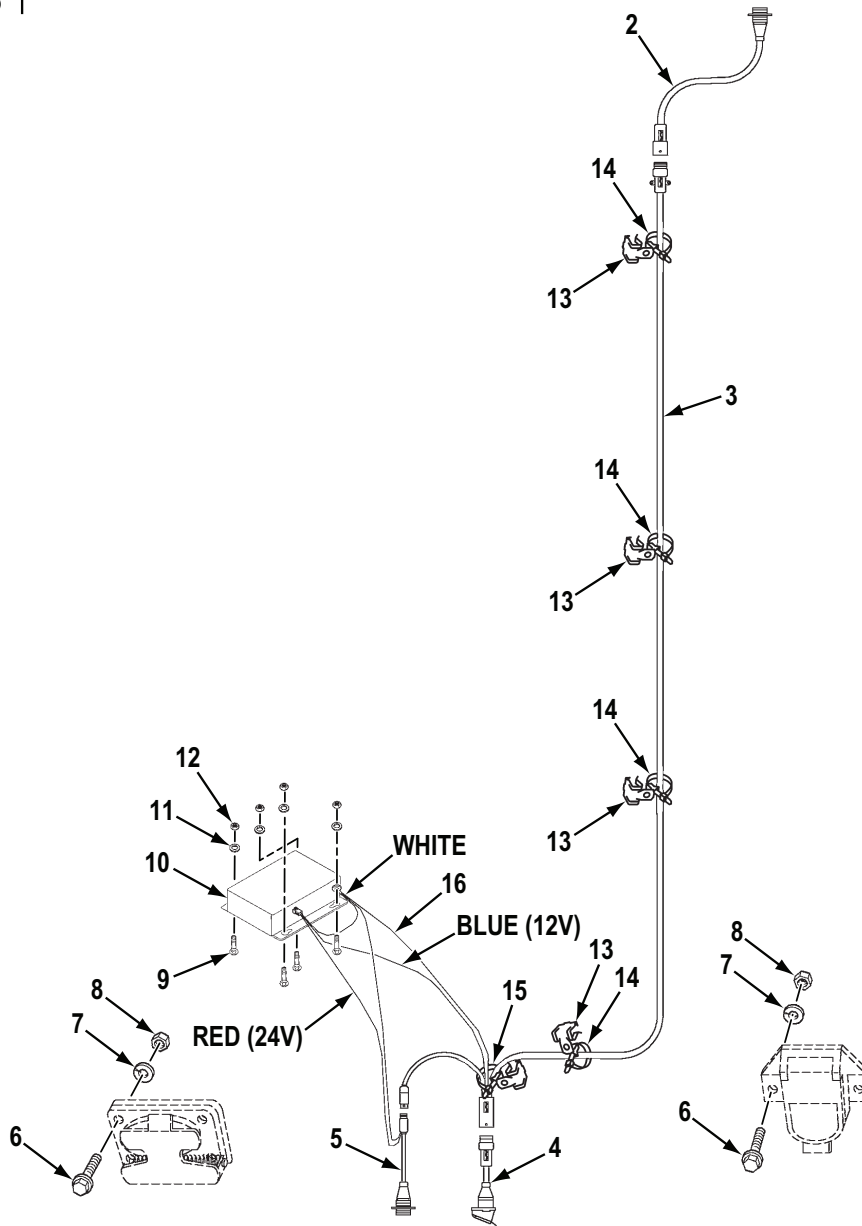
Figure 3. Turn Signal and Clearance Lamps.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0609 LIGHTS						
FIG. 3. TURN SIGNAL AND CLEARANCE LAMPS.						
1	PAFZZ	6220-01-519-2252	13548	10275Y	LAMP UNIT,VEHICULAR CLEARANCE,YELLOW PART OF KIT P/N 60075Y.....	2
2	PCFZZ	5325-01-519-2175	13548	10702	GROMMET,NONMETALLIC CLOSED BACK PART OF KIT P/N 60075Y.....	2
3	PAFZZ	5935-01-576-7359	04664	61-2484	CONNECTOR,PLUG,ELEC PART OF KIT P/N 60075Y.....	2
4	PCFZZ	5325-01-163-6558	13548	60700	GROMMET,NONMETALLIC PART OF KIT P/N 60075Y.....	2
5	KFFZZ		13548	60275Y	LAMP UNIT,VEHICULAR PART OF KIT P/N 60075Y.....	2

END OF FIGURE

FIELD MAINTENANCE
GOOSENECK WIRING, 24 AND 12 VOLT RECEPTACLES

1
2 THRU 5



m466-5001

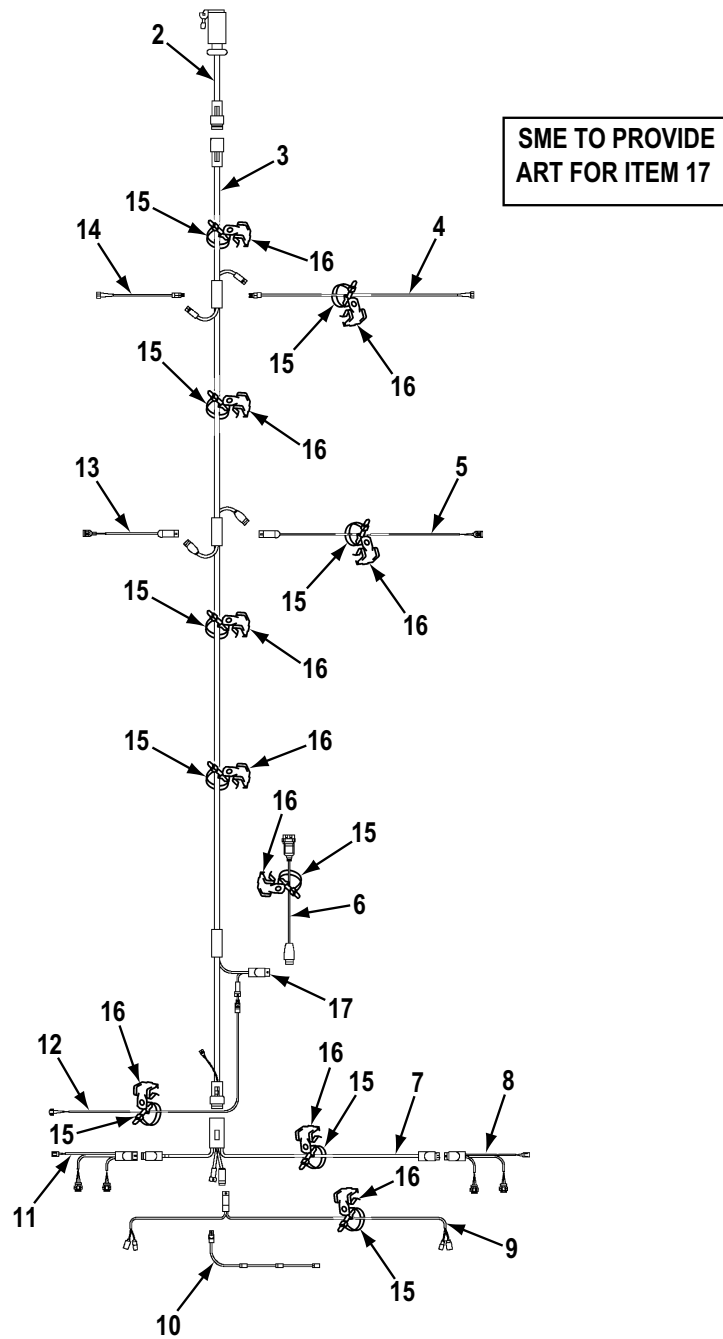
Figure 4. Gooseneck Wiring, 24 and 12 Volt Receptacles.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0613 HULL OR CHASSIS WIRING HARNESS						
FIG. 4. GOOSENECK WIRING, 24 AND 12 VOLT RECEPTACLES.						
1	PFFFF	6150-01-519-2182	63576	HKS-KIT-4150	WIRING HARNESS, BRANCHED.....	1
2	PAFZZ	6150-01-519-2173	63576	HKS-047	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL 10-PIN MILITARY SOCKET.....	1
3	PAFZZ	6150-01-519-2172	63576	HKS-046	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL MAIN GOOSENECK.....	1
4	PAFZZ	6150-01-519-2170	63576	HKS-001	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL 12 VOLT RECEPTACLE.....	1
5	PAFZZ	6150-01-519-2168	63576	HKS-045	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL 24 VOLT RECEPTACLE.....	2
6	PAFZZ	5305-00-914-3785	96906	MS18154-8	SCREW,CAP,HEXAGON H 1/4-20 X 1.00.....	6
7	PAFZZ	5310-00-285-8124	96906	MS27183-50	WASHER,FLAT 1/4.....	6
8	PAFZZ	5310-00-965-1820	81349	M45913/1-4CBB	NUT,SELF-LOCKING,HE 1/4-20.....	6
9	PAFZZ	5305-00-050-9239	96906	MS51957-73	SCREW,MACHINE 10-24 X 2 1/2.....	4
10	PAFZZ	6130-01-572-2676	00912	SCM-2412K	POWER SUPPLY DC/ DC CONVERTER.....	1
11	PAFZZ	5310-00-619-1148	80205	MS15795-808	WASHER,FLAT #10.....	4
12	PAFZZ	5310-01-463-4929	39428	91831A011	NUT,SELF-LOCKING,HE 10-24.....	4
13	PAFZZ	5340-01-549-2053	63576	09-20-001A	BEAM CLIP.....	25
14	PAFZZ	5975-01-379-4997	06383	PLT3S-C0	STRAP,TIEDOWN,ELECT NARROW 3/16 X 11.5.....	25
15	PAFZZ	5975-01-447-9852	06383	PLT6LH-L	STRAP,TIEDOWN,ELECT WIDE 5/16 X 21.....	19
16	PAFZZ	6150-01-572-8191	00912	0L90-2210-00	WIRING HARNESS, BRANCHED SPECIAL PURPOSE,ELECTRICAL DC/DC CONVERTER.....	1

END OF FIGURE

FIELD MAINTENANCE
LOWBOY BED WIRING

1
2 THRU 14



m466-5002

Figure 5. Lowboy Bed Wiring.

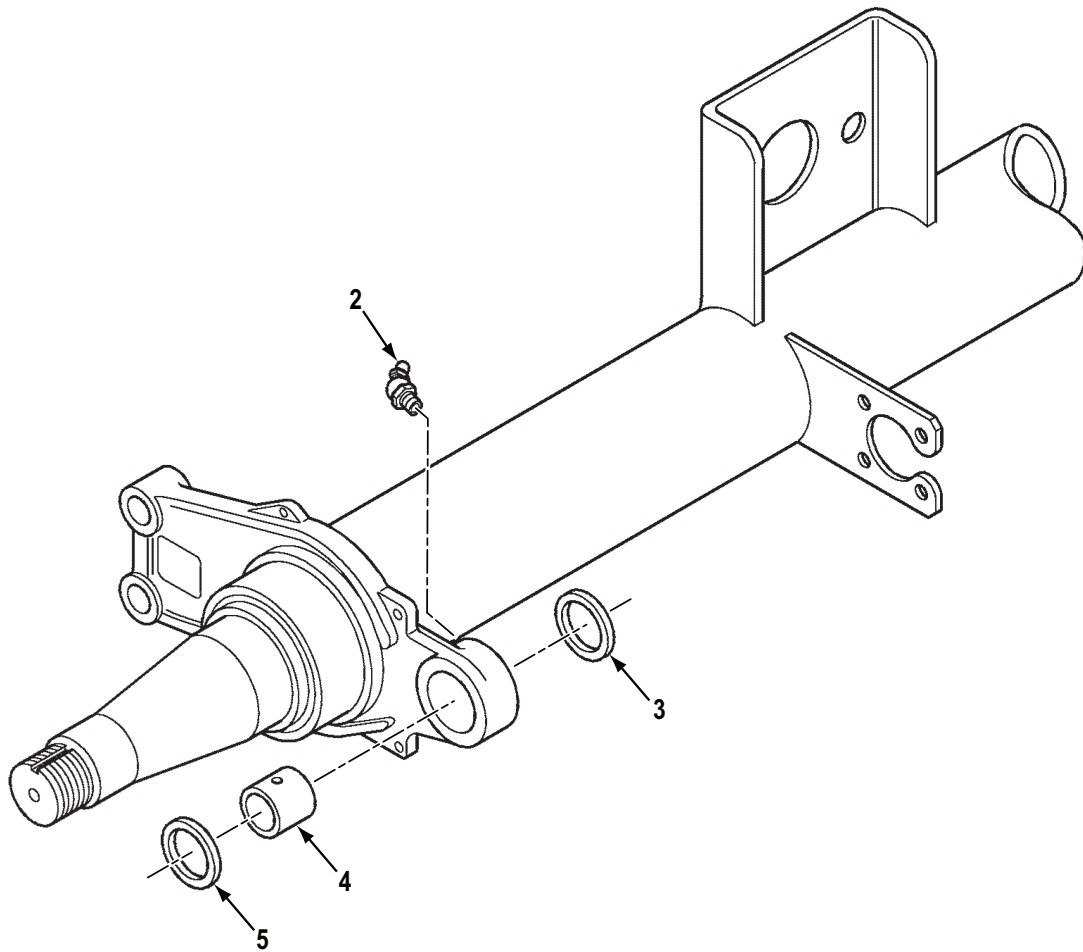
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 0613 HULL OR CHASSIS WIRING HARNESS						
FIG. 5. LOWBOY BED WIRING.						
1	PFFFF	6150-01-519-7023	63576	HKS-KIT-4100	CABLE ASSEMBLY SET, ELECTRICAL	1
2	PAFZZ	6150-01-519-2154	63576	HKS-048	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL NOSE END.....	1
3	PAFZZ	6150-01-519-2147	63576	HKS-017	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL MAIN.....	1
4	PAFZZ	6150-01-519-2146	63576	HKS-018	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL CURBSIDE MARKER.....	1
5	PAFZZ	6150-01-519-2150	63576	HKS-020	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL CURB SIDE MID-TURN.....	1
6	PAFZZ	6150-01-519-2151	63576	HKS-006	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL ECU POWER.....	1
7	PAFZZ	6150-01-519-2156	63576	HKS-024	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL REAR SILL.....	1
8	PAFZZ	6150-01-519-2157	63576	HKS-026	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL CURBSIDE PIGTAIL.....	1
9	PAFZZ	6150-01-519-2158	63576	HKS-028	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL BLACKOUT LIGHTS.....	1
10	PAFZZ	6150-01-519-2163	63576	HKS-025	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL I.D. BAR.....	1
11	PAFZZ	6150-01-519-2164	63576	HKS-027	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL ROADSIDE PIGTAIL.....	1
12	PAFZZ	6150-01-519-6507	63576	HKS-075	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL ABS WARNING LIGHT.....	1
13	PAFZZ	6150-01-519-2166	63576	HKS-021	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL ROADSIDE MID-TURN.....	1
14	PAFZZ	6150-01-519-2167	63576	HKS-019	. CABLE ASSEMBLY, SPECIAL PURPOSE,ELECTRICAL ROADSIDE MARKER.....	1
15	PAFZZ	5975-01-379-4997	06383	PLT3S-C0	STRAP,TIEDOWN,ELECT NARROW 3/16 X 11.5.....	50
16	PAFZZ	5340-01-572-5319	63576	09-20-011A	CLAMP,BEAM GRIPPING 9/16 - 3/4.....	25
16	PAFZZ	5340-01-572-5110	63576	09-17-021A	CLAMP,BEAM GRIPPING 1/8 - 1/4.....	25

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
17	PAFZZ	0000-00-000-0000	63576	HKS-126	PURPOSE,ELECTRICAL ABS RELAY CABLE ASSY.....	1

END OF FIGURE

FIELD MAINTENANCE
AXLE ASSEMBLIES

1
2 THRU 5



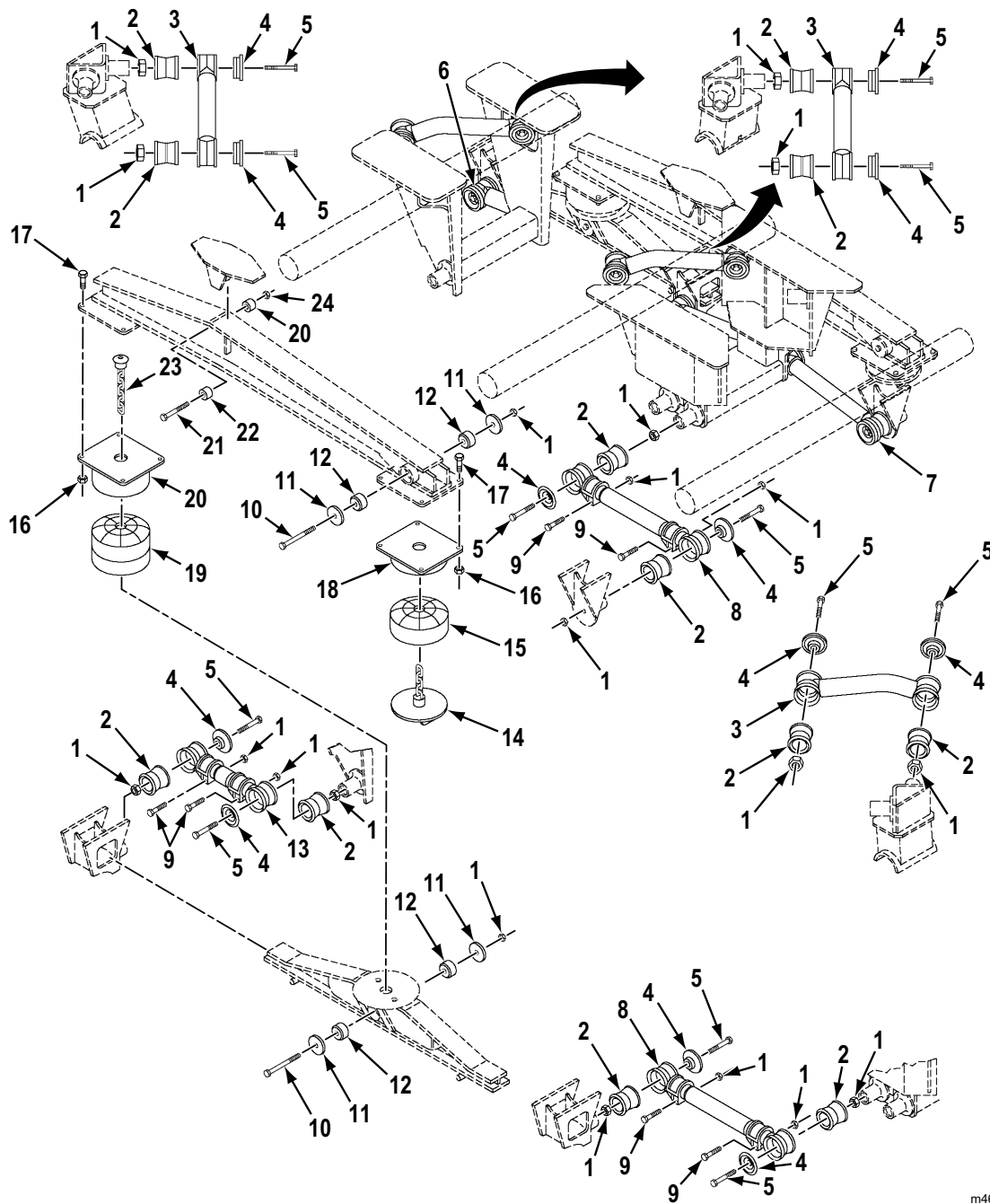
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Figure 6. Axle Assemblies.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1100 REAR AXLE ASSEMBLY						
FIG. 6. AXLE ASSEMBLIES.						
1	PFFFF	2530-01-518-8802	63576	M870A3MAXLEASS Y	AXLE,VEHICULAR, NONDRIVING INTERMEDIATE.....	1
1	PFFFF	2530-01-518-8801	63576	M870A3RAXLEASS Y	AXLE,VEHICULAR, NONDRIVING FRONT AND REAR W/ABS.....	2
2	PAFZZ	4730-00-172-0028	81343	AS15003-4	. FITTING,LUBRICATION.....	1
3	PAFZZ	5330-01-517-3777	63576	M16HR103	. SEAL,PLAIN ENCASED SPIDER SEAL PART OF KIT P/N 43-7118.....	1
4	KFFZZ		62707	M16HD106	. BUSHING,SLEEVE SPIDER BUSHING PART OF KIT P/N 43-7118.....	1
5	KFFZZ		62707	EH125011	. WASHER PART OF KIT P/N 43-7118.....	1

END OF FIGURE

FIELD MAINTENANCE
AXLE SUSPENSION



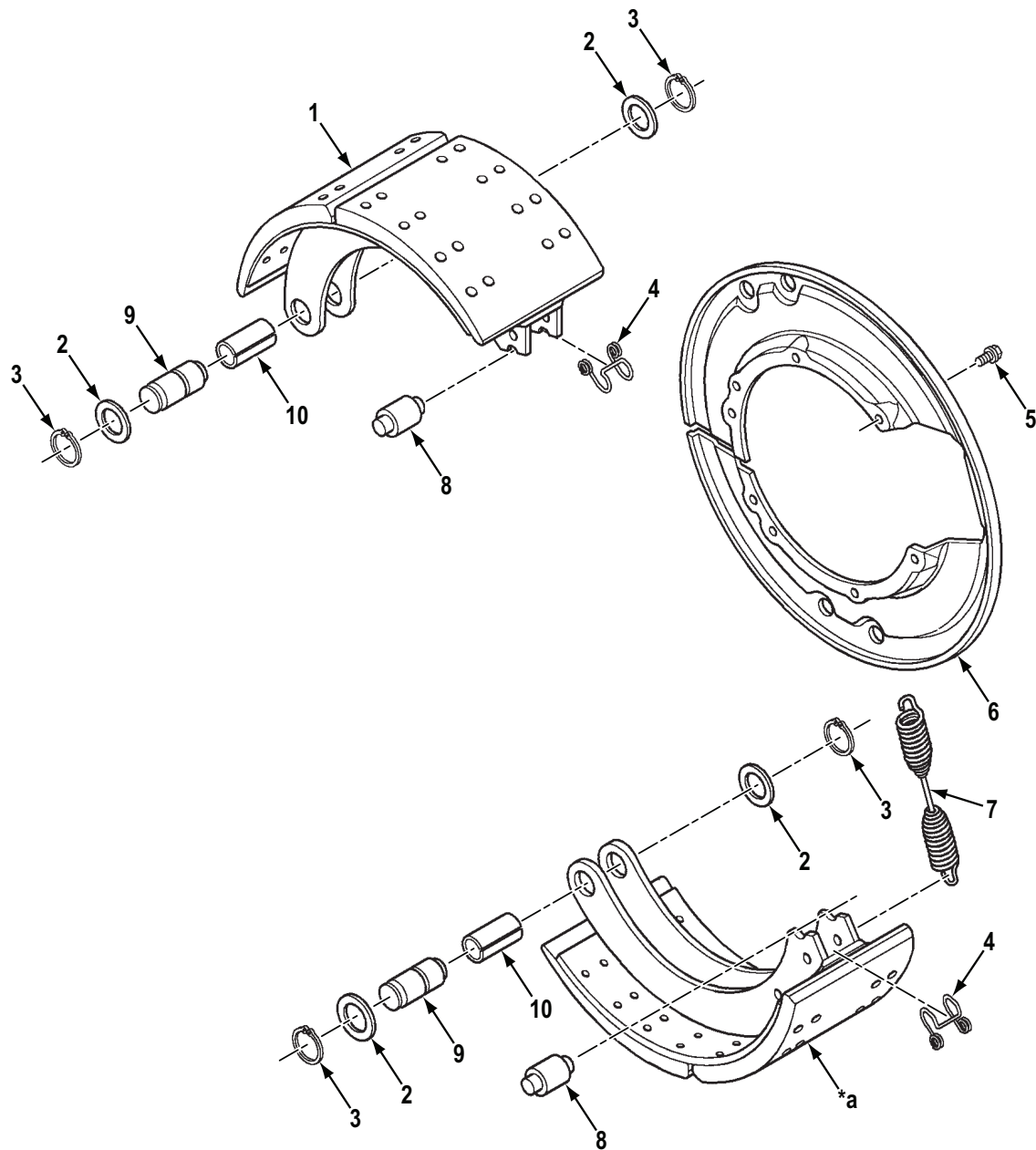
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Figure 7. Axle Suspension.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1100 REAR AXLE ASSEMBLY						
FIG. 7. AXLE SUSPENSION.						
1	PAFZZ	5310-01-519-8701	63576	HDW 379	NUT,SELF-LOCKING,HE 5/8 UNC.....	34
2	PCFZZ	5365-01-519-2200	63576	800010	BUSHING,NONMETALLIC.....	24
3	PAFZZ	2530-01-520-4301	63576	800049	TORQUE ROD,TANDEM A UPPER CURVED.....	6
4	PAFZZ	5340-01-519-2260	63576	800055	CAP,PROTECTIVE,DUST.....	24
5	PAFZZ	5306-01-519-8693	63576	HDW 382	BOLT,SHOULDER 5/8 X 5 1/2 UNC.....	24
6	PAFZZ	2530-01-524-5248	63576	805155	TORQUE ROD LOWER.....	1
7	PAFZZ	2530-01-519-2138	63576	805223	TORQUE ROD,TANDEM A LOWER FIXED.....	2
8	PAFZZ	2530-01-519-2140	63576	807223	TORQUE ROD,TANDEM A LOWER ADJUSTABLE.....	2
9	PAFZZ	5306-01-519-8689	63576	HDW 380	BOLT,MACHINE 5/8 X 3 1/2 THREAD LENGTH.....	4
10	PAFZZ	5306-01-519-8690	63576	HDW 055	BOLT,MACHINE 5/8 X 8 1/2 THREAD LENGTH.....	4
11	PAFZZ	5310-01-519-2141	63576	04P00243	WASHER,FLAT.....	8
12	PAFZZ	5365-01-519-2203	63576	22096	SPACER,SLEEVE.....	8
13	PAFZZ	2530-01-519-2143	63576	807155	TORQUE ROD,TANDEM A LOWER ADJUSTABLE.....	1
14	PAFZZ	5340-01-519-2264	63576	03S00494	PLATE,MOUNTING ASSEMBLY,LOWER	2
15	PAFZZ	5340-01-519-2263	63576	15016	PAD,SHOCK MOUNT.....	2
16	XDFZZ		63576	HDW461	NUT,SELF-LOCKING 1/2.....	16
17	XDFZZ		63576	HDW 397	BOLT 1/2 X 1 3/4.....	16
18	PAFZZ	5340-01-519-2284	63576	07S00012	PLATE,MOUNTING.....	2
19	PAFZZ	5340-01-519-2283	63576	15002	MOUNT,RESILIENT,GEN.....	2
20	PAFZZ	5340-01-519-2287	63576	07S00011	PLATE,MOUNTING.....	2
21	PAFZZ	5306-01-519-8695	63576	HDW 342	BOLT,SHOULDER 3/4 X 4 1/2 UNC.....	4
22	PAFZZ	5365-01-519-2214	63576	120161	SPACER,SLEEVE.....	4
23	PAFZZ	4010-01-519-2197	63576	04S00080	CHAIN ASSEMBLY, SINGLE LEG REBOUND.....	2
24	PAFZZ	5310-01-519-8697	63576	HDW 018	NUT,SELF-LOCKING,HE 3/4 UNC.....	4

