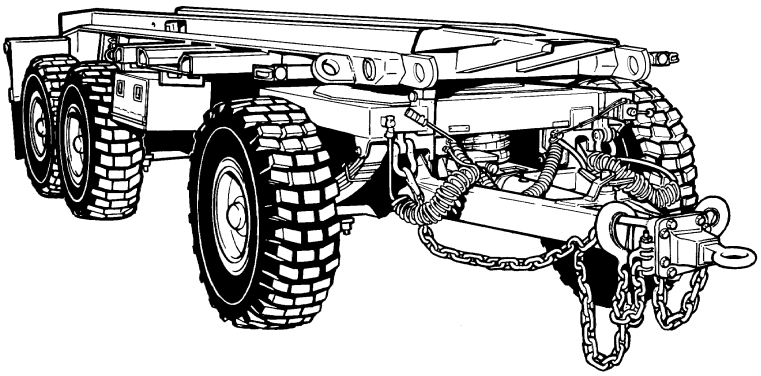
TM 9-2330-385-14

THIS MANUAL SUPERSEDES TM 9-2330-385-14 DATED 30 MAY 1994, INCLUDING ALL CHANGES.

TECHNICAL MANUAL

OPERATOR'S, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL



PALLETIZED LOAD SYSTEM TRAILER (PLST) MODEL M1076 NSN 2330-01-303-5197

HEADQUARTERS, DEPARTMENT OF THE ARMY
AUGUST 1999

WARNING

Before performing PMCS be sure that the parking brakes are applied. Serious injury or death could result if parking brakes are not applied during PMCS.

WARNING

While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.

WARNING

Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.

WARNING

Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.

WARNING

Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.

WARNING

Do not leave drawbar in elevated position after disconnecting from truck. Drawbar could fall causing serious injury to personnel.

WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

WARNING

Drawbar with extension weighs 850 lbs (386 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

WARNING

Brake chamber contains a spring that is under great pressure. Never work directly behind brake chamber or attempt to disassemble brake chamber. Serious injury or death could result to personnel.

WARNING

If top of brake chamber is clogged with mud, sand, or dirt, do not proceed with caging operation unless brake chamber can be cleared or serious injury or death could result to personnel.

WARNING

Trailer wheels must be chocked while caging brake chambers or serious injury or death could result to personnel.

WARNING

Trailer must be connected to truck with parking brakes set before removing chock blocks or trailer may move uncontrolled. Failure to do so could result in severe injury or death may result to personnel.

WARNING

Trailer wheels must be chocked prior to loading the flatrack. Serious injury or death could result to personnel.

WARNING

Apply engine brake only when truck and trailer tires have good traction. Use of engine brake on slick surfaces can cause truck and trailer to skid and cause injury or death to personnel.

WARNING

Do not ford water unless depth is known. Water deeper than four ft (1.22 m) may enter trailer parts, causing injury or equipment damage.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

WARNING

Never crawl under trailer when performing maintenance unless trailer is securely blocked. Trailer may fall and cause serious injury or death to personnel.

WARNING

Tire weighs 425 lbs (193 kg). Keep all personnel clear from under tire. Failure to comply may result in serious injury to personnel.

WARNING

Tire weighs 425 lbs (193kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Ensure all personnel wear suitable eye protection while lowering or raising spare tire. Failure to comply may result in injury to personnel.

WARNING

Ensure personnel are positioned under trailer only far enough to perform procedure. Do not position entire body under tire unless required. Failure to comply may result in injury or death to personnel.

WARNING

Wear hearing protection when lowering or raising spare tire. Injury to personnel may result.

WARNING

Ensure slide handle or air wrench and socket are held securely in place while lowering spare tire. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Ensure all personnel wear protective gloves when handling cable. Cable may fray and injury to personnel may result.

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

WARNING

Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

WARNING

If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause personal injury. Air system should be drained before air lines are disconnected.

WARNING

If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause injury or death to personnel. Air system should be drained and air bag control valve set in center position before air bag air lines are disconnected.

WARNING

If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

WARNING

Front electrical box and external resisters may become extremely hot and cause burns upon contact. Use extreme caution to avoid injury to personnel.

WARNING

Front electrical box may be hot. Use caution when working around electrical box to avoid burns.

WARNING

Rear electrical box and external resistors may become extremely hot and cause burns upon contact. Use extreme caution to avoid injury to personnel.

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

WARNING

Do not work under trailer unless the wheels of the truck and trailer are chocked, the trailer is on level ground and the truck engine is shut off. Failure to chock wheels of truck and trailer could cause serious injury or death to personnel.

WARNING

An assistant must be in the truck cab at all times while checking brakes under trailer to prevent truck movement. Failure to have an assistant in truck cab to prevent truck movement could cause serious injury or death to personnel.

WARNING

Do not hook up trailer drawbar or trailer safety chains while checking brakes under truck. If trailer safety chains or drawbar are hooked up, the trailer could be dragged if the truck should move, causing serious injury or death to personnel.

WARNING

Remain clear of drawbar when it is raised. If drawbar falls it will cause injury or death to personnel.

WARNING

Brake shoes may be covered with dust. Breathing this dust may be harmful to your health. Do not use compressed air to clean brake shoes. Wear a filter mask approved for use against brake dust. Failure to comply may result in injury or death to personnel.

WARNING

Brake shoe springs are under great tension. Wear eye protection and use caution when removing or installing springs or serious injury to personnel could result.

WARNING

Use care when removing or installing retaining rings. Retaining rings are under tension and can act as projectiles when released and could cause severe eye injury.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc).

WARNING

Ensure that air pressure in brake lines is drained to 0 psi (0 kpa) prior to replacing brake chambers. If air pressure is not released, parts and lines could blow off and harm personnel. Air tanks have more than 30 psi (207 kPa) pressure in them. Do not drain air tanks with any part of body in air spray path. Skin embolisms and or debris in eyes can occur from released pressure.

WARNING

Do not remove air chamber prior to compressing brake spring with caging bolt. The brake spring is under extreme pressure. Failure to cage the chamber could cause serious injury or death to personnel.

WARNING

Do not attempt to disassemble brake chambers. Brake chambers contain springs under pressure. Attempting to disassemble brake chambers could result in serious injury or death to personnel.

WARNING

Support reservoir when removing locknuts, to prevent reservoir from falling. Failure to comply may result in injury to personnel.

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). If there is no air pressure in the drawbar air assist system, the drawbar may fall. Serious injury or death could result.

WARNING

Ensure air pressure is depleted prior to starting this task. Working on air lines or air bag without depleting air pressure could cause serious injury or death to personnel.

WARNING

Adjusting rods must be properly aligned prior to operating the trailer or the trailer brakes may not apply correctly causing serious injury or death to personnel.

WARNING

Tube assembly weighs 187 lbs (85 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

WARNING

Ensure studs are fully seated in slots before tightening nuts, or wheel could come off during operation of trailer, resulting in injury or death of personnel.

WARNING

Brake drum weighs 125 lbs (57 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Hub weighs 65 lbs (29 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Do not use compressed air to clean bearings. Bearings can come apart causing injury or death to personnel.

WARNING

Drawbar tow ring and mounting plate will fall off when mounting screws are removed. Care should be taken to keep towing ring from falling. Possible injury to personnel may result.

WARNING

Drawbar extension assembly and tube assembly weigh 625 lbs (283 kg). Attach suitable lifting device prior to installation to prevent injury to personnel.

WARNING

Stand clear of trajectory area during deflation or personal injury or death may result.

WARNING

Do not stand in front of, or under drawbar. Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). If there is no air pressure in the drawbar air assist system, the drawbar will fall. Serious injury or death could result.

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- ALWAYS use air line respirators when using CARC paint unless air sampling shows exposure to be below standards. Use chemical cartridge respirator if air sampling is below standards.
- NEVER weld or cut CARC-coated materials.
- DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
- DO NOT let skin or eyes come in contact with CARC paint. Always wear protective equipment (gloves, ventilation mask, safety goggles, etc.).
- DO NOT use CARC paint without adequate ventilation.
- BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.

WARNING

Use care when removing or installing springs. Springs are under tension and can act as projectiles when released. Injury to personnel may result.

WARNING

Wire rope can become frayed or contain broken wires. Wear heavy, leather-palmed work gloves when handling wire rope. Frayed or broken wires can injure hands.

WARNING

Flatrack lock air chamber contains a spring that is under great pressure. Never work directly behind flatrack lock air chamber or attempt to disassemble flatrack lock air chamber. Serious injury or death could result to personnel.

WARNING

If top of flatrack air chamber is clogged with mud, sand, or dirt, do not proceed with caging operation unless flatrack air chamber can be cleared or serious injury or death could result to personnel.

WARNING

Bumper weighs 120 lbs (54 kg). Attach two suitable lifting devices prior to removal or installation to prevent possible injury to personnel.

WARNING

Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

WARNING

Rail load locking pins must be installed to lock flatrack to trailer for rail transport. Failure to use locking pins to lock flatrack to trailer could cause severe injury or death to personnel.

WARNING

Stacking of trailers is done only for Air (C-141, C-5A, C-17 aircraft), Sea (LACV-30 and larger vessels) and Rail (50 in. [1.27 m] high rail car) transport. The stacking of trailers is not to be used for highway transport. Use of this procedure for highway transport may cause damage to equipment and serious injury or death to personnel.

WARNING

Trailer stacking procedure must be done with both trailers on a level, stable surface or serious injury or death to personnel could result.

WARNING

Trailer weighs 16,500 lbs (7,491 kg). Attach suitable lifting device to prevent possible injury to personnel.

WARNING

All personnel must stay clear of trailers while lifting is in progress. Failure to stay clear of trailers while lifting could cause serious injury or death to personnel.

WARNING

Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

WARNING

Allow adhesives to dry completely prior to soldering. Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

WARNING

Axle assembly weighs 1,565 lbs (710 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

When aligning axle, do not remove nuts in the following step. Failure to comply will result in axle falling and possible injury or death to personnel.

WARNING

The suspension hanger assembly weighs 270 lbs (122 kg). Attach a suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Keep hands and fingers out of spring pin hole or injury to personnel may result.

WARNING

Drawbar shaft weighs 187 lbs (85 kg). Attach a suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Spring weighs 163 lbs (74 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

WARNING

Rear of the trailer weighs approximately 8,000 lbs (3,632 kg). Attach suitable lifting device prior to lifting or lowering frame to prevent possible injury or death to personnel.

WARNING

Spring assembly weighs approximately 240 lbs (109 kg). Attach a suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Be sure to read the instructions on the use of the brake turning equipment in your shop to prevent possible injury or death to personnel.

WARNING

Turntable and bearing weighs 840 lbs (381 kg). Attach a suitable lifting device prior to removal or installation to prevent possible injury to personnel.

WARNING

Unsafe torching practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to use a torch. Protective clothing and goggles must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby.

WARNING

Drawbar should be in lowered position when removing locking pin. Failure to comply may result in injury to personnel.

WARNING

Always completely deflate tire by removing valve core from valve stem before attempting demounting operation. After air has finished exhausting from valve stem, carefully run a piece of wire through valve stem to ensure it is not plugged and tire is completely deflated. Failure to comply may result in injury to personnel.

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.

WARNING

Turntable bearing weighs 135 lbs (61 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

WARNING

If spare tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, attach inflator gage to valve stem. Inflator gage must not be hooked up to air hose. Press down inflator gage handle until all air pressure has been exhausted. Stand out of the trajectory area or personal injury or death may result.

WARNING

Tire air pressure must be checked properly or serious injury or death may result.

WARNING

Never inflate a tire without checking to ensure that the side ring is still properly seated and the lock ring is properly seated in the lock ring groove. Ensure that the side ring, lock ring and lock ring groove are not damaged. The side ring and lock ring may blow off during inflation/deflation resulting in injury or death to personnel.

WARNING

Improperly seated lock rings and side rings may blow off during inflation. Never attempt to seat a lock ring or side ring during or after inflation. Serious injury or death may result.

WARNING

When inflating tires mounted on the trailer, all personnel must remain out of the trajectory of the side ring and lock ring as shown by the areas indicated. Failure to follow proper procedures may result in serious injury or death to personnel.

WARNING

If the tire has been driven on when underinflated or overinflated or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, attach inflator gage to valve stem. Inflator gage must not be hooked up to air hose. Press down inflator gage handle until all air pressure has been exhausted. Stand out of the trajectory area or personal injury or death may result.

WARNING

If tire has been driven on underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, remove the valve core from the valve stem and stand out of the trajectory area or personal injury or death may result.

WARNING

Hold end of air hose when disconnecting from quick-disconnect coupling. Air hose is under pressure and can fly out at fast rate of speed causing injury to personnel.

WARNING

Wheel/tire must be inflated in a safety cage or personal injury or death may result.

WARNING

Failure to comply with tire air pressure procedures may result in faulty positioning of the tire and/or rim parts, and cause the assembly to burst with explosive force, sufficient to cause serious physical injury or death. Never mount or use damaged tires or rims.

WARNING

When a wheel/tire is in a restraining device, do not rest or lean any part of body or equipment on or against the restraining device, or injury or death could result.

WARNING

No attempt shall be made to correct the seating of side and lock rings by hammering, striking or forcing the components while the tire is pressurized, or damage, injury or death may result.

WARNING

Cracked, broken, bent or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated or damage, injury or death may result.

WARNING

Whenever multi-piece rim wheels are being handled, personnel shall stay out of the trajectory unless the supervisor can demonstrate that performance of the servicing makes the personnel's presence in the trajectory necessary or damage, injury or death may result.

WARNING

No heat shall be applied to a multi-piece wheel or wheel component or damage, injury or death may result.

WARNING

Do not inflate above 5 psi (34 kPa) or personnel injury or death may result.

WARNING

If tire has been run flat, or is overinflated or underinflated when tire pressure is measured and operating terrain is compared to the appropriate table, or wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6, and remove the tire from the axle. Failure to follow these procedures may result in serious personal injury or death.

WARNING

Spare tire weighs 425 lbs (193 kg). Keep all personnel clear from under spare tire. Failure to comply may result in serious injury to personnel.

WARNING

Before checking tire pressure, perform Steps (2) through (10) of Para 3-6 to check tire pressure properly, or pressure readings will be inaccurate and injury or death may result.

WARNING

If the tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated by removing the inflator gage from the air hose and pressing down handle until all air pressure has been exhausted from tire. Stand out of the trajectory area or personal injury may result.

WARNING

If the tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated (Para 3-6). To deflate the tire, remove the valve core from the valve stem and stand out of the trajectory area before the wheel is removed from the trailer or personal injury may result.

WARNING

High air pressure may be released from valve stem when valve core is removed. Stay clear of valve stem after core is removed. Ensure all personnel wear suitable eye protection. Failure to comply may result in serious injury to personnel.

WARNING

Lock ring is under tension. If lock ring breaks loose it could cause injury to personnel. Keep hands and fingers away from lock ring when removing.

WARNING

Wheel/tire assembly weighs 425 lbs (193 kg). Use suitable lifting device to lift wheel/tire assembly and prevent possible injury to personnel.

WARNING

Wheel weighs 110 lbs (50 kg). Use suitable lifting device to lift wheel assembly and prevent possible injury to personnel.

WARNING

When lock ring snaps into position it could pinch hands and fingers. Do not allow hands or fingers to get between lock ring and lock ring groove when installing lock ring or injury to personnel may result.

WARNING

When installing lock ring, ensure the bulge is facing up or lock ring could unseat causing serious injury to personnel.

WARNING

Lock ring must be fully seated in lock ring groove around the entire circumference or lock ring could unseat during tire inflation causing serious injury to personnel.

WARNING

Failure to place wheel/wire assembly in safety cage prior to initial inflation could result in serious injury or death to personnel.

WARNING

When inflating tires, always use an inflation hose with an in-line gage and clip-on chuck. The gage and valve must be mounted a minimum of ten feet (3 m) away from air chuck.

WARNING

All personnel must remain a minimum of ten feet (3 m) away from tire and not in possible path of lock ring or side ring. Failure to comply may result in serious injury or death.

WARNING

Improperly seated lock rings or side rings may blow off at any time. Never attempt to seat a lock ring or side ring during or after inflation. Failure to comply may result in serious injury or death to personnel.

WARNING

Never inflate tires over 40 psi (276 kPa) to seat tire beads. If beads do not seat, deflate, demount, and check tire/rim parts. Relubricate and remount tires. Serious injury or death could result if these procedures are not followed.

WARNING

Ensure that tire and rim parts are in proper position and that tire lower sidewall circumferential groove to the top of the rim flange does not vary more than 1/8 in. (3.2 mm), and that each bead does not vary more than 1/8 in. (3.2 mm) around that circumference or from one bead to the other. Measurements exceeding 1/8 in. (3.2 mm) require unseating tire beads, relubricating tire beads and remounting tire, or serious injury or death may result when tire is removed from safety cage.

WARNING

When returning axle to the ground, ensure personnel are out of the trajectory as shown by the area indicated. Failure to comply may result in serious injury or death to personnel.

WARNING

Use of excessive amount of grease when lubricating wheel bearings may result in grease contacting brake linings and cause brake failure. Possible injury or death to personnel and damage to equipment may result.

LIST OF EFFECTIVE PAGES Insert latest changed pages. Destroy superseded pages.

NOTE

The portion of the text effected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by shadowed or screened areas, or by miniature pointing hands.

Dates of issue for original and changed pages are:

Original ..... 0 ... 30 May 1994 Revision 1 0 1 August 1999

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 926 CONSISTING OF THE FOLLOWING:

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A	0	B-1 - B-9	0		
B Blank	0	B-10 Blank	0		
i - iii	0	C-1 - C-3	0		
iv Blank	0	C-4 Blank	0		
1-1 - 1-13	0	D-1	0		
1-14 Blank	0	D-2 Blank	0		
2-1 - 2-68	0	E-1 - E-4	0		
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4-1 - 4-119	0	H-1 - H-7	0		
4-120 Blank	0	H-8 Blank	0		
4-21 - 4-203	0	I-1 - I-4	0		
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4-205 - 4-249	0	J-4 Blank	0		
4-250 Blank	0	INDEX-1 - INDEX-3	0		
4-251 - 4-319	0	INDEX-4 Blank	0		
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4-321 - 4-325	0				
4-326 Blank	0				
4-327 - 4-609	0				
4-610 Blank	0				
5-1 - 5-98	0				

* Zero In This Column Indicates An Original Page.

TECHNICAL MANUAL

No. 9-2330-385-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 01 August 1999

OPERATOR'S, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

FOR

PALLETIZED LOAD SYSTEM TRAILER (PLST)

Current as of 01 August 1999

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is http://aeps.ria.army.mil. If you need a password, scroll down and click on "ACCESS REQUEST FORM." The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or email your letter, DA Form 2028, or DA Form 2028-2, located at the back of this manual direct to: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-AC-NML, Rock Island, IL 61299-7630. The email address is amsta-ac-nml@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726. A reply will be furnished to you.

TABLE OF CONTENTS

* This manual supersedes TM 9-2330-385-14, 30 May 1994.

TABLE OF CONTENTS (CONT)

HOW TO USE THIS MANUAL

This manual is designed to help operate and maintain the Model M1076 PLS trailer, NSN 2330-01-303-5197. Listed below are some of the features included in this manual to help locate and use the needed information:

- A front cover Table of Contents is provided for quick reference to chapters and sections that will be used often.
- Warning, caution and note headings, subject headings and other essential information are printed in bold type making them easier to see.
- In addition to text, there are exploded-view illustrations showing how to take a component off and put it back on. Cleaning and inspection criteria are also included where necessary.
- Chapters 1 and 2 are directed at the operator of the trailer. These chapters include an overall description and instructions for operation, as well as operator PMCS.
- Chapter 3 covers Operator Maintenance.
- Chapter 4 covers Unit Maintenance, including PMCS.
- Chapter 5 covers Direct Support Maintenance.
- Chapter 6 covers General Support Maintenance.
- Appendix A covers the References used in this manual.
- Appendix B covers the Maintenance Allocation Chart (MAC).
- Appendix C covers the Basic Issue Items (BII) list.
- Appendix D covers the Additional Authorized List (AAL) of items authorized for the trailer.
- Appendix E covers the Expendable and Durable Items List for the trailer.
- Appendix F lists the Manufactured Items for the trailer.
- Appendix G lists the Stowage and Sign Guides for the trailer.
- Appendix H lists common torque limits for the trailer.
- Appendix I lists the Mandatory Replacement Parts.
- Appendix J is the Tool Identification List.
- An Alphabetical Index is provided to help locate items in the text.

Follow these guidelines when using this manual:

- The operator must read through this manual and become familiar with the contents before attempting to operate the trailer.
- Read all WARNINGS and CAUTIONS before performing any procedure.

CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. Type of Manual. Operator's, Unit, Direct Support and General Support Maintenance Manual.

b. Model Number and Equipment Name. Palletized Load System Trailer (PLST), M1076, NSN 2330-01-303-5197, (Figures 1-1 and 1-2).

c. Purpose of Equipment. The Palletized Load System Trailer, hereafter referred to as the trailer, is specifically designed to carry loads behind the Palletized Load System (PLS) M1074 and M1075, in conjunction with the Flatrack M1077. With some minor preparation, the trailer may be towed behind other Army trucks.

1-2. MAINTENANCE FORMS AND RECORDS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

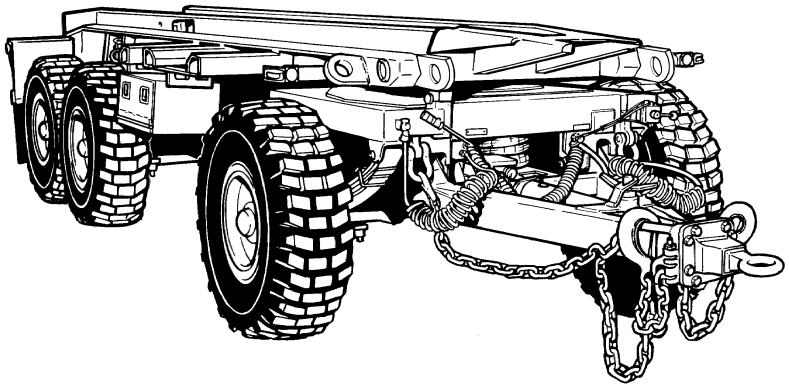


Figure 1-1. Palletized Load System Trailer, M1076, Right Front View

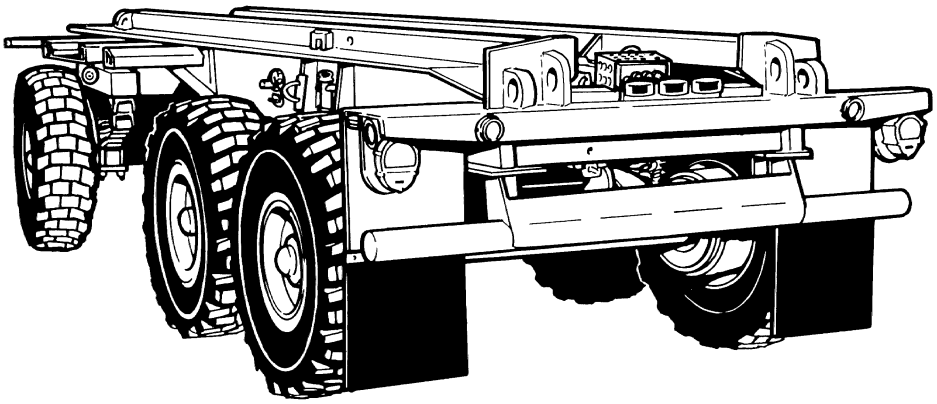


Figure 1-2. Palletized Load System Trailer, M1076, Left Rear View

1-3. CORROSION PREVENTION AND CONTROL (CPC).

The trailer has a total service life of ten years which allows for extended periods of operation in a corrosive environment. A corrosive environment includes exposure to high humidity, salt spray, road-deicing chemicals, gravel damage, and atmospheric contamination. No action beyond normal washing and repair of damaged areas is necessary to control corrosion. To prevent moisture accumulation, drain holes are provided on structural and sheet metal areas where necessary, and the stowage box is provided with seals and baffled drains.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Command decision, according to the tactical situation, will determine when the destruction of the trailer will be accomplished. A destruction plan will be prepared by the using organization unless one has been prepared by a higher authority. For general destruction procedures for this equipment, refer to TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to prevent Enemy Use (U.S. Army Tank-Automotive Command).

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your trailer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, U. S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E-MPA, Warren, Michigan 48397-5000. A reply will be furnished to you.

1-6. PREPARATION FOR STORAGE OR SHIPMENT.

Refer to Chapter 4, Section VI for Unit preparation for storage or shipment. Refer to Chapter 5, Section IV for Direct Support preparation for storage or shipment.

1-7. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC).

If there are any Quality Assurance/Quality Control problems with the trailer, put the problem on a SF 368 Quality Deficiency Report and mail it direct to: Commander, U. S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E-MPA, Warren, Michigan 48397-5000. A reply will be furnished to you.

1-8. EQUIPMENT CONFIGURATION.

At time of publication, there is only one model of the trailer, M1076. It should be noted however that variations in general appearance of the trailer may be due to use of the side rail kits, extended drawbar/light bar kits or International Standards Organization (ISO) container on the flatrack.

1-9. SAFETY CARE AND HANDLING.

The following are significant hazards and safety recommendations.

a. Loading Trailer With PLS Load Handling System (LHS). This is a normal operating condition. Follow all procedures and safety guidelines in TM 9-2320-364-10, and Chapter 2 of this manual.

b. Connecting/Disconnecting Trailer. This is a normal operating condition. Do not go between trailer and towing truck until engine is shut down on towing truck, brakes are set, and wheels chocked on both truck and trailer.

1-10. WARRANTY INFORMATION.

Refer to trailer Warranty Technical Bulletin, TB 9-2320-364-15, for complete warranty information covering the trailer. Warranty starts on the date found in block 23, DA Form 2408-9, in logbook. Report all defects in material or workmanship to the supervisor, who will take appropriate action.

1-11. NOMENCLATURE CROSS REFERENCE LIST.

This listing includes nomenclature cross-reference list.

Common Name	Official Nomenclature
Gladhand	Quick disconnect air coupling
Jackstand	Trestle
Towing pintle	Self-guiding coupler
Towing eye	Drawbar lunette

1-12. LIST OF ABBREVIATIONS.

The following is a list of abbreviations used in this manual.

AAL ..... Additional Authorization List
BII ..... Basic Issue Item
CAGE ..... Commercial and Government Entity
CCW ..... Counterclockwise
COEI ..... Components of End Item
DA ..... Department of the Army
EIR ..... Equipment Improvement Recommendation
FR ..... Flatrack
ft ..... Foot
ISO ..... International Standards Organization
JTA ..... Joint Tables of Allowances
kg ..... Kilogram
km/h ..... Kilometer Per Hour
kPa ..... Kilopascal
lb ..... Pound
lb-ft ..... Pound-Foot
lb-in ..... Pound-Inch
LHS ..... Load Handling System
m ..... Meter
MAC ..... Maintenance Allocation Chart
mm ..... Millimeter
mph ..... Miles Per Hour
NSN ..... National Stock Number
N·m ..... Newton Meter
PLS ..... Palletized Load System
PLST ..... Palletized Load System Trailer
PMCS ..... Preventive Maintenance Checks and Services

psi ..... Pound-Force Per Square Inch
QA/QC ..... Quality Assurance/Quality Control
QTY ..... Quantity
RPSTL ..... Repair Parts and Special Tools List
SAE ..... Society of Automotive Engineers
TAMMS ..... The Army Maintenance Management System
TDA ..... Tables of Distribution and Allowance
TM ..... Technical Manual
U/I ..... Unit Of Issue
U/M ..... Unit Of Measure

1-13. GLOSSARY.

The following is a glossary of words used in this manual.

Slack adjuster ..... A device that automatically adjusts brakes as they develop wear.

Load lock ..... A device designed to lock the flatrack in place on the trailer.

Drawbar ..... Attaches truck to trailer and allows operator to adjust length of trailer to comply with highway regulations.

Brake power regulating valve ..... A device designed to adjust brake power depending on the amount of load being carried on trailer.

Section II. EQUIPMENT DESCRIPTION

1-14. EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES.

a. Purpose of the Trailer. The trailer carries a flatrack payload of up to 33,000 lbs (14,969 kg). The flatrack is loaded onto the trailer using the truck Load Handling System (LHS).

b. Capabilities and Features.

- Three axles and six heavy duty tires.
- Adjustable drawbar.
- High maneuverability.
- Capable of towing speeds up to 55 mph (88.5 km/h).
- On board air system for operation of air brakes, load locks, and drawbar assist.
- 12 volt and 24 volt electrical hook-ups to the tow vehicle.

1-15. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

Refer to Figures 1-3 and 1-4 for location of the following items:

a. Drawbar (1). Provides a simple way to pull and guide the trailer.

b. 12 Volt/24 Volt Vehicular Lighting Connectors (2). 12 volt and 24 volt adapter connectors provide connectors for the truck 12 volt/24 volt system to be hooked to the trailer.

c. Safety Chains (3). Provides a safety backup to drawbar.

d. Air Lines (4). Provides a means to link air system of truck to trailer.

e. Turntable (5). Provides front axle steering.

f. Stowage Box (6). Provides a place to store trailer Basic Issue Items.

g. Tires (7). Provides excellent cross-country mobility.

h. Frame (8). Provides a main support for loads and flatrack.

i. Lifting Eyes (9). Provides means to lift trailer.

j. Guide Rails (10). Provides guides for flatrack during loading and unloading.

k. Data Plates (11). Provides information on operation and technical details of the trailer.

l. Drawbar Extension (12). (If equipped.) Provides a way to pull and guide trailer during Combat Bridge Transport missions.

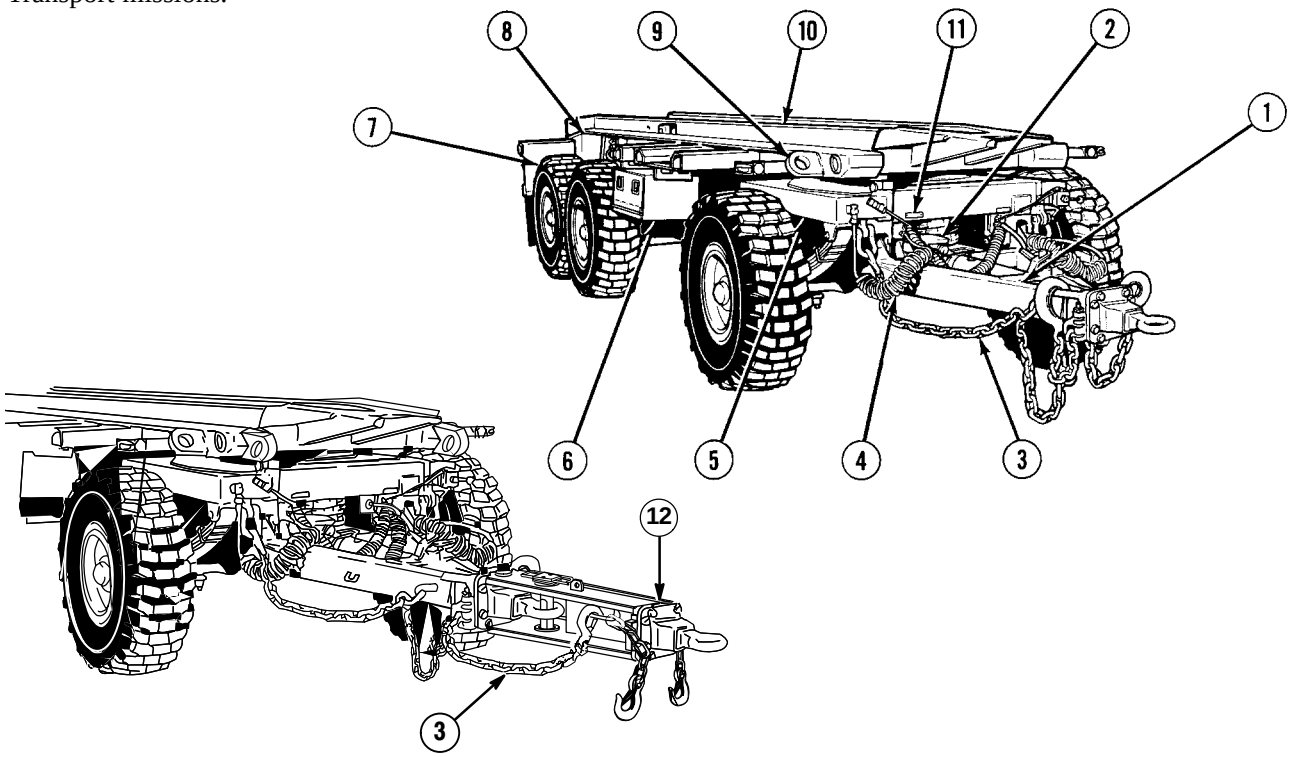


Figure 1-3. Location of Major Components, Right Front View

m. Rear Combination Lights (13). Provides stop, turn, and blackout lights.

n. Reflectors (14). Provides safety marking.

o. Parking Brakes and Service Brakes (15). Provides stopping capability and holds the trailer in place when parked.

p. Spare Tire (16). Provides tire change capability during mission.

q. Loading Struts (17). Provides trailer stacking capability.

r. Side Marker Lights (18). Provides safety marking to sides.

s. Load Locks (19). Provides for locking of flatracks to trailer frame.

t. Rear Marker Lights (20). Provides safety marking to the rear.

u. Light Bar Electrical Connector (21). (If equipped.) Provides way to provide power to light bar used during Combat Bridge Transport missions.

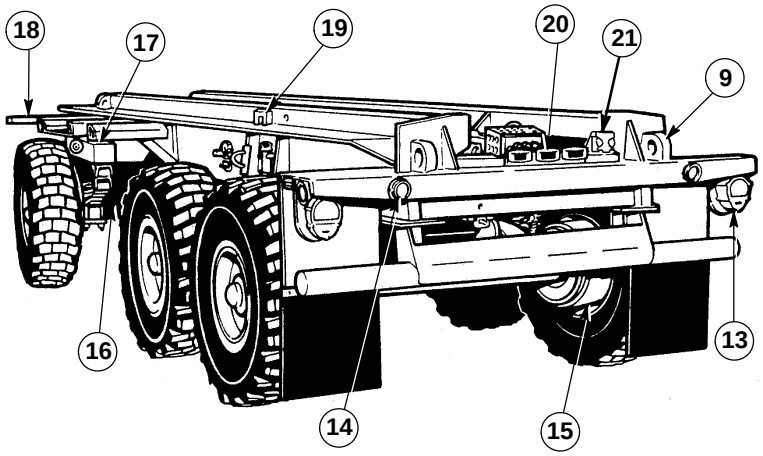


Figure 1-4. Location of Major Components, Left Rear View

1-16. EQUIPMENT DATA.

Refer to Tables 1-1 through 1-10 for specific equipment data and Figure 1-5 for a diagram showing the center of gravity for the trailer.

Table 1-1. Dimensions

Item	Specification
Overall length (excluding drawbar)	269.8 in. (685 cm)
Drawbar length	
Fully extended	88.9 in. (226 cm)
Fully extended (equipped with drawbar extension)	124.9 in. (317.25 cm)
Fully retracted	64.9 in. (165 cm)
Overall width	96 in. (244 cm)
Overall height (approximate)	60 in. (152 cm)
Deck height	
Unloaded (approximate)	54 in. (137 cm)
Loaded (approximate)	51 in. (130 cm)
Distance between front and second axle	124.7 in. (317 cm)
Distance between second and third axle	50.6 in. (129 cm)
Front and rear track	80.5 in. (204 cm)
Ground clearance under axles	18.0 in. (46 cm)
Wheel base ground clearance under spare wheel	22.8 in. (58 cm)
Main frame length	226.4 in. (575 cm)
Curb weight (includes flatrack and all kits)	16,500 lb (7,491 kg)
Curb weight (includes flatrack, all kits and drawbar extension)	16,925 lb (7,677 kg)
Gross Vehicle Weight (GVW)	49,500 lb (22,473 kg)
Gross Vehicle Weight (GVW) with drawbar extension	49,925 lb (22,646 kg)
Nominal payload with flatrack	33,000 lb (14,982 kg)
Maximum payload without flatrack and sideboard kit	36,600 lb (16,616 kg)

Table 1-2. Performance

Item	Specification
Maximum speed	55 mph (88 km/h)
Steering angle of turntable	90 degrees
Side slope with 20 foot ISO container	30 percent
Fording depth	48 in. (122 cm)

Table 1-3. Electrical System

Item	Specification
Voltage	12/24 dual voltage

Table 1-4. Wheels

Item	Specification
Type	Three piece, split style
Quantity	Six
Trailer Spare Wheel Quantity	One
Rim Size	20 by 10
Stud Quantity Per Wheel	Ten

Table 1-5. Tires

Item	Specification
Tires	Tubeless
Quantity	Six
Spare Quantity	One
Tread Type	All terrain, non-directional
Size	15.5/80R20 PXL T LRJ

Table 1-6. Tire Pressure (Cold)

Driving Condition	Front Axle	Rear Tandem
Highway	87 psi (600 kPa)	80 psi (552 kPa)
Cross Country	51 psi (352 kPa)	46 psi (317 kPa)
Mud, Sand, Snow	32 psi (221 kPa)	29 psi (200 kPa)

Table 1-7. Axles

Item	Specification
Axle No. 1 Weight Fully Loaded	19,020 lb (8,635 kg)
Axle No. 1 Weight Curb	7,040 lb (3,196 kg)
Axle No. 2 and 3 Weight Fully Loaded	30,480 lb (13,838 kg)
Axle No. 2 and 3 Weight Curb	9,460 lb (4,295 kg)

1-16. EQUIPMENT DATA (CONT).

Table 1-8. Brake System

Item	Specification
Actuation Number of Brake Chambers	Air Six

Table 1-9. Drawbar

Item	Specification
Drawbar Adjustment Operation	 Manual, two position Air assist

Table 1-10. Load Classification Chart

Trailer Condition	Load Class Number
Unloaded Loaded	7 24

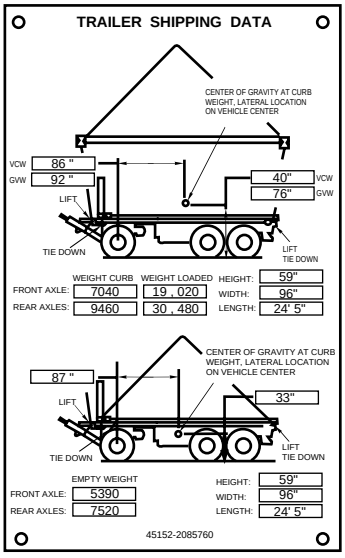
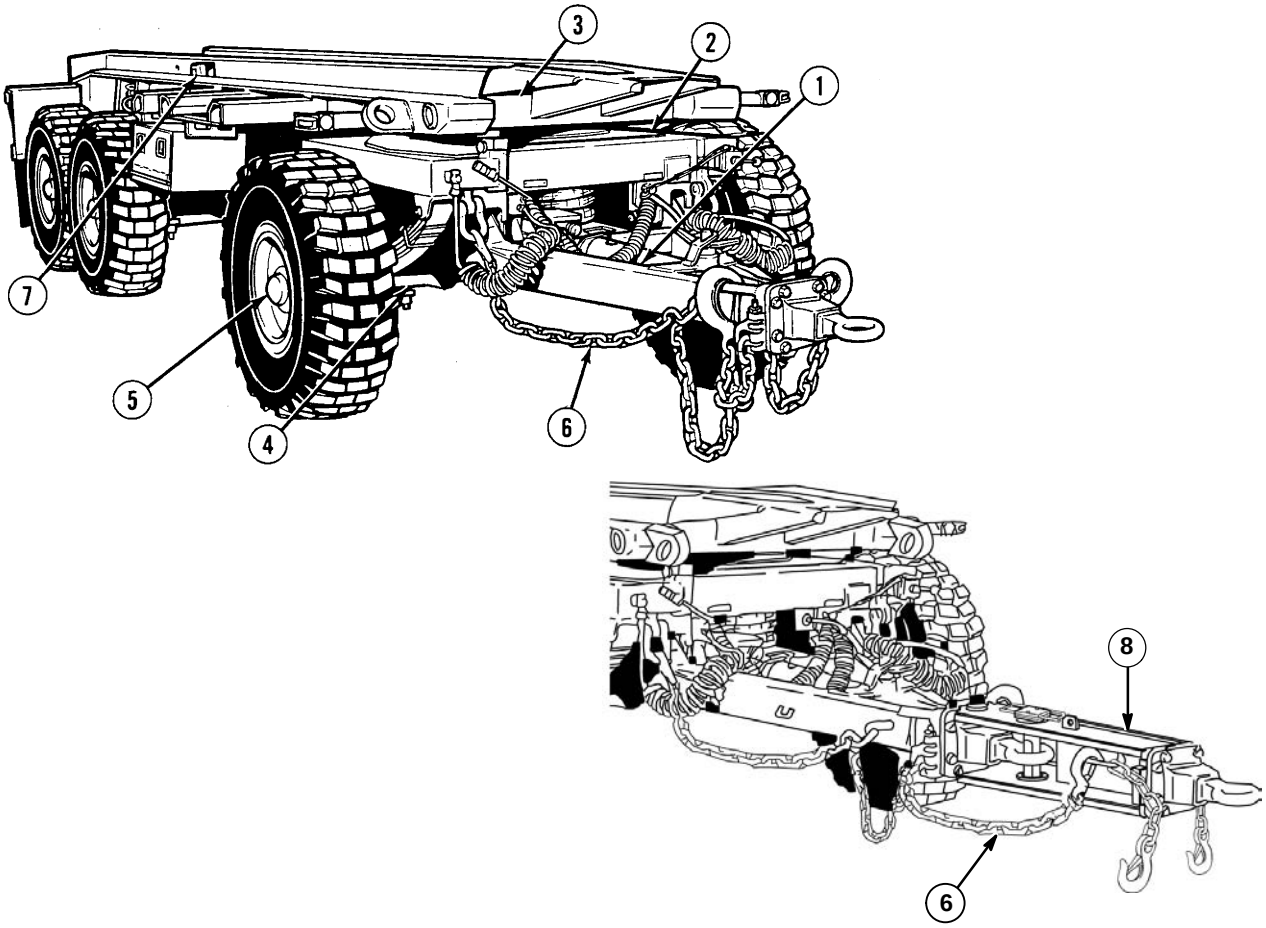


Figure 1-5. Center of Gravity

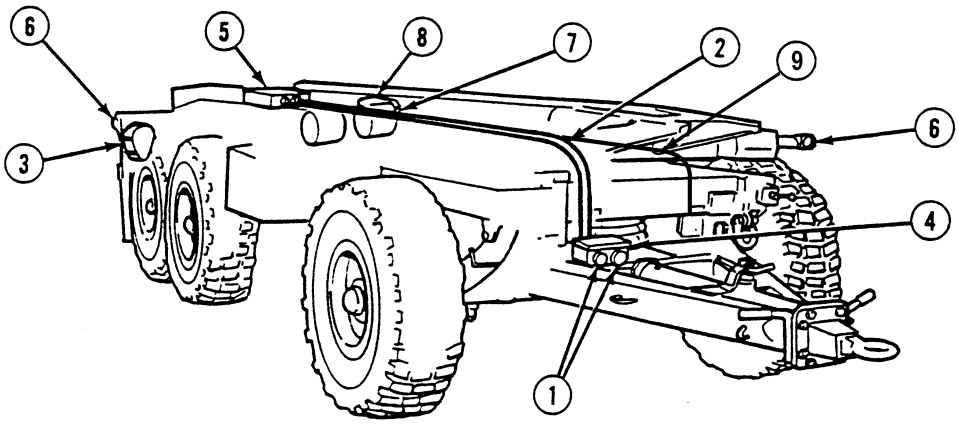
Section III. PRINCIPLES OF OPERATION

1-17. MECHANICAL SYSTEM.



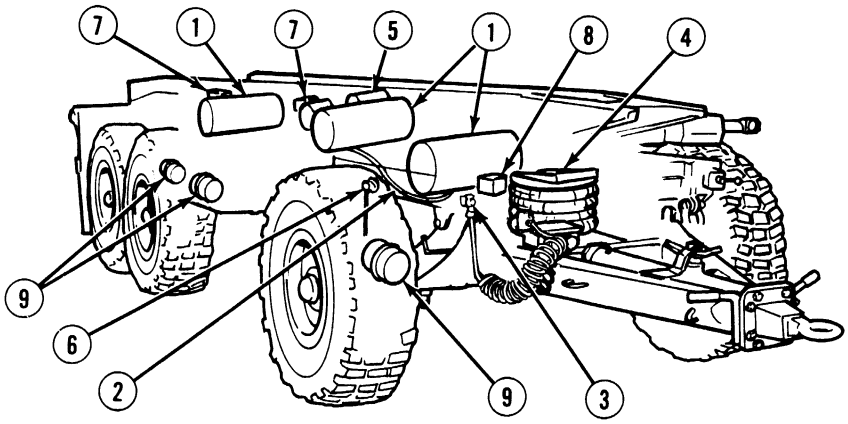
Key	Item	Description
1	Drawbar	Provides a means to tow and steer the trailer. Provides a way to adjust the trailer length.
2	Turntable	Allows front axle to turn on axis to provide steering.
3	Main Frame	Main frame provides a mounting place for rest of the systems.
4	Axles	Three spring mounted axles provide a cushioned ride for loads.
5	Brakes	Spring operated parking brakes provide safe parking without air pressure. During operation, service brakes provide braking power.
6	Safety Chains	Safety chains on the drawbar attach to the tow vehicle as a safety back up.
7	Load Locks	Load locks provide a means to lock flatrack to trailer for transport.
8	Drawbar Extension (If equipped)	Provides a means to tow and steer the trailer during Combat Bridge Transport missions.

1-18. ELECTRICAL SYSTEM.



Key	Item	Description
1	Intervehicular Power Hookups	The 12 and 24 volt power hookups allow the operator to hook up the trailer to the towing vehicle in either 12 or 24 volt mode.
2	Wire Harnesses	Provide electrical power between electrical components of trailer.
3	Rear Combination Light	Provides blackout marker, stop and signaling capability.
4	Front Junction Box	Provides a way of routing electrical harnesses and connecting trailer intervehicular wiring harnesses to prime mover.
5	Rear Junction Box	Provides a way of routing electrical harnesses to the rear of trailer.
6	Front and Rear Marker Lights	Provide safety side and rear markers for the trailer and allows operator to observe trailer during limited visibility.
7	Load Lock Sensor	Sends signal to PLS truck indicating if load locks are locked.
8	Load Lock Sensor Power Cable	Connects trailer load lock sensor to truck.
9	Light Bar Power Wire Harness (If equipped)	Provides 24 vdc electrical power between electrical components of trailer and external light bar when equipped with drawbar extension.

1-19. AIR SYSTEM.



Key	Item	Description
1	Air Reservoirs	Provide air pressure storage on trailer.
2	Air Lines	Route air pressure between air components of trailer.
3	Air Hookups (Gladhands)	Provide a way to hook trailer air system to truck.
4	Drawbar Airbag	Provides assistance to raise or lower drawbar.
5	Airchambers	Provide brake activation/deactivation.
6	Load Sensing Valve	Regulates braking power according to load.
7	Relay Valves	Provide brake activation/deactivation.
8	Multifunction Valve	Distributes correct amount of air pressure between components.
9	Brakes	Provide stopping capability.

CHAPTER 2

OPERATING INSTRUCTION

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. LOCATION AND USE OF CONTROLS AND INDICATORS.

Know the location and proper use of every control and indicator before operating the trailer. Use this section to learn how each control and indicator is to be used. Separate illustrations, with keys, are provided in this section.

2-1. LOCATION AND USE OF CONTROLS AND INDICATORS (CONT).

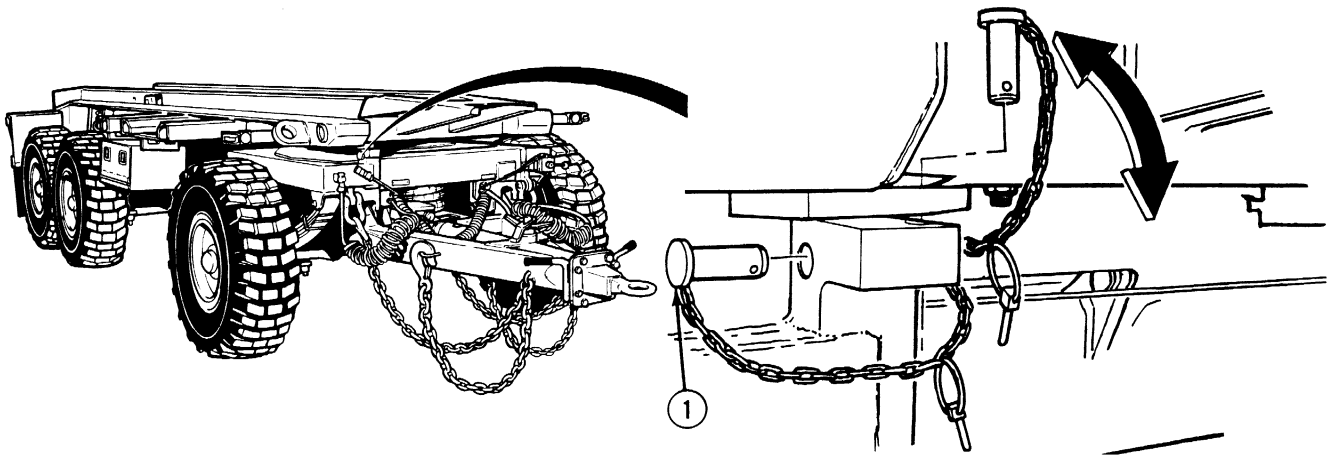


Figure 2-1. Turntable Controls

Key	Control or Indicator	Function
1	Turntable locking pin	Locks the turntable in place for backing operations.

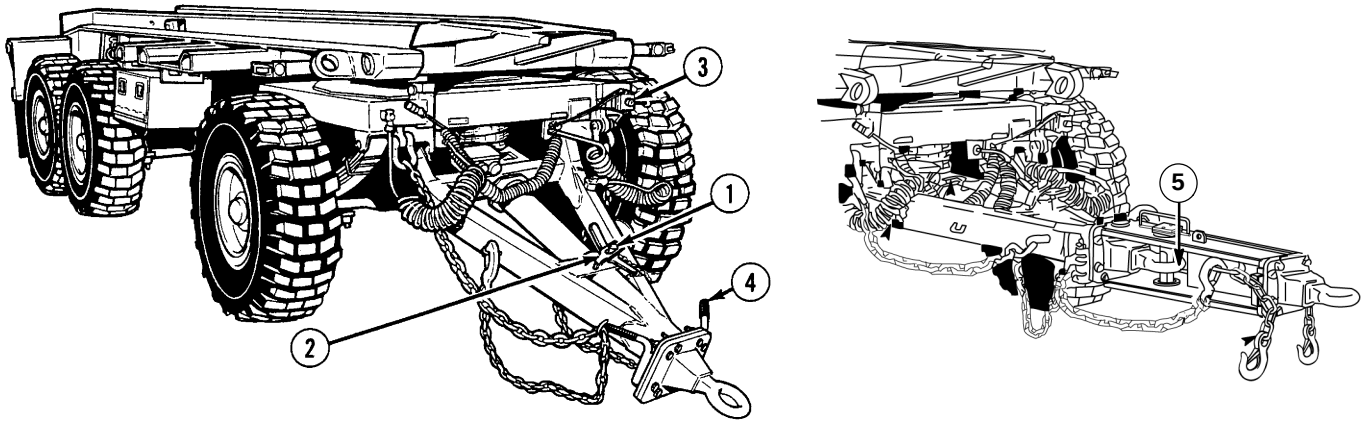


Figure 2-2. Drawbar Controls

Key	Control or Indicator	Function
1	Drawbar Locking Pin	Allows drawbar to be locked in one of two positions.
2	Drawbar Locking Pin Latch	Locks locking pin in position.
3	Air Assist Control Lever	Provides an air assist to raise or lower the drawbar.
4	Drawbar Lifting Handles	Provide means to lift drawbar.
5	D-Ring Assembly	Provides means to secure drawbar extension in forward position.

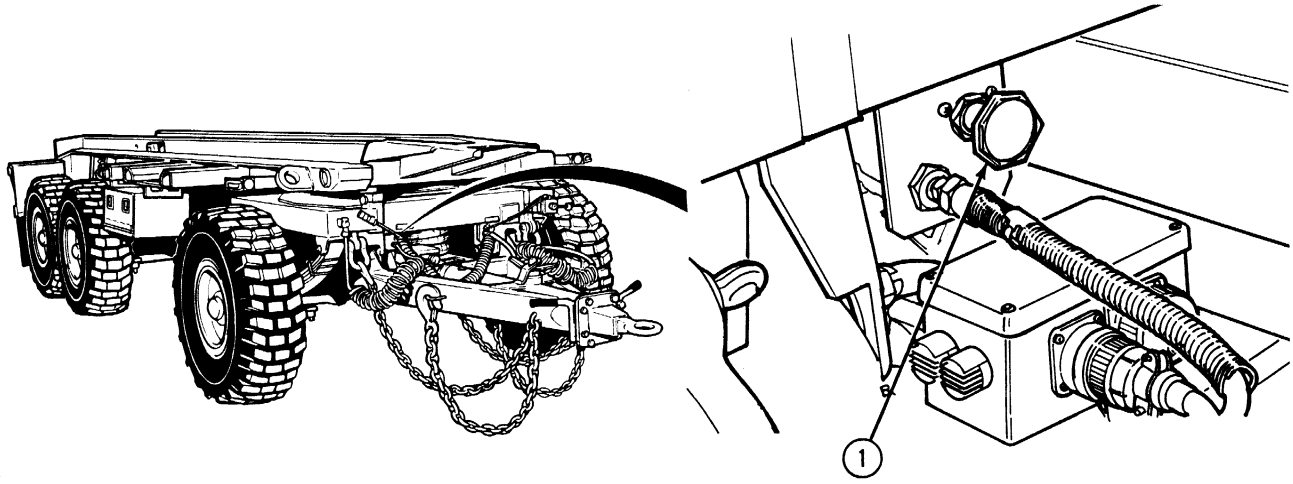


Figure 2-3. Emergency Brake Control

Key	Control or Indicator	Function
1	Emergency/Parking Brake Control	Applies and releases the trailer emergency/parking brakes when trailer is parked or being loaded or unloaded.

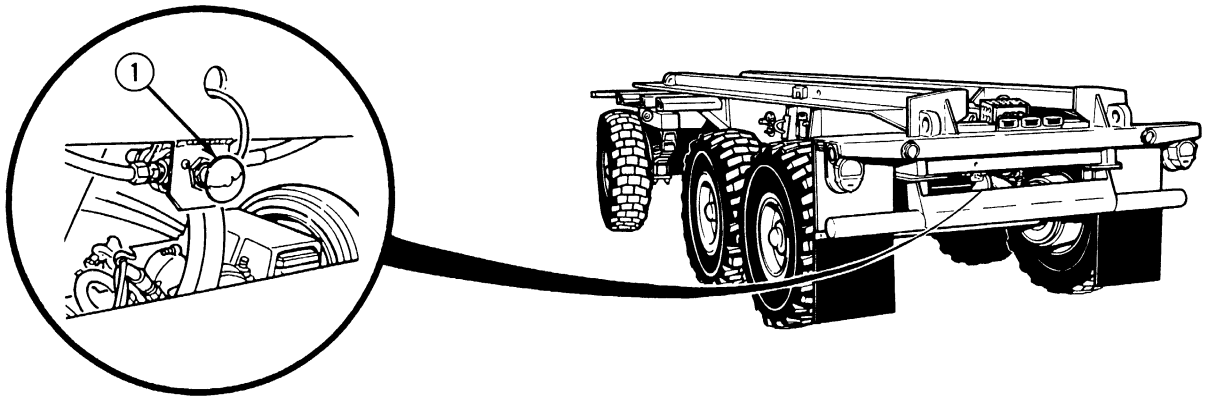


Figure 2-4. Load Lock Control

Key	Control or Indicator	Function
1	Load Lock Control	Pull to lock load, push to unlock load.

2-1. LOCATION AND USE OF CONTROLS AND INDICATORS (CONT).

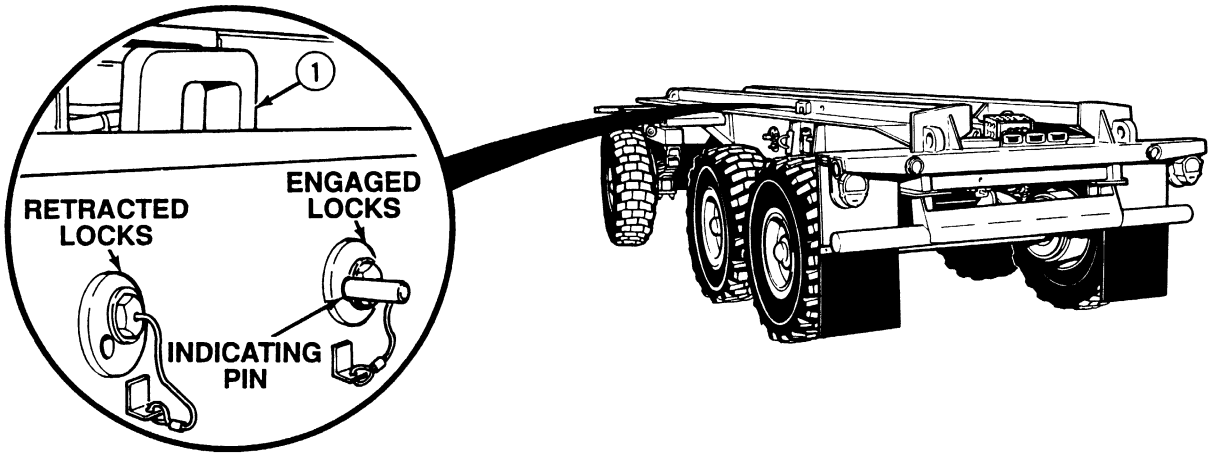


Figure 2-5. Load Lock Indicator

Key	Control or Indicator	Function
1	Load Lock Indicator Pins	Give visual indication if the load locks are locked/unlocked. If pins are retracted, the load locks are unlocked. If the pins are extended (visible), the load locks are locked.

2-2. PLS TRAILER INSTRUMENTS.

The PLS truck has two instruments that aid the driver during trailer operations, these are the Air Pressure Gage and the Load Lock Indicator. Refer to TM 9-2320-364-10 for use of these instruments.

Section II. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-3. GENERAL.

This section contains Operator's Preventive Maintenance Checks and Services (PMCS) requirements for the trailer. The PMCS tables contain checks and services necessary to ensure that the trailer is ready for operation. Using PMCS tables, perform maintenance at specified intervals.

a. General Maintenance Procedures. During PMCS keep the following general maintenance procedures in mind.

(1) *Cleanliness.* Dirt, grease, oil and debris may cause a serious problem. Clean all metal surfaces.

(2) *Bolts, nuts and screws.* Check bolts, nuts and screws for obvious looseness, missing, bent, or broken condition. Look for chipped paint, bare metal, or rust around boltheads. If any part seems loose, tighten it, or have the part repaired or replaced.

(3) *Welds.* Look for loose or chipped paint, rust, or gaps on welds. If a bad weld is found, notify Unit Maintenance.

(4) *Electrical wires and connectors.* Look for cracked or broken insulation, bare wires and loose or broken connectors. Tighten loose connectors and make sure wires are in good shape. If a wire or connector is bad, notify Unit Maintenance.

(5) *Air system components.* Look for worn, damaged or leaking components. Make sure clamps and fittings are tight. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, notify Unit Maintenance.

2-4. PMCS WARNINGS AND CAUTIONS.

Always observe the Warnings and Cautions appearing in your PMCS table. Warnings and cautions appear before applicable procedures. You must observe these warnings and cautions to prevent serious injury to yourself or others, or prevent equipment from being damaged.

2-5. EXPLANATION OF PMCS TABLE ENTRIES.

a. Item Number Column. Items in this column are for reference. When completing DA Form 2404 (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 the checks and services for the intervals listed.

b. Interval Column. This column describes when and how often, the check is to be made. Thus, if a given check is performed before operation, the word Before is opposite the check in the Interval column.

(1) Perform the (Before) CHECKS just before leaving the containment area.

(2) Perform the (During) CHECKS while trailer and/or its component systems are performing the mission.

(3) Perform the (After) CHECKS right after operating the trailer.

(4) Perform the (Weekly) CHECKS once a week.

(5) Perform the (Monthly) CHECKS once a month.

c. Item To Be Inspected Column. The items listed in this column are divided into groups indicating the portion of the equipment of which they are a part, e.g. front, left. Under these groupings a few common words are used to identify the specific item being checked.

d. Procedures Column. This column contains a brief description of the procedure by which the check is performed.

e. Equipment Is Not Fully Mission Capable If: Column. This column contains the criteria that causes the equipment to be classified as NOT READY/NOT AVAILABLE because of inability to perform its primary mission. An entry in this column will identify conditions that may make the equipment not ready/available for readiness reporting purposes.

2-6. SHORTENED MAINTENANCE INTERVALS.

Extreme weather conditions, periods of high use, or combat conditions may dictate that PMCS is performed more often than is required in the PMCS Tables.

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS).

WARNING

Before performing PMCS be sure that the parking brakes are applied. Serious injury or death could result if parking brakes are not applied during PMCS.

Refer to Table 2-1 for Operator's PMCS for the trailer. Figure 2-6 will be of help to complete the PMCS. It shows the general path an operator will follow to complete the PMCS.

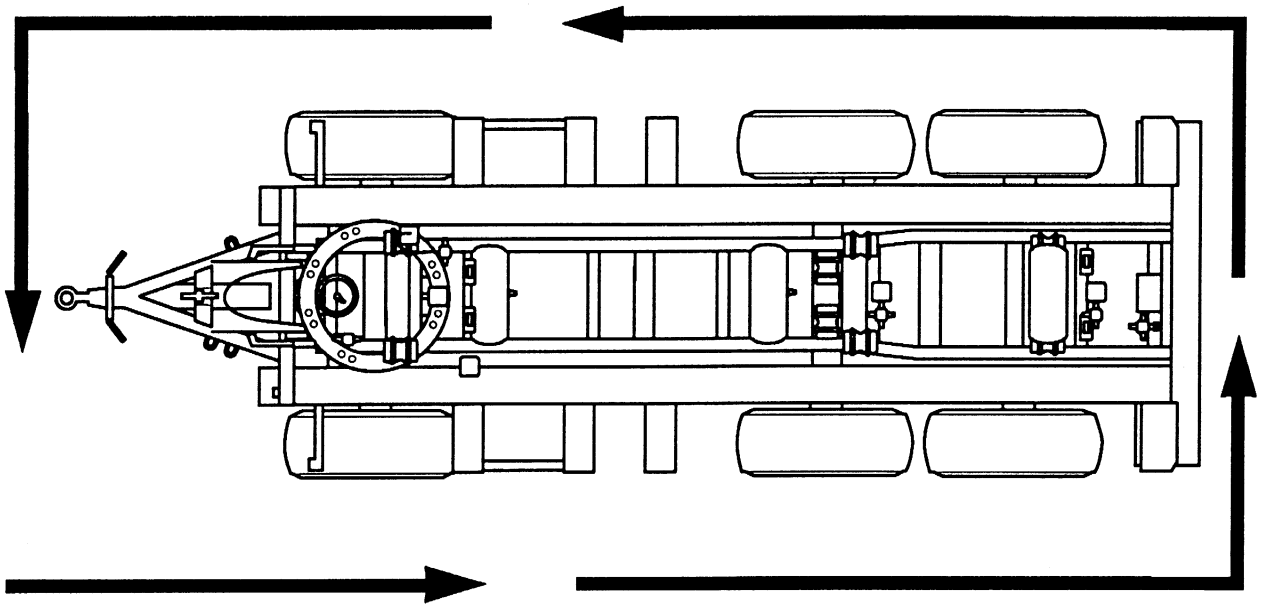
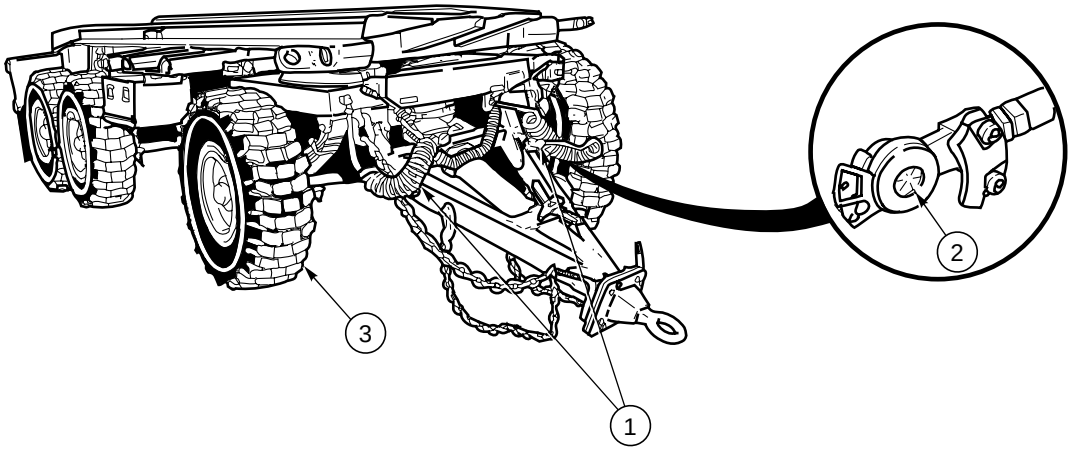


Figure 2-6. PMCS Walkaround

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
1	Before	Air Lines (Connectors to Towing Vehicle)	Visually inspect intervehicular air lines (1) to the towing vehicle for cracks and damaged gladhand seals (2).	Intervehicular cables and gladhands seals are damaged or missing.
			CAUTION • Do not increase engine speed above 1200 RPM or pull trailer more than 2 ft. (61 cm). Failure to comply may result in damage to equipment. • Trailer must be unloaded prior to performing brake test. Failure to comply may result in damage to equipment.	
			NOTE Trailer air system must be fully charged to 120 psi (827 kPa).	
2	Before	Brakes	a. Test trailer service brake system by connecting trailer to towing vehicle (Para 2-9 or Para 2-11). Apply trailer brakes using trailer handbrake control in towing vehicle. Place transmission selector of towing vehicle in drive and pull trailer forward slightly. Observe if trailer tires (3) rotate or skid.	One or more tires rotates.

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (CONT).

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

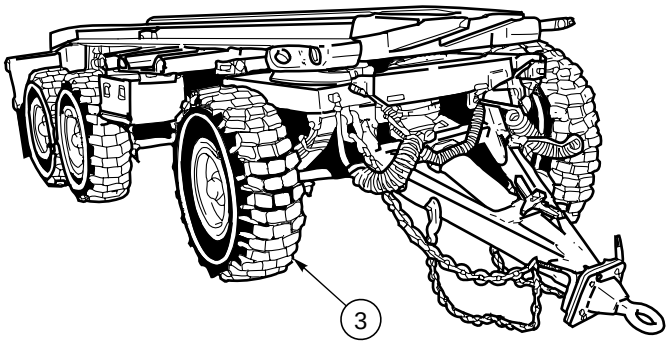
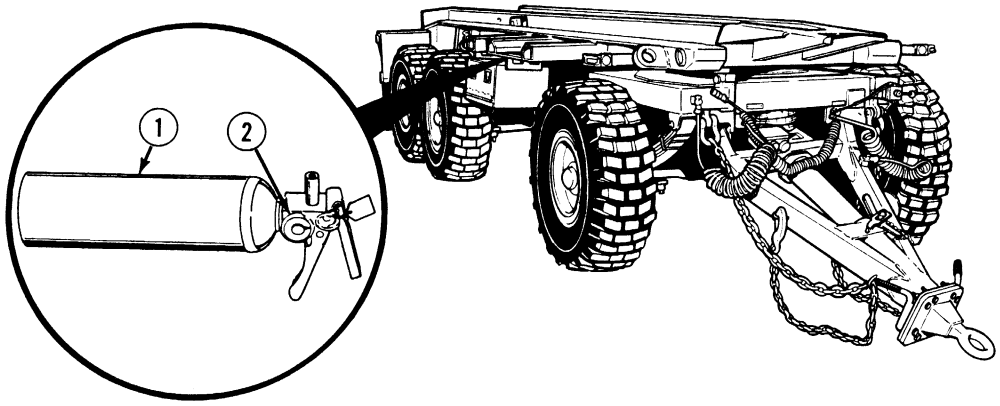
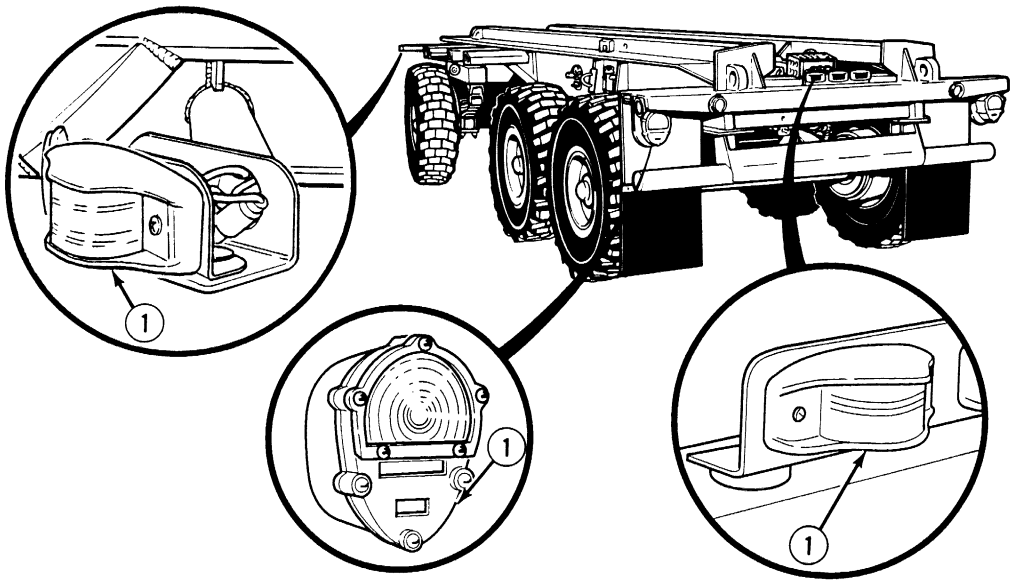
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
2	Before	Brakes - continued	b. Test trailer emergency brake system. Pull out trailer air supply knob on towing vehicle to apply trailer parking/emergency brakes. Place transmission selector of towing vehicle in drive and pull trailer forward slightly. Observe if trailer tires (3) rotate or skid.	One or more tires rotate.

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
3	Before	Fire Extinguisher	Visually inspect for missing, damaged, or loose fire extinguisher (1). Check for proper pressure/seal (2) condition.	
				
			NOTE • Blackout lights will operate only with 24 volt connector. • Checking condition of lights is a safety task that would not be performed under combat conditions, see AR 385-55.	
4	Before	Lights	Operate the truck light switches through all settings and check all trailer lights (1) for proper operation or damage.	

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (CONT).

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

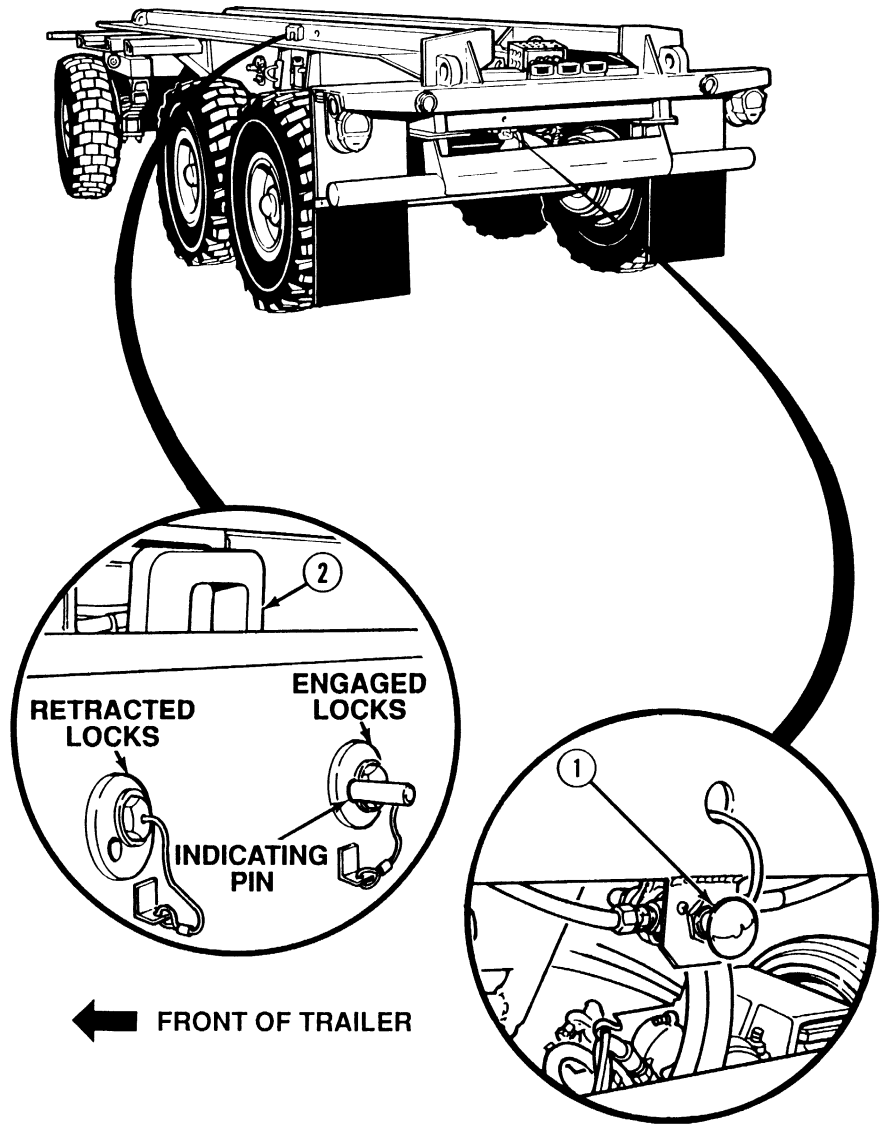
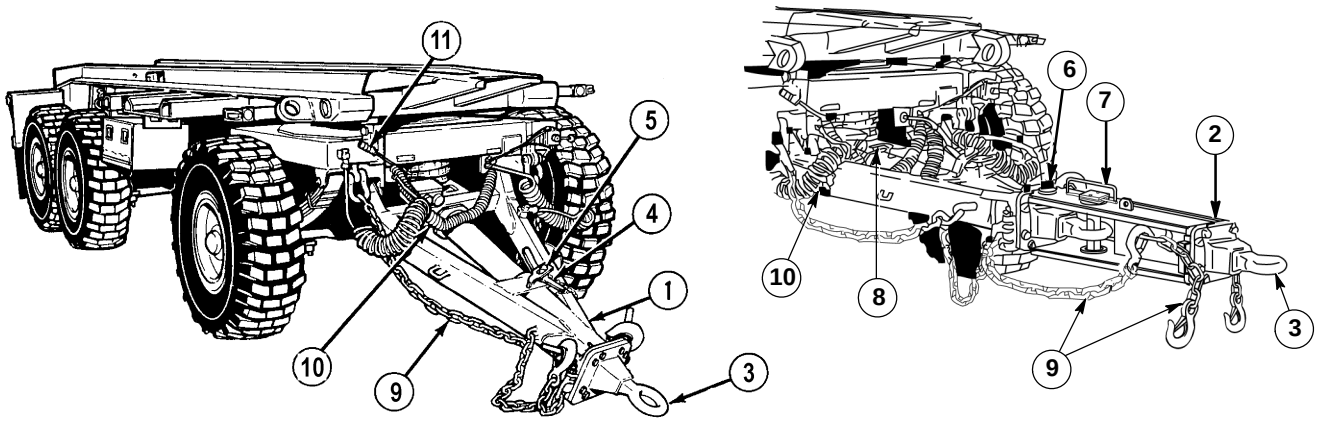
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
5	During	Load Locks	Operate button (1) and extend and retract load locks (2).	One or more load locks will not operate.

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
6	After	Drawbar and Drawbar Extension (If Equipped)	Visually inspect drawbar (1) and drawbar extension (2), if equipped for obvious damage, missing parts, or cracks.	Drawbar or extension has obvious damage, cracks, or missing parts that would impair operation.
7	After	Drawbar Tow Ring	Check for loose or bent tow ring (3). If looseness or bending is found, notify Unit Maintenance.	Drawbar tow ring is loose or bent.
8	After	Drawbar Locking Pin	Visually inspect drawbar locking pin (4) and latch (5) for missing or broken parts.	Drawbar locking pin is missing or locking latch is missing or damaged.
9	After	Drawbar Extension Pivot Pin (If Equipped)	Rotate drawbar extension (2) from stow to forward position. Check for binding at pivot pin (6).	Drawbar extension binds or is damaged.
10	After	Drawbar Extension D-ring Assembly (If Equipped)	Visually inspect drawbar extension D-ring assembly (7) for missing or broken parts.	Drawbar extension D-ring assembly has missing or damaged parts.
11	After	Drawbar Extension Safety Strap (If Equipped)	Visually inspect drawbar extension safety strap (8) for missing parts or obvious damage.	Drawbar extension safety strap is missing, has missing parts or has damage that impairs operation.
12	After	Safety Chains	Visually inspect safety chains (9) for obvious damage or missing parts.	Safety chains are missing, have missing parts or have damage that impair operation.
13	After	Intervehicular Power Cables	Visually inspect intervehicular power cables (10) and load lock status line (11) for obvious damage or damaged pin connectors.	Intervehicular power cables or load lock status line is missing or has damaged or broken pin connectors that would impair operation.

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (CONT).

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

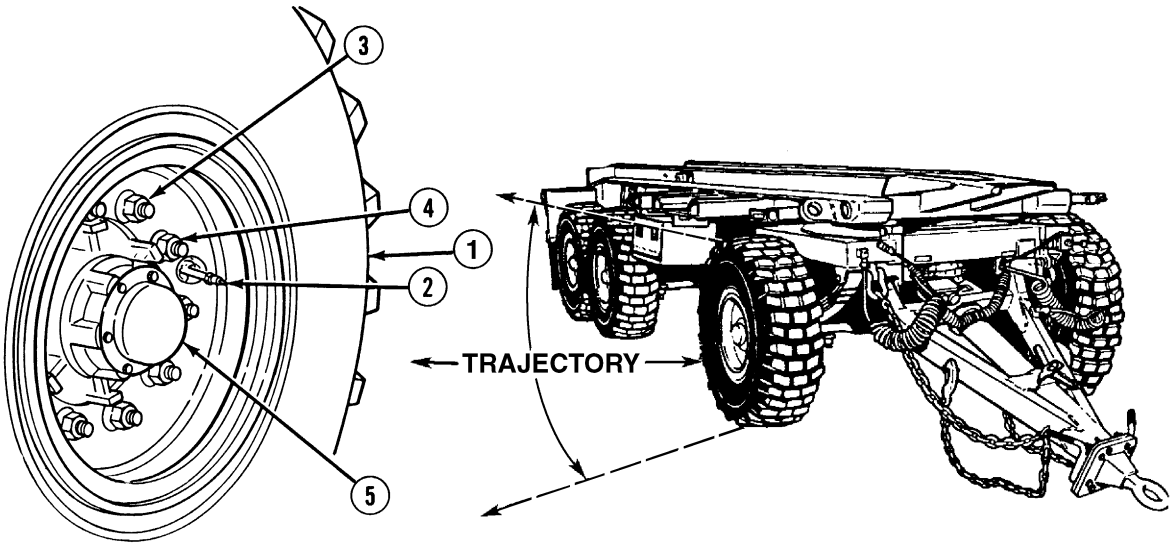
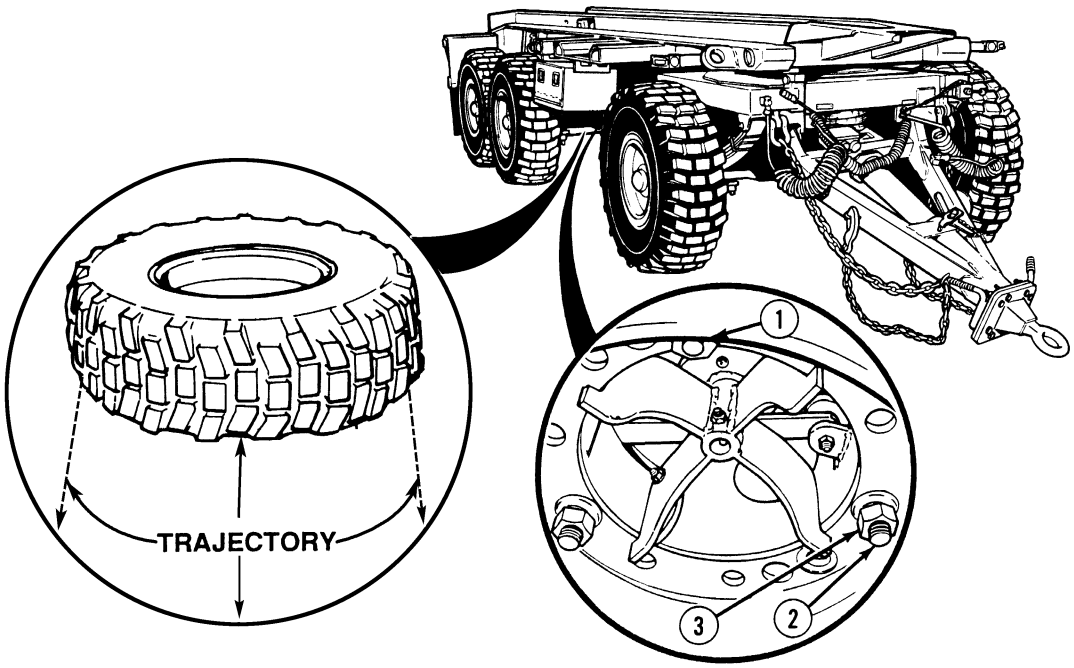
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
	WARNING • While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel. • Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.			
	NOTE Trajectory area as shown applies to all wheel/tire assemblies.			
14	After	Wheels and Tires	a. Visually inspect tires (1) for cuts, gouges, cracks and foreign objects. Check for missing valve stem caps (2).	Tires missing or unserviceable.
			b. Check for missing, cracked and broken studs (3) and lugnuts (4). Check for damaged wheel end covers (5).	One or more studs or lugnuts are missing from the same wheel.

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
			WARNING • While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel. • Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.	
			NOTE Trajectory area as shown applies to all wheel/tire assemblies.	
15	After	Spare Tire	a. Visually inspect spare tire (1) for cuts, gouges, cracks and foreign objects. Check spare tire for proper inflation (Para 3-6).	Spare tire is missing, deflated or unserviceable.
			b. Check for missing, cracked and broken studs (2) and lugnuts (3).	One or more studs or lugnuts are missing from spare tire.

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (CONT).

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

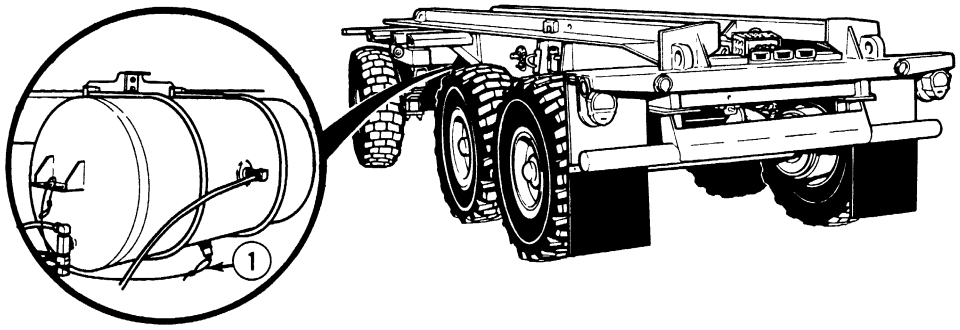
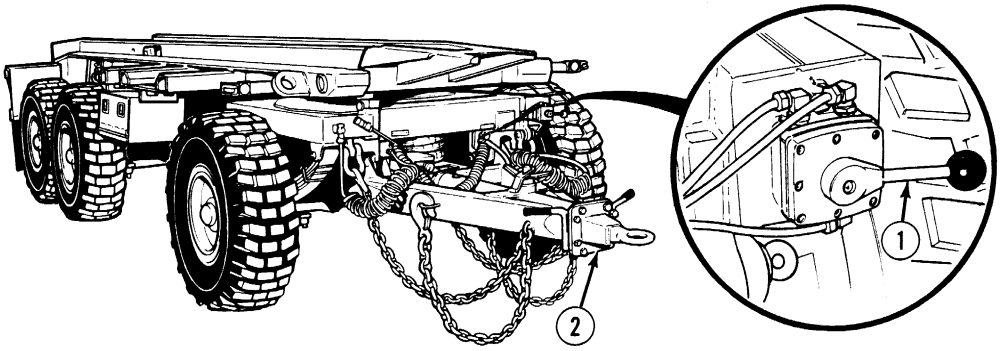
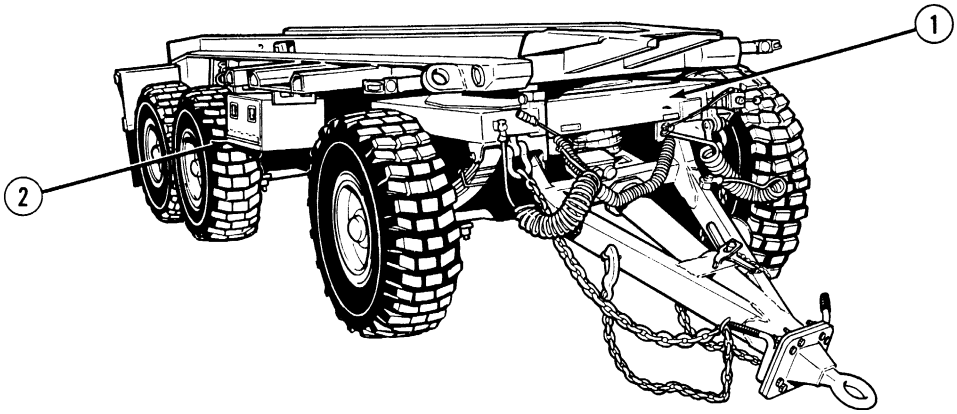
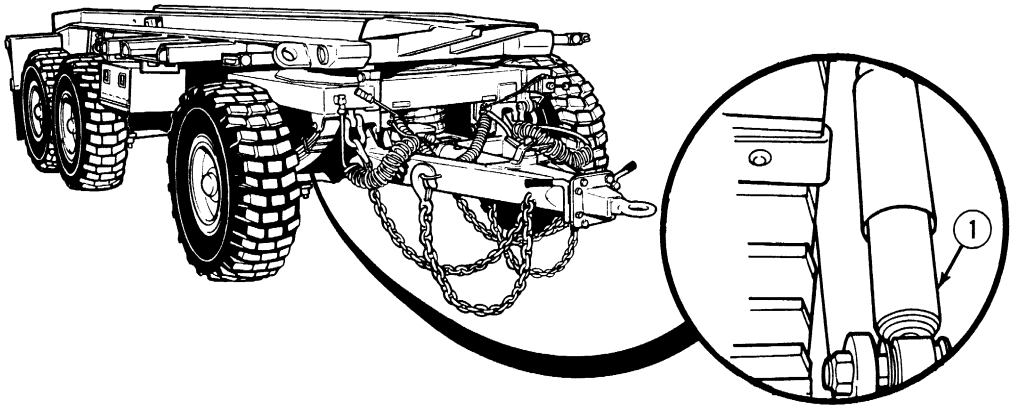
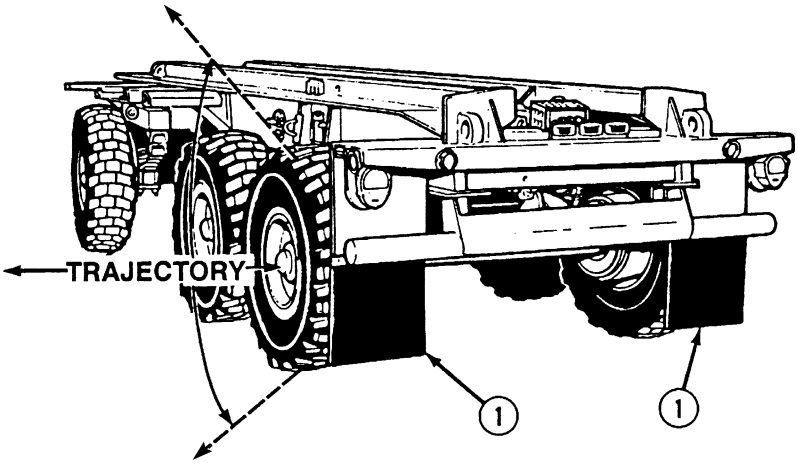
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
16	After	Air Reservoirs	Pull cable (1) on all three air reservoirs and observe air stream for presence of moisture. Drain air until only air comes out.	
				
			NOTE Air assist system must be charged in order for air bag to function (Para 2-22).	
17	After	Air Assist	Check air assist lever (1) for proper operation. Drawbar (2) should raise and lower freely.	

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				
18	Weekly	Frame	Walk around trailer and visually inspect for obvious damage to trailer frame (1) and stowage box (2).	Trailer has damage to frame that would impair operation.
				
19	Weekly	Shock Absorbers	Visually check shock absorbers (1) for leaks or obvious damage.	Damage to shock absorbers that would impair operation.

2-7. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (CONT).

Table 2-1. Operator's Preventive Maintenance Checks and Services (PMCS) - CONT.

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable If:
				

COLD TIRE PRESSURE (PSI)

TERRAIN	FRONT AXLE
HIGHWAY	87
CROSS COUNTRY	51
MUD, SAND, SNOW	32
	REAR TANDEM
HIGHWAY	80
CROSS COUNTRY	46
MUD, SAND, SNOW	29

WARNING

- While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.

NOTE

Trajectory area as shown applies to all wheel/tire assemblies.

20	Weekly	Tire Pressure	Check tires for proper inflation. Inflate as required (Para 3-6).	Any tire deflated.
21	Monthly	Mudflaps	Visually inspect mudflaps (1) for missing parts or torn rubber.	

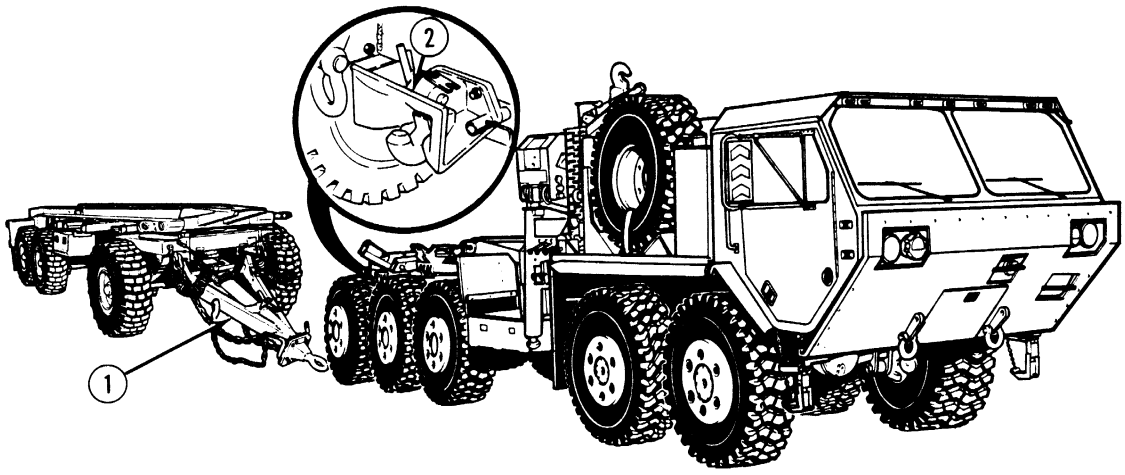
Section III. OPERATION UNDER USUAL CONDITIONS

2-8. ASSEMBLY AND PREPARATION FOR USE.

The trailer requires no assembly prior to use. Refer to Para 2-7 and perform PMCS prior to operation of the trailer.

2-9. TRAILER CONNECT/DISCONNECT.

a. Trailer Connect.



WARNING

- Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.
- Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

NOTE

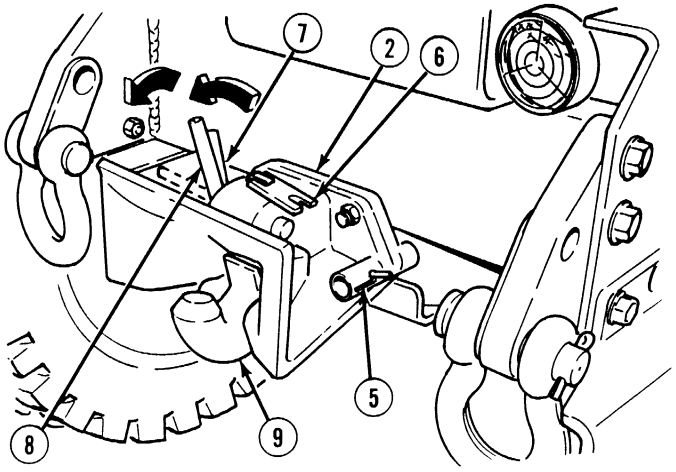
Align truck coupler with drawbar prior to beginning hookup procedures.

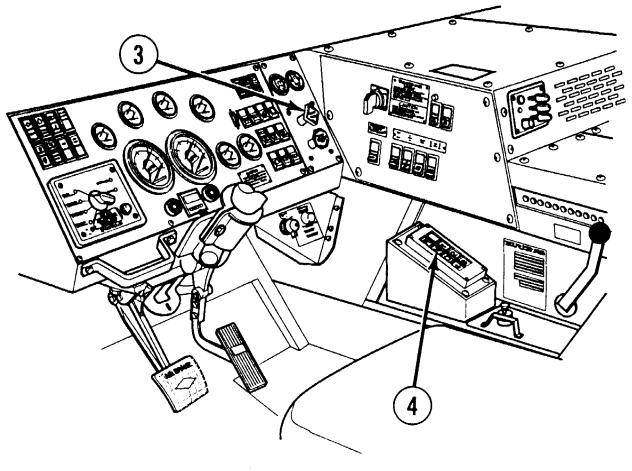
(1) Chock wheels of trailer (Para 2-20).

(2) Adjust drawbar (1) if necessary (Para 2-10).

(3) Start truck (TM 9-2320-364-10) and back up truck until coupler (2) is approximately six in. (15.24 cm) from end of drawbar (1).

2-9. TRAILER CONNECT/DISCONNECT (CONT).





(4) Apply parking brake (3) and place transmission range selector (4) to Neutral (N). Shut off truck (TM 9-2320-364-10).

NOTE

Rotation locking pin should be in locked (UP) position to prevent coupler rotation during hook-up.

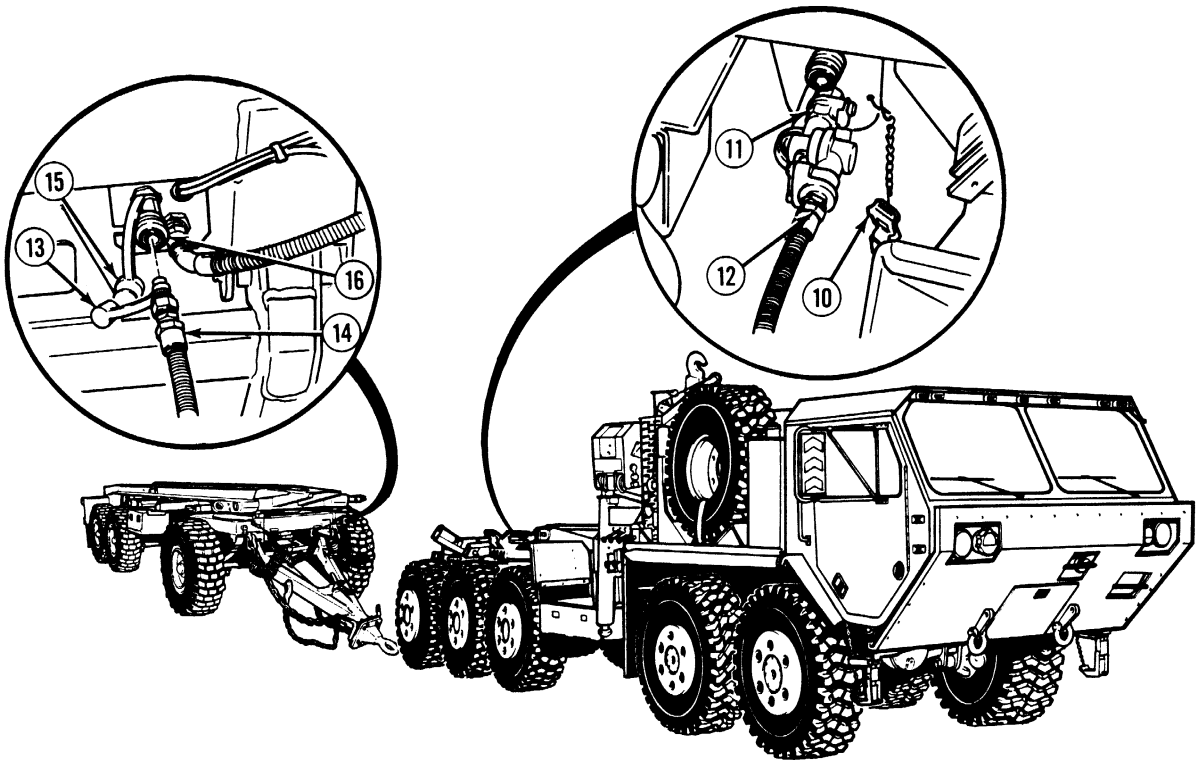
(5) Lock rotation locking pin (5) on coupler (2).

(6) Lift up locking gate (6) on coupler (2).

NOTE

Coupler jaw will drop open when Step (7) is performed correctly.

(7) Pull locking lever (7) out and pull lever (8) back at the same time to open coupler jaw (9).



NOTE

Air tank No. 1 must be charged with air for air assist lever to work. If it is not charged, remove the charging hose from the trailer stowage box and perform Steps (8) through (19). If air tank is charged, perform Step (20).

(8) Remove cover (10) from emergency air gladhand (11).

(9) Connect charging hose gladhand (12) to emergency air gladhand (11).

(10) Remove cover (13) from charging hose connector (14).

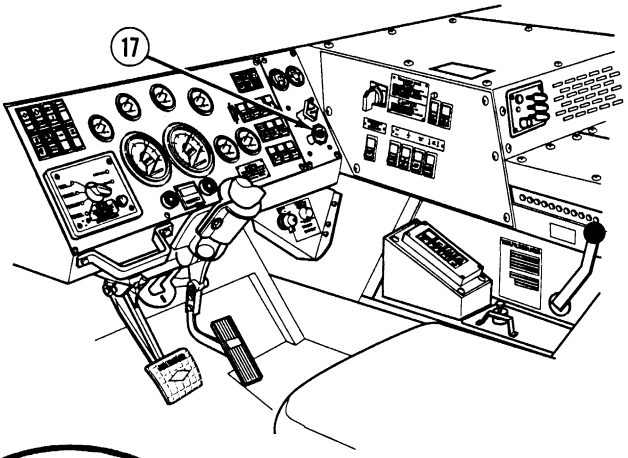
(11) Remove cover (15) from trailer quick disconnect (16).

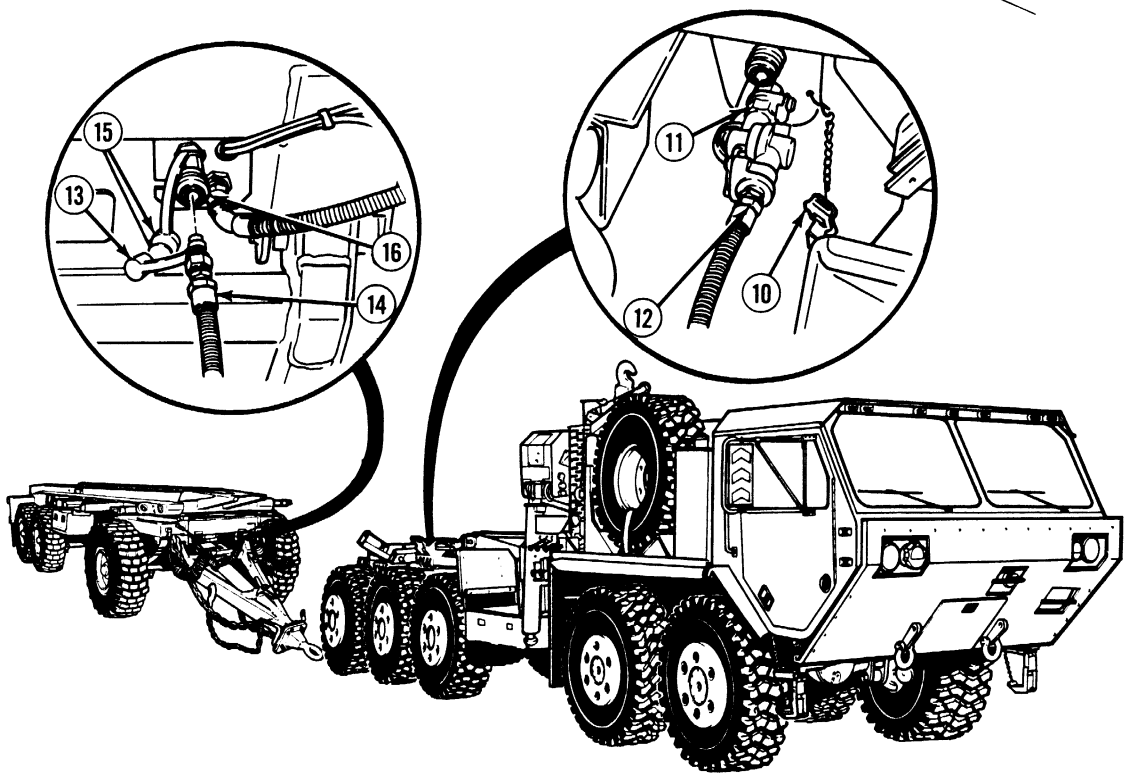
(12) Connect charging hose connector (14) to trailer quick disconnect (16).

2-9. TRAILER CONNECT/DISCONNECT (CONT).

(13) With truck running, push in trailer air supply valve (17) on dash to charge No. 1 air tank.

(14) When fully charged (three to five minutes), release trailer air supply valve (17) on dash and shutoff engine.





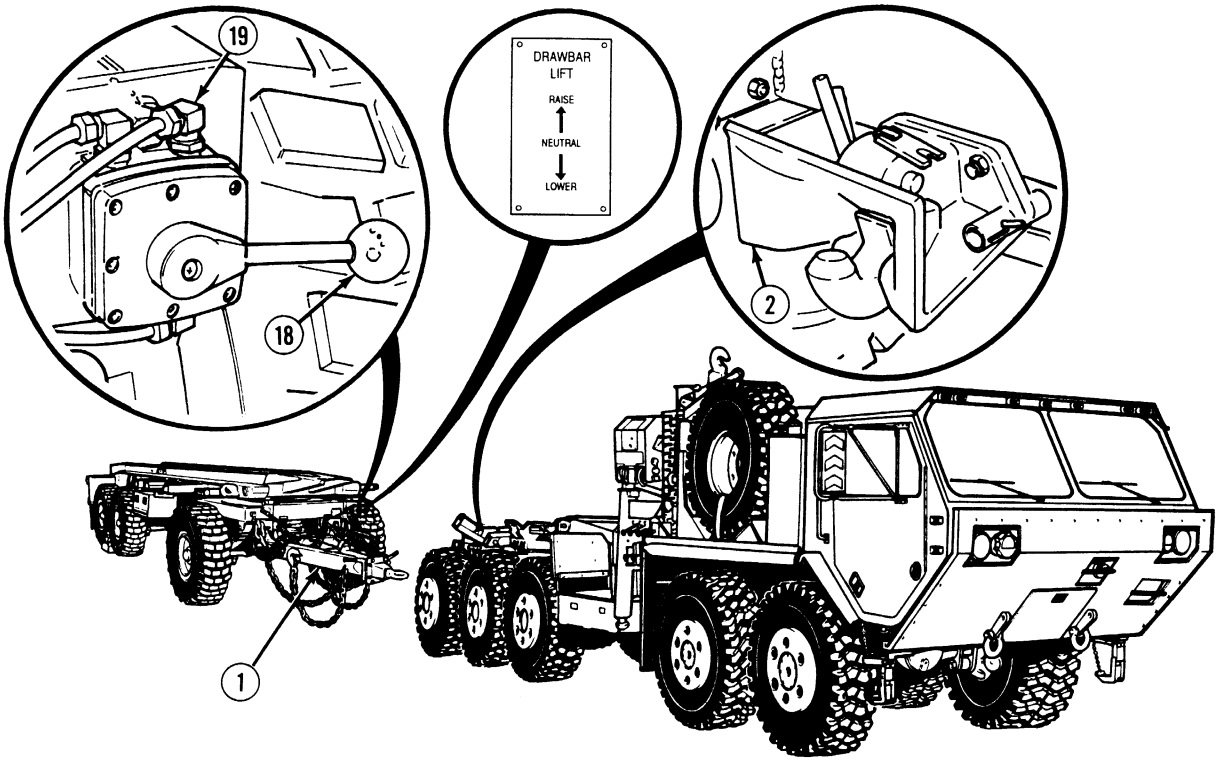
(15) Disconnect charging hose connector (14) from trailer quick disconnect (16).

(16) Install cover (15) on trailer quick disconnect (16).

(17) Install cover (13) on charging hose connector (14).

(18) Disconnect charging hose gladhand (12) from emergency air gladhand (11) and stow in stowage box.

(19) Install cover (10) on emergency air gladhand (11).



WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.

NOTE

Move air assist lever UP to raise drawbar and DOWN to lower drawbar.

(20) Move air assist lever (18) on drawbar air assist valve (19) to UP position and raise drawbar (1) to level of coupler (2).

(21) Place air assist lever (18) in Neutral position.

WARNING

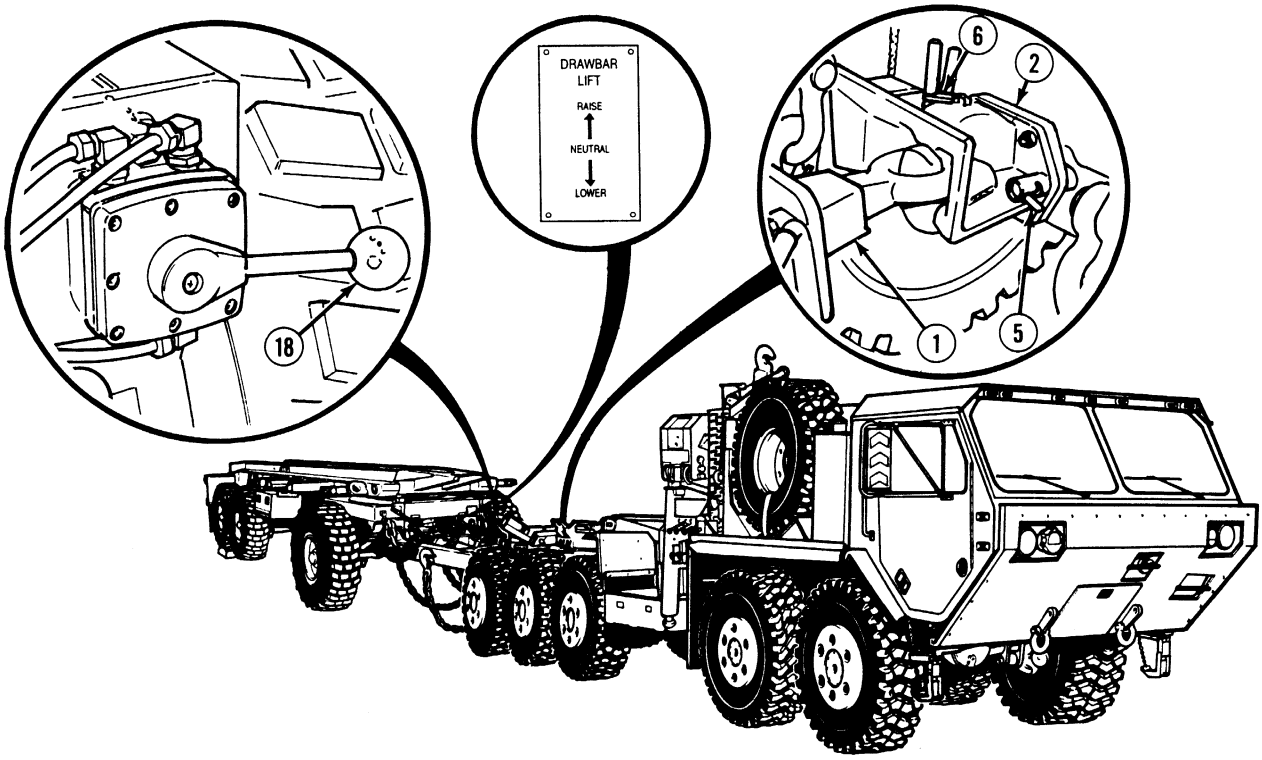
- Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.
- Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

NOTE

Coupler jaw will close when drawbar makes contact.

(22) Start truck and slowly back up until drawbar (1) makes contact and locks with coupler (2).

2-9. TRAILER CONNECT/DISCONNECT (CONT).



(23) Pull truck forward slightly to verify coupler (2) has latched onto drawbar (1).

NOTE

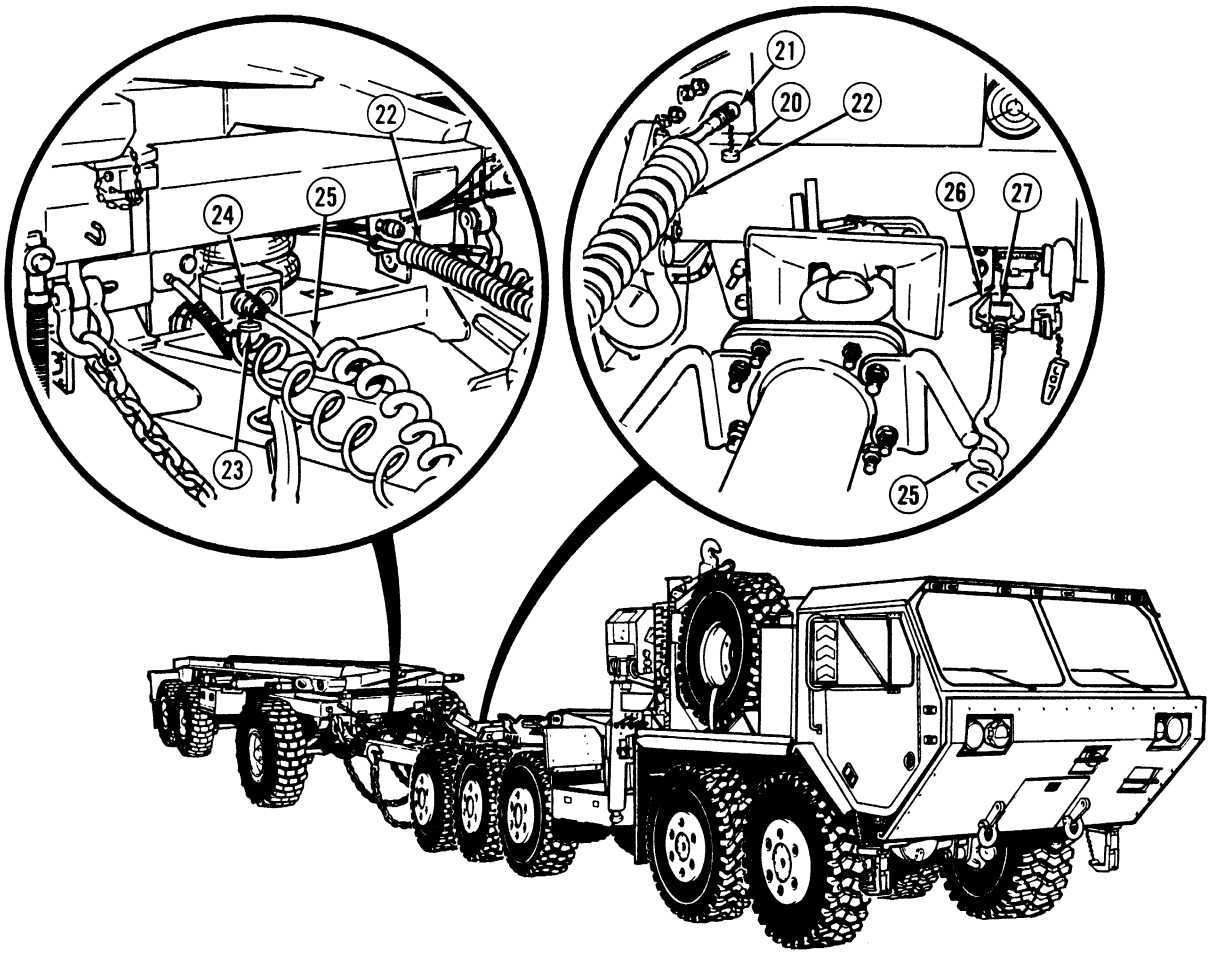
If trailer fails to hook up, repeat Steps (22) and (23).

(24) Shut off truck.

(25) Release air pressure by moving air assist lever (18) down for five seconds.

(26) Close locking gate (6) on coupler (2).

(27) Unlock rotation locking pin (5) on coupler (2).



(28) Remove cover (20) from truck receptacle (21).

(29) Connect load lock status line (22) to truck receptacle (21).

CAUTION

- Both the 12 volt and 24 volt cables must not be connected at the same time. Only one cable can be hooked up during operation or damage to equipment will result.
- Ensure that receptacle latch is engaged on cable or damage to cable may result.

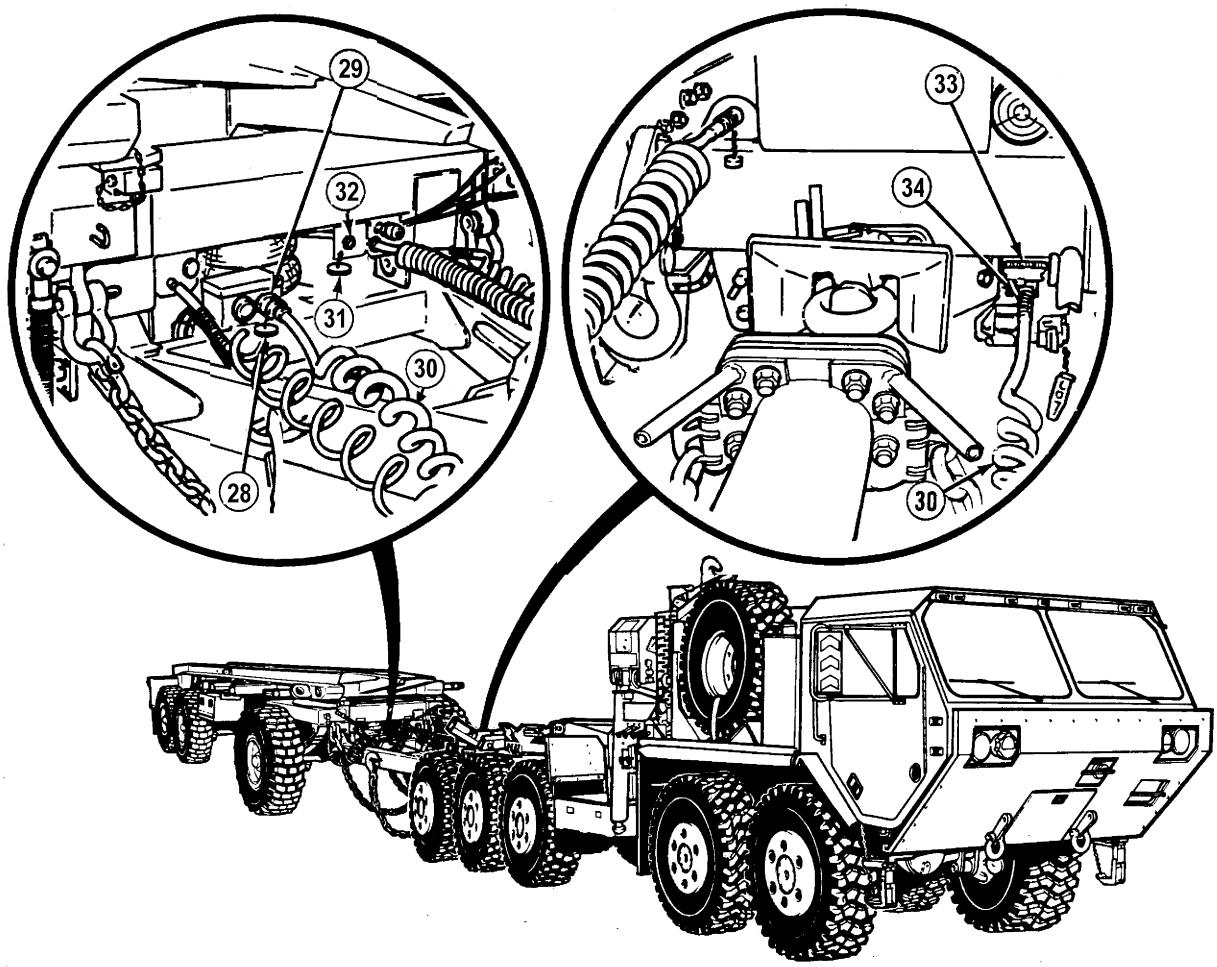
NOTE

- The 12 volt cable is standard for this trailer. Use the 24 volt system only when the 12 volt cable cannot be used or blackout lights are used.
- Perform Steps (30) and (31) for 12 volt system only.
- Cables are located in the stowage box.

(30) Remove cover (23) from 7-pin receptacle (24) on trailer and connect 12 volt cable (25) on receptacle (24).

(31) Lift receptacle cover (26) on truck and connect 12 volt cable (25) on receptacle (27).

2-9. TRAILER CONNECT/DISCONNECT (CONT).



NOTE

- Perform Steps (32) and (34) for 24 volt system when not equipped with drawbar extension.
- Perform Steps (33) and (34) for 24 volt system when equipped with drawbar extension.

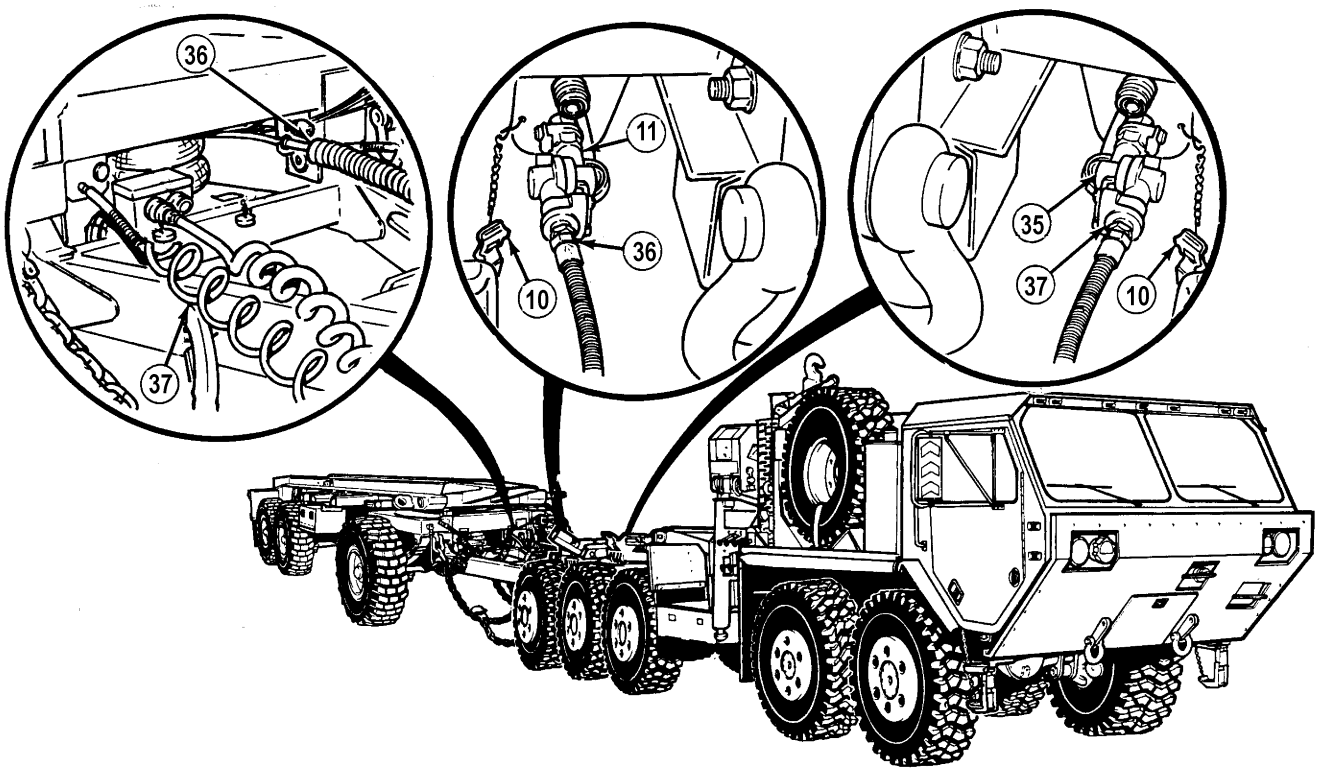
(32) Remove cover (28) from 12-pin receptacle (29) on trailer and connect 24 volt cable (30) on receptacle (29).

(33) Remove cover (31) from 12-pin receptacle (32) and connect 24 volt cable (30) on receptacle (32).

CAUTION

Ensure that receptacle latch is engaged on cable or damage to cable may result.

(34) Lift upper right receptacle cover (33) on the truck and connect 24 volt cable (30) on receptacle (34).



(35) Remove two covers (10) from air couplings (11) and (35).

(36) Install emergency air gladhand (36) to air coupling (11).

(37) Install service air gladhand (37) to air coupling (35).

2-9. TRAILER CONNECT/DISCONNECT (CONT).

NOTE

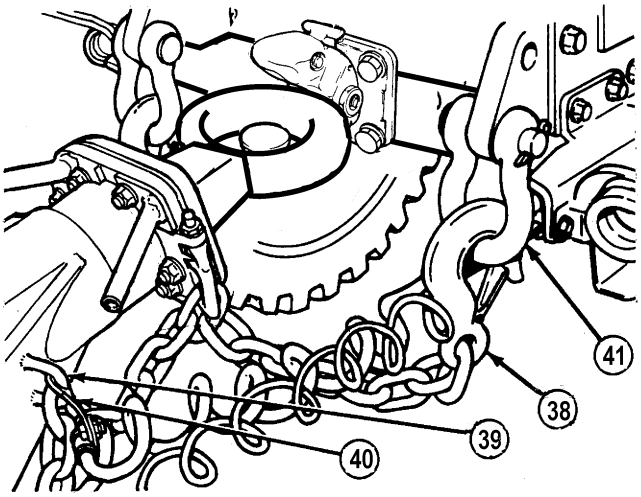
Safety chains should be already hanging on hooks by the large link.

(38) Install safety chains (38) on hooks (39) from large links on chains.

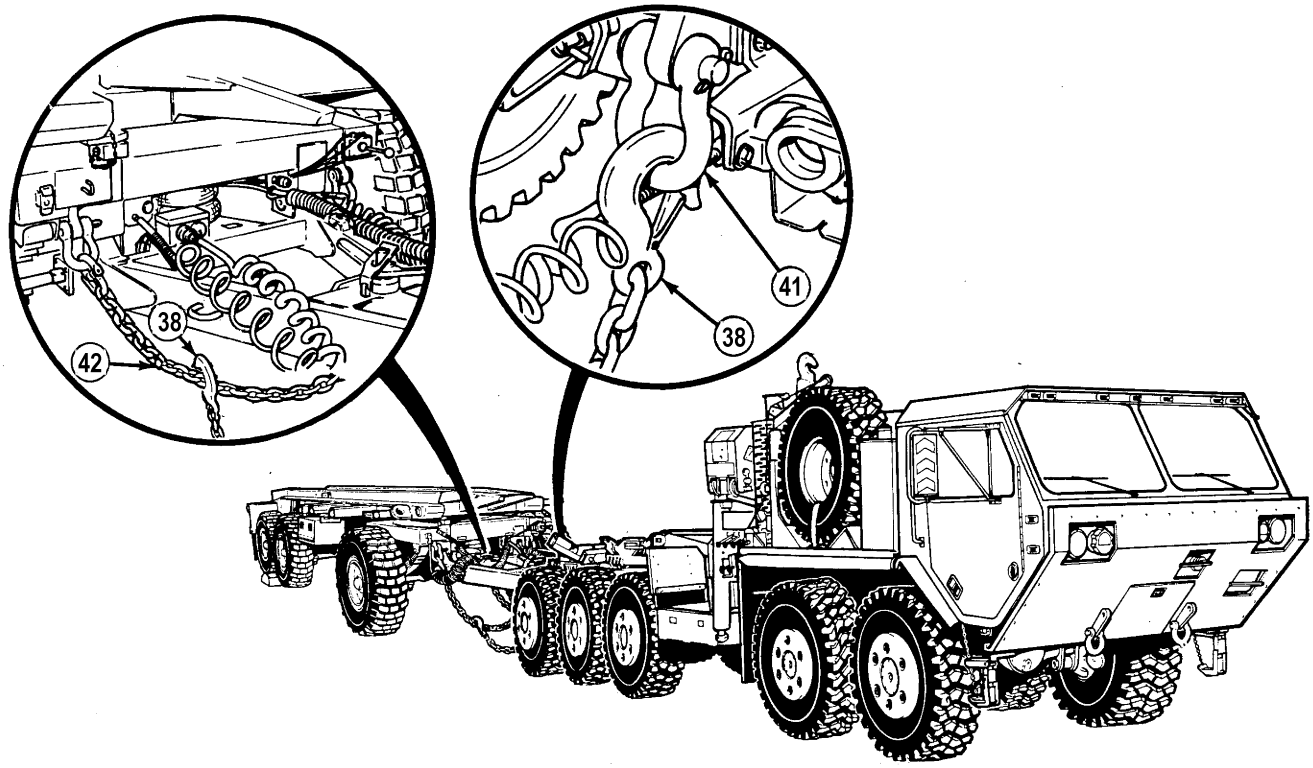
(39) Attach electrical cable brackets (40) to hooks (39) on both sides of drawbar.

(40) Unhook two safety chains (38) from trailer and attach to truck clevises (41).

(41) Remove wheel chocks.



b. Trailer Disconnect.



WARNING

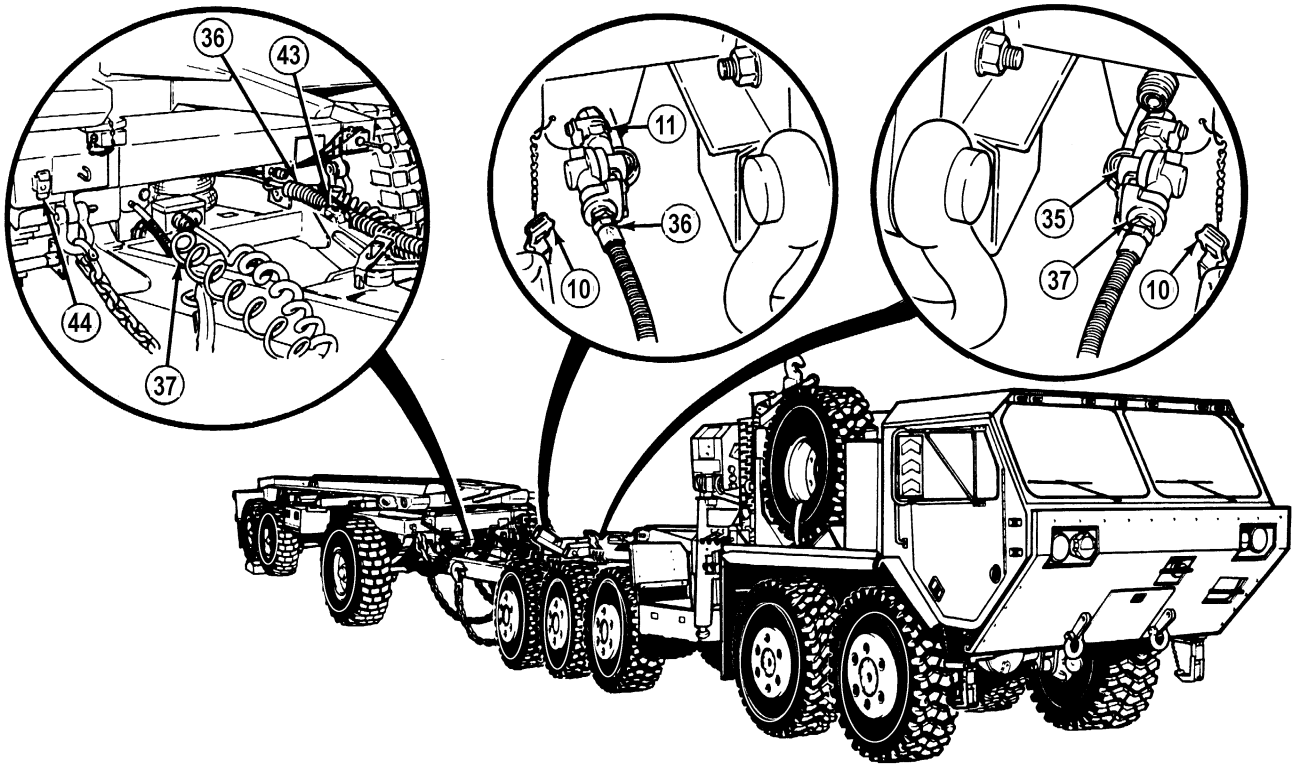
- Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.
- Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

(1) Chock wheels of trailer.

(2) Unhook two safety chains (38) from clevises (41) and attach to trailer.

(3) Hook safety chains (38) to chain links (42).

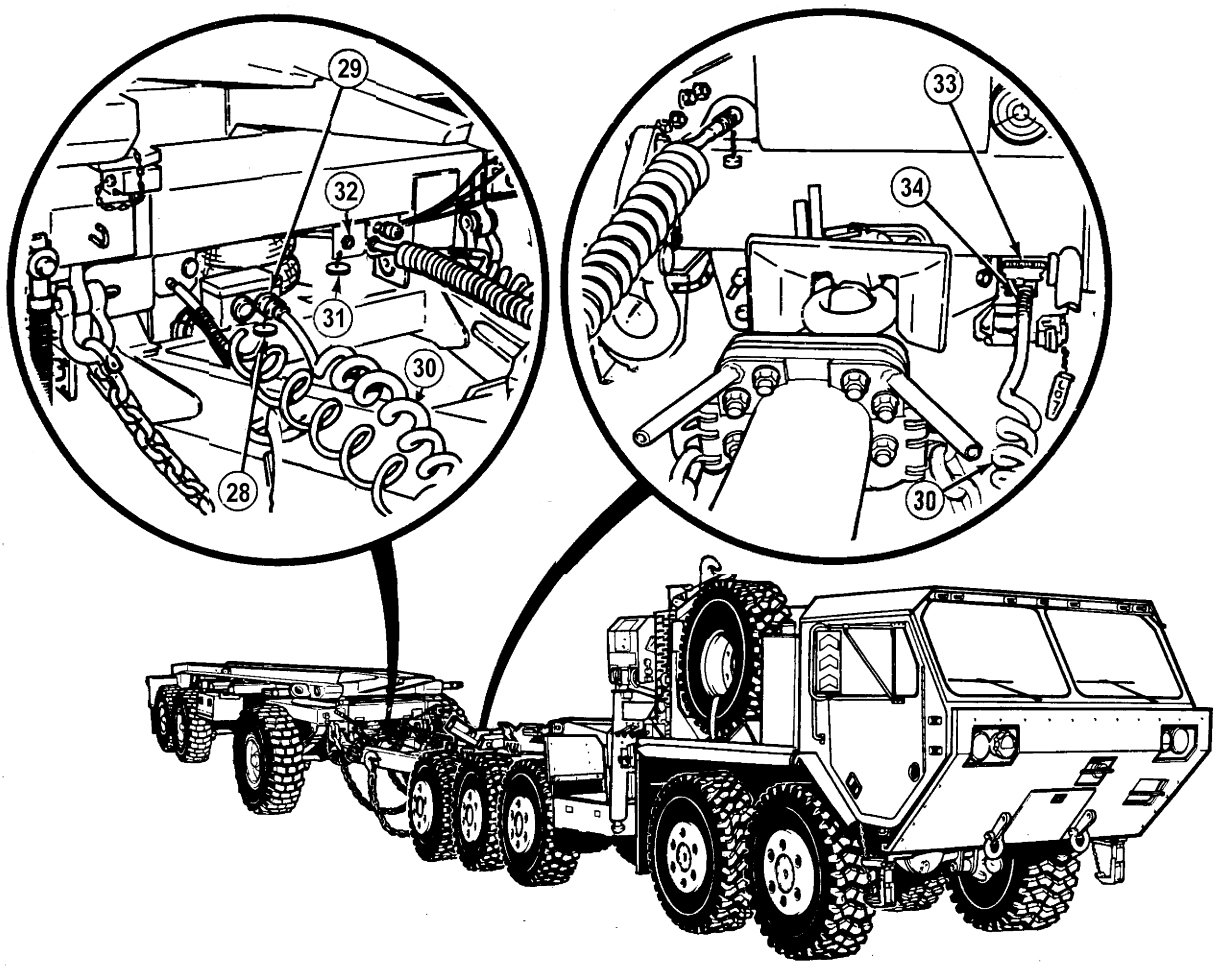
2-9. TRAILER CONNECT/DISCONNECT (CONT).



(4) Remove emergency air gladhand (36) from air coupling (11) and stow on stowage coupler (43).

(5) Remove service air gladhand (37) from air coupling (35) and stow on stowage coupler (44).

(6) Install covers (10) on air couplings (11) and (35).



CAUTION

Both the 12 volt (7-pin) and 24 volt (12-pin) cables must not be connected at the same time. Only one cable can be hooked up during operation or damage to equipment will result.

NOTE

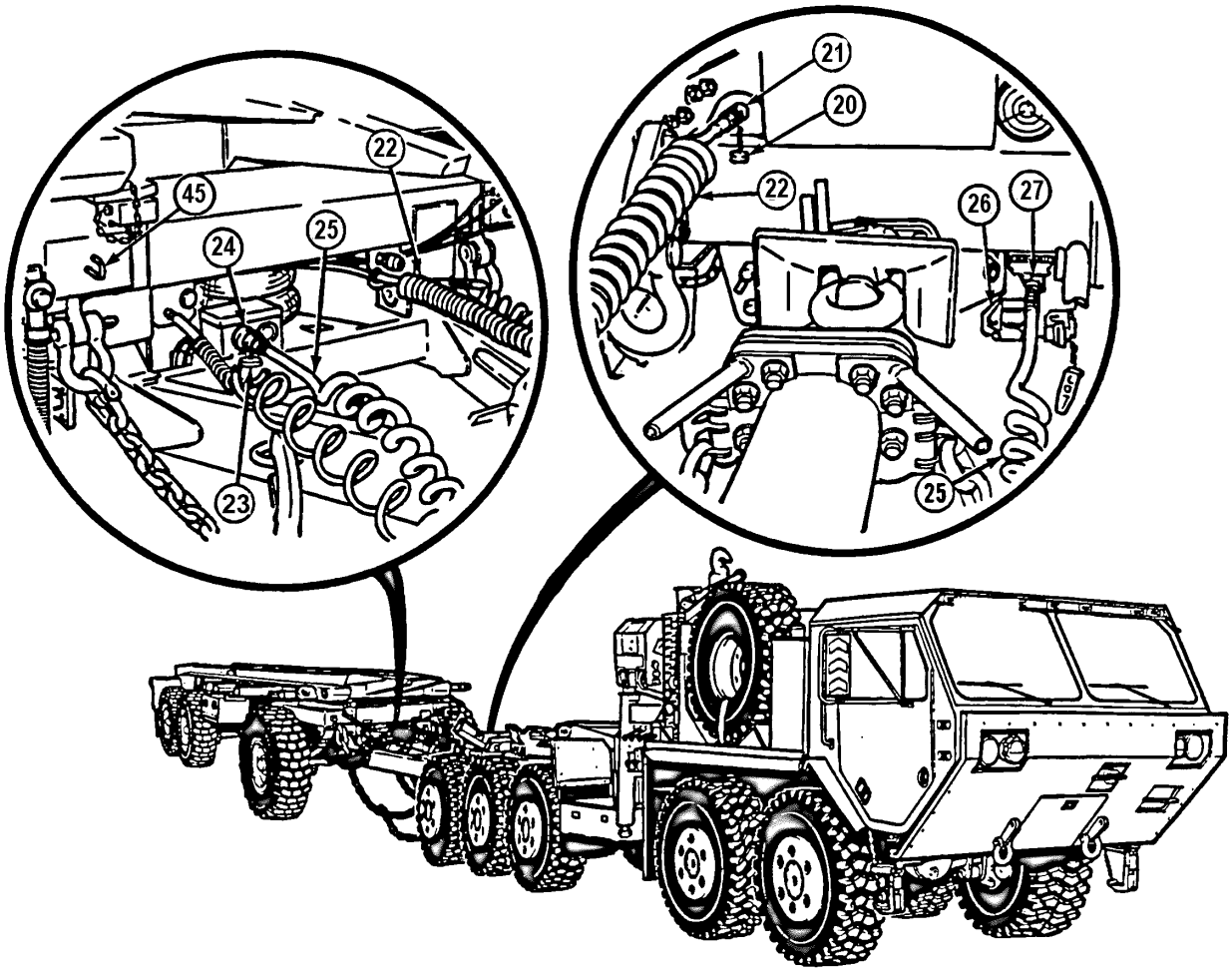
- Perform Steps (7) and (8) if the 24 volt (12-pin) cable is installed without drawbar extension.
- Perform Steps (7) and (9) if equipped with drawbar extension.
- Perform Steps (10) and (11) if the 12 volt (7-pin) cable is installed.

(7) Remove 24 volt cable (30) from receptacle (34) on truck and close receptacle cover (33).

(8) Remove 24 volt cable (30) on trailer from receptacle (29) and install cover (28) on receptacle and stow in trailer stowage box.

(9) Remove 24 volt cable (30) on trailer from receptacle (32) and install cover (31) on receptacle and stow in trailer stowage box.

2-9. TRAILER CONNECT/DISCONNECT (CONT).

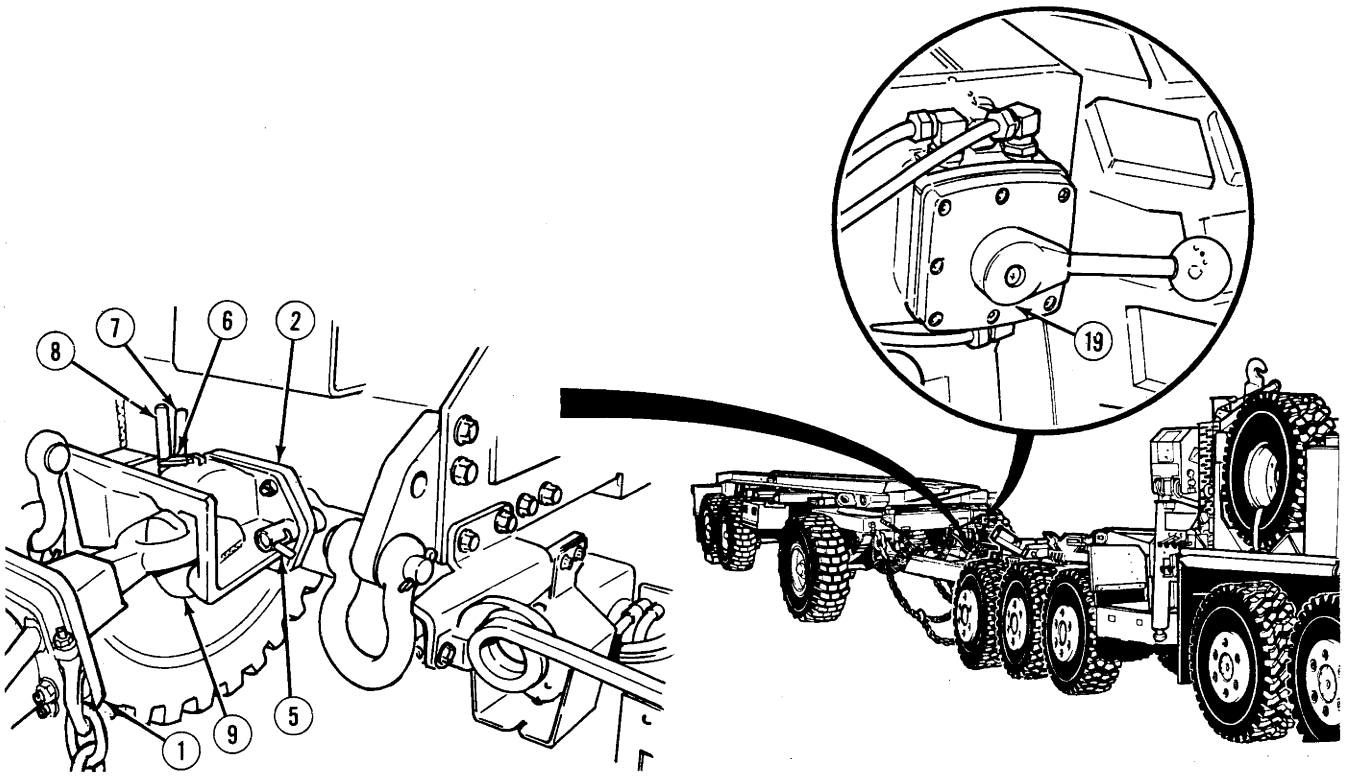


(10) Remove 12 volt cable (25) on truck from receptacle (27) and close receptacle cover (26).

(11) Remove 12 volt cable (25) on trailer from receptacle (24) and install cover (23) on receptacle and stow in trailer stowage box.

(12) Remove load lock status line (22) from truck receptacle (21) and place on stowage hook (45).

(13) Install cover (20) to receptacle (21).



(14) Lock rotation locking pin (5) and check coupler (2) to make sure it will not rotate.

NOTE

It may be necessary to move truck backwards slightly to relieve tension on coupler.

(15) Lift up locking gate (6) on coupler (2).

(16) Pull locking lever (7) out while pulling lever (8) back at the same time.

(17) Release locking lever (7) prior to releasing lever (8), to unlock coupler jaw (9).

WARNING

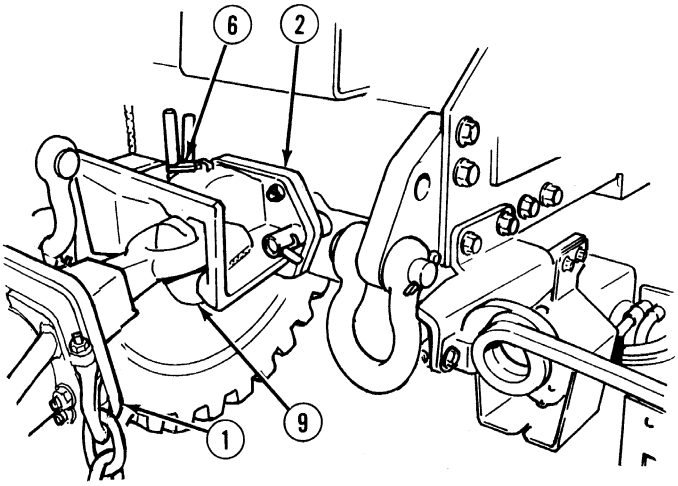
- Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.
- Do not leave drawbar in elevated position after disconnecting from truck. Drawbar could fall causing serious injury to personnel.

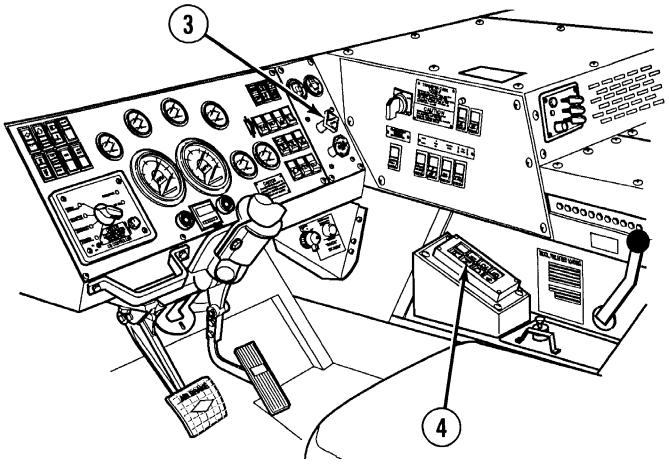
NOTE

Increasing air pressure will raise drawbar, decreasing air pressure will allow drawbar to fall.

(18) Use air assist valve (19) to apply air pressure to hold drawbar (1) from falling when released from coupler (2).

2-9. TRAILER CONNECT/DISCONNECT (CONT).





(19) Start truck (TM 9-2320-364-10), release parking brake (3) and slowly pull forward until drawbar (1) releases from coupler (2).

(20) Apply parking brake (3) and place transmission range selector (4) to Neutral (N).

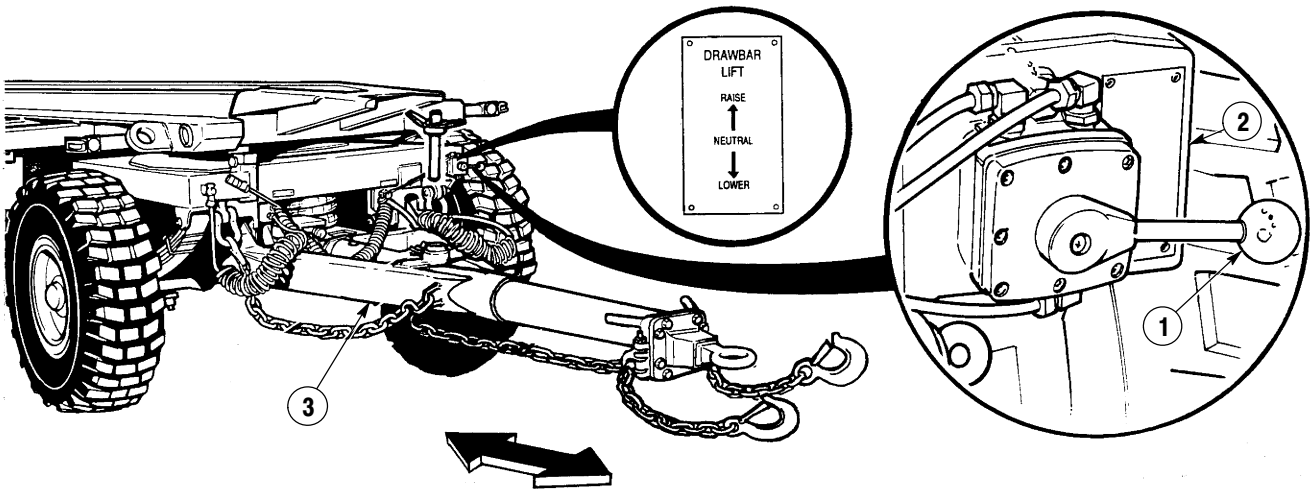
(21) Push up on coupler jaw (9) to close.

(22) Close locking gate (6) on coupler (2).

2-10. DRAWBAR ADJUSTMENT.

NOTE

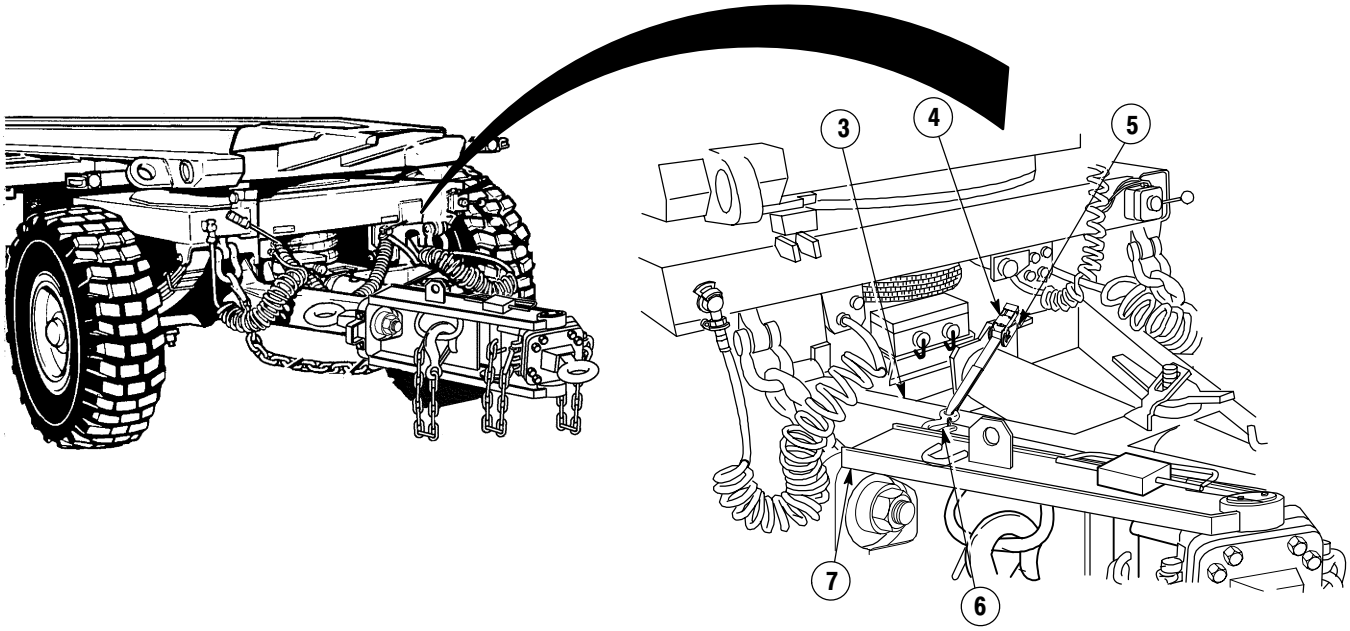
- The drawbar (without drawbar extension) has only two positions: extended and retracted.
    - Extended position (Pulled Out):
        - Standard operating position.
        - Must be used for all off road operations.
    - Retracted position (Pushed In):
        - NO off road operation.
        - NO ISO containers on truck.
- The drawbar (with drawbar extension) has three positions: drawbar extension forward with drawbar extended and drawbar extension stowed with drawbar extended or retracted.
    - Drawbar extension forward, drawbar extended position (Pulled Out):
        - Standard operating position during combat bridge transport mission.
        - Must be used for all combat bridge transport mission off road operations.
    - Drawbar extension stowed, drawbar extended position (Pulled Out):
        - Standard operating position.
        - Must be used for all off road operations.
    - Drawbar extension stowed, drawbar retracted position (Pushed In):
        - NO off road operation.
        - NO ISO containers on truck.



a. If necessary, charge trailer air bag with air, (Para 2-22).

b. Move air assist lever (1) on drawbar air assist valve (2) to LOWER position and lower drawbar structure (3).

c. Place air assist lever (1) in NEUTRAL position.



NOTE

- Perform Steps (d) through (l) only if equipped with drawbar extension.
- Ensure drawbar is in level position.

d. Lift handle (4) and release safety strap ratchet (5).

e. Remove safety strap hook (6) from drawbar extension assembly (7).

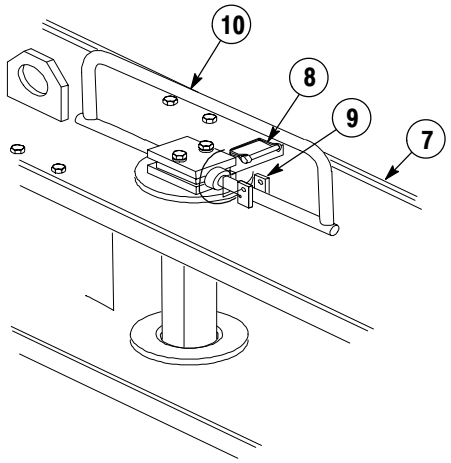
f. Attach safety strap hook (6) to drawbar structure (3).

2-10. DRAWBAR ADJUSTMENT (CONT).

g. Remove lockpin (8) from D-ring assembly lock (9).

h. Remove D-ring assembly (10) from drawbar extension assembly (7).

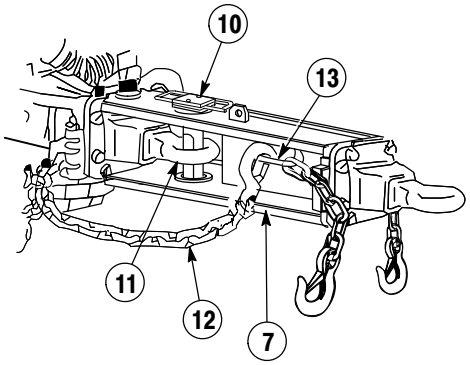
i. Rotate drawbar extension assembly (7) to forward position.



j. Align holes in drawbar extension assembly (7) with tow ring (11) and install D-ring assembly (10).

k. Install lockpin (8) in D-ring assembly lock (9).

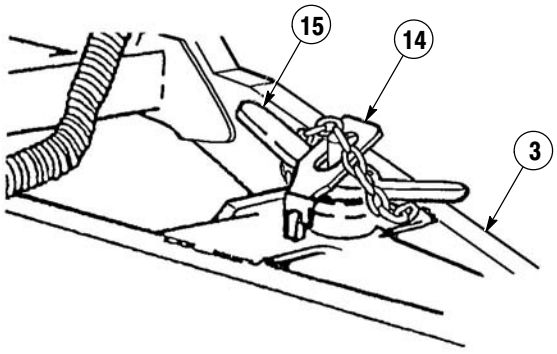
l. Unhook two safety chains (12) from trailer and attach to safety chain loop (13) on drawbar extension assembly (7).

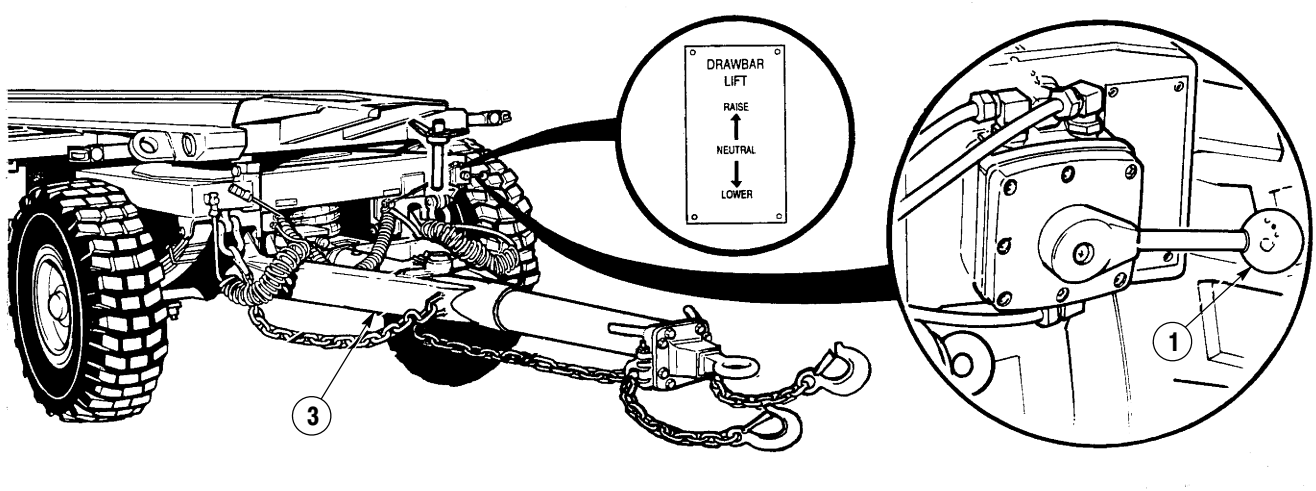


WARNING

Drawbar should be in lowered position when removing locking pin. Failure to comply may result in injury to personnel.

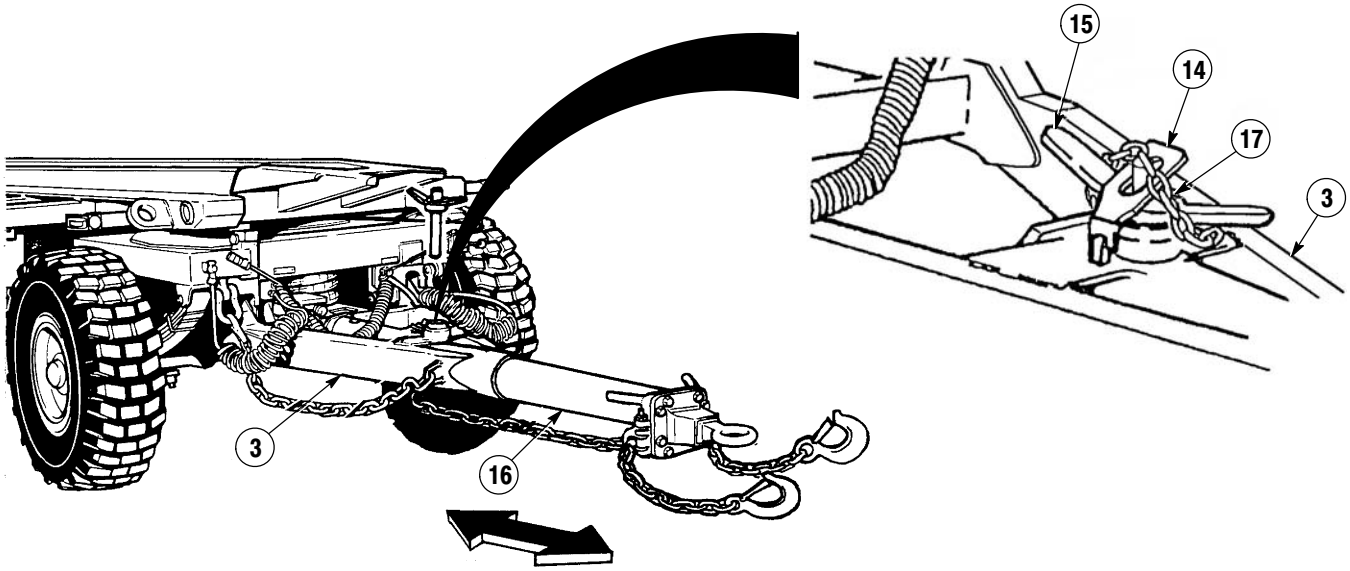
m. Lift locking gate (14) and remove locking pin (15) from drawbar structure (3).





n. Move air assist lever (1) to RAISE position and raise drawbar structure (3) to level position.

o. Place air assist lever (1) in NEUTRAL position.



p. Slide tube assembly (16) in or out of drawbar structure (3) to desired position.

q. Align holes in tube assembly (16) and drawbar structure (3) and install locking pin (15) into drawbar structure (3).

r. Close locking gate (14) over locking pin (15) on drawbar structure (3).

NOTE

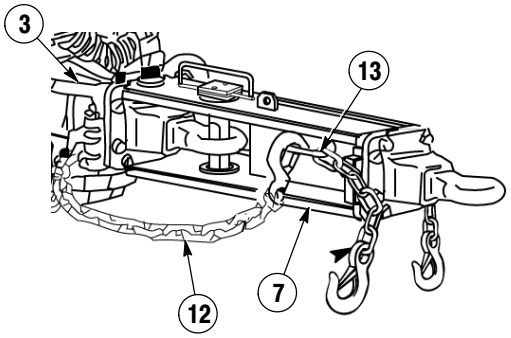
Locking pin chain is used to keep locking gate in “LOCKED” position during trailer operation.

s. Position locking pin chain (17) over locking gate (14) and around locking pin (15).

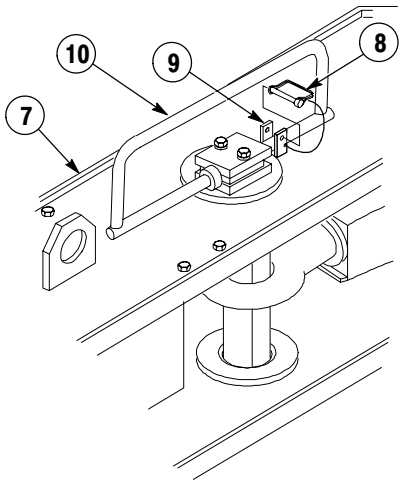
2-10. DRAWBAR ADJUSTMENT (CONT).

NOTE

Perform Steps (t) through (ab) if equipped with drawbar extension.



t. Unhook two safety chains (12) from safety chain loop (13) on drawbar extension assembly (7) and attach to drawbar structure (3).



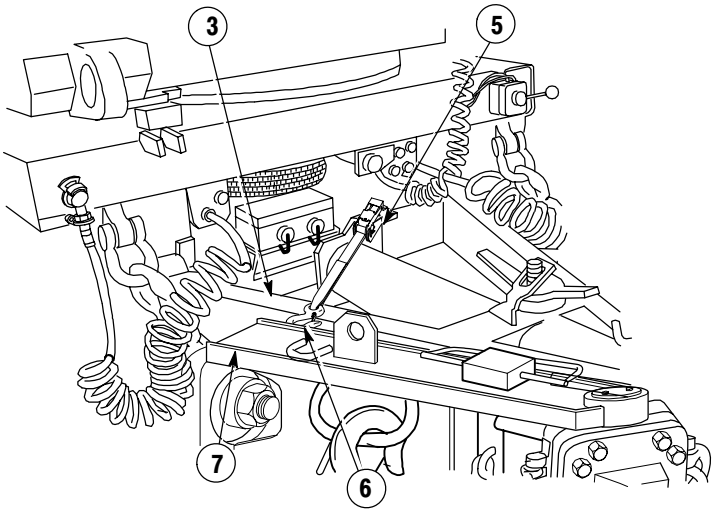
u. Remove lockpin (8) from D-ring assembly lock (9).

v. Remove D-ring assembly (10) from drawbar extension assembly (7).

w. Rotate drawbar extension assembly (7) to stowed position.

x. Install D-ring assembly (10) in drawbar extension assembly (7).

y. Install lockpin (8) in D-ring assembly lock (9).



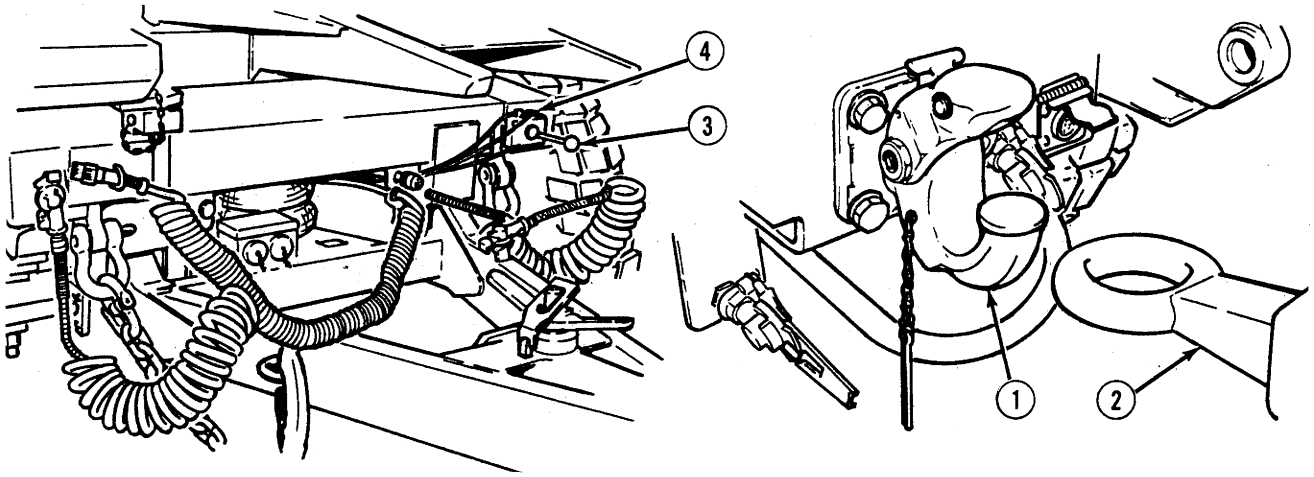
z. Remove safety strap hook (6) from drawbar structure (3).

aa. Attach safety strap hook (6) to drawbar extension assembly (7).

ab. Tighten safety strap ratchet (5).

2-11. TRAILER CONNECT/DISCONNECT TO VEHICLE OTHER THAN PLS.

a. Trailer Connect.



WARNING

- Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.
- Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.
- Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

CAUTION

Trailer drawbar must be in extended position when trailer is to be towed by another vehicle other than a PLS truck. Failure to extend drawbar may cause severe damage to trailer and towing vehicle.

(1) Adjust drawbar to extended position, (Para 2-10).

(2) Chock wheels of trailer, (Para 2-20).

(3) Back up vehicle until coupler (1) is approximately six in. (15.24 cm) from trailer drawbar (2).

(4) Refer to applicable operator manual and set vehicle parking brakes and set transmission to Neutral (N).

NOTE

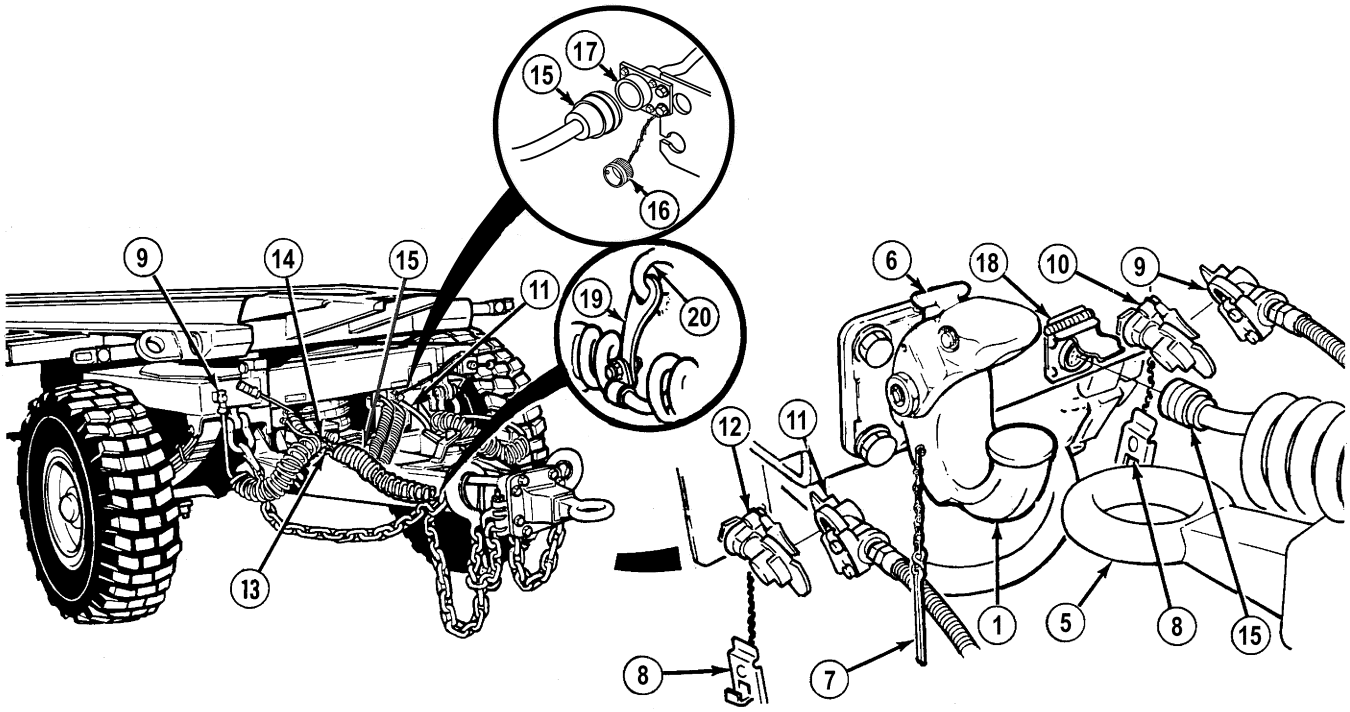
- Trailer air bag must be charged with air for air assist lever to work.
- Move air assist lever up to raise drawbar and down to lower drawbar.

(5) If necessary, charge trailer air bag with air, (Para 2-22).

(6) Move air assist lever (3) on drawbar air assist valve (4) to UP position and raise drawbar (2) to level of coupler (1).

(7) Place air assist lever (3) in NEUTRAL position.

2-11. TRAILER CONNECT/DISCONNECT TO VEHICLE OTHER THAN PLS (CONT).



(8) Place drawbar ring (5) in coupler (1) and push coupler latch (6) down until it is latched in place.

(9) Install cotter pin (7) in coupler (1) and slightly bend cotter pin.

(10) If applicable, remove covers (8) and connect service air gladhand (9) to service gladhand (10) on vehicle and connect emergency air gladhand (11) to emergency air gladhand (12) on vehicle.

CAUTION

Both the 12 volt (7-pin) and 24 volt (12-pin) cables must not be connected at the same time. Only one cable can be hooked up during operation or damage to equipment will result.

NOTE

- The 12 volt cable is standard for this trailer. Use the 24 volt system cable only when the 12 volt cable cannot be used or blackout lights are used.
- Cables are located in the stowage box.
- Perform Step (11) when connecting 12 vdc cable on either drawbar assembly.
- Perform Step (11) when connecting 24 vdc cable on trailer without drawbar extension.
- Perform Step (12) when connecting 24 vdc cable if equipped with drawbar extension.

(11) Remove cover (13) from proper receptacle (14) on trailer and connect cable (15) to receptacle (14).

(12) Remove cover (16) and connect cable (15) to receptacle (17).

(13) Connect cable (15) to receptacle (18) on vehicle.

(14) Attach electrical cable brackets (19) to hooks (20) on drawbar.

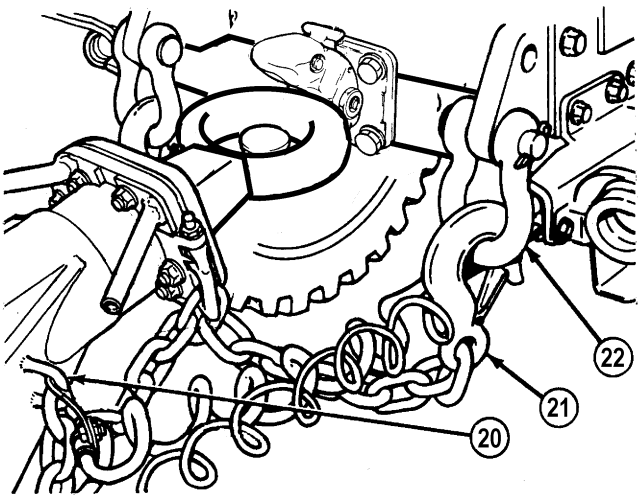
NOTE

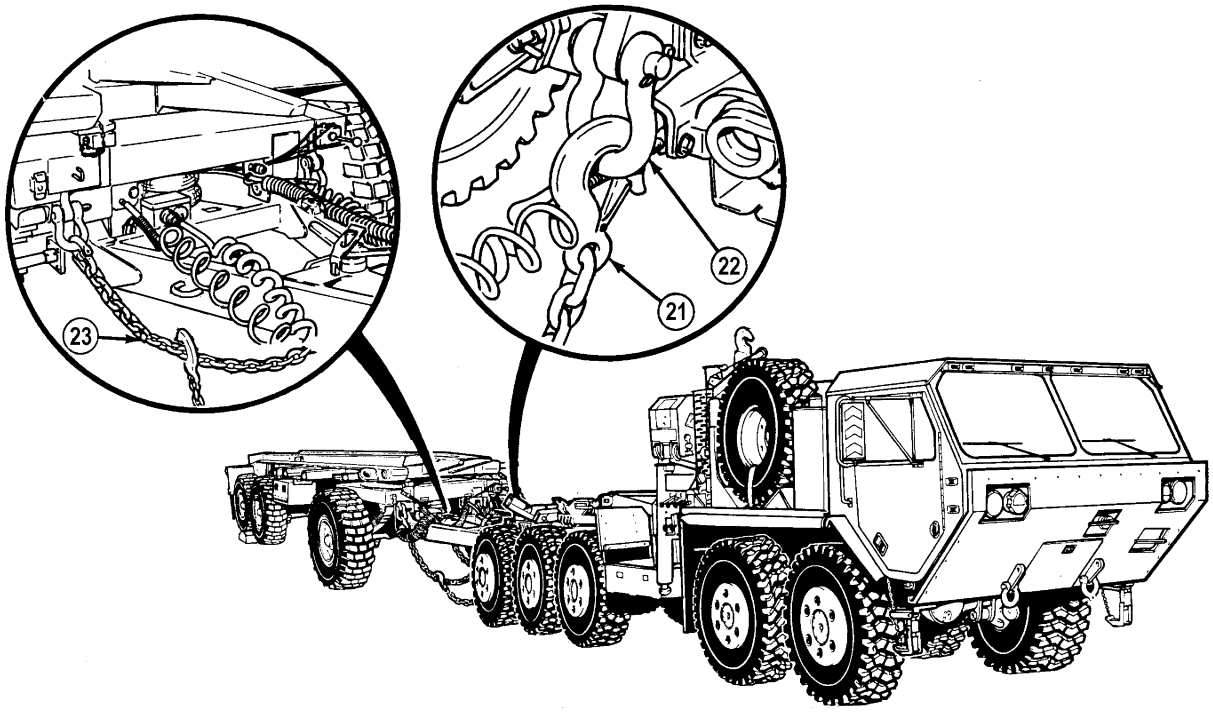
Safety chains should be already hanging on hooks by the large link.

(15) Install safety chains (21) on hooks (20) from large links on chains.

(16) Unhook two safety chains (21) from trailer and attach to truck clevises (22).

(17) Remove wheel chocks.





b. Trailer Disconnect.

(1) To disconnect trailer from vehicle, chock trailer wheels, (Para 2-20).

WARNING

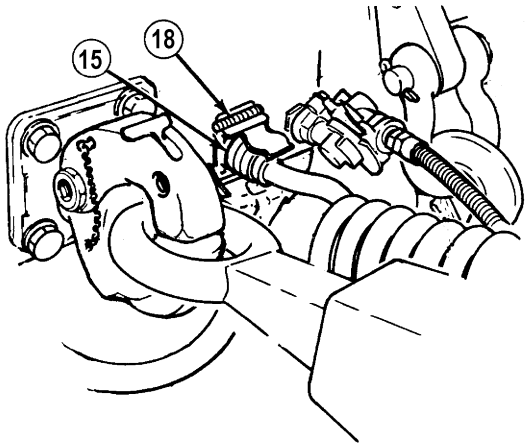
- Do not stand between trailer drawbar and truck coupler during hook-up procedures to prevent being pinned between truck and trailer. Serious injury or death could result to personnel.
- Wheels on trailer must be chocked to prevent trailer from moving during hook-up procedures. Serious injury or death could result to personnel.

(2) Unhook two safety chains (21) from clevises (22) and attach to trailer.

(3) Hook safety chains (21) to chain links (23).

2-11. TRAILER CONNECT/DISCONNECT TO VEHICLE OTHER THAN PLS (CONT).

(4) Disconnect cable (15) from receptacle (18) on vehicle.



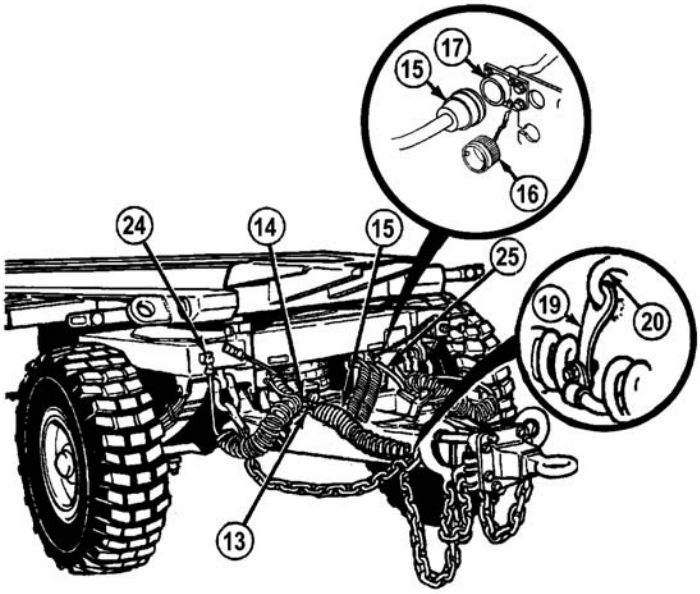
NOTE

- Perform Step (5) when disconnecting 24 vdc cable if equipped with drawbar extension.
- Perform Step (6) when disconnecting 24 vdc cable on trailer without drawbar extension.
- Perform Step (6) when disconnecting 12 vdc cable on either drawbar assembly.

(5) Disconnect cable (15) from receptacle (17) on trailer and install cover (16).

(6) Disconnect cable (15) from receptacle (14) on trailer and install cover (13).

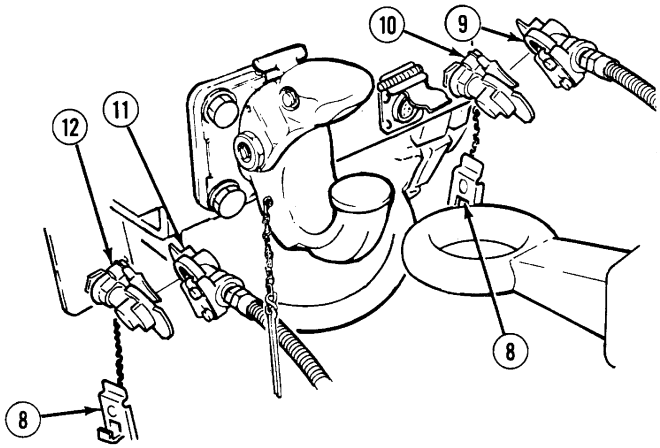
(7) Remove electrical cable bracket (19) from hook (20) on drawbar.

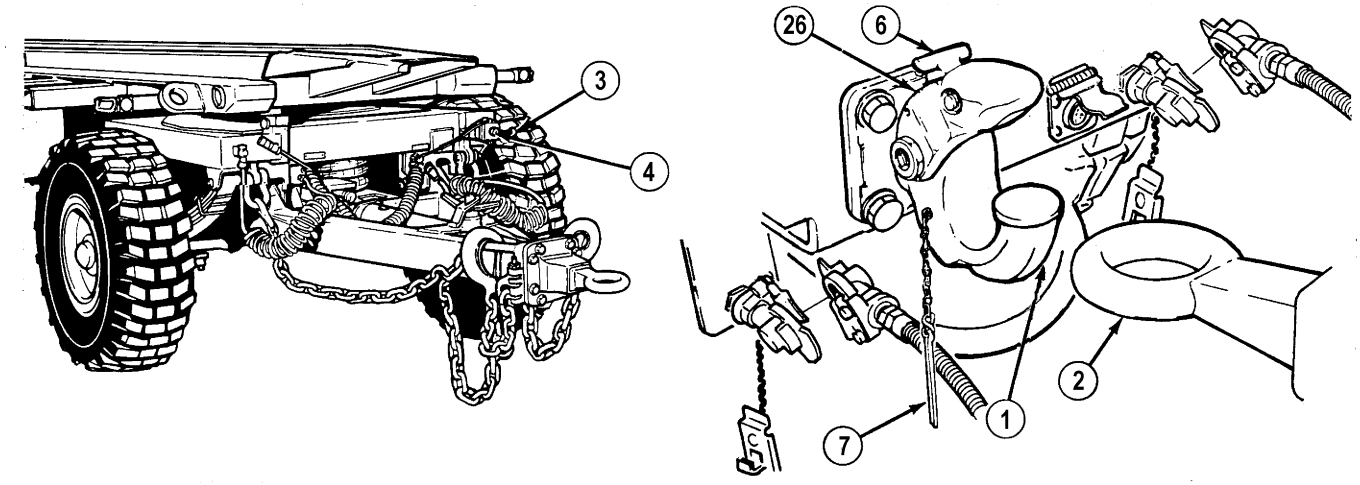


(8) Disconnect emergency air gladhand (11) from emergency air gladhand (12) on vehicle and stow on stowage coupler (24).

(9) Disconnect service air gladhand (9) from service air gladhand (10) on vehicle and stow on stowage coupler (25).

(10) Replace covers (8) to gladhands (12) and (10).





(11) Remove cotter pin (7) from coupler latch (6).

(12) Pull up on latch (6) to open pintle hook (26).

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.

NOTE

It may be necessary to move vehicle backwards slightly to relieve tension on drawbar.

(13) Move air assist lever (3) on air assist valve (4) to UP position to apply air pressure to raise drawbar (2) up in coupler (1).

(14) With drawbar (2) released from pintle hook (26), slowly drive vehicle away from trailer.

WARNING

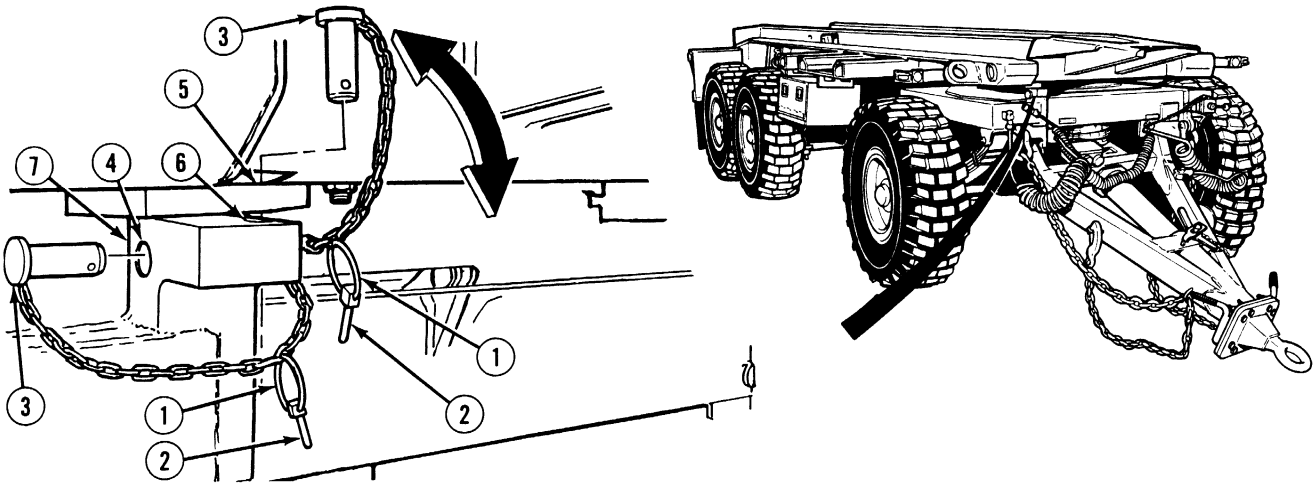
Do not leave drawbar in elevated position after disconnecting from vehicle. Drawbar could fall quickly causing serious injury to personnel.

NOTE

Move air assist valve lever up to raise drawbar or down to lower drawbar.

(15) Use air assist valve (4) to lower drawbar (2) to ground.

2-12. TRAILER BACKING WITH TURNTABLE LOCKED.



CAUTION

Backing the trailer for minor repositioning is permitted without locking the turntable, provided caution is used when backing up. Failure to keep the trailer and truck aligned while backing up could result in the trailer jackknifing, possibly causing severe drawbar and truck damage.

a. Lift up on locking ring (1) and remove safety pin (2) from pin (3).

b. Remove pin (3) from stowage hole (4).

c. Align turntable locking hole (5) and locking hole (6) in stowage bracket (7) and install pin (3).

d. Install safety pin (2) in pin (3) and engage locking ring (1).

CAUTION

Trailer turntable must be unlocked after completing backing operations. Failure to unlock turntable will result in a sheared pin or damaged trailer.

NOTE

When backing operations are completed perform Steps (e) through (h).

e. Lift up on locking ring (1) and remove safety pin (2) from pin (3).

f. Remove pin (3) from turntable locking hole (5) and locking hole (6).

CAUTION

Pin must be stowed in stowage hole with safety pin installed or pin can become damaged or lost.

g. Install pin (3) in stowage hole (4).

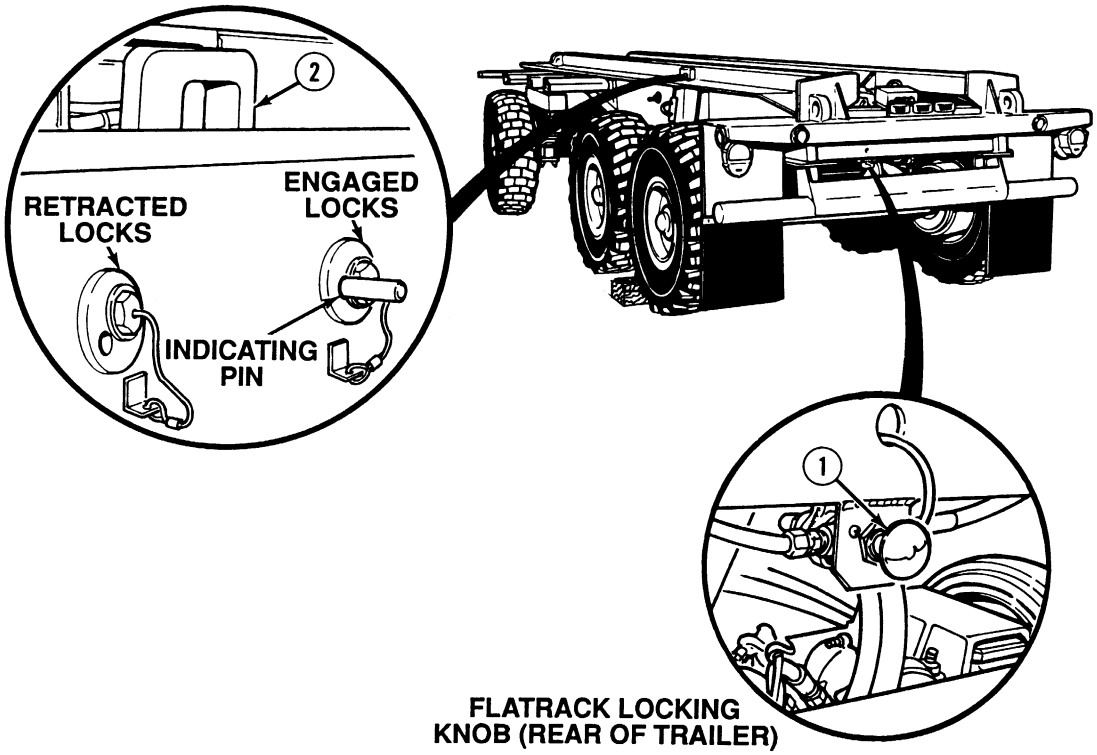
h. Install safety pin (2) in pin (3) and engage locking ring (1).

2-13. RETRACTION/ENGAGEMENT OF FLATRACK LOCKS (NORMAL).

NOTE

Flatrack locks should only be released prior to loading/unloading procedures.

a. Retract Flatrack Locks.



(1) Ensure trailer is uncoupled and ready to be loaded/unloaded.

(2) Push in flatrack locking knob (1) to retract locks (2).

CAUTION

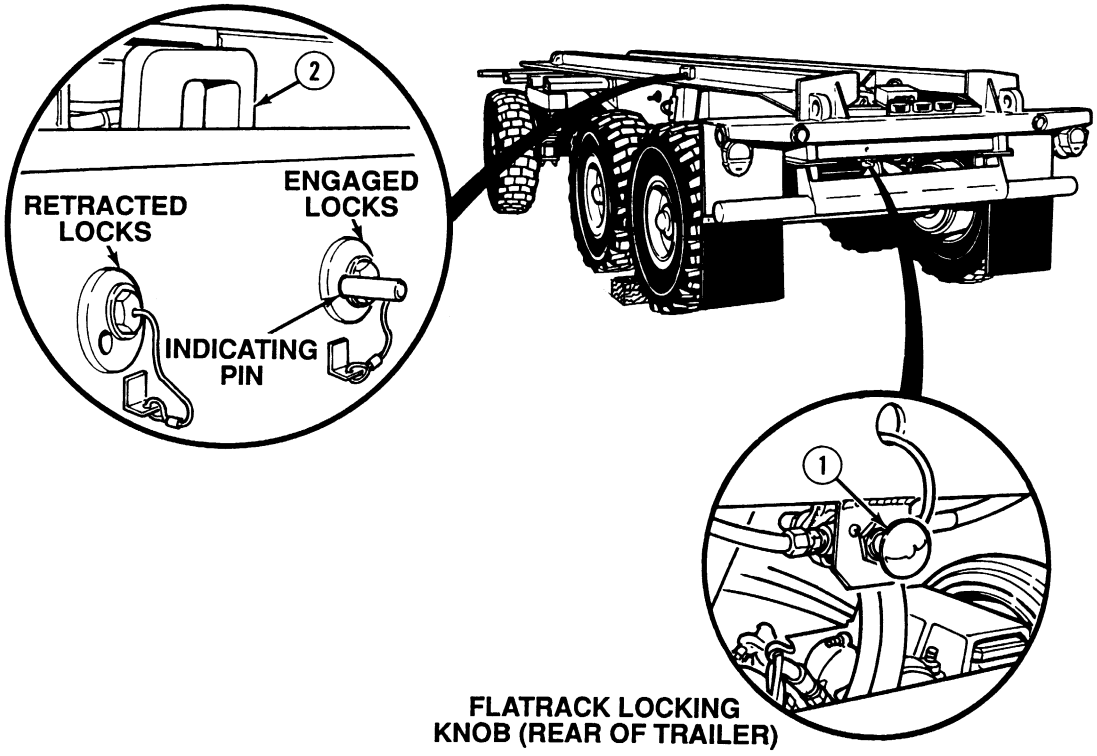
Ensure both flat rack locks are fully retracted or damage to equipment may result.

NOTE

The flatrack locks indicating pins should be retracted “in” when the flatrack locks are released. There is one indicating pin on each side of the trailer.

(3) Visually check both locks (2) to ensure locks are retracted.

2-13. RETRACTION/ENGAGEMENT OF FLATRACK LOCKS (NORMAL) (CONT).



(4) The following procedure should be used when the flatrack locks on the trailer will not release:

(a) Chock trailer tires at Axle No. 2 and No. 3 locations. Push flatrack release button in on trailer. Verify that the locks have not released (check indicating pins on the left and right side of the trailer).

(b) Back truck up to trailer with the LHS hook positioned to make load transfer from truck to trailer. Back the truck up until the trailer bumper stop is underneath the truck bump stop, pull the truck forward approximately one to two inches (25.40 to 50.80 mm).

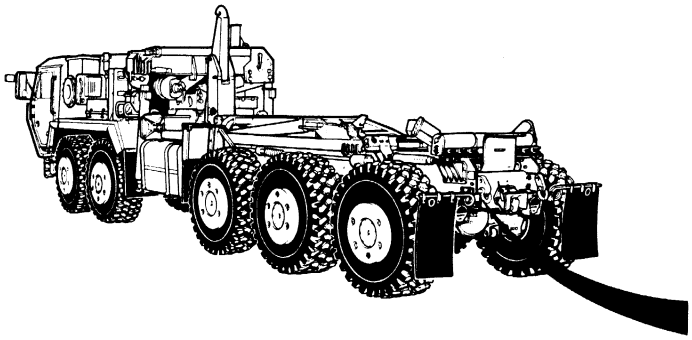
(c) Connect the emergency gladhand from trailer to the truck and charge the trailer air system. Check the load lock indicating pins to see if locks have released and disconnect the emergency air line. Make sure that the flatrack release button is pushed in. If the load locks have released go to Step (g).

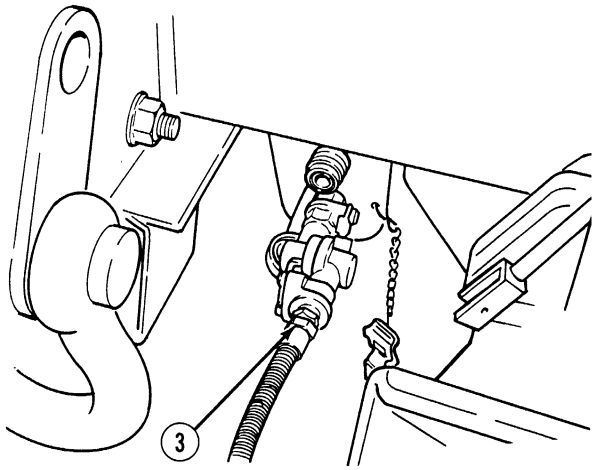
(d) Using the “Manual Hook Arm Mode” move the joystick to the load position until the weight of the flatrack is off of the front of the trailer and that there is approximately two to four inches (50.80 to 101.60 mm) of clearance between the front edge of the flatrack and the trailer deck.

(e) While holding the truck brakes, switch the LHS mode switch to the “Manual Main Frame Mode”. Move the joystick to the unload position until the trailer can be seen pushing backwards.

(f) Verify that the locks have released. If the flatrack locks have not released use the manual tools to release the locks, (Para 2-14).

(g) Switch LHS mode switch to the “Automatic position” and move the joystick to the load position. Offload flatrack from trailer to truck.





WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

NOTE

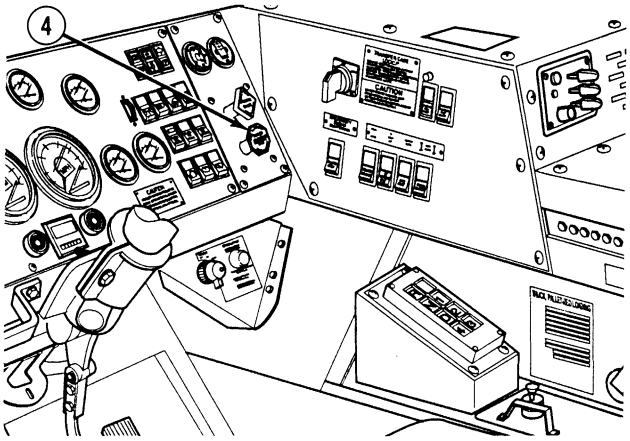
If locks do not retract, recharge the air system by performing Steps (5) through (11).

(5) Refer to Para 2-20 and chock trailer tires.

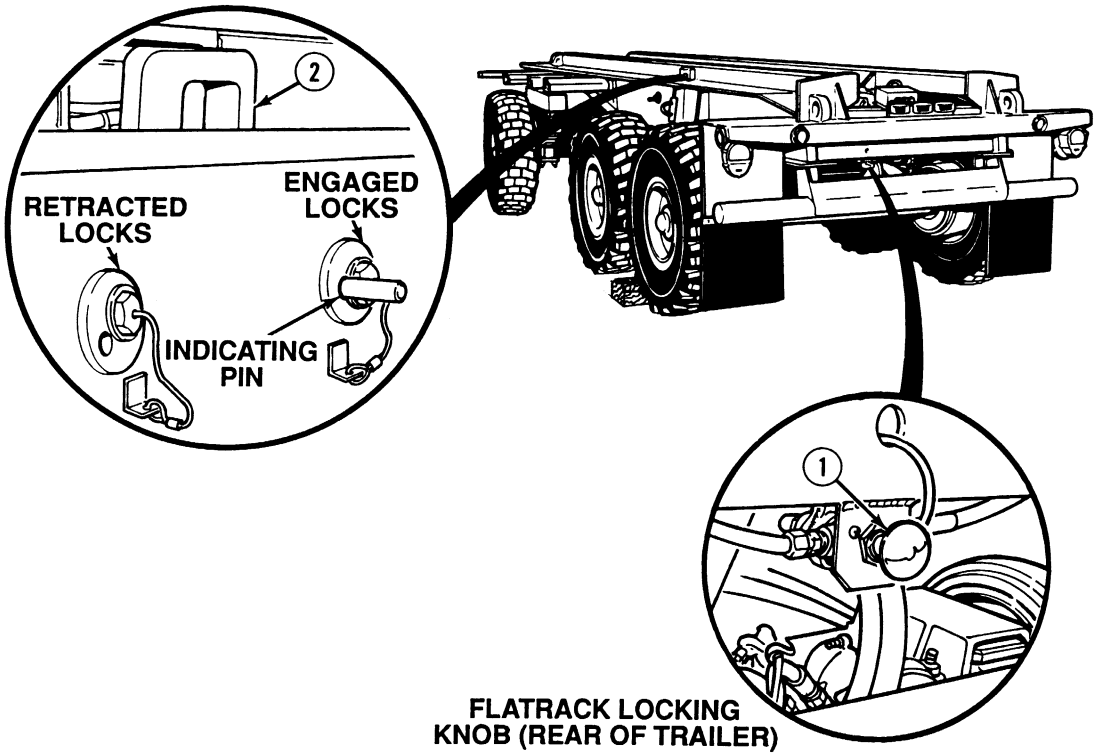
(6) Couple emergency trailer brake line (3) to truck.

(7) Push in trailer air supply knob (4) in cab of truck.

(8) With truck engine running allow three to five minutes to recharge air system.



2-13. RETRACTION/ENGAGEMENT OF FLATRACK LOCKS (NORMAL) (CONT).

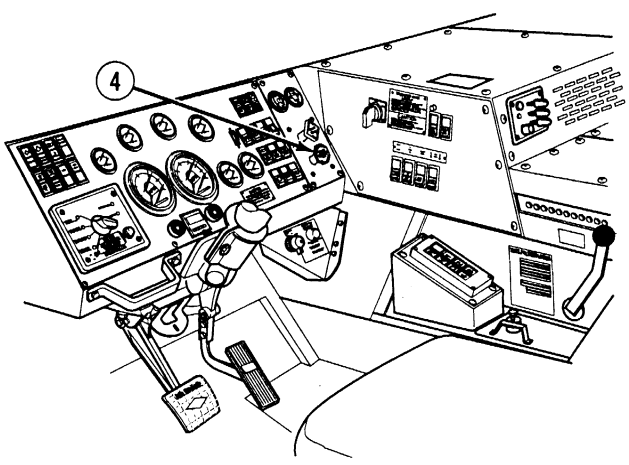


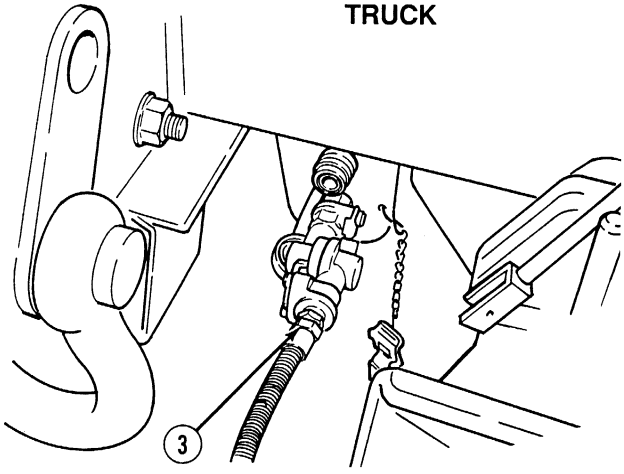
(9) Push in flatrack locking knob (1) to retract locks (2).

NOTE

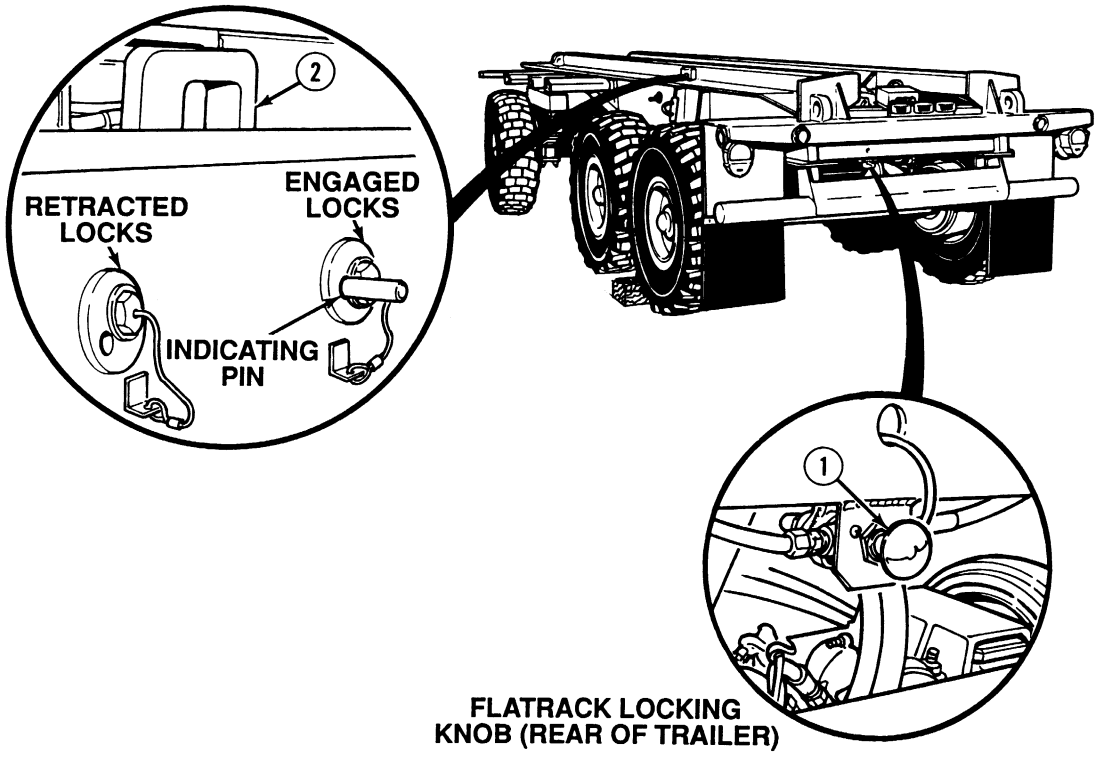
The flatrack locks indicating pins should be retracted "in" when the flatrack locks are released. There is one indicating pin on each side of the trailer.

(10) Check locks (2) to ensure locks are retracted. If locks did not retract, refer to Para 2-14 for manual retraction of locks.





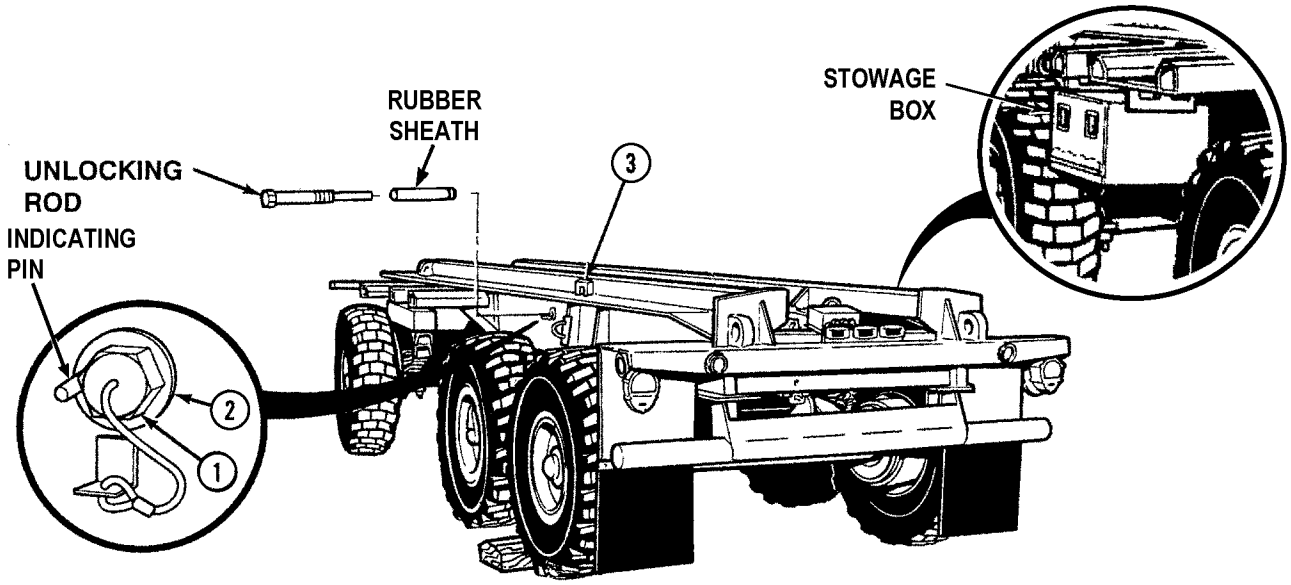
(11) Pull out trailer air supply knob (4) and uncouple trailer emergency brake line (3).



b. Engagement. Pull flatrack locking knob (1) to engage flatrack locks (2).

2-14. RETRACTION/ENGAGEMENT OF FLATRACK LOCKS (MANUAL).

a. Retract Flatrack Locks.



NOTE

- Use manual procedure only if normal procedure will not work.
- Locks will automatically engage unless air pressure holds them retracted.
- The flatrack locks indicating pins should be extended “out” when the flatrack locks are locked. There is one indicating pin on each side of the trailer.

(1) Ensure trailer is uncoupled and ready to be unloaded.

(2) Refer to Para 2-20 and chock trailer wheels.

(3) Remove protective plugs (1) from threaded frame holes (2).

(4) Remove unlocking rod from stowage box.

(5) Remove rubber sheath from unlocking rod.

(6) Install unlocking rod into threaded frame holes (2) and turn clockwise using the adjustable wrench until flatrack locks (3) are retracted.

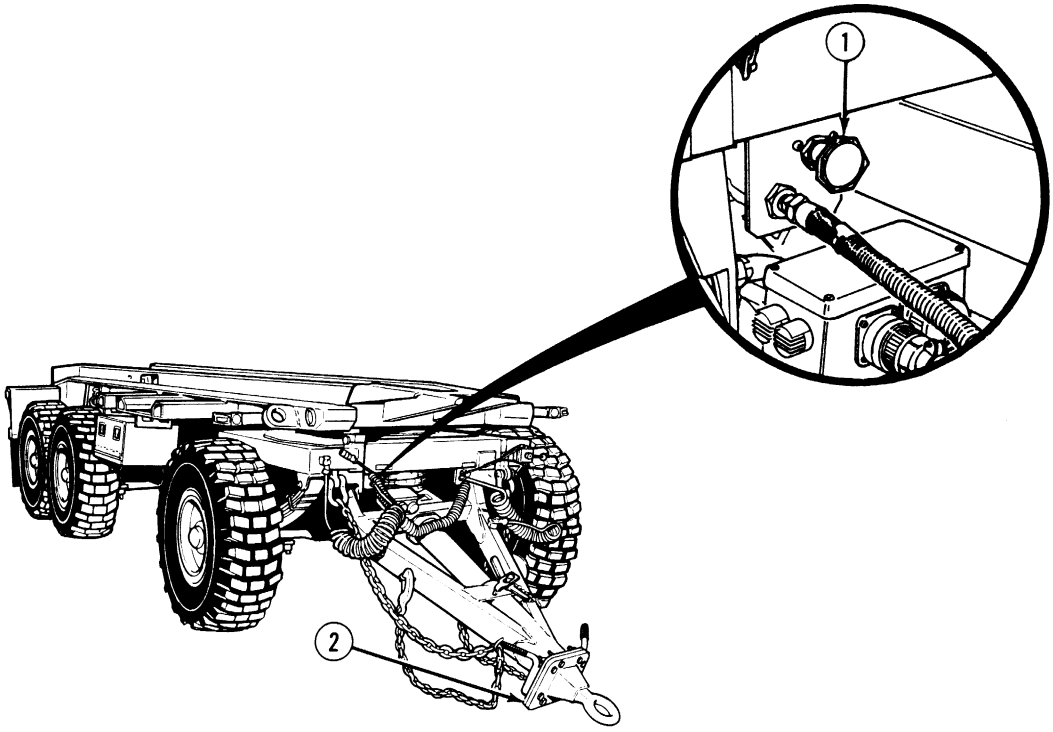
b. Engagement.

(1) Unscrew unlocking rod using the adjustable wrench and allow locks (3) to engage flatrack.

(2) Install protection plugs (1) in threaded frame holes (2).

2-15. RELEASE/APPLY PARKING BRAKES (NORMAL).

a. Release Parking Brakes.



WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

NOTE

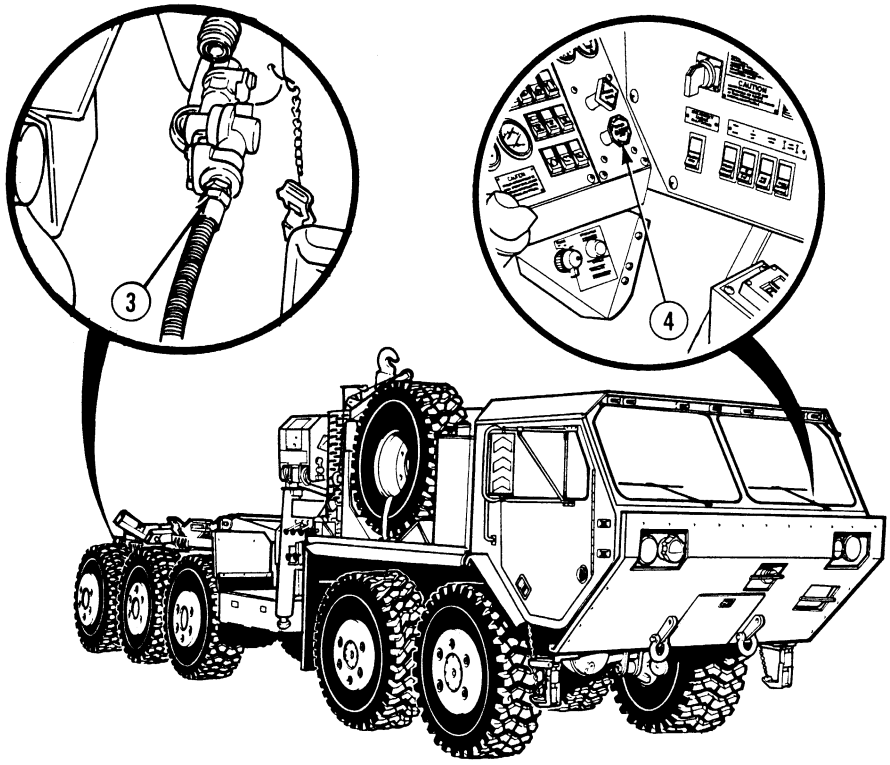
- The following procedures are for when the trailer is not hooked to the truck.
- Parking brakes are set automatically when gladhands are unhooked.
- Parking brakes are released when gladhands are hooked up and trailer air supply knob in cab is pushed in.
- If trailer parking brakes do not release, perform Steps (2) through (10) and pressurize air system.

(1) Refer to Para 2-20 and chock trailer wheels.

(2) To release trailer parking brakes, push in trailer parking brake knob (1) (located on trailer).

(3) Back truck close to drawbar (2).

2-15. RELEASE/APPLY PARKING BRAKES (NORMAL) (CONT).



WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

NOTE

When air pressure is supplied through emergency gladhand, trailer brakes will automatically release. When emergency gladhand is disconnected, trailer brakes will automatically lock.

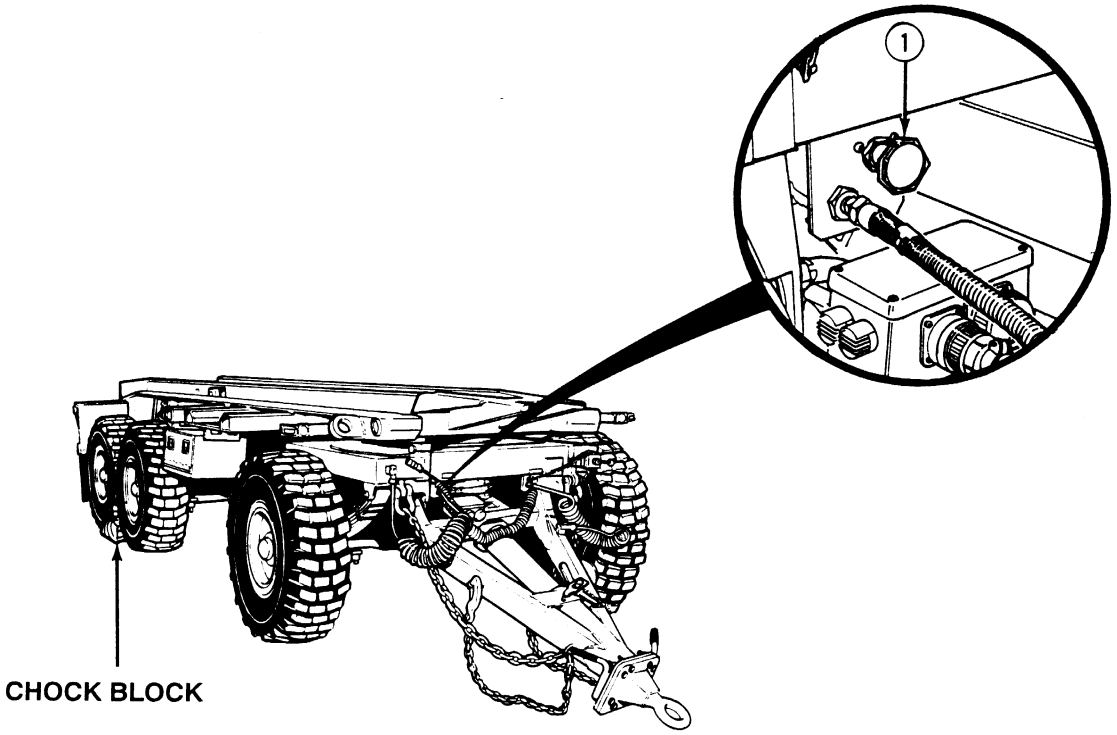
(4) Hook up emergency gladhand (3) and push in trailer air supply valve (4) located in truck cab.

(5) Allow trailer air pressure to build up to operating pressure (3 to 5 minutes).

(6) Pull trailer air supply valve (4) out in truck.

(7) Unhook emergency gladhand (3) from truck.

(8) Pull truck forward.



(9) To release trailer parking brake, push in trailer parking brake knob (1) located on trailer.

(10) Remove chock blocks from trailer wheels, (Para 2-20).

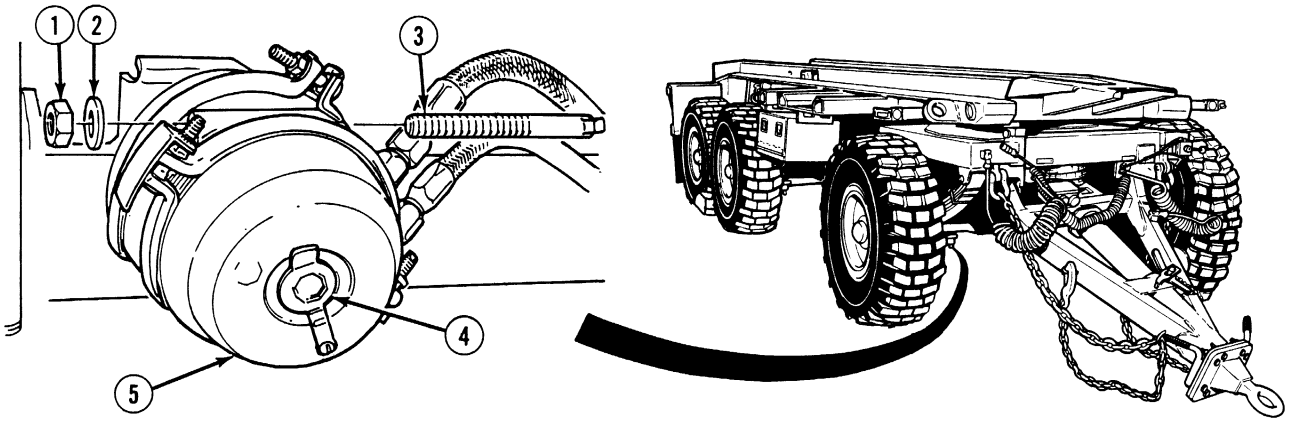
NOTE

The trailer spring brakes automatically apply when trailer reservoir pressure is low (below 40 psi [276 kPa]). The parking brake button will not stay pushed in when the pressure is low unless the reservoir pressure is at “zero” pressure.

b. Apply. Pull out parking brake knob (1) located on trailer.

2-16. RELEASE/APPLY PARKING BRAKES (CAGING BRAKES).

a. Release Parking Brake.



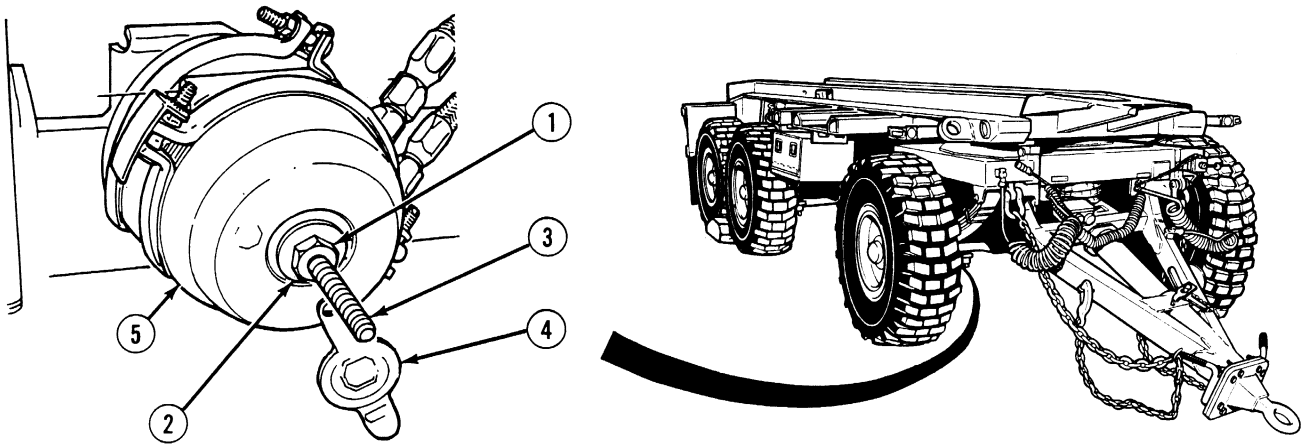
WARNING

- Brake chamber contains a spring that is under great pressure. Never work directly behind brake chamber or attempt to disassemble brake chamber. Serious injury or death could result to personnel.
- If top of brake chamber is clogged with mud, sand, or dirt, do not proceed with caging operation unless brake chamber can be cleared or serious injury or death could result to personnel.
- Trailer wheels must be chocked while caging brake chambers or serious injury or death could result to personnel.

(1) Chock wheels of trailer, (Para 2-20).

(2) Remove nut (1) and washer (2) from caging bolt (3) and remove caging bolt.

(3) Remove protective cap (4) on rear portion of brake chamber (5).



(4) Insert T-end of caging bolt (3) into hole on rear of brake chamber (5).

(5) Rotate caging bolt (3) to the left 1/4 turn until it stops.

CAUTION

Tighten until spring is fully compressed. Do not overtighten spring or damage to equipment may result.

NOTE

- If caging bolt cannot be pulled directly out it is properly inserted.
- Spring is fully compressed when caging bolt is sticking out approximately three in. (7.62 cm).

(6) Install nut (1) and washer (2) on caging bolt (3). Tighten nut (1) until spring is fully compressed.

(7) Repeat Steps (1) through (5) for the other brake chambers.

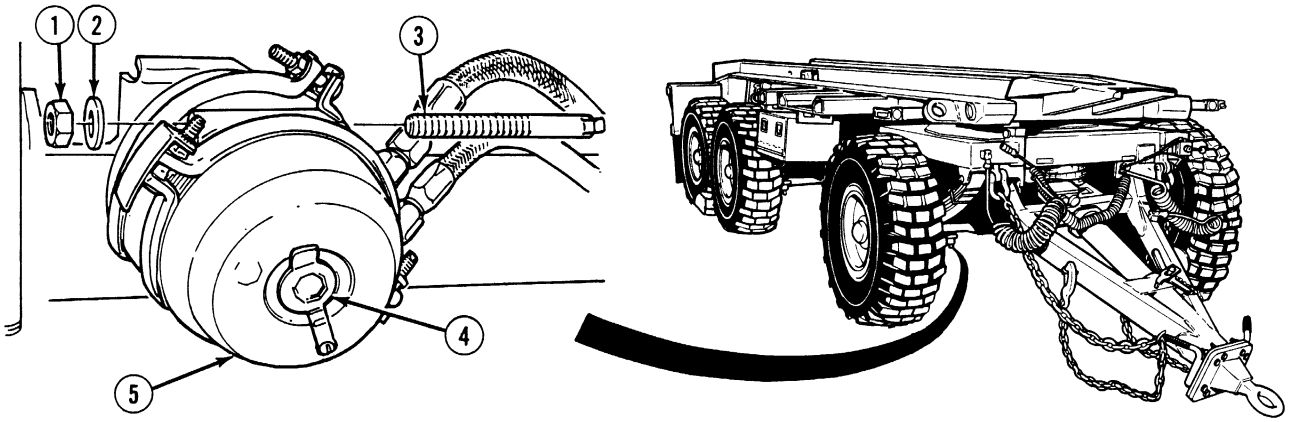
WARNING

Trailer must be connected to truck with parking brakes set before removing chock blocks or trailer may move uncontrolled. Failure to do so could result in severe injury or death may result to personnel.

(8) Remove chock blocks from trailer wheels (Para 2-20).

2-16. RELEASE/APPLY PARKING BRAKES (CAGING BRAKES) (CONT).

b. Apply Parking Brake.



WARNING

Trailer wheels must be chocked while caging brake chambers or serious injury or death could result to personnel.

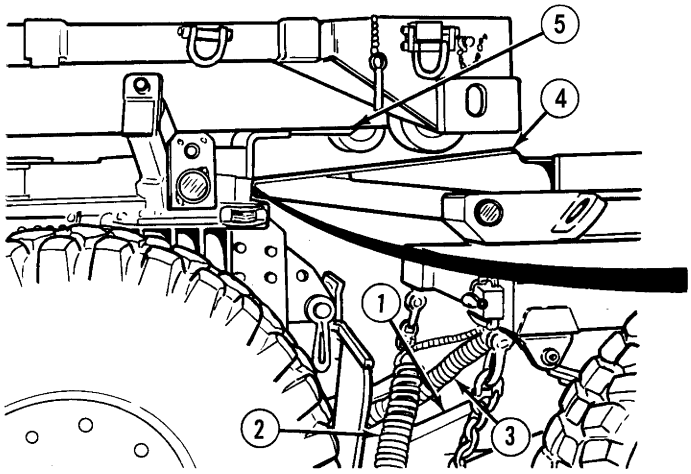
(1) Chock wheels of trailer, (Para 2-20).

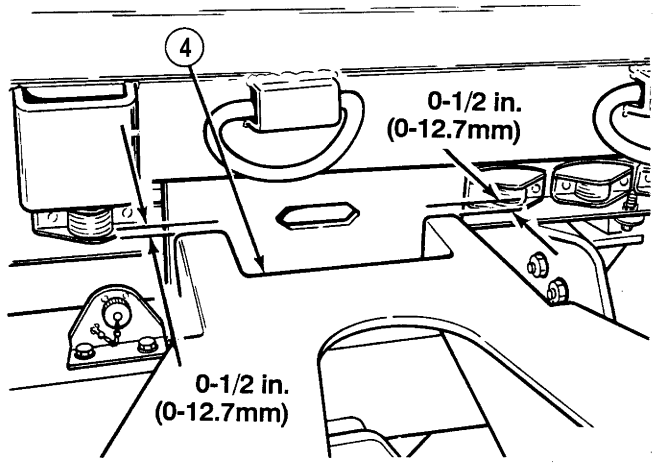
(2) Remove nuts (1), washers (2) and remove caging bolts (3) from brake chambers (5).

(3) Install protective caps (4) on rear of brake chambers (5).

(4) Install caging bolts (3) to storage position and secure with washers (2) and nuts (1).

2-17. PREPARATION FOR LOADING FLATRACK.





WARNING

Trailer wheels must be chocked prior to loading the flatrack. Serious injury or death could result to personnel.

CAUTION

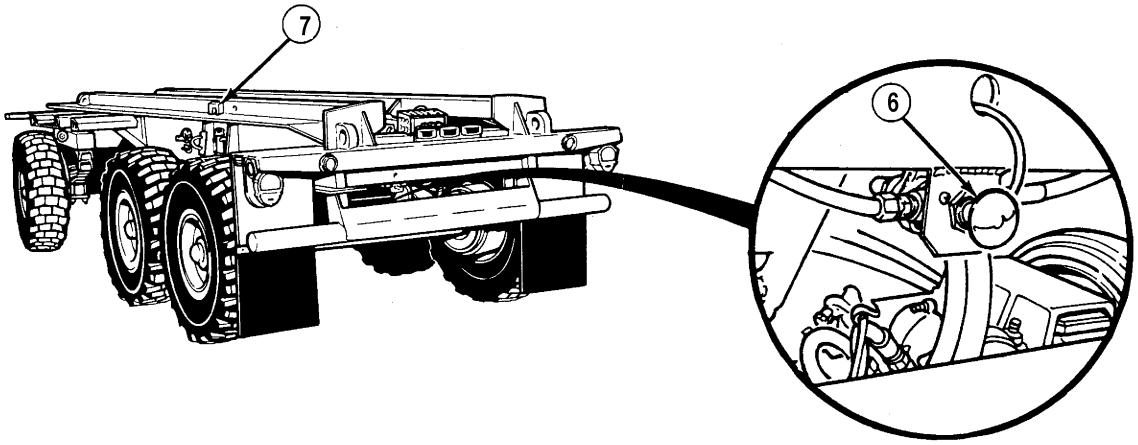
- Ensure trailer drawbar is down against the ground or damage to equipment may result.
- Ensure that air lines and cables are properly stowed or damage to equipment may result.
- Both trailer bumper points must be under the truck bumper stop flange and at least one of the bumper points must contact the bumper stop. The trailer bumper point not contacting the truck bumper stop cannot exceed 1/2 in. (12.7 mm) or flatrack will miss main rail guides and equipment damage may result.

a. Chock trailer wheels (Para 2-20) and lower drawbar (1).

b. Remove and stow air lines (2) and electrical cables (3), (Para 2-9b).

c. Back up truck so that trailer bumper (4) is under flange of bumper stop (5).

2-17. PREPARATION FOR LOADING FLATRACK (CONT).



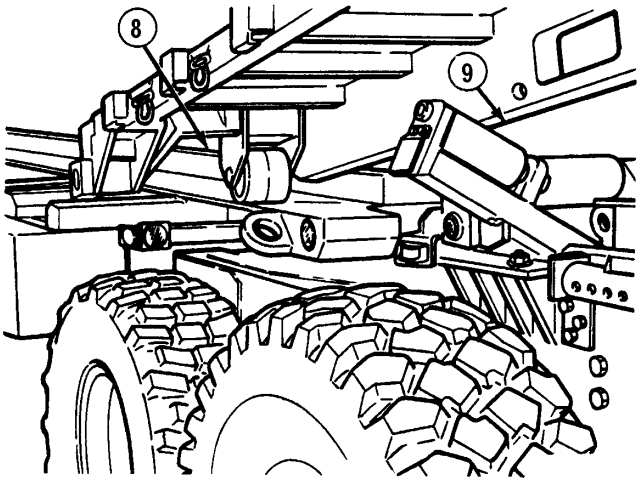
NOTE

There must be sufficient air pressure in trailer air system to retract flatrack locks. If not, refer to (Para 2-22) and charge the air system. If air system cannot retract flatrack locks, use manual flatrack lock retract procedure, (Para 2-14).

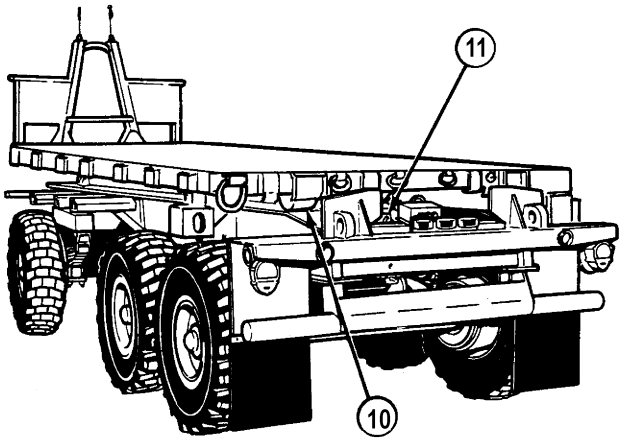
d. Push in on knob (6) and retract flatrack locks (7).

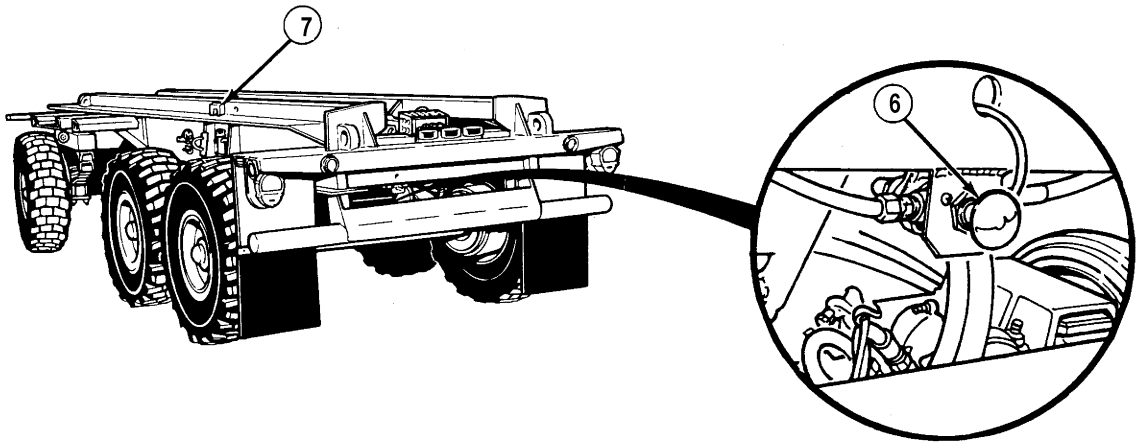
e. As flatrack is loaded, inspect and verify trailer guides (8) are lined up between flatrack main rails (9).

f. Refer to TM 9-2320-364-10 for flatrack loading procedures.



g. When flatrack is completely loaded, inspect that rear rollers (10) have contacted rear trailer stops (11).





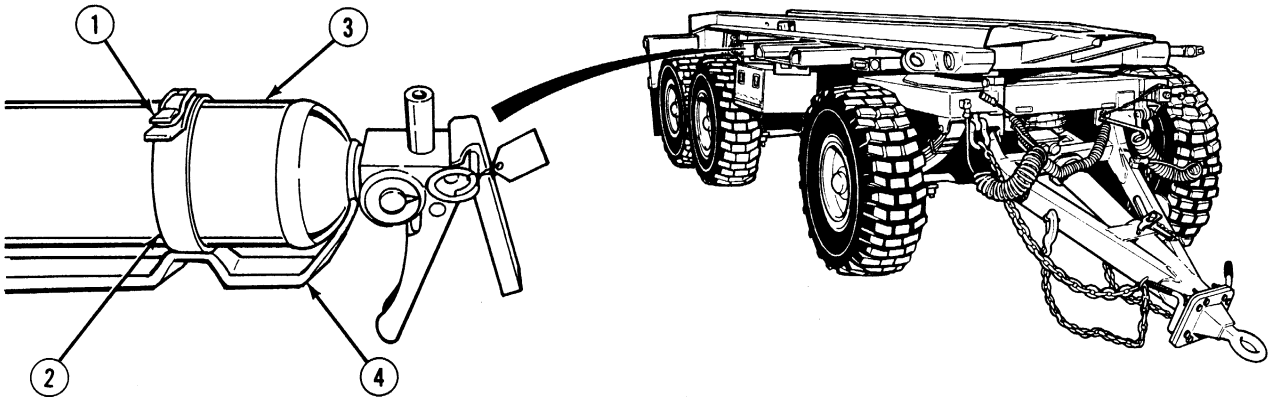
h. Pull out knob (6) and lock load locks (7). Ensure load lock indicator pins are “out”.

i. Refer to Para 2-9 for trailer hookup procedures.

2-18. TIRE/SPARE TIRE REPLACEMENT.

Refer to Para 3-4 and 3-5 for tire/spare tire replacement.

2-19. FIRE EXTINGUISHER OPERATION.



a. Pull up clamp (1) and open strap (2).

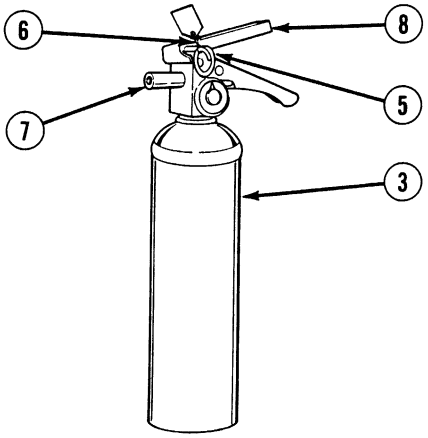
b. Pull fire extinguisher (3) straight out and off bracket (4).

c. Hold fire extinguisher (3) upright and pull safety pin (5) to break plastic tie (6).

d. Point nozzle (7) at base of fire.

e. Press down on stop lever (8) and spray discharge in a side-to-side motion at base of fire.

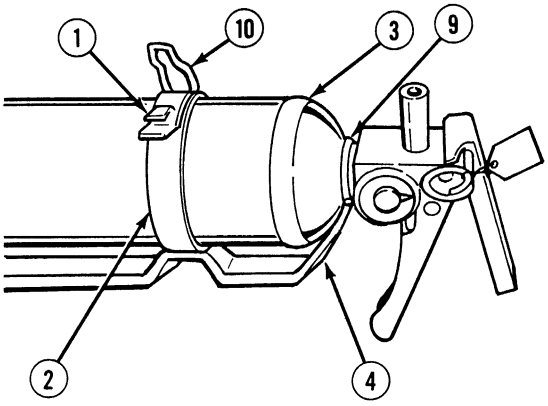
f. Replace fire extinguisher (3) after use.



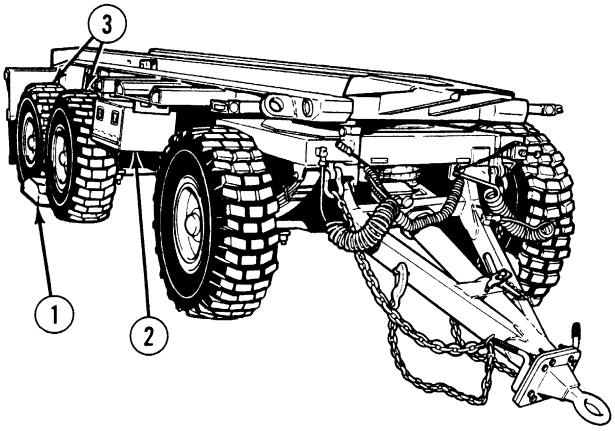
g. Put neck (9) of fire extinguisher (3) on bracket (4).

h. Put clamp (1) on hook (10).

i. Push down on clamp (1) to secure strap (2).



2-20. CHOCK TIRES.



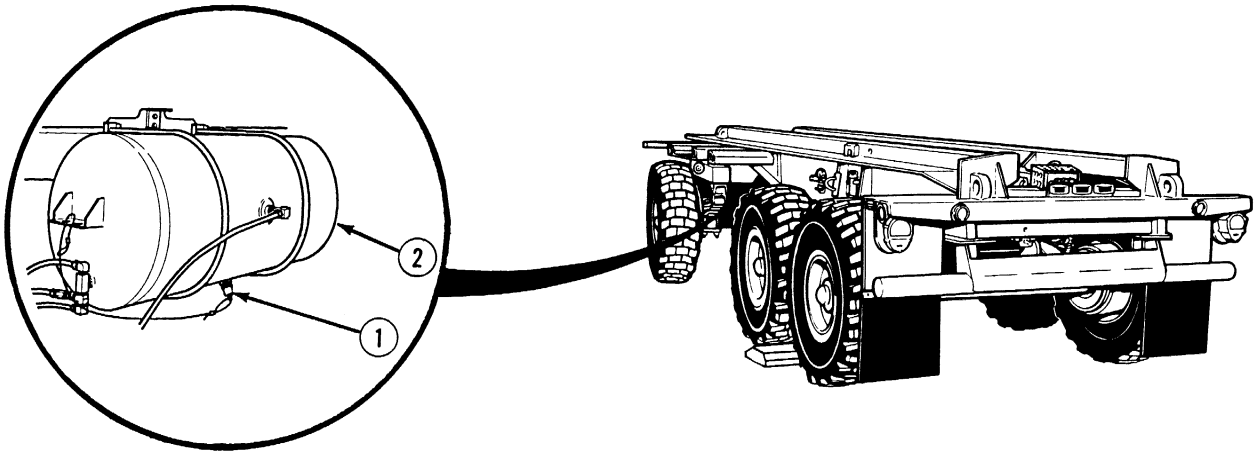
NOTE

Trailer should be parked on level ground.

a. Remove chock blocks (1) from stowage box (2).

b. Place chock blocks (1) on ground between wheels (3) of Axles No. 2 and No. 3.

2-21. DRAIN AIR RESERVOIRS.



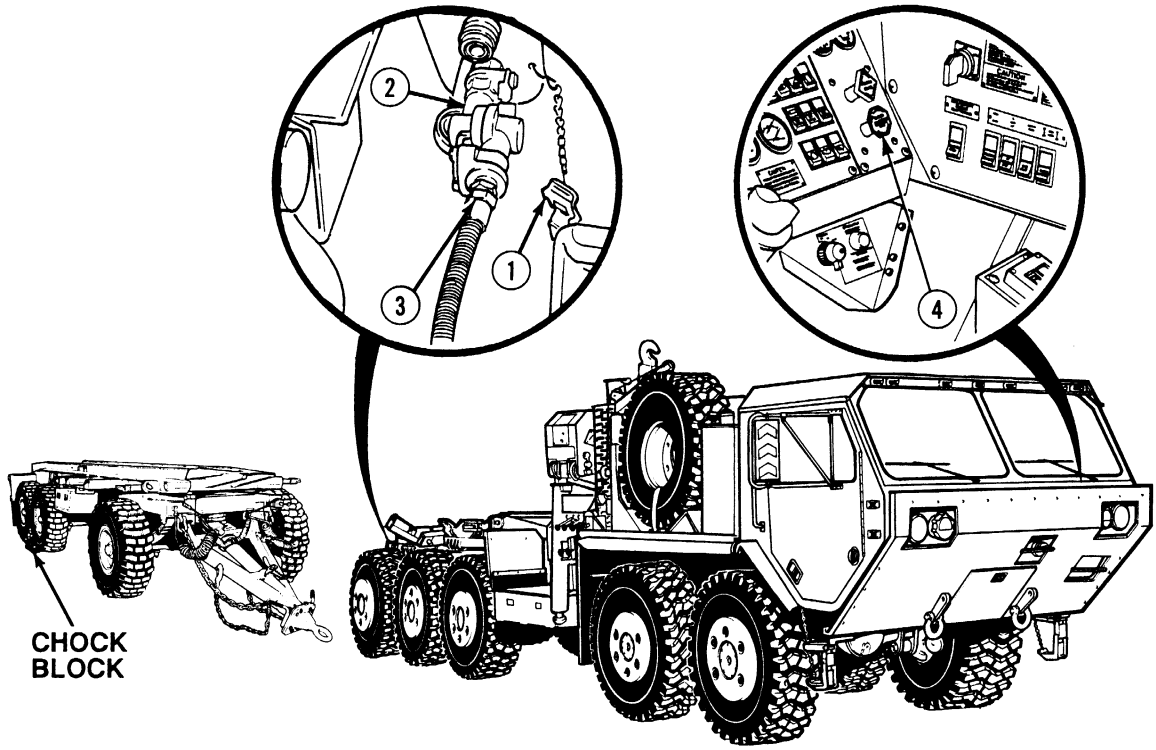
NOTE

When draining air system for maintenance or troubleshooting procedures, drain air from reservoirs until no air is heard exhausting out of reservoirs.

a. Pull cable (1) on each reservoir (2) to release air. Observe air stream for evidence of moisture. If no moisture is present, release cable (1). If moisture is present in air stream, continue to release air until no moisture is evident.

b. Release cable (1).

2-22. CHARGE AIR SYSTEM.



WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

NOTE

When air pressure is supplied through emergency line, trailer brakes will automatically release. When line is disconnected trailer brakes will automatically lock.

a. Chock trailer wheels, (Para 2-20).

b. Remove cover (1) from truck emergency gladhand (2).

c. Hook up emergency hose gladhand (3) to truck emergency gladhand (2).

d. Refer to TM 9-2320-364-10 and start truck.

e. Push in trailer air supply valve (4) located in truck cab.

f. Allow trailer air pressure to build to operating pressure 120 to 125 psi (827-861 kPa).

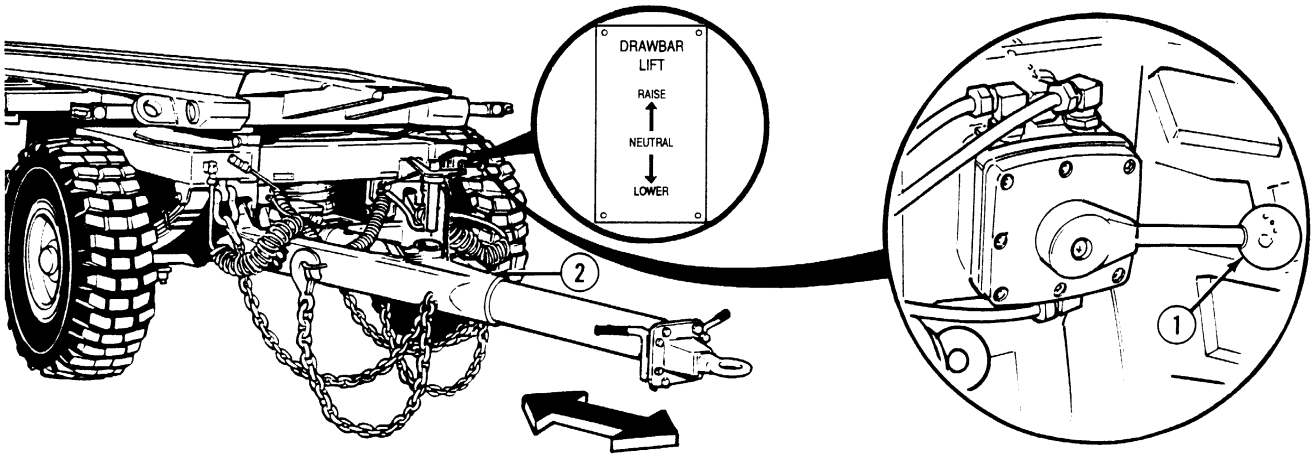
g. Pull out trailer air supply valve (4) located in truck cab.

h. Refer to TM 9-2320-364-10 to shut off truck.

i. Remove trailer emergency gladhand hose (3) from truck emergency gladhand (2).

j. Install cover (1) to truck emergency gladhand (2).

2-23. LOWER DRAWBAR.



a. Retract drawbar (Para 2-10).

b. Move air assist lever (1) to DOWN position to lower drawbar (2) to ground.

2-24. DECALS AND INSTRUCTION PLATES.

Figure 2-7 shows the location of the decals and instruction plates on the trailer.

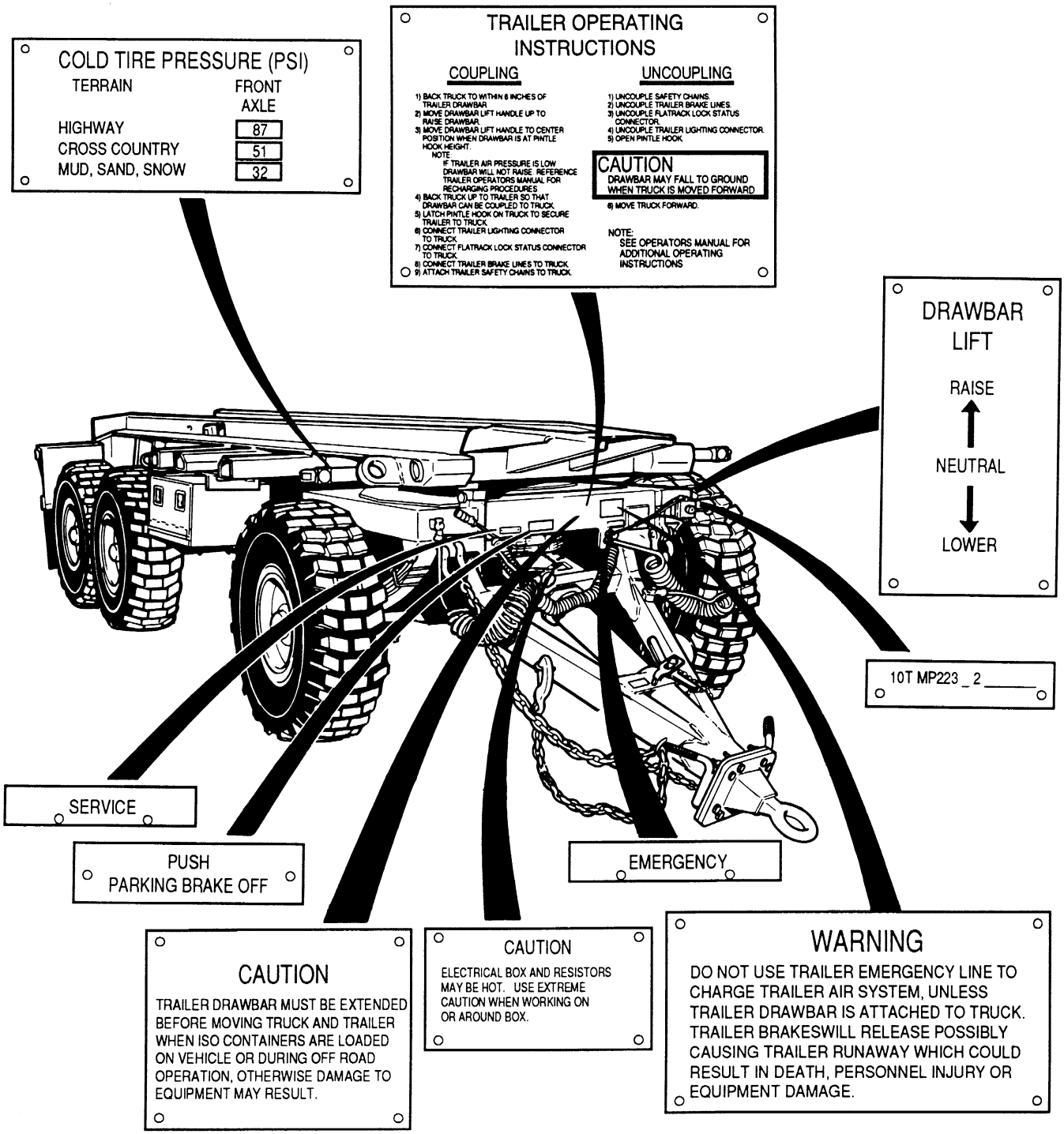


Figure 2-7. Decals and Instruction Plates (Sheet 1 of 2)

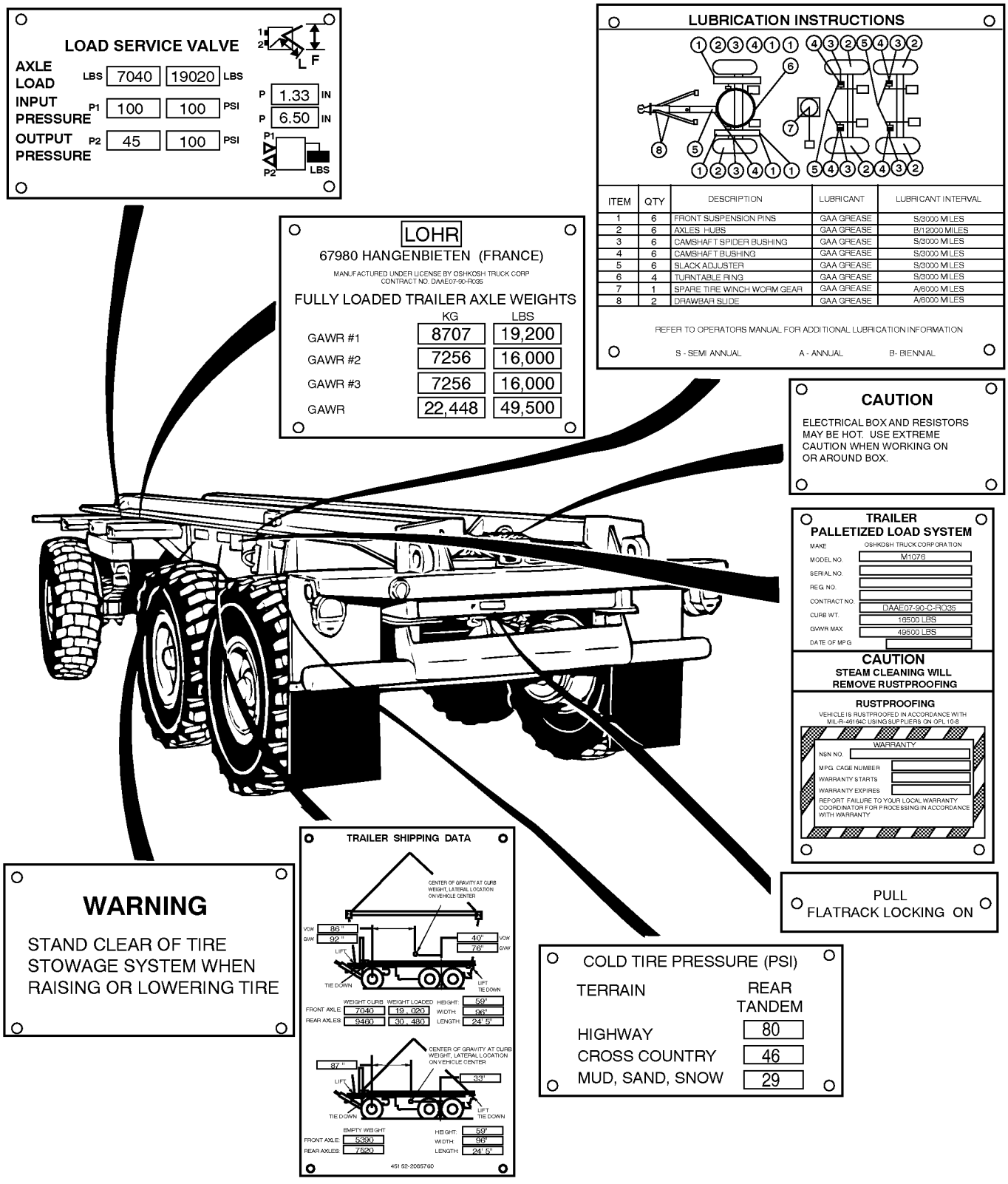


Figure 2-7. Decals and Instruction Plates (Sheet 2 of 2)

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-25. OPERATE IN EXTREME SAND OR MUD.

Driving in mud can degrade braking and speed up brake shoe wear. If braking worsens while operating in mud, dry brakes by driving truck and trailer approximately 500 ft (153 m) with service brakes frequently applied. This must be done with brake drums totally out of mud so that drying action can take place. If adequate braking is not restored by drying brakes, notify Unit Maintenance.

2-26. OPERATE IN DESERT ENVIRONMENT.

Refer to FM 90-3 for detailed instructions for living and working in desert. Principles for operating in sand or mud (Para 2-25), apply.

2-27. OPERATE IN COLD WEATHER ENVIRONMENT.

CAUTION

- Before operating trailer in severe cold environment, make sure it has been prepared as described in FM 9-207. Refer to FM 31-70, FM 31-71 and FM 21-305 for additional information on operation in cold environment. Failure to prepare trailer properly could cause damage to equipment.
- Park in shelter when possible. If shelter is not available, park so trailer does not face wind. Place planks or brush under wheels so trailer will not freeze in place. Failure to park properly may cause damage to trailer.
- Refer to (Para 2-21) and drain air reservoirs after operation. Water in air system could freeze and block system causing damage to equipment.
- All snow and ice should be removed from trailer as soon as possible or damage to equipment could result.

NOTE

Refer to TM 9-2320-364-10, Operator's Manual for detailed operation procedures.

a. Drive on mud, snow, ice and slippery surfaces:

(1) Accelerate and decelerate the towing truck gradually.

(2) Keep towing truck speed as steady as possible after truck reaches desired speed.

(3) Turn truck and trailer slowly when on slippery surfaces.

(4) Steer truck and trailer away from ruts and large snow banks.

(5) Steer truck and trailer straight up and down hills if possible.

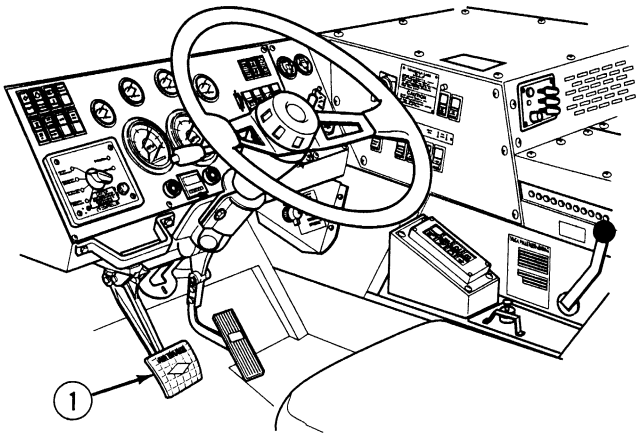
(6) Refer to the Operator's Manual (TM 9-2320-364-10) and select the appropriate transmission range to go down medium grades.

(7) Drive at slower speeds and keep twice the normal distance from vehicle ahead.

(8) Give turn signals sooner.

WARNING

Apply engine brake only when truck and trailer tires have good traction. Use of engine brake on slick surfaces can cause truck and trailer to skid and cause injury or death to personnel.



NOTE

Pressing brake lightly will help keep truck and trailer from skidding.

(9) Apply brakes (1) sooner and press brake pedal lightly to give early warning that truck will slow or stop.

(10) Refer to operators manual and downshift, if necessary, when slowing or stopping truck and on slick surfaces.

(11) Keep stoplights and clearance lights clean and free of snow and ice.

b. Brakes Slipping, Sliding Truck/Trailer and Central Tire Inflation System (CTIS) use.

(1) Drive slowly and test brakes after driving through slush or water. If brakes slip, perform the following:

(a) Continue to drive slowly.

(b) Apply moderate pressure on brake pedal (1) of towing truck to cause slight brake drag.

(c) When brakes are dry and no longer slip, let up on brake pedal (1).

(d) Resume normal driving speed.

2-27. OPERATE IN COLD WEATHER ENVIRONMENT (CONT).

NOTE

Refer to FM 21-305 or applicable Operator's Manual for additional information on driving in dangerous conditions.

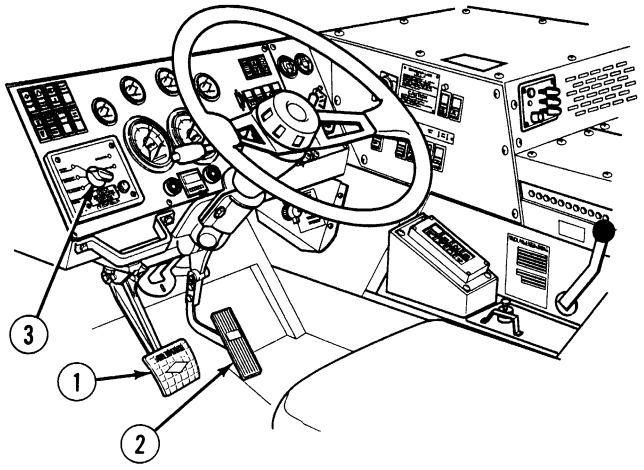
(2) If rear of truck and trailer skids, do the following:

(a) Let up on throttle control (2).

(b) Steer in same direction in which truck is skidding.

(c) When truck and trailer is under control, press truck brake pedal (1) lightly.

(d) Steer truck and trailer on straight course and slowly press throttle control.



(3) If towing truck and trailer starts to slide while climbing hill, do the following:

(a) Let up on throttle control (2) of towing truck.

(b) Steer truck and trailer in direction of slide until truck and trailer stops.

(c) Slowly press throttle control (2) on towing truck and steer truck and trailer on straight course.

NOTE

Refer to FM 20-22 for detailed information on vehicle recovery.

(4) If towing truck is equipped with a CTIS and it is absolutely necessary for better traction, refer to applicable Operator's Manual and set CTIS switch (3) to position 4 (Emergency). Drive at low speed (five mph [8 km/h]) when tire air pressures are reduced.

2-28. DEEP WATER FORDING.

WARNING

Do not ford water unless depth is known. Water deeper than four ft (1.22 m) may enter trailer parts, causing injury or equipment damage.

(1) Ensure depth of fording site is not more than four ft (1.22 m).

(2) Ensure bottom at fording site is firm enough that four ft (1.22 m) maximum fording depth will not be exceeded and trailer will not become mired.

(3) Stop truck and trailer at edge of water.

(4) If brakes have been used heavily and are hot, allow drums and shoes to cool before entering water if possible.

(5) Drive truck and trailer slowly into water.

(6) Drive at three to four mph (five to six km/h), or less, through water.

(7) Unless absolutely necessary, do not stop while in water.

(8) If truck and trailer accidentally enters water deeper than four ft (1.22 m), slowly back truck and trailer out of deep water.

(9) After leaving water, press brake pedal lightly and hold while driving slowly to dry out brake linings.

(10) When clear of fording area, stop truck and trailer.

(11) Apply and release parking brake several times to remove water from brake components.

(12) Remove water and clean deposits from all trailer parts as soon as possible.

(13) Lubricate and perform PMCS check as soon as possible.

2-29. EMERGENCY PROCEDURES.

a. Loss of Air Supply System Pressure While Driving.

(1) Refer to TM 9-2320-364-10 for driving instructions in the event of air system failure.

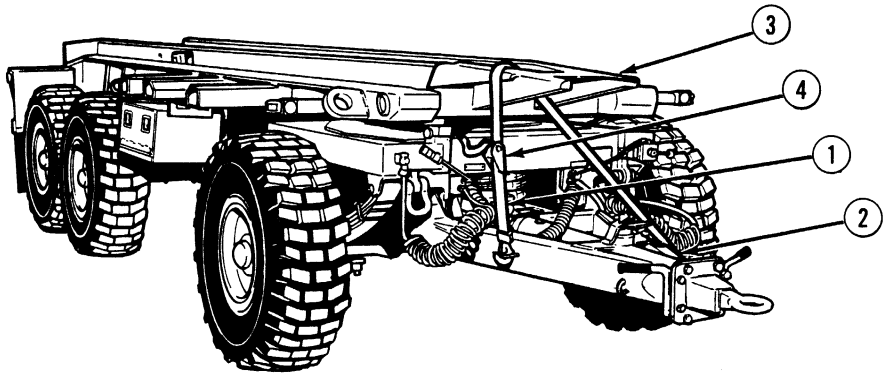
(2) Look for place to stop truck and trailer without blocking other traffic.

(3) Downshift, as needed, to control truck speed until place is found to stop.

(4) Refer to troubleshooting as soon as possible.

2-29. EMERGENCY PROCEDURES (CONT).

b. Drawbar Operations With Air System Failure.



(1) Raise Drawbar.

(a) Remove a stowage strap (1) from stowage box.

(b) Install strap (1) through drawbar (2) and trailer bumper (3) and connect ends of strap together.

(c) Use ratchet (4) on strap (1) to raise drawbar (2) to allow trailer hookup.

(d) Refer to Para 2-9 and connect trailer to truck.

(e) Remove strap (1) from drawbar (2).

(f) Place stowage strap (1) in stowage box.

(2) Lower drawbar.

(a) Remove a stowage strap (1) from stowage box.

(b) Install strap (1) through drawbar (2) and trailer bumper (3) and connect ends of strap together.

(c) Use ratchet (4) on strap (1) to raise drawbar (2).

(d) Refer to Para 2-9 and disconnect trailer from truck.

(e) Use ratchet (4) on strap (1) to lower drawbar (2).

(f) Remove strap (1) from drawbar (2).

(g) Place stowage strap (1) in stowage box.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

Section I. TROUBLESHOOTING PROCEDURES

3-1. TROUBLESHOOTING INTRODUCTION.

This section contains step by step procedures for identifying, locating and isolating equipment malfunctions.

3-2. TROUBLESHOOTING SYMPTOMS.

Refer to Table 3-1 for a list of common malfunctions. Table 3-2 lists the most common malfunctions found during operation or maintenance of the trailer. Tests or inspections and corrective actions should be performed in the order listed. If a malfunction is not listed, or is not corrected by listed corrective actions, notify the supervisor.

Table 3-1. Operator Troubleshooting Symptom Index

3-2. TROUBLESHOOTING SYMPTOMS (CONT).

Table 3-2. Operator Troubleshooting Procedures

Malfunction
Test or Inspection
Corrective Action

1. ALL TRAILER LIGHTS FAIL.

Is trailer electrical system connected to the truck electrical system?

If the trailer electrical cable assembly is not connected to the truck, connect the electrical cable assembly (Para 2-9).

If selected lights fail, notify Unit Maintenance.

2. ALL TRAILER PARKING BRAKES DO NOT RELEASE.

WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

Is the trailer emergency air supply line connected to the truck air system?

If the trailer emergency air supply line is not connected to the truck, connect the emergency air supply line (Para 2-9).

If the trailer emergency air supply line is connected to the truck, notify Unit Maintenance.

3. TRAILER SERVICE BRAKES DO NOT APPLY.

WARNING

Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.

Is the trailer service air supply line connected to the truck air system?

If the trailer service air supply line is not connected, connect the trailer air supply line (Para 2-9).

If the trailer service air supply line is connected, notify Unit Maintenance.

Table 3-2. Operator Troubleshooting Procedures - CONT.

Malfunction Test or Inspection Corrective Action
4. TRAILER FAILS TO TURN AND FOLLOW THE TRUCK.
Is the drawbar locking pin removed?
If the locking pin is installed, remove the locking pin (Para 2-12).
If the locking pin is removed, notify Unit Maintenance.
5. FLATRACK LOCKING MECHANISM DOES NOT UNLOCK.
WARNING Trailer wheels must be chocked or drawbar connected to truck before coupling trailer gladhands to truck. Failure to comply may result in injury or death to personnel.
Is the emergency air supply gladhand connected to the truck?
If the emergency air supply gladhand is not connected to the truck, connect the gladhand (Para 2-9).
If the emergency gladhand is connected to the truck, notify Unit Maintenance.
6. FLATRACK LOCKING MECHANISM DOES NOT LOCK.
Is the flatrack positioned on the trailer correctly?
If the flatrack is not positioned on the trailer correctly, reposition the flatrack (Para 2-17).
If the flatrack is positioned on the trailer correctly, notify Unit Maintenance.
7. DRAWBAR WILL NOT RAISE OR LOWER.
Is air tank No. 1 pressurized?
Pull air drain cable and listen for air release. If air tank No. 1 is not pressurized, charge it (Para 2-22).
If air tank No. 1 is pressurized, notify Unit Maintenance.

Section II. MAINTENANCE PROCEDURES

3-3. MAINTENANCE INTRODUCTION.

This section covers maintenance tasks authorized at the Operator's level of maintenance.

3-4. TIRE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Jack, Hydraulic (TM 9-2320-364-10)
Handle, Sliding (TM 9-2320-364-10)
Socket, Impact 1-1/2 in. (TM 9-2320-364-10)
Wrench, Extension (TM 9-2320-364-10)
Wrench, Impact (TM 9-2320-364-10)

Personnel Required
Two

References
TM 9-2610-200-14

Equipment Condition
Parking brake applied, (Para 2-15)
Wheels chocked, (Para 2-20)
Spare tire removed, (Para 3-5)

a. Removal.

WARNING

- If the tire has been driven on when underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, attach inflator gage to valve stem. Inflator gage must not be hooked up to air hose. Press down inflator gage handle until all air pressure has been exhausted. Stand out of the trajectory area or personal injury or death may result.
- Wheel/tire must be inflated in a safety cage or personal injury or death may result.
- Tire air pressure must be checked properly or serious injury or death may result.
- If tire has been run flat, or is overinflated or underinflated when tire pressure is measured and operating terrain is compared to Table 3-3, or if wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6, and remove the tire from the axle. Failure to follow these procedures may result in serious personal injury or death.

NOTE

Trajectory area as shown applies to all wheel/tire assemblies.

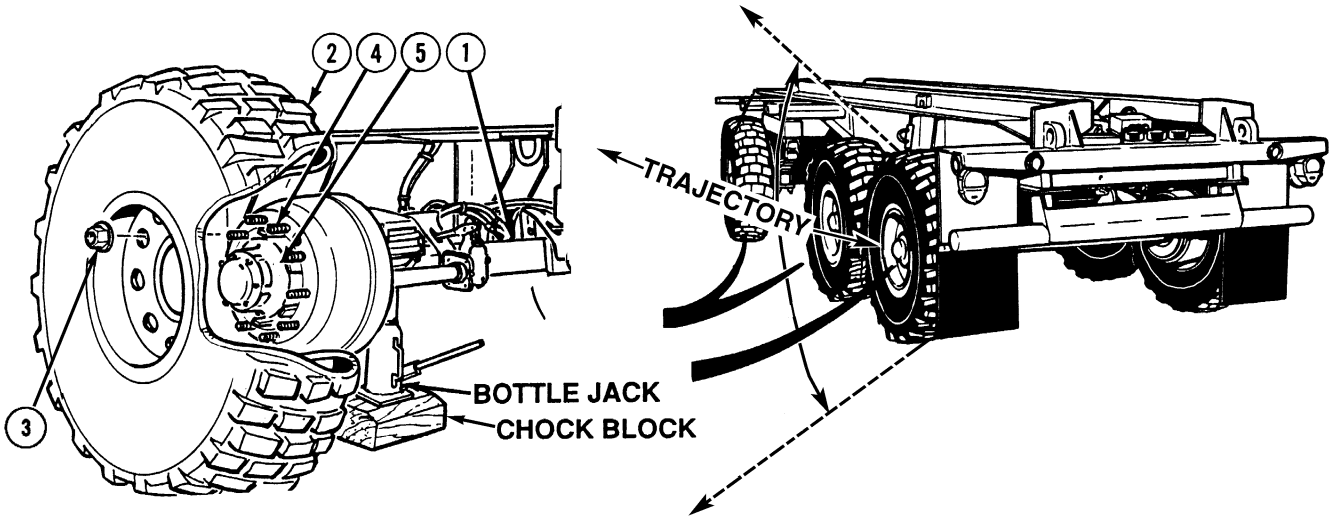


Table 3-3. Unsafe Inflation Pressures

	FRONT TIRES ARE:	**REAR TIRES ARE:**	**FRONT TIRES ARE:**	**REAR TIRES ARE:**
	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**
Highway	109 psi (752 kPa)	100 psi (690 kPa)	70 psi (483 kPa)	64 psi (441 kPa)
Cross-Country	64 psi (441 kPa)	58 psi (400 kPa)	41 psi (283 kPa)	37 psi (255 kPa)
Mud, Sand and Snow	40 psi (276 kPa)	36 psi (248 kPa)	26 psi (179 kPa)	23 psi (159 kPa)

(1) Take tire pressure reading on tire/wheel to be changed and compare reading to Table 3-3. If tire is overinflated or underinflated or there is obvious or suspected damage to wheel or tire, completely deflate tire before removing from trailer (Para 3-6).

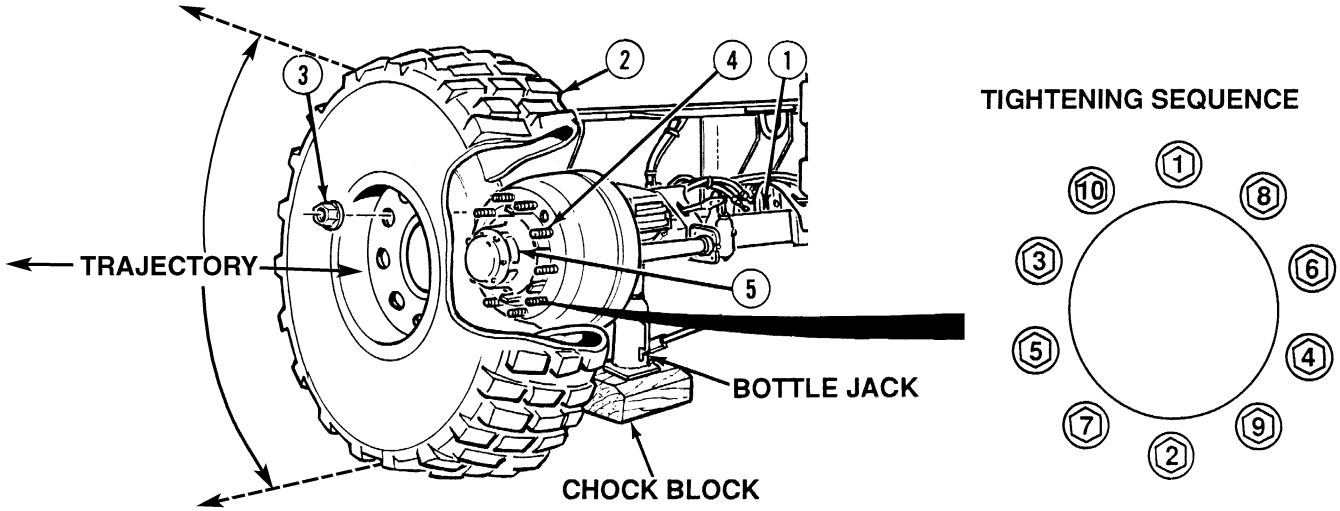
WARNING

Never crawl under trailer when performing maintenance unless trailer is securely blocked. Trailer may fall and cause serious injury or death to personnel.

(2) Position jack on chock block and install under axle (1) to be raised.

(3) Raise jack until tire (2) clears ground.

3-4. TIRE REPLACEMENT (CONT).



(4) Remove ten lugnuts (3) from wheel studs (4).

WARNING

Tire weighs 425 lbs (193 kg). Keep all personnel clear from under tire. Failure to comply may result in serious injury to personnel.

(5) With the aid of an assistant, remove tire (2) from wheel hub (5).

b. Installation.

WARNING

- Never crawl under trailer when performing maintenance unless trailer is securely blocked. Trailer may fall and cause serious injury or death to personnel.
- Tire weighs 425 lbs (193 kg). Keep all personnel clear from under tire. Failure to comply may result in serious injury to personnel.

(1) Position tire (2) on wheel hub (5).

(2) Install ten lugnuts (3) on wheel studs (4). Tighten lugnuts using tightening sequence shown.

WARNING

When returning axle to the ground, ensure personnel are out of the trajectory as shown by the area indicated. Failure to comply may result in serious injury or death to personnel.

(3) Lower and remove jack and chock block from axle (1).

c. Follow-On Maintenance:

- Stow defective tire on spare tire bracket, (Para 3-5).
- Remove wheel chocks, (Para 2-20).
- Report to Unit Maintenance to torque lugnuts as soon as possible.

END OF TASK

3-5. SPARE TIRE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Gloves, Heavy Duty (Item 12, Appendix J)
Handle, Sliding (TM 9-2320-364-10)
Socket, Impact 1-1/2 in. (TM 9-2320-364-10)
Wrench, Extension (TM 9-2320-364-10)
Wrench, Impact (TM 9-2320-364-10)

Personnel Required
Two

References
TM 9-2610-200-14

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.

WARNING

- Spare tire weighs 425 lbs (193 kg). Keep all personnel clear from under spare tire. Failure to comply may result in serious injury to personnel.
- Ensure all personnel wear suitable eye protection while lowering spare tire. Failure to comply may result in injury to personnel.
- Ensure personnel are positioned under trailer only far enough to perform procedure. Do not position entire body under tire unless required. Failure to comply may result in injury or death to personnel.
- If spare tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, attach inflator gage to valve stem. Inflator gage must not be hooked up to air hose. Press down inflator gage handle until all air pressure has been exhausted. Stand out of the trajectory area or personal injury or death may result.
- Wheel/tire must be inflated in a safety cage or personal injury or death may result.
- While changing tire or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Tire pressure must be checked properly or serious injury or death may result.

3-5. SPARE TIRE REPLACEMENT (CONT).

WARNING

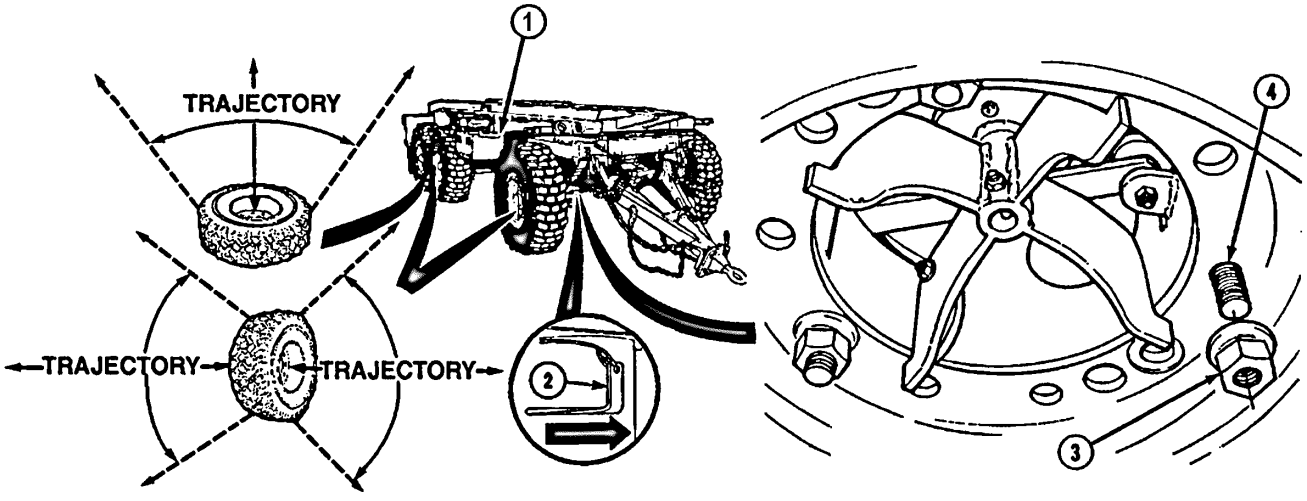
If tire has been run flat, or is overinflated or underinflated when tire pressure measured is compared to Table 3-4, or if wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6, and remove the tire from the trailer. Failure to follow these procedures may result in serious personal injury or death.

NOTE

- Air wrench from PLS truck may be used in place of sliding handle and extension wrench.
- Trajectory area as shown applies to all wheel/tire assemblies.

Table 3-4. Unsafe Inflation Pressure

	SPARE TIRE IS:	SPARE TIRE IS:
	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**
Spare Tire Pressure	109 psi (752 kPa)	70 psi (483 kPa)



(1) Take tire pressure reading on spare tire and compare reading to Table 3-4. If tire is overinflated or underinflated, or there is obvious damage or suspected damage to tire or wheel components, completely deflate tire (Para 3-6) and stand out of trajectory range before lowering tire from trailer.

(2) Remove slide handle, extension wrench and socket from stowage box (1).

(3) Ensure handle (2) is in LOCKED position.

(4) Remove three nuts (3) from studs (4).

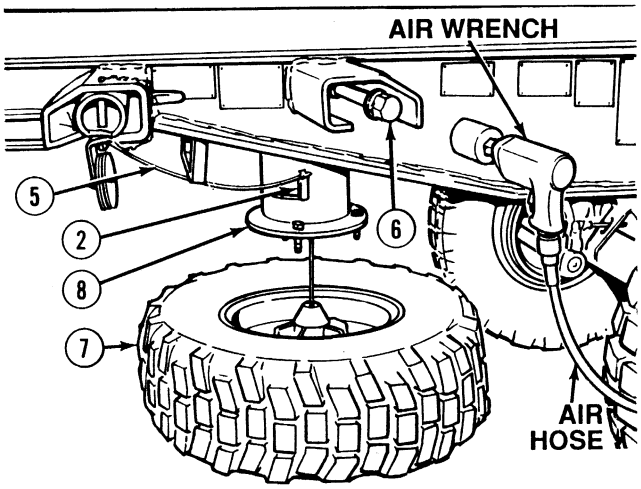
WARNING

- Ensure slide handle or air wrench and socket are held securely in place while lowering spare tire. Failure to comply may result in injury to personnel and/or damage to equipment.
- Wear hearing protection when lowering spare tire. Injury to personnel may result.

CAUTION

Ensure safety latch is held in release position until spare tire is lowered to ground. If safety latch is not held in release position, spare tire will not lower to ground.

(5) Pull safety latch cable (5) to UNLOCK position and turning winch bolt assembly (6) counterclockwise, lower spare tire (7) approx four in. (10 cm) from spare tire bracket (8).



WARNING

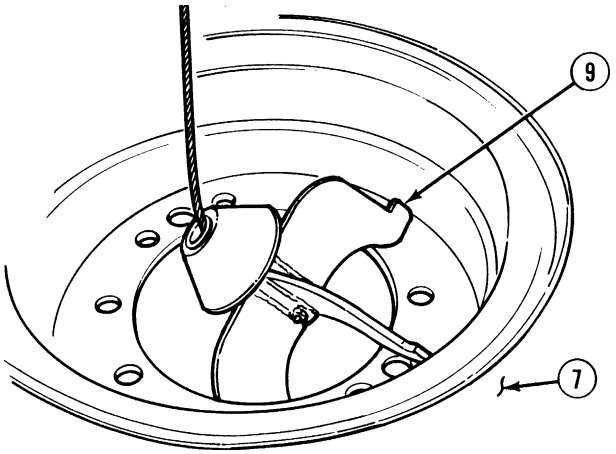
Ensure all personnel wear protective gloves when handling cable. Cable may fray and injury to personnel may result.

(6) Release safety latch cable (5).

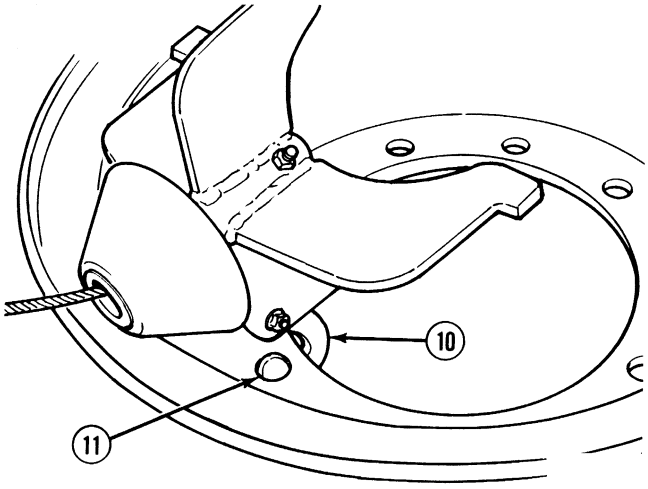
(7) Turning winch bolt assembly (6) counterclockwise, lower spare tire (7).

3-5. SPARE TIRE REPLACEMENT (CONT).

(8) Remove lift assembly (9) from spare tire (7).



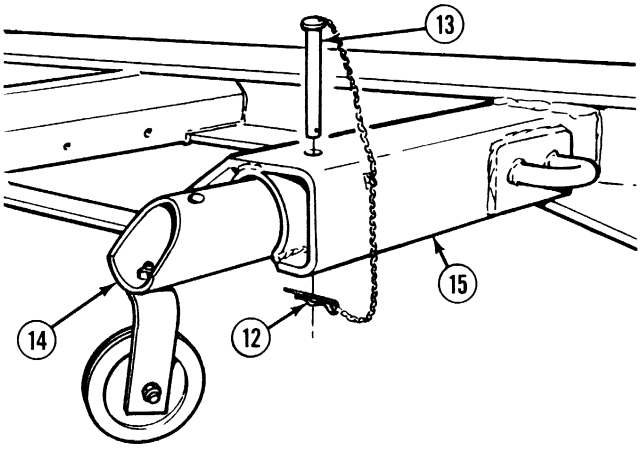
(9) Install lift assembly hook (10) in spare tire stud hole (11).



(10) Remove safety clip (12) and pin (13) from pulley assembly (14).

(11) Extend pulley assembly (14) until second hole lines up with hole in support (15).

(12) Install pin (13) and safety clip (12) in pulley assembly (14).

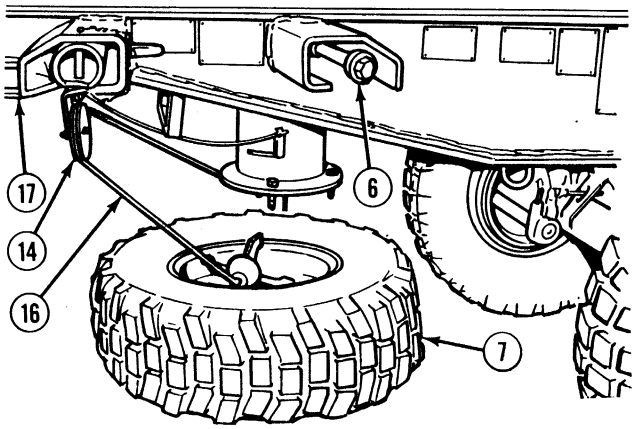


WARNING

Ensure all personnel wear protective gloves when handling cable. Cable may fray and injury to personnel may result.

(13) Turning winch bolt assembly (6) counterclockwise, remove ten ft (3 m) of cable (16) from winch assembly.

(14) Install cable (16) on pulley assembly (14).



CAUTION

To prevent knotting and binding ensure there is tension on cable when reeling it in. Failure to comply may result in damage to equipment.

(15) Turn rod assembly (6) clockwise and remove spare tire (7) from under trailer (17).

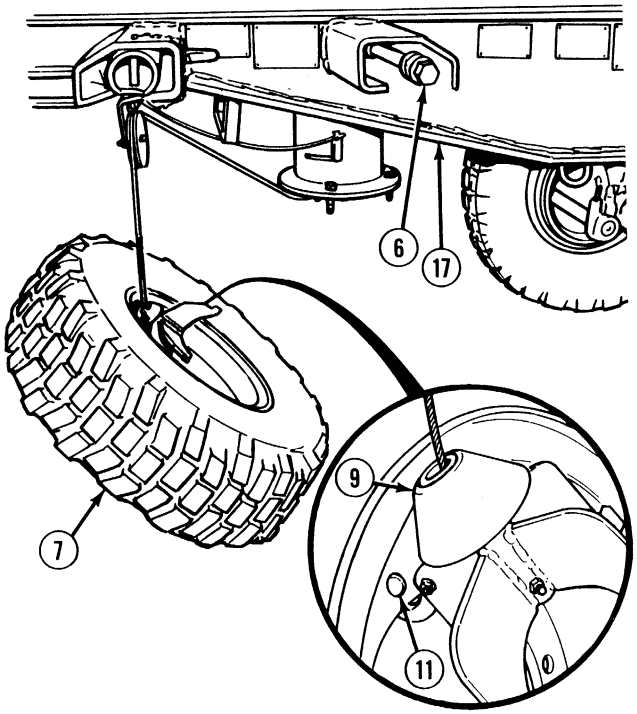
WARNING

Spare tire weighs 425 lbs (193 kg). Keep all personnel clear from under spare tire. Failure to comply may result in serious injury to personnel.

(16) Turn rod assembly (6) clockwise and raise spare tire (7) to upward position.

(17) With the aid of an assistant, support spare tire (7) and remove lift assembly (9) from spare tire stud hole (11).

(18) With the aid of an assistant, position spare tire (7) against trailer (17).



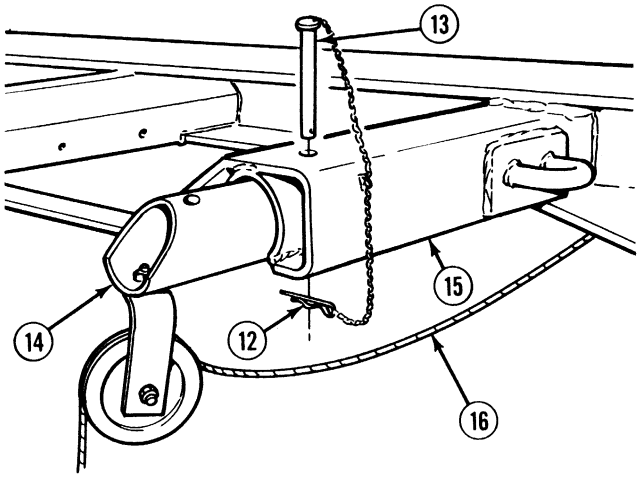
3-5. SPARE TIRE REPLACEMENT (CONT).

(19) Remove cable (16) from pulley assembly (14).

(20) Remove safety clip (12) and pin (13) from pulley assembly (14).

(21) Retract pulley assembly (14) to stow position in support (15) and install pin (13) and safety clip (12) in pulley assembly.

(22) Change tire (Para 3-4).



b. Installation.

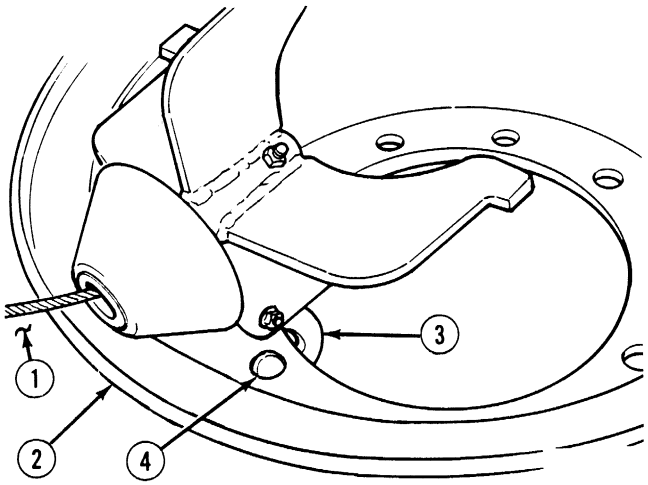
WARNING

- Ensure all personnel wear suitable eye protection while raising spare tire. Failure to comply may result in injury to personnel.
- Ensure personnel are positioned under trailer only far enough to perform procedure. Do not position entire body under tire unless required. Failure to comply may result in injury or death to personnel.
- Tire weighs 425 lbs (193 kg). Keep all personnel clear from under tire. Failure to comply may result in serious injury to personnel.
- Wheel/tire must be inflated in a safety cage or personal injury or death may result.

(1) Position spare tire (1) on flat surface with inside of rim (2) facing upward.

CAUTION

- Ensure lift assembly does not enter stud holes in rim of spare tire or spare tire will not be installed properly on spare tire bracket.
- To prevent knotting and binding ensure there is tension on cable when reeling it in. Failure to comply may result in damage to equipment.

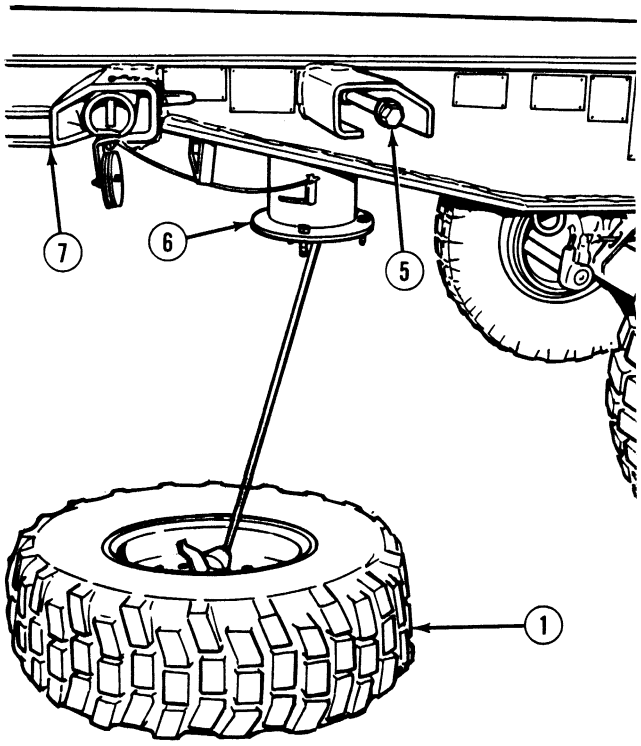


(2) Install lift assembly hook (3) in stud hole (4) of spare tire (1).

WARNING

- Ensure all personnel wear protective gloves when handling cable. Cable may fray and injury to personnel may result.
- Wear hearing protection when raising spare tire. Injury to personnel may result.

(3) Turn rod assembly (5) clockwise and slide spare tire (1) under spare tire bracket (6) on trailer (7).



(4) Turn rod assembly (5) counterclockwise to loosen cable (8).

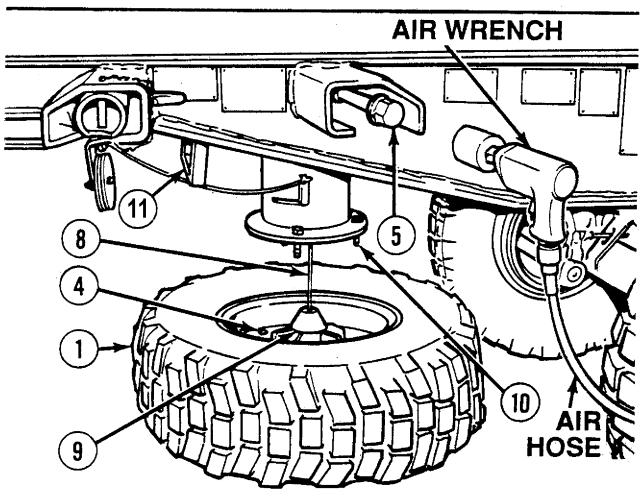
(5) Install lift assembly (9) to spare tire (1).

CAUTION

Ensure studs are aligned with stud holes before positioning tire on bracket. Failure to comply may cause damage to equipment.

(6) Turn rod assembly (5) clockwise and raise spare tire (1) and position until studs (10) and stud holes (4) are aligned.

(7) Tighten winch bolt (5) until spare tire (1) contacts both tire stops (11).

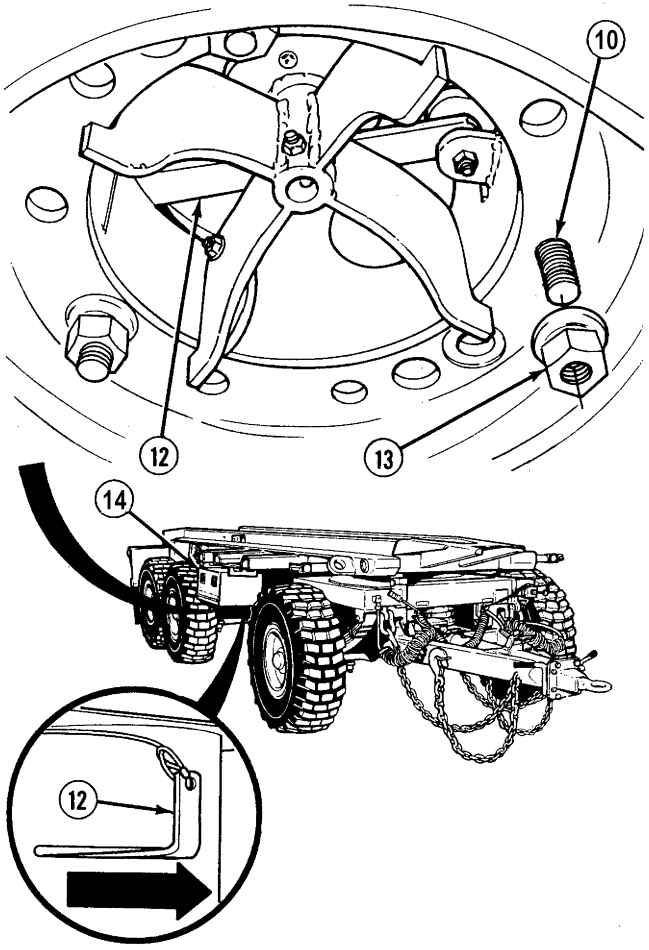


3-5. SPARE TIRE REPLACEMENT (CONT).

(8) Ensure handle (12) is in LOCKED position.

(9) Install three nuts (13) on studs (7).

(10) Return tools to stowage box (14).



c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).
- Report to Unit Maintenance if spare tire needs repair.
- Report to Unit Maintenance to torque lugnuts as soon as possible.

END OF TASK

3-6. SERVICE TIRES.

This task covers:

a. Check/Adjust Tire Air Pressure b. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Gloves, Heavy Duty (Item 12, Appendix J)
Gage, Inflation (TM 9-2320-364-10)
Hose, Air (TM 9-2320-364-10)

References
TM 9-2610-200-14

Equipment Condition
Wheels Chocked, (Para 2-20)

a. Check/Adjust Tire Air Pressure.

Table 3-5. Standard Tire Pressure

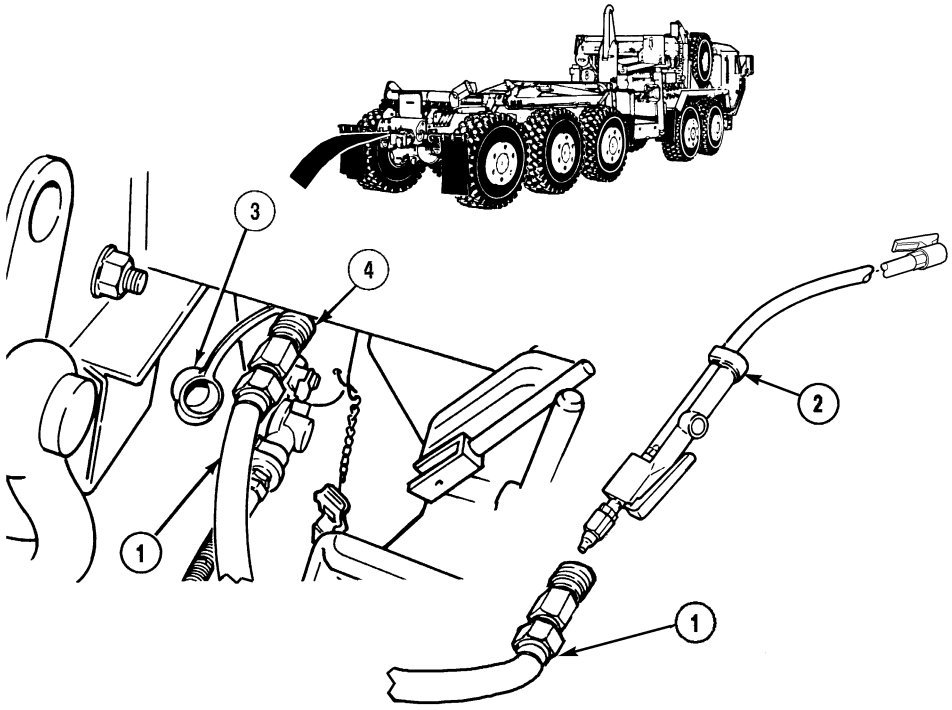
Axle Location	Highway	Cross Country	Mud, Sand, Snow
Front	87 psi (600 kPa)	51 psi (352 kPa)	32 psi (221 kPa)
Rear	80 psi (552 kPa)	46 psi (317 kPa)	29 psi (200 kPa)
Spare Tire	87 psi (600 kPa)	87 psi (600 kPa)	87 psi (600 kPa)

WARNING

- Failure to comply with tire air pressure procedures may result in faulty positioning of the tire and/or rim parts, and cause the assembly to burst with explosive force, sufficient to cause serious physical injury or death. Never mount or use damaged tires or rims.
- Before checking tire pressure, Perform Steps (2) through (10) to check tire pressure properly, or pressure readings will be inaccurate and injury or death may result.

(1) Refer to Table 3-5 to ensure tires have correct air pressure for road condition.

3-6. SERVICE TIRES (CONT).

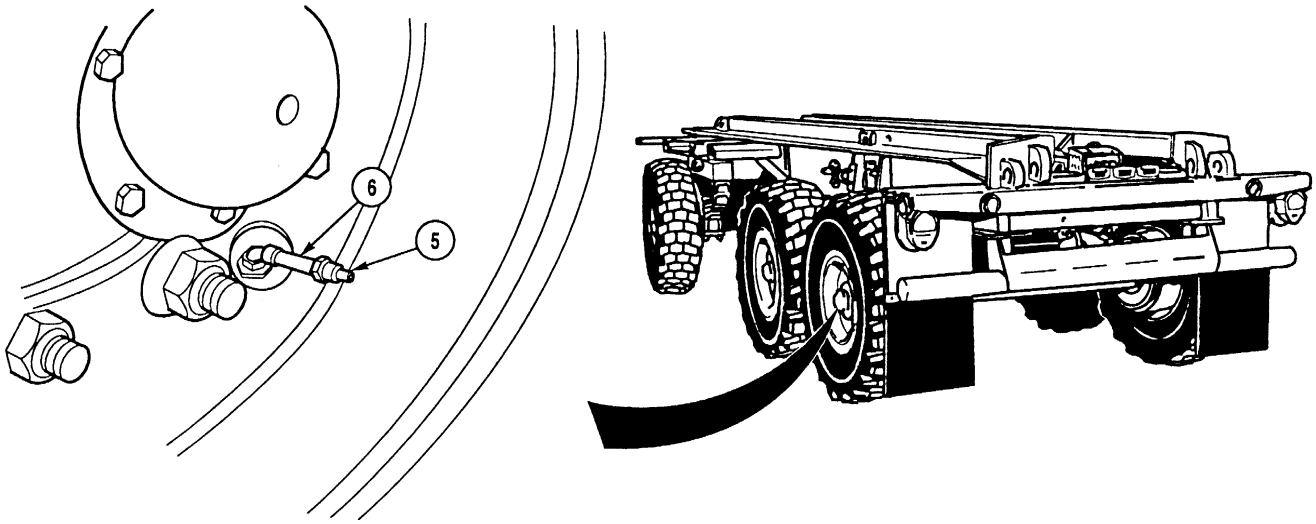


(2) Remove air hose (1) and inflation gage (2) from PLS Truck BII storage box.

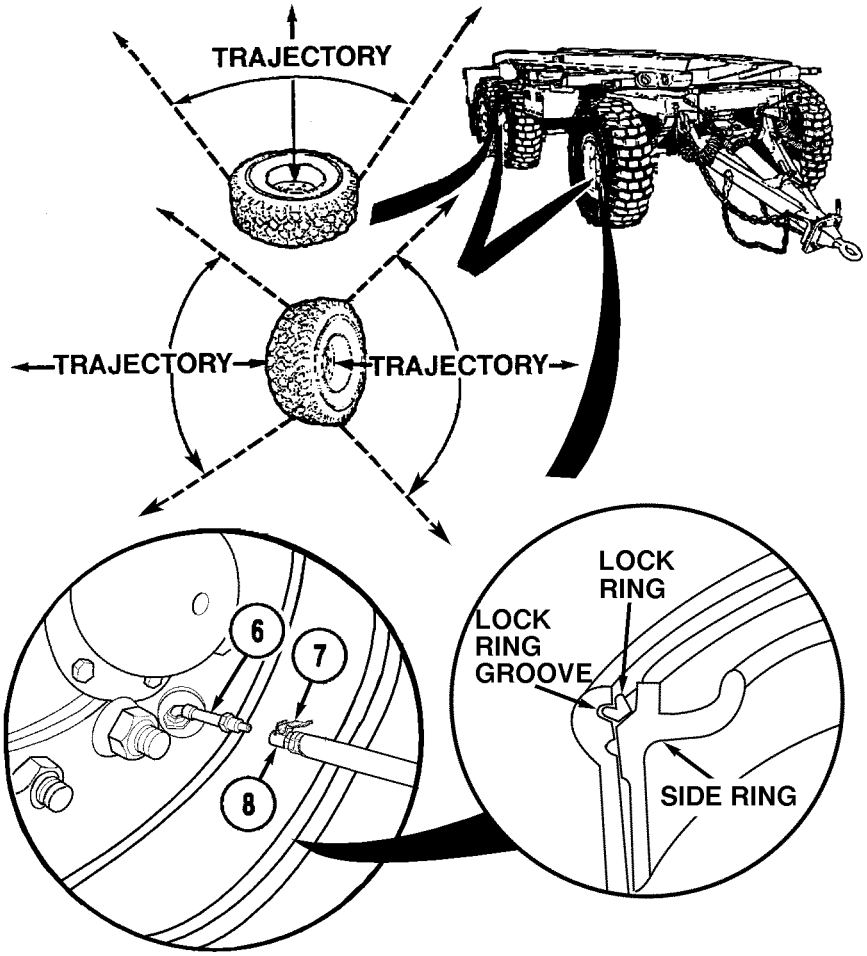
(3) Connect air hose (1) to inflation gage (2).

(4) Remove cover (3) from truck air coupler (4) and connect remaining end of air hose (1).

(5) Start engine (TM 9-2320-364-10).



(6) Remove valve stem cap (5) from valve stem (6).



WARNING

- While changing tires or while performing tire maintenance stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.
- Never inflate a tire without checking to ensure that the side ring is still properly seated and the lock ring is properly seated in the lock ring groove. Ensure that the side ring, lock ring and lock ring groove are not damaged. The side ring and lock ring may blow off during inflation/deflation resulting in injury or death to personnel.
- Improperly seated lock rings and side rings may blow off at any time. Never attempt to seat a lock ring or side ring during or after inflation. Failure to comply may result in serious injury or death.
- When inflating tires mounted on the trailer, all personnel must remain out of the trajectory of the side ring and lock ring as shown by the areas indicated. Failure to follow proper procedures may result in serious injury or death to personnel.

NOTE

- Air chuck must clamp securely with no leaks or inflation gage readings will be inaccurate.
- Trajectory area as shown applies to all wheel/tire assemblies.

(7) Push latch handles (7) inward, while pushing air chuck (8) onto valve stem (6). Release latch handle and immediately step out of the trajectory area. Check inflation gage reading and compare to Table 3-6.

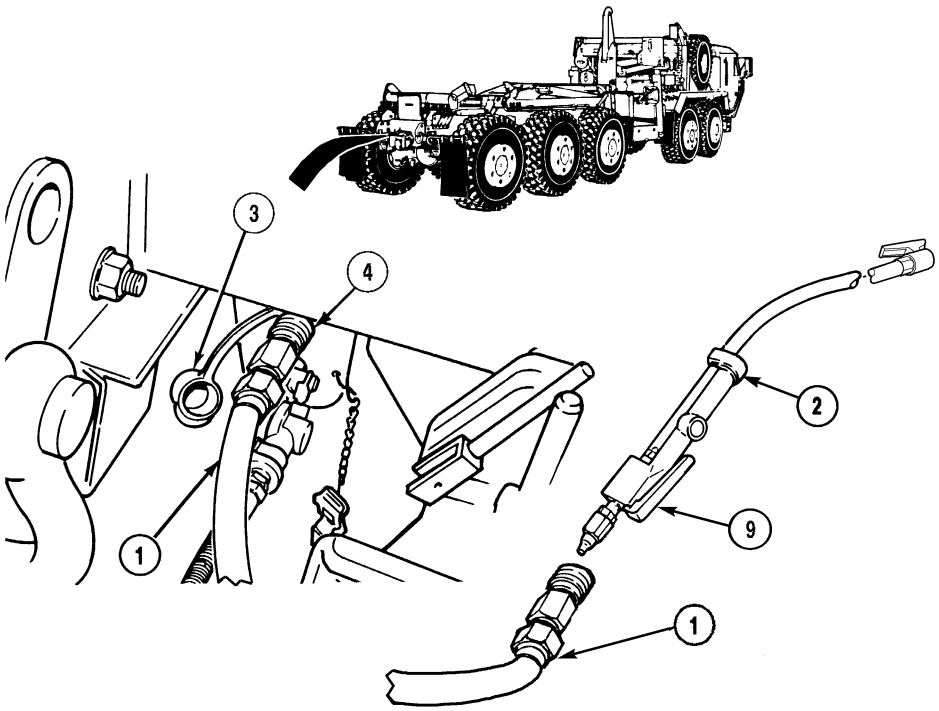
3-6. SERVICE TIRES (CONT).

WARNING

- While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.
- Never inflate a tire without checking to ensure that the side ring is still properly seated and the lock ring is properly seated in the lock ring groove. Ensure that the side ring, lock ring and lock ring groove are not damaged. The side ring and lock ring may blow off during inflation/deflation resulting in injury or death to personnel.
- When inflating tires mounted on the trailer, all personnel must remain out of the trajectory of the side ring and lock ring as shown by the areas indicated. Failure to follow proper procedures may result in serious injury or death to personnel.
- If the tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated by removing the inflator gage from the air hose and pressing down the handle until all air pressure has been exhausted from tire. Stand out of the trajectory area or personal injury may result.
- If tire has been run flat, or is overinflated or underinflated when tire pressure is measured and operating terrain is compared to Table 3-6, or wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6 and remove the tire from the axle. Failure to follow these procedures may result in serious personal injury or death.

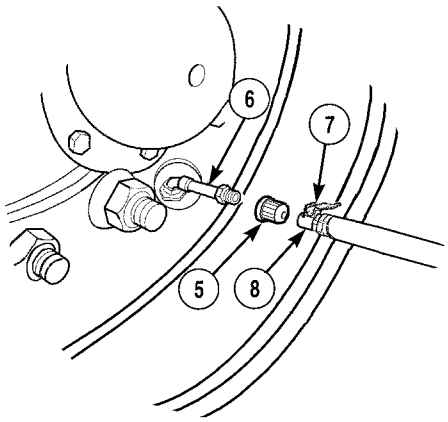
Table 3-6. Unsafe Inflation Pressures

	SPARE TIRE IS:	**SPARE TIRE IS:**	**FRONT TIRES ARE:**	**REAR TIRES ARE:**	**FRONT TIRES ARE:**	**REAR TIRES ARE:**
	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**
Highway	109 psi (752 kPa)	70 psi (483 kPa)	109 psi (752 kPa)	100 psi (690 kPa)	70 psi (483 kPa)	64 psi (441 kPa)
Cross-Country	109 psi (752 kPa)	70 psi (483 kPa)	64 psi (441 kPa)	58 psi (400 kPa)	41 psi (283 kPa)	37 psi (255 kPa)
Mud, Sand, and Snow	109 psi (752 kPa)	70 psi (483 kPa)	40 psi (276 kPa)	36 psi (248 kPa)	26 psi (179 kPa)	23 psi (159 kPa)



(8) If tire is underinflated or overinflated or if the wheel or tire has obvious damage or suspected damage, stand out of trajectory range. Remove inflation gage (2) from air hose (1) and press handle (9) until all air pressure has exhausted from inflation gage. When tire is completely deflated, remove from trailer and take to Unit Maintenance for disassembly and repair. Install spare tire on trailer (Para 3-4 and Para 3-5).

(9) If tire is not underinflated or overinflated and the wheel or tire does not have obvious damage or is not suspected of damage, stand out of trajectory and inflate or deflate until proper pressure is attained (see Table 3-5). Press in latch handle (7) and pull air chuck (8) from valve stem (6). Install valve cap (5).



(10) Shut off engine (TM 9-2320-364-10).

WARNING

Hold end of air hose when disconnecting from quick-disconnect coupling. Air hose is under pressure and can fly out at fast rate of speed causing injury to personnel.

(11) Remove air hose (1) from air coupler (4) and install cover (3) on air coupler (4).

(12) Remove inflation gage (2) from air hose (1). Stow air hose and inflation gage in PLS truck BII stowage box.

b. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS

Para	Contents	Page

Section I. REPAIR PARTS, SPECIAL TOOLS, TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT AND SUPPORT EQUIPMENT

4-1. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2. SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT.

Refer to Section III of the Maintenance Allocation Chart (MAC) for a list of tool kits authorized for the trailer.

4-3. REPAIR PARTS.

Repair parts are listed and illustrated in the Repair Parts and Special Tool List (RPSTL), TM 9-2330-385-24P, covering Unit, Direct Support, General Support and Depot maintenance for the trailer.

Section II. SERVICE UPON RECEIPT

4-4. UNPACKING AND DEPROCESSING.

a. Unpacking. Upon receipt of a new trailer, the receiving organization must see if it has been properly prepared for service and is in good condition. Inspect all assemblies, subassemblies, and accessories to be sure they are in proper working order. Secure, clean, and correctly adjust and/or lubricate as needed, Para 4-8. Check all tools and equipment (Appendix C and Appendix D) to be sure every item is there in good condition, clean and properly stowed.

b. Deprocessing. Read all tags attached to the trailer and follow all precaution checks.

4-5. SERVICE BEFORE OPERATION.

a. General.

(1) Refer to Chapter 2 for operating instructions for the trailer.

(2) Upon receipt of new, used, or reconditioned trailer, the receiving organization must see if it has been properly prepared for service and is in good condition. Inspect all assemblies, subassemblies, and accessories to be sure they are in proper working order. Secure, clean, and correctly adjust and/or lubricate, Para 4-8, as needed. Check all tools and equipment to be sure every item is accounted for, in good condition, clean, and properly mounted or stowed.

(3) Follow general procedures for all services and inspections.

4-5. SERVICE BEFORE OPERATION (CONT).

b. Inspection and Servicing Equipment.

NOTE

If trailer has been towed to the using organization, most or all of the following work should have been done.

(1) When trailer is received, inspect all items for damage that may have occurred during shipping and unloading operations. Pay close attention to any loose or missing nuts, bolts, screws, access plates, drain plugs, draincocks, oil plugs, assemblies, subassemblies, or components that may be easily lost or broken in transit. Check Basic Issue Items (BII), Appendix C, to make sure all items are accounted for and are in good condition. Carefully list all discrepancies.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.

- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

(2) Clean all exterior surfaces coated with oil with drycleaning solvent (Item 22, Appendix E).

(3) Lubricate specific points shown in Para 4-8, regardless of interval.

(4) Schedule services in accordance with DA PAM 738-750.

c. Special Service Instructions.

(1) *Trailer Body and Sheet Metal Inspection.*

(a) Inspect body and sheet metal for evidence of damage during shipment.

(b) Check latches and hinges on compartments for proper operation.

(c) Check mounting hardware and tighten as necessary.

(2) *Electrical System Inspection.*

(a) Check lights for burned out lamps, loose connections, and dirty or broken lenses.

(b) Inspect sensors and cables for loose connections or damage.

(3) *Air System Inspection.*

(a) Drain any water from reservoirs.

(b) Inspect air hose and tubing connections for leakage.

(4) *Tire Inspection.*

(a) Check tire inflation.

(b) Inspect tires for serious cuts, bubbles, cracks, bruises, dry-rot, foreign objects, or exposure of internal cords. Remove foreign objects lodged between treads.

(c) Check all wheel mounting nuts for proper torque.

(d) Check suspension for broken spring leaves or damaged components.

Section III. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-6. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION.

This section contains PMCS requirements for the trailer. The PMCS table contains checks and services necessary to ensure the trailer is ready for operation. Using the PMCS table, perform maintenance at the specified intervals. Perform Preventive Maintenance Checks and Services in Chapter 2 prior to performing the Unit Preventive Maintenance. Lubrication instructions for the trailer are included in the Unit PMCS.

4-7. GENERAL MAINTENANCE PROCEDURES.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.

- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

a. Cleanliness. Dirt, grease, oil and debris only get in the way and may cover up a serious problem. Use drycleaning solvent P-D-680 (Item 22, Appendix E) on all metal surfaces. For general exterior cleaning use soap solution (Item 21, Appendix E) and water.

b. Bolts, Nuts and Screws. Check bolts, nuts and screws for obvious looseness, missing, bent, or broken condition. Look for loose or chipped paint, bare metal or rust around bolt heads. If any part seems loose, tighten it. If the part is missing, bent or broken, report it to the supervisor.

4-7. GENERAL MAINTENANCE PROCEDURES (CONT).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
  - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals, and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby; and requirements of TC 9-237 strictly followed.

c. Welds. Look for loose or chipped paint, rust or gaps where parts are welded together. If a bad weld is found, report it.

d. Electrical Wires and Connectors. Look for cracked or broken insulation, bare wires and loose or broken connectors. Tighten loose connectors and make sure the wires are in good shape. If a bad wire or connector is found, report it.

e. Air Lines, Hoses and Fittings. Look for wear or damage, listen for leaks and make sure that clamps and fittings are tight. If an air leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, report it. Inspect all hoses, lines and fittings for cracks, bends, nicks, dents, stripping threads and cuts. Replace all damaged parts.

f. Unusual Environment. When the trailer is being used in an unusual environment such as extreme heat, cold, wet and dry conditions, PMCS should be performed more often than indicated on the PMCS table.

g. First Use Inspections. When the trailer is first being put into use or is being used for the first time after a long period of non-use, perform all the PMCS inspections.

h. Damage. Damage is defined as any condition that affects safety or would make the trailer unserviceable for mission requirements.

4-8. PMCS TABLE.

a. Do the SEMIANNUAL PREVENTIVE MAINTENANCE (Table 4-1) once every six months and/or every 3,000 miles (4,827 km) whichever comes first.

b. Do the ANNUAL PREVENTIVE MAINTENANCE (Table 4-1) once each year and/or every 6,000 miles (9,654 km) whichever comes first.

c. Do the BIENNIAL PREVENTIVE MAINTENANCE (Table 4-1) once every two years and/or every 12,000 miles (19,308 km) whichever comes first.

d. Always do the Preventive Maintenance in the same order until it gets to be a habit. Once practiced, it will be easy to spot anything wrong in a hurry.

e. If something does not work, troubleshoot using instructions in Section IV.

f. If anything looks wrong and is not fixed, write a DA Form 2404.

g. When doing Preventive Maintenance, take along the tools and supplies needed to make all the checks, including a clean cloth or two.

h. The following is a breakdown of the PMCS table:

(1) "Item No." column. Checks and services are numbered in a logical order for moving around the trailer. The item number column is used as a source of items numbers for the TM Number Column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, for recording results of the PMCS.

(2) "Interval" column. The column identifies when the PMCS should be performed. Lubrication services coincide with the trailer's Semiannual Preventive Maintenance Service. For this purpose, a 10 percent tolerance (variation) in specified lubrication point mileage is permissible. Those trailers not accumulating 1,000 miles (1,609 km) in a 6-month period will be lubricated at the time of Semiannual Preventive Maintenance Service.

(3) "Item To Be Inspected" column. This column identifies the item to be inspected.

(4) "Procedures" column. This column contains all the information required to do the check/inspection. Art is integrated into the column to aid the user in identifying items. Whenever replacement or repair is recommended, reference is made to the applicable maintenance instructions.

(5) "Not Mission Capable If:" column. This column contains a brief statement of the condition (e.g., malfunction, shortage) that would cause the trailer to be less than fully ready to perform its assigned mission.

i. Perform all semiannual inspections in addition to the annual inspections at the time of the annual inspection. Perform all annual and semiannual inspections in addition to the biennial inspections at the time of the biennial inspection.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services

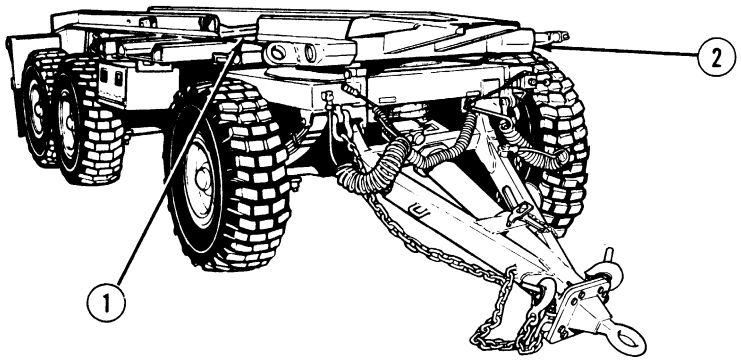
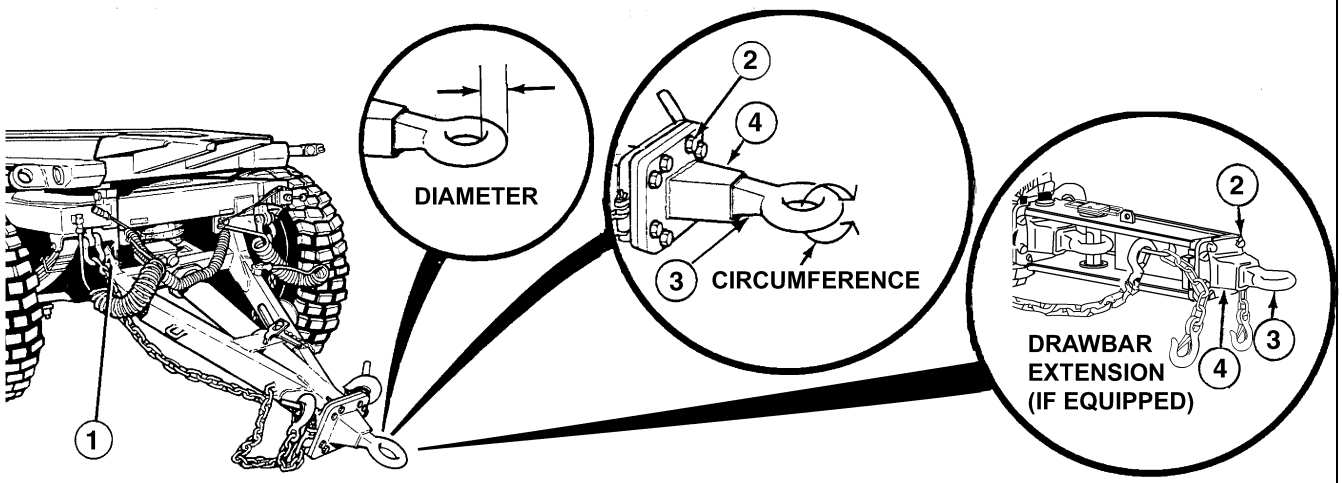
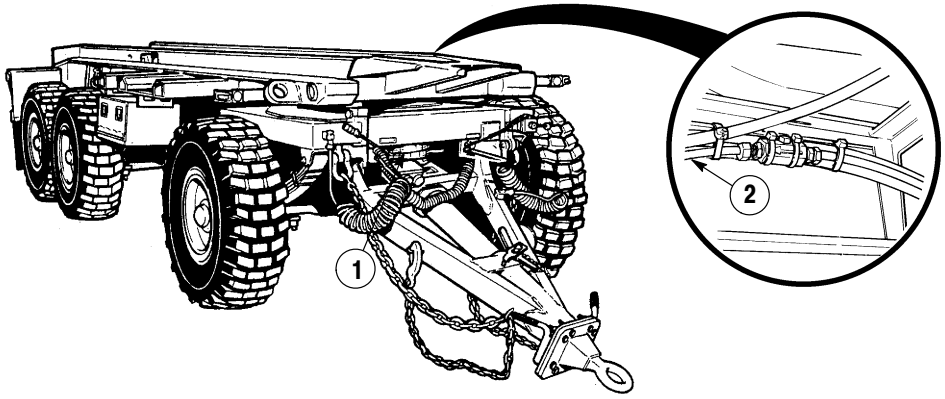
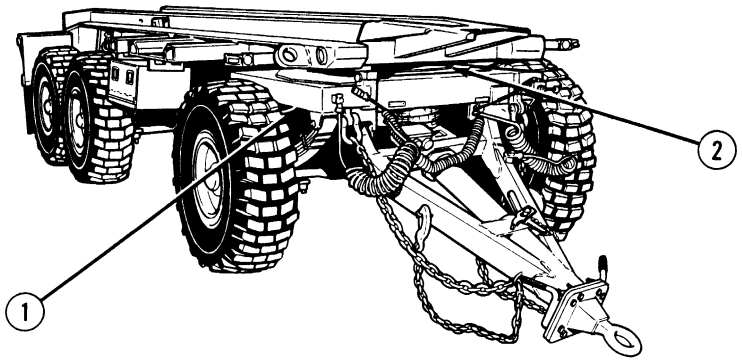
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
1	Semi-Annual	Cross-members and frame	Inspect crossmembers (1) and frame (2) for cracks in welds. If cracks are found, notify Direct Support Maintenance.	Crossmembers or frame have cracks in welds.
				
2	Semi-Annual	Drawbar mounting bolts, drawbar and drawbar extension (if equipped) tow ring bracket bolts, tow ring and tow ring bracket	Check drawbar mounting bolts (1), tow ring mounting plate bolts (2), tow ring (3) and tow ring bracket (4) for looseness, cracked welds or damage. Check tow ring (3) for wear by measuring in worn area. If diameter is less than 1-1/4 in. (32 mm) or circumference is less than 4-5/8 in. (117 mm), replace tow ring prior to next mission. If any tow ring bracket bolts/nuts are loose or missing, replace bolt/nut and tighten (Para 4-59 or Para 4-78). If looseness is found in tow ring, tighten (Para 4-59 or Para 4-78). If bending or cracked weld is found in tow ring, replace (Para 4-59 or Para 4-78). If bending or gouging of lower lip of tow ring bracket is found, replace (Para 4-59 or Para 4-78). If damage or looseness is found in drawbar mounting bolts, notify Direct Support Maintenance.	Tow ring diameter is less than 1-1/4 in. (32 mm) or circumference is less than 4-5/8 in. (117 mm). Tow ring bracket bolt/nuts are loose or missing. Tow ring is loose or bent. Tow ring has cracked welds. Tow ring bracket lower lip is bent or gouged.

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
3	Semi-Annual	Drawbar airbag	Inspect airbag (1) for damage and leaks. Replace airbag as required.	Airbag is damaged or leaks.
4	Semi-Annual	Drawbar airbag vent line	Inspect airbag vent line 2232 (2) for crimps or blockage. Clean, repair or replace vent line (Para 4-50).	Airbag vent line is crimped or blocked.
				
5	Semi-Annual	Turntable	***a.*** Turn turntable from side-to-side and check turntable (1) for damage and freedom of movement. Check turntable mounting bolts (2) for looseness. If turntable does not rotate or bolts are loose, notify Direct Support Maintenance.	Turntable does not rotate or bolts are loose.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

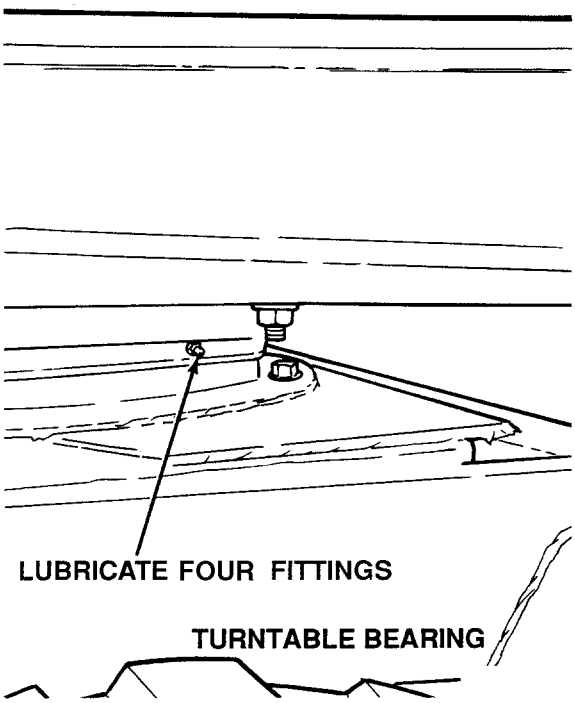
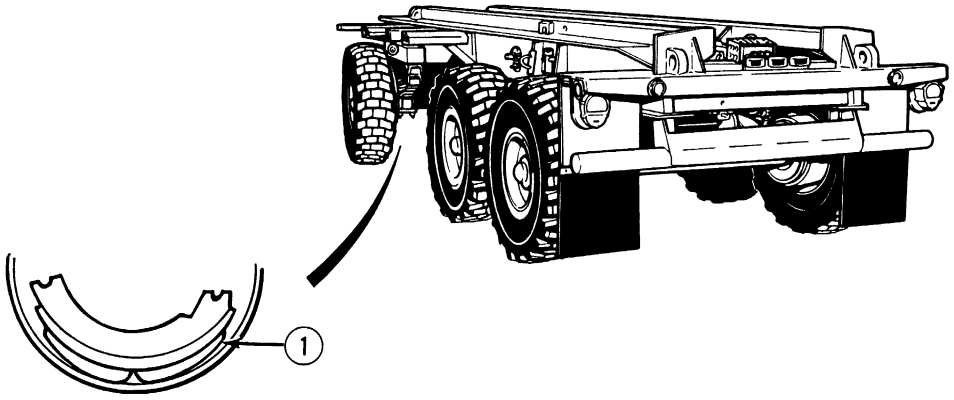
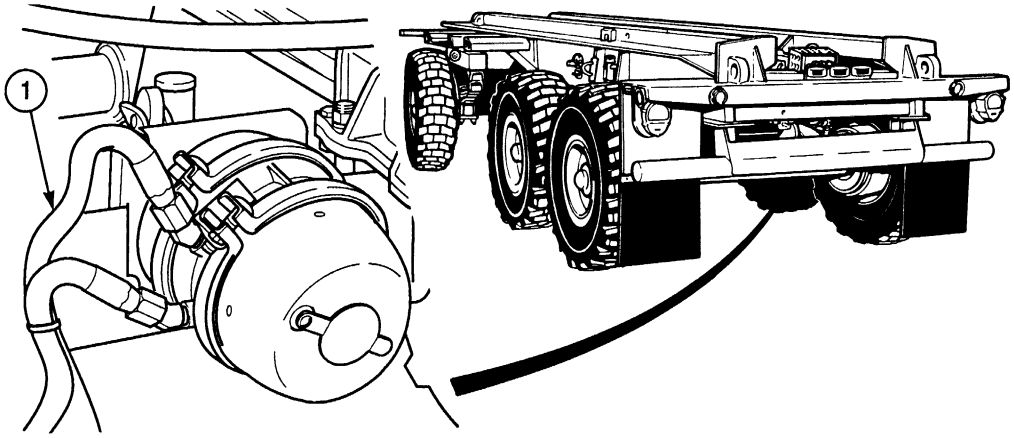
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
			NOTE • If an air-operated grease gun does not purge the fitting, use a hand-operated grease gun. If the part does not purge, remove fitting and clean, install fitting and grease again. If part still does not purge, refer to maintenance task for that component. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.	
		Turntable (continued)	***b.*** Lubricate the turntable bearing with GAA every 3,000 miles (4,827 km) or semiannually whichever comes first.	Fittings will not purge old lubricant out of component.

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
6	Semi-Annual	Brake linings	Check all brake linings (1) for wear and signs of overheating. If brake lining thickness is 1/4 in. (6 mm) or less at any point on the lining, repair brakes as necessary.	Brake lining thickness is less than 1/4 in. (6 mm) at any point.
				
7	Semi-Annual	Brake air hoses	Check all brake air line hoses (1) for tightness and frayed or cracked hoses. Replace hoses as required.	Hoses are frayed or cracked.
8	Semi-Annual	Air lines and fittings	Charge air system (Para 2-22). Listen for air leaks. Tighten loose connections.	Air leaks are present.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

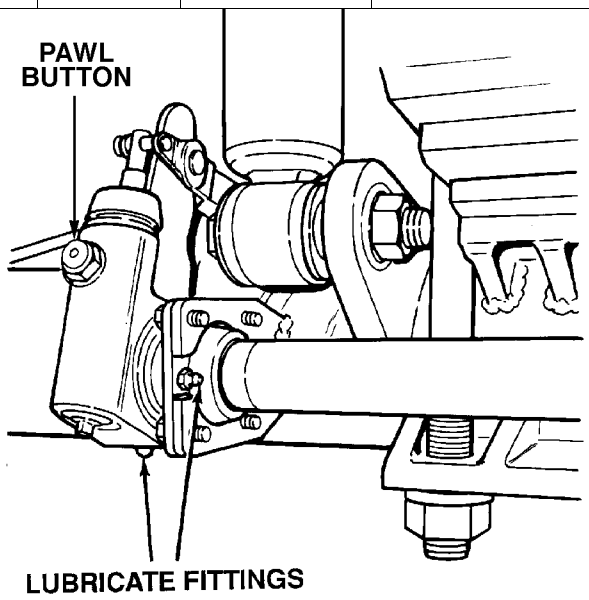
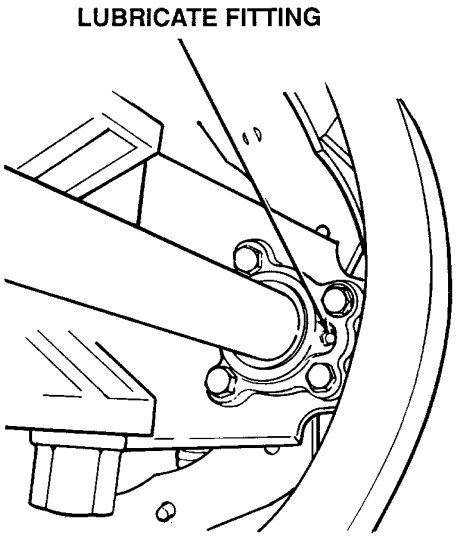
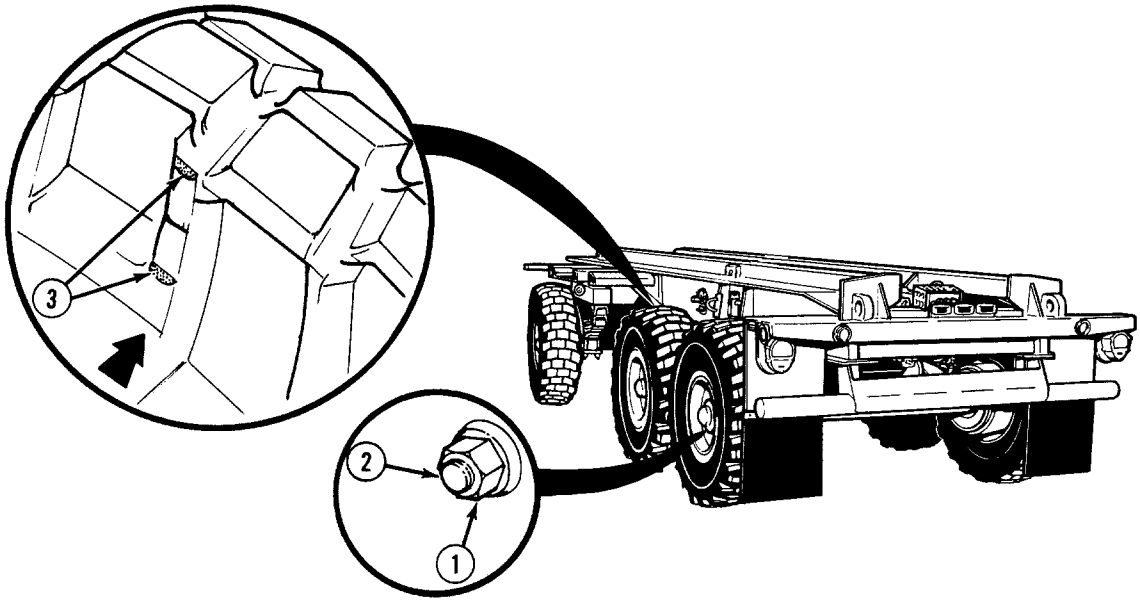
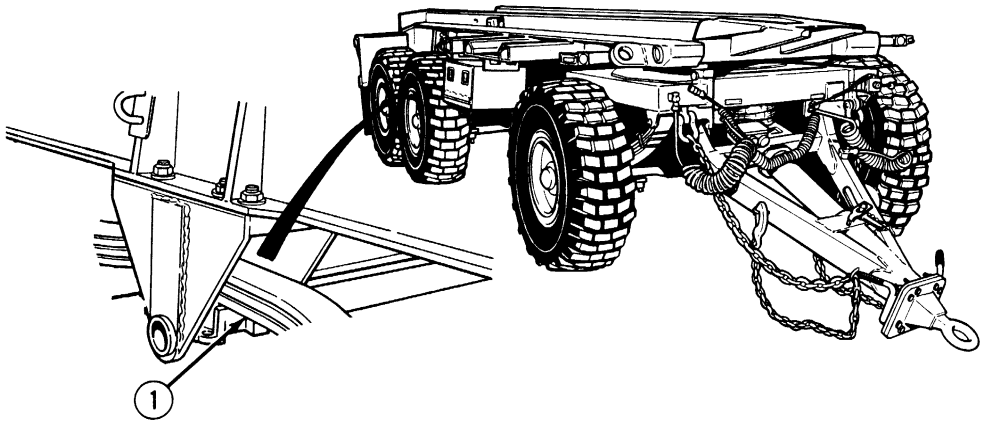
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
			 SLACK ADJUSTERS AND CAMSHAFT BUSHINGS  CAMSHAFT SPIDER BUSHING	
			NOTE • If an air-operated grease gun does not purge the fitting, use a hand-operated grease gun. If the part does not purge, remove fitting and clean, install fitting and grease again. If part still does not purge, refer to maintenance task for that component. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the pressure relief seal under pawl button on slack adjuster and the part being lubricated.	
9	Semi-Annual	Slack adjusters and camshaft bushings	Lubricate all slack adjusters and camshaft bushings with GAA every 3,000 miles (4,827 km) or semiannually, whichever comes first. **NOTE** Wipe up excess grease to avoid contamination of brake linings.	Fittings will not purge old lubricant out of component.
10	Semi-Annual	Camshaft spider bushings (all)	Lubricate all camshaft spider bushings with GAA every 3,000 miles (4,827 km) or semi-annually, whichever comes first.	Fittings will not purge old lubricant out of component.

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
11	Semi-Annual	Lugnuts	Refer to Para 4-57 and make sure all lugnuts (1) are installed and tightened to correct torque values. Tighten in correct pattern. Check for broken studs (2).	One or more studs are broken.
12	Semi-Annual	Tire tread	Visually inspect the wear indicators (3) on the tire tread. If tread is worn even with or below any tread wear indicator, replace tire.	Tread is even with or below tread wear indicator.
				
13	Semi-Annual	Springs	Check springs (1) for cracked components and missing hardware. If springs are cracked or missing hardware, notify Direct Support Maintenance.	Springs are cracked or missing.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

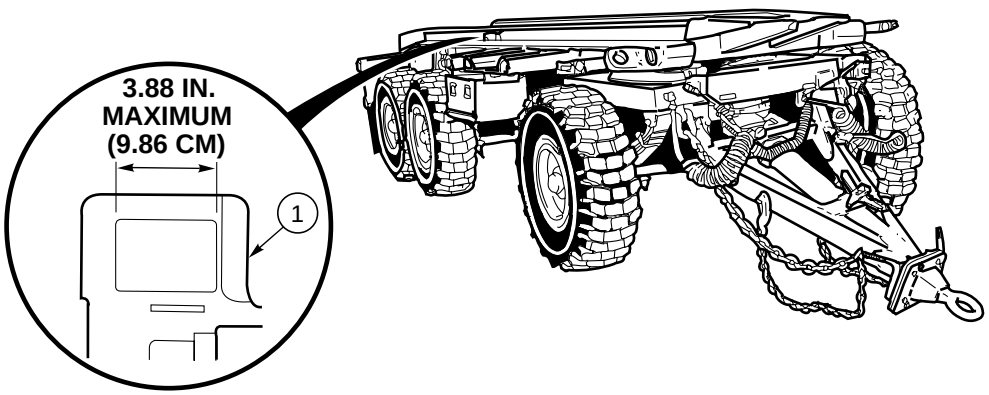
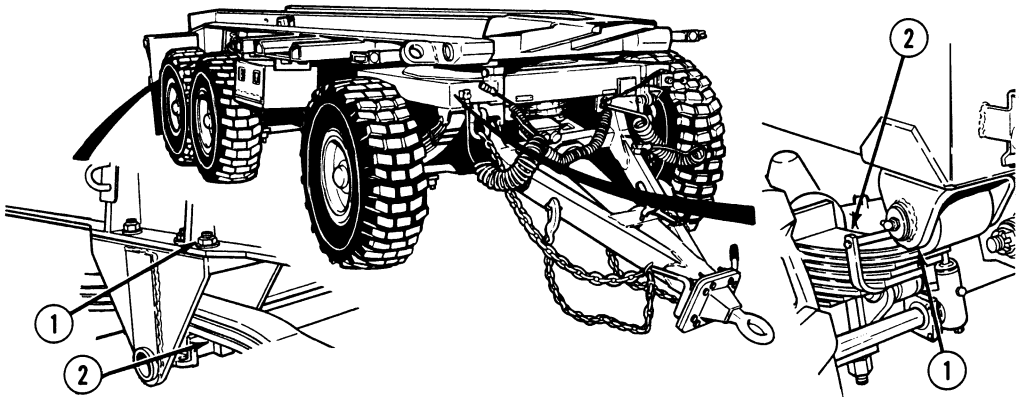
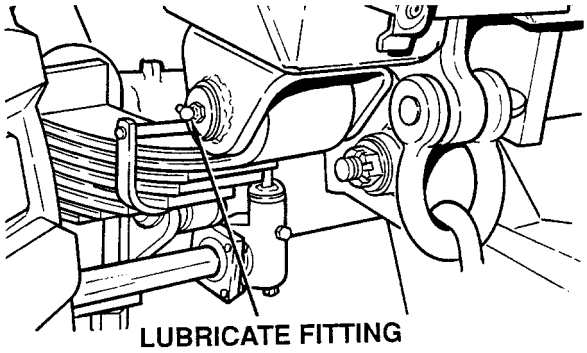
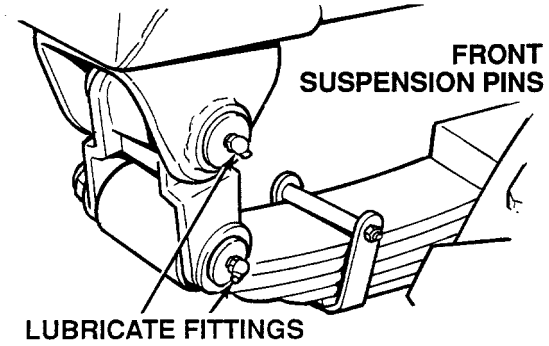
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
14	Semi-Annual	Flatrack locks	Check inside diameter of both flatrack locks for wear. If inside diameter is greater than 3.88 in (9.86 cm), replace flatrack lock (Para 4-66).	Flatrack lock inside diameter is greater than 3.88 in. (9.86 cm).
				
15	Semi-Annual	Suspension	Check all suspension mounting hardware (1) for looseness and damage. Check for movement of springs (2) by looking for signs of rust or shiny spots on spring and mounting hardware that indicate spring movement. If springs are loose or hardware is damaged, notify Direct Support Maintenance.	Suspension hardware is missing, loose or damaged.

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
			 	
16	Semi-Annual	Front suspension pins	**NOTE** • If an air-operated grease gun does not purge the fitting, use a hand-operated grease gun. If the part does not purge, remove fitting and clean, install fitting and grease again. If part still does not purge, refer to maintenance task for that component. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • If suspension pin does not accept grease, relieve load on suspension pin by jacking trailer up by frame as close to suspension pin as possible. If suspension pin still fails to accept grease, notify Direct Support Maintenance to remove suspension pin and/or bushing and replace if necessary. Lubricate all suspension pins with GAA every 3,000 miles (4,827 km) or semi-annually, whichever comes first.	Fittings will not purge old lubricant out of component.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

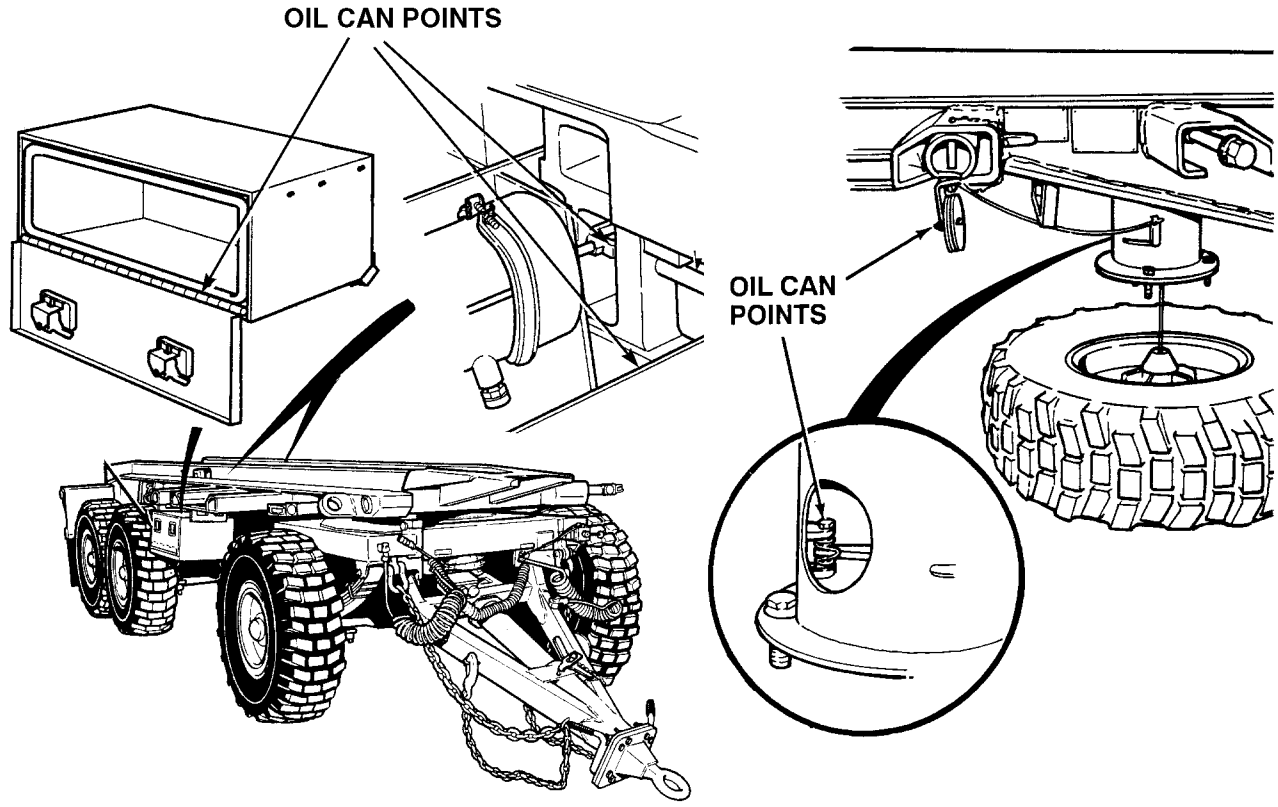
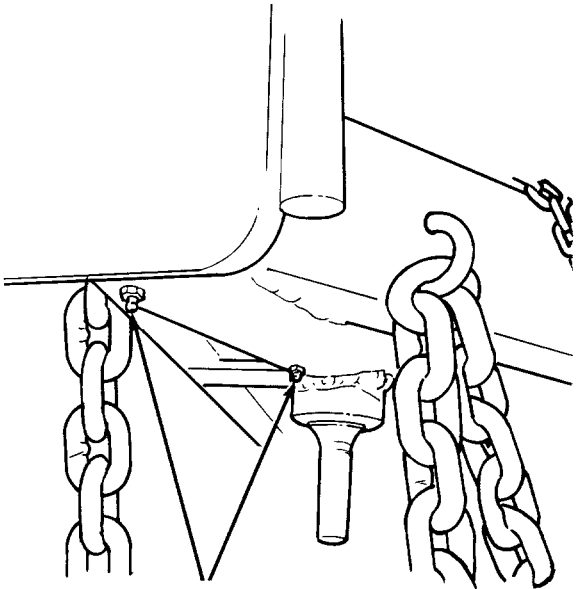
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
				
17	Semi-Annual	Oil can points	Lubricate hinges, pulleys, pivot pins and pivot points with OE/HDO every 1,500 miles (2,414 km) or semi-annually, whichever comes first. Lubricate more often if usage is high.	

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
			 LUBRICATE FITTINGS	
			DRAWBAR BUSHINGS	
			NOTE • If an air-operated grease gun does not purge the fitting, use a hand-operated grease gun. If the part does not purge, remove fitting and clean, install fitting and grease again. If part still does not purge, refer to maintenance task for that component. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.	
18	Annual	Drawbar bushings	Lubricate the drawbar bushings with GAA every 6,000 miles (9,654 km) or annually, whichever comes first.	Fittings will not purge old lubricant out of component.

4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

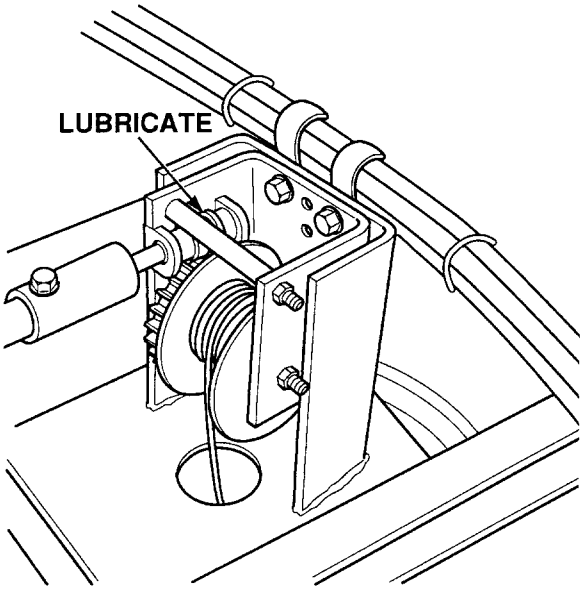
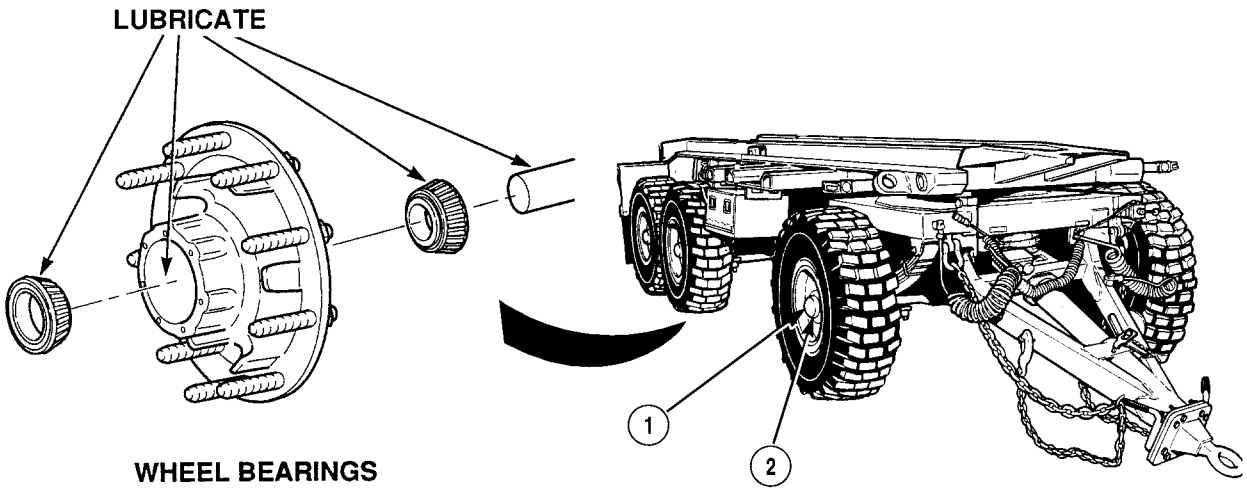
Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
			 SPARE TIRE WINCH	
			NOTE Wipe off excess grease to avoid contamination of components.	
19	Annual	Spare tire winch worm gear	Lubricate worm gear with GAA every 6,000 miles (9,654 km) or annually, whichever comes first.	

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

Item No.	Interval	Item to Be Inspected	Procedure	Not Mission Capable If:
			 WHEEL BEARINGS	
20	Biennally	Wheel bearings	**WARNING** Use of excessive amount of grease when lubricating wheel bearings may result in grease contacting brake linings and cause brake failure. Possible injury or death to personnel and damage to equipment may result. **NOTE** Wipe up excess grease to avoid contamination of brake linings. Clean and inspect all wheel bearings (1). Refer to Para 4-58. Lubricate or replace wheel bearings as required. Lubricate bearings with GAA every 12,000 miles (19,308 km) or biennially, whichever comes first. If axle ends (2) show damage, notify Direct Support Maintenance.	Wheel bearings or axle ends are damaged.