END OF FIGURE

**FIELD MAINTENANCE
BRAKE SHOE AND LINING**



*a PART OF ITEM 1

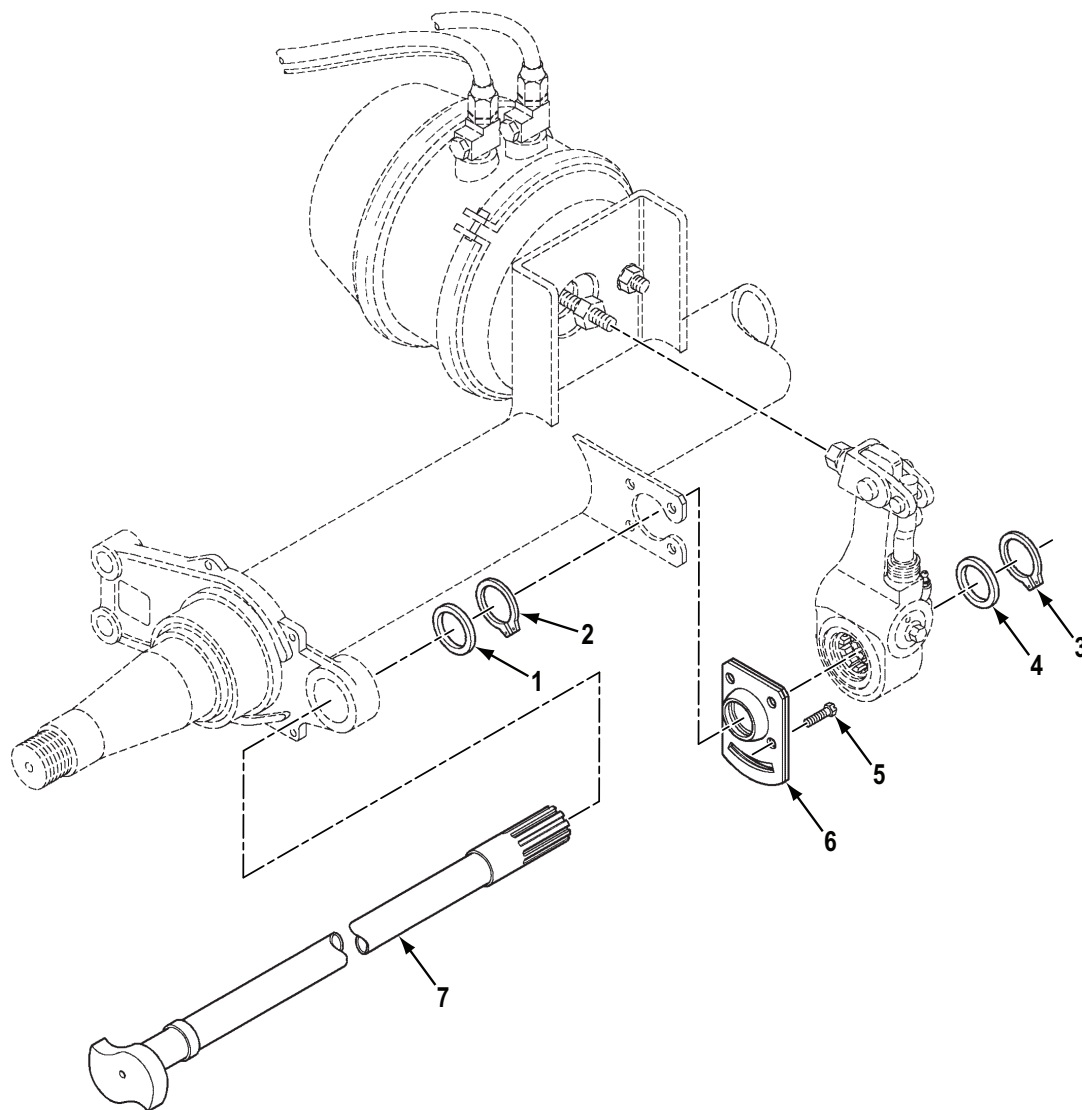
m466-5014

Figure 8. Brake Shoe and Lining.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1202 SERVICE BRAKES						
FIG. 8. BRAKE SHOE AND LINING.						
1	PAFZZ	2530-01-241-3216	06853	4515PBLK	BRAKE SHOE.....	12
2	PAFZZ	5310-01-062-1531	62707	M10HN135	WASHER,FLAT.....	24
3	PAFZZ	5325-01-062-1009	26697	MP0-0113	RING,RETAINING.....	24
4	PAFZZ	5340-01-239-0883	91422	20-881	CLIP,RETAINING.....	12
5	PAFZZ	5305-01-265-6080	62707	M10HM115	SCREW,MACHINE.....	36
6	PAFZZ	2530-01-217-8156	62707	M16WB100	SHIELD,BRAKE DISK.....	6
7	PAFZZ	5360-01-241-6961	62707	M16WJ100	SPRING,HELICAL,EXTE.....	6
8	PAFZZ	5315-01-220-6245	06853	321425	PIN,SHOULDER,HEADLE.....	12
9	PAFZZ	5315-01-220-6238	06853	15-527	PIN,GROOVED,HEADLES.....	12
10	PAFZZ	3120-01-239-0889	45152	M16HD107	BUSHING,SLEEVE PART OF KIT P/N 43-7118.....	12

END OF FIGURE

FIELD MAINTENANCE
BRAKE CAMSHAFTS



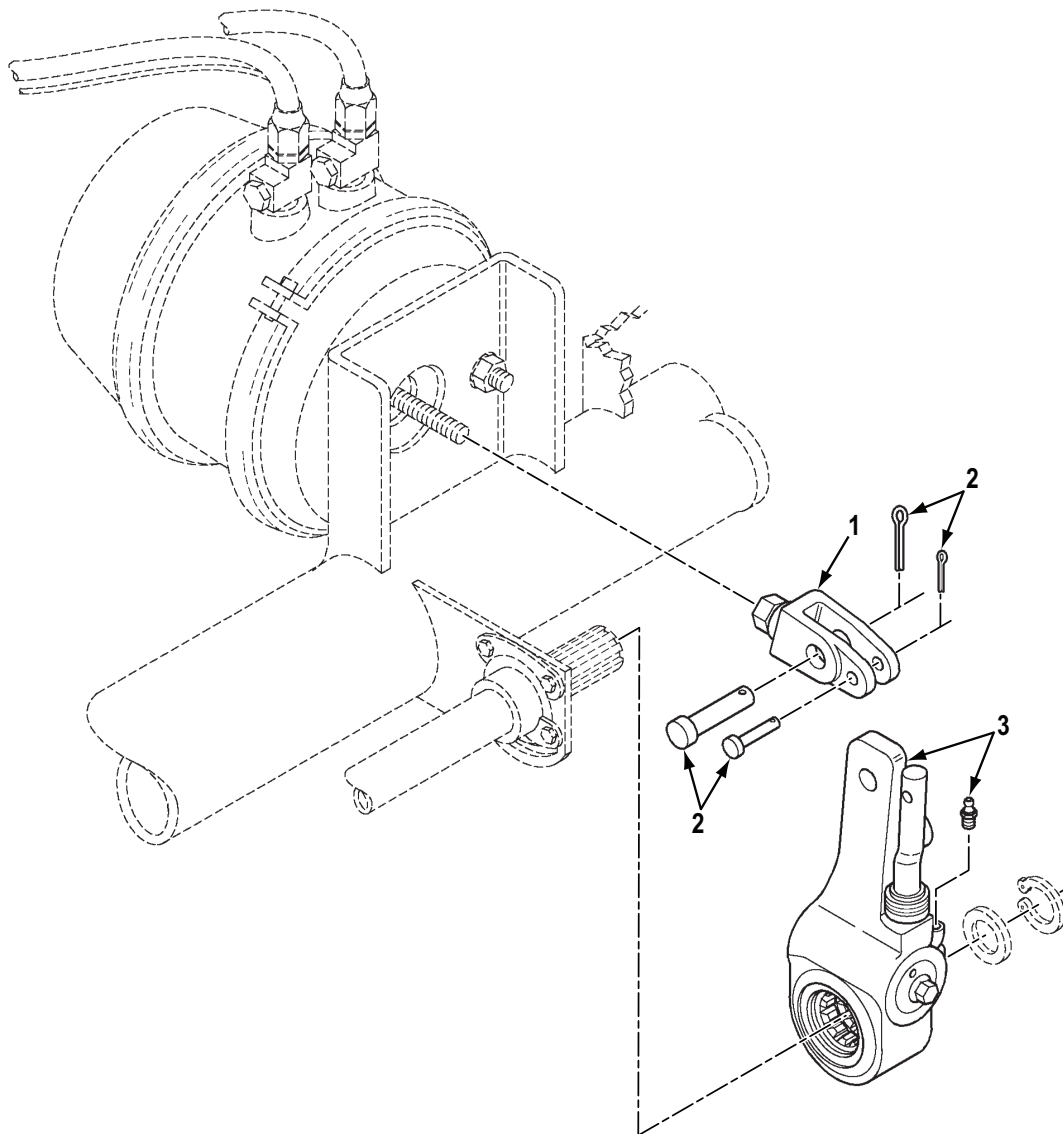
m466-5015

Figure 9. Brake Camshafts.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1202 SERVICE BRAKES						
FIG. 9. BRAKE CAMSHAFTS.						
1	KFFZZ		62707	M10HS143	WASHER,FLAT PART OF KIT P/N 43-7118.....	6
2	KFFZZ		62707	SH-162	RING,SNAP PART OF KIT P/N 43-7118....	6
3	KFFZZ		62707	M10HR155	RING,SNAP PART OF KIT P/N 43-7118....	6
4	KFFZZ		62707	M10HS145	WASHER,FLAT PART OF KIT P/N 43-7118.....	6
5	KFFZZ		62707	M10HM195	SCREW,SELF-TAPPING PART OF KIT P/N 43-7118.....	24
6	KFFZZ		62707	M10WH150-L	BRACKET,MOUNTING CAM SHAFT, LEFT HAND PART OF KIT P/N 43-7118.....	3
6	KFFZZ		62707	M10WH150-R	BRACKET,MOUNTING CAM SHAFT, RIGHT HAND PART OF KIT P/N 43-7118.....	3
7	PAFZZ	2530-01-520-5697	62707	M16WKL25-256	CAMSHAFT,ACTUATING, BRAKE SHOE ACTUATING CAMSHAFT, LEFT HAND USE ON FRONT AND REAR AXLES.....	2
7	PAFZZ	2530-01-520-5686	06853	M16WKR25-256	CAMSHAFT,ACTUATING, BRAKE SHOE ACTUATING CAMSHAFT, RIGHT HAND USE ON FRONT AND REAR AXLES.....	2
7	PAFZZ	2530-01-520-5684	06853	M16WKL25-191	CAMSHAFT,ACTUATING, BRAKE SHOE ACTUATING CAMSHAFT, LEFT HAND USE ON INTERMEDIATE AXLE.....	1
7	PAFZZ	2530-01-520-6453	62707	M16WKR25-191	CAMSHAFT,ACTUATING, BRAKE SHOE ACTUATING CAMSHAFT, RIGHT HAND USE ON INTERMEDIATE AXLE.....	1

END OF FIGURE

FIELD MAINTENANCE
SLACK ADJUSTER

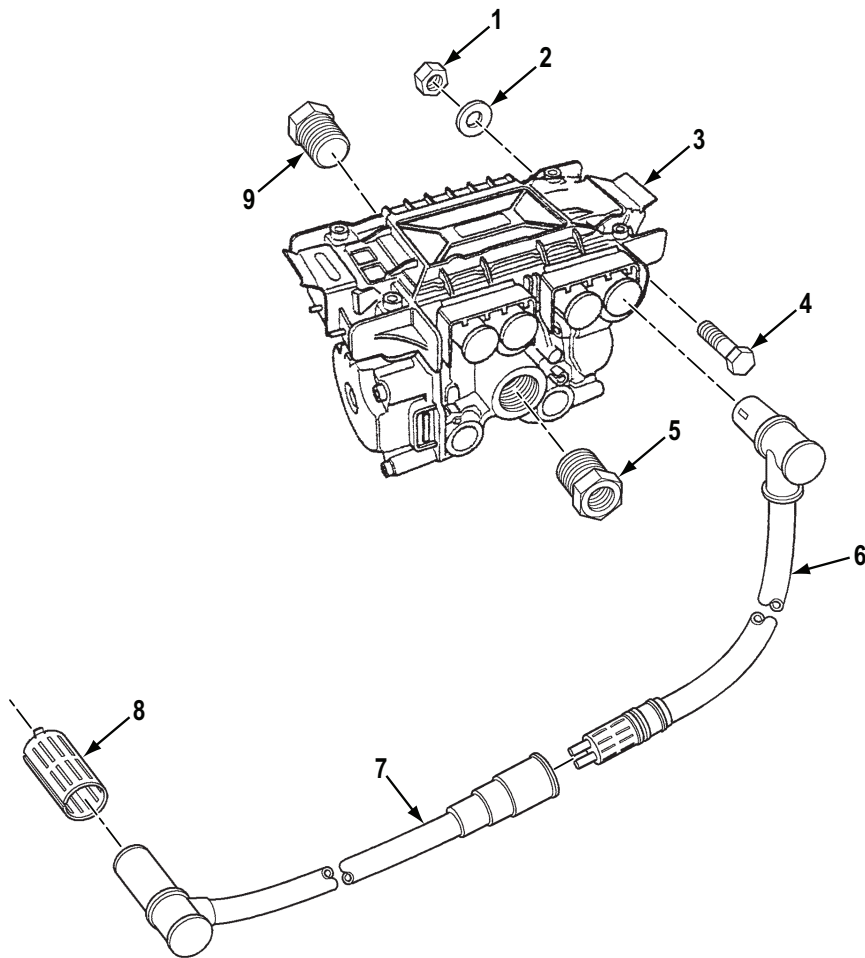


m466-5016

Figure 10. Slack Adjuster.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1206 MECHANICAL BRAKE SYSTEM						
FIG. 10. SLACK ADJUSTER.						
1	PAFZZ	5340-01-520-5344	73972	AS3018	CLEVIS,ROD END.....	1
2	PAFZZ	5315-01-520-5676	73972	AS4004	COTTER PIN ASSORTME CONTAINS 6 - 1/4 INCH AND 6 - 1/2 INCH CLEVIS PINS,AND 12 - COTTER PINS.....	1
3	PAFZZ	2530-01-519-2148	73972	AS1141	ADJUSTER,SLACK,BRAK INCLUDES ROD END CLEVIS AND PINS.....	6
END OF FIGURE						

**FIELD MAINTENANCE
ABS BRAKING SYSTEM.**



m466-5017

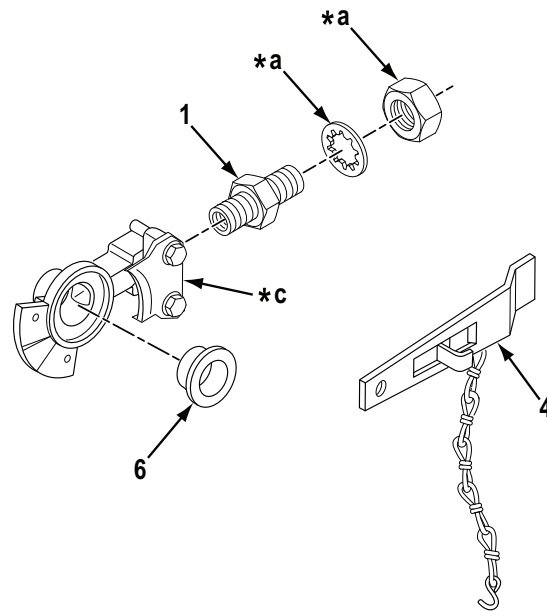
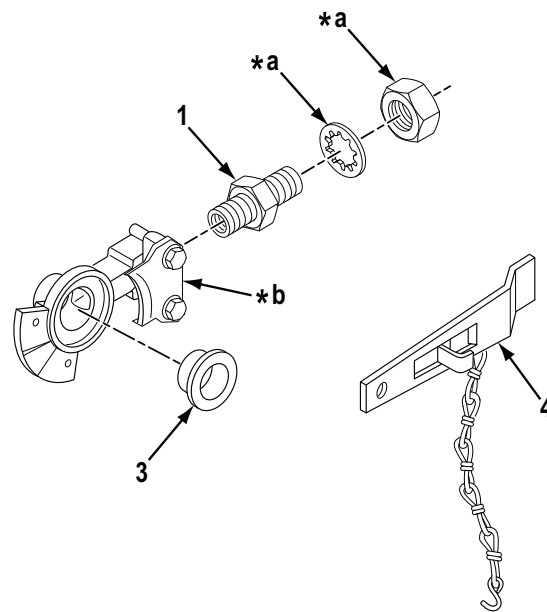
Figure 11. ABS Braking System.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 11. ABS BRAKING SYSTEM.						
1	PAFZZ	5310-00-914-6028	81349	M45913/1-6CS3	NUT,SELF-LOCKING,HE 3/8-16 UNC.....	2
2	PAFZZ	5310-01-312-4960	96906	MS27183-55	WASHER,FLAT 3/8.....	2
3	PAFZZ	4810-01-499-3407	78500	S4005001030	VALVE ASSEMBLY.....	1
4	PAFZZ	5305-01-516-9263	2V507	91286A206	SCREW,CAP,HEXAGON H 3/8-16 X 1 3/4 UNC.....	2
5	PAFZZ	4730-00-278-3888	81343	J514 12-8 140140C	REDUCER,PIPE.....	1
6	PAFZZ	2530-01-499-3170	78500	S4497130300	SENSOR,ANTI-LOCK BR ABS SENSOR EXTENSION.....	4
7	PAFZZ	2530-01-502-0543	338X5	R955336	SENSOR,ANTI-LOCK BR SENSOR WITH SOCKET.....	4
8	PAFZZ	5340-01-499-3481	78500	R955458	CLIP,SPRING TENSION.....	4
9	PAFZZ	4730-00-678-4749	19207	10863625	PLUG,PIPE 3/4 NPTF.....	1

END OF FIGURE

**FIELD MAINTENANCE
GLADHANDS AND MOUNTING HARDWARE**

2	5
3	6



*a PART OF ITEM 1
 *b PART OF ITEM 2
 *c PART OF ITEM 5

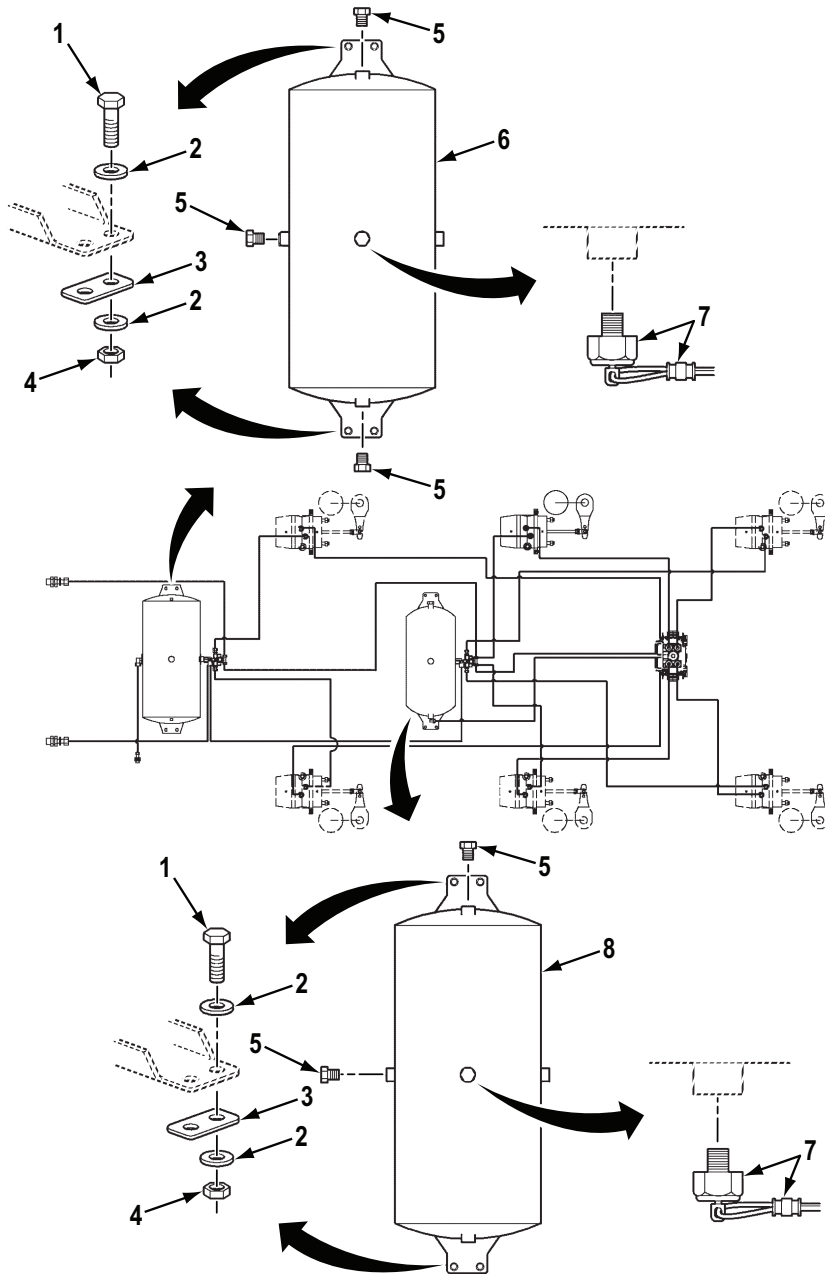
m466-5003

Figure 12. Gladhands and Mounting Hardware.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 12. GLADHANDS AND MOUNTING HARDWARE.						
1	PAFZZ	4730-00-244-9848	28548	5228623	NIPPLE,TANK.....	2
2	PAFFF	2530-01-382-8736	19207	12414667-001	COUPLER,AIR BRAKE,E.....	1
3	PAFZZ	5330-00-172-1919	06721	1509	. PACKING,PREFORMED.....	1
4	PAFZZ	2530-00-270-3878	06727	N13048	DUMMY COUPLING,AUTO.....	2
5	PAFFF	2530-01-384-1441	06721	N20415PB	COUPLER,AIR BRAKE,S.....	1
6	PAFZZ	5330-00-172-1919	06721	1509	. PACKING,PREFORMED.....	1

END OF FIGURE

FIELD MAINTENANCE
PRIMARY AND SECONDARY AIR RESERVOIRS AND REMOTE DUMP VALVE



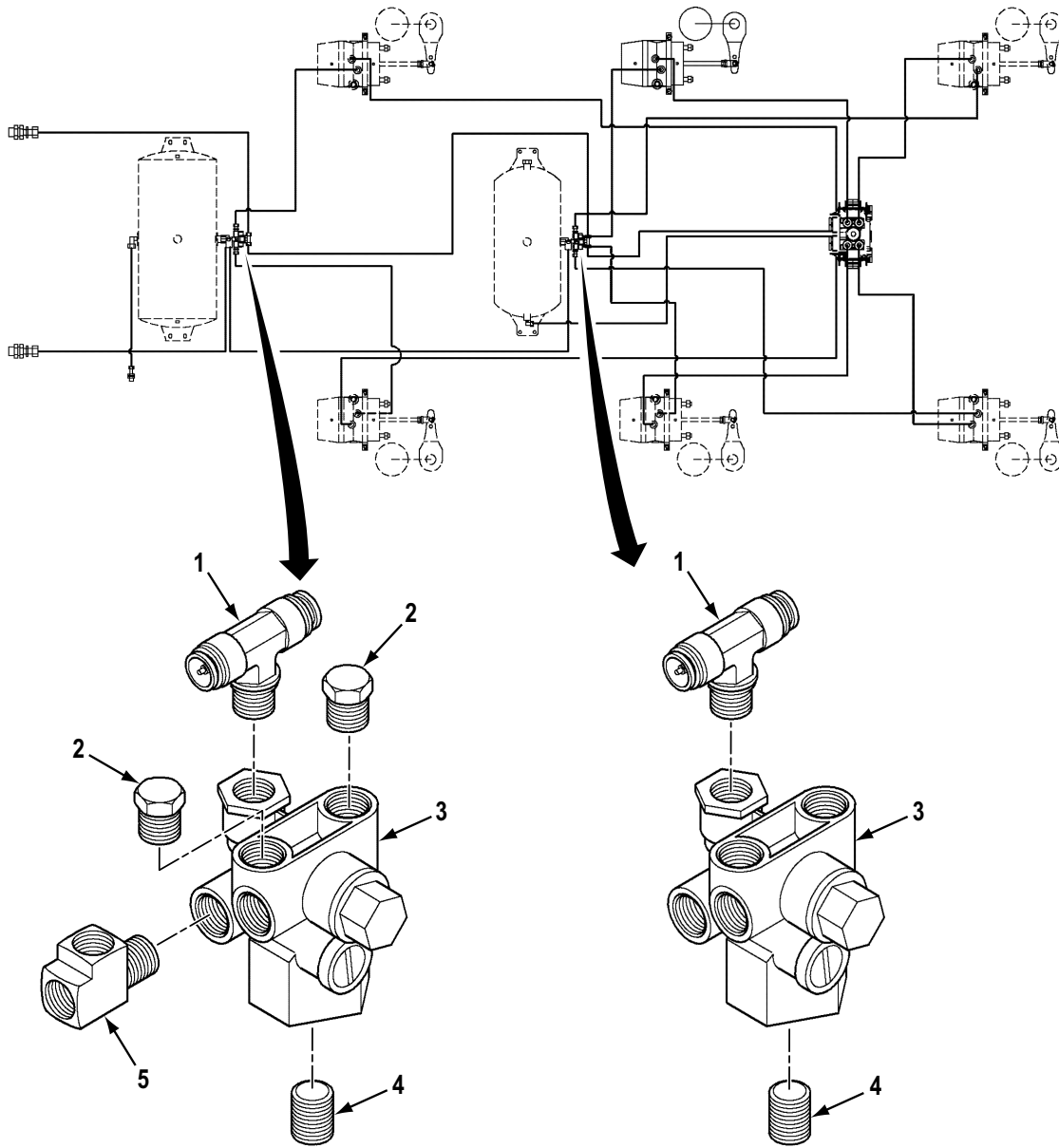
m466-5018

Figure 13. Air Reservoirs and Remote Dump Valve.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 13. AIR RESERVOIRS AND REMOTE DUMP VALVE.						
1	PAFZZ	5305-00-068-0511	80204	B1821BH038C125N	SCREW,CAP,HEXAGON H 3/8-16 X 1 1/4 UNC.....	8
2	PAFZZ	5310-01-312-4960	96906	MS27183-55	WASHER,FLAT 3/8.....	16
3	PCFZZ	5330-01-519-2670	62173	1078	GASKET PRESSURE TANK.....	4
4	PAFZZ	5310-00-914-6028	81349	M45913/1-6CS3	NUT,SELF-LOCKING,HE 3/8-16 UNC.....	8
5	PAFZZ	4730-00-014-4027	338X5	444632	PLUG,PIPE 1/2 NPTF.....	4
6	PAFZZ	2530-01-517-3992	63576	HT-1218	TANK,PRESSURE.....	1
7	PAFZZ	2590-01-519-2181	63576	12355	VALVE,POPPET,HULL D REMOTE DUMP VALVE.....	2
8	PAFZZ	2530-01-517-3716	63576	9531	TANK,PRESSURE.....	1

END OF FIGURE

**FIELD MAINTENANCE
SPRING BRAKE CONTROL VALVE**



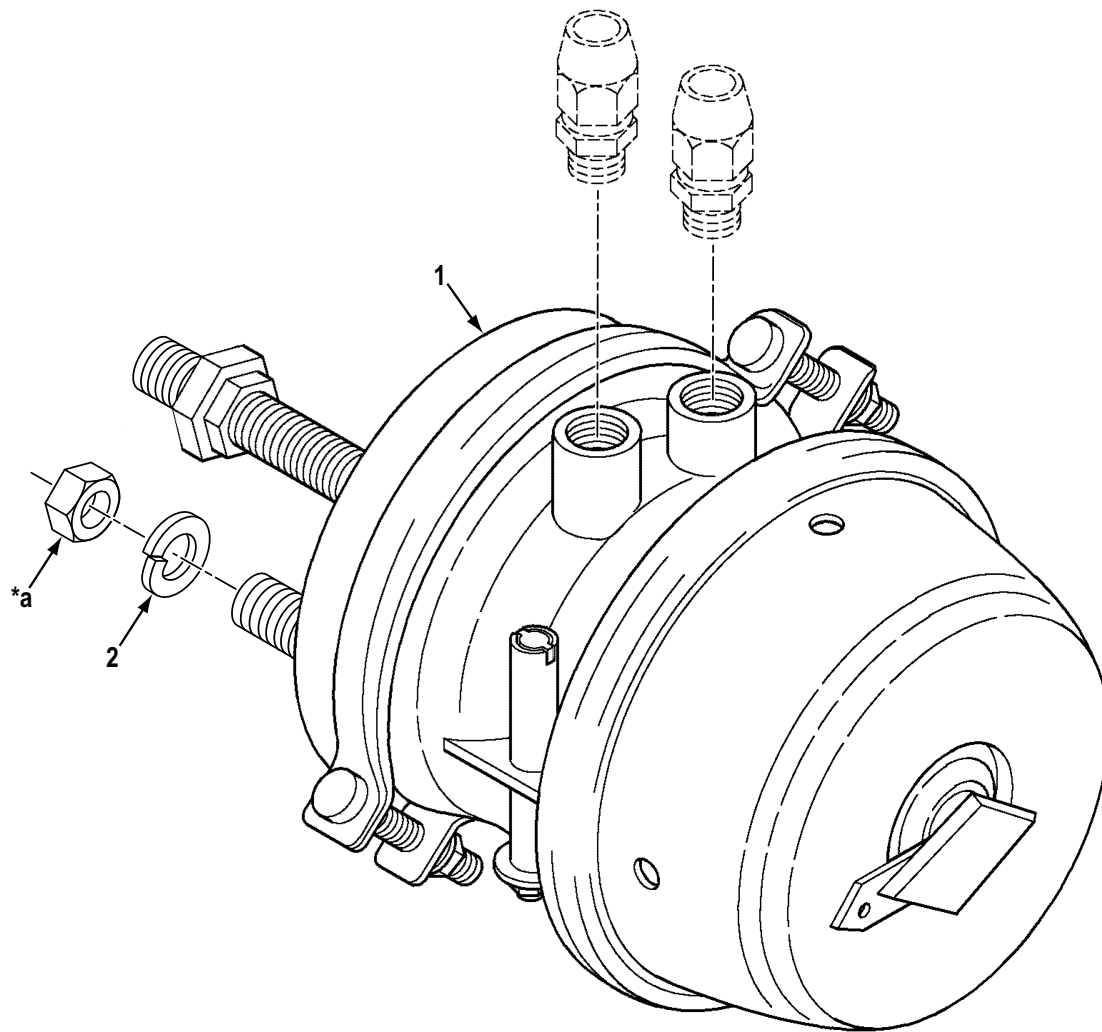
m466-5019

Figure 14. Spring Brake Control Valve.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 14. SPRING BRAKE CONTROL VALVE.						
1	PAFZZ	4730-01-519-2377	93061	VS172PMTNS-6-6	TEE,PIPE TO TUBE.....	2
2	PAFZZ	5365-01-318-1888	63576	P3/8GSP	PLUG,MACHINE THREAD.....	2
3	PAFZZ	4820-01-497-8729	10125	110500	VALVE,CHECK 3/8 TO 1/2.....	2
4	PAFZZ	4730-01-519-2178	10125	6002	NIPPLE,PIPE 1/2SC80.....	2
5	PAFZZ	4730-01-517-3907	63576	P3/8GST	TEE,PIPE.....	1

END OF FIGURE

**FIELD MAINTENANCE
SPRING BRAKE CHAMBERS**



*a PART OF ITEM 1

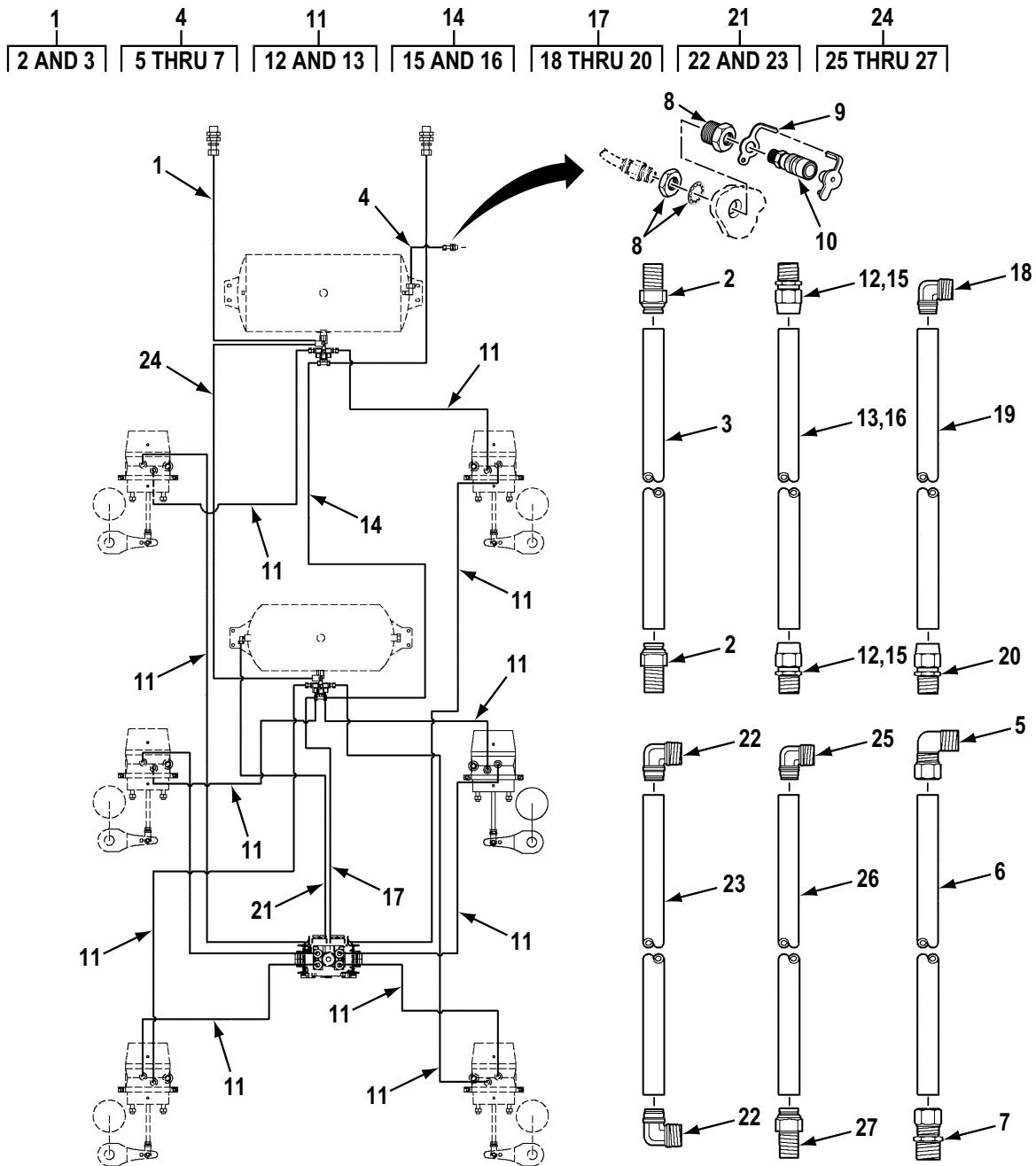
m466-5020

Figure 15. Spring Brake Chambers.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 15. SPRING BRAKE CHAMBERS.						
1	PAFZZ	2530-01-368-8282	63576	3130272	CHAMBER,AIR BRAKE CENTER.....	2
1	PAFZZ	2530-01-519-2152	63576	12591	CHAMBER,AIR BRAKE FRONT.....	2
1	PAFZZ	2530-01-519-2161	63576	12582	CHAMBER,AIR BRAKE REAR.....	2
2	PAFZZ	5310-00-959-4679	96906	MS35340-45	WASHER,LOCK.....	2

END OF FIGURE

**FIELD MAINTENANCE
AIR BRAKE HOSES AND FITTINGS**



m466-5021

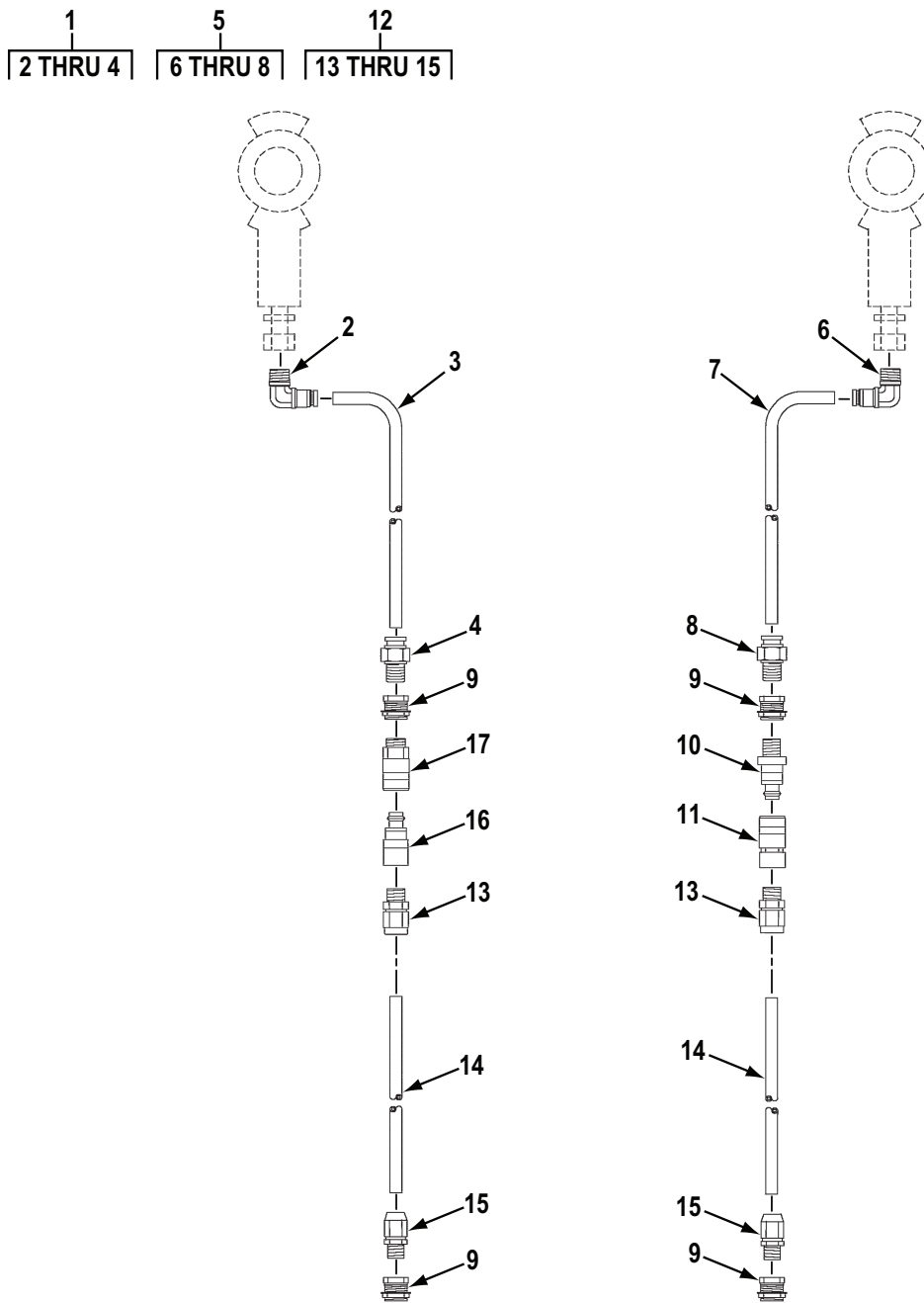
Figure 16. Air Brake Hoses and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 16. AIR BRAKE HOSES AND FITTINGS.						
1	AFFFF		63576	X8291-1	HOSE ASSEMBLY, NONME AIR BRAKE.....	2
2	PAFZZ	4730-01-519-2372	93061	VS169PMT-6-6	. COUPLING HALF, QUICK DISCONNECT	2
3	MFFZZ		63576	125608-1	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC P/N 6ABB (81300).....	1
4	AFFFF		63576	X8291-7	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
5	PAFZZ	4730-01-310-4665	93061	VS269NTA-8-8	. ELBOW, PIPE TO TUBE.....	1
6	MFFZZ		63576	8291-7	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 1120-8B-BLK-100 (61424).....	1
7	PAFZA	4730-00-453-8252	11083	5P4402	. ADAPTER, STRAIGHT, PIPE TO TUBE.....	1
8	PAFZZ	5340-01-517-3807	63576	50006	ANCHOR FITTING THRU- BULKHEAD ADAPTER.....	1
9	PAFZZ	5340-01-307-5989	97111	H1-65M	PLUG, PROTECTIVE, DUS.....	1
10	PAFZZ	4730-01-519-2409	39428	6536K19	COUPLING HALF, QUICK DISCONNECT	1
11	AFFFF		63576	X8291-2	HOSE ASSEMBLY, NONME AIR BRAKE, SPRING BRAKE CHAMBER.....	12
12	PAFZZ	4730-01-519-2159	93061	VS68RB-6-6	. ADAPTER, STRAIGHT, PIPE TO HOSE.....	2
13	MFFZZ		63576	125608-2	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC P/N 6ABB (81300).....	1
14	AFFFF		63576	X8291-5	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
15	PAFZZ	4730-01-519-2159	93061	VS68RB-6-6	. ADAPTER, STRAIGHT, PIPE TO HOSE.....	1
16	MFFZZ		63576	8291-5	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 3250-0616 (85757).....	1
17	AFFFF		63576	X8291-3	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
18	PAFZZ	4730-01-519-2380	1R5C8	9292-0007	. ELBOW, PIPE TO TUBE.....	1
19	MFFZZ		63576	8291-3	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 3250-0616 (85757).....	1
20	PAFZZ	4730-01-519-2159	93061	VS68RB-6-6	. ADAPTER, STRAIGHT, PIPE TO HOSE.....	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
21	AFFFF		63576	X8291-4	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
22	PAFZZ	4730-01-519-2390	93061	169PMTNS-8-8	. ELBOW, PIPE TO TUBE.....	2
23	MFFZZ		63576	8291-4	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 1120-8B-BLK-100 (61424).....	1
24	AFFFF		63576	X8291-6	HOSE ASSEMBLY, NONME AIR BRAKE.....	2
25	PAFZZ	4730-01-512-4548	93061	VS169PMTNS-6-6	. ELBOW, PIPE PIPE TO HOSE.....	1
26	MFFZZ		63576	8291-6	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 1120-6B-RED-500 (61424).....	1
27	PAFZZ	4730-01-519-2372	93061	VS169PMT-6-6	. COUPLING HALF, QUICK DISCONNECT	1

END OF FIGURE

**FIELD MAINTENANCE
GOOSENECK AIR HOSES AND FITTINGS**



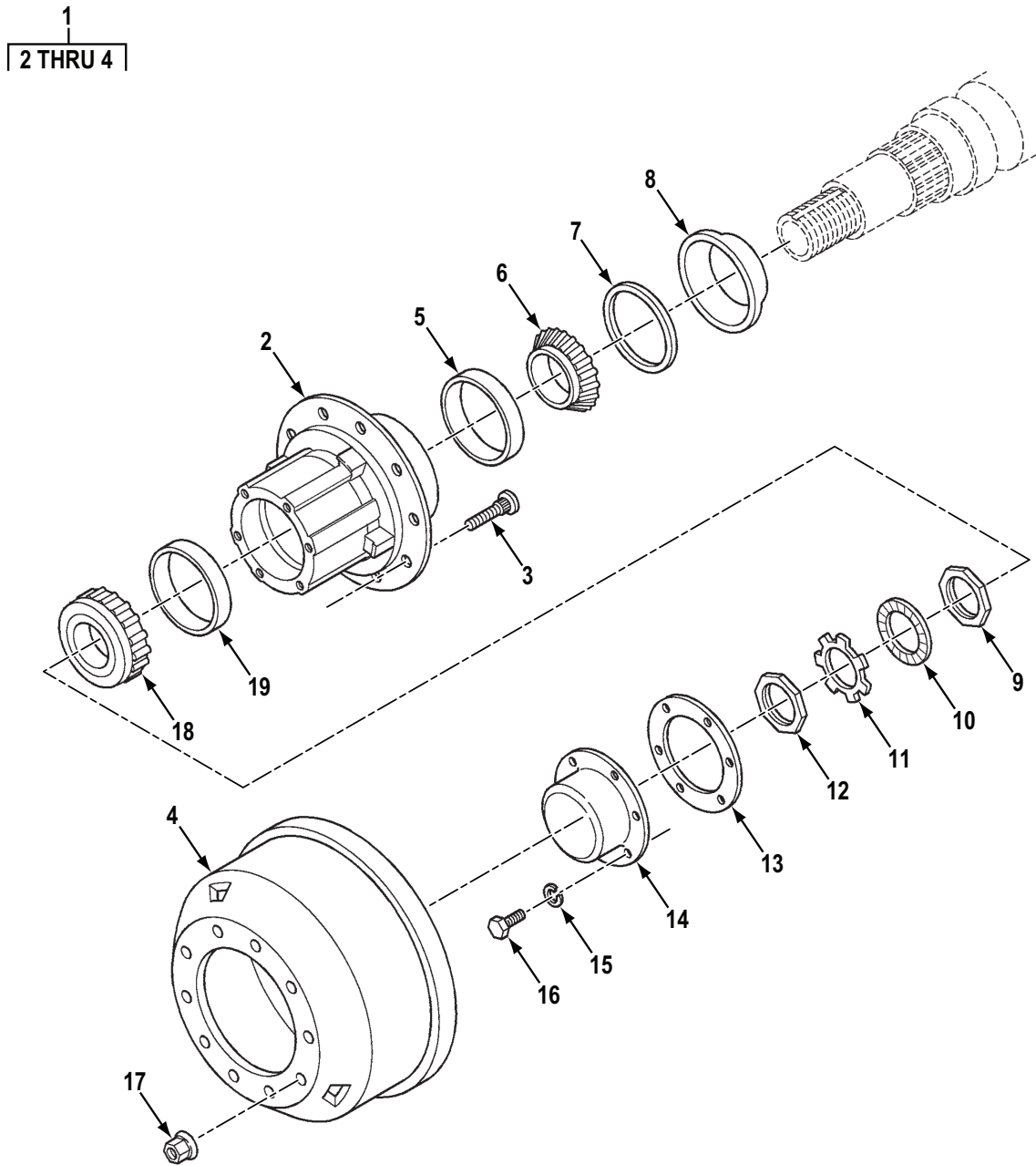
m466-5022

Figure 17. Gooseneck Air Hoses and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1208 AIR BRAKE SYSTEM						
FIG. 17. GOOSENECK AIR HOSES AND FITTINGS.						
1	AFFFF		63576	X8291-15	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
2	PAFZZ	4730-01-512-4548	93061	VS169PMTNS-6-6	. ELBOW, PIPE PIPE TO HOSE.....	1
3	MFFZZ		63576	8291-15	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 1120-6B-RED-500 (61424).....	1
4	PAFZZ	4710-01-540-9546	63576	VS68PMT-6-6	. TUBE, METALLIC ADAPTER, STRAIGHT, PIPE TO HOSE.....	1
5	AFFFF		63576	X8291-14	HOSE ASSEMBLY, NONME AIR BRAKE.....	1
6	PAFZZ	4730-01-512-4548	93061	VS169PMTNS-6-6	. ELBOW, PIPE PIPE TO HOSE.....	1
7	MFFZZ		63576	8291-14	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 3250-0616 (85757).....	1
8	PAFZZ	4710-01-540-9546	63576	VS68PMT-6-6	. TUBE, METALLIC ADAPTER, STRAIGHT, PIPE TO HOSE.....	1
9	PAFZZ	5340-01-517-3807	63576	50006	ANCHOR FITTING.....	4
10	PAFZZ	4730-01-276-6942	39428	6534K47	COUPLING, HOSE QUICK DISCONNECT.....	1
11	PAFZZ	4730-01-519-2406	39428	6536K29	COUPLING HALF, QUICK DISCONNECT	1
12	AFFFF		63576	X8291-13	HOSE ASSEMBLY, NONME AIR BRAKE.....	2
13	PAFZZ	4730-01-540-9232	63576	34003	. ADAPTER, STRAIGHT, PIPE TO HOSE.....	1
14	MFFZZ		63576	125608-13	. HOSE, NONMETALLIC MAKE FROM HOSE, NONMETALLIC, P/N 6ABB (81300).....	1
15	PAFZZ	4730-01-519-2159	93061	VS68RB-6-6	. ADAPTER, STRAIGHT, PIPE TO HOSE.....	1
16	PAFZZ	4730-01-519-2414	39428	6534K57	PLUG, QUICK DISCONNECT.....	1
17	PAFZZ	4730-01-519-2409	39428	6536K19	COUPLING HALF, QUICK DISCONNECT	1