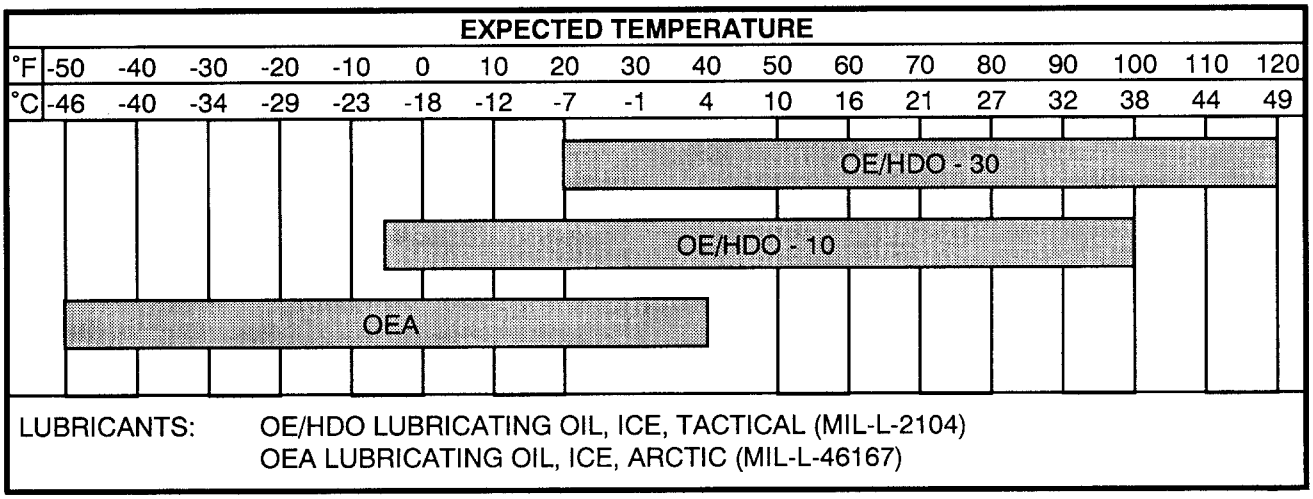
4-8. PMCS TABLE (CONT).

Table 4-1. Unit Maintenance Preventive Maintenance Checks and Services - CONT.

CHART A – LUBRICANTS

LUBRICATION POINT	CAPACITIES	EXPECTED TEMPERATURE		INTERVALS
		-25°F to +14°F (-32°C to -10°C)	+14°F to +120°F (-10°C to +48°C)	
Drawbar Bushings	As Req.	GAA GREASE AUTOMOTIVE AND ARTILLERY (MIL-L-10924) ALL TEMPERATURES		S - Semiannually A - Annually (Every 2nd "S P.M." service) BI - Biennially
Slack Adjusters	As Req.			
Camshaft Bushings	As Req.			
Camshaft Spider Bushings	As Req.			
Wheel Bearings & Hubs	As Req.			
Turntable Bearing	As Req.			
Front Suspension Pins	As Req.			

CHART B - OIL CAN POINTS



LUBRICANTS: OE/HDO LUBRICATING OIL, ICE, TACTICAL (MIL-L-2104)
OEA LUBRICATING OIL, ICE, ARCTIC (MIL-L-46167)

Section IV. UNIT TROUBLESHOOTING.

4-9. TROUBLESHOOTING INTRODUCTION.

This section contains step by step procedures for identifying, locating, and isolating trailer equipment malfunctions.

4-10. TROUBLESHOOTING SYMPTOMS.

The first part of this section explains the use of the Troubleshooting Logic Tree. The last part of this section contains the System Symptom Index (Table 4-2) which lists common malfunctions by trailer systems and the Troubleshooting Trees (Table 4-3).

4-11. INTRODUCTION TO LOGIC TREE TROUBLESHOOTING.

a. Page Layout. Troubleshooting is divided into symptoms peculiar to a trailer system or component, for example, air system or inversion valve.

(1) Determine the symptom or condition that indicated a problem or failure. Refer to the System Symptom Index, Table 4-2.

(2) Go to the referenced page to begin troubleshooting. Open the manual flat so both the right and left pages are displayed before you. The information on all facing pages is important.

(3) All diagnostic logic and flowcharts are on the left-hand page, with supporting information, warnings, cautions, notes, and test instructions on the right-hand page. Pages are setup so you do not need anymore than the necessary information, warnings, cautions, and notes about a particular question. The experienced technician generally reads just the left-hand page and refers to information on the right-hand page when needed: all critical information for decision making is on the left-hand page.

b. How to Begin Troubleshooting.

(1) Identify the symptom or fault.

(2) Follow the diagnostic procedure. Answer Question No. 1 on the left-hand page and follow the YES or NO path to either the remedy or the next page. Helpful information about the problem is also on the left-hand page. Look on the right-hand page for additional specific instructions.

(3) Observe WARNINGS, CAUTIONS, and NOTES. If you see the WARNING symbol on the left-hand page, look on the right-hand page for the text of the warning. The warning message on the right-hand page will also have the symbol above it. If you see the CAUTION symbol on the left-hand page, look on the right-hand page for the text of the caution. The caution message on the right-hand page will also have the symbol above it. If you see the NOTE symbol on the left-hand page, look on the right-hand page for the text of the note. The note message on the right-hand page will also have the symbol above it.

c. Measurements Required for Troubleshooting.

(1) *Resistance Measurements.*

(a) Connect red test lead to Volt-Ohm input connector and black lead to COMMON (COM) input connector on meter.

4-11. INTRODUCTION TO LOGIC TREE TROUBLESHOOTING (CONT).

(b) Set the function/range switch to the desired ohm position. If the magnitude of the resistance is not known, set the switch to the highest range, then reduce until a satisfactory reading is obtained.

(c) Connect test leads to the circuit being measured. When measuring high resistance, be careful not to contact adjacent points, even if they are insulated. Some insulators have a relatively low insulation resistance which can affect the resulting measurement.

(d) Read the resistance value on the digital display.

(2) *Continuity Checks.*

(a) Place the function/range switch in any ohm range.

NOTE

Some meters show "1+m", or simply "1" when function/range switch is in any ohm position.

(b) Connect the red lead to the volt-ohm connector and black lead to COM input connector on the meter. When the test leads separated or measuring and out-of-range resistance, the digital display will indicate Over-Limit (OL).

(c) Put one test probe at one end of the wire or circuit to be tested. Use the other test lead to trace the circuit. When continuity is established, an ohm symbol will appear in the upper left corner of the digital display. If contact in the wire is maintained long enough (about 1/4 of a second), the OL will disappear and the resistance value of the wire or circuit will appear next to the symbol.

(d) If your multimeter does not work in this manner, carefully read the manufacturer's operating manual for proper operational procedures before performing troubleshooting.

(3) *Voltage Measurements.*

(a) Connect the red test lead to the volt-ohm input connector and the black lead to the COM input on the meter. If a DC-AC switch is present, make sure it is switched to the DC position.

(b) Set the function/range switch to the desired volts position. If the magnitude of the voltage is not known, set the switch to the highest DC voltage range. Then reduce the range until a satisfactory reading is obtained.

(c) Connect the test leads to the circuit being measured. Following the voltage measurement points, the color test lead used is given in parenthesis (red is the positive volt-ohm connection, and black is the negative COM connection).

4-12. UNIT TROUBLESHOOTING PROCEDURES.

Refer to Table 4-2 for a list of common malfunctions which are found in the troubleshooting procedures. The troubleshooting procedures contain test and inspection instructions required to determine the malfunction's cause and corrective actions for repairing the faulty equipment. Before troubleshooting, be sure all Preventive Maintenance Checks and Services (PMCS) have been performed. Try to return the component to operation after each test, inspection and correction action has been performed.

Table 4-2. Unit Troubleshooting Symptom Index

Table 4-2. Unit Troubleshooting Symptom Index - Continued

4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES.

This paragraph covers 24 volt electrical system troubleshooting procedures. The 24 Volt Electrical System Fault Index, Table 4-3, lists faults for the 24 volt electrical system of the trailer. Refer to schematic, Figure FO-1 when performing tests and corrective actions.

Table 4-3. 24 Volt Electrical System Fault Index

4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

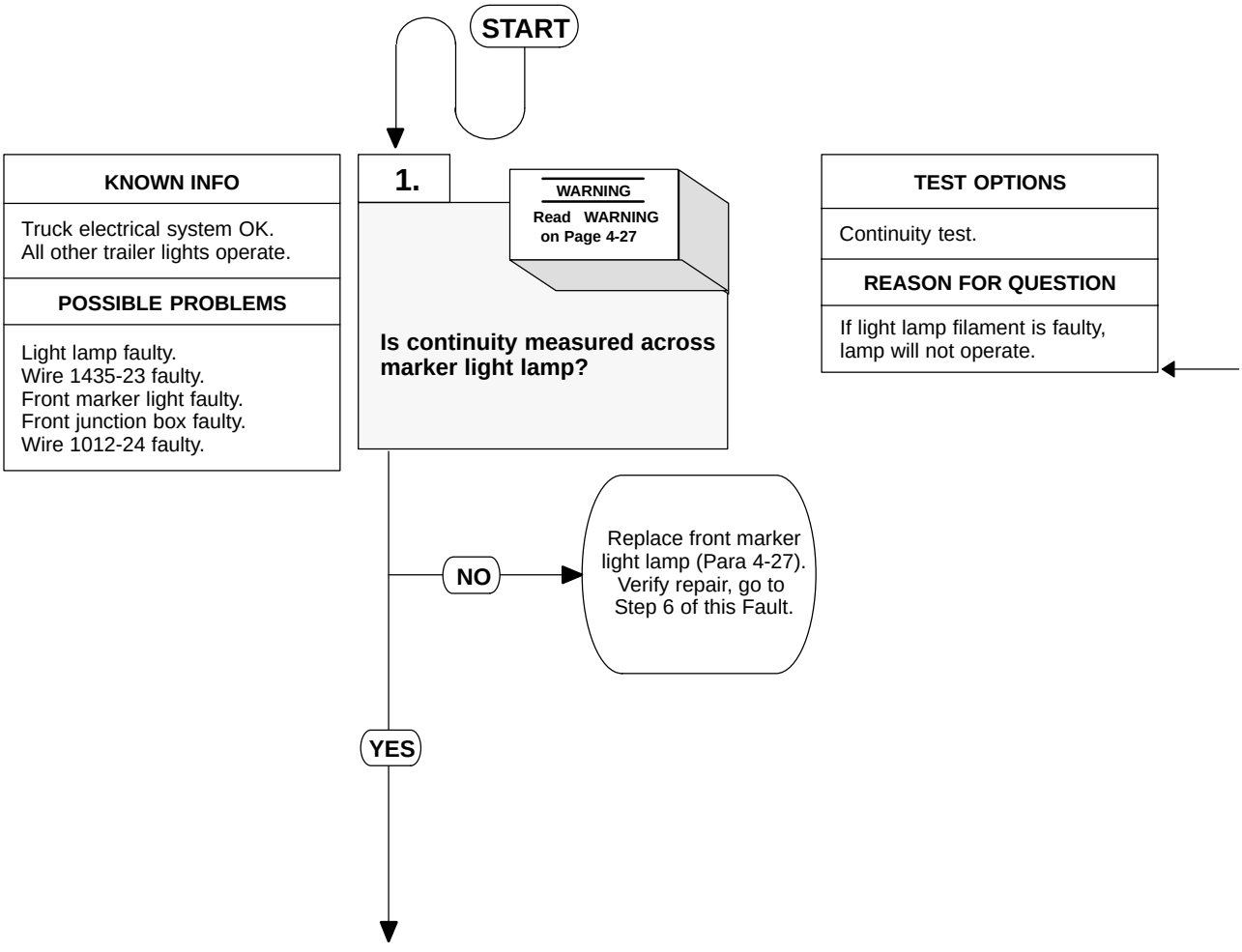
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

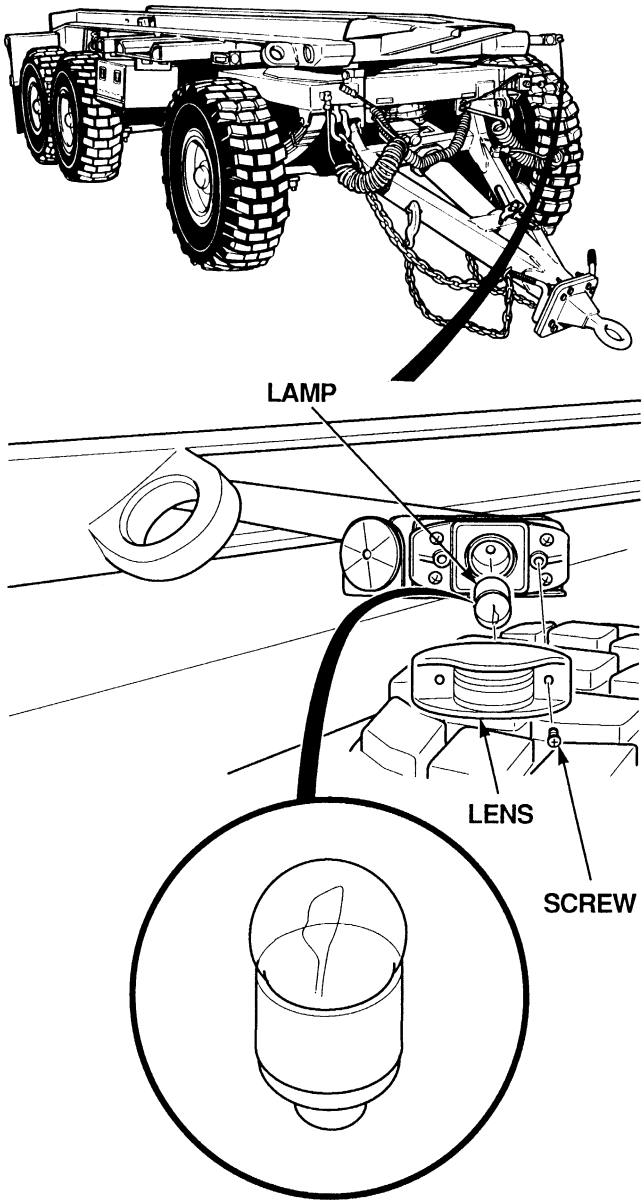
NOTE

- The following troubleshooting procedures cover the left front side marker light, but they apply to both front side marker lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



WARNING

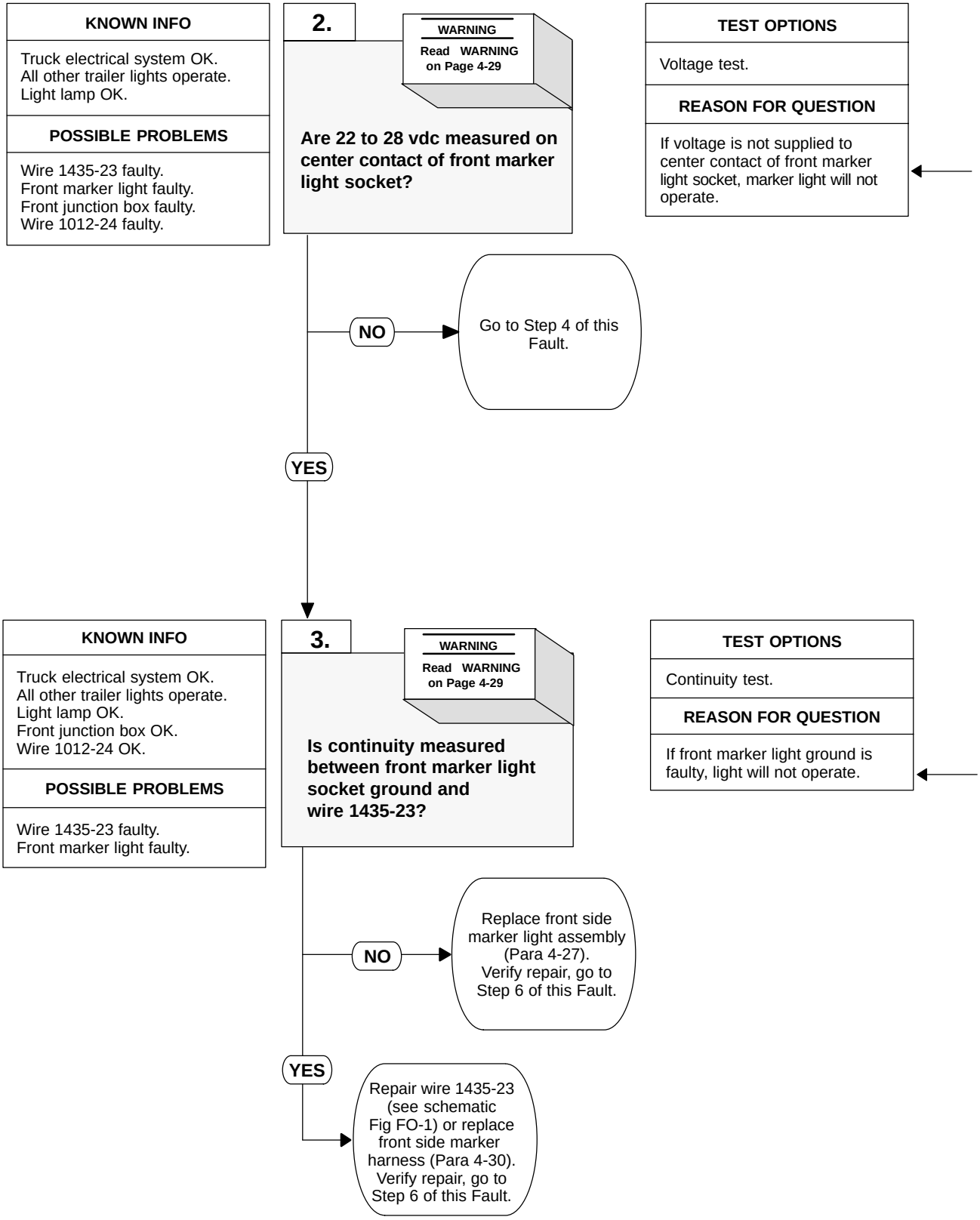
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.



CONTINUITY TEST

(1) Remove two screws and side marker light lens.
(2) Remove front marker light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
    (a) If there is no continuity, replace lamp (Para 4-27).
    (b) If there is continuity, lamp is OK.

1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).

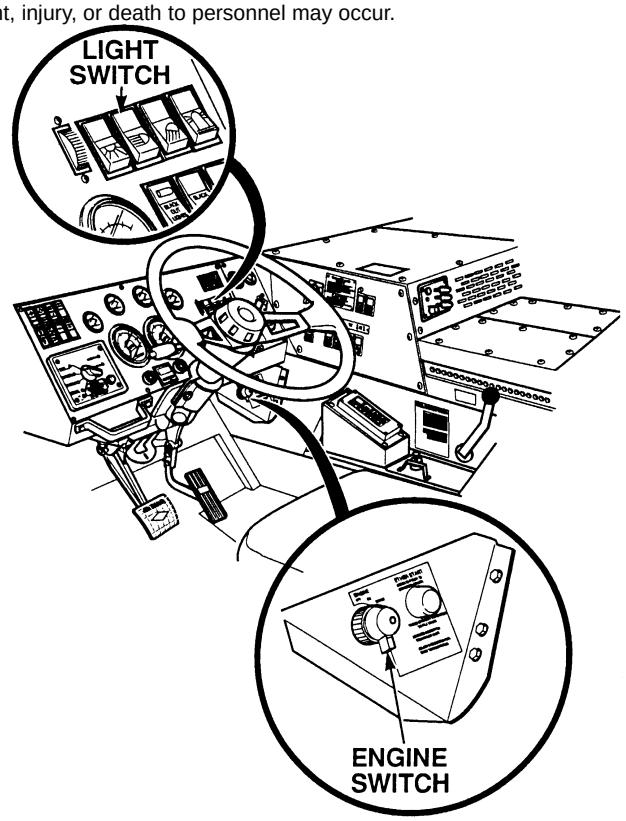


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

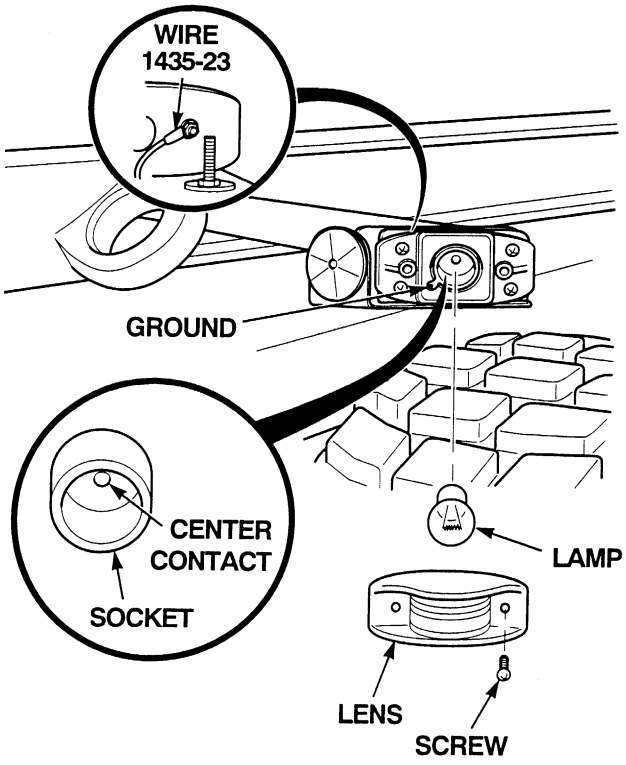
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Step (5) below and go to Step 4 of this Fault.
  (b) If 22 to 28 vdc are present, side marker light socket is OK.
(5) Turn off lights and turn OFF ENGINE switch.

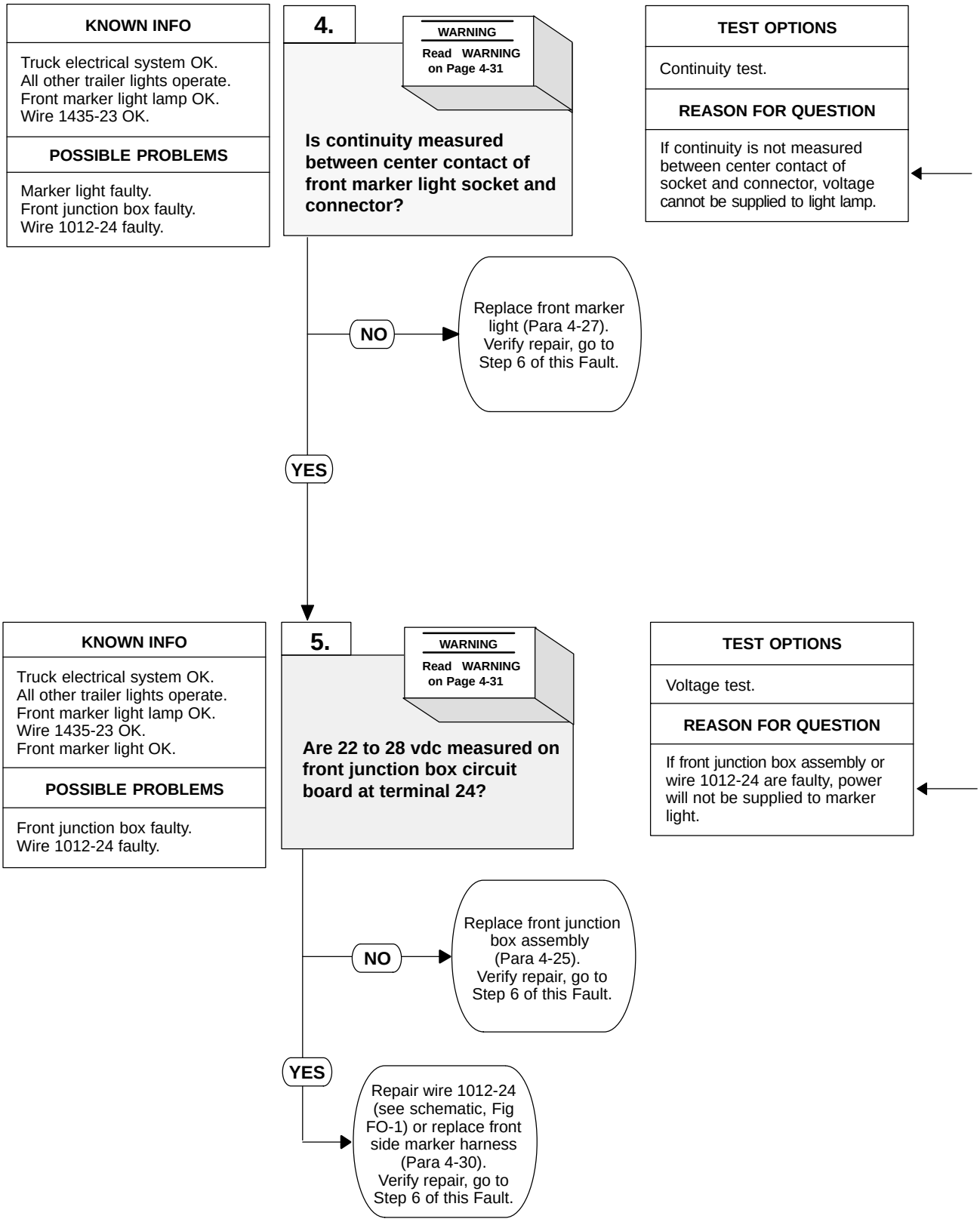


CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between front marker light socket ground and wire 1435-23?
  (a) If there is no continuity, replace front marker light (Para 4-27).
  (b) If there is continuity, repair/replace wire 1435-23 (see schematic Fig FO-1) or replace front side marker harness (Para 4-30) and perform Steps (3) and (4) below.
(3) Install marker light lamp.
(4) Install light lens and two screws.



1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).

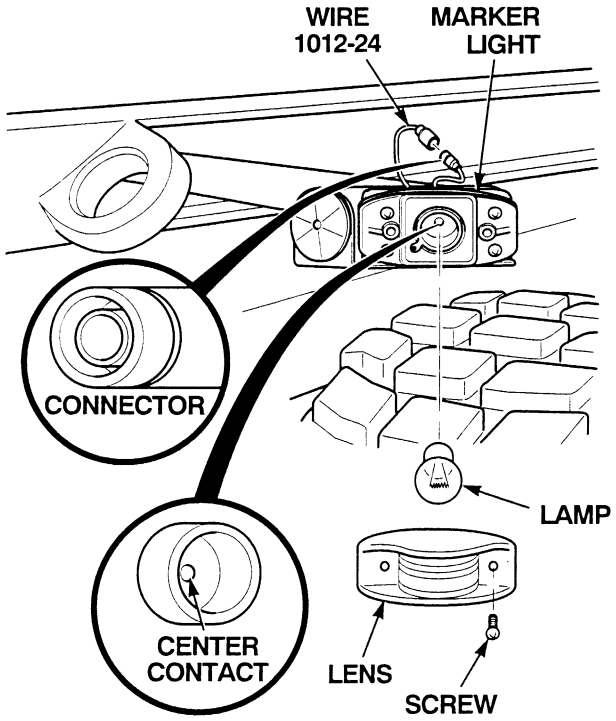


WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

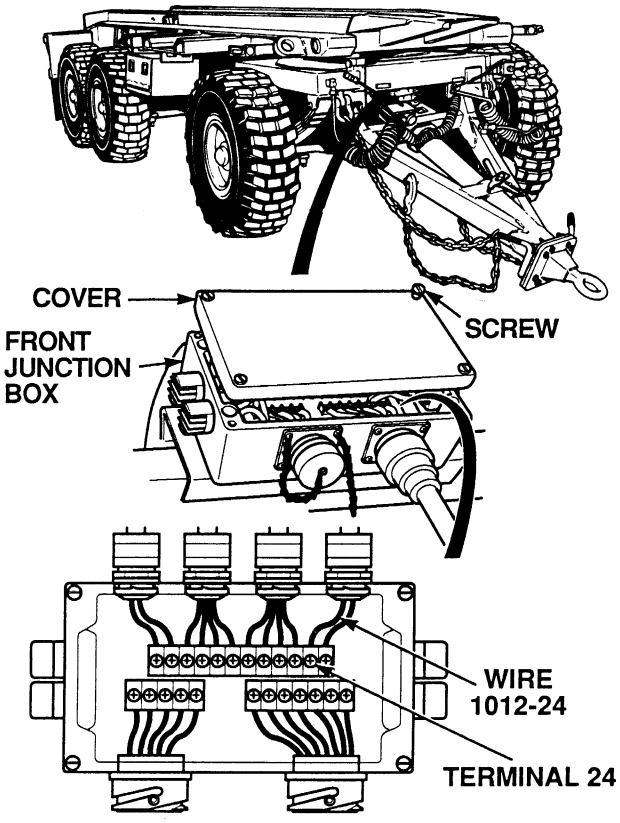
CONTINUITY TEST

(1) Disconnect wire 1012-24 connector from front marker light connector.
(2) Is there continuity measured between center contact of marker light socket and marker light connector?
  (a) If there is no continuity, replace front marker light (Para 4-27).
  (b) If there is continuity, marker light is OK.
(3) Install marker light lamp.
(4) Install light lens and two screws.

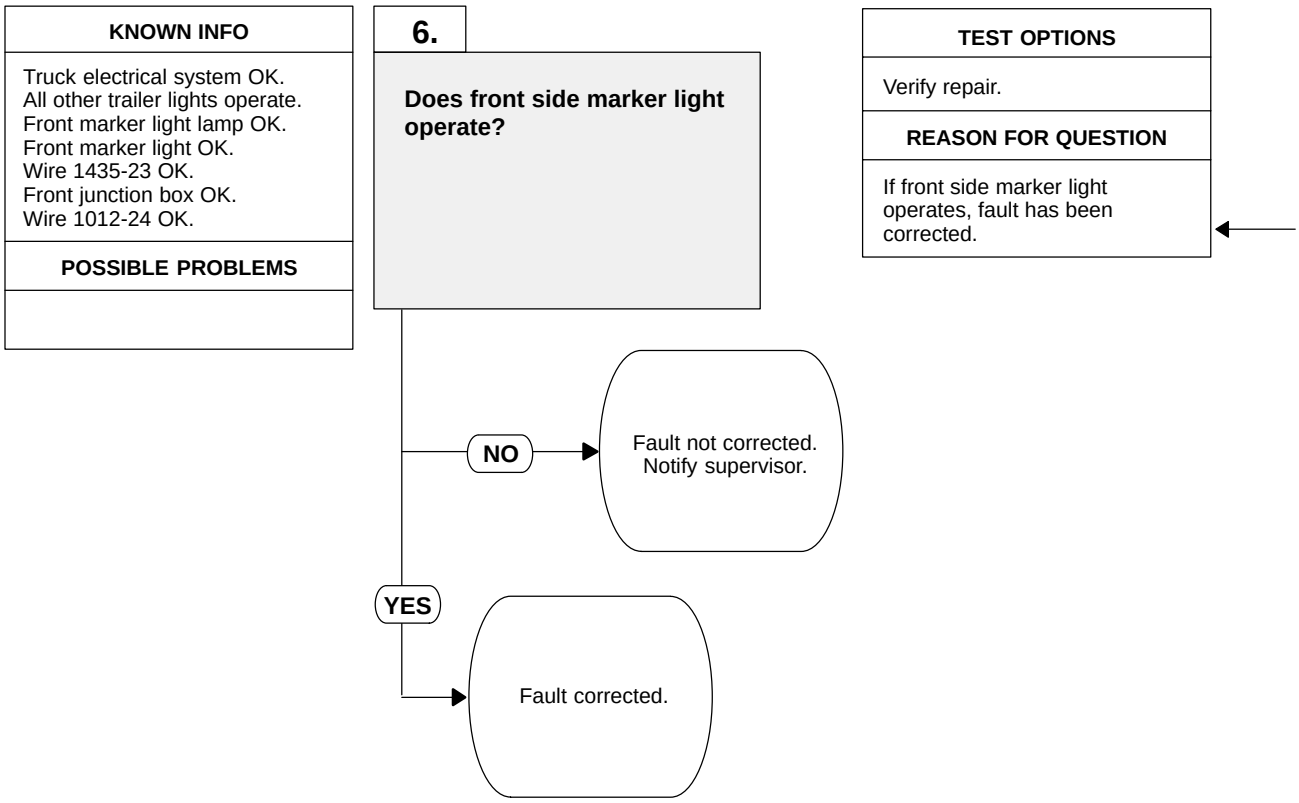


VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to volts dc.
(3) Connect positive (+) multimeter lead to front junction box, terminal 24.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below, and replace front junction box assembly (Para 4-25).
  (b) If 22 to 28 vdc are present, repair wire 1012-24 (see schematic Fig FO-1) or replace front side marker harness (Para 4-30).
(6) Turn off lights and perform Steps (7) through (9) below.
(7) Turn OFF ENGINE switch.
(8) Install front junction box cover and tighten four captive screws.
(9) Connect wire 1012-24 connector to front marker light connector.

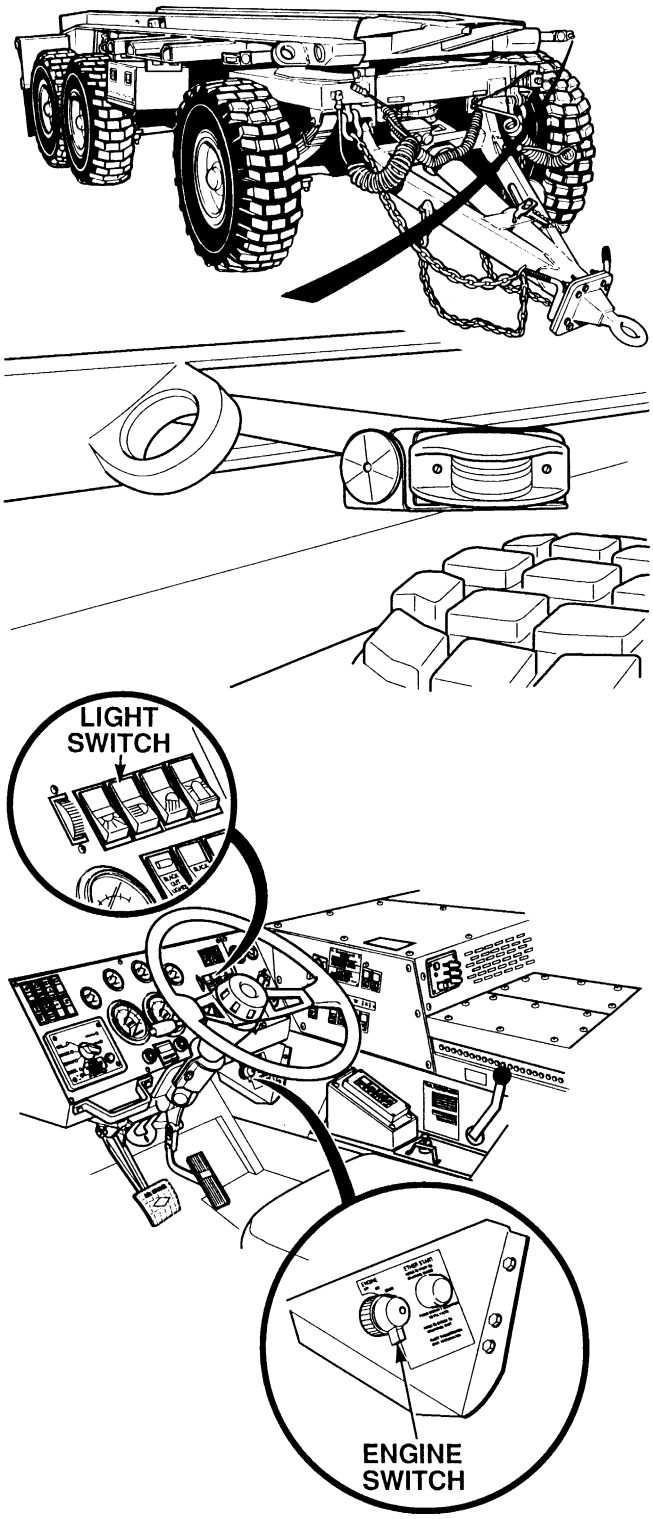


1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).



VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe front marker lights (TM 9-2320-364-10).
   (a) If front side marker light does not operate, fault not corrected, perform Steps (2) and (3) below and notify supervisor.
   (b) If front side marker light operates, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.



4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

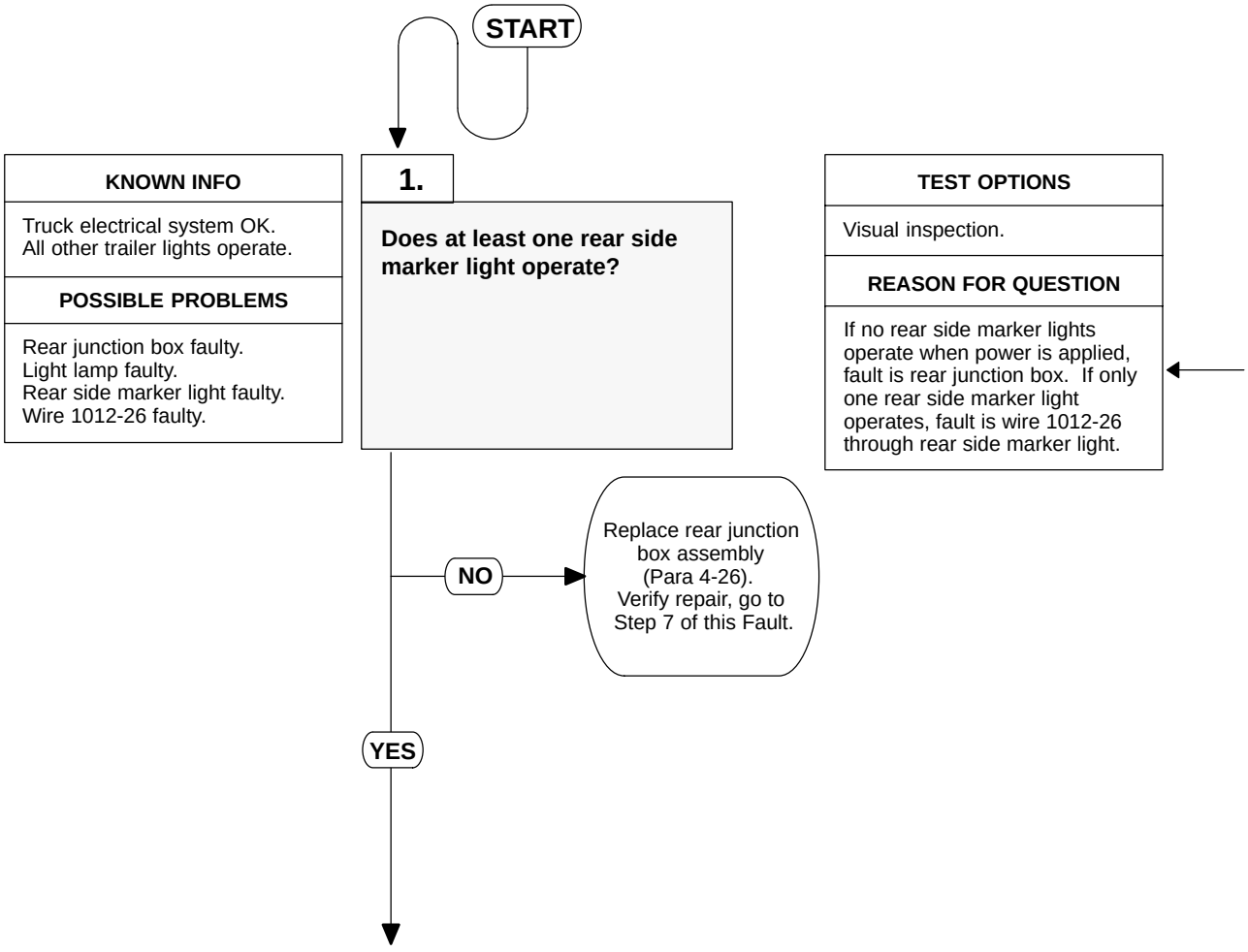
Personnel Required
Two

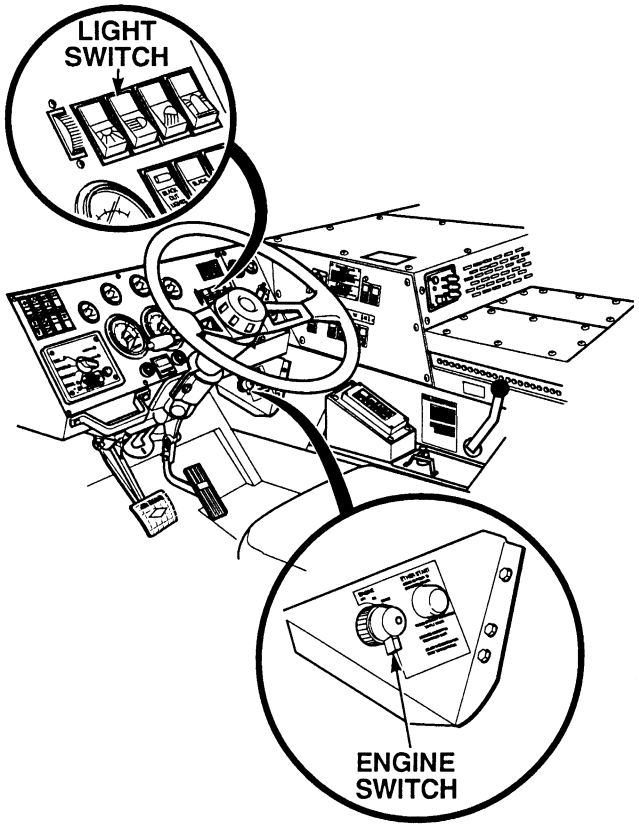
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE

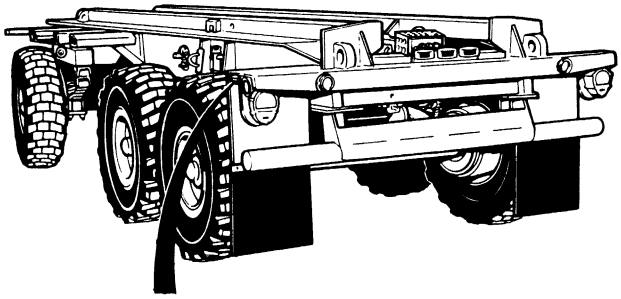
- The following troubleshooting procedures cover the left front side marker light, but they apply to both front side marker lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

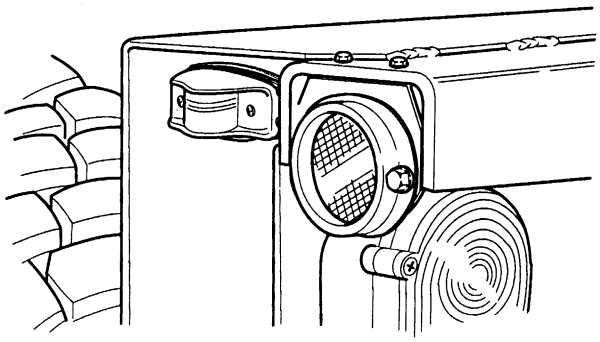




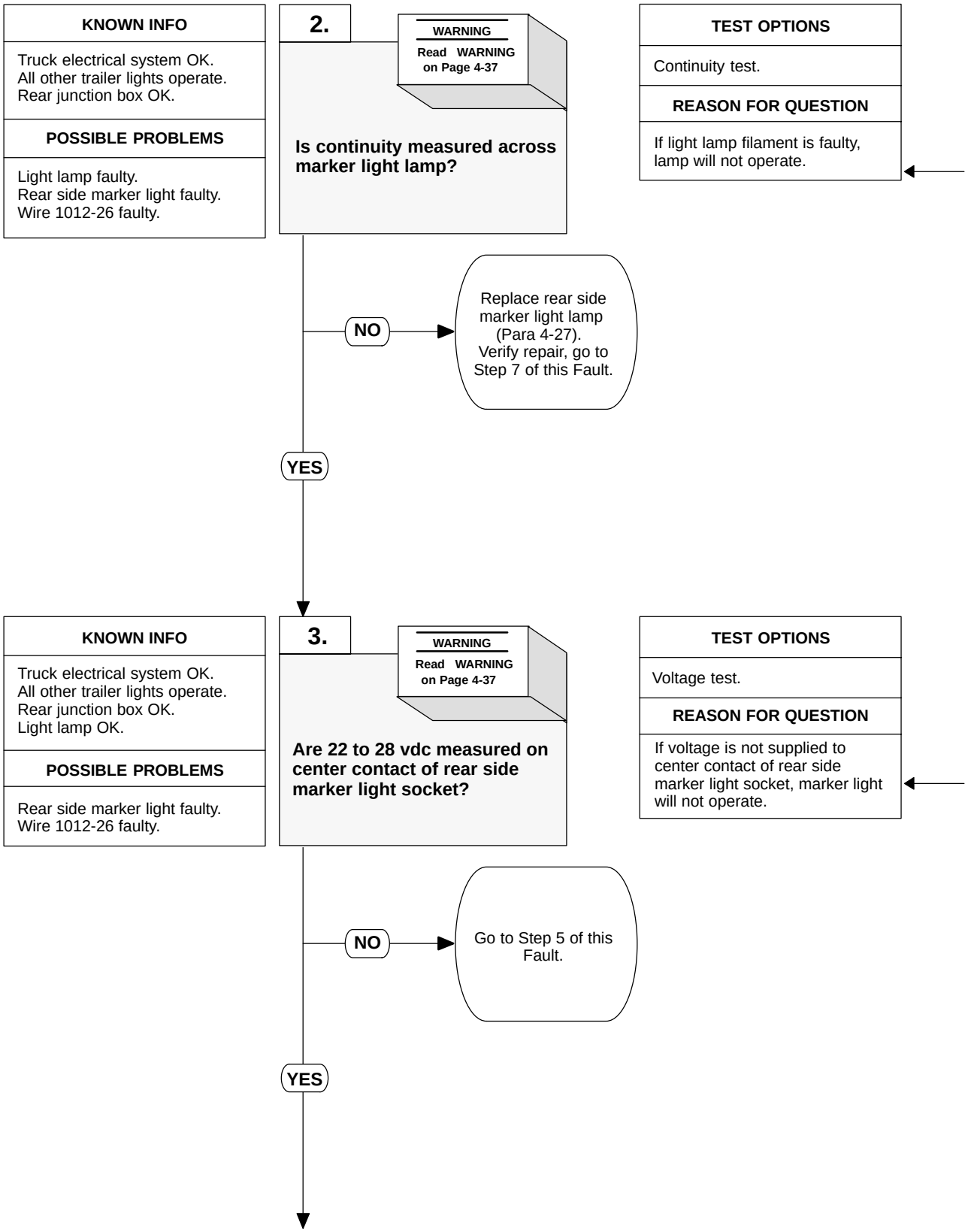
VISUAL INSPECTION

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear side marker lights (TM 9-2320-364-10).
   (a) If all rear side marker lights fail to operate, perform Steps (2) and (3) below and replace rear junction box (Para 4-26).
   (b) If at least one side marker light operates, perform Steps (2) and (3) below and go to Step 2 of this Fault.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

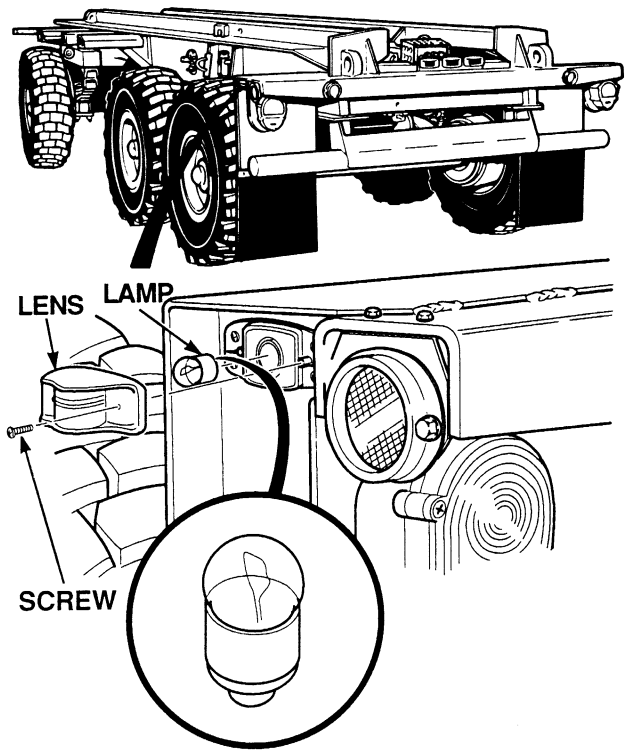


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

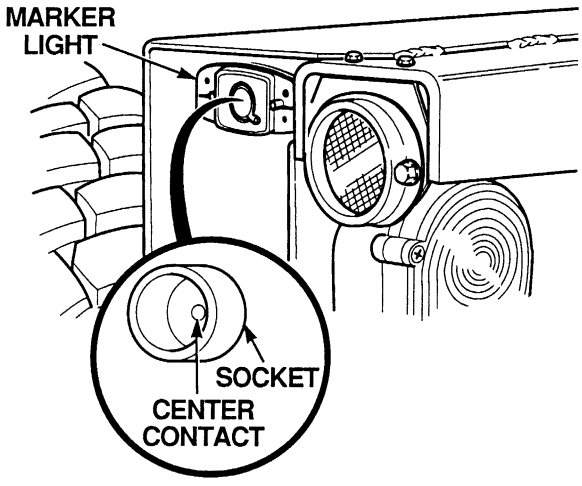
CONTINUITY TEST

(1) Remove two screws and side marker light lens.
(2) Remove light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
  (a) If there is no continuity, replace lamp (Para 4-27).
  (b) If there is continuity, lamp is OK.

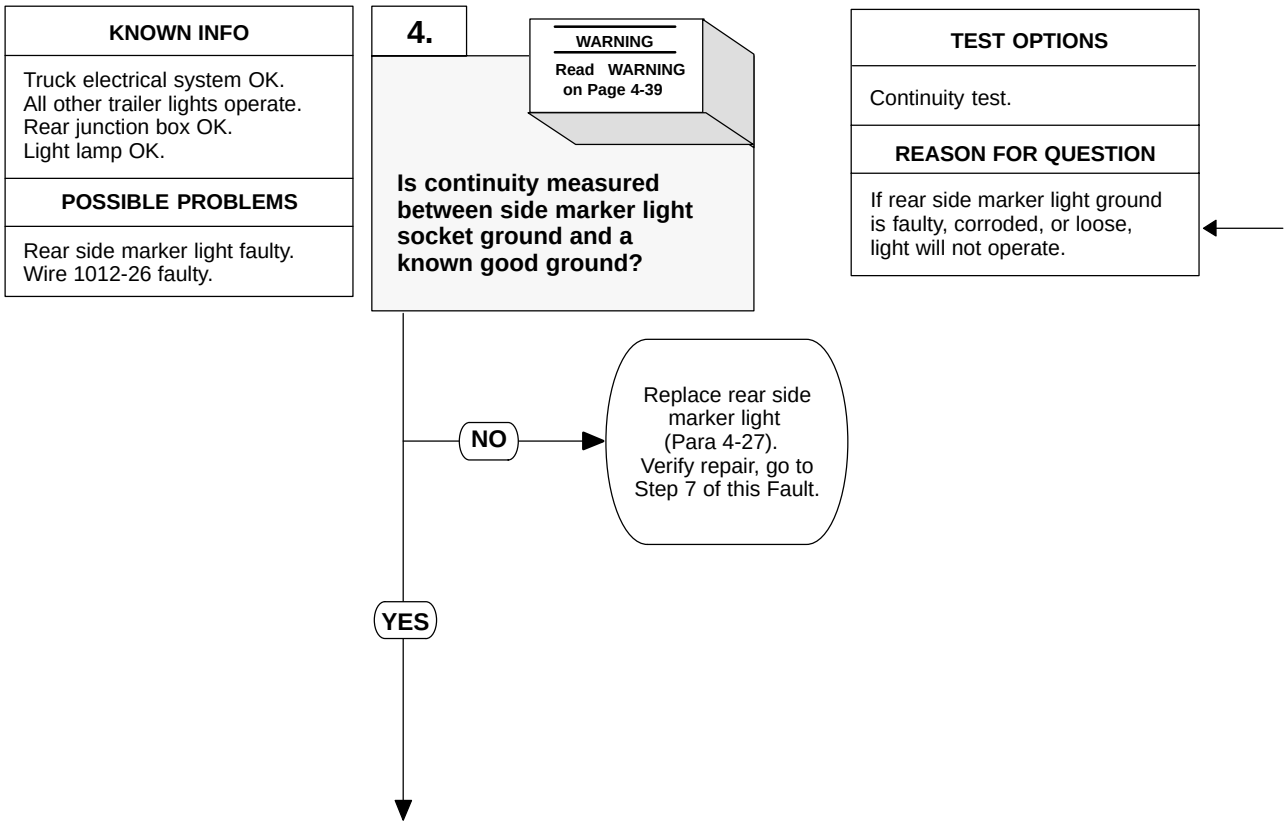


VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and go to Step 5 of this Fault.
  (b) If 22 to 28 vdc are present, side marker light socket is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.



2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

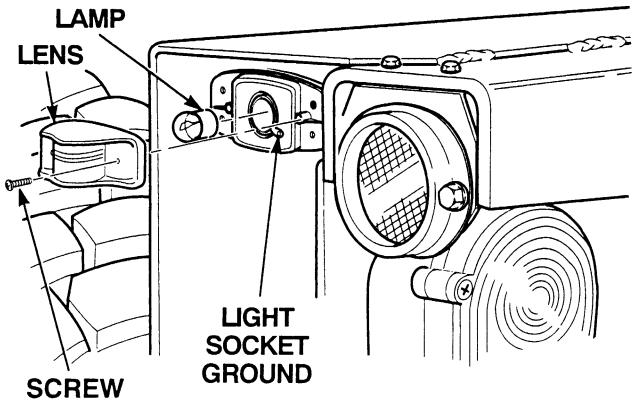


WARNING

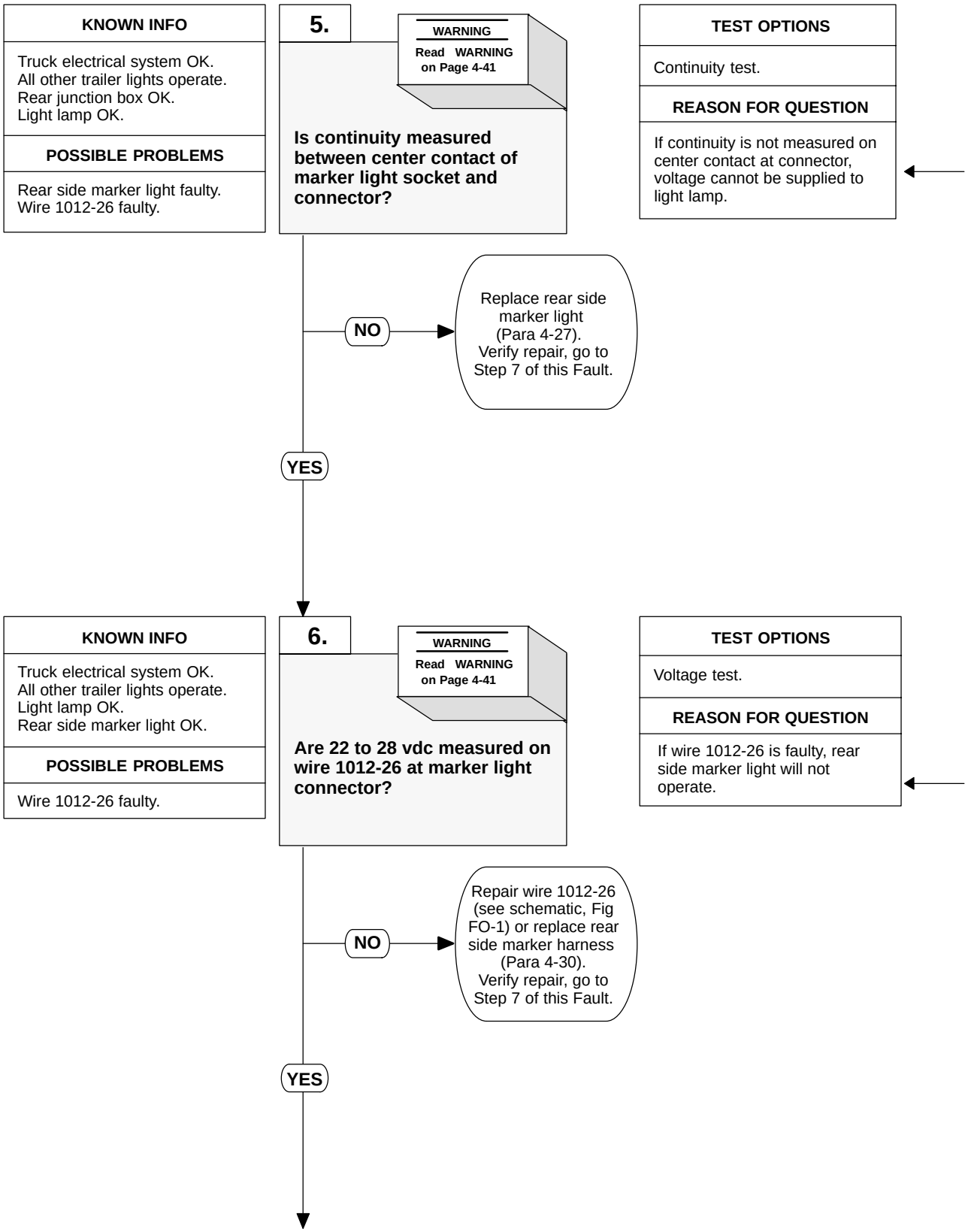
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between rear side marker light socket ground and a known good ground?
   (a) If there is no continuity, replace rear side marker light (Para 4-27).
   (b) If there is continuity, marker light is OK.



2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

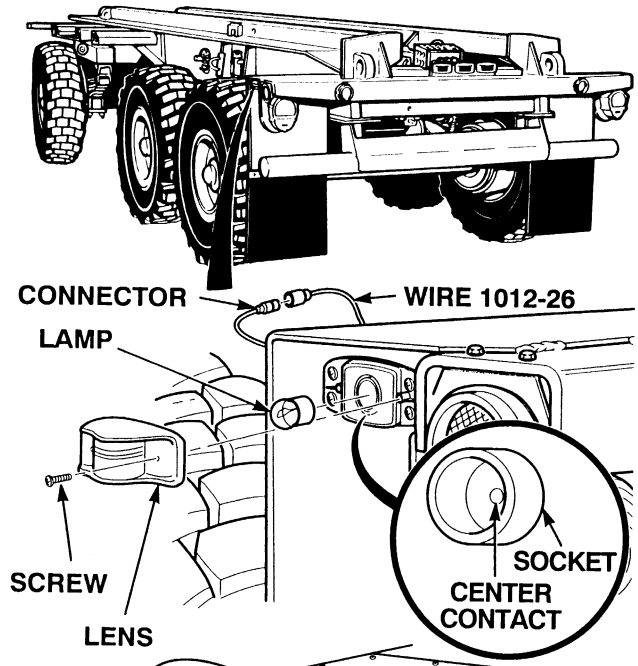


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

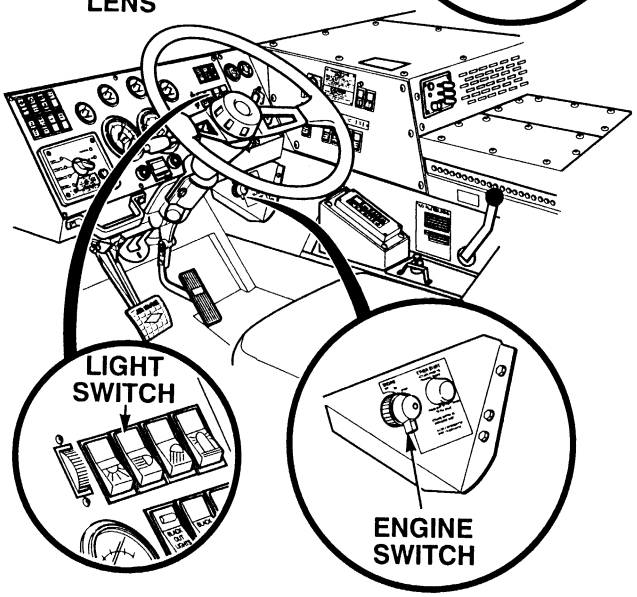
CONTINUITY TEST

(1) Disconnect wire 1012-26 connector from marker light connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured on center contact of marker light socket and connector?
  (a) If there is no continuity, replace marker light (Para 4-27).
  (b) If there is continuity, marker light is OK.
(4) Install side marker light lamp.
(5) Install light lens and two screws.

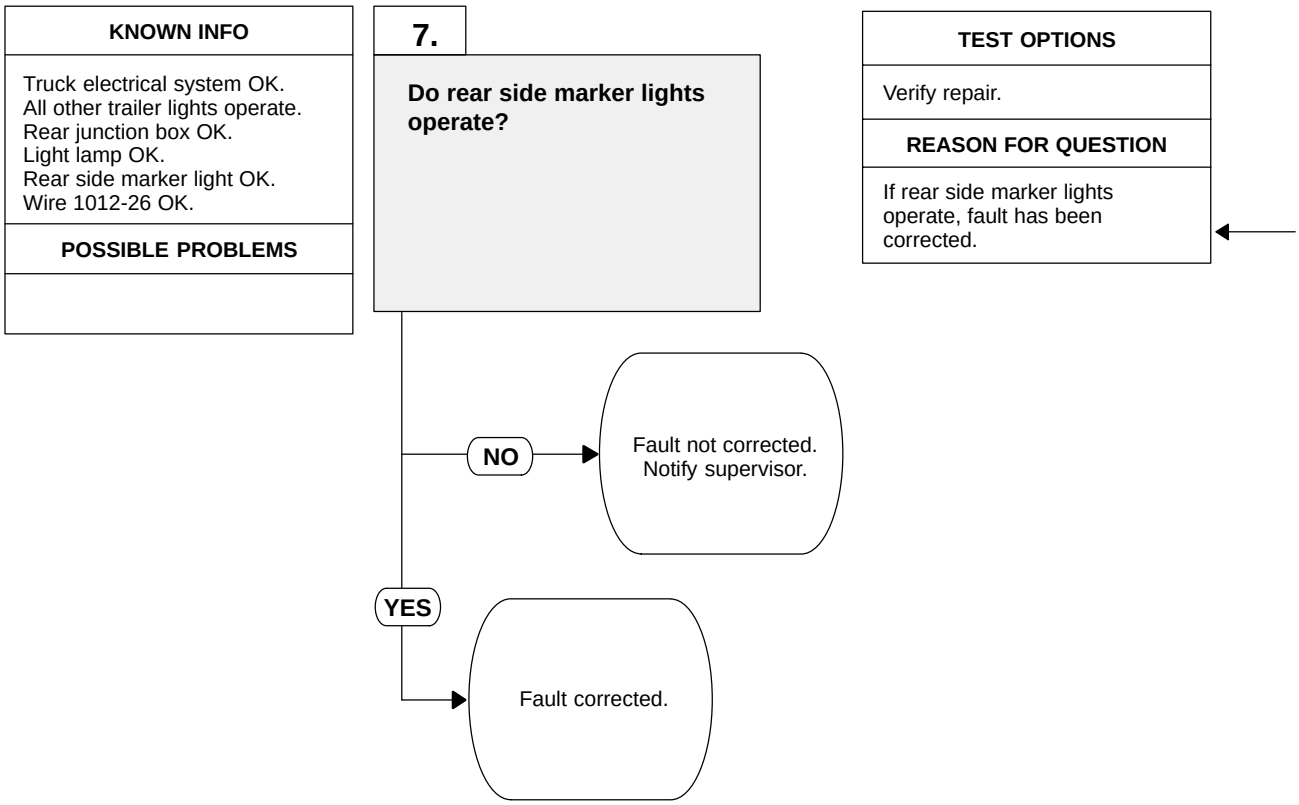


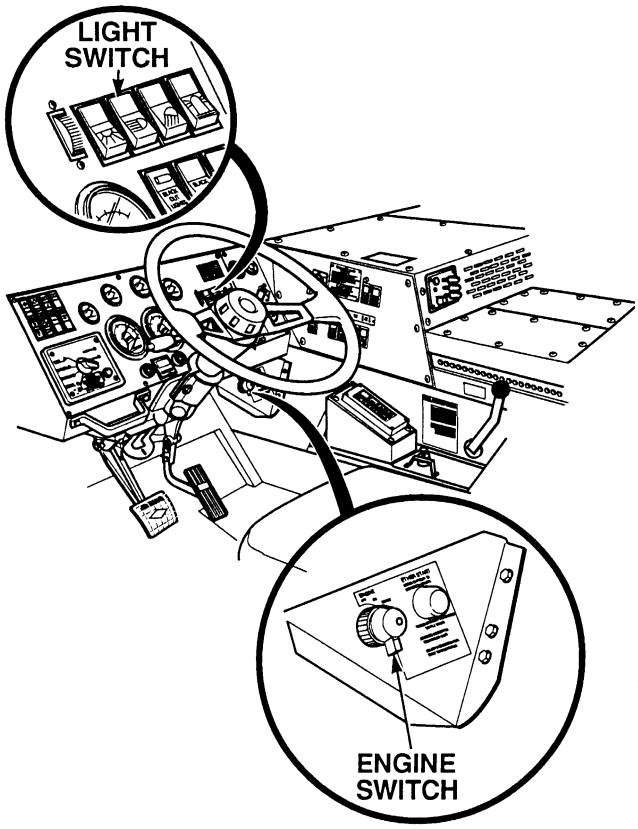
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1012-26 connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and repair wire 1012-26 (see schematic, Fig FO-1) or replace rear side marker harness (Para 4-30).
  (b) If 22 to 28 vdc are present, wire 1012-26 is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1012-26 connector to marker light connector.



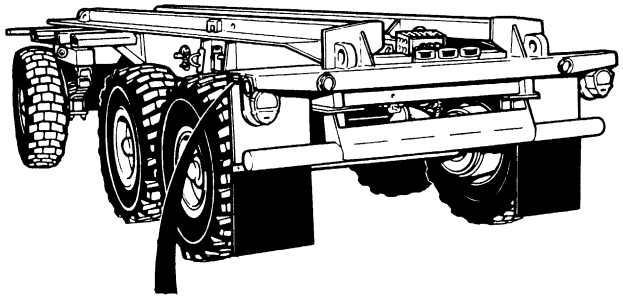
2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

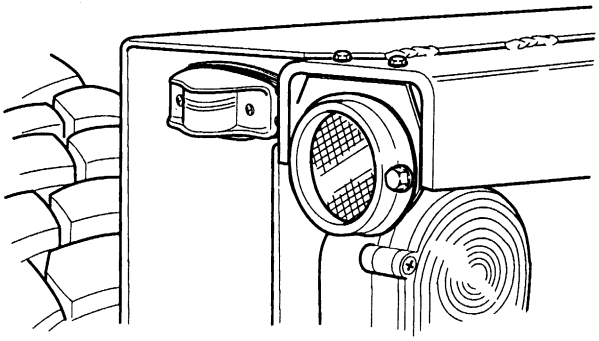




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear side marker lights (TM 9-2320-364-10).
   (a) If rear side marker lights do not operate, fault not corrected. Perform Step (2) below and notify supervisor.
   (b) If rear side marker lights operate, fault has been corrected.
(2) Turn off lights and turn OFF ENGINE switch.





4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

3. REAR MARKER LIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Material/Parts
Locknut (Item 31, Appendix I)

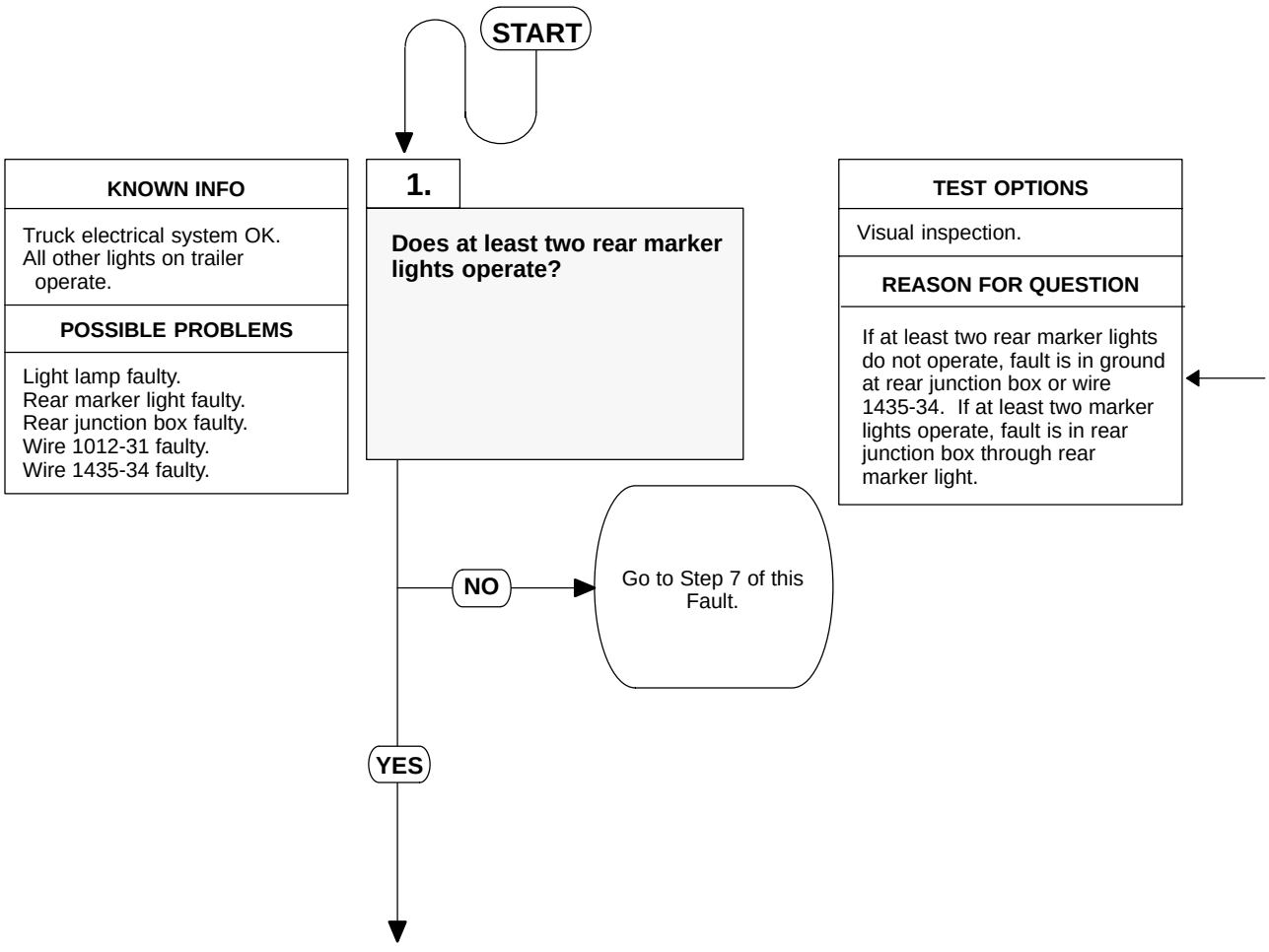
Personnel Required
Two

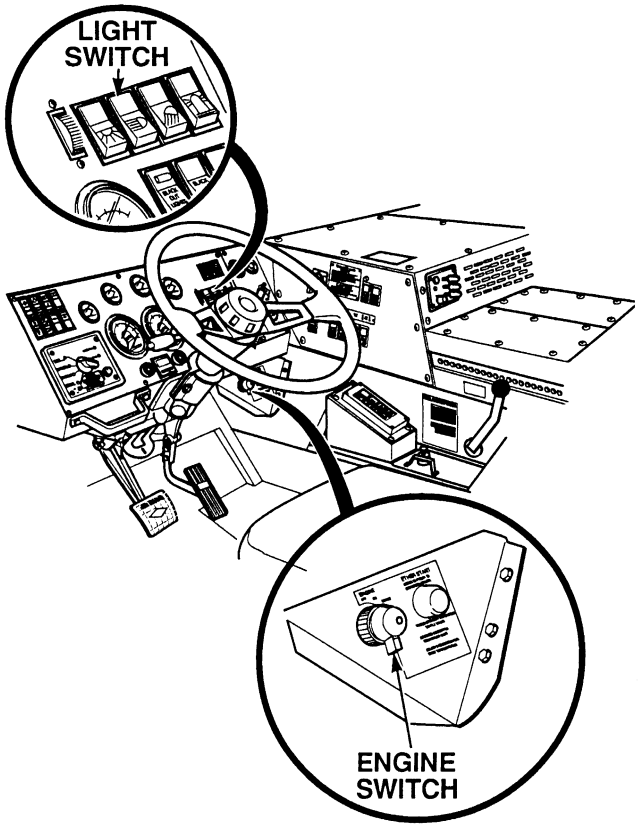
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE

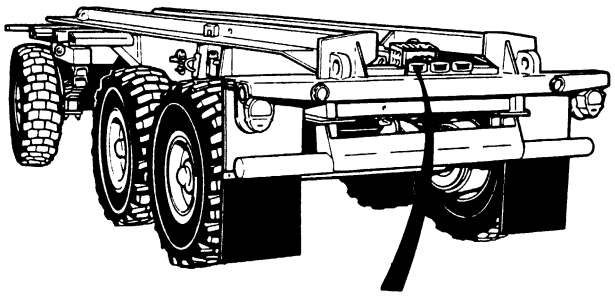
- The following troubleshooting procedures cover one rear marker light, but they apply to all three red rear marker lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

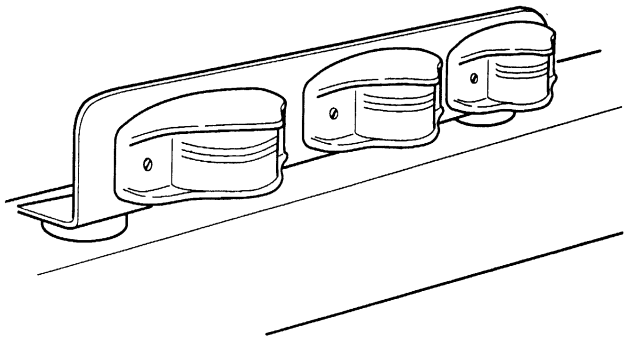




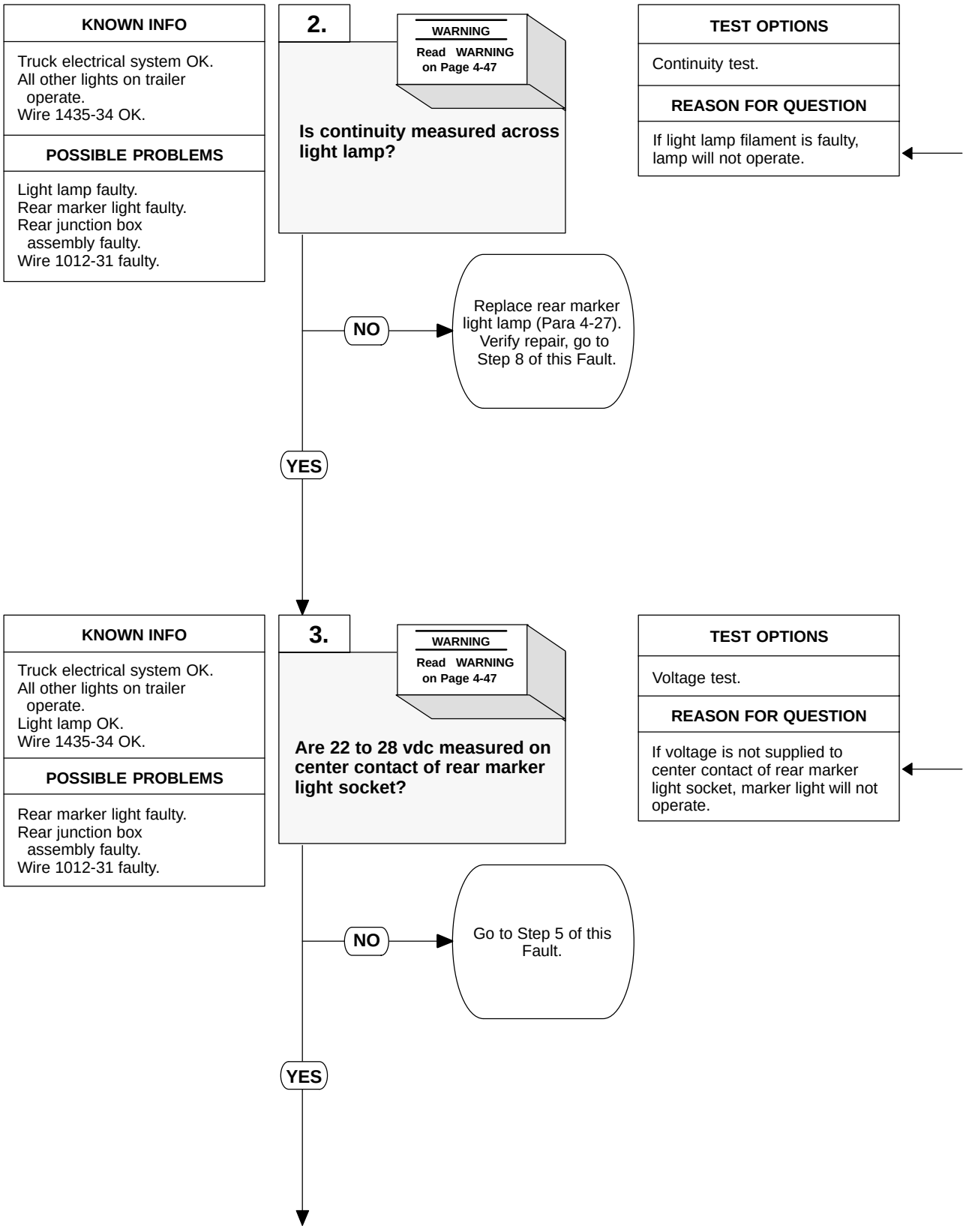
VISUAL INSPECTION

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear marker lights (TM 9-2320-364-10).
  (a) If there are no rear marker lights operating, perform Steps (2) and (3) below and go to Step 7 of this Fault.
  (b) If there are at least two rear marker lights operating, perform Steps (2) and (3) below and go to Step 2 of this Fault.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

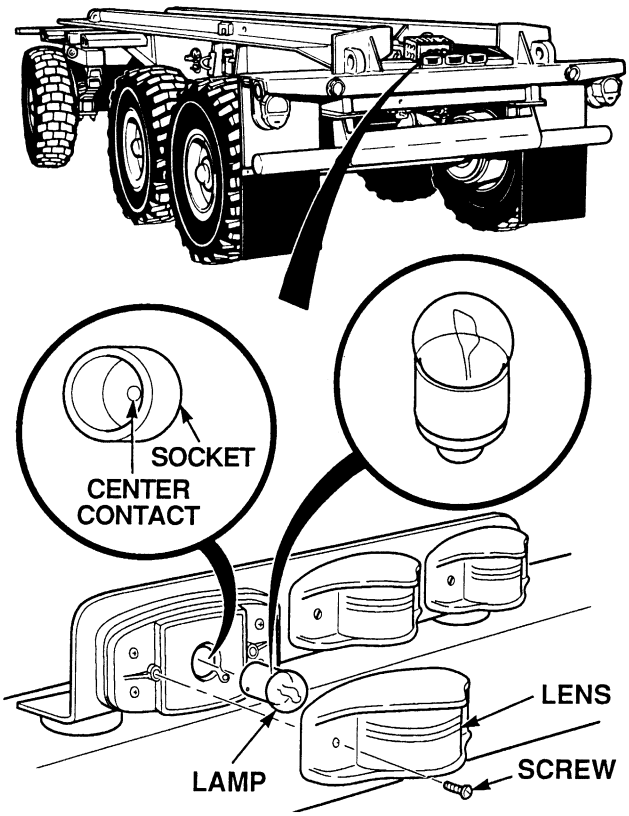


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Remove two screws and rear marker light lens.
(2) Remove light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
  (a) If there is no continuity, replace lamp (Para 4-27).
  (b) If there is continuity, lamp is OK.



VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and go to Step 5 of this Fault.
  (b) If 22 to 28 vdc are present, rear marker light socket is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.

3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Light lamp OK.
Rear junction box OK.
Wire 1012-31 OK.
Wire 1435-34 OK.

POSSIBLE PROBLEMS

Rear marker light faulty.

4.

WARNING
Read WARNING on Page 4-49

Is continuity measured between rear marker light socket ground and a known good ground?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If rear marker light ground is faulty, corroded, or loose, light will not operate.

NO → Replace rear marker light assembly (Para 4-28). Verify repair, go to Step 8 of this Fault.

YES → Fault not corrected. Notify supervisor.

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Light lamp OK.
Wire 1435-34 OK.

POSSIBLE PROBLEMS

Rear marker light faulty.
Rear junction box assembly faulty.
Wire 1012-31 faulty.

5.

WARNING
Read WARNING on Page 4-49

Is continuity measured between center contact of rear marker light socket and connector?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on center contact at connector, voltage cannot be supplied to light lamp.

NO → Replace rear marker light (Para 4-28). Verify repair, go to Step 8 of this Fault.

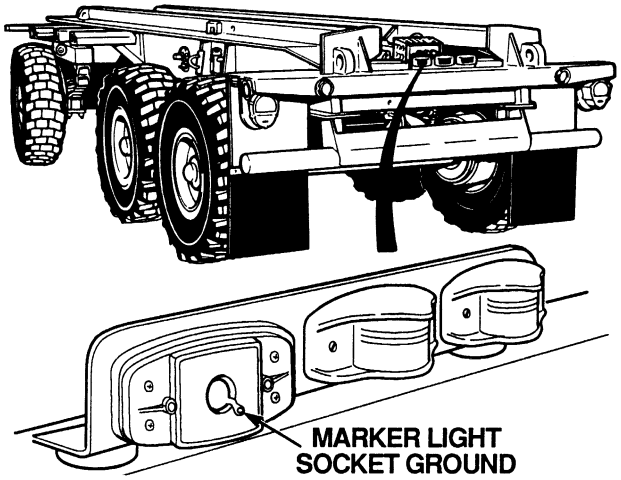
YES

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

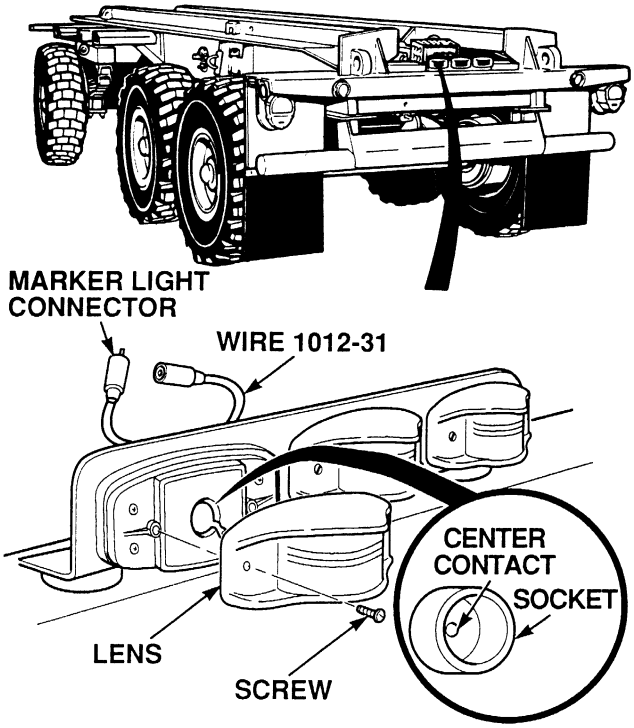
CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between rear marker light socket ground and a known good ground?
   (a) If there is no continuity, replace rear marker light (Para 4-28).
   (b) If there is continuity, rear marker light is OK. Fault not corrected. Notify supervisor.
(3) Install marker light lamp.
(4) Install light lens and two screws.



CONTINUITY TEST

(1) Disconnect wire 1012-31 connector from rear marker light connector.
(2) Is there continuity measured between center contact of marker light socket and connector?
   (a) If there is no continuity, replace marker light (Para 4-28).
   (b) If there is continuity, marker light is OK.
(3) Connect wire 1012-31 connector to rear marker light connector.
(4) Install marker light lamp.
(5) Install light lens and two screws.



3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Light lamp OK.
Rear marker light OK.
Wire 1435-34 OK.

POSSIBLE PROBLEMS

Rear junction box assembly faulty.
Wire 1012-31 faulty.

6.

WARNING
Read WARNING on Page 4-51

Are 22 to 28 vdc measured on rear junction box at terminal 31?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If voltage is not supplied to rear junction box terminal 31, circuit board is faulty and rear marker light will not operate.

NO → Replace rear junction box assembly (Para 4-26). Verify repair, go to Step 8 of this Fault.

YES → Repair wire 1012-31 (see schematic, Fig FO-1) or replace rear marker harness (Para 4-30). Verify repair, go to Step 8 of this Fault.

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Light lamp OK.
Rear marker light OK.
Wire 1012-31 OK.

POSSIBLE PROBLEMS

Rear junction box assembly faulty.
Wire 1435-34 faulty.

7.

WARNING
Read WARNING on Page 4-51

Is continuity measured between rear junction box terminal 34 and a known good ground?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on terminal 34, rear junction box is faulty and light will not operate. If there is continuity, light is not grounded because of faulty wire 1435-34.

NO → Replace rear junction box assembly (Para 4-26). Verify repair, go to Step 8 of this Fault.

YES → Repair wire 1435-34 (see schematic, Fig FO-1) or replace rear marker harness (Para 4-30). Verify repair, go to Step 8 of this Fault.

WARNING

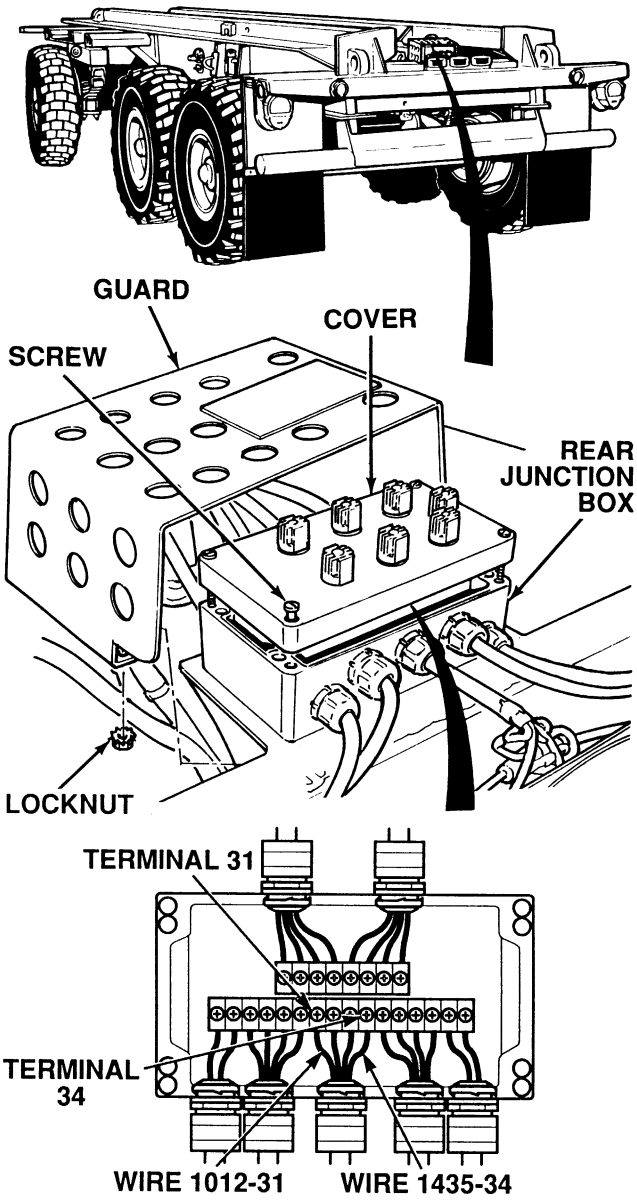
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

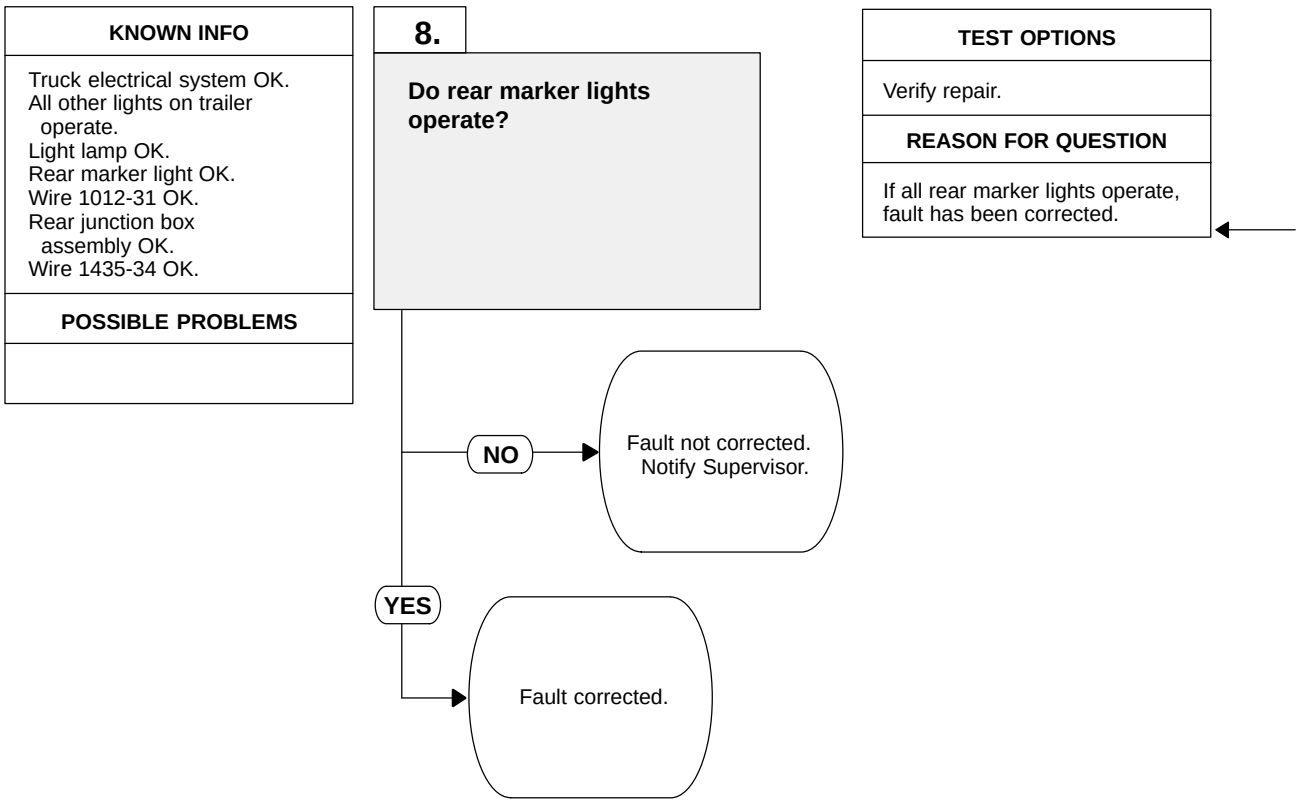
(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box.
(3) Set multimeter select switch to volts dc.
(4) Connect positive (+) multimeter lead to rear junction box, terminal 31.
(5) Connect negative (–) multimeter lead to a known good ground.
(6) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, replace rear junction box assembly (Para 4-26).
  (b) If 22 to 28 vdc are present, repair wire 1012-31 (see schematic, Fig FO-1) or replace rear marker harness (Para 4-30).
(7) Turn off lights and turn OFF ENGINE switch.

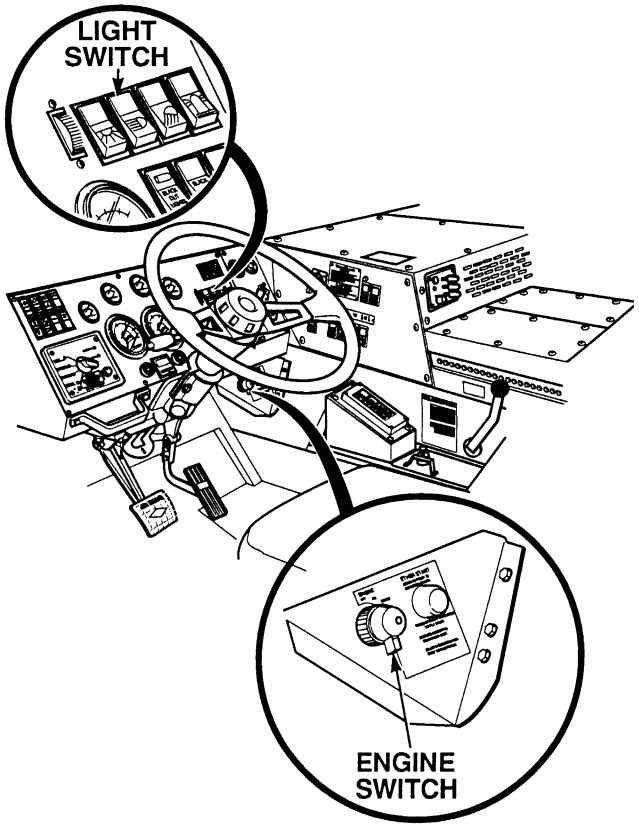
CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between rear junction box terminal 34 and a known good ground?
  (a) If there is no continuity, replace rear junction box assembly (Para 4-26).
  (b) If there is continuity, repair wire 1435-34 (see schematic, Fig FO-1) or replace rear marker harness (Para 4-30).
(3) Install junction box cover and tighten four captive screws.
(4) Install rear junction box guard and four locknuts.



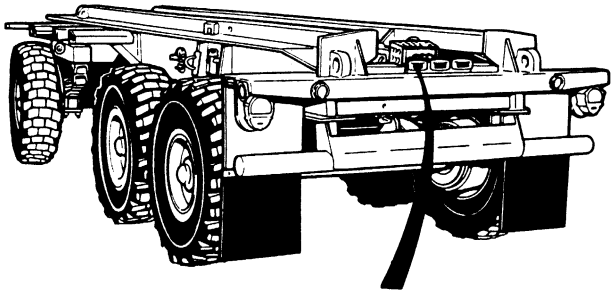
3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

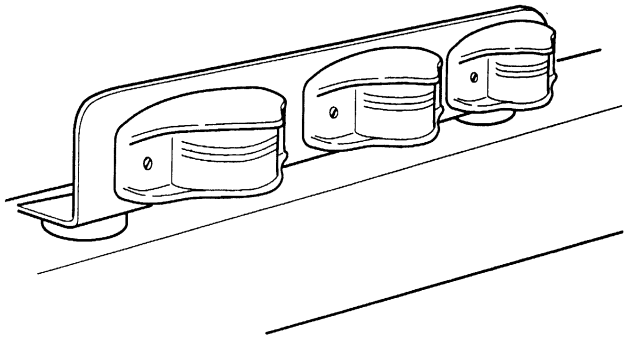




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear marker lights (TM 9-2320-364-10).
   (a) If rear marker lights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If rear marker lights operate, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

4. TAILLIGHT DOES NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

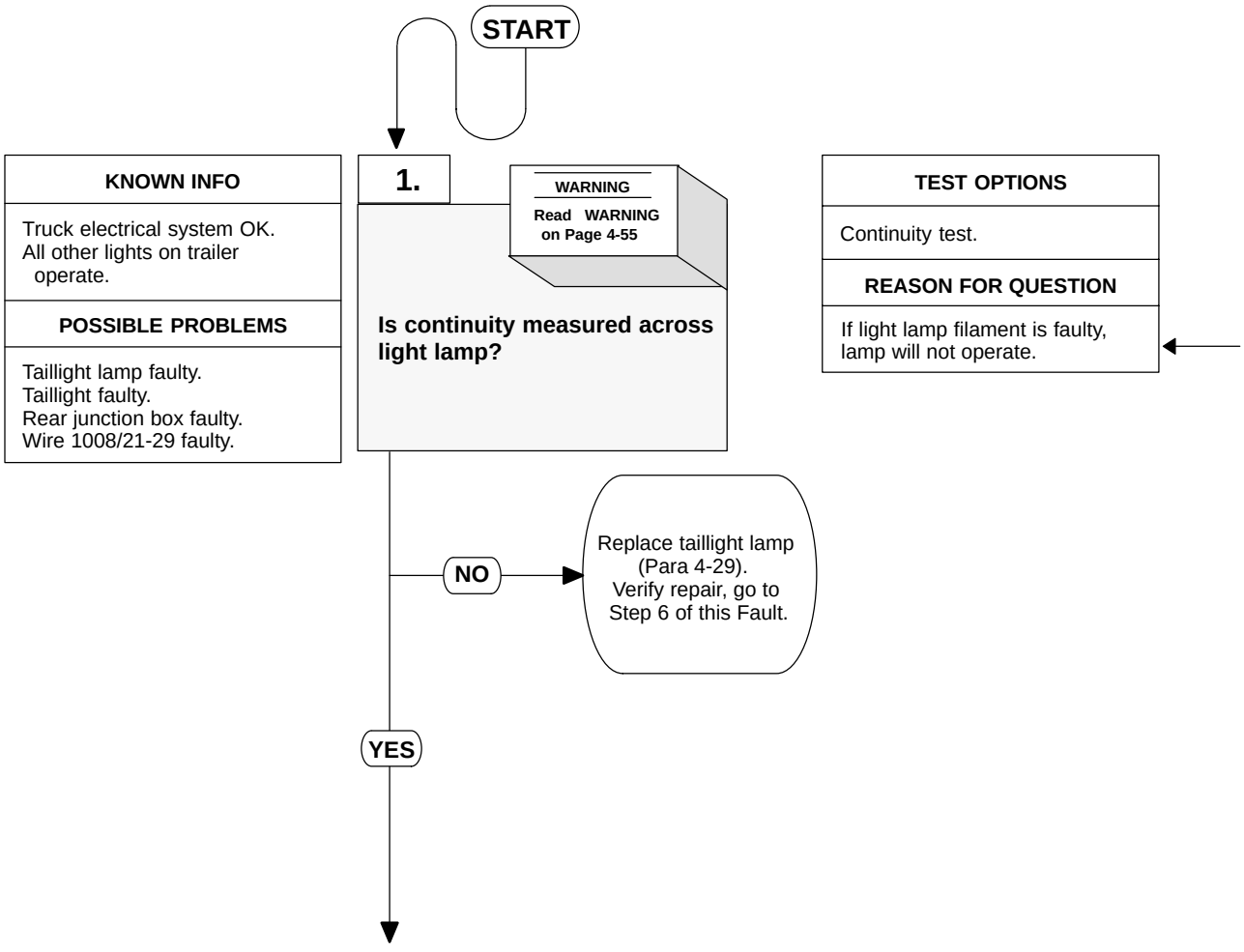
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE

- The following troubleshooting procedures cover the left taillight, but they apply to both taillights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

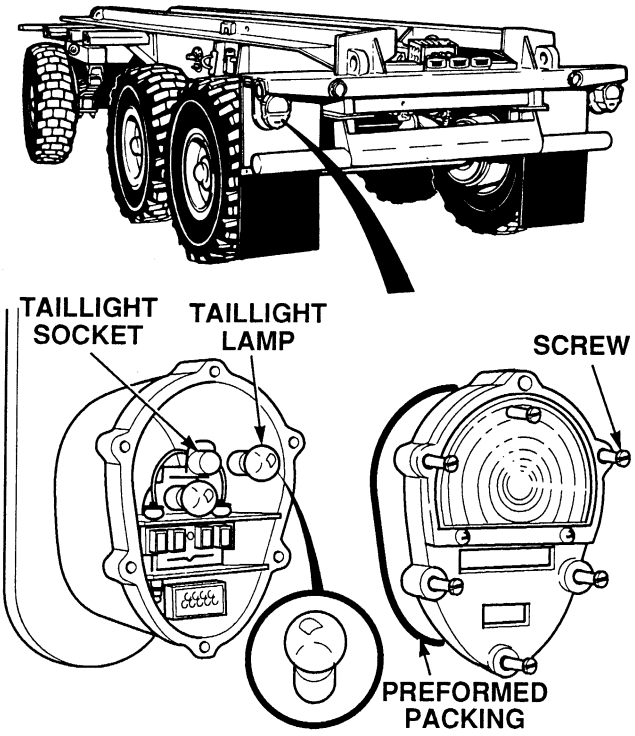


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Loosen six captive screws, remove composite light cover, and preformed packing. Discard preformed packing.
(2) Remove taillight lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
  (a) If there is no continuity, replace lamp (Para 4-29).
  (b) If there is continuity, lamp is OK.



4. TAILLIGHT DOES NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Taillight lamp OK.

POSSIBLE PROBLEMS

Taillight faulty.
Rear junction box faulty.
Wire 1008/21-29 faulty.

2.

WARNING
Read WARNING on Page 4-57

Are 22 to 28 vdc measured on center contact of taillight socket?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If voltage is not supplied to center contact of taillight socket, taillight will not operate.

NO → Go to Step 4 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Taillight lamp OK.
Rear junction box OK.
Wire 1008/21-29 OK.

POSSIBLE PROBLEMS

Taillight faulty.

3.

WARNING
Read WARNING on Page 4-57

Is continuity measured between taillight socket ground and a known good ground?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If taillight ground is faulty, light will not operate.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 6 of this Fault.

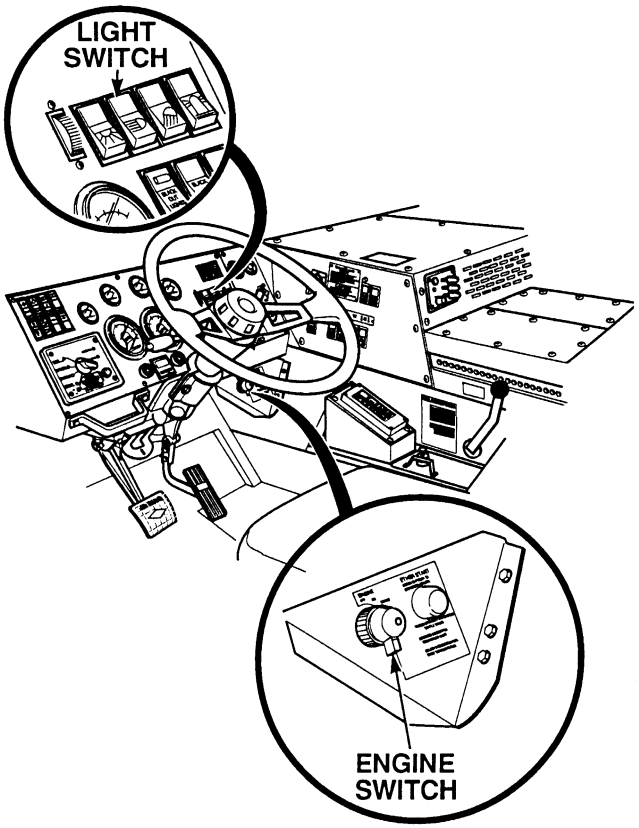
YES → Fault not corrected. Notify DS Maintenance.

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

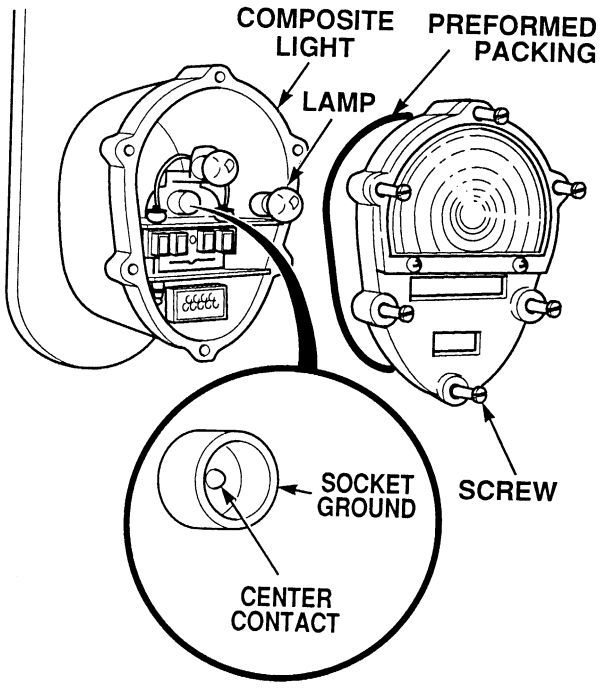
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and go to Step 4 of this Fault.
  (b) If 22 to 28 vdc are present, perform Steps (5) and (6) below and go to Step (3) of this Fault.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.



CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between taillight socket ground and a known good ground?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, fault is not corrected. Perform Steps (3) and (4) below and notify DS Maintenance.
(3) Install lamp in taillight socket.
(4) Install preformed packing, composite light cover, and tighten six captive screws.



4. TAILLIGHT DOES NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Taillight lamp OK.

POSSIBLE PROBLEMS

Taillight faulty.
Rear junction box faulty.
Wire 1008/21-29 faulty.

4.

WARNING
Read WARNING on Page 4-59

Is continuity measured between center contact of taillight socket and connector?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on center contact at connector, voltage cannot be supplied to light lamp.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 6 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Taillight lamp OK.
Taillight OK.

POSSIBLE PROBLEMS

Rear junction box faulty.
Wire 1008/21-29 faulty.

5.

WARNING
Read WARNING on Page 4-59

Are 22 to 28 vdc measured on rear junction box at terminal 29?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If voltage is not supplied to rear junction box terminal 29, rear junction box is faulty. If voltage is supplied to rear junction box terminal 37, wire 1008/21-29 is faulty.

NO → Replace rear junction box assembly (Para 4-26). Verify repair, go to Step 6 of this Fault.

YES → Repair wire 1008/21-29 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30). Verify repair, go to Step 6 of this Fault.

WARNING

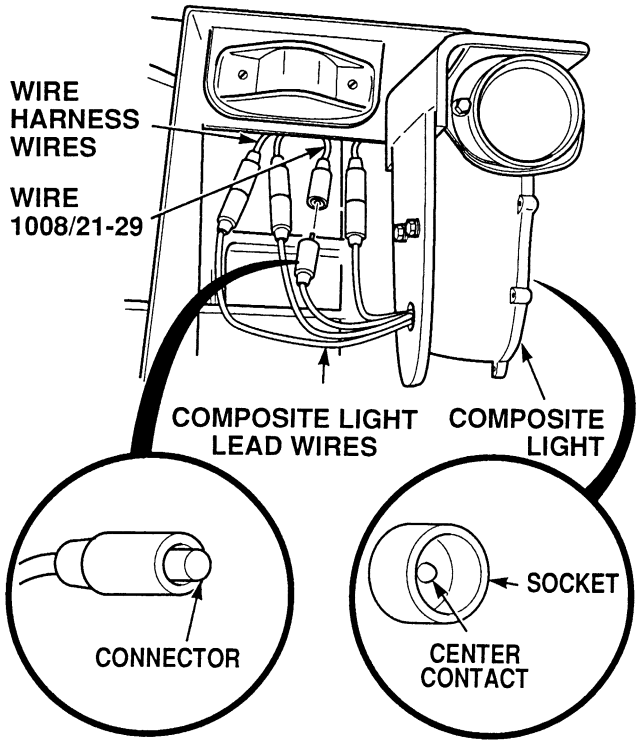
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

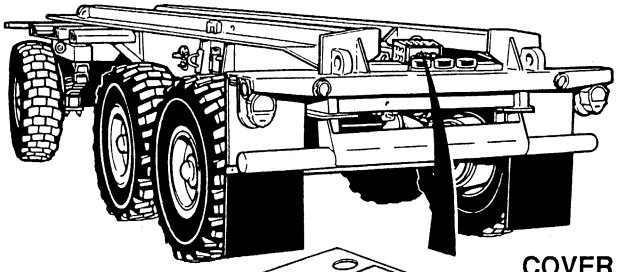
CONTINUITY TEST

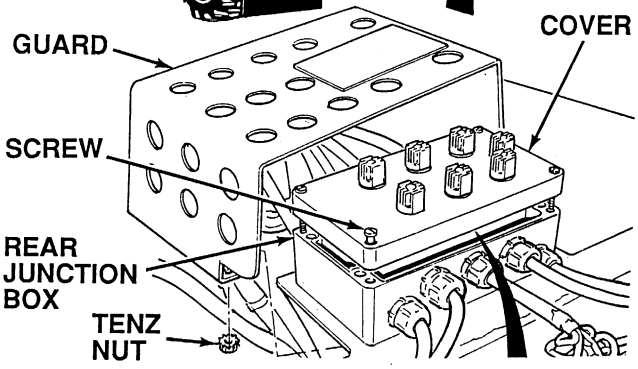
(1) Disconnect wire 1008/21-29 connector at composite light connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured on center contact of marker light socket and composite light connector?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, rear composite light is OK.
(4) Install lamp in taillight socket.
(5) Install preformed packing, composite light cover and six captive screws.

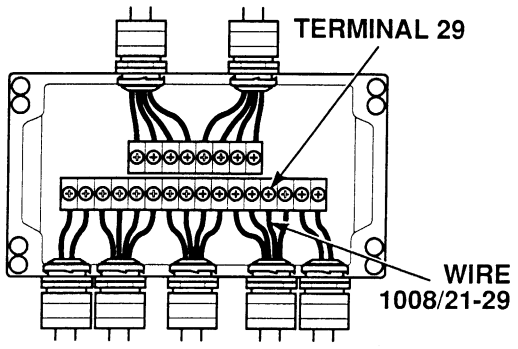
VOLTAGE TEST

(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box.
(3) Set multimeter select switch to volts dc.
(4) Connect positive (+) multimeter lead to rear junction box, terminal 29.
(5) Connect negative (–) multimeter lead to a known good ground.
(6) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (7) and (8) below and replace rear junction box assembly (Para 4-26).
  (b) If 22 to 28 vdc are present, repair wire 1008/21-29 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30) and perform Steps (7) through (10).
(7) Turn off lights.
(8) Turn OFF ENGINE switch.
(9) Install junction box cover and tighten four captive screws.
(10) Install rear junction box guard and four locknuts.

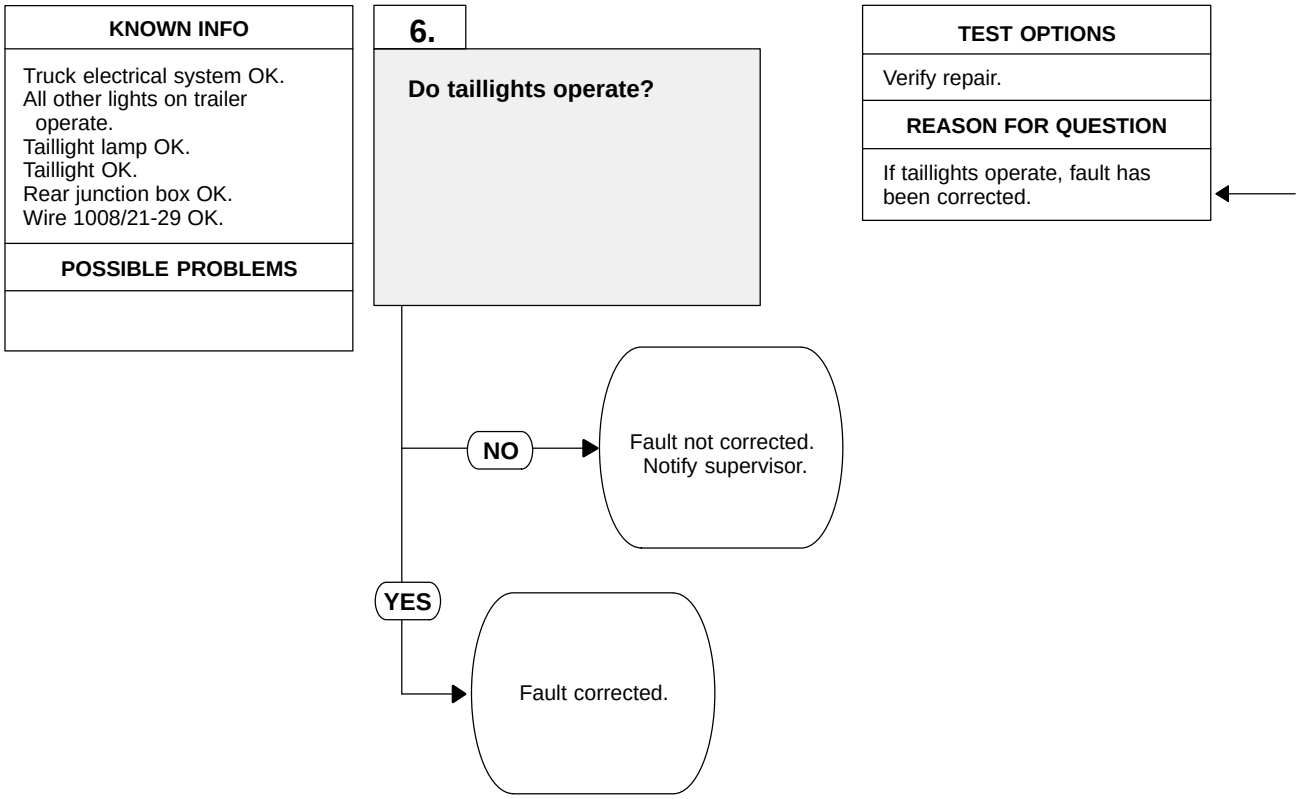


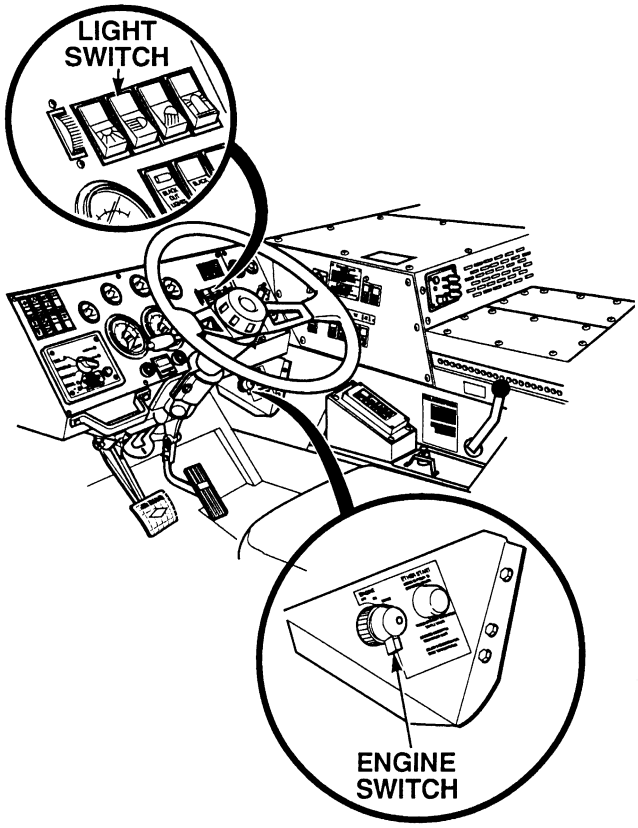






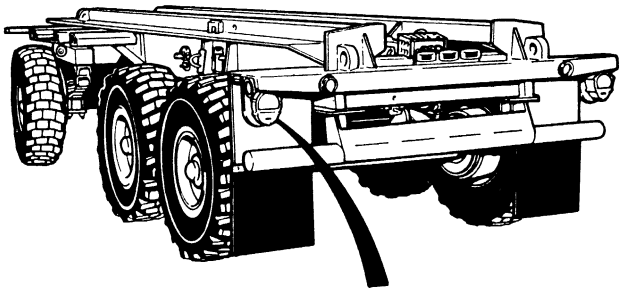
4. TAILLIGHT DOES NOT OPERATE (CONT).

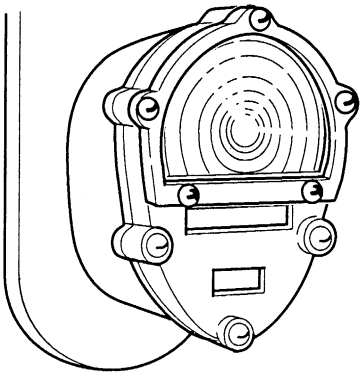




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe taillights (TM 9-2320-364-10).
  (a) If taillights operate, fault corrected.
  (b) If taillights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify DS Maintenance.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

5. STOPLIGHT DOES NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

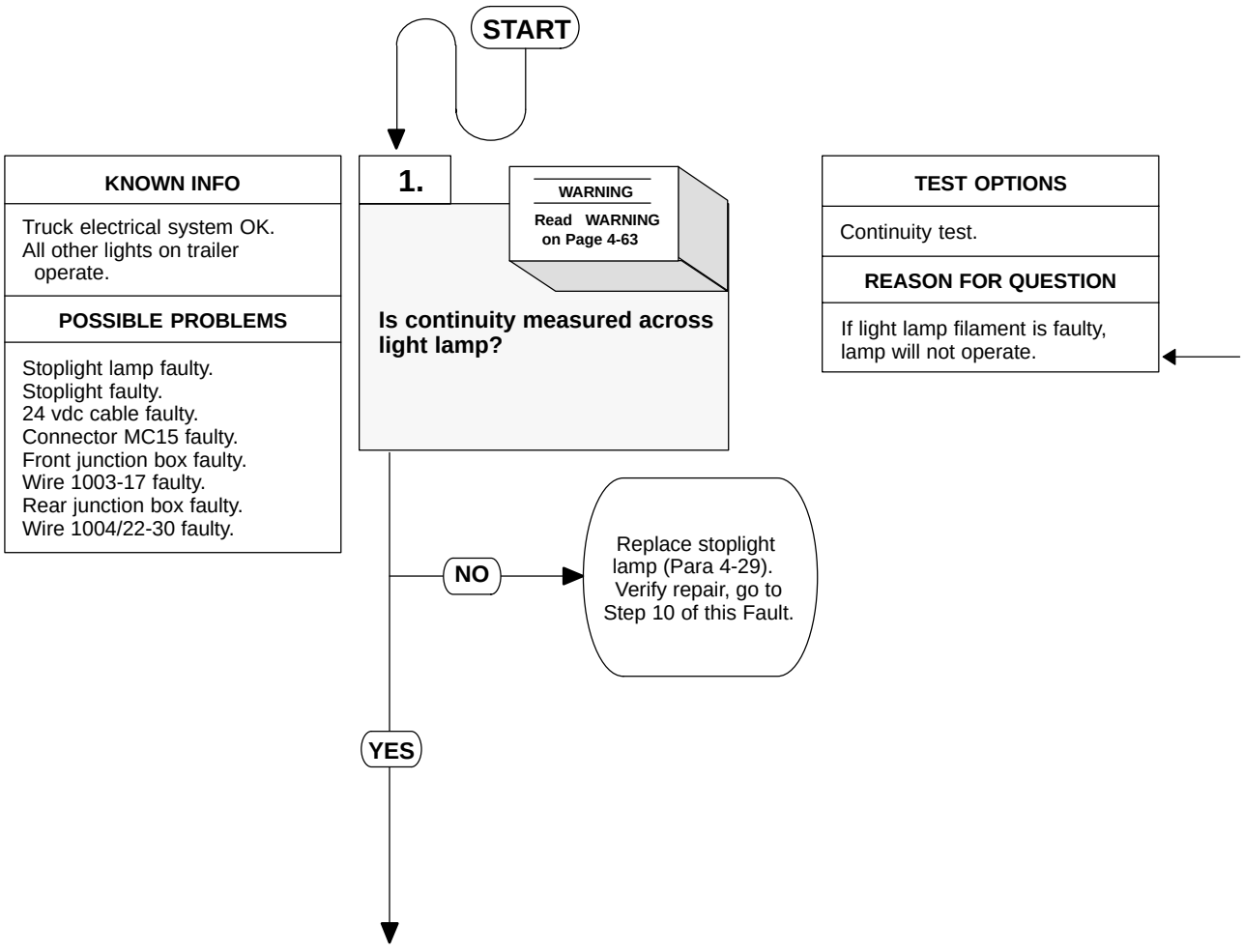
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Truck air pressure charged, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Wheels chocked, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)

NOTE

- The following troubleshooting procedures cover the left stoplight, but they apply to both stoplights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

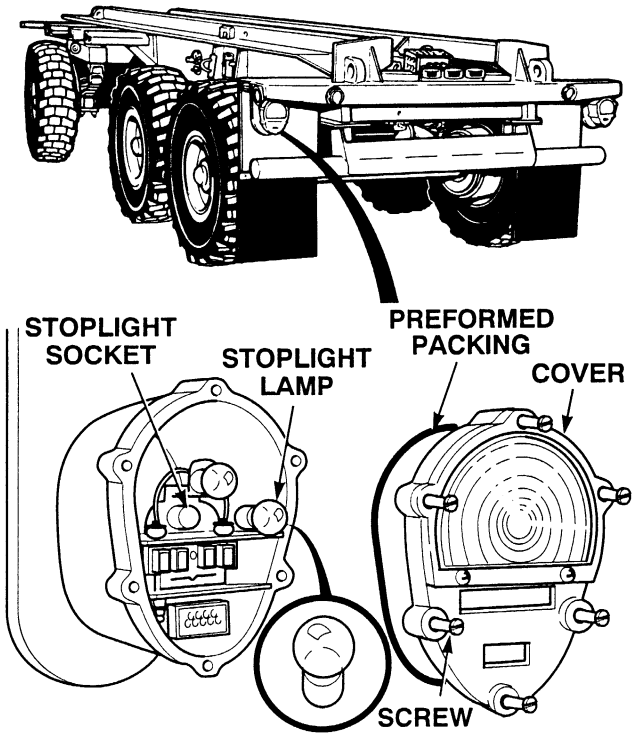


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Loosen six captive screws, and remove composite light cover and preformed packing. Discard preformed packing.
(2) Remove stoplight lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
  (a) If there is no continuity, replace lamp (Para 4-29).
  (b) If there is continuity, lamp is OK.



5. STOPLIGHT DOES NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.

POSSIBLE PROBLEMS

Stoplight faulty.
24 vdc cable faulty.
Connector MC15 faulty.
Front junction box faulty.
Wire 1003-17 faulty.
Rear junction box faulty.
Wire 1004/22-30 faulty.

2.

WARNING
Read WARNING on Page 4-65

Are 22 to 28 vdc measured on center contact of stoplight socket?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc is not present on center contact of taillight socket, taillight will not operate.

NO → Go to Step 4 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1003-17 OK.
Rear junction box OK.
Wire 1004/22-30 OK.

POSSIBLE PROBLEMS

Stoplight faulty.

3.

WARNING
Read WARNING on Page 4-65

Is continuity measured between stoplight socket ground and a known good ground?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If stoplight ground is faulty, light will not operate.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 10 of this Fault.

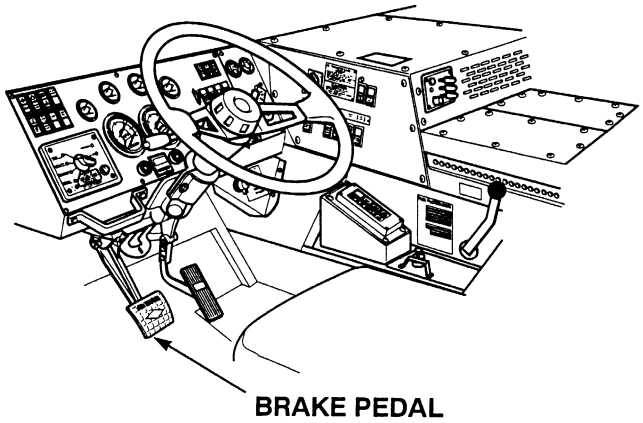
YES → Fault not corrected. Notify supervisor.

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

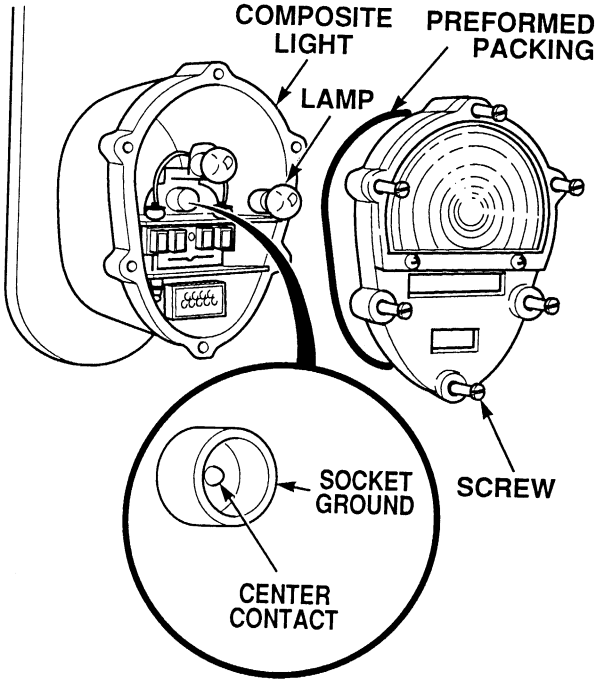
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
    (a) If 22 to 28 vdc are not present, release brake pedal and go to Step (4) of this fault.
    (b) If 22 to 28 vdc are present, release brake pedal and go to Step (3) of this fault.



CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between stoplight socket ground and a known good ground?
    (a) If there is no continuity, replace rear composite light (Para 4-29).
    (b) If there is continuity, fault not corrected. Perform Steps (3) and (4) below and notify supervisor.
(3) Install lamp in stoplight socket.
(4) Install preformed packing, composite light cover, and six captive screws.



5. STOPLIGHT DOES NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.

POSSIBLE PROBLEMS

Stoplight faulty.
24 vdc cable faulty.
Connector MC15 faulty.
Front junction box faulty.
Wire 1003-17 faulty.
Rear junction box faulty.
Wire 1004/22-30 faulty.

4.

WARNING
Read WARNING on Page 4-67

Is continuity measured between center contact of taillight socket and connector?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on center contact at connector, voltage cannot be supplied to light lamp.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 10 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.
Stoplight OK.

POSSIBLE PROBLEMS

24 vdc cable faulty.
Connector MC15 faulty.
Front junction box faulty.
Wire 1003-17 faulty.
Rear junction box faulty.
Wire 1004/22-30 faulty.

5.

WARNING
Read WARNING on Page 4-67

Are 22 to 28 vdc measured at terminal B and D on trailer end of 24 vdc cable?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present at 24 vdc cable, terminal B, light will not operate.

NO → Replace 24 vdc cable. Verify repair, go to Step 10 of this Fault.

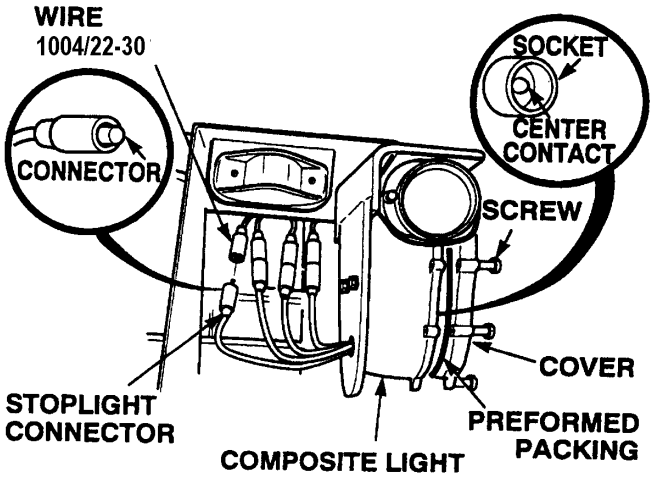
YES

WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

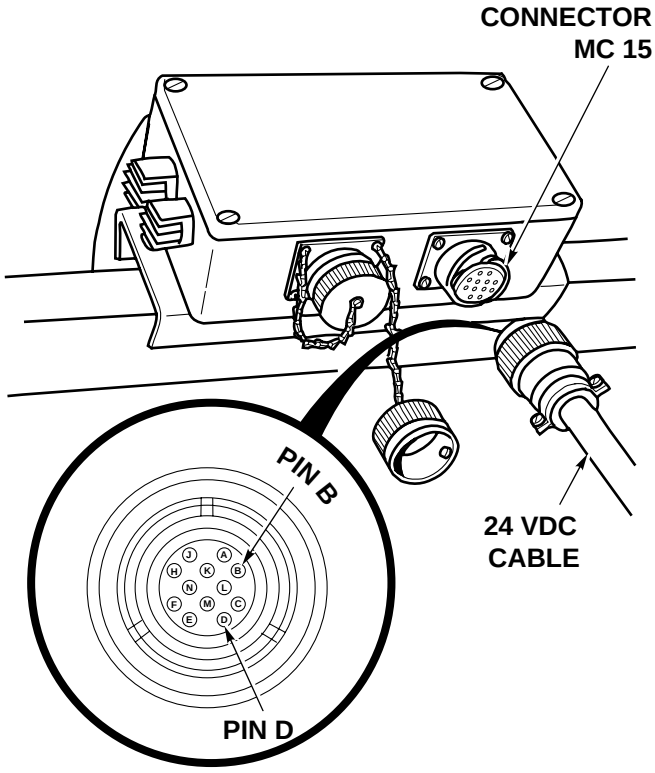
CONTINUITY TEST

(1) Disconnect wire 1004/22-30 connector at stoplight connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured on center contact of stoplight socket and connector?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, stoplight is OK.
(4) Connect wire 1004/22-30 connector to composite light connector.
(5) Install lamp in stoplight socket.
(6) Install preformed packing, composite light cover, and tighten six captive screws.

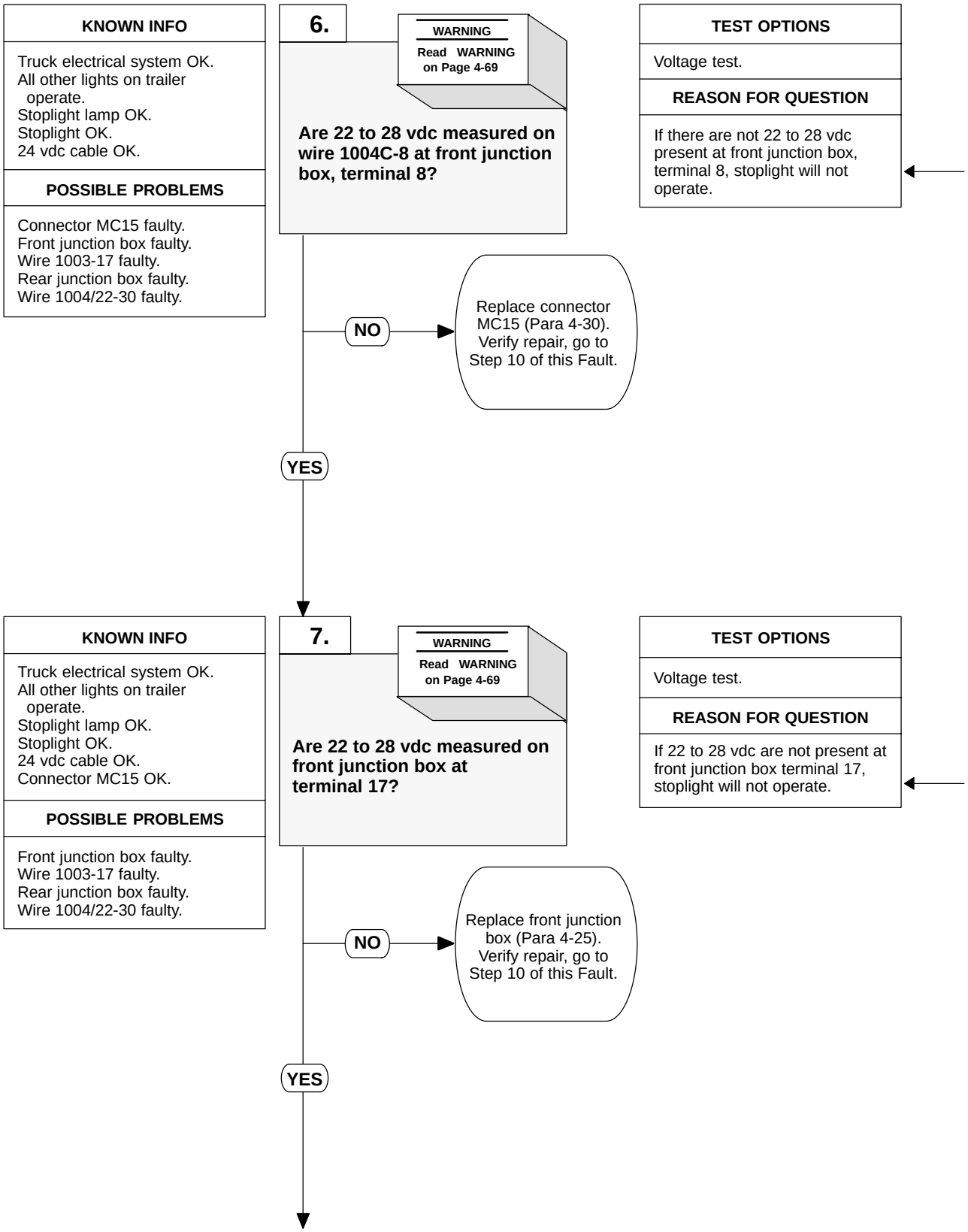


VOLTAGE TEST

(1) Disconnect 24 vdc (12 terminal) cable from front junction box connector MC15.
(2) Set multimeter select switch to volts dc.
(3) Connect positive (+) multimeter lead to pin B on trailer end connector.
(4) Connect negative (–) multimeter lead to pin D on trailer end connector.
(5) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, release brake pedal and repair/replace 24 vdc cable.
  (b) If 22 to 28 vdc are present, 24 vdc cable is OK.
(6) Release brake pedal.
(7) Connect 24 vdc cable to front junction box connector MC15.



5. STOPLIGHT DOES NOT OPERATE (CONT).

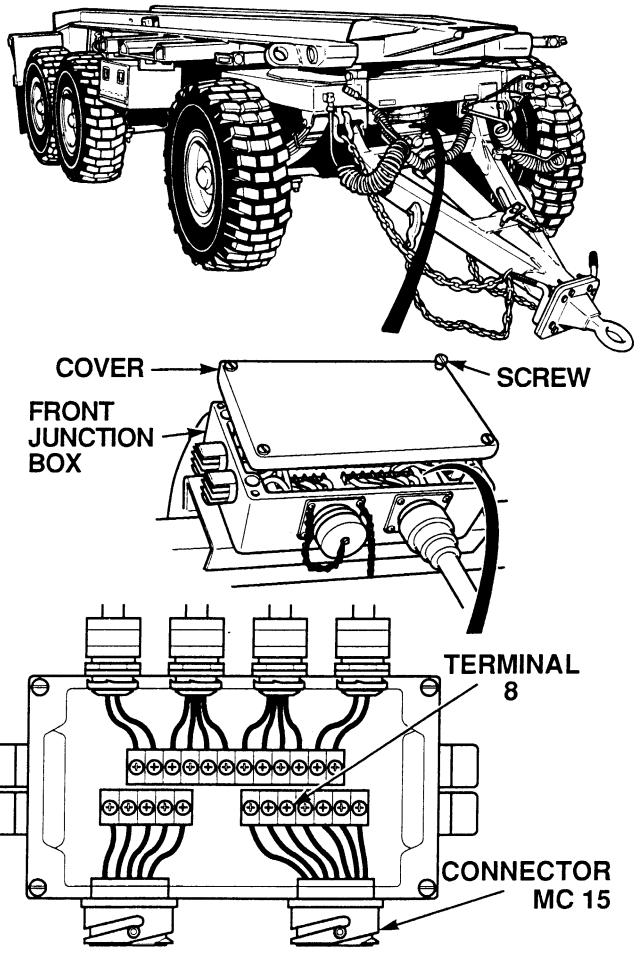


WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

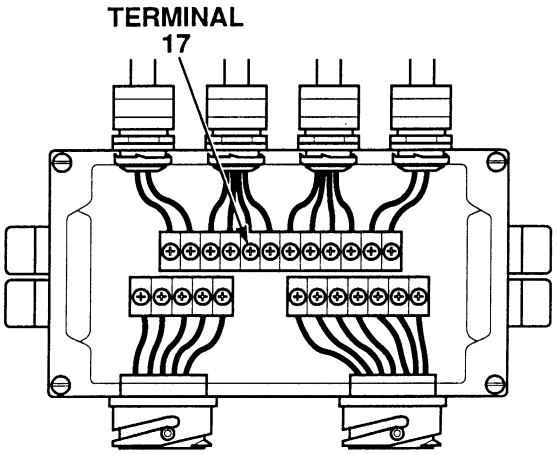
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Connect positive (+) multimeter lead to front junction box, terminal 8.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, release brake pedal and replace connector MC15 (Para 4-30).
  (b) If 22 to 28 vdc are present, connector MC15 is OK.
(5) Release brake pedal.



VOLTAGE TEST

(1) Connect positive (+) multimeter lead to front junction box, terminal 17.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, release brake pedal and replace front junction box (Para 4-25).
  (b) If 22 to 28 vdc are present, front junction box is OK.
(4) Release brake pedal.
(5) Install front junction box cover and tighten four captive screws.



5. STOPLIGHT DOES NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.
Stoplight OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.

POSSIBLE PROBLEMS

Wire 1003-17 faulty.
Rear junction box faulty.
Wire 1004/22-30 faulty.

8.

WARNING
Read WARNING on Page 4-71

Are 22 to 28 vdc measured on wire 1003-17 at rear junction box, terminal 17?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If wire 1003-17 is faulty, stoplight will not operate.

NO → Repair wire 1003-17 (see schematic, Fig FO-1) or replace left composite light harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other lights on trailer operate.
Stoplight lamp OK.
Stoplight OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1003-17 OK.

POSSIBLE PROBLEMS

Rear junction box faulty.
Wire 1004/22-30 faulty.

9.

WARNING
Read WARNING on Page 4-71

Are 22 to 28 vdc measured on rear junction box at terminal 30?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present at rear junction box, terminal 30, rear junction box is faulty. If there are 22 to 28 vdc present at terminal 30, wire 1004/22-30 is faulty.

NO → Replace rear junction box (Para 4-26). Verify repair, go to Step 10 of this Fault.

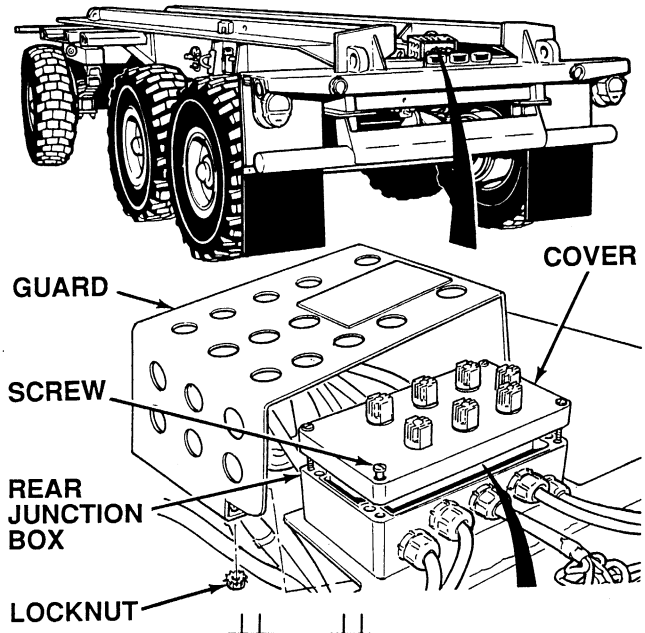
YES → Repair wire 1004/22-30 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

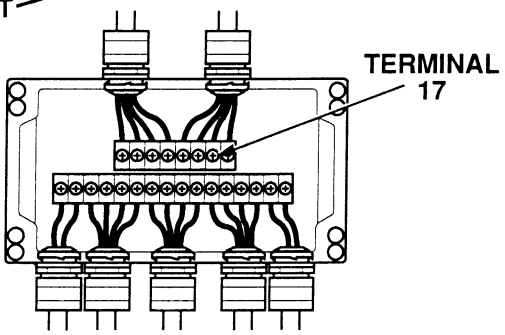
WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

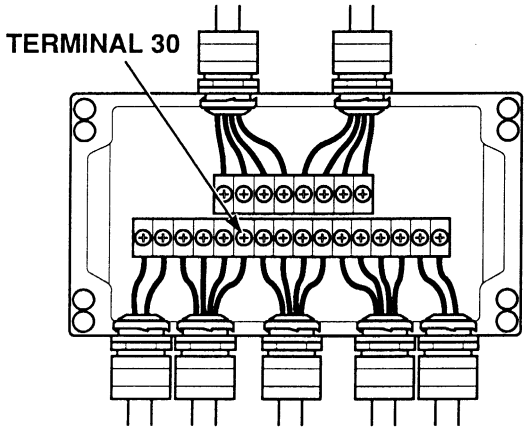
(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box.
(3) Connect positive (+) multimeter lead to rear junction box, terminal 17.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, release brake pedal, and repair wire 1003-17 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
  (b) If 22 to 28 vdc are present, wire 1003-17 is OK.
(6) Release brake pedal.



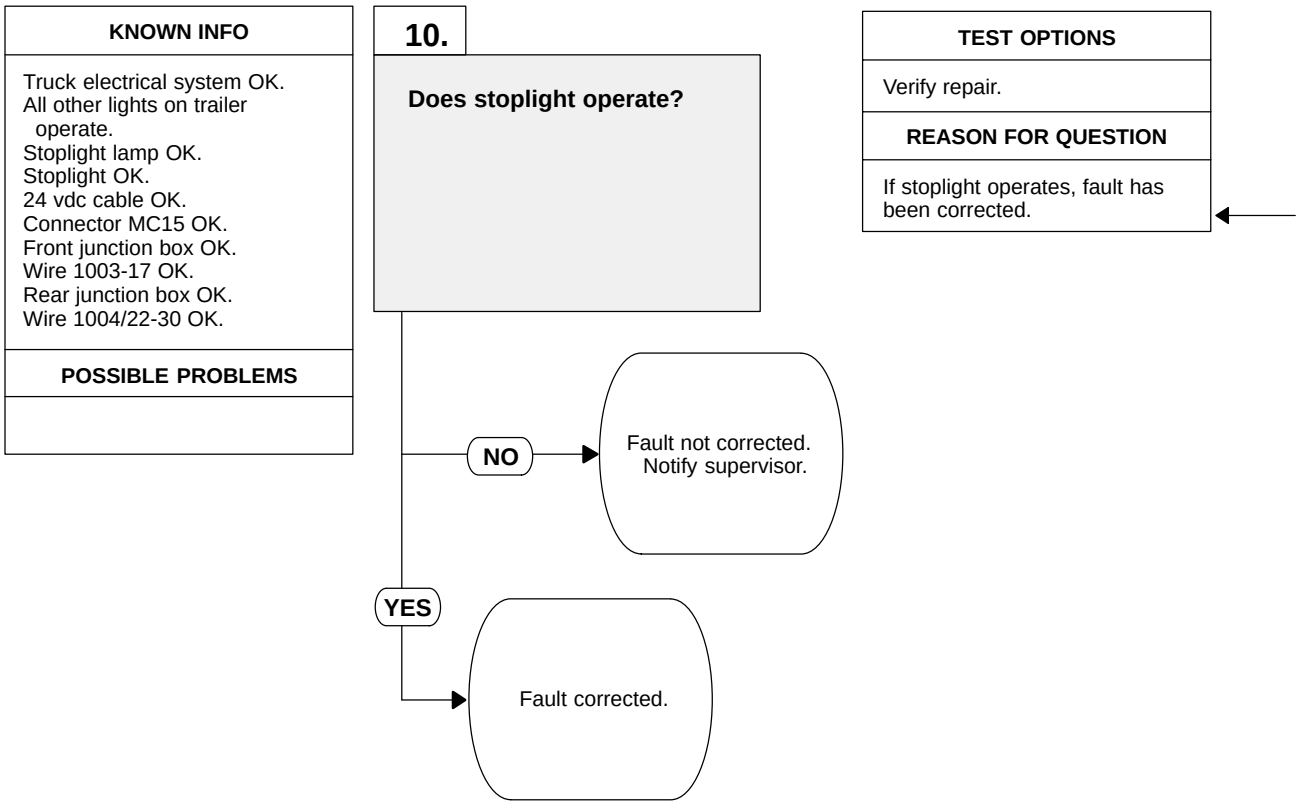


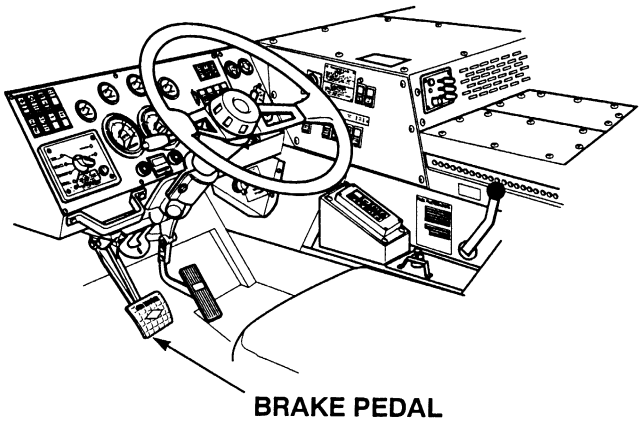
VOLTAGE TEST

(1) Connect positive (+) multimeter lead to rear junction box, terminal 30.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, release brake pedal and replace rear junction box (Para 4-26).
  (b) If 22 to 28 vdc are present, release brake pedal and repair wire 1004/22-30 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30).
(4) Install rear junction box cover and tighten four captive screws.
(5) Install rear junction box guard and four locknuts.



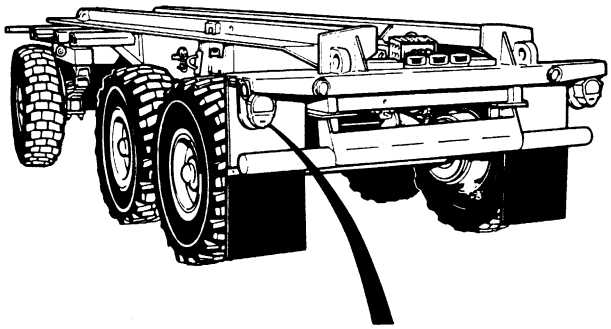
5. STOPLIGHT DOES NOT OPERATE (CONT).

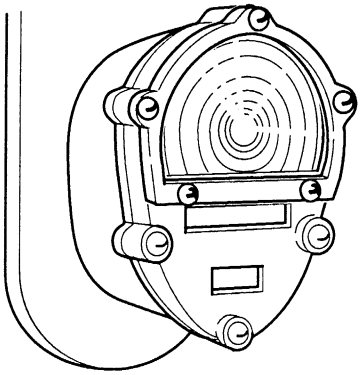




VERIFY REPAIR

(1) While assistant fully applies brake pedal, observe stoplight.
  (a) If stoplight operates, fault corrected.
  (b) If stoplight does not operate, fault not corrected. Release brake pedal, and notify supervisor.
(2) Release brake pedal.





4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

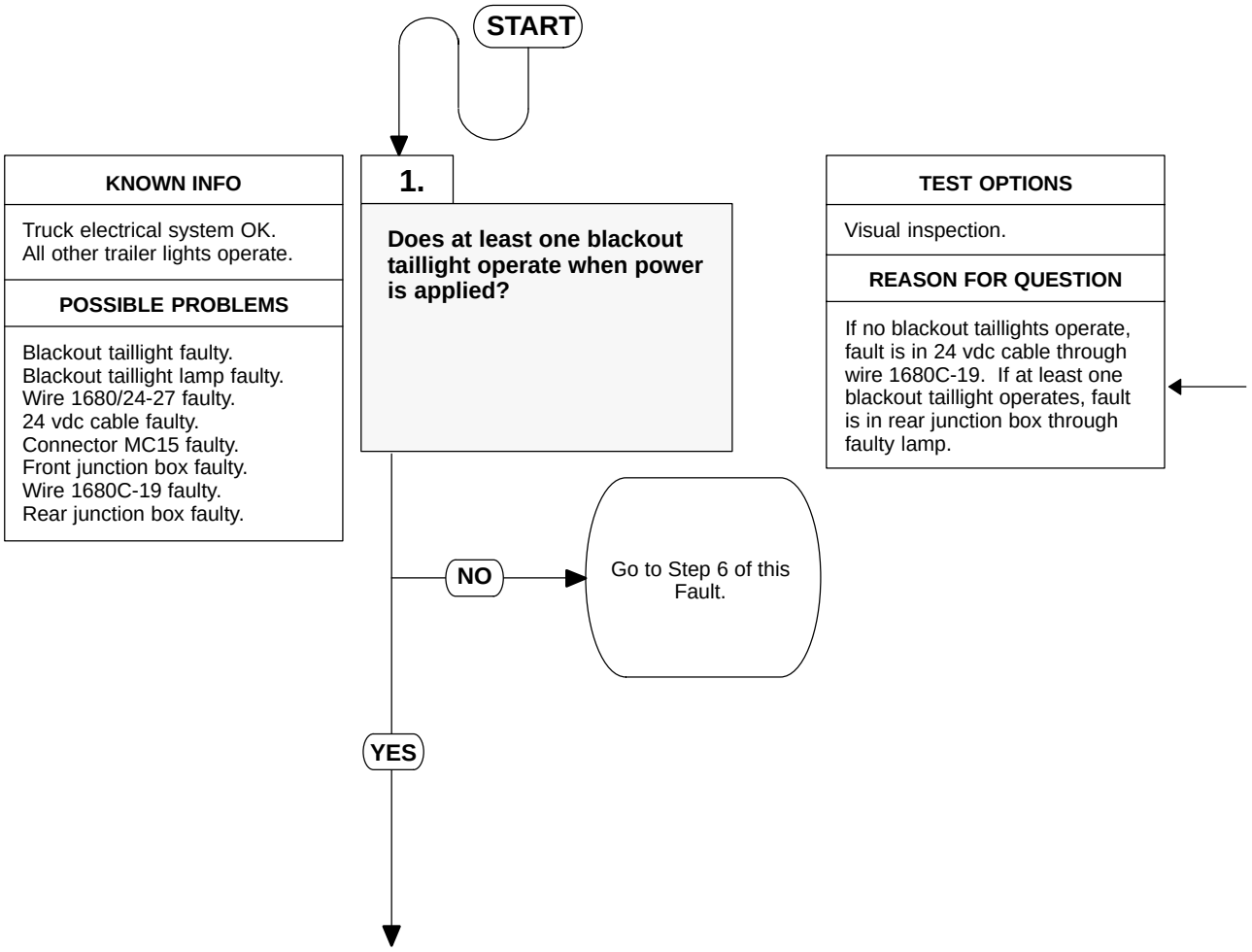
Personnel Required
Two

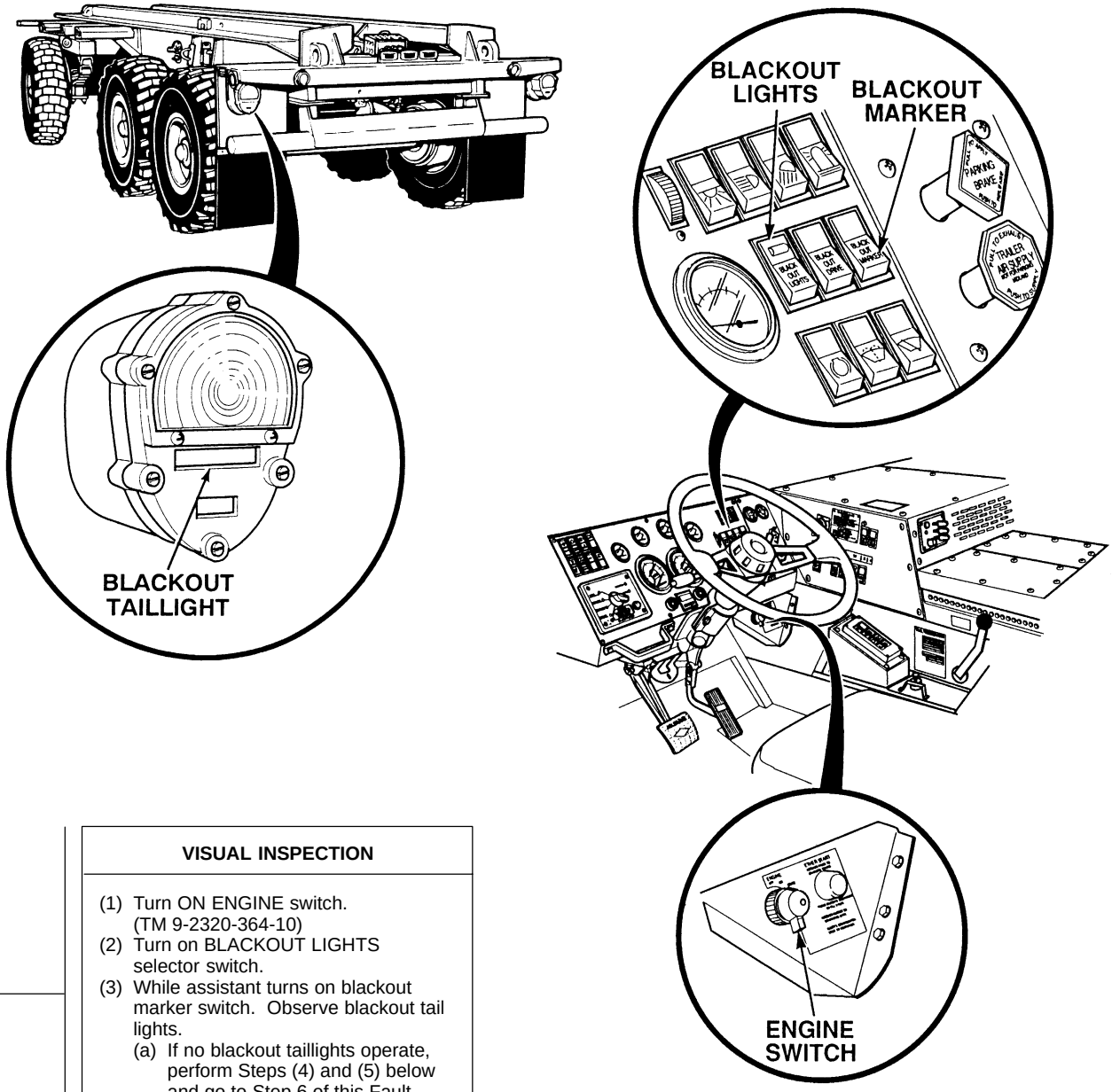
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)

NOTE

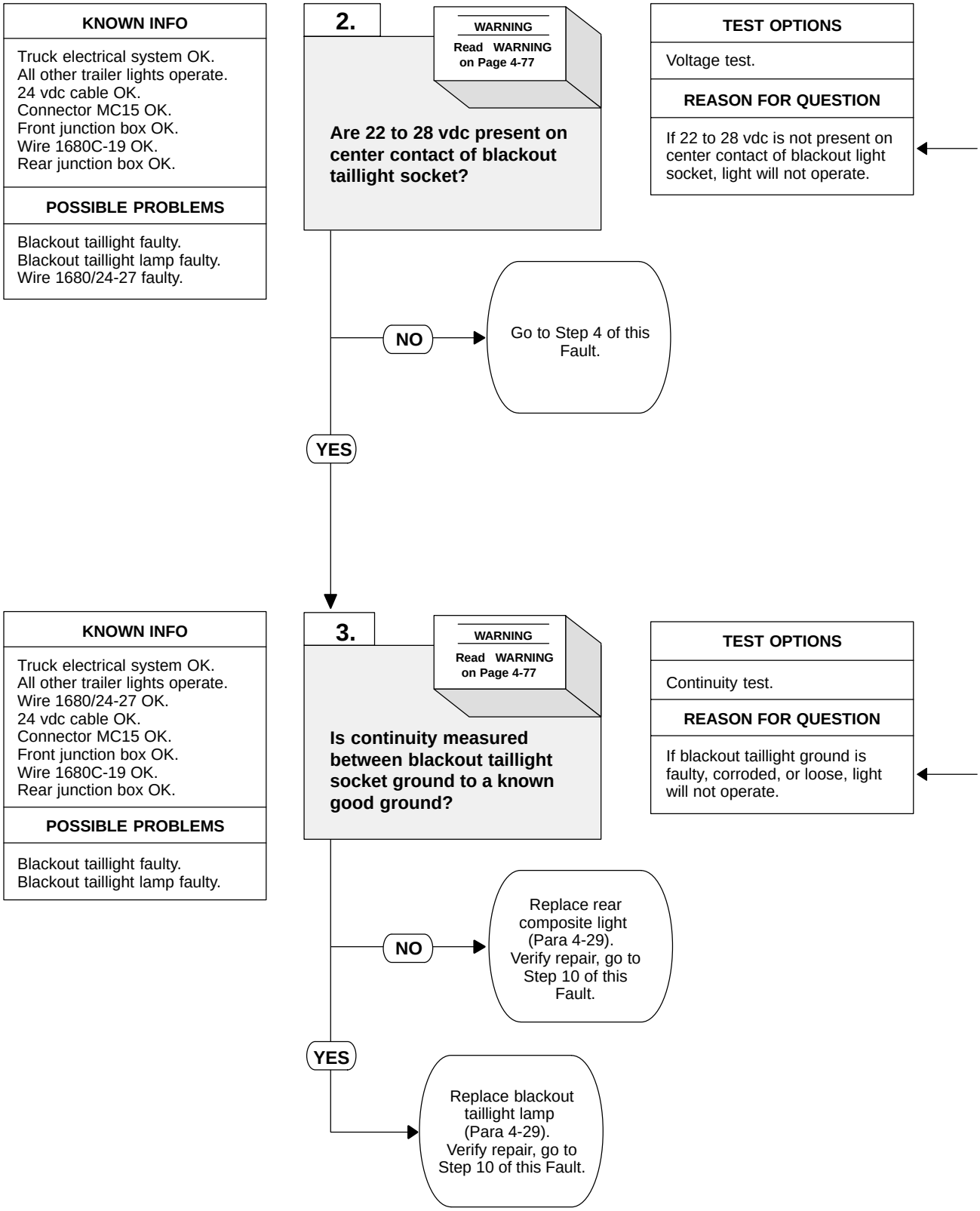
- The following troubleshooting procedures cover the left blackout taillight, but they apply to both blackout taillights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.





VISUAL INSPECTION
(1) Turn ON ENGINE switch. (TM 9-2320-364-10) (2) Turn on BLACKOUT LIGHTS selector switch. (3) While assistant turns on blackout marker switch. Observe blackout tail lights. (a) If no blackout taillights operate, perform Steps (4) and (5) below and go to Step 6 of this Fault. (b) If at least one blackout taillight operates, perform Steps (4) and (5) below and go to Step 2 of this Fault. (4) Turn off BLACKOUT LIGHTS selector switch. (5) Turn OFF ENGINE switch.

6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE (CONT).



WARNING

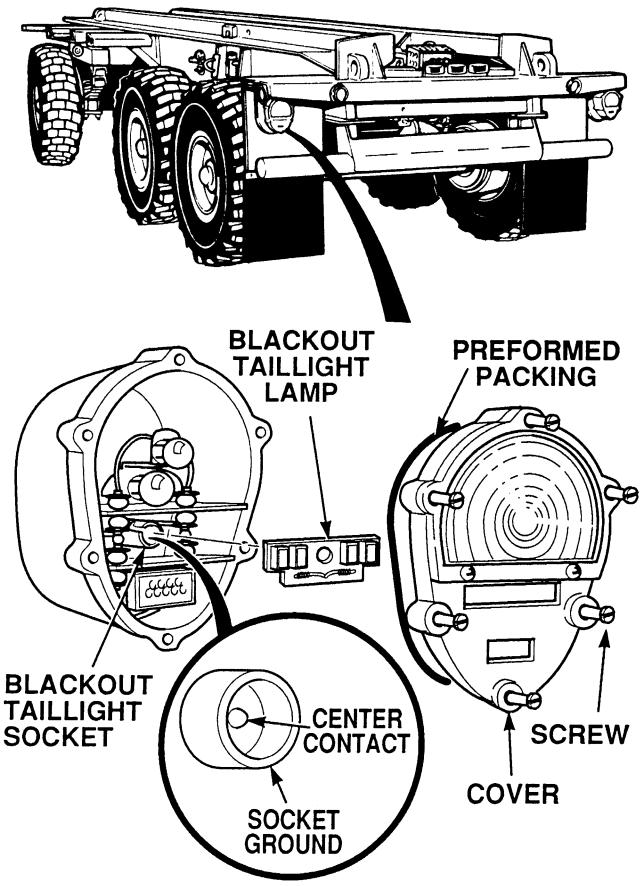
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

VOLTAGE TEST

(1) Loosen six captive screws and remove composite light cover, and preformed packing. Discard preformed packing.
(2) Depress screw in center of blackout taillight lamp and turn counter-clockwise and remove blackout taillight lamp.
(3) Set multimeter select switch to volts dc.
(4) Connect positive (+) multimeter lead to center contact of socket.
(5) Connect negative (–) multimeter lead to a known good ground.
(6) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (7) and (8) below and go to Step 4 of this Fault.
  (b) If 22 to 28 vdc are present, perform Steps (7) and (8) below and go to Step 3 of this Fault.
(7) Turn off BLACKOUT LIGHTS selector switch.
(8) Turn OFF ENGINE switch.

CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between blackout taillight socket ground and a known good ground?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, replace blackout taillight lamp (Para 4-29).
(3) Install blackout taillight lamp by depressing screw in center of blackout taillight lamp and turning clockwise.
(4) Install preformed packing and composite light cover, and tighten six captive screws.



6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1680C-19 OK.
Rear junction box OK.

POSSIBLE PROBLEMS

Blackout taillight faulty.
Blackout taillight lamp faulty.
Wire 1680/24-27 faulty.

4.

WARNING
Read WARNING on Page 4-79

Is continuity measured between center contact of blackout taillight socket and connector?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on center contact at connector, voltage cannot be supplied to light lamp.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 10 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout taillight lamp OK.
Blackout taillight OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1680C-19 OK.
Rear junction box OK.

POSSIBLE PROBLEMS

Wire 1680/24-27 faulty.

5.

WARNING
Read WARNING on Page 4-79

Are 22 to 28 vdc measured on wire 1680/24-27 at blackout taillight connector?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present on wire 1680/24-27, blackout taillight will not operate.

NO → Repair wire 1680/24-27 (see schematic, Fig FO-1) or replace side composite harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

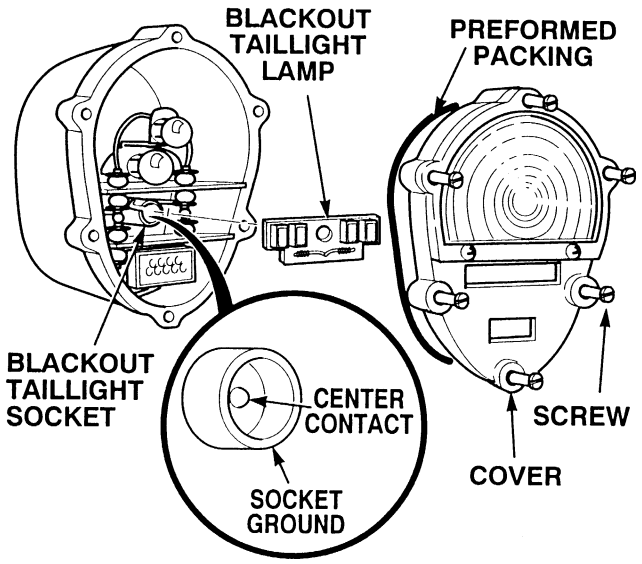
YES → Fault not corrected. Notify DS Maintenance.

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

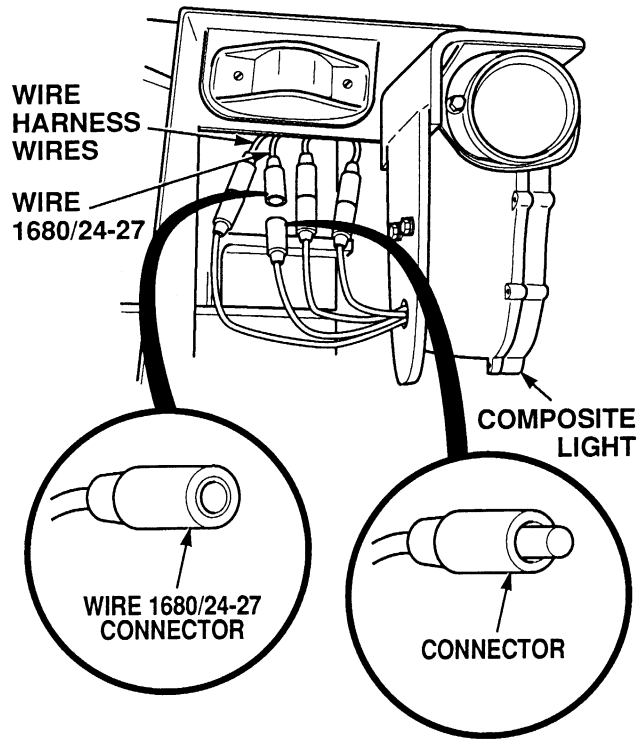
CONTINUITY TEST

(1) Disconnect wire 1680/24-27 connector at blackout taillight connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured on center contact of blackout taillight socket and connector?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, blackout taillight is OK.
(4) Install blackout taillight lamp by depressing screw in center of blackout taillight lamp and turning clockwise.
(5) Install preformed packing and composite light cover, and tighten six captive screws.

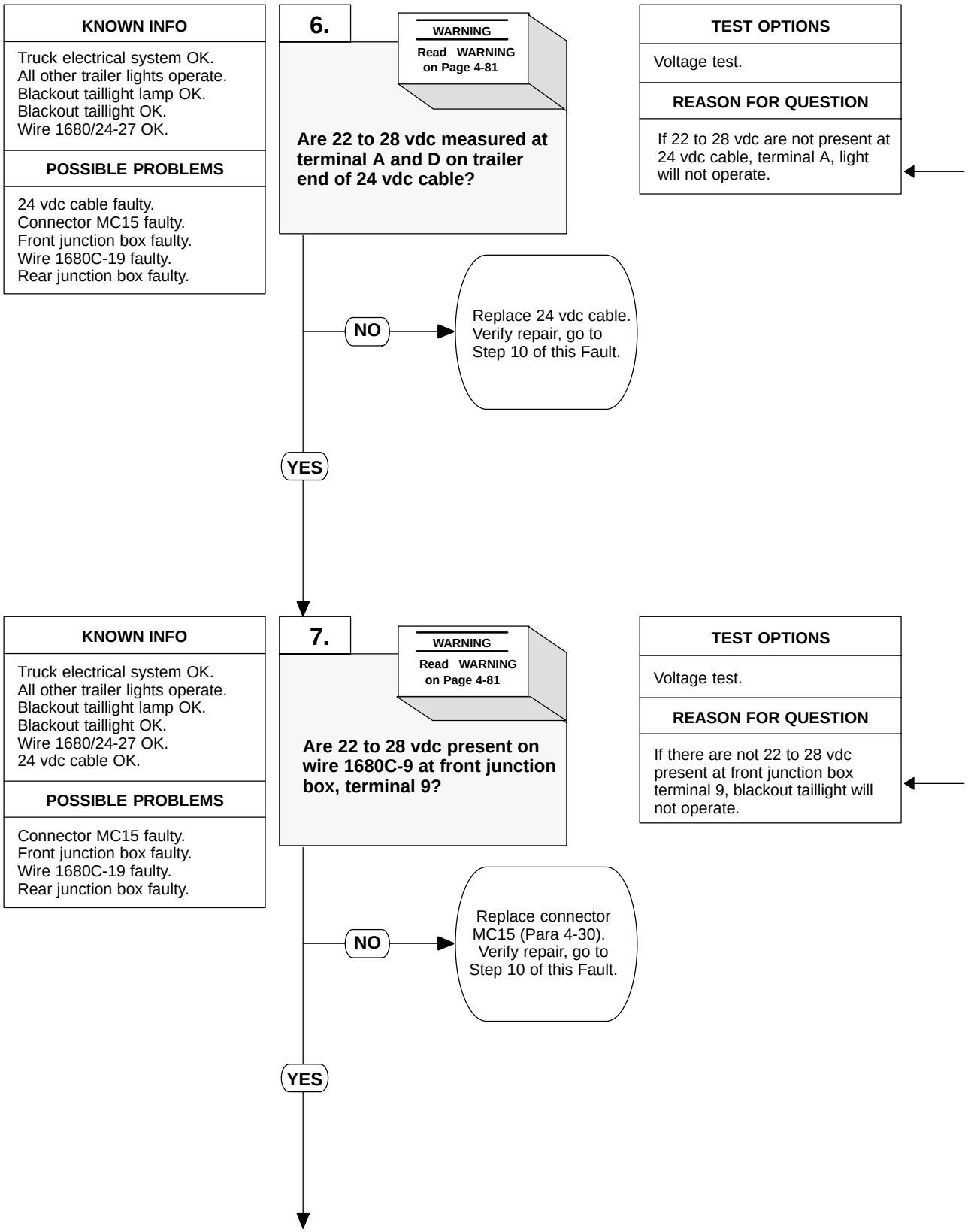


VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1680/24-27 at blackout taillight connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and repair wire 1680/24-27 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30).
  (b) If 22 to 28 vdc are present, wire 1680/24-27 is OK.
(5) Turn off BLACKOUT LIGHTS selector switch.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1680/24-27 connector to blackout taillight connector.



6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE (CONT).



WARNING

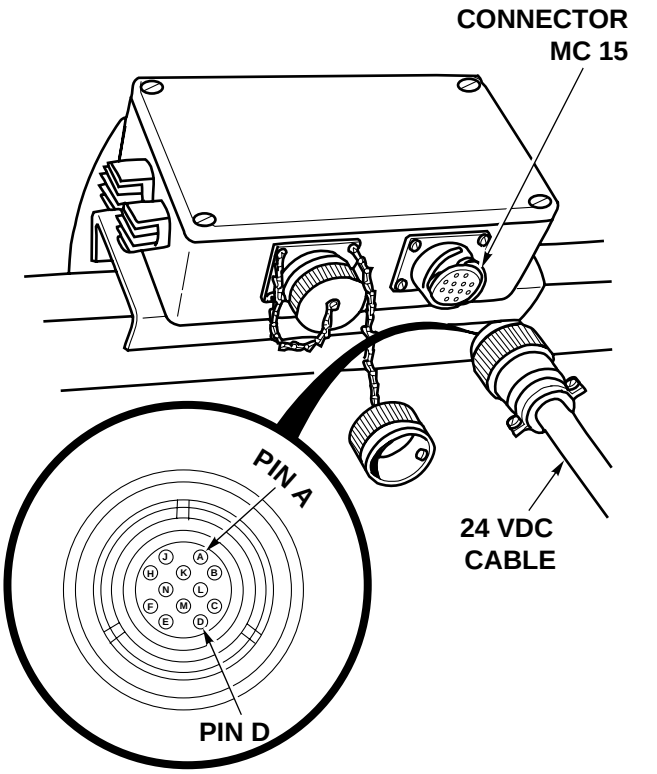
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

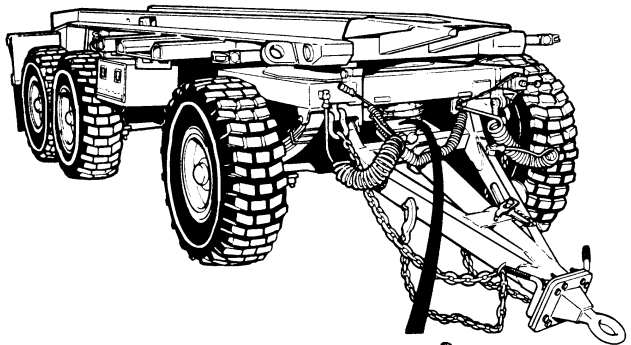
VOLTAGE TEST

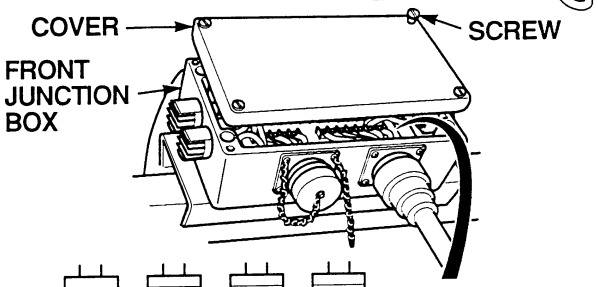
(1) Disconnect 24 vdc (12 terminal) cable from front junction box connector MC15.
(2) Set multimeter select switch to volts DC.
(3) Connect positive (+) multimeter lead to terminal A on trailer end connector.
(4) Connect negative (–) multimeter lead to terminal D on trailer end connector.
(5) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and replace 24 vdc cable.
  (b) If 22 to 28 vdc are present, 24 vdc cable is OK.
(6) Turn off BLACKOUT LIGHTS selector switch.
(7) Turn OFF ENGINE switch.
(8) Connect 24 vdc cable to front junction box connector MC15.

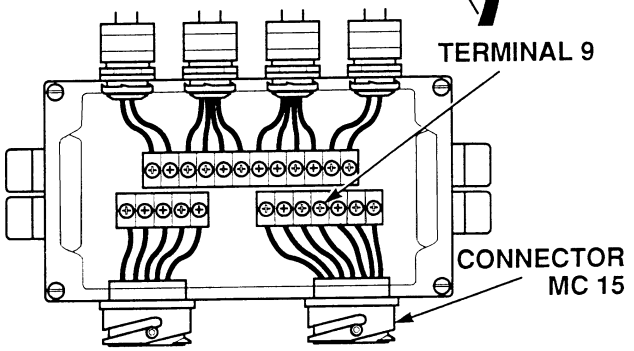
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Connect positive (+) multimeter lead to front junction box, terminal 9.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and replace connector MC15 (Para 4-30).
  (b) If 22 to 28 vdc are present, connector MC15 is OK.
(5) Turn off BLACKOUT LIGHTS selector switch.
(6) Turn OFF ENGINE switch.









6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout taillight lamp OK.
Blackout taillight OK.
Wire 1680/24-27 OK.
24 vdc cable OK.
Connector MC15 OK.

POSSIBLE PROBLEMS

Front junction box faulty.
Wire 1680C-19 faulty.
Rear junction box faulty.

8.

WARNING
Read WARNING on Page 4-83

Are 22 to 28 vdc measured on front junction box at terminal 19?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present at front junction box, terminal 19, blackout taillight will not operate.

NO → Replace front junction box (Para 4-25). Verify repair, go to Step 10 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout taillight lamp OK.
Blackout taillight OK.
Wire 1680/24-27 OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.

POSSIBLE PROBLEMS

Wire 1680C-19 faulty.
Rear junction box faulty.

9.

WARNING
Read WARNING on Page 4-83

Are 22 to 28 vdc measured on wire 1680C-19 at rear junction box, terminal 19?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present at rear junction box, terminal 19, wire 1680C-19 is faulty. If 22 to 28 vdc are present, rear junction box is faulty.

NO → Repair wire 1680C-19 (see schematic, Fig FO-1) or replace wire harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

YES → Replace rear junction box (Para 4-26). Verify repair, go to Step 10 of this Fault.