END OF FIGURE

**FIELD MAINTENANCE
HUB AND DRUM ASSEMBLY**



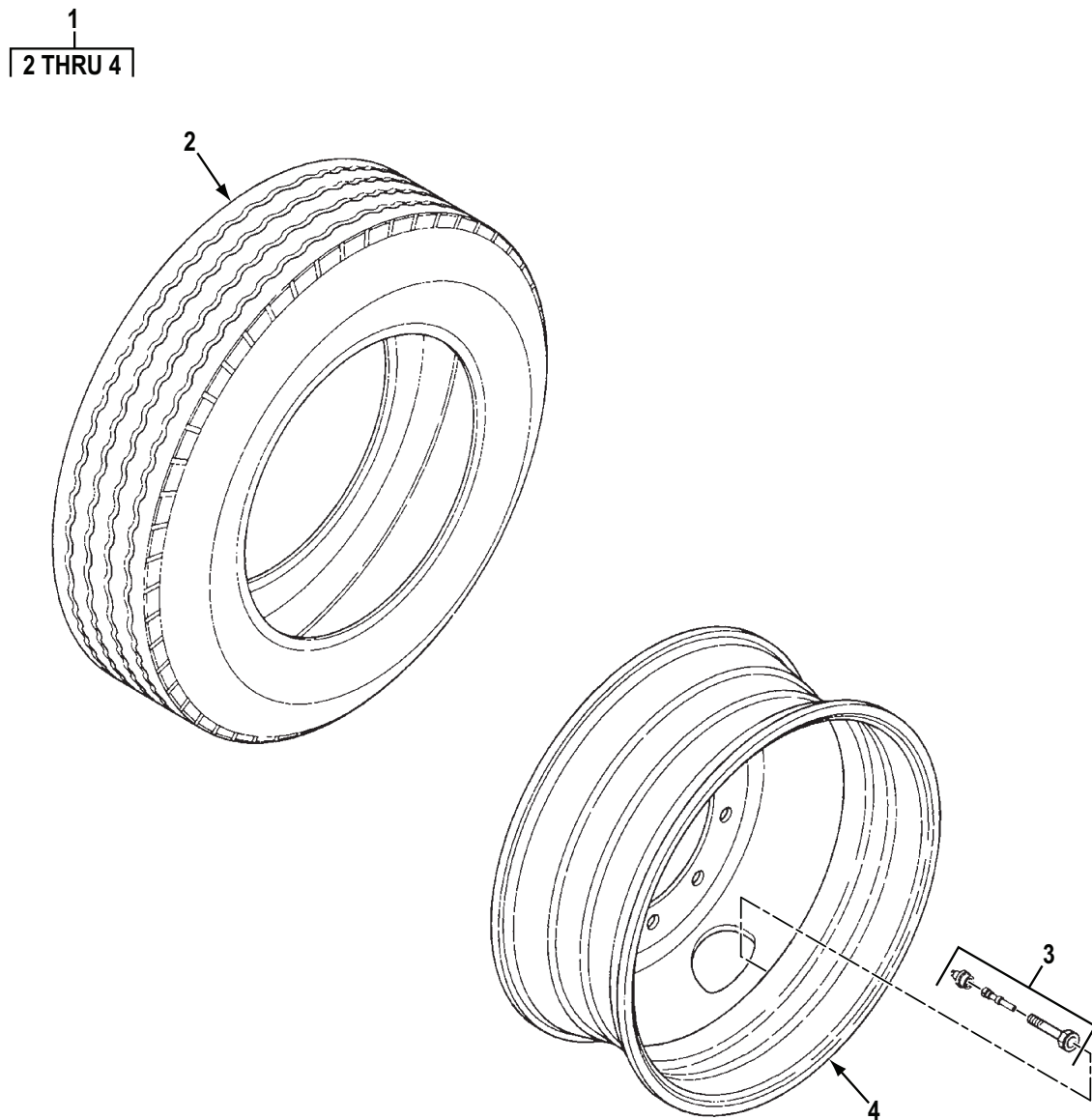
m466-5023

Figure 18. Hub and Drum Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1311 WHEEL ASSEMBLY						
FIG. 18. HUB AND DRUM ASSEMBLY.						
1	AFFFF		1S0R6	4809001	HUB AND DRUM ASSY USE ON FRONT AND REAR AXLE.....	4
2	PAFZZ	2530-01-506-2721	5BRG5	450062	HUB,WHEEL,VEHICULAR.....	1
3	PAFZZ	5306-01-508-5764	1S0R6	3018503	BOLT,MACHINE.....	10
4	PAFFZ	2530-01-519-2188	5BRG5	2308712	BRAKE DRUM.....	1
5	PAFZZ	3110-00-618-0249	60038	HM218210	CUP,TAPERED ROLLER BEARING,INNER	6
6	PAFZZ	3110-00-618-0248	60038	HM218248	CONE AND ROLLERS, TAPERED ROLLER BEARING.....	6
7	PAFZZ	5330-01-093-1149	26151	320-2110	SEAL,PLAIN.....	6
8	PAFZZ	5330-01-255-0201	26151	315-1504	RETAINER,SEAL.....	6
9	PAFZZ	5310-01-043-0596	4Q4K2	M10HN101	NUT,PLAIN,OCTAGON 2 5/8-16.....	6
10	PAFZZ	5310-00-620-2486	19207	7085127	WASHER,KEY 2 5/8.....	6
11	PAFZZ	5310-01-049-9051	62707	M10HN151	WASHER 2 5/8.....	6
12	PAFZZ	5310-01-239-0893	62707	M10HN102	NUT,PLAIN,SLOTTED, OCTAGON, 2 5/8-16.....	6
13	PAFZZ	5330-01-071-8179	26151	330-3009	GASKET.....	6
14	PAFZZ	2530-01-520-5730	26151	340-5097	CAP,GREASE.....	6
15	PAFZZ	5310-00-959-4679	96906	MS35340-45	WASHER,LOCK 5/16.....	36
16	PAFZZ	5306-00-226-4822	80204	B1821BH031C050N	BOLT,MACHINE 5/16-18 UNC.....	36
17	PAFZZ	5310-01-414-7141	45152	2DR229	NUT,PLAIN,EXTENDED M22 X 1.5 MM,EXTENDED WASHER,HEXAGON.....	60
18	PAFZZ	3110-00-293-8998	60038	HM212049	CONE AND ROLLERS, TAPERED ROLLER BEARING.....	6
19	PAFZZ	3110-00-293-8997	60038	HM212011	CUP,TAPERED ROLLER BEARING,OUTER	1

END OF FIGURE

FIELD MAINTENANCE
WHEEL ASSEMBLY



m466-5004

Figure 19. Wheel Assembly.

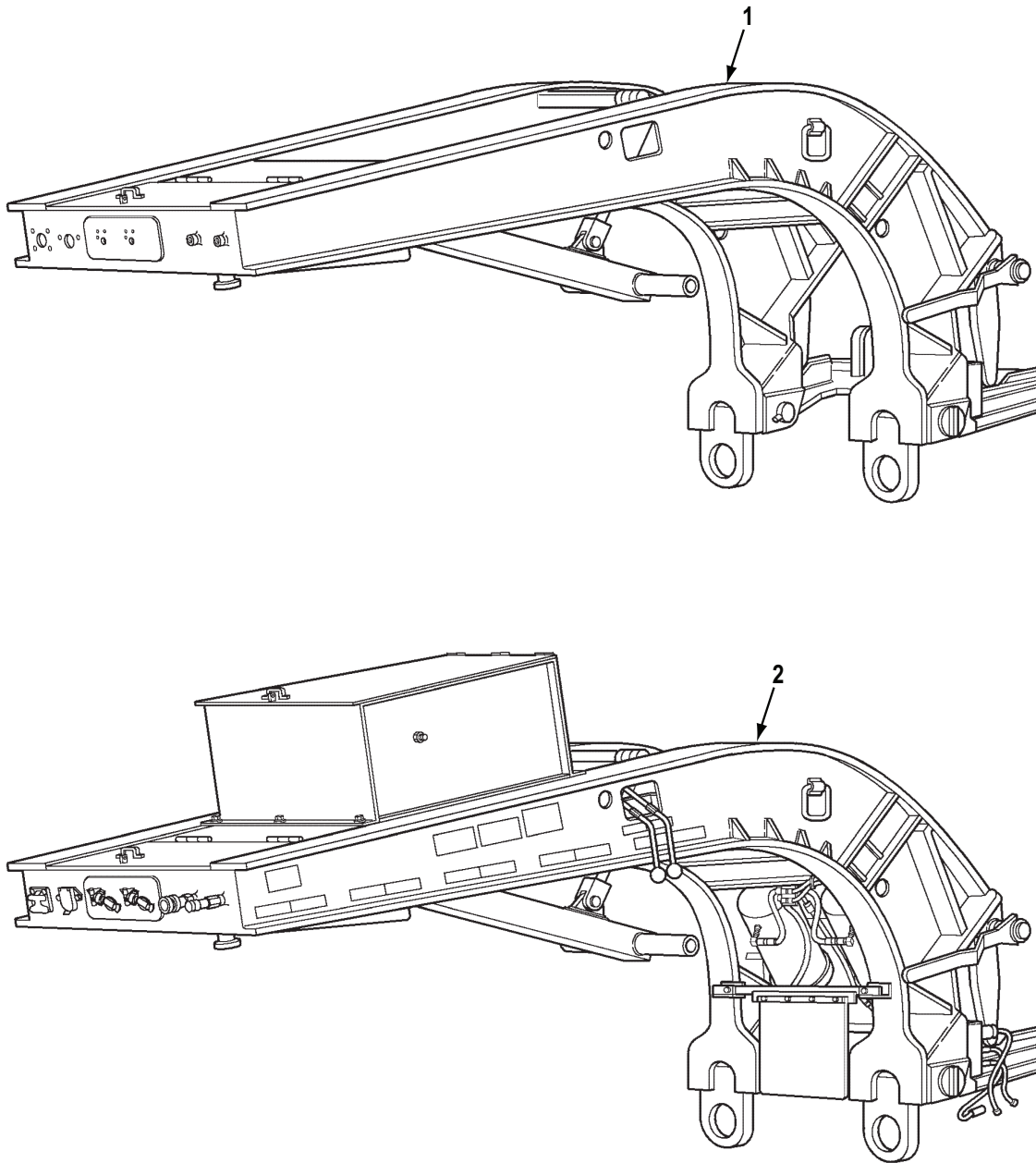
(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY

GROUP 1311 WHEEL ASSEMBLY**FIG. 19. WHEEL ASSEMBLY.**

1	PCFHH	2530-01-571-7223	19207	13014099	WHEEL,PNEUMATIC TIR.....	13
2	PCFZZ	2610-01-518-5292	12195	42407	. TIRE,PNEUMATIC,VEHI.....	1
3	PAFZZ	2640-00-555-2823	58536	A-A-52611-2-2- TR572	. VALVE,PNEUMATIC TIR.....	1
4	PAFZZ	2530-01-441-9700	1S0R6	90541CARCBLK	. WHEEL,PNEUMATIC TIR.....	1

END OF FIGURE

FIELD MAINTENANCE
GOOSENECK



m466-5028

Figure 20. Gooseneck.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY

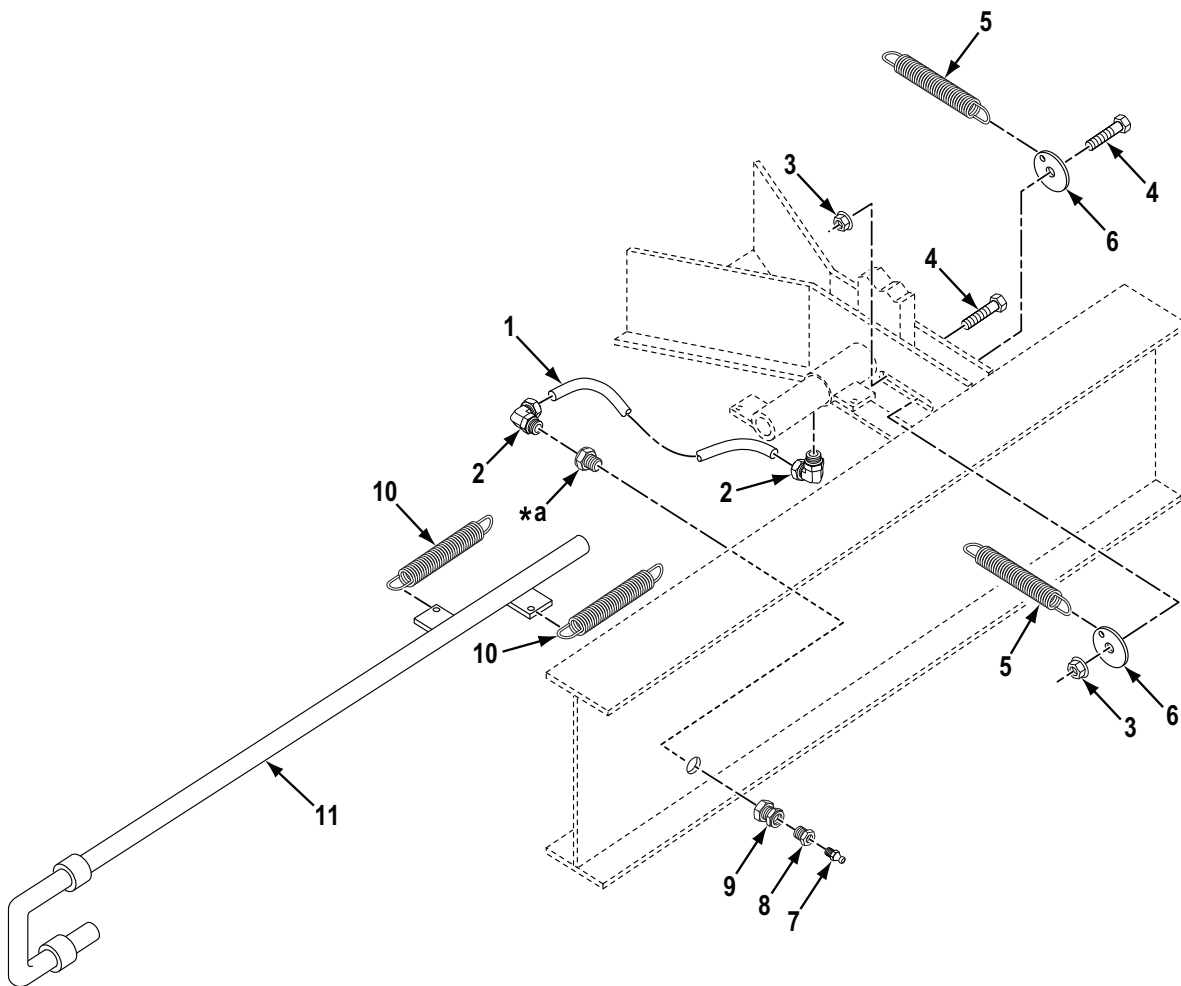
GROUP 1501 FRAME ASSEMBLY

FIG. 20. GOOSENECK.

1	XDFZZ		63576	G2870-PART	GOOSENECK FRAME ASSEMBLY.....	1
2	XDFZZ		63576	G2708-ASSY	GOOSENECK ASSY.....	1

END OF FIGURE

**FIELD MAINTENANCE
GOOSENECK LOCKING ASSEMBLY**



*a PART OF ITEM 9

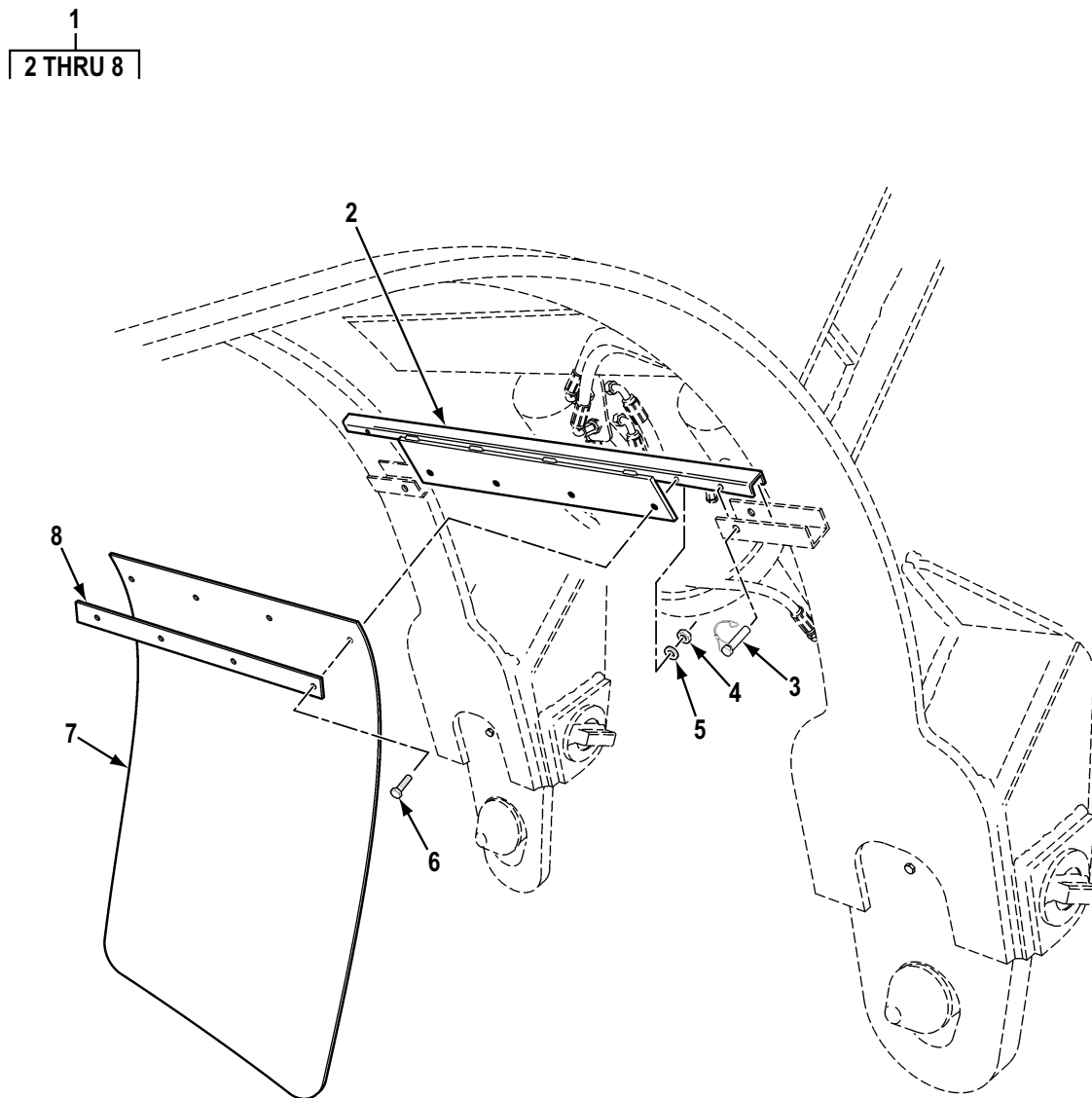
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Figure 21. Gooseneck Locking Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 21. GOOSENECK LOCKING ASSEMBLY.						
1	PCFZZ	4720-01-540-9453	63576	12652	HOSE, NONMETALLIC.....	1
2	PAFZZ	5306-01-519-2541	39428	91286A344	BOLT, MACHINE 1/2-13 X 4.....	2
3	PAFZZ	5360-01-519-2542	39428	9654K296	SPRING, HELICAL, EXTE.....	2
4	PAFZZ	5310-01-519-2543	63576	FENDER WASHER	WASHER, FLAT.....	2
5	PAFZZ	5310-01-232-9769	39428	94895A823	NUT, PLAIN, HEXAGON 1/2-13.....	2
6	PAFZZ	4730-01-517-3795	63576	AERKN1/8PT	FITTING, LUBRICATION.....	1
7	PAFZZ	4730-01-446-3253	54939	209P-4-2	BUSHING, PIPE.....	1
8	PAFZZ	4730-01-164-3365	93061	207ACBH-4	COUPLING, PIPE.....	1
9	PAFZZ	5360-01-519-6413	56988	371	SPRING, HELICAL, EXTE.....	2
10	PAFZZ	5340-01-519-2540	63576	F0285	BAR, LATCH HANDLE.....	1
11	PAFZZ	4730-01-506-3267	93061	169PMTNS-4-4	ELBOW, PIPE TO TUBE 90 DEGREE.....	2

END OF FIGURE

FIELD MAINTENANCE
GOOSENECK GRAVEL GUARD



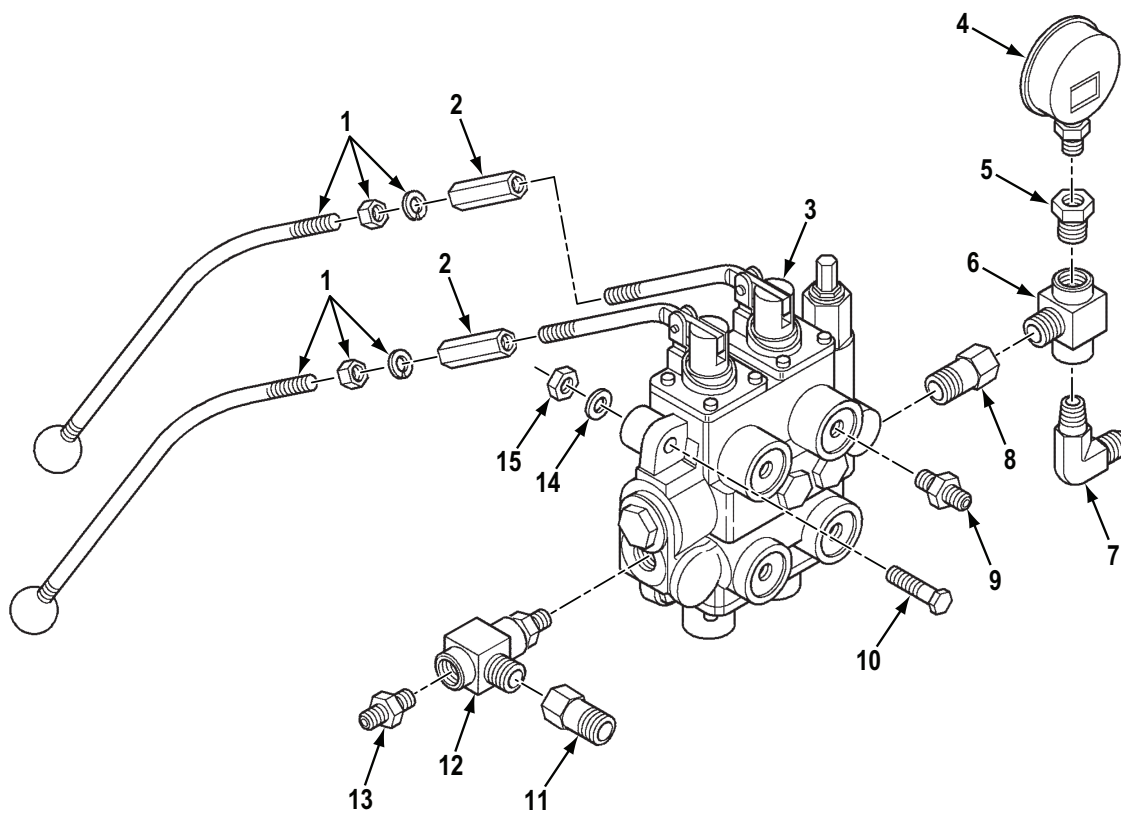
m466-5025

Figure 22. Gooseneck Gravel Guard.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 22. GOOSENECK GRAVEL GUARD.						
1	XDFFF		63576	101888	GUARD,SPLASH,VEHICU ASSEMBLY.....	1
2	PAFZZ	5340-01-572-5955	63576	101888-2	. BRACKET,MOUNTING.....	1
3	PAFZZ	5315-01-406-5019	19207	12342121	. PIN,STRAIGHT,HEADED WITH SQUARED RETAINER SNAP.....	2
4	PAFZZ	5310-00-984-3806	81349	M45913/1-5CG5C	. NUT,SELF-LOCKING,HE 5/16-18 UNC.....	4
5	PAFZZ	5310-01-358-0596	96906	MS27183-53	. WASHER,FLAT 5/16.....	4
6	PAFZZ	5305-01-389-9097	80204	B1821AH031C125N	. SCREW,CAP,HEXAGON H 5/16-18 X 1 1/4 UNC.....	4
7	PAFZZ	2540-01-519-2193	63576	24X30MF	. GUARD,SPLASH,VEHICU.....	1
8	PAFZZ	5340-01-517-3848	63576	MFW2375	. BRACKET,MOUNTING MUD FLAP BOLTING BRACKET.....	1

END OF FIGURE

FIELD MAINTENANCE
HYDRAULIC CONTROL VALVE, PRESSURE GAGE AND FITTINGS



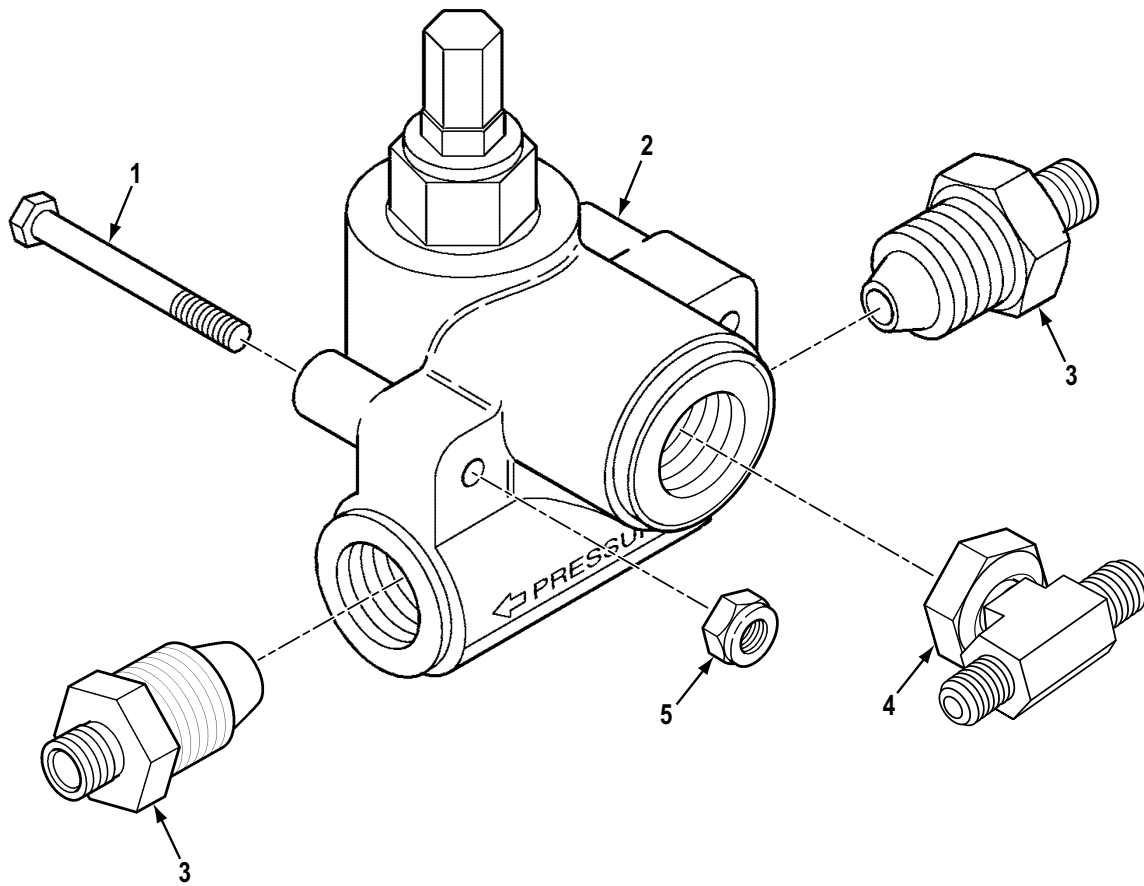
m466-5030

Figure 23. Hydraulic Control Valve, Pressure Gage, and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 23. HYDRAULIC CONTROL VALVE, PRESSURE GAGE, AND FITTINGS.						
1	PAFZZ	3040-01-519-2221	29260	660150017	LEVER,MANUAL CONTRO HYDRAULIC CONTROLS INCLUDES HEX NUT,LOCK WASHER,KNOB AND HANDLE.....	1
2	PAFZZ	5340-01-519-2551	63576	90264A480	STANDOFF,THREADED,S 7/16-20.....	2
3	PAFZZ	4820-01-519-2217	29260	HC-V-BC23	SLIDE,DIRECTIONAL CONTROL LINEAR VALVE SLIDE.....	1
4	PAFZZ	6685-01-519-2206	63576	HPGS3	GAGE,PRESSURE,DIAL.....	1
5	PAFZZ	4730-01-519-8398	39428	4513K344	BUSHING,PIPE EXTERNAL THREAD 1/2-14NPT, INTERNAL THREAD 1/4-18NPT.....	2
6	PAFZZ	4730-01-519-2289	01276	TF3609X8	TEE,TUBE MALE BRANCH TEE.....	1
7	PAFZZ	4730-01-519-2236	63576	3A1608A08	ELBOW,TUBE 90 DEGREE.....	1
8	PAFZZ	4730-01-152-5473	65459	118-2662-009	ADAPTER,STRAIGHT, PIPE TO BOSS.....	1
9	PAFZZ	4730-01-519-7011	01276	C5315X6X10	ADAPTER,STRAIGHT, TUBE TO BOSS.....	4
10	PAFZZ	5305-01-533-2971	39428	91257A634	SCREW,CAP,HEXAGON H 3/8-16 X 2 1/2 UNC.....	3
11	PAFZZ	4730-01-575-0159	63576	C5315X12	ADAPTER,STRAIGHT, HOSE TO BOSS.....	1
12	PAFZZ	4730-01-575-0778	63576	6871-12	TEE,HOSE TO BOSS.....	1
13	PAFZZ	4730-01-572-8735	63576	6-12F50X-5	ADAPTER,STRAIGHT, HOSE TO BOSS.....	1
14	PAFZZ	5310-01-312-4960	96906	MS27183-55	WASHER,FLAT 3/8	3
15	PAFZZ	5310-00-914-6028	81349	M45913/1-6CS3	NUT,SELF-LOCKING,HE 3/8-16 UNC.....	3

END OF FIGURE

**FIELD MAINTENANCE
HYDRAULIC PRESSURE RELIEF VALVE AND FITTINGS**



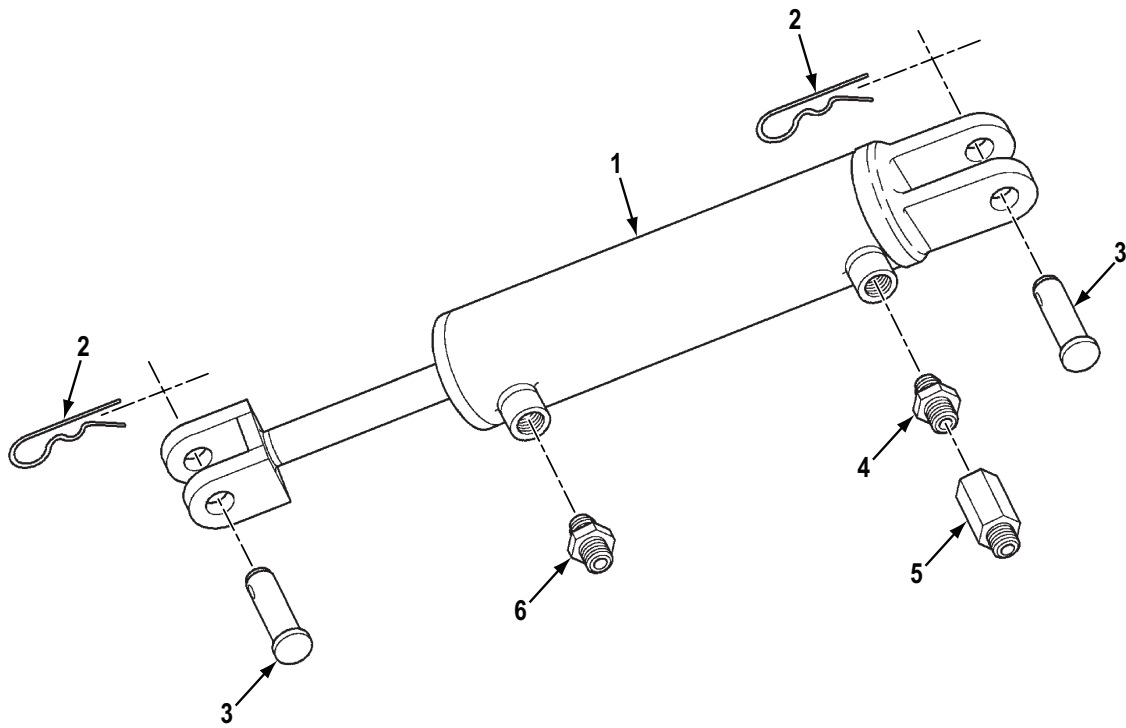
m466-5031

Figure 24. Hydraulic Pressure Relief Valve and Fittings.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 24. HYDRAULIC PRESSURE RELIEF VALVE AND FITTINGS.						
1	PAFZZ	5305-01-283-9211	80204	1/4-20UNC-2A X 2 IN LG	SCREW,CAP,HEXAGON H 1/4-20 X 2 UNC GR 5.....	2
2	PAFZZ	4820-01-519-7027	29260	RV-3L	VALVE,SAFETY RELIEF.....	1
3	PAFZZ	4730-01-519-7011	01276	C5315X6X10	ADAPTER,STRAIGHT, TUBE TO BOSS.....	3
4	PAFZZ	4730-01-519-2367	01276	C5707X6	TEE,TUBE.....	1
5	PAFZZ	5310-00-965-1820	81349	M45913/1-4CBB	NUT,SELF-LOCKING,HE 1/4-20 UNC.....	2

END OF FIGURE

FIELD MAINTENANCE
HYDRAULIC TILT CYLINDER



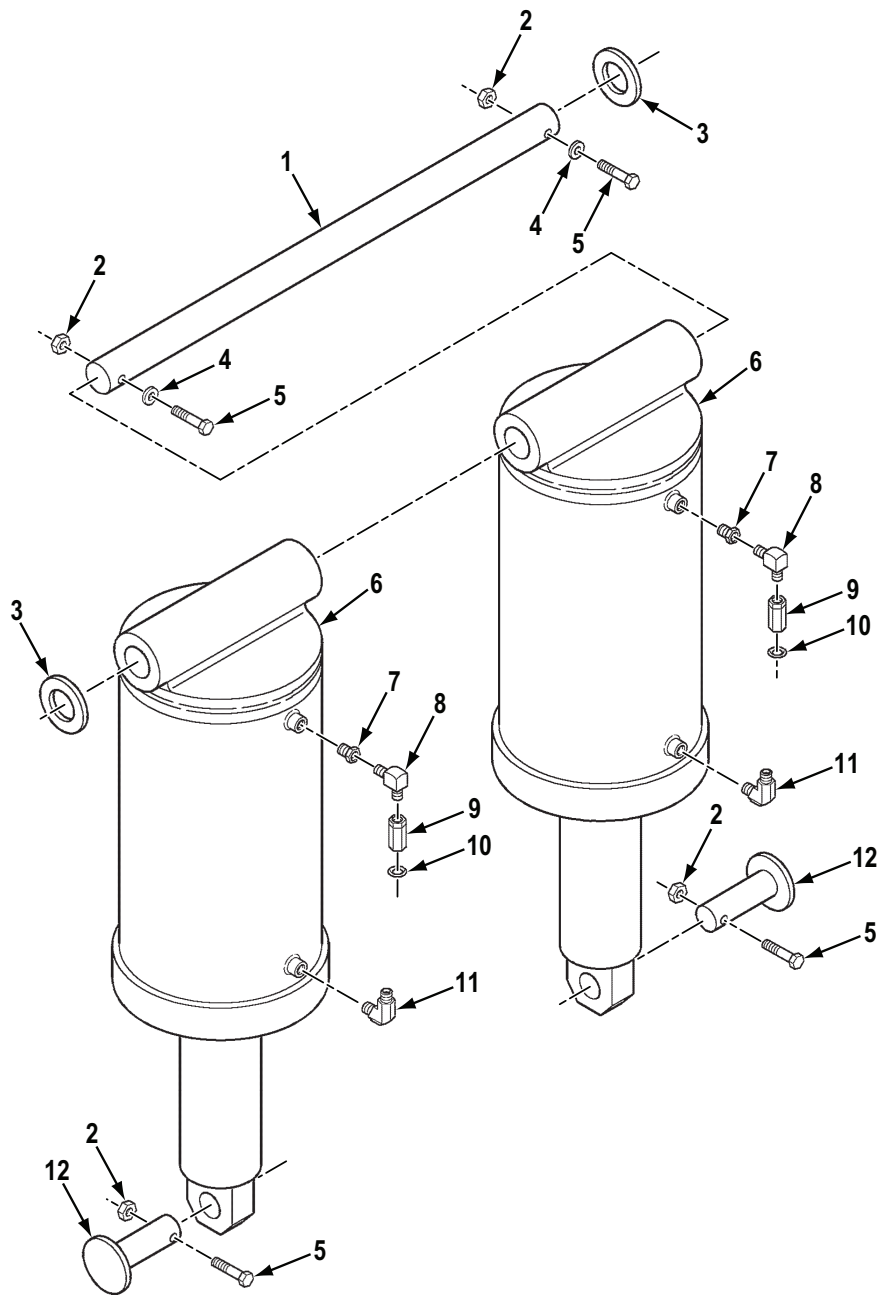
m466-5008

Figure 25. Hydraulic Tilt Cylinder.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 25. HYDRAULIC TILT CYLINDER.						
1	PAFZZ	3040-01-519-2208	63576	CYLM3010	CYLINDER ASSEMBLY, ACTUATING, LINEAR.....	1
2	PAFZZ	5315-01-424-6539	39428	92391A066	PIN,LOCK.....	2
3	PAFZZ	5315-01-146-6163	96906	MS35810-10	PIN,STRAIGHT,HEADED.....	2
4	PAFZZ	4730-01-519-2222	63576	C3249X6X8	PLUG,TUBE FITTING, THREADED.....	2
5	PAFZZ	4820-01-519-7021	63576	10312-606-062	VALVE,CHECK.....	1
6	PAFZZ	4730-01-162-7054	30780	0103-8-6	ADAPTER,STRAIGHT, PIPE TO BOSS.....	1

END OF FIGURE

FIELD MAINTENANCE
HYDRAULIC LIFT CYLINDERS



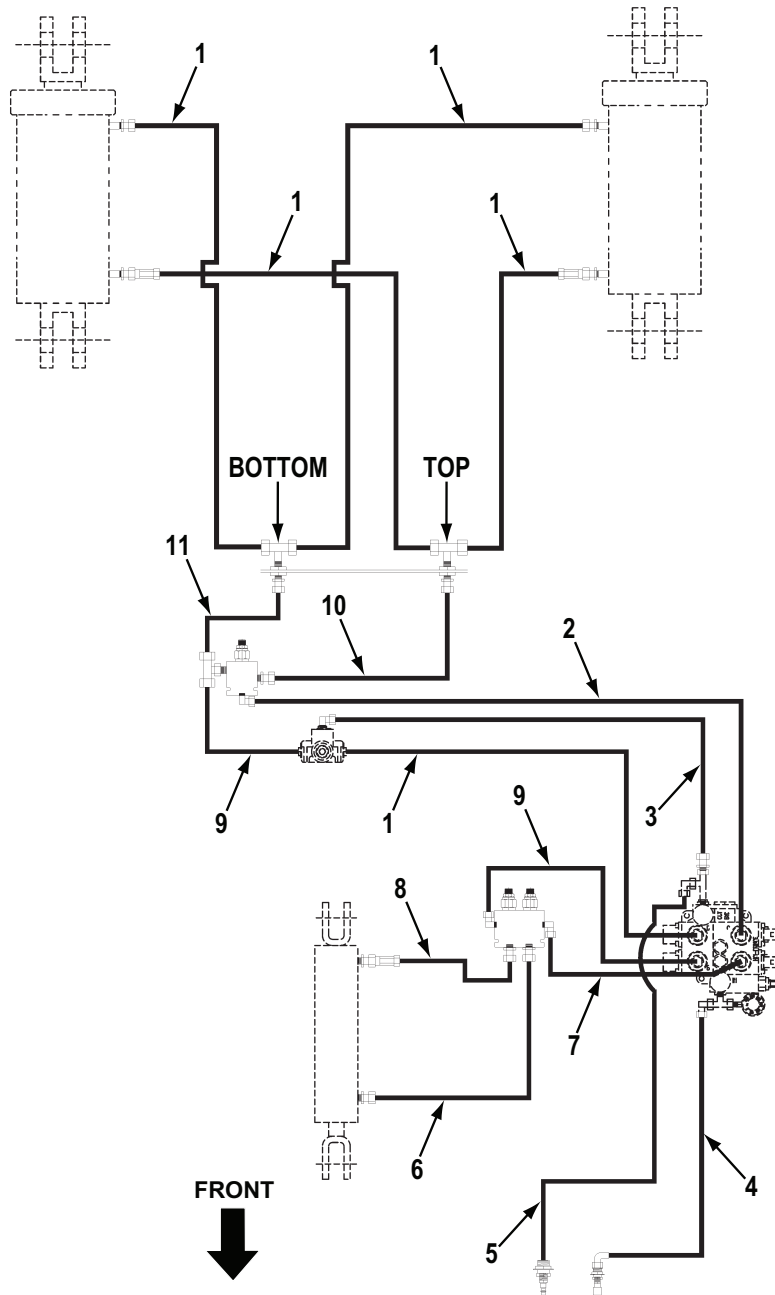
m466-5032

Figure 26. Hydraulic Lift Cylinders.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 26. HYDRAULIC LIFT CYLINDERS.						
1	PAFZZ	5315-01-519-2548	63576	G2870-30	PIN,STRAIGHT,HEADLE CYLINDER RETAINER PIN.....	1
2	PAFZZ	5310-01-519-2538	39428	93839A031	NUT,PLAIN,HEXAGON 3/8-16.....	4
3	XCFZZ		63576	DOMEX1/4	SPACER,RING CYLINDER RETAINER SPACER.....	2
4	PAFZZ	5310-01-312-4960	96906	MS27183-55	WASHER,FLAT 3/8.....	2
5	PAFZZ	5305-01-533-2971	39428	91257A634	SCREW,CAP,HEXAGON H 3/8-16 X 2 1/2.....	4
6	PAFZZ	3040-01-519-2211	63576	CYLM9010	CYLINDER ASSEMBLY, LINEAR ACTUATING.....	2
7	PAFZZ	4730-01-498-7249	3A054	50785K65	BUSHING,PIPE.....	2
8	PAFZZ	4730-01-519-2235	63576	6806X6X4	ELBOW,TUBE 90 DEGREES.....	2
9	PAFZZ	4820-01-519-7021	63576	10312-606-062	VALVE,CHECK.....	2
10	PAFZZ	5331-01-519-2559	63576	568906	O-RING.....	2
11	PAFZZ	4730-01-519-7014	85757	3A16-08A06	ELBOW,PIPE TO TUBE.....	2
12	PAFZZ	5315-01-519-2423	63576	101835-11	PIN,STRAIGHT,HEADED.....	2

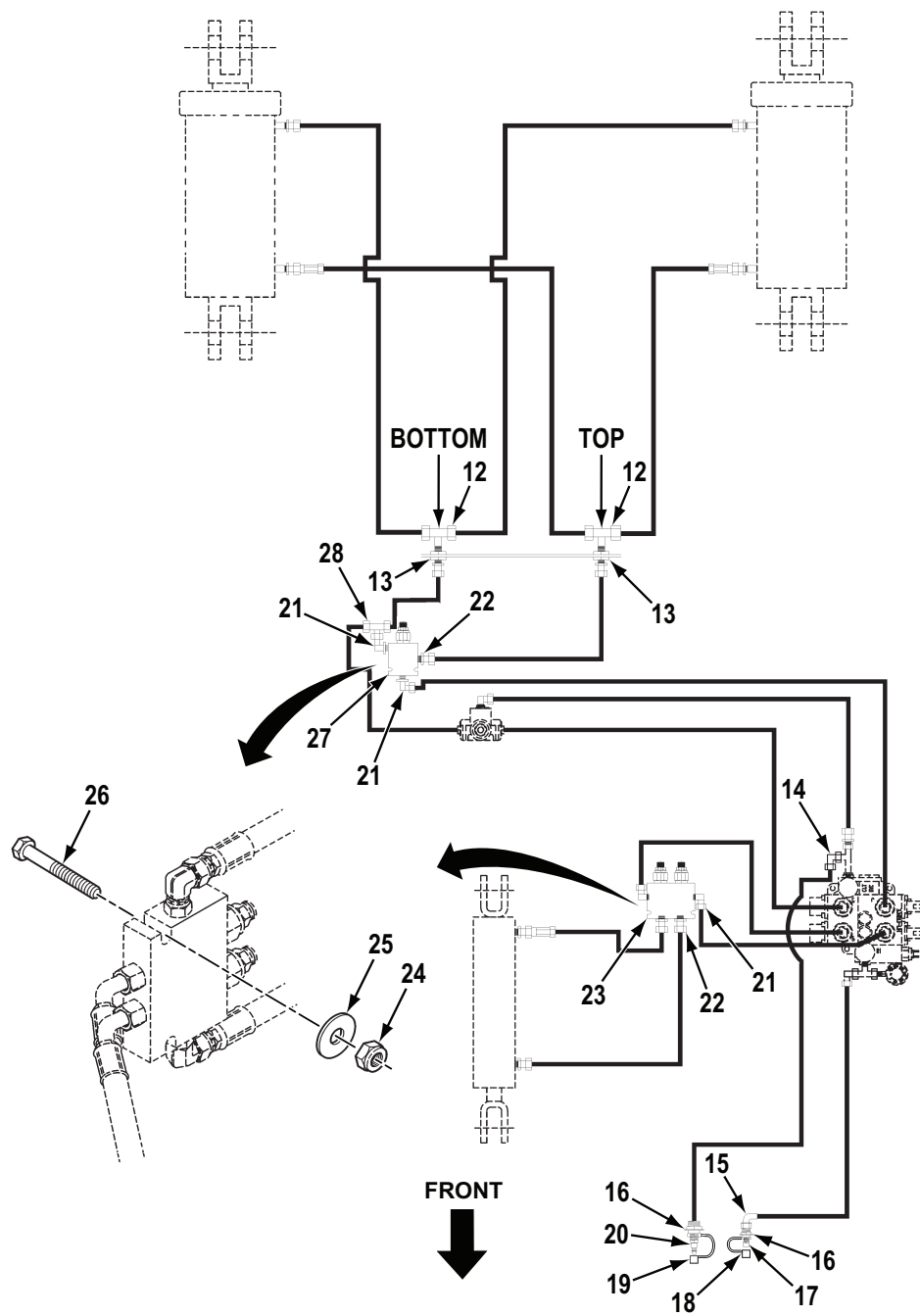
END OF FIGURE

**FIELD MAINTENANCE
HYDRAULIC LINES AND FITTINGS**



m466-5033-1

Figure 27. Hydraulic Lines and Fittings (Sheet 1 of 2).



m466-5033-2

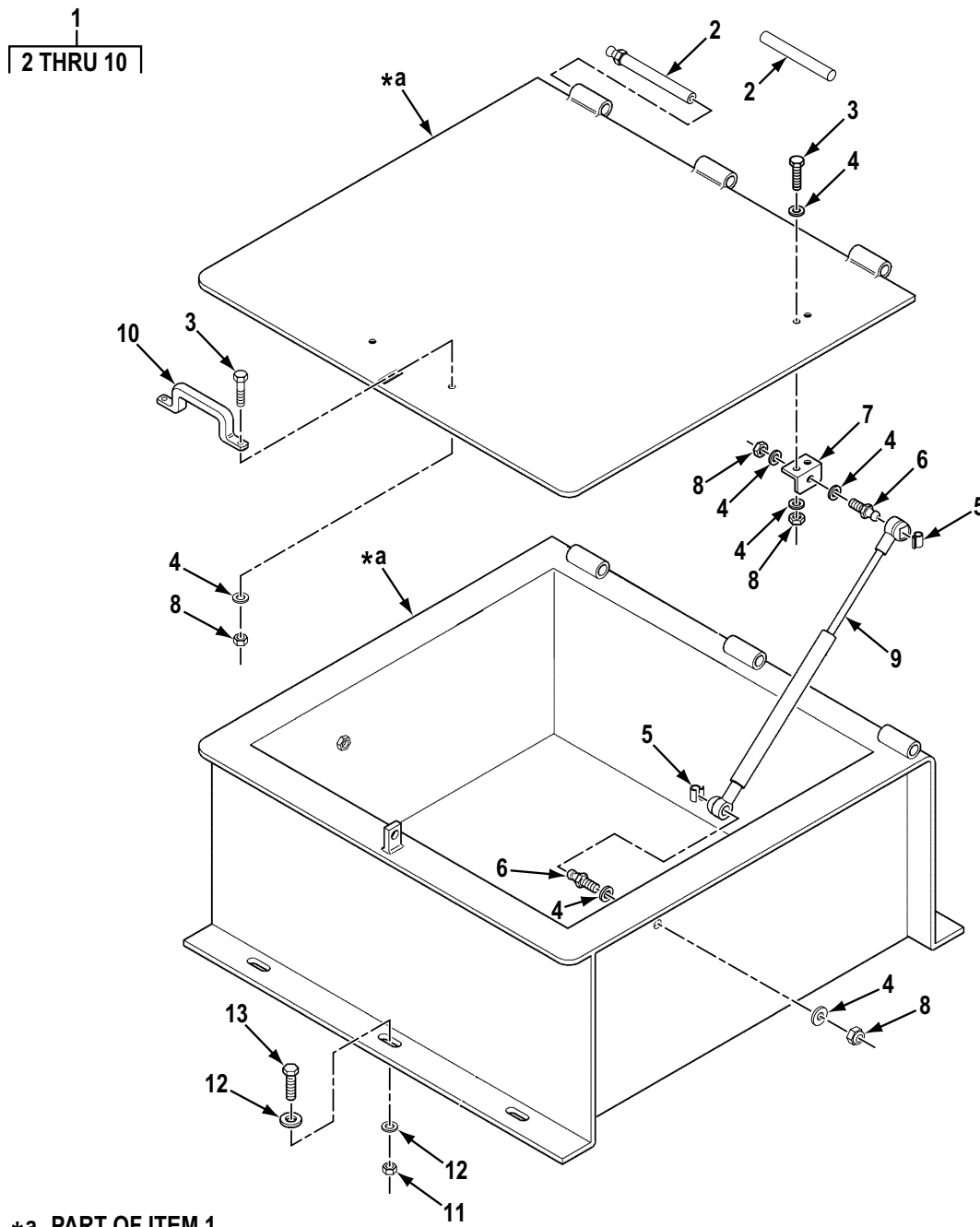
Figure 27. Hydraulic Lines and Fittings (Sheet 2 of 2).