WARNING

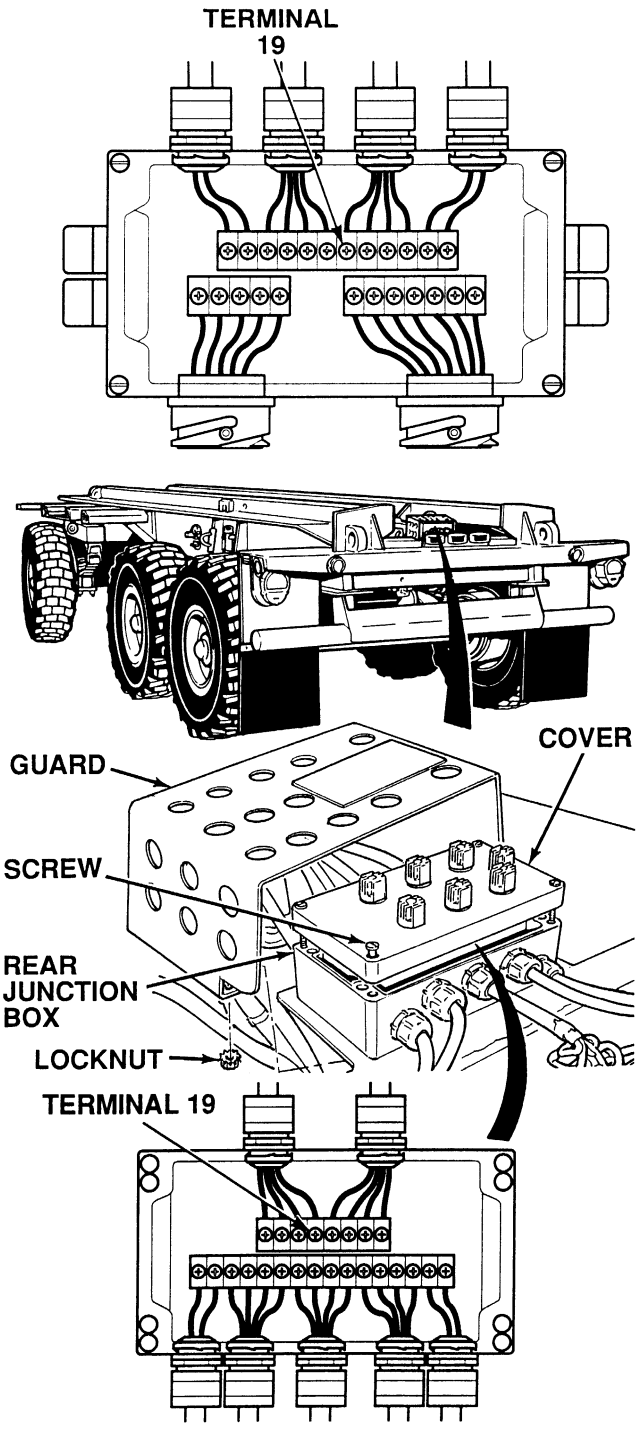
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

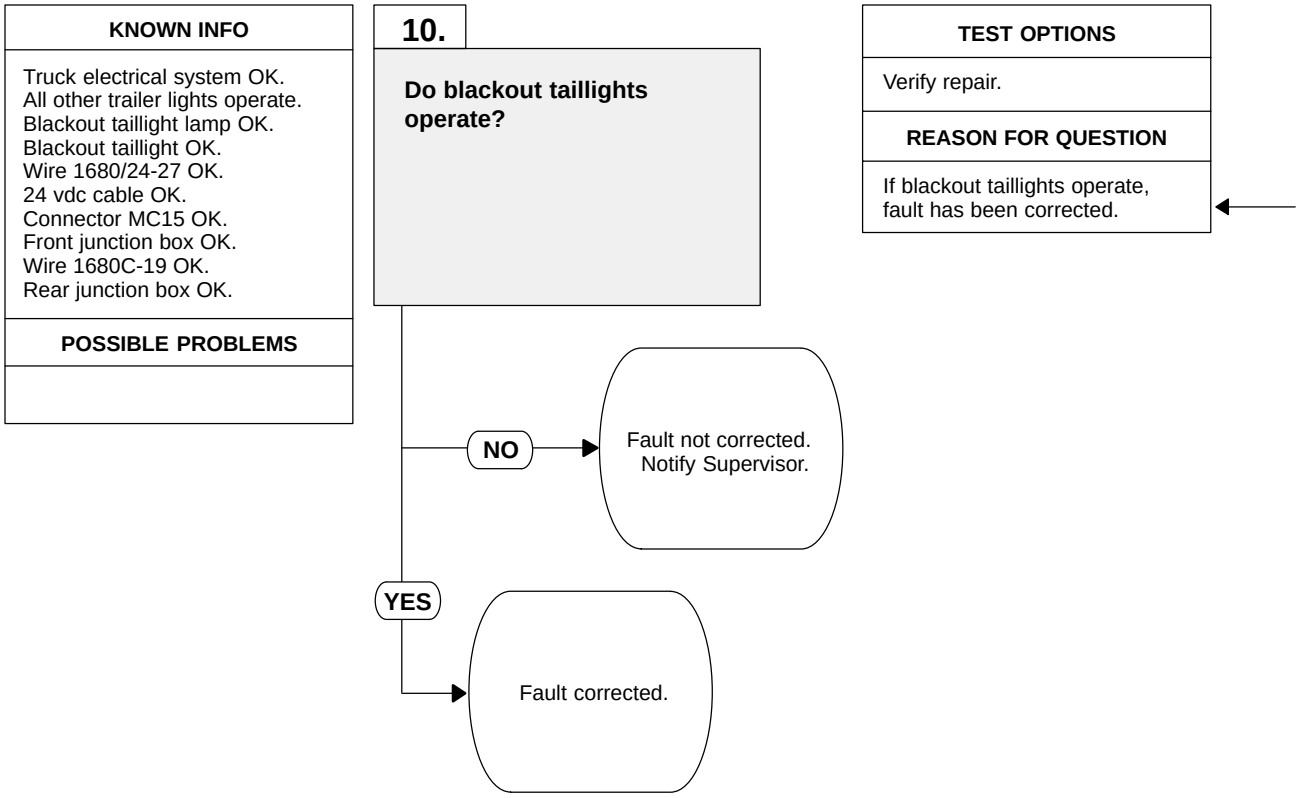
(1) Connect positive (+) multimeter lead to front junction box, terminal 19.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (4) and (5) below and replace front junction box (Para 4-25).
  (b) If 22 to 28 vdc are present, front junction box is OK.
(4) Turn off BLACKOUT LIGHTS selector switch.
(5) Turn OFF ENGINE switch.
(6) Install front junction box cover and tighten four captive screws.

VOLTAGE TEST

(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box.
(3) Connect positive (+) multimeter lead to rear junction box, terminal 19.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and repair wire 1680C-19 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
  (b) If 22 to 28 vdc are present, perform Steps (6) and (7) below and replace rear junction box (Para 4-26).
(6) Turn off BLACKOUT LIGHTS selector switch.
(7) Turn OFF ENGINE switch.
(8) Install rear junction box guard and four locknuts.

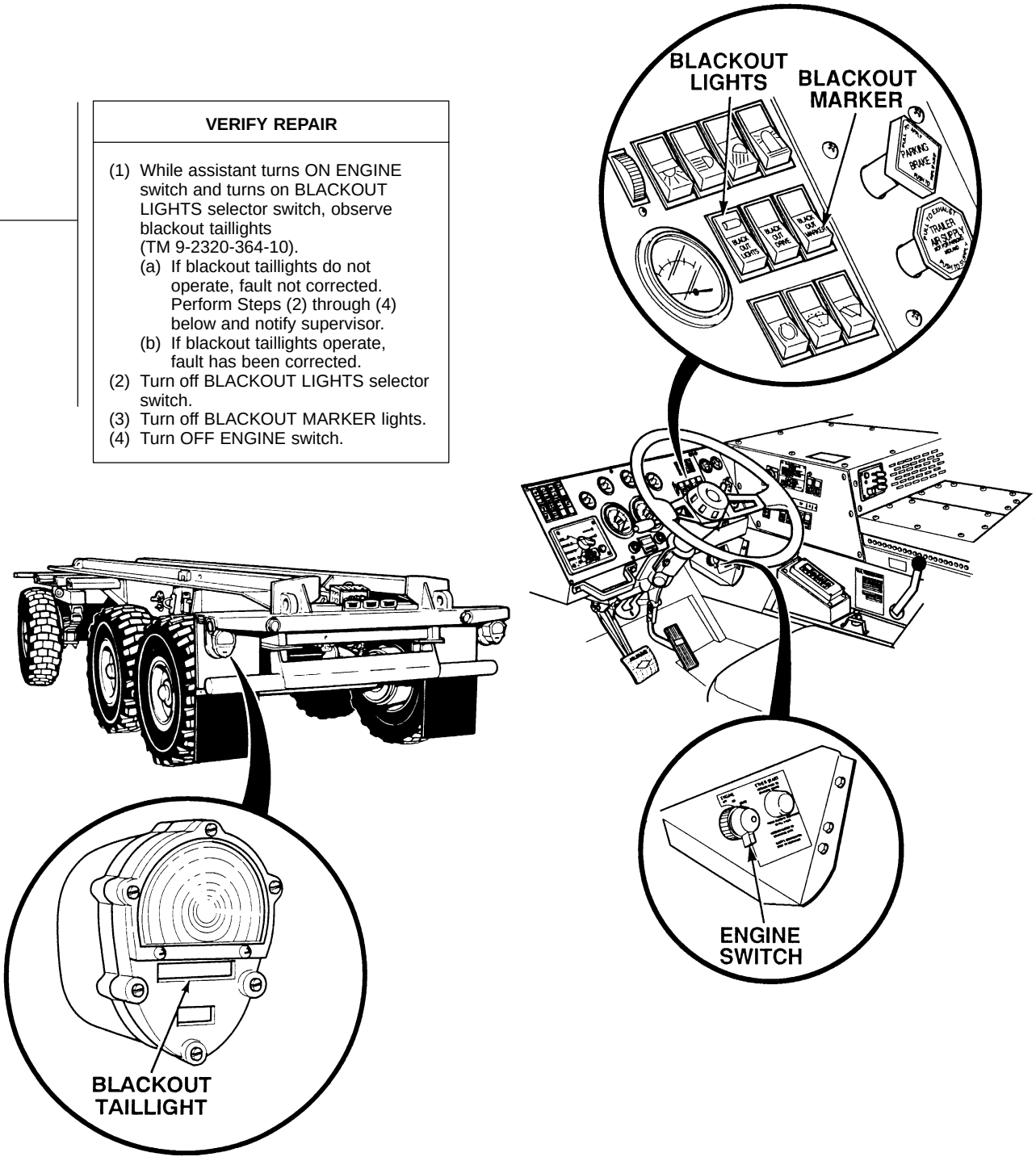


6. BLACKOUT TAILLIGHT(S) DO NOT OPERATE (CONT).



VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on BLACKOUT LIGHTS selector switch, observe blackout taillights (TM 9-2320-364-10).
   (a) If blackout taillights do not operate, fault not corrected. Perform Steps (2) through (4) below and notify supervisor.
   (b) If blackout taillights operate, fault has been corrected.
(2) Turn off BLACKOUT LIGHTS selector switch.
(3) Turn off BLACKOUT MARKER lights.
(4) Turn OFF ENGINE switch.



4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

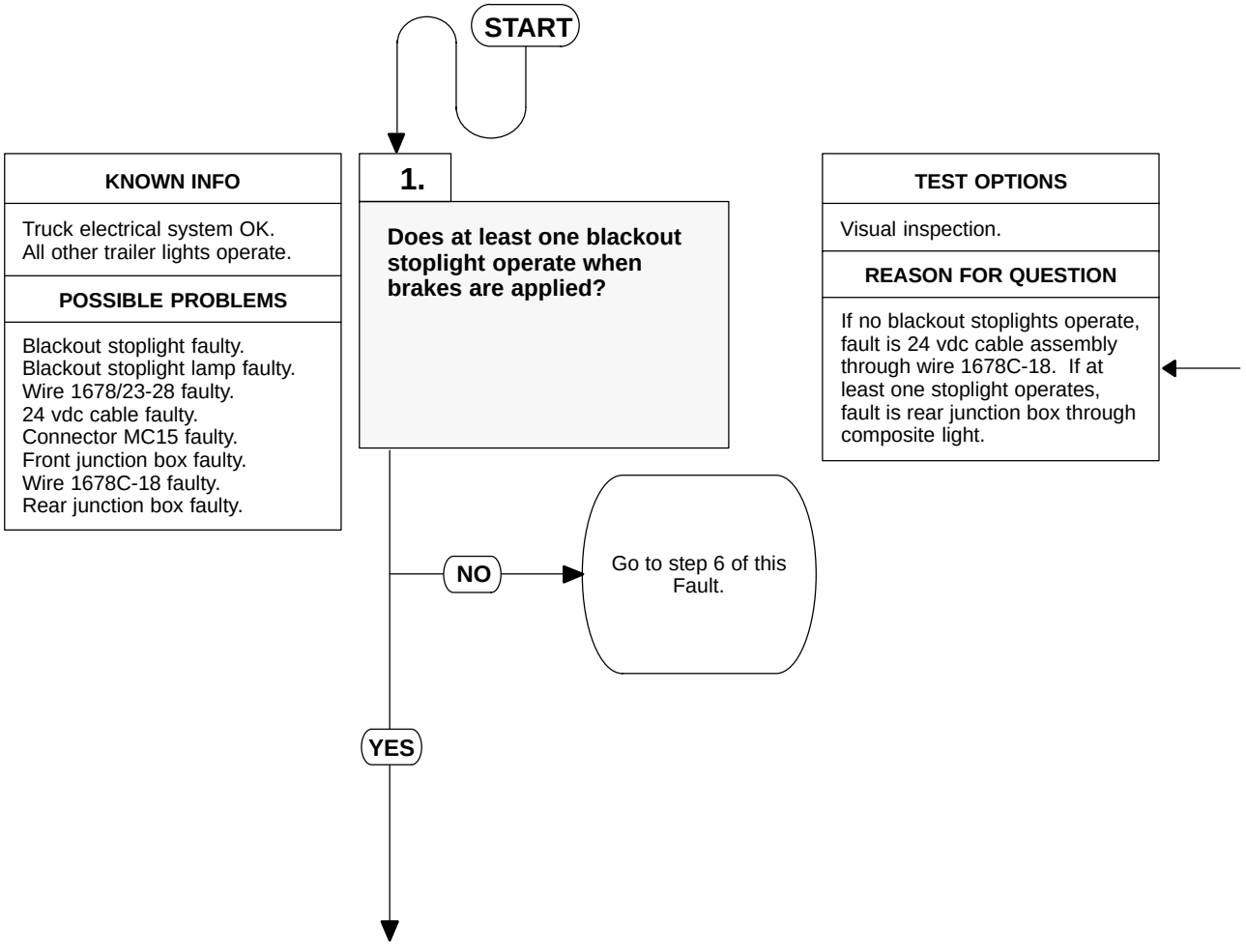
Personnel Required
Two

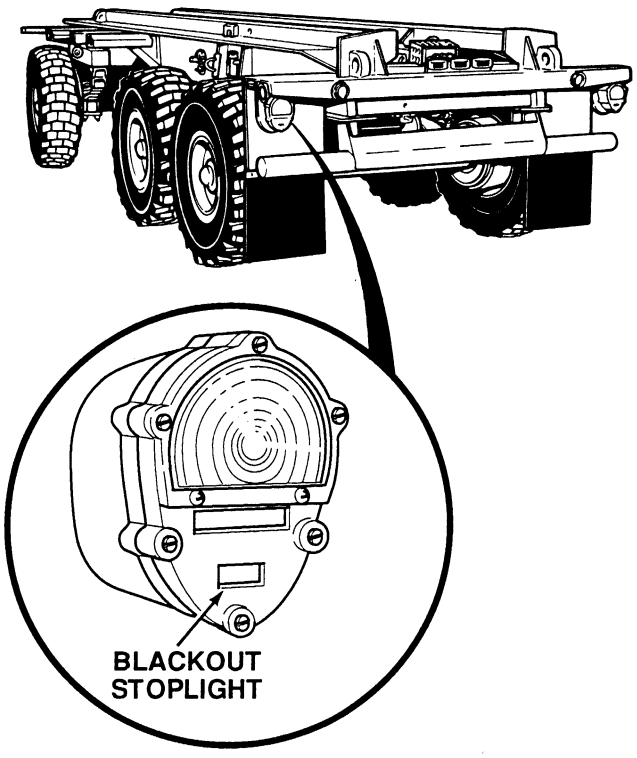
References
TM 9-2320-364-10

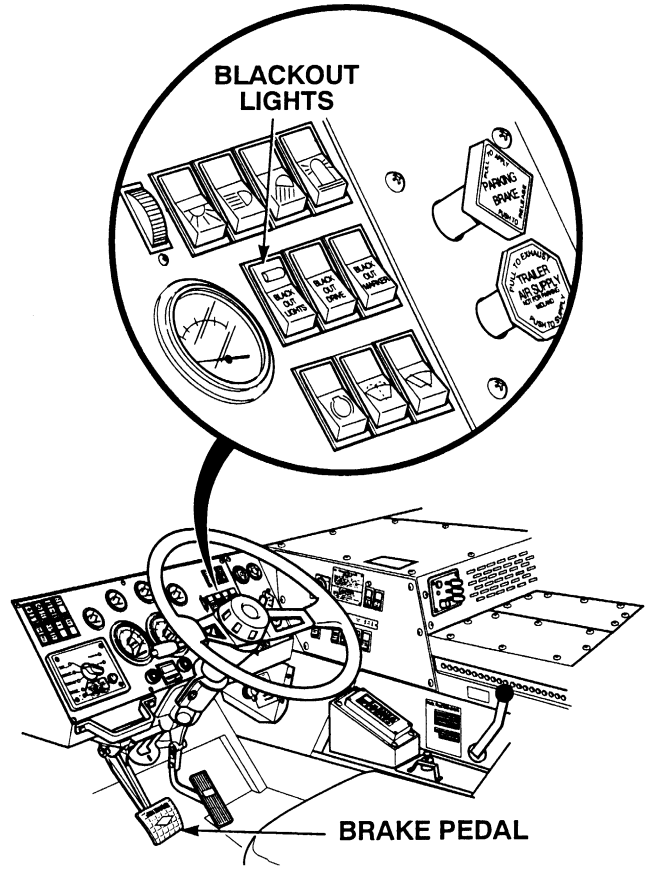
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Truck air pressure charged, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE

- The following troubleshooting procedures cover the left blackout stoplight, but they apply to both blackout stoplights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in Figure FO-1.



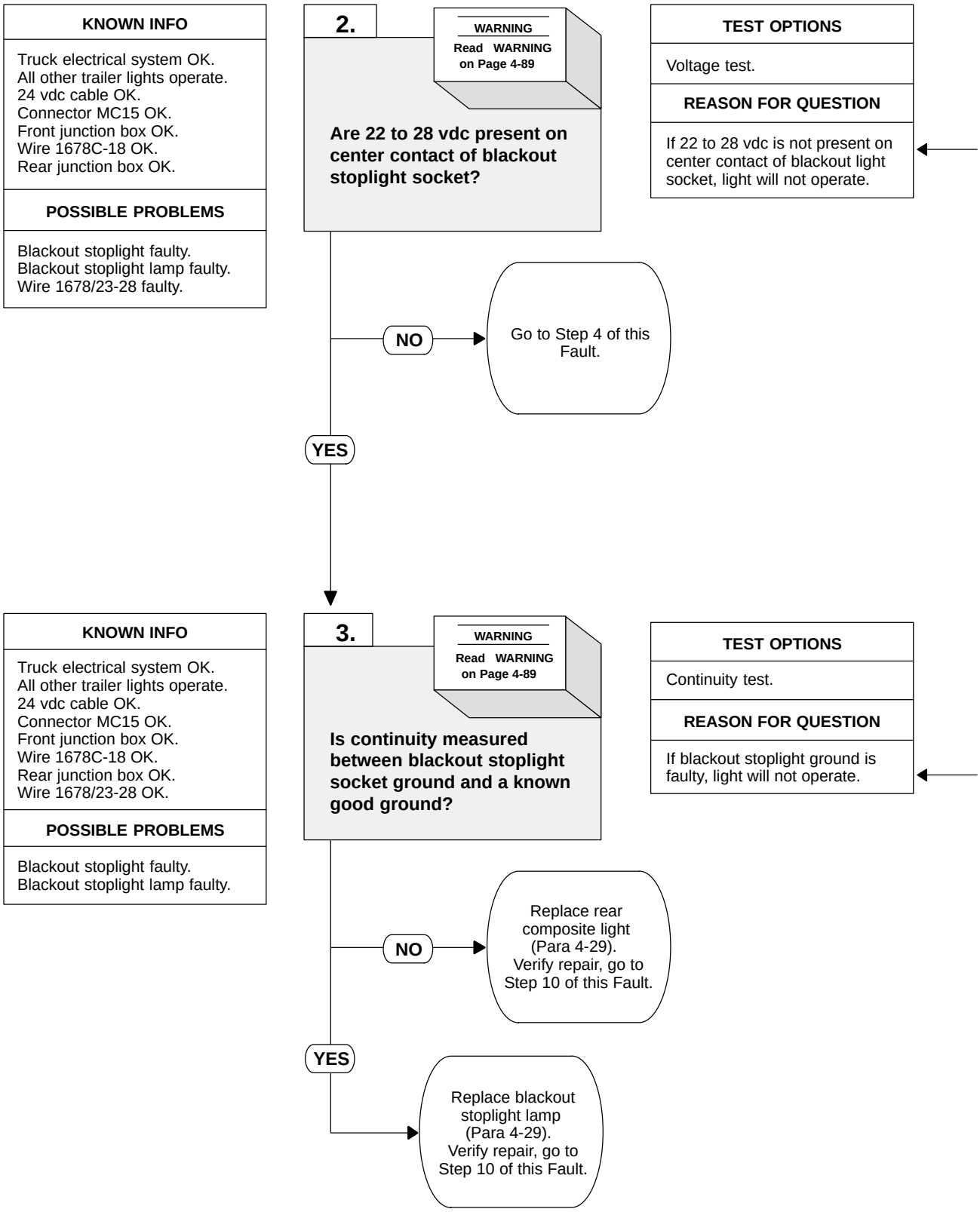




VISUAL INSPECTION

(1) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(2) While assistant fully applies brake pedal, observe blackout stoplights.
  (a) If no blackout stoplights operate, perform Steps (3) and (4) below and go to Step 6 of this Fault.
  (b) If at least one blackout stoplight operates, perform Steps (3) and (4) below and go to Step 2 of this Fault.
(3) Release brake pedal.
(4) Turn off BLACKOUT LIGHTS selector switch.

7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE (CONT).

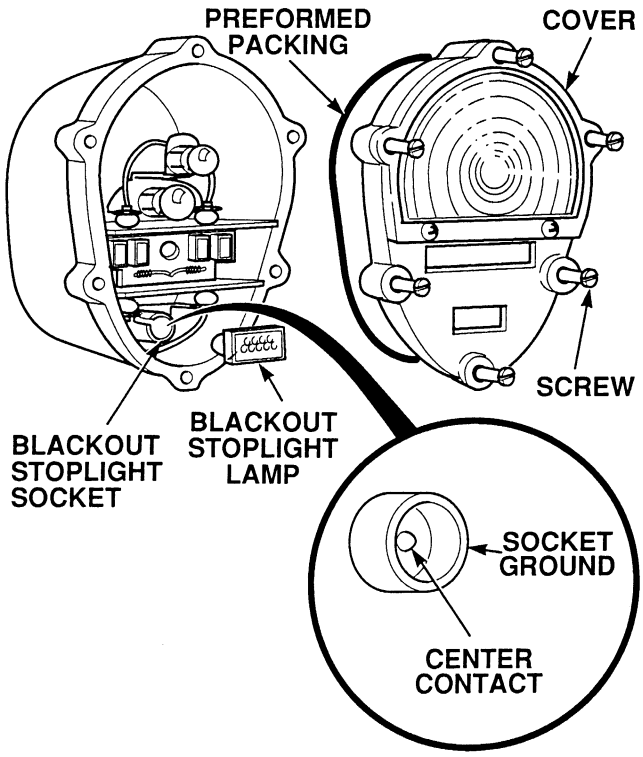


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

VOLTAGE TEST

(1) Loosen six captive screws and remove composite light cover, and preformed packing. Discard preformed packing.
(2) Remove blackout stoplight lamp (Para 4-29).
(3) Set multimeter select switch to volts dc.
(4) Connect positive (+) multimeter lead to center contact of socket.
(5) Connect negative (–) multimeter lead to a known good ground.
(6) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(7) While assistant fully applies brake pedal, observe multimeter.
    (a) If 22 to 28 vdc are not present, perform Steps (8) and (9) below and go to Step 4 of this Fault.
    (b) If 22 to 28 vdc are present, perform Steps (8) and (9) and go to Step 3 of this Fault.
(8) Release brake pedal.
(9) Turn off BLACKOUT LIGHTS selector switch.



CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between blackout stoplight socket ground and a known good ground?
    (a) If there is no continuity, replace rear composite light (Para 4-29).
    (b) If there is continuity, replace blackout stoplight lamp (Para 4-29).
(3) Install blackout stoplight lamp (Para 4-29).
(4) Install preformed packing and composite light cover, and tighten six captive screws.

7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout stoplight lamp OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1678C-18 OK.
Rear junction box OK.

POSSIBLE PROBLEMS

Blackout stoplight faulty.
Wire 1678/23-28 faulty.

4.

WARNING
Read WARNING on Page 4-91

Is continuity measured between center contact of blackout stoplight socket and connector?

TEST OPTIONS

Continuity test.

REASON FOR QUESTION

If continuity is not measured on center contact and connector, voltage cannot be supplied to light lamp.

NO → Replace rear composite light (Para 4-29). Verify repair, go to Step 10 of this Fault.

YES

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout stoplight lamp OK.
Blackout stoplight OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1678C-18 OK.
Rear junction box OK.

POSSIBLE PROBLEMS

Wire 1678/23-28 faulty.

5.

WARNING
Read WARNING on Page 4-91

Are 22 to 28 vdc measured on wire 1678/23-28 at blackout taillight connector?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present on wire 1678/23-28, blackout stoplight will not operate.

NO → Repair wire 1678/23-28 (see schematic, Fig FO-1) or replace composite light harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

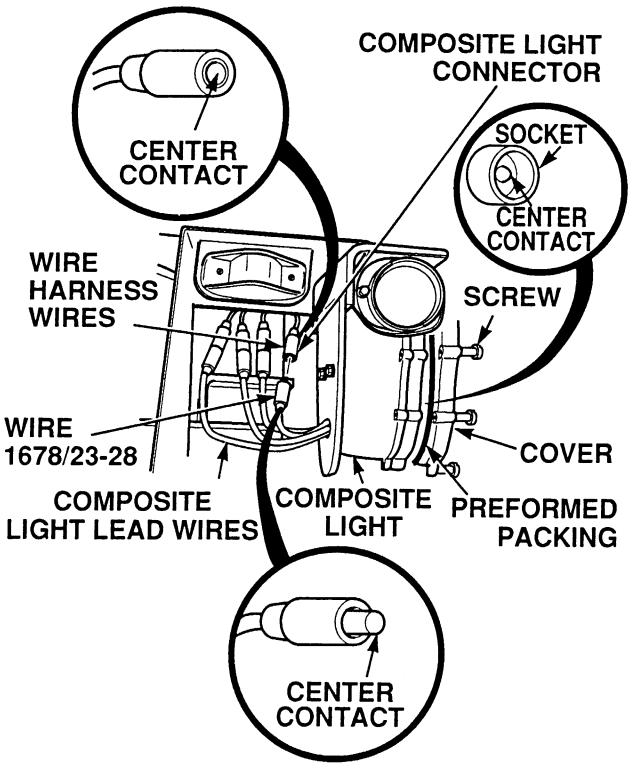
YES → Fault not corrected. Notify supervisor.

WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

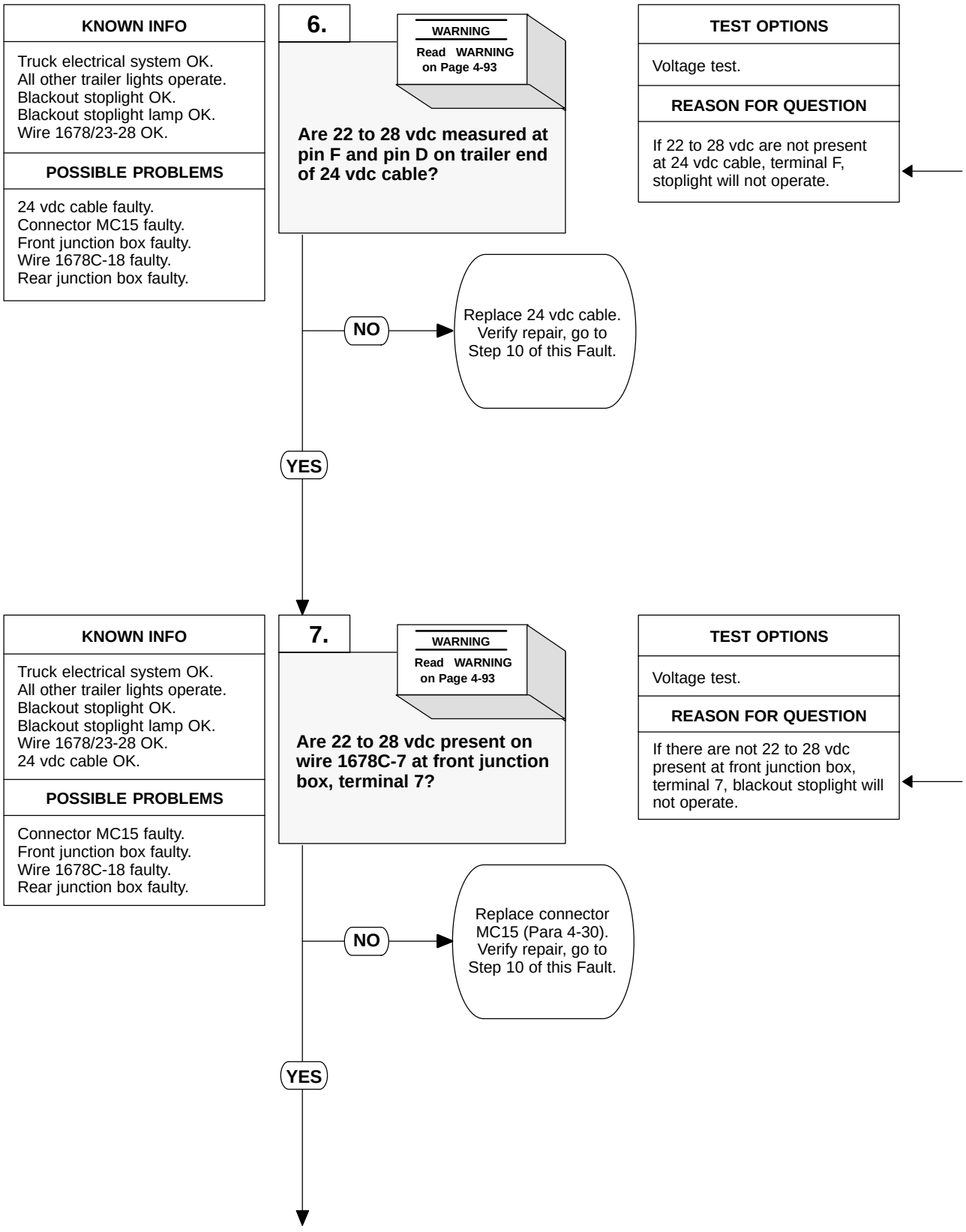
(1) Disconnect wire 1678/23-28 connector at blackout stoplight connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured on center contact of blackout stoplight socket and connector?
  (a) If there is no continuity, replace rear composite light (Para 4-29).
  (b) If there is continuity, blackout taillight is OK.
(4) Install blackout taillight lamp (Para 4-29).
(5) Install preformed packing and composite light cover, and tighten six captive screws.



VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1678/23-28 at blackout stoplight connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) Turn on BLACKOUT LIGHTS selector switch.
(5) While assistant fully applies brake pedal, observe blackout stoplights.
  (a) If 22 to 28 vdc are not present, perform Steps (7) and (8) below and repair wire 1678/23-28 (see schematic, Fig FO-1) or replace composite light wire harness (Para 4-30).
  (b) If 22 to 28 vdc are present, wire 1678/23-28 is OK. Fault not corrected. Notify supervisor.
(6) Release brake pedal.
(7) Turn off BLACKOUT LIGHTS selector switch.
(8) Connect wire 1678/23-28 connector to blackout taillight connector.

7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE (CONT).

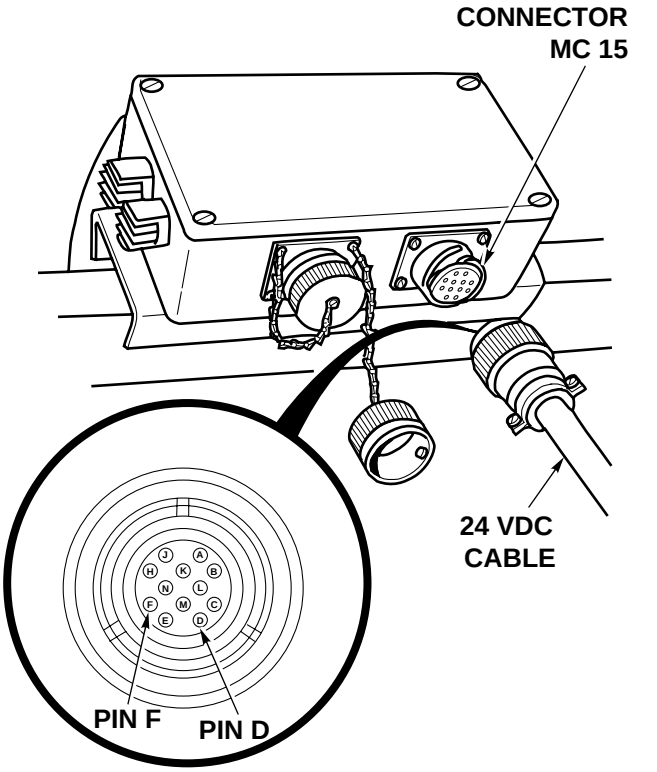


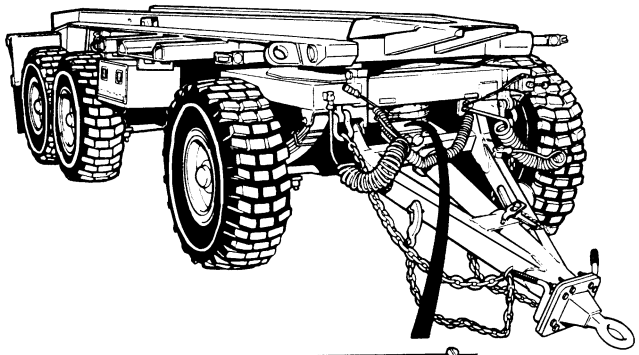
WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

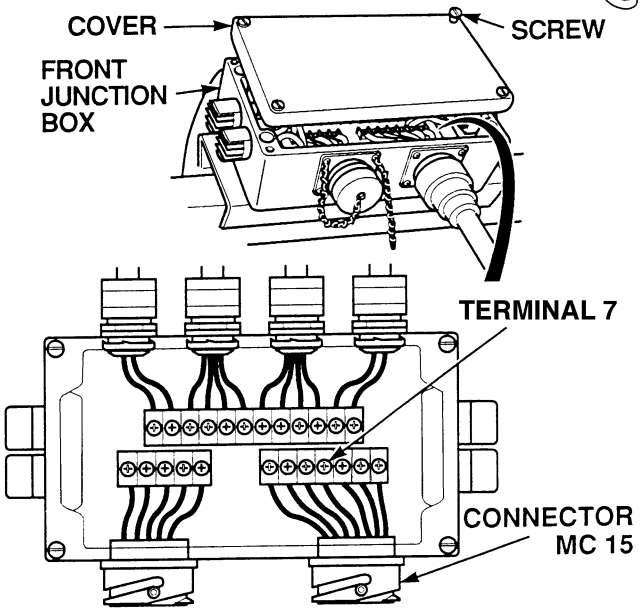
(1) Disconnect 24 vdc (12 pin) cable from front junction box connector MC15.
(2) Set multimeter select switch to volts DC.
(3) Connect positive (+) multimeter lead to pin F on trailer end connector.
(4) Connect negative (–) multimeter lead to pin D on trailer end connector.
(5) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(6) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, perform Steps (7) and (8) below and replace 24 vdc cable.
  (b) If 22 to 28 vdc are present, 24 vdc cable is OK.
(7) Release brake pedal.
(8) Turn off BLACKOUT LIGHTS selector switch.
(9) Connect 24 vdc cable to front junction box connector MC15.



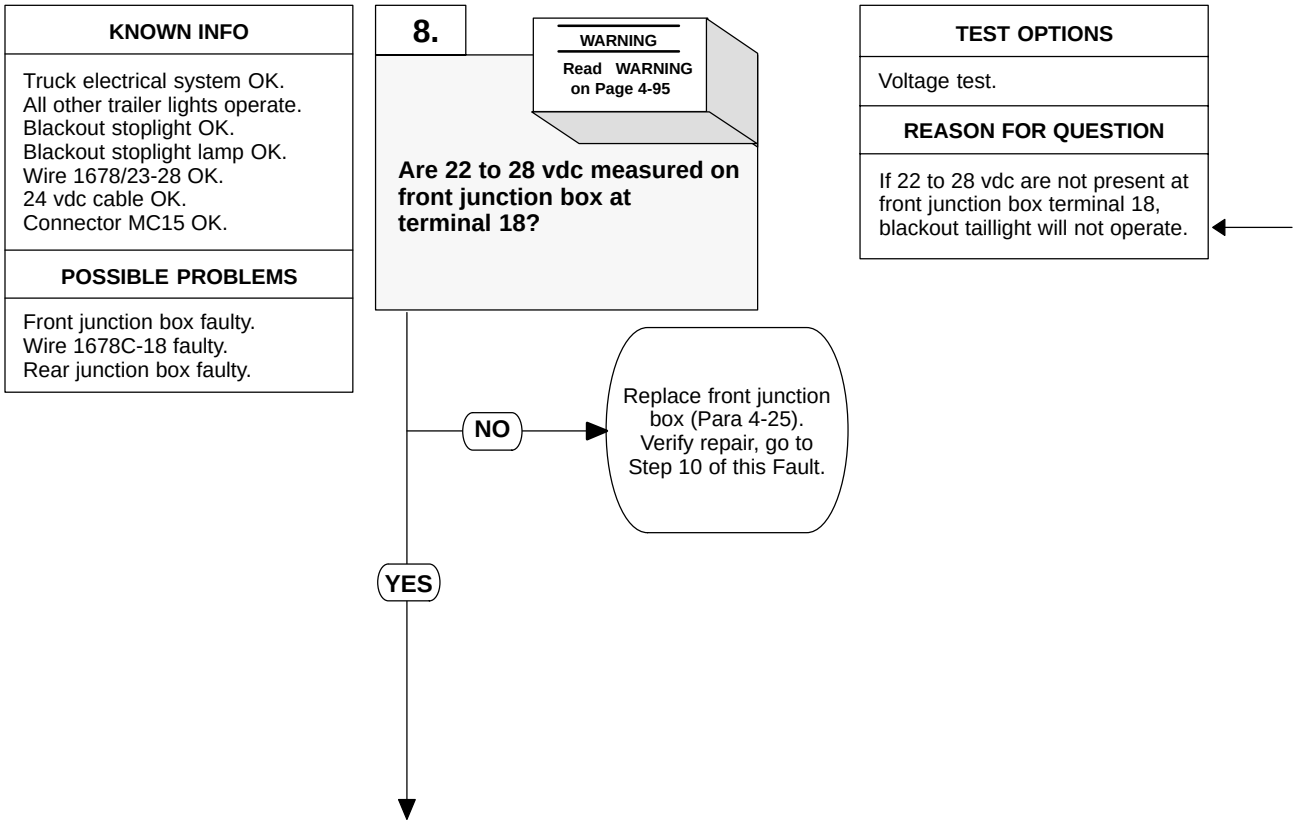


VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Connect positive (+) multimeter lead to front junction box, terminal 7.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(5) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and replace connector MC15 (Para 4-30).
  (b) If 22 to 28 vdc are present, connector MC15 is OK.
(6) Release brake pedal.
(7) Turn off BLACKOUT LIGHTS selector switch.



7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE (CONT).

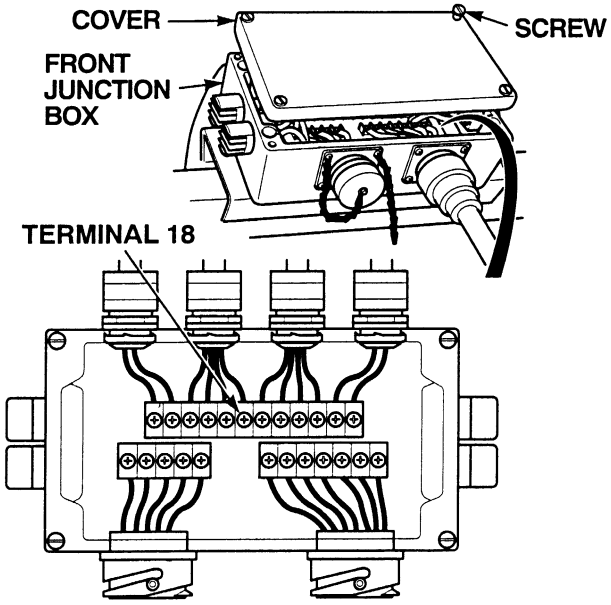


WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

(1) Connect positive (+) multimeter lead to front junction box, terminal 18.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(4) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, perform Steps (5) and (6) below and replace front junction box (Para 4-25).
  (b) If 22 to 28 vdc are present, front junction box is OK.
(5) Release brake pedal.
(6) Turn off BLACKOUT LIGHTS selector switch.
(7) Install front junction box cover and tighten four captive screws.



7. BLACKOUT STOPLIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout stoplight OK.
Blackout stoplight lamp OK.
Wire 1678/23-28 OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.

POSSIBLE PROBLEMS

Wire 1678C-18 faulty.
Rear junction box faulty.

9.

WARNING
Read WARNING on Page 4-97

Are 22 to 28 vdc measured on wire 1678C-18 at rear junction box, terminal 18?

TEST OPTIONS

Voltage test.

REASON FOR QUESTION

If 22 to 28 vdc are not present at rear junction box, terminal 18, wire 1678C-18 is faulty. If 22 to 28 vdc are present, rear junction box is faulty.

NO → Repair wire 1678C-18 (see schematic, Fig FO-1) or replace wire harness (Para 4-30). Verify repair, go to Step 10 of this Fault.

YES → Replace rear junction box (Para 4-26). Verify repair, go to Step 10 of this Fault.

KNOWN INFO

Truck electrical system OK.
All other trailer lights operate.
Blackout stoplight OK.
Blackout stoplight lamp OK.
Wire 1678/23-28 OK.
24 vdc cable OK.
Connector MC15 OK.
Front junction box OK.
Wire 1678C-18 OK.
Rear junction box OK.

POSSIBLE PROBLEMS

10.

Do blackout stoplights operate?

TEST OPTIONS

Verify repair.

REASON FOR QUESTION

If blackout stoplights operate, fault has been corrected.

NO → Fault not corrected. Notify supervisor.

YES → Fault corrected.

WARNING

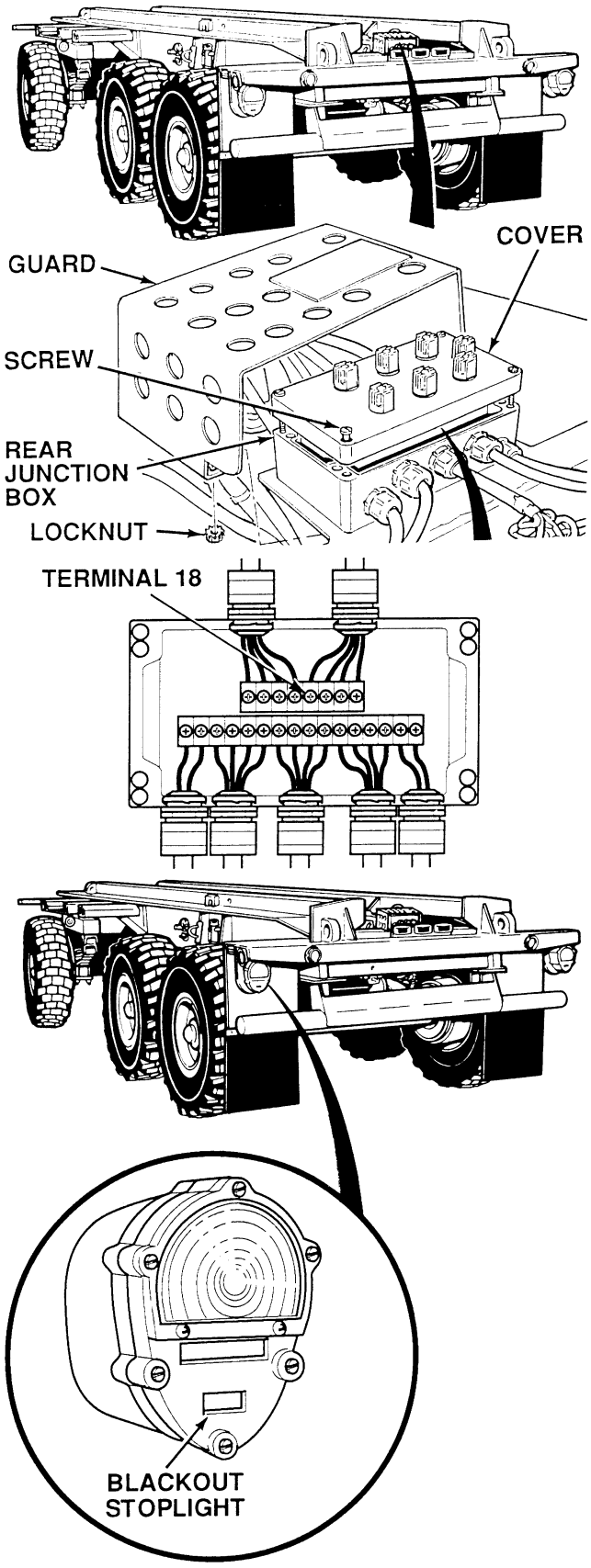
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits a direct short may result. Damage to equipment, injury or death to personnel may occur.
- Resistors mounted on exterior junction box assembly reach very high temperature when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box cover.
(3) Connect positive (+) multimeter lead to rear junction box, terminal 18.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(6) While assistant fully applies brake pedal, observe multimeter.
  (a) If 22 to 28 vdc are not present, perform steps (7) and (8) below and repair wire 1678C-18 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
  (b) If 22 to 28 vdc are present, perform Steps (7) and (8) below and replace rear junction box (Para 4-26).
(7) Release brake pedal.
(8) Turn off BLACKOUT LIGHTS selector switch.
(9) Install rear junction box cover and tighten four captive screws.
(10) Install rear junction box guard and four locknuts.

VERIFY REPAIR

(1) Turn on BLACKOUT LIGHTS selector switch (TM 9-2320-364-10).
(2) While assistant fully applies brake pedal, observe blackout stoplights.
  (a) If blackout stoplights do not operate, fault not corrected. Perform Steps (3) and (4) below and notify supervisor.
  (b) If blackout stoplights operate, fault has been corrected.
(3) Release brake pedal.
(4) Turn off BLACKOUT LIGHTS selector switch.



4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

8. ALL LIGHTS ON REAR OF TRAILER DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

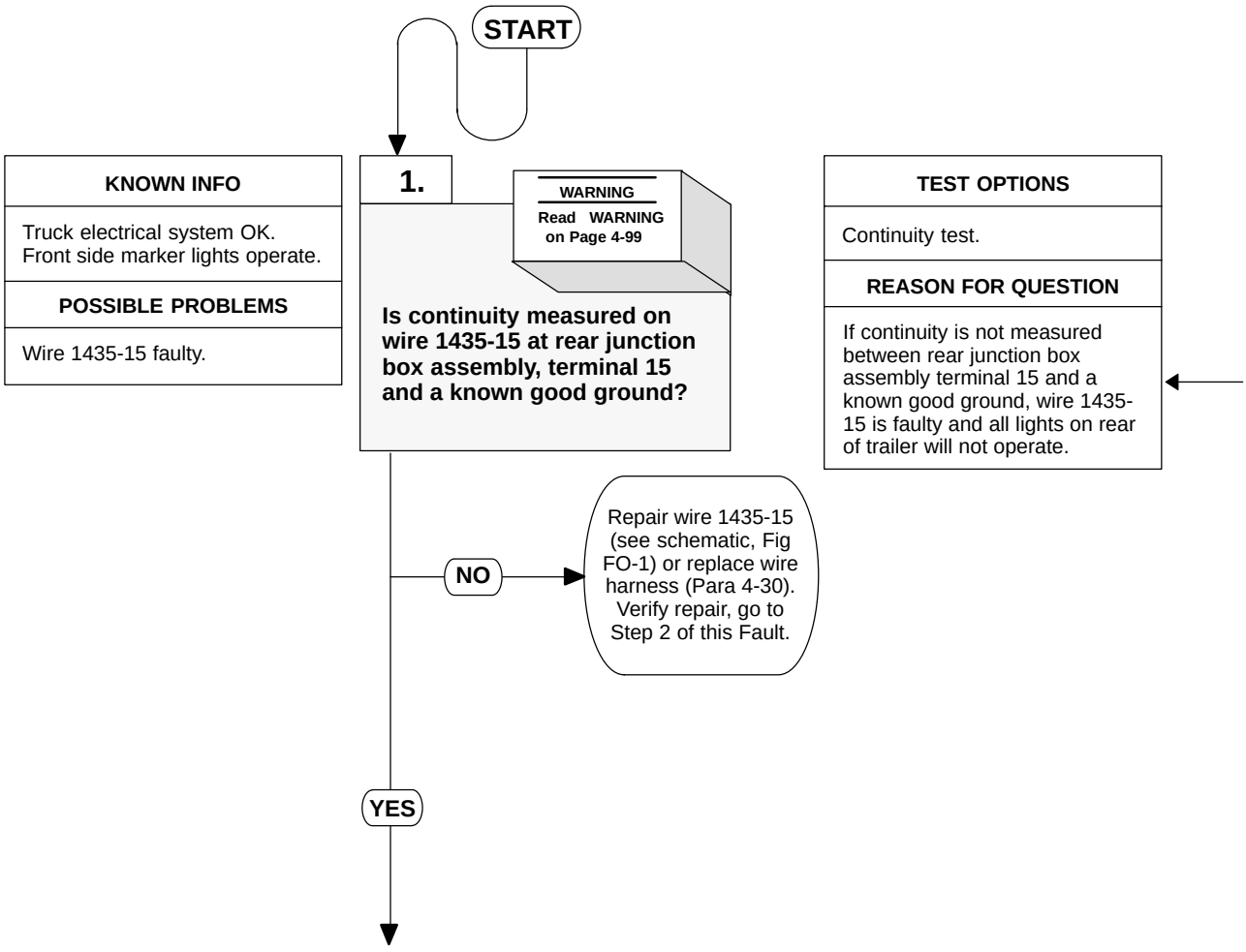
Materials/Parts
Locknut (Item 31, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

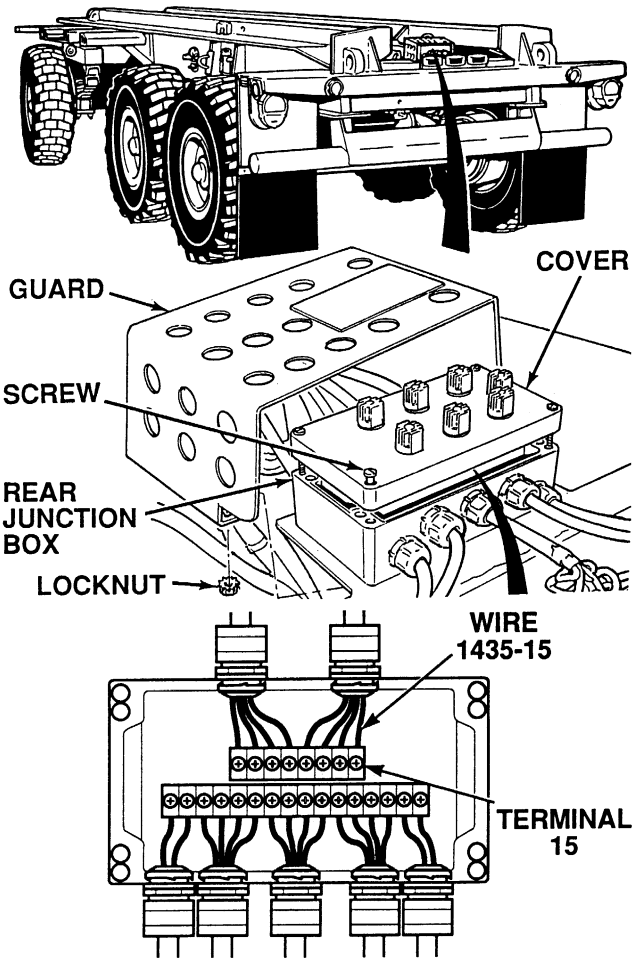


WARNING

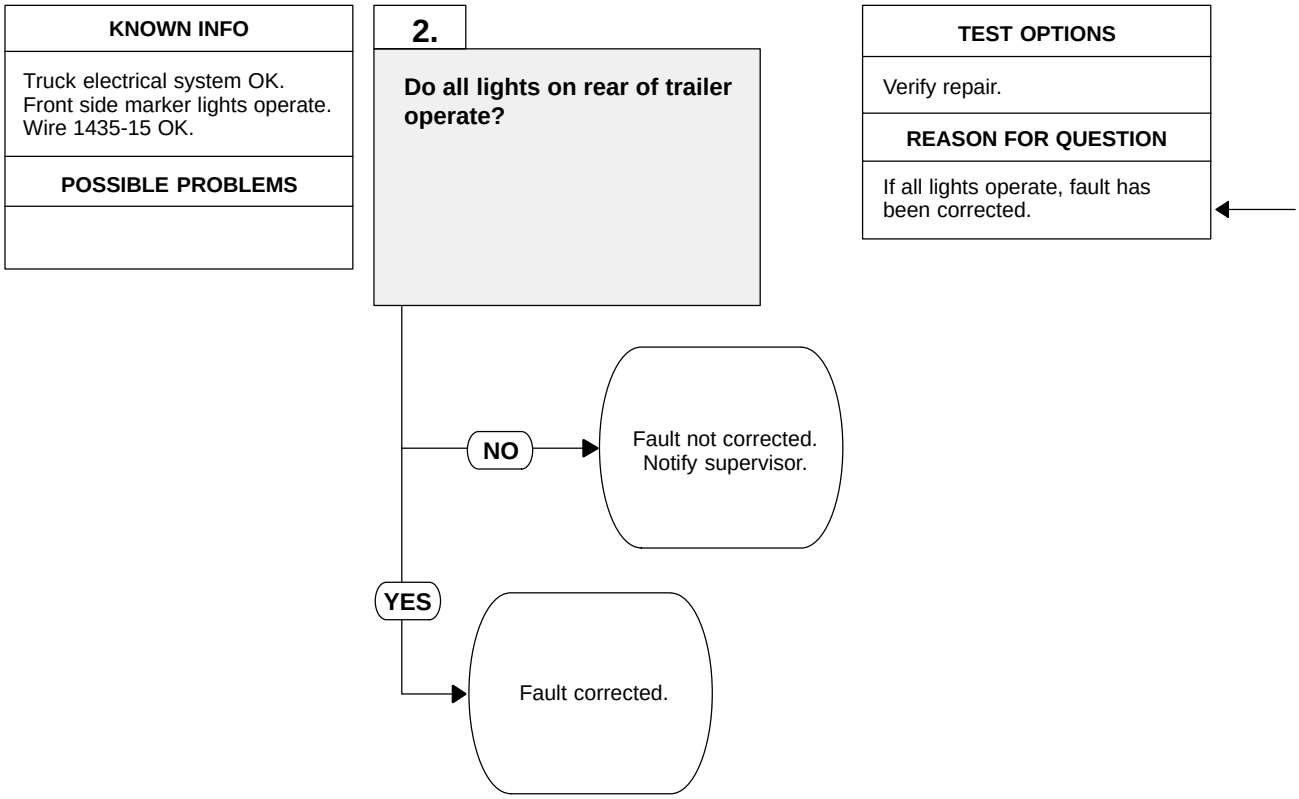
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits a direct short may result. Damage to equipment, injury or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperature when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

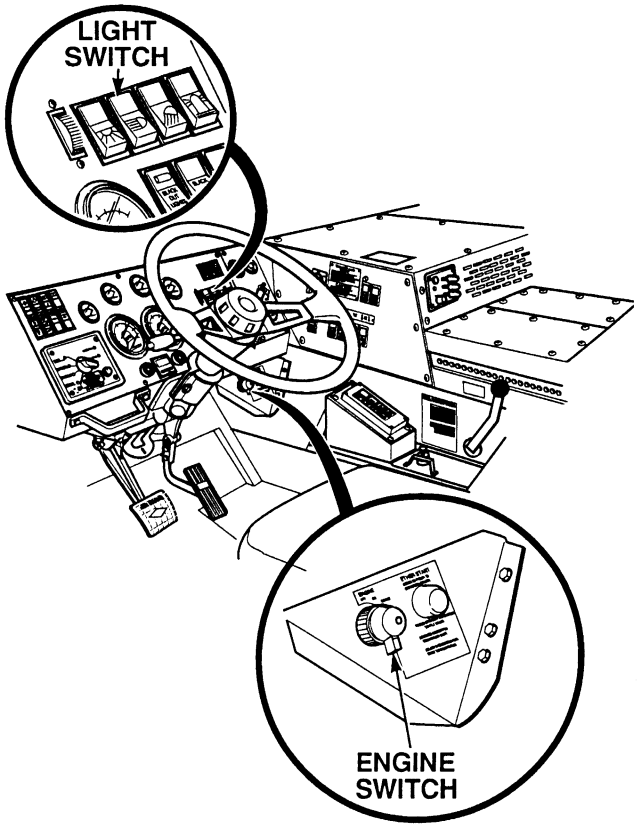
CONTINUITY TEST

(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box cover.
(3) Set multimeter select switch to ohms.
(4) Is continuity measured between rear junction box assembly, terminal 15 and a known good ground?
  (a) If there is no continuity, repair wire 1435-15 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
  (b) If there is continuity wire 1435-15 is OK.



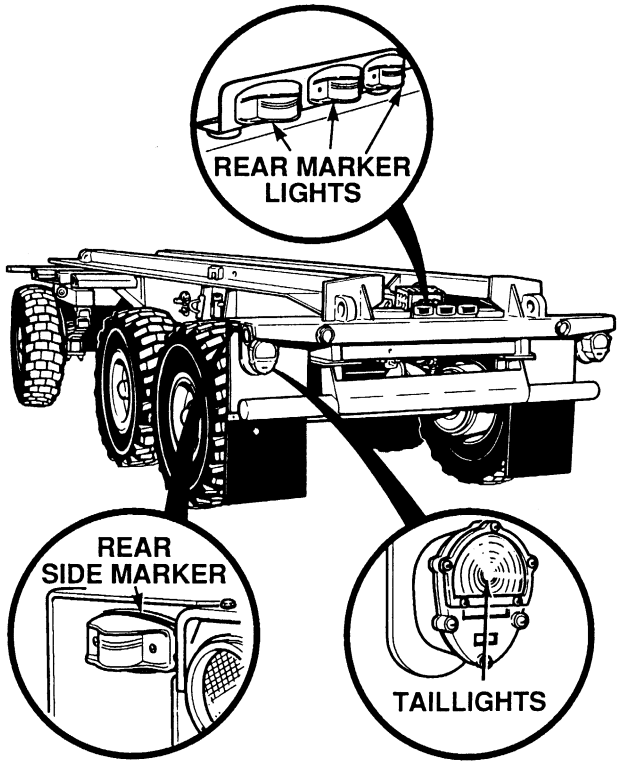
8. ALL LIGHTS ON REAR OF TRAILER DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear side marker lights and taillights (TM 9-2320-364-10).
   (a) If rear side marker lights, rear marker lights and taillights do not operate, fault is not corrected. Notify supervisor.
   (b) If rear marker lights, rear marker lights and taillights operate, fault is corrected.
(2) Turn off lights and turn OFF ENGINE switch.



4-13. 24 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

9. REAR SIDE MARKER LIGHTS, REAR MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

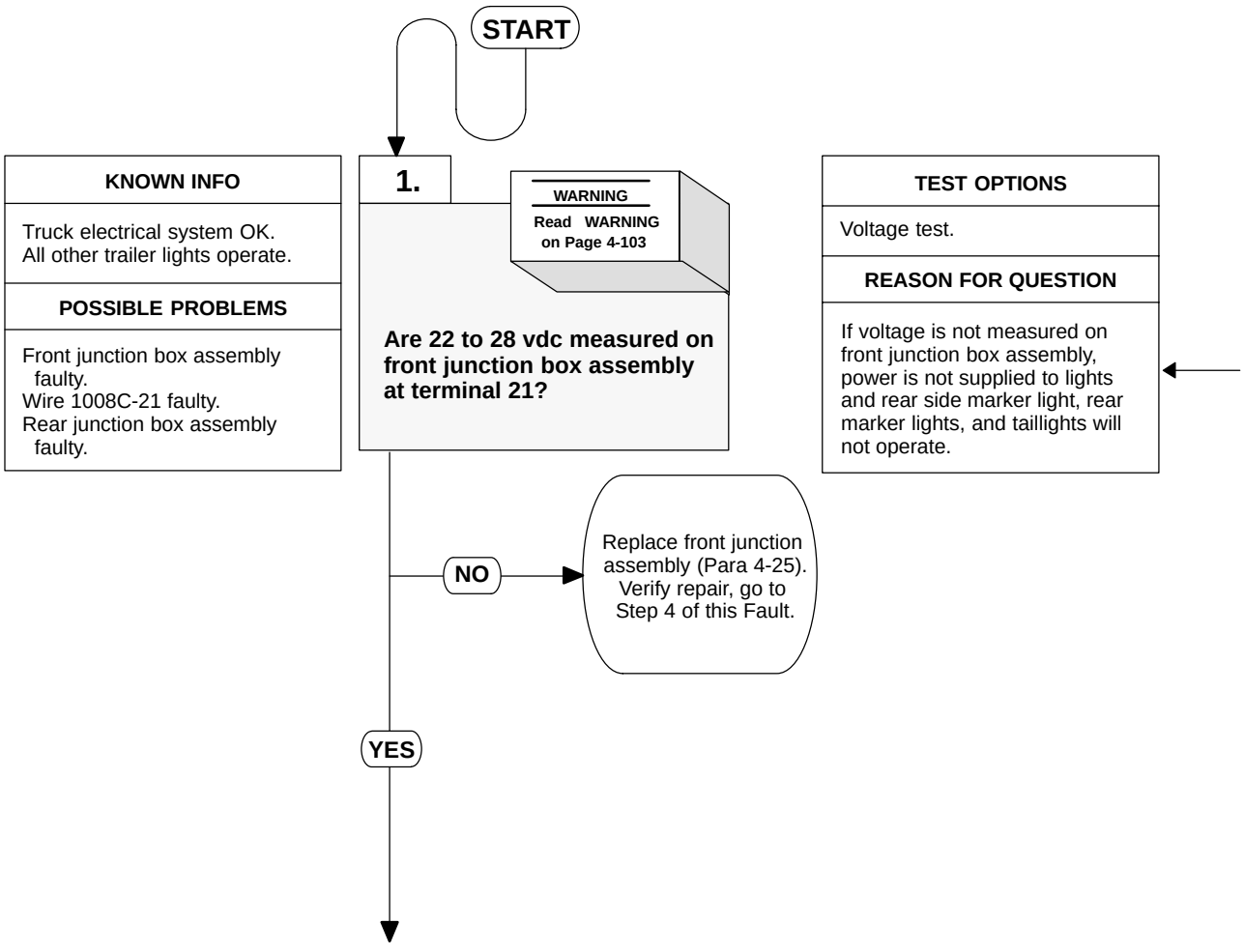
Materials/Parts
Locknut (Item 31, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

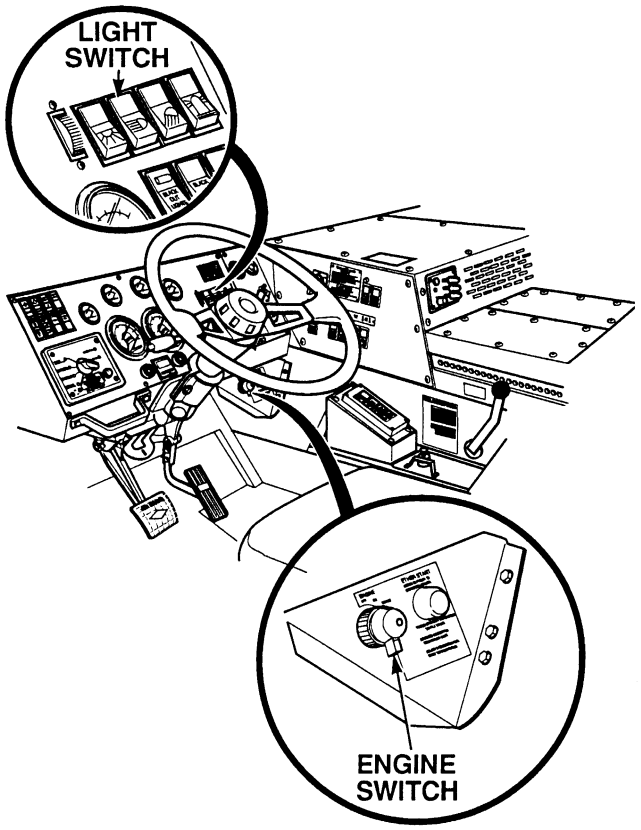
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



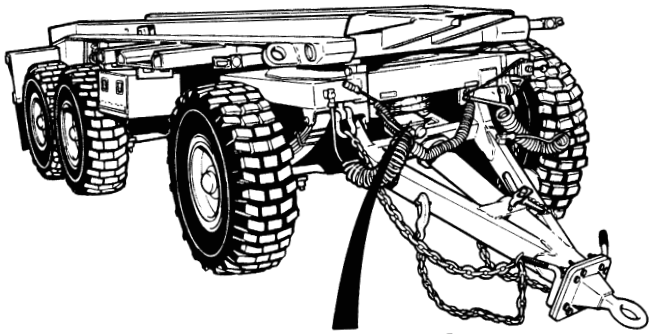
WARNING

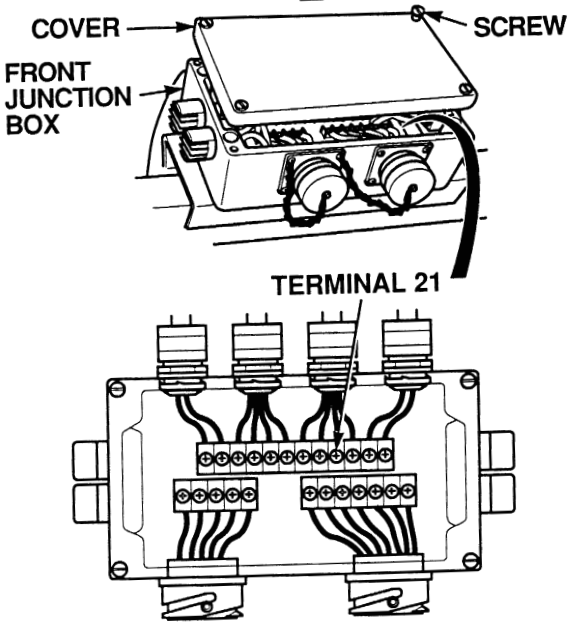
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperature when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.



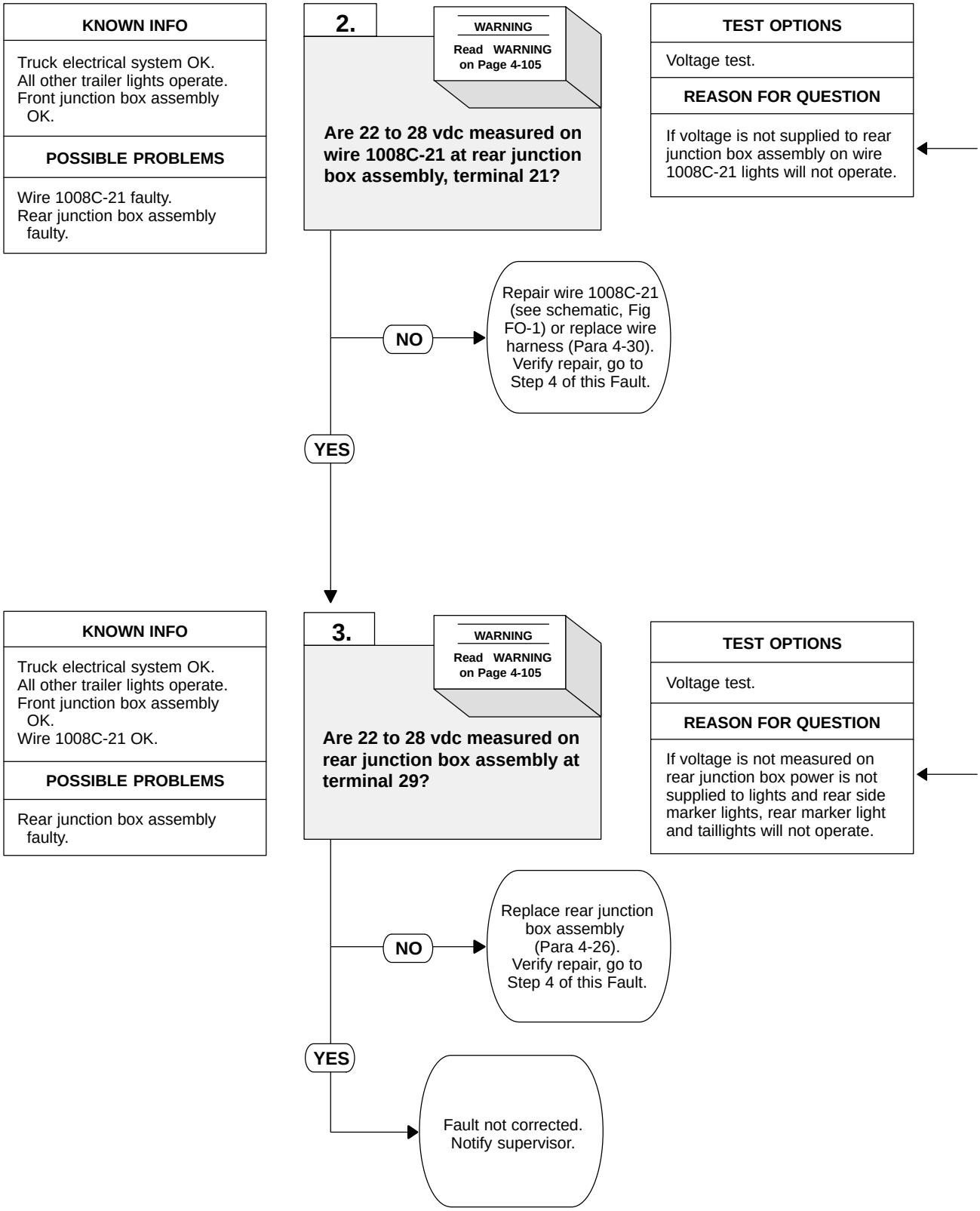
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to vdc.
(3) Connect positive (+) multimeter lead to front junction box assembly terminal 21.
(4) Connect negative (-) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present perform Steps (6) and (7) below and replace front junction box assembly (Para 4-25).
  (b) If 22 to 28 vdc are present front junction box assembly is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.
(8) Install front junction box assembly cover and tighten four captive screws.





9. REAR SIDE MARKER LIGHTS, REAR MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).

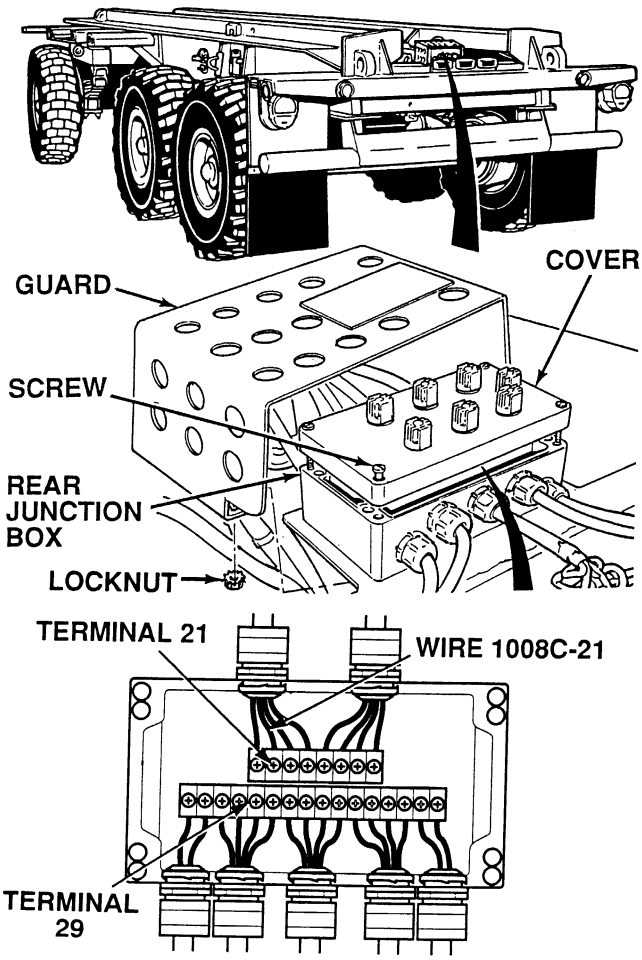


WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperature when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

VOLTAGE TEST

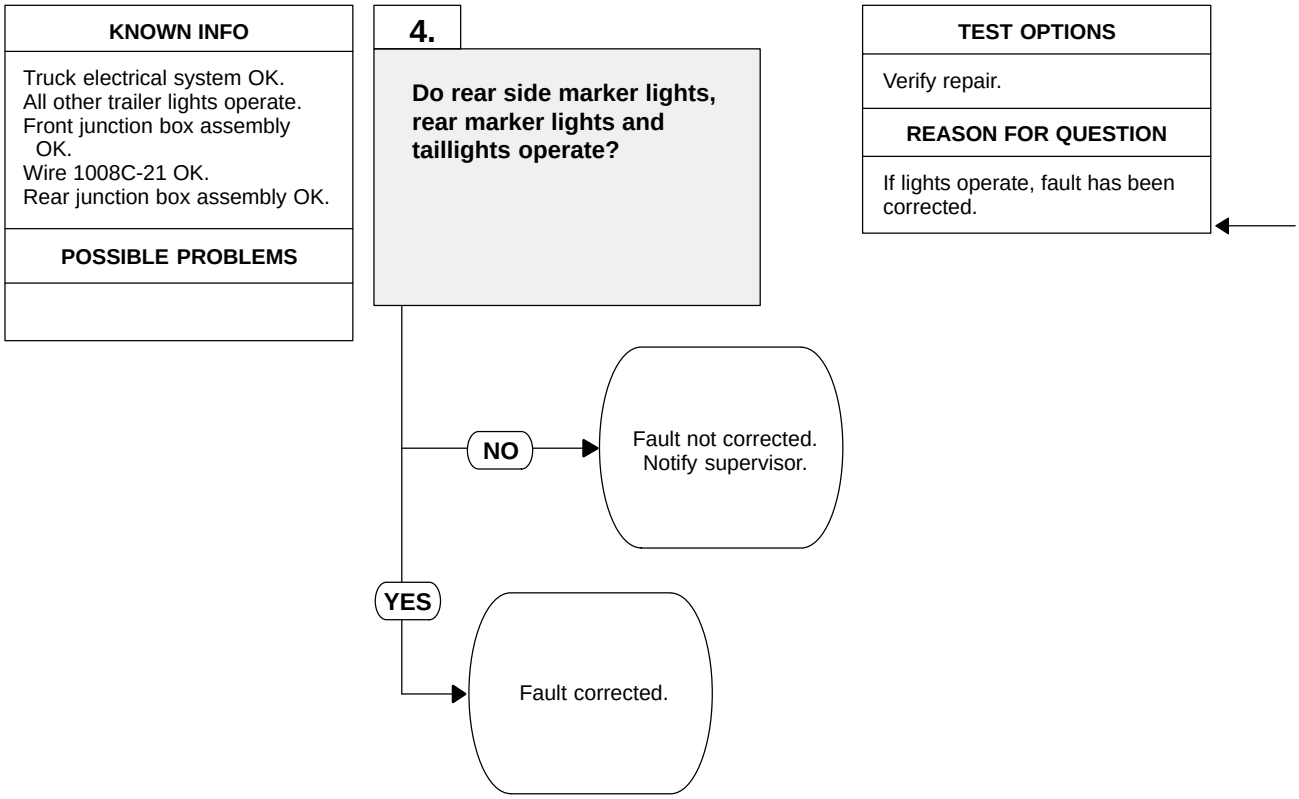
(1) Remove four locknuts and rear junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box assembly cover.
(3) Connect positive (+) multimeter lead to rear junction box cover assembly terminal 21.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present at rear junction box assembly, terminal 21, perform Steps (6) and (7) below and repair wire 1008C-21 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
  (b) If 22 to 28 vdc are present, wire 1008C-21 is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.

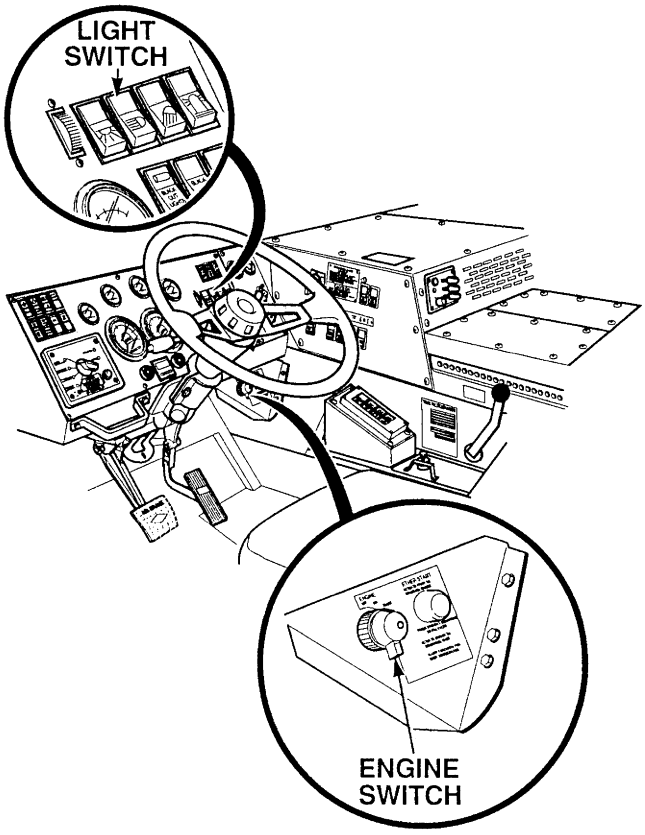


VOLTAGE TEST

(1) Connect positive (+) multimeter lead to rear junction box assembly, terminal 29.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present at terminal 29, perform Steps (4) and (5) below and replace rear junction box assembly (Para 4-26).
  (b) If 22 to 28 vdc are present at rear junction box assembly is OK.
(4) Turn off lights.
(5) Turn OFF ENGINE switch.
(6) Install rear junction box assembly cover and tighten four captive screws.
(7) Install rear junction box guard and four locknuts.

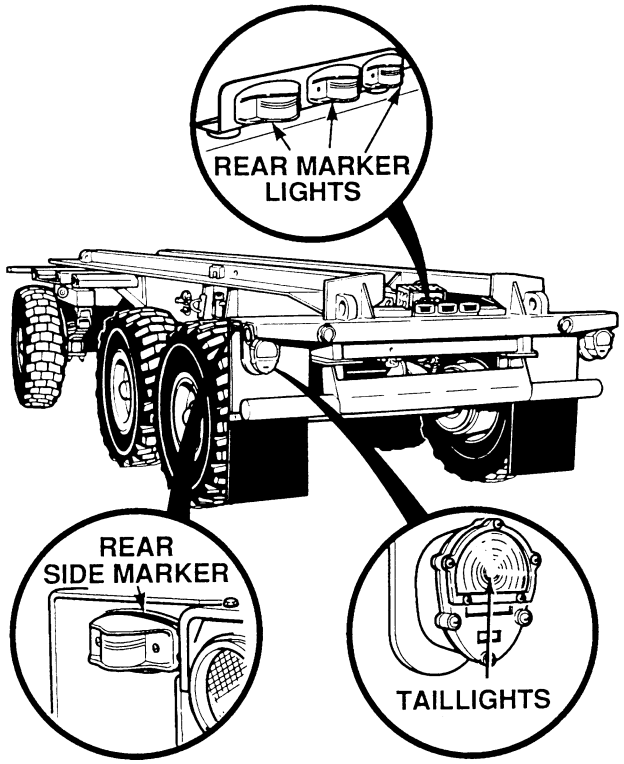
9. REAR SIDE MARKER LIGHTS, REAR MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear side marker lights, rear marker lights and taillights (TM 9-2320-364-10).
   (a) If rear side marker lights, rear marker lights and taillights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If rear side marker lights, rear marker lights and taillights operate, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.



4-13. 24-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING (CONT).

10. ALL MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE.

INITIAL SETUP

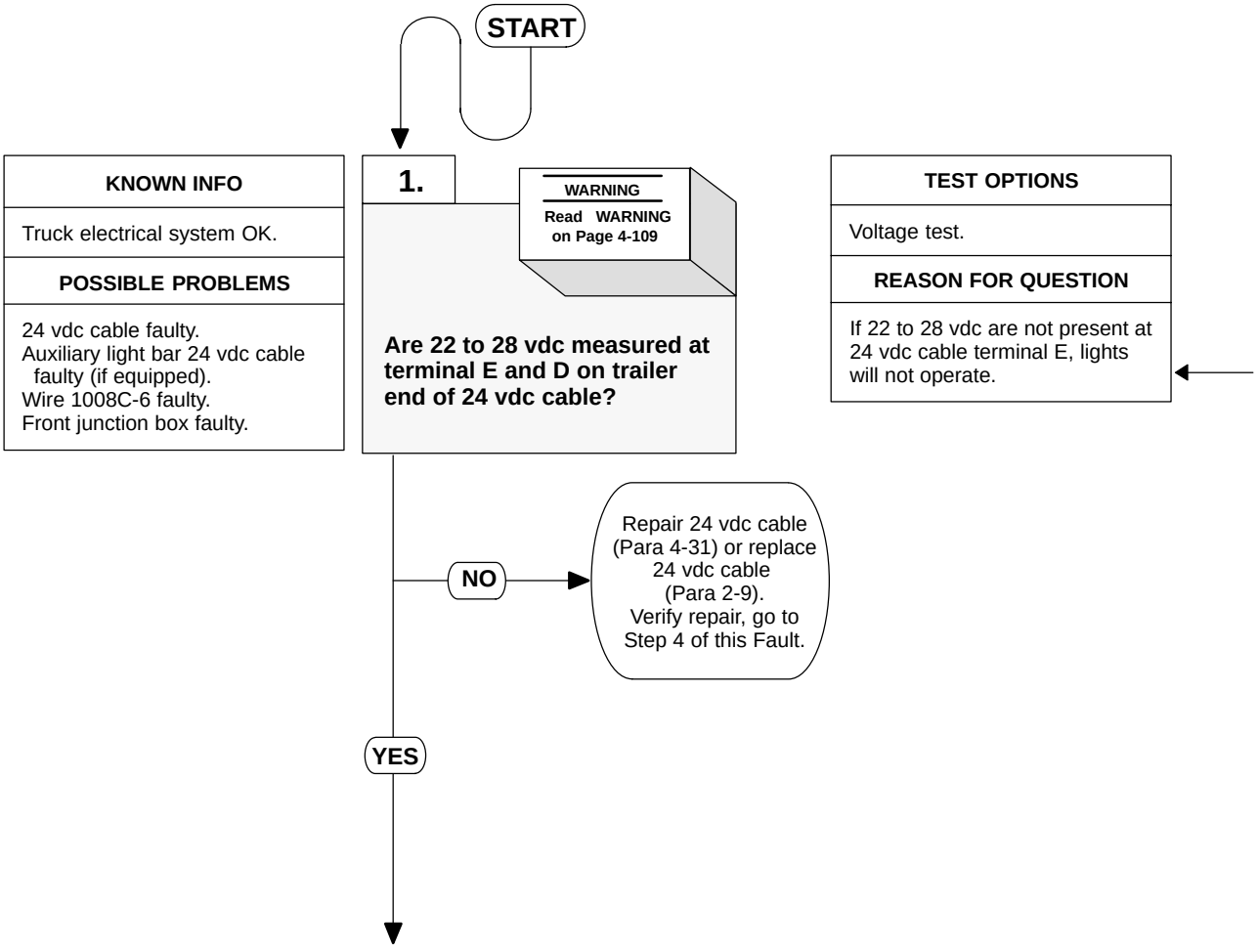
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

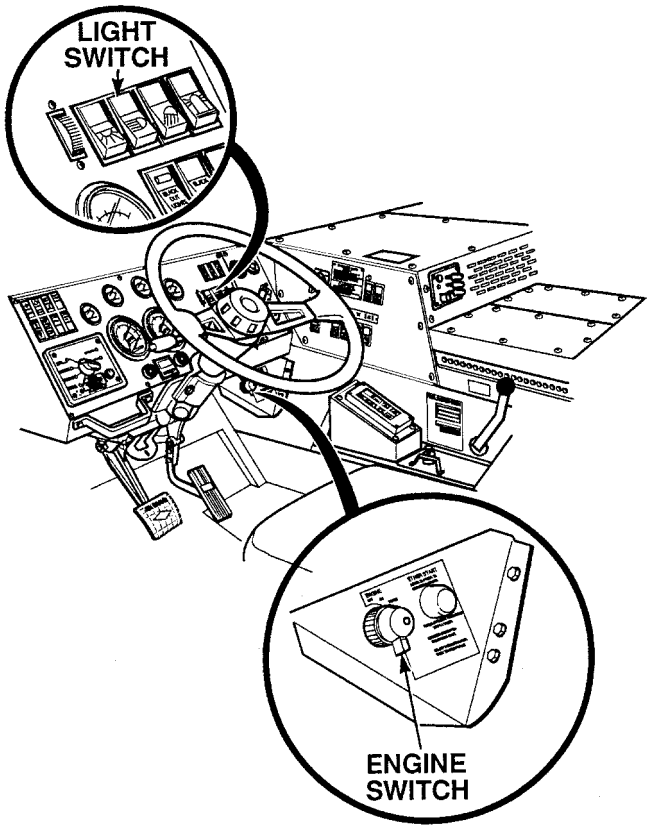
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



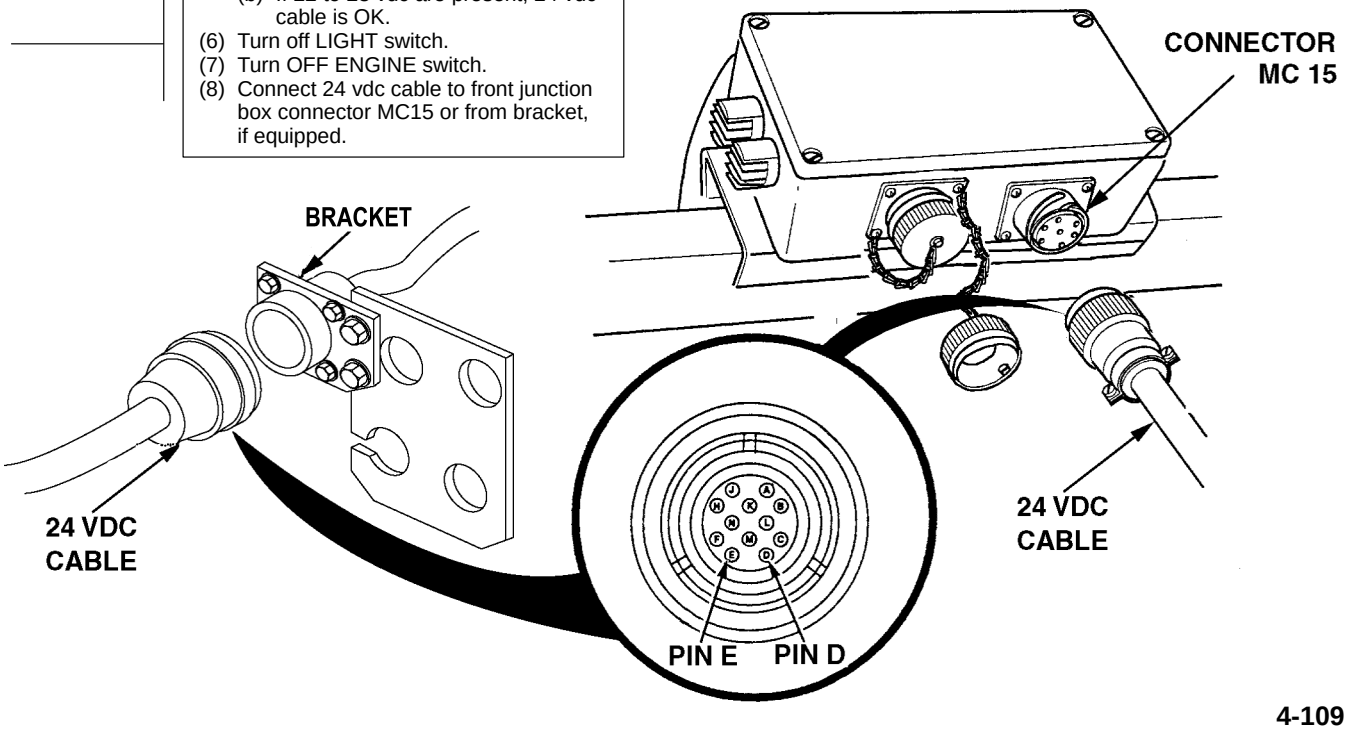
WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

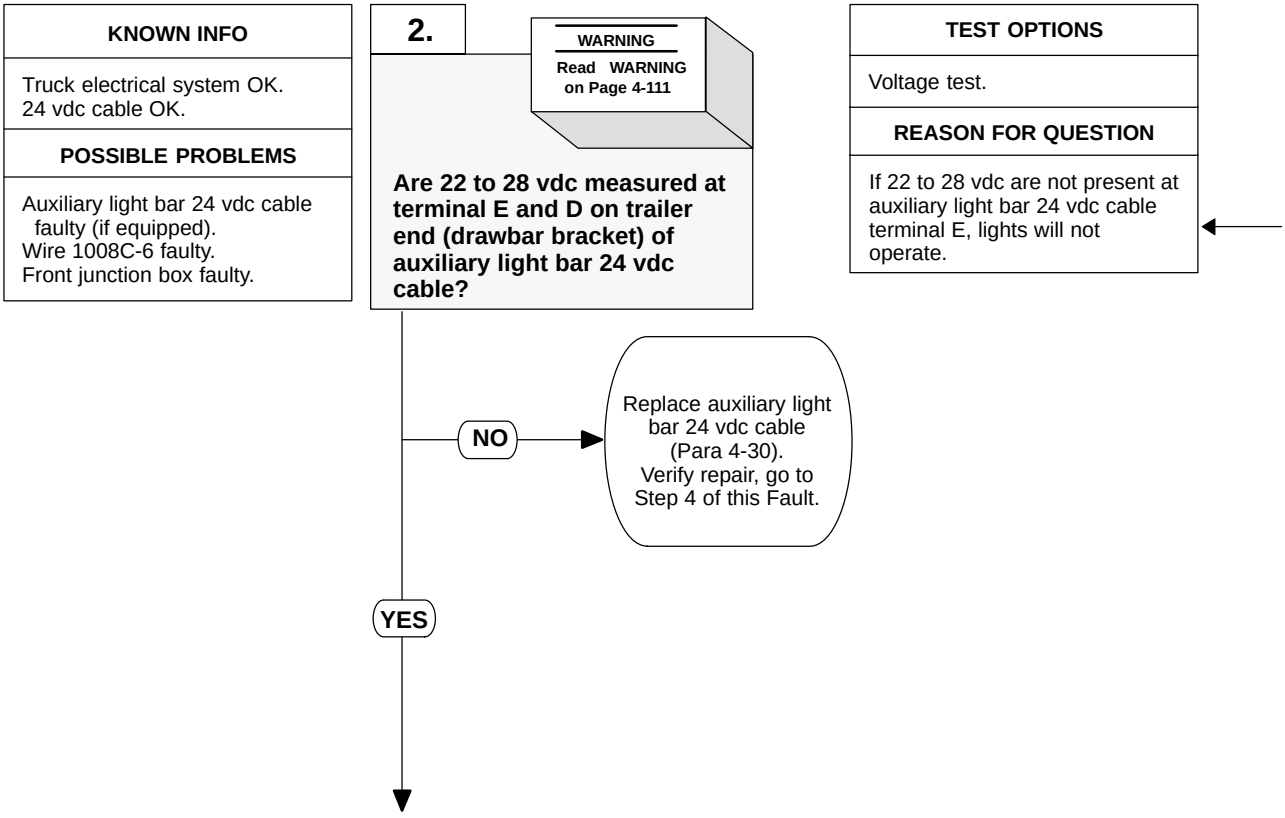


VOLTAGE TEST

(1) Disconnect 24 vdc (12 terminal) cable from front junction box connector MC15 or from bracket, if equipped.
(2) Set multimeter select switch to volts DC.
(3) Connect positive (+) multimeter lead to terminal E on trailer end connector.
(4) Connect negative (–) multimeter lead to terminal D on trailer end connector.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
  (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and repair 24 vdc cable (Para 4-31) or replace 24 vdc cable (Para 2-9).
  (b) If 22 to 28 vdc are present, 24 vdc cable is OK.
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.
(8) Connect 24 vdc cable to front junction box connector MC15 or from bracket, if equipped.

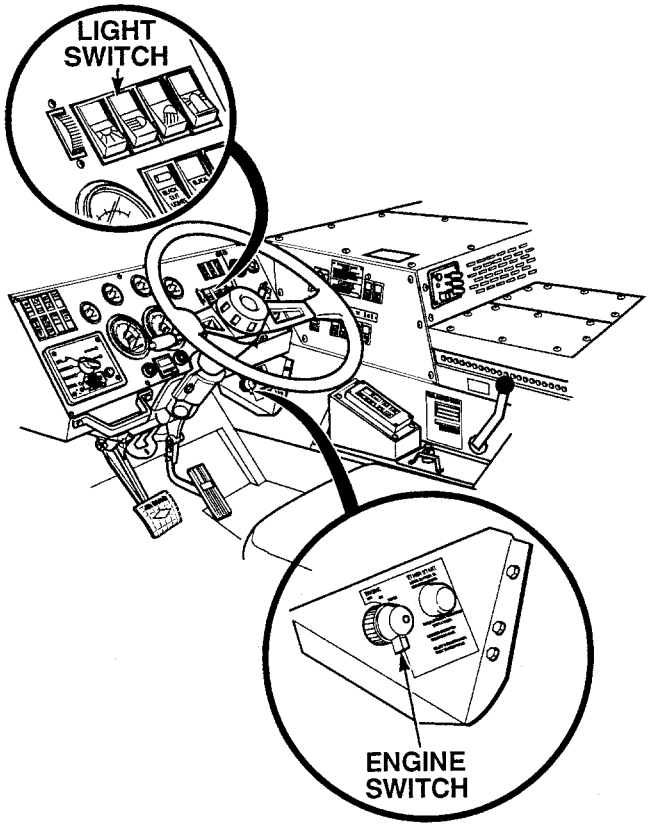


10. ALL MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).



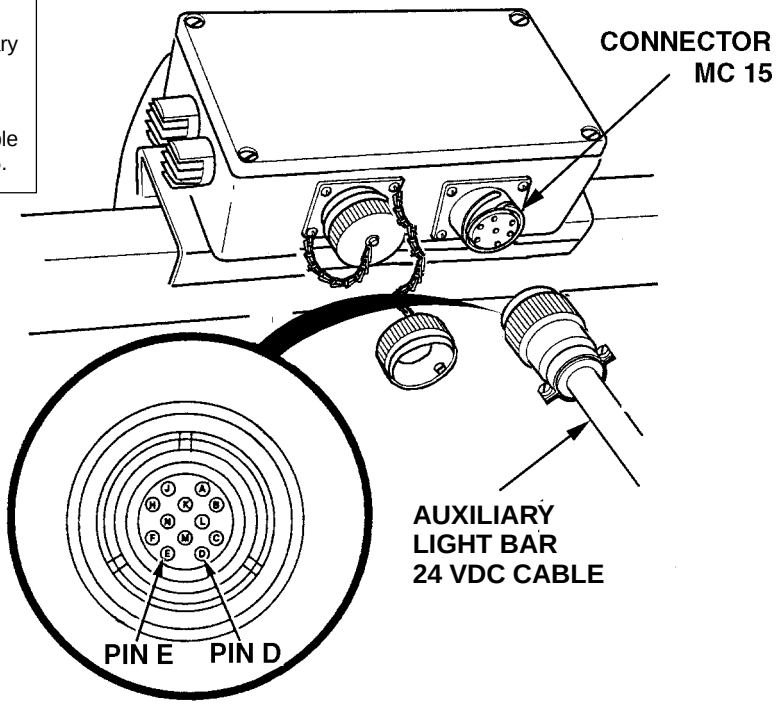
WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

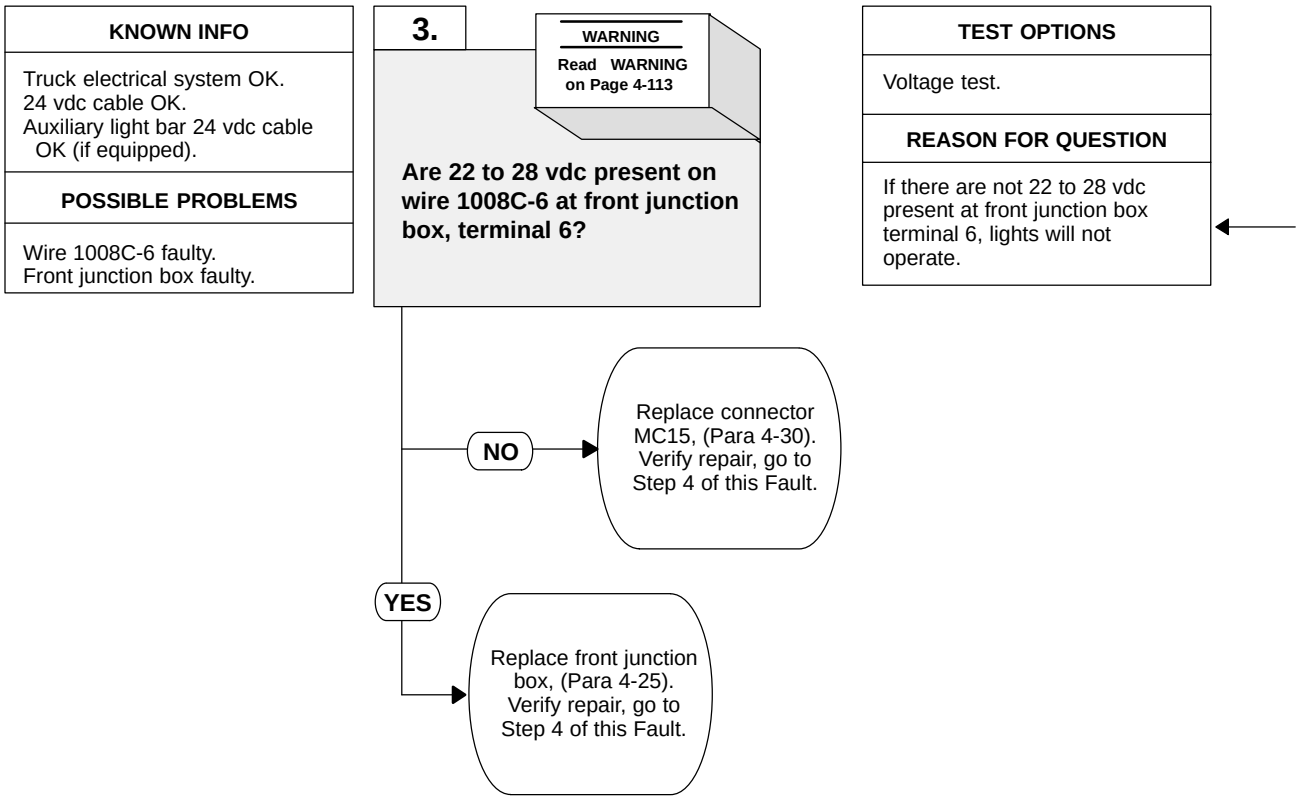


VOLTAGE TEST

(1) Disconnect auxiliary light bar 24 vdc (12 terminal) cable from front junction box connector MC15.
(2) Set multimeter select switch to volts DC.
(3) Connect positive (+) multimeter lead to terminal E on trailer end connector.
(4) Connect negative (–) multimeter lead to terminal D on trailer end connector.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
    (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and replace auxiliary light bar 24 vdc cable, (Para 4-30).
    (b) If 22 to 28 vdc are present, auxiliary light bar 24 vdc cable is OK.
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.
(8) Connect auxiliary light bar 24 vdc cable to front junction box connector MC15.



10. ALL MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).

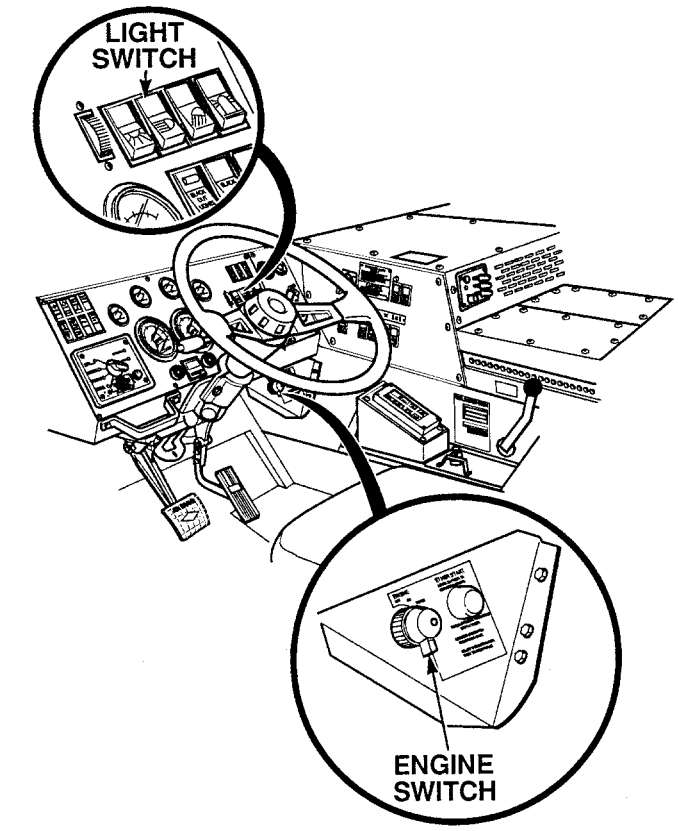


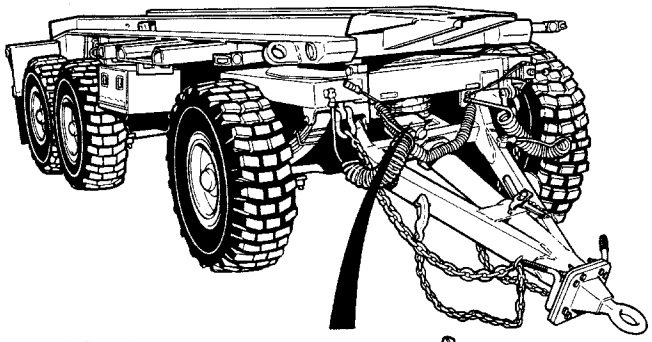
WARNING

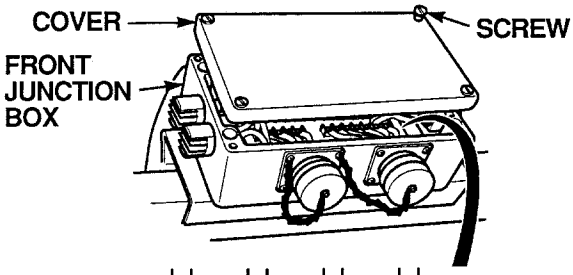
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

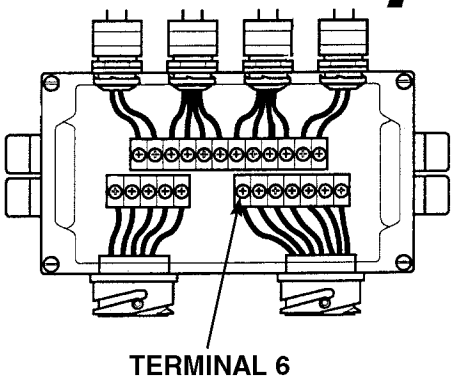
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to vdc.
(3) Connect positive (+) multimeter lead to front junction box assembly terminal 6.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
   (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and replace connector MC-15, (Para 4-30).
   (b) If 22 to 28 vdc are present, replace front junction box assembly (Para 4-25).
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.

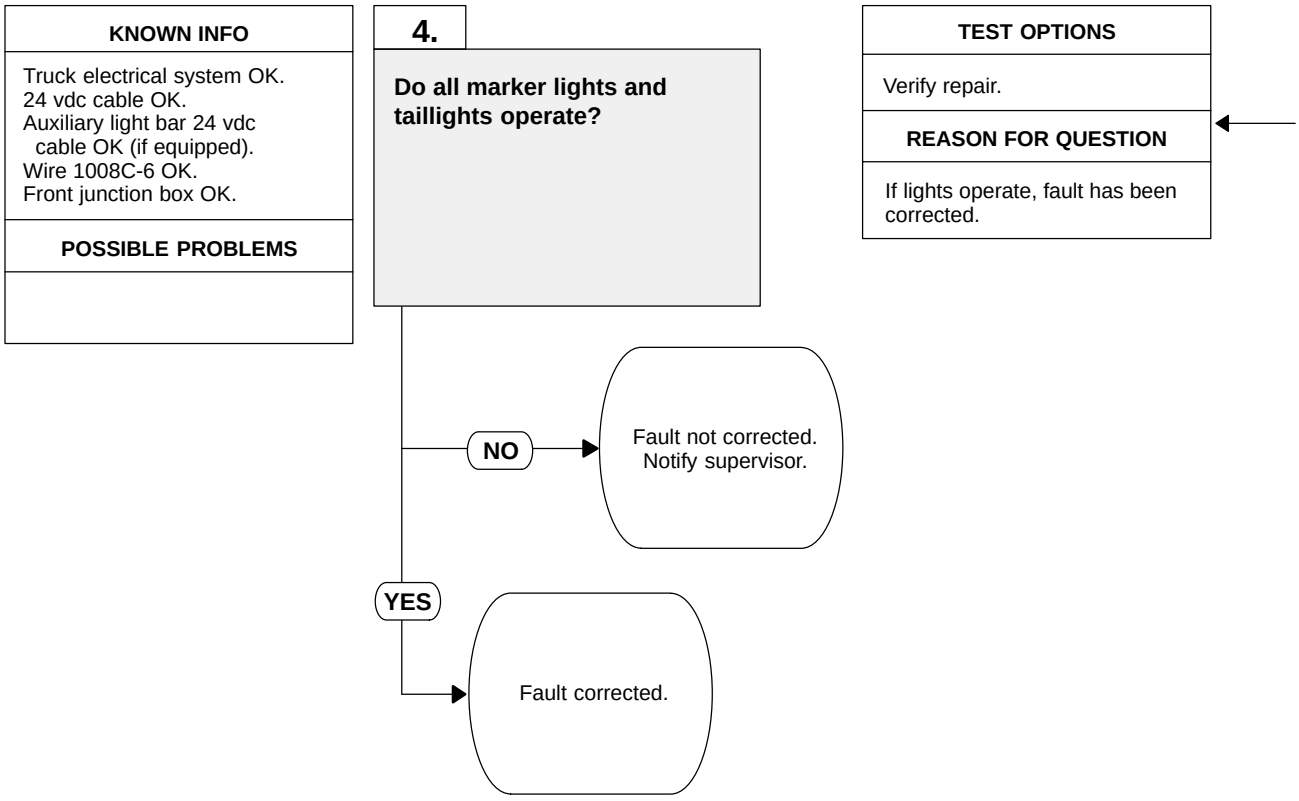


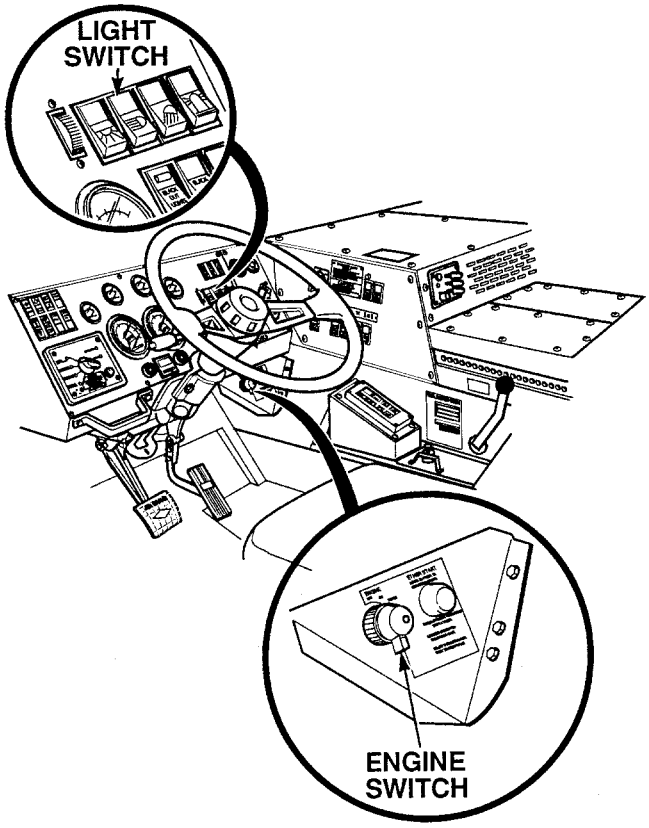






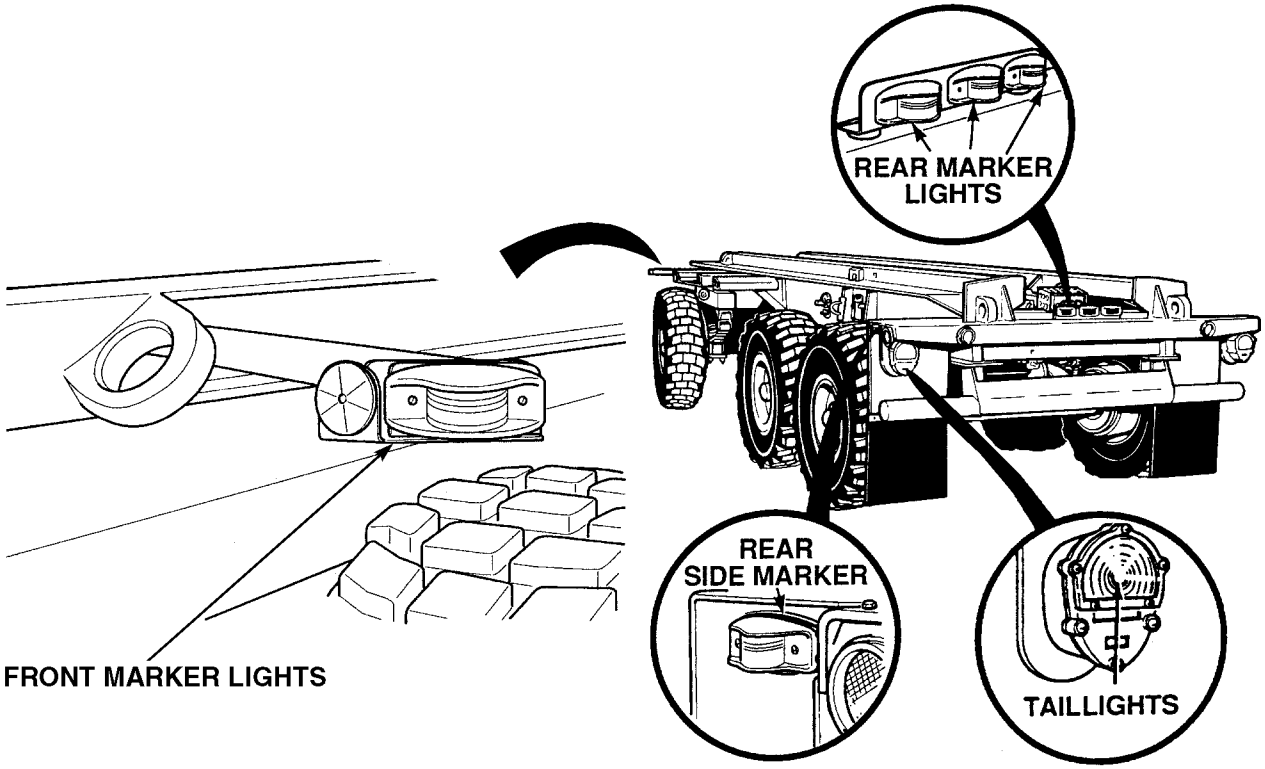
10. ALL MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe all marker lights and taillights, (TM 9-2320-364-10).
   (a) If all marker lights and taillights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If all marker lights and taillights operate, fault has been corrected.
(2) Turn off LIGHT switch.
(3) Turn OFF ENGINE switch.



4-13. 24-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING (CONT).

11. AUXILIARY LIGHT BAR MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

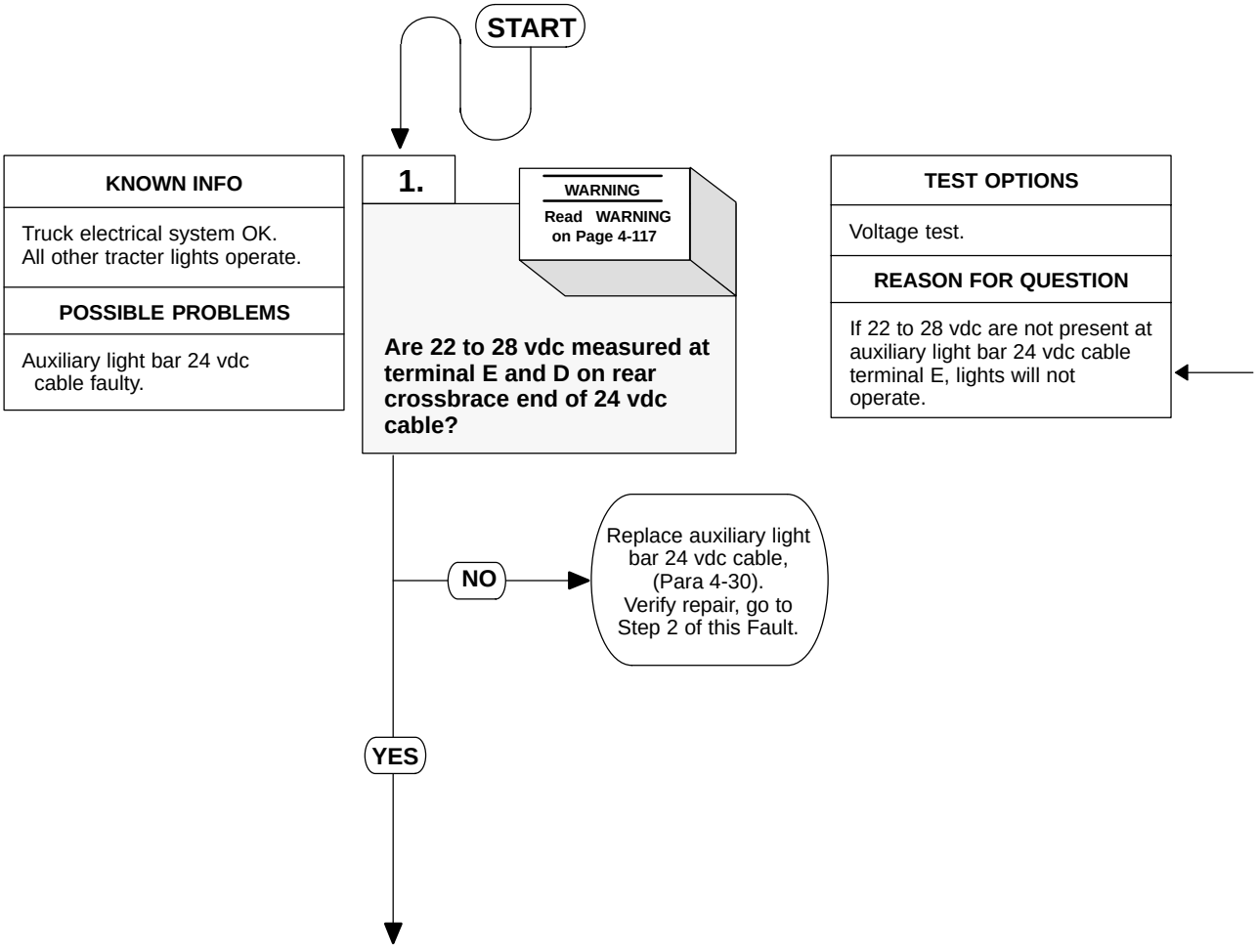
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
24 vdc cable connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

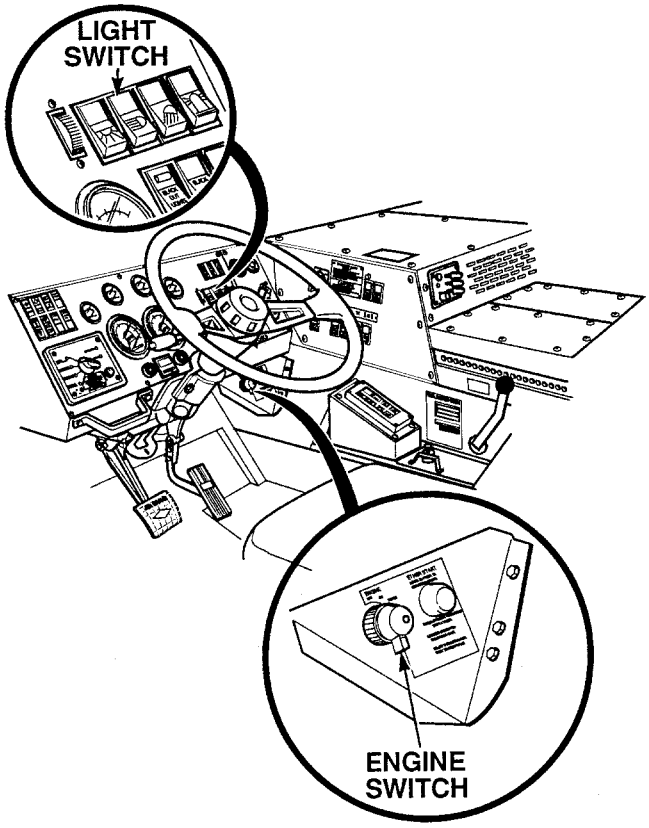
NOTE

- The following troubleshooting procedures need to be performed if extended drawbar/light bar kit has been installed.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



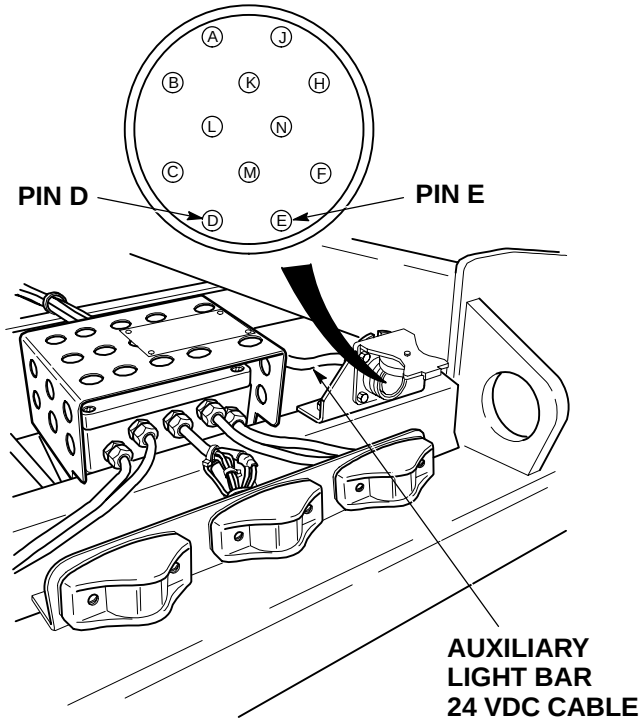
WARNING

- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperatures when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

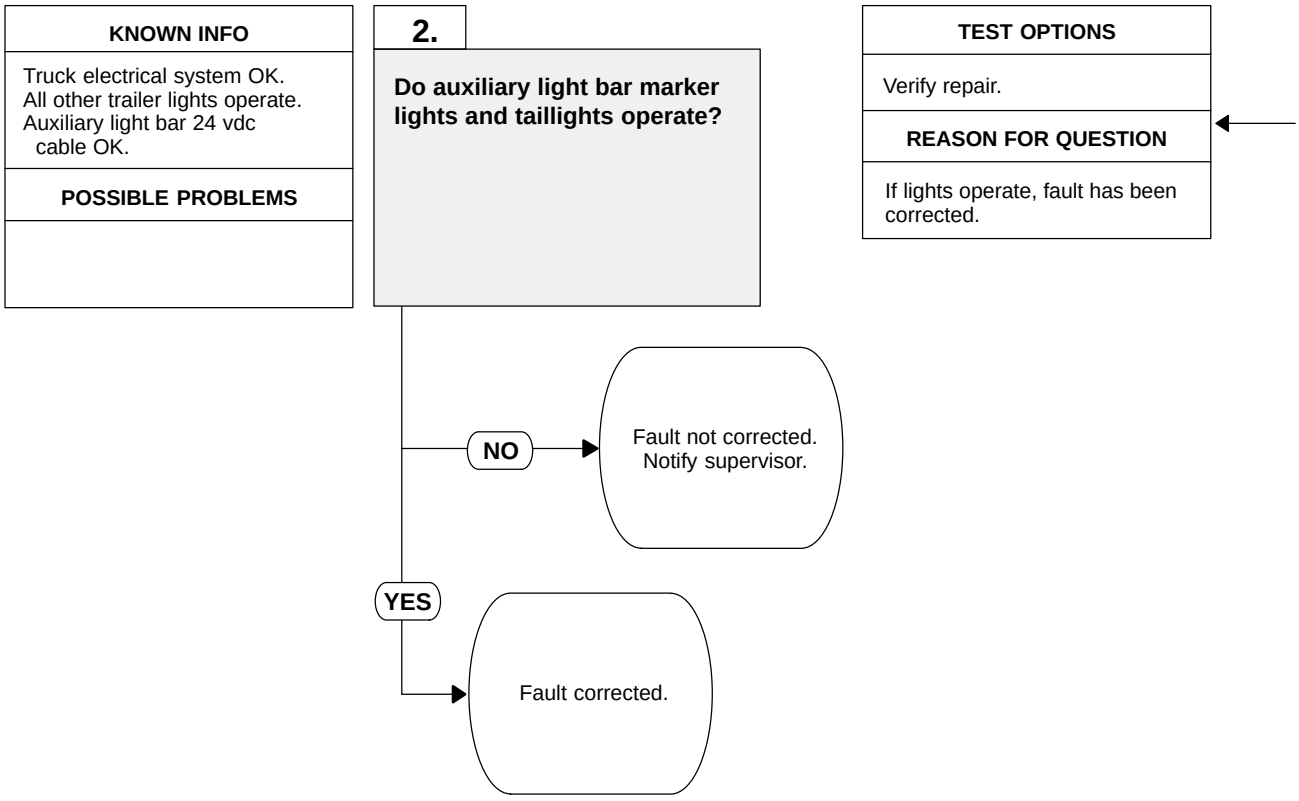


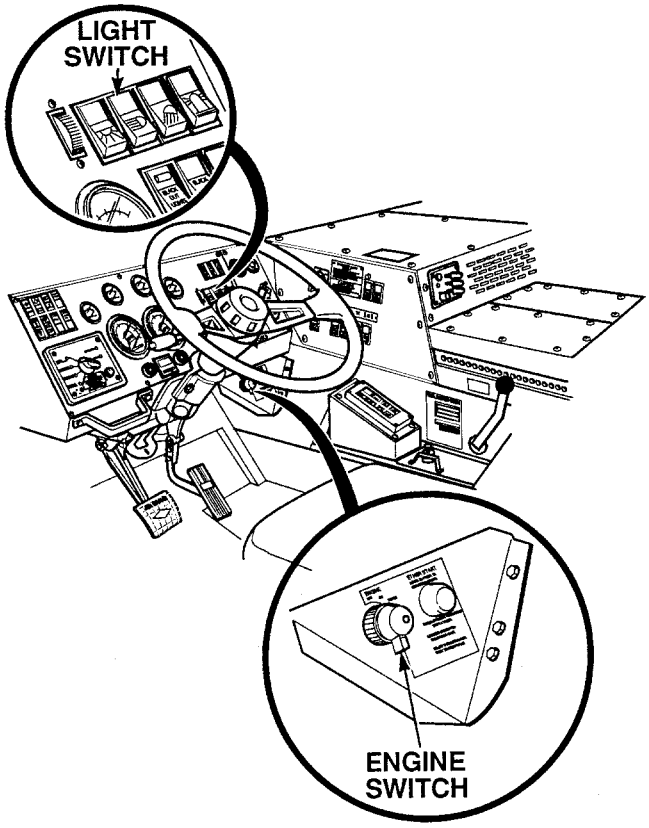
VOLTAGE TEST

(1) Disconnect auxiliary light bar 24 vdc (12 terminal) cable from rear crossbrace connector.
(2) Set multimeter select switch to volts DC.
(3) Connect positive (+) multimeter lead to terminal E on trailer end connector.
(4) Connect negative (–) multimeter lead to terminal D on trailer end connector.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
    (a) If 22 to 28 vdc are not present, perform Steps (6) and (7) below and replace auxiliary light bar 24 vdc cable, (Para 4-30).
    (b) If 22 to 28 vdc are present, auxiliary light bar 24 vdc cable is OK.
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.
(8) Connect auxiliary light bar 24 vdc cable to rear crossbrace connector.



11. AUXILIARY LIGHT BAR MARKER LIGHTS AND TAILLIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe auxiliary light bar marker lights and taillights.
   (a) If auxiliary light bar marker lights and taillights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If auxiliary light bar marker lights and taillights operate, fault has been corrected.
(2) Turn off LIGHT switch.
(3) Turn OFF ENGINE switch.

4-14. 12 VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES.

This paragraph covers 12 volt electrical system troubleshooting procedures. The 12 Volt Electrical System Fault Index, Table 4-4, lists faults for the 12 volt electrical system of the trailer. Refer to schematic, Figure FO-1 when performing tests and corrective actions.

Table 4-4. 12 Volt Electrical System Fault Index

4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

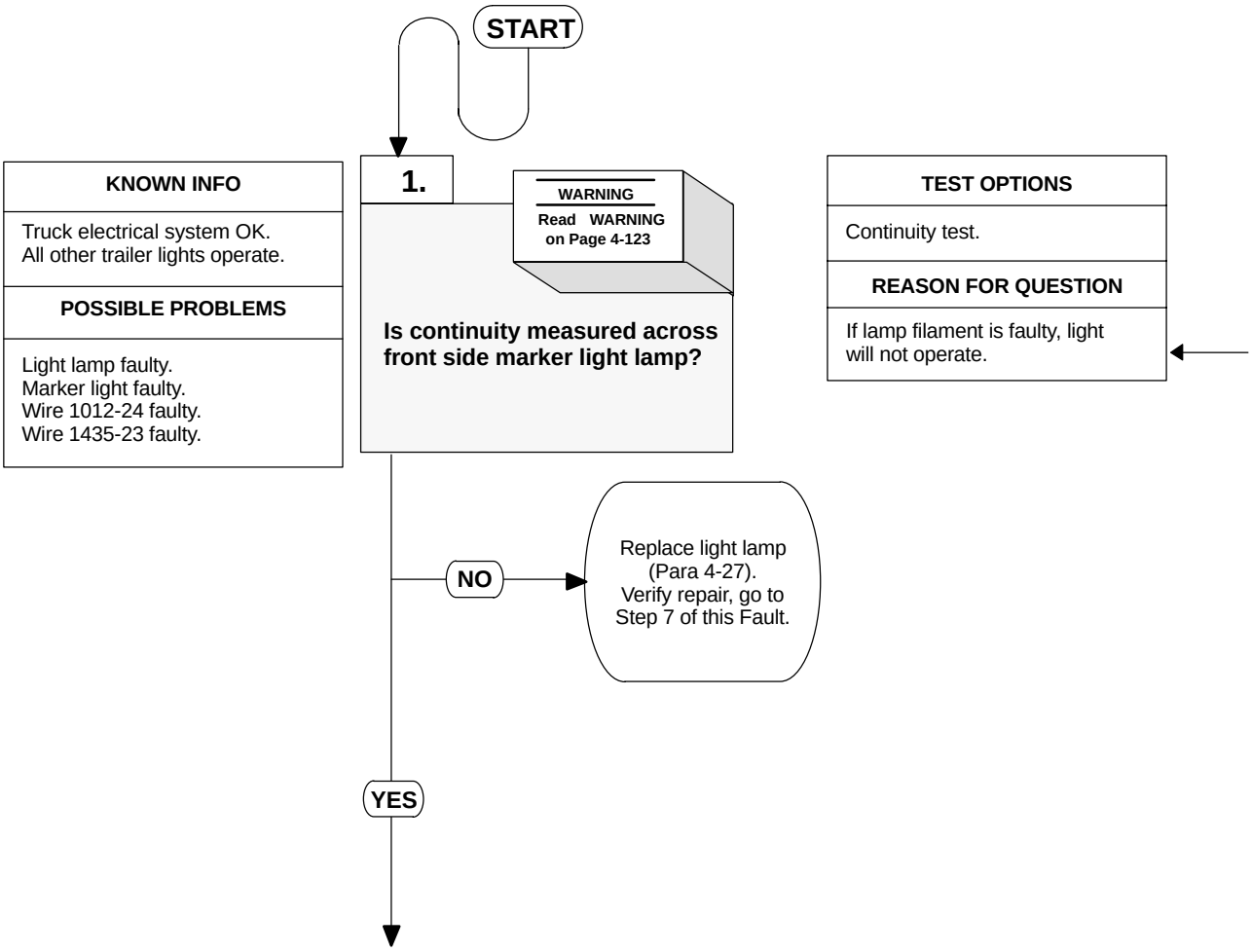
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)

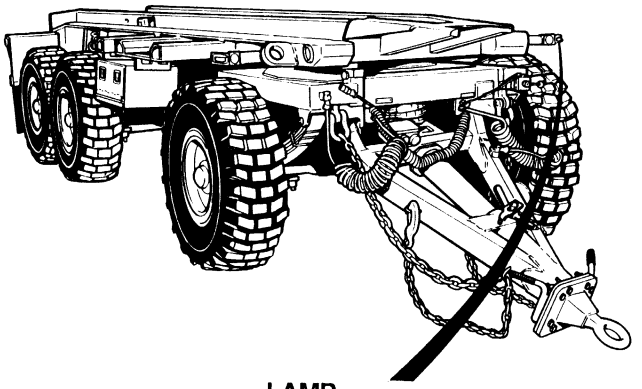
NOTE

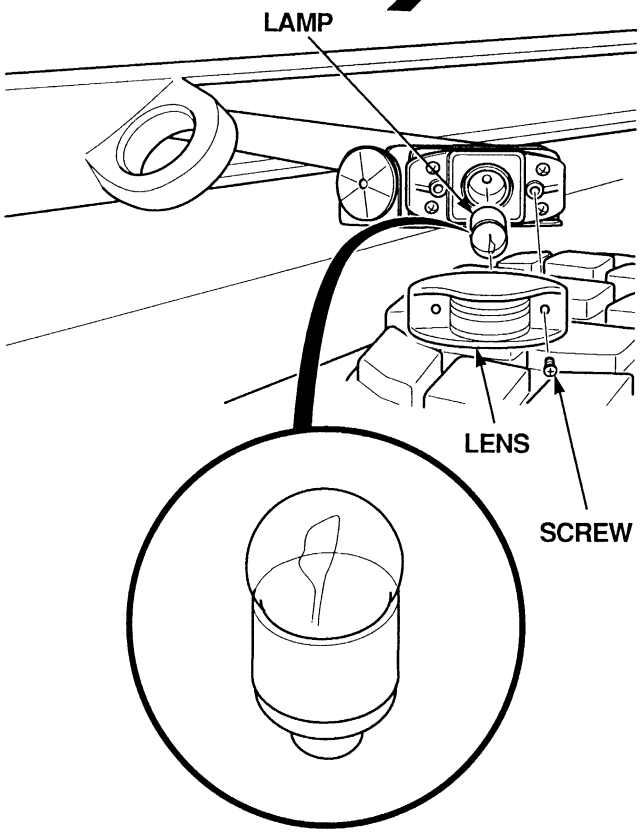
- The following troubleshooting procedures cover the left front side marker light, but they apply to both front side marker light lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

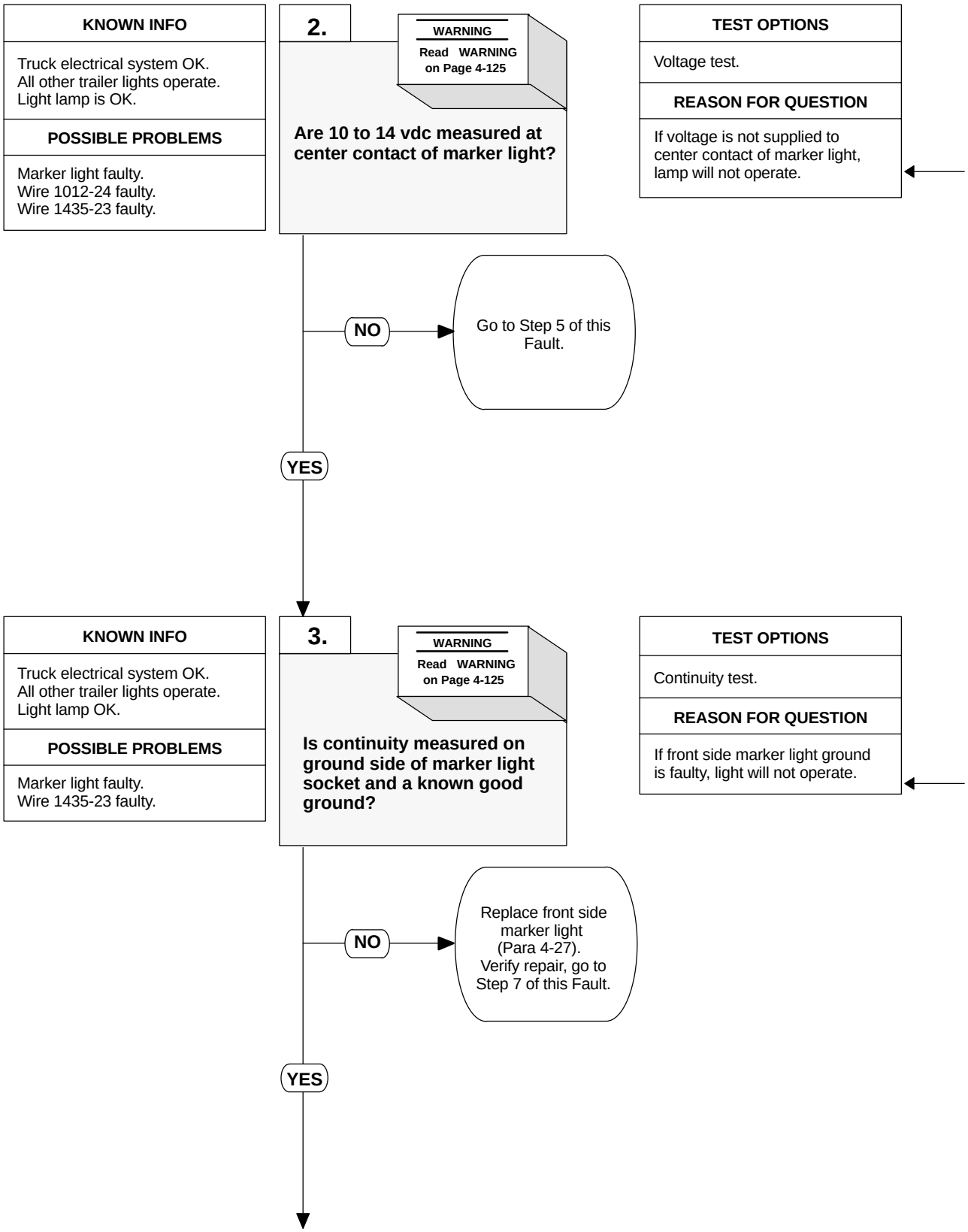




CONTINUITY TEST

(1) Remove two screws and marker light lens.
(2) Remove marker light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across lamp?
  (a) If there is no continuity, replace marker light lamp (Para 4-27).
  (b) If there is continuity, light lamp is OK.

1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).

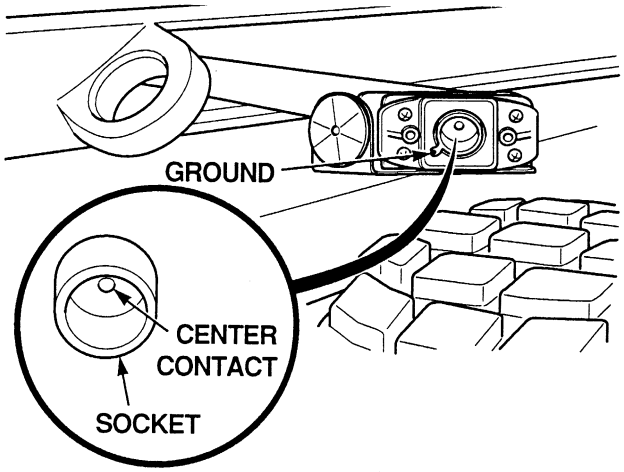


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

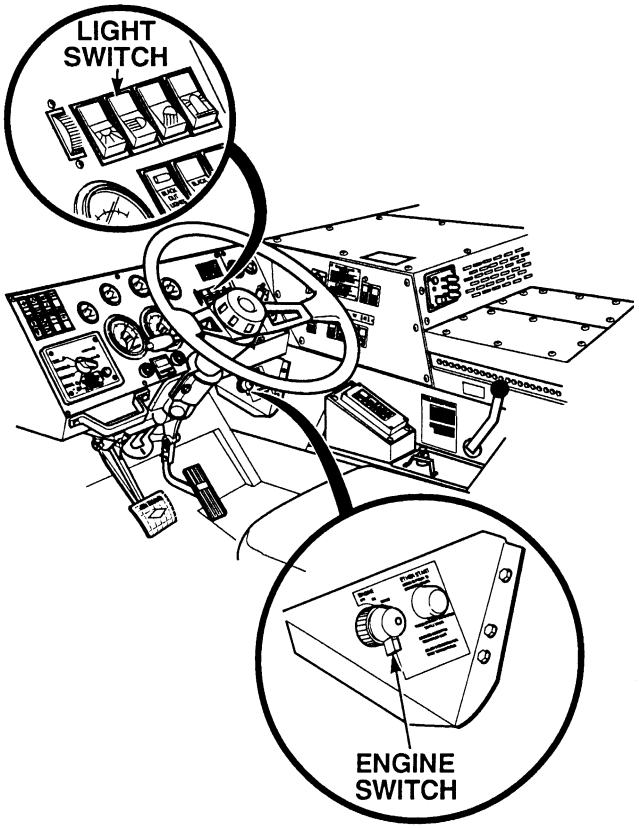
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If there are not 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step (5) of this fault.
  (b) If there are 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step (3) of this Fault.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.

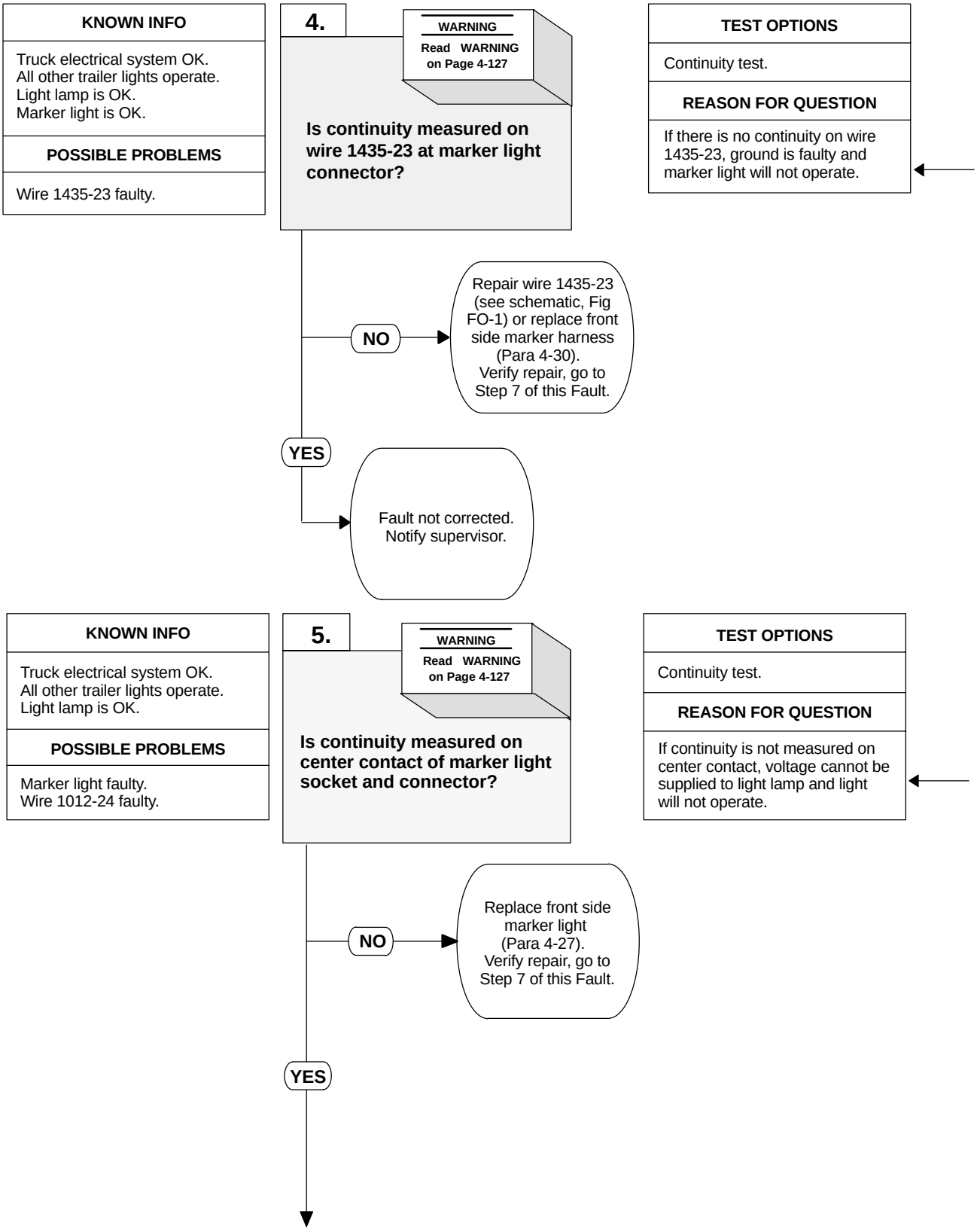


CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is continuity measured between ground side of marker light socket and a known good ground?
  (a) If there is no continuity, replace front marker light (Para 4-27).
  (b) If there is continuity, front marker light is OK.



1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).

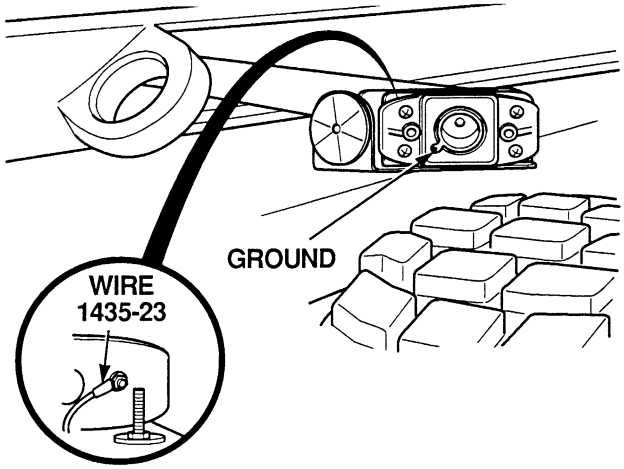


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

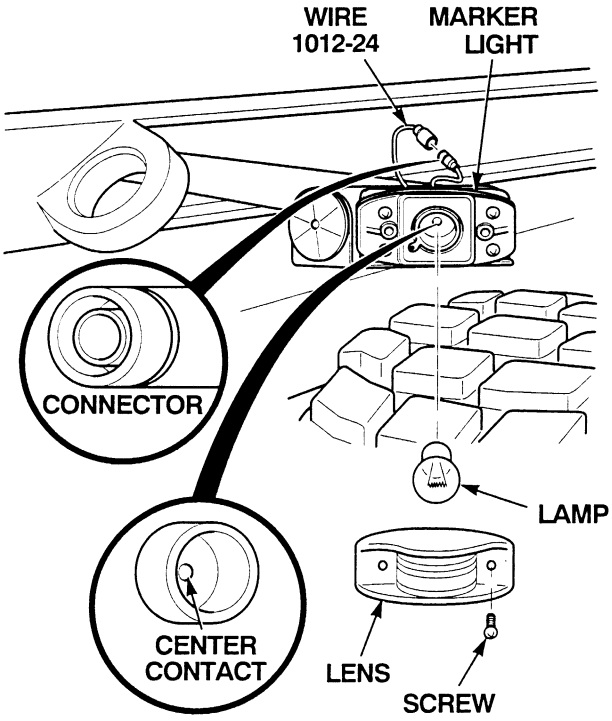
CONTINUITY TEST

(1) Is there continuity between wire 1435-23 and a known good ground?
   (a) If there is no continuity, repair wire 1435-23 (see schematic, Fig FO-1) or replace front side marker harness (Para 4-30).
   (b) If there is continuity, wire 1435-23 is OK.

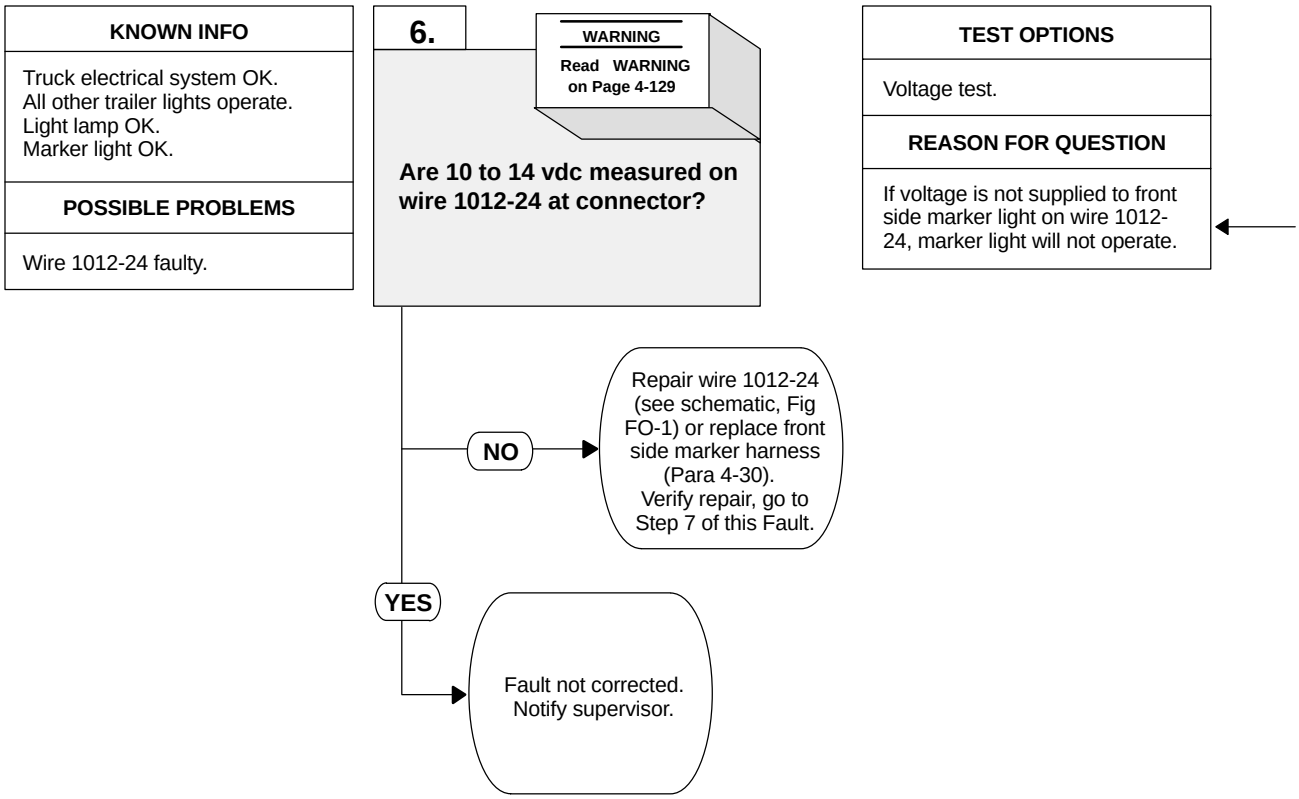


CONTINUITY TEST

(1) Disconnect wire 1012-24 connector.
(2) Is there continuity between front side marker light socket center contact and connector?
   (a) If there is no continuity, replace front side marker light (Para 4-27).
   (b) If there is continuity, front side marker light is OK.
(3) Install light lamp.
(4) Install front side marker light lens and two screws.



1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).

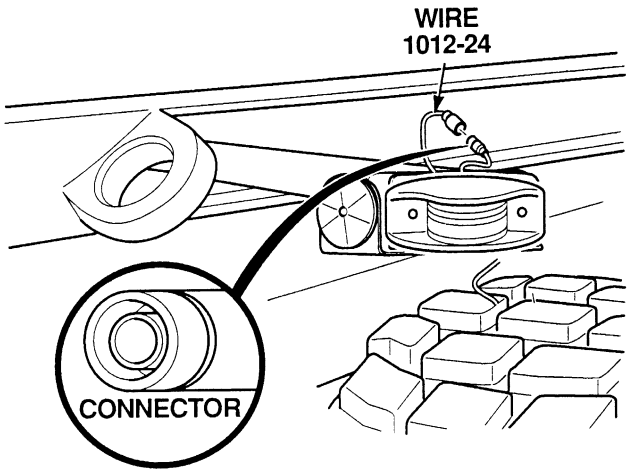


WARNING

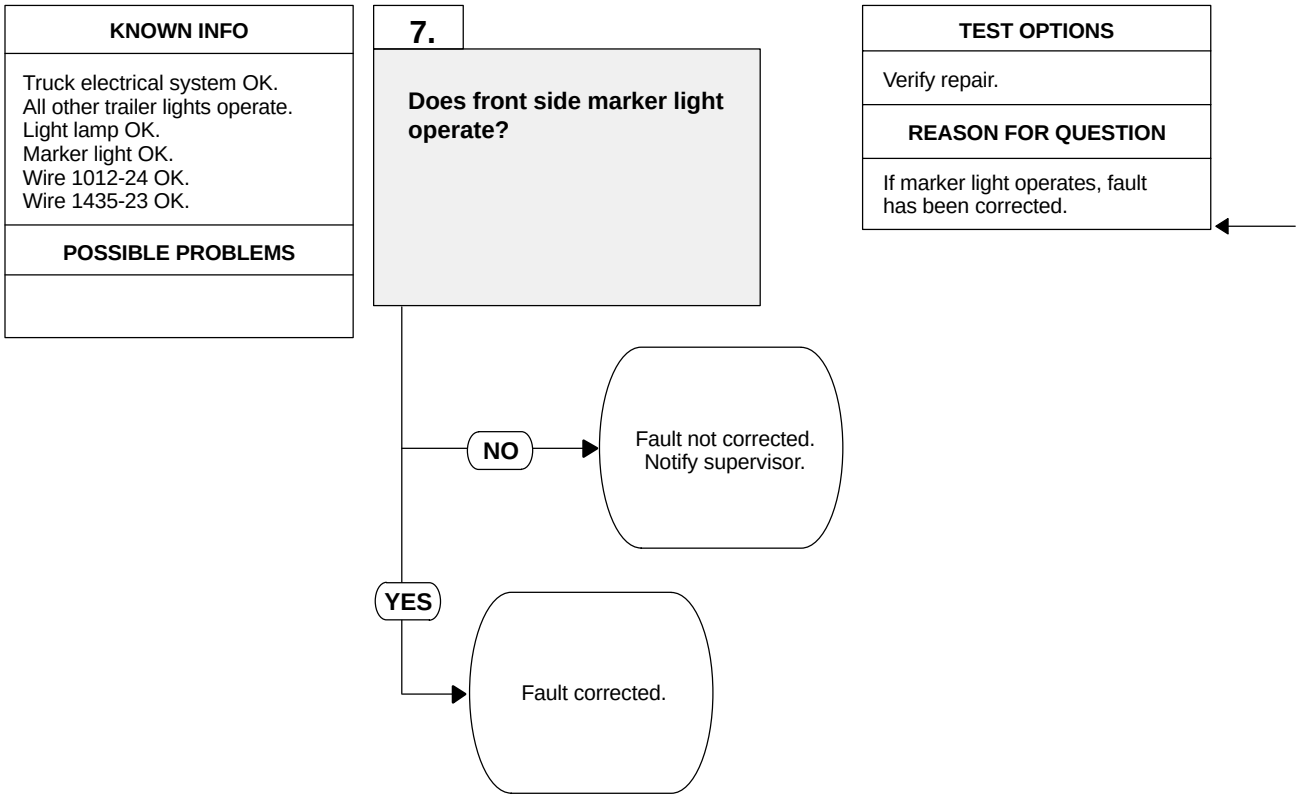
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1012-24 connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
    (a) If 10 to 14 vdc is not present, perform Steps (5) and (6) below, and repair wire 1012-24 (see schematic, Fig FO-1) or replace left front side marker harness (Para 4-30).
    (b) If 10 to 14 vdc is present, wire 1012-24 is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1012-24 connector.

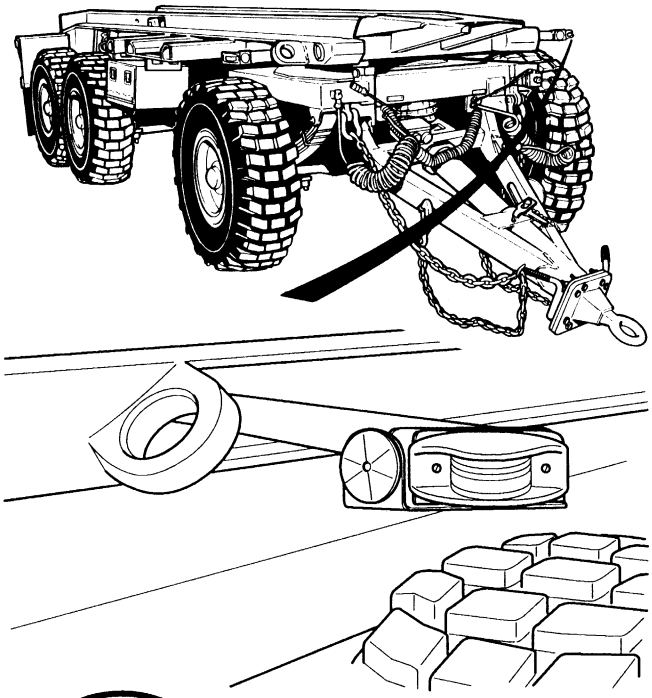


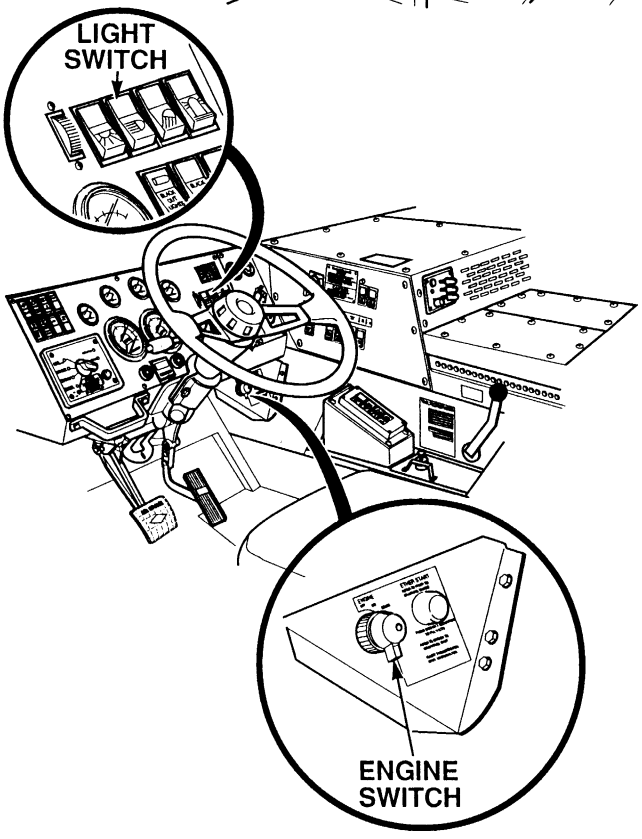
1. FRONT SIDE MARKER LIGHT DOES NOT OPERATE (CONT).



VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe front side marker light (TM 9-2320-364-10).
   (a) If front side marker light does not operate, fault not corrected. Perform Step (2) below, and notify supervisor.
   (b) If front side marker light operates, Fault has been corrected.
(2) Turn off lights and turn OFF ENGINE switch.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

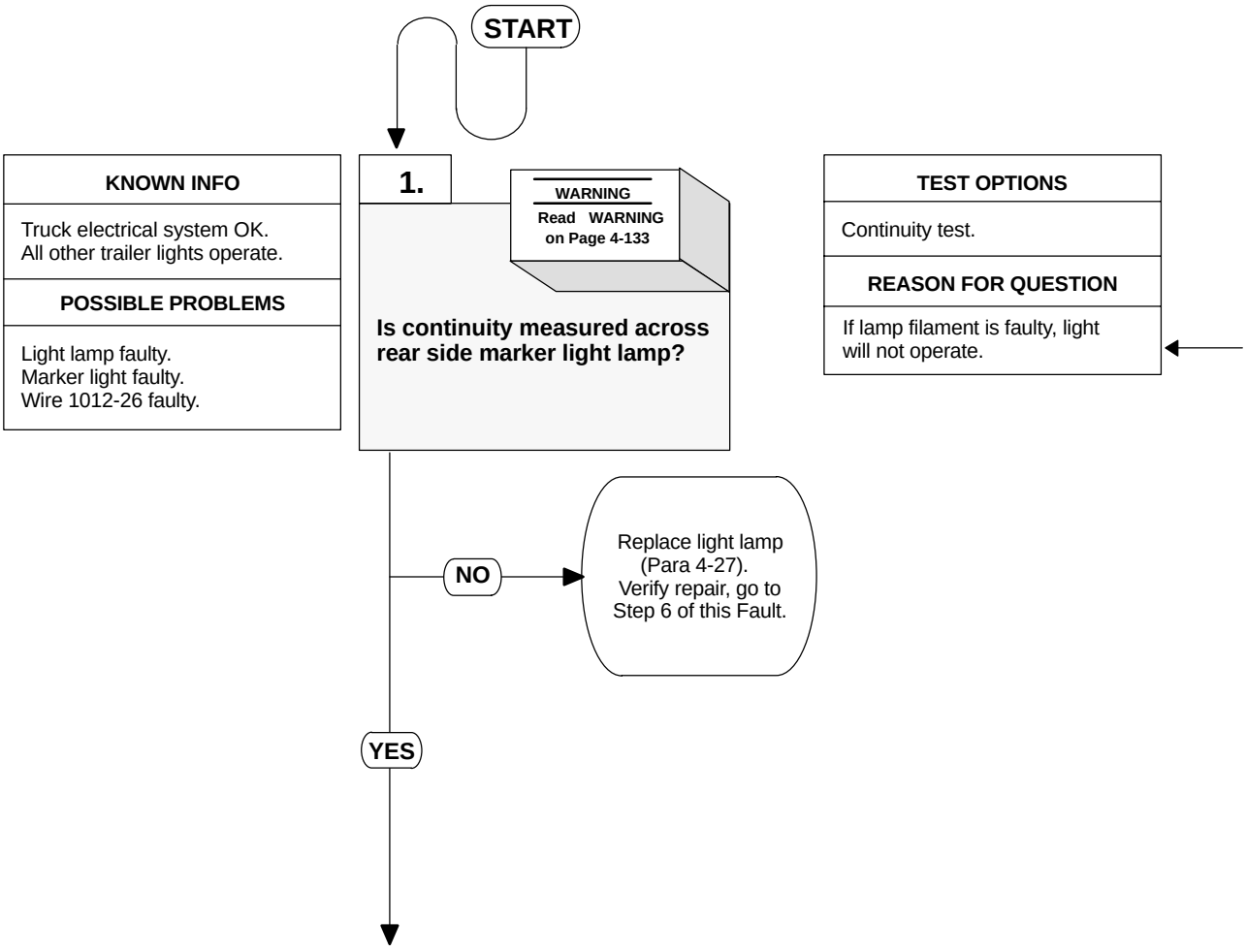
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)

NOTE

- The following troubleshooting procedures cover the left rear side marker light, but they apply to both rear side marker lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

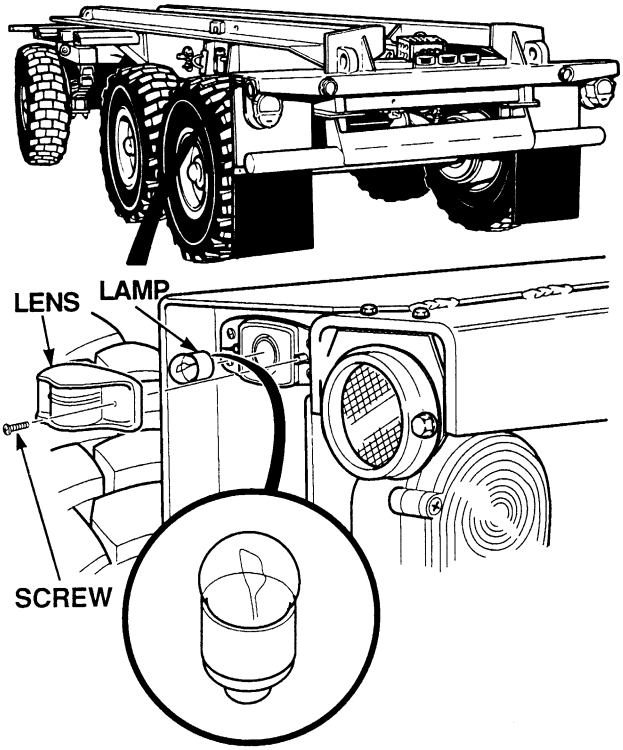


WARNING

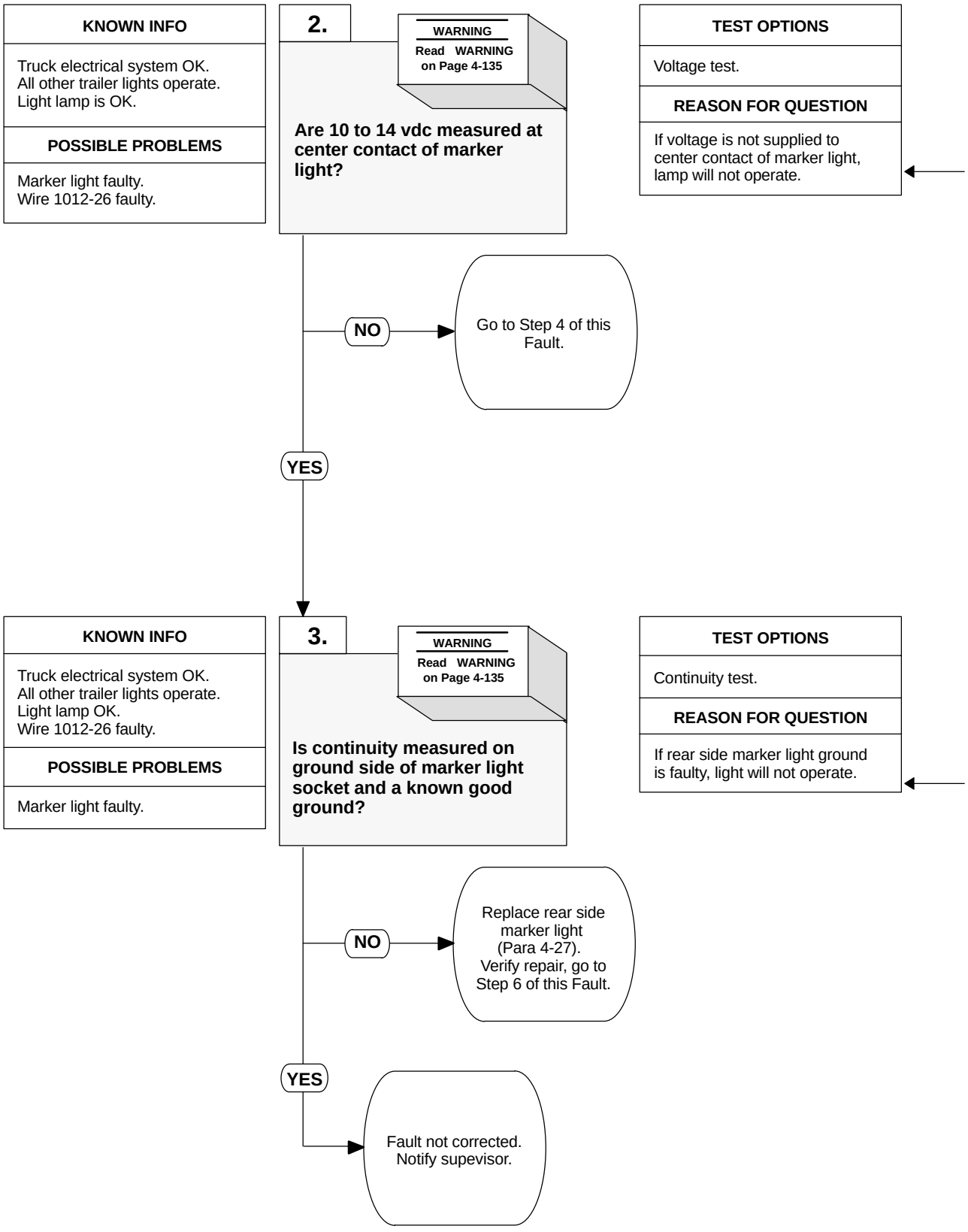
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Remove two screws and marker light lens.
(2) Remove marker light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp?
  (a) If there is no continuity, replace side marker light lamp (Para 4-27).
  (b) If there is continuity light lamp is OK.



2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

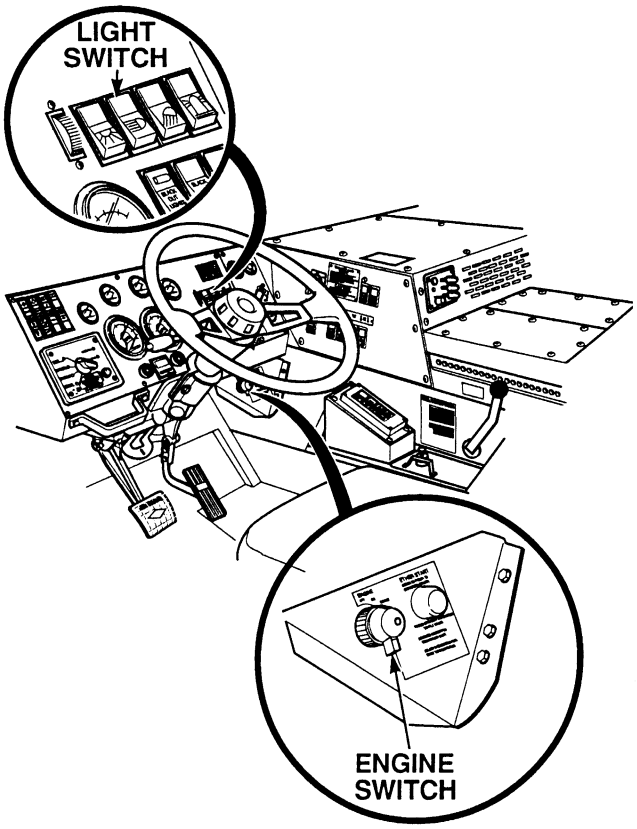


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

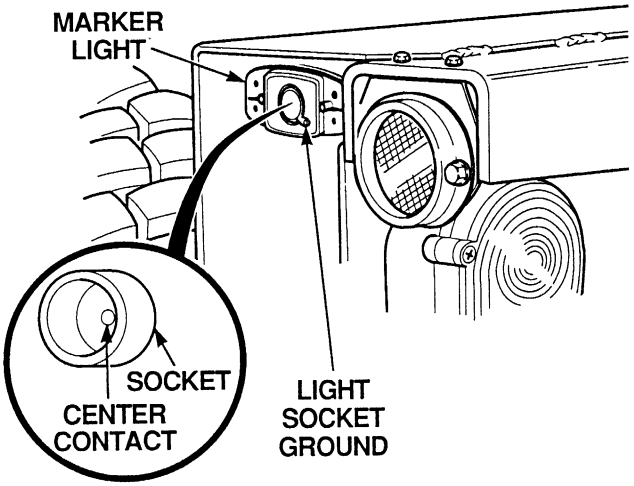
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If there are not 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step 4 of this fault.
  (b) If there are 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step 3 of this fault.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.

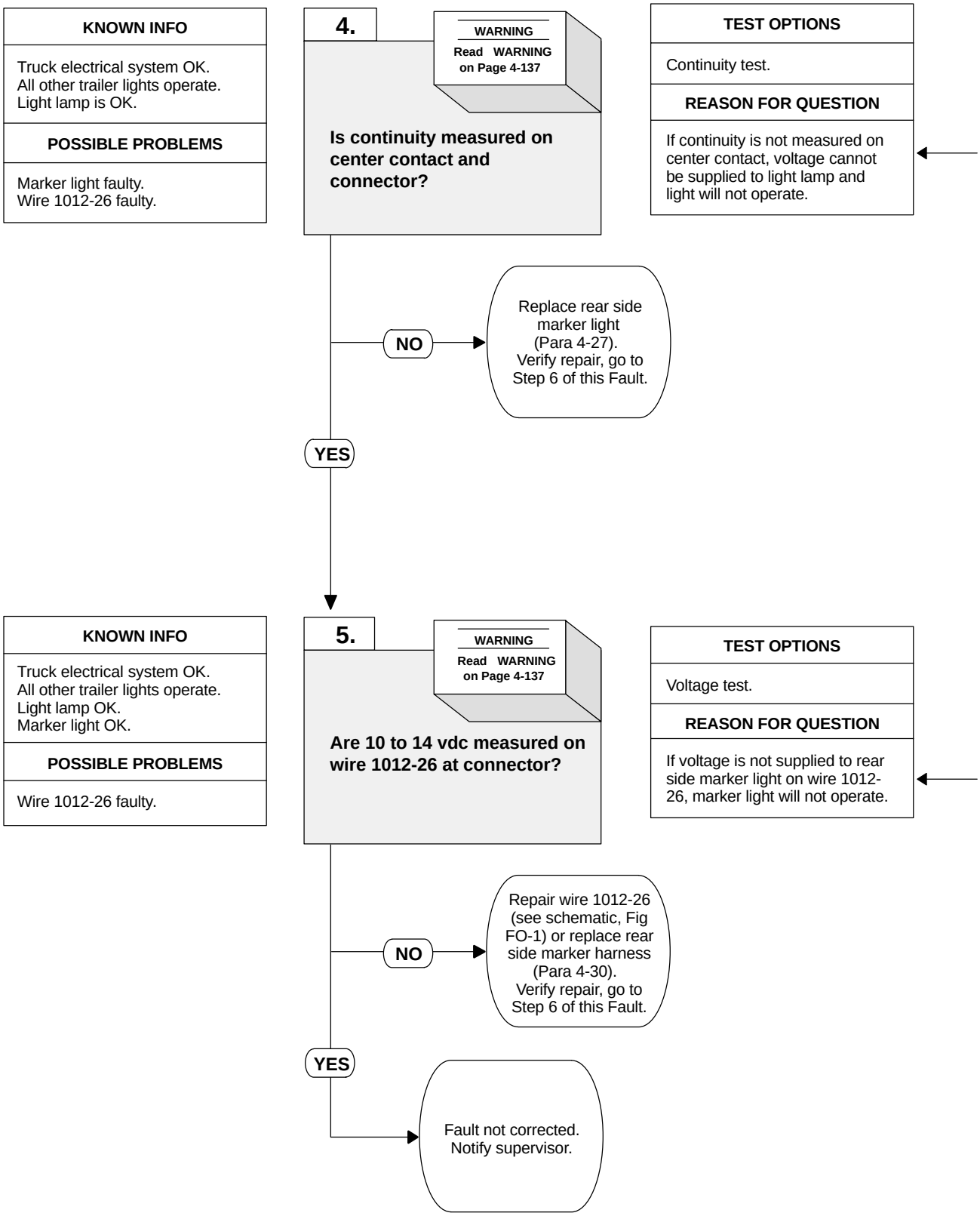


CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is continuity measured between ground side of marker light socket and a known good ground?
  (a) If there is no continuity, replace rear side marker light (Para 4-27).
  (b) If there is continuity, rear side marker light is OK. Fault not corrected. Notify supervisor.