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 27. HYDRAULIC LINES AND FITTINGS.						
1	PCFZZ	0000-00-000-0000	63576	F451TC-06-39-06-06	HOSE ASSEMBLY,NONME..... -06-23"	5
2	PCFZZ	4720-01-597-3631	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-45.5"	1
3	PCFZZ	0000-00-000-0000	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-23.25"-45	1
4	PCFZZ	4720-01-597-3636	63576	F451TC-06-39-08-08	HOSE ASSEMBLY,NONME..... -08-62.5"	1
5	PCFZZ	4720-01-597-3641	63576	F451TC-06-06-12-12	HOSE ASSEMBLY,NONME..... -12-67.5"	1
6	PCFZZ	0000-00-000-0000	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-24"-180	1
7	PCFZZ	0000-00-000-0000	63576	F451TC-06-39-06-06	HOSE ASSEMBLY,NONME..... -06-13.75"	1
8	PCFZZ	4720-01-597-2265	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-36.5"-180	1
9	PCFZZ	4720-01-597-2267	63576	F451TC-06-39-06-06	HOSE ASSEMBLY,NONME..... -06-21.25"	2
10	PCFZZ	0000-00-000-0000	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-32.5"-270	1
11	PCFZZ	0000-00-000-0000	63576	F451TC-39-39-06-06	HOSE ASSEMBLY,NONME..... -06-21"-22.5	1
12	PAFZZ	4730-01-524-4808	63576	5725X6	TEE,BOSS BULKHEAD TEE.....	2
13	PAFZZ	5310-01-524-4843	63576	5924X6	NUT,PLAIN,HEXAGON THRU- BULKHEAD ADAPTER.....	2
14	PAFZZ	4730-00-618-5372	96906	MS51521A6	ELBOW,TUBE.....	1
15	PAFZZ	4730-01-244-3554	81343	SAE J514 8-12 0701025S	ADAPTER,STRAIGHT, PIPE TO TUBE.....	1
16	PAFZZ	4730-01-567-0241	63576	C3249X12X12	ADAPTER,STRAIGHT, HOSE TO BOSS.....	3
17	PAFZZ	4730-01-567-0286	63576	FF751-12F0	COUPLING HALF,QUICK DISCONNECT FEMALE.....	1
18	PAFZZ	5340-01-519-2425	97111	FR-751	PLUG,PROTECTIVE,DUS.....	1
19	PAFZZ	5340-01-519-2426	97111	FR-752	PLUG,PROTECTIVE,DUS.....	1
20	PAFZZ	4730-01-519-2280	0EJ14	76065	COUPLING HALF,QUICK DISCONNECT MALE.....	1
21	PAFZZ	4730-01-597-3385	63576	C5515X6X10	ELBOW,HOSE TO BOSS 90 DEGREE 3/8 X #10.....	2
22	PAFZZ	4730-01-519-7011	01276	C5315X6X10	ADAPTER,STRAIGHT, TUBE TO BOSS.....	5

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
23	PAFZZ	4820-01-597-2011	63576	DCBA10NS10TX30	VALVE,LINEAR,DIRECT DOUBLE ACTION COUNTERBALANCE VALVE.....	1
24	PAFZZ	5310-00-965-1820	81349	M45913/1-4CBB	NUT,SELF-LOCKING,HE 1/4-20 UNC.....	4
25	PAFZZ	5310-00-285-8124	96906	MS27183-50	WASHER,FLAT 1/4.....	8
26	PAFZZ	5305-00-576-5746	96906	MS35309-316	SCREW,CAP,HEXAGON H 1/4-20 UNC X 2 1/2.....	4
27	PAFZZ	4820-01-572-5351	63576	CBPA10NS10TX30	VALVE,LINEAR,DIRECT SINGLE ACTION COUNTERBALANCE VALVE.....	1
28	PAFZZ	4730-01-573-1544	63576	3A49-04A06	TEE,HOSE TO BOSS.....	1

END OF FIGURE

FIELD MAINTENANCE
TOOLBOX ASSEMBLY



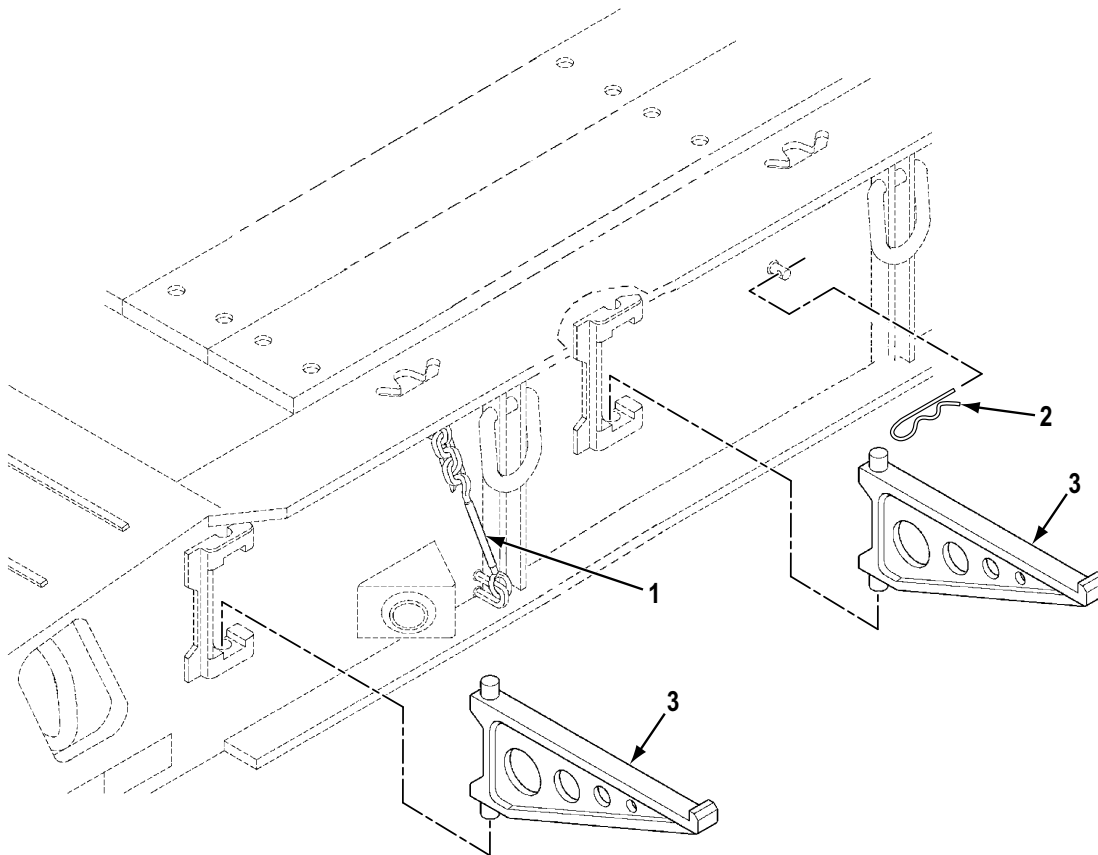
m466-5024

Figure 28. Toolbox Assembly.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 28. TOOLBOX ASSEMBLY.						
1	PAFFF	2540-01-520-6771	63576	9116-0107	BOX,ACCESSORIES STO TOOLBOX ASSEMBLY.....	1
2	XDFZZ		63570	R140-01SPGF	. PIN,STRAIGHT,HEAD WITH GREASE FITTING.....	0003
2	PFFZZ	5315-01-519-2555	63576	R140-0150SP	. PIN,STRAIGHT,HEADLE.....	3
3	PFFZZ	5306-00-225-8499	80205	MS90725-34	. BOLT,MACHINE 5/16-18 X 1.....	6
4	PFFZZ	5310-01-358-0596	96906	MS27183-53	. WASHER,FLAT 5/16.....	18
5	PFFZZ	5340-01-519-6522	7B735	GS-10MM-C	. CLIP,RETAINING.....	4
6	PFFZZ	5307-01-519-2687	7B735	GS-10MM-BS-1THD	. STUD,BALL.....	4
7	PFFZZ	5340-01-572-5416	63576	101876-7	. BRACKET,ANGLE.....	2
8	PFFZZ	5310-00-984-3806	81349	M45913/1-5CG5C	. NUT,SELF-LOCKING,HE 5/16-18 UNC.....	10
9	PFFZZ	3040-01-519-2196	0FNZ2	SE 1000 AC 10100 100 PSI	. ACTUATOR,MECHANICAL.....	2
10	PFFZZ	5340-00-182-5359	19207	7531424	. HANDLE,BOW.....	1
11	PFFZZ	5310-01-527-9521	81349	M45913/1-8CG8Z	NUT,SELF-LOCKING,HE 1/2-13 GR C.....	6
12	PFFZZ	5310-01-435-8312	39428	98025A133	WASHER,FLAT 1/2 GR 8.....	12
13	PFFZZ	5305-00-071-2069	80204	B1821BH050C150N	SCREW,CAP,HEXAGON H 1/2-13 X 1 1/2 GR8.....	6

END OF FIGURE

FIELD MAINTENANCE
OUTRIGGER



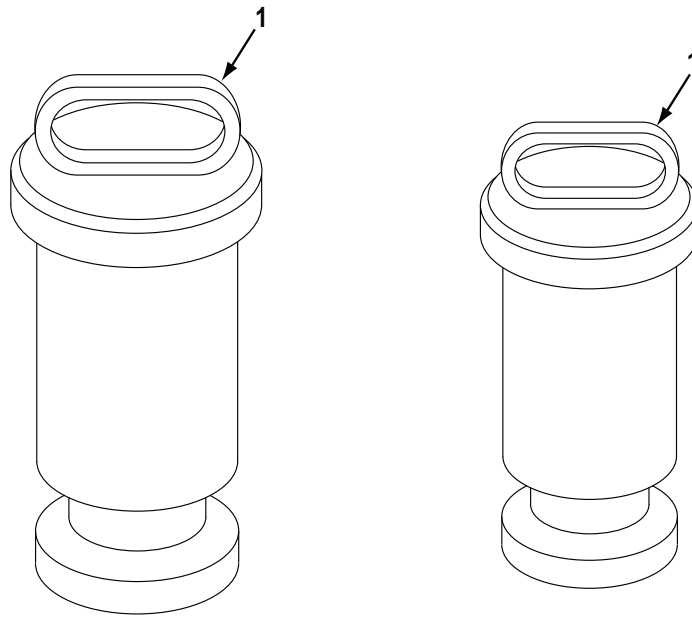
m466-5006

Figure 29. Outrigger.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1501 FRAME ASSEMBLY						
FIG. 29. OUTRIGGER.						
1	PAFZZ	5340-01-284-1519	39428	2998T52	TURNBUCKLE HOOK AND EYE TURNBUCKLE ASSEMBLY.....	4
2	PAFZZ	5340-01-517-3709	63576	5/16-28SL	CLIP,RETAINING.....	20
3	PAFZZ	2590-01-519-2199	63576	OR2BC	BRACKET,VEHICULAR C OUTRIGGER	20

END OF FIGURE

FIELD MAINTENANCE
KING PIN



m466-5036

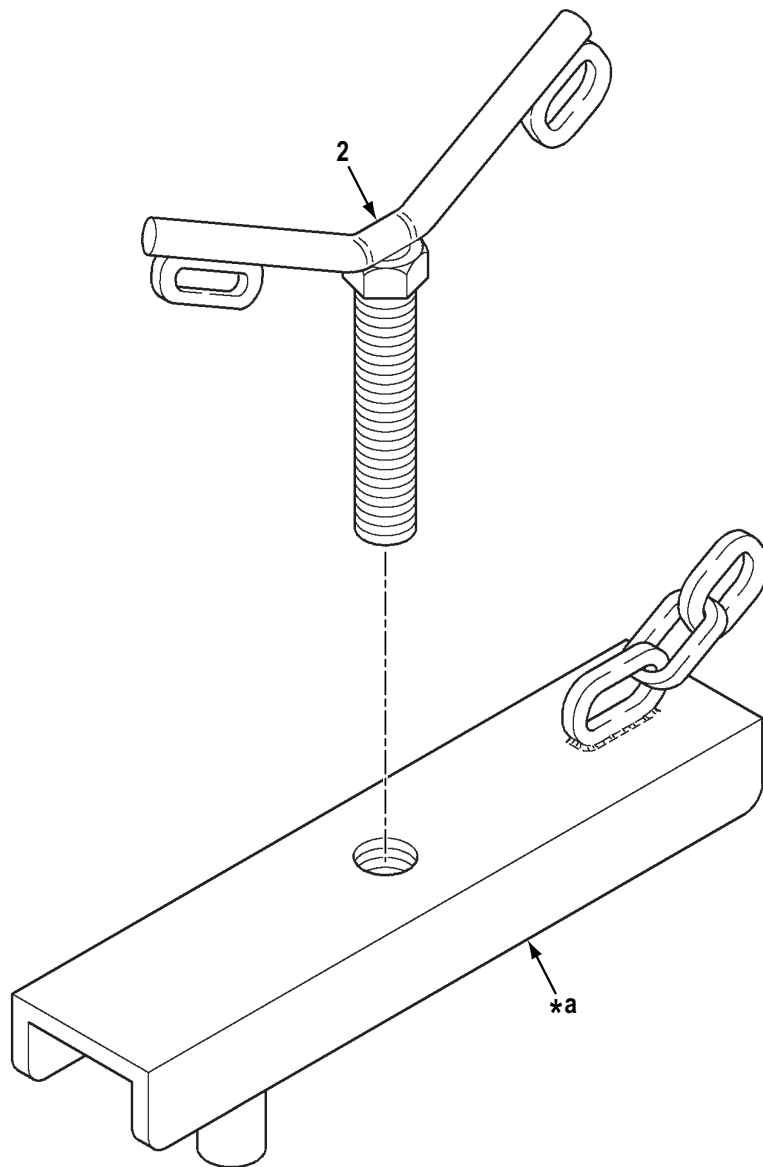
Figure 30. King Pin.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1503 PINTLES AND TOWING ATTACHMENTS						
FIG. 30. KING PIN.						
1	PAFZZ	2510-01-517-3991	63576	F0080	KINGPIN,FIFTH WHEEL.....	1
1	PAFZZ	2510-01-517-3871	63576	F0081	KINGPIN,FIFTH WHEEL.....	1

END OF FIGURE

FIELD MAINTENANCE
SPARE TIRE CARRIER

1
2



*a PART OF ITEM 1

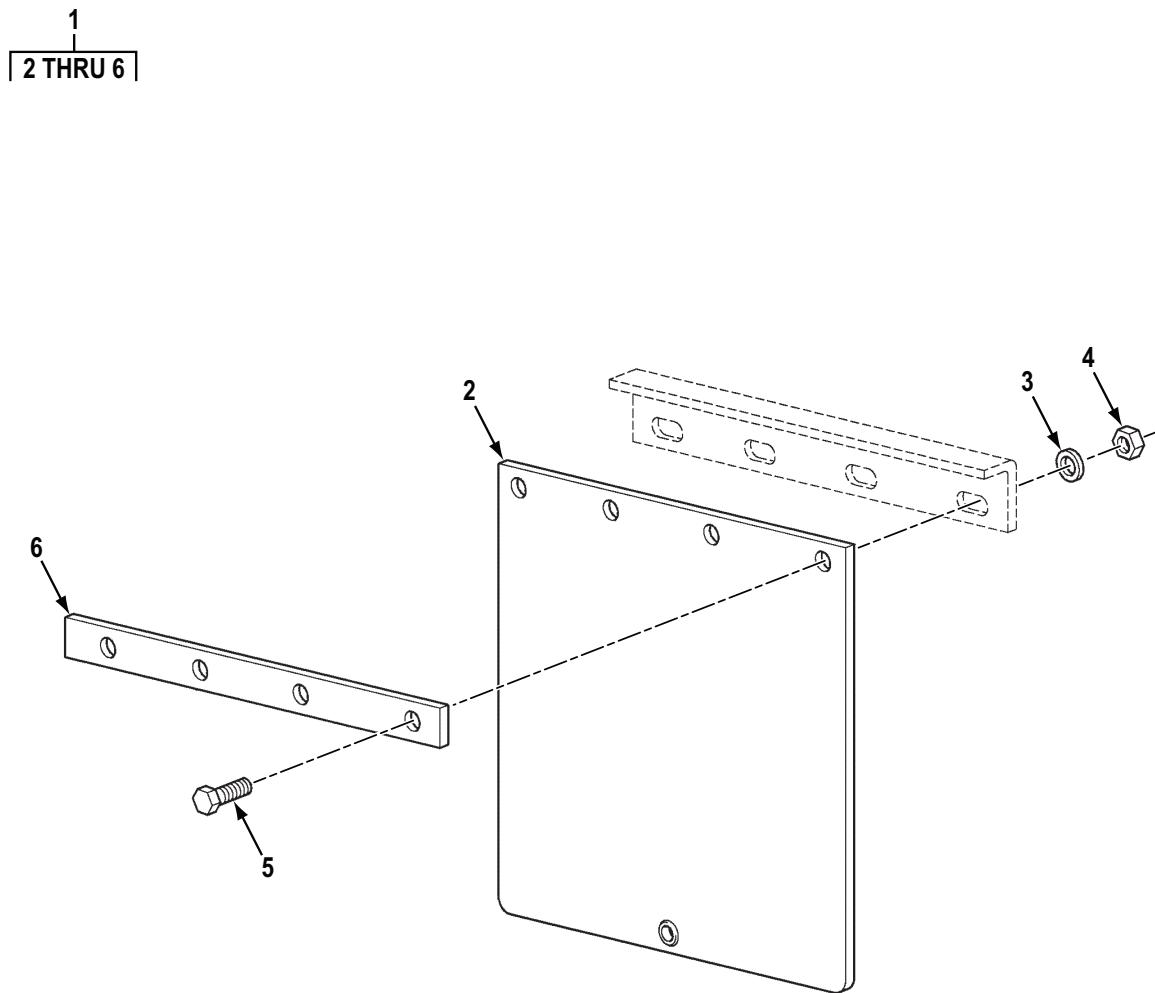
m466-5026

Figure 31. Spare Tire Carrier.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 1504 SPARE WHEEL CARRIER AND TIRE LOCK	
					FIG. 31. SPARE TIRE CARRIER.	
1	PFFZZ	2590-01-517-3674	63576	160040-01	RETAINER,SPARE TIRE.....	1
2	PFFZZ	5306-01-517-3678	63576	160040-02	. BOLT,MACHINE SPARE TIRE Y-BOLT.....	1

END OF FIGURE

FIELD MAINTENANCE
MUD FLAPS



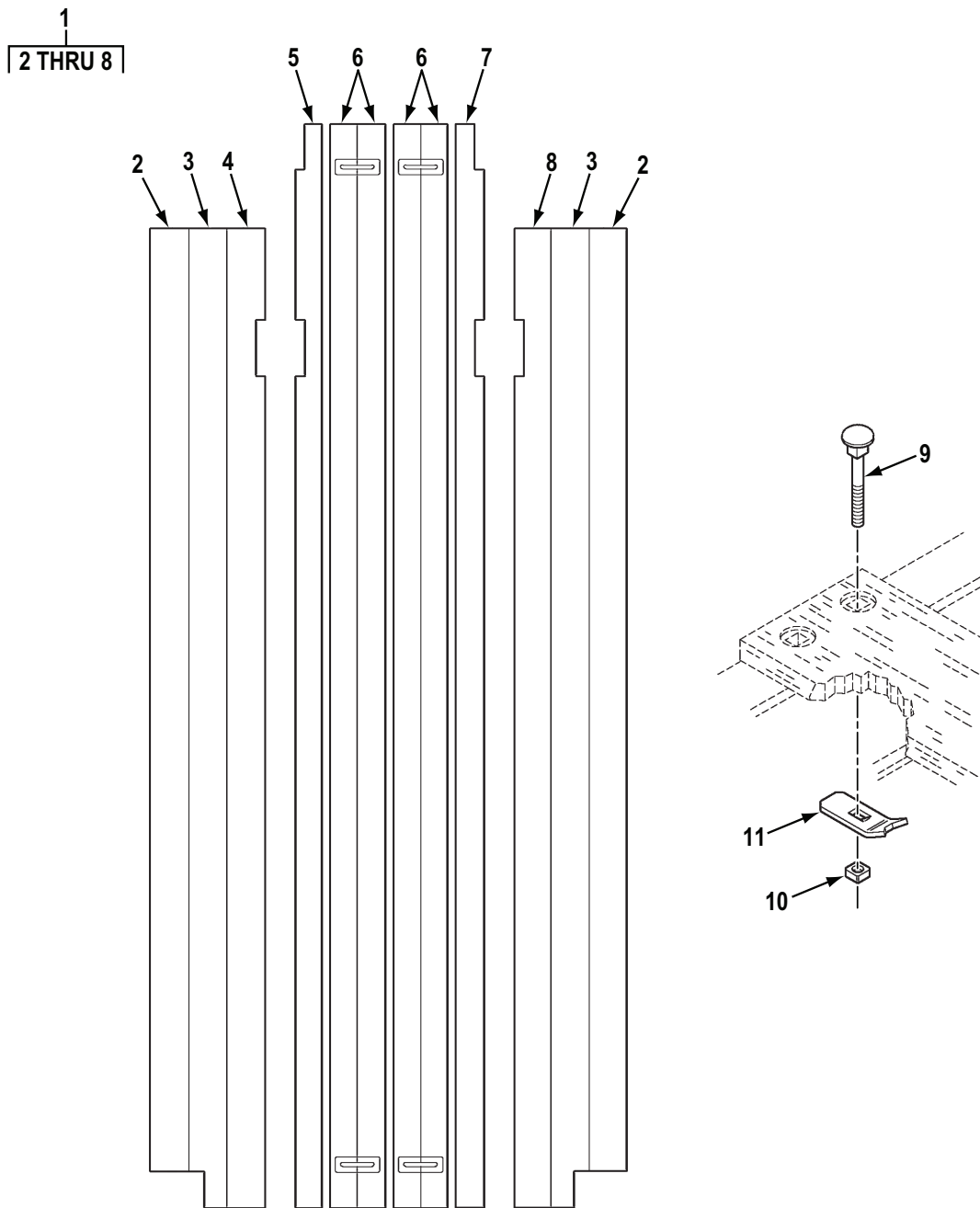
m466-5027

Figure 32. Mud Flaps.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1801 BODY, CAB, HOOD, AND HULL ASSEMBLIES						
FIG. 32. MUD FLAPS.						
1	XDFFF		63576	101911	GUARD,SPLASH,VEHICU ASSEMBLY.....	2
2	PFFZZ	2540-01-519-2239	63576	24X30MFNL	. GUARD,SPLASH,VEHICU.....	1
3	PFFZZ	5310-01-358-0596	96906	MS27183-53	. WASHER,FLAT 5/16.....	4
4	PFFZZ	5310-00-984-3806	81349	M45913/1-5CG5C	. NUT,SELF-LOCKING,HE 5/16-18 UNC.....	4
5	PFFZZ	5305-01-389-9097	80204	B1821AH031C125N	. SCREW,CAP,HEXAGON H 5/16-18 X 1 1/4 UNC.....	4
6	PAFZZ	5340-01-517-3848	63576	MFW2375	. BRACKET,MOUNTING MUD FLAP BOLTING BRACKET.....	1

END OF FIGURE

FIELD MAINTENANCE
FLOOR DECK BOARDS



m466-5029

Figure 33. Floor Deck Boards.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 1805 FLOORS, SUBFLOORS AND RELATED COMPONENTS						
FIG. 33. FLOOR DECK BOARDS.						
1	PFFFF	5510-01-602-3781	63576	101900	LUMBER,HARDWOOD ASSEMBLY.....	1
2	PFFZZ	2510-01-519-2241	63576	101900-1	. FLOOR,BODY,VEHICULA OUTER, DECK 1.....	2
3	PFFZZ	2510-01-519-2243	63576	101900-2	. FLOOR,BODY,VEHICULA OUTER, DECK 2.....	2
4	PFFZZ	2510-01-519-2244	63576	101900-3	. FLOOR,BODY,VEHICULA OUTER, DECK 3.....	2
5	PFFZZ	2510-01-519-2248	63576	101900-5	. FLOOR,BODY,VEHICULA.....	1
6	PFFZZ	2510-01-519-2247	63576	101900-7	. FLOOR,BODY,VEHICULA INNER REMOVABLE.....	4
7	PFFZZ	2510-01-519-2253	63576	101900-6	. FLOOR,BODY,VEHICULA.....	1
8	PFFZZ	2510-01-519-2246	63576	101900-4	. FLOOR,BODY,VEHICULA INNER, DECK 4.....	1
9	PAFZZ	5306-01-519-2536	63576	3/8X31/2CBDACRO MER	BOLT,SQUARE NECK 3/8-16 X 3 1/2....	225
10	PAFZZ	5310-01-597-6614	63576	3/8NUTDACROMER	NUT,PLAIN,SQUARE 3/8-16.....	225
11	PAFZZ	5340-01-519-2679	63576	FCMAKCOGAL	RETAINER,NUT AND BOLT RETAINER.....	225

END OF FIGURE

FIELD MAINTENANCE
DATA PLATES

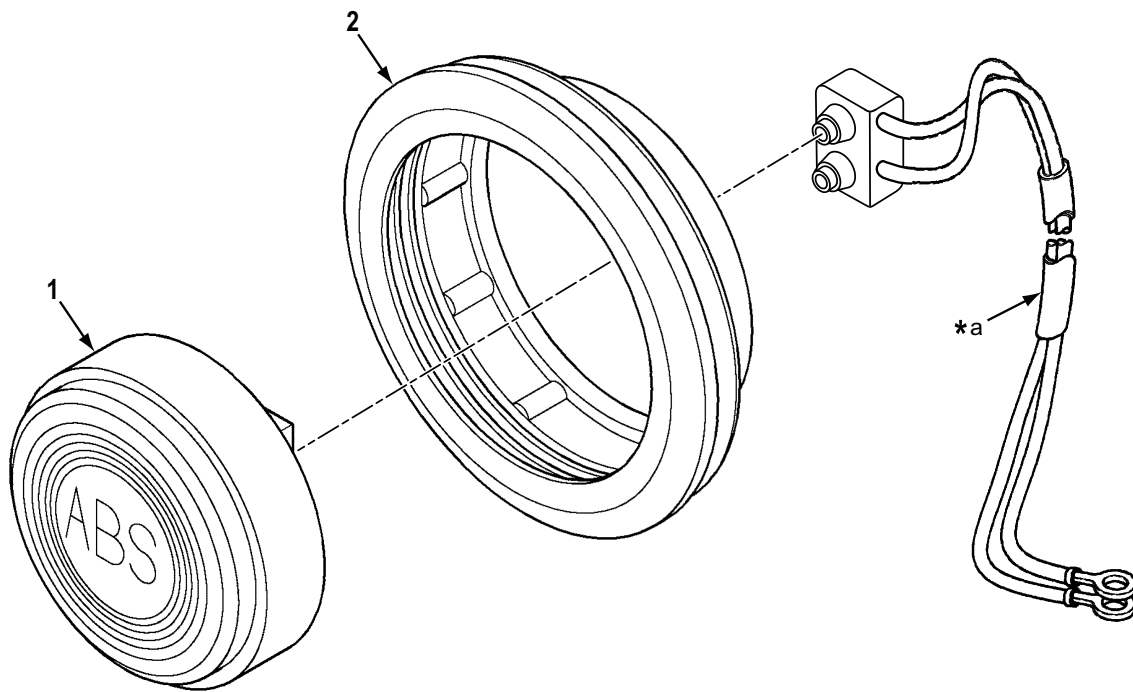


0131-2

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 2210 DATA PLATES AND INSTRUCTION HOLDER						
FIG. 34. DATA PLATES.						
1	XDFZZ		63576	GVWRPLATE	PLATE,IDENTIFICATIO.....	1
2	PFFZZ	5320-01-519-2424	63576	AFA64	RIVET,SOLID 3/16.....	32
3	XDFZZ		63576	49-SN	PLATE,IDENTIFICATIO.....	1
4	XDFZZ		63576	NOMENCLATURE	PLATE,IDENTIFICATIO MILITARY REGISTRATION DATA.....	1
5	XDFZZ		63576	101870	PLATE,INSTRUCTION M870A3 TRANSPORTATION DATA.....	1
6	PFFZZ	7690-01-572-3359	63576	L0085	LABEL PRESSURE AND RETURN.....	1
7	XDFZZ		63576	L0019	PLATE,INSTRUCTION HYDRAULIC OPERATION.....	1
8	PFFZZ	7690-01-572-3356	63576	L0104	LABEL TRACTOR PTO SWITCH.....	1
9	XDFZZ		63576	L0095	MARKER,IDENTIFICATI CLEAN FITTINGS CAUTION.....	1