2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

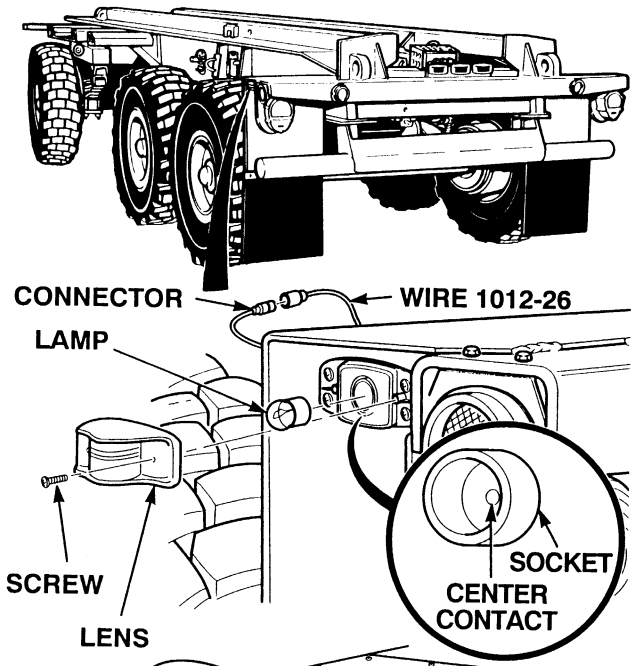


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

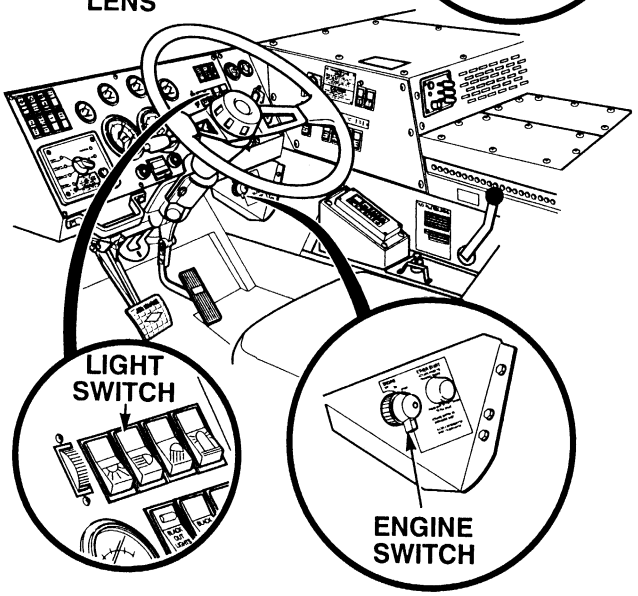
CONTINUITY TEST

(1) Disconnect wire 1012-26 connector.
(2) Is there continuity between rear side marker light socket center contact and connector?
  (a) If there is no continuity, replace rear side marker light (Para 4-27).
  (b) If there is continuity, rear side marker light is OK.
(3) Install light lamp.
(4) Install rear side marker light lens and two screws.

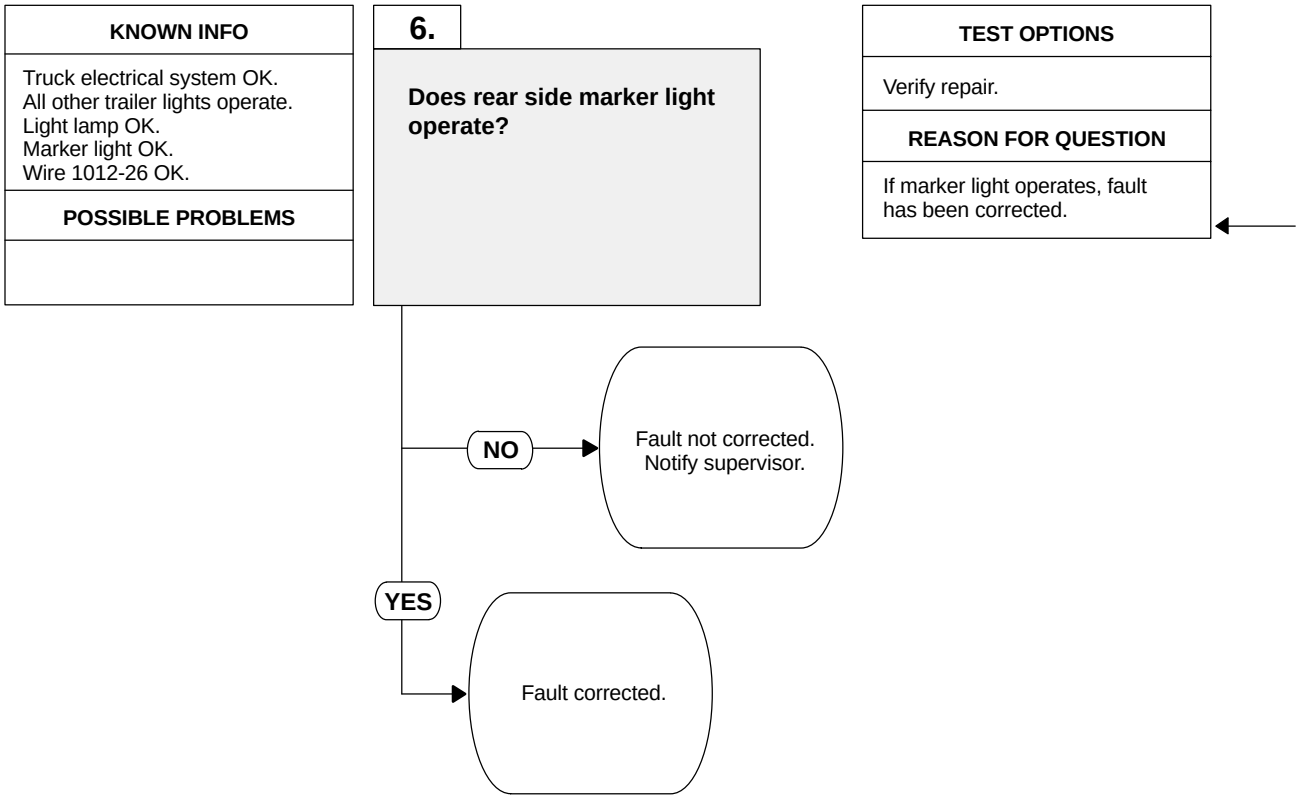


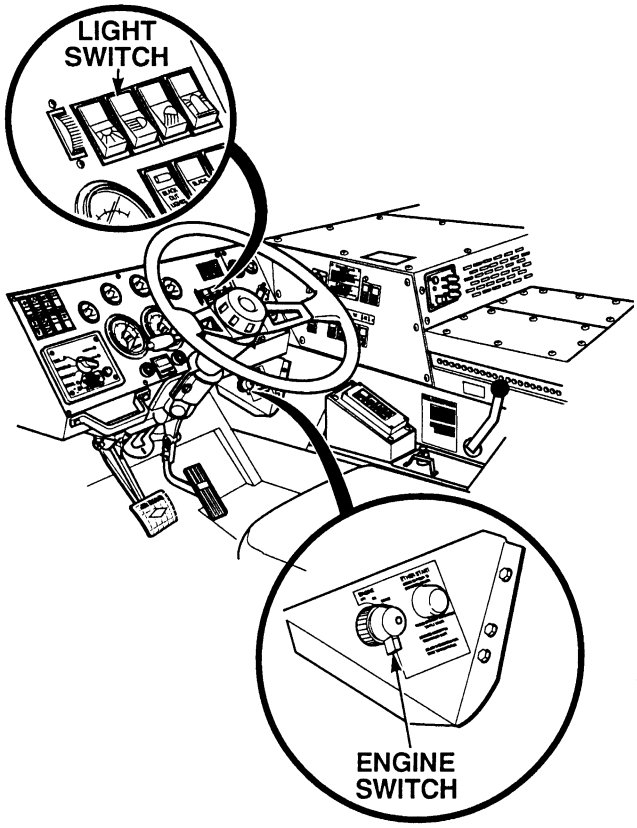
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1012-26 connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc is not present, perform Steps (5) and (6) below, and repair wire 1012-26 (see schematic, Fig FO-1) or replace left rear side marker harness (Para 4-30).
  (b) If 10 to 14 vdc is present, wire 1012-26 is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1012-26 connector.



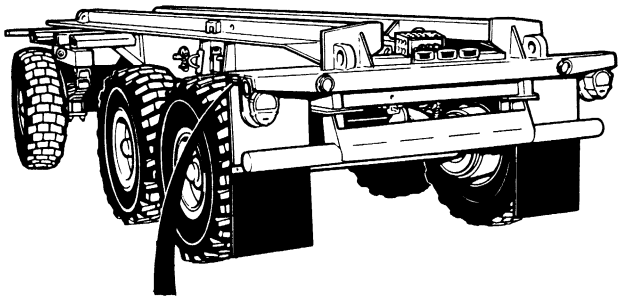
2. REAR SIDE MARKER LIGHT(S) DO NOT OPERATE (CONT).

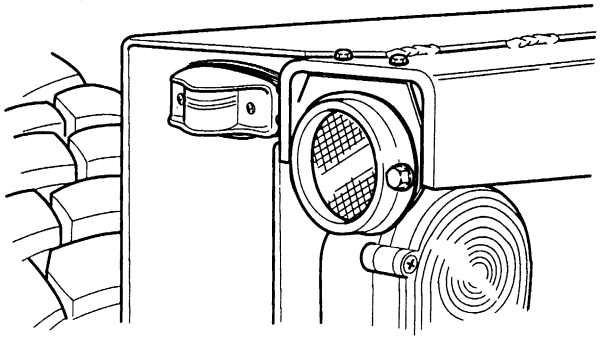




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear side marker light (TM 9-2320-364-10).
   (a) If rear side marker light does not operate, fault has not been corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If rear side marker light operates, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

3. REAR MARKER LIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

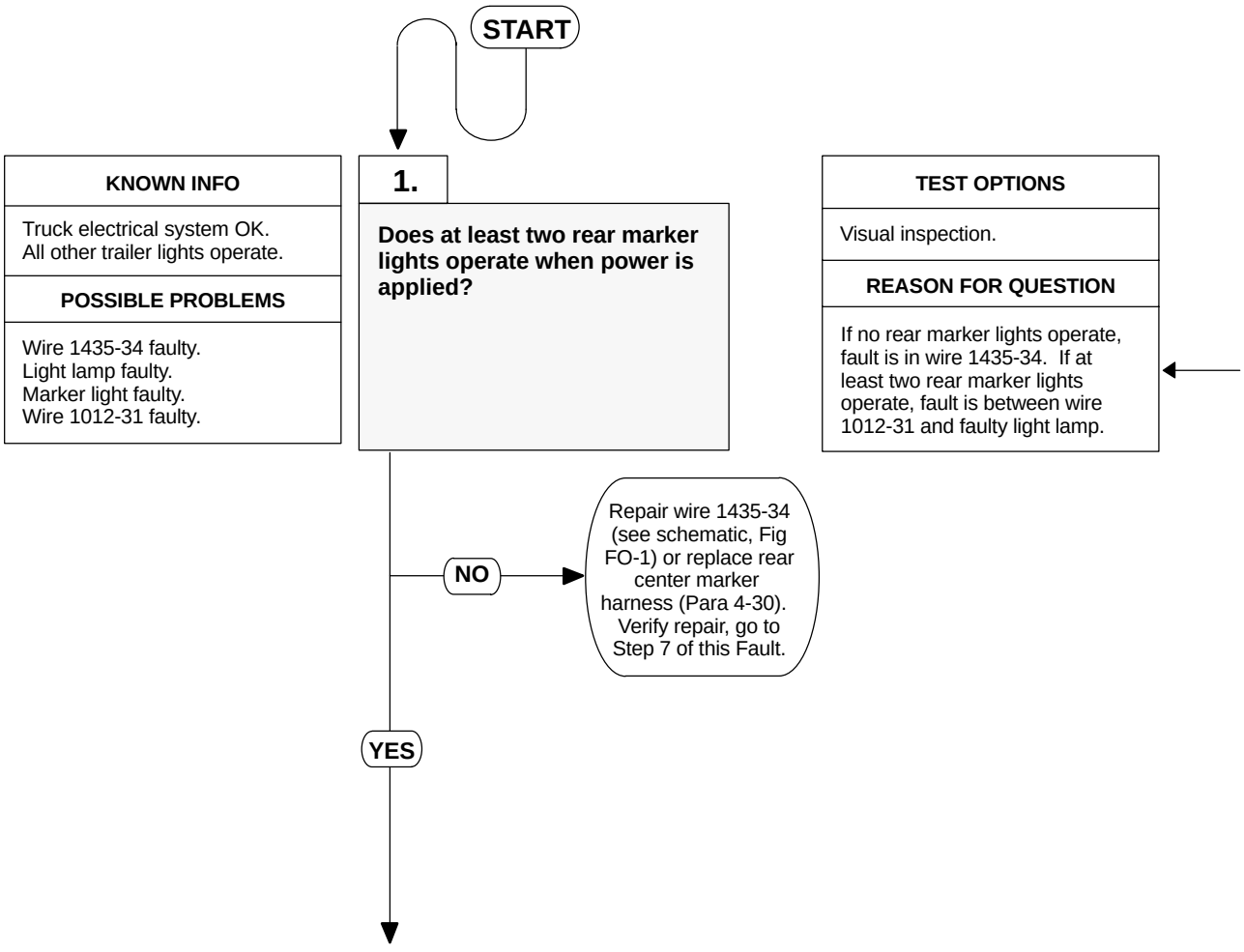
Personnel Required
Two

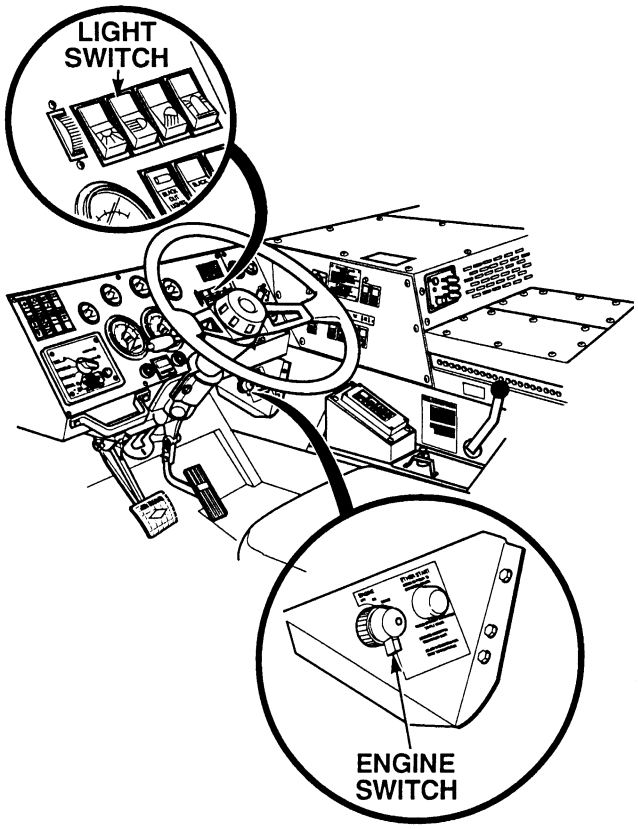
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)

NOTE

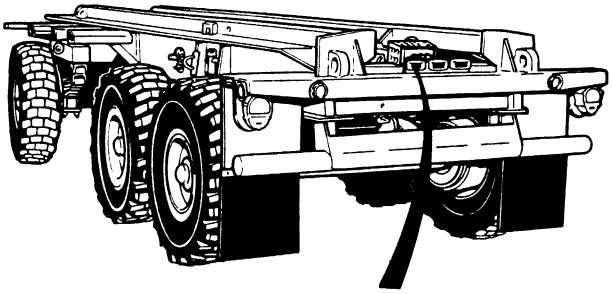
- The following troubleshooting procedures cover one rear marker light, but they apply to all three rear marker lights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

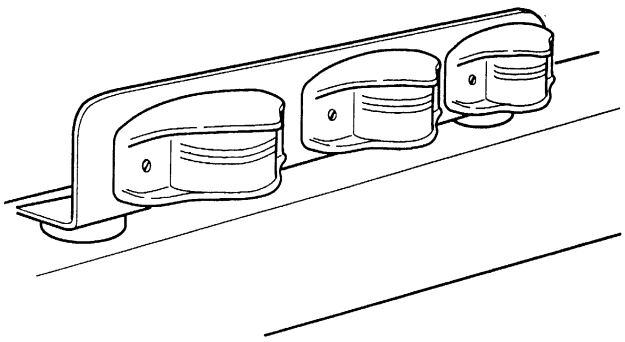




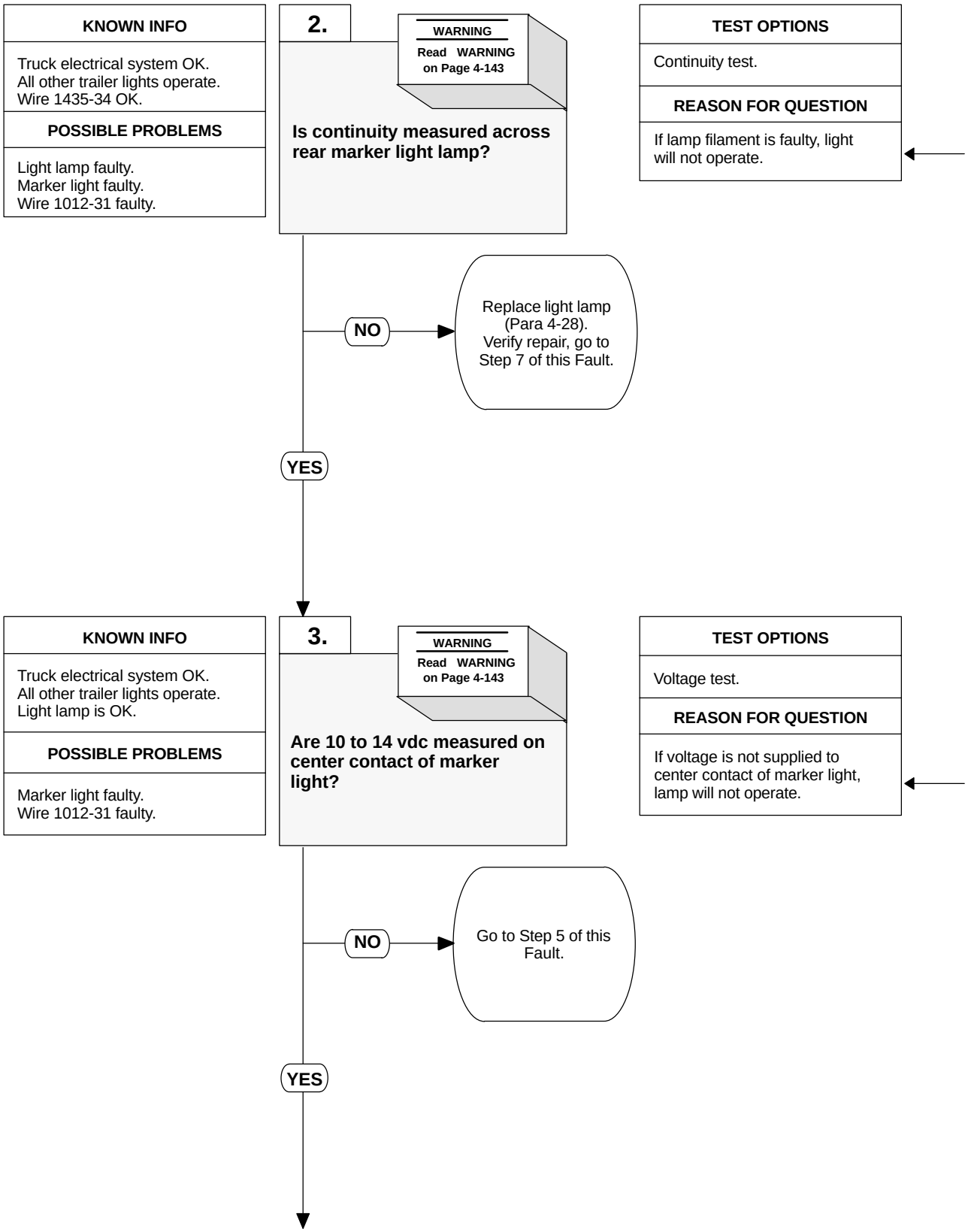
VISUAL INSPECTION

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear marker lights (TM 9-2320-364-10).
   (a) If all rear marker lights do not operate, perform Steps (2) and (3) below, and repair wire 1435-34 (see schematic, Fig FO-1) or replace rear center marker harness (Para 4-30).
   (b) If two rear marker lights operate, perform Steps (2) and (3) below and go to Step (2) of this Fault.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

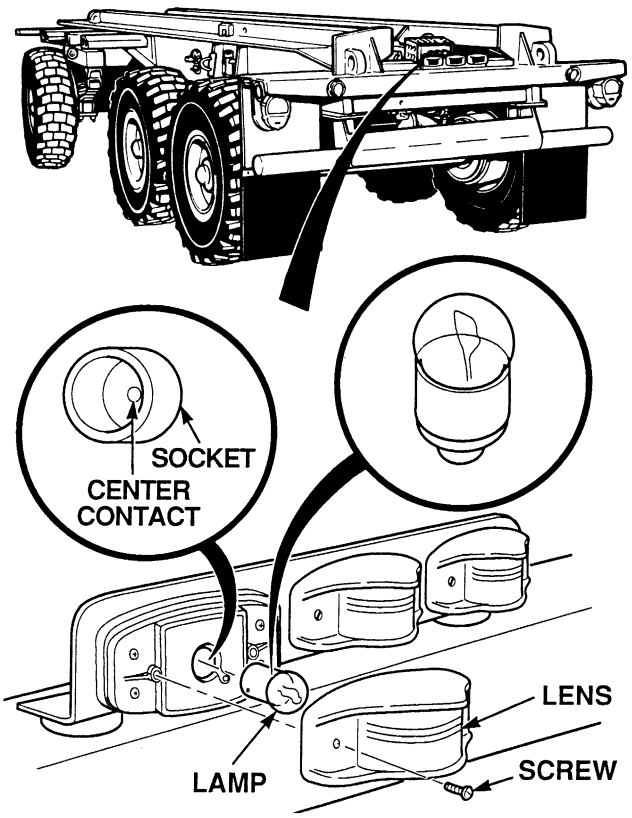


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

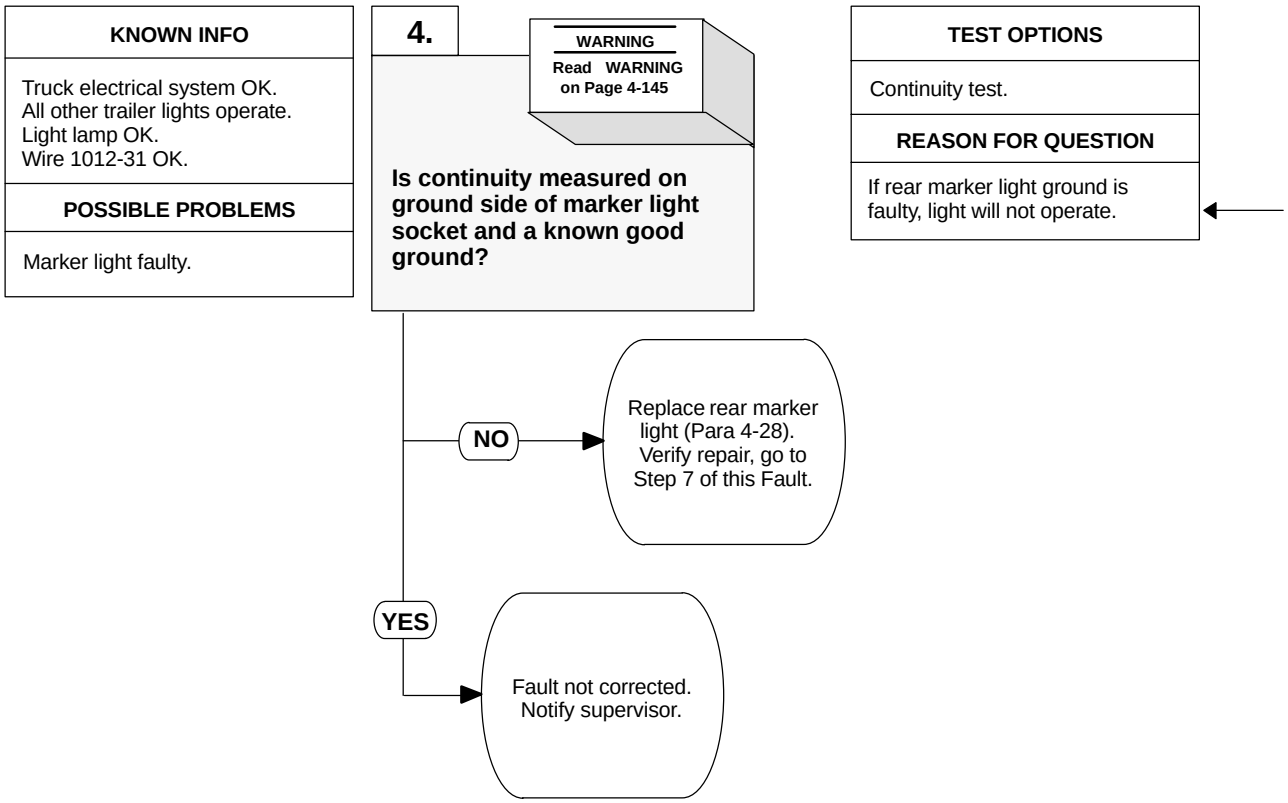
(1) Remove two screws and marker light lens.
(2) Remove marker light lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across light lamp.
  (a) If there is no continuity, replace marker light lamp (Para 4-28).
  (b) If there is continuity, marker light lamp is OK.

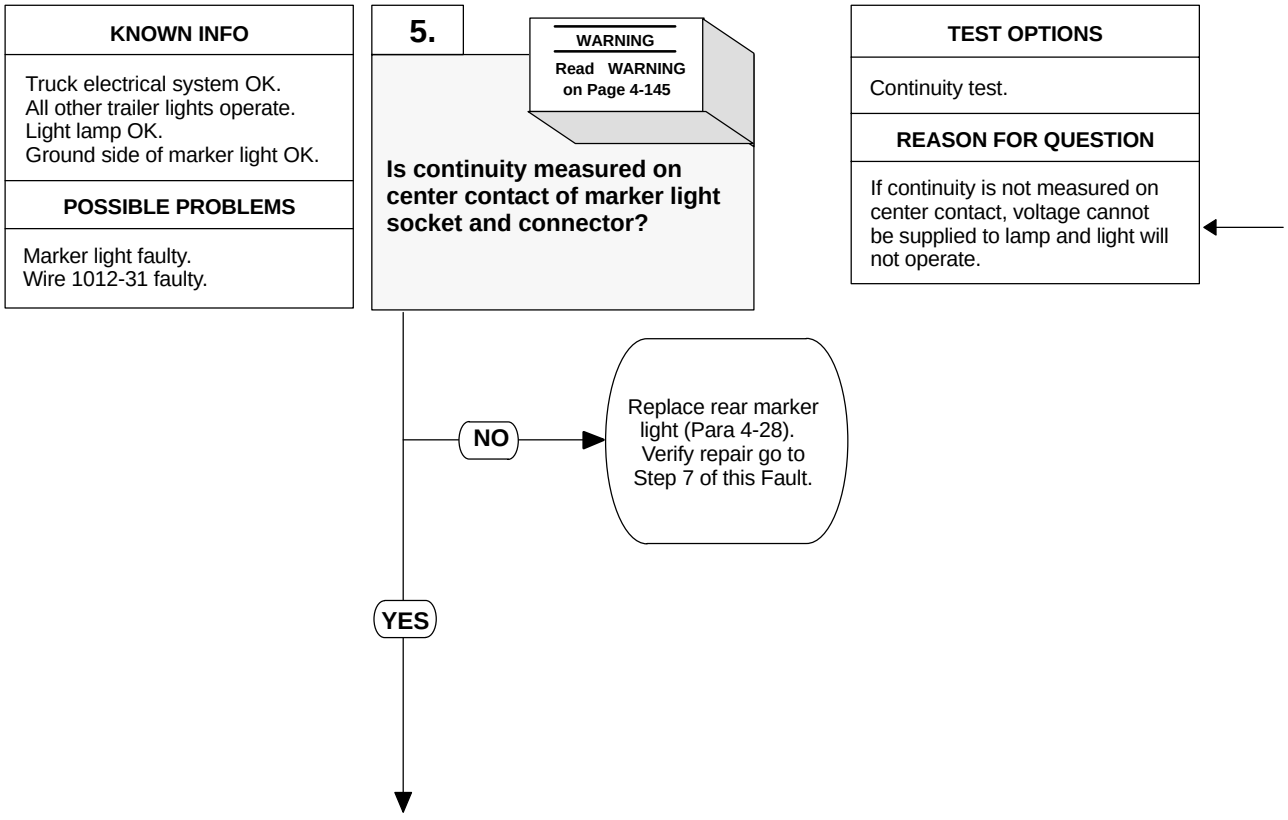


VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If there are not 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step (5) of this fault.
  (b) If there are 10 to 14 vdc present, perform Step (5) and (6) below and go to Step (4) of this fault.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.

3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).



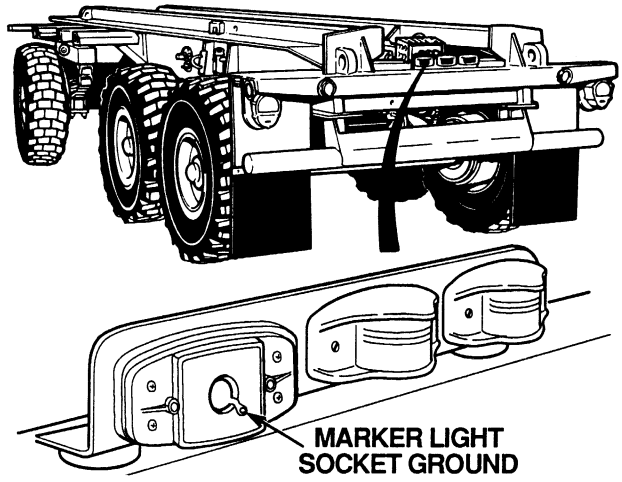


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

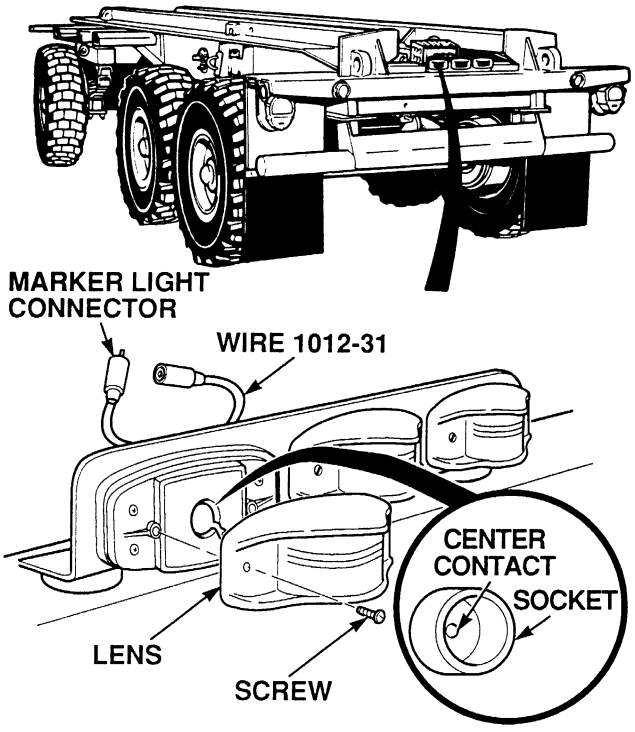
CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is continuity measured between ground side of marker light socket and a known good ground.
  (a) If there is no continuity, replace rear marker light (Para 4-28).
  (b) If there is continuity, rear marker light is OK. Fault not corrected. Notify supervisor.



CONTINUITY TEST

(1) Disconnect wire 1012-31 connector.
(2) Is there continuity between connector and center contact and connector?
  (a) If there is no continuity, replace rear marker light (Para 4-28).
  (b) If there is continuity, marker light is OK.
(3) Install light lamp.
(4) Install marker light lens and two screws.



3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

KNOWN INFO
Truck electrical system OK. All other trailer lights operate. Light lamp OK. Marker light OK.
POSSIBLE PROBLEMS
Wire 1012-31 faulty.

6.

WARNING
Read WARNING on Page 4-147

Are 10 to 14 vdc measured on wire 1012-31 at connector?

TEST OPTIONS
Voltage test.
REASON FOR QUESTION
If voltage is not supplied to rear marker light on wire 1012-31, marker light will not operate.

NO → Repair wire 1012-31 (see schematic, Fig FO-1) or replace rear center marker harness (Para 4-30). Verify repair, go to Step 7 of this Fault.

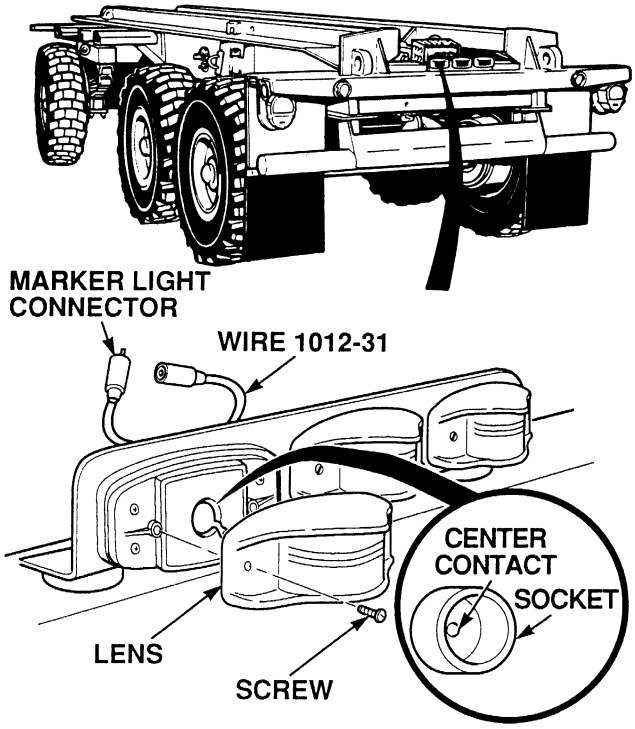
YES → Fault not corrected. Notify supervisor.

WARNING

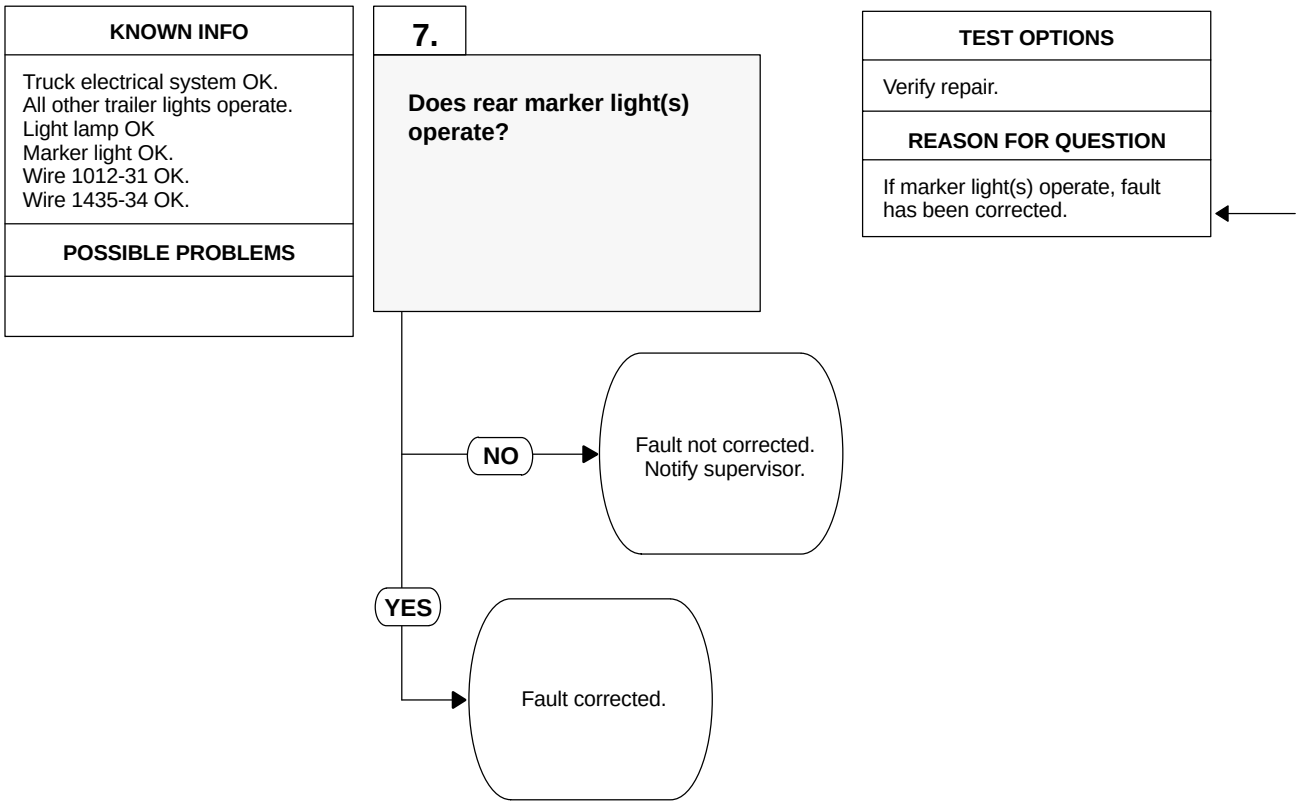
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

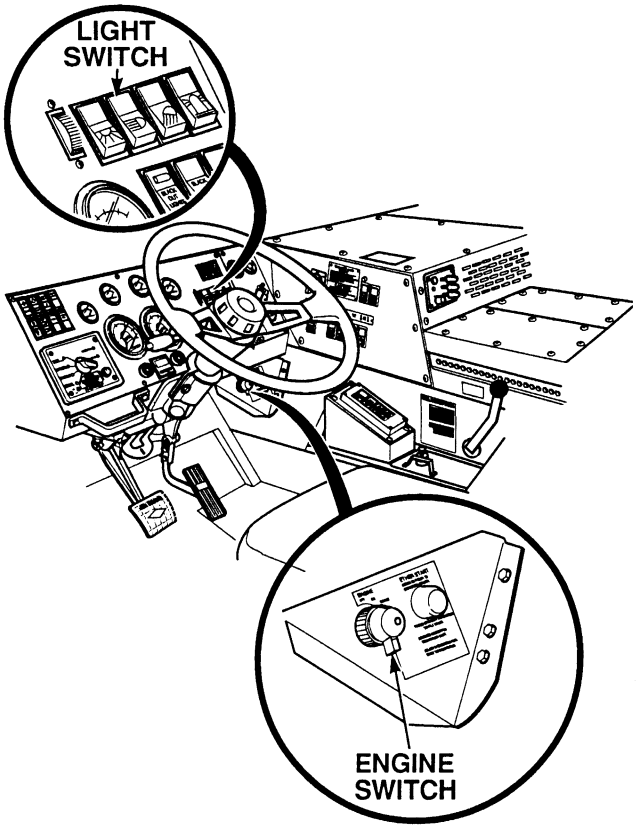
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1012-31 connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc is not present, perform Steps (5) and (6) below, and repair wire 1012-31 (see schematic, Fig FO-1) or replace rear center marker harness (Para 4-30).
  (b) Fault not corrected, perform Steps (5) through (7) below and notify supervisor.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1012-31 connector.



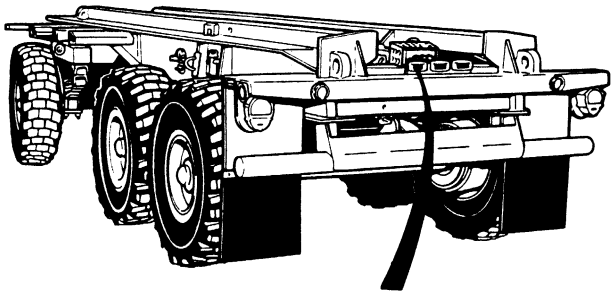
3. REAR MARKER LIGHT(S) DO NOT OPERATE (CONT).

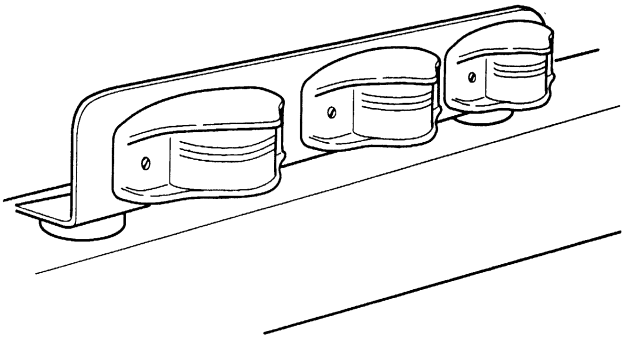




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear marker light (TM 9-2320-364-10).
  (a) If rear side marker light does not operate, fault not corrected. Perform Steps (2) and (3) below, and notify supervisor.
  (b) If rear side marker light operates, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

4. TAILLIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

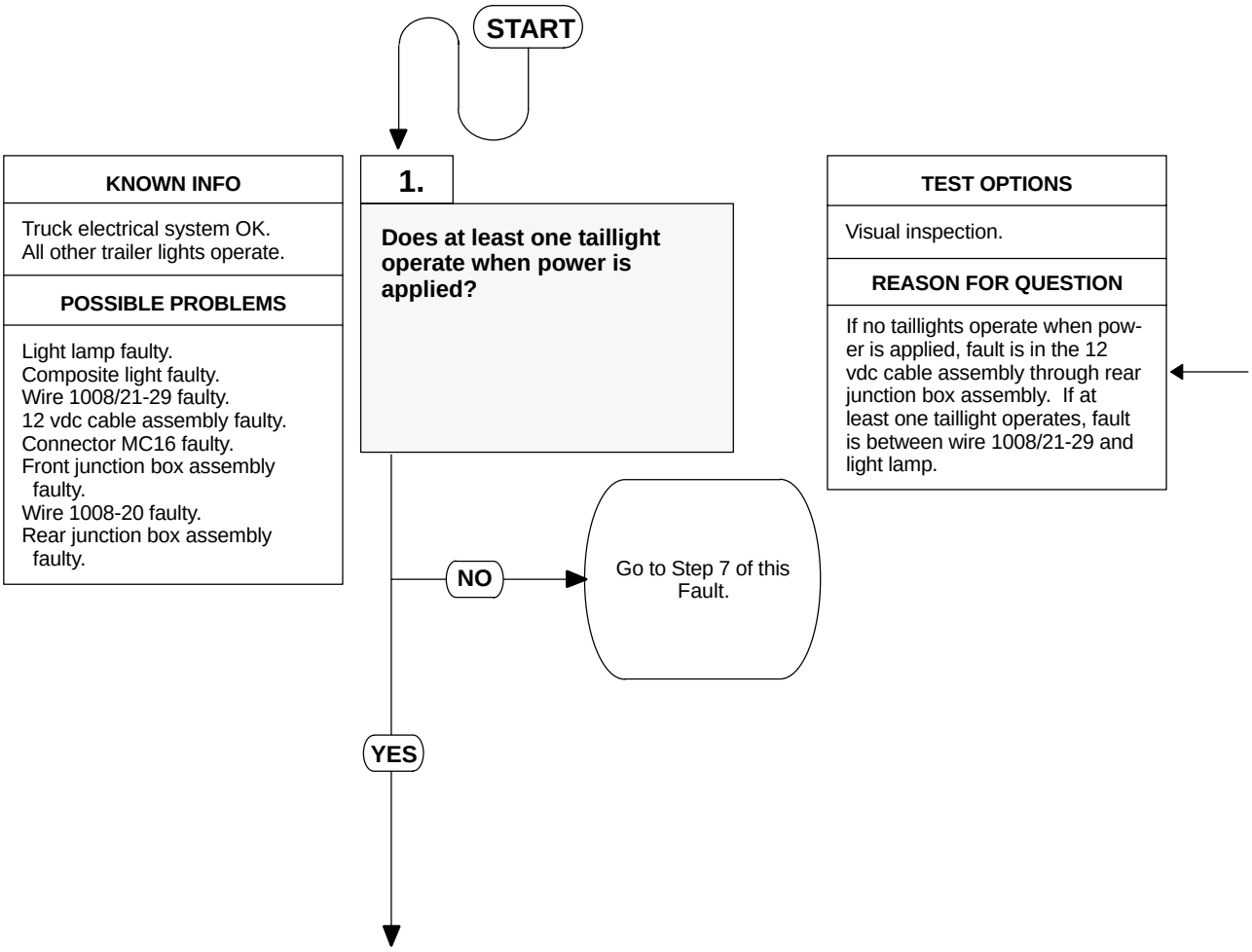
Personnel Required
Two

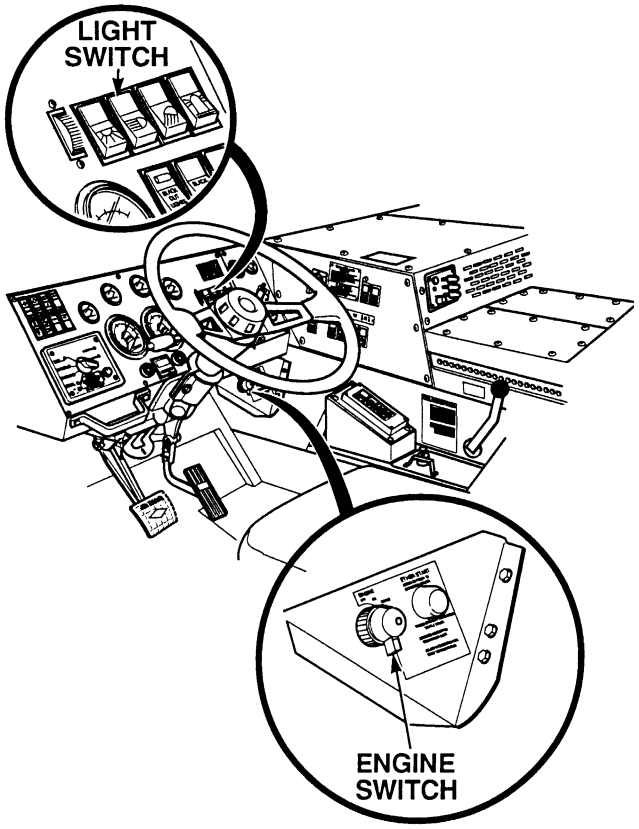
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE

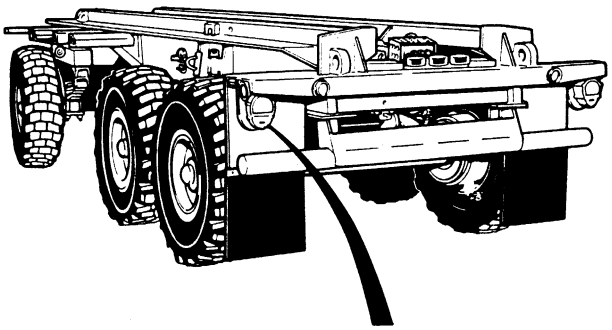
- The following troubleshooting procedures cover the left taillight, but they apply to both taillights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

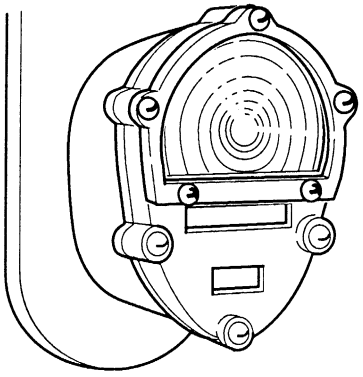




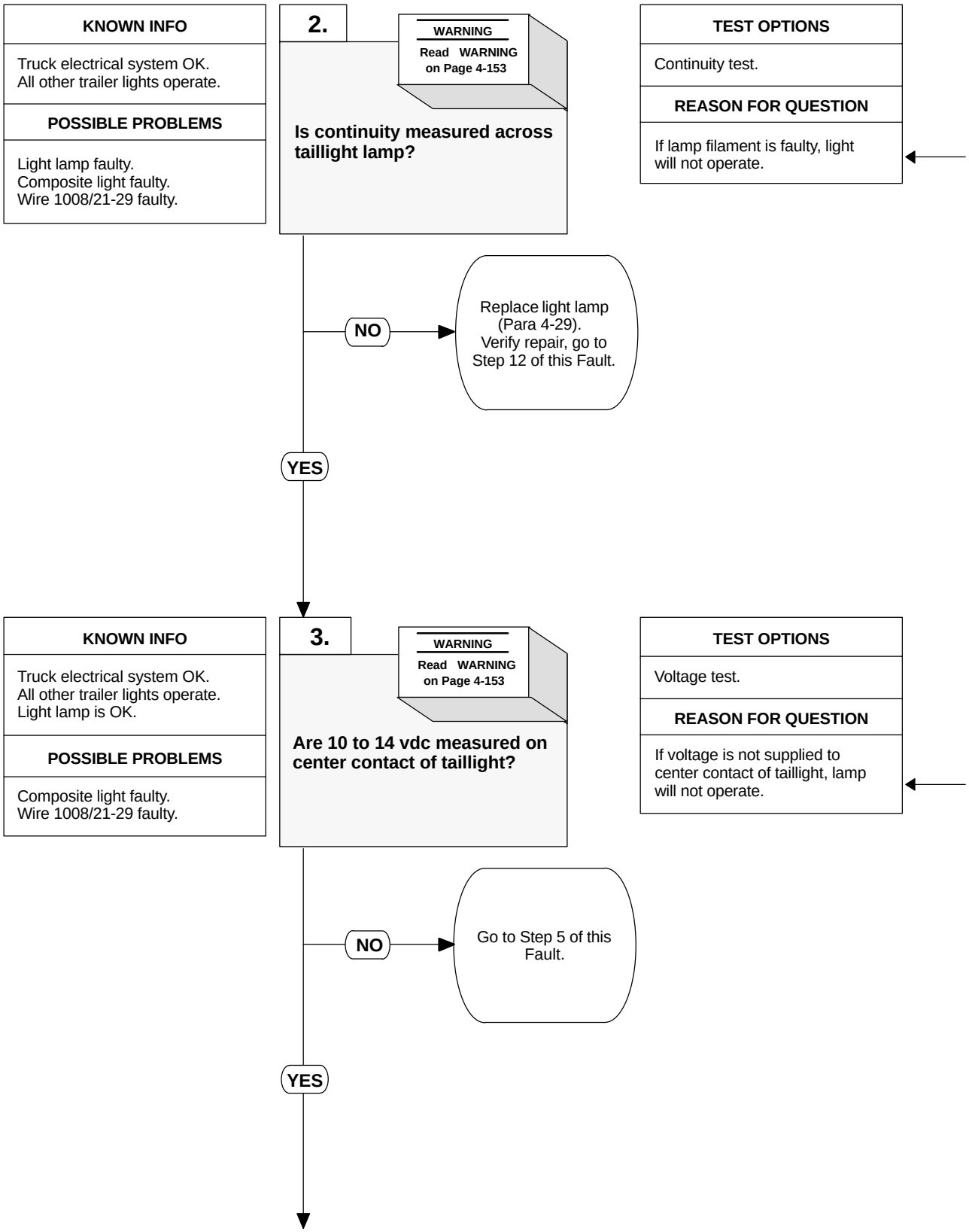
VISUAL INSPECTION

(1) While assistant turns ON ENGINE switch and turns on lights, observe taillights (TM 9-2320-364-10).
  (a) If no taillights operate, go to Step (7) of this Fault.
  (b) If at least one taillight operates, perform Steps (2) and (3) below and go to Step (2) of this Fault.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4. TAILLIGHT(S) DO NOT OPERATE (CONT).

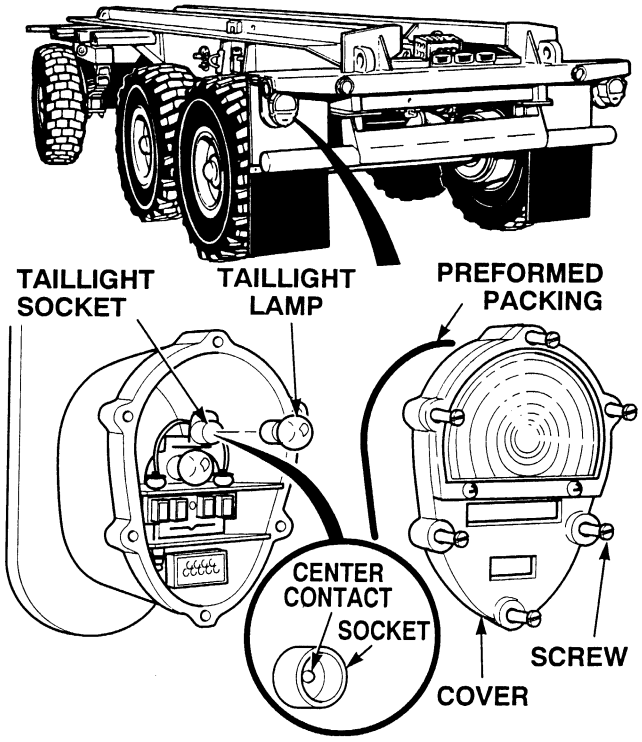


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

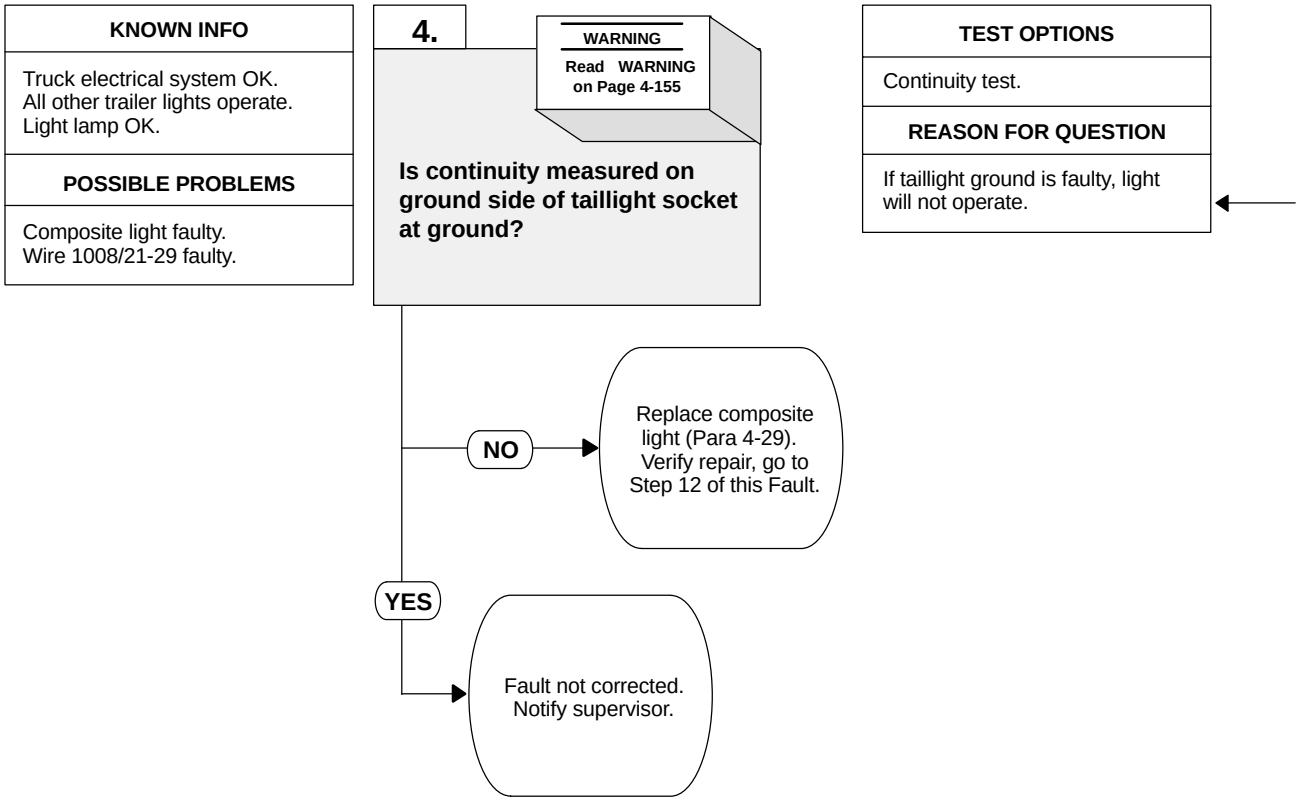
(1) Loosen six captive screws, and remove composite light cover and preformed packing. Discard preformed packing.
(2) Remove taillight lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across lamp?
  (a) If there is no continuity, replace taillight lamp (Para 4-29).
  (b) If there is continuity, taillight lamp is OK.

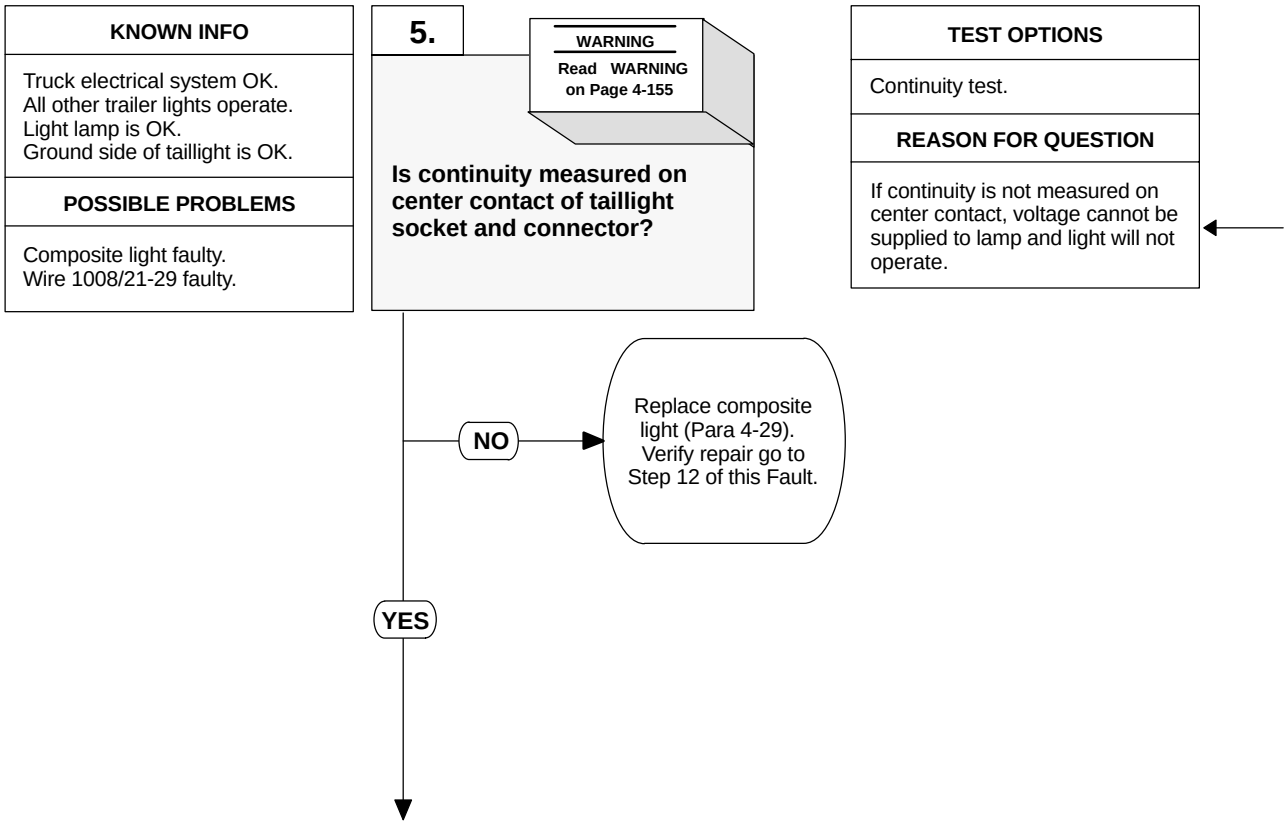


VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If there are not 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step (5) of this fault.
  (b) If there are 10 to 14 vdc present, perform Steps (5) and (6) below and go to Step (4) of this Fault.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.

4. TAILLIGHT(S) DO NOT OPERATE (CONT).



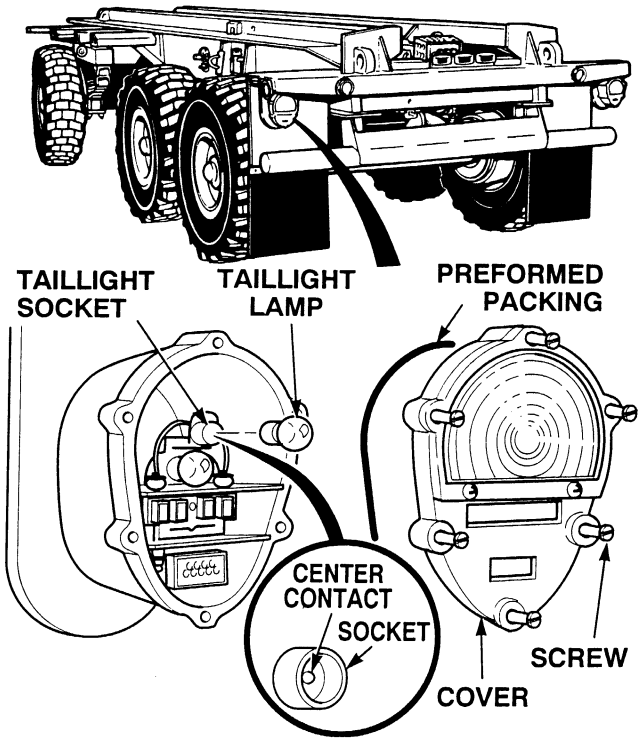


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

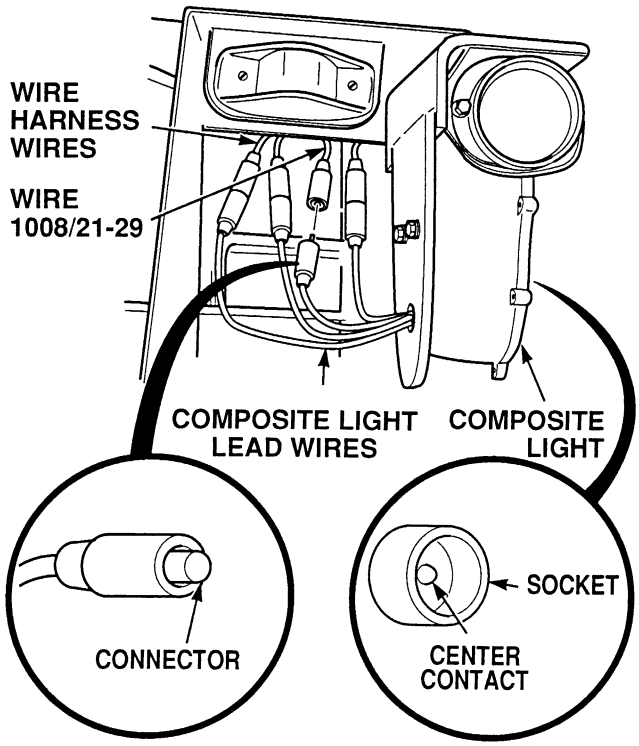
CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is continuity measured between ground side of taillight socket and a known good ground.
  (a) If there is no continuity, replace composite light (Para 4-29).
  (b) If there is continuity, Fault not corrected. Perform Step (3) below and notify supervisor.
(3) Install taillight lamp.
(4) Install preformed packing, composite light cover and tighten six captive screws.

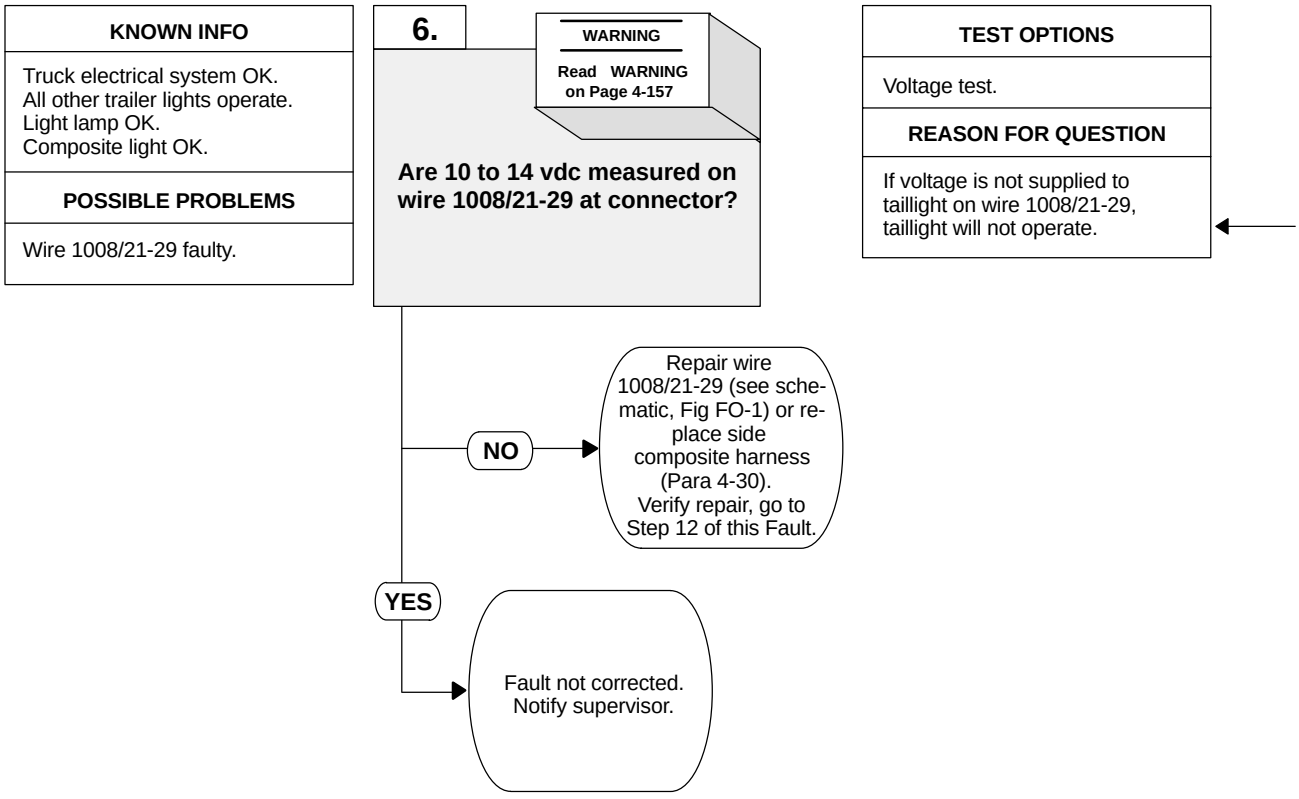


CONTINUITY TEST

(1) Disconnect wire 1008/21-29 connector.
(2) Is there continuity between connector and center contact and connector?
  (a) If there is no continuity, replace composite light (Para 4-29).
  (b) If there is continuity, composite light is OK.
(3) Install preformed packing, composite light cover and tighten six captive screws.



4. TAILLIGHT(S) DO NOT OPERATE (CONT).

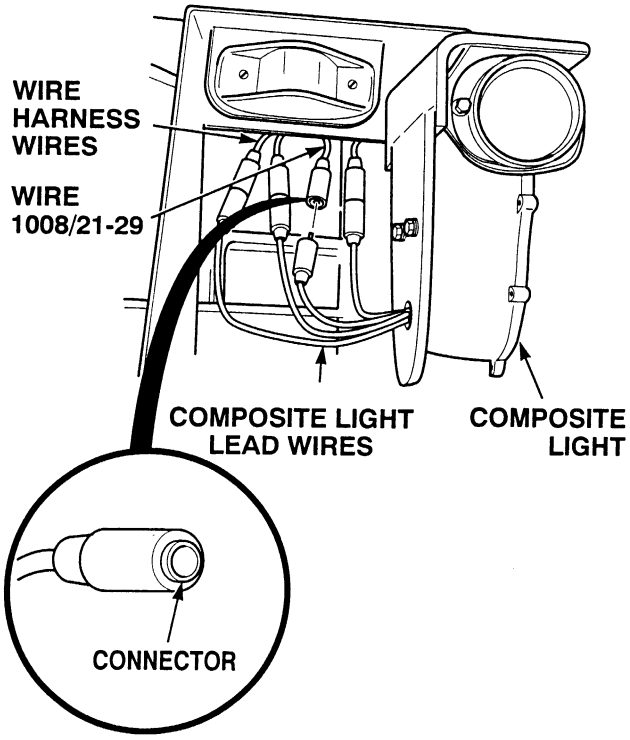


WARNING

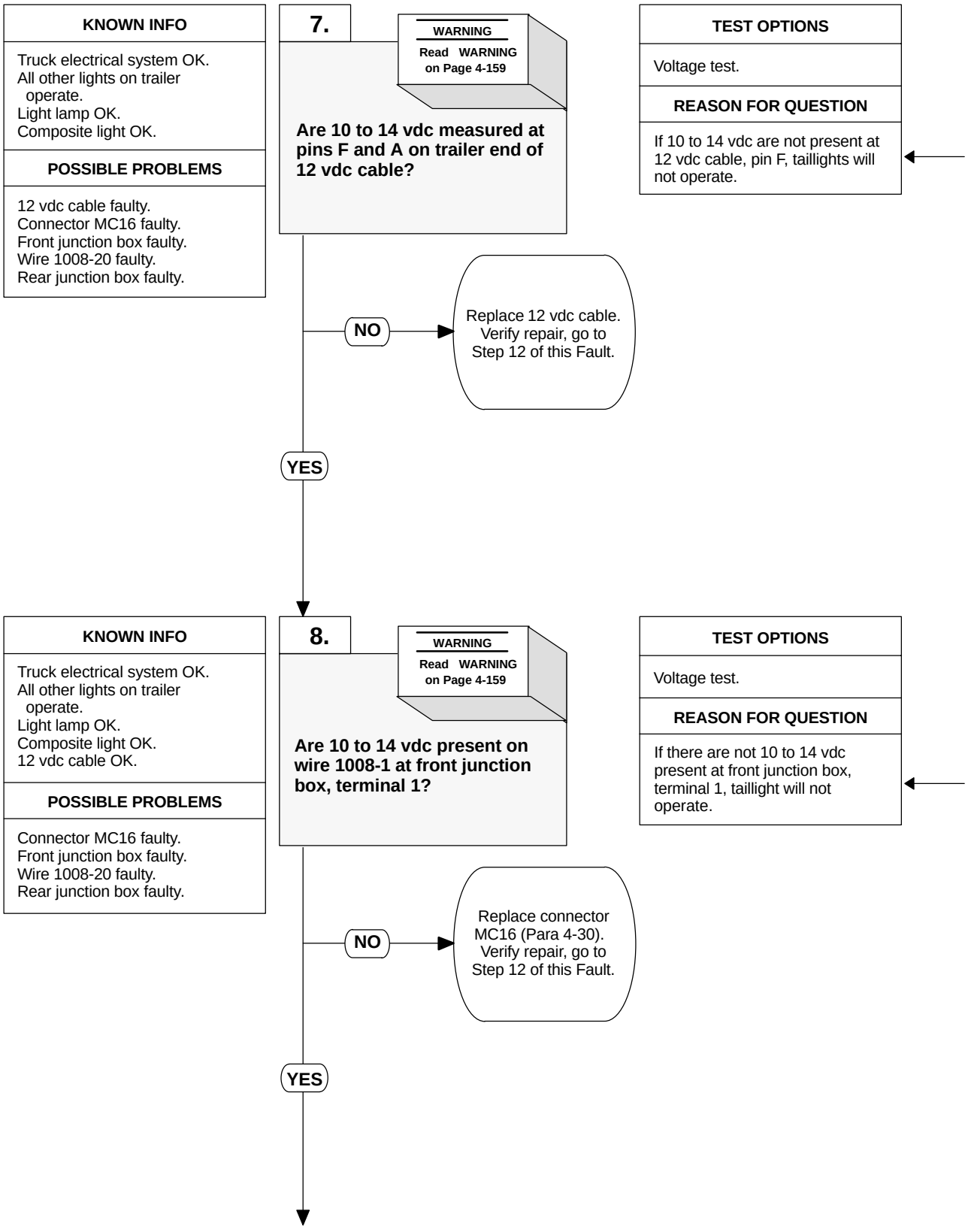
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to wire 1008/21-29 connector.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
    (a) If 10 to 14 vdc is not present, perform Steps (5) and (6) below, and repair wire 1008/21-29 (see schematic, Fig FO-1) or replace side composite light harness (Para 4-30).
    (b) If 10 to 14 vdc is present, wire 1008/21-29 is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.
(7) Connect wire 1008/21-29 connector.



4. TAILLIGHT(S) DO NOT OPERATE (CONT).

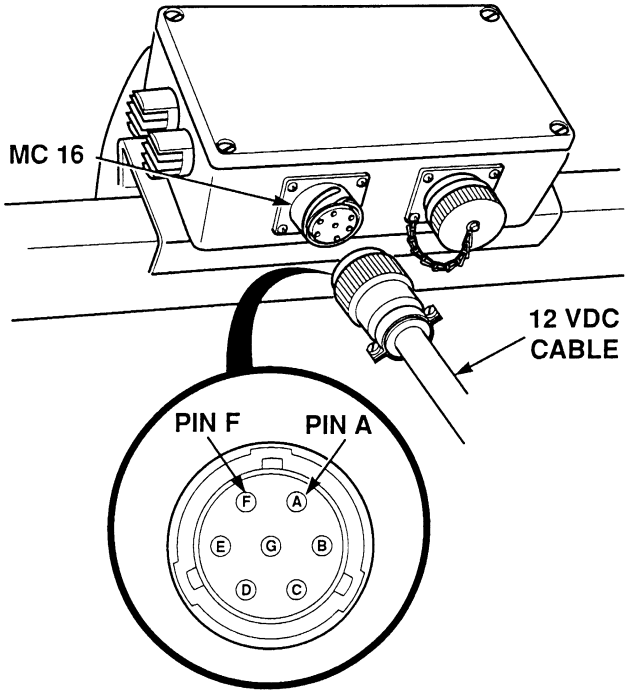


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

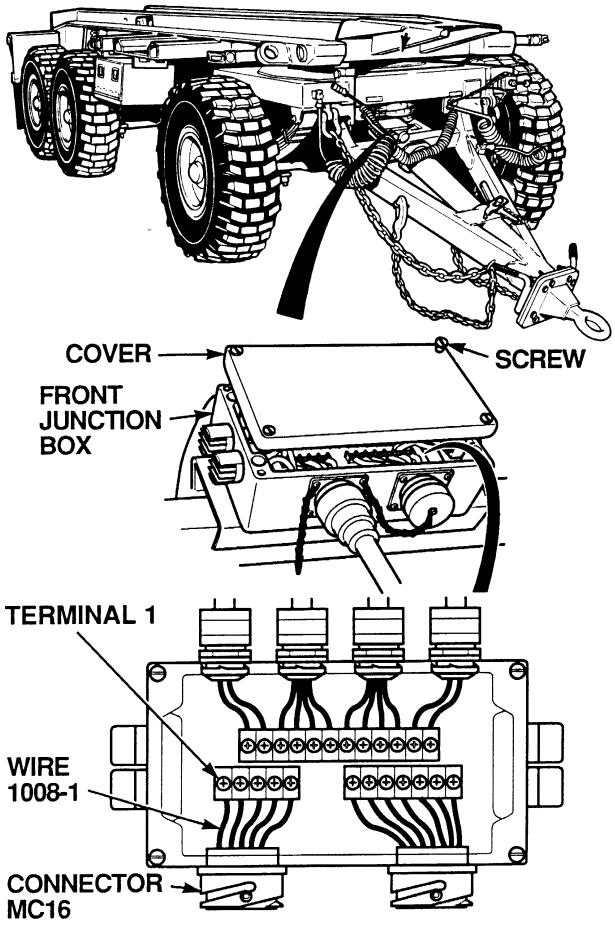
VOLTAGE TEST

(1) Disconnect 12 vdc (7 pin) cable from front junction box connector MC16.
(2) Set multimeter select switch to volts dc.
(3) Connect positive (+) multimeter lead to pin F on trailer end connector.
(4) Connect negative (–) multimeter lead to terminal A on trailer end connector.
(5) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below, and replace 12 vdc cable.
  (b) If 10 to 14 vdc are present, 12 vdc cable is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.
(8) Connect 12 vdc cable to front junction box connector MC16.

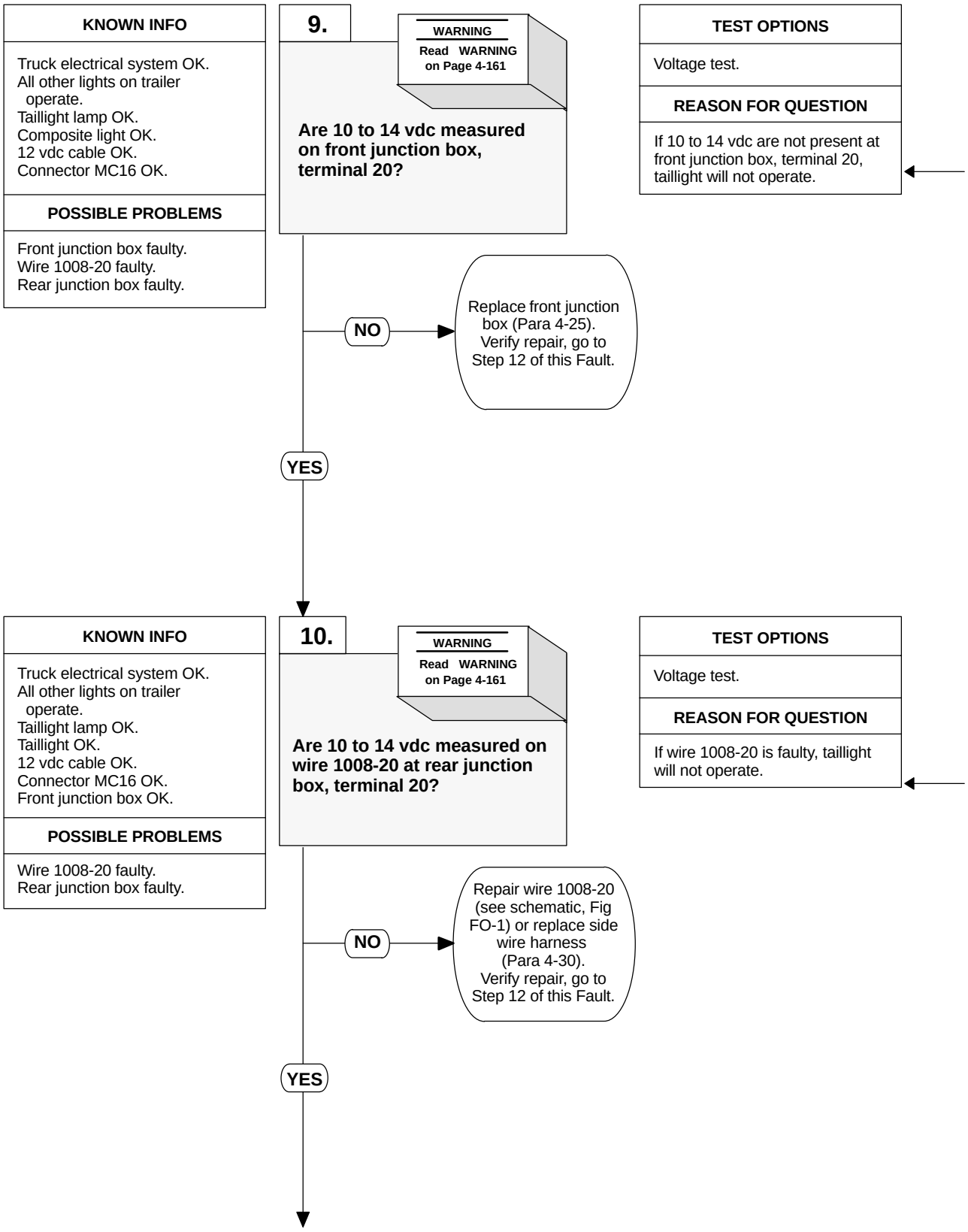


VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Connect positive (+) multimeter lead to front junction box, terminal 1.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (5) and (6) below, and replace connector MC16 (Para 4-30).
  (b) If 10 to 14 vdc are present, connector MC16 is OK.
(5) Turn off lights.
(6) Turn OFF ENGINE switch.



4. TAILLIGHT(S) DO NOT OPERATE (CONT).

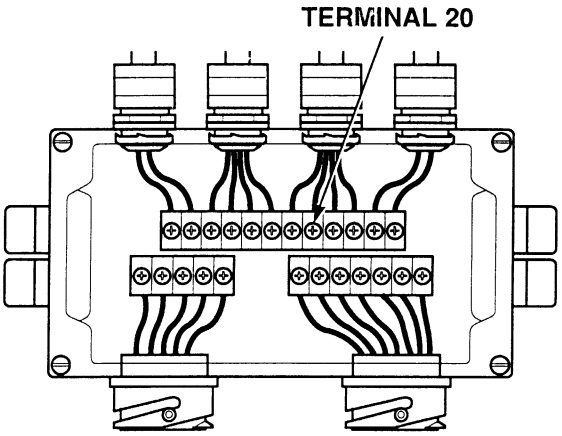


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

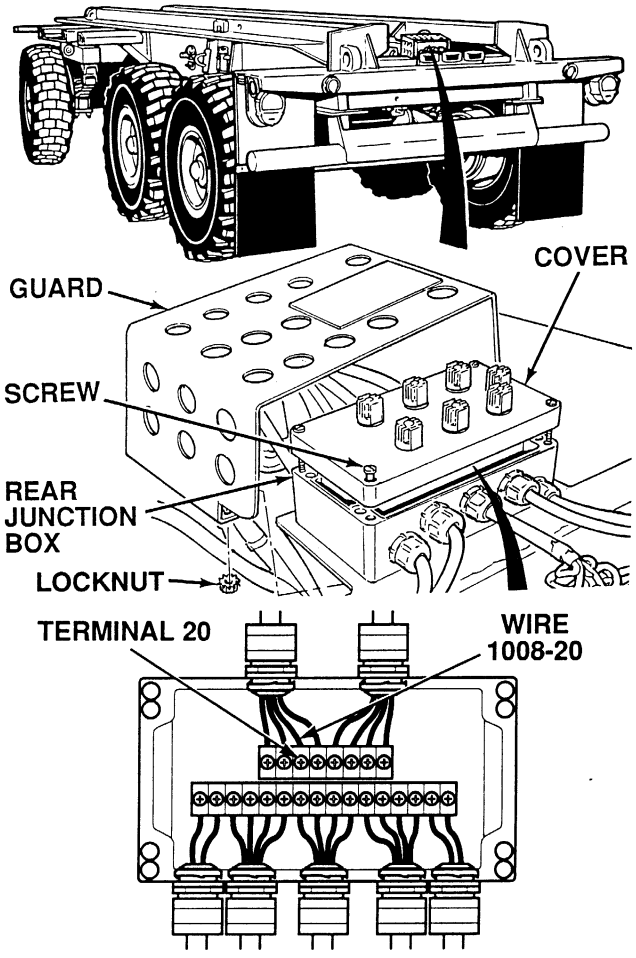
VOLTAGE TEST

(1) Connect positive (+) multimeter lead to front junction box, terminal 20.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (4) and (5) below, and replace front junction box (Para 4-25).
  (b) If 10 to 14 vdc are present, front junction box is OK.
(4) Turn off lights.
(5) Turn OFF ENGINE switch.
(6) Install front junction box cover and tighten four captive screws.

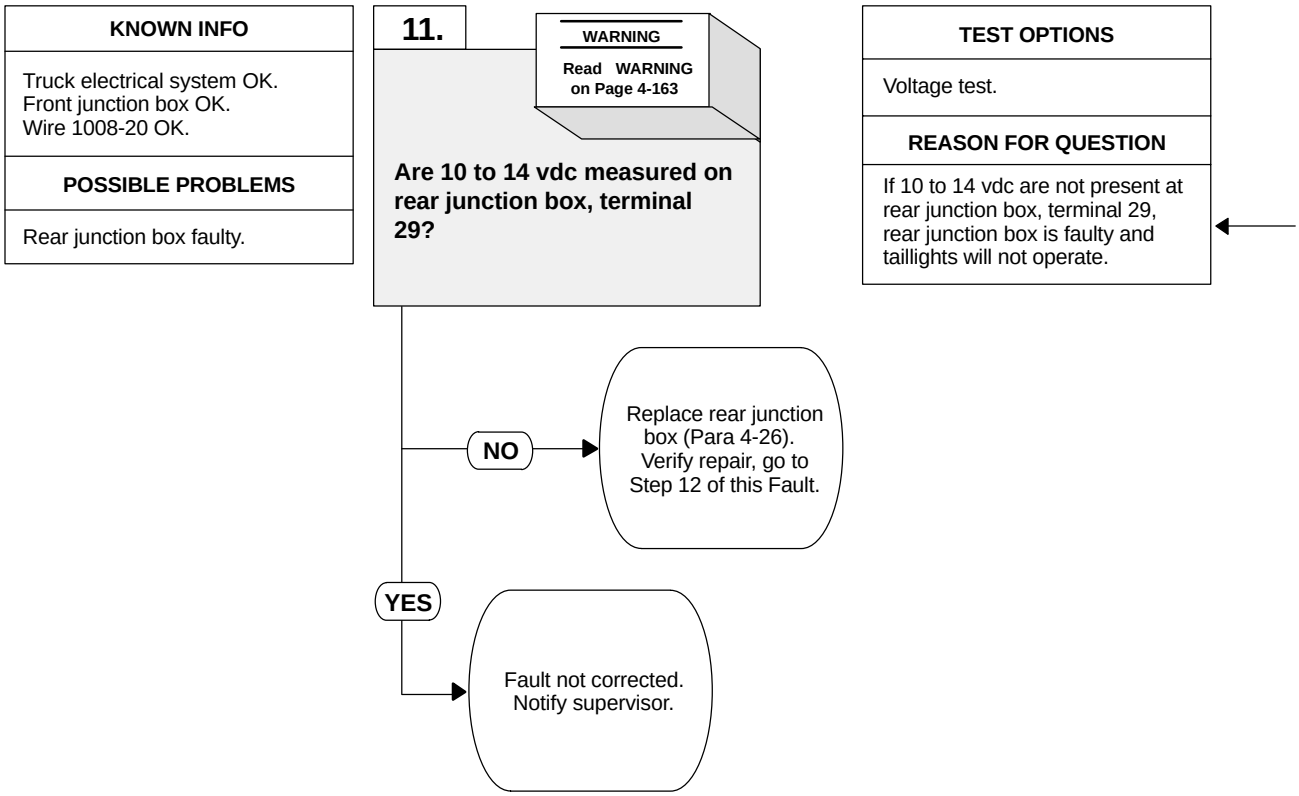


VOLTAGE TEST

(1) Remove four locknuts and junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box cover.
(3) Connect positive (+) multimeter lead to rear junction box, terminal 20.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns on ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below, and repair wire 1008-20 (see schematic, Fig FO-1) or replace side wire harness (Para 4-30).
  (b) If 10 to 14 vdc are present, wire 1008-20 is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.



4. TAILLIGHT(S) DO NOT OPERATE (CONT).

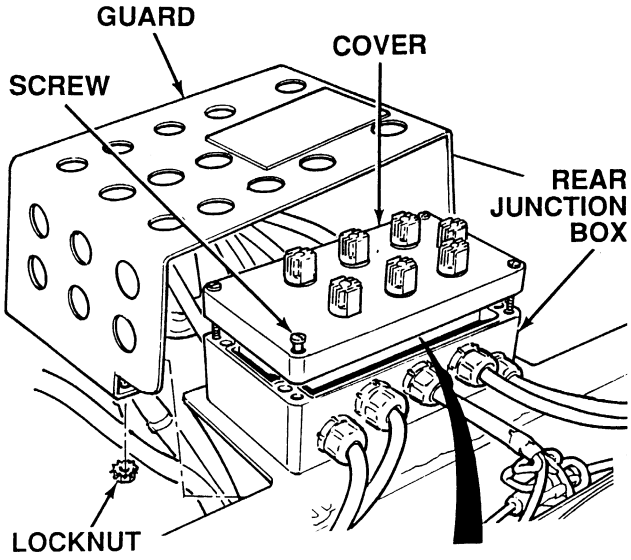


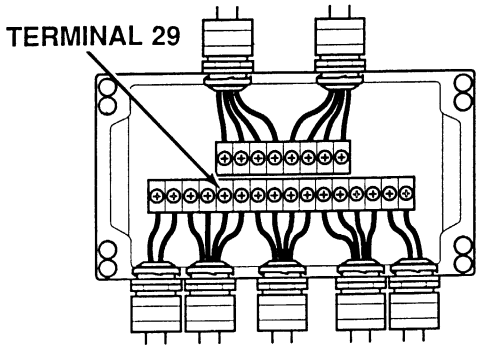
WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

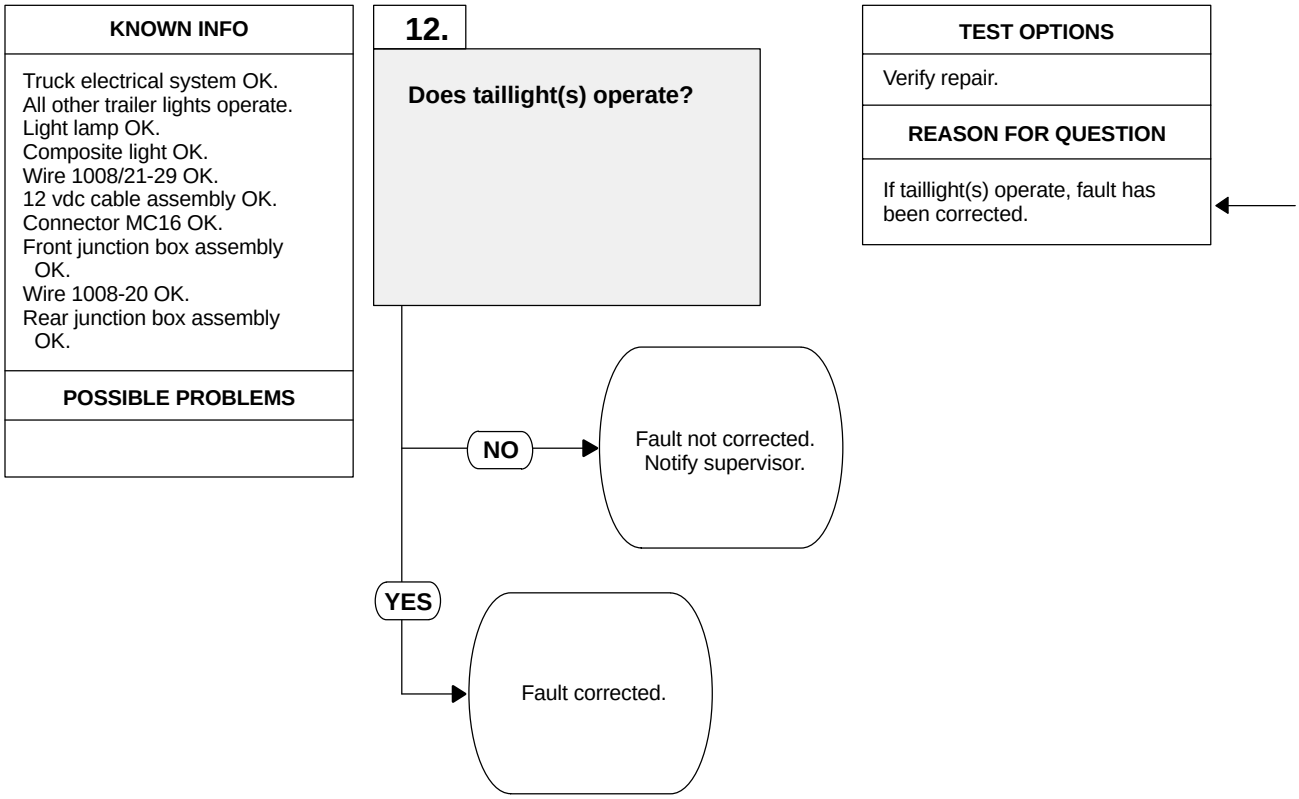
VOLTAGE TEST

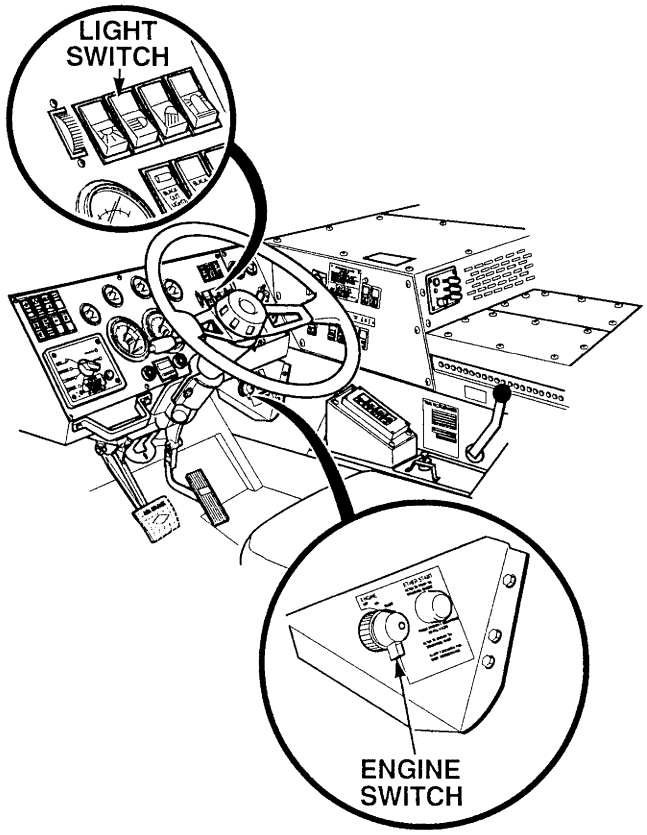
(1) Connect positive (+) multimeter lead to rear junction box, terminal 29.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (4) and (5) below, and replace rear junction box (Para 4-26).
  (b) If 10 to 14 vdc are present, fault not corrected. Perform Steps (4) and (5) below, and notify supervisor.
(4) Turn off lights.
(5) Turn OFF ENGINE switch.
(6) Install rear junction box cover and tighten four captive screws.
(7) Install rear junction box guard and four locknuts.





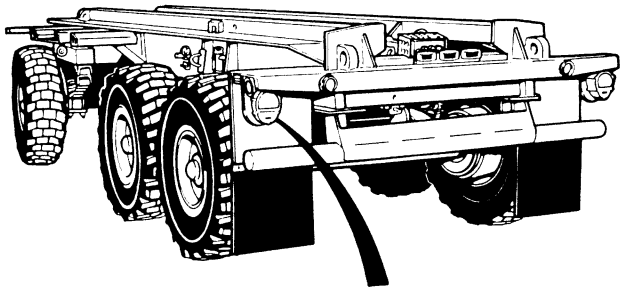
4. TAILLIGHT(S) DO NOT OPERATE (CONT).

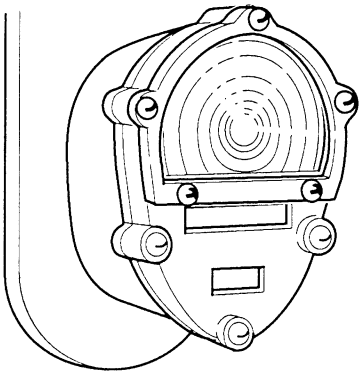




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe taillight(s) (TM 9-2320-364-10).
  (a) If taillight(s) does not operate, fault has not been corrected. Perform Steps (2) and (3) below, and notify supervisor.
  (b) If taillight(s) operates, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

5. STOPLIGHT(S) DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Packing, Preformed (Item 59, Appendix I)

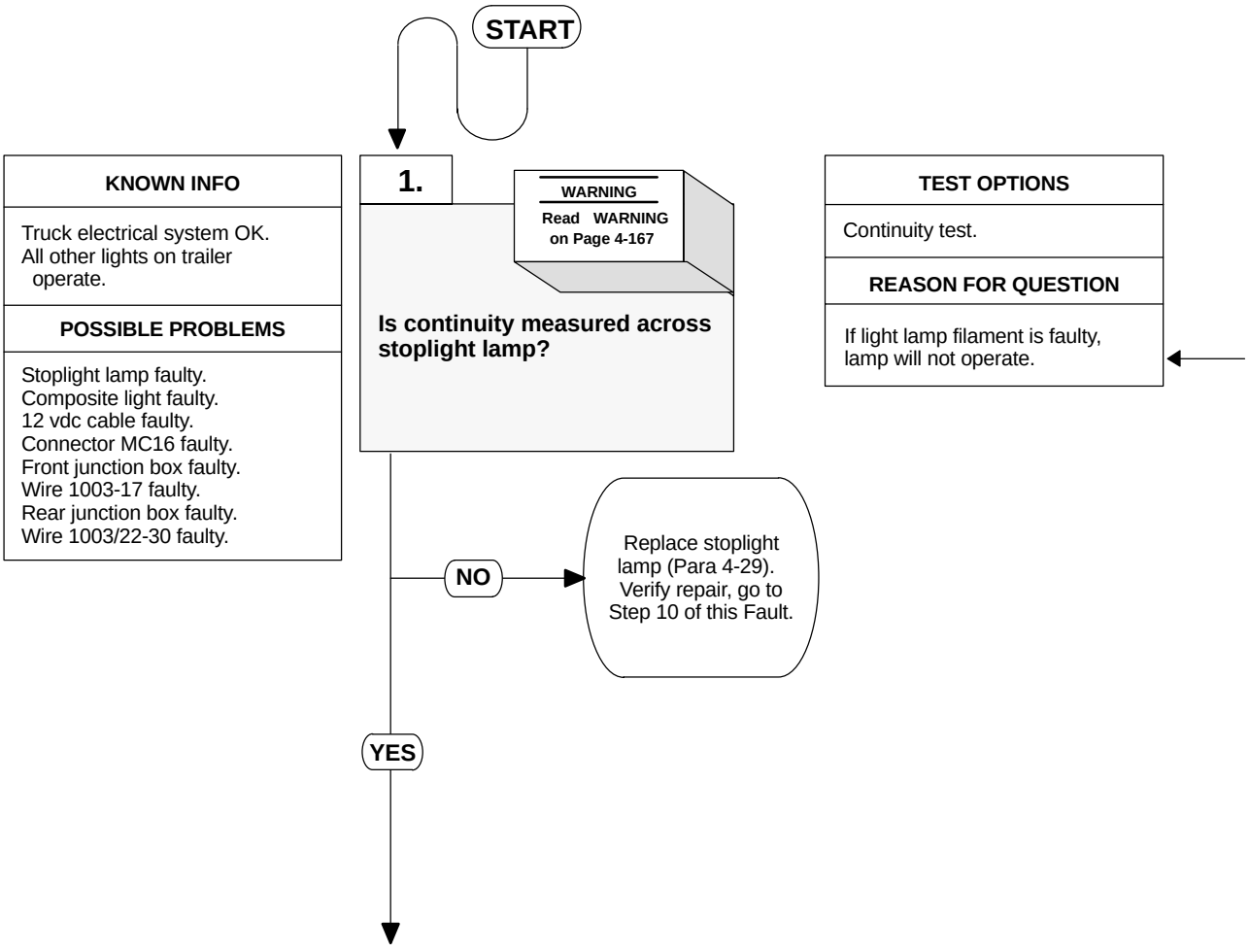
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)

NOTE

- The following troubleshooting procedures cover the left stoplight, but they apply to both stoplights.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

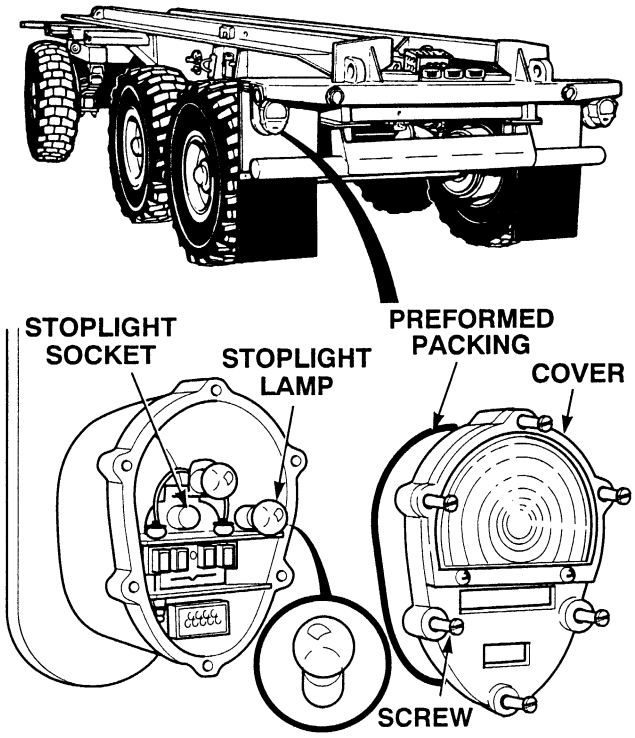


WARNING

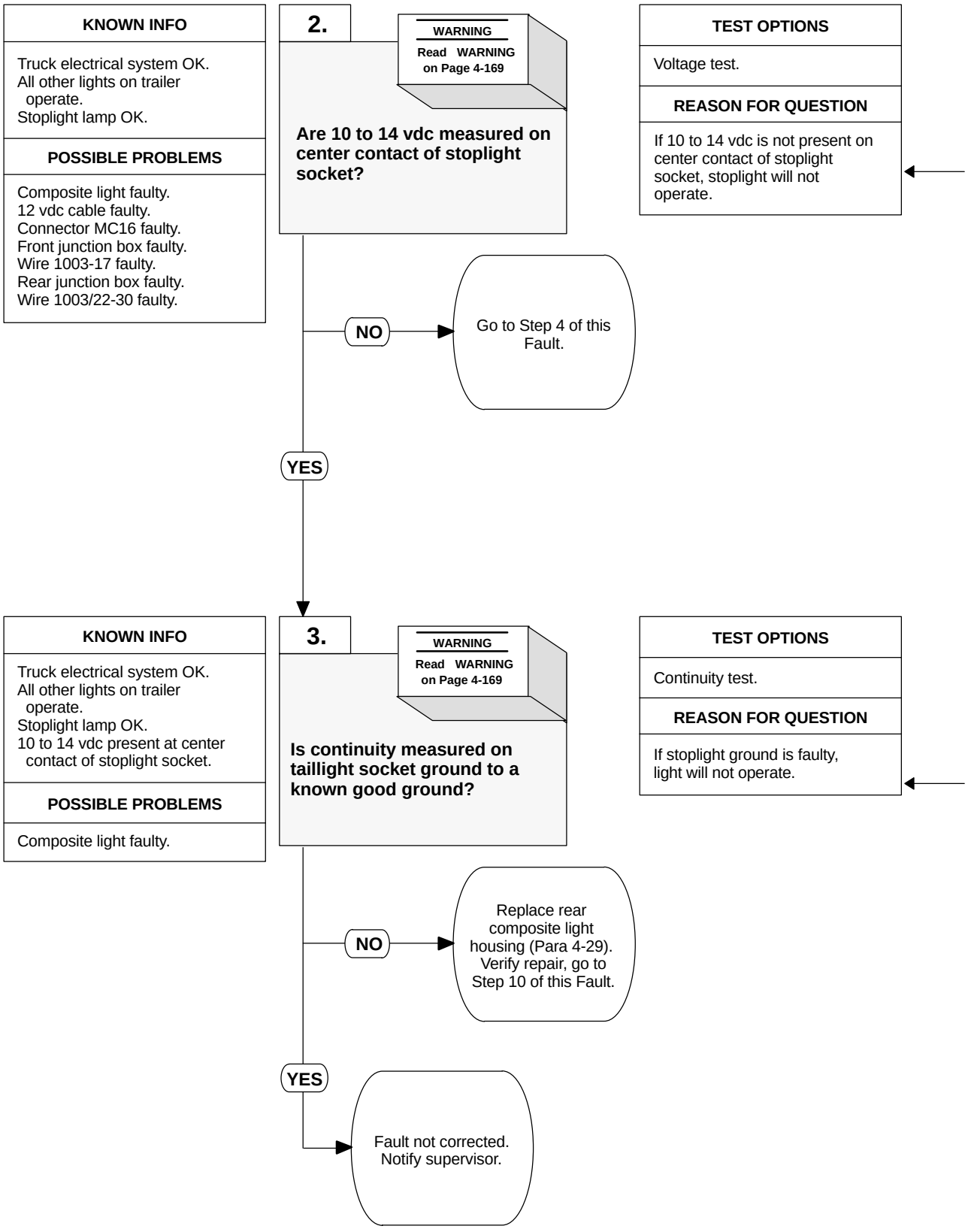
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

CONTINUITY TEST

(1) Loosen six captive screws, remove composite light cover, and preformed packing. Discard preformed packing.
(2) Remove stoplight lamp.
(3) Set multimeter select switch to ohms.
(4) Is there continuity across lamp?
  (a) If there is no continuity, replace lamp (Para 4-29).
  (b) If there is continuity, lamp is OK.



5. STOPLIGHT(S) DO NOT OPERATE (CONT).

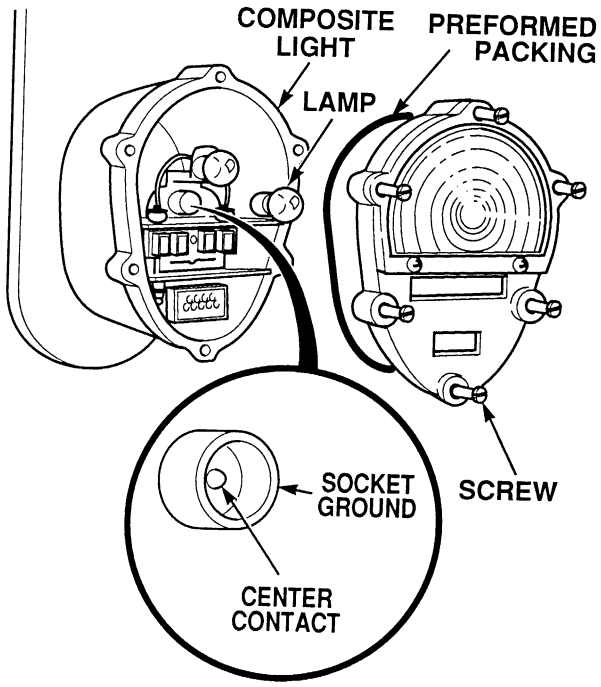


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

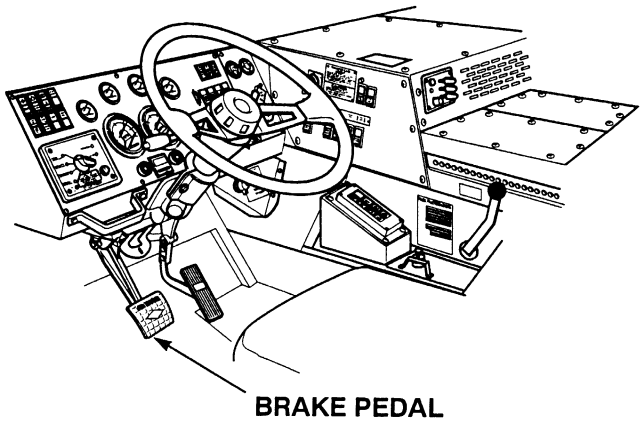
VOLTAGE TEST

(1) Set multimeter select switch to volts dc.
(2) Connect positive (+) multimeter lead to center contact of socket.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant fully depresses brake pedal, observe multimeter (TM 9-2320-364-10).
    (a) If 10 to 14 vdc are not present, perform Step (5) below and go to Step 4 of this fault.
    (b) If 10 to 14 vdc are present, perform Step (5) below and go to Step 3 of this fault.
(5) Release brake pedal.

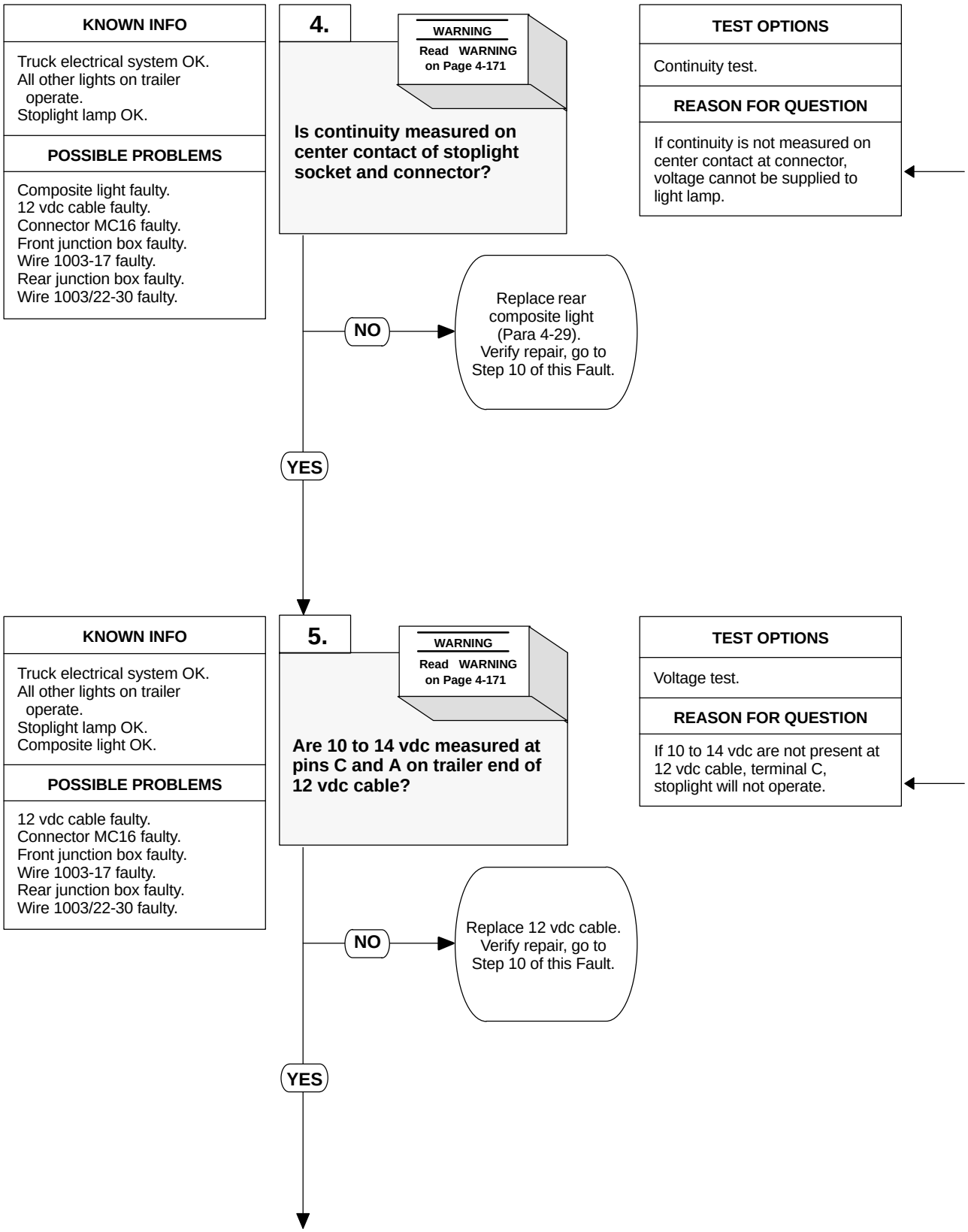


CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between stoplight socket and a known good ground?
    (a) If there is no continuity, replace rear composite light (Para 4-29).
    (b) If there is continuity, rear composite light is OK. Fault not corrected. Notify supervisor.



5. STOPLIGHT(S) DO NOT OPERATE (CONT).

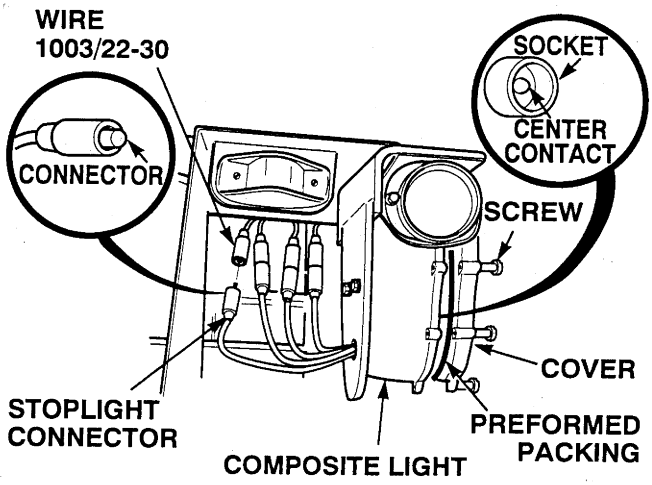


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

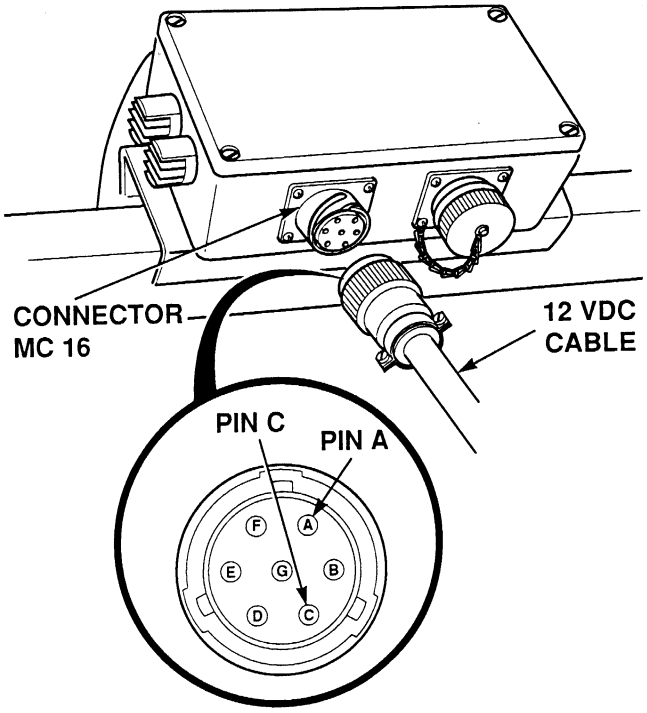
CONTINUITY TEST

(1) Disconnect wire 1003/22-30 at stoplight connector.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured between center contact of stoplight socket and connector?
  (a) If there is no continuity, replace composite light (Para 4-29).
  (b) If there is continuity, composite light is OK.
(4) Connect wire 1003/22-30 to connector.
(5) Install lamp in stoplight socket.
(6) Install preformed packing and composite light cover, and tighten six captive screws.

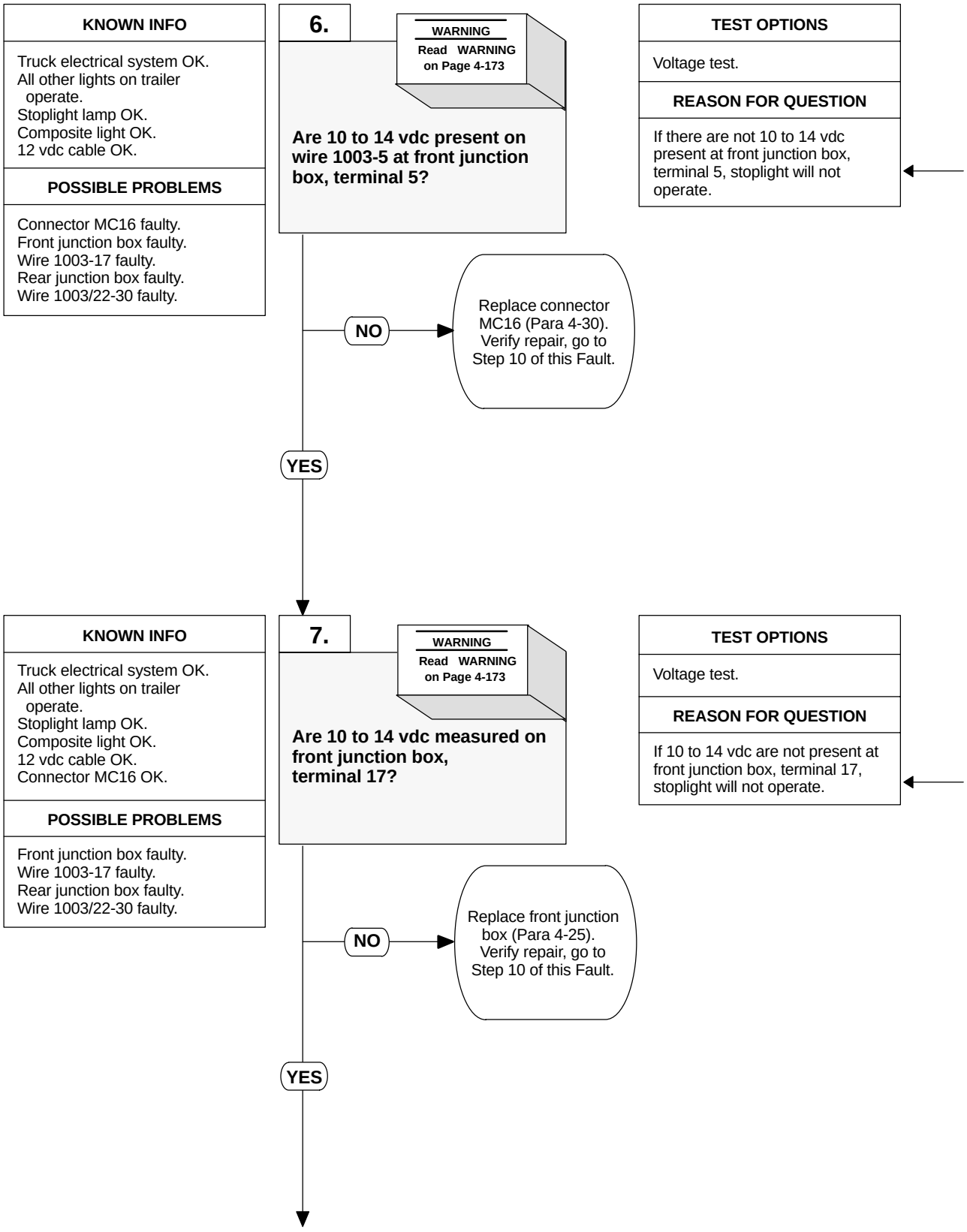


VOLTAGE TEST

(1) Disconnect 12 vdc (7 pin) cable from front junction box connector MC16.
(2) Set multimeter select switch to volts dc.
(3) Connect positive (+) multimeter lead to pin C on trailer end connector.
(4) Connect negative (–) multimeter lead to pin A on trailer end of connector.
(5) While assistant turns ON ENGINE switch and fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below, and replace 12 vdc cable.
  (b) If 10 to 12 vdc are present, 12 vdc cable assembly is OK.
(6) Release brake pedal.
(7) Turn OFF ENGINE switch.
(8) Connect 12 vdc cable to front junction box connector MC16.



5. STOPLIGHT(S) DO NOT OPERATE (CONT).

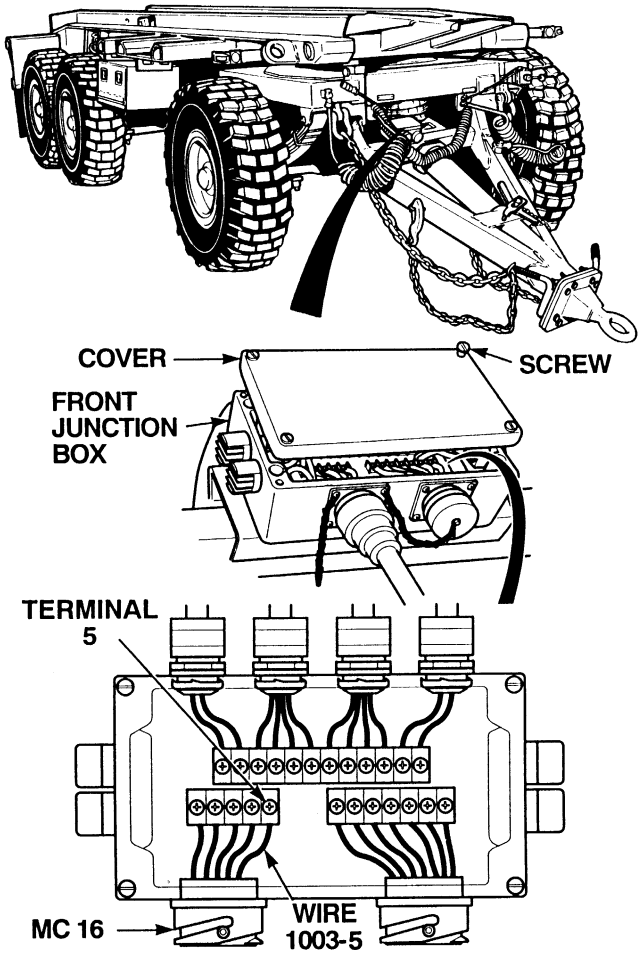


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

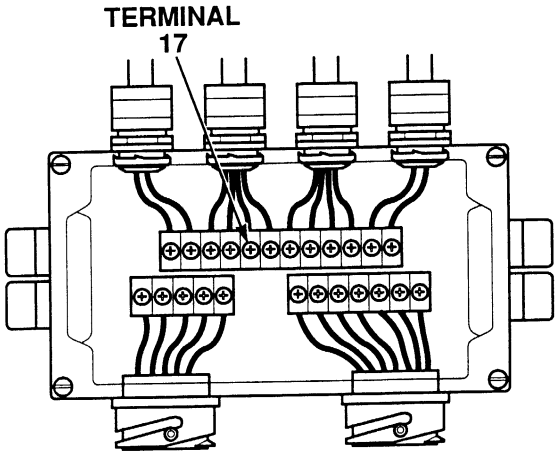
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Connect positive (+) multimeter lead to front junction box, terminal 5.
(3) Connect negative (–) multimeter lead to a known good ground.
(4) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, release brake pedal, and replace connector MC16 (Para 4-30).
  (b) If 10 to 14 vdc are present, connector MC16 is OK.
(5) Release brake pedal.

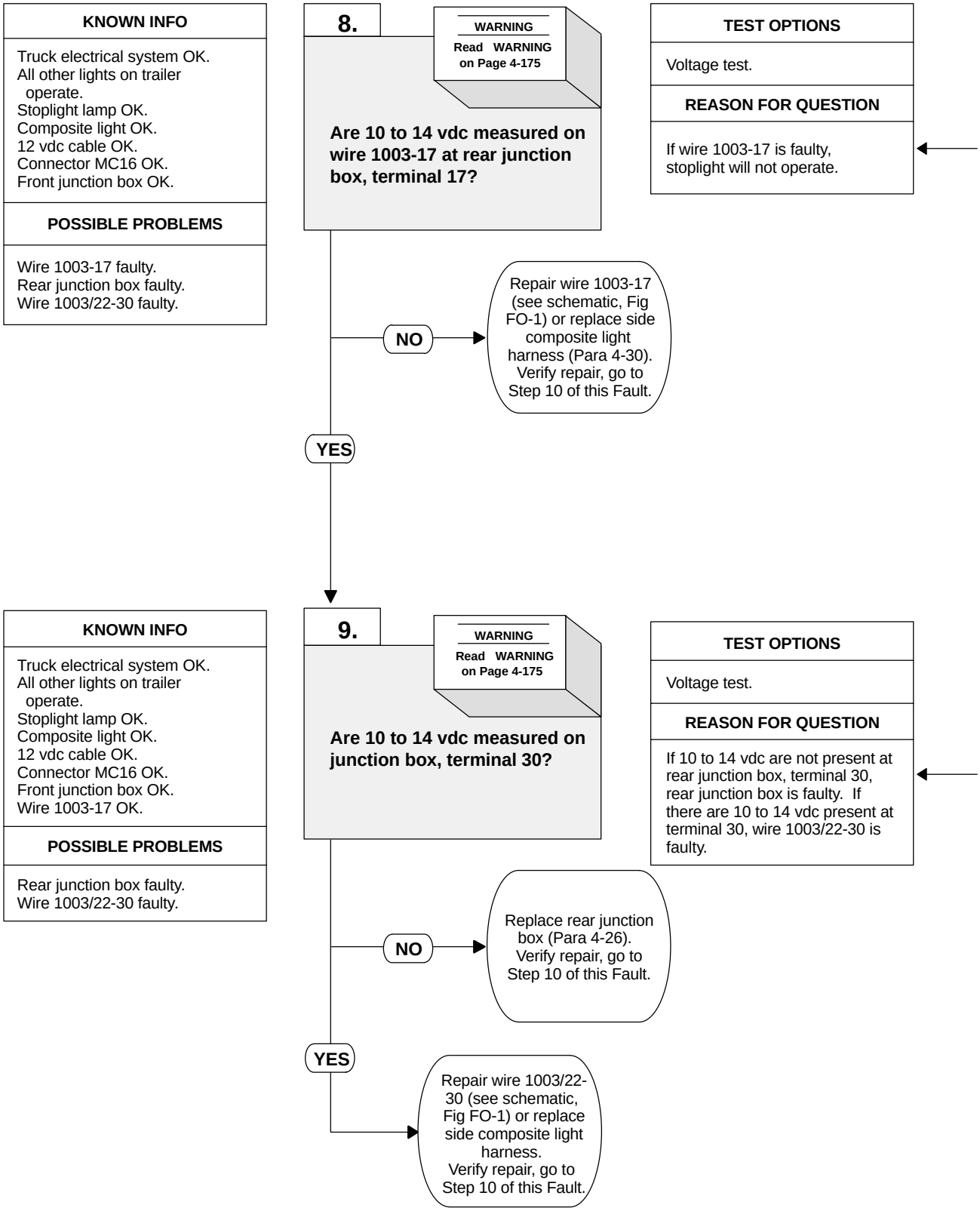


VOLTAGE TEST

(1) Connect positive (+) multimeter lead to front junction box, terminal 17.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, release brake pedal, and replace front junction box (Para 4-25).
  (b) If 10 to 14 vdc are present, front junction box is OK.
(4) Release brake pedal.
(5) Install front junction box cover and tighten four captive screws.



5. STOPLIGHT(S) DO NOT OPERATE (CONT).

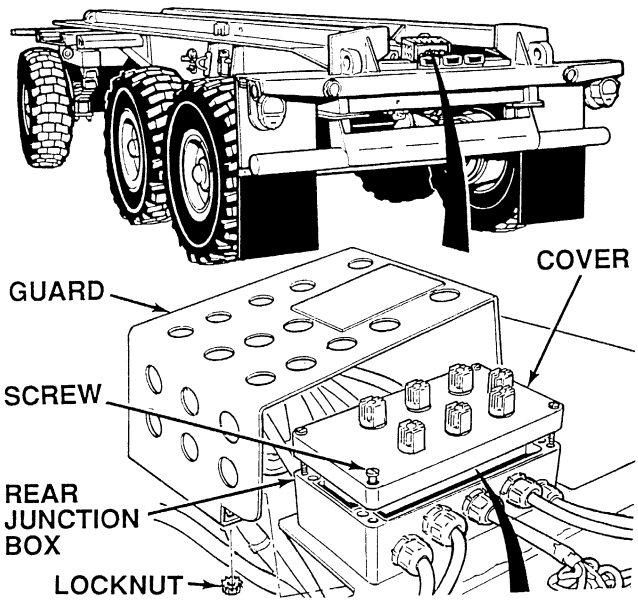


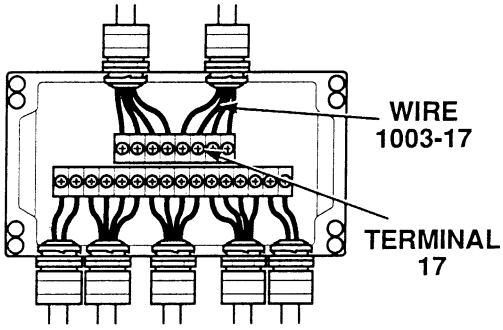
WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury, or death to personnel may occur.

VOLTAGE TEST

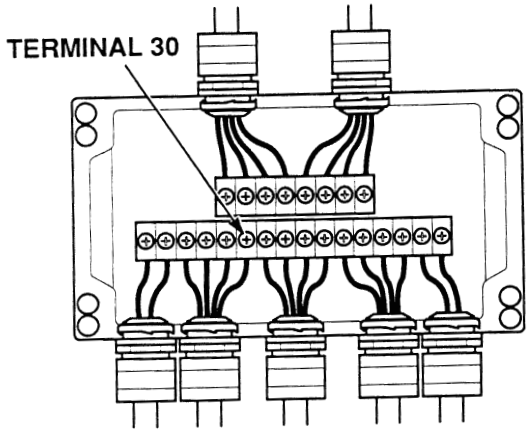
(1) Remove four locknuts and junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box cover.
(3) Connect positive (+) multimeter lead to rear junction box, terminal 17.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, release brake pedal and repair wire 1003-17 (see schematic, Fig FO-1) or replace side composite light harness (Para 4-30).
  (b) If 10 to 14 vdc are present, wire 1003-17 is OK.
(6) Release brake pedal.



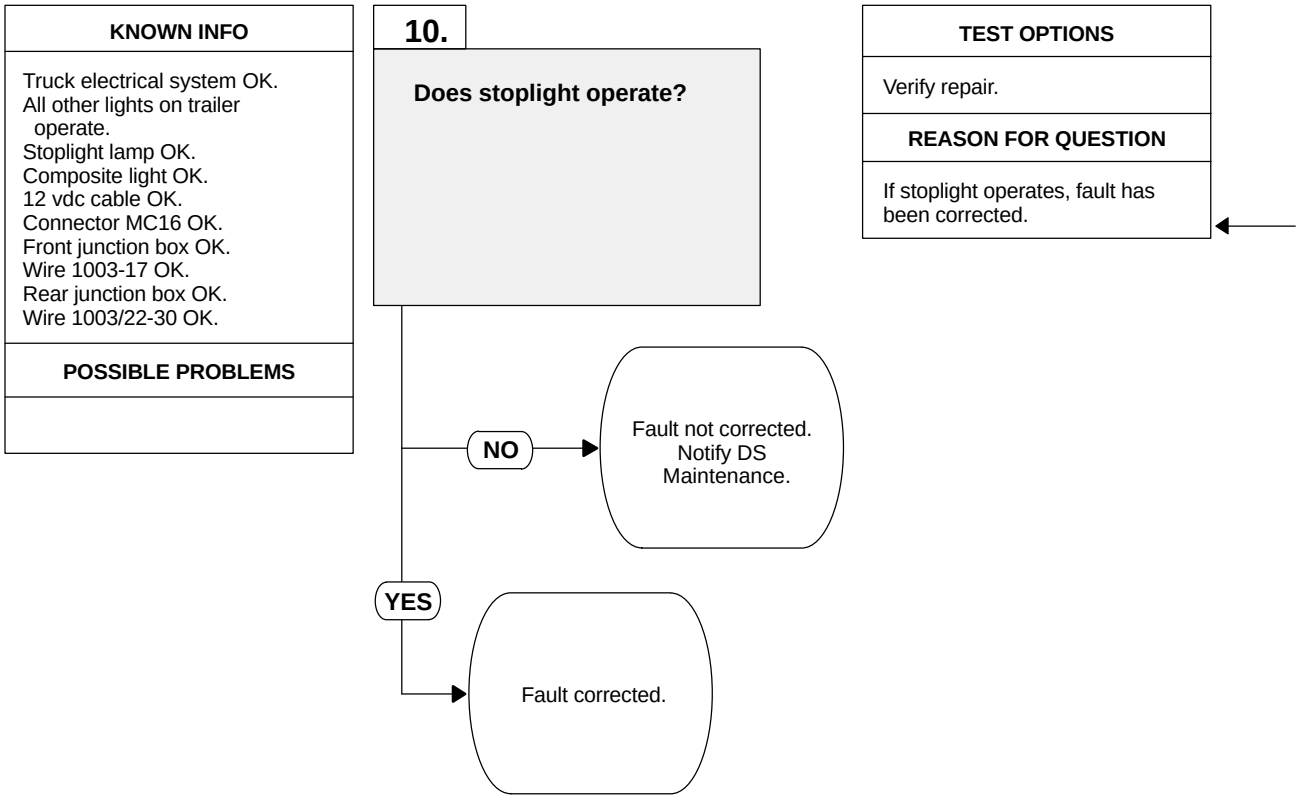


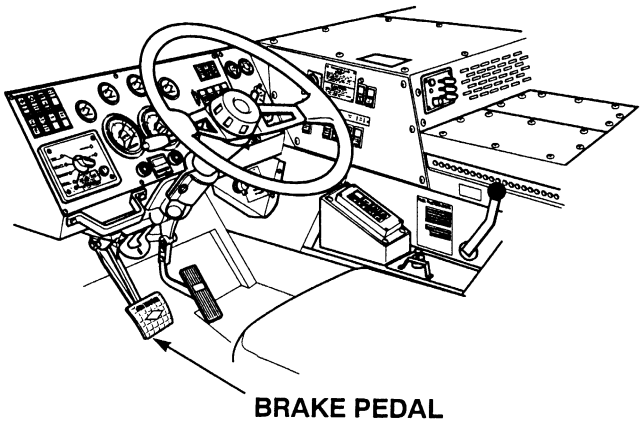
VOLTAGE TEST

(1) Connect positive (+) multimeter lead to rear junction box, terminal 30.
(2) Connect negative (–) multimeter lead to a known good ground.
(3) While assistant fully applies brake pedal, observe multimeter (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, release brake pedal, and replace rear junction box (Para 4-26).
  (b) If 10 to 14 vdc are present, release brake pedal, and repair wire 1003/22-30 (see schematic, Fig FO-1) or replace side composite light harness (Para 4-30).
(4) Install rear junction box cover and tighten four captive screws.
(5) Install junction box guard and four locknuts.



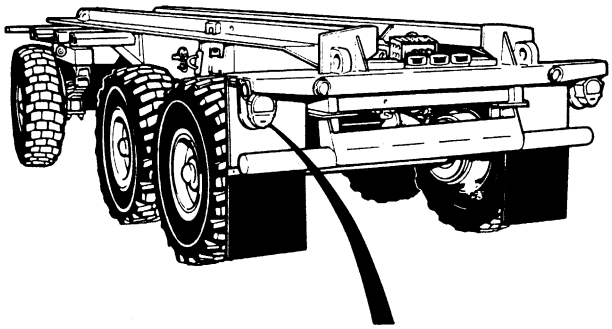
5. STOPLIGHT(S) DO NOT OPERATE (CONT).

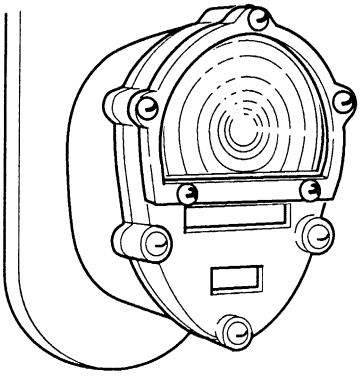




VERIFY REPAIR

(1) While assistant fully applies brake pedal, observe stoplight (TM 9-2320-364-10).
   (a) If stoplight does not operate, fault not corrected, release brake pedal, and notify DS Maintenance.
   (b) If stoplight operates, fault has been corrected.
(2) Release brake pedal.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

6. ALL LIGHTS ON REAR OF TRAILER DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

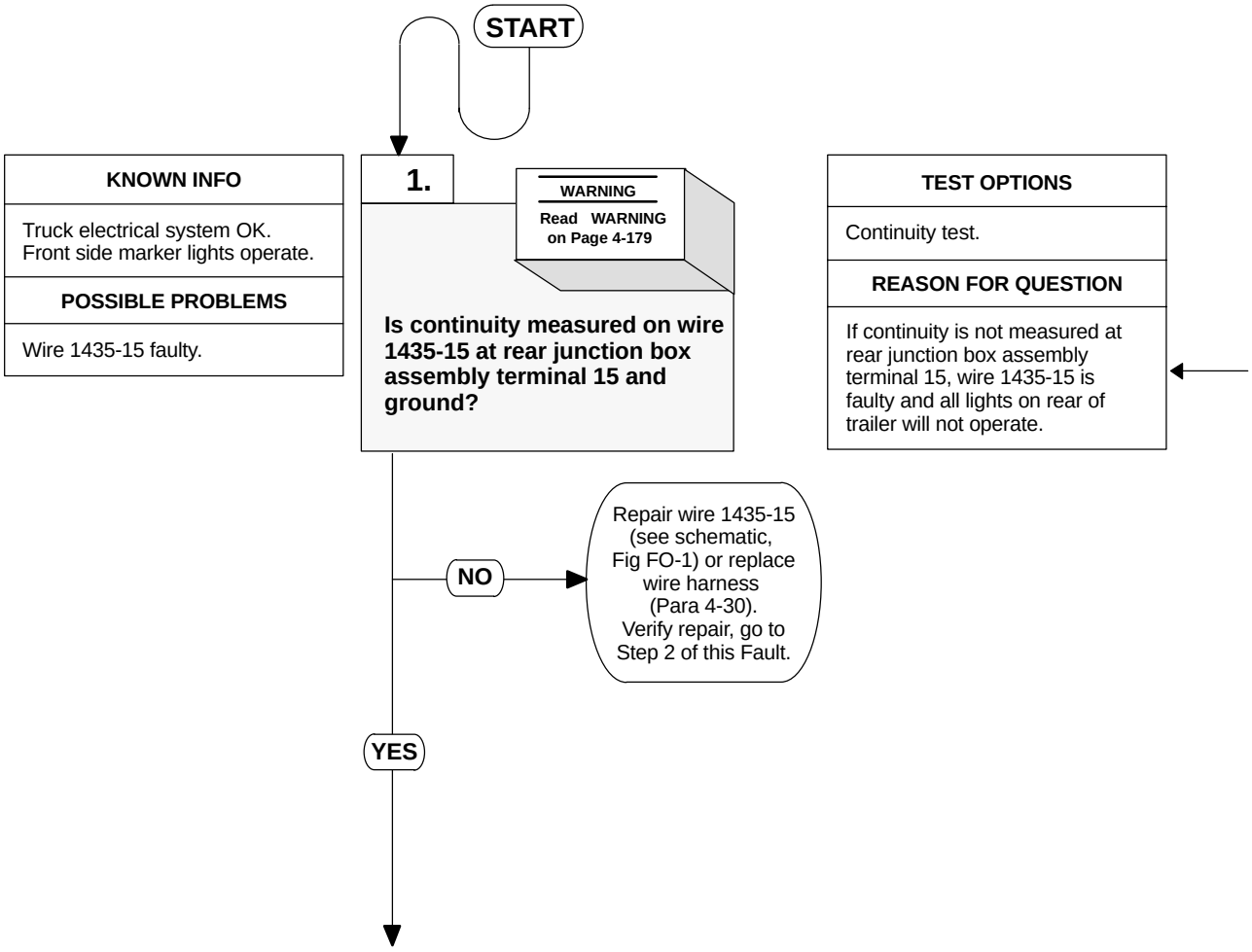
Materials/Parts
Locknut (Item 31, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

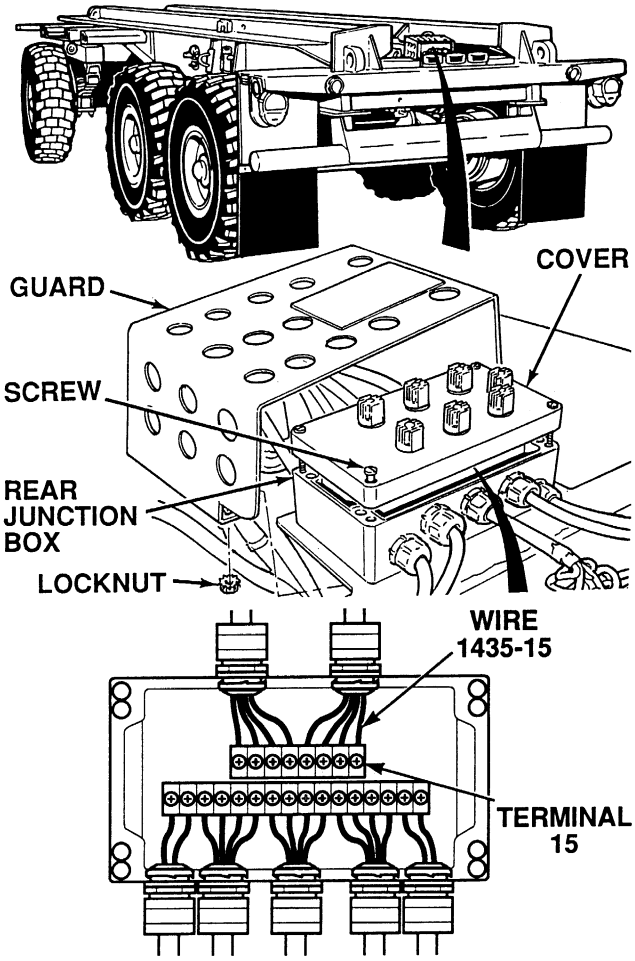


WARNING

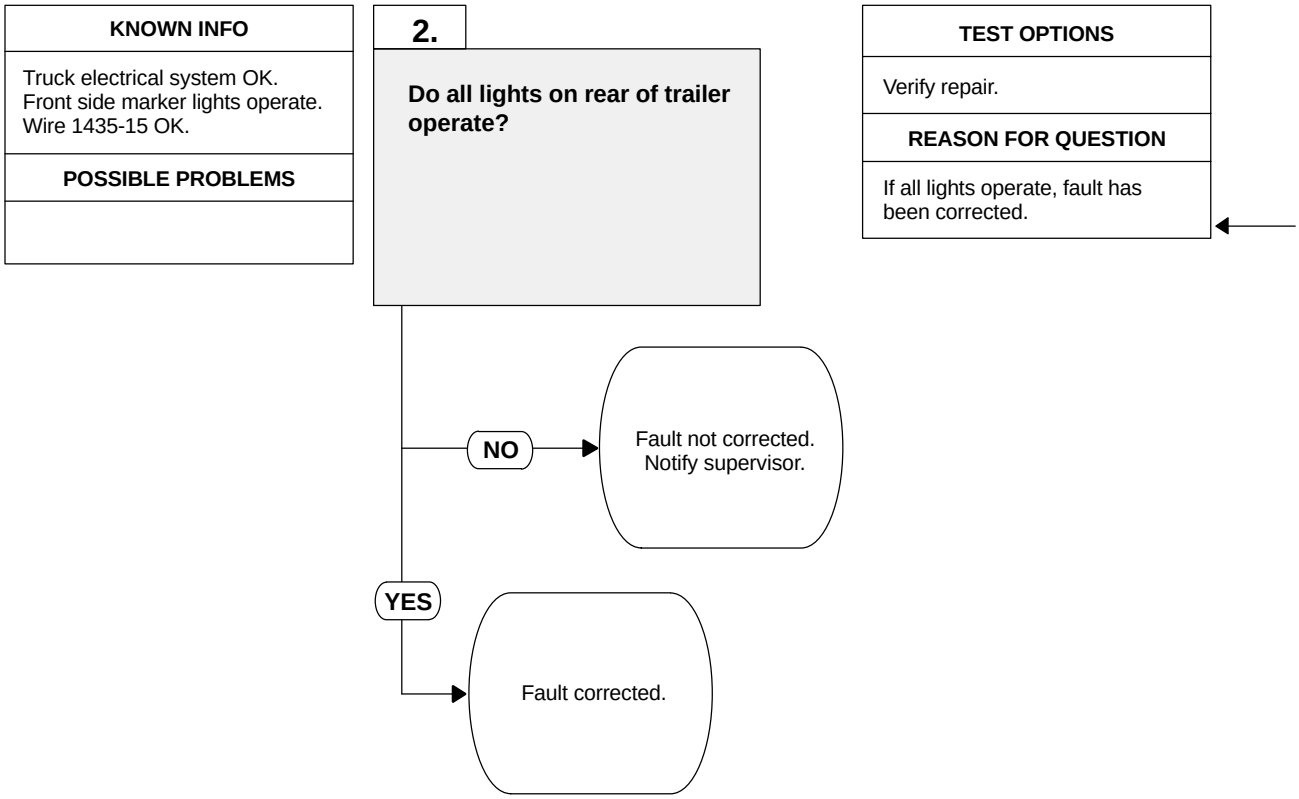
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

CONTINUITY TEST

(1) Remove four locknuts and junction box guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box cover.
(3) Set multimeter select switch to ohms.
(4) Is continuity measured between rear junction box assembly terminal 15 and a known good ground?
  (a) If there is no continuity, repair wire 1435-15 (see schematic, Fig FO-1) or replace wire harness and perform Steps (5) and (6) below.
  (b) If there is continuity, wire 1435-15 is OK.
(5) Install rear junction box cover and tighten four captive screws.
(6) Install rear junction box guard and four locknuts.

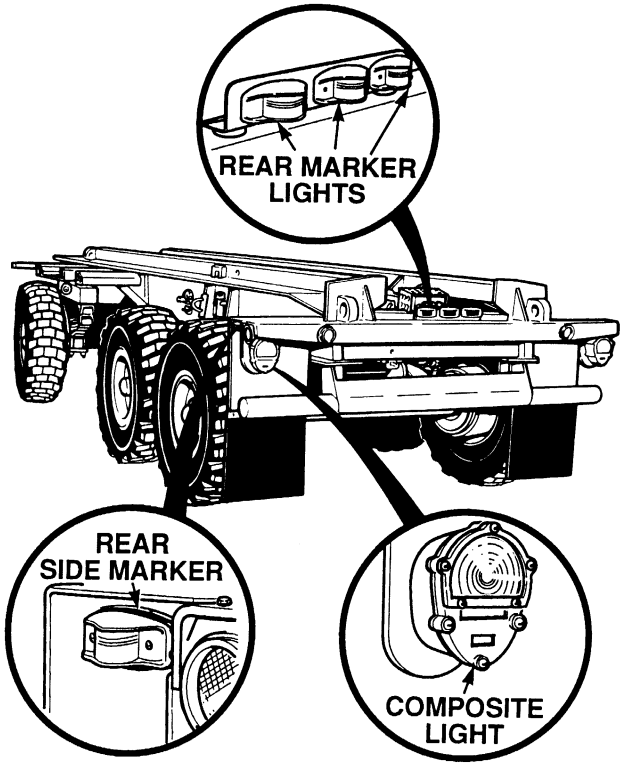


6. ALL LIGHTS ON REAR OF TRAILER DO NOT OPERATE (CONT).



VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear trailer lights (TM 9-2320-364-10).
   (a) If rear trailer lights do not operate, fault has not been corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If rear trailer lights operate, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.



4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

7. TAILLIGHT AND STOPLIGHT DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

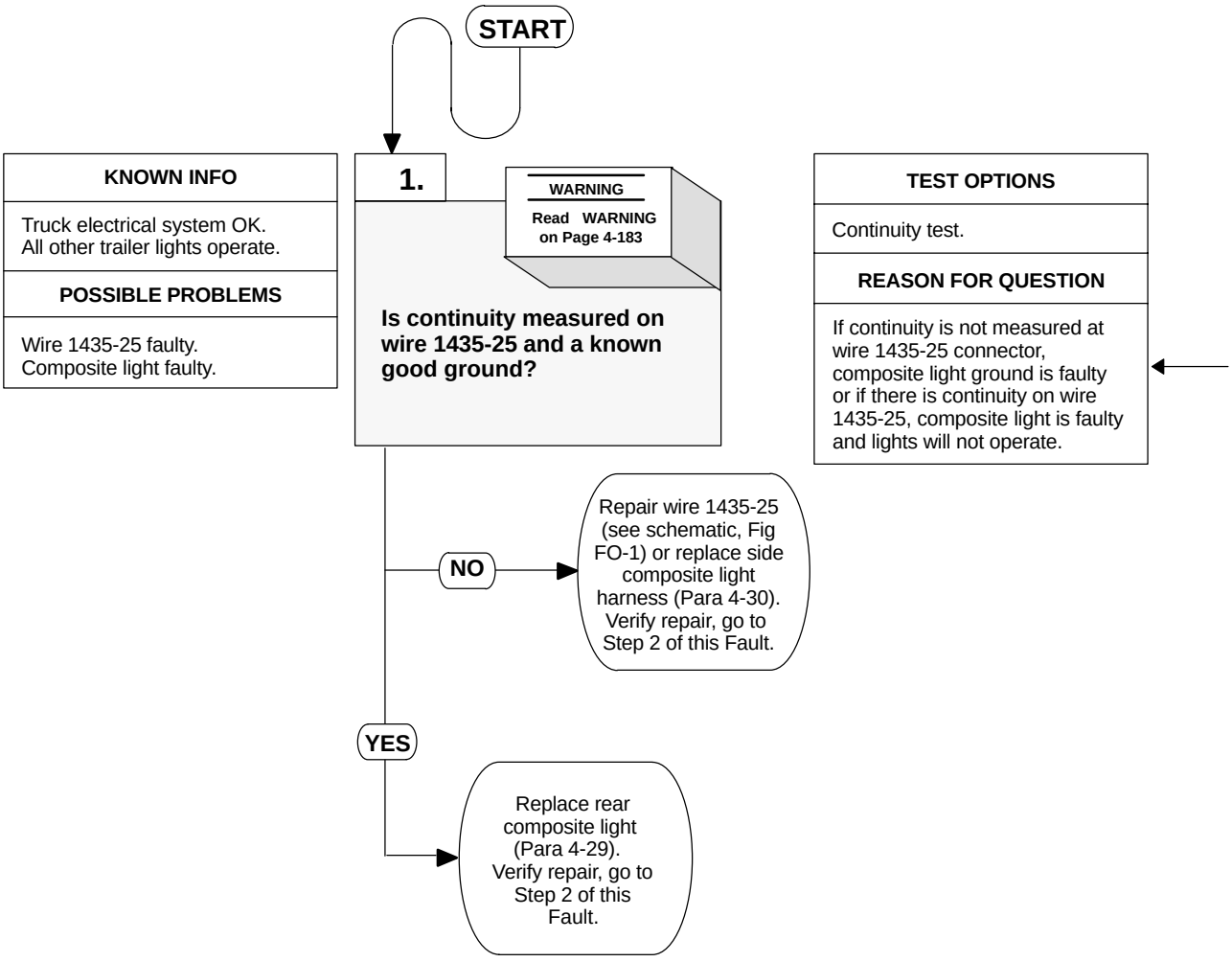
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

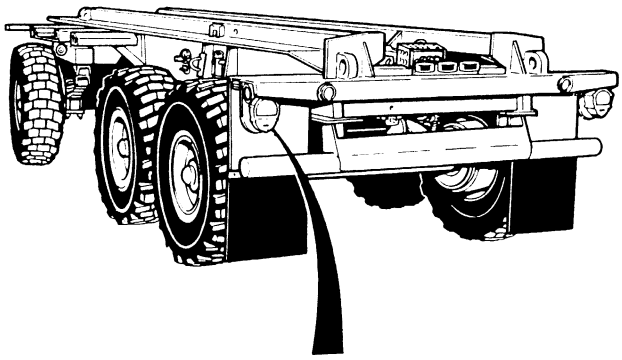
NOTE

- The following troubleshooting procedures cover the left taillight and stoplight.
- All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



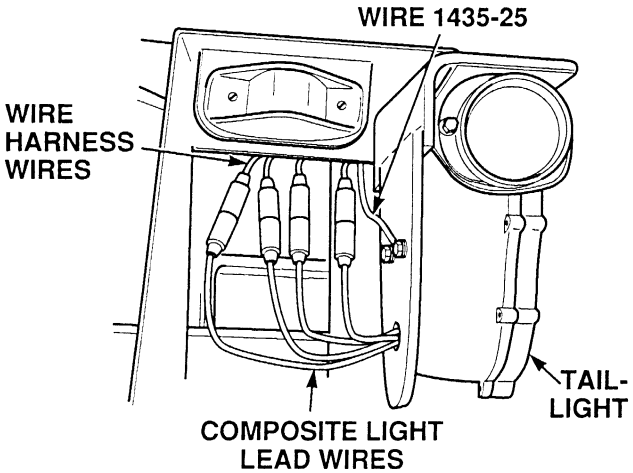
WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

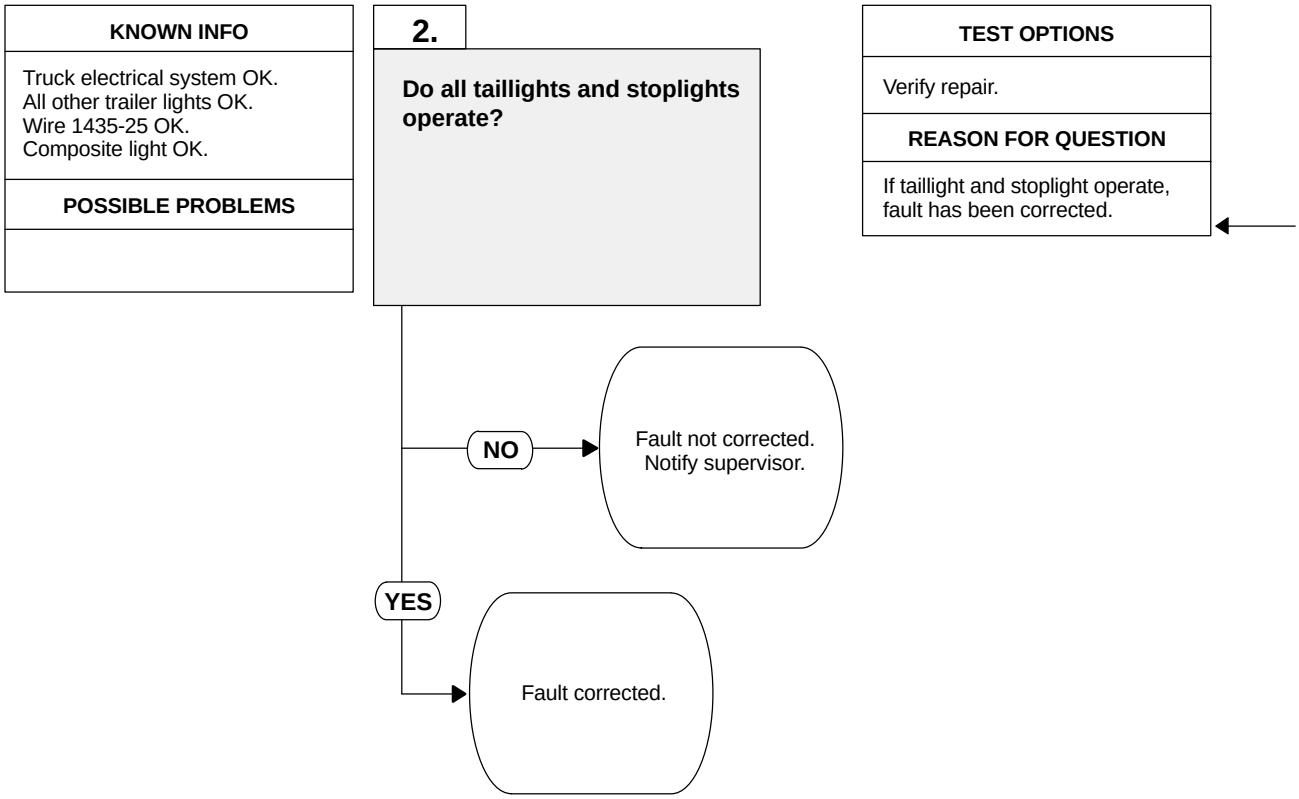


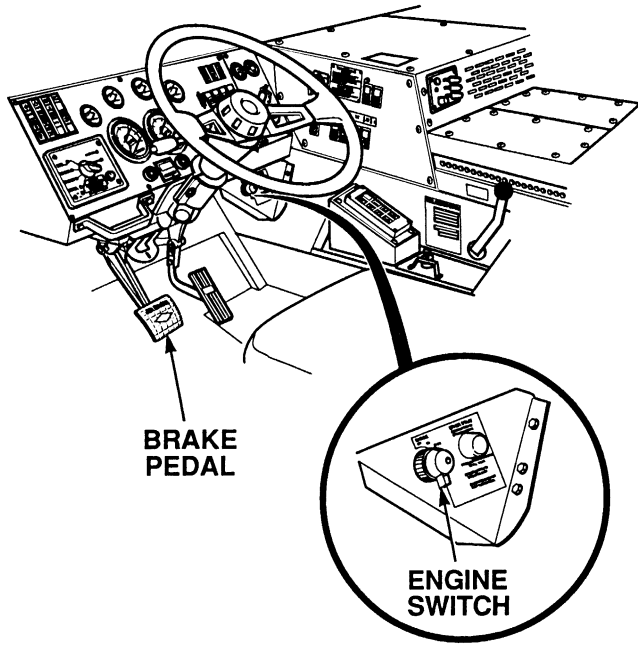
CONTINUITY TEST

(1) Set multimeter select switch to ohms.
(2) Is there continuity between wire 1435-25 connector and a known good ground?
   (a) If there is no continuity, repair wire 1435-25 (see schematic, Fig FO-1) or replace side composite light marker harness (Para 4-30).
   (b) If there is continuity, replace rear composite light (Para 4-29).



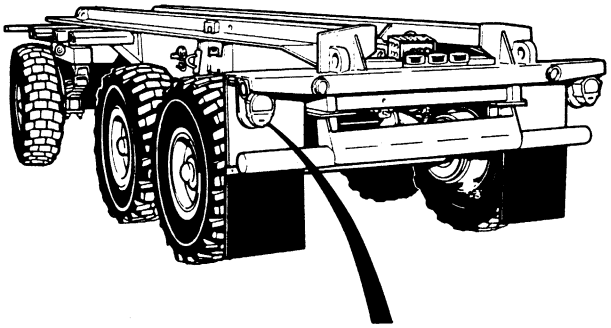
7. TAILLIGHT AND STOPLIGHT DO NOT OPERATE (CONT).

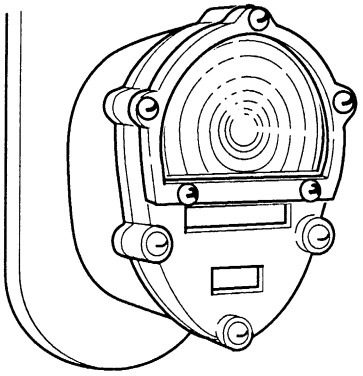




VERIFY REPAIR

(1) While assistant turns ON ENGINE switch, turns on lights, and fully applies brake pedal, observe composite lights (TM 9-2320-364-10).
  (a) If taillight and stoplight do not operate, fault not corrected. Perform Steps (2) through (4) below, and notify supervisor.
  (b) If taillight and stoplight operate, fault has been corrected.
(2) Release brake pedal.
(3) Turn off lights.
(4) Turn OFF ENGINE switch.





4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

8. REAR SIDE MARKER LIGHTS AND REAR MARKER LIGHTS DO NOT OPERATE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

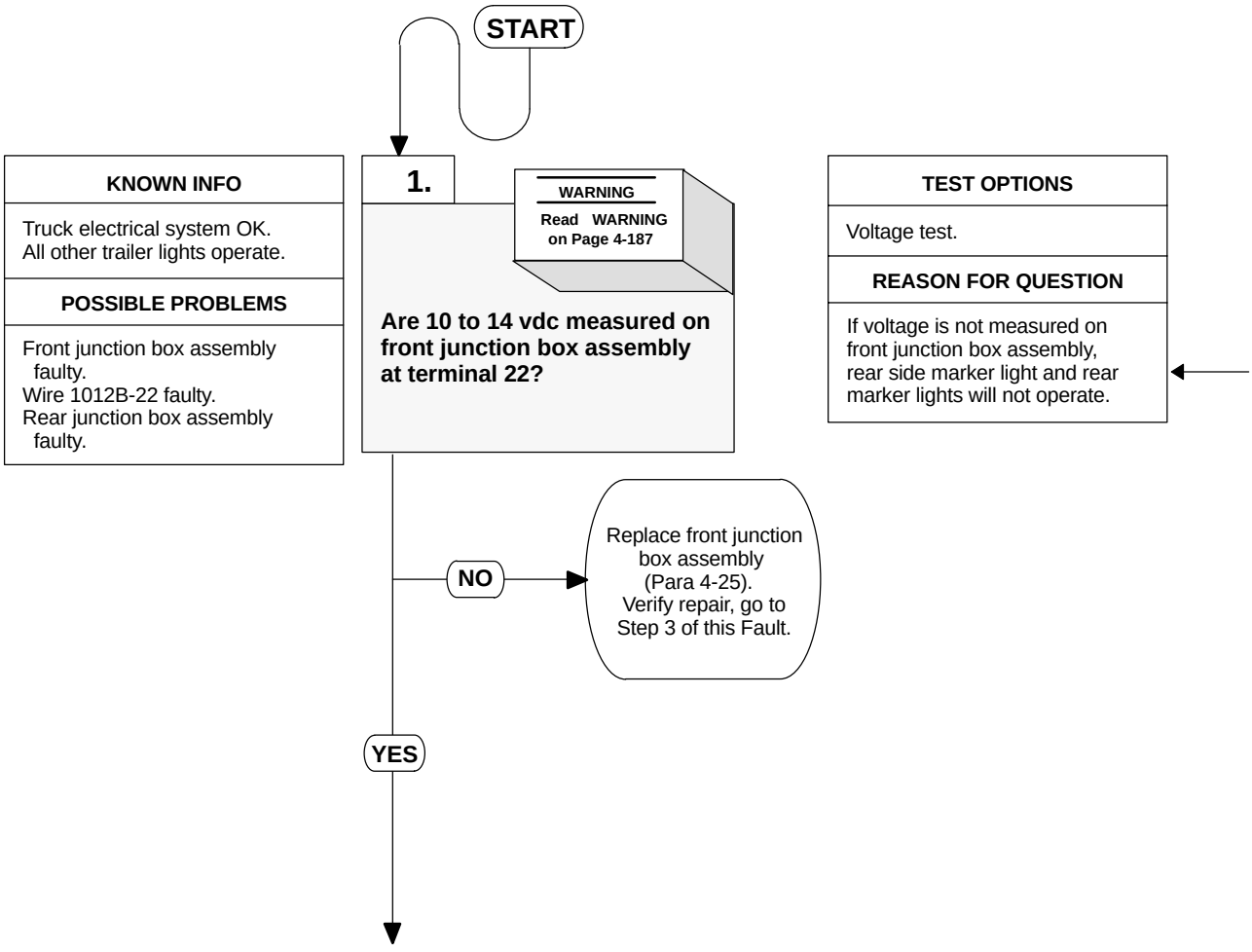
Materials/Parts
Locknut (Item 31, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

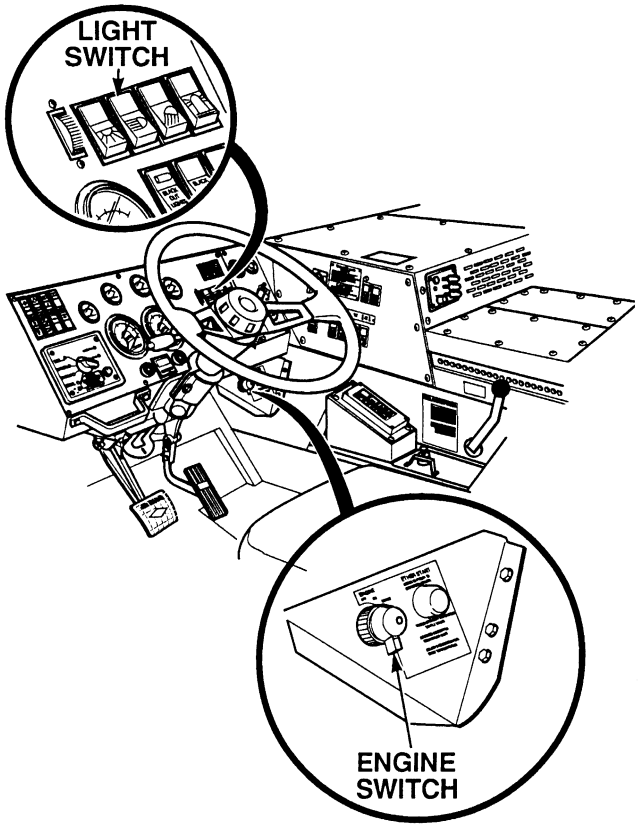
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.



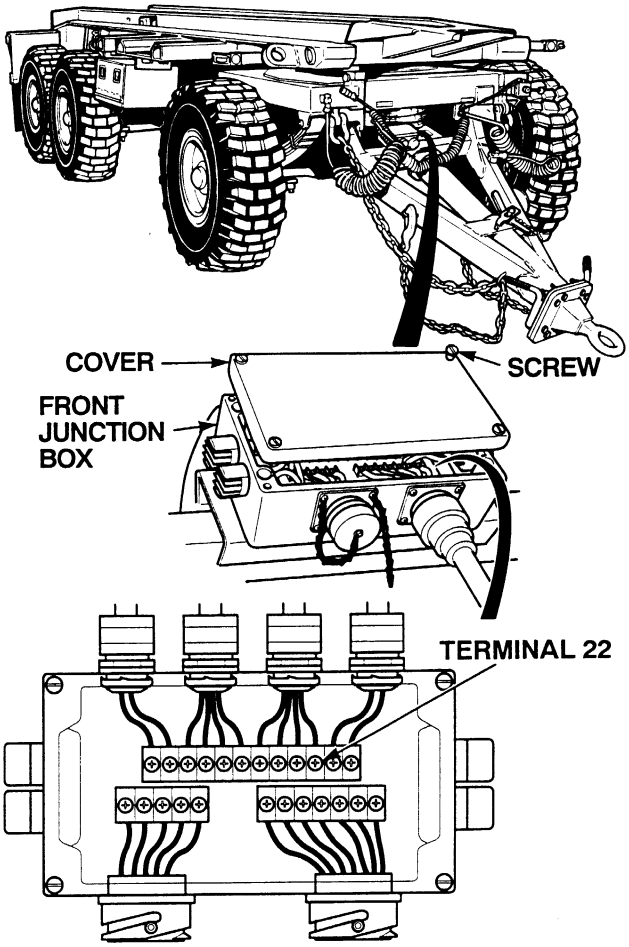
WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

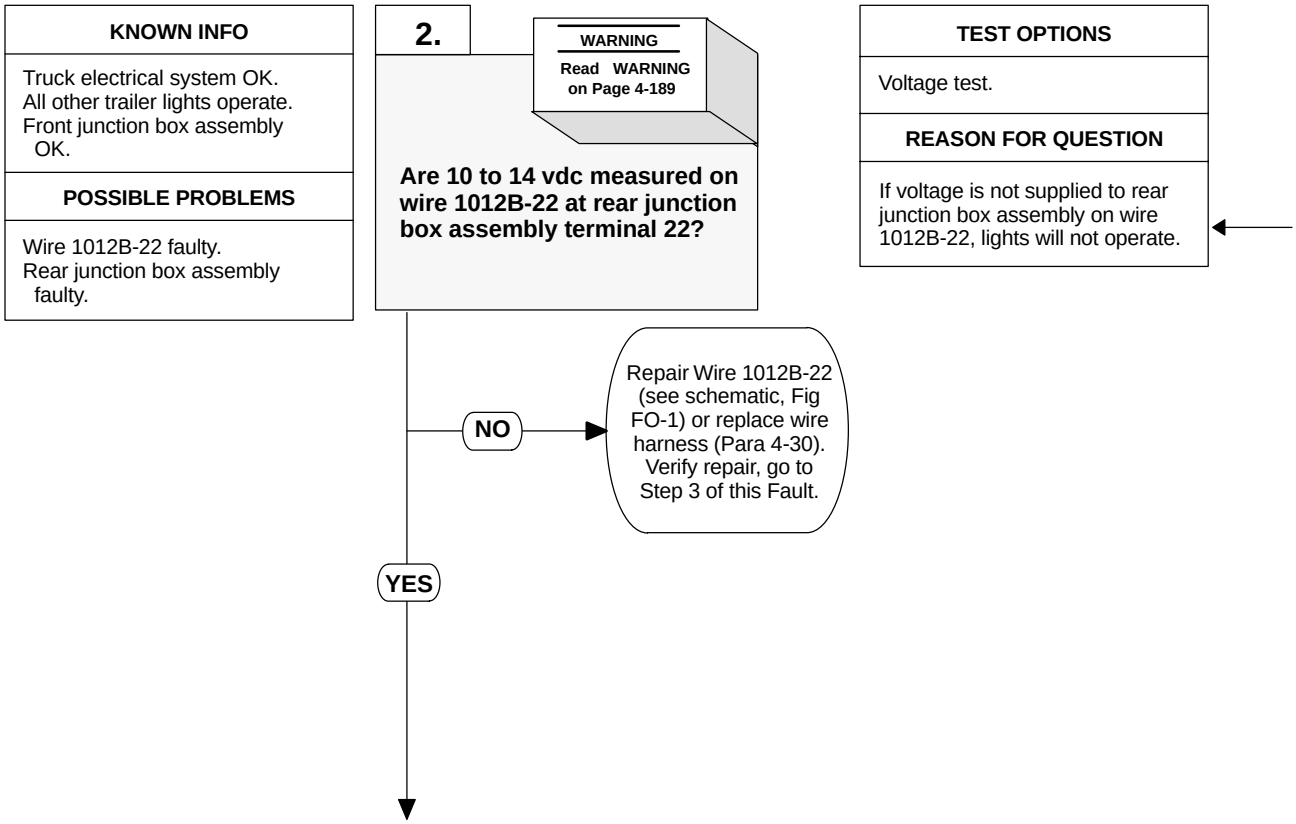


VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to volts dc.
(3) Connect positive (+) multimeter lead to front junction box assembly, terminal 22.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch, and turns on lights, observe multimeter (TM 9-2320-364-10).
    (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below, and replace front junction box assembly (Para 4-25).
    (b) If 10 to 14 vdc are present, front junction box assembly is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.
(8) Install front junction box cover and tighten four captive screws.



8. REAR SIDE MARKER LIGHTS AND REAR MARKER LIGHTS DO NOT OPERATE (CONT).

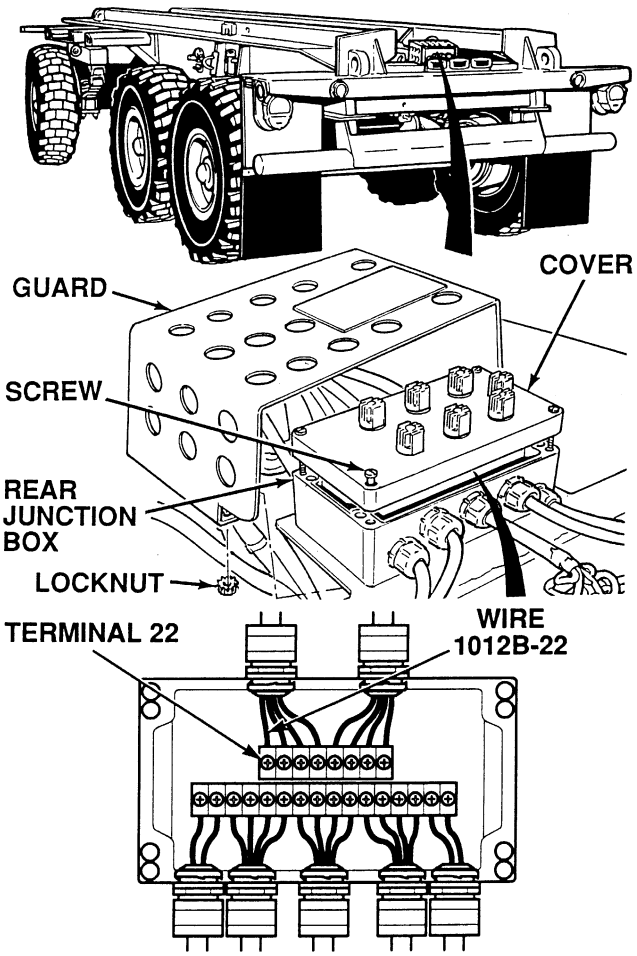


WARNING

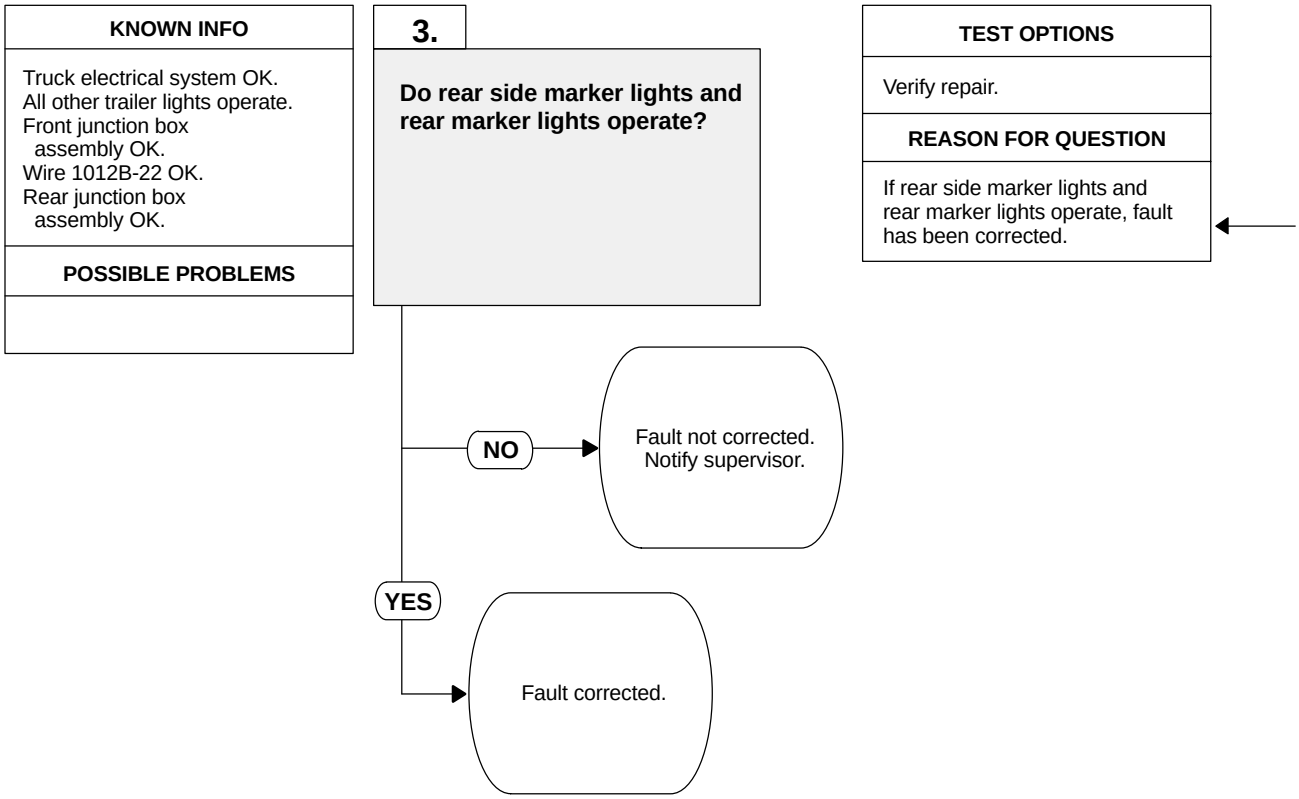
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

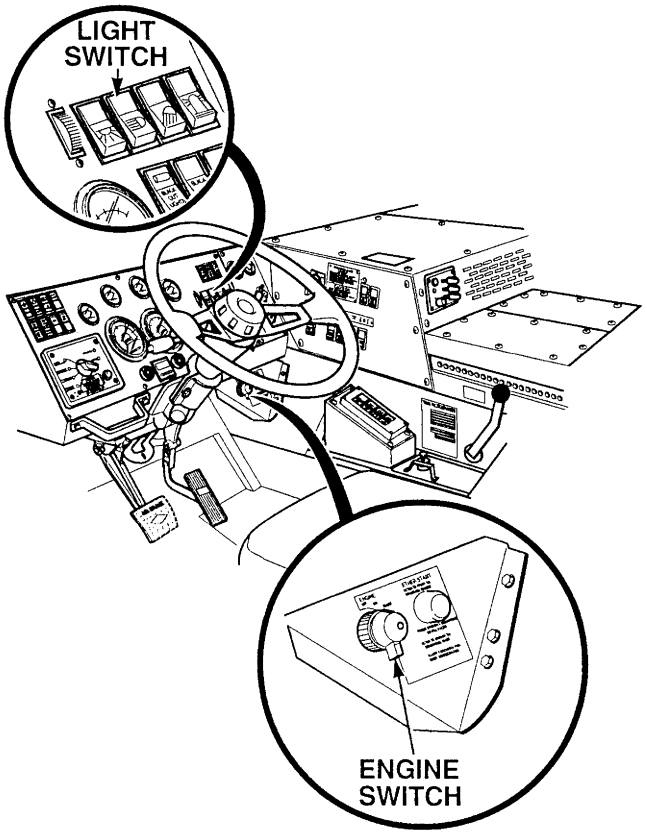
VOLTAGE TEST

(1) Remove four locknuts and rear junction box assembly guard. Discard locknuts.
(2) Loosen four captive screws and remove rear junction box assembly cover.
(3) Connect positive (+) multimeter lead to rear junction box cover assembly terminal 22.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on lights, observe multimeter (TM 9-2320-364-10)
    (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below, and repair wire 1012B-22 (see schematic, Fig FO-1) or replace wire harness (Para 4-30).
    (b) If 10 to 14 vdc are present, wire 1012B-22 is OK.
(6) Turn off lights.
(7) Turn OFF ENGINE switch.
(8) Install rear junction box cover and tighten four captive screws.
(9) Install rear junction box guard and four locknuts.



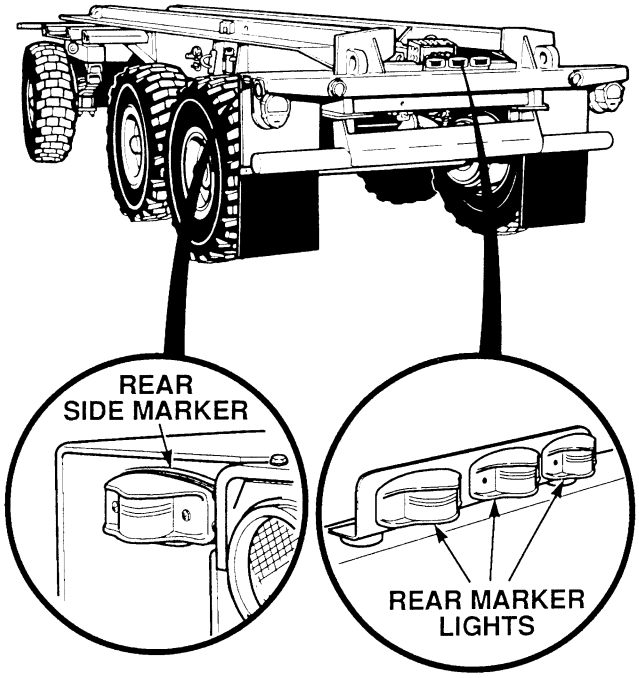
8. REAR SIDE MARKER LIGHTS AND REAR MARKER LIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on lights, observe rear marker lights and rear side marker lights (TM 9-2320-364-10).
   (a) If rear side marker lights and rear marker lights do not operate, fault not corrected. Perform Steps (2) and (3) below, and notify DS Maintenance.
   (b) If rear side marker lights and rear marker lights operate, fault has been corrected.
(2) Turn off lights.
(3) Turn OFF ENGINE switch.



4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

9. ALL MARKER LIGHTS DO NOT OPERATE.

INITIAL SETUP

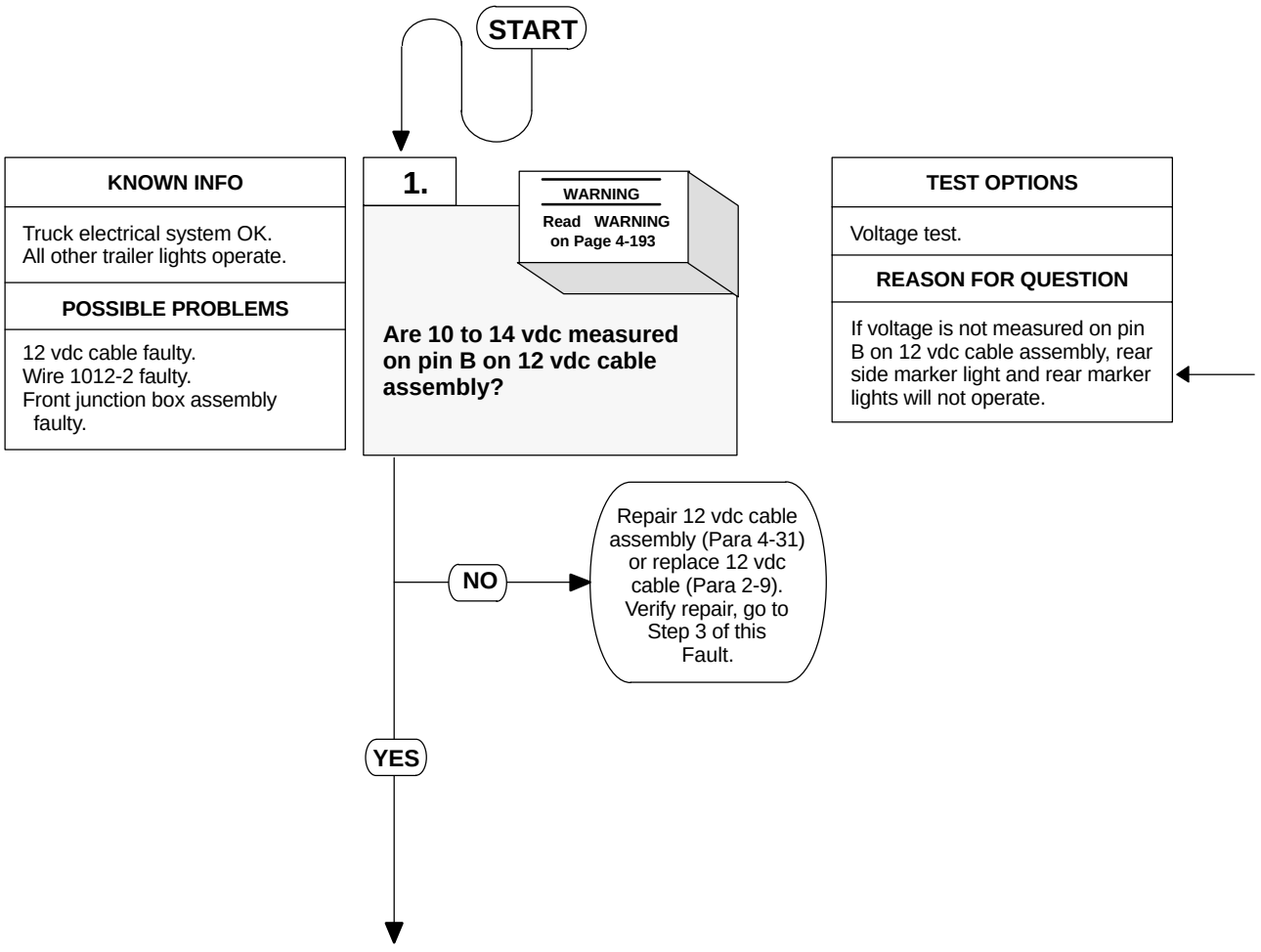
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

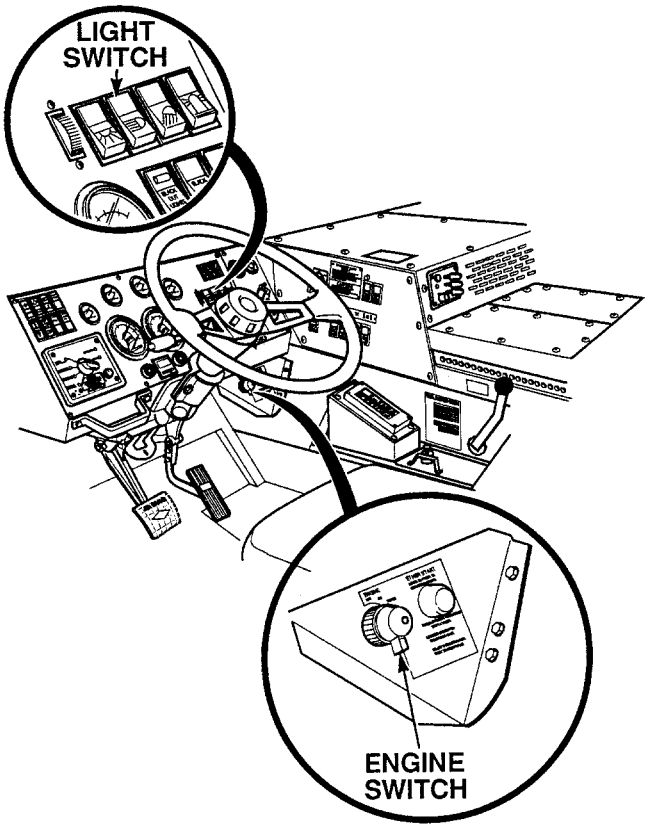
Personnel Required
Two

References
TM 9-3220-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)

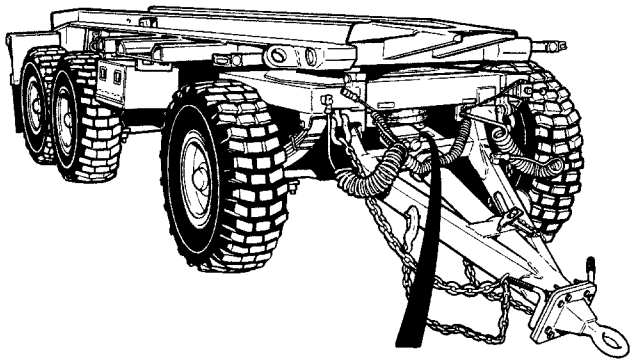
NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.





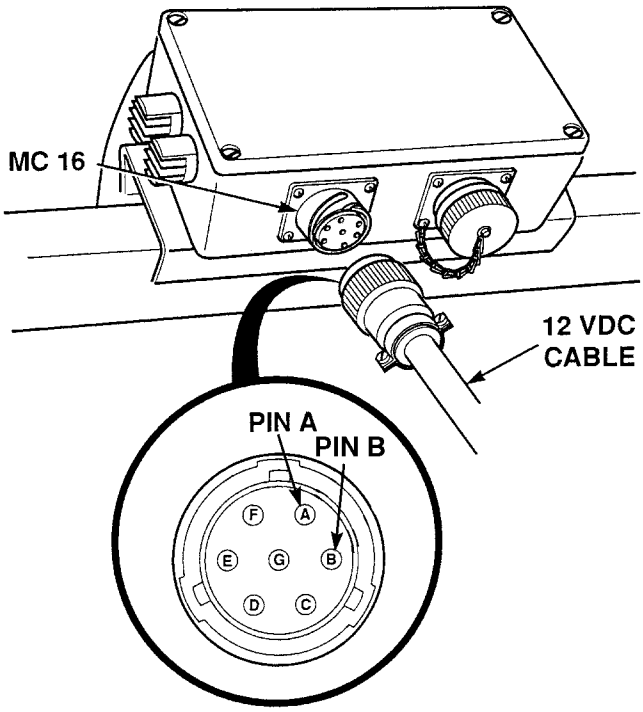
WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

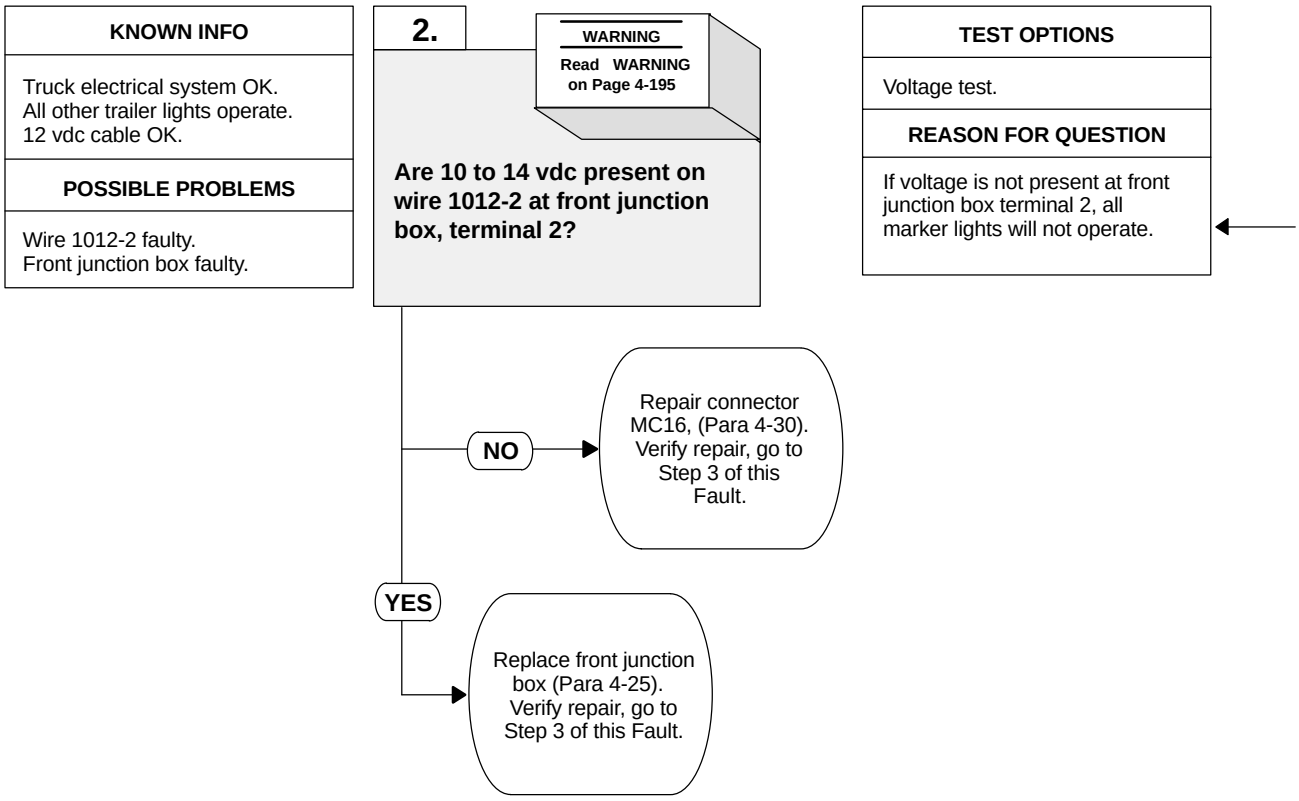


VOLTAGE TEST

(1) Disconnect 12 vdc cable from connector MC16.
(2) Set multimeter select switch to volts vdc.
(3) Connect positive (+) multimeter lead to pin B on 12 vdc cable.
(4) Connect negative (–) multimeter lead to pin A on 12 vdc cable.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below and repair 12 vdc cable (Para 4-31) or replace 12 vdc cable (Para 2-9).
  (b) If 10 to 14 vdc are present, 12 vdc cable is OK.
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.
(8) Connect 12 vdc cable to connector MC16.



9. ALL MARKER LIGHTS DO NOT OPERATE (CONT).

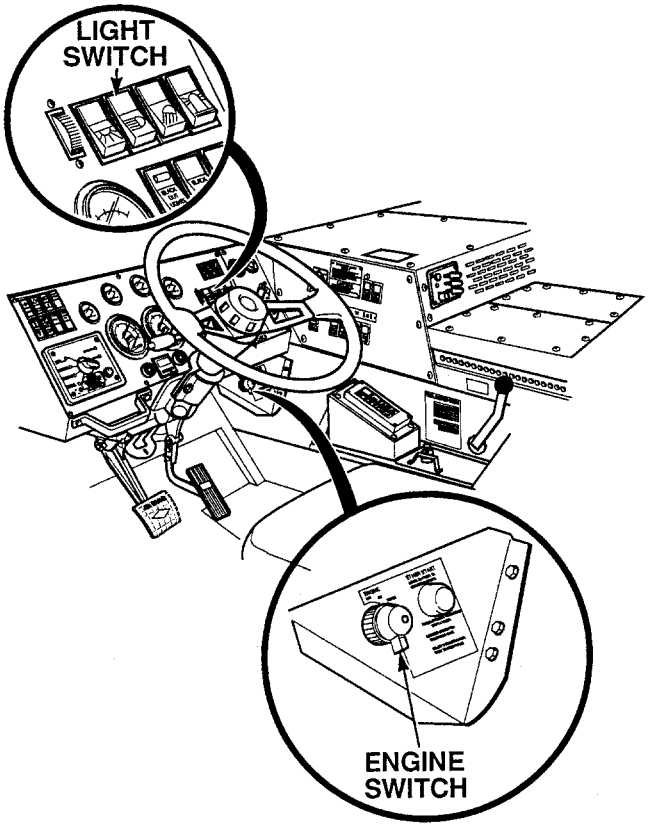


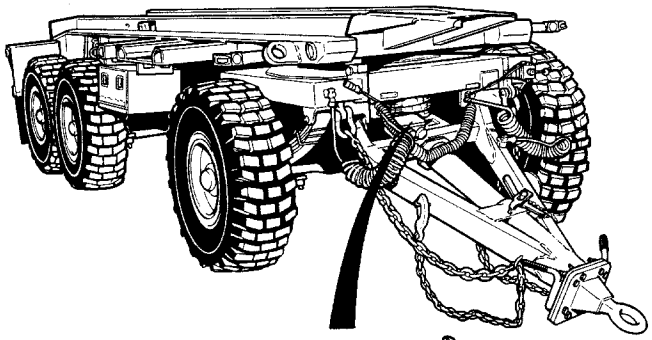
WARNING

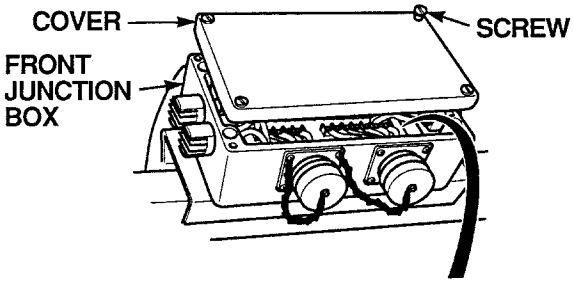
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.
- Resistors mounted on exterior of junction box assembly reach very high temperature when power is applied to circuit. Avoid touching or contacting resistors when working in or around junction boxes. Failure to comply could result in injury to personnel.

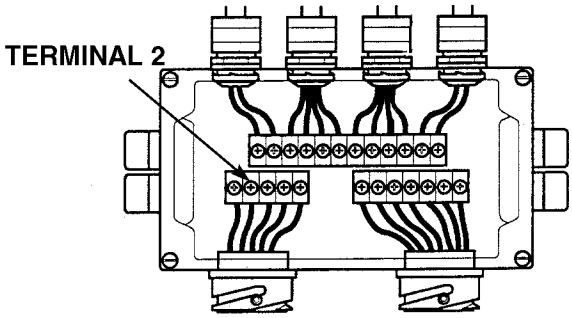
VOLTAGE TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to vdc.
(3) Connect positive (+) multimeter lead to front junction box assembly terminal 2.
(4) Connect negative (–) multimeter lead to a known good ground.
(5) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe multimeter, (TM 9-2320-364-10).
  (a) If 10 to 14 vdc are not present, perform Steps (6) and (7) below and replace connector MC16, (Para 4-30).
  (b) If 10 to 14 vdc are present, perform Steps (6) and (7) below and replace front junction box, (Para 4-25).
(6) Turn off LIGHT switch.
(7) Turn OFF ENGINE switch.

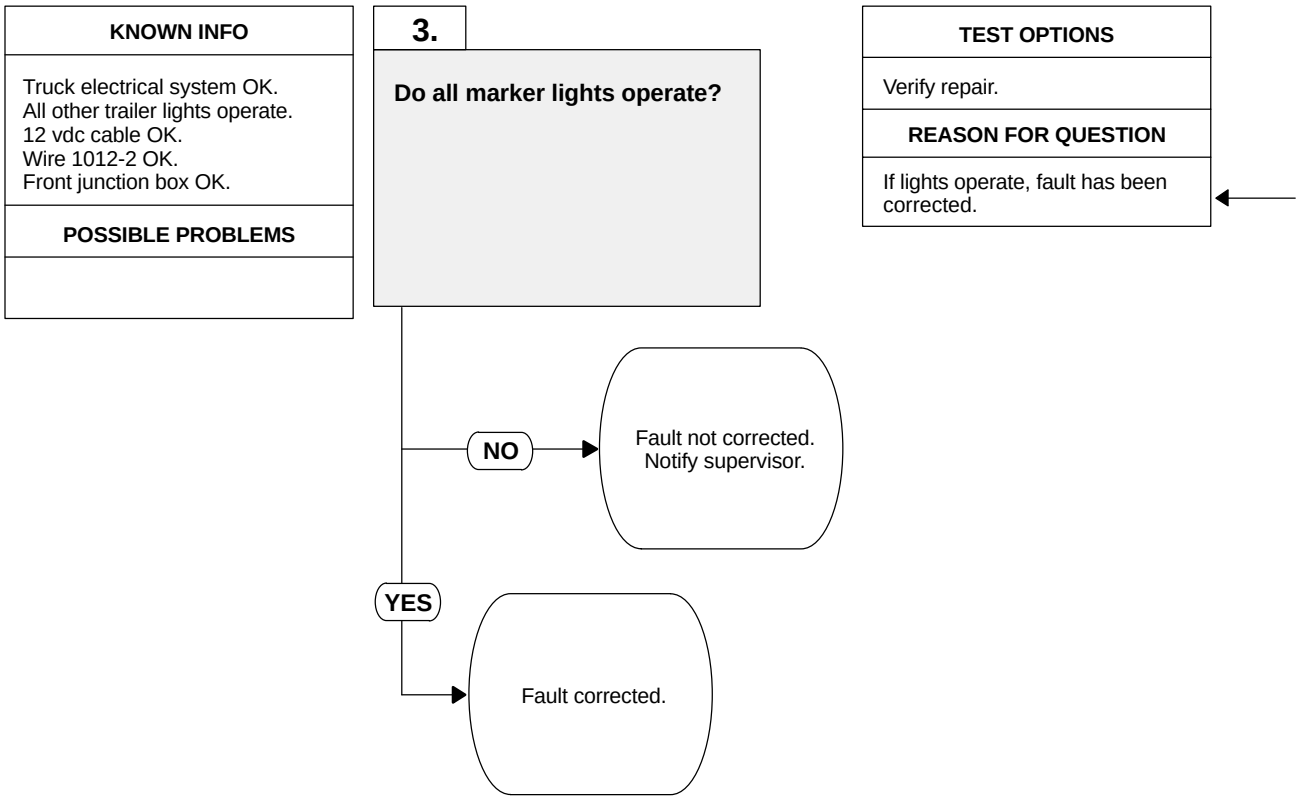


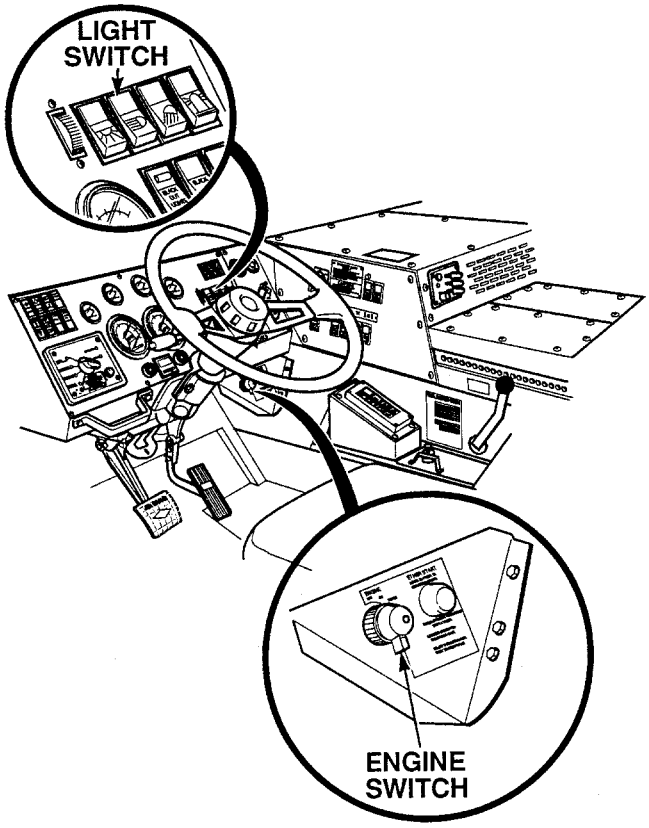






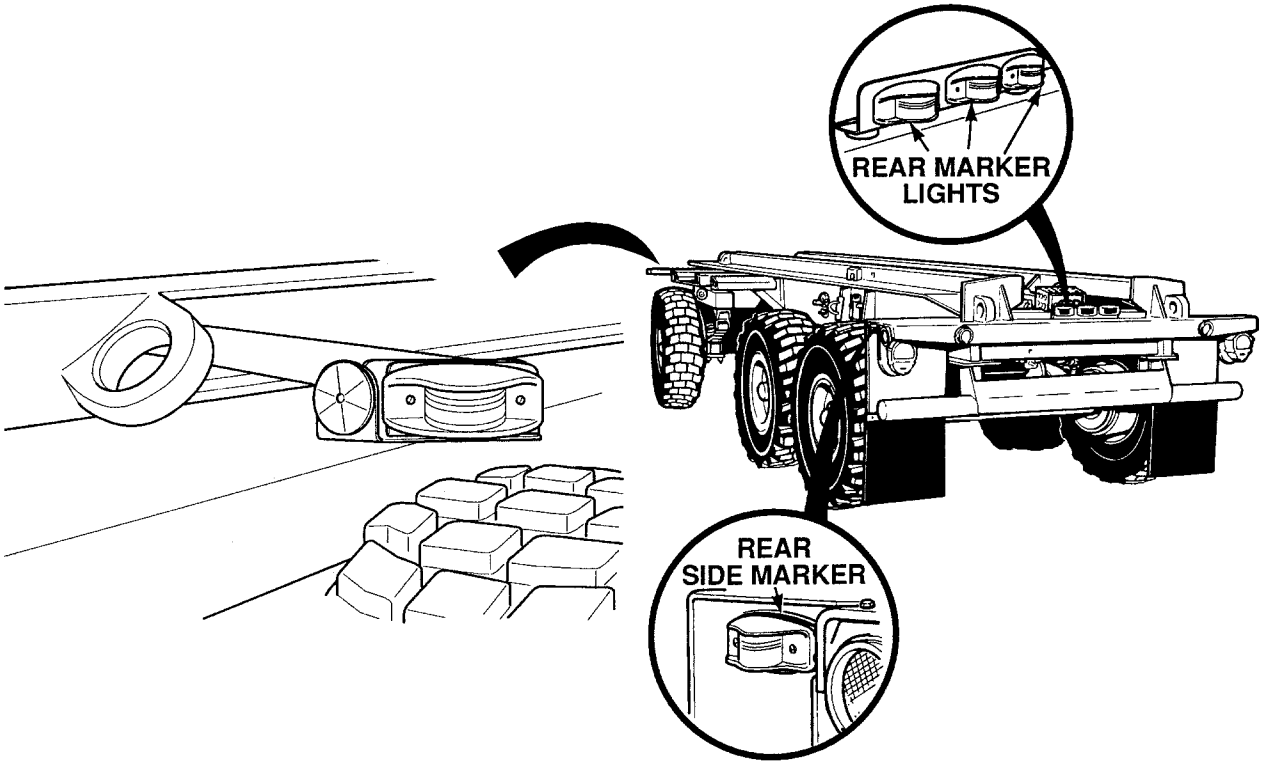
9. ALL MARKER LIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe all marker lights, (TM 9-2320-364-10).
   (a) If all marker lights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If all marker lights operate, fault has been corrected.
(2) Turn off LIGHT switch.
(3) Turn OFF ENGINE switch.



4-14. 12-VOLT ELECTRICAL SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

10. ALL TRAILER LIGHTS DO NOT OPERATE.

INITIAL SETUP

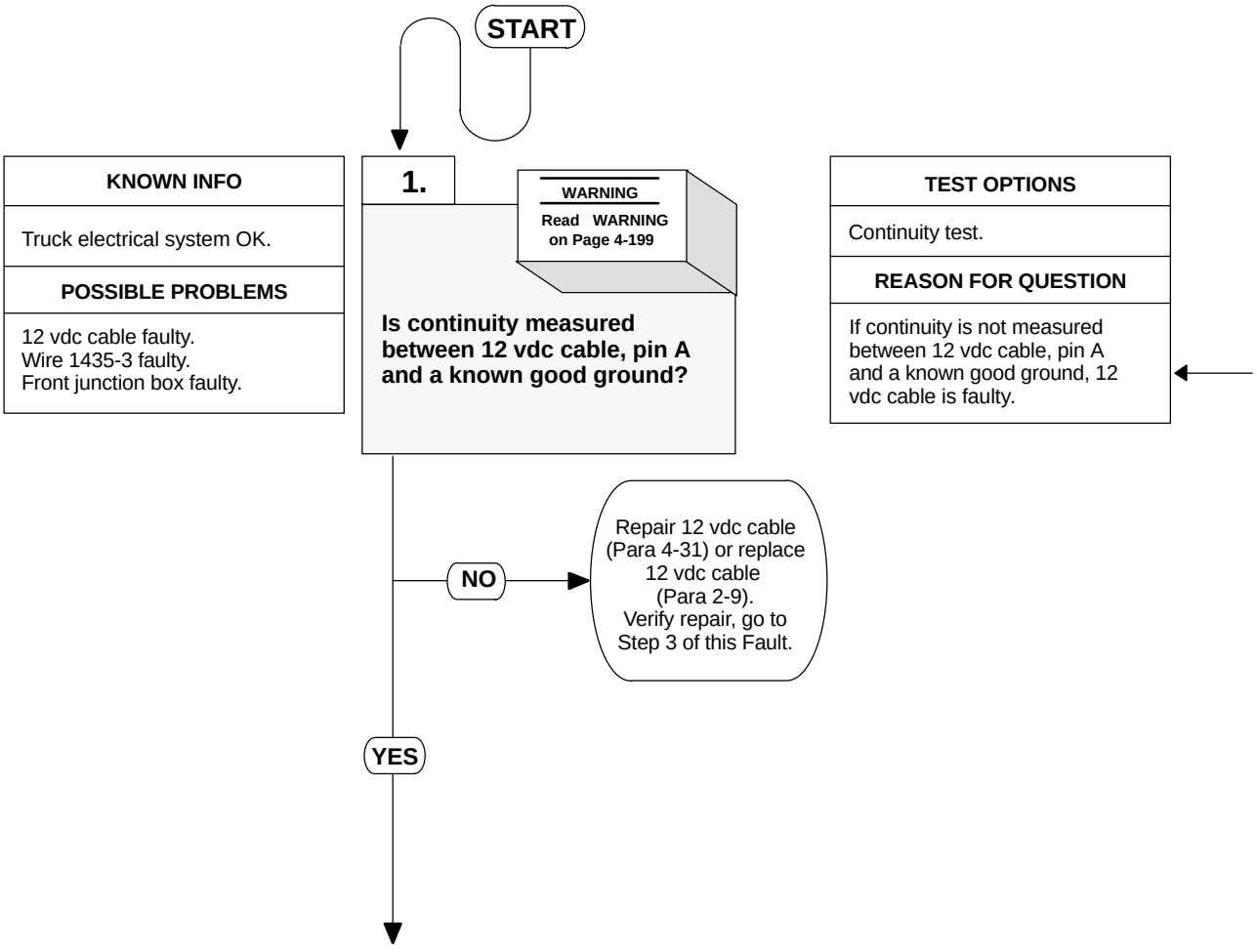
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Multimeter (Item 28, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
12 vdc cable assembly connected to truck, (Para 2-9)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)

NOTE
All electrical wires and components listed in this troubleshooting procedure are illustrated and located in FO-1.

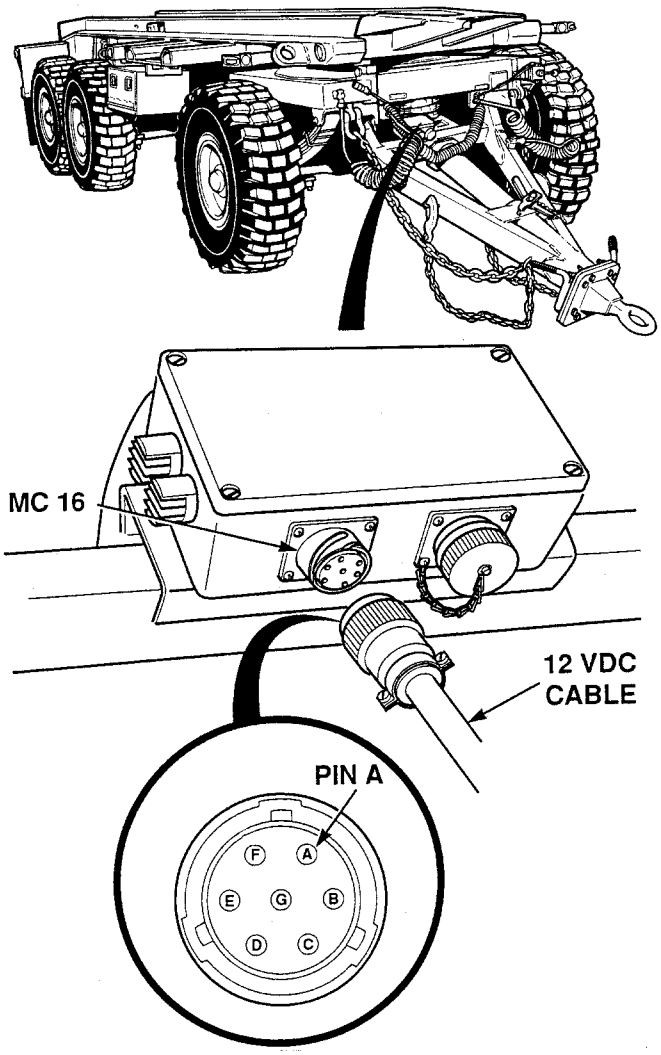


WARNING

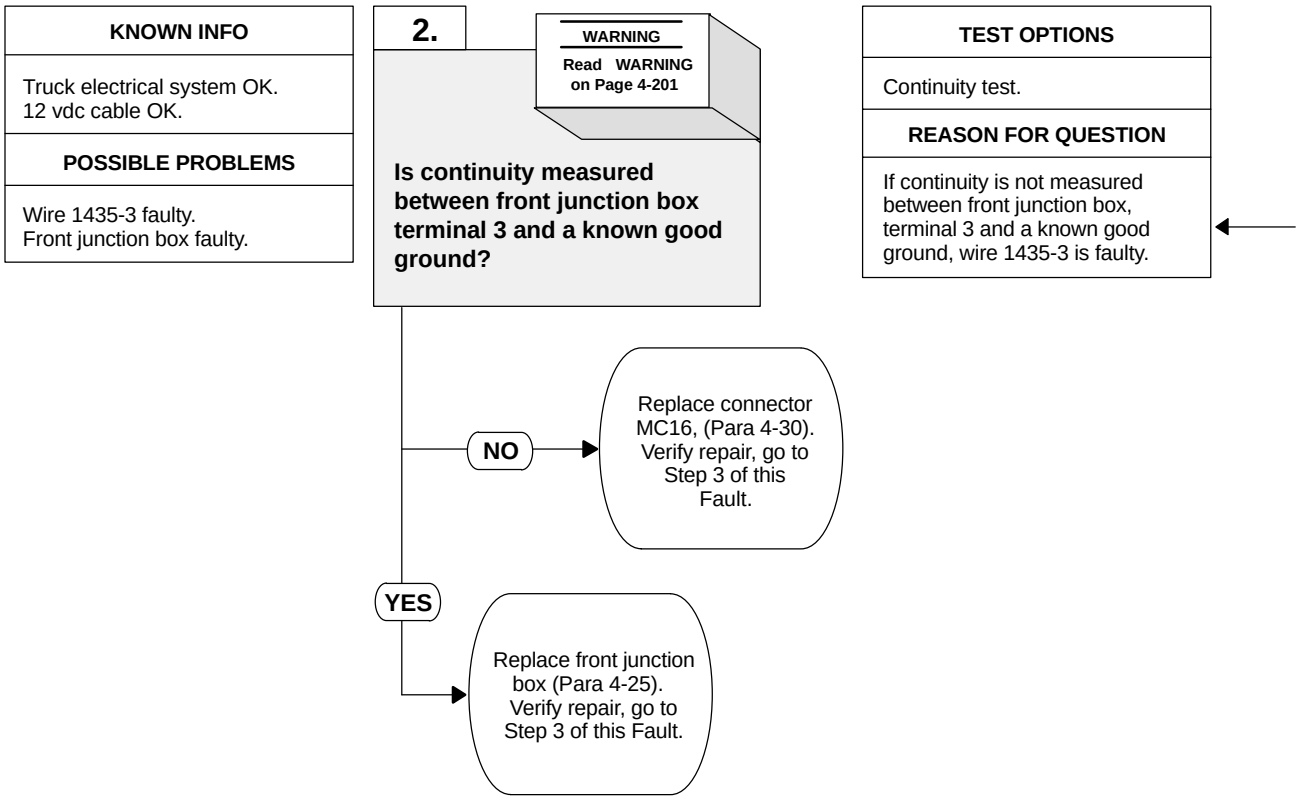
Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.

CONTINUITY TEST

(1) Disconnect 12 vdc cable from connector MC16.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured between 12 vdc cable, pin A and a known good ground?
  (a) If there is no continuity, repair 12 vdc cable (Para 4-31) or replace 12 vdc cable (Para 2-9).
  (b) If there is continuity, perform Step (4) below and go to Step 2 of this fault.
(4) Connect 12 vdc cable to connector MC-16.

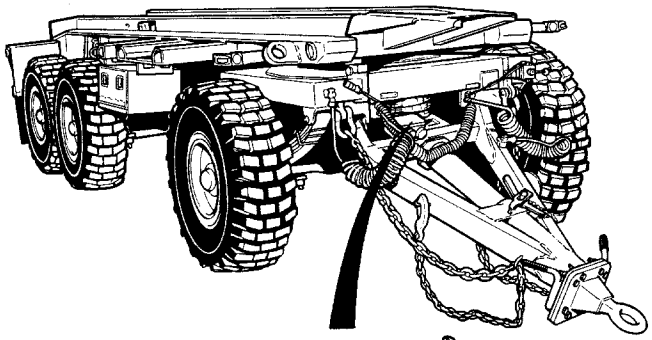


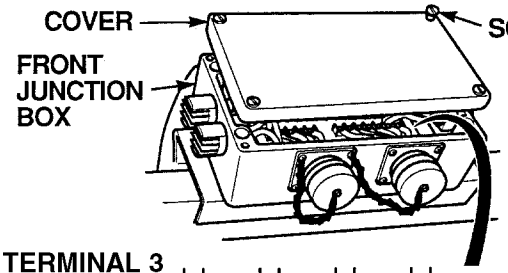
10. ALL TRAILER LIGHTS DO NOT OPERATE (CONT).

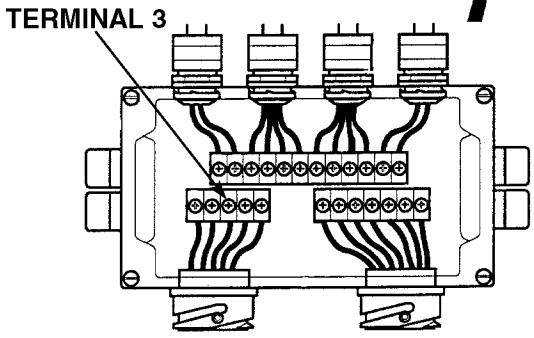


WARNING

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry or tools contact positive electrical circuits, a direct short may result. Damage to equipment, injury or death to personnel may occur.



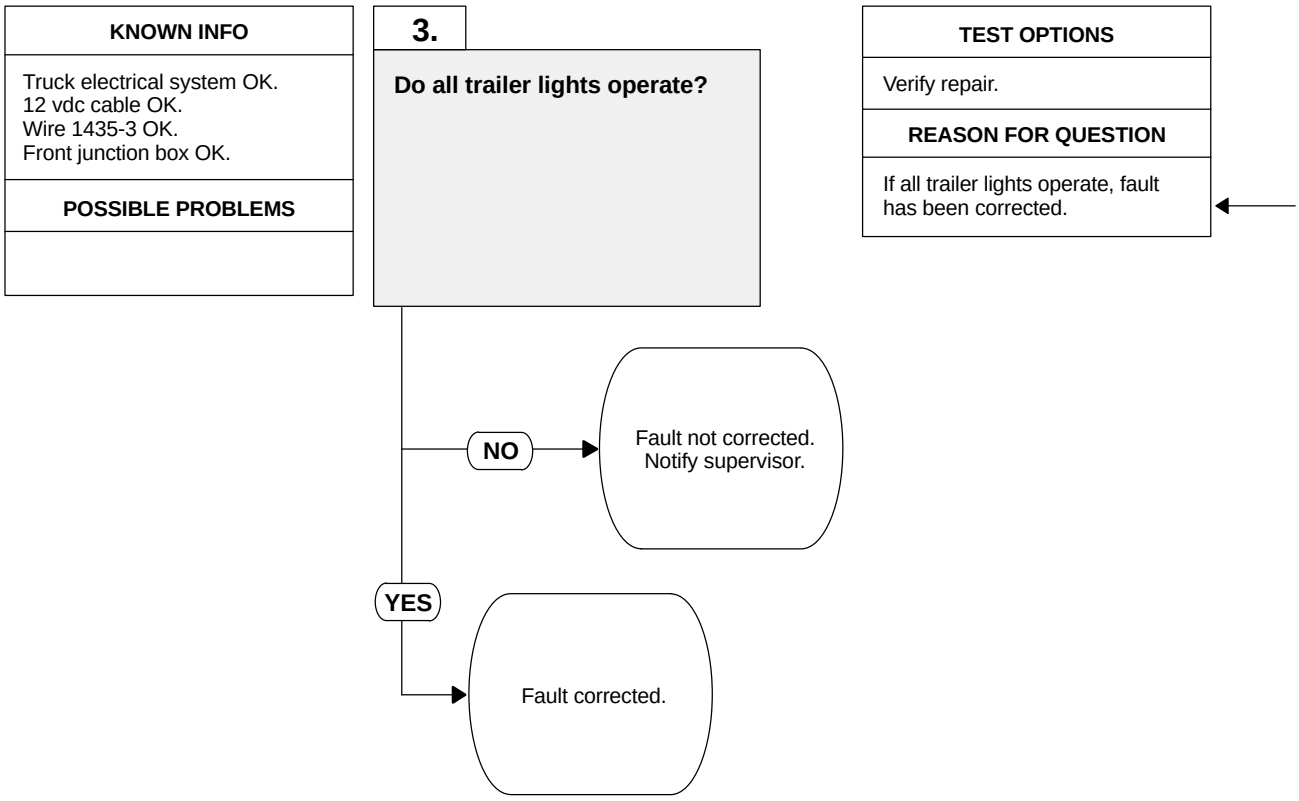


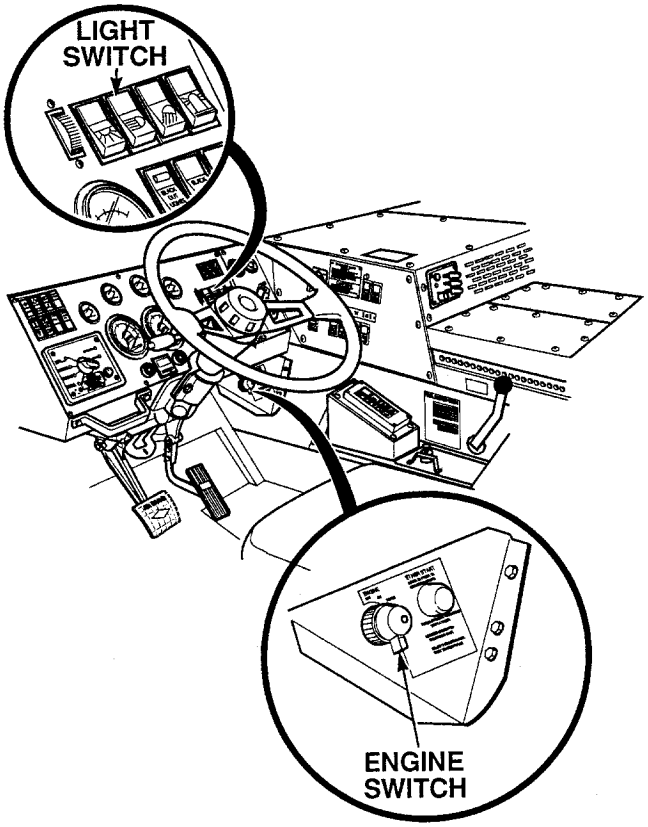


CONTINUITY TEST

(1) Loosen four captive screws and remove front junction box cover.
(2) Set multimeter select switch to ohms.
(3) Is continuity measured between front junction box, terminal 3 and a known good ground?
  (a) If continuity is not measured, replace connector MC16, (Para 4-30).
  (b) If continuity is measured, replace front junction box, (Para 4-25).

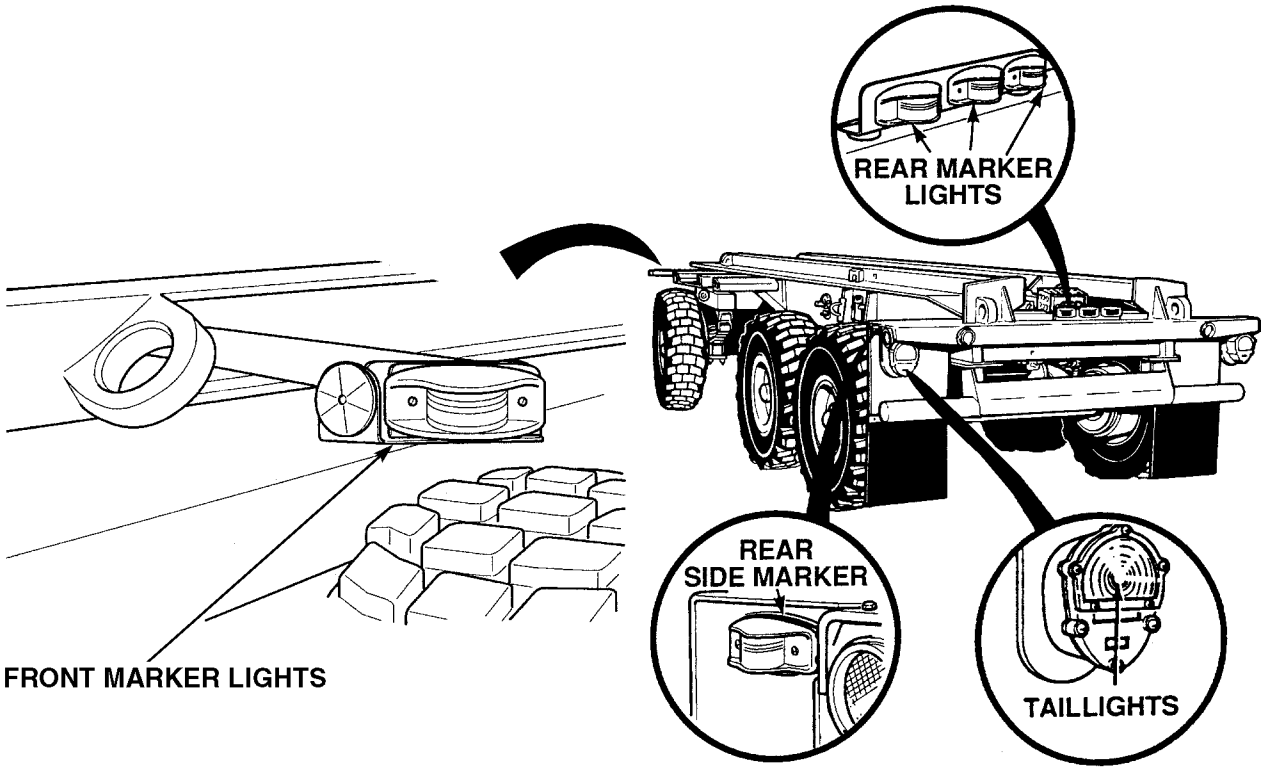
10. ALL TRAILER LIGHTS DO NOT OPERATE (CONT).





VERIFY REPAIR

(1) While assistant turns ON ENGINE switch and turns on LIGHT switch, observe all trailer lights, (TM 9-2320-364-10).
   (a) If all trailer lights do not operate, fault not corrected. Perform Steps (2) and (3) below and notify supervisor.
   (b) If all trailer lights operate, fault has been corrected.
(2) Turn off LIGHT switch.
(3) Turn OFF ENGINE switch.



4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES.

This paragraph covers air system troubleshooting procedures. The Air System Fault Index, Table 4-5, lists faults for the air system of the trailer. Refer to schematic, Figure FO-2 when performing tests and corrective actions.

Table 4-5. Air System Fault Index

4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

1. TRAILER AIR SYSTEM WILL NOT CHARGE OR MAINTAIN A CHARGE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)

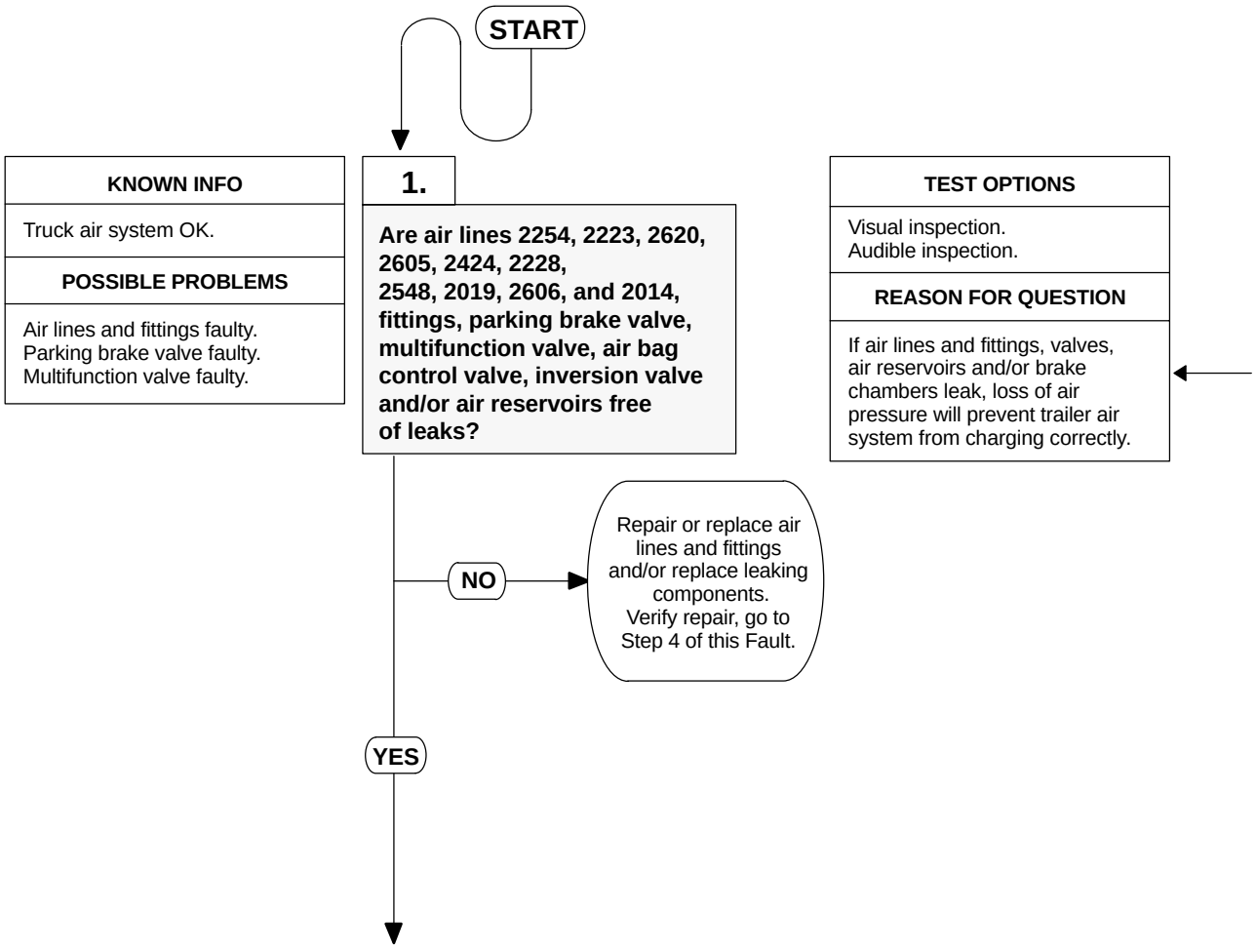
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)
Flatrack removed from trailer, (TM 9-2320-364-10)

NOTE

Soap and water solution will be used to visually check for leaks.

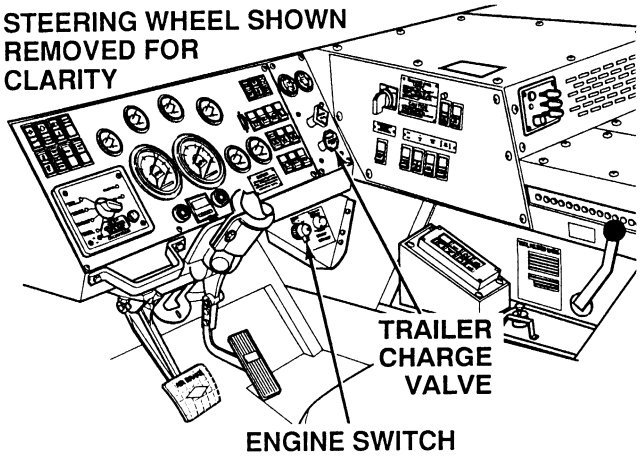


NOTE

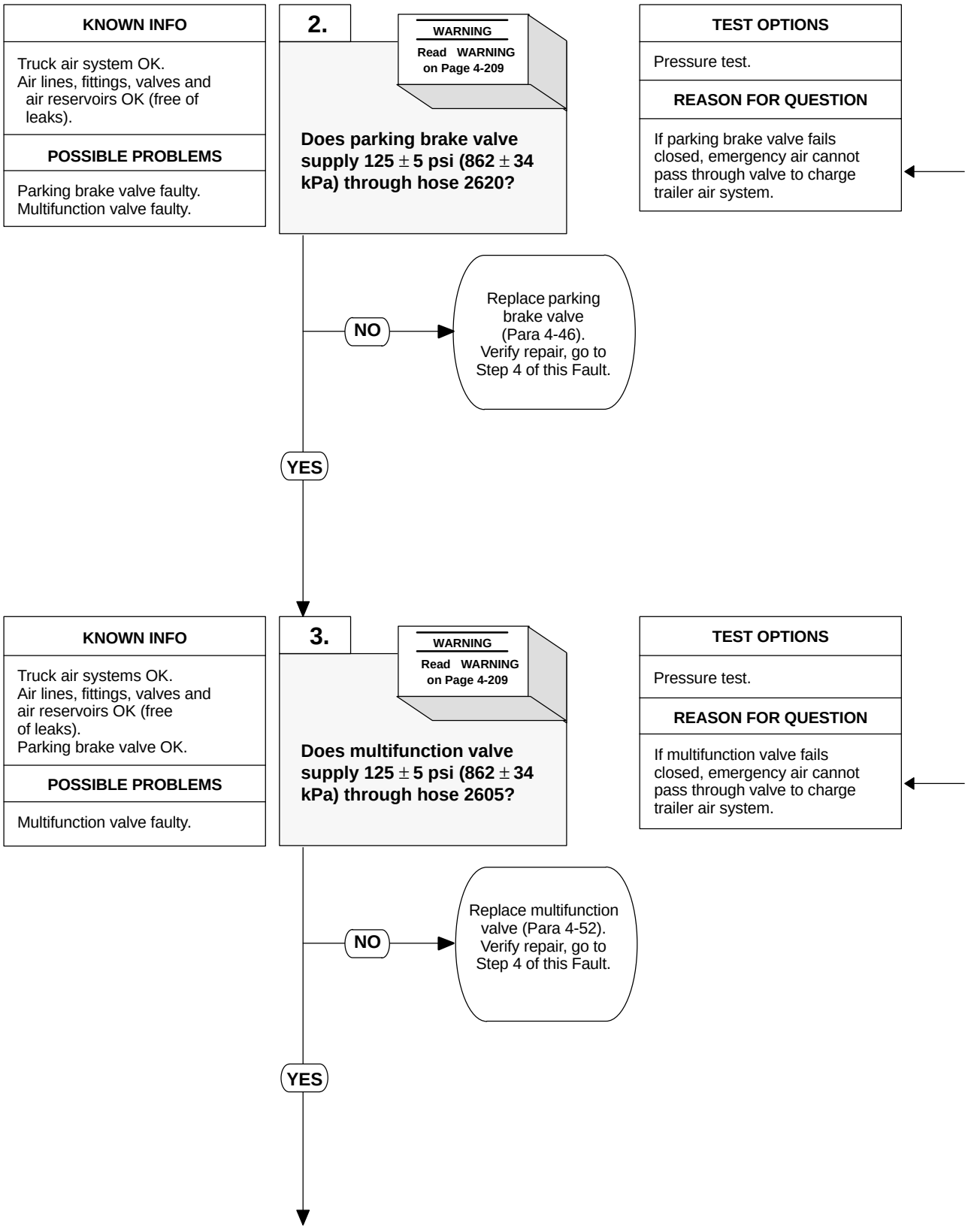
- 125 ± 5 psi (862 ± 34 kPa) must be supplied to trailer air system before troubleshooting can begin.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

(1) Push in trailer charge valve in truck (Para 2-22).
(2) Listen for leaks from the following components air lines 2254, 2223, 2620, 2605, 2424, 2228, 2548, 2019, 2606, 2014, fittings, parking brake control valve, inversion valve, air bag control valve, air reservoirs, brake relay valves, and multifunction valve.
   (a) If fittings leak and are loose, tighten fittings.
   (b) If air hose(s) leak, perform Steps (3) and (4) below and repair or replace air hose(s) (see schematic Fig FO-2 or Para 4-40 and 4-45).
   (c) If any of the components listed above leak, perform Steps (3) and (4) below and replace them according to maintenance procedures (Chapter 4).
   (d) If all of Items above are OK, perform Steps (3) and (4) below and go to Step (2) of this Fault.
(3) Pull out trailer charge valve in truck.
(4) Turn OFF ENGINE switch.



1. TRAILER AIR SYSTEM WILL NOT CHARGE OR MAINTAIN A CHARGE (CONT).

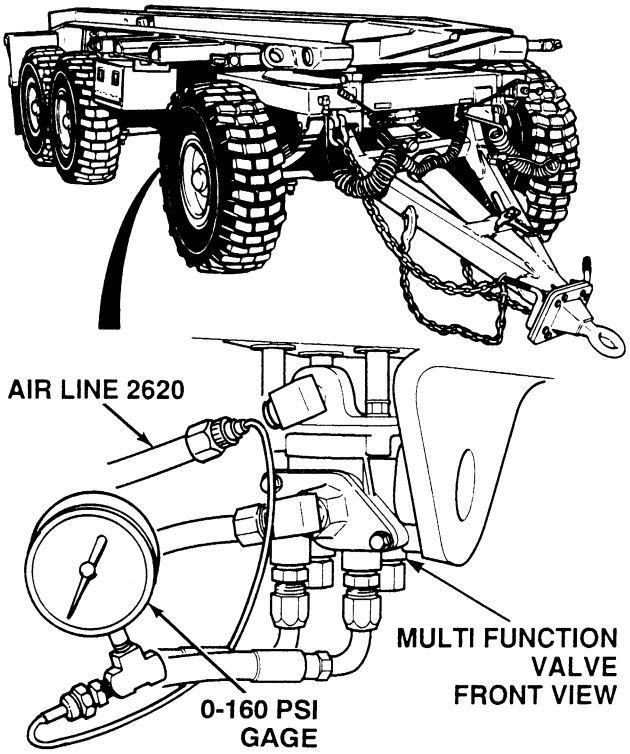


WARNING

If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause personal injury. Air system should be drained before air lines are disconnected.

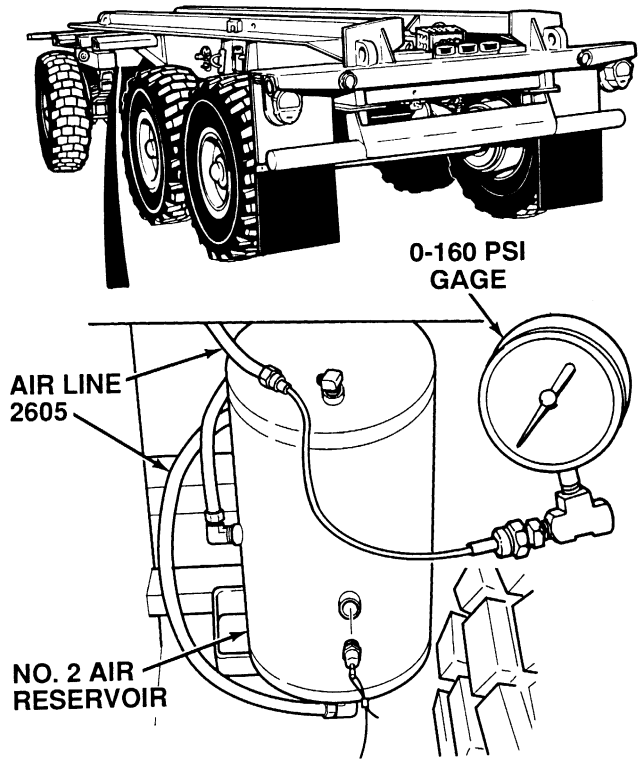
PRESSURE TEST

(1) Disconnect air hose 2620 from multifunction valve.
(2) Connect air hose 2620 to 0-160 psi (1103 kPa) pressure gage.
(3) Start engine (TM 9-2320-364-10).
(4) While assistant pushes in trailer charge valve in truck (Para 2-22), observe pressure gage.
  (a) If 125 ± 5 psi (862 ± 34 kPa) are not measured, perform Steps (5) through (8) below and replace parking brake valve (Para 4-46).
  (b) If 125 ± 5 psi (862 ± 34 kPa) are measured, parking brake valve is OK.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.
(7) Disconnect air hose 2620 from pressure gage.
(8) Connect air hose 2620 to multifunction valve.

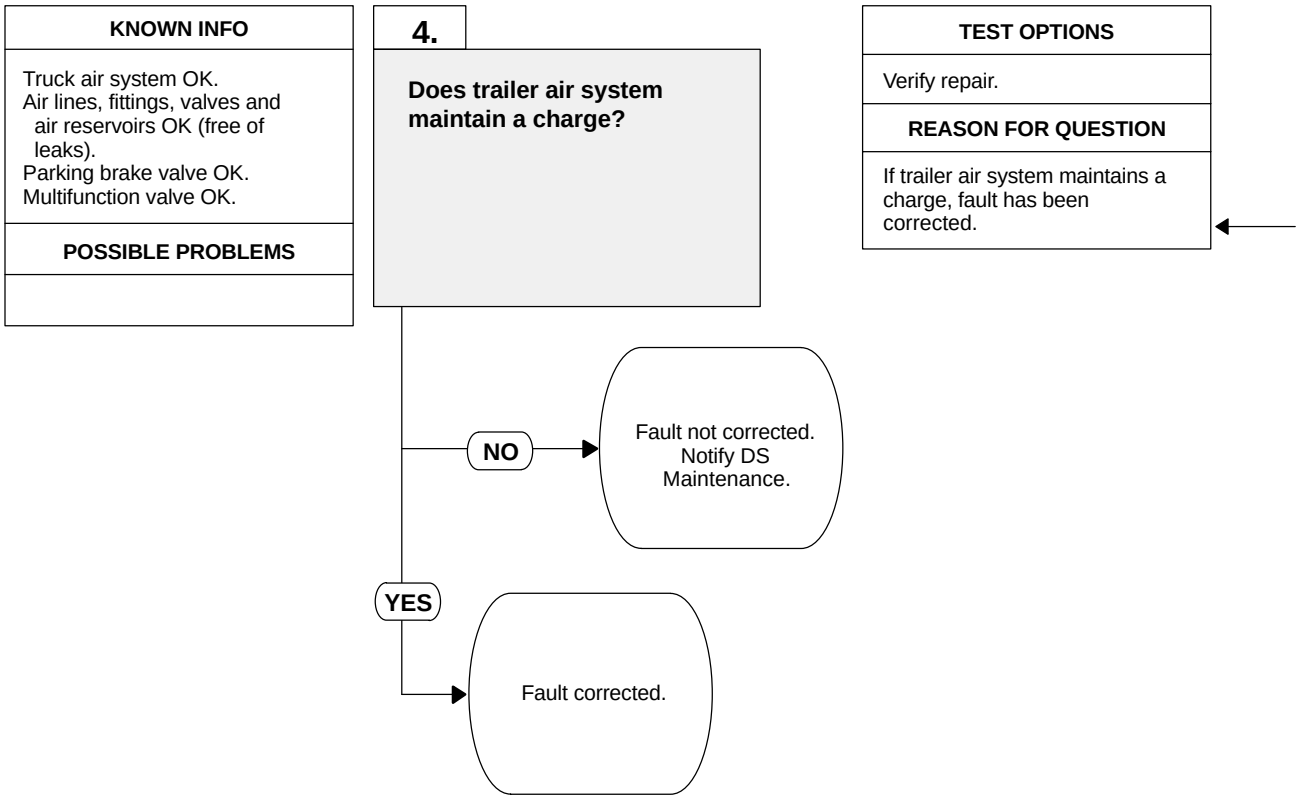


PRESSURE TEST

(1) Disconnect air hose 2605 from air reservoir 2.
(2) Connect air hose 2605 to 0-160 psi (1103 kPa) pressure gage.
(3) Start engine (TM 9-2320-364-10).
(4) While assistant pushes in trailer charge valve in truck (Para 2-22), observe pressure gage.
  (a) If 125 ± 5 psi (862 ± 34 kPa) are not measured, perform Steps (5) through (8) and replace multifunction valve (Para 4-52).
  (b) If 125 ± 5 psi (862 ± 34 kPa) are measured, multifunction valve is OK.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.
(7) Disconnect air hose 2605 from pressure gage.
(8) Connect air hose 2605 to air reservoir 2.



1. TRAILER AIR SYSTEM WILL NOT CHARGE OR MAINTAIN A CHARGE (CONT.)

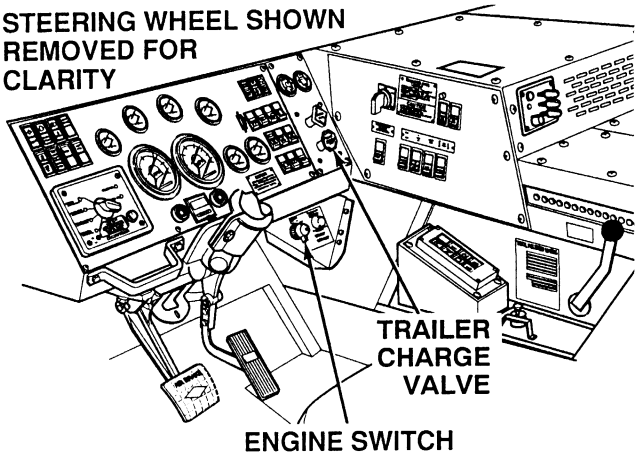


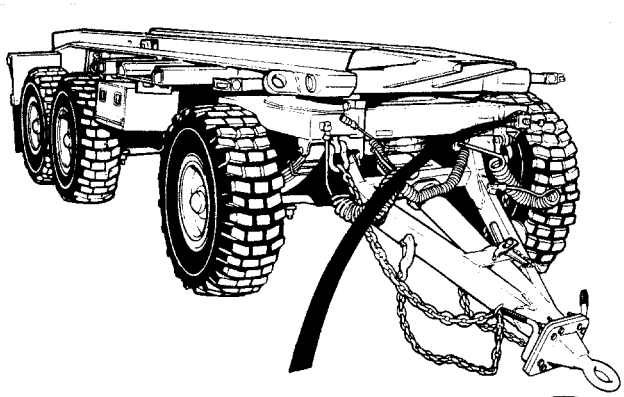
WARNING

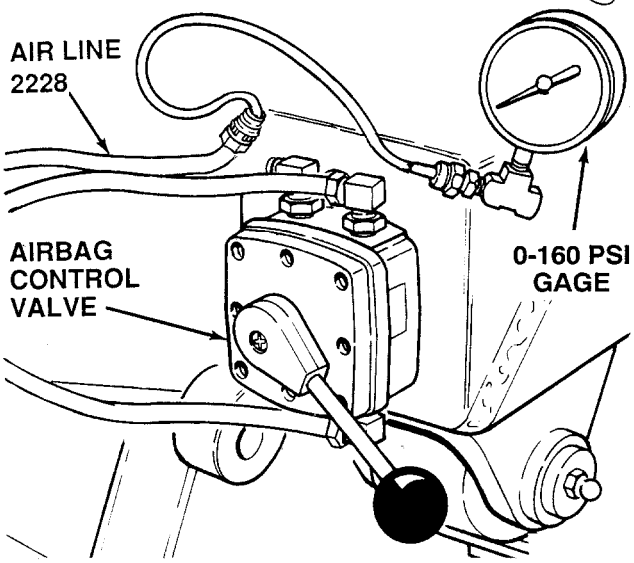
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

VERIFY REPAIR

(1) Drain trailer air system (Para 2-21).
(2) Disconnect hose 2228 from air bag control valve.
(3) Connect 0 to 160 psi (1103 kPa) gage to air hose 2228.
(4) Start engine (TM 9-2320-364-10).
(5) While assistant pushes in trailer charge valve in truck, observe pressure gage (Para 2-22).
  (a) If pressure does not raise to 125 ± 5 psi (862 ± 34 kPa), perform Steps (6) through (10) below and notify DS maintenance.
  (b) If pressure does raise to 125 ± 5 psi (862 ± 34 kPa), fault corrected.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.
(8) Drain trailer air system.
(9) Disconnect gage from hose 2228.
(10) Connect hose 2228 to air bag control valve.







4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT.)

2. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT LOCK.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)

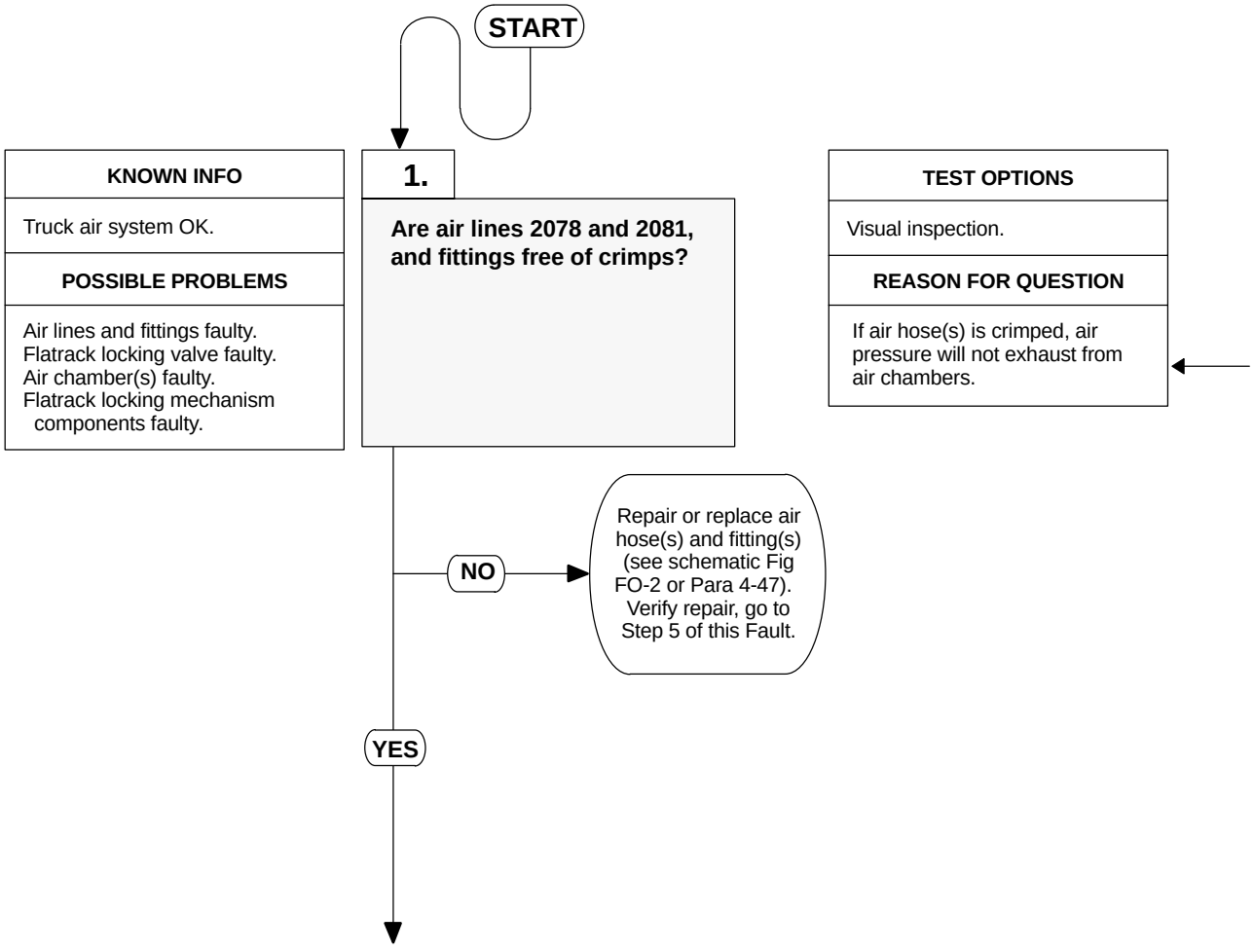
Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)
Flatrack removed from trailer, (TM 9-2320-364-10)

NOTE

Soap and water solution will be used to visually check for leaks.



NOTE

- 125 ± 5 psi (862 ± 34 kPa) must be supplied to trailer air system before troubleshooting can begin.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

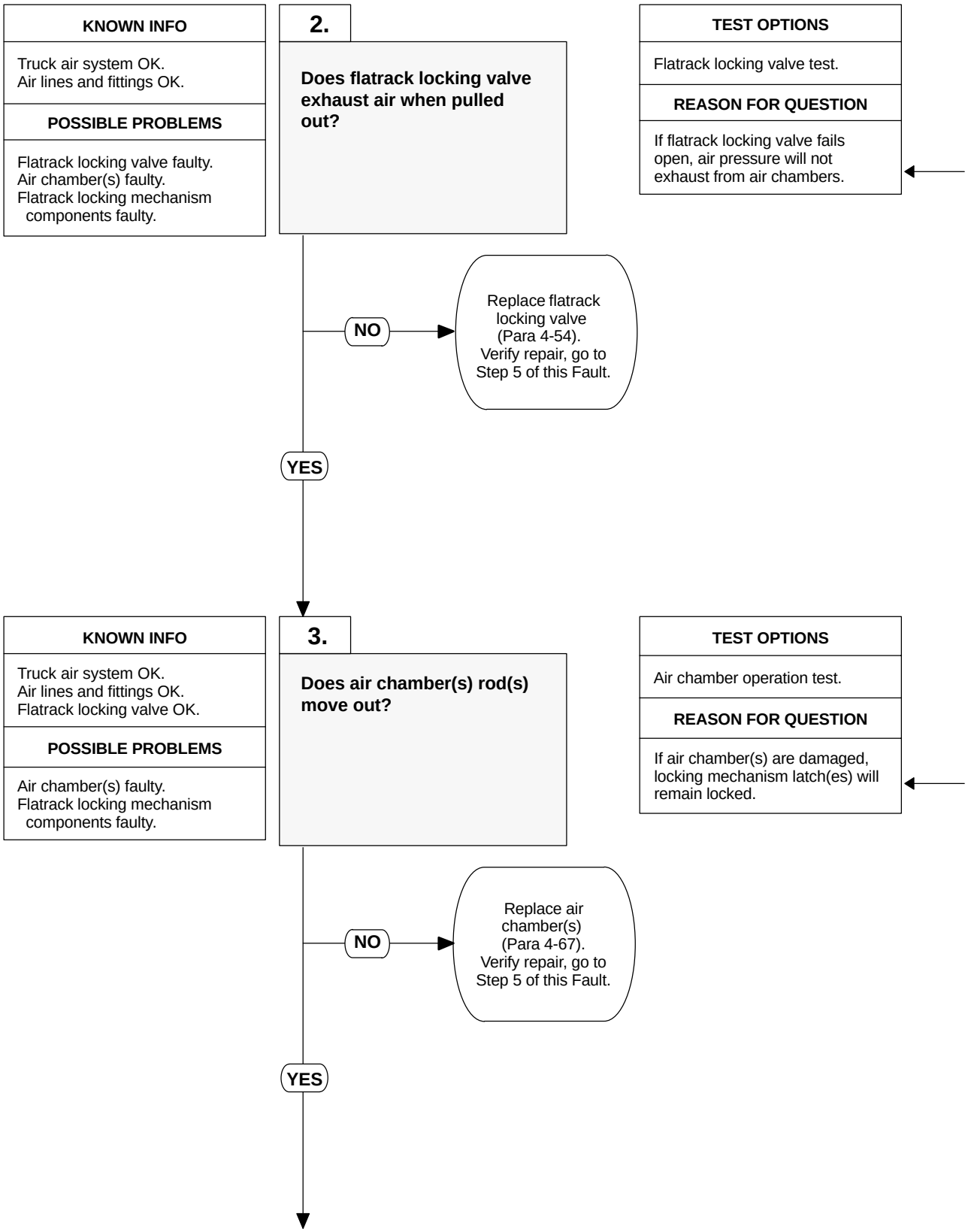
VISUAL INSPECTION

Inspect air lines 2078 and 2081 and fittings for crimps.

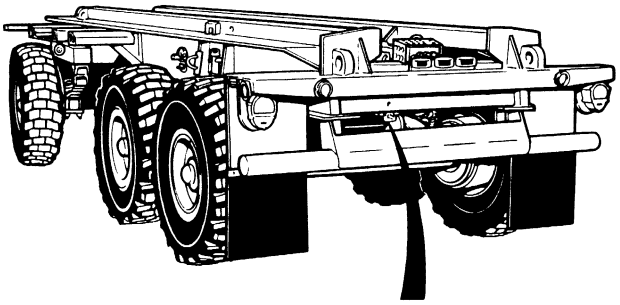
(1) If hose(s) and fitting(s) are crimped, replace or repair hose(s) and fitting(s) (see schematic Fig FO-2 or Para 4-47).

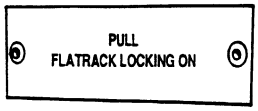
(2) If lines and fittings are OK, go to Step 2 of this Fault.

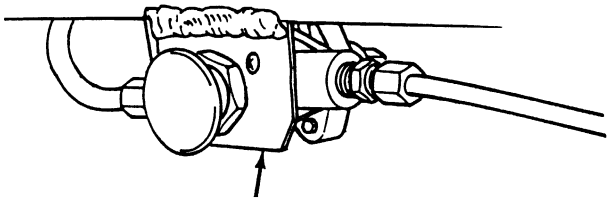
2. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT LOCK (CONT).



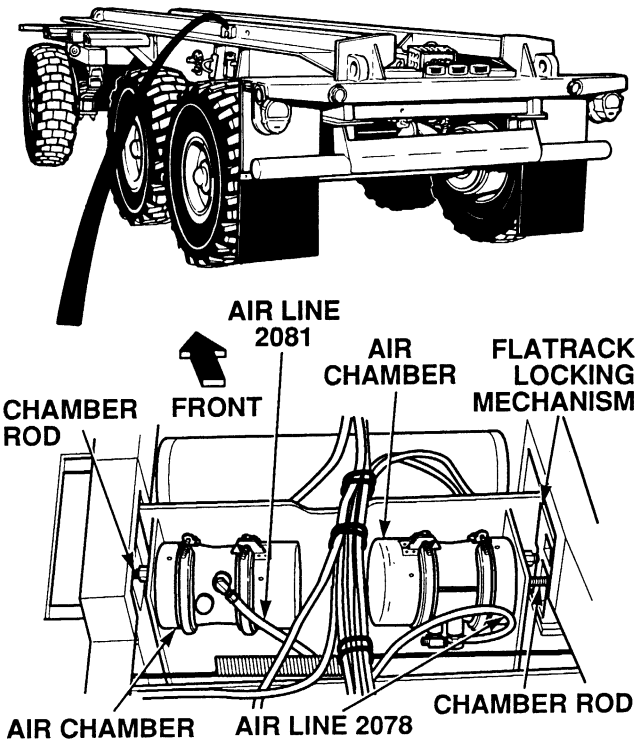
OPERATION TEST
Pull out flatrack locking valve and listen for air to exhaust (Para 2-13). (1) If air does not exhaust from valve, replace flatrack locking valve (Para 4-54). (2) If air exhausts from valve, flatrack locking valve is OK.



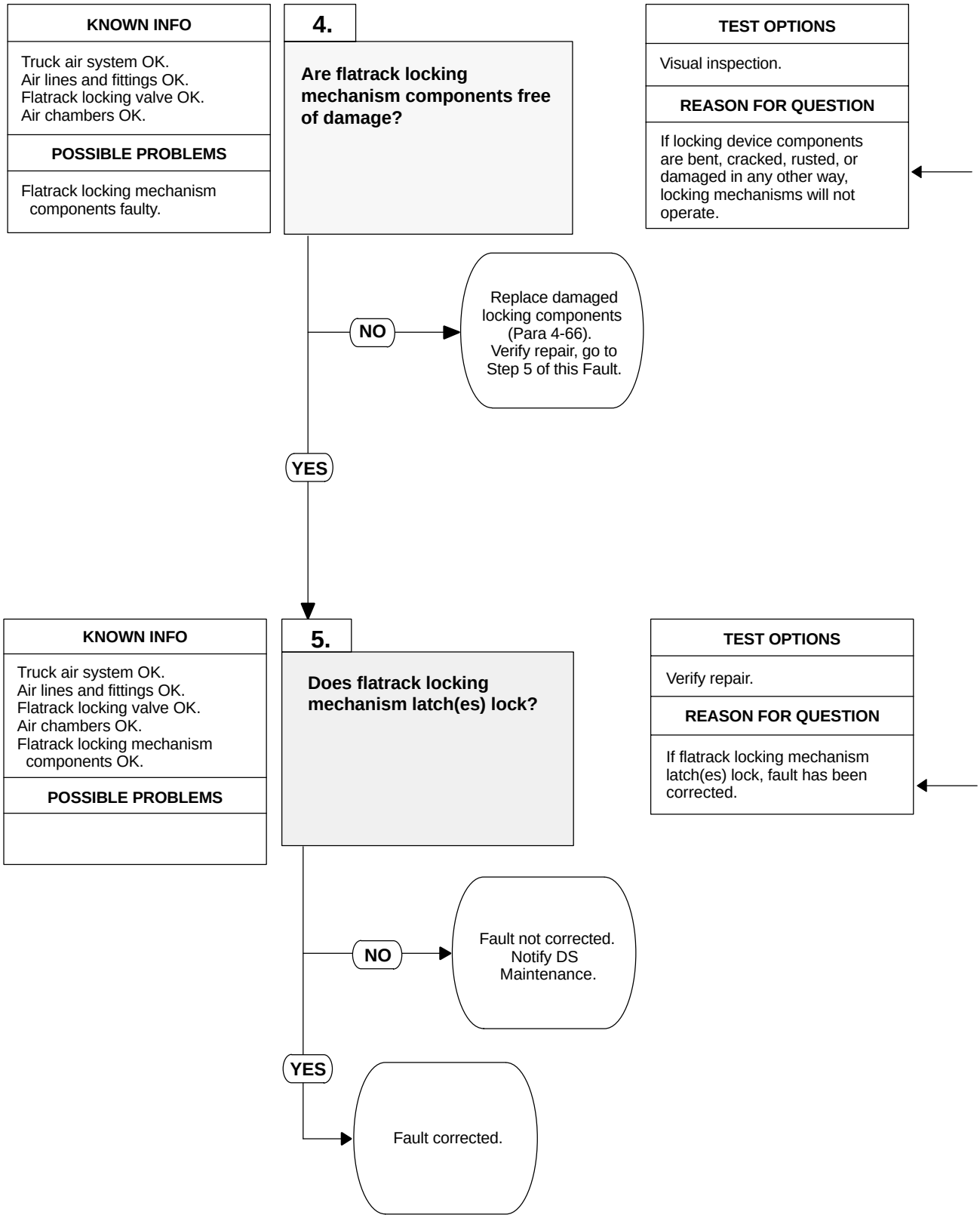




OPERATION TEST
(1) Cage air chamber (Para 4-65). (2) Remove upper locking pin from air chamber clevis (Para 4-67). (3) Uncage air chamber. (4) While assistant pushes in and pulls out flatrack locking valve, observe air chamber operation. (a) If air chamber rod does not move out of chamber, replace air chamber (Para 4-67). (b) If air chamber rod moves out of chamber, air chamber is OK.

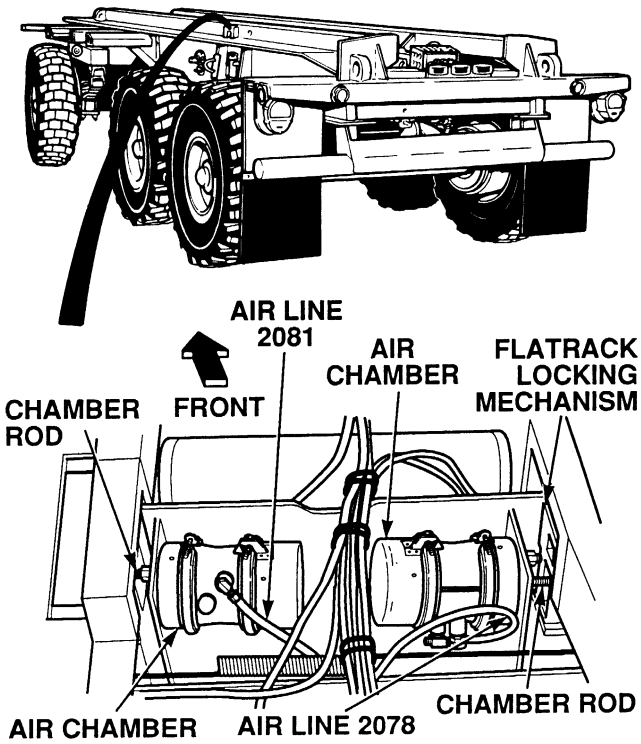


2. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT LOCK (CONT).



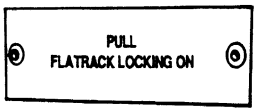
VISUAL INSPECTION

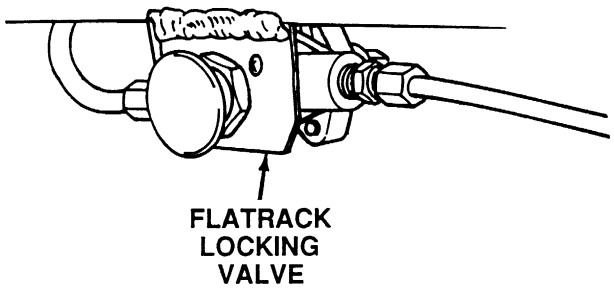
(1) Visually inspect locking mechanism, looking for bent, broken and/or rusted components.
(2) Operate locking mechanism by hand; ensure that locking components move freely and do not interfere with each other.
  (a) If locking components are damaged or do not operate freely, replace damaged locking components (Para 4-66).
  (b) If locking components are not damaged and move freely, locking mechanism is OK.
(3) Cage air chamber (Para 4-65).
(4) Install upper locking pin in air chamber clevis (Para 4-67).
(5) Uncage air chamber.



VERIFY REPAIR

(1) Push in flatrack locking valve and observe flatrack locking latch(es) (Para 2-13).
  (a) If latch(es) do not lock, fault not corrected. Pull out flatrack locking valve, and notify DS Maintenance.
  (b) If latch(es) locks, fault corrected.
(2) Pull out flatrack locking valve.





4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

3. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT UNLOCK OR REMAIN UNLOCKED.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

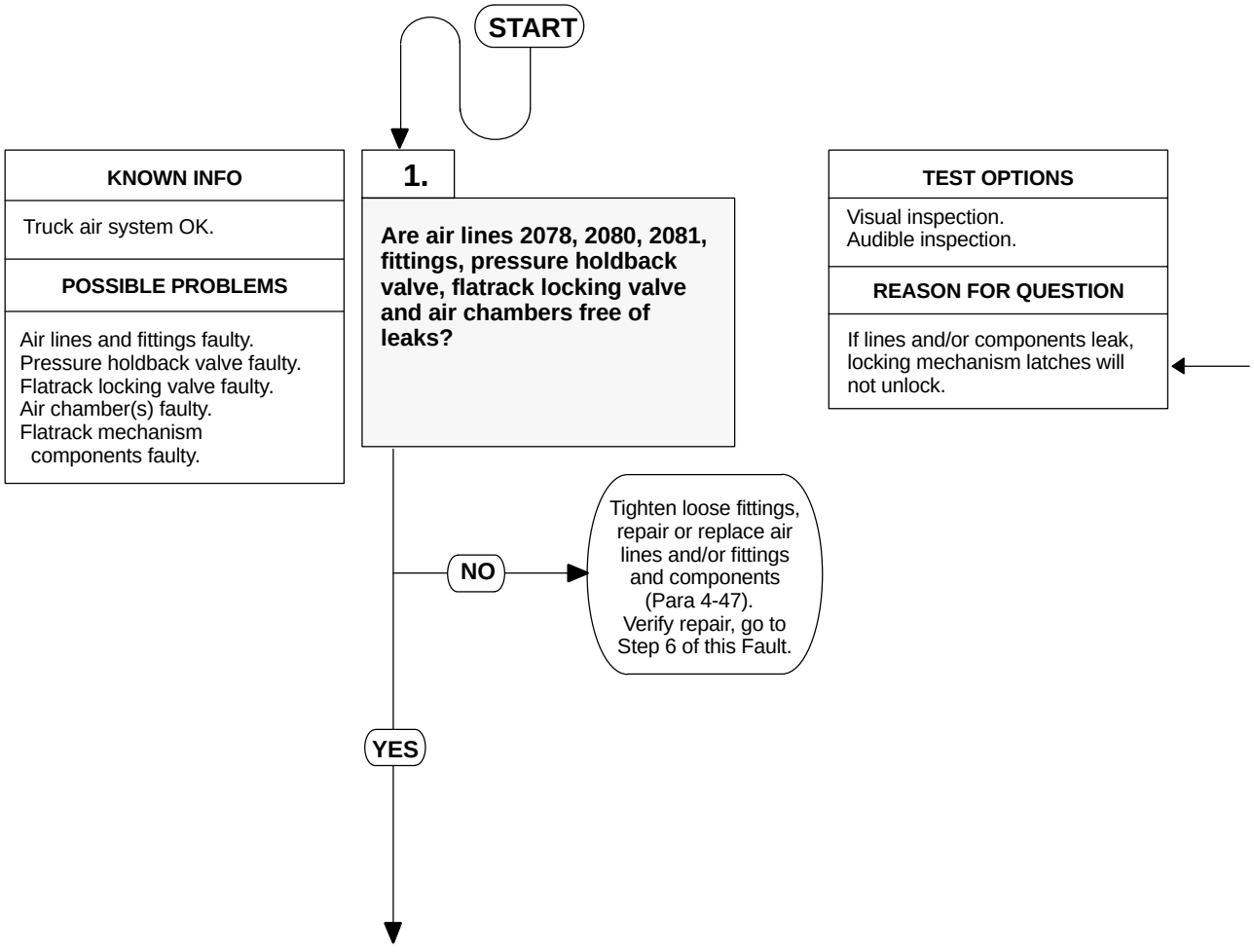
Materials/Parts
Solution, Soap (Item 21, Appendix E)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)
Flatrack removed from trailer, (TM 9-2320-364-10)

NOTE
Soap and water solution will be used to visually check for leaks.

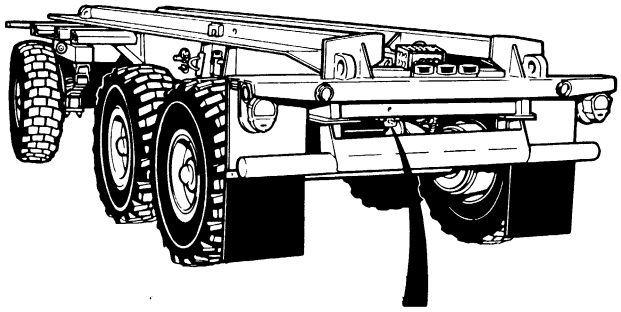


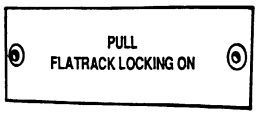
NOTE

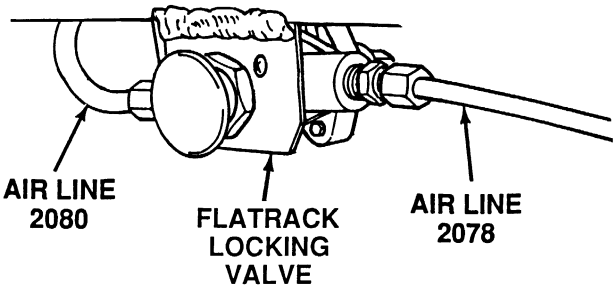
- 125 ± 5 psi (862 ± 34 kPa) must be supplied to trailer air system before troubleshooting can begin.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

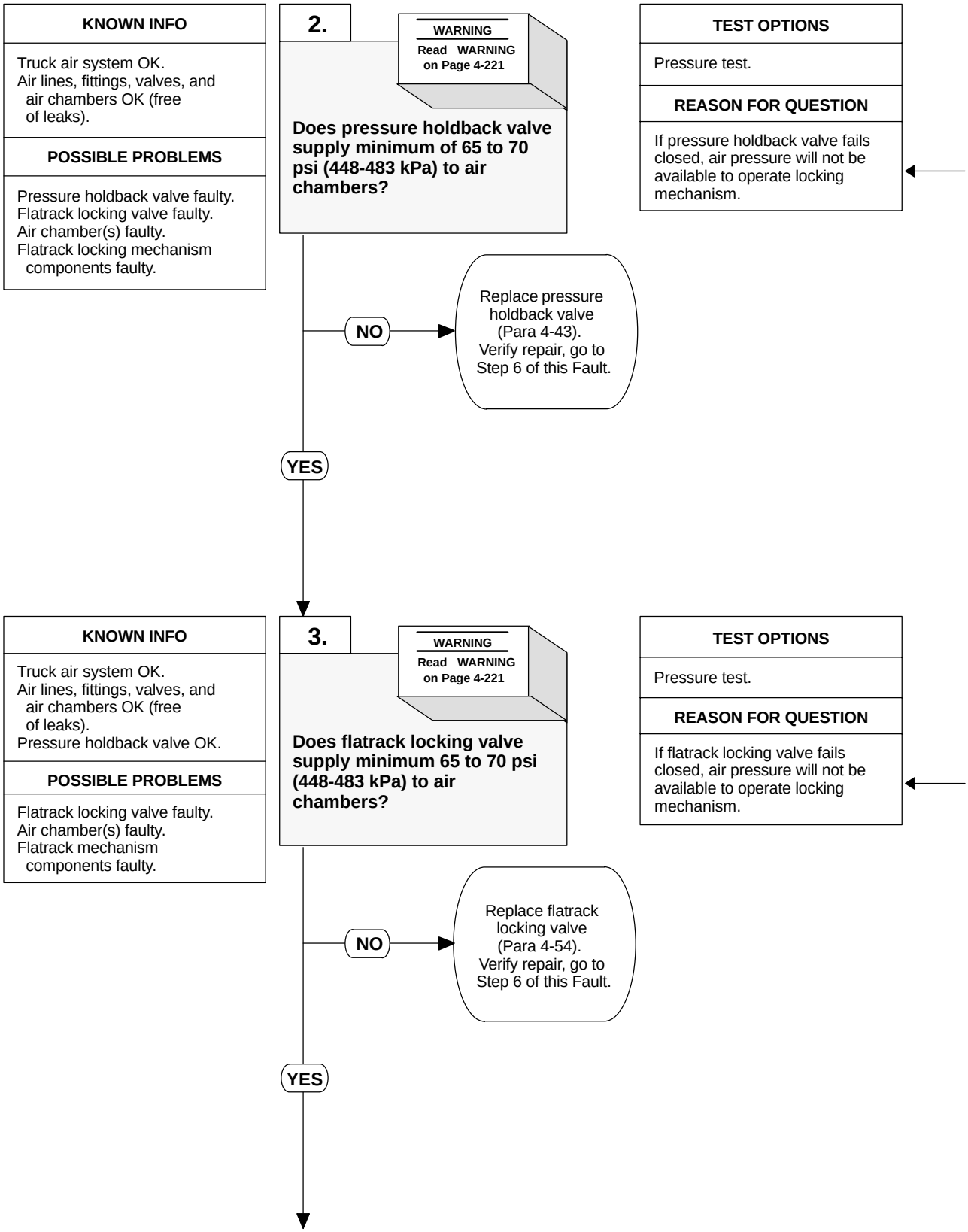
(1) Push in flatrack locking valve (Para 2-13).
(2) Listen for leaks on following air lines and components: air lines 2080, 2078, 2081, fittings, pressure holdback valve, flatrack locking valve and air chambers.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If air hose(s) leak, perform Step (3) below and repair or replace air hose(s) (see schematic Fig FO-2 or Para 4-47).
  (c) If any of the components listed above leak, perform Step (3) below and replace them according to maintenance procedures (Chapter 4).
  (d) If all of the Items above are OK, perform Step (3) below and go to Step (2) of this Fault.
(3) Pull out flatrack locking valve.







3. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT UNLOCK OR REMAIN UNLOCKED (CONT).

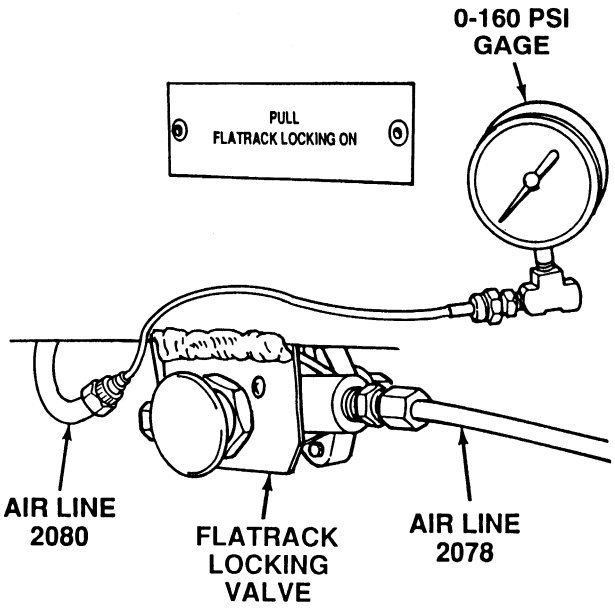


WARNING

If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

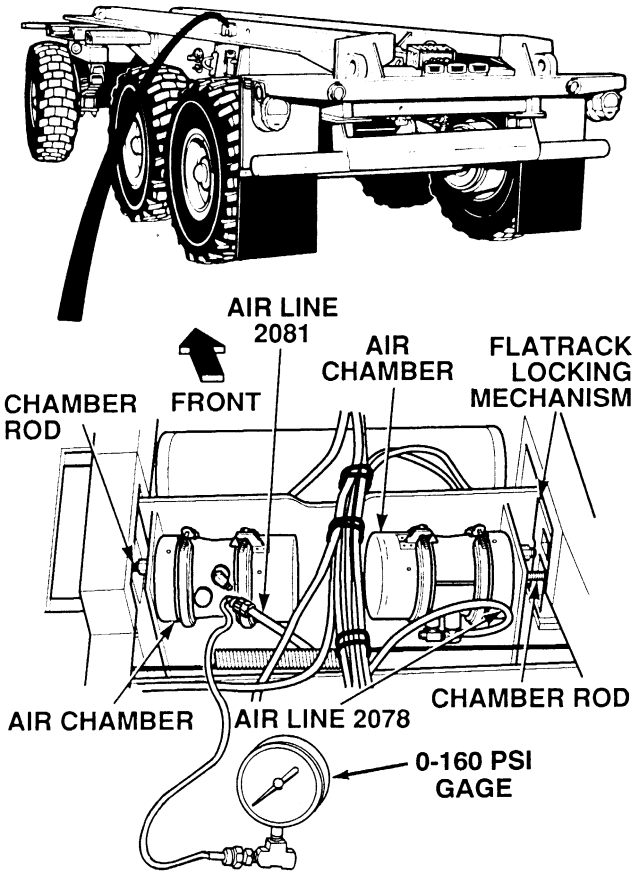
PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2080 from flatrack locking valve.
(3) Connect air hose 2080 to 0 to 160 psi (1103 kPa) pressure gage.
(4) Start engine (TM 9-2320-364-10).
(5) While assistant pushes in trailer charge valve in truck, observe pressure gage (Para 2-22).
    (a) If 65 to 70 psi (448-483 kPa) is not measured, perform Steps (6) through (10) below and replace pressure hold back valve (Para 4-43).
    (b) If 65 to 70 psi (448-483 kPa) is measured, pressure hold back valve is OK.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.
(8) Drain trailer air system.
(9) Disconnect air hose 2080 from pressure gage.
(10) Connect air hose 2080 to flatrack locking valve.

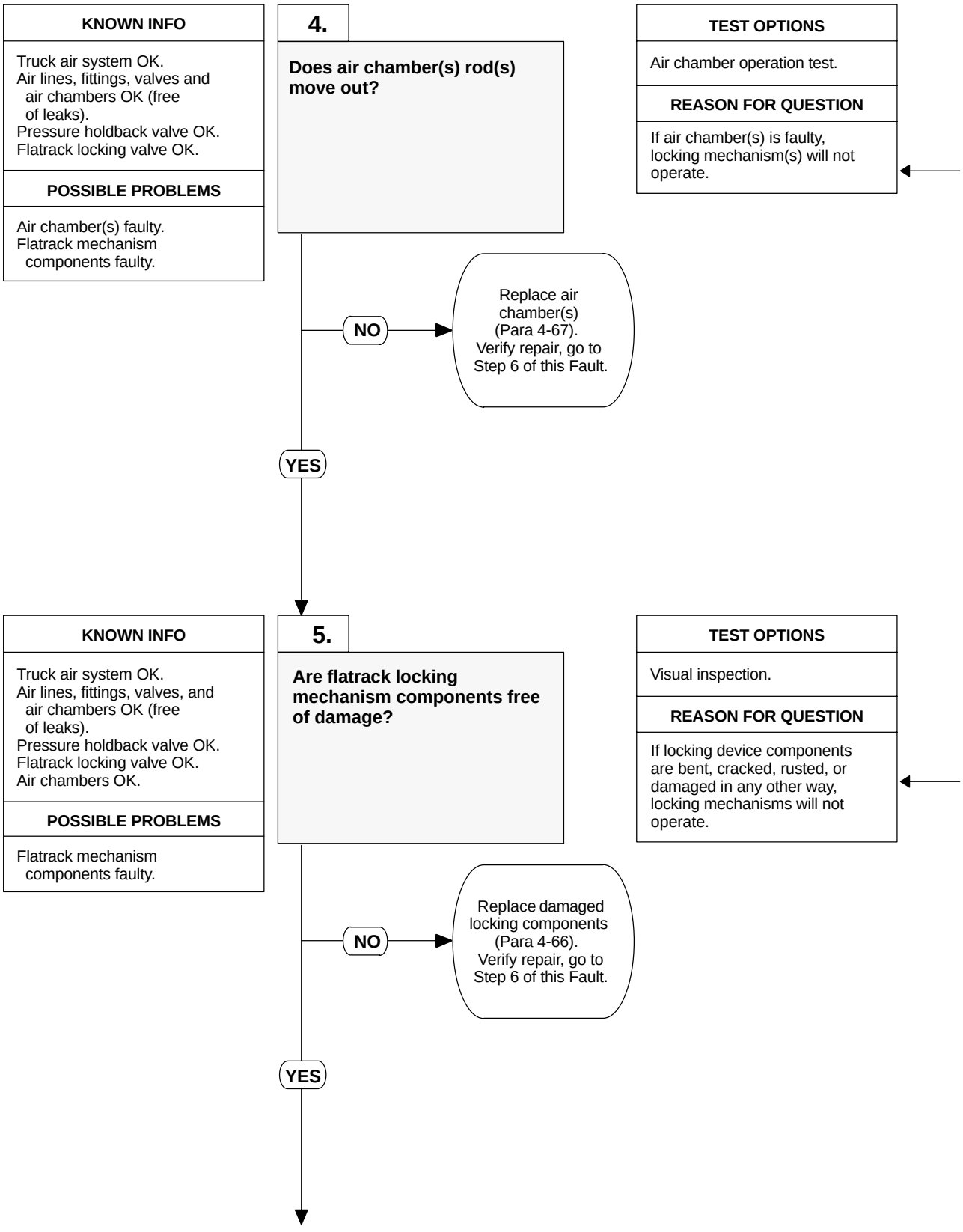


PRESSURE TEST

(1) Disconnect air hose 2078 or 2081 from air chamber.
(2) Connect air hose 2078 or 2081 to 0 to 160 psi (1103 kPa) pressure gage.
(3) Push in flatrack locking valve.
(4) While assistant pushes in trailer charge valve in truck, observe pressure gage.
    (a) If 65 to 70 psi (448-483 kPa) is not measured, perform Steps (5) and (9) below and replace flatrack locking valve (Para 4-54).
    (b) If 65 to 70 psi (448-483 kPa) is measured, flatrack locking valve is OK.
(5) Pull out flatrack locking valve.
(6) Pull out trailer charge valve in truck (Para 2-22).
(7) Turn OFF ENGINE switch.
(8) Disconnect air hose 2078 or 2081 from pressure gage.
(9) Connect air hose 2078 or 2081 to air chamber.

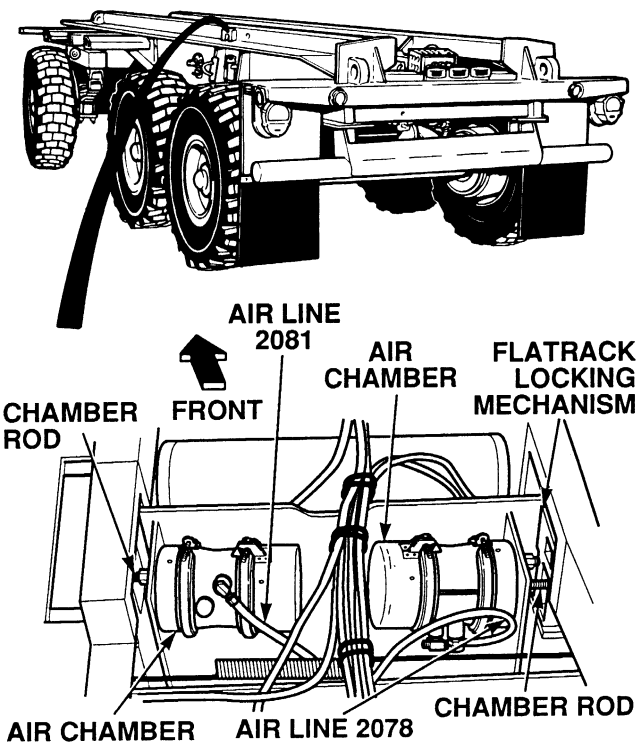


3. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT UNLOCK OR REMAIN UNLOCKED (CONT).



AIR CHAMBER OPERATION TEST

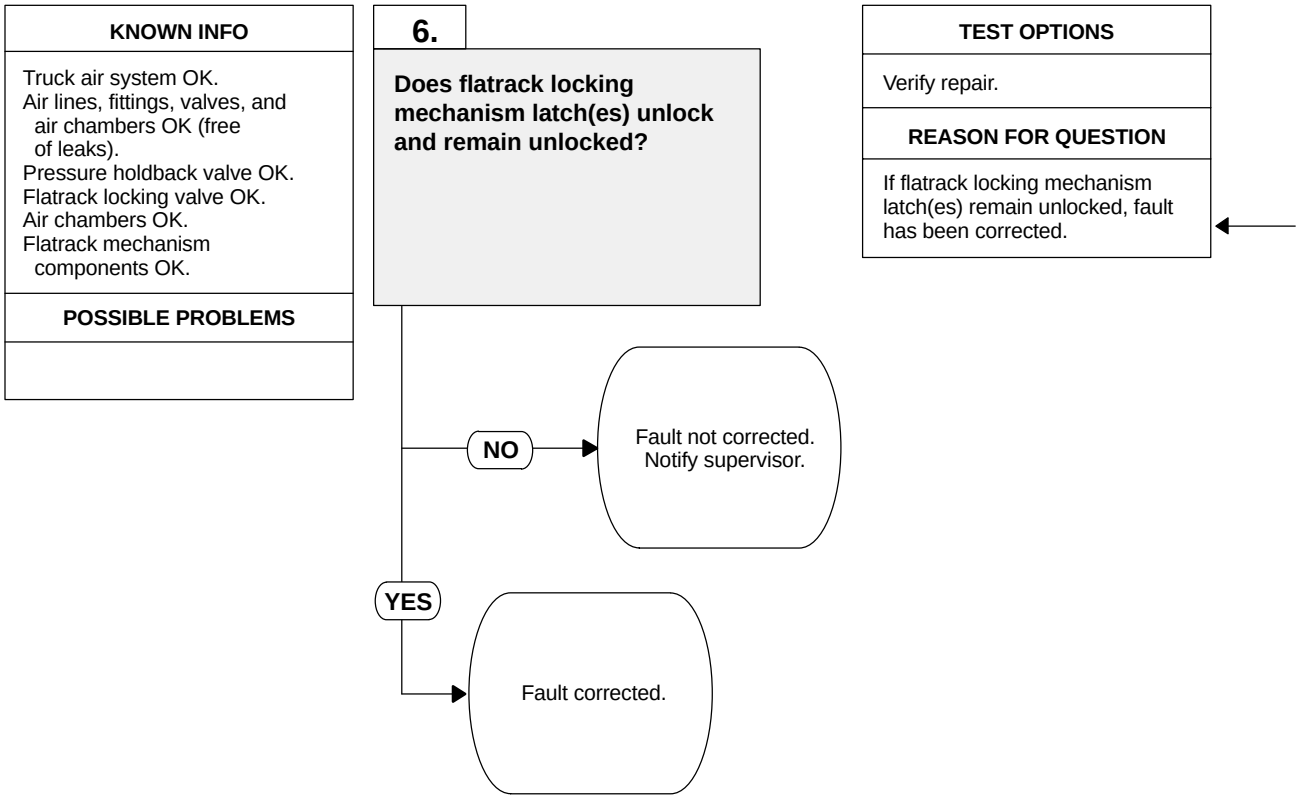
(1) Cage air chamber (Para 4-65).
(2) Remove upper locking pin from air chamber clevis (Para 4-67).
(3) Uncage air chamber.
(4) While assistant pushes in flatrack locking valve, observe air chamber operation.
    (a) If air chamber rod does not move in chamber, perform Step (5) below and replace air chamber (Para 4-67).
    (b) If air chamber rod moves in chamber, air chamber is OK.
(5) Pull out flatrack locking valve.

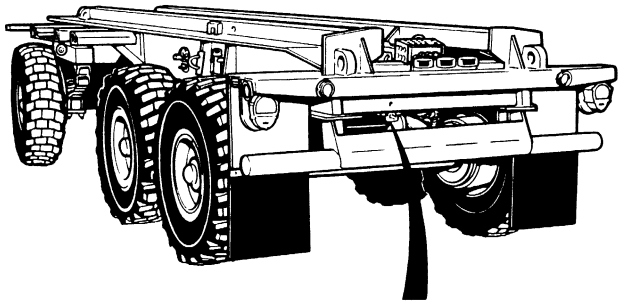


VISUAL INSPECTION

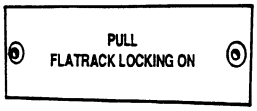
(1) Visually inspect locking mechanism, looking for bent, broken and/or rusted components.
(2) Operate locking mechanism by hand; ensure that locking components move freely and do not interfere with each other.
    (a) If locking components are damaged or do not operate freely, perform Steps (3) through (5) below and replace damaged locking components (Para 4-66).
    (b) If locking components are not damaged and operate freely, locking mechanism is OK.
(3) Cage air chamber (Para 4-65).
(4) Install upper locking pin in air chamber clevis (Para 4-67).
(5) Uncage air chamber.

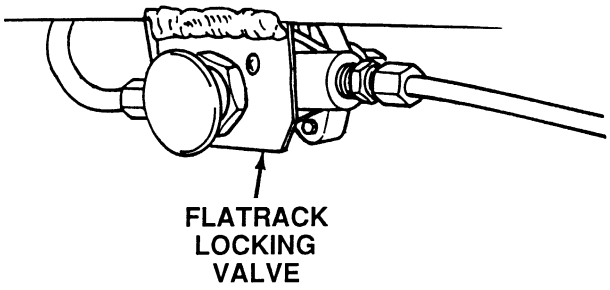
3. ONE OR BOTH FLATRACK LOCKING MECHANISM LATCHES WILL NOT UNLOCK OR REMAIN UNLOCKED (CONT).





VERIFY REPAIR
(1) Push in flatrack locking valve and observe locking mechanism latch(es) (Para 2-13). (a) If latch(es) do not unlock or remain unlocked, fault not corrected. Pull out flatrack locking valve and notify supervisor. (b) If latch(es) unlock and remain unlocked, fault corrected. (2) Pull out flatrack locking valve.





4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED.

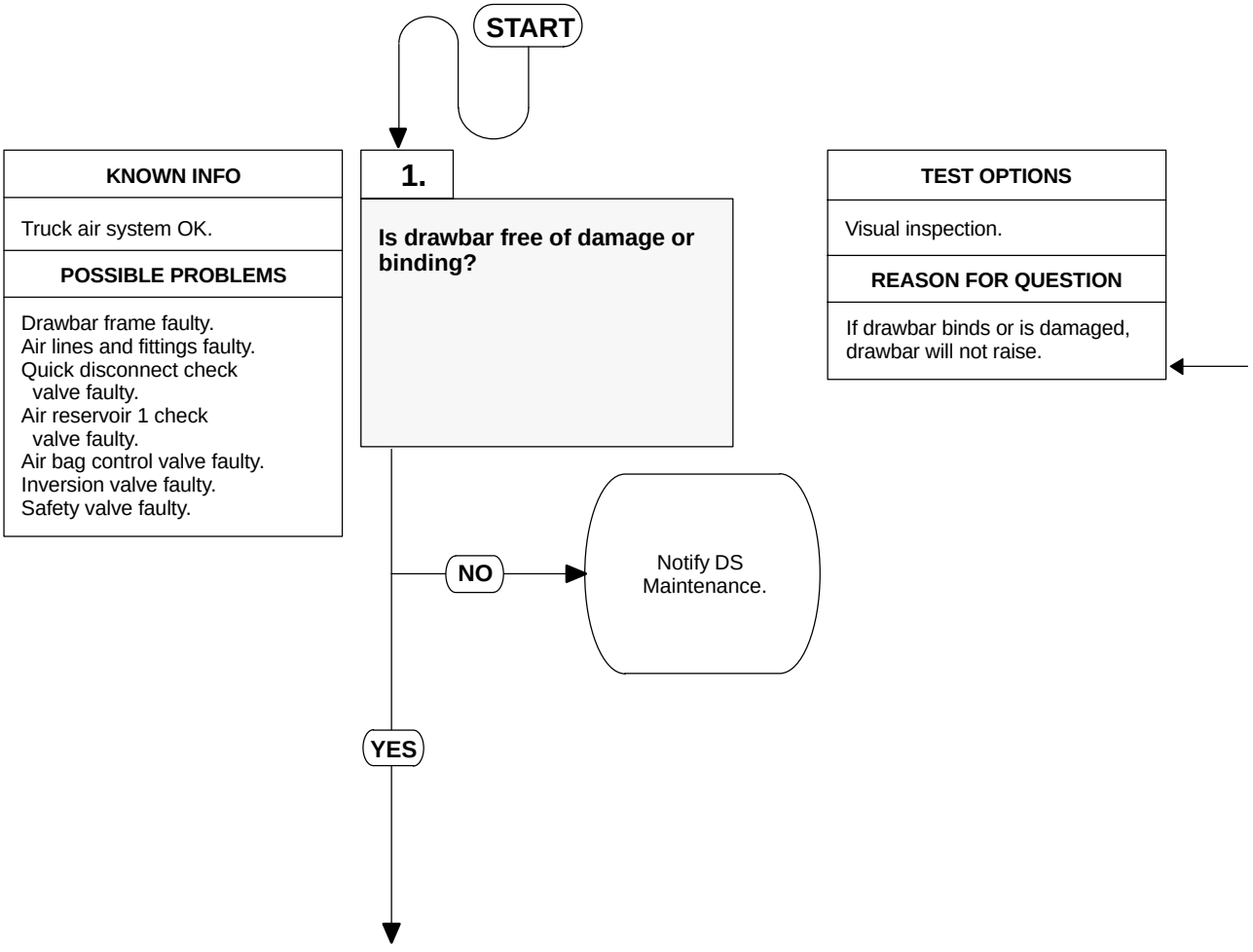
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

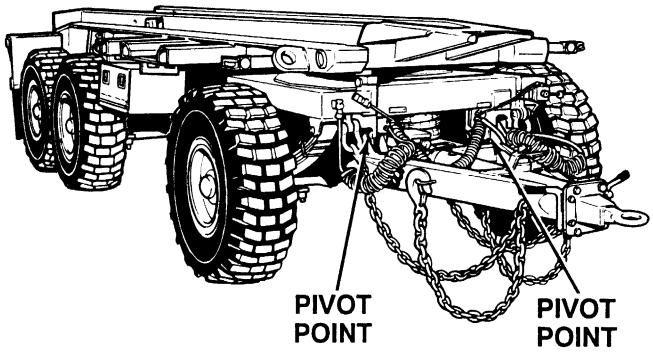
Personnel Required
Two

References
TM 9-2320-364-10

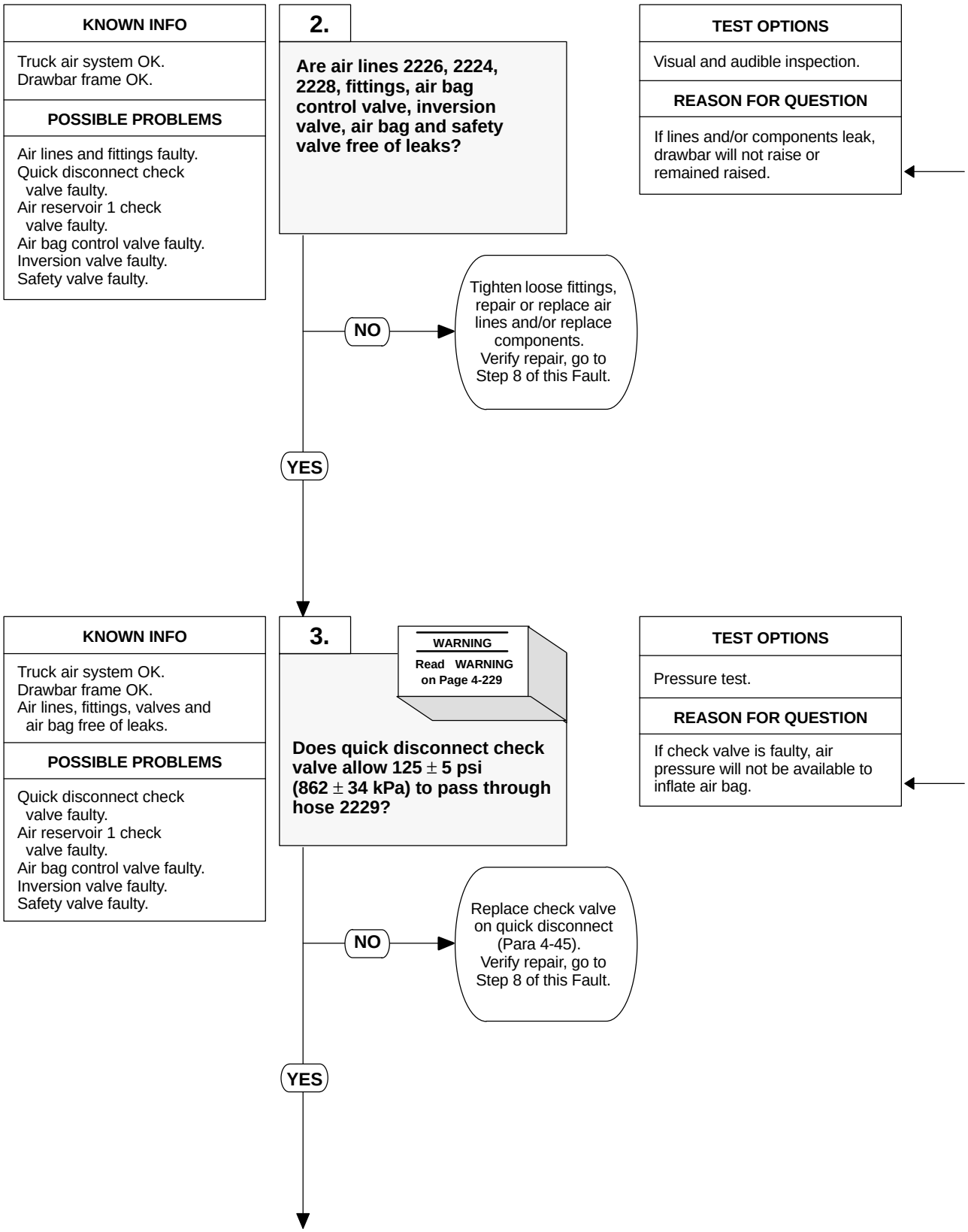
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Charging hose connected to trailer quick disconnect and truck, (Para 2-9)
Trailer air system charged, (Para 2-22)



VISUAL INSPECTION
Inspect drawbar for damage and binding at drawbar pivot points. (1) If drawbar is damaged or binding, notify DS Maintenance. (2) If drawbar is OK, go to Step (2) of this Fault.



4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED (CONT).



WARNING

- If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.
- Remain clear of draw bar when it is raised. If draw bar falls it will cause injury or death to personnel.

NOTE

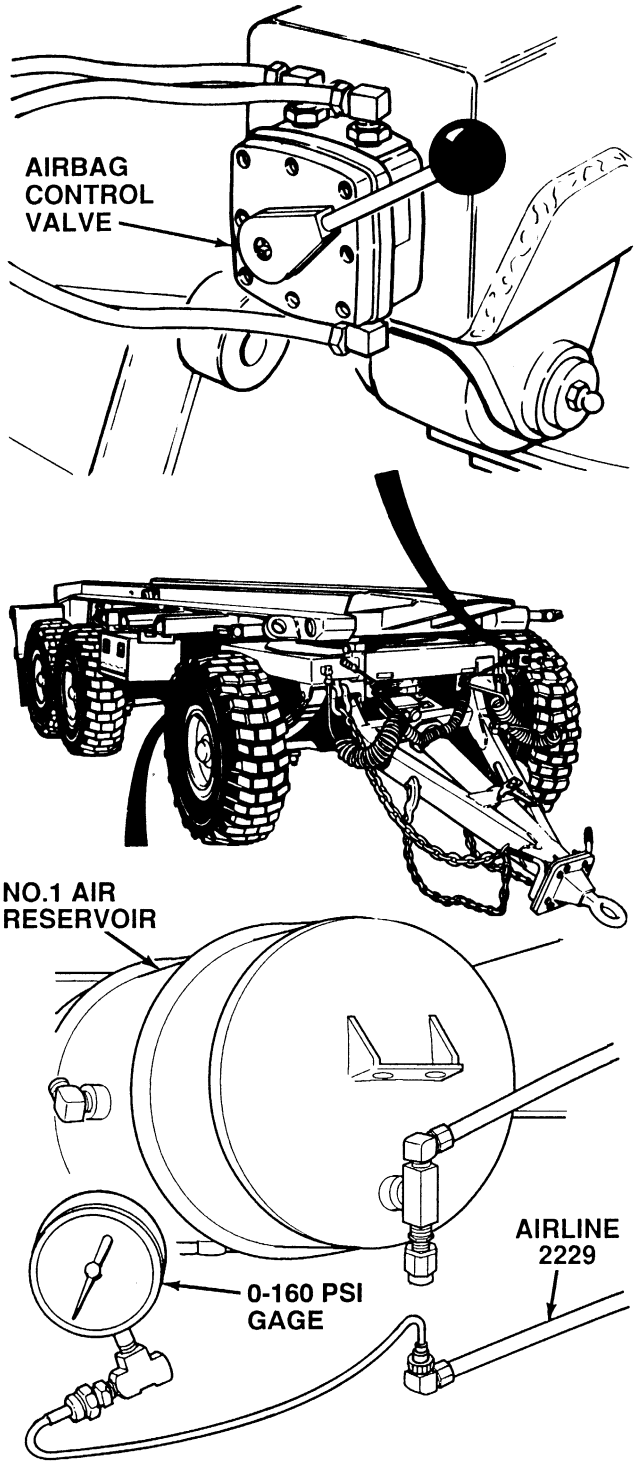
Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

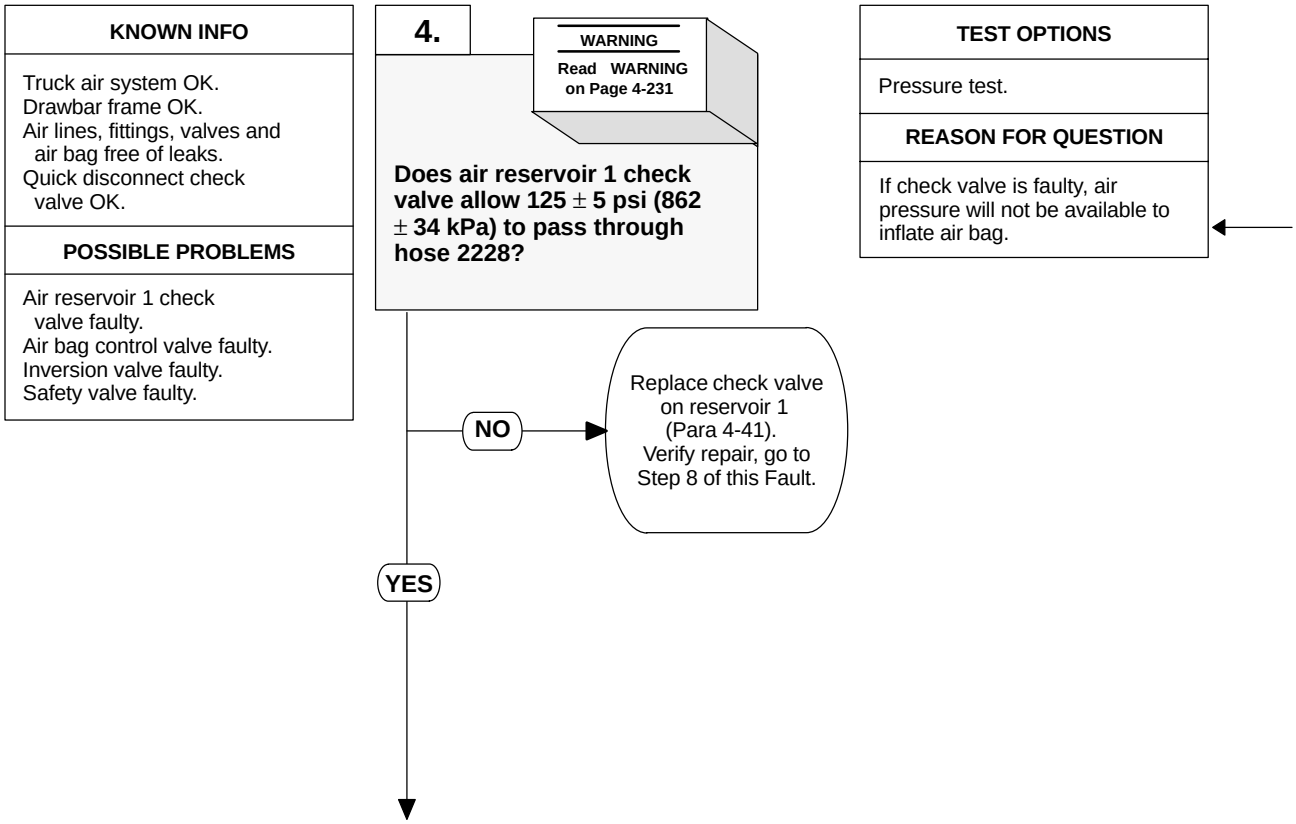
(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) Raise air bag control lever up.
(4) Listen for leaks on following air lines and components: air lines 2228, 2226, 2224, fittings, air bag control valve, inversion valve, safety valve and air bag.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If air hose(s) leak, repair or replace air hose(s) (see schematic Fig FO-2 or Para 4-45).
  (c) If any of components listed above leak, replace them according to maintenance procedures (Chapter 4).
  (d) If all of the Items above are OK, perform Steps (5) through (7) below and go to Step 3 of this Fault.
(5) Lower air bag control lever to center position.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.

PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect hose 2229 from air reservoir 1.
(3) Connect 0 to 160 psi (1103 kPa) gage to air hose 2229.
(4) Start engine (TM 9-2320-364-10).
(5) While assistant pushes in trailer charge valve in truck (Para 2-22), observe pressure gage.
  (a) If pressure does not raise to 125 ± 5 psi (862 ± 34 kPa), perform Steps (6) through (9) below and replace check valve (Para 4-45).
  (b) If pressure does raise to 125 ± 5 psi (862 ± 34 kPa), check valve is OK.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.
(8) Disconnect gage from hose 2229.
(9) Connect hose 2229 to air reservoir 1.



4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED (CONT).

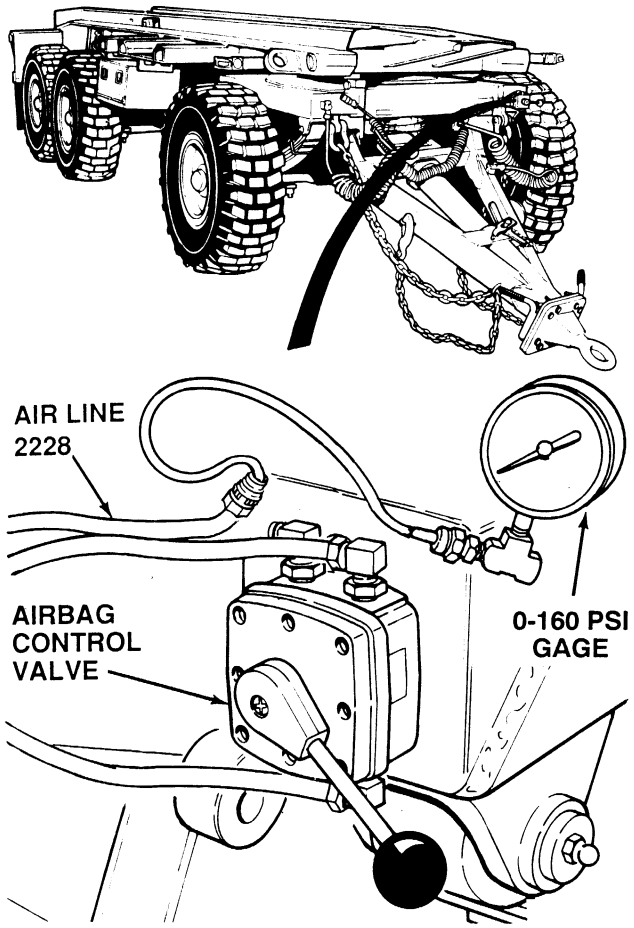


WARNING

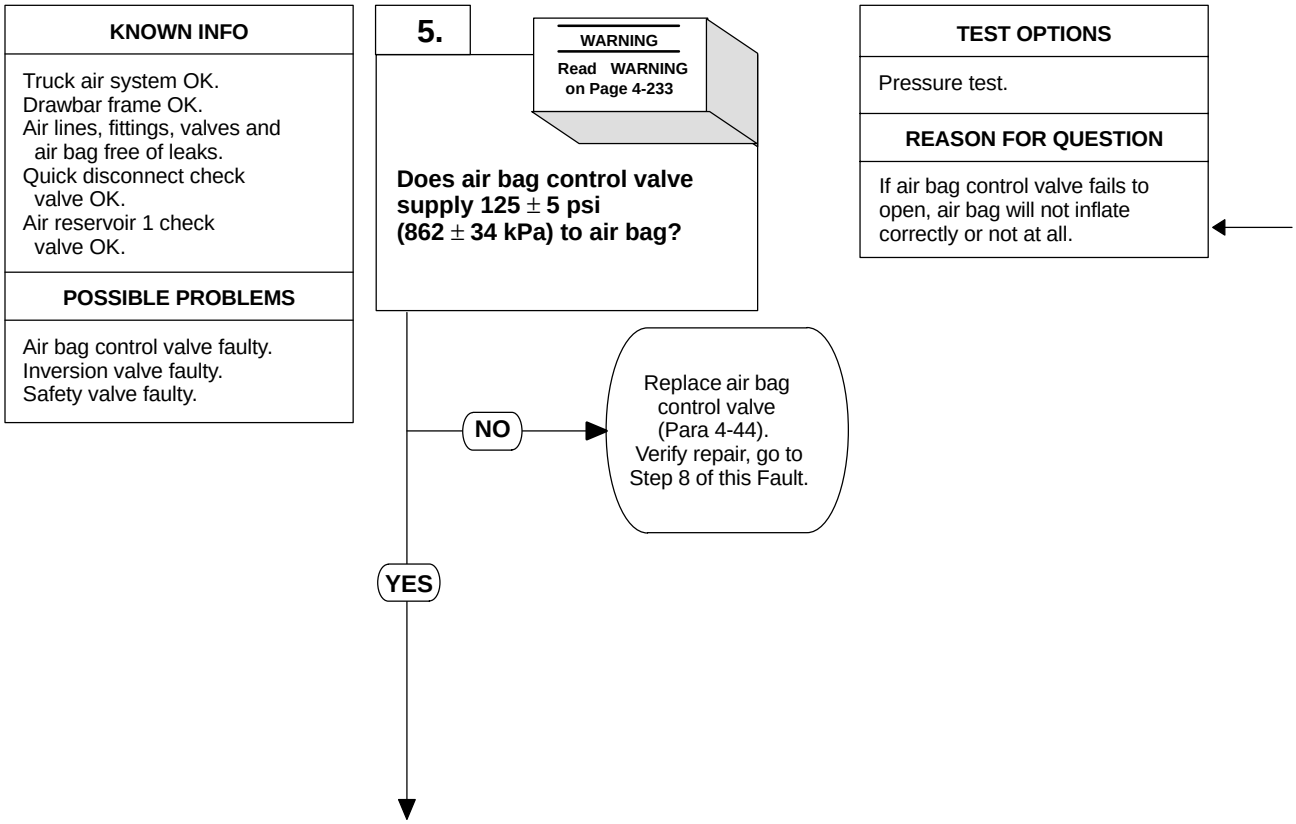
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

VERIFY REPAIR

(1) Drain trailer air system (Para 2-21).
(2) Disconnect hose 2228 from air bag control valve.
(3) Connect 0 to 160 psi (1103 kPa) gage to air hose 2228.
(4) Start engine (TM 9-2320-364-10).
(5) While assistant pushes in trailer charge valve in truck, observe pressure gage (Para 2-22).
    (a) If pressure does not raise to 125 ± 5 psi (862 ± 34 kPa), perform Steps (6) through (10) below and replace check valve (Para 4-41).
    (b) If pressure does raise to 125 ± 5 psi (862 ± 34 kPa), check valve is OK.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.
(8) Drain air reservoir 1.
(9) Disconnect gage from hose 2228.
(10) Connect hose 2228 to air bag control valve.



4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED (CONT).

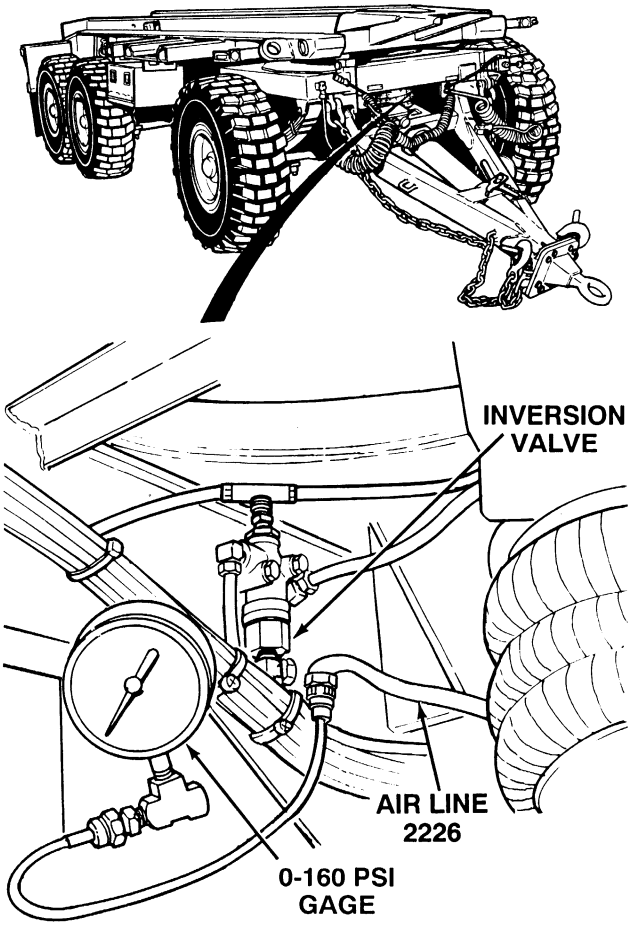


WARNING

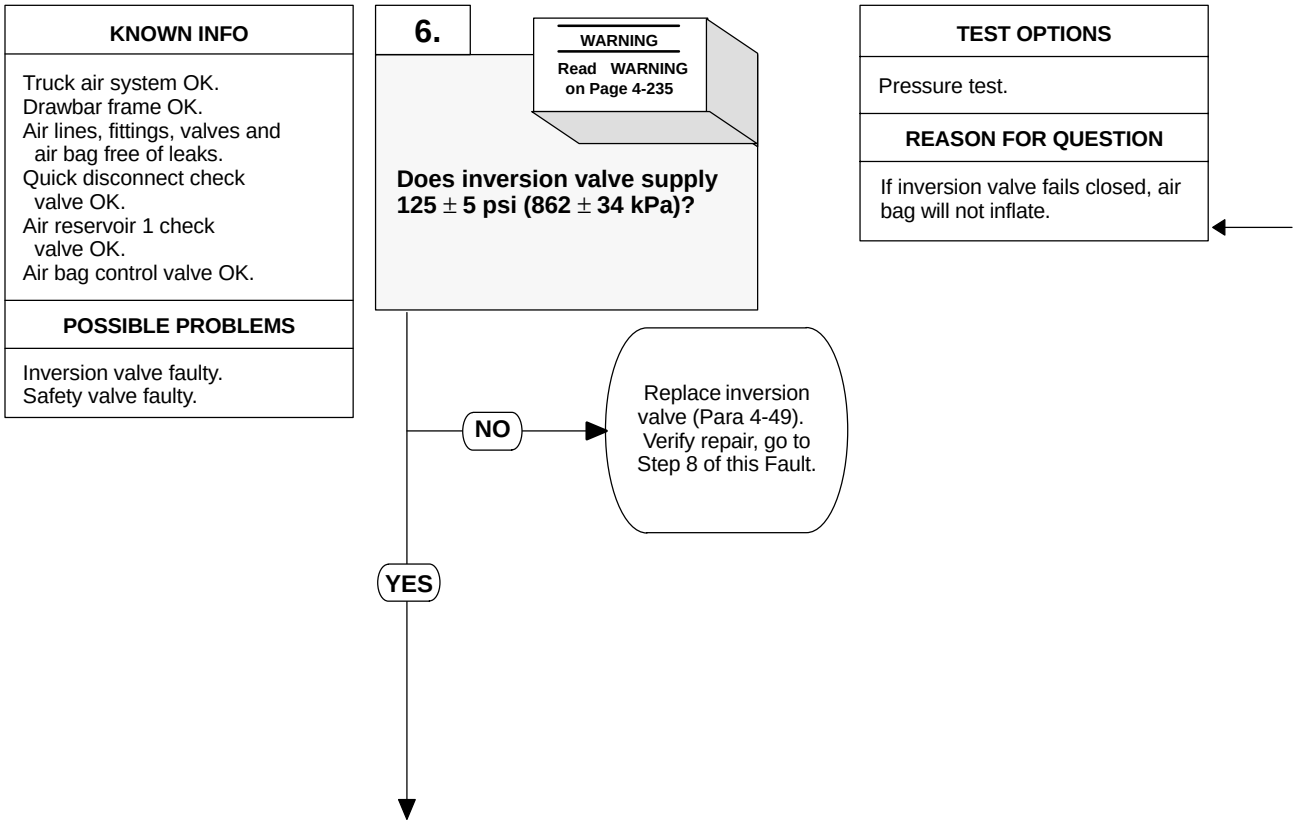
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

PRESSURE TEST

(1) Lower air bag control lever to down position (Para 2-9).
(2) Disconnect air hose 2226 from air bag inversion valve.
(3) Connect 0 to 160 psi (1103 kPa) pressure gage to air hose 2226.
(4) Start engine (TM 9-2320-364-10).
(5) Push in trailer charge valve in truck (Para 2-22).
(6) While assistant raises air bag control lever to up position, observe pressure gage.
  (a) If pressure does not raise to 125 ± 5 psi (862 ± 34 kPa), perform Steps (7) through (11) below and replace control valve (Para 4-44).
  (b) If pressure raises to 125 ± 5 psi (862 ± 34 kPa), control valve is OK.
(7) Pull out trailer charge valve in truck.
(8) Turn OFF ENGINE switch.
(9) Lower air bag control lever to down position.
(10) Disconnect air hose 2226 from pressure gage.
(11) Connect air hose 2226 to inversion valve.



4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED (CONT).

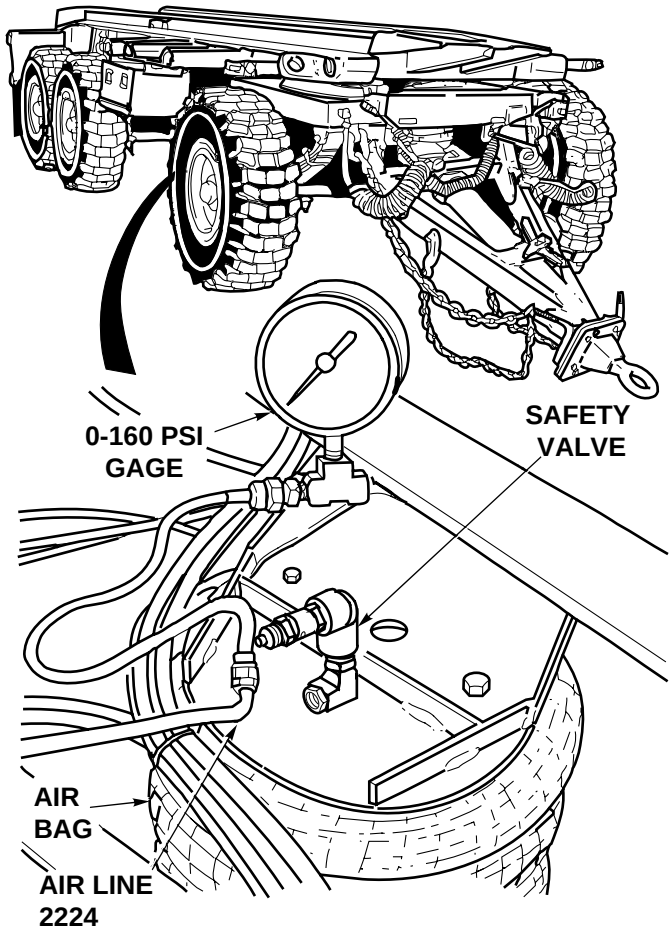


WARNING

If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause injury or death to personnel. Air system should be drained and air bag control valve set in center position before air bag air lines are disconnected.

PRESSURE TEST

(1) Move air bag control lever in the down position (Para 2-9).
(2) Disconnect air hose 2224 from safety valve.
(3) Connect 0 to 160 psi (1103 kPa) pressure gage to air hose 2224.
(4) Start engine (TM 9-2320-364-10).
(5) Push in trailer charge valve in truck (Para 2-22).
(6) While assistant raises air bag control lever to up position, observe pressure gage.
  (a) If 125± 5 psi (862± 34 kPa) is not measured, perform Steps (7) through (11) below and replace inversion valve (Para 4-49).
  (b) If 125± 5 psi (862± 34 kPa) is measured, inversion valve is OK.
(7) Pull out trailer charge valve in truck.
(8) Turn OFF ENGINE switch.
(9) Lower air bag control lever to down position.
(10) Disconnect air hose 2224 from pressure gage.
(11) Connect air hose 2224 to safety valve.



4. DRAWBAR WILL NOT RAISE OR REMAIN RAISED (CONT).

KNOWN INFO

Truck air system OK.
Drawbar frame OK.
Air lines, fittings, valves and air bag free of leaks.
Quick disconnect check valve OK.
Air reservoir 1 check valve OK.
Air bag control valve OK.
Inversion valve OK.

POSSIBLE PROBLEMS

Safety valve faulty.

7.

WARNING
Read WARNING on Page 4-237

Does safety valve release at 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension?

TEST OPTIONS

Pressure test.

REASON FOR QUESTION

If safety valve fails open or releases at too low of pressure, loss of air will prevent air bag from inflating.

NO → Adjust safety valve (Para 4-48). Verify repair, go to Step 8 of this Fault.

YES

KNOWN INFO

Truck air system OK.
Drawbar frame OK.
Air lines, fittings, valves, and air bag free of leaks.
Quick disconnect check valve OK.
Air reservoir 1 check valve OK.
Air bag control valve OK.
Inversion valve OK.
Safety valve OK.

POSSIBLE PROBLEMS

8.

Does drawbar raise and remain raised?

TEST OPTIONS

Verify repair.

REASON FOR QUESTION

If drawbar raises and remains raised, fault has been corrected.

NO → Fault not corrected. Notify supervisor.

YES → Fault corrected.

WARNING

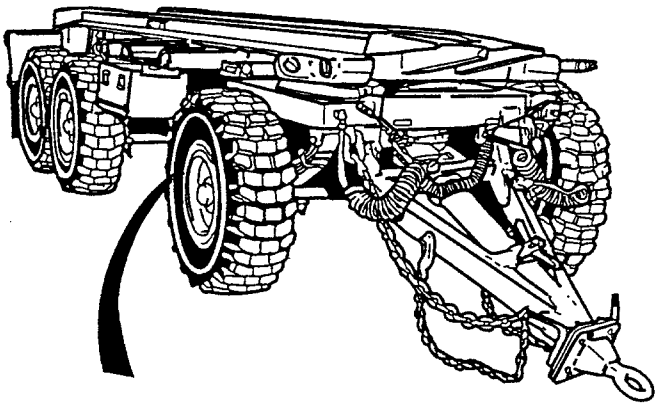
If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause injury or death to personnel. Air system should be drained and air bag control valve set in center position before air bag air lines are disconnected.

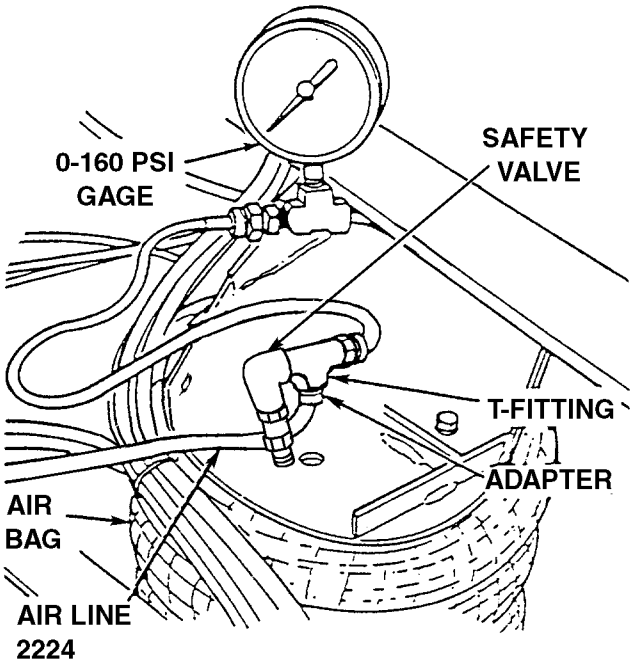
PRESSURE TEST

(1) Move air bag control lever in the down position (Para 2-9).
(2) Remove safety valve and T-fitting from air bag (Para 4-48).
(3) Connect 0 to 160 psi (1103 kPa) pressure gage to T-fitting.
(4) Connect air line 2224 to adapter on T-fitting.
(5) While assistant raises air bag control lever up, observe pressure gage.
  (a) If safety valve releases at less than 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, perform Steps (6) through (8) below and adjust safety valve (Para 4-48).
  (b) If safety valve releases at 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, safety valve is OK.
(6) Lower air bag control lever.
(7) Remove pressure gage from T-fitting.
(8) Remove air line 2224 from adapter on T-fitting.
(9) Install safety valve and T-fitting on air bag.

VERIFY REPAIR

(1) Raise air bag control lever to up position and observe drawbar operation (Para 2-9).
  (a) If drawbar does not raise or remain raised, fault not corrected. Lower air bag control lever to down position and notify supervisor.
  (b) If drawbar raises and remains raised, fault corrected.
(2) Lower air bag control lever to down position.





4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

5. DRAWBAR WILL NOT LOWER.

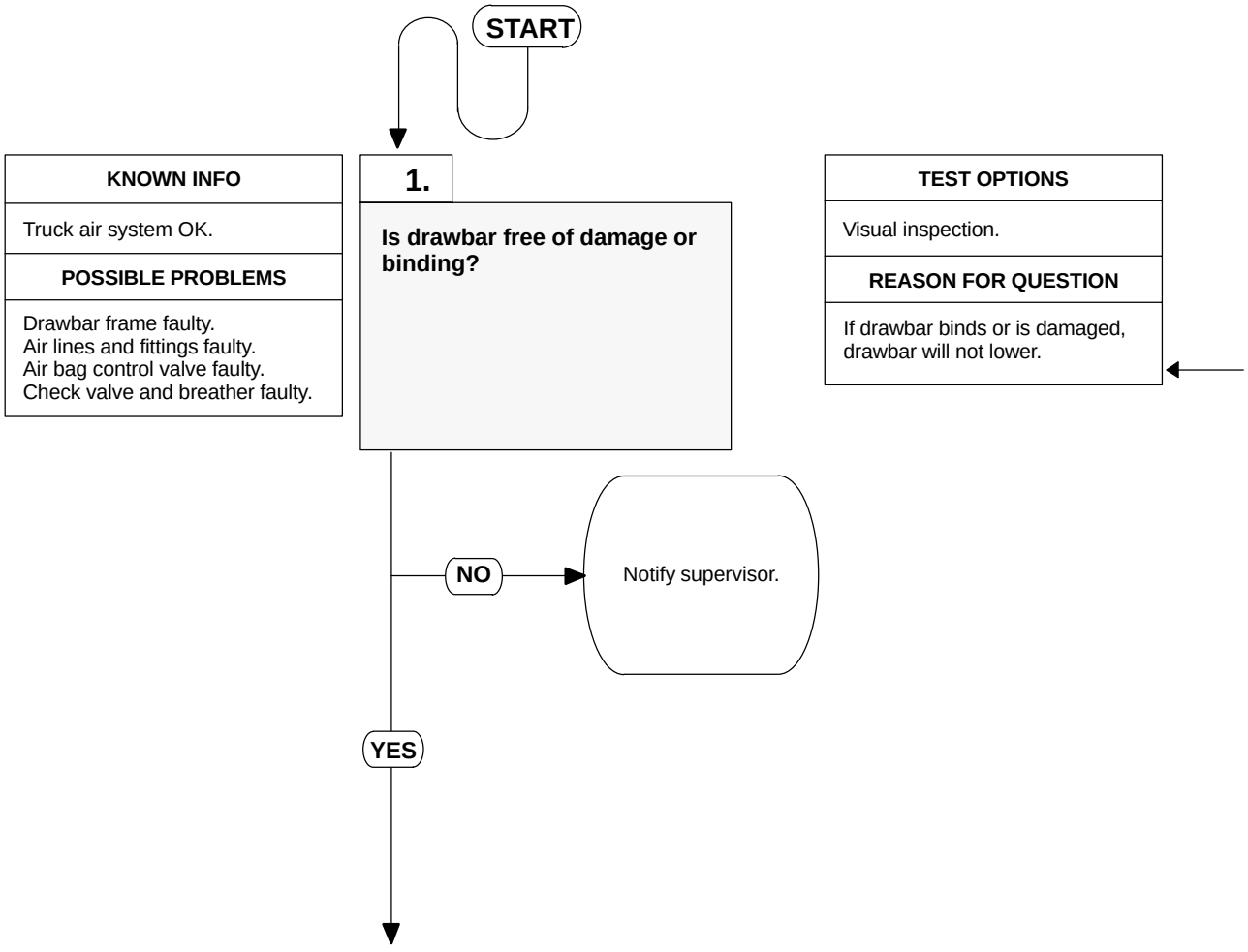
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

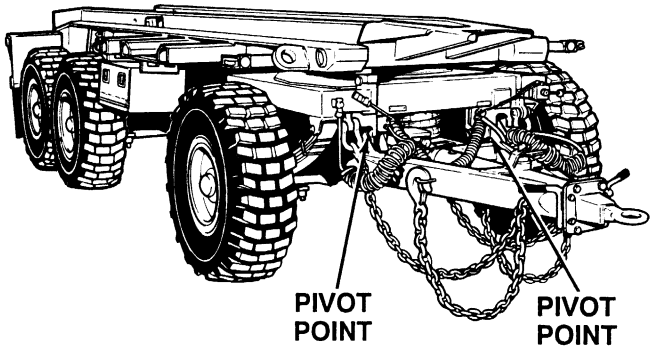
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Charging hose connected to trailer quick disconnect and truck, (Para 2-9 or 2-11)
Trailer air system charged, (Para 2-22)



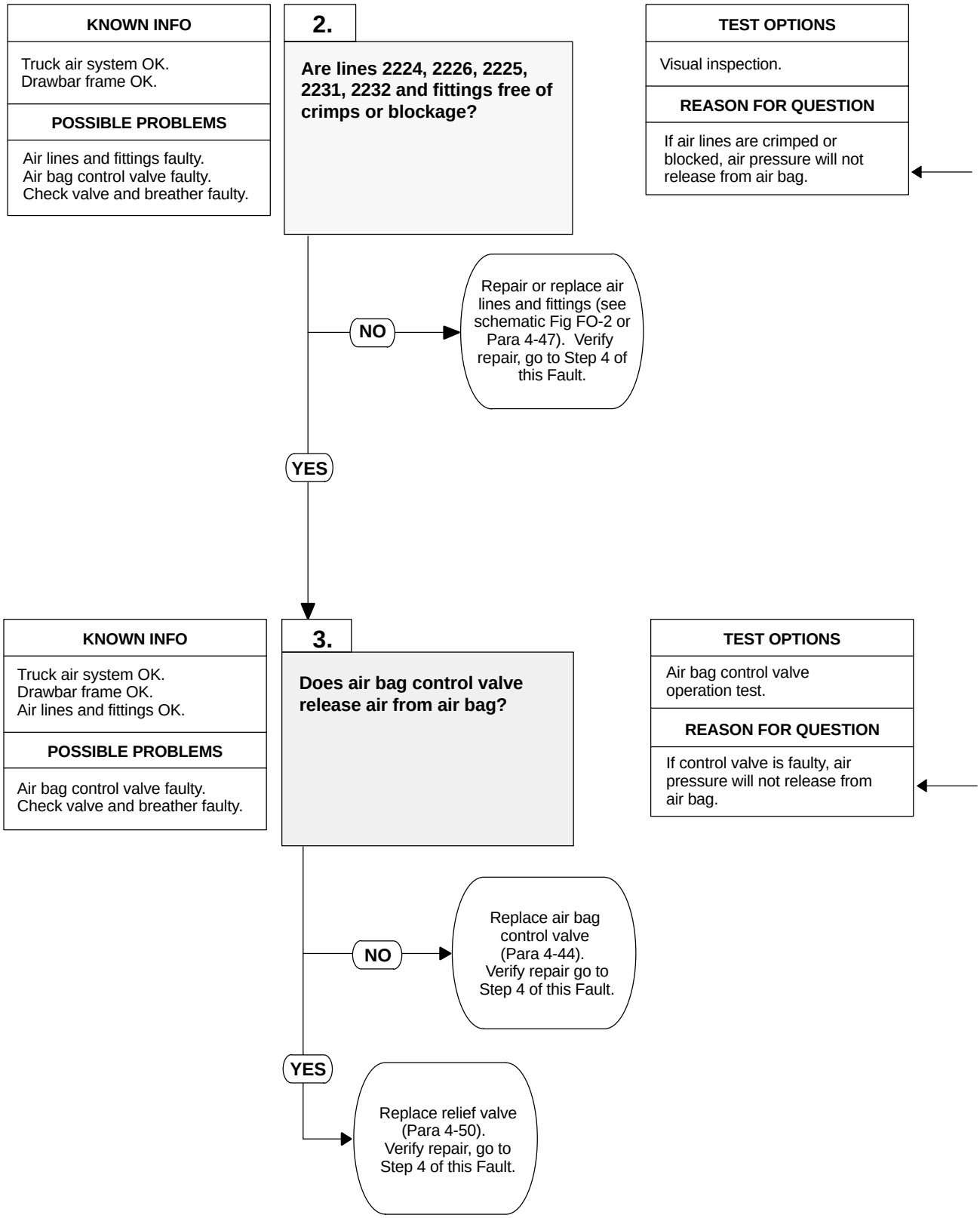
NOTE

- 125 ± 5 psi (862 ± 34 kPa) must be supplied to trailer air system before troubleshooting can begin.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION
Raise and lower drawbar (Para 2-9) and inspect drawbar for damage and binding at connections to trailer frame. (1) If drawbar is damaged or binding, notify supervisor. (2) If drawbar is OK, go to Step (2) of this Fault.



5. DRAWBAR WILL NOT LOWER (CONT).

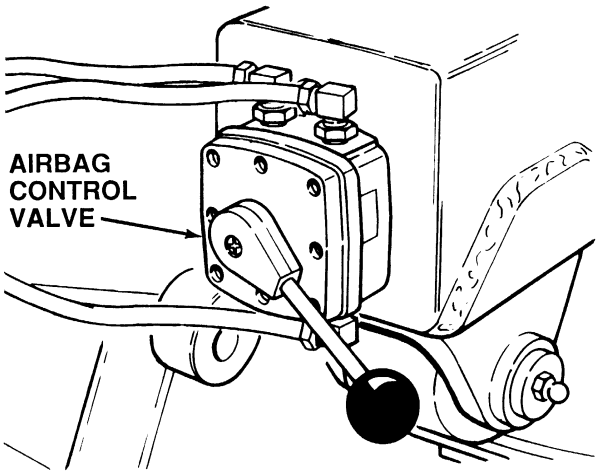


WARNING

- If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause injury or death to personnel. Air system should be drained and air bag control valve set in center position before air bag air lines are disconnected.
- Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.

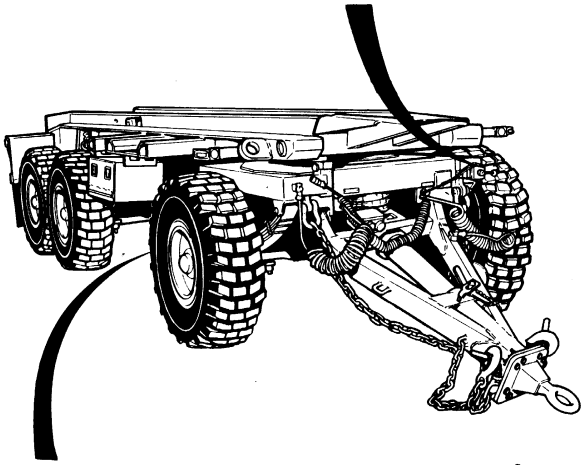
VISUAL INSPECTION

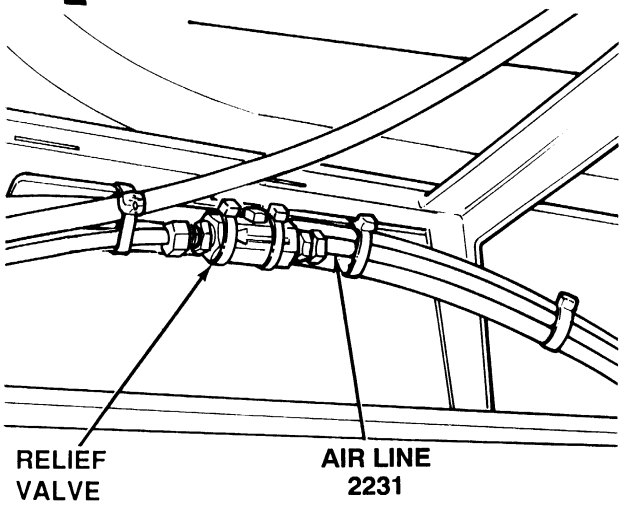
Inspect air lines 2224, 2226, 2225, 2231, 2232 and fittings for crimps or blockage.
(1) If air hose(s) and fitting(s) are crimped or blocked, clean, repair or replace air hose(s) (see schematic Fig FO-2 or Para 4-47).
(2) If air lines and fittings are OK, go to Step (3) of this Fault.



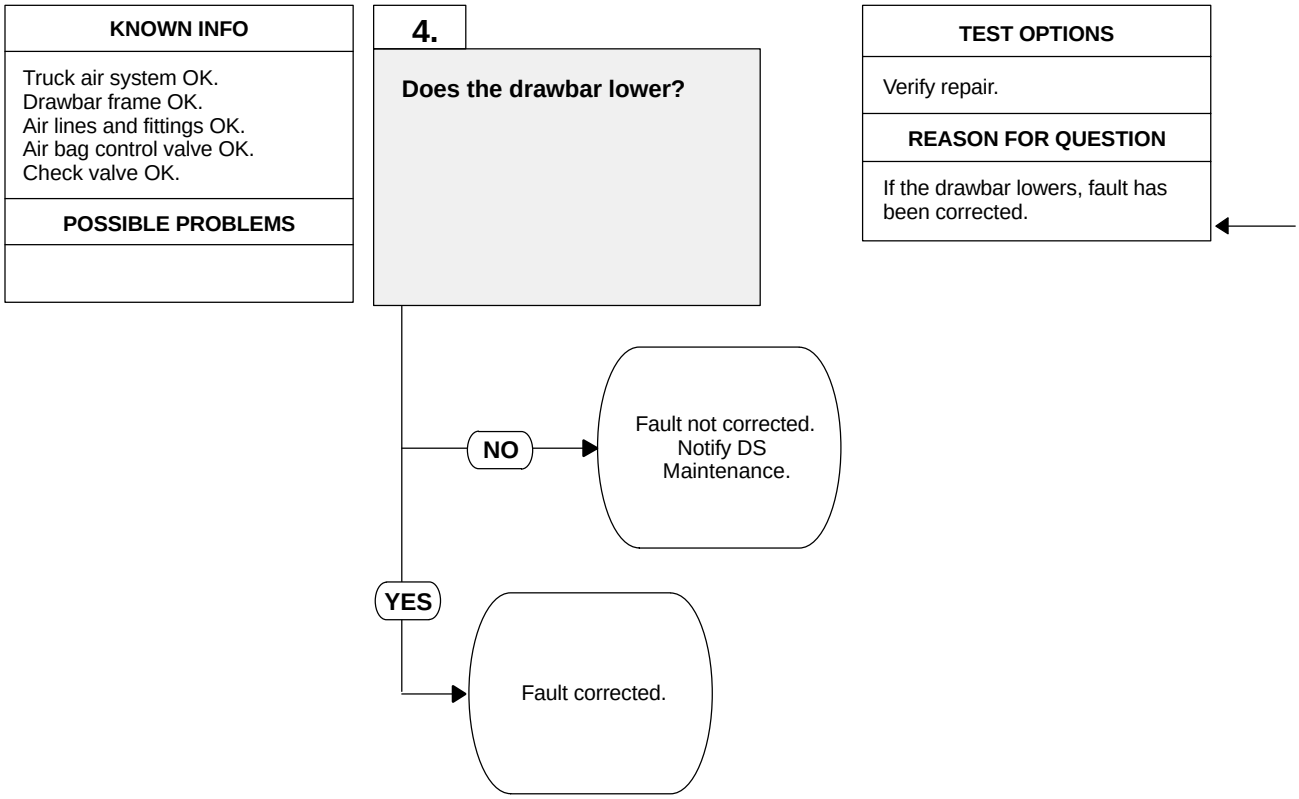
AIR BAG CONTROL VALVE OPERATION TEST

(1) Move air bag control lever in the down position.
(2) Disconnect air hose 2231 from check valve.
(3) Raise air bag control lever to up position.
(4) While assistant lowers air bag control lever to down position, listen to air hose 2231.
  (a) If air does not escape from air hose 2231, perform Steps (5) and (6) below and replace control valve (Para 4-44).
  (b) If air escapes from air hose 2231, perform Steps (5) and (6) below and replace relief valve (Para 4-50).
(5) Raise air bag control lever to center position.
(6) Connect air hose 2231 to relief valve.



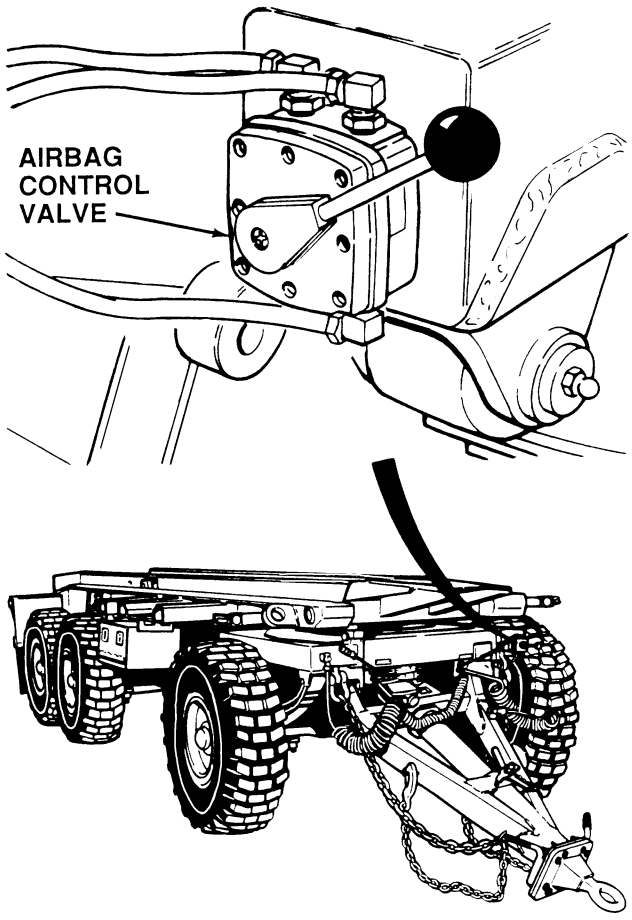


5. DRAWBAR WILL NOT LOWER (CONT).



VERIFY REPAIR

(1) Raise air bag control lever to up position.
(2) Lower air bag control lever to down position.
   (a) If drawbar does not lower, fault not corrected. Notify DS Maintenance.
   (b) If drawbar lowers, fault corrected.