END OF FIGURE

FIELD MAINTENANCE
ABS WARNING LIGHT



*a PART OF ITEM 1

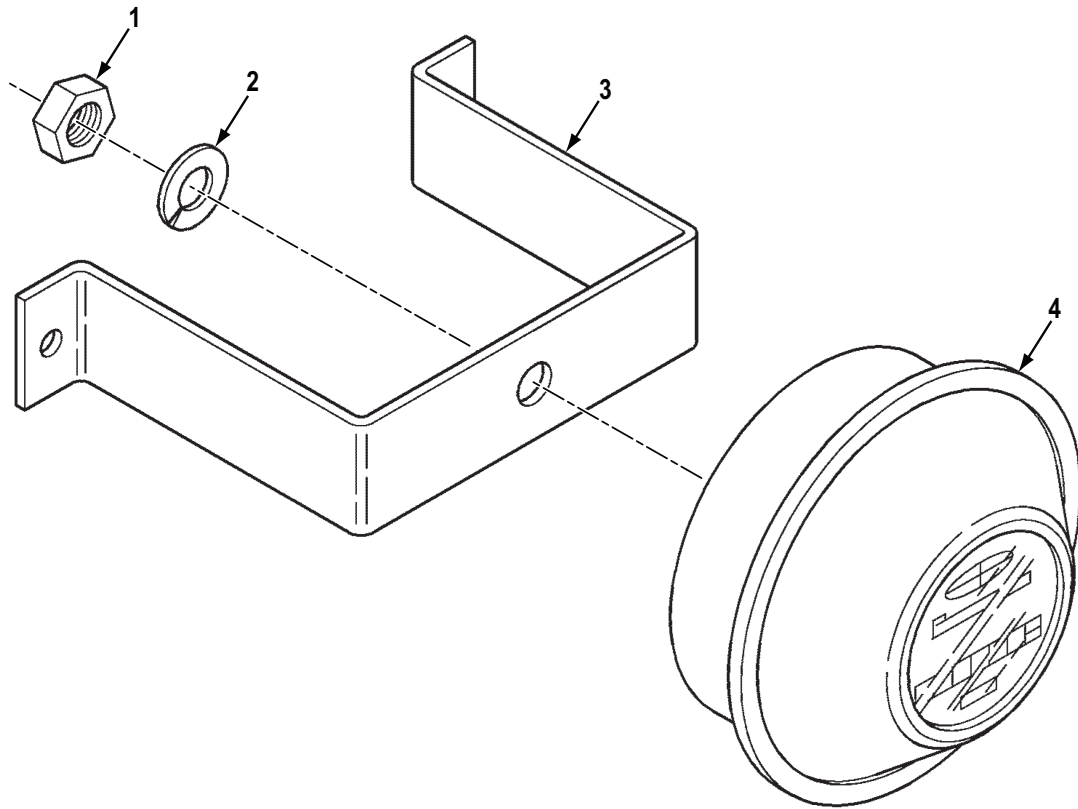
m466-5034

Figure 35. ABS Warning Light.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 4209 SIGNALING DEVICES						
FIG. 35. ABS WARNING LIGHT.						
1	PFFZZ	6240-01-499-4267	13548	30257Y	LAMP, INCANDESCENT PART OF KIT P/N 30075Y.....	1
2	PCFZZ	5325-01-067-5438	13548	30700	GROMMET, NONMETALLIC PART OF KIT P/N 30075Y.....	1

END OF FIGURE

FIELD MAINTENANCE
HUB MILEAGE METER



m466-5035

Figure 36. Hub Mileage Meter.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 4701 INSTRUMENTS (SPEED AND DISTANCE)						
FIG. 36. HUB MILEAGE METER.						
1	PAFZZ	5310-00-761-6882	96906	MS51967-2	NUT,PLAIN,HEXAGON 1/4-20 UNC.....	1
2	PAFZZ	5310-00-582-5965	80205	MS35338-44	WASHER,LOCK 1/4.....	1
3	PAFZZ	2590-01-450-0304	26151	610-0065	BRACKET,VEHICULAR COMPONENTS	1
4	PAFZZ	6645-01-519-2220	26151	650-0619	METER,TIME TOTALIZI.....	1

END OF FIGURE

FIELD MAINTENANCE
REPAIR KITS

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
GROUP 9401 REPAIR KITS						
FIG. KITS.						
1	PAFZZ	6220-01-519-6523	13548	44030R	STOP LIGHT-TAILLIGHT MOUNTING,RED	1
					CONNECTOR (004) 2-3	
					ASSEMBLY,	
					GROMMET,NONMET (004) 2-4	
					ALLIC	
					LAMP,INCANDESCENCE (004) 2-5	
					NT	
2	PAFZZ	6220-01-511-1629	13548	60075Y	DIRECTIONAL LIGHT,V MOUNTING,YELLOW	1
					CONNECTOR,PLUG, (002) 3-3	
					ELEC	
					GROMMET,NONMET (002) 3-2	
					ALLIC	
					GROMMET,NONMET (002) 3-4	
					ALLIC	
					LAMP (002) 3-1	
					UNIT,VEHICULAR	
					LAMP (002) 3-5	
					UNIT,VEHICULAR	
3	PAFZZ	2530-01-519-2286	06853	43-7118	CAMSHAFT,ACTUATING.....	1
					BRACKET,MOUNTING (003) 9-6	
					G	
					BRACKET,MOUNTING (003) 9-6	
					G	
					BUSHING,SLEEVE (001) 6-4	
					BUSHING,SLEEVE (012) 8-10	
					RING,SNAP (006) 9-2	
					RING,SNAP (006) 9-3	
					SCREW,SELF-TAPPING (024) 9-5	
					SEAL,PLAIN (001) 6-3	
					ENCASED	
					WASHER (001) 6-5	
					WASHER,FLAT (006) 9-1	
					WASHER,FLAT (006) 9-4	

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
4	PAFZZ	6220-01-519-2186	13548	30075Y	PARTS KIT,VEHICULAR GROMMET..... GROMMET,NONMET (001) ALLIC LAMP,INCANDESCENCE (001) NT	1 35-2 35-1

END OF FIGURE

FIELD MAINTENANCE
BULK MATERIAL

(1)	(2)	(3)	(4)	(5)	(6)	(7)
ITEM					DESCRIPTION AND USABLE ON	
NO.	SMR CODE	NSN	CAGEC	PART NUMBER	CODE (UOC)	QTY

GROUP 9501 BULK MATERIAL**FIG. BULK. BULK MATERIAL.**

1	PCFZZ	4720-01-287-9313	61424	1120-6B-RED-500	TUBING, NONMETALLIC.....	1
2	PCFZZ	4720-01-179-2939	85757	3250-0616	HOSE, NONMETALLIC.....	1
3	PCFZZ	4720-01-412-1664	81300	6ABB	HOSE, NONMETALLIC 3/8" ID.....	1
4	PCFZZ	4720-01-182-9068	61424	1120-8B-BLK-100	TUBING, NONMETALLIC.....	1

END OF FIGURE

**FIELD MAINTENANCE
NATIONAL STOCK NUMBER INDEX**

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
0000-00-000-0000	5	17		32	4
	27	1	5310-01-043-0596	18	9
	27	3	5310-01-049-9051	18	11
	27	6	5325-01-062-1009	8	3
	27	7	5310-01-062-1531	8	2
	27	10	5325-01-067-5438	35	2
	27	11	5325-01-067-5890	2	4
4730-00-014-4027	13	5	5330-01-071-8179	18	13
5310-00-045-3299	1	2	6220-01-088-5915	1	1
5305-00-050-9239	4	9	5330-01-093-1149	18	7
5305-00-068-0511	13	1	5315-01-146-6163	25	3
5305-00-071-2069	28	13	4730-01-152-5473	23	8
4730-00-172-0028	6	2	4730-01-162-7054	25	6
5330-00-172-1919	12	3	5325-01-163-6558	3	4
	12	6	4730-01-164-3365	21	8
5340-00-182-5359	28	10	4720-01-179-2939	BULK	2
5306-00-225-8499	28	3	4720-01-182-9068	BULK	4
5306-00-226-4822	18	16	2530-01-217-8156	8	6
4730-00-244-9848	12	1	5315-01-220-6238	8	9
2530-00-270-3878	12	4	5315-01-220-6245	8	8
4730-00-278-3888	11	5	5310-01-232-9769	21	5
5310-00-285-8124	4	7	5340-01-239-0883	8	4
	27	25	3120-01-239-0889	8	10
3110-00-293-8997	18	19	5310-01-239-0893	18	12
3110-00-293-8998	18	18	2530-01-241-3216	8	1
4730-00-453-8252	16	7	5360-01-241-6961	8	7
2640-00-555-2823	19	3	4730-01-244-3554	27	15
5305-00-576-5746	27	26	5330-01-255-0201	18	8
5310-00-582-5965	36	2	5305-01-265-6080	8	5
3110-00-618-0248	18	6	4730-01-276-6942	17	10
3110-00-618-0249	18	5	5305-01-283-9211	24	1
4730-00-618-5372	27	14	5340-01-284-1519	29	1
5310-00-619-1148	4	11	4720-01-287-9313	BULK	1
5310-00-620-2486	18	10	5340-01-307-5989	16	9
4730-00-678-4749	11	9	4730-01-310-4665	16	5
5310-00-761-6882	36	1	5310-01-312-4960	11	2
5305-00-914-3785	4	6		13	2
5310-00-914-6028	11	1		23	14
	13	4		26	4
	23	15	5365-01-318-1888	14	2
5310-00-934-9757	1	3	5310-01-358-0596	22	5
5310-00-959-4679	15	2		28	4
	18	15		32	3
5310-00-965-1820	4	8	2530-01-368-8282	15	1
	24	5	5975-01-379-4997	4	14
	27	24		5	15
5310-00-984-3806	22	4	2530-01-382-8736	12	2
	28	8	2530-01-384-1441	12	5

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5305-01-389-9097	22	6	6150-01-519-2150	5	5
	32	5	6150-01-519-2151	5	6
5315-01-406-5019	22	3	2530-01-519-2152	15	1
4720-01-412-1664	BULK	3	6150-01-519-2154	5	2
5310-01-414-7141	18	17	6150-01-519-2156	5	7
5315-01-424-6539	25	2	6150-01-519-2157	5	8
5310-01-435-8312	28	12	6150-01-519-2158	5	9
2530-01-441-9700	19	4	4730-01-519-2159	16	12
4730-01-446-3253	21	7		16	15
5975-01-447-9852	4	15		16	20
2590-01-450-0304	36	3		17	15
5310-01-463-4929	4	12	2530-01-519-2161	15	1
4820-01-497-8729	14	3	6150-01-519-2163	5	10
4730-01-498-7249	26	7	6150-01-519-2164	5	11
2530-01-499-3170	11	6	6150-01-519-2166	5	13
4810-01-499-3407	11	3	6150-01-519-2167	5	14
5340-01-499-3481	11	8	6150-01-519-2168	4	5
6240-01-499-4267	35	1	6150-01-519-2170	4	4
2530-01-502-0543	11	7	6150-01-519-2172	4	3
2530-01-506-2721	18	2	6150-01-519-2173	4	2
4730-01-506-3267	21	11	5325-01-519-2175	2	2
5306-01-508-5764	18	3		3	2
6220-01-511-1629	KITS	2	4730-01-519-2178	14	4
4730-01-512-4548	16	25	2590-01-519-2181	13	7
	17	2	6150-01-519-2182	4	1
	17	6	6220-01-519-2186	KITS	4
5305-01-516-9263	11	4	2530-01-519-2188	18	4
2590-01-517-3674	31	1	2540-01-519-2193	22	7
5306-01-517-3678	31	2	3040-01-519-2196	28	9
5340-01-517-3709	29	2	4010-01-519-2197	7	23
2530-01-517-3716	13	8	2590-01-519-2199	29	3
5330-01-517-3777	6	3	5365-01-519-2200	7	2
4730-01-517-3795	21	6	5365-01-519-2203	7	12
5340-01-517-3807	16	8	6685-01-519-2206	23	4
	17	9	3040-01-519-2208	25	1
5340-01-517-3848	22	8	3040-01-519-2211	26	6
	32	6	5365-01-519-2214	7	22
2510-01-517-3871	30	1	4820-01-519-2217	23	3
4730-01-517-3907	14	5	6645-01-519-2220	36	4
2510-01-517-3991	30	1	3040-01-519-2221	23	1
2530-01-517-3992	13	6	4730-01-519-2222	25	4
5935-01-518-3690	2	3	4730-01-519-2235	26	8
2610-01-518-5292	19	2	4730-01-519-2236	23	7
6240-01-518-6843	2	1	2540-01-519-2239	32	2
2530-01-518-8801	6	1	2510-01-519-2241	33	2
2530-01-518-8802	6	1	2510-01-519-2243	33	3
2530-01-519-2138	7	7	2510-01-519-2244	33	4
2530-01-519-2140	7	8	2510-01-519-2246	33	8
5310-01-519-2141	7	11	2510-01-519-2247	33	6
2530-01-519-2143	7	13	2510-01-519-2248	33	5
6150-01-519-2146	5	4	6220-01-519-2252	3	1
6150-01-519-2147	5	3	2510-01-519-2253	33	7
2530-01-519-2148	10	3	5340-01-519-2260	7	4

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5340-01-519-2263	7	15	5306-01-519-8693	7	5
5340-01-519-2264	7	14	5306-01-519-8695	7	21
4730-01-519-2280	27	20	5310-01-519-8697	7	24
5340-01-519-2283	7	19	5310-01-519-8701	7	1
5340-01-519-2284	7	18	2530-01-520-4301	7	3
2530-01-519-2286	KITS	3	5340-01-520-5344	10	1
5340-01-519-2287	7	20	5315-01-520-5676	10	2
4730-01-519-2289	23	6	2530-01-520-5684	9	7
4730-01-519-2367	24	4	2530-01-520-5686	9	7
4730-01-519-2372	16	2	2530-01-520-5697	9	7
	16	27	2530-01-520-5730	18	14
4730-01-519-2377	14	1	2530-01-520-6453	9	7
4730-01-519-2380	16	18	2540-01-520-6771	28	1
4730-01-519-2390	16	22	4730-01-524-4808	27	12
4730-01-519-2406	17	11	5310-01-524-4843	27	13
4730-01-519-2409	16	10	2530-01-524-5248	7	6
	17	17	5310-01-527-9521	28	11
4730-01-519-2414	17	16	5305-01-533-2971	23	10
5315-01-519-2423	26	12		26	5
5320-01-519-2424	34	2	4730-01-540-9232	17	13
5340-01-519-2425	27	18	4720-01-540-9453	21	1
5340-01-519-2426	27	19	4710-01-540-9546	17	4
5306-01-519-2536	33	9		17	8
5310-01-519-2538	26	2	5340-01-549-2053	4	13
5340-01-519-2540	21	10	4730-01-567-0241	27	16
5306-01-519-2541	21	2	4730-01-567-0286	27	17
5360-01-519-2542	21	3	2530-01-571-7223	19	1
5310-01-519-2543	21	4	6130-01-572-2676	4	10
5315-01-519-2548	26	1	7690-01-572-3356	34	8
5340-01-519-2551	23	2	7690-01-572-3359	34	6
5315-01-519-2555	28	2	5340-01-572-5110	5	16
5331-01-519-2559	26	10	5340-01-572-5319	5	16
5330-01-519-2670	13	3	4820-01-572-5351	27	27
5340-01-519-2679	33	11	5340-01-572-5416	28	7
5307-01-519-2687	28	6	5340-01-572-5955	22	2
5360-01-519-6413	21	9	6150-01-572-8191	4	16
6150-01-519-6507	5	12	4730-01-572-8735	23	13
5340-01-519-6522	28	5	4730-01-573-1544	27	28
6220-01-519-6523	KITS	1	4730-01-575-0159	23	11
4730-01-519-7011	23	9	4730-01-575-0778	23	12
	24	3	5935-01-576-7359	3	3
	27	22	4820-01-597-2011	27	23
4730-01-519-7014	26	11	4720-01-597-2265	27	8
4820-01-519-7021	25	5	4720-01-597-2267	27	9
	26	9	4730-01-597-3385	27	21
6150-01-519-7023	5	1	4720-01-597-3631	27	2
4820-01-519-7027	24	2	4720-01-597-3636	27	4
4730-01-519-8398	23	5	4720-01-597-3641	27	5
5306-01-519-8689	7	9	5310-01-597-6614	33	10
5306-01-519-8690	7	10	5510-01-602-3781	33	1

END OF WORK PACKAGE

FIELD MAINTENANCE PART NUMBER INDEX

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
A-A-52611-2-2-TR572	19	3	FCMAKCOGAL	33	11
AERKN1/8PT	21	6	FENDER WASHER	21	4
AFA64	34	2	FF751-12F0	27	17
AS1141	10	3	FR-751	27	18
AS15003-4	6	2	FR-752	27	19
AS3018	10	1	G2708-ASSY	20	2
AS4004	10	2	G2870-30	26	1
B1821AH031C125N	22	6	G2870-PART	20	1
	32	5	GS-10MM-BS-1THD	28	6
B1821BH031C050N	18	16	GS-10MM-C	28	5
B1821BH038C125N	13	1	GVWRPLATE	34	1
B1821BH050C150N	28	13	H1-65M	16	9
C3249X12X12	27	16	HC-V-BC23	23	3
C3249X6X8	25	4	HDW 018	7	24
C5315X12	23	11	HDW 055	7	10
C5315X6X10	23	9	HDW 342	7	21
	24	3	HDW 379	7	1
	27	22	HDW 380	7	9
C5515X6X10	27	21	HDW 382	7	5
C5707X6	24	4	HDW 397	7	17
CBPA10NS10TX30	27	27	HDW461	7	16
CMG/405416	2	1	HKS-001	4	4
CYLM3010	25	1	HKS-006	5	6
CYLM9010	26	6	HKS-017	5	3
DCBA10NS10TX30	27	23	HKS-018	5	4
DOMEX1/4	26	3	HKS-019	5	14
EH125011	6	5	HKS-020	5	5
F0080	30	1	HKS-021	5	13
F0081	30	1	HKS-024	5	7
F0285	21	10	HKS-025	5	10
F451TC-06-06-12-12-12-67.5"	27	5	HKS-026	5	8
F451TC-06-39-06-06-06-13.75"	27	7	HKS-027	5	11
F451TC-06-39-06-06-06-21.25"	27	9	HKS-028	5	9
	27	9	HKS-045	4	5
F451TC-06-39-06-06-06-23"	27	1	HKS-046	4	3
F451TC-06-39-08-08-08-62.5"	27	4	HKS-047	4	2
F451TC-39-39-06-06-06-21"-2	27	11	HKS-048	5	2
2.5	27	11	HKS-075	5	12
F451TC-39-39-06-06-06-23.25"	27	3	HKS-126	5	17
-45	27	3	HKS-KIT-4100	5	1
F451TC-39-39-06-06-06-24"-1	27	6	HKS-KIT-4150	4	1
80	27	6	HM212011	18	19
F451TC-39-39-06-06-06-32.5"	27	10	HM212049	18	18
-270	27	10	HM218210	18	5
F451TC-39-39-06-06-06-36.5"	27	8	HM218248	18	6
-180	27	8	HPGS3	23	4
F451TC-39-39-06-06-06-45.5"	27	2	HT-1218	13	6
	27	2	J514 12-8 140140C	11	5

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
L0019	34	7	MS35340-45	15	2
L0085	34	6		18	15
L0095	34	9	MS35649-282	1	3
L0104	34	8	MS35810-10	25	3
M10HM115	8	5	MS51521A6	27	14
M10HM195	9	5	MS51957-73	4	9
M10HN101	18	9	MS51967-2	36	1
M10HN102	18	12	MS90725-34	28	3
M10HN135	8	2	N13048	12	4
M10HN151	18	11	N20415PB	12	5
M10HR155	9	3	NOMENCLATURE	34	4
M10HS143	9	1	OR2BC	29	3
M10HS145	9	4	P3/8GSP	14	2
M10WH150-L	9	6	P3/8GST	14	5
M10WH150-R	9	6	PLT3S-C0	4	14
M16HD106	6	4		5	15
M16HD107	8	10	PLT6LH-L	4	15
M16HR103	6	3	R140-0150SP	28	2
M16WB100	8	6	R140-01SPGF	28	2
M16WJ100	8	7	R955336	11	7
M16WKL25-191	9	7	R955458	11	8
M16WKL25-256	9	7	RV-3L	24	2
M16WKR25-191	9	7	S4005001030	11	3
M16WKR25-256	9	7	S4497130300	11	6
M45913/1-4CBB	4	8	SAE J514 8-12 0701025S	27	15
	24	5	SCM-2412K	4	10
	27	24	SE 1000 AC 10100 100 PSI	28	9
M45913/1-5CG5C	22	4	SH-162	9	2
	28	8	TF3609X8	23	6
	32	4	VS169PMT-6-6	16	2
M45913/1-6CS3	11	1		16	27
	13	4	VS169PMTNS-6-6	16	25
	23	15		17	2
M45913/1-8CG8Z	28	11		17	6
M870A3MAXLEASSY	6	1	VS172PMTNS-6-6	14	1
M870A3RAXLEASSY	6	1	VS269NTA-8-8	16	5
MF2375	22	8	VS68PMT-6-6	17	4
	32	6		17	8
MP0-0113	8	3	VS68RB-6-6	16	12
MS15795-808	4	11		16	15
MS18154-8	4	6		16	20
MS27183-50	4	7		17	15
	27	25	X8291-1	16	1
MS27183-53	22	5	X8291-13	17	12
	28	4	X8291-14	17	5
	32	3	X8291-15	17	1
MS27183-55	11	2	X8291-2	16	11
	13	2	X8291-3	16	17
	23	14	X8291-4	16	21
	26	4	X8291-5	16	14
MS35309-316	27	26	X8291-6	16	24
MS35338-42	1	2	X8291-7	16	4
MS35338-44	36	2	0103-8-6	25	6

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
03S00494	7	14	160040-02	31	2
04P00243	7	11	169PMTNS-4-4	21	11
04S00080	7	23	169PMTNS-8-8	16	22
07S00011	7	20	20-881	8	4
07S00012	7	18	207ACBH-4	21	8
09-17-021A	5	16	209P-4-2	21	7
09-20-001A	4	13	22096	7	12
09-20-011A	5	16	2308712	18	4
0L90-2210-00	4	16	24X30MF	22	7
1/4-20UNC-2A X 2 IN LG	24	1	24X30MFNL	32	2
101835-11	26	12	2998T52	29	1
101870	34	5	2DR229	18	17
101876-7	28	7	3/8NUTDACROMER	33	10
101888	22	1	3/8X31/2CBDACROMER	33	9
101888-2	22	2	30075Y	KITS	4
101900	33	1	3018503	18	3
101900-1	33	2	30257Y	35	1
101900-2	33	3	30700	35	2
101900-3	33	4	3130272	15	1
101900-4	33	8	315-1504	18	8
101900-5	33	5	320-2110	18	7
101900-6	33	7	321425	8	8
101900-7	33	6	3250-0616	BULK	2
101911	32	1	330-3009	18	13
10275Y	3	1	340-5097	18	14
10312-606-062	25	5	34003	17	13
	26	9	371	21	9
10702	2	2	3A16-08A06	26	11
	3	2	3A1608A08	23	7
1078	13	3	3A49-04A06	27	28
10863625	11	9	40700	2	4
110500	14	3	42407	19	2
1120-6B-RED-500	BULK	1	43-7118	KITS	3
1120-8B-BLK-100	BULK	4	44030R	KITS	1
118-2662-009	23	8	44302R	2	5
120161	7	22	444632	13	5
12258212	1	1	450062	18	2
12342121	22	3	4513K344	23	5
12355	13	7	4515PBLK	8	1
12414667-001	12	2	4809001	18	1
125608-1	16	3	49-SN	34	3
125608-13	17	14	5/16-28SL	29	2
125608-2	16	13	50006	16	8
12582	15	1		17	9
12591	15	1	50785K65	26	7
12652	21	1	5228623	12	1
13014099	19	1	568906	26	10
15-527	8	9	5725X6	27	12
15002	7	19	5924X6	27	13
15016	7	15	5P4402	16	7
1509	12	3	6-12F50X-5	23	13
	12	6	6002	14	4
160040-01	31	1	60075Y	KITS	2

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
60275Y	3	5	8291-14	17	7
60700	3	4	8291-15	17	3
61-2484	3	3	8291-3	16	19
610-0065	36	3	8291-4	16	23
650-0619	36	4	8291-5	16	16
6534K47	17	10	8291-6	16	26
6534K57	17	16	8291-7	16	6
6536K19	16	10	90264A480	23	2
	17	17	90541CARCBLK	19	4
6536K29	17	11	9116-0107	28	1
660150017	23	1	91257A634	23	10
6806X6X4	26	8		26	5
6871-12	23	12	91286A206	11	4
6ABB	BULK	3	91286A344	21	2
7085127	18	10	91831A011	4	12
7531424	28	10	92391A066	25	2
76065	27	20	9292-0007	16	18
800010	7	2	93839A031	26	2
800049	7	3	94706	2	3
800055	7	4	94895A823	21	5
805155	7	6	9531	13	8
805223	7	7	9654K296	21	3
807155	7	13	98025A133	28	12
807223	7	8			

END OF WORK PACKAGE

CHAPTER 8

SUPPORTING INFORMATION

**FIELD MAINTENANCE
REFERENCES**

GENERAL

This work package lists the publications referenced in this manual. DA PAM 25-30, Consolidated Index of Army Publications and Blank Forms, should be consulted frequently for the latest changes and revisions and for new publications relevant to material covered in this manual.

Forms

DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404/5988E	Equipment Inspection and Maintenance Worksheet
DA Form 2407/5990-E	Maintenance Request
DD Form 314	Preventive Maintenance Schedule and Record
DD Form 1397	Processing and Deprocessing Record for Shipment, Storage, and Issues of Vehicles and Spare Engines
SF Form 364	Report of Discrepancy (ROD)
SF Form 368	Product Quality Deficiency Report

Field Manuals

FM 4-25.11	First Aid
FM 9-207	Operation and Maintenance of Ordnance Material in Cold Weather (0° F to minus 65° F)
FM 21-305	Manual for the Wheeled Vehicle Driver (Distribution Restricted)

Technical Manuals

TM 9-214	Inspection, Care, and Maintenance of Antifriction Bearings
TM 9-237	Welding Theory and Application
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 38-400	Storage and Materials Handling
TM 43-0139	Painting Instructions for Army Materiel
TM 55-2220-058-14	Railcar Loading Procedures
TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)

Technical Bulletins

TB 9-2510-242-40

Towed Wheeled Vehicles, FSC Class 2330, Lunette Trailers and Semitrailers: Repair of Frames

Miscellaneous Publications

CTA 8-100

Army Medical Department Expendable/Durable Items

CTA 50-909

Field and Garrison Furnishings and Equipment

CTA 50-970

Expendable/Durable Items (Except Medical Class V, Repair Parts, and Heraldic Items)

DA PAM 750-8

The Army Maintenance Management System (TAMMS) Users Manual

END OF WORK PACKAGE

FIELD MAINTENANCE MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field – includes two subcolumns, Crew (C) and Maintainer (F).

Sustainment – includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. **Crew maintenance.** The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the SMR code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.
2. **Maintainer maintenance.** Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are returned to the user after maintenance is performed at this level.
3. **Below depot sustainment.** Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.
4. **Depot sustainment.** Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The Remarks Table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

INTRODUCTION - Continued

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. **Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gaugings and evaluation of cannon tubes.
2. **Test.** To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. **Service.** Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:
 - a. **Unpack.** To remove from packing box for service or when required for the performance of maintenance operations.
 - b. **Repack.** To return item to packing box after service and other maintenance operations.
 - c. **Clean.** To rid the item of contamination.
 - d. **Touch up.** To spot paint scratched or blistered surfaces.
 - e. **Mark.** To restore obliterated identification.
4. **Adjust.** To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. **Align.** To adjust specified variable elements of an item to bring about optimum or desired performance.
6. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. **Remove/Install.** To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. **Paint (ammunition only).** To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.
10. **Repair.** The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

INTRODUCTION - Continued**NOTE**

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. **Overhaul.** That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
12. **Rebuild.** Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

EXPLANATION OF COLUMNS IN THE MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above).

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C Crew maintenance

F Maintainer maintenance

Sustainment:

L Specialized Repair Activity (SRA)

H Below depot maintenance

D Depot maintenance

INTRODUCTION - Continued**NOTE**

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

EXPLANATION OF COLUMNS IN THE TOOLS AND TEST EQUIPMENT REQUIREMENTS

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer's part number.

EXPLANATION OF COLUMNS IN THE REMARKS

Column (1) Remarks Code. The code recorded in column (6) of the MAC.

Column (2) Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

**FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART (MAC)**

Table 1. Maintenance Allocation Chart (MAC).

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0000-04	PMCS (WEEKLY)	None	1.0					
0000-05	PMCS (MONTHLY)	None	1.2					
0000-07	PMCS (ANNUAL)	None	9.5					
06	ELECTRICAL SYSTEM							
0609	Blackout, Stop, and Tailight	Replace		0.3			3	
	Stop Light/ Tailight	Replace		0.3			3	
	Light, Marker Clearance	Replace		0.3			3	
0613	24-volt Receptacle	Replace		1.0			3	
	12-volt Receptacle	Replace		0.2			3	
	Wiring Harness	Replace		1.0			3	
		Repair		1.0			3	
11	AXLE							
1100	Axle	Replace		6.0			3	
12	BRAKES							

Table 1. Maintenance Allocation Chart (MAC) - Continued.

(1)	(2)	(3)	(4)				(5)	(6)
GROUP NUMBER	COMPONENT/ ASSEMBLY	MAINTENANCE FUNCTION	MAINTENANCE LEVEL				TOOLS AND EQUIPMENT REFERENCE CODE	REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
1202	Service Brakes	Replace		4			3	
	Brake Camshaft	Replace		1.0			3	
1206	Slack Adjusters	Replace		1.0			3	
		Adjust		1.0			2, 3	
1208	Electronic Control Unit (ECU)	Replace		1.0			3	
		Test		0.4				
	ABS Sensor	Test		0.3			3	
		Replace		0.3				
	Gladhands	Repair		1.0			3	
		Replace		0.5			3	
	Reservoir Drain Valve	Replace		1.0			3	
	Front Air Reservoir	Test		0.2			3	
		Replace		1.0			3	
	Rear Air Reservoir	Test		0.2			3	
		Replace		1.0			3	

Table 1. Maintenance Allocation Chart (MAC) - Continued.

(1)	(2)	(3)	(4)				(5)	(6)
GROUP NUMBER	COMPONENT/ ASSEMBLY	MAINTENANCE FUNCTION	MAINTENANCE LEVEL				TOOLS AND EQUIPMENT REFERENCE CODE	REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
13	Spring Brake Control Valve	Replace		1.0			3	A
		Test		0.4				
	Air Brake Chambers	Test		0.2				
		Replace		1.0			3	
	Air Hoses and Fittings	Replace		1.0			3	
1311	WHEELS, HUBS, AND DRUMS							
	Hub and Drum Assembly							
15	Wheel Assembly	Replace	1.0	2.0			3	
		Replace						
	Repair		0.5			1		
1501	FRAME, TOWING ATTACHMENT S, DRAWBAR, AND ARTICULATION							
	Gooseneck Locking Assembly	Replace		1.0			3	
	Center Mud Flaps	Replace	0.4				3	
	Hydraulic Control Valve and Pressure Gage	Replace		2.0				

Table 1. Maintenance Allocation Chart (MAC) - Continued.

(1)	(2)	(3)	(4)				(5)	(6)
GROUP NUMBER	COMPONENT/ ASSEMBLY	MAINTENANCE FUNCTION	MAINTENANCE LEVEL				TOOLS AND EQUIPMENT REFERENCE CODE	REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	Setting Hydraulic Tilt Arm Pressure							
	Hydraulic Pressure Relief Valve	Replace		1.5				
	Setting Hydraulic Deck Raising/ Lowering Pressure							
	Gooseneck Tilt Cylinder	Replace		0.5			3	
	Gooseneck Lift Cylinder	Replace		3.0			3	
	Hydraulic Pressure Relief Valve	Replace		1.5				
	Gooseneck Regulator Valves	Replace		3.0				
	Hydraulic Lines and Fittings	Replace		1.0				
		Repair		1.0				
	Outrigger	Replace	0.1					
	Tool Box Door	Replace		1.0			3	
1503	King Pin	Replace	0.2					
1504	Spare Tire and Mounting Hardware	Replace	0.2					
18	BODY, CAB, HOOD, AND HULL							

Table 1. Maintenance Allocation Chart (MAC) - Continued.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REFERENCE CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
1801	Mud Flaps	Replace		0.4			3	
1805	Deck Planking	Replace		1.5			3	
22	BODY, CHASSIS, AND HULL ACCESSORIES							
2202	Reflectors	Replace		0.2			3	
2210	Data Plates	Replace		0.5			3	
4209	ABS Warning Light	Replace		.5			1	
4701	Hub Mileage Meter	Replace		0.5			1	

Table 2. Tools and Test Equipment.

TOOLS OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Forward Repair Systems (FRS)	4940-01-463-7940	SC 4940-95-E41
2	F	Clevis Installation Gage		Local Fabrication
3	F	Tool Kit, General Mechanic's	5180-01-548-7634	(19800) PD484

Table 3. Remarks.

REMARK CODE	REMARKS
A	Refer to TM 9-2610-200-14

END OF WORK PACKAGE

FIELD MAINTENANCE COMPONENTS OF END ITEMS (COEI) AND BASIC ISSUE ITEMS (BII) LIST

INTRODUCTION

Scope

This work package lists Components of End Item (COEI) and Basic Issue Items (BII) for the semitrailer to help you inventory the items for safe and efficient operation of the equipment.

General

The COEI and BII information is divided into the following lists:

COEI. This list is for informational purposes only and is not authority to requisition replacements. These items are part of semitrailer. 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.

BII. These essential items are required to place the semitrailer in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the semitrailer during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns

Column (1) - Illus Number. Gives you the number of the item illustrated.

Column (2) - National Stock Number. Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) - Description, Part Number/(CAGEC). Identifies the Federal item name followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) - 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 Rqr. Indicates the quantity required.

Table 1. Components Of End Items (COEI).

(1)	(2)	(3)	(4)	(5)	(6)
ITEM NUMBER	NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	DESCRIPTION, PART NUMBER/(CAGEC)	USABLE ON CODE	U/I	QTY RQR
1	N/A	N/A		N/A	N/A

Table 2. Basic Issue Items (BII).

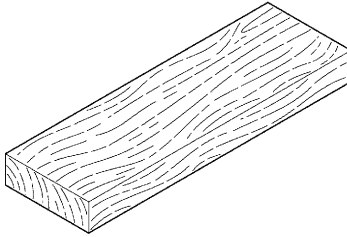
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
1	4730-01-459-0000  466-0111d	ADAPTER, STRAIGHT, TUBE TO HOSE 209P-8-6 (93061)		EA	1
2	5120-00-243-2419  466-0109d	BAR, SOCKET WRENCH 41H1541-10 (19204)		EA	1
3	 466-0110c	BLOCK, WOOD 2.375 in. x 7.5 in. x 24 in. (19207)		EA	1
4	4010-01-520-5747  466-0108b	CHAIN ASSEMBLY 3362T43 (39428)		EA	8

Table 2. Basic Issue Items (BII) - Continued.

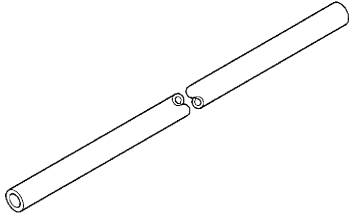
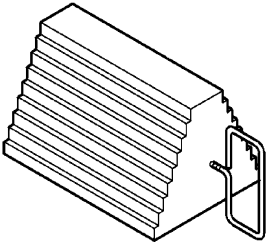
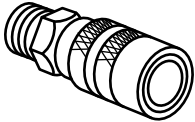
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
5	5340-01-520-5776  466-0110a	CHEATER BAR, Hollow, 1.375 in. OD, 4-ft Long BIIKITARMY-18 (63576)		EA	1
6	2540-00-678-3469  466-0108d	CHOCK, WHEEL-TRACK A52475-1 (58536)		EA	2
7	4730-00-293-7182  466-0111c	COUPLING HALF, QUICK DISCONNECT AA59439-09-12-00C (85836)		EA	1

Table 2. Basic Issue Items (BII) - Continued.

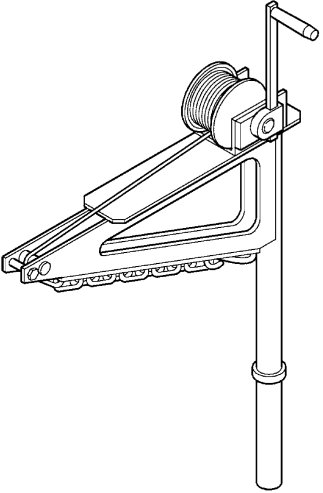
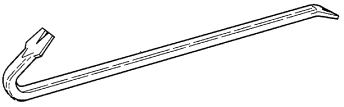
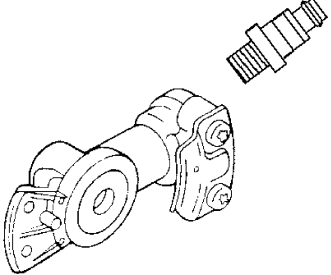
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
8	3930-01-520-5783  466-0109a	CRANE, SPARE TIRE 160061 (63576)		EA	1
9	5120-01-519-3069  466-0109c	CROWBAR 5992A6 (39428)		EA	1
10	4730-01-550-1470  466-0111b	GLADHAND, EMERGENCY 12-008 (1F3G5)		EA	1

Table 2. Basic Issue Items (BII) - Continued.

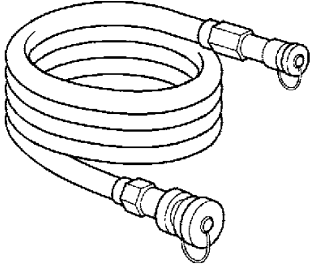
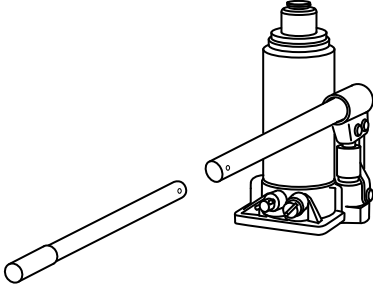
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
11	4710-01-586-5839  466-0110a	HOSE ASSEMBLY with Quick Disconnect, 12-ft Long X8412 (63576)		EA	2
12	5120-01-351-2074  466-0109b	JACK, HYDRAULIC, HAND 76520 (61674)		EA	1
13	2510-01-517-3871  466-0111e	KINGPIN, FIFTH WHEEL 2 in. (63576)		EA	1

Table 2. Basic Issue Items (BII) - Continued.

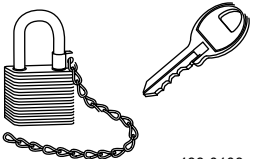
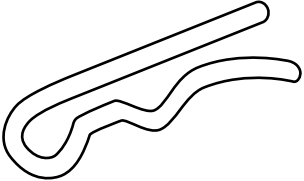
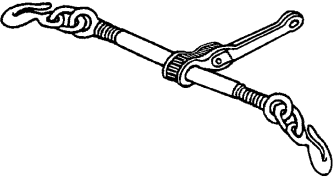
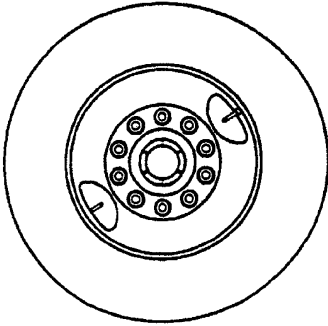
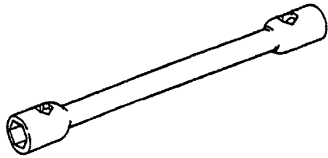
(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
14	2510-01-517-3991  466-0111f	KINGPIN, FIFTH WHEEL 3.5 in. (63576)		EA	1
15	5340-00-682-1506  466-0108c	PADLOCK SET AA59486-1AB05S2E1 (58536)		EA	2
16	5315-01-476-4740  466-0111a	PIN, LOCK Used on Outriggers (39428)		EA	16
17	3990-01-213-1746  466-0108a	RATCHET BINDER R-45 (27404)		EA	8

Table 2. Basic Issue Items (BII) - Continued.

(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
18	2530-01-571-7223  466-0108e	SPARE TIRE ASSEMBLY 13014099 (19207)		AY	1
19	5120-00-293-1289  466-0109e	WRENCH, SOCKET 41W3838-30 (19207)		EA	1

END OF WORK PACKAGE

**FIELD MAINTENANCE
ADDITIONAL AUTHORIZATION LIST (AAL)**

INTRODUCTION**Scope**

This work package lists items you are authorized for the support of the Semitrailer.

General

This list identifies items that do not have to accompany the semitrailer 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

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.

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 shown in column (1).

Column (5) Qty Recm. Indicates the quantity recommended.

Table 1. Additional Authorization List (AAL).

(1) NATIONAL STOCK NUMBER (NSN)	(2) DESCRIPTION, PART NUMBER/ (CAGEC)	(3) USABLE ON CODE	(4) U/I	(5) QTY RECM
2590-01-561-4746	MODIFICATION KIT, VEHICULAR EQUIPMENT COMPONENTS Used on M916/M920 57K4788 (19207)		EA	1
4320-01-517-1882	PARTS KIT, HYDRAULIC PUMP Used on M916A1/M916A2 57K4742 (19207)		EA	1

END OF WORK PACKAGE

**FIELD MAINTENANCE
EXPENDABLE AND DURABLE ITEMS LIST (EDIL)**

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Semitrailer. 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 Columns in the Expendable Durable Items List

Column (1) Item Number. This number is assigned to the entry in the listing and is referenced in the "Initial Setup" of maintenance paragraphs or narrative instructions to identify the material needed (e.g., Use Adhesive (WP 0097, Item 1)).

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (includes as applicable: C = Crew F = Maintainer).

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) 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).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, (e.g., gallon, dozen, gross, etc.).

Table 1. Expendable and Durable Items List (EDIL).

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
1	F	8040-01-024-6991	ADHESIVE, LOCTITE, MINUTE BOND 31231 50 CC Bottle (05972)	BT
2	F	8040-00-833-9563	ADHESIVE, SEALANT, SILICONE RUBBER 5 Ounce Tube RTV102-WTT85ML (80936)	KT
3	F	8135-00-171-0930	BARRIER MATERIAL, GREASE PROOF, WATERPROOFED FLEXIBLE 100 Yard Roll MIL-B-121 (81349)	RO
4	F	7920-00-514-2417	BRUSH, ACID SWABBING Box of 144 803-12 (7S147)	GR
5	F	7920-00-061-0038	BRUSH, SCRUB 4054000 (15398)	EA
6	F	7920-00-900-3577	BRUSH, WIRE 3577 (17987)	EA
7	F	8030-01-418-9006	CORROSION PREVENTIVE COMPOUND Box of 12 Aerosol Cans, 8 Ounces Each (09137)	BX
8	F	7930-00-282-9699	DETERGENT, GENERAL PURPOSE, LIQUID 1 Gallon Can 7930-00-282-9699 (83421)	GL
9	F	3439-00-255-9935	FLUX, SOLDERING 1 Pound Can A-A-51145 (58536)	LB
10	C	9150-01-197-7693	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 14 Ounce Cartridge M-10924-B (81349)	CA
11	C	9150-01-197-7688	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 2-1/4 Ounce Tube M-10924-A (81349)	TU
12	C	9150-01-197-7690	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 1-3/4 Pound Can M-10924-C (81349)	CN
13	C	9150-01-197-7689	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 6-1/2 Pound Can M-10924-D (81349)	CN
14	C	9150-01-197-7692	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 35 Pound Can M-10924-E (81349)	CN
15	C	9150-01-197-7691	GREASE, AUTOMOTIVE AND ARTILLERY, GAA 120 Pound Drum M-10924-F (81349)	DR
16	F	9510-00-241-7010	LUBRICANT, RUBBER	LB

Table 1. Expendable and Durable Items List (EDIL) - Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
17	C	9150-00-402-2372	0500KN63 (25472) OIL, LUBRICATING, INTERNAL COMBUSTION ENGINE, ARCTIC, OEA 5 Gallon Drum MIL-L-46167 (81349)	CN
18	C	9150-00-491-7197	OIL, LUBRICATING, INTERNAL COMBUSTION ENGINE, ARCTIC, OEA 55 Gallon Drum MIL-L-46167 (81349)	DR
19	C	9150-00-189-6727	OIL, LUBRICATING, INTERNAL COMBUSTION ENGINE, OE/HDO 10 1 Quart Can M2104-1-10W (81349)	QT
20	C	9150-00-402-4478	OIL, LUBRICATING, INTERNAL COMBUSTION ENGINE, ARCTIC, OEA 1 Quart Can MIL-L-46167 (81349)	QT
21	C	7920-00-205-1711	RAG, WIPING 50 Pound Bale 7920-00-205-1711 (64067)	BE
22	F	8010-00-181-7568	REMOVER, PAINT M81294-11-001G (81349)	GL
23	F	3439-00-265-7102	SOLDER, LEAD ALLOY 1 Pound Spool/Roll SN10WRP20.63 (81346)	SL
24	F	6850-01-474-2318	SOLVENT, CLEANING COMPOUND, TYPE III 1 Gallon Drum MIL-PRF-680 (81349)	GL
25	F	6850-01-474-2320	SOLVENT, CLEANING COMPOUND, TYPE III 5 Gallon Drum MIL-PRF-680 (81349)	CN
26	F	6850-01-474-2321	SOLVENT, CLEANING COMPOUND, TYPE III 55 Gallon Drum MIL-PRF-680 (81349)	DR
27	F	5975-01-379-4997	STRAP, TIEDOWN Package of 100 PLT3S-C0 (06383)	HD
28	F	9905-00-537-8954	TAG, MARKER Bundle of 50 9905-00-537-8954 (64067)	BD
29	F	8030-00-889-3535	TAPE, ANTISEIZING 0.5 in. Width, 260 in. Roll P5025-2R (81755)	EA
30	F	5640-00-103-2254	TAPE, DUCT 2 in. Width, 60 in. Roll 1791K70 (39428)	RO
31	F	5970-00-682-8536	TAPE, INSULATION, ELECTRICAL 1.5 in. Width, 28 Yard Roll MANSON 1-1-2 (76892)	RO
32	F	5970-00-815-1295	TUBING, HEAT SHRINKABLE	FT

Table 1. Expendable and Durable Items List (EDIL) - Continued.

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/ (CAGEC)	(5) U/I
			M23053/5-106-0 (81343)	

END OF WORK PACKAGE

FIELD MAINTENANCE TOOL IDENTIFICATION LIST (TIL)

SCOPE

This work package lists all common tools and supplements and special tools/fixtures needed to maintain the Semitrailer.

EXPLANATION OF COLUMNS

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Extractor (WP 0090, Item 32)).

Column (2) Item Name. This column lists the item by noun nomenclature and other descriptive features (e.g., Gage, belt tension).

Column (3) National Stock Number (NSN). This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) Part Number/(CAGEC). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

Table 1. Tool Identification List (TIL).

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER / (CAGEC)	(5) REFERENCE
1	CLEVIS INSTALLATION GAGE			TM 9-2330-325-13&P
2	CUTTING AND FLARING KIT, TUBE			
3	DIE SET, METAL STAMPING, HAND, ALPHABETIC		KTC S1000 (00NS2)	SATS CL 4910-95A81
4	DRILL SET, TWIST		KTC S0194 (00NS2)	SATS CL 4910-95A81
5	DRILL, ELECTRIC, PORTABLE		KTC S089 (00NS2)	SATS CL 4910-95A81
6	FORWARD REPAIR SYSTEM (FRS)	4940-01-463-7940	SC 4940-95-E41	
7	GLOVES, CHEMICAL AND OIL PROTECTIVE	8415-00-266-8675	N36 (86523)	

Table 1. Tool Identification List (TIL) - Continued.

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER (NSN)	(4) PART NUMBER /(CAGEC)	(5) REFERENCE
8	GLOVES, WELDER'S	8415-00-268-7859	A-A-50022 (58536)	
9	HOT AIR GUN	4940-01-286-7079	M83521/5-02 (81349)	
10	JACK, DOLLY TYPE	4910-00-289-7233	93660 (36251)	
11	JACK, STAND	4910-00-251-8013	DFP-375 (59678)	
12	MULTIPLIER, TORQUE	5120-01-399-9054	J6212 (1CV05)	
13	RIVETER KIT, BLIND, HAND	5180-01-201-4978	D-100-MIL-1 (64878)	
14	SOLDERING GUN	3439-00-808-0528	10106117 (18876)	
15	TOOL KIT, ELECTRICAL	5180-00-876-9336	5180-00-876- 9336 (80244)	
16	TOOL KIT, GENERAL MECHANIC'S	5180-01-548-7634	PD484 (19200)	
17	TORCH, CUTTING	3433-00-105-7961	A-A-55826-2 (58536)	
18	WELDER, ARC, PORTABLE	5130-01-482-1692	10000MDP (1SUS3)	
19	WRENCH, TORQUE, RATCHET HEAD, 0.5 IN. DRIVE, 250 LB FT		KTC S0991 (00NS2)	SATS CL 4910-95A81
20	WRENCH, TORQUE, RATCHET HEAD, 0.75 IN. DRIVE, 600 LB FT		KTC S0988 (00NS2)	SATS CL 4910-95A81
21	WRENCH, TORQUE, RATCHET HEAD, 0.375 IN. DRIVE, 75 LB FT		KTC S0989 (00NS2)	SATS CL 4910-95A81

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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 <i>Date you filled out this form.</i>	
TO (Forward to proponent of publication or form) (Include ZIP Code) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000						FROM (Activity and location) (Include ZIP Code) <i>Your mailing address</i>			
PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS									
PUBLICATION/FORM NUMBER <i>TM Number</i>						DATE <i>DD MMMM YYYY</i>		TITLE <i>TM Title</i>	
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)			
	0007-3					<i>Figure 2, Item 9 should show a lockwasher. Currently shows a flat washer.</i>			
	0018-2					<i>Cleaning and inspection, Step 6, reference to governor support pin (14) is wrong reference. Reference should be change to (12).</i>			
SAMPLE									
TYPED NAME, GRADE OR TITLE <i>Your Name</i>					TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>			SIGNATURE <i>Your Signature</i>	

TO (Forward direct to addressee listed in publication) U.S. Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-IM/TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000				FROM (Activity and location) (Include ZIP Code) <i>Your Address</i>				DATE <i>Date you filled out this form</i>	
PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS									
PUBLICATION/FORM NUMBER <i>TM Number</i>				DATE <i>DD MMMM YYYY</i>		TITLE <i>TM Title</i>			
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION	
SAMPLE									
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.)									
TYPED NAME, GRADE OR TITLE <i>Your Name</i>				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <i>Your Phone Number</i>			SIGNATURE <i>Your Signature</i>		

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PUBLICATION/FORM NUMBER TM 5-2330-325-13&P						DATE 23 June 2014	TITLE Trailer, Medium Heavy Equipment Transporter (MHET), 40 Ton, M870A3
	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON	
TYPED NAME, GRADE OR TITLE					TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE

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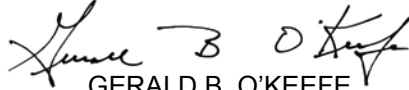
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By Order of the Secretary of the Army:

Official:

A handwritten signature in black ink, appearing to read "Gerald B. O'Keefe", written over the printed name.

GERALD B. O'KEEFE
*Administrative Assistant to the
Secretary of the Army*

1415502

RAYMOND T. ODIERNO
*General, United States Army
Chief of Staff*

Distribution:

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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 Pounds 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 = 0.0386 Sq Miles Cubic Measure 1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches 1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet Temperature $9/5\text{ }^{\circ}\text{C} + 32 = ^{\circ}\text{F}$ $5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$ 212° Fahrenheit is equivalent to 100° Celsius 90° Fahrenheit is equivalent to 32.2° Celsius 32° Fahrenheit is equivalent to 0° Celsius

APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq 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 per 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	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq 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
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

PIN: 087757-000