4-15. AIR SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

6. DRAWBAR RAISES WITHOUT OPERATION.

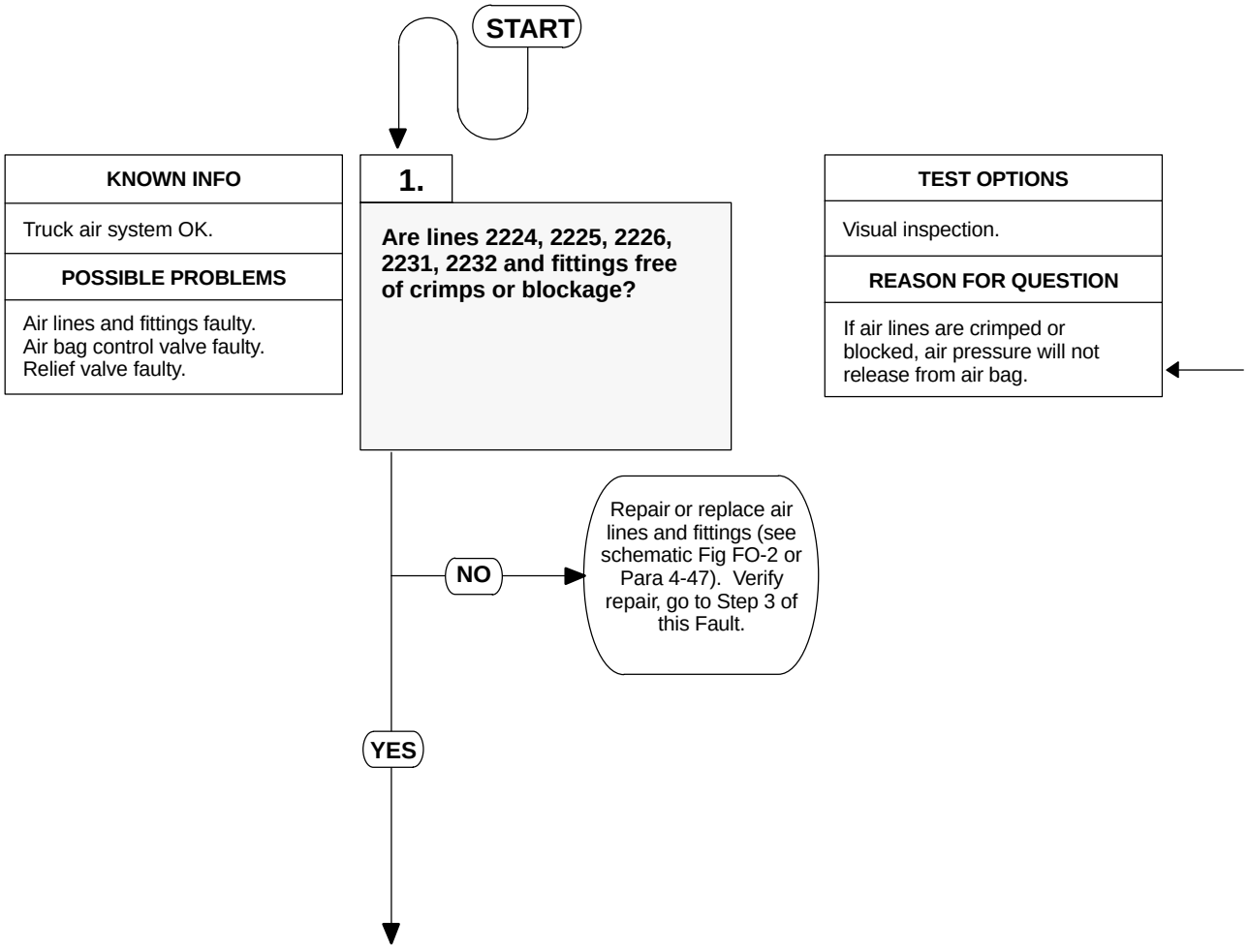
INITIAL SETUP

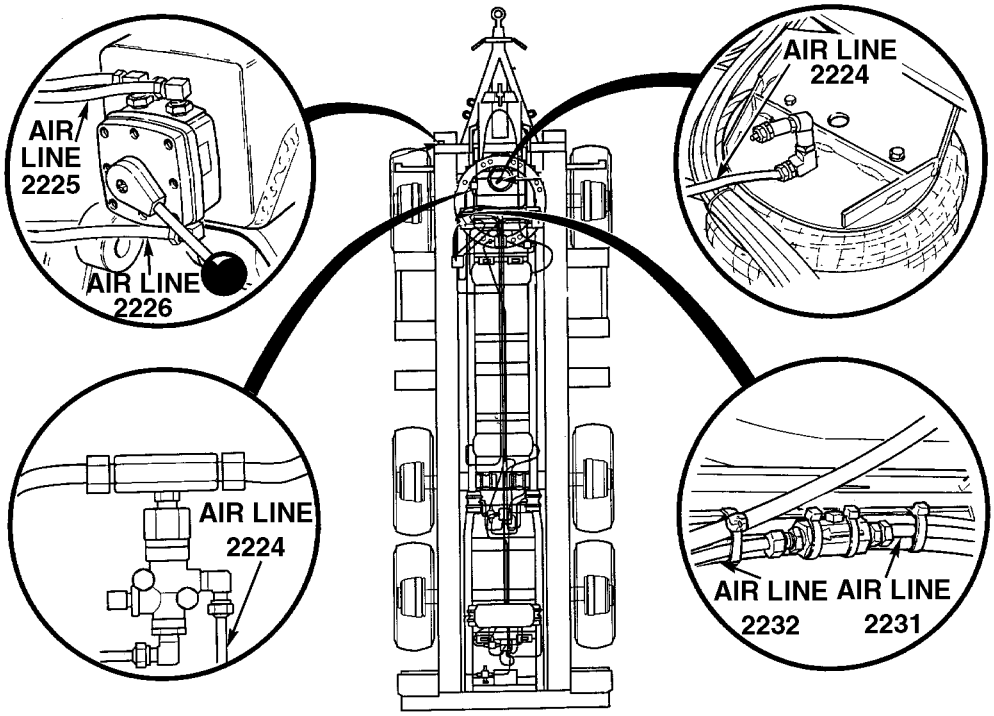
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

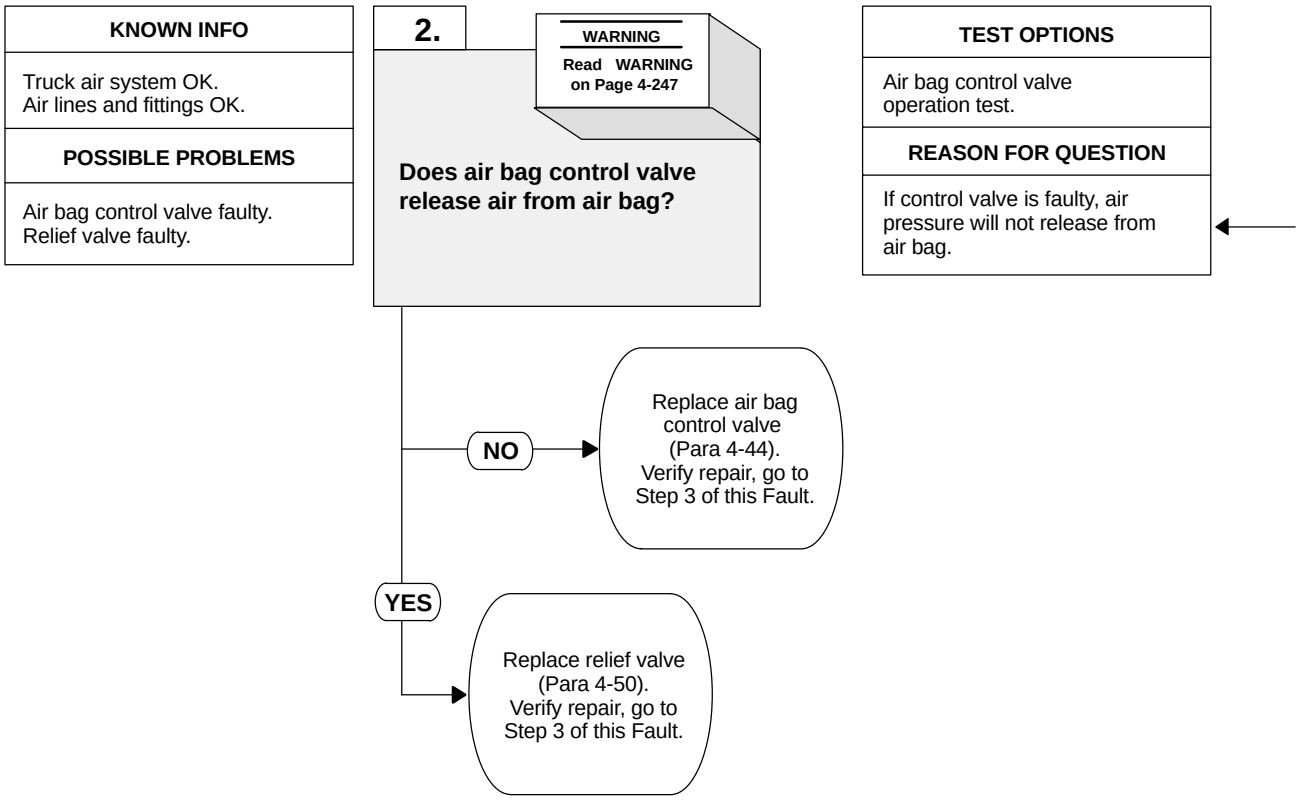
Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Charging hose connected to trailer quick disconnect and truck, (Para 2-9 or 2-11)
Trailer air system charged, (Para 2-22)





VISUAL INSPECTION
Inspect air lines 2224, 2225, 2226, 2231, 2232 and fittings for crimps or blockage. (1) If air hose(s) and fitting(s) are crimped or blocked, clean, repair or replace air hose(s) or fitting(s) (see schematic Fig FO-2 or Para 4-47). (2) If air lines and fittings are OK go to Step 2 of this fault.

6. DRAWBAR RAISES WITHOUT OPERATION (CONT).

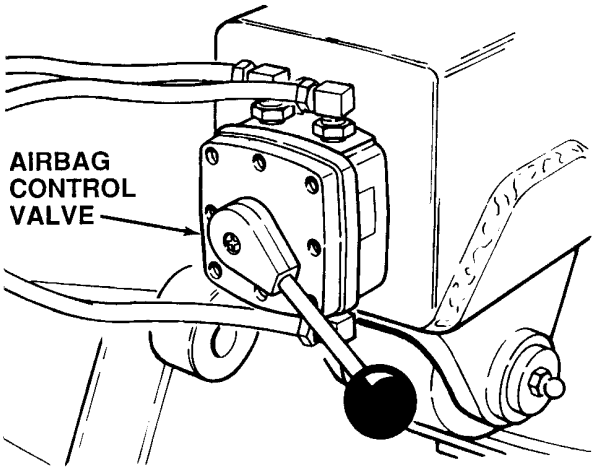


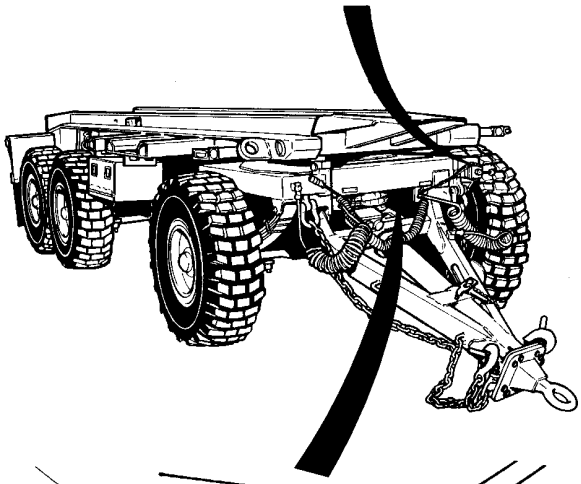
WARNING

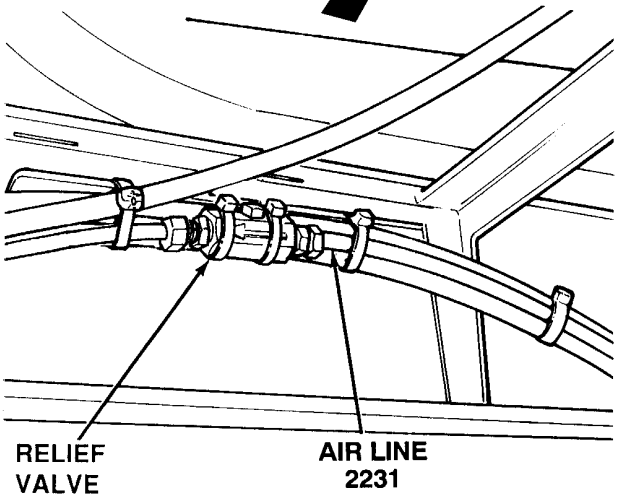
- If air lines are disconnected while under 90 to 125 psi (621-862 kPa), they can whip around and cause injury or death to personnel. Air system should be drained and air bag control valve set in center position before air bag air lines are disconnected.
- Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Drawbar may raise quickly or fall suddenly to the ground when released from coupler. Do not allow feet or body to get under or above drawbar. Serious injury to personnel may result.

AIR BAG CONTROL VALVE OPERATION TEST

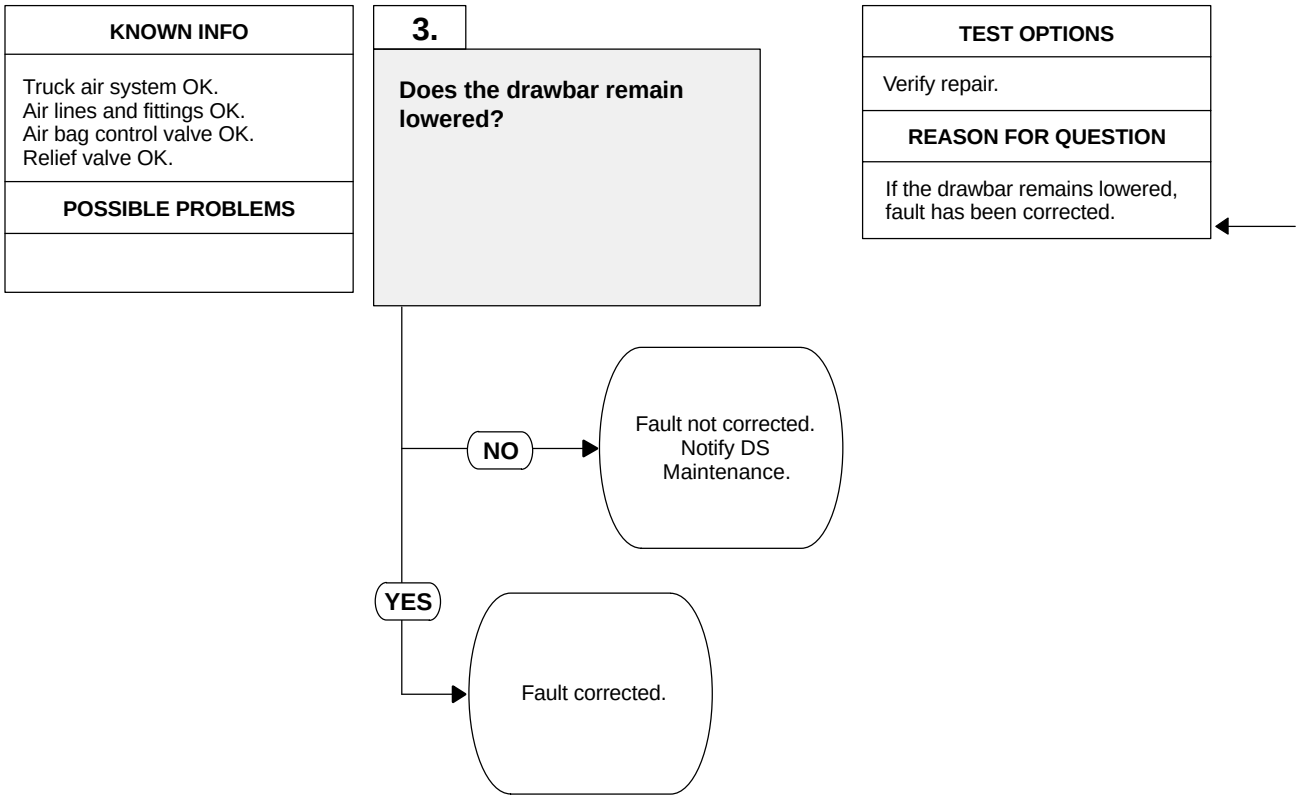
(1) Move air bag control lever in the down position.
(2) Disconnect air hose 2231 from relief valve.
(3) Raise air bag control lever to up position.
(4) While assistant lowers air bag control lever to down position, listen to air hose 2231.
  (a) If air does not escape from air hose 2231, perform Steps (5) and (6) below and replace control valve (Para 4-44).
  (b) If air escapes from air hose 2231, perform Steps (5) and (6) below and replace relief valve (Para 4-50).
(5) Raise air bag control lever to center position.
(6) Connect air hose 2231 to relief valve.





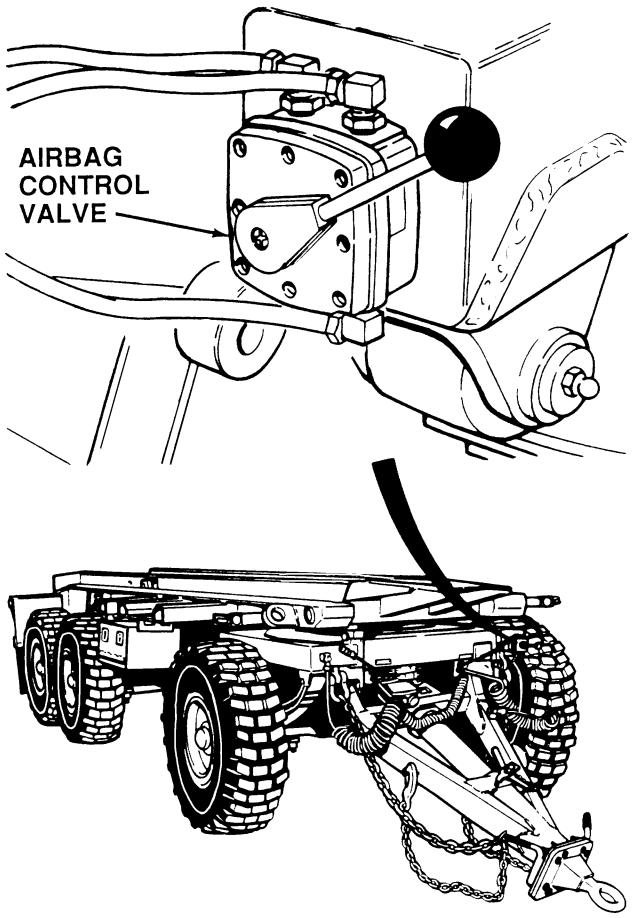


6. DRAWBAR RAISES WITHOUT OPERATION (CONT).



VERIFY REPAIR

(1) Raise air bag control lever to up position.
(2) Lower air bag control lever to down position.
    (a) If drawbar does not remain lowered, fault not corrected. Notify DS Maintenance.
    (b) If drawbar remains lowered, fault corrected.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES.

This paragraph covers brake system troubleshooting procedures. The Brake System Fault Index, Table 4-6, lists faults for the brake system of the trailer. Refer to schematic, Figure FO-2 when performing tests and corrective actions.

Table 4-6. Brake System Fault Index

4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

1. ALL PARKING BRAKES DO NOT RELEASE.

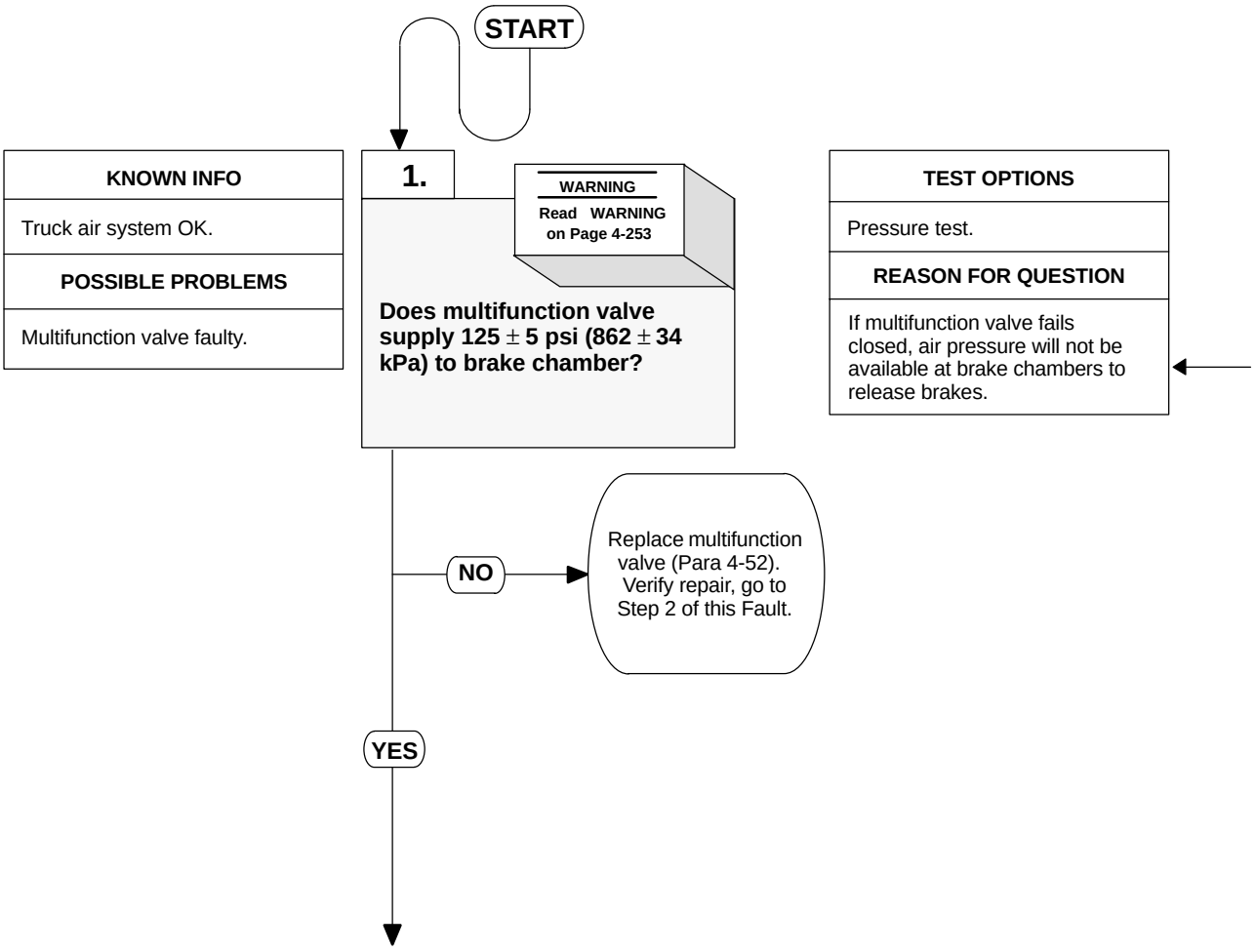
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency air supply gladhand connected to truck, (Para 2-22)
Air system charged, (Para 2-22)



WARNING

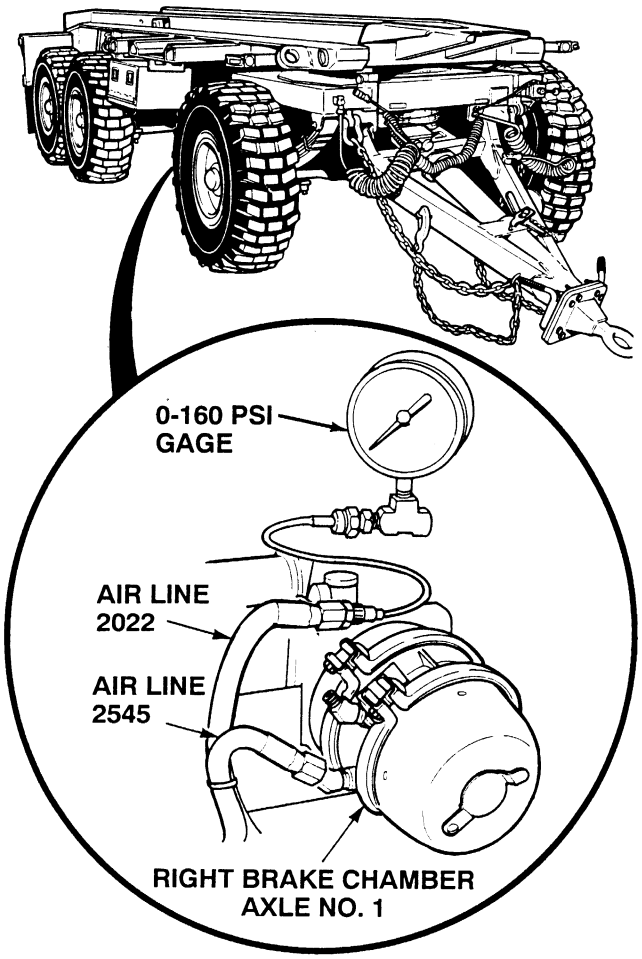
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

NOTE

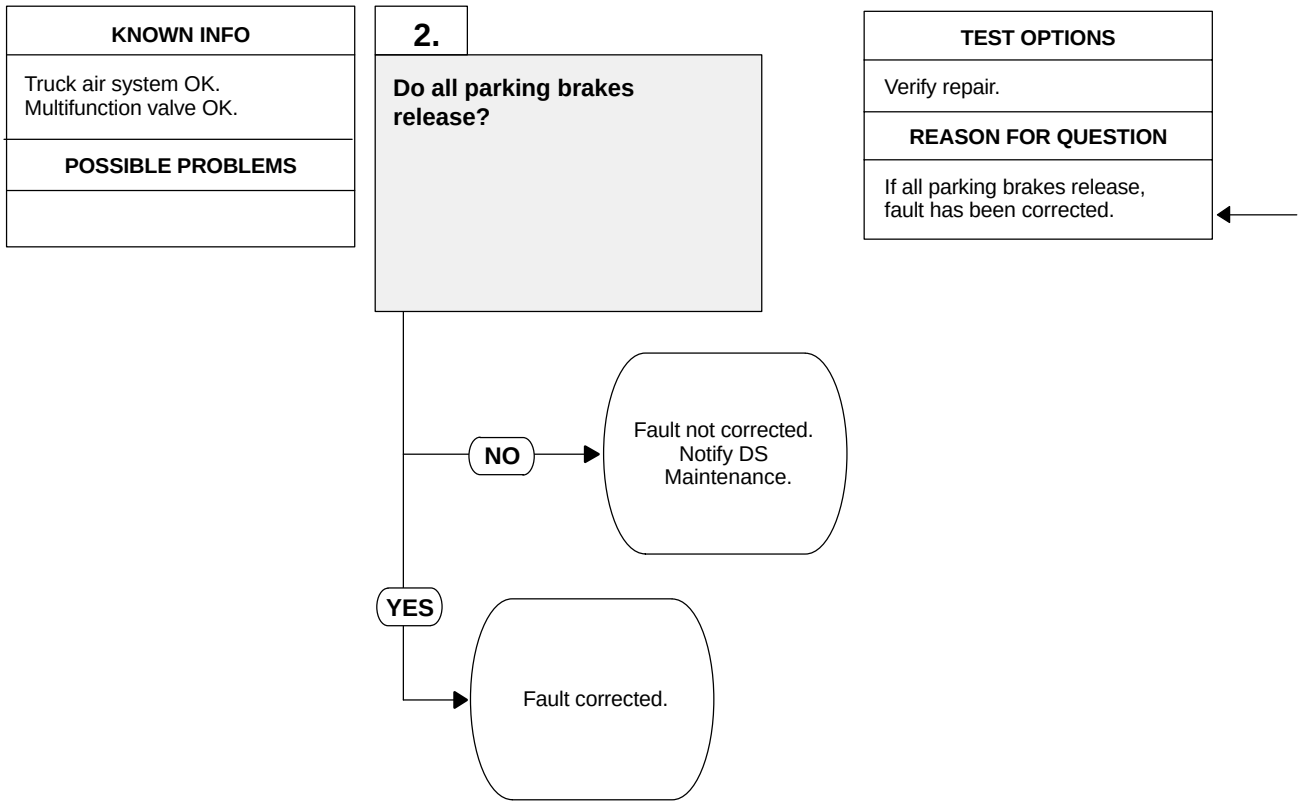
- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2022 from right front brake chamber.
(3) Connect air hose 2022 to 0-160 psi (1103 kPa) pressure gage.
(4) Start engine (TM 9-2320-364-10).
(5) While assistant pushes in trailer charge valve in truck, observe pressure gage (Para 2-22).
  (a) If 125 ± 5 psi (862 ± 34 kPa) is not measured, perform Steps (6) through (9) below and replace multifunction valve (Para 4-52).
  (b) If 125 ± 5 psi (862 ± 34 kPa) is measured, multifunction valve is OK.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.
(8) Disconnect air hose 2022 from pressure gage.
(9) Connect air hose 2022 to right front brake chamber.

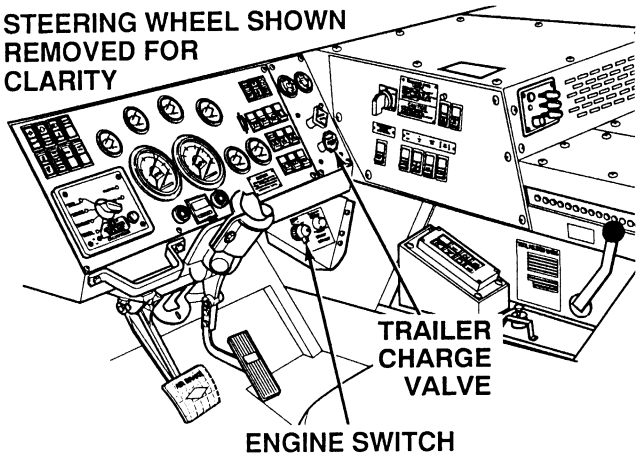


1. ALL PARKING BRAKES DO NOT RELEASE (CONT).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant drives truck and pulls trailer, observe wheels on trailer.
    (a) If wheels drag, fault not corrected. Perform Steps (4) through (6) below and notify DS Maintenance.
    (b) If wheels do not drag, fault corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

2. PARKING BRAKE(S) ON ONE AXLE DO NOT RELEASE OR DO NOT RELEASE CORRECTLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (Item 63, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

NOTE

Soap and water solution will be used to visually check for leaks.

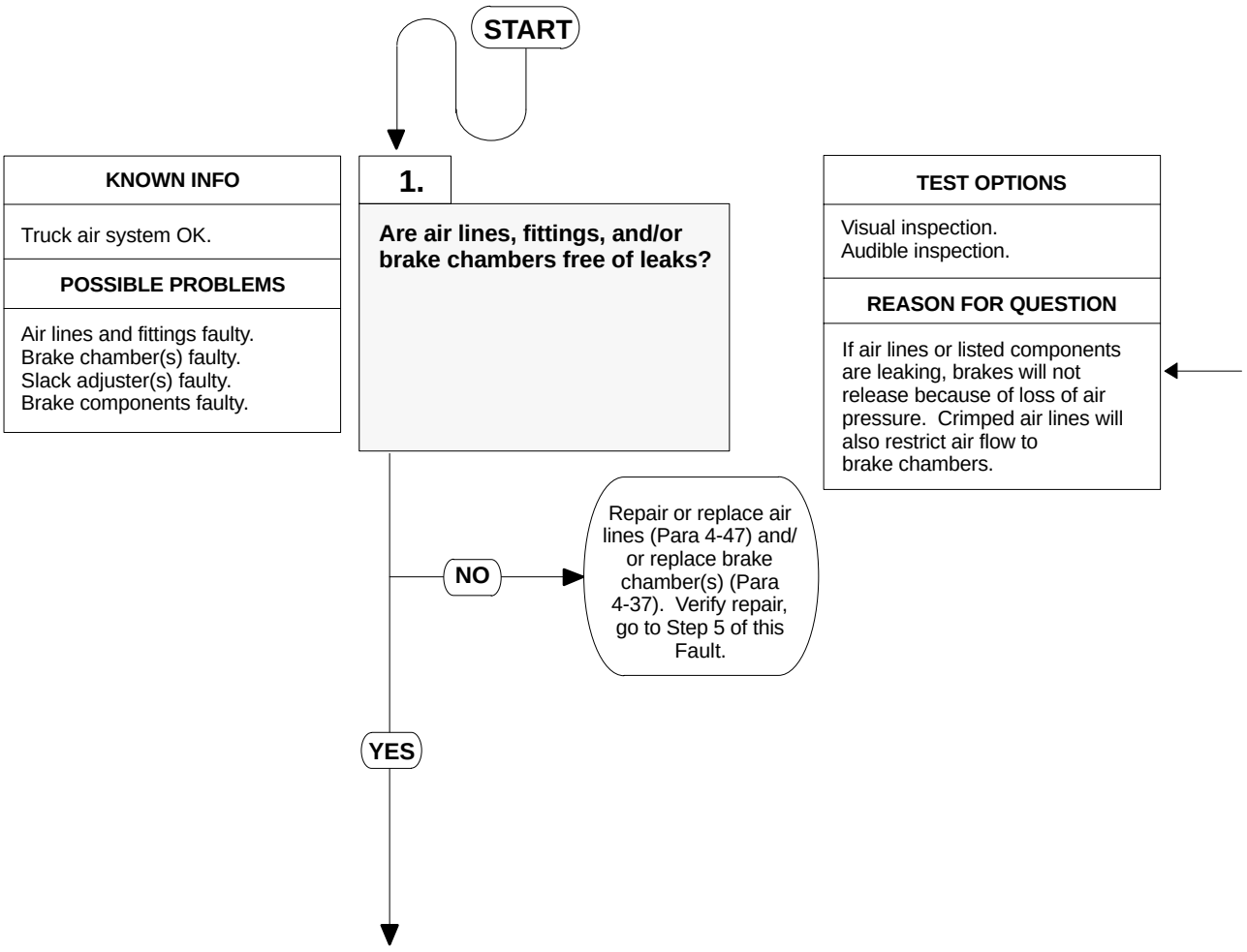


Table 4-7. Parking Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2023	LH 2142	LH 2141
RH 2022	LH 2139	RH 2140
	RH 2138	RH 2143

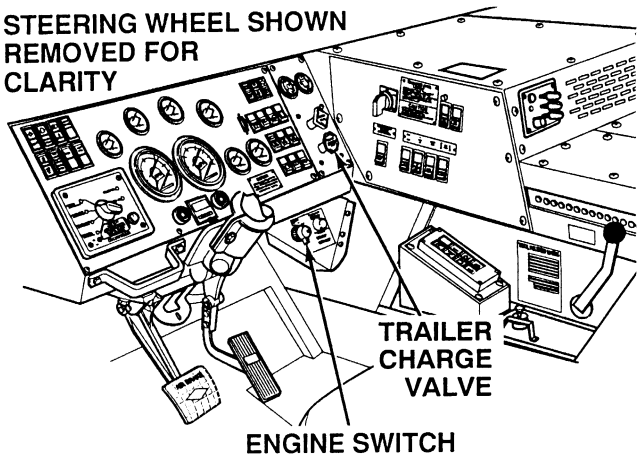
The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

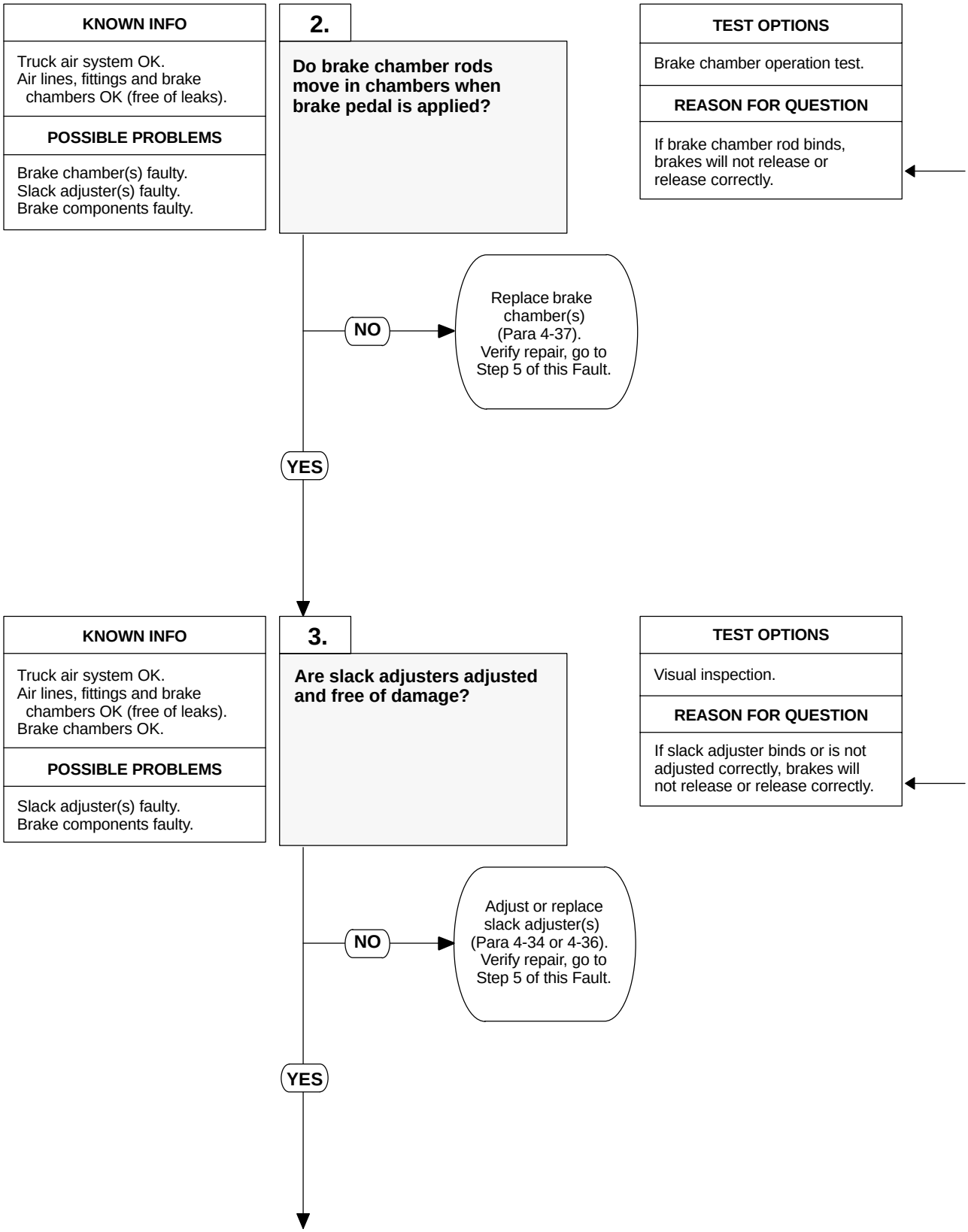
- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) Inspect air lines (Table 4-7) for crimps.
(4) Inspect air lines (Table 4-7), fittings, and brake chambers for leaks.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If air hose(s) and/or brake chamber(s) leak, perform Steps (5) and (6) below and repair or replace air lines (see schematic Fig FO-2 or Para 4-47) and/or replace brake chamber(s) (Para 4-37).
  (c) If fittings, air lines, and brake chambers do not leak, perform Steps (5) and (6) below and go to Step (2) of this Fault.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



2. PARKING BRAKE(S) ON ONE AXLE DO NOT RELEASE OR DO NOT RELEASE CORRECTLY (CONT).



NOTE

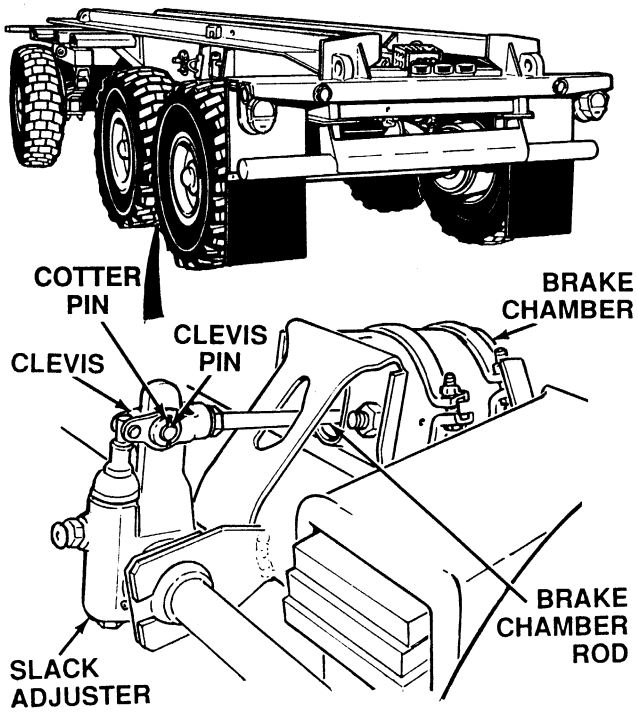
This test covers left rear brake chamber, but it can be used to test operation of all trailer brake chambers.

BRAKE CHAMBER TEST

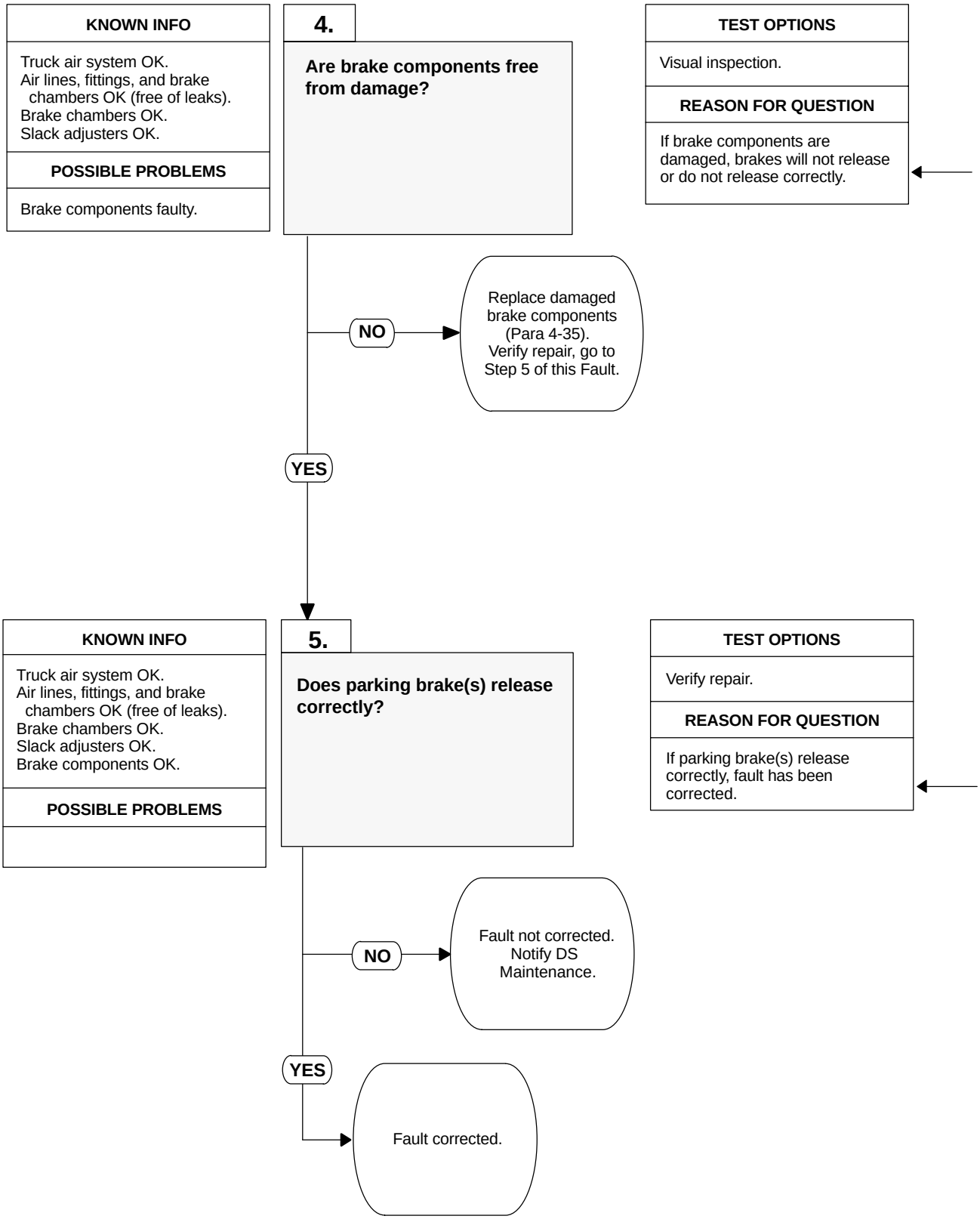
(1) Cage brake chamber (Para 2-16).
(2) Remove two cotter pins, pins and rod clevis from slack adjuster. Discard cotter pins.
(3) Rotate slack adjuster away from rod clevis.
(4) Uncage brake chamber.
(5) Start engine (TM 9-2320-364-10).
(6) While assistant pushes in trailer charge valve in truck, observe operation of brake chamber rod (Para 2-22).
    (a) If rod does not move smoothly into brake chamber, perform Steps (7) through (12) below and replace brake chamber (Para 4-37).
    (b) If rod moves into brake chamber smoothly, brake chamber is OK.
(7) Pull out trailer charge valve in truck.
(8) Turn OFF ENGINE switch.
(9) Cage brake chamber.
(10) Rotate slack adjuster to clevis.
(11) Install rod clevis, two pins, and cotter pins on slack adjuster.
(12) Uncage brake chamber.

VISUAL INSPECTION

(1) Inspect slack adjusters for damage.
    (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
    (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brake(s) (Para 4-34).

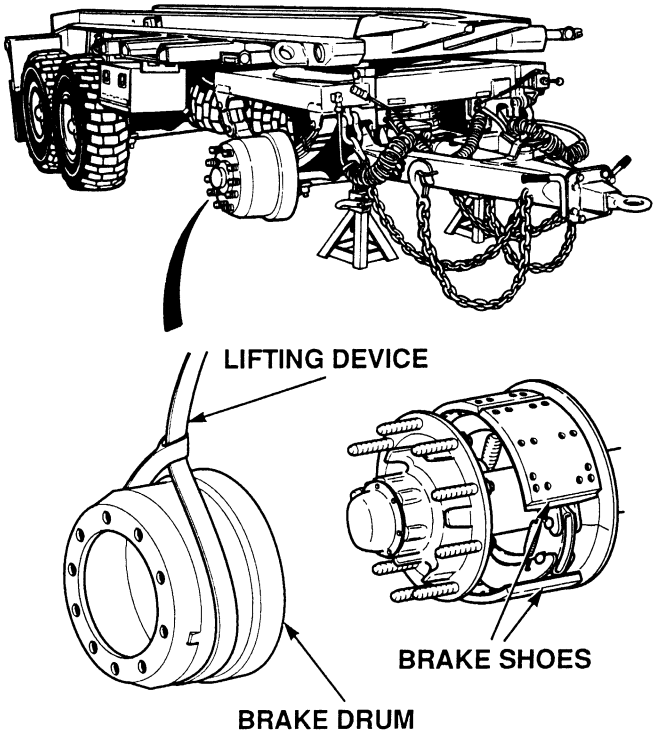


2. PARKING BRAKE(S) ON ONE AXLE DO NOT RELEASE OR DO NOT RELEASE CORRECTLY (CONT).



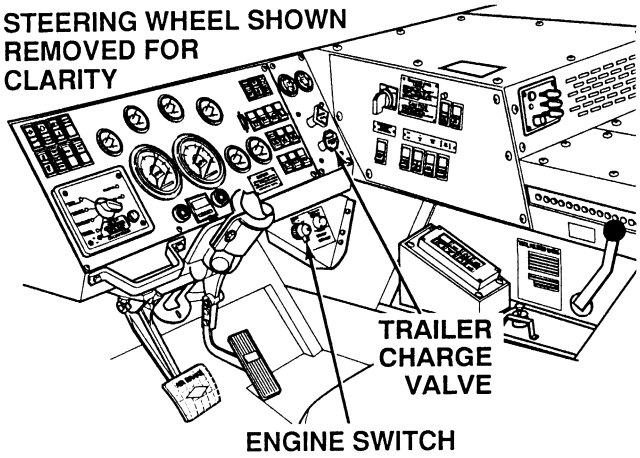
VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums, and other damage that will prevent brakes from releasing.
    (a) If brake components are damaged, replace damaged brake components (Para 4-35).
    (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant drives truck and pulls trailer, observe wheel(s) on axle.
    (a) If wheels drag, fault not corrected. Perform Steps (4) through (6) below and notify supervisor.
    (b) If wheels do not drag, fault corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

3. PARKING BRAKES ON ALL AXLES DO NOT APPLY, OR APPLY SLOWLY.

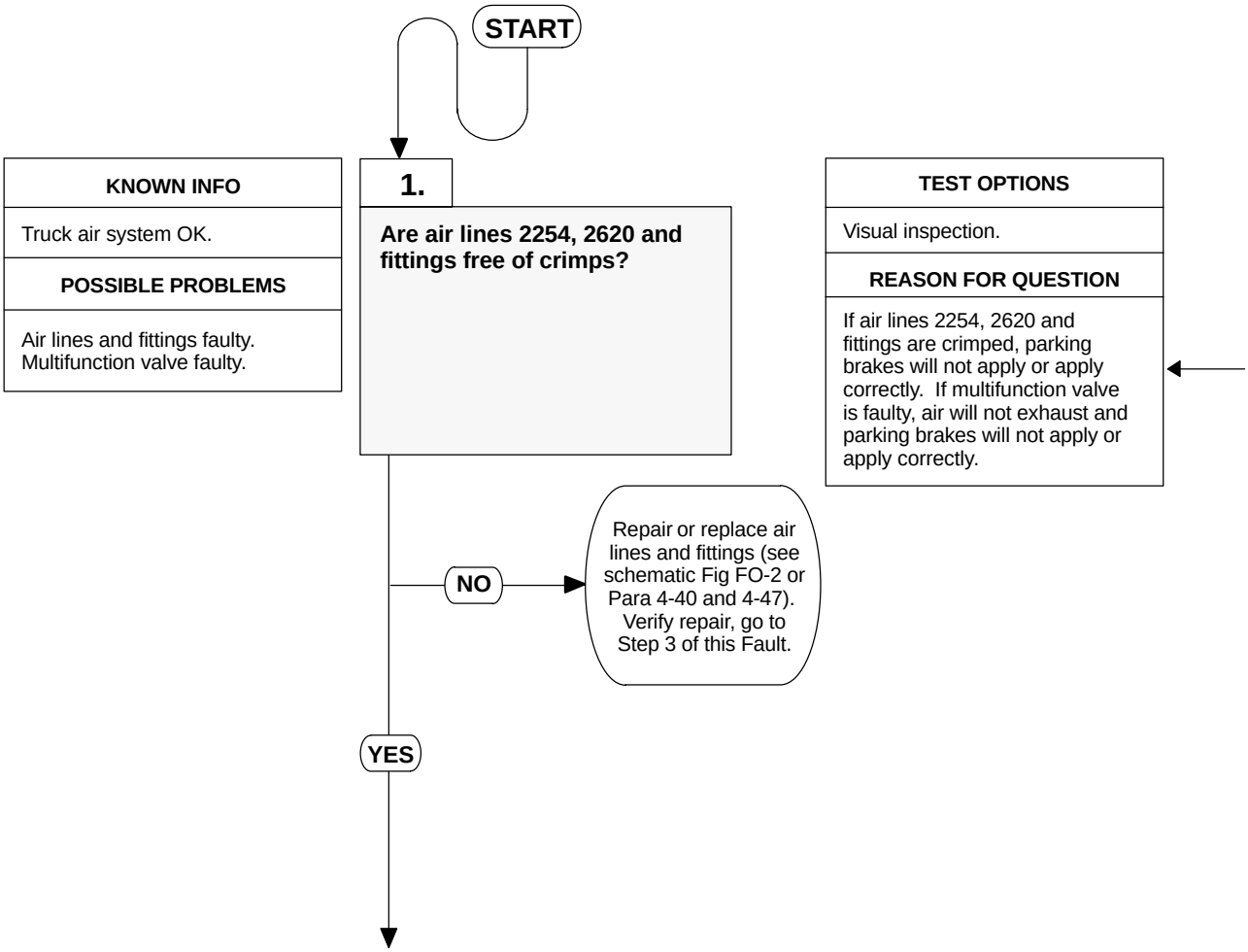
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency air supply gladhand connected to truck, (Para 2-22)

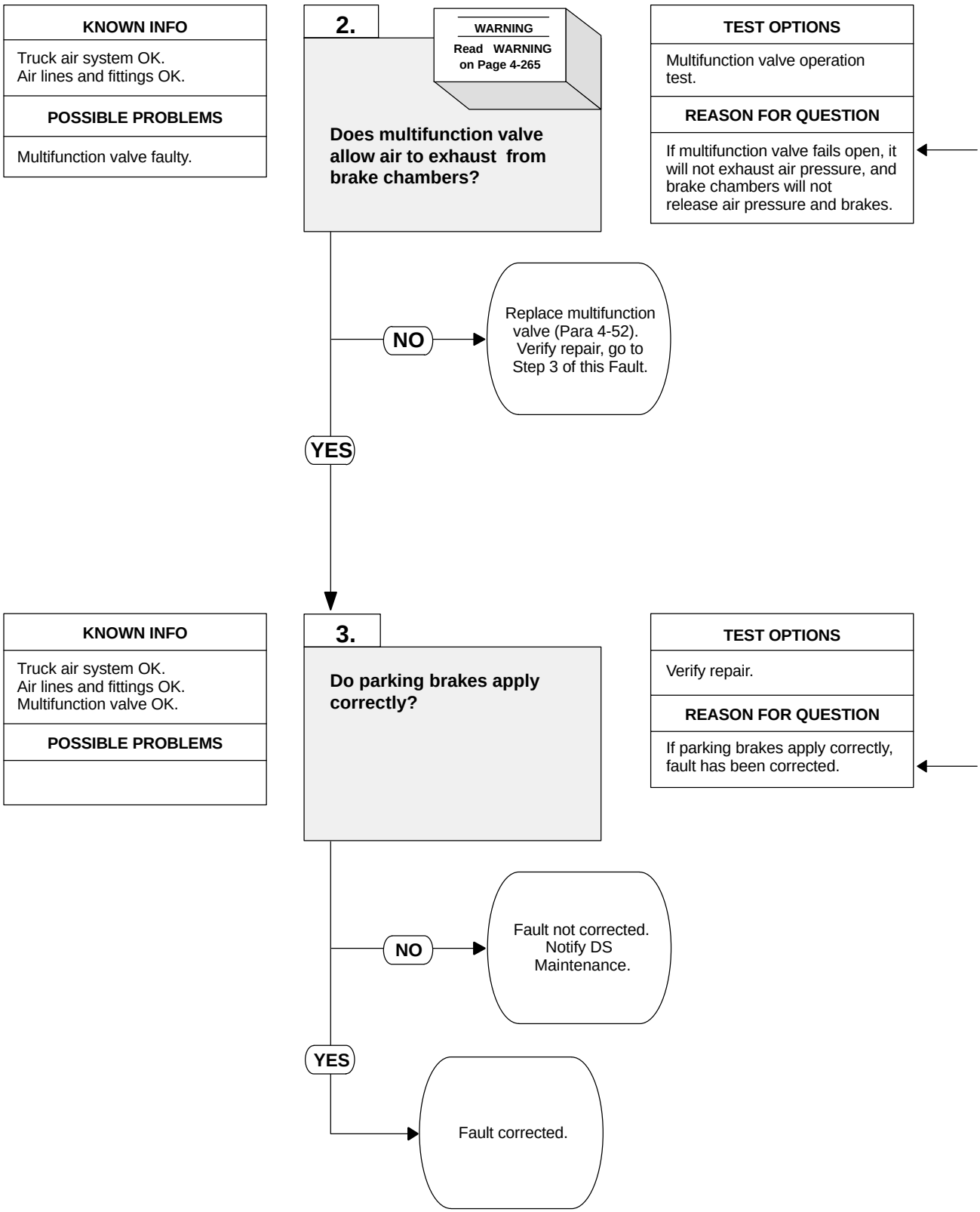


NOTE

- Trailer air system pressure must be ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION
Inspect air lines 2254, 2620, and fittings for crimps. (1) If air hose(s) or fittings are crimped, repair or replace air hose(s) and fittings (see schematic Fig FO-2 or Para 4-40 and 4-47). (2) If air lines and fittings are not crimped, air lines and fittings OK.

3. PARKING BRAKES ON ALL AXLES DO NOT APPLY, OR APPLY SLOWLY (CONT).

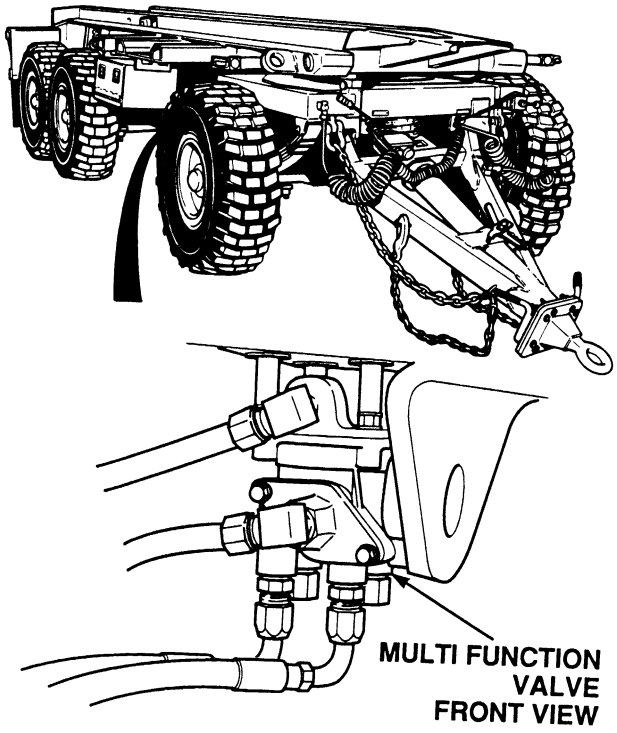


WARNING

If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

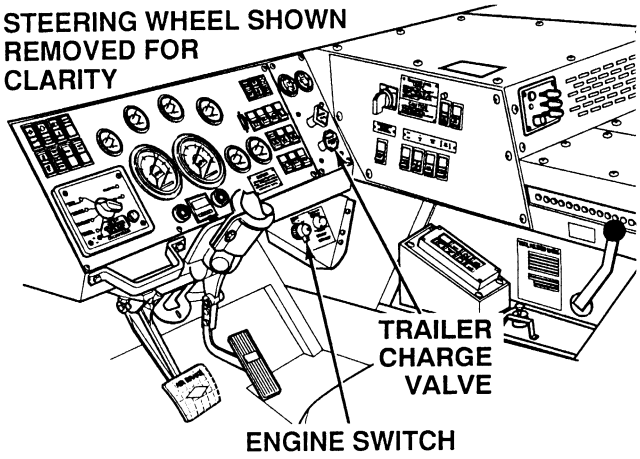
MULTIFUNCTION VALVE TEST

(1) Start engine (TM 9-2320-364-10).
(2) Pull out trailer charge valve in truck and charge trailer air system (Para 2-22).
(3) While assistant pushes in trailer charge valve, listen for air to exhaust from multifunction valve.
   (a) If air does not escape from multifunction valve, perform Step (4) below and replace valve (Para 4-52).
   (b) If air escapes from multifunction valve, multifunction valve is OK.
(4) Turn OFF ENGINE switch.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant pulls out trailer charge valve in truck, observe operation of brakes chamber rod(s).
   (a) If brakes do not operate correctly, fault not corrected. Perform Steps (4) and (5) below and notify DS Maintenance.
   (b) If brakes operate correctly, fault corrected.
(4) Push in trailer charge valve in truck.
(5) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

4. PARKING BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (Item 63, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency air supply gladhand connected to truck, (Para 2-22)

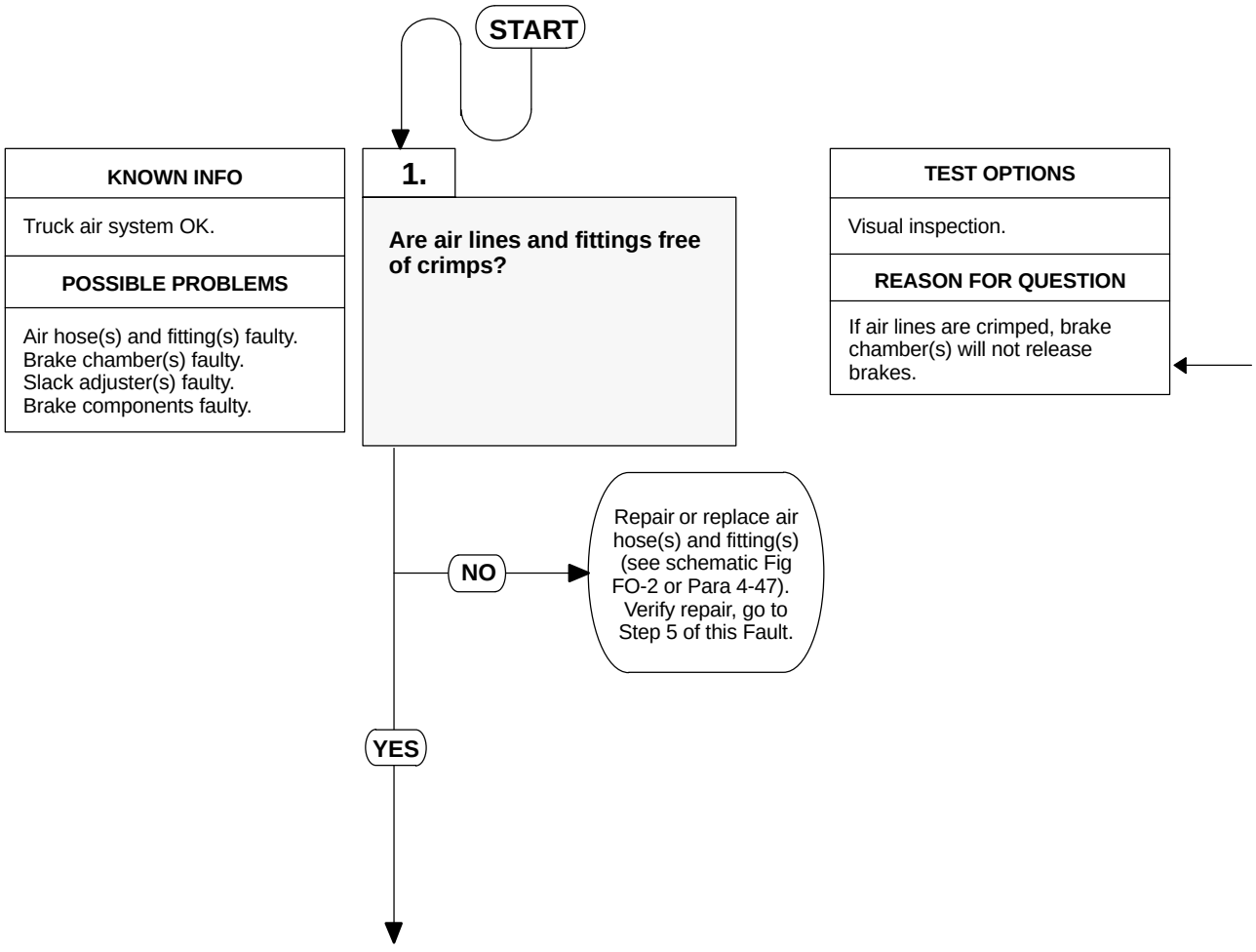


Table 4-8. Parking Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2023	LH 2142	LH 2141
RH 2022	LH 2139	RH 2140
	RH 2138	RH 2143

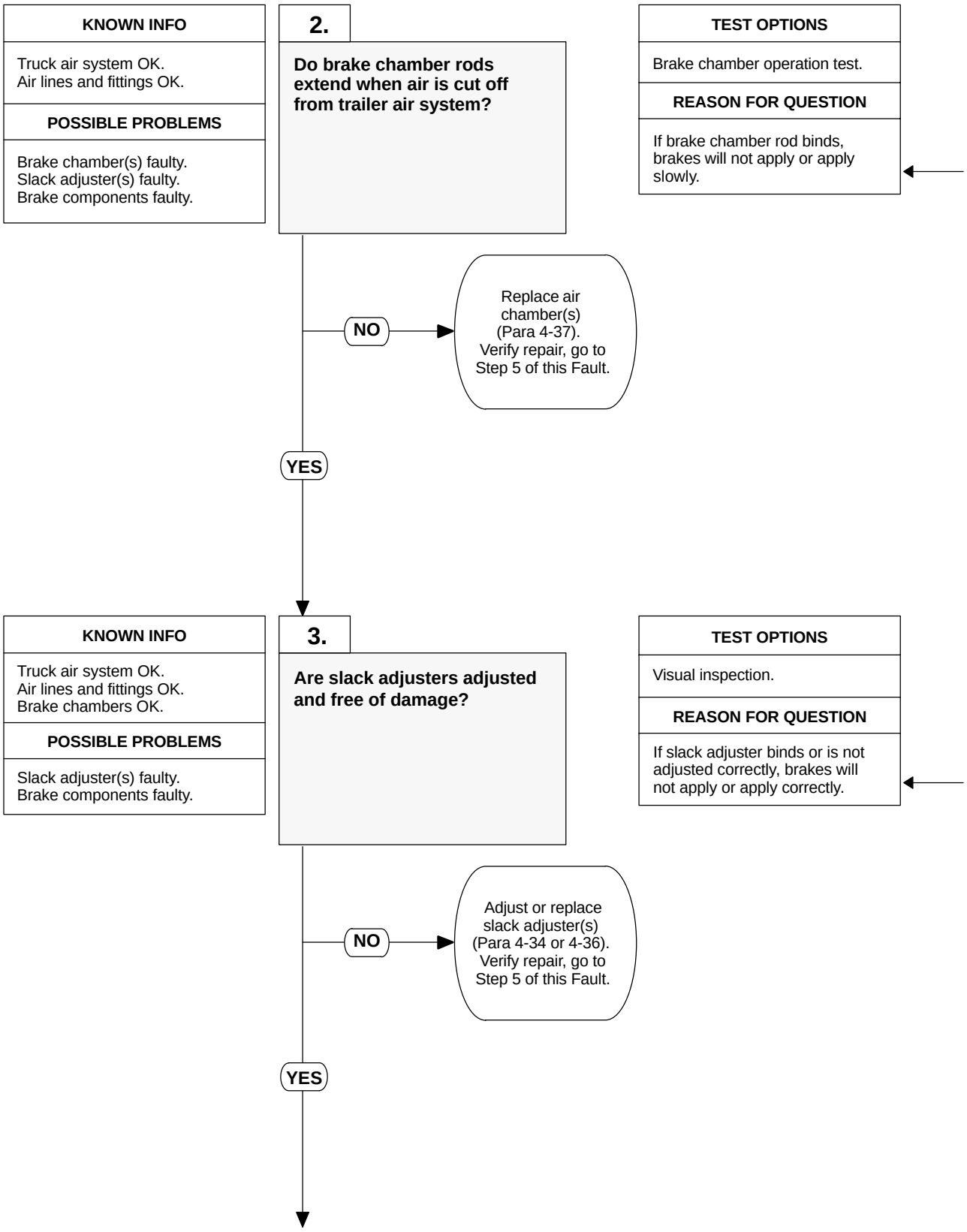
The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION
Inspect air lines (Table 4-8) and fittings for crimps. (1) If air hose(s) or fittings are crimped, repair or replace air hose(s) and fittings (see schematic Fig FO-2 or Para 4-47). (2) If air lines and fittings are not crimped, air lines and fittings are OK.

4. PARKING BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY (CONT).

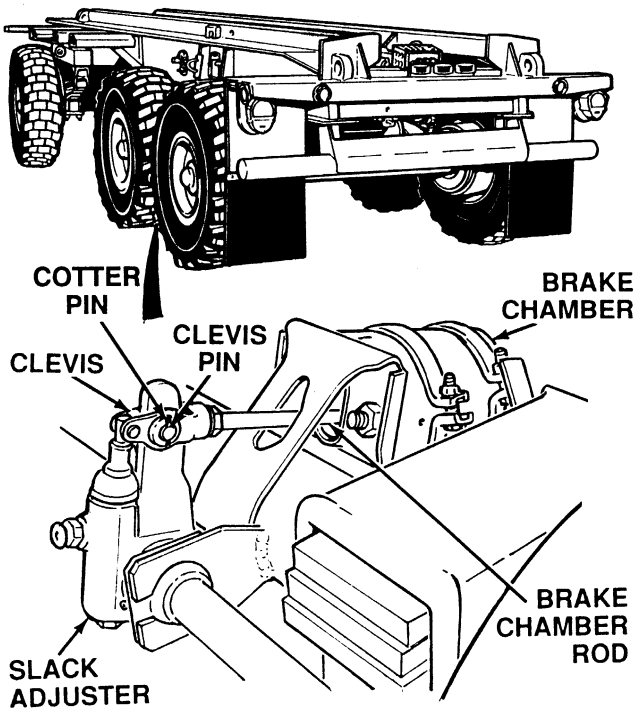


NOTE

- This test covers left rear brake chamber, but it can be used to test operation of all trailer brake chambers.
- Some resistance will be felt from spring when pulling chamber rod out of brake chamber.

BRAKE CHAMBER TEST

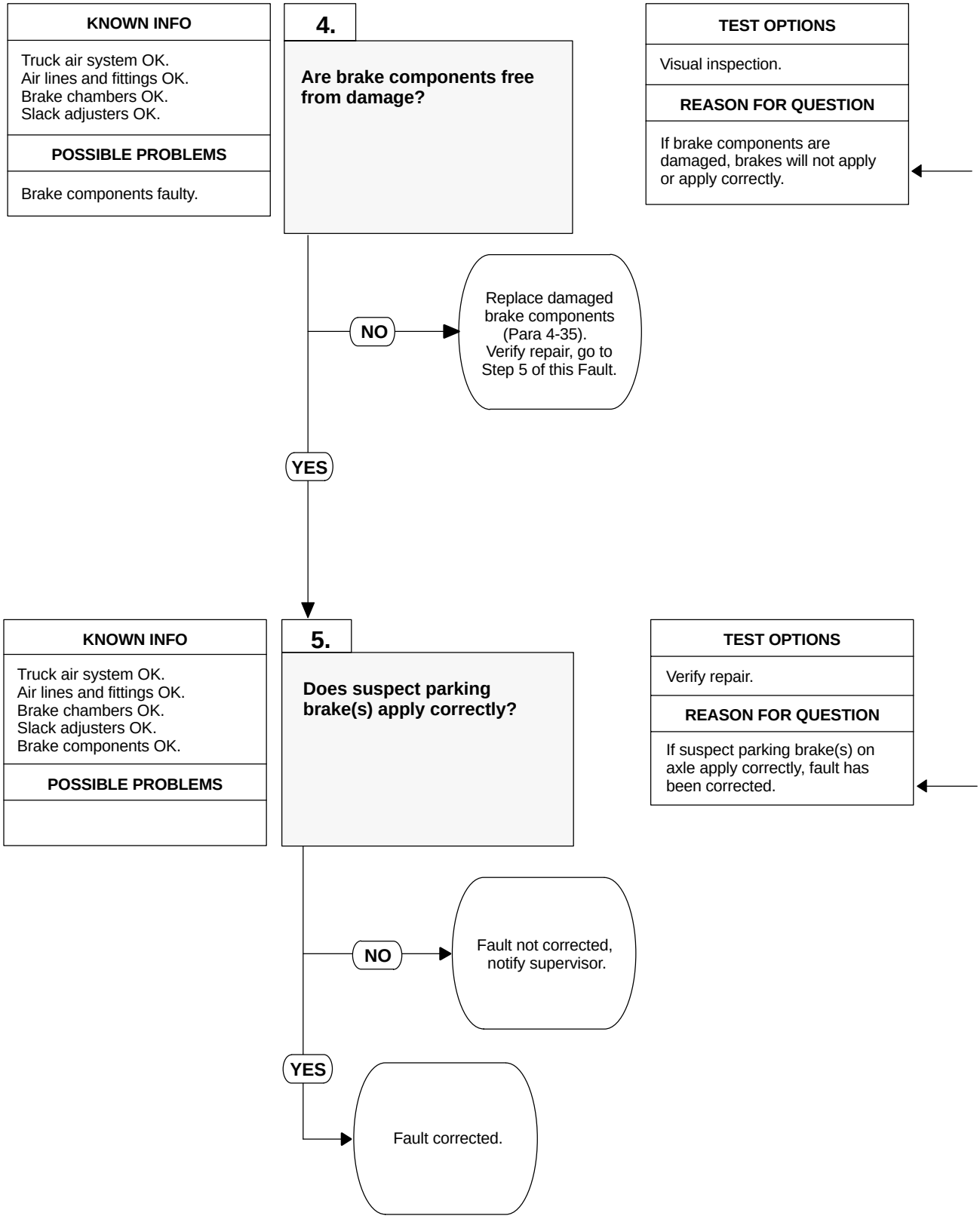
(1) Drain air from trailer air system (Para 2-21).
(2) Cage brake chamber (Para 2-16).
(3) Remove two cotter pins, pins and rod clevis from slack adjuster. Discard cotter pins.
(4) Rotate slack adjuster away from clevis.
(5) Uncage brake chamber.
(6) Pull brake chamber rod out of chamber by hand.
    (a) If rod does not move smoothly out of chamber by hand, replace brake chamber (Para 4-37).
    (b) If rod moves smoothly out of chamber by hand, brake chamber is OK.
(7) Cage brake chamber.
(8) Rotate slack adjuster to clevis.
(9) Install rod clevis, two pins, and cotter pins on slack adjuster.
(10) Uncage brake chamber.



VISUAL INSPECTION

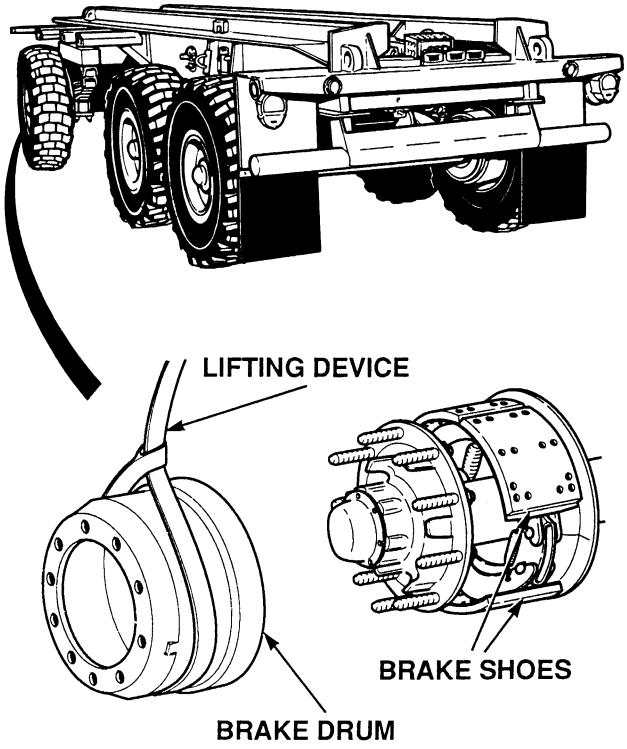
(1) Inspect slack adjusters for damage.
    (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
    (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brake(s) (Para 4-34).

4. PARKING BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY (CONT).



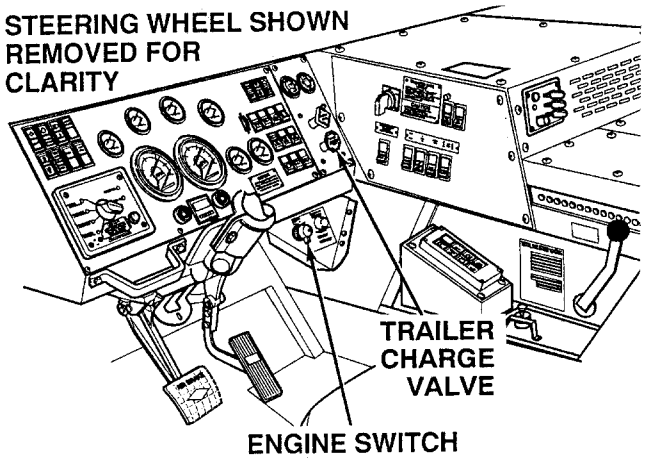
VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums and other damage that will prevent brakes from releasing.
    (a) If brake components are damaged, replace damaged brake components (Para 4-35).
    (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant pulls out trailer charge valve, observe operation of brake chamber rod(s).
    (a) If brakes do not operate correctly, fault not corrected. Perform Steps (4) and (5) below and notify supervisor.
    (b) If brakes operate correctly, fault corrected.
(4) Pull out trailer charge valve in truck.
(5) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

5. SERVICE BRAKES ON ALL AXLES DO NOT APPLY OR APPLY SLOWLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)

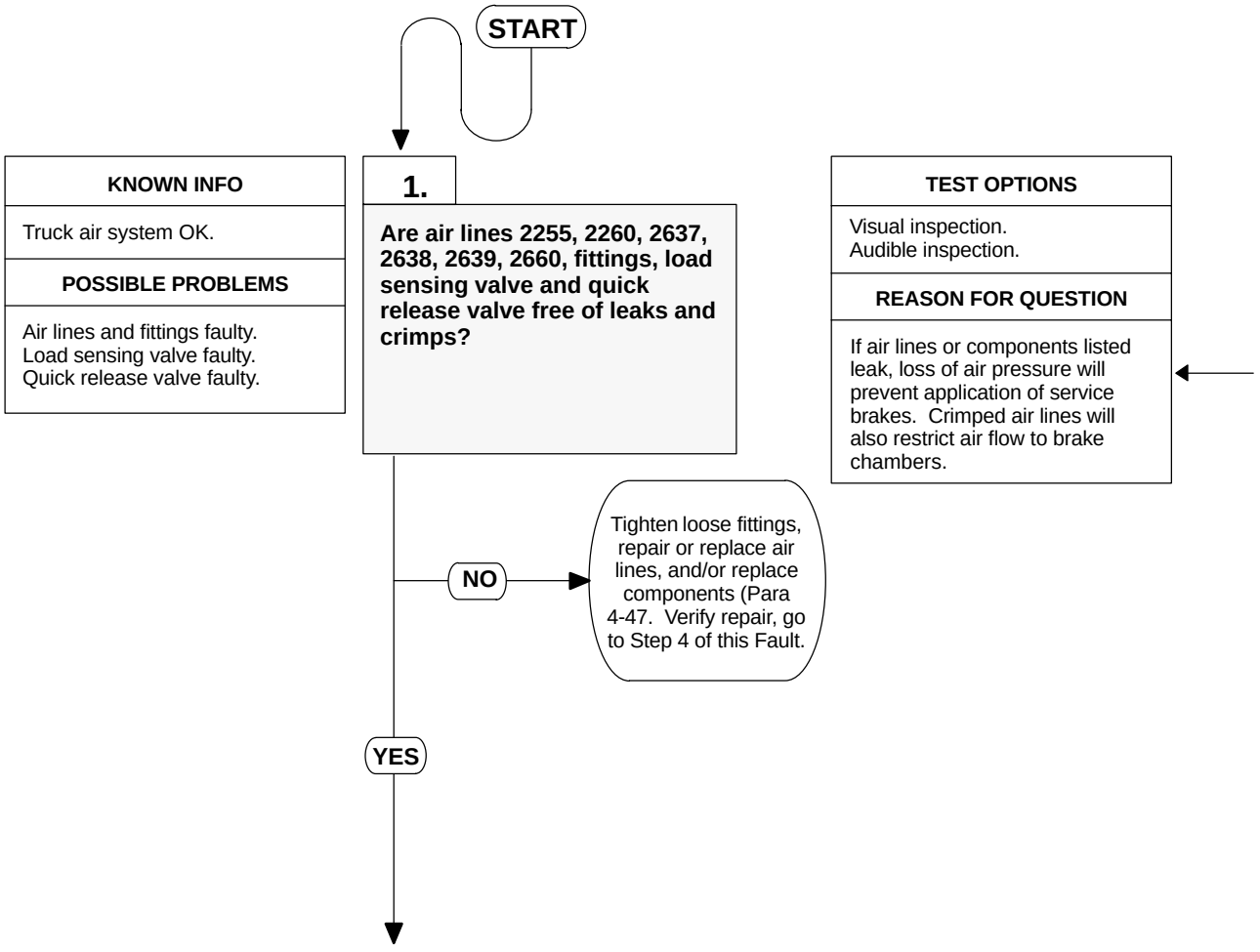
Personnel Required
Two

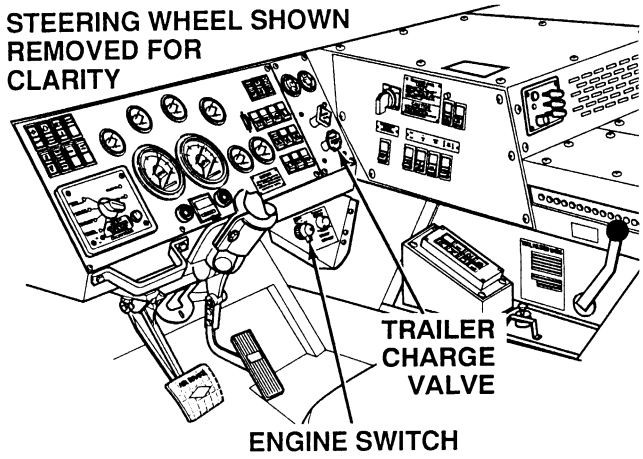
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

NOTE

Soap and water solution will be used to visually check for leaks.





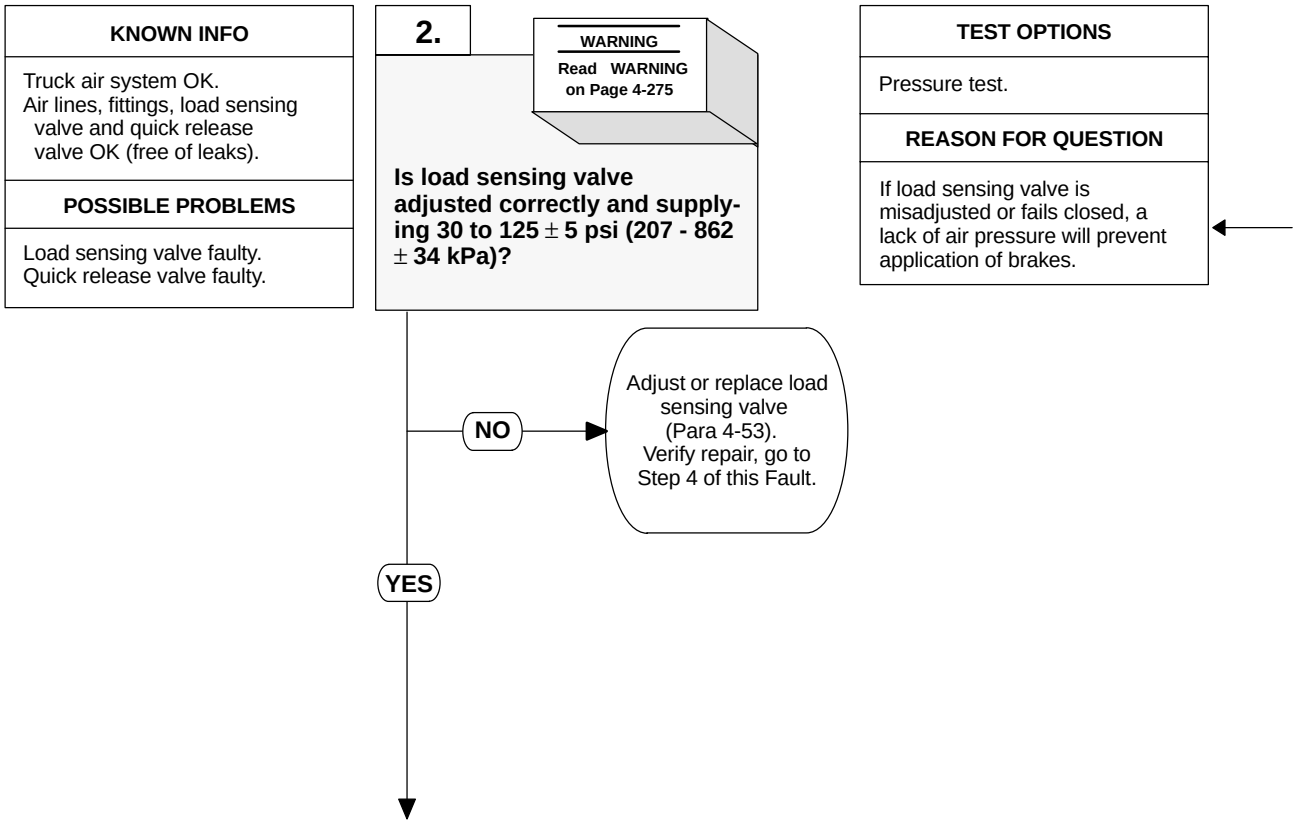
NOTE

- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

(1) Inspect air lines 2255, 2660, 2260, 2639, 2638 and 2637 for crimps.
(2) Start engine (TM 9-2320-364-10).
(3) Push in trailer charge valve in truck (Para 2-22).
(4) While assistant fully applies brake pedal, listen to air lines, fittings, load sensor valve and quick release valve for leaks.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If hose(s) leaks, perform Steps (5) and (6) below and repair or replace hose(s) (see schematic Fig FO-2 or Para 4-47).
  (c) If any of the items listed above leak, perform Steps (5) and (6) below and replace them according to maintenance procedures (Chapter 4).
  (d) If all of items listed above are OK, go to Step (2) of this Fault.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.

5. SERVICE BRAKES ON ALL AXLES DO NOT APPLY OR APPLY SLOWLY (CONT).



WARNING

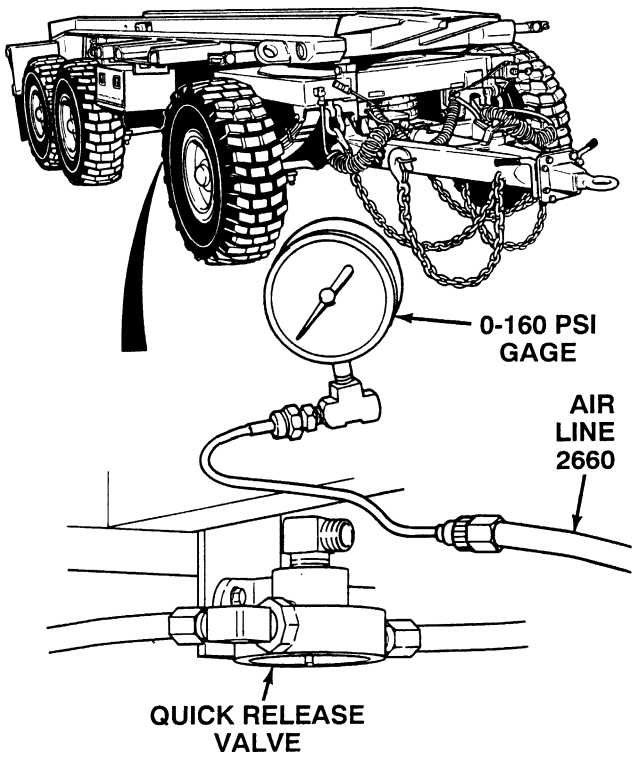
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

NOTE

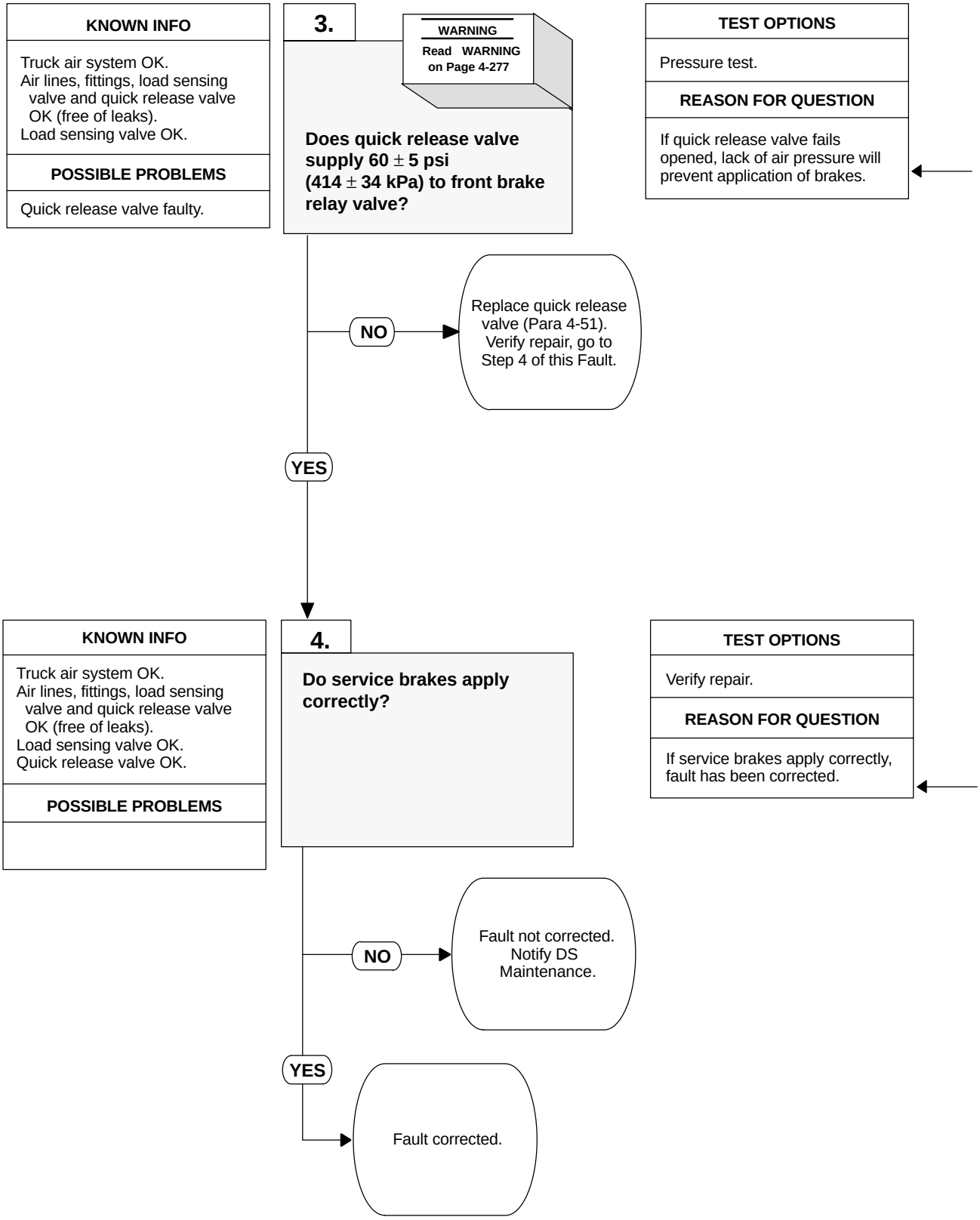
When rod is disconnected from the valve, it should hang freely without interference from other components. During testing of load sensing valve, control rod must be able to simulate a no load condition.

PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2660 from quick release valve.
(3) Connect 0-160 psi (1103 kPa) pressure gage to air hose 2660.
(4) Disconnect load sensing valve control rod from axle (Para 4-53).
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, push up on control rod and observe pressure gage.
    (a) If valve output pressure does not go to 125 ± 5 psi (862 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure does go to 125 ± 5 psi (862 ± 34 kPa), go to Step (8) below.
(8) While assistant fully applies brake pedal, pull down on control rod and observe pressure gage.
    (a) If valve output pressure is less than 30 ± 5 psi (207 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure does go to 30 ± 5 psi (207 ± 34 kPa), valve is OK.
(9) Release brake pedal.
(10) Pull out trailer charge valve in truck.
(11) Turn OFF ENGINE switch.
(12) Disconnect air hose 2660 from pressure gage.
(13) Connect air hose 2660 to quick release valve.
(14) Connect control rod to axle.
(15) Adjust load sensing valve (Para 4-53).



5. SERVICE BRAKES ON ALL AXLES DO NOT APPLY OR APPLY SLOWLY (CONT).

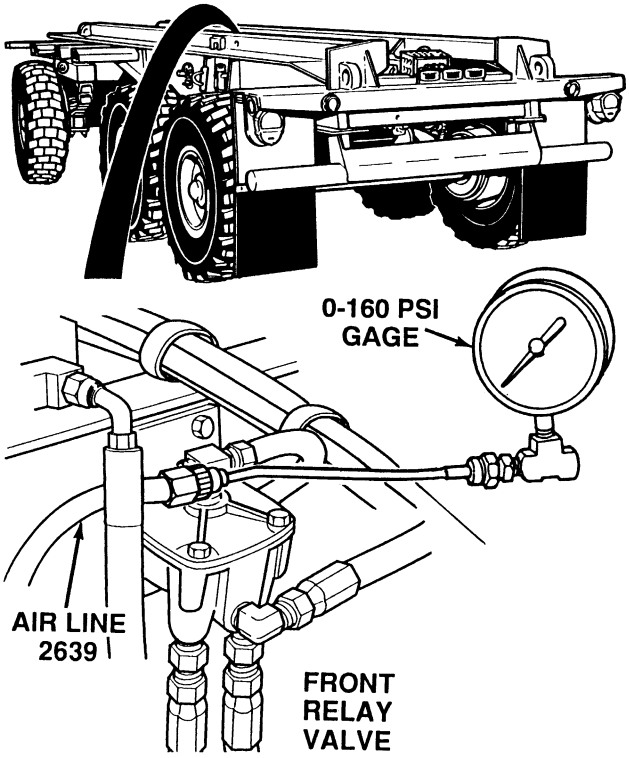


WARNING

If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

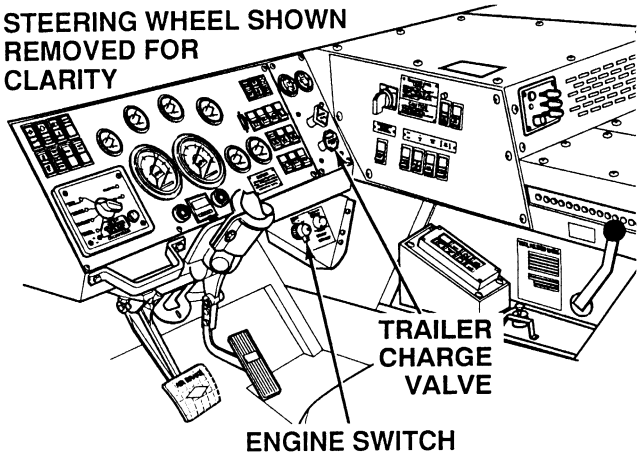
PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2639 from front brake relay valve.
(3) Connect air hose 2639 to 0-160 psi (1103 kPa) pressure gage.
(4) Start engine (TM 9-2320-364-10).
(5) Push in trailer charge valve in truck (Para 2-22).
(6) While assistant fully applies brake pedal, observe pressure gage.
  (a) If 60 ± 5 psi (414 ± 34 kPa) is not measured at air hose 2639, perform Steps (7) through (11) below and replace quick release valve (Para 4-51).
  (b) If 60 ± 5 psi (414 ± 34 kPa) is measured at air hose 2639, quick release valve is OK.
(7) Release brake pedal.
(8) Pull out trailer charge valve in truck.
(9) Turn OFF ENGINE switch.
(10) Disconnect air hose 2639 from pressure gage.
(11) Connect air hose 2639 to front brake relay valve.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant fully applies brake pedal, observe brake operation.
  (a) If brakes do not operate correctly, fault not corrected. Perform Steps (4) and (5) below and notify DS Maintenance.
  (b) If brakes operate correctly, fault corrected.
(4) Release brake pedal.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

6. SERVICE BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (Item 63, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

NOTE

Soap and water solution will be used to visually check for leaks.

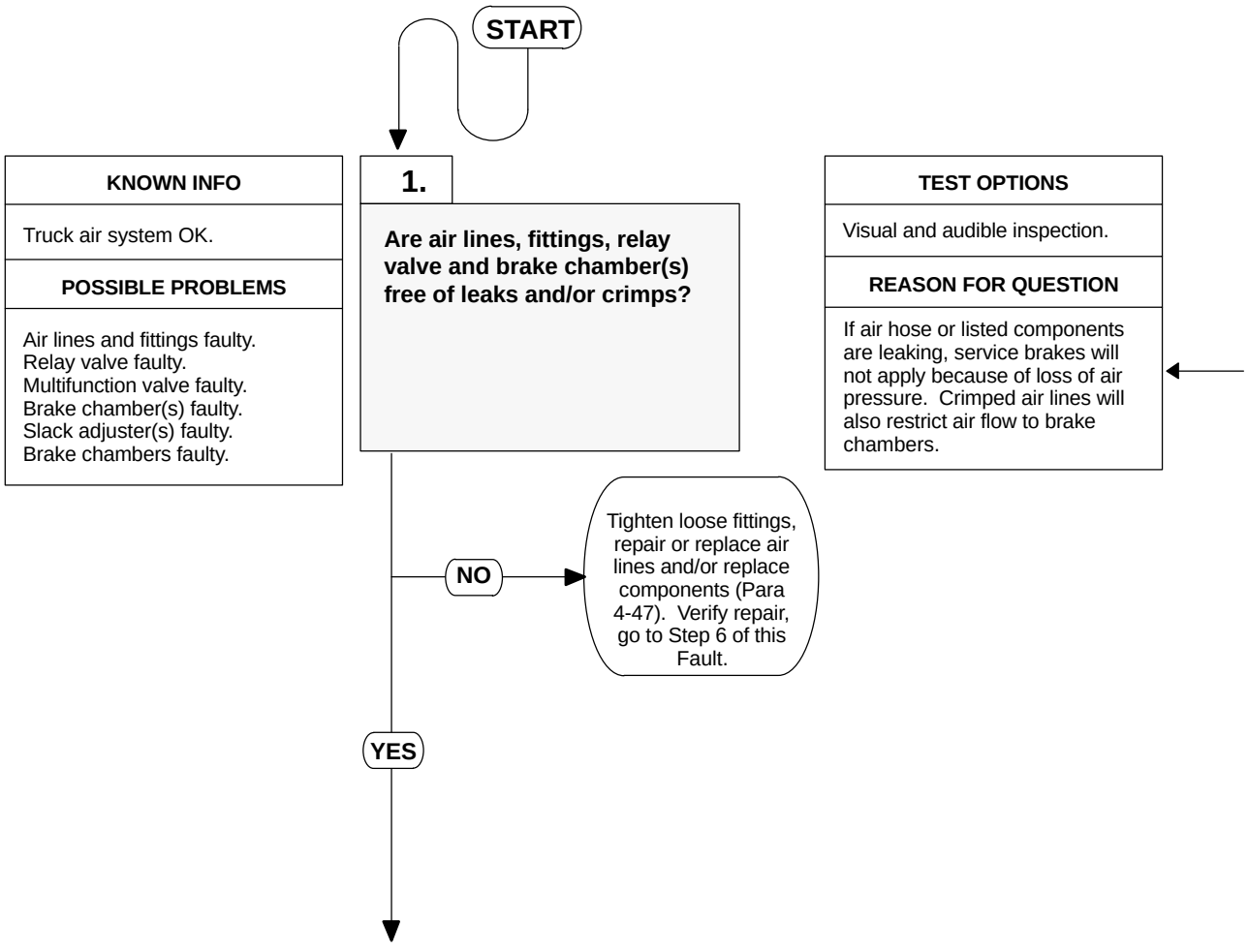


Table 4-9. Service Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2547 RH 2545	LH 2015 RH 2017	LH 2016 RH 2018

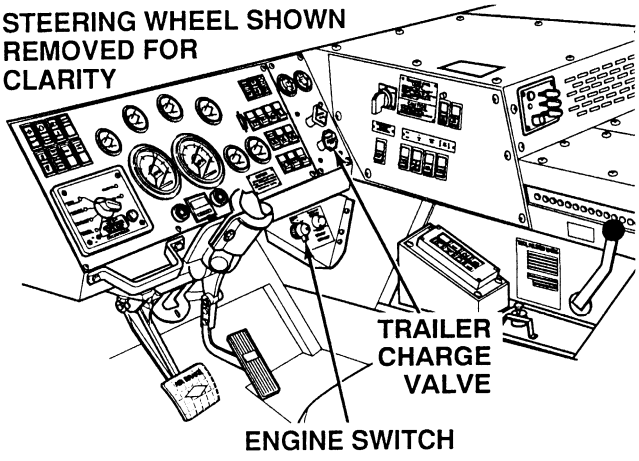
The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

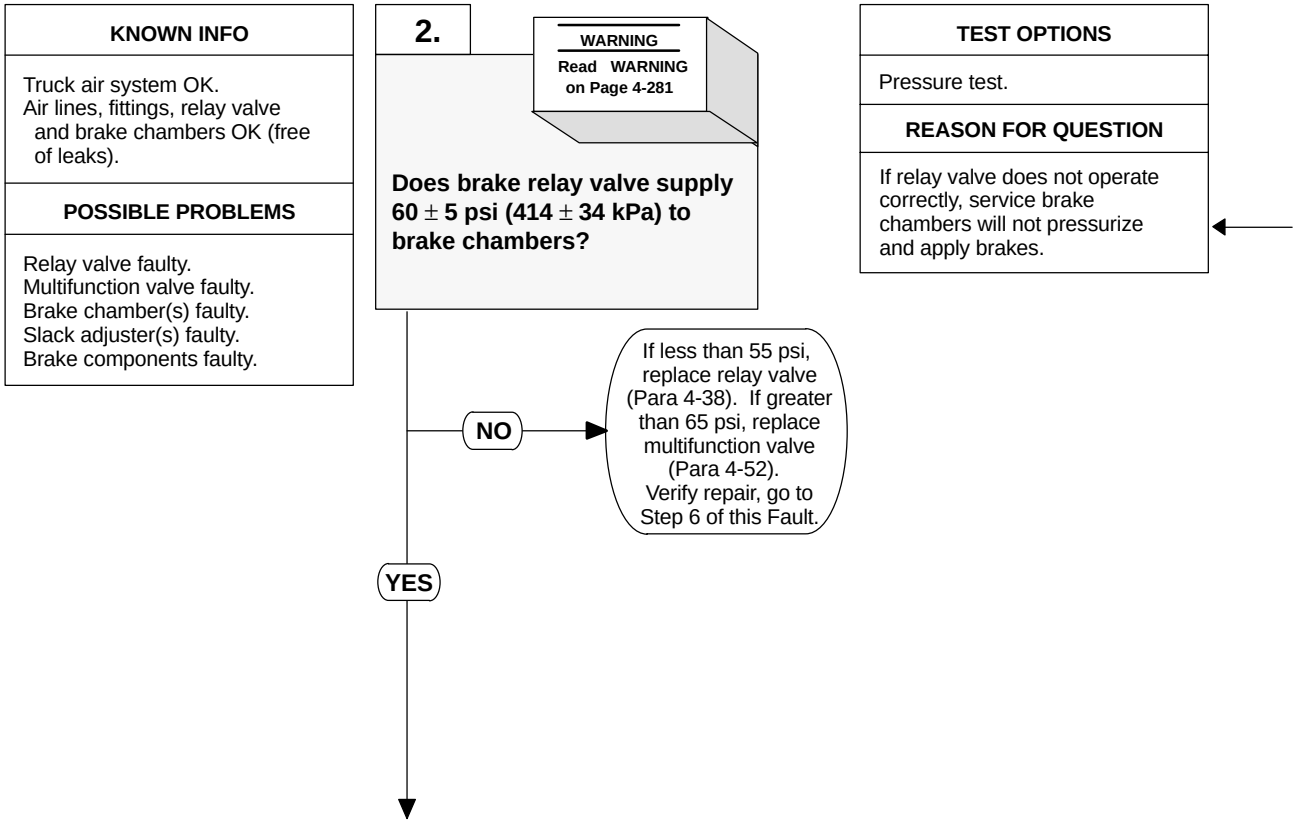
- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

(1) Inspect air lines and fittings (Table 4-9) for crimps.
(2) Start engine (TM 9-2320-364-10).
(3) Push in trailer charge valve in truck.
(4) While assistant fully applies brake pedal, listen to air lines and fittings (Table 4-9), relay valve and brake chambers for leaks.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If hose(s) leaks, perform Steps (5) through (7) below and repair or replace hose(s) (see schematic Fig FO-2 or Para 4-47).
  (c) If any of the items listed above leak, perform Steps (5) through (7) below and replace them according to maintenance procedures (Chapter 4).
  (d) If all of items above are OK, go to Step (2) of this Fault.
(5) Release brake pedal.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.



* 6. SERVICE BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY (CONT).



WARNING

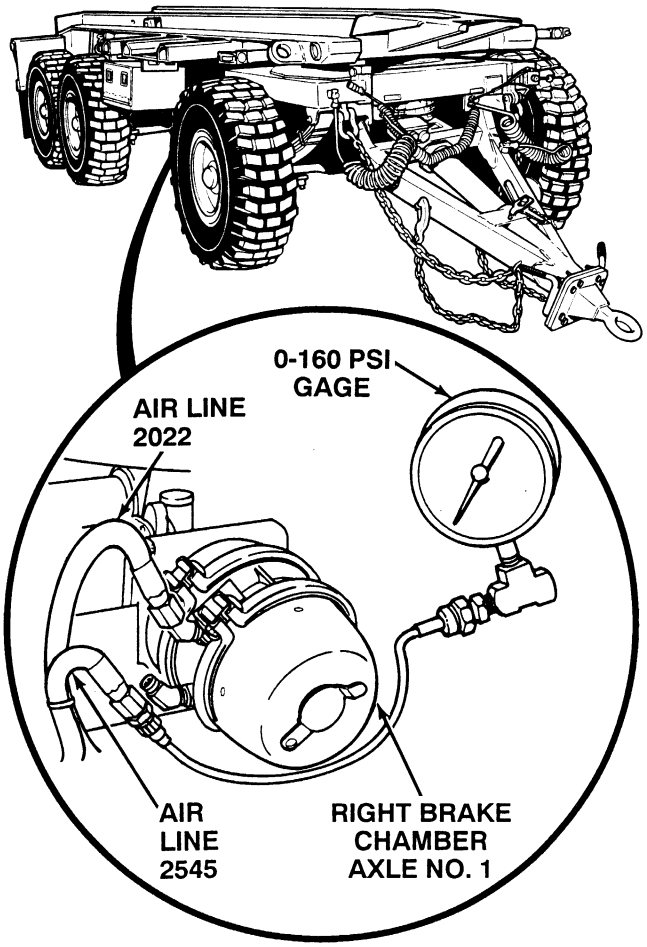
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

NOTE

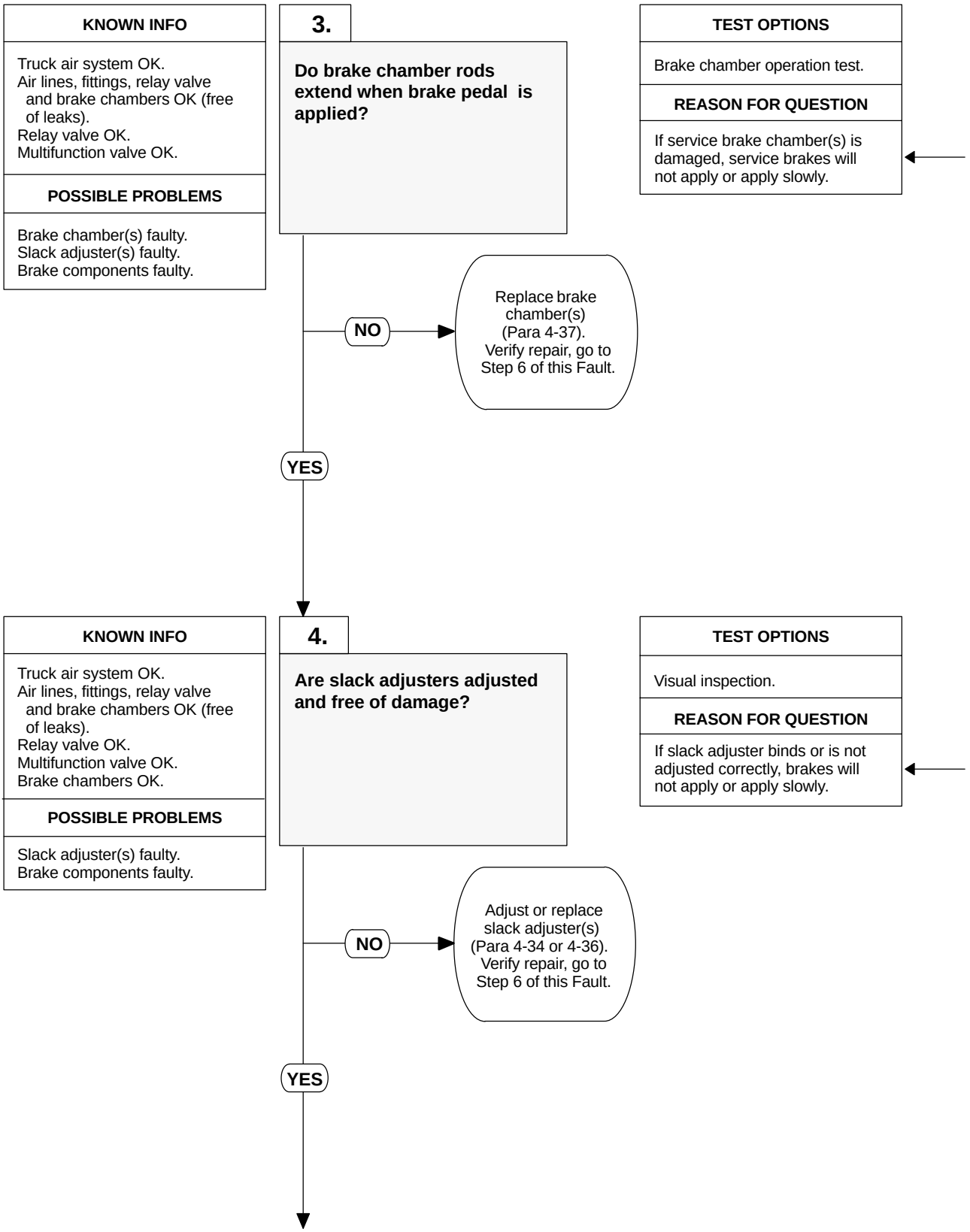
The relay valve test listed below applies to all brake relay valves.

PRESSURE TEST

(1) Drain air from trailer air system (Para 2-21).
(2) Disconnect air hose 2545 from right front brake chamber.
(3) Connect 0 to 160 psi (1103 kPa) pressure gage to air hose 2545.
(4) Start engine (TM 9-2320-364-10).
(5) Push in trailer charge valve in truck (Para 2-22).
(6) While assistant fully applies brake pedal, observe pressure gage.
  (a) If valve output pressure is less than 60 ± 5 psi (414 ± 34 kPa), perform Steps (7) through (11) below and replace relay valve (Para 4-38).
  (b) If valve output pressure is 65 psi (448 kPa) or more and continues to increase, perform Steps (7) through (11) below and replace multifunction valve (Para 4-52).
  (c) If valve output pressure is 60 ± 5 psi (414 ± 34 kPa), relay valve is OK.
(7) Release brake pedal.
(8) Pull out trailer charge valve in truck.
(9) Turn OFF ENGINE switch.
(10) Disconnect air hose 2545 from pressure gage.
(11) Connect air hose 2545 to right front brake chamber.



6. SERVICE BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY (CONT).

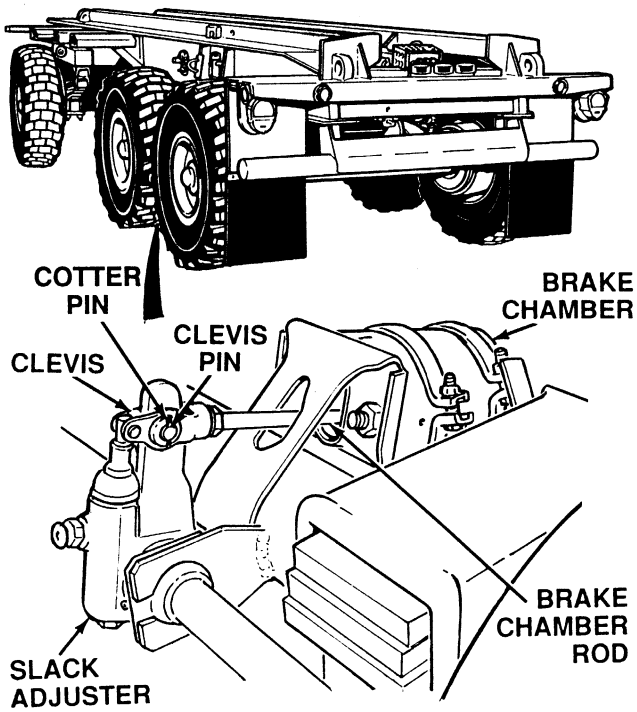


NOTE

This test covers left rear brake chamber, but it can be used to test operation of all trailer brake chambers.

BRAKE CHAMBER TEST

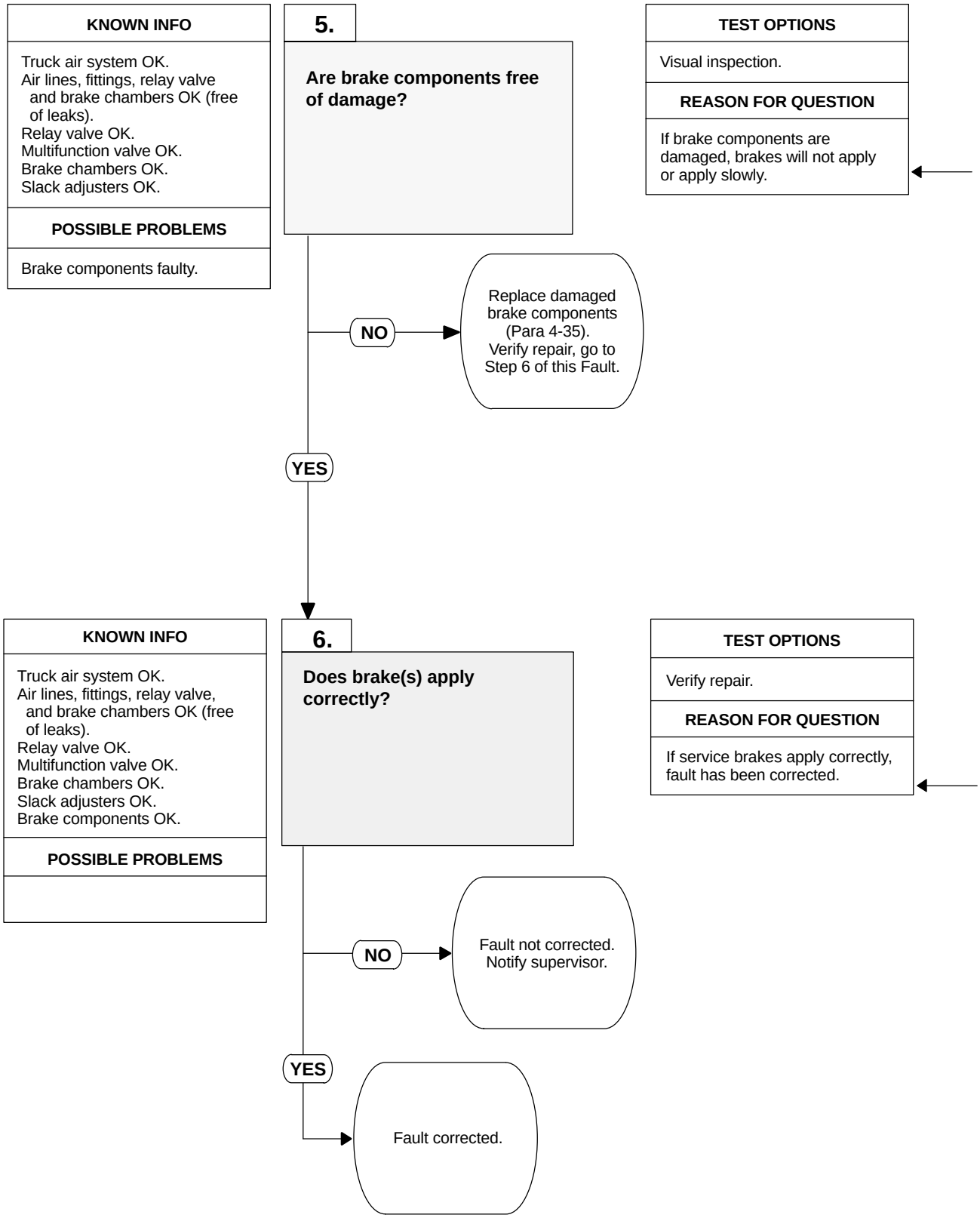
(1) Cage brake chamber (Para 2-16).
(2) Remove two cotter pins, pins and rod clevis from slack adjuster. Discard cotter pins.
(3) Rotate slack adjuster away from rod clevis.
(4) Uncage brake chamber (Para 2-16).
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, observe operation of brake chamber rod.
    (a) If rod does not move smoothly into brake chamber, perform Steps (8) and (9) below and replace brake chamber (Para 4-37).
    (b) If rod moves into brake chamber smoothly, brake chamber is OK.
(8) Pull out trailer charge valve in truck.
(9) Turn OFF ENGINE switch.
(10) Cage brake chamber (Para 2-16).
(11) Rotate slack adjuster to clevis.
(12) Install rod clevis, two pins, and cotter pins on slack adjuster.
(13) Uncage brake chamber.



VISUAL INSPECTION

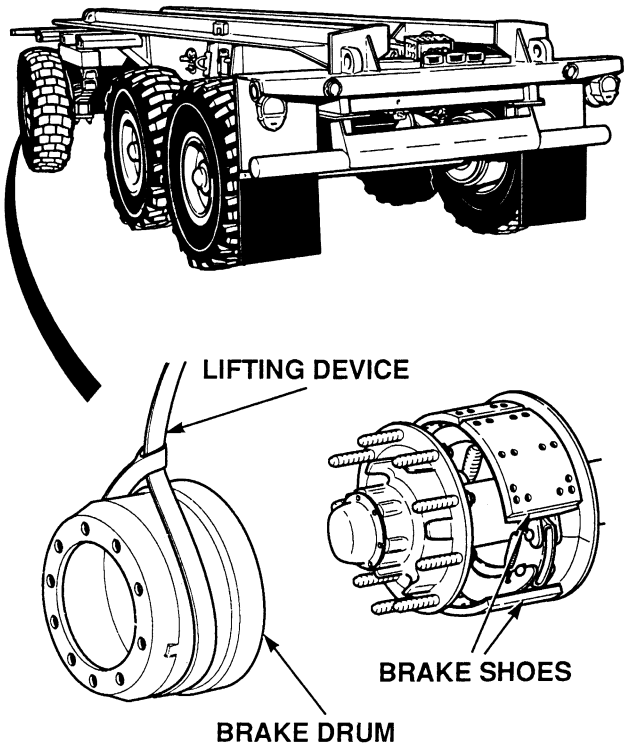
(1) Inspect slack adjusters for damage.
    (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
    (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brake(s) (Para 4-34).

6. SERVICE BRAKE(S) ON ONE AXLE DO NOT APPLY OR APPLY SLOWLY (CONT).



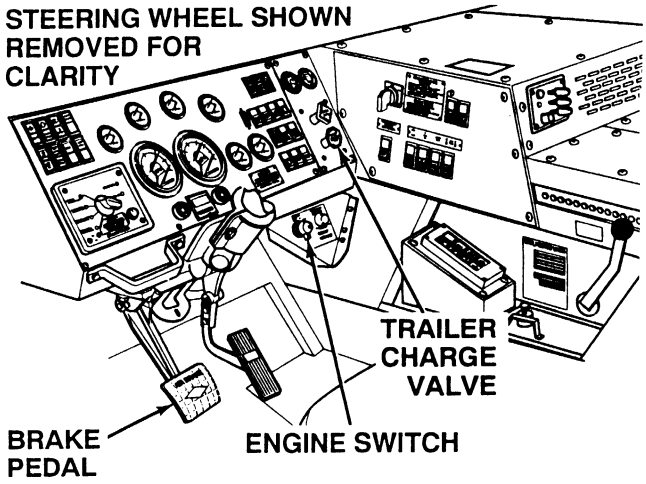
VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums and other damage that will prevent brakes from applying.
  (a) If brake components are damaged, replace damaged brake components (Para 4-35).
  (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant fully applies brake pedal, observe brake(s) operation.
  (a) If brakes do not apply or apply slowing, fault not corrected. Perform Steps (4) through (6) below, and notify supervisor.
  (b) If brakes apply correctly, fault corrected.
(4) Release brake pedal.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

7. SERVICE BRAKE(S) ON ONE AXLE DOES NOT RELEASE OR DOES NOT RELEASE CORRECTLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (Item 63, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)

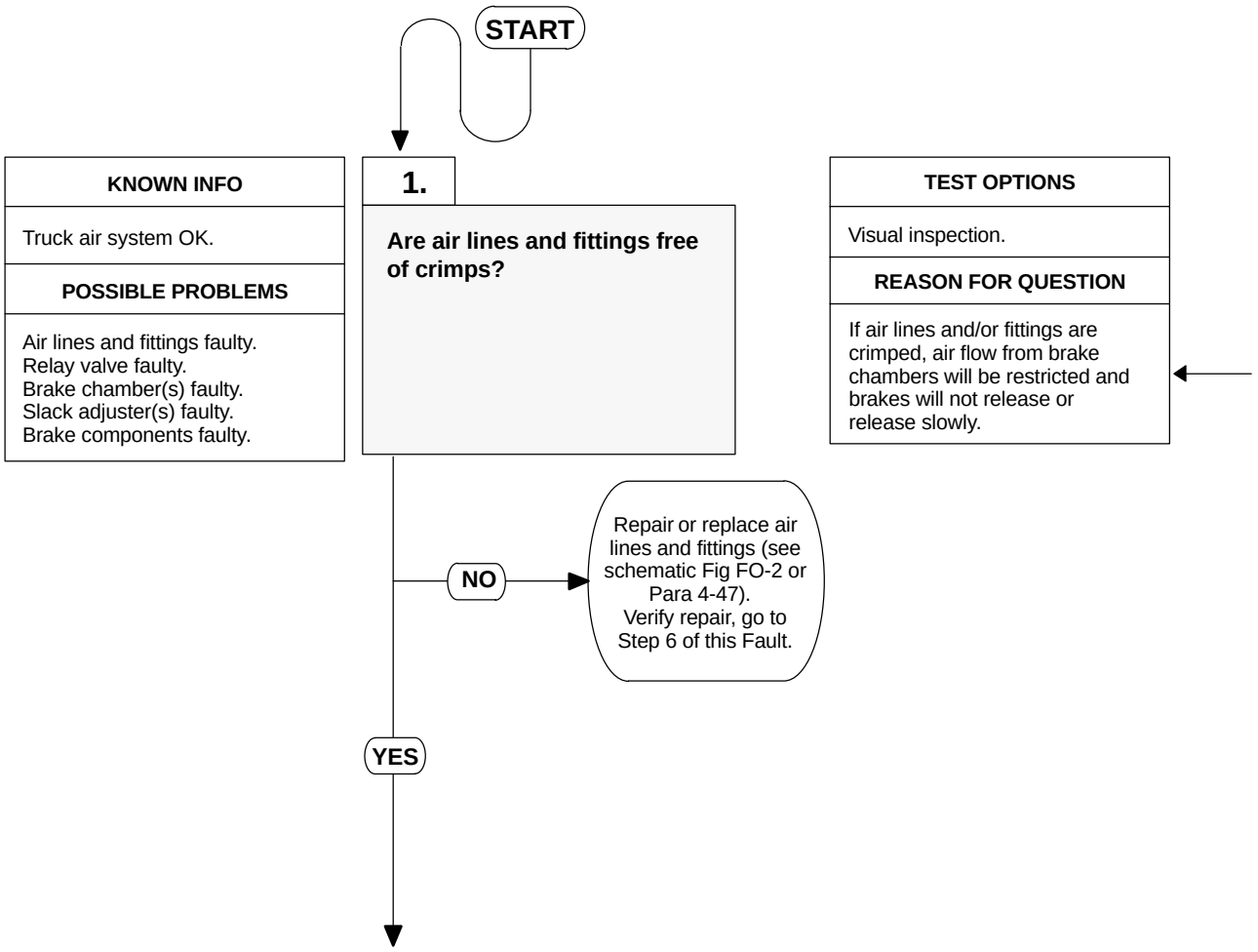


Table 4-10. Service Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2547 RH 2545	LH 2015 RH 2017	LH 2016 RH 2018

The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

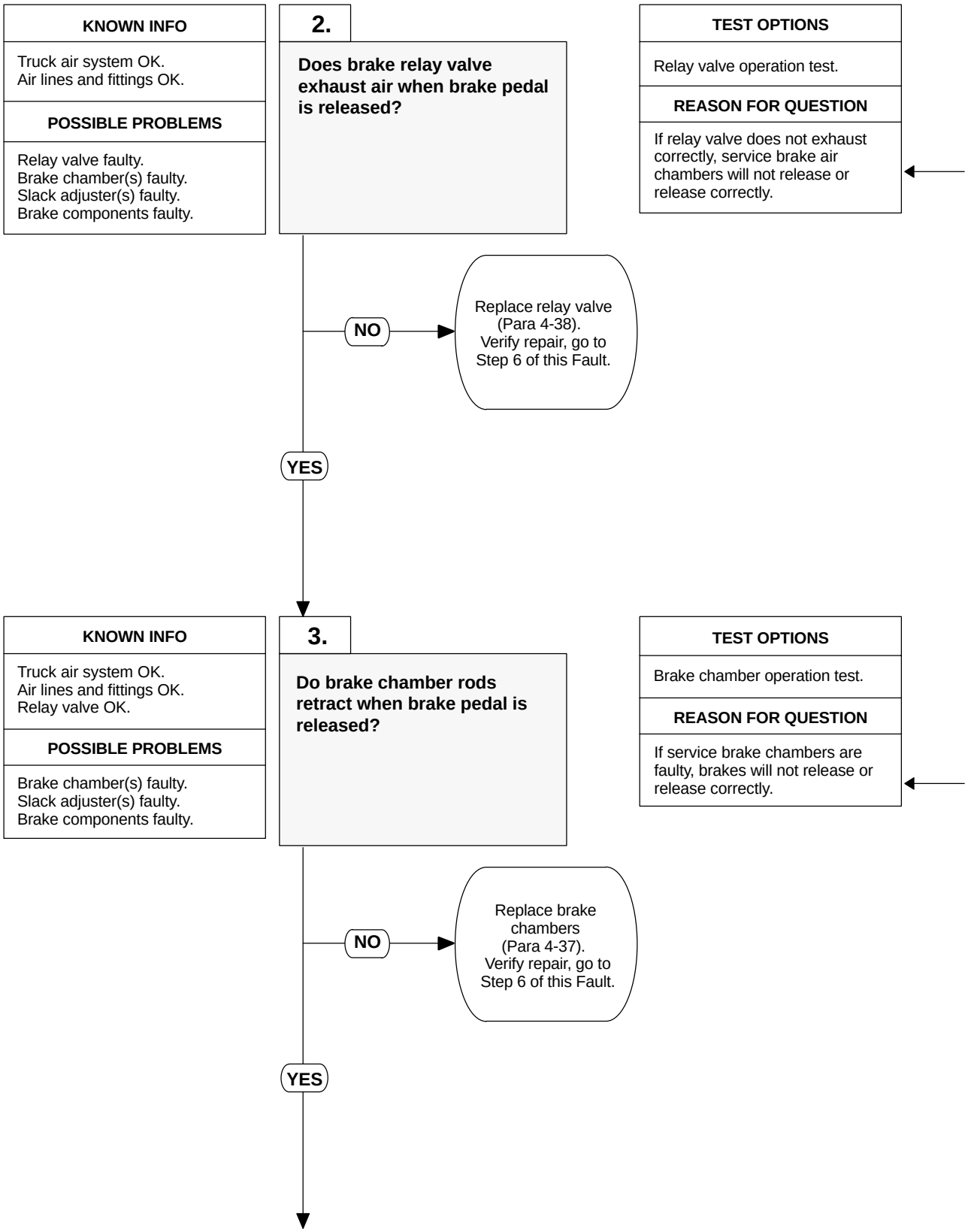
VISUAL INSPECTION

Inspect air lines and fittings (Table 4-10) for crimps.

(1) If air lines and fittings are crimped, repair or replace air hose and fittings (see schematic Fig FO-2 or Para 4-47).

(2) If air lines and fittings are not crimped, air hose and fittings are OK.

7. SERVICE BRAKE(S) ON ONE AXLE DOES NOT RELEASE OR DOES NOT RELEASE CORRECTLY (CONT).

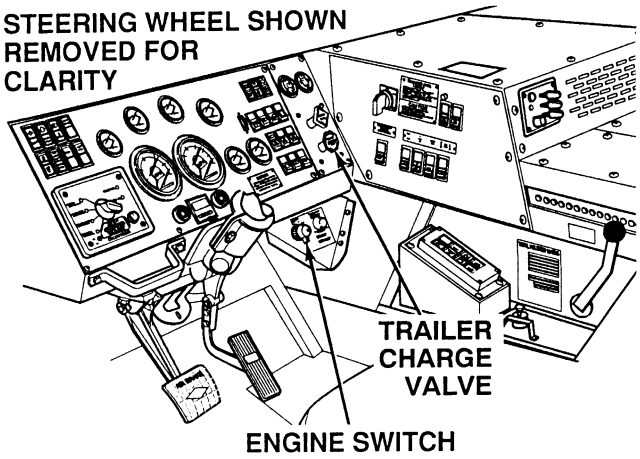


NOTE

The relay valve test listed below applies to all brake relay valves.

RELAY VALVE TEST

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck.
(3) While assistant fully applies and releases brake pedal, listen for pressure to exhaust from relay chamber.
  (a) If valve air pressure does not exhaust quickly, perform Steps (4) and (5) below and replace relay valve (Para 4-38).
  (b) If valve air pressure exhausts quickly, relay valve is OK.
(4) Pull out trailer charge valve.
(5) Turn OFF ENGINE switch.

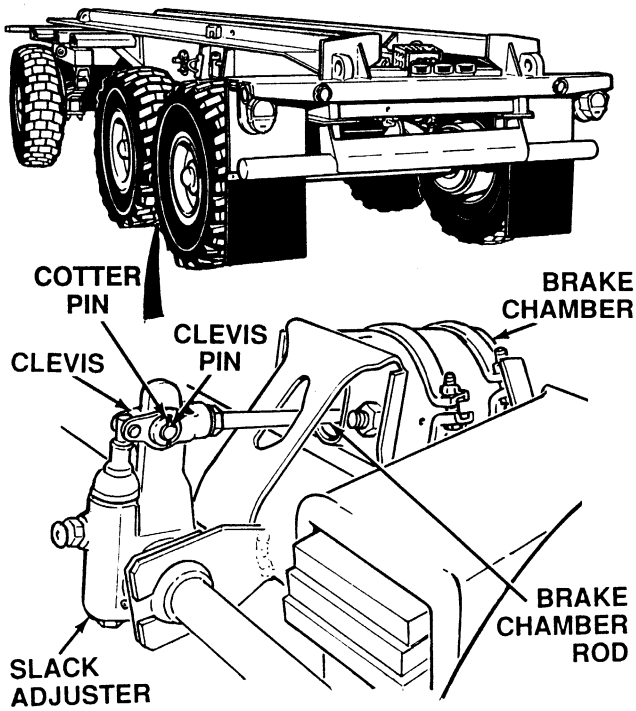


NOTE

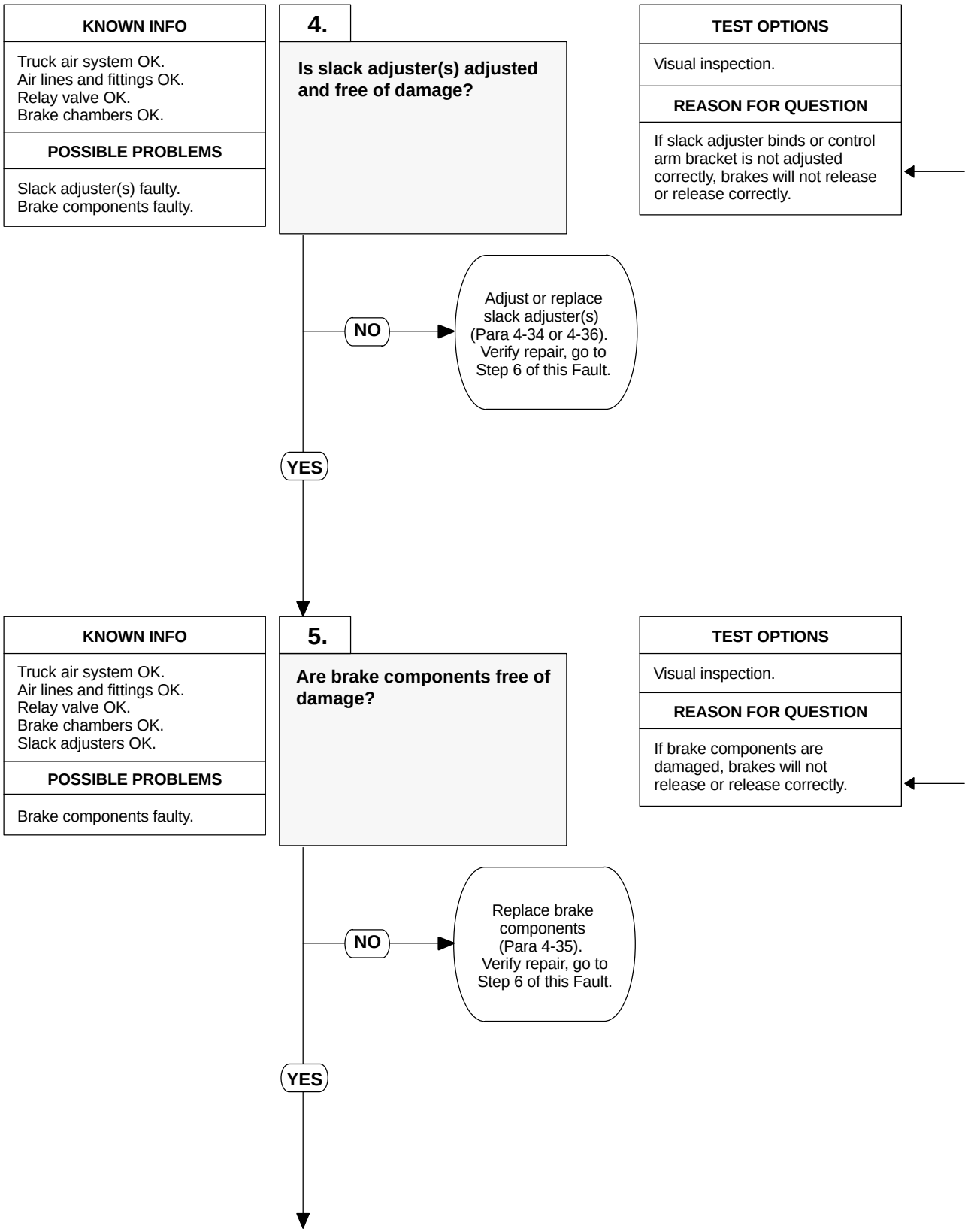
This test covers left rear brake chamber, but it can be used to test operation of all trailer brake chambers.

BRAKE CHAMBER TEST

(1) Cage brake chamber (Para 2-16).
(2) Remove two cotter pins, pins and rod clevis from slack adjuster. Discard cotter pins.
(3) Rotate slack adjuster away from rod clevis.
(4) Uncage brake chamber.
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, observe operation of brake chamber rod.
  (a) If rod does not move smoothly into brake chamber, perform Steps (8) through (10) below and replace brake chamber (Para 4-37).
  (b) If rod moves into brake chamber smoothly, brake chamber is OK.
(8) Release brake pedal.
(9) Pull out trailer charge valve in truck.
(10) Turn OFF ENGINE switch.
(11) Cage brake chamber.
(12) Rotate slack adjuster to clevis.
(13) Install rod clevis, two pins, and cotter pins on slack adjuster.
(14) Uncage brake chamber.

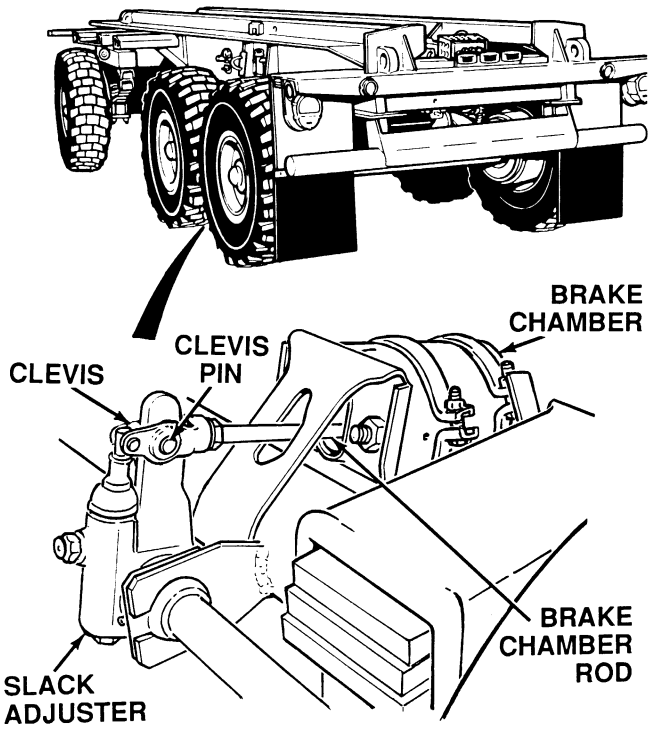


SERVICE BRAKE(S) ON ONE AXLE DOES NOT RELEASE OR DOES NOT RELEASE CORRECTLY (CONT).



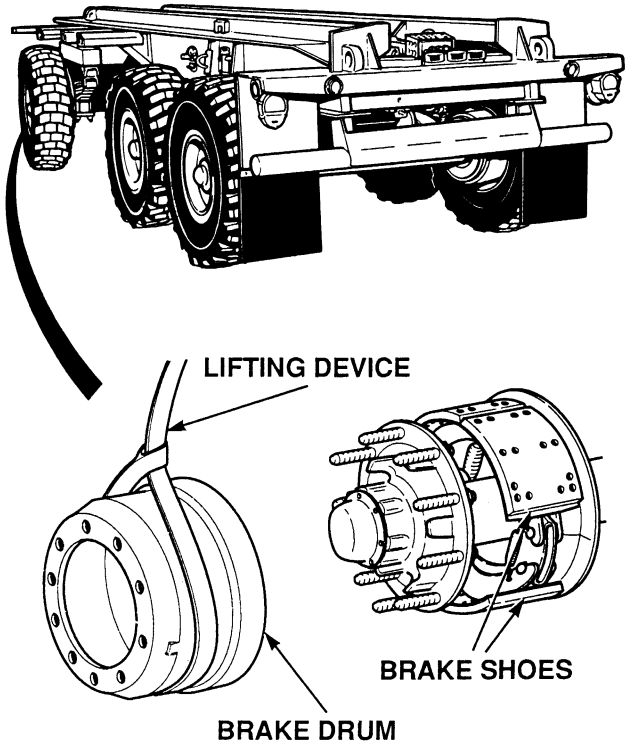
VISUAL INSPECTION

(1) Inspect slack adjusters for damage.
  (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
  (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brake(s) (Para 4-34).

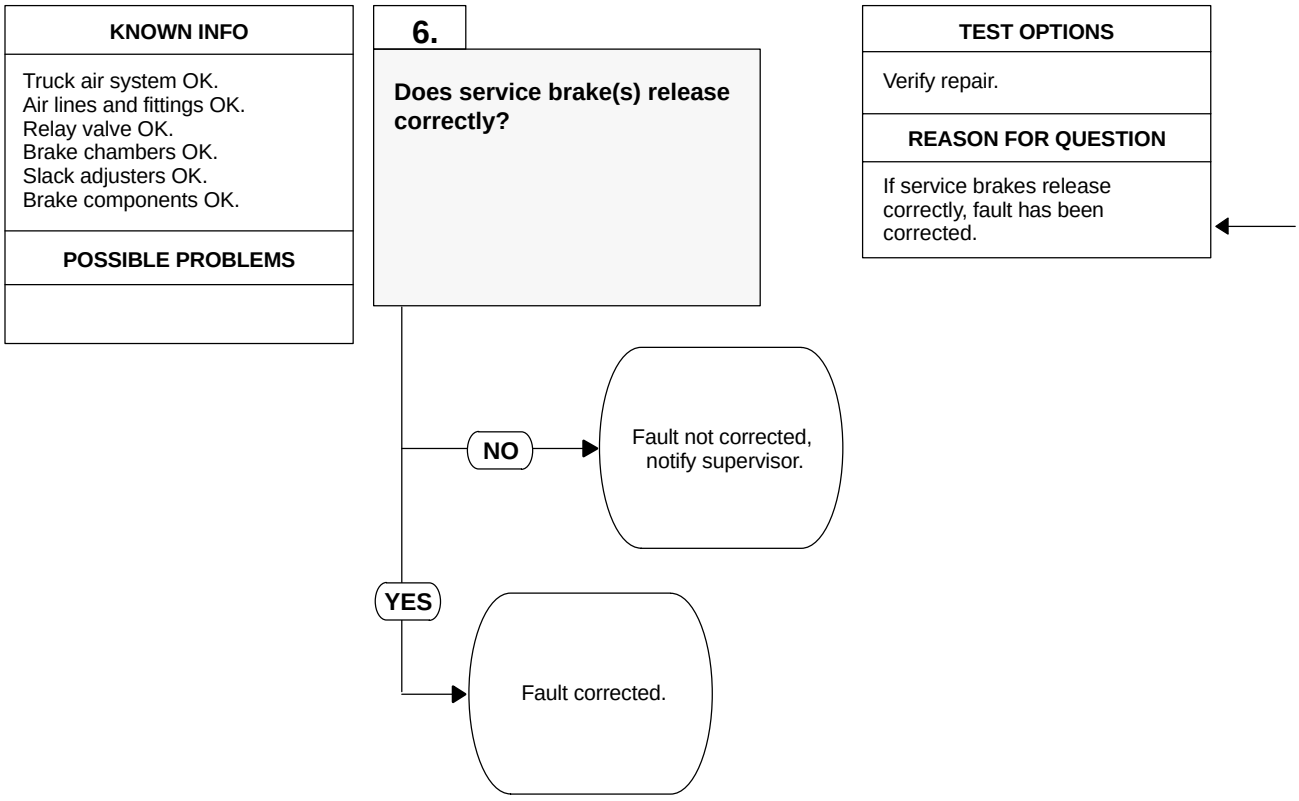


VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums and other damage that will prevent brakes from releasing.
  (a) If brake components are damaged, replace damaged brake components (Para 4-35).
  (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.

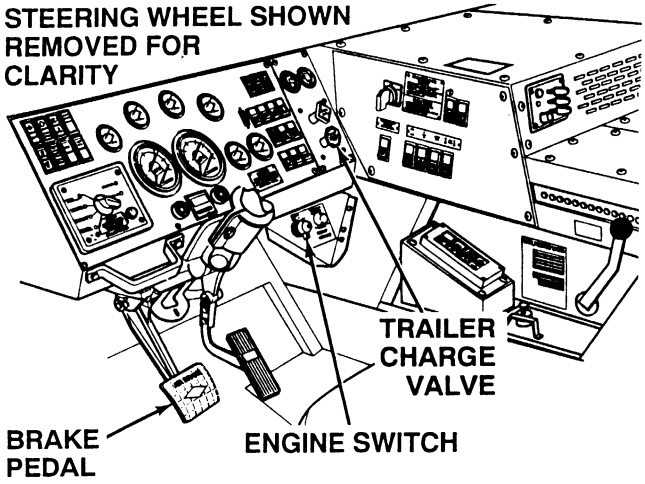


7. SERVICE BRAKE(S) ON ONE AXLE DOES NOT RELEASE OR DOES NOT RELEASE CORRECTLY (CONT).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck.
(3) While assistant fully applies and releases brake pedal, observe suspect brake(s) operation.
    (a) If brakes do not release correctly, fault not corrected. Perform Steps (4) through (6) below and notify supervisor.
    (b) If brakes release correctly, fault corrected.
(4) Release brake pedal.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

8. TRAILER BRAKES UNEVENLY OR PULLS TO ONE SIDE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (Item 63, Appendix I)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

NOTE

Soap and water solution will be used to visually check for leaks.

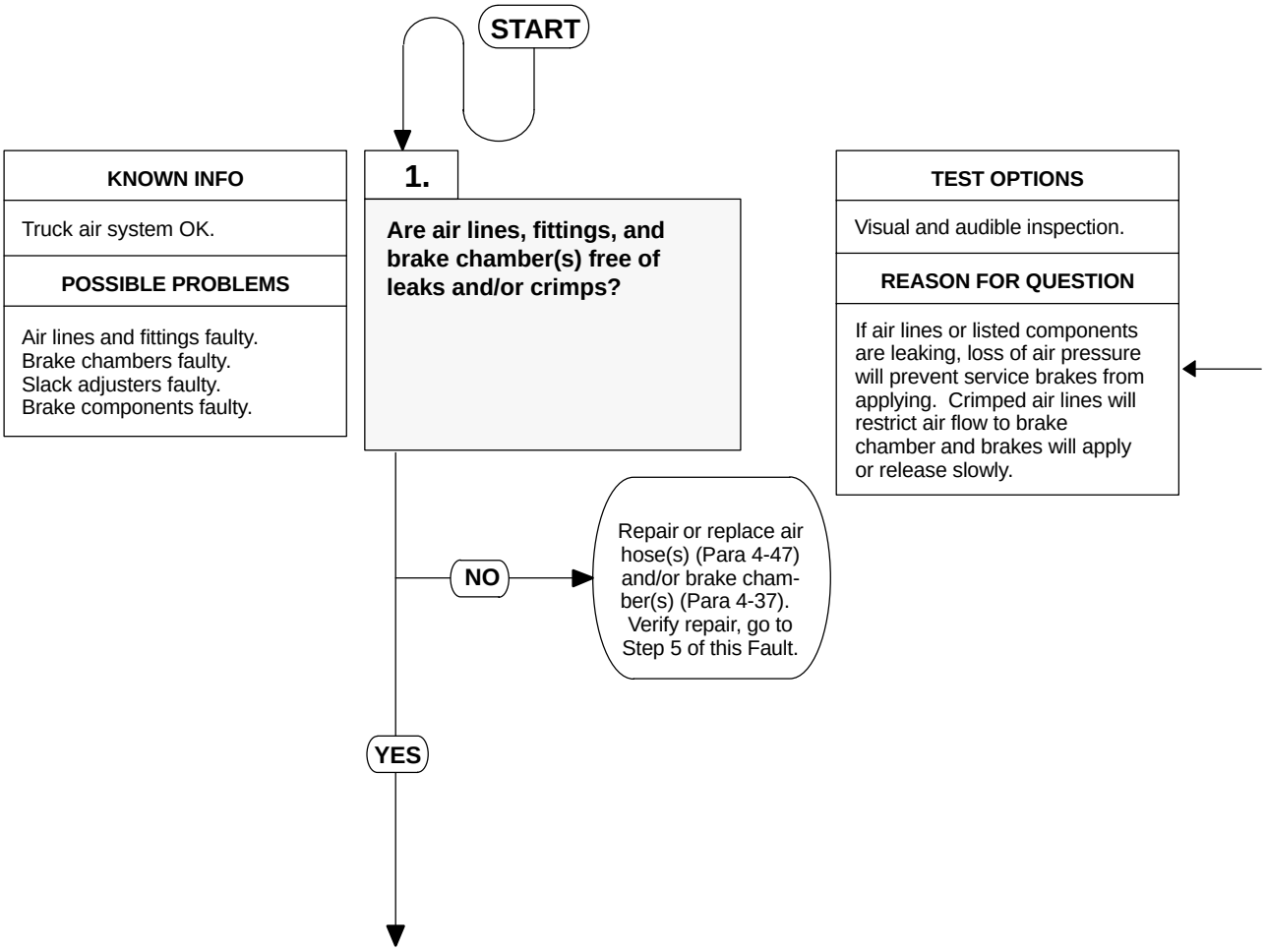


Table 4-11. Service Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2547 RH 2545	LH 2015 RH 2017	LH 2016 RH 2018

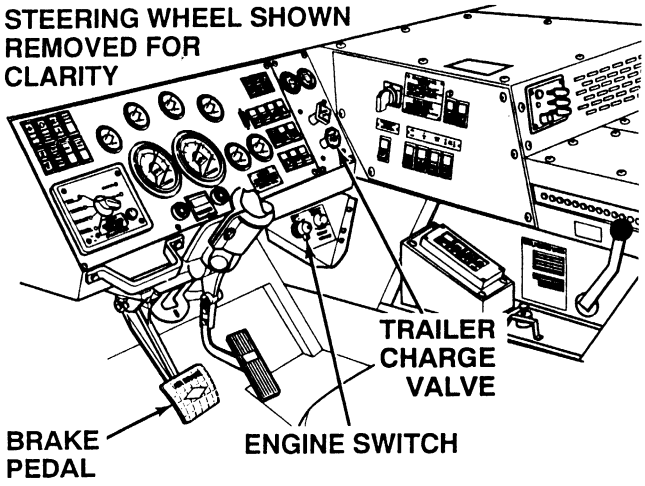
The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

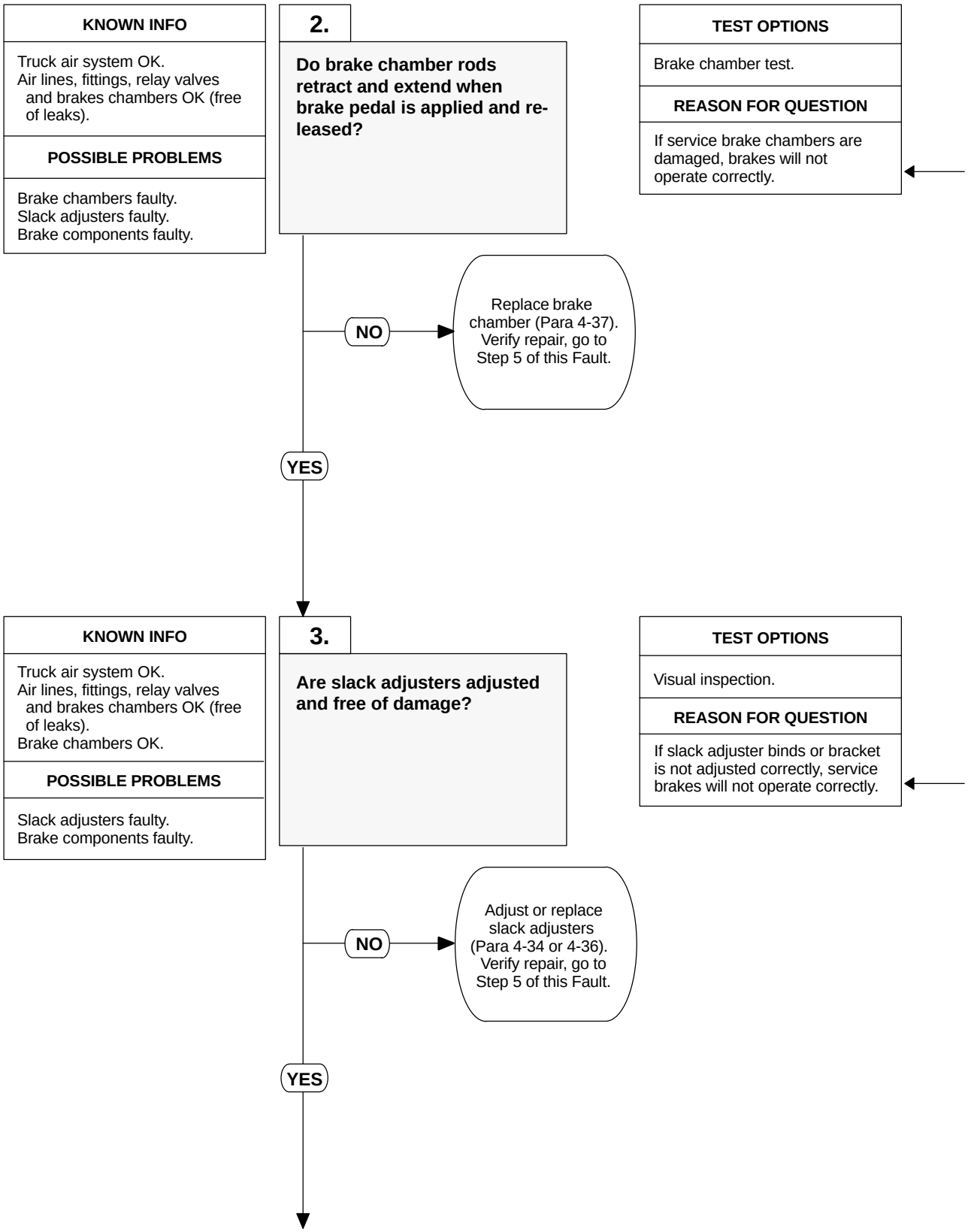
- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

VISUAL INSPECTION

(1) Inspect air lines and fittings (Table 4-11) for crimps.
(2) Start engine (TM 9-2320-364-10).
(3) Push in trailer charge valve in truck (Para 2-22).
(4) Listen to air lines and fittings (Table 4-11) and brake chambers for leaks while assistant fully applies brake pedal.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If hose(s) leak, perform Steps (5) and (6) below and repair or replace hose(s) (see schematic FO-2 or Para 4-47).
  (c) If brake chamber(s) leak, perform Steps (4) and (5) below and replace brake chamber(s) (Para 4-37).
  (d) If all of items above are OK, perform Steps (4) and (5) below and go to Step (2) of this Fault.
(5) Release brake pedal.
(6) Turn OFF ENGINE switch.

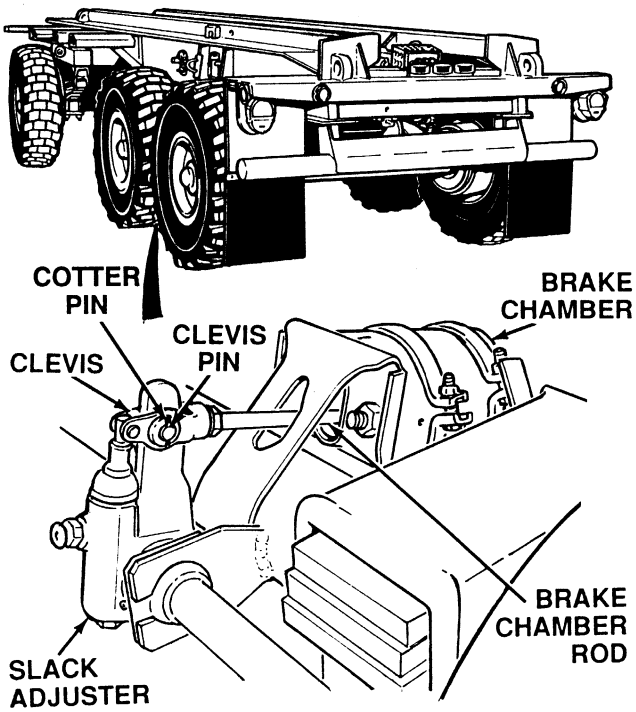


8. TRAILER BRAKES UNEVENLY OR PULLS TO ONE SIDE (CONT).



NOTE

This test covers left rear brake chamber, but it can be used to test operation of all trailer brake chambers.



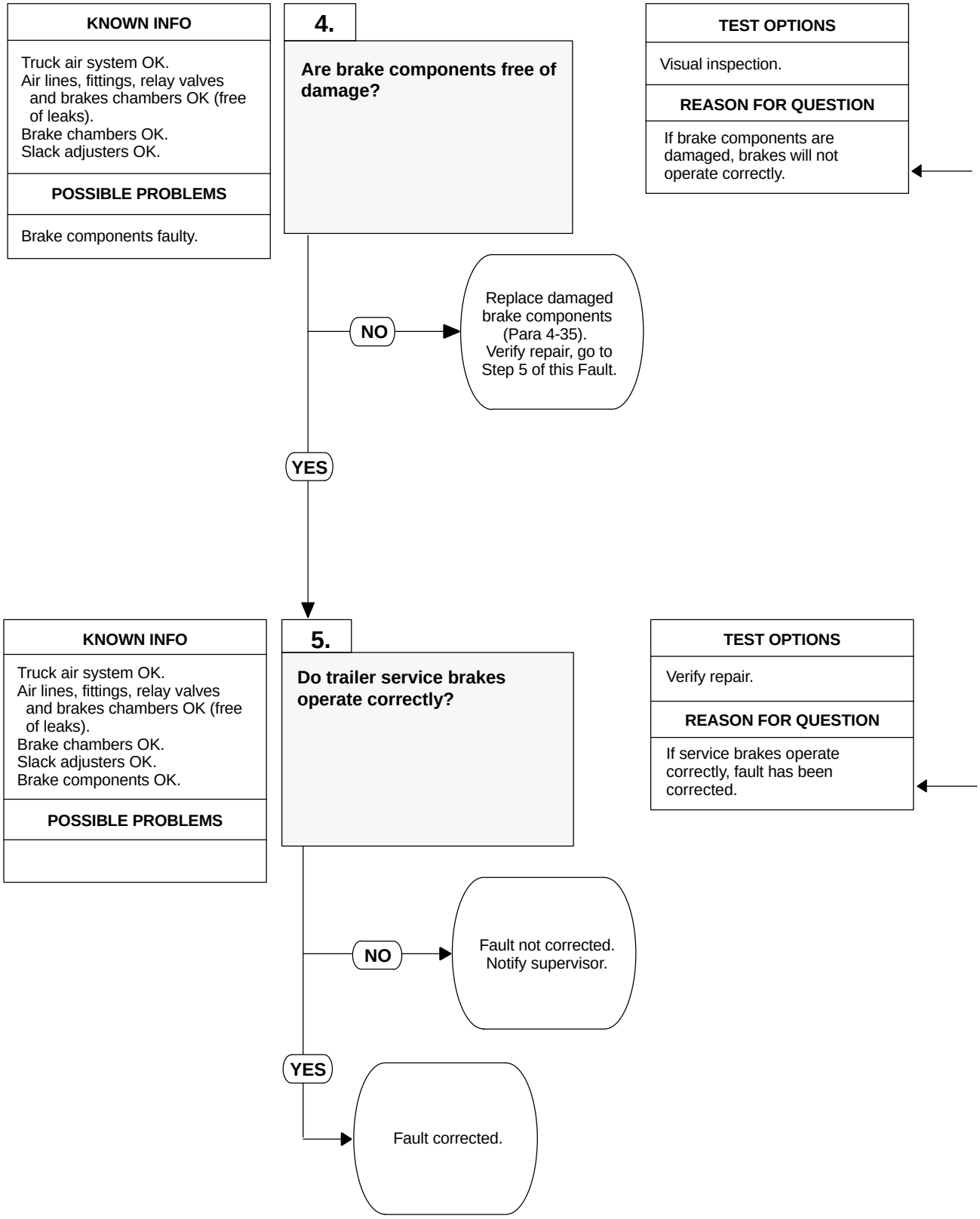
BRAKE CHAMBER TEST

(1) Cage brake chamber (Para 2-16).
(2) Remove two cotter pins, pins and rod clevis from slack adjuster. Discard cotter pins.
(3) Rotate slack adjuster away from rod clevis.
(4) Uncage brake chamber.
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies and releases brake pedal, observe operation of brake chamber rod.
  (a) If rod does not move smoothly into brake chamber, perform Steps (8) through (10) below and replace brake chamber (Para 4-37).
  (b) If rod moves into brake chamber smoothly, brake chamber is OK.
(8) Release brake pedal.
(9) Pull out trailer charge valve in truck.
(10) Turn OFF ENGINE switch.
(11) Cage brake chamber.
(12) Rotate slack adjuster to clevis.
(13) Install rod clevis, two pins and cotter pins on slack adjuster.
(14) Uncage brake chamber.

VISUAL INSPECTION

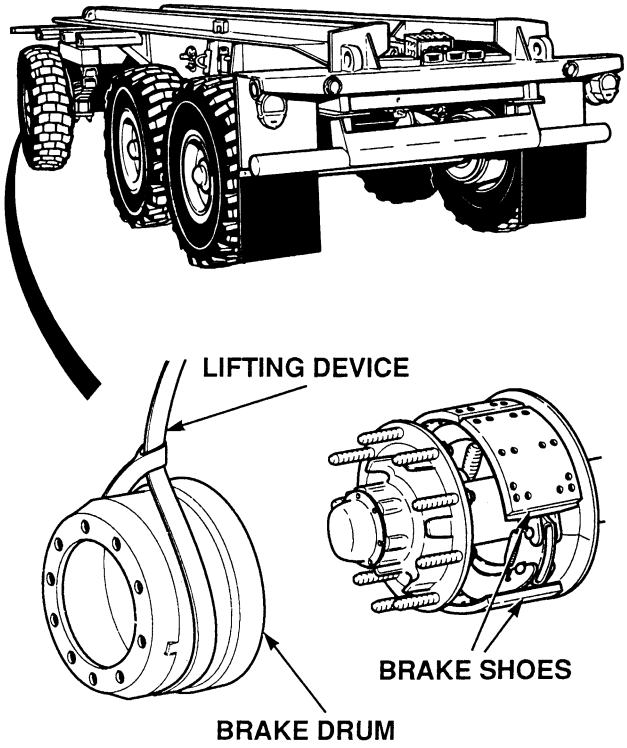
(1) Inspect slack adjusters for damage.
  (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
  (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brake(s) (Para 4-34).

8. TRAILER BRAKES UNEVENLY OR PULLS TO ONE SIDE (CONT).



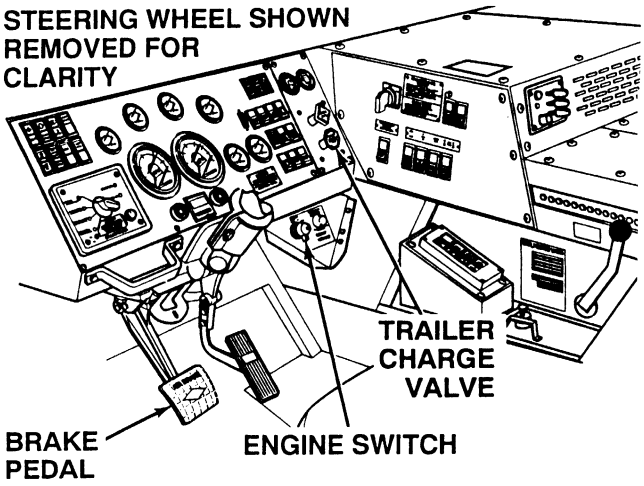
VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums and other damage that will prevent brakes from releasing.
  (a) If brake components are damaged, replace damaged brake components (Para 4-35).
  (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck.
(3) While assistant drives truck and then applies brake pedal, observe wheels on trailer with brakes.
  (a) If trailer does not brake evenly correctly, fault not corrected. Perform Steps (4) and (5) below and notify supervisor.
  (b) If trailer brakes correctly, fault corrected.
(4) Pull out trailer charge valve.
(5) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

9. EXCESSIVE BRAKING DISTANCE.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Materials/Parts
Solution, Soap (Item 21, Appendix E)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

NOTE

Soap and water solution will be used to visually check for leaks.

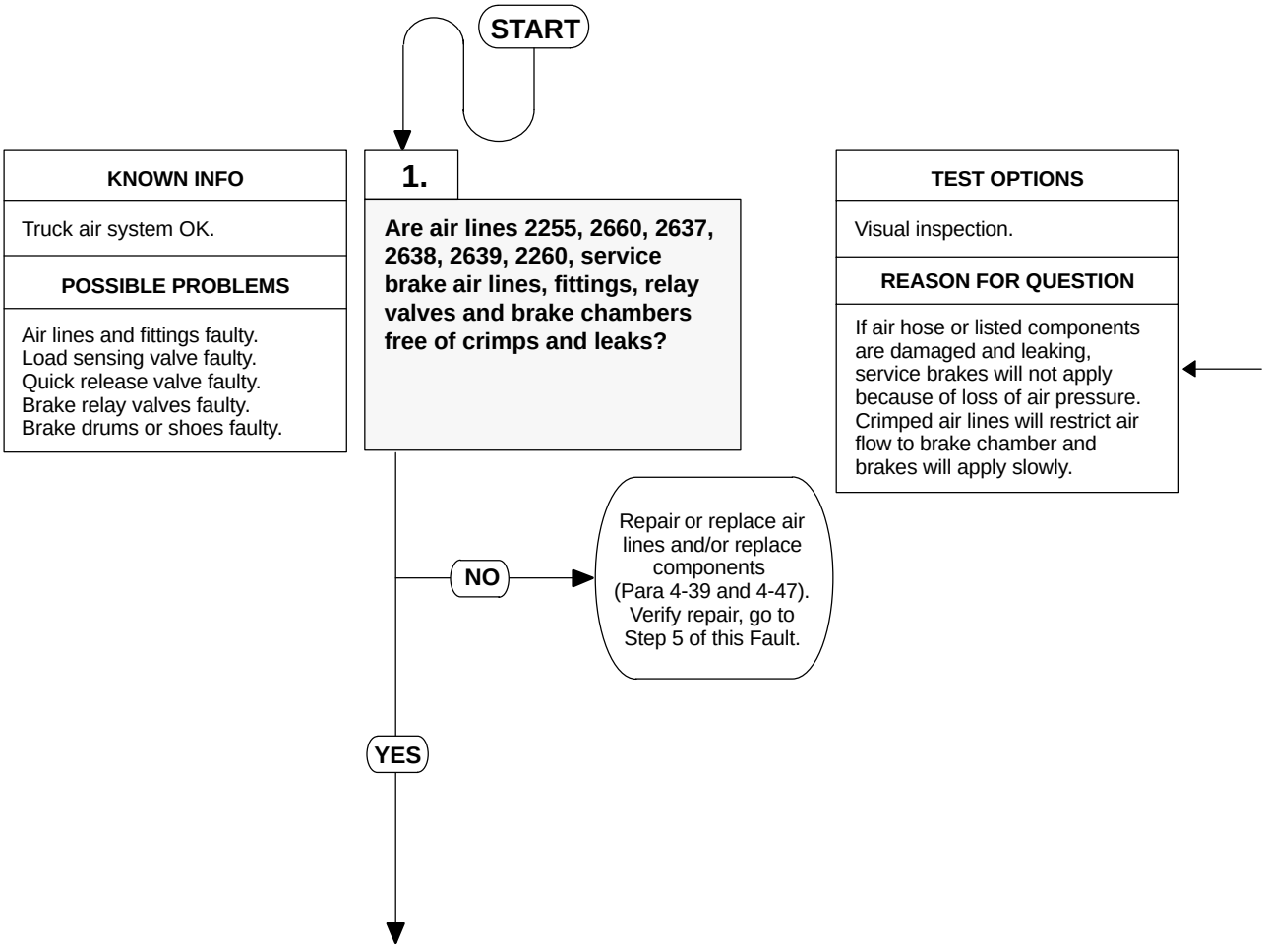


Table 4-12. Service Brake Air Lines

Axle No. 1 Air Hose No.	Axle No. 2 Air Hose No.	Axle No. 3 Air Hose No.
LH 2547 RH 2545	LH 2015 RH 2017	LH 2016 RH 2018

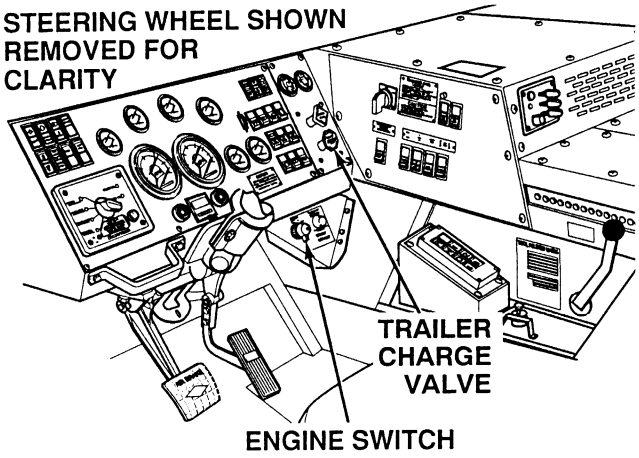
The LH and RH listed with the air hose numbers indicate the brake chamber supplied by the listed air hose.

NOTE

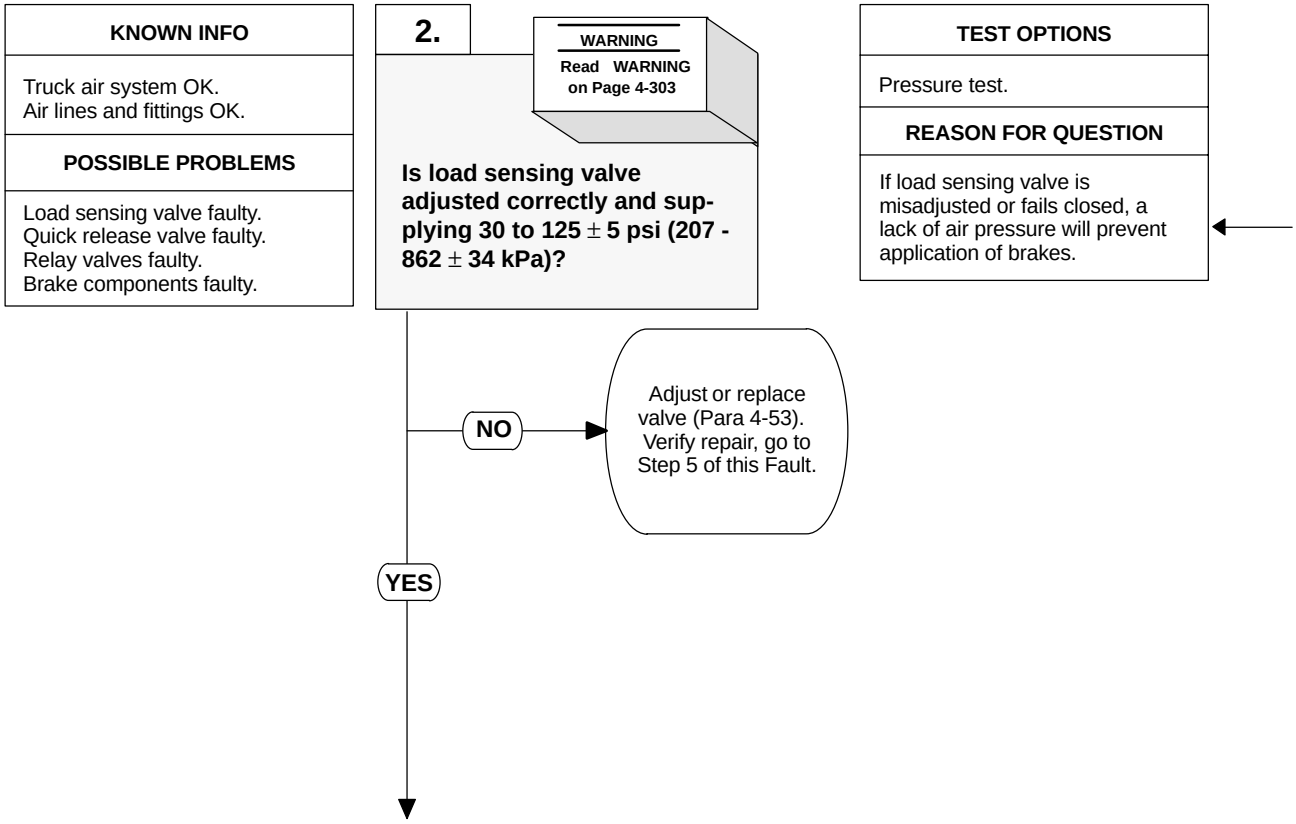
- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.

AIR LINES AND FITTINGS INSPECTION

(1) Inspect air lines and fittings (Table 4-12) for crimps.
  (a) If air hose(s) and fitting(s) is crimped, repair or replace air hose(s) and fitting(s) (see schematic Fig FO-2, Para 4-39 and 4-47).
  (b) If air lines and fittings are not crimped, go to Step (2) below.
(2) Start engine (TM 9-2320-364-10).
(3) Push in trailer charge valve in truck.
(4) While assistant fully applies brake pedal, listen to air lines and fittings (Table 4-12), relay valves and brake chambers for leaks.
  (a) If fittings leak and are loose, tighten fittings.
  (b) If hose(s) leaks, perform Steps (5) through (7) below and repair or replace hose(s) (see schematic Fig FO-2, Para 4-39 and 4-47).
  (c) If any of the items listed above leak, perform Steps (5) through (7) below and replace them according to Maintenance procedures (Chapter 4).
  (d) If all of items above do not leak, perform Steps (5) through (7) below and go to Step (2) of this Fault.
(5) Release brake pedal.
(6) Pull out trailer charge valve in truck.
(7) Turn OFF ENGINE switch.



9. EXCESSIVE BRAKING DISTANCE (CONT).



WARNING

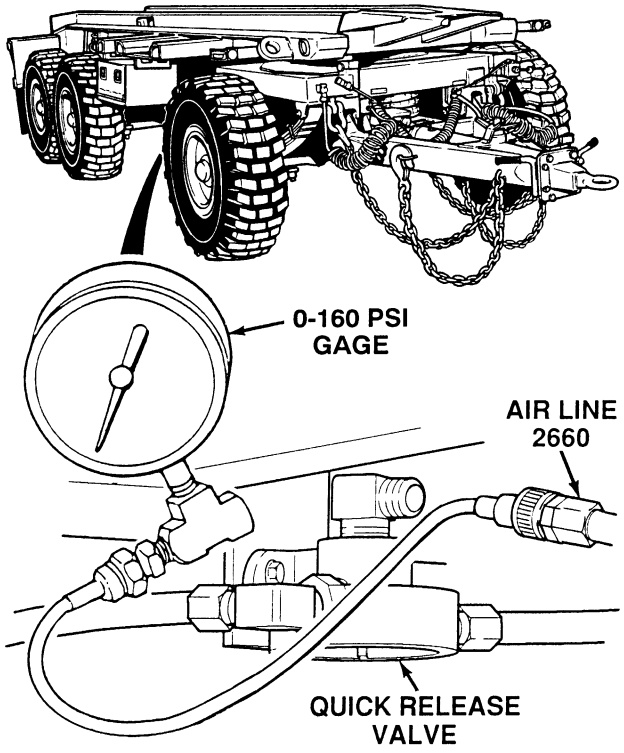
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

NOTE

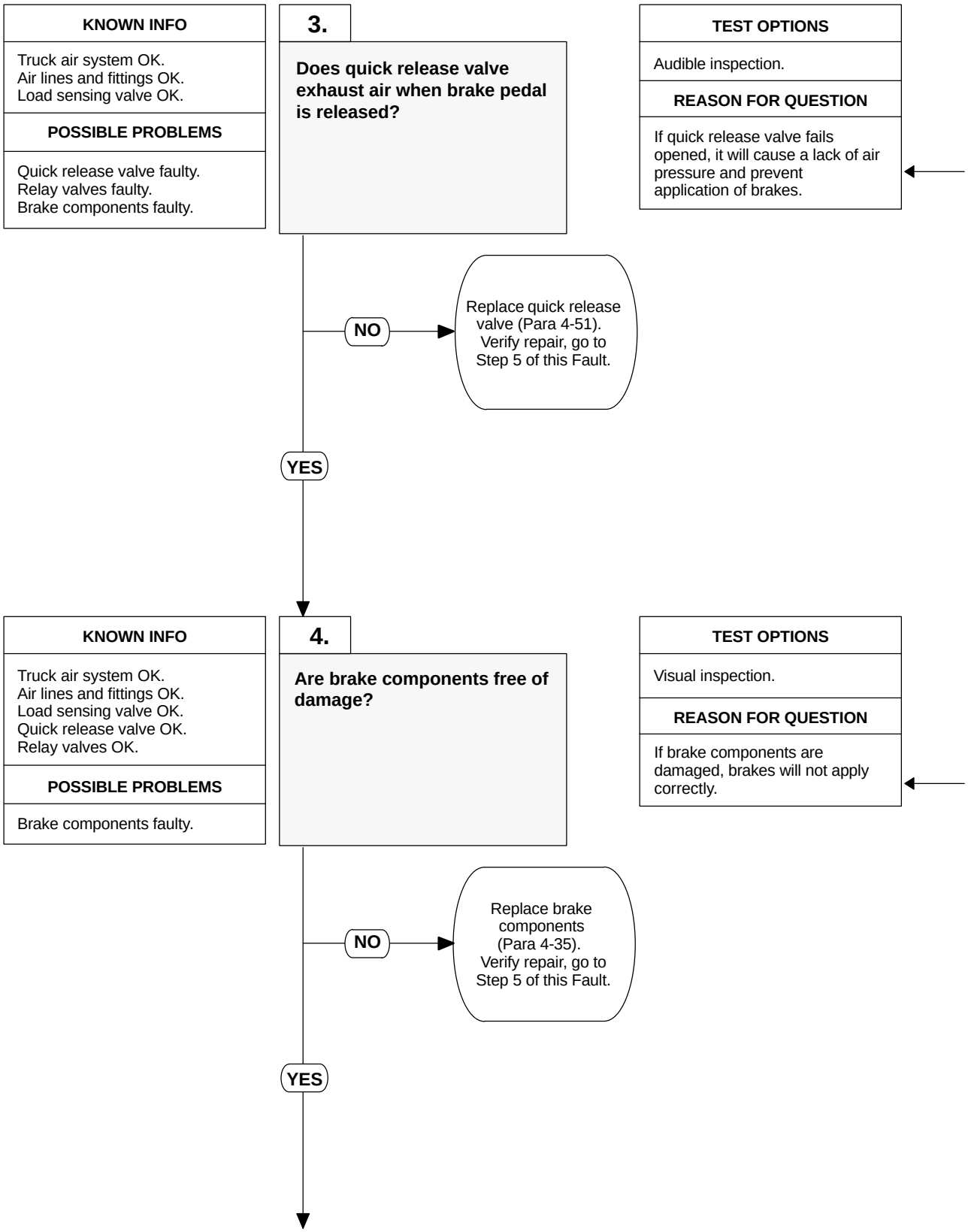
When rod is disconnected from the valve it should hang freely without interference from other components. During testing of load sensing valve, control rod must be able to simulate a no load condition.

PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2660 from quick release valve.
(3) Connect 0-160 psi (1103 kPa) pressure gage to air hose 2660.
(4) Disconnect load sensing valve control rod from axle (Para 4-53).
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, push up on control rod and observe pressure gage.
    (a) If valve output pressure does not go to 120 ± 5 psi (827 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure does go to 120 ± 5 psi (827 ± 34 kPa), go to Step (8) below.
(8) While assistant fully applies brake pedal, pull down on control rod and observe pressure gage.
    (a) If valve output pressure is less than 30 ± 5 psi (207 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure does go to 30 ± 5 psi (207 ± 34 kPa), valve is OK.
(9) Release brake pedal.
(10) Pull out trailer charge valve in truck.
(11) Turn OFF ENGINE switch.
(12) Disconnect air hose 2660 from pressure gage.
(13) Connect air hose 2660 to quick release valve.
(14) Connect control rod to axle.
(15) Adjust load sensing valve (Para 4-53).

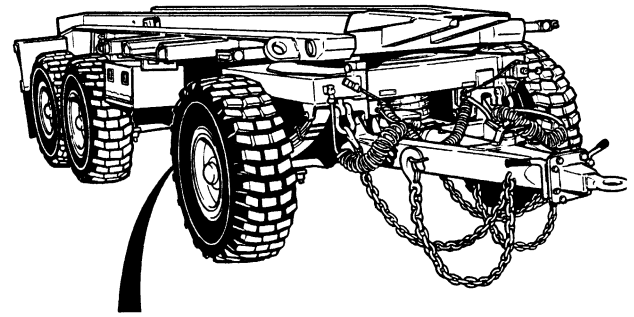


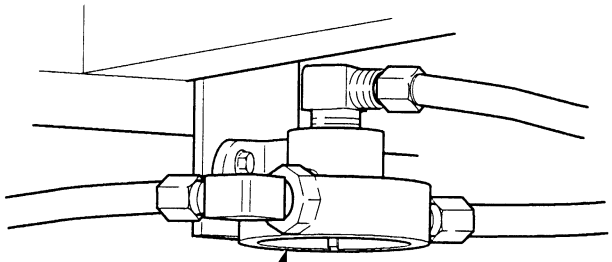
9. EXCESSIVE BRAKING DISTANCE (CONT).



AUDIBLE INSPECTION

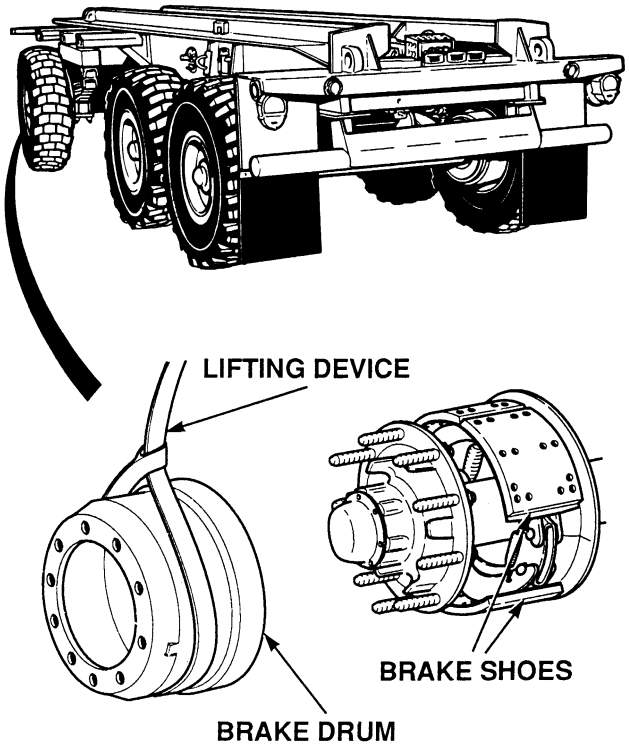
(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck.
(3) While assistant fully applies brake pedal, listen for air to exhaust from quick release valve.
  (a) If air does not exhaust from valve, perform Steps (4) and (5) below and go to Step (4) (Para 4-51).
  (b) If air exhausts from valve, replace valve (Para 4-51).
(4) Pull out trailer charge valve in truck.
(5) Turn OFF ENGINE switch.



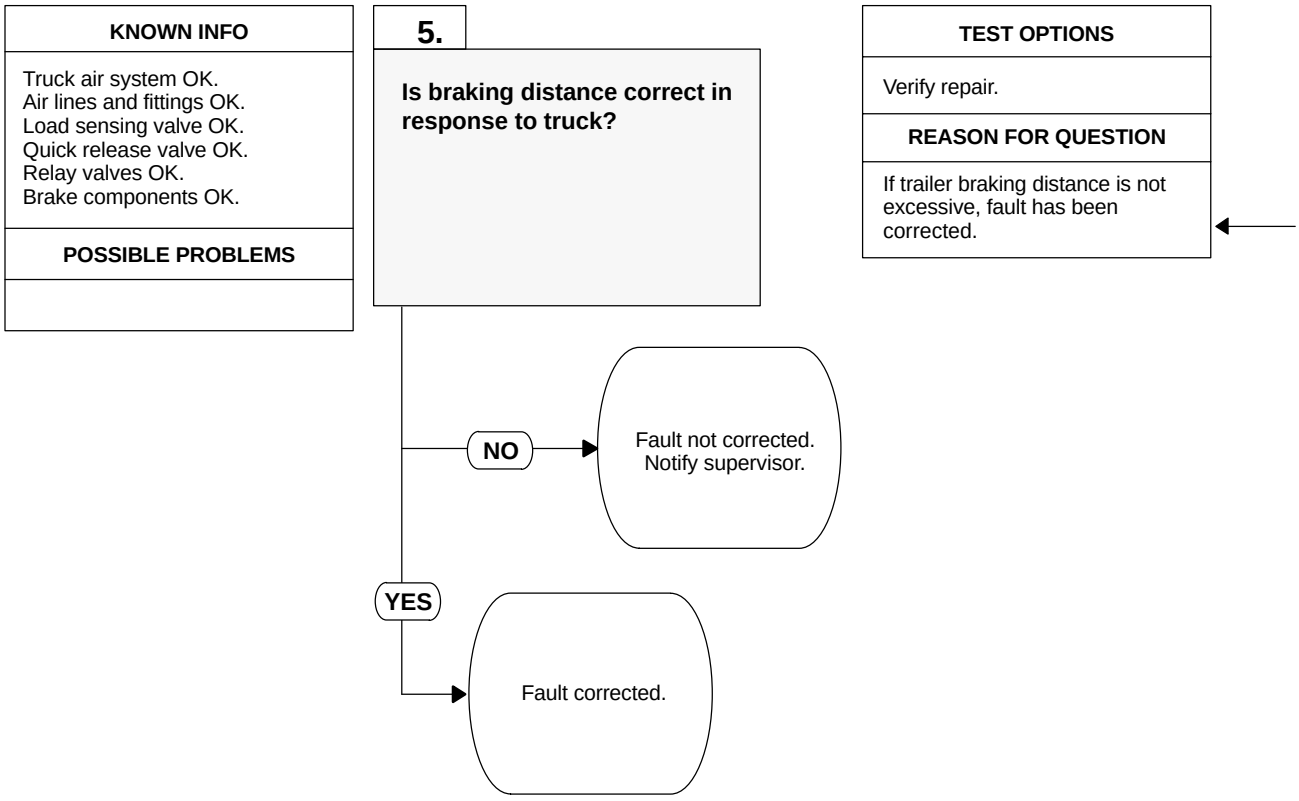


VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum and other brake components for excessive wear, broken brake shoe springs, loose shoes, grooved drums and other damage that will prevent brakes from releasing.
  (a) If brake components are damaged, replace damaged brake components (Para 4-35).
  (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.

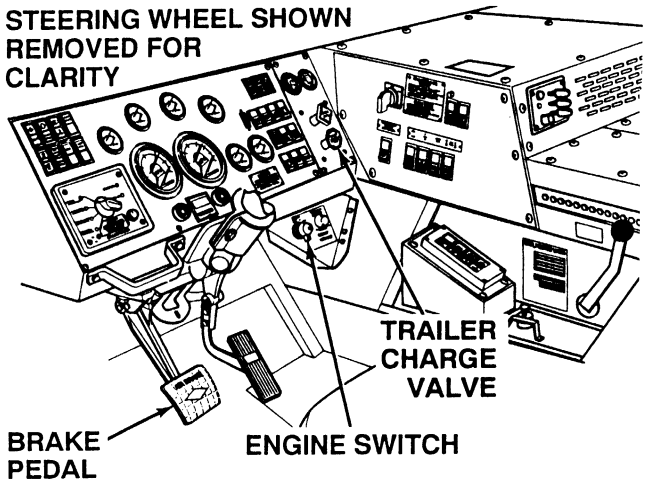


9. EXCESSIVE BRAKING DISTANCE (CONT).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck.
(3) While assistant drives truck and applies brakes, observe braking distance.
  (a) If braking distance is excessive, fault not corrected. Perform Steps (4) through (6) below and notify supervisor.
  (b) If braking distance is OK, fault corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

10. TRAILER BRAKES GRAB WHEN APPLIED.

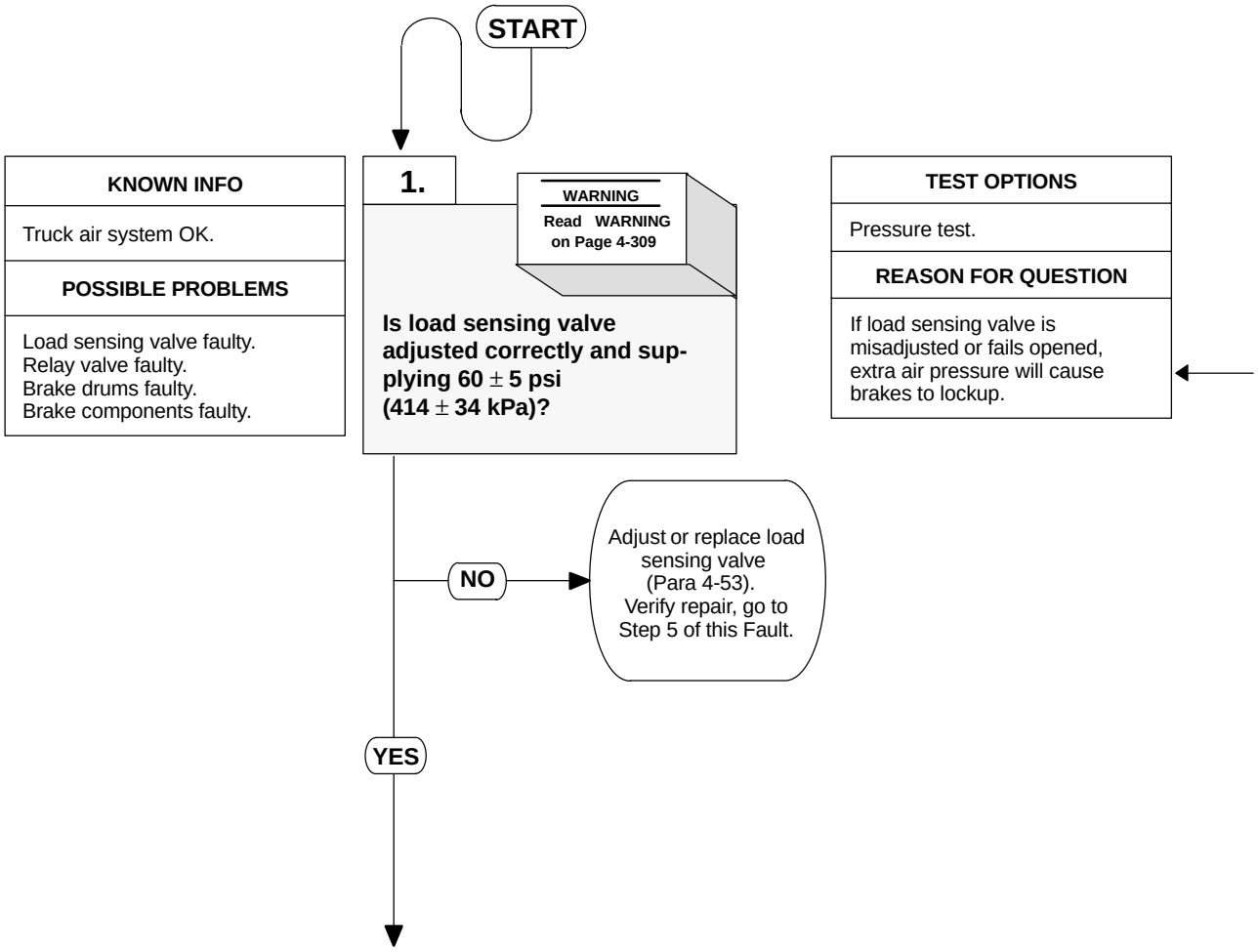
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pressure Test Kit (Item 34, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)



WARNING

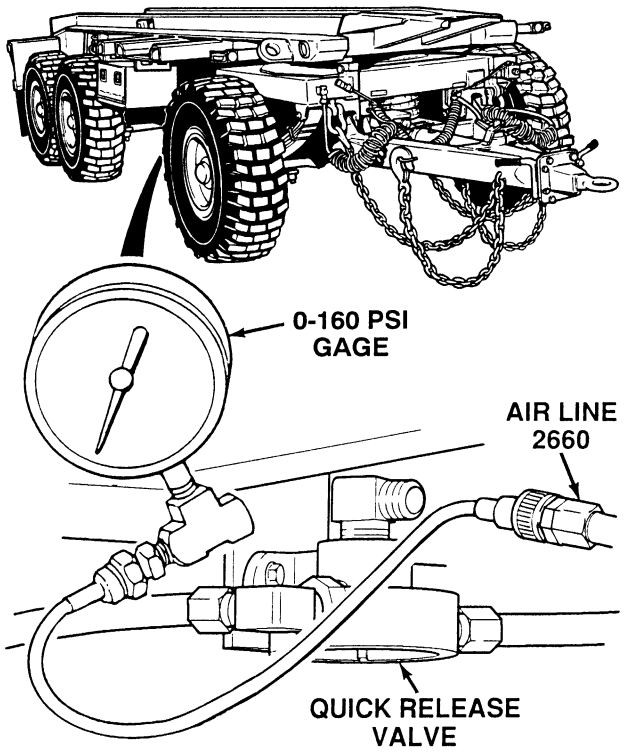
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

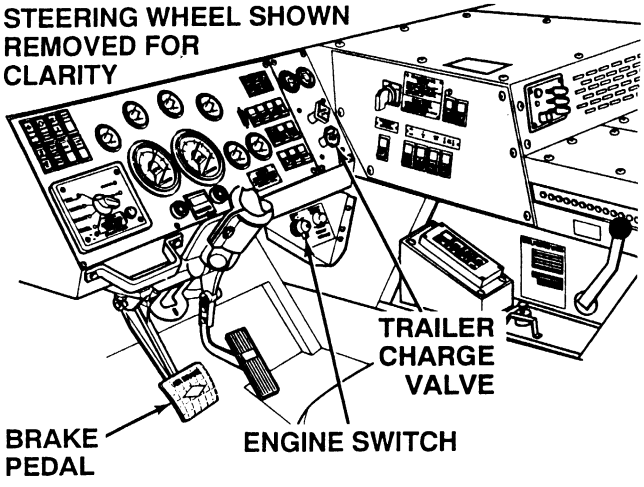
NOTE

- Trailer air system pressure must be 125 ± 5 psi (862 ± 34 kPa) to begin troubleshooting the brake system. If the air system pressure cannot be maintained, refer to Air System Troubleshooting.
- Air lines and valves listed in this troubleshooting procedure are illustrated and located in FO-2.
- When rod is disconnected from the valve it should hang freely without interference from other components. During testing of load sensing valve, control rod must be able to simulate a no load condition.

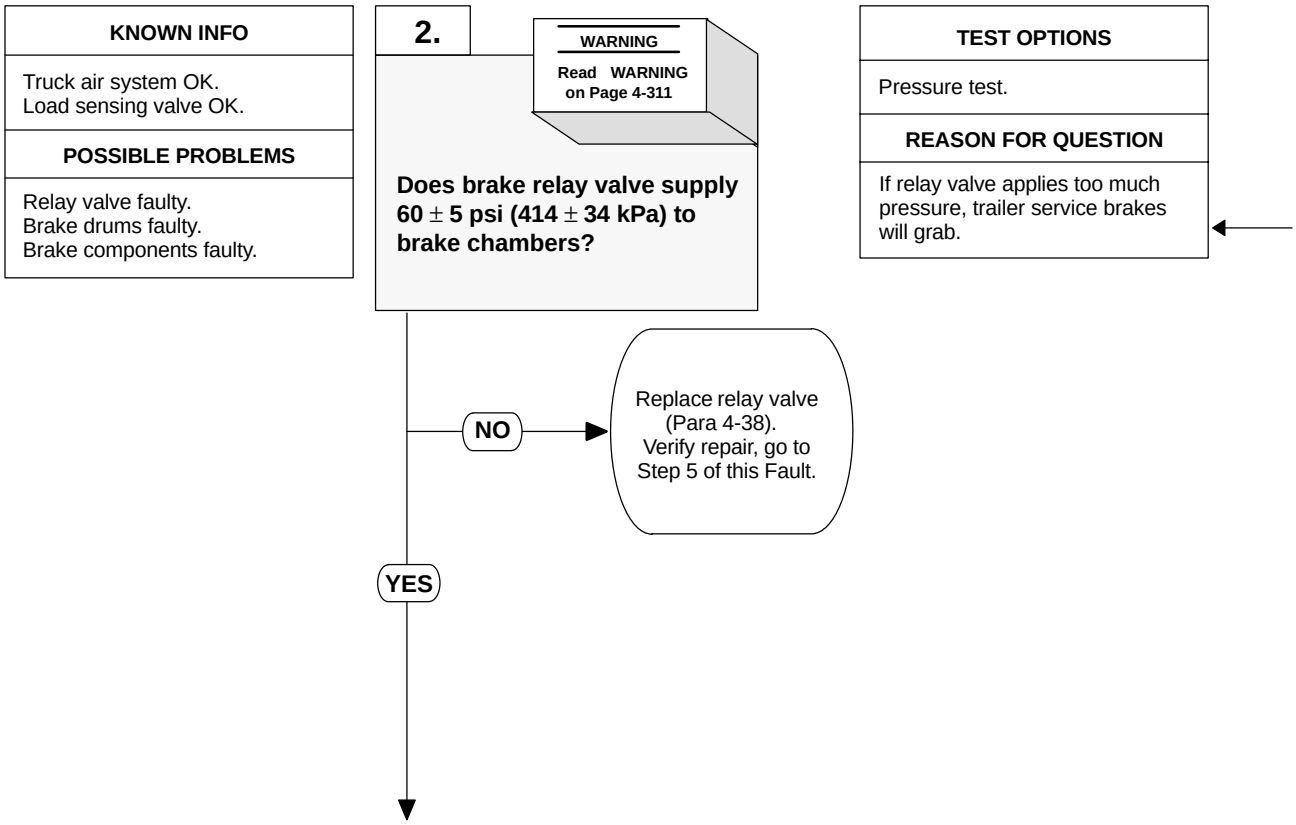
PRESSURE TEST

(1) Drain trailer air system (Para 2-21).
(2) Disconnect air hose 2660 from quick release valve.
(3) Connect 0-160 psi (1103 kPa) pressure gage to air hose 2660.
(4) Disconnect load sensing valve control rod from axle (Para 4-53).
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, push up on control rod and observe pressure gage.
    (a) If valve output pressure does not go to 125 ± 5 psi (862 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure goes to 125 ± 5 psi (862 ± 34 kPa), go to Step (8) below.
(8) While assistant fully applies brake pedal, pull down on control rod and observe pressure gage.
    (a) If valve output pressure is less than 30 ± 5 psi (207 ± 34 kPa), perform Steps (9) through (14) below and replace valve (Para 4-53).
    (b) If valve output pressure goes to 30 ± 5 psi (207 ± 34 kPa), valve is OK.
(9) Release brake pedal.
(10) Pull out trailer charge valve in truck.
(11) Turn OFF ENGINE switch.
(12) Disconnect air hose 2660 from pressure gage.
(13) Connect air hose 2660 to quick release valve.
(14) Connect control rod to axle.
(15) Adjust load sensing valve (Para 4-53).





10. TRAILER BRAKES GRAB WHEN APPLIED (CONT).



WARNING

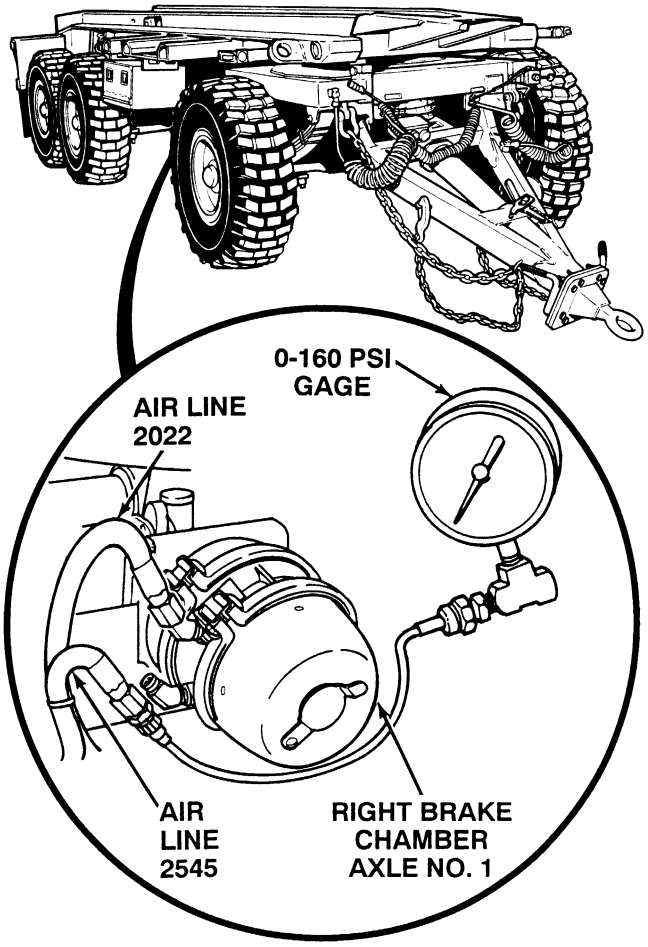
If air lines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.

NOTE

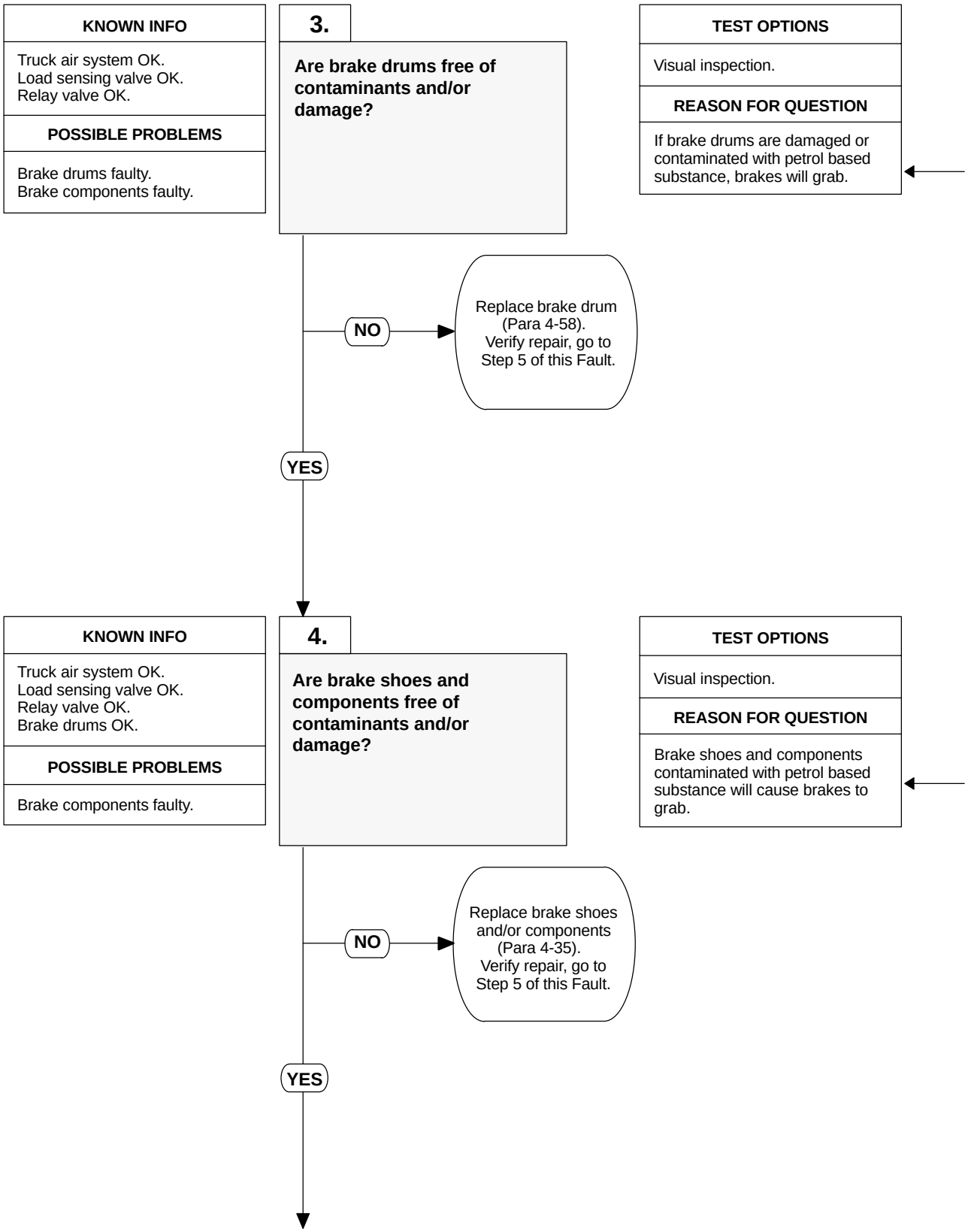
Right rear brake chamber shown.

PRESSURE TEST

(1) Drain air from trailer air system (Para 2-21).
(2) Disconnect air hose 2545 from right front brake chamber.
(4) Connect 0 to 160 psi (1103 kPa) pressure gage to air hose 2545.
(5) Start engine (TM 9-2320-364-10).
(6) Push in trailer charge valve in truck (Para 2-22).
(7) While assistant fully applies brake pedal, observe pressure gage on hose 2545.
  (a) If relay valve output pressure is greater than 60 ± 5 psi (414 ± 5 kPa), perform Steps (8) through (12) below and replace relay valve (Para 4-38).
  (b) If valve output pressure is 60 ± 5 psi (414 ± 5 kPa), relay valve is OK.
(8) Release brake pedal.
(9) Pull out trailer charge valve in truck.
(10) Turn OFF ENGINE switch.
(11) Disconnect air hose 2545 from pressure gage.
(12) Connect air hose 2545 to right front brake chamber.

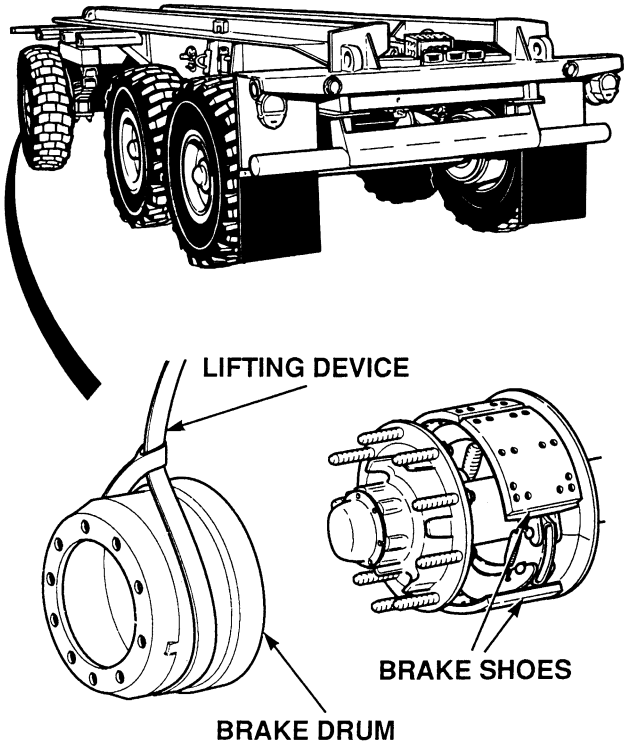


10. TRAILER BRAKES GRAB WHEN APPLIED (CONT).



VISUAL INSPECTION

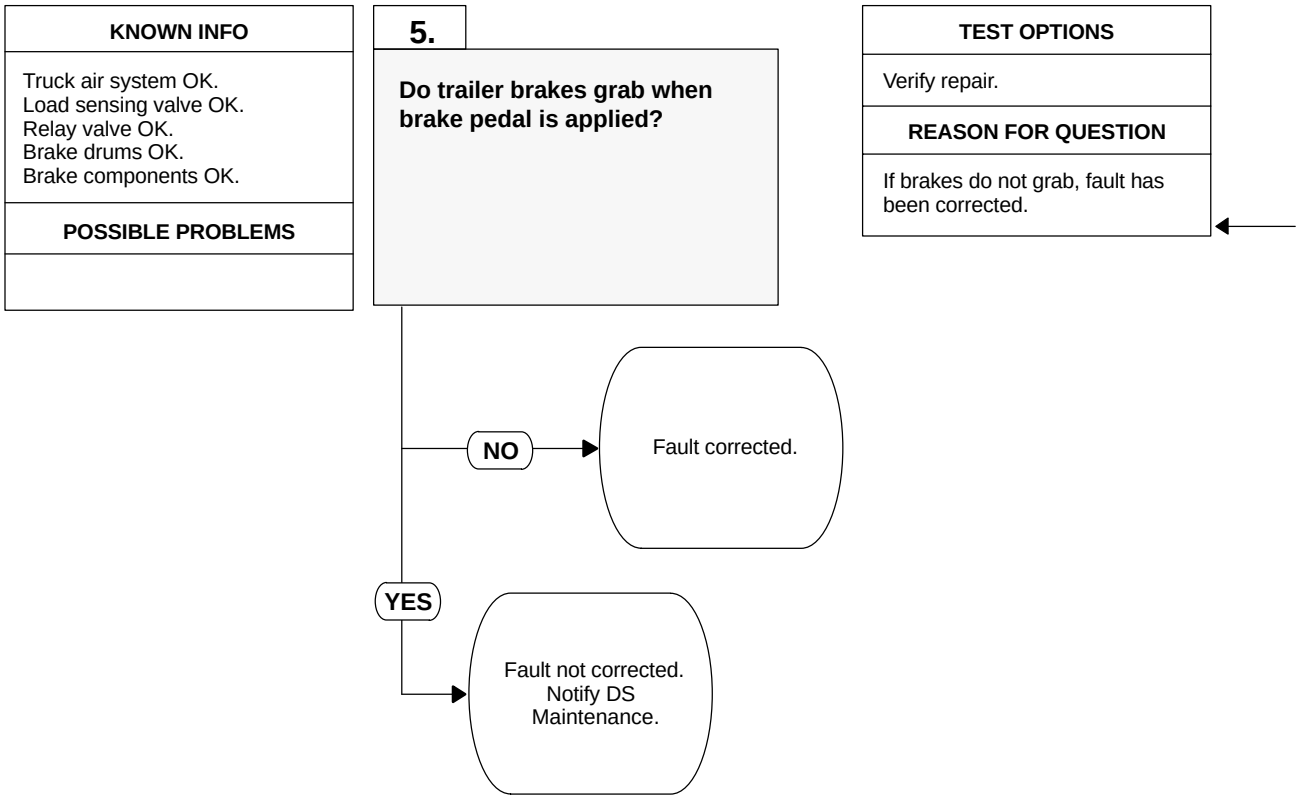
(1) Remove brake drum (Para 4-58).
(2) Inspect drum for heat cracks, rust, petrol based contaminants and other damage that will prevent brakes from grabbing.
    (a) If drum is faulty, clean or replace brake drum.
    (b) If drum is not faulty, brake drum is OK.



VISUAL INSPECTION

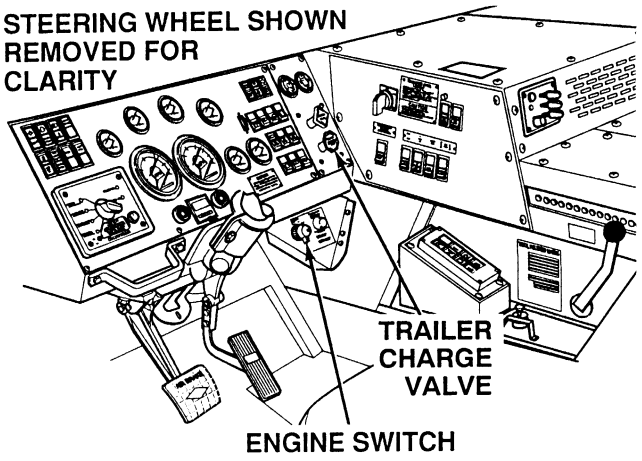
(1) Inspect brake shoes and other components for excessive wear and contaminants (Table 2-1).
    (a) If brake shoes and/or components are damaged, replace brake shoes and/or components (Para 4-35).
    (b) If brake shoes and components are not damaged, brake shoes and components are OK.
(2) Install brake drum (Para 4-58).

10. TRAILER BRAKES GRAB WHEN APPLIED (CONT).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) Observe wheels on suspect axle(s) while assistant drives truck and applies and releases brake pedal.
  (a) If brakes do not apply correctly, fault not corrected. Perform Steps (4) through (6) below and notify DS Maintenance.
  (b) If brakes apply correctly, fault corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-16. BRAKE SYSTEM TROUBLESHOOTING PROCEDURES (CONT).

11. BRAKE DRUMS OVERHEAT.

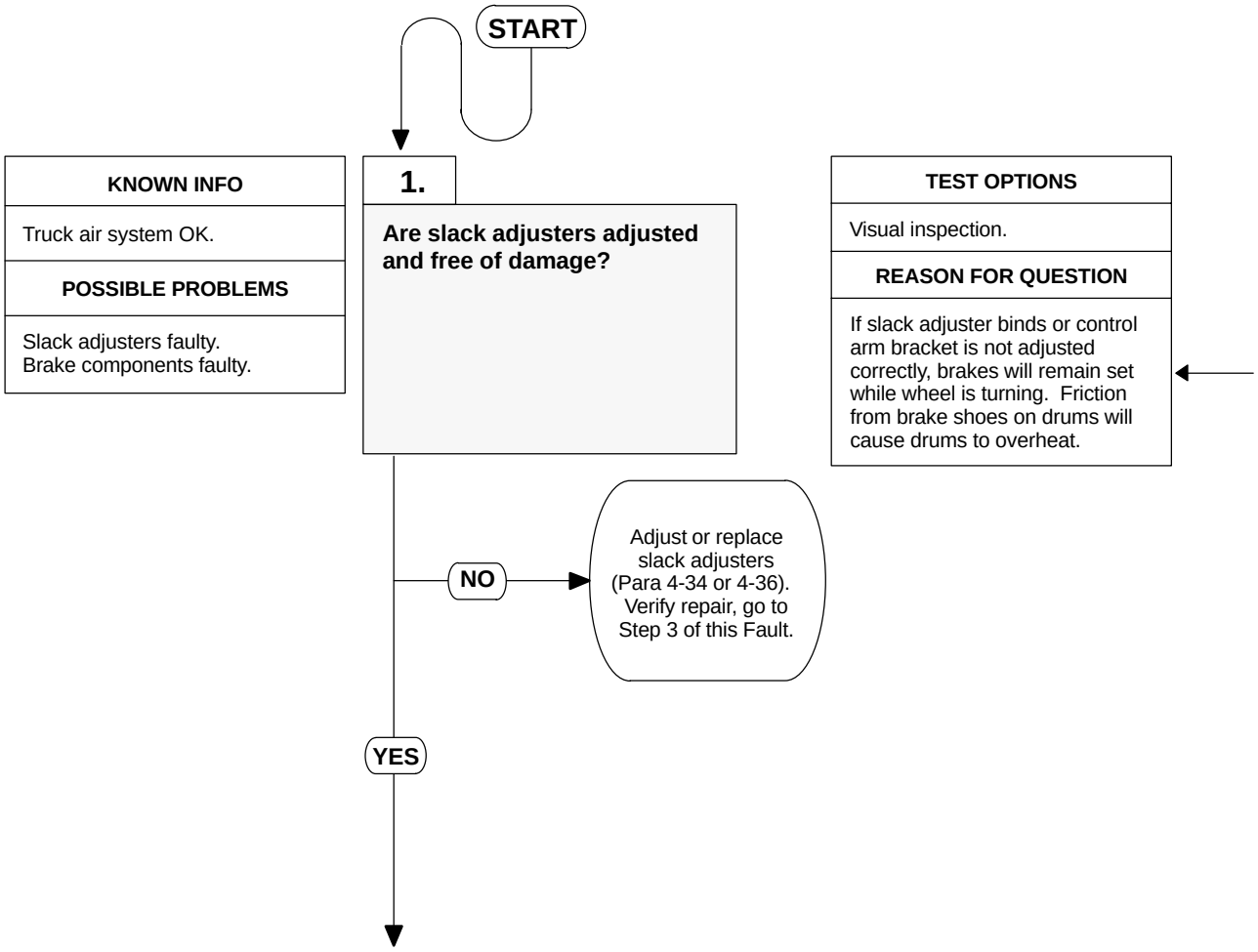
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Emergency and service air supply gladhand connected to truck, (Para 2-22)
Trailer air system charged, (Para 2-22)

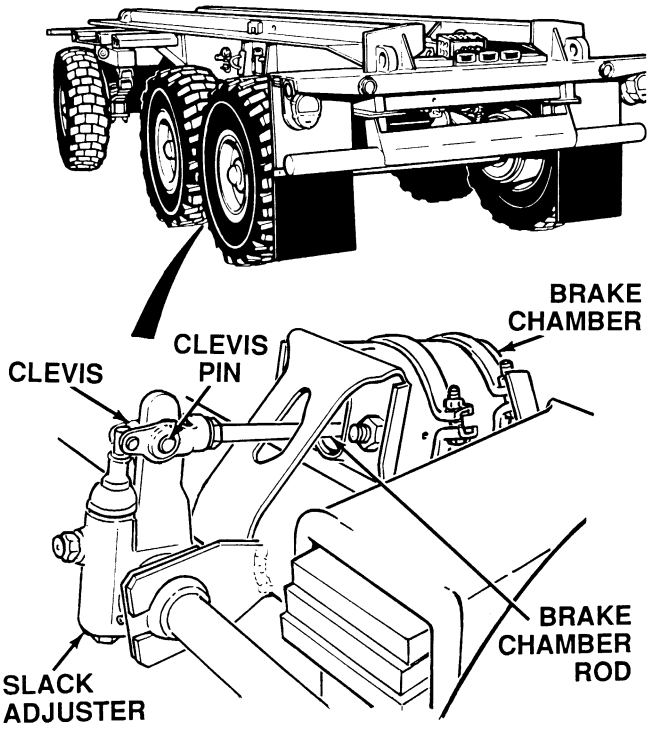


NOTE

Test covers left side rear slack adjusters, all slack adjusters are tested by the same method.

VISUAL INSPECTION

(1) Inspect slack adjusters for damage.
  (a) If slack adjuster is damaged, replace slack adjuster (Para 4-36).
  (b) If slack adjuster is not damaged, slack adjuster is OK.
(2) Adjust brakes (Para 4-34).



11. BRAKE DRUMS OVERHEAT (CONT).

KNOWN INFO
Truck air system OK. Slack adjusters OK.
POSSIBLE PROBLEMS
Brake components faulty.

2.

Are brake components free of damage?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If brake components are damaged, brakes will not release correctly and drums will overheat.

NO → Replace brake components (Para 4-35). Verify repair, go to Step 3 of this Fault.

YES

KNOWN INFO
Truck air system OK. Slack adjusters OK. Brake components OK.
POSSIBLE PROBLEMS

3.

Does wheel(s) spin freely?

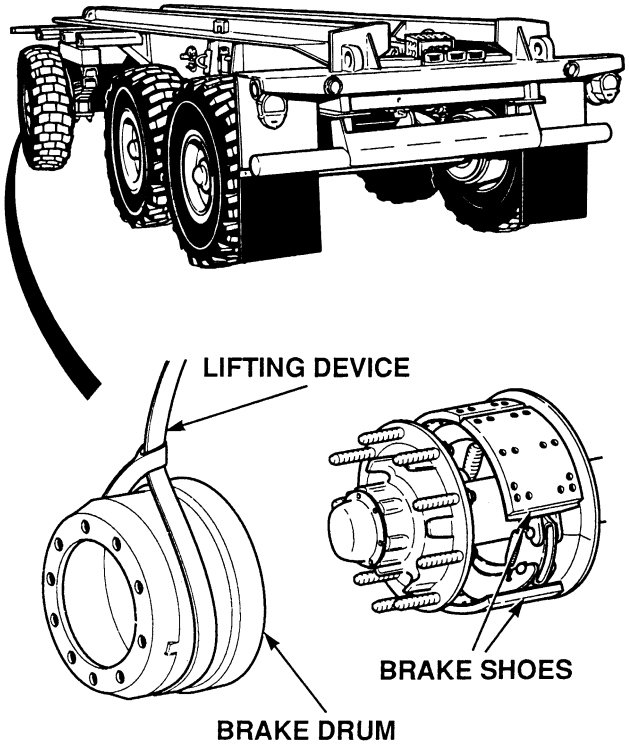
TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If wheels spin freely, fault has been corrected.

NO → Fault corrected.

YES → Fault not corrected. Notify supervisor.

VISUAL INSPECTION

(1) Remove brake drum (Para 4-58).
(2) Visually inspect brake shoes, drum, and other brake components for excessive wear, broken brake shoe, springs, loose shoes, grooved drums, and other damage that will prevent brakes from releasing.
    (a) If brake components are damaged, replace damaged brake components (Para 4-35).
    (b) If brake components are not damaged, brake components are OK.
(3) Install brake drum.



VERIFY REPAIR

(1) Raise up trailer (Para 4-57) and support side so the wheel(s) is off the ground.
(2) Turn ON ENGINE switch (TM 9-2320-364-10).
(3) Push in trailer charge valve in truck (Para 2-22).
(4) Spin wheel and listen to and observe movement.
    (a) If wheel(s) do not spin freely, fault not corrected. Perform Steps (5) through (7) below and notify supervisor.
    (b) If wheel(s) spins freely, fault corrected.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.
(7) Remove support from side and lower trailer to ground.

4-17. AXLE TROUBLESHOOTING PROCEDURES.

This paragraph covers axle troubleshooting procedures. The Axle Fault Index, Table 4-13, lists faults for the axles of the trailer.

Table 4-13. Axle Fault Index

4-17. AXLE TROUBLESHOOTING PROCEDURES (CONT).

1. TRAILER FAILS TO FOLLOW TRUCK; PULLS TO ONE SIDE OR WANDERS.

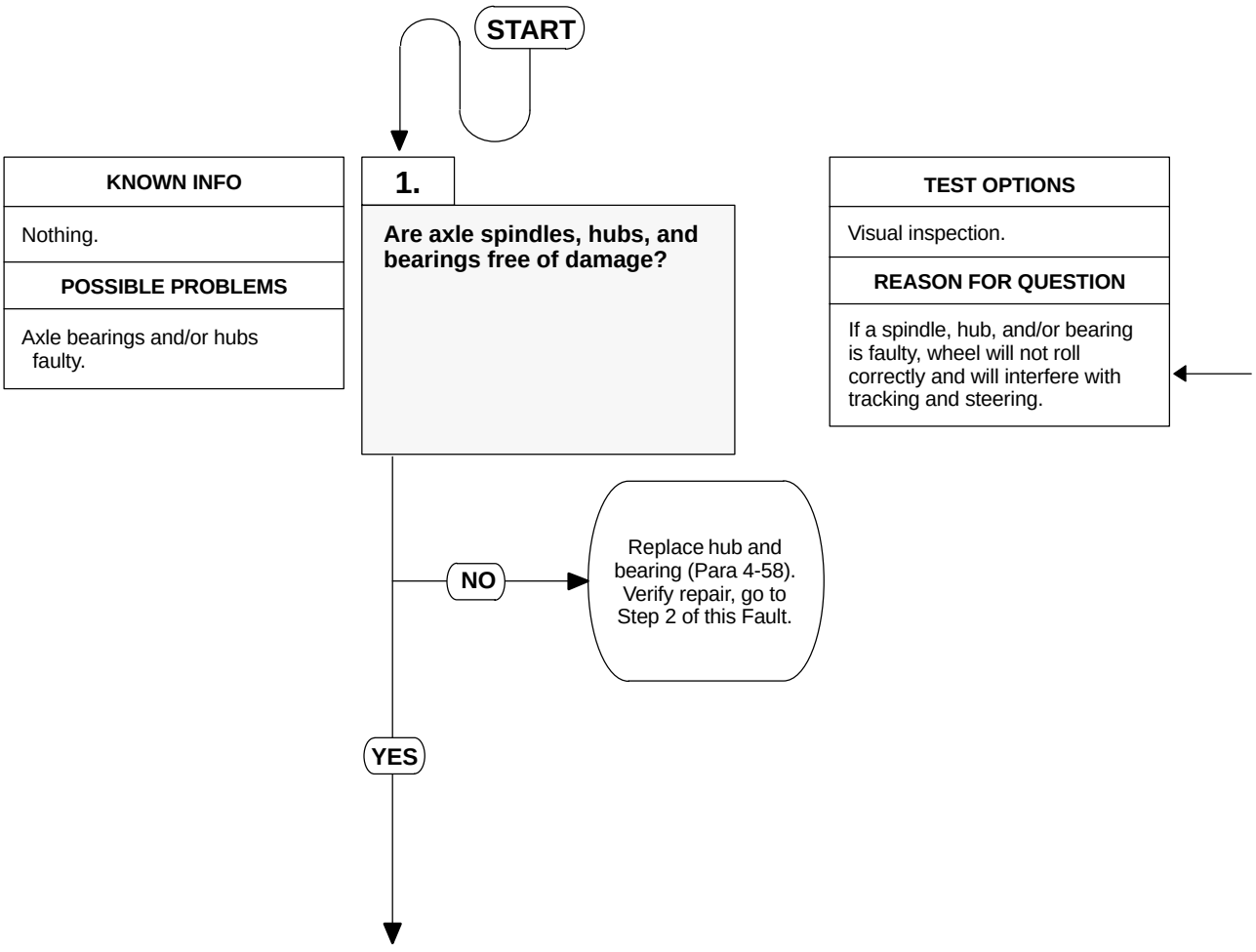
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

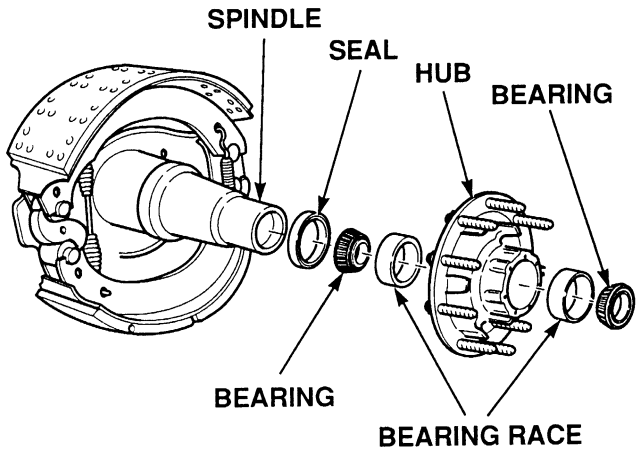
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Trailer connected to truck, (Para 2-9)

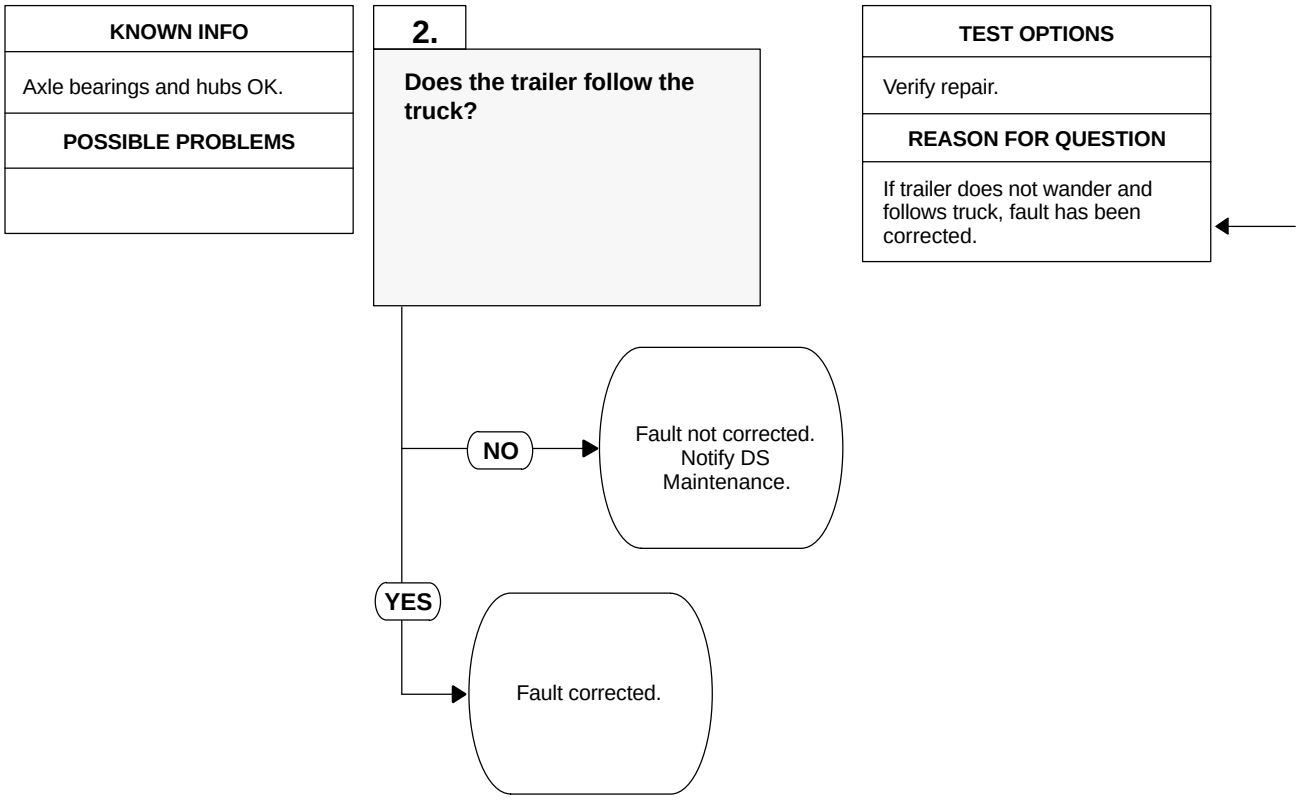


VISUAL INSPECTION

(1) Remove wheel hub and bearings from suspect wheel (Para 4-58).
(2) Clean bearings and inspect them for damage.
(3) Clean hub and inspect it for damage:
  (a) Discoloration.
  (b) Scratches and grooves inside hub.
(4) Inspect spindle for damage.
  (a) Scratches and grooves on journals.
  (b) Spindle bent.
(5) Replace faulty components (Para 4-58).
  (a) If spindle journals and/or grooves are bent or scratched, notify DS Maintenance.
  (b) If spindle, journals and grooves are free of damage, fault not corrected, install wheel hub and bearings (Para 4-58).

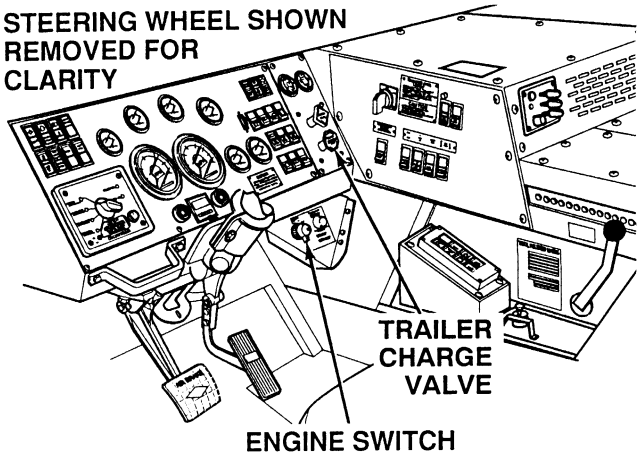


1. TRAILER FAILS TO FOLLOW TRUCK; PULLS TO ONE SIDE OR WANDERS (CONT).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant drives truck, observe trailer operation.
    (a) If trailer does not follow truck correctly, fault not corrected. Perform Steps (4) through (6) below and notify DS Maintenance.
    (b) If trailer follows truck correctly, fault corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



4-18. TIRES, WHEELS AND HUBS TROUBLESHOOTING PROCEDURES.

This paragraph covers tires, wheels and hubs troubleshooting procedures. The Tires, Wheels and Hubs Fault Index, Table 4-14, lists faults for the tires, wheels and hubs of the trailer.

Table 4-14. Tires, Wheels and Hubs Fault Index

Table 4-15. Unsafe Inflation Pressures

	FRONT TIRES ARE:	REAR TIRES ARE:	FRONT TIRES ARE:	REAR TIRES ARE:
	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**
Highway	109 psi (752 kPa)	100 psi (690 kPa)	70 psi (483 kPa)	64 psi (441 kPa)
Cross-Country	64 psi (441 kPa)	58 psi (400 kPa)	41 psi (283 kPa)	37 psi (255 kPa)
Mud, Sand and Snow	40 psi (276 kPa)	36 psi (248 kPa)	26 psi (179 kPa)	23 psi (159 kPa)

4-18. TIRES, WHEELS AND HUBS TROUBLESHOOTING PROCEDURES (CONT).

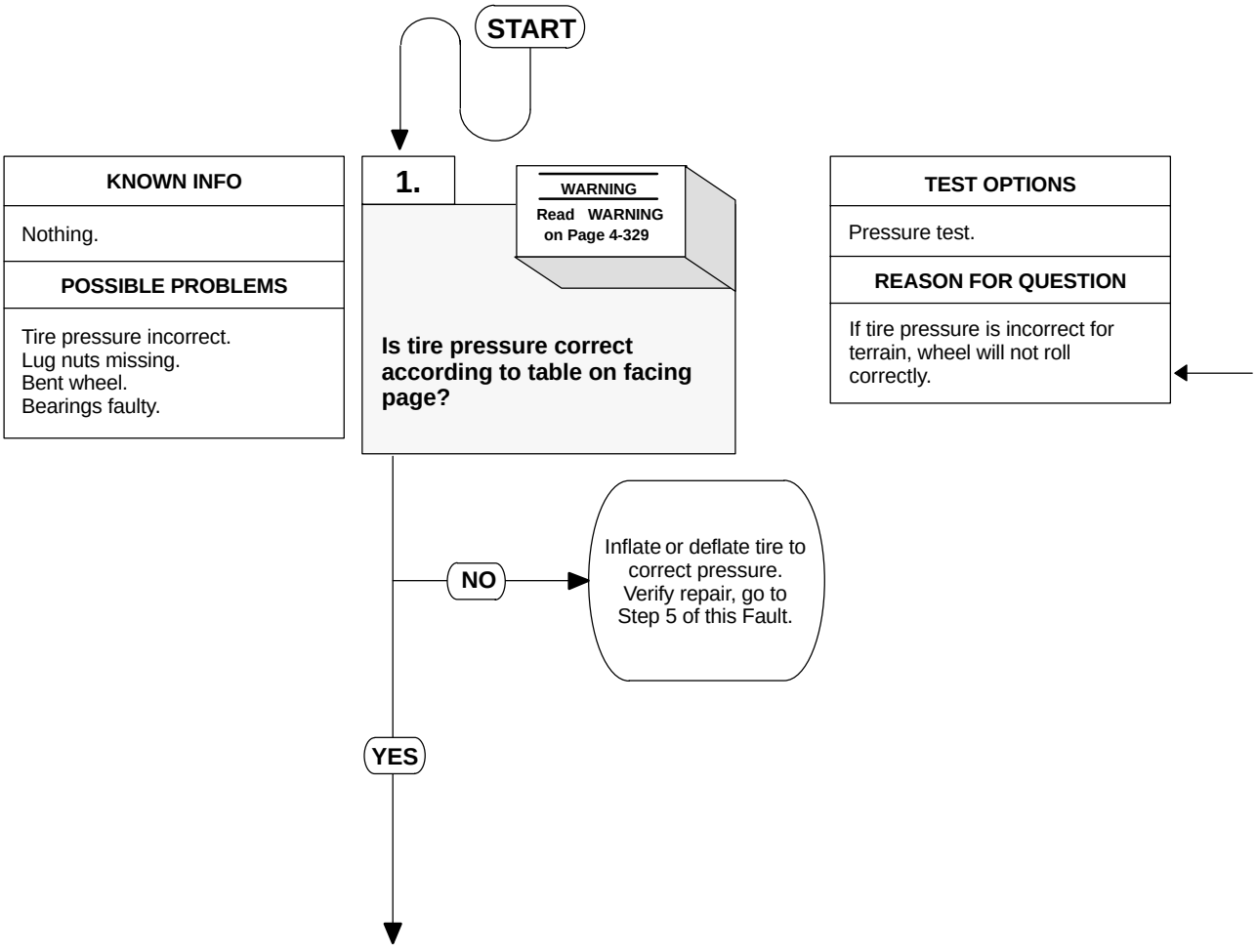
1. WHEEL WOBBLES AND SHIMMIES OR TIRE WEARS UNEVENLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

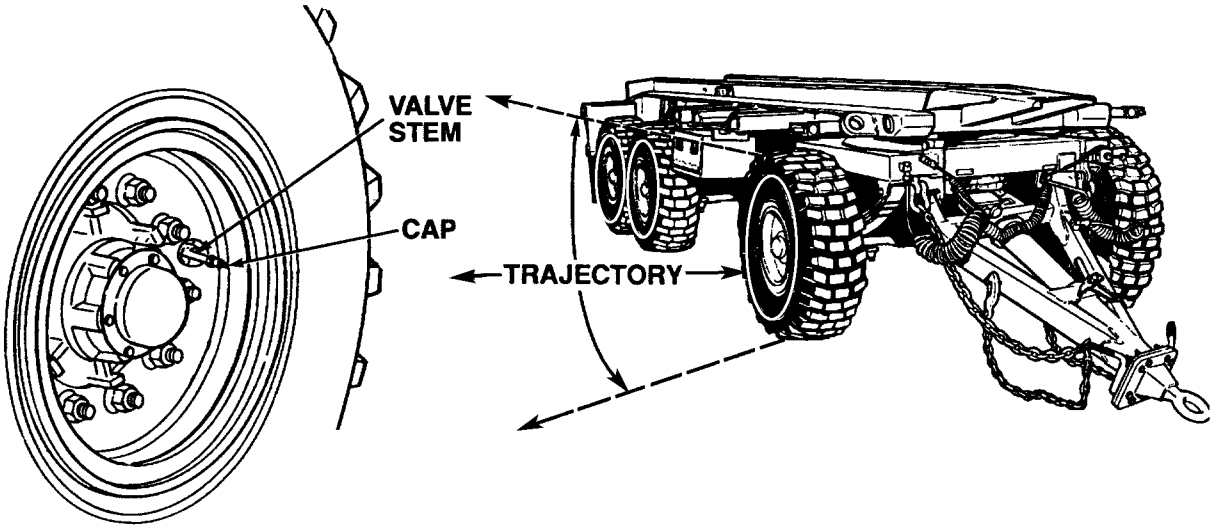
References
TM 9-2320-364-10

Equipment Condition
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)



WARNING

- While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Under some circumstances, the trajectory may deviate from its expected path. Failure to follow proper procedures may result in injury or death to personnel.
- If the tire is underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated (Para 3-6). To deflate the tire, remove the valve core from the valve stem and stand out of the trajectory area before the wheel is removed from the trailer or personal injury may result.
- The wheel/tire must be inflated in a safety cage or personal injury or death may result.
- If tire has been run flat, or is overinflated or underinflated when tire pressure is measured and operating terrain is compared to Table 4-15, or if wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6, and remove the tire from the axle. Failure to follow these procedures may result in serious personal injury or death.
- Tire air pressure must be checked properly or serious injury or death may result.



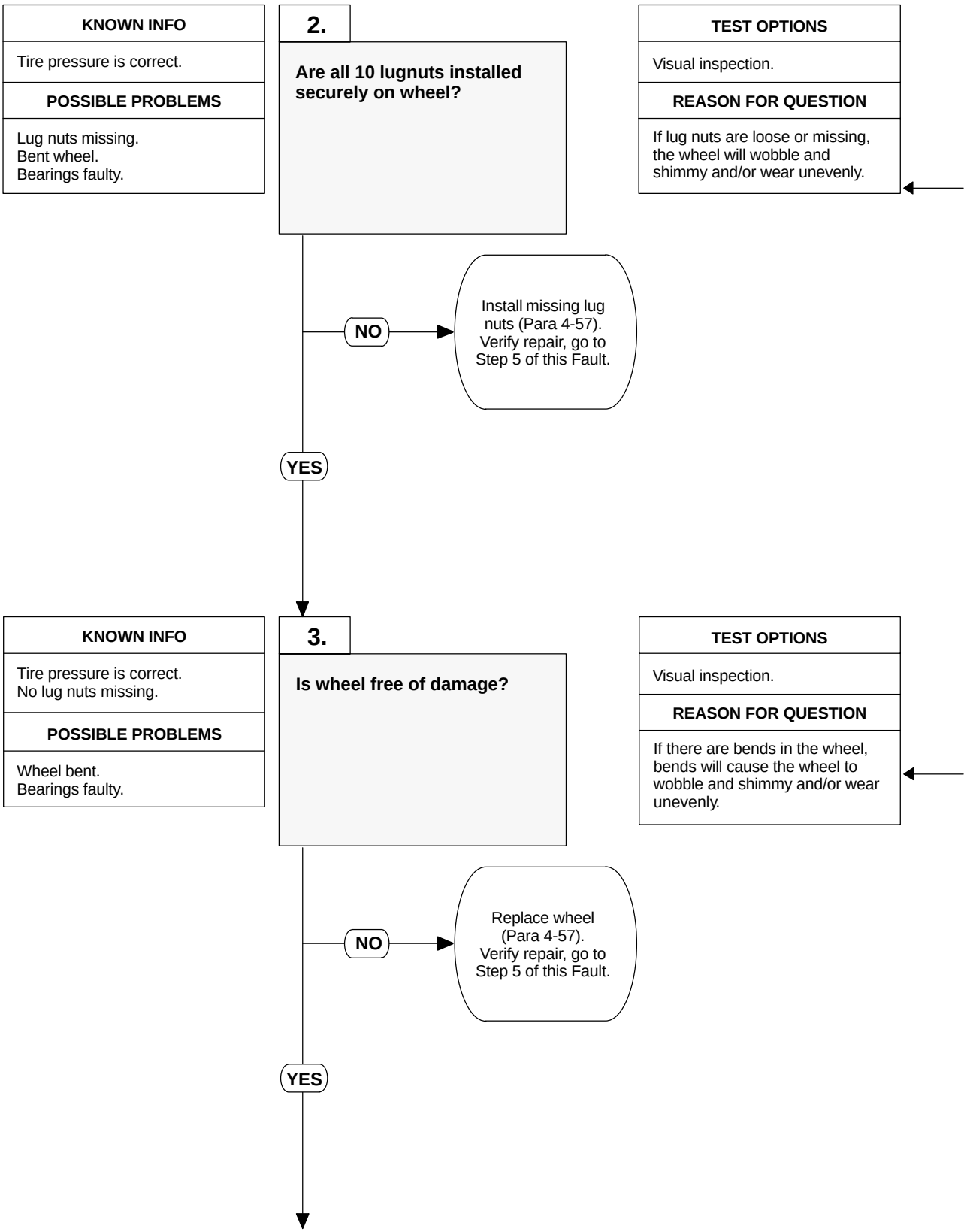
PRESSURE TEST

(1) Remove cap from valve stem.
(2) Position tire inflation gage on valve stem.
(3) Remove and read tire inflation gage and compare to Table 4-15.
  (a) If tire pressure is underinflated or overinflated, or there is obvious damage or suspected damage to tire or wheel, completely deflate tire before removing from trailer (Para 3-6).
  (b) If tire is not underinflated or overinflated and wheel/tire is not damaged, use tire inflation gauge to lower or raise pressure (Para 3-6).
  (c) If tire pressure is correct according to Table 4-16, tire pressure is OK.
(4) Install cap on valve stem.

Table 4-16. Cold Tire Air Pressure

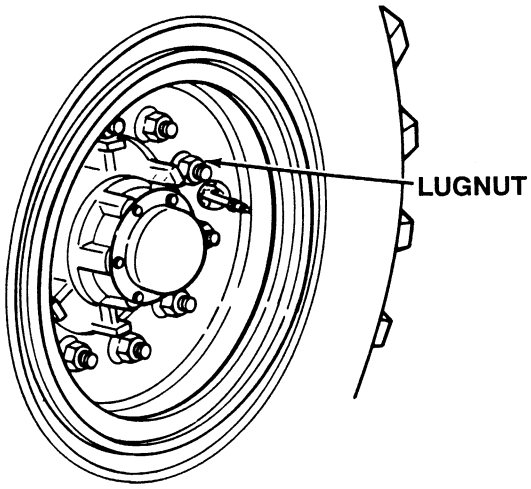
Axle Location	Highway	Cross Country	Mud, Sand, Snow
Front	87 psi (600 kPa)	51 psi (352 kPa)	32 psi (221 kPa)
Rear	80 psi (552 kPa)	46 psi (317 kPa)	29 psi (200 kPa)
Spare Tire	87 psi (600 kPa)	87 psi (600 kPa)	87 psi (600 kPa)

1. WHEEL WOBBLES AND SHIMMIES OR TIRE WEARS UNEVENLY (CONT).



VISUAL INSPECTION

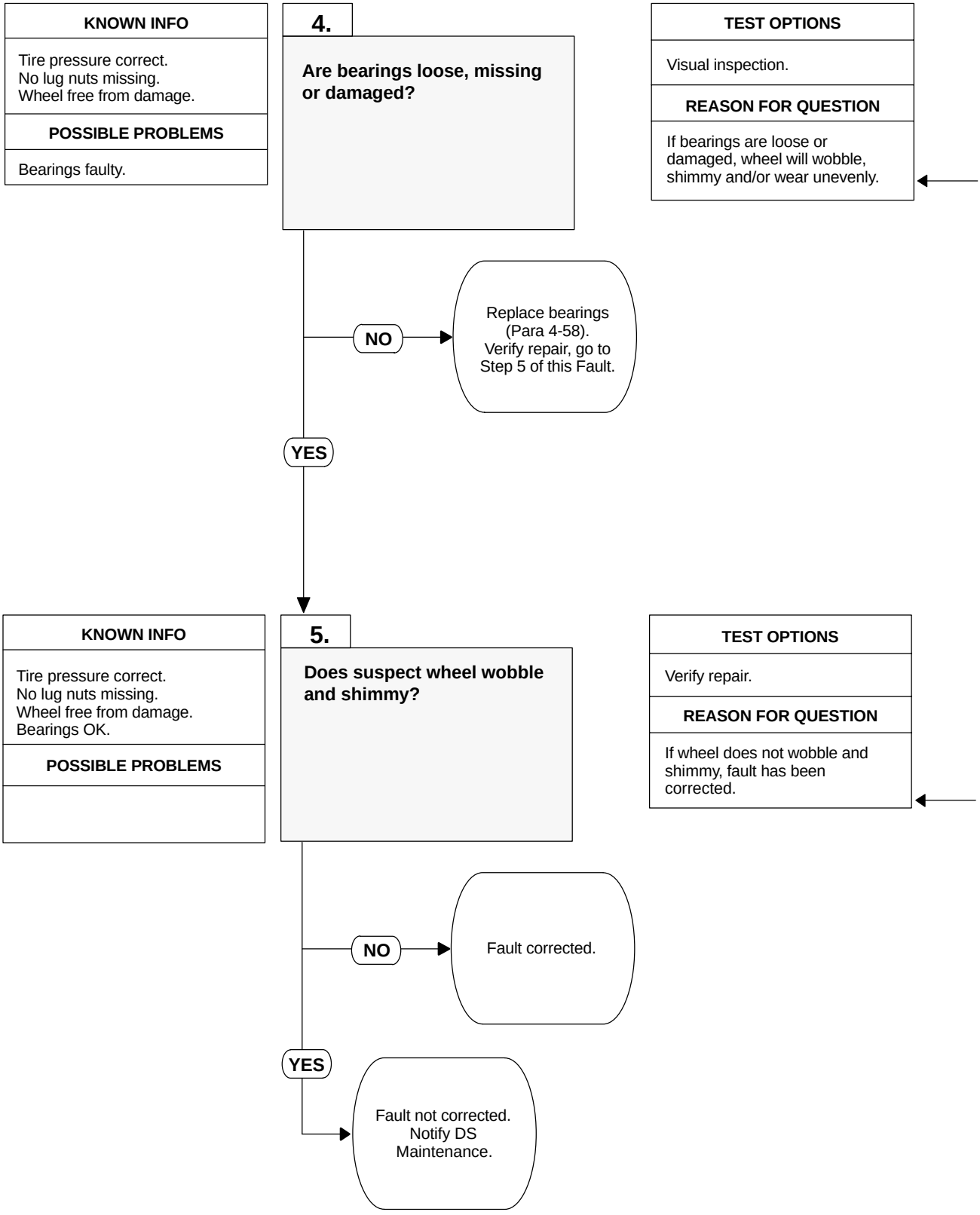
Check all wheels for missing or loose lugnuts.
(1) If any lugnuts are loose or missing install new lugnuts on wheel and tighten (Para 4-57).
(2) If no lugnuts are missing, go to Step 3 of this Fault.



VISUAL INSPECTION

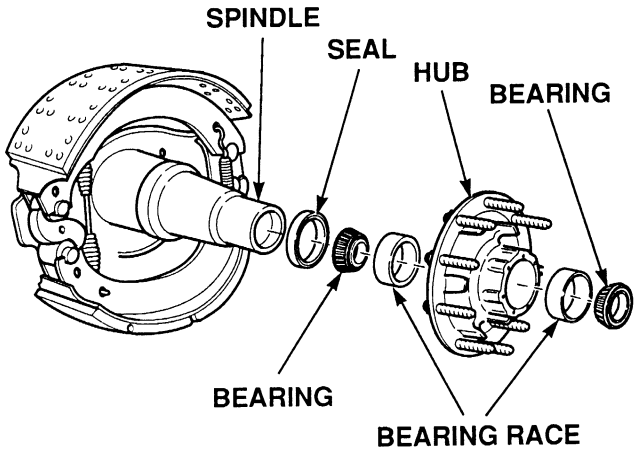
Inspect wheel for bends and other damage that will cause the wheel to wobble.
(1) If wheel is damaged, replace wheel (Para 4-57).
(2) If wheel is not damaged, go to Step (4) of this Fault.

1. WHEEL WOBBLES AND SHIMMIES OR TIRE WEARS UNEVENLY (CONT).



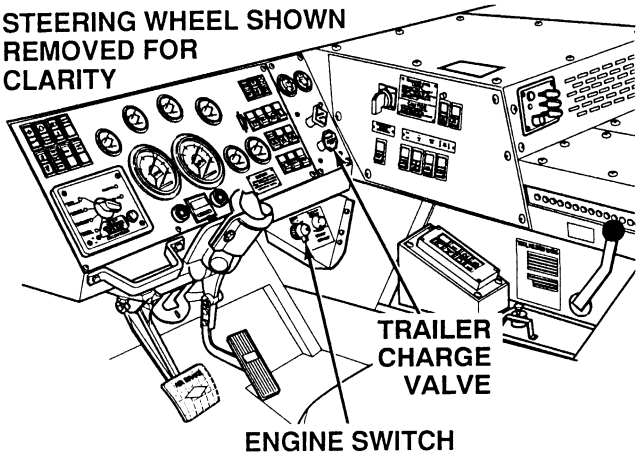
VISUAL INSPECTION

(1) Remove wheel hub and bearings from suspect wheel (Para 4-58).
(2) Clean bearings and inspect them for damage.
(3) Clean hub and inspect it for damage:
  (a) Discoloration.
  (b) Scratches and grooves inside hub.
(4) Inspect spindle for damage.
  (a) Scratches and grooves on journals.
  (b) Spindle bent.
(5) Replace faulty components (Para 4-58).
  (a) If spindle journals and/or grooves are bent or scratched, notify DS Maintenance.
  (b) If spindle, journals and grooves are free of damage, fault not corrected, install wheel hub and bearings (Para 4-58).



VERIFY REPAIR

(1) Start engine (TM 9-2320-364-10).
(2) Push in trailer charge valve in truck (Para 2-22).
(3) While assistant drives truck, observe suspect wheel.
  (a) If wheel shimmies and wobbles, fault not corrected. Perform Steps (4) through (6) below and notify DS Maintenance.
  (b) If wheel does not shimmy or wobble, fault not corrected.
(4) Stop truck.
(5) Pull out trailer charge valve in truck.
(6) Turn OFF ENGINE switch.



Section V. UNIT MAINTENANCE PROCEDURES

4-19. UNIT MAINTENANCE INTRODUCTION.

Instructions in this section provide general procedures to be followed for inspection, removal, cleaning, repair, replacement, or installation of components and testing authorized at the unit level as specified by the Maintenance Allocation Chart (MAC).

4-20. SERVICING EQUIPMENT.

a. Perform the PMCS contained in Table 4-1.

b. Lubricate all points as shown in the PMCS, Para 4-8, Table 4-1.

c. Schedule the next Preventive Maintenance Checks and Services on DD Form 314, Preventive Maintenance Schedule and Record.

4-21. OPERATIONAL CHECKS.

All operational checks included in the maintenance procedures will include the techniques and methods required to assure the satisfactory performance of the trailer. Reference TM 9-2320-364-10 for hook up, driving and parking procedures.

4-22. UNIT CLEANING PROCEDURES.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

a. When cleaning ball or roller bearings, place in a basket and suspend in a container of drycleaning solvent, P-D-680 (Item 22, Appendix E). If necessary, use a brush (Item 6, Appendix E) to remove caked grease or chips. Avoid rotating bearings before solid particles are removed to prevent damaging races and balls. Lubricate bearings after cleaning.

b. Do not clean preformed packings or other rubber parts in drycleaning solvent. Wipe with a clean, dry, lint-free cloth (Item 11, Appendix E).

c. For exterior cleaning of frame and structural components, use soap solution (Item 21, Appendix E). Leave application on items surface for approximately ten minutes before rinsing. Rinse with hot or cold water under pressure. If available, use hot water under 80 to 120 lb (36 to 54 kg) pressure. An ordinary garden hose may be used if no other equipment is available. If pressurized water supply is not available, wash painted surfaces with a soap solution (Item 21, Appendix E) and water.

d. Electrical parts such as coils, connectors, switches and insulated wiring, should not be soaked or sprayed with cleaning solutions. Clean these parts with a clean, dry cloth (Item 11, Appendix E) moistened with drycleaning solvent P-D-680 (Item 22, Appendix E).

4-23. PAINTING.

Instructions for preparation of material to paint, how to paint and material to be used are in TM 43-0139. Instruction for camouflage painting are contained in FM 20-3. Stenciling and marking military vehicles are listed in TB 43-0209. Data plate location and description is listed in Chapter 2.

4-24. LUBRICATION.

Refer to PMCS, Para 4-8, Table 4-1 for lubrication procedures and requirements for the trailer. The instructions include types and grades of lubricant used, lube points, locations and frequency of the required lubrication.

4-25. FRONT ELECTRICAL BOX REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Locknut (4) (Item 33, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Lower drawbar, (Para 2-23)
Air system drained, (Para 2-21)
Intervehicular power cable disconnected, (Para 2-9)

a. Removal.

WARNING

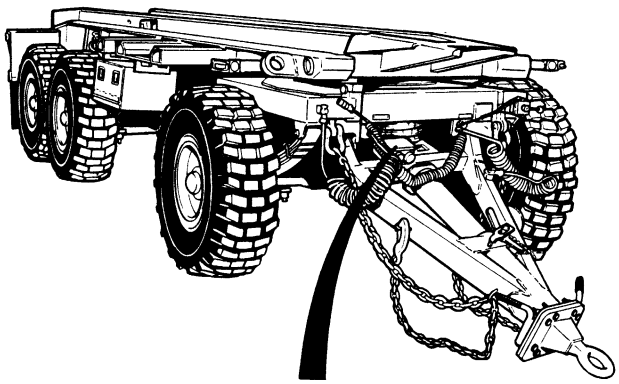
Front electrical box may be hot. Use caution when working around electrical box to avoid burns.

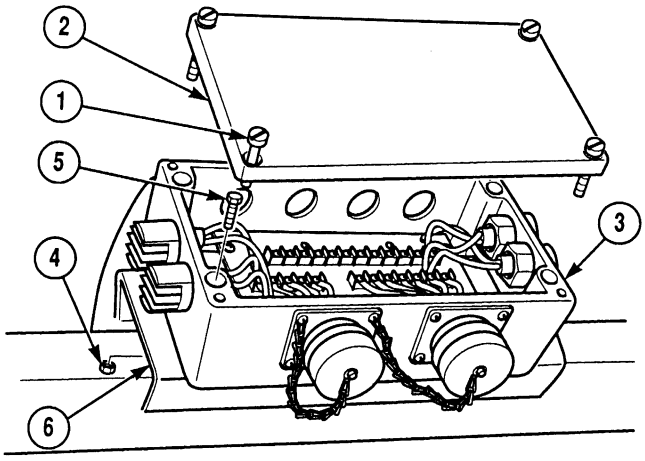
(1) Remove four captive screws (1) and cover (2) from front electrical box (3).

(2) Refer to Para 4-30 and remove wiring harnesses from front electrical box (3).

(3) Remove four locknuts (4), screws (5) and front electrical box (3) from bracket (6). Discard locknuts.

(4) Install cover (2) on front electrical box (3) with four captive screws (1).





b. Installation.

(1) Remove four captive screws (1) and cover (2) from electric box (3).

(2) Install front electrical box (3) on bracket (6) with four screws (5) and locknuts (4).

(3) Refer to Para 4-30 and install wiring harnesses on front electrical box (3).

(4) Install cover (2) on front electrical box (3) with four captive screws (1).

c. Follow-On Maintenance:

- Connect intervehicular power cable, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-26. REAR ELECTRICAL BOX REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

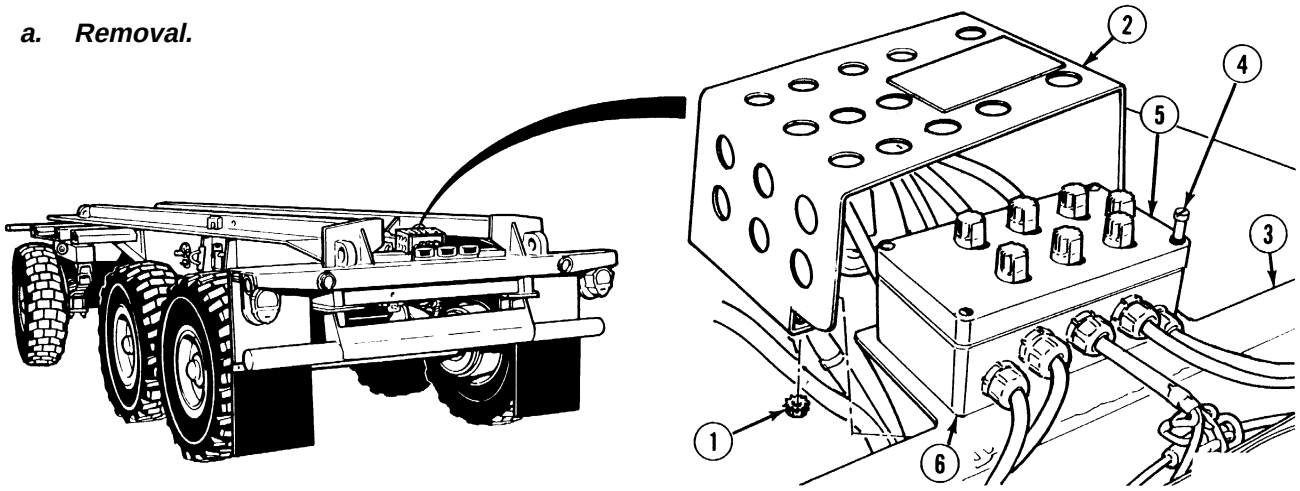
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Tags, Identification (Item 23, Appendix E)
Locknut (8) (Item 31, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Intervehicular power cable disconnected, (Para 2-9)

a. Removal.



(1) Remove four locknuts (1) and heat shield (2) from bracket (3). Discard locknuts.

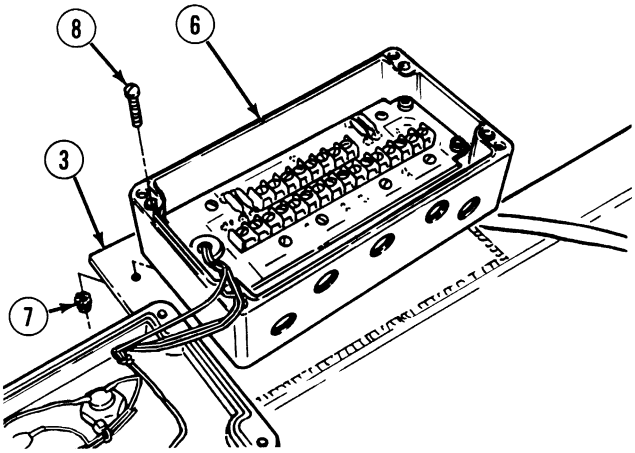
(2) Remove four captive screws (4) and cover (5) from box (6).

4-26. REAR ELECTRICAL BOX REPLACEMENT (CONT).

(3) Refer to Para 4-30 and remove harnesses.

(4) Remove four locknuts (7), screws (8) and box (6) from bracket (3). Discard locknuts.

(5) Install cover (5) on box (6) with four captive screws (4).



b. Installation.

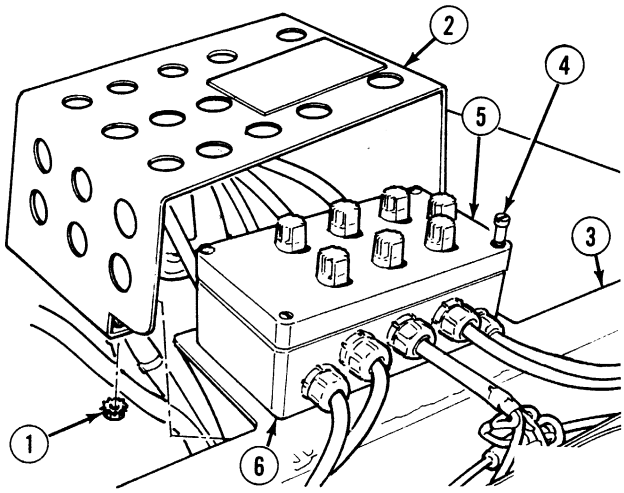
(1) Remove four captive screws (4) and cover (5) from box (6).

(2) Install box (6) on bracket (3) with four screws (8) and locknuts (7).

(3) Refer to Para 4-30 and install harnesses.

(4) Install cover (5) on box (6) with four captive screws (4).

(5) Install heat shield (2) on bracket (3) with four locknuts (1).



c. Follow-On Maintenance:

- Connect intervehicular power cable, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-27. FRONT/REAR SIDE MARKER LIGHT/BRACKET REPLACEMENT.

This task covers:

a. Front Side Marker Light Replacement
b. Rear Side Marker Light Replacement
c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Goggles, Industrial (Item 13, Appendix J)

Materials/Parts
Silicone Compound, Anti-Corrosion (Item 20, Appendix E)
Tags, Identification (Item 23, Appendix E)

Materials/Parts - Continued
Bushing (2) (Item 6, Appendix I)
Locknut (6) (Item 31, Appendix I)
Locknut (2) (Item 36, Appendix I)
Ring (2) (Item 72, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Intervehicular power cable disconnected, (Para 2-9)

a. Front Side Marker Light Replacement.

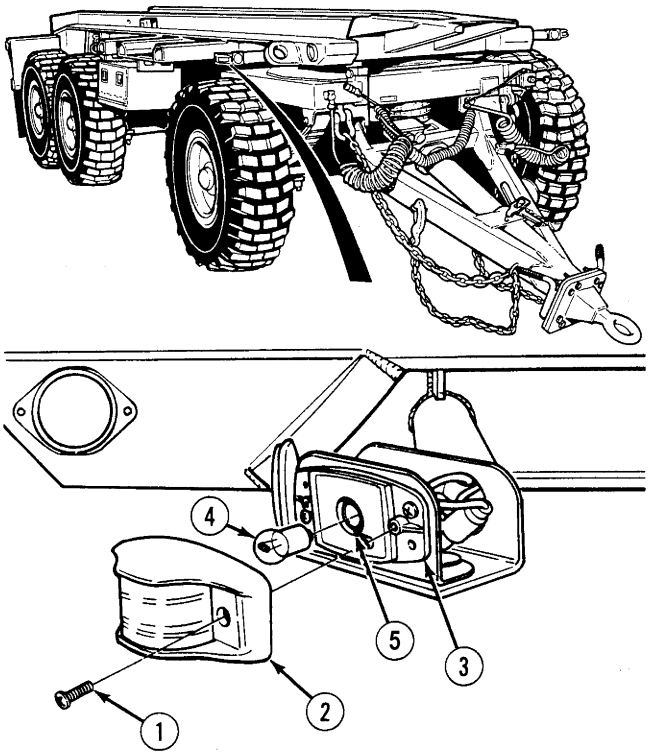
(1) *Removal.*

NOTE

If only replacing lamp, perform Steps (a) and (b).

(a) Remove two screws (1) and lens (2) from lens support (3).

(b) Remove lamp (4) from lamp socket (5).



4-27. FRONT/REAR SIDE MARKER LIGHT/BRACKET REPLACEMENT (CONT).

NOTE

- Wire numbers are different between left and right sides. Left side is shown.
- Perform Steps (c) through (e) for left light. Perform Steps (f) through (h) for right light.
- Tag and mark all wires prior to removal.

(c) Disconnect 1012-24 connector (6) from 489 connector (7).

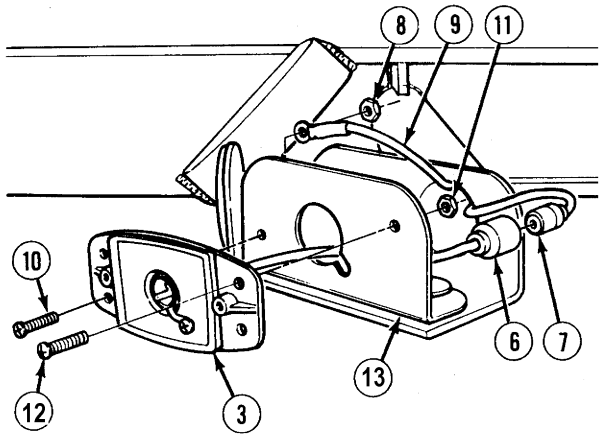
(d) Remove locknut (8), wire 1435-23 (9) and screw (10) from lens support (3). Discard locknut.

(e) Remove locknut (11), screw (12) and lens support (3) from bracket (13).

(f) Disconnect 1012-14 connector (6) from 489 connector (7).

(g) Remove locknut (8), wire 1435-13 (9) and screw (10) from lens support (3). Discard locknut.

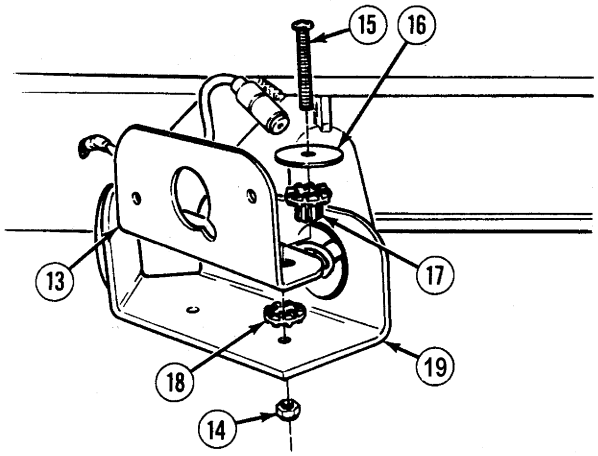
(h) Remove locknut (11), screw (12) and lens support (3) from bracket (13). Discard locknut.



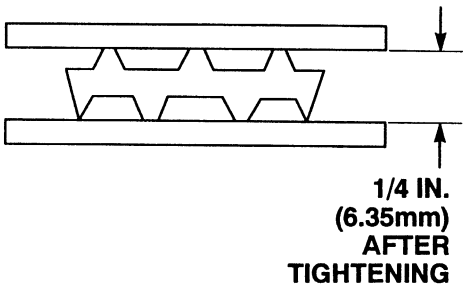
(i) Remove two locknuts (14), screws (15), washers (16), mounts (17) and (18) and bracket (13) from trailer arm (19). Discard locknuts and mounts.

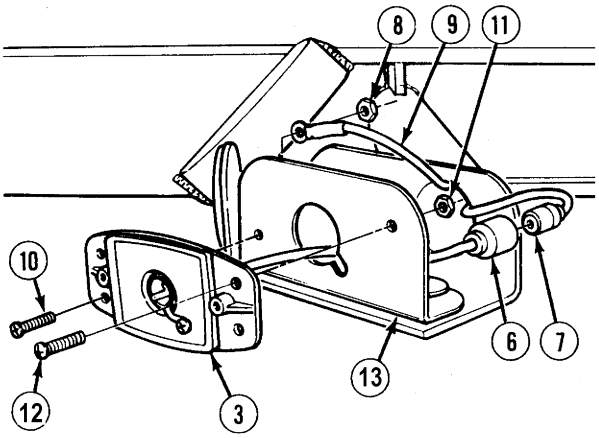
(2) *Installation.*

(a) Install bracket (13) on trailer arm (19) with mounts (18) and (17), washers (16), screws (15) and locknuts (14).



(b) Tighten locknuts (14) until two mounts (18) and (17) are compressed to 1/4 in. (6.35 mm).





(c) Install lens support (3) on bracket (13) with screw (12) and locknut (11).

NOTE

- Wire numbers are different between left and right sides. Left side is shown.
- Perform Steps (d) and (e) for left light. Perform Steps (f) and (g) for right light.

(d) Install screw (10) wire 1435-23 (9) and locknut (8) on bracket (13) and lens support (3).

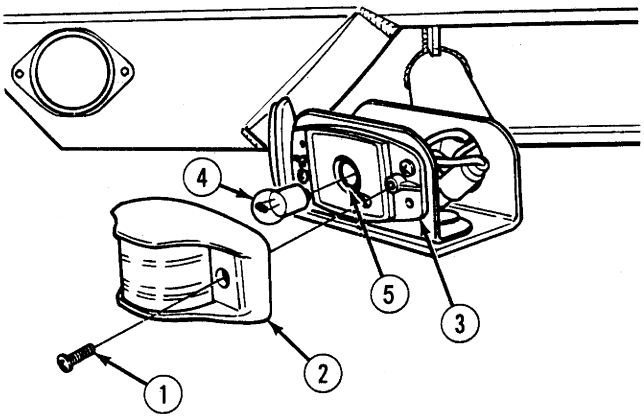
(e) Connect 1012-24 connector (6) on 489 connector (7).

(f) Install screw (10), wire 1435-23 (9) and locknut (8) on bracket (13) and lens support (3).

(g) Connect 1012-14 connector (6) on 489 connector (7).

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



(h) Apply anti-corrosion silicone compound to inside of lamp socket (5).

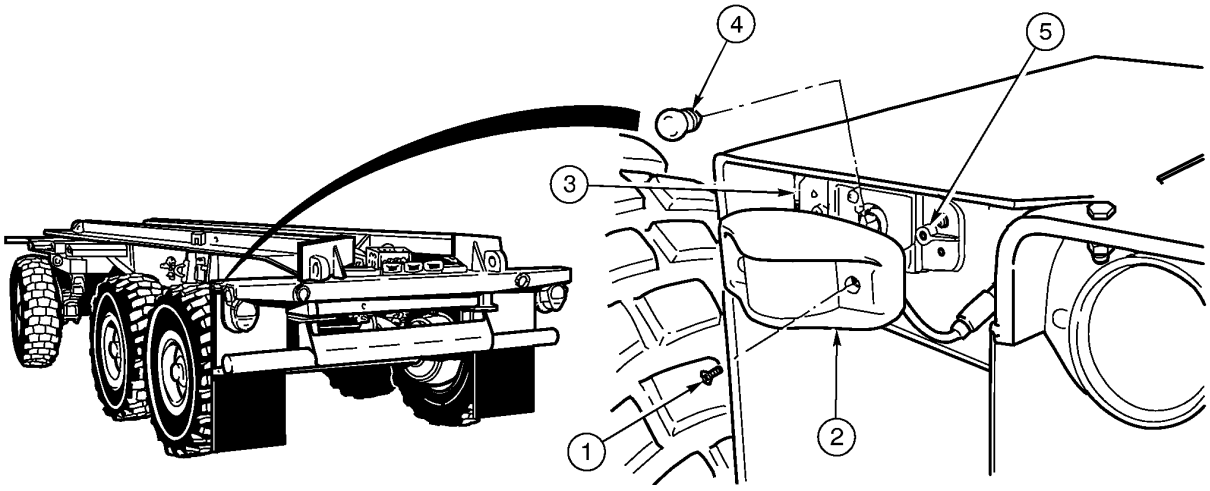
(i) Install lamp (4) in lamp socket (5).

(j) Install lens (2) on lens support (3) with two screws (1).

4-27. FRONT/REAR SIDE MARKER LIGHT/BRACKET REPLACEMENT (CONT).

b. Rear Side Marker Light Replacement.

(1) *Removal.*



NOTE

If only replacing lamp, perform Steps (a) and (b).

(a) Remove two screws (1) and lens (2) from lens support (3).

(b) Remove lamp (4) from lamp socket (5).

NOTE

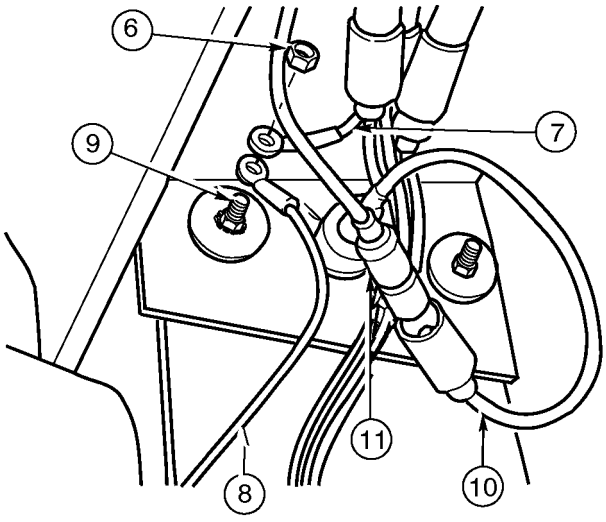
- Wire numbers are different between left and right sides. Left side is shown.
- Perform Steps (c) and (d) for left light. Perform Steps (e) and (f) for right light.
- Tag and mark all wires prior to removal.

(c) Remove locknut (6), wire 1435-25 (7) and wire 1435 (8) from screw (9). Discard locknut.

(d) Disconnect 1012-26 connector (10) from 489 connector (11).

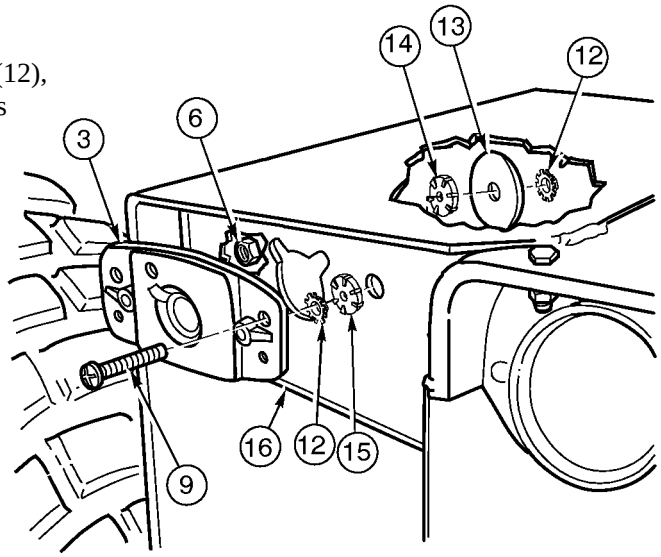
(e) Remove locknut (6), wire 1435-39 (7) and wire 1435 (8) from screw (9). Discard locknut.

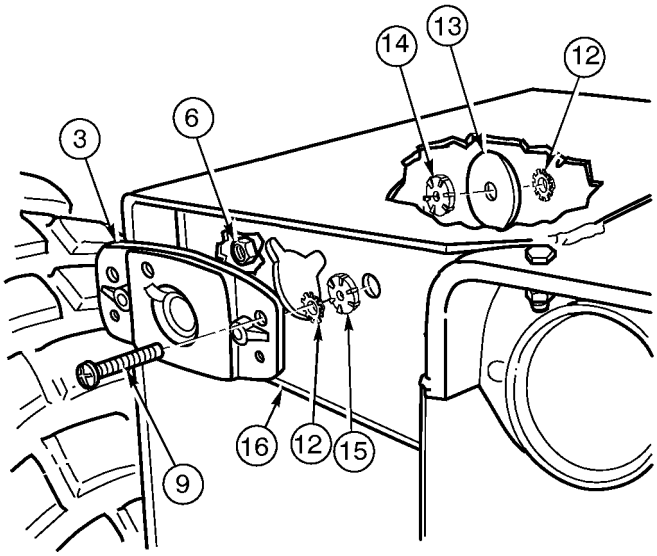
(f) Disconnect 1012-40 connector (10) from 489 connector (11).

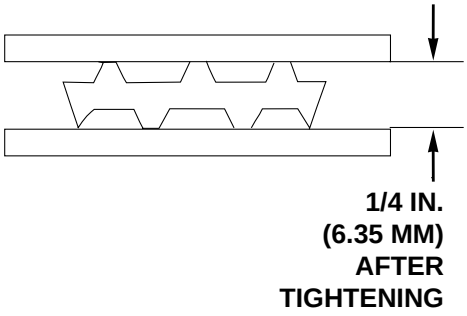


(g) Remove locknut (6), two locknuts (12), two washers (13), mounts (14), lens support (3) and mounts (15) from frame (16). Discard mounts and locknuts.

(h) Remove two screws (9) and locknuts (6) from lens support (3). Discard locknuts.







(2) *Installation.*

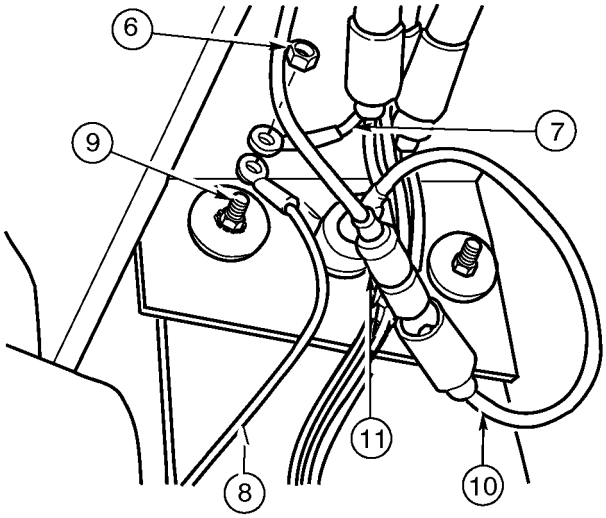
(a) Install two locknuts (6), mounts (15), lens support (3), two screws (9), mounts (14), washers (13), locknut (6) and two locknuts (12) on frame (16).

(b) Tighten locknuts (6) and (12) until two mounts (15) and (14) are compressed to 1/4 in. (6.35 mm).

4-27. FRONT/REAR SIDE MARKER LIGHT/BRACKET REPLACEMENT (CONT).

NOTE

- Wire numbers are different between left and right sides. Left side is shown.
- Perform Steps (c) and (d) for left light. Perform Steps (e) and (f) for right light.



(c) Connect 1012-26 connector (10) to electrical 489 connector (11).

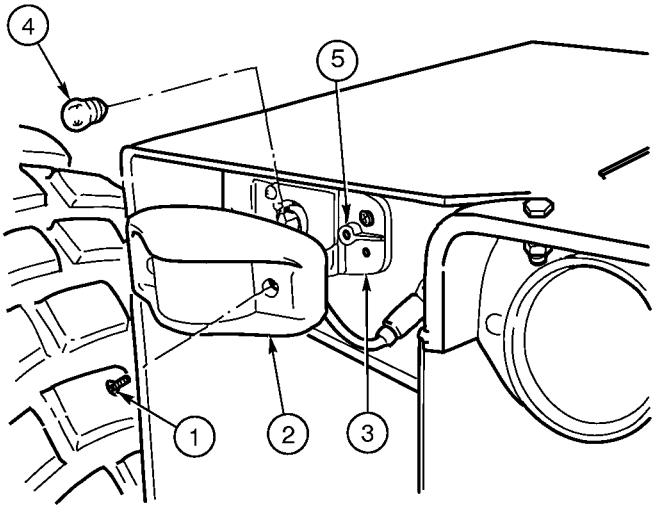
(d) Install wire 1435-25 (7) and wire 1435 (8) on screw (9) with locknut (6).

(e) Connect 1012-40 connector (10) on electrical 489 connector (11).

(f) Install wire 1435-39 (7) and wire 1435 (8) on screw (9) with locknut (6).

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



(g) Apply anti-corrosion silicone compound to inside of lamp socket (5).

(h) Install lamp (4) in lamp socket (5).

(i) Install lens (2) on lens support (3) with two screws (1).

c. Follow-On Maintenance:

- Connect intervehicular power cable, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-28. REAR MARKER LIGHTS/BRACKET REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

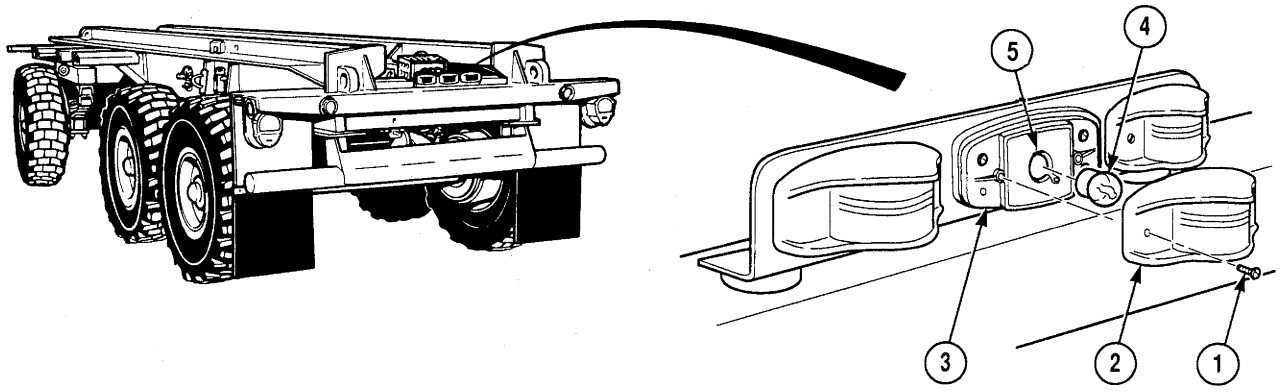
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Goggles, Industrial (Item 13, Appendix J)

Materials/Parts
Cable Ties (Item 8, Appendix E)
Silicone Compound, Anti-Corrosion (Item 20, Appendix E)

Materials/Parts - Continued
Tags, Identification (Item 23, Appendix E)
Locknut (6) (Item 31, Appendix I)
Lockwasher (4) (Item 51, Appendix I)

Equipment Condition
Wheel chocked, (Para 2-20)
Intervehicular power cable disconnected, (Para 2-9)

a. Removal.



NOTE

- If only replacing lamp, perform Steps (1) and (2).
- Tag and mark all wires before removal.
- Remove cable ties as required.
- All three running lights removed same way.
- Ground wire removed only on center lamp.

(1) Remove two screws (1) and lens (2) from lens support (3).

(2) Remove lamp (4) from lamp socket (5).

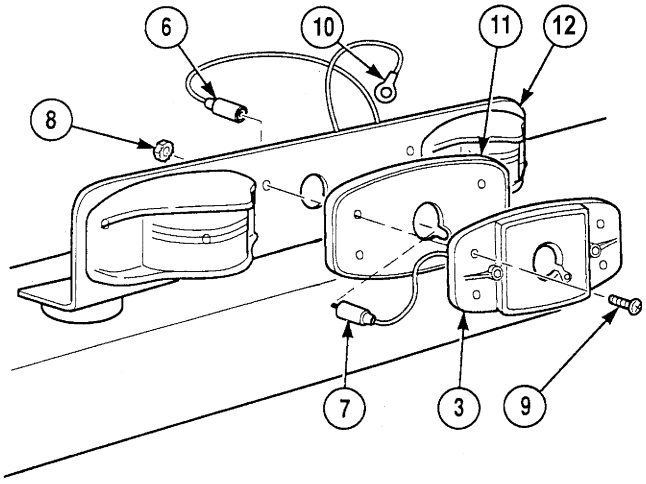
4-28. REAR MARKER LIGHTS/BRACKET REPLACEMENT (CONT).

(3) Disconnect 1012-31 connector (6) from 489 connector (7) on left light.

(4) Disconnect 1012-32 connector (6) from 489 connector (7) on center light.

(5) Disconnect 1012-33 connector (6) from 489 connector (7) on right light.

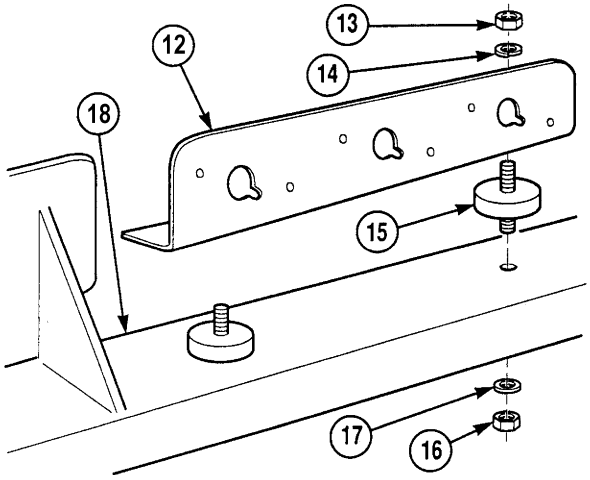
(6) Remove two locknuts (8), screws (9), wire 1435-34 (10), lens support (3) and gasket (11) from light bracket (12). Discard locknuts.



(7) Remove two nuts (13) and lockwashers (14) from bracket (12) and mounts (15). Discard lockwashers.

(8) Remove bracket (12) from mounts (15).

(9) Remove two nuts (16), lockwashers (17) and mounts (15) from frame (18). Discard lockwashers.



b. Installation.

NOTE

- If only replacing lamp, perform steps (9) and (10).
- To properly secure bracket, it may be necessary to tighten upper and lower nuts at the same time.
- All three lights are installed the same way.
- Replace cable ties as required.

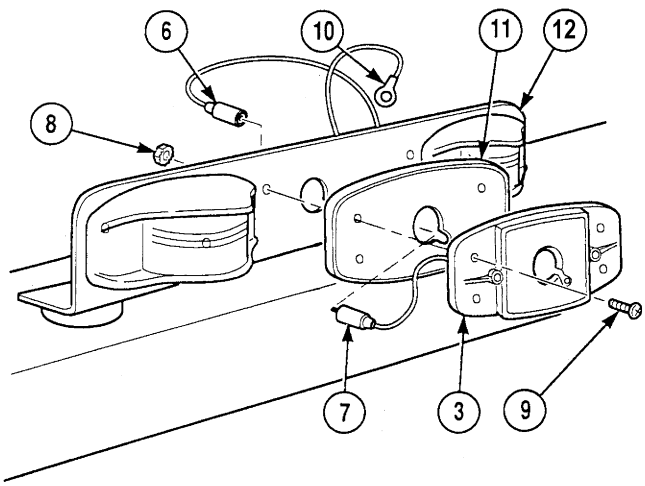
(1) Install two mounts (15) on frame (18) with two lockwashers (17) and nuts (16).

(2) Position bracket (12) on two mounts (15).

(3) Install two lockwashers (14) and nuts (13) on mounts (15).

NOTE

- Align alignment pin in back of lens support with cutouts in bracket and gasket.
- Ground wire only installed on center light.



(4) Install gasket (11), lens support (3) and wire 1435-34 (10) on bracket (12) with two screws (9) and locknuts (8).

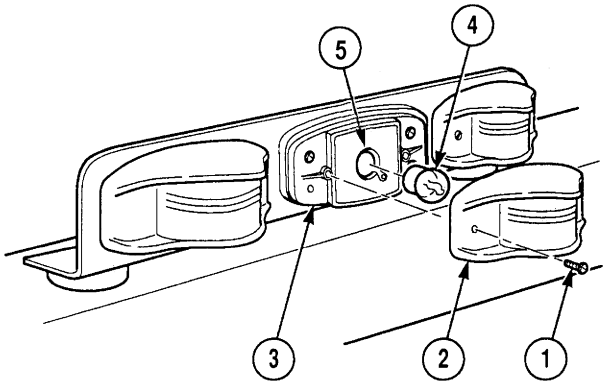
(5) Connect 1012-33 connector (6) to 489 connector (7) on right light.

(6) Connect 1012-32 connector (6) to 489 connector (7) on center light.

(7) Connect 1012-31 connector (6) to 489 connector (7) on left light.

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



(8) Apply anti-corrosion silicone compound to inside of lamp socket (5).

(9) Install bulb (4) in lamp socket (5).

(10) Install lens (2) with two screws (1).

c. Follow-On Maintenance:

- Connect intervehicular cables, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-29. REAR COMPOSITE LIGHT REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-On Maintenance

INITIAL SETUP

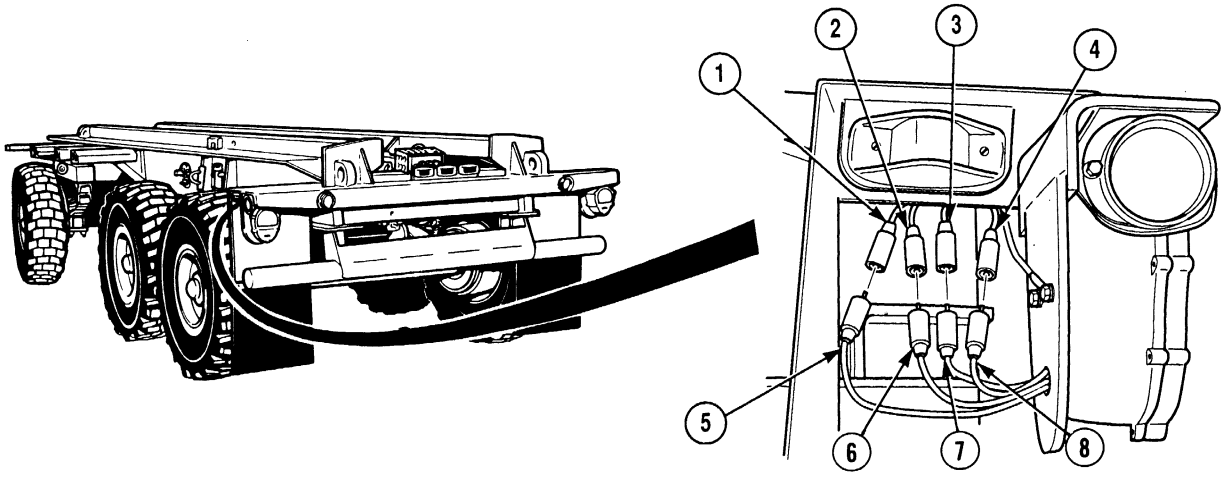
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Goggles, Industrial (Item 13, Appendix J)

Materials/Parts
Cable Ties (Item 8, Appendix E)
Silicone Compound, Anti-Corrosion (Item 20, Appendix E)

Materials/Parts - Continued
Tags, Identification (Item 23, Appendix E)
Lockwasher (2) (Item 51, Appendix I)
Packing, Preformed (Item 59, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Intervehicular power cable disconnected, (Para 2-9)

a. Removal.



NOTE

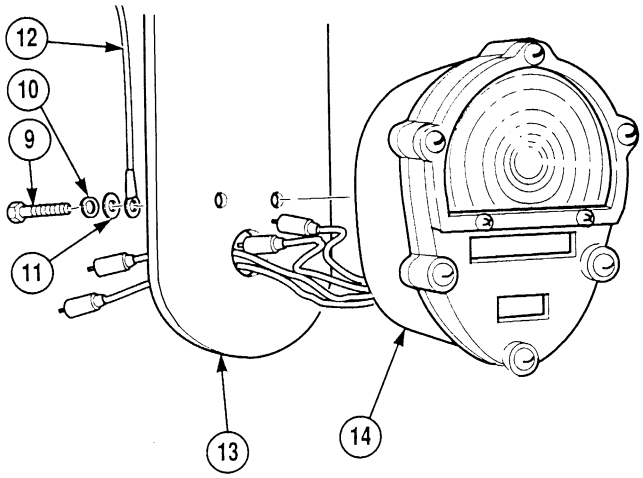
- If only removing lamps, perform steps (1) through (3) of ***b. Disassembly***.
- Tag and mark all wires before removal.
- Remove cable ties as required.
- If removing left light perform Step (1) and if removing right light, perform Step (2).

(1) Disconnect wire 1680/24-27 (1), wire 1678/23-28 (2), wire 1008/21-29 (3) and wire 1003/22-30 (4) from composite light wire 24 (5), wire 23 (6), wire 22 (7) and wire 21 (8).

(2) Disconnect wire 1680/24-38 (1), wire 1678/23-35 (2), wire 1004/22-36 (3) and wire 1008/21-37 (4) from composite light wire 24 (5), wire 23 (6), wire 22 (7) and wire 21 (8).

(3) Remove two screws (9), lockwashers (10), washers (11) and wire 1435 (12) from bracket (13) and housing (14). Discard lockwashers.

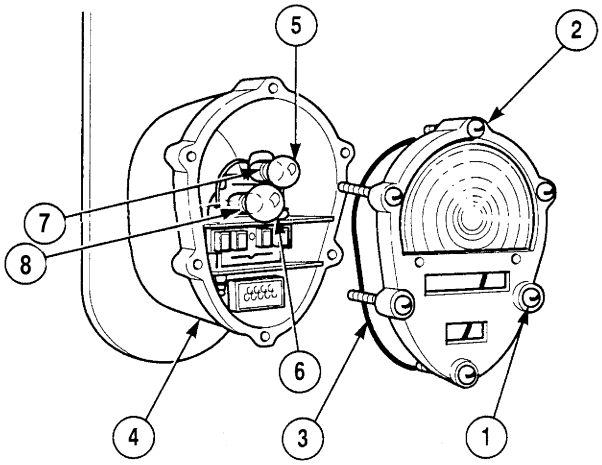
(4) Remove housing (14) from bracket (13).



b. Disassembly.

(1) Loosen five screws (1) and remove from housing cover (2) and preformed packing (3) from housing (4). Discard preformed packing.

(2) Remove lamps (5) and (6) from sockets (7) and (8).



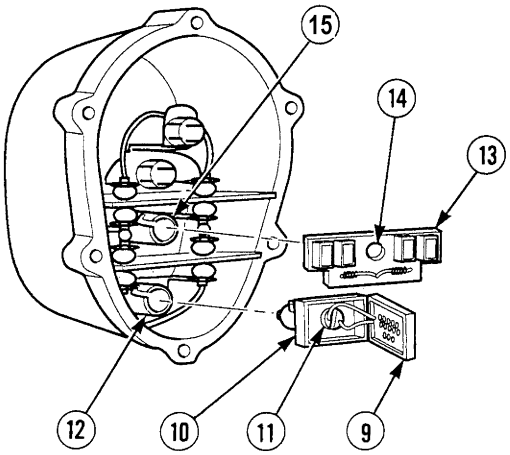
(3) Open blackout light door (9) on blackout brake light (10).

(4) Insert screwdriver through hole in blackout brake light (10). Push in and turn slot (11) to the left.

(5) Remove blackout brake light (10) from socket (12).

(6) Insert screwdriver through hole in blackout light (13). Push in and turn slot (14) to the left.

(7) Remove blackout light (13) from socket (15).



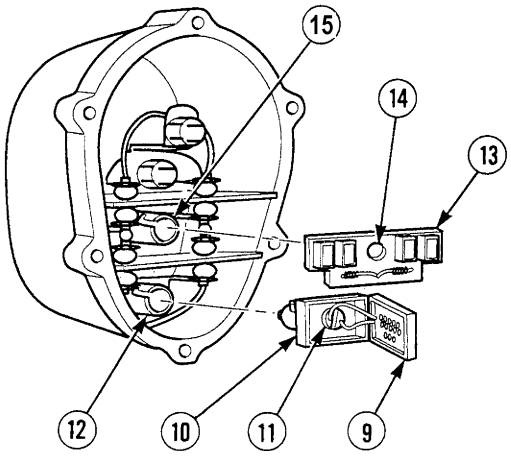
4-29. REAR COMPOSITE LIGHT REPAIR (CONT).

c. Cleaning/Inspection.

(1) Inspect lamp sockets for corrosion.

(2) Inspect lenses and light housing for cracks.

(3) Replace damaged parts.



d. Assembly.

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.

(1) Apply anti-corrosion silicone compound to inside of socket (15), socket (12), socket (7) and socket (8).

(2) Install blackout light (13) in socket (15).

(3) Lock blackout light (13) in place by pushing in and turning slot (14) to the right.

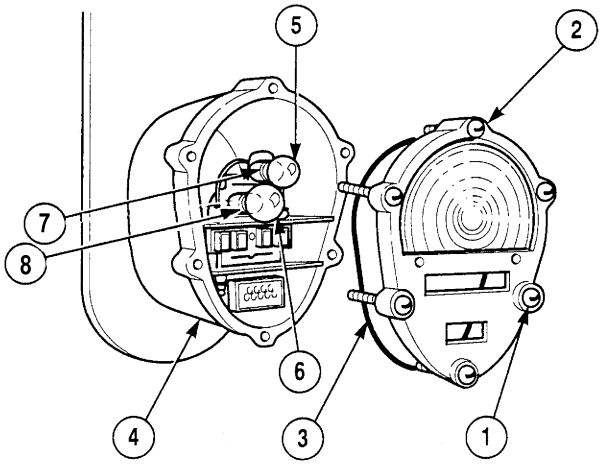
(4) Install blackout brake light (10) in socket (12).

(5) Install blackout brake light (10) in place by pushing in and turning slot (11) to the right.

(6) Close door (9) on blackout brake light (10).

(7) Install preformed packing (3) and housing cover (2) on housing (4) and tighten five screws (1).

(8) Install lamps (5) and (6) in sockets (7) and (8).

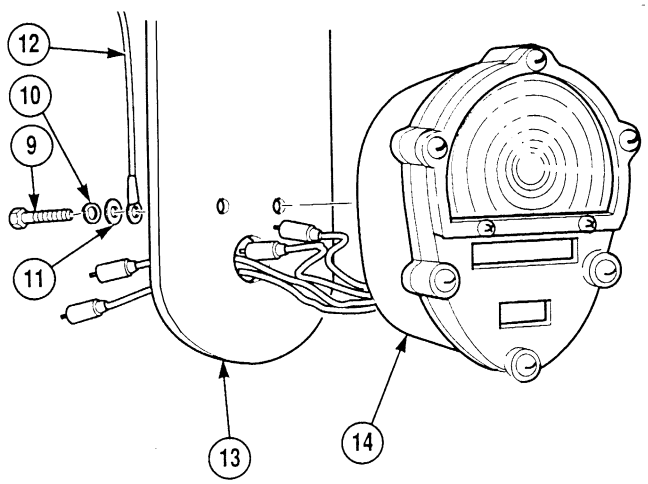


e. Installation.

NOTE

- Route connectors through bracket.
- Install cable ties as necessary.

(1) Install housing (14) on bracket (13) with two screws (9), wire 1435 (12), lockwashers (10) and washers (11).

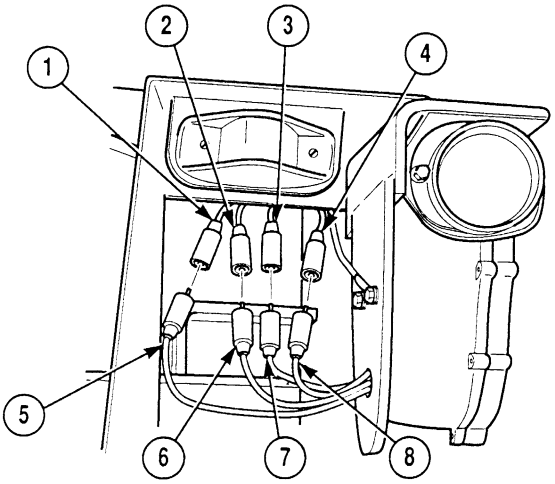


NOTE

If installing left light perform Step (2), if installing right light, perform Step (3).

(2) Connect wire 1680/24-27 (1), wire 1678/23-28 (2) wire 1008/21-29 (3) and wire 1003/22-30 (4) on composite light wire 24 (5), wire 23 (6), wire 22 (7) and wire 21 (8).

(3) Connect wire 1680/24-38 (1), wire 1678/23-35 (2), wire 1004/22-36 (3) and wire 1008/21-37 (4) on composite light wire 24 (5), wire 23 (6), wire 22 (7) and wire 21 (8).



f. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).
- Connect intervehicular power cable, (Para 2-9).

END OF TASK

4-30. WIRE HARNESS REPLACEMENT.

This task covers:

a. Front Electrical Box Cover Replacement
b. Rear Electrical Box Cover Replacement
c. Front Side Marker Harness (Right Side) Replacement
d. Front Side Marker Harness (Left Side) Replacement
e. Wire Harness (Right Side) Replacement
f. Wire Harness (Left Side) Replacement
g. Rear Side Marker Harness (Left Side) Replacement
h. Rear Side Marker Harness (Right Side) Replacement
i. Rear (Center) Marker Light Harness Replacement
j. Composite Light Harness (Left Side) Replacement
k. Composite Light Harness (Right Side) Replacement
l. 12 Volt Connector Replacement
m. 24 Volt Connector Replacement
n. Wire Harness Replacement (Drawbar Extension)
o. Follow-On Maintenance

INITIAL SETUP

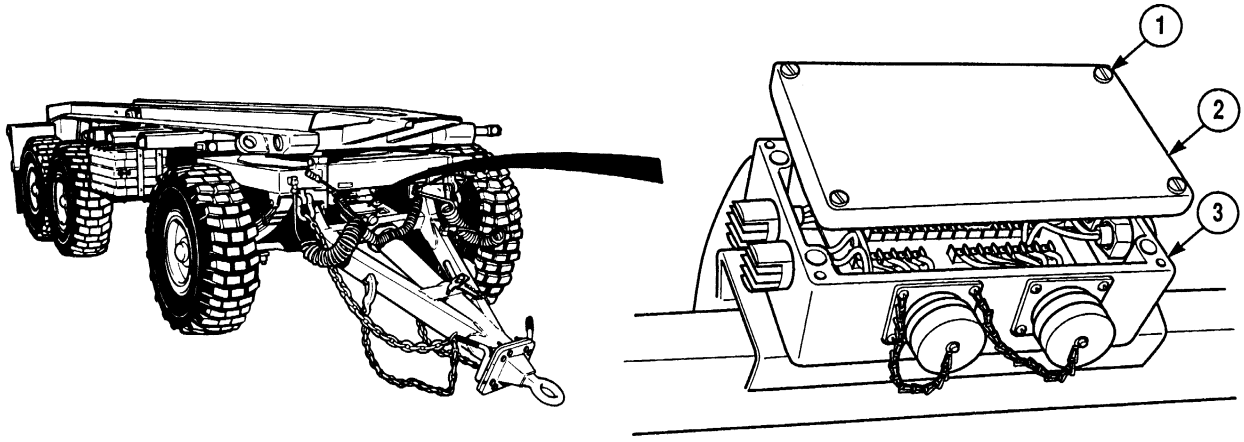
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Adhesive Sealant (Item 4, Appendix E)
Cable Ties (Item 8, Appendix E)
Tags, Identification (Item 23, Appendix E)
Gasket (Item 17, Appendix I)
Gasket (Item 18, Appendix I)
Locknut (Item 31, Appendix I)
Locknut (4) (Item 32, Appendix I)

Materials/Parts - Continued
Locknut (9) (Item 33, Appendix I)
Locknut (Item 34, Appendix I)
Locknut (Item 36, Appendix I)
Locknut (Item 37, Appendix I)
Locknut (Item 40, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Intervehicular cables disconnected, (Para 2-9)

a. Front Electrical Box Cover Replacement.



WARNING

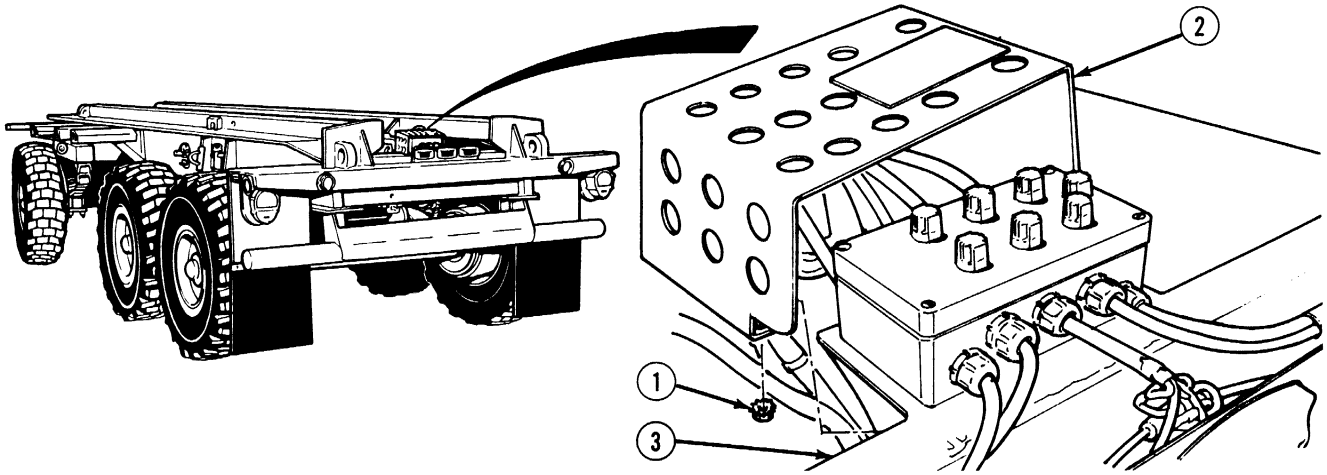
Front electrical box and external resistors may become extremely hot and cause burns upon contact. Use extreme caution to avoid injury to personnel.

(1) *Removal.* Loosen four captive screws (1) and remove box cover (2) from box (3).

(2) *Installation.* Install cover (2) on box (3) with four captive screws (1).

b. Rear Electrical Box Cover Replacement.

(1) *Removal.*



WARNING

Rear electrical box and external resistors may become extremely hot and cause burns upon contact. Use extreme caution to avoid injury to personnel.

(a) Remove four tenz nuts (1) and heat shield (2) from bracket (3).

4-30. WIRE HARNESS REPLACEMENT (CONT).

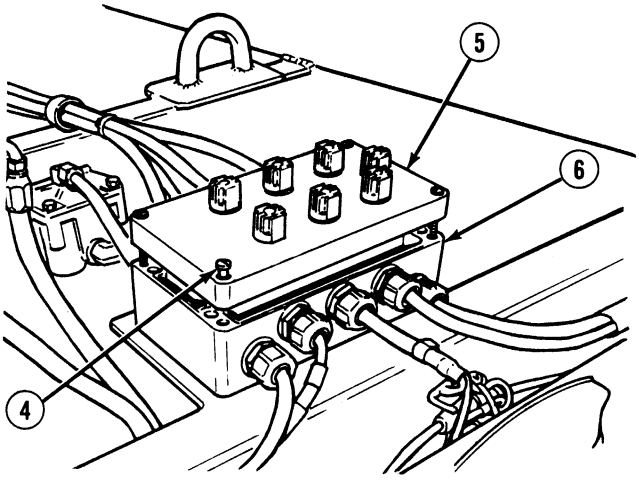
NOTE

Box cover will be connected to the box by wires. Set cover to one side to gain access to the box.

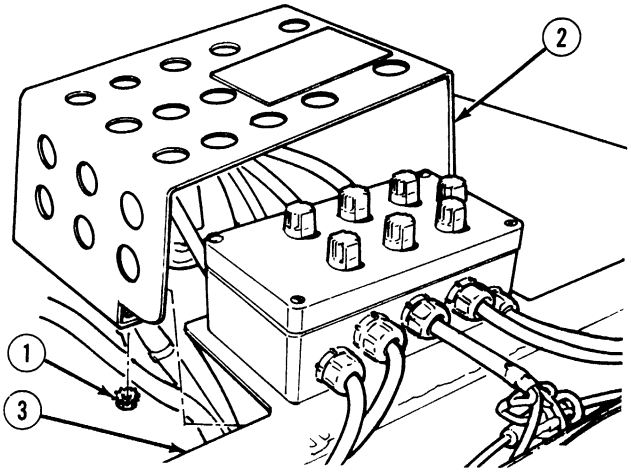
(b) Loosen four captive screws (4) and remove box cover (5) from box (6).

(2) *Installation.*

(a) Install cover (5) on box (6) and tighten four captive screws (4).

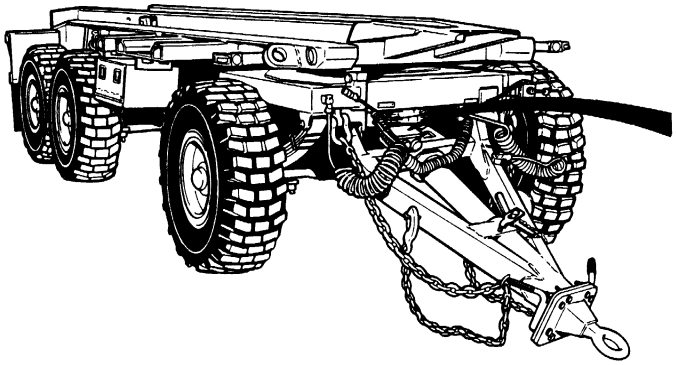


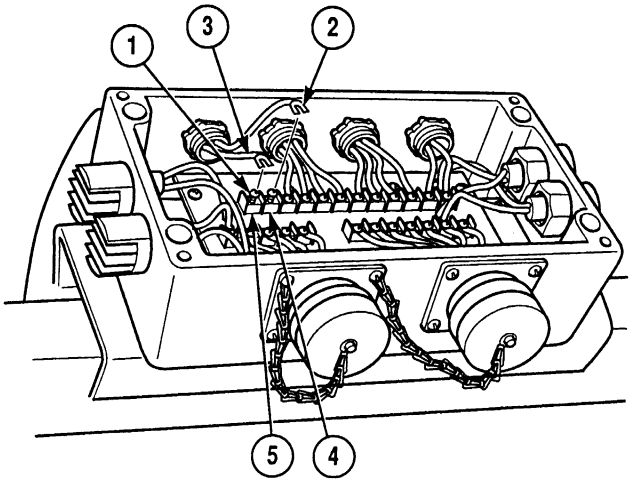
(b) Install heat shield (2) on bracket (3) with four locknuts (1).



c. Front Side Marker Harness (Right Side) Replacement.

(1) *Removal.*





NOTE

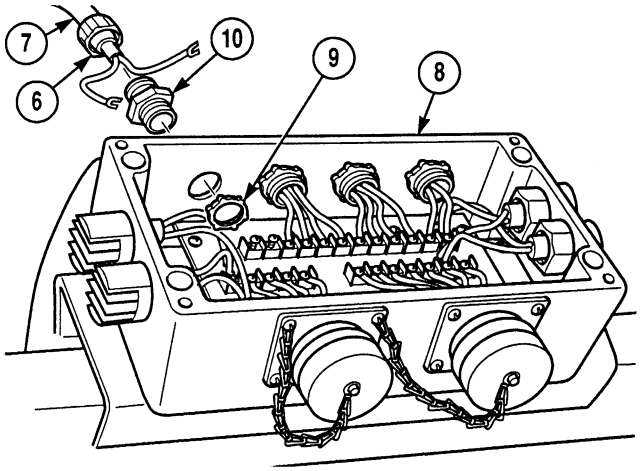
- Tag and mark all wires before removing.
- Remove cable ties as required.

(a) Refer to Subparagraph ***a.*** and remove front electrical box cover.

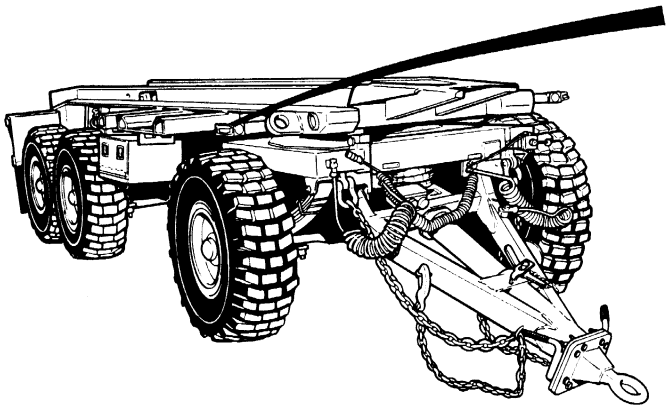
(b) Loosen two screws (1) and remove wire 1012-14 (2) and wire 1435-13 (3) from terminal 1012-14 (4) and terminal 1435-13 (5).

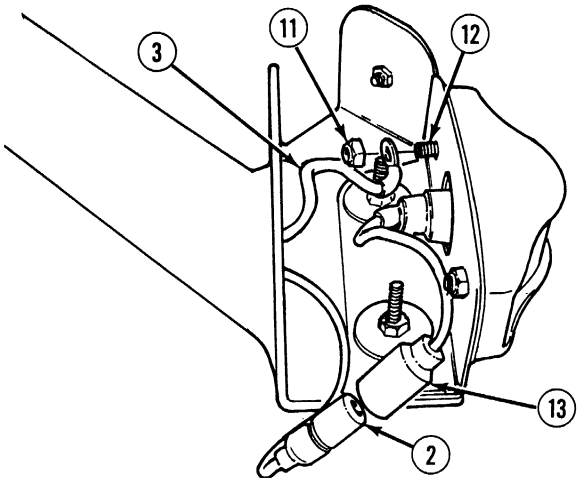
(c) Loosen cable nut (6) and pull cable (7) out of front electrical box (8).

(d) Remove locknut (9) and box connector (10) from front electrical box (8).



4-30. WIRE HARNESS REPLACEMENT (CONT).



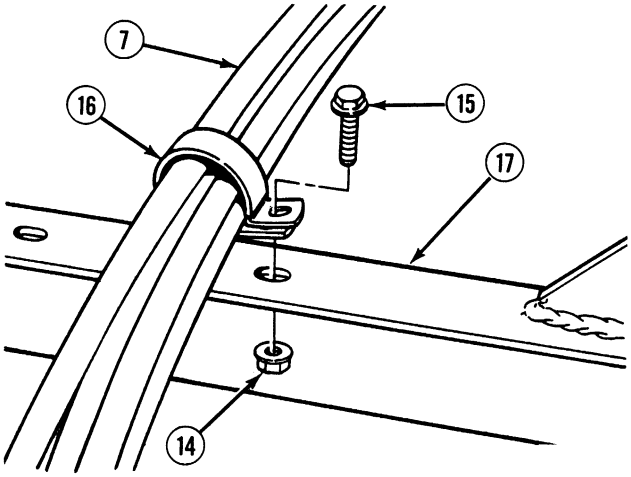


(e) Remove locknut (11) and wire 1435-13 (3) from screw (12). Discard locknut.

(f) Disconnect wire 1012-14 (2) from wire 489 (13).

(g) Remove locknut (14), screw (15) and cushion clip (16) from cable (7) and trailer frame (17). Discard locknut.

(h) Remove cable (7) from trailer frame (17).



(2) *Installation.*

NOTE

Install cable ties as required.

(a) Position cable (7) on trailer frame (17).

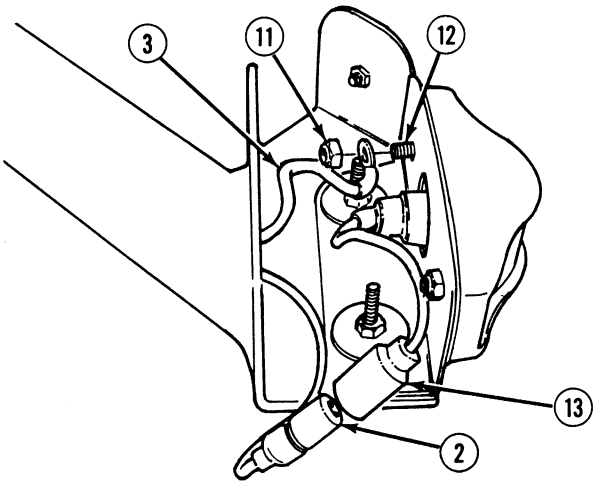
NOTE

Ensure cable is properly positioned prior to tightening clamp.

(b) Install cushion clip (16), screw (15) and locknut (14) on cable (7) and trailer frame (17).

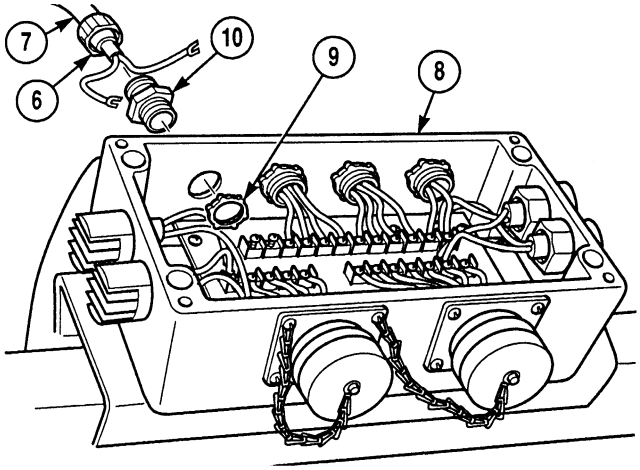
(c) Install wire 1435-13 (3) on screw (12) with locknut (11).

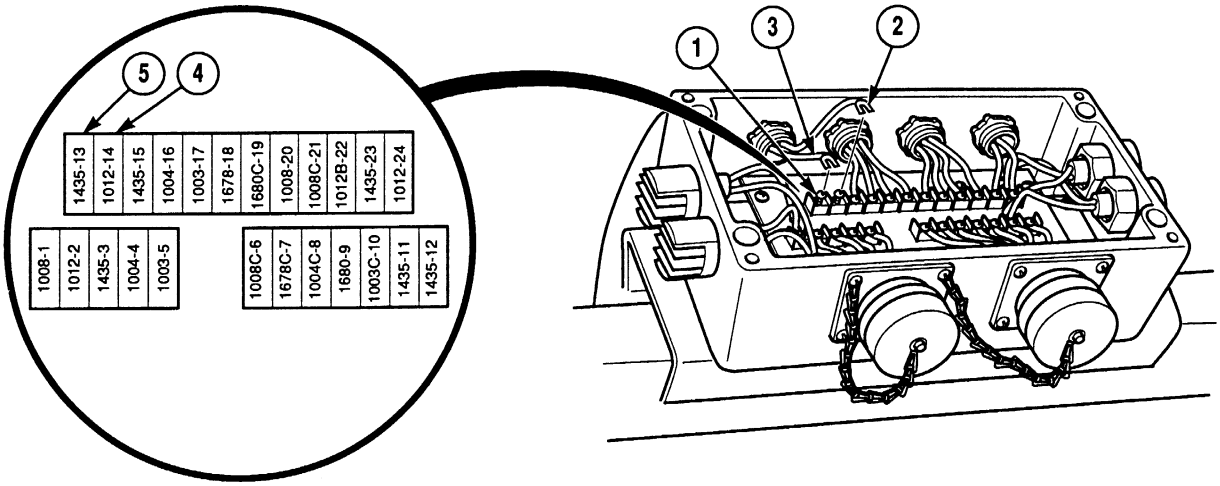
(d) Connect wire 1012-14 (2) on wire 489 (13).



(e) Install box connector (10) on electrical box (8) with locknut (9).

(f) Install cable (7) on box connector (10) and tighten cable nut (6).





(g) Position wire 1435-13 (3) on terminal 1435-13 (5).

(h) Tighten screw (1).

(i) Position wire 1012-14 (2) on terminal 1012-14 (4).

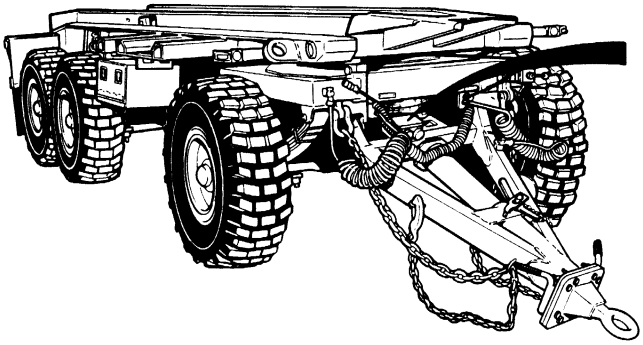
(j) Tighten screw (1).

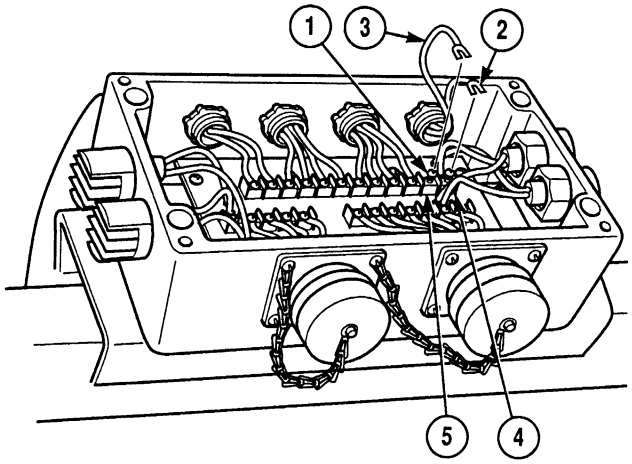
(k) Refer to Subparagraph ***a.*** and install front electrical box cover.

4-30. WIRE HARNESS REPLACEMENT (CONT).

d. Front Side Marker Harness (Left Side) Replacement.

(1) *Removal.*





NOTE

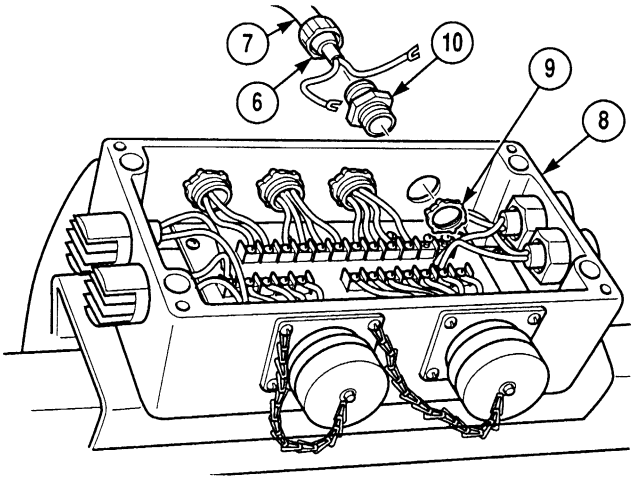
- Tag and mark all wires before removing.
- Remove cable ties as required.

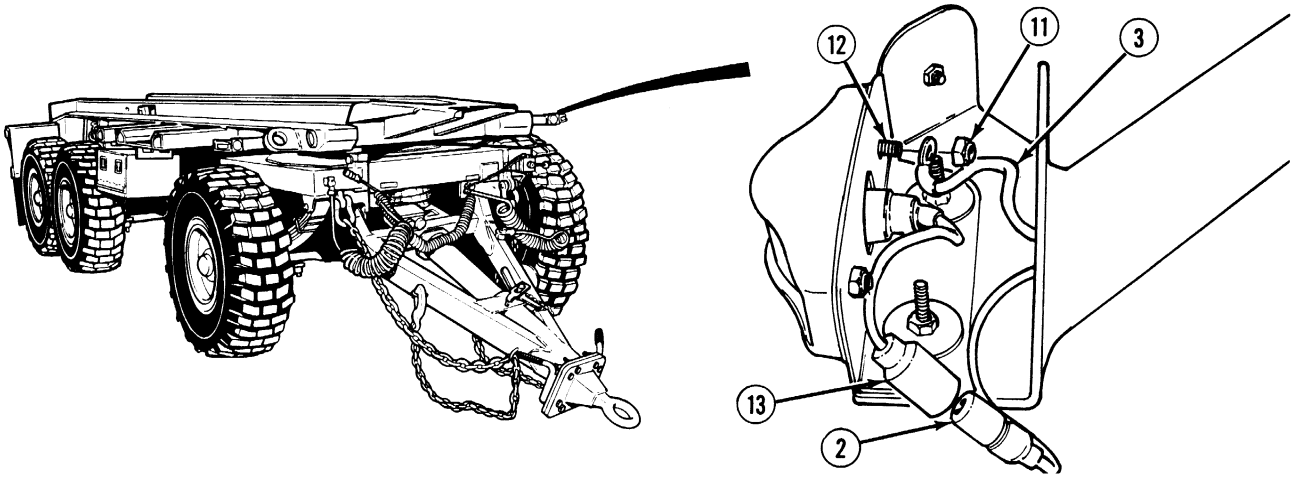
(a) Refer to Subparagraph ***a.*** and remove front electrical box cover.

(b) Loosen two screws (1) and remove wire 1012-24 (2) and wire 1435-23 (3) from terminal 1012-24 (4) and terminal 1435-23 (5).

(c) Loosen cable nut (6) and pull cable (7) out of front electrical box (8).

(d) Remove locknut (9) and box connector (10) from front electrical box (8).



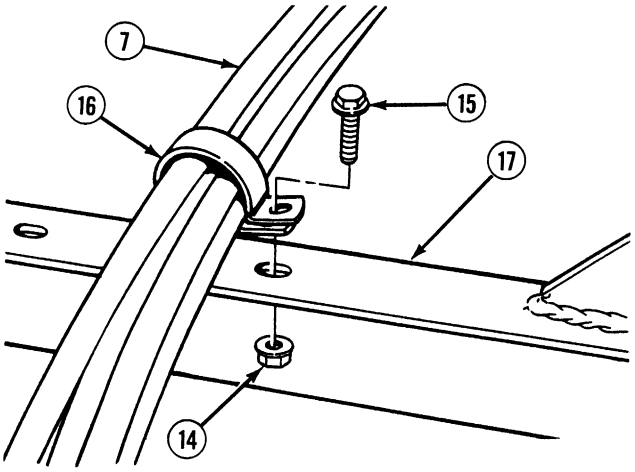


(e) Remove locknut (11) and wire 1435-23 (3) from screw (12). Discard locknut.

(f) Disconnect wire 1012-24 (2) from wire 489 (13).

(g) Remove locknut (14), screw (15) and cushion clip (16) from cable (7) and trailer frame (17). Discard locknut.

(h) Remove cable (7) from trailer frame (17).



(2) *Installation.*

NOTE

Install cable ties as required.

(a) Position cable (7) on trailer frame (17).

NOTE

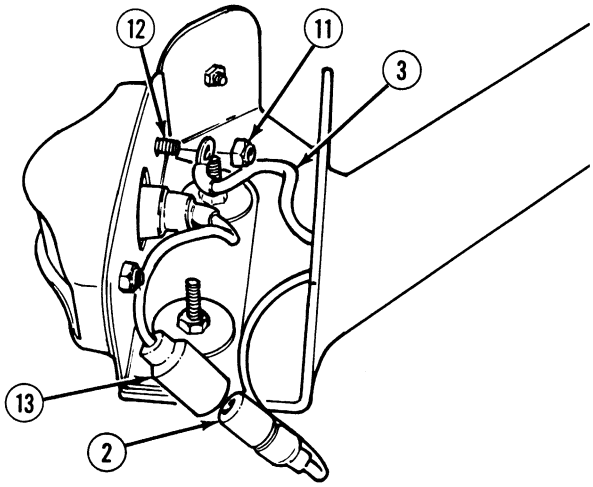
Ensure cable is properly positioned prior to tightening clamp.

(b) Install cushion clip (16), screw (15) and locknut (14) on cable (7) and trailer frame (17).

4-30. WIRE HARNESS REPLACEMENT (CONT).

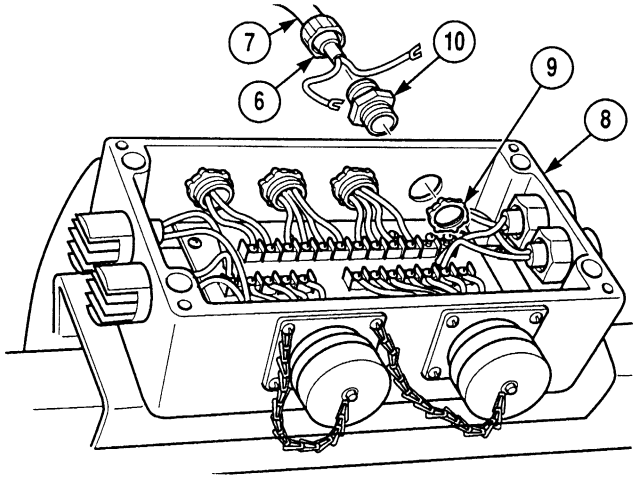
(c) Install wire 1435-23 (3) on screw (12) with locknut (11).

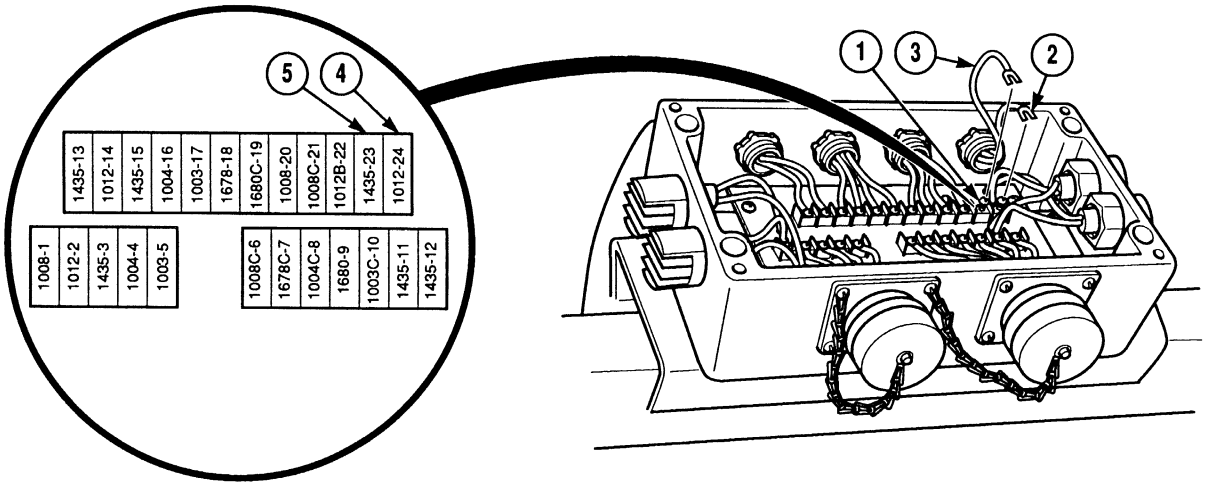
(d) Connect wire 1012-24 (2) on wire 489 (13).



(e) Install box connector (10) on electrical box (8) with locknut (9).

(f) Install cable (7) on box connector (10) and tighten cable nut (6).





(g) Position wire 1435-23 (3) on terminal 1435-23 (5).

(h) Tighten screw (1).

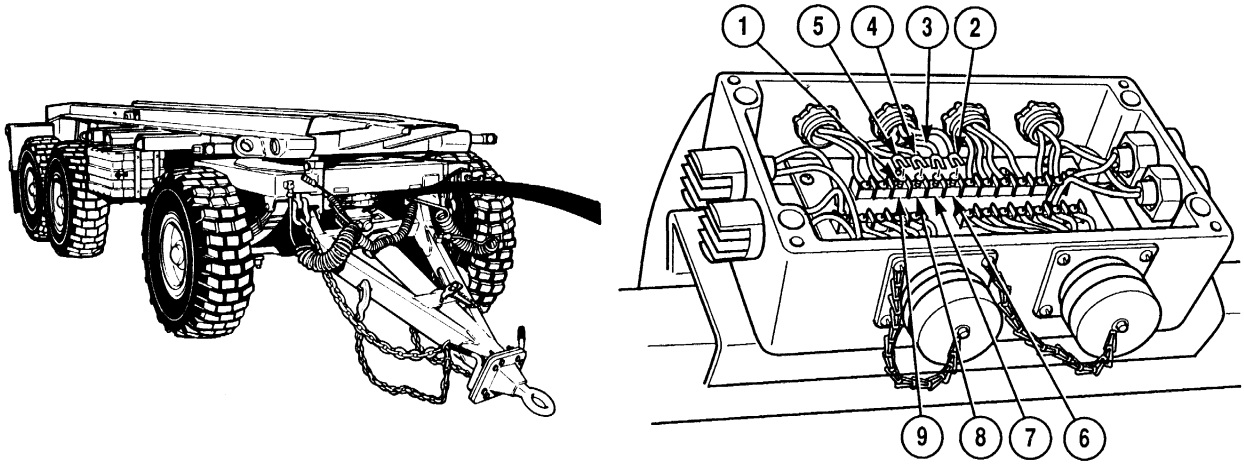
(i) Position wire 1012-24 (2) on terminal 1012-24 (4).

(j) Tighten screw (1).

(k) Refer to Subparagraph ***a.*** and install front electrical box cover.

e. Wire Harness (Right Side) Replacement.

(1) *Removal.*



NOTE

- Tag and mark all wires prior to removal.
- Remove cable ties as required.

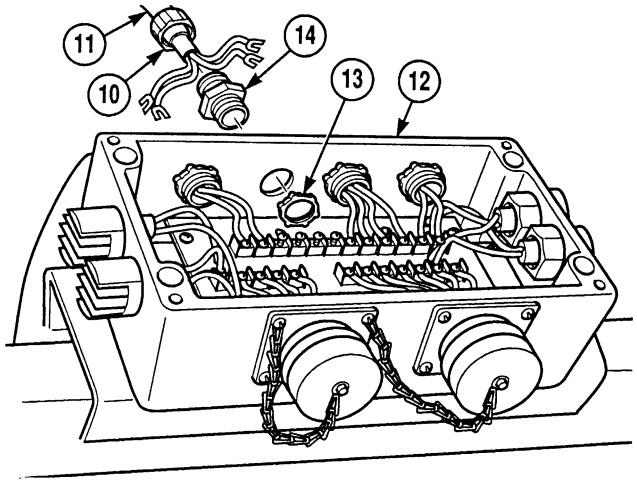
(a) Refer to Subparagraphs ***a.*** and ***b.*** and remove front and rear electrical box covers.

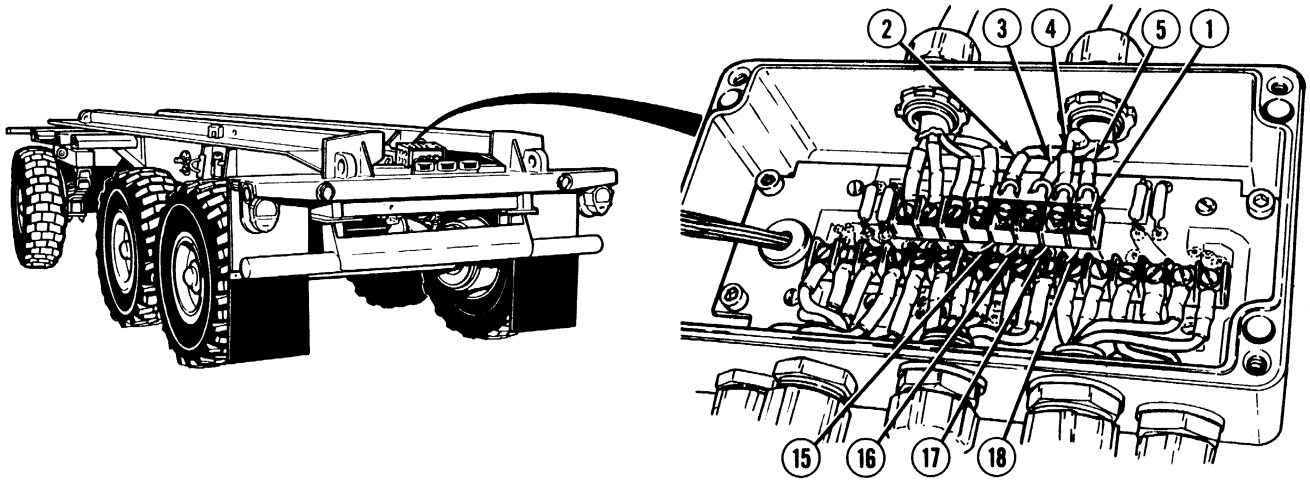
(b) Loosen four screws (1) and disconnect wire 1678C-18 (2), wire 1003-17 (3), wire 1004-16 (4) and wire 1435-15 (5) from terminal 1678-18 (6), terminal 1003-17 (7), terminal 1004-16 (8) and terminal 1435-15 (9).

4-30. WIRE HARNESS REPLACEMENT (CONT).

(c) Loosen cable nut (10) and pull cable (11) out of front electrical box (12).

(d) Remove locknut (13) and box connector (14) from front electrical box (12).

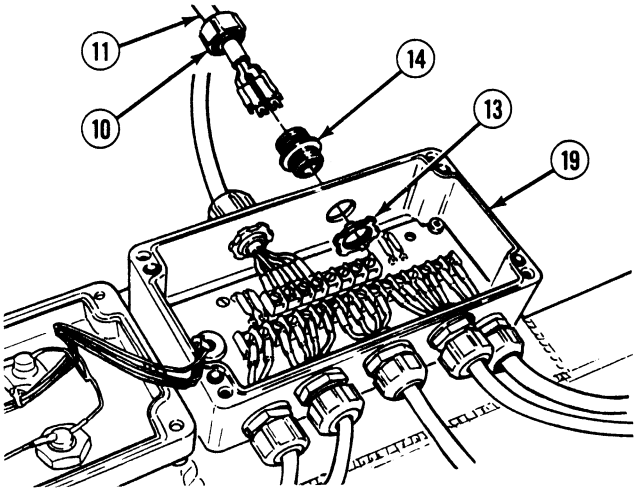




(e) Loosen four screws (1) and disconnect wire 1678C-18 (2), wire 1003-17 (3), wire 1004-16 (4) and wire 1435-15 (5) from terminal 1678C-18 (15), terminal 1003-17 (16), terminal 1004-16 (17) and terminal 1435-15 (18).

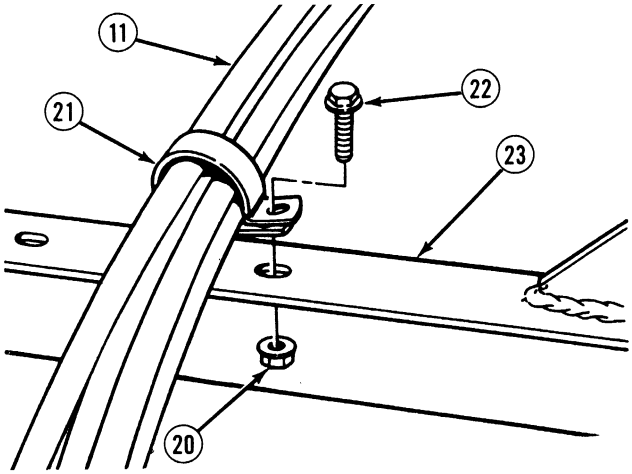
(f) Loosen cable nut (10) and pull cable (11) out of rear electrical box (19).

(g) Remove locknut (13) and box connector (14) from rear electrical box (19).



(h) Remove eight locknuts (20), cushion clips (21) and screws (22) from cable (11) and trailer frame (23). Discard locknuts.

(i) Remove cable (11) from trailer frame (23).



(2) *Installation.*

NOTE

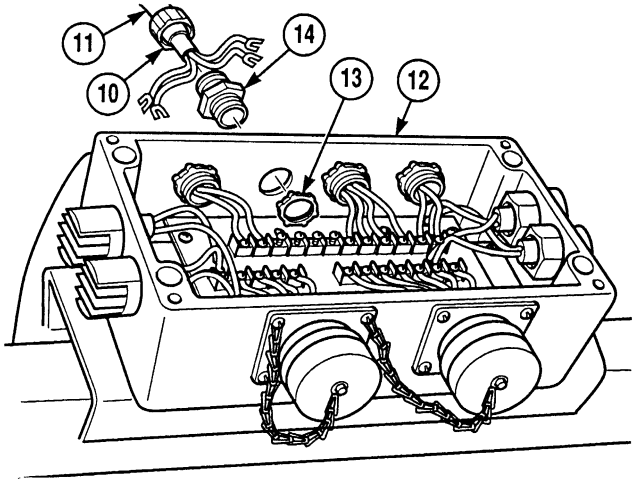
- Ensure cable is properly aligned before installing clamps.
- Install cable ties as required.

(a) Position cable (11) on trailer frame (23).

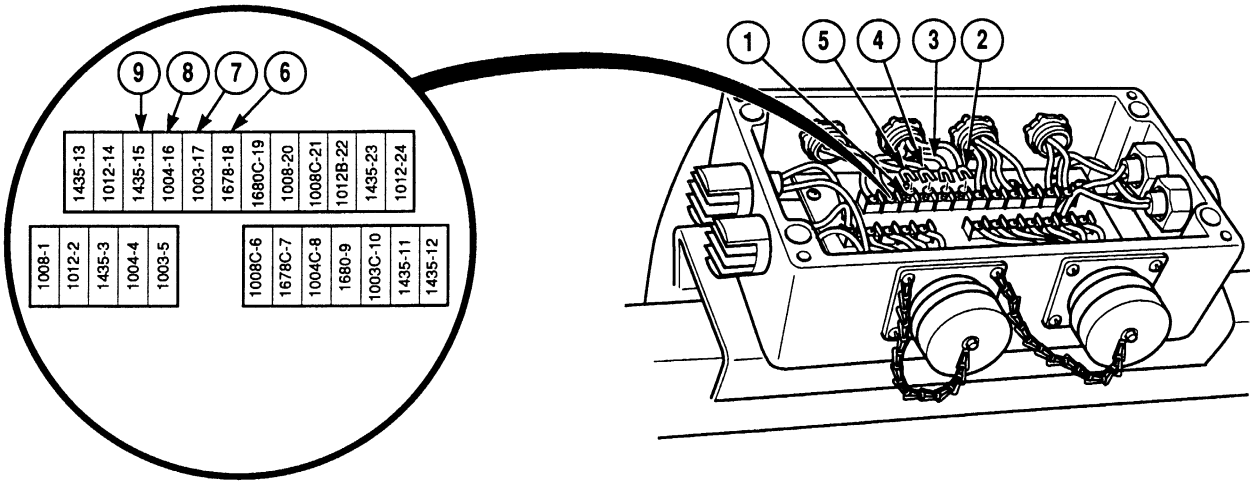
(b) Install cable (11) on trailer frame (23) with eight cushion clips (21), screws (22) and locknuts (20).

(c) Install box connector (14) on front electrical box (12) with locknut (13).

(d) Install cable (11) on box connector (14) and tighten cable nut (10).



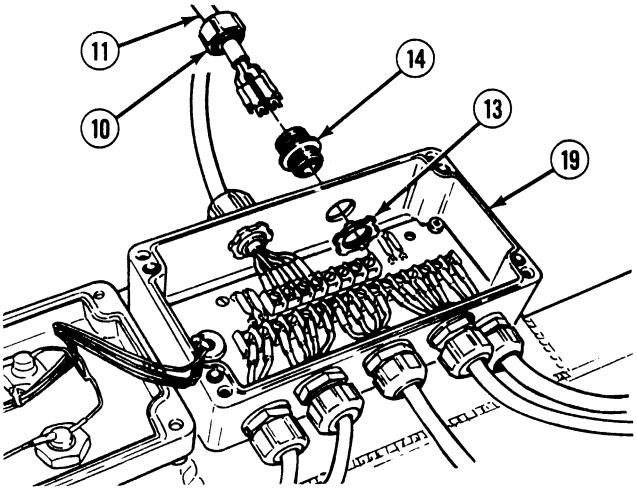
4-30. WIRE HARNESS REPLACEMENT (CONT).

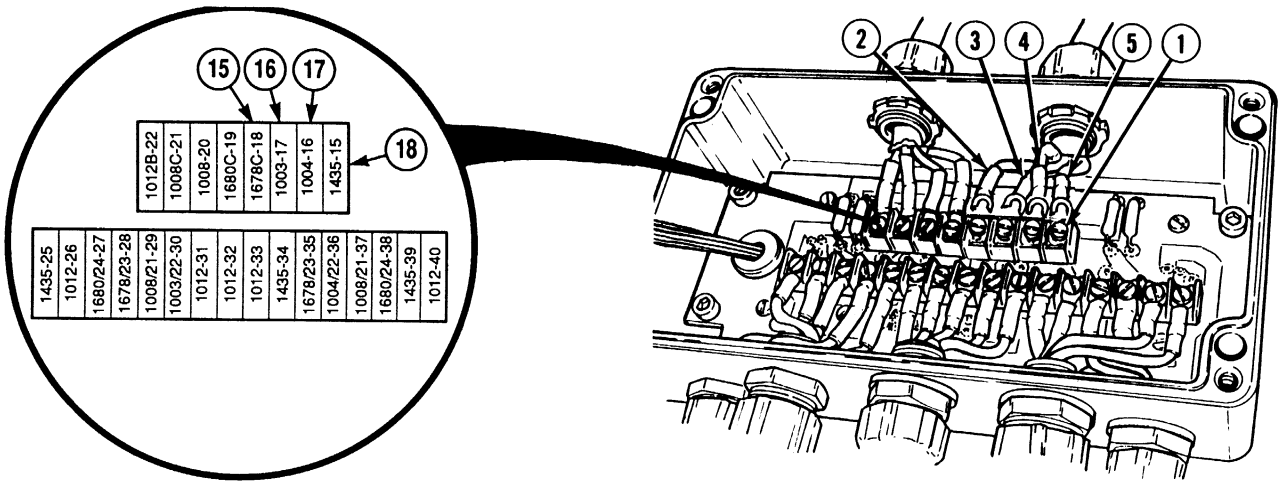


(e) Position wire 1678C-18 (2), wire 1003-17 (3), wire 1004-16 (4) and wire 1435-15 (5) on terminal 1678-18 (6), terminal 1003-17 (7), terminal 1004-16 (8) and terminal 1435-15 (9) and tighten four screws (1).

(f) Install box connector (14) on rear electrical box (19) with locknut (13).

(g) Install cable (11) on box connector (14) and tighten nut (10).



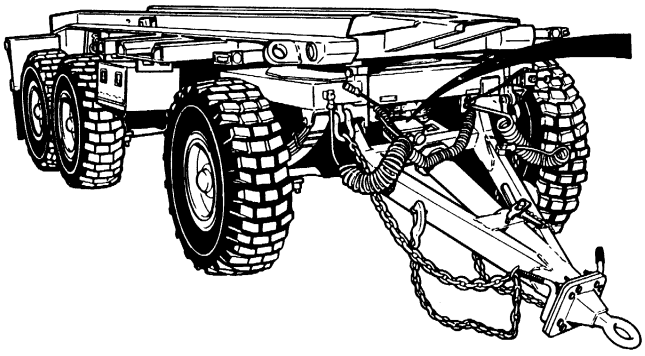


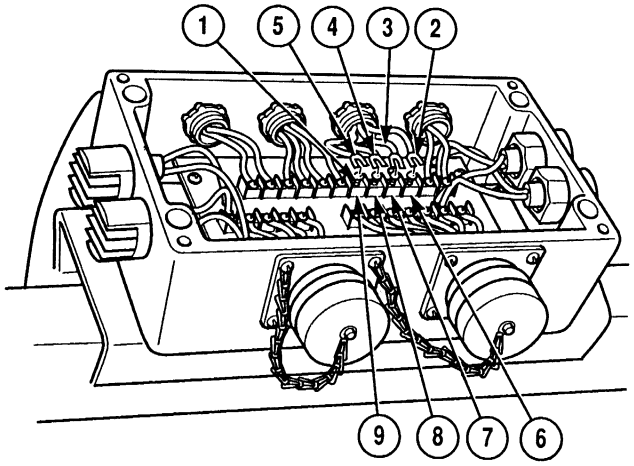
(h) Position wire 1678C-18 (2), wire 1003-17 (3), wire 1004-16 (4) and wire 1435-15 (5) on terminal 1678C-18 (15), terminal 1003-17 (16), terminal 1004-16 (17) and terminal 1435-15 (18) and tighten four screws (1).

(i) Refer to Subparagraphs ***a.*** and ***b.*** and install front and rear electrical box covers.

f. Wire Harness (Left Side) Replacement.

(1) *Removal.*





NOTE

- Tag and mark all wires prior to removal.
- Remove cable ties as required.

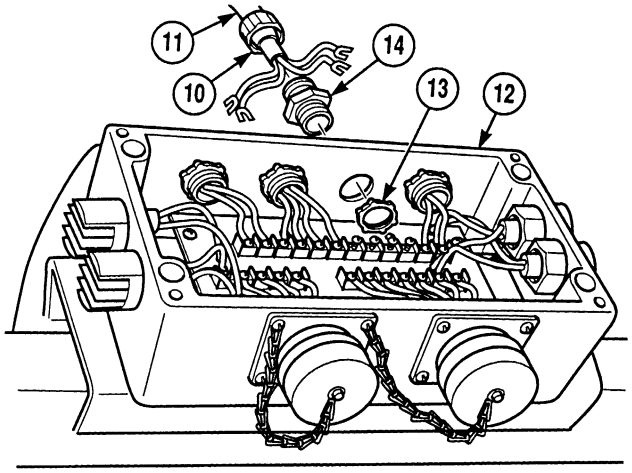
(a) Refer to Subparagraphs ***a.*** and ***b.*** and remove front and rear electrical box covers.

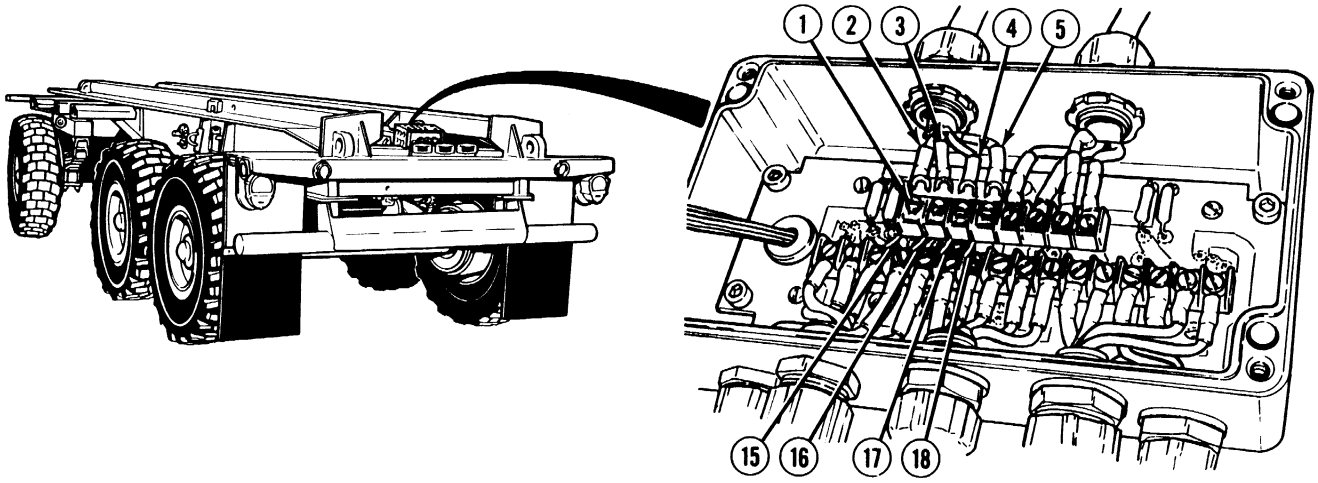
(b) Loosen four screws (1) and disconnect wire 1012B-22 (2), wire 1008C-21 (3), wire 1008-20 (4) and wire 1680C-19 (5) from terminal 1012B-22 (6), terminal 1008C-21 (7), terminal 1008-20 (8) and terminal 1680-19 (9).

4-30. WIRE HARNESS REPLACEMENT (CONT).

(c) Loosen cable nut (10) and pull cable (11) out of front electrical box (12).

(d) Remove locknut (13) and box connector (14) from front electrical box (12).

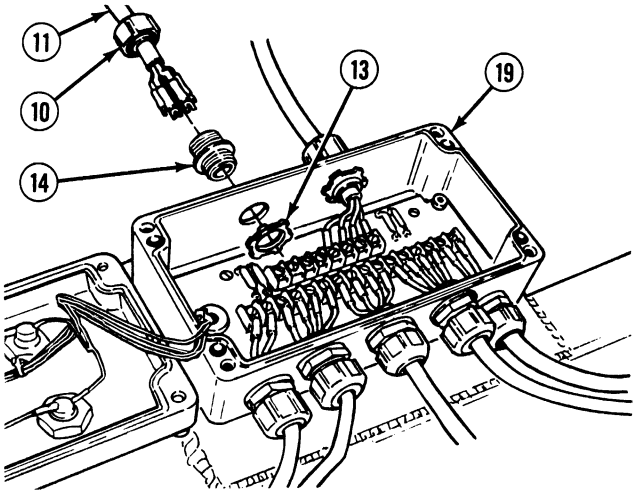




(e) Loosen four screws (1) and disconnect wire 1012B-22 (2), wire 1008C-21 (3), wire 1008-20 (4) and wire 1680C-19 (5) from terminal 1012B-22 (15), terminal 1008C-21 (16), terminal 1008-20 (17) and terminal 1680C-19 (18).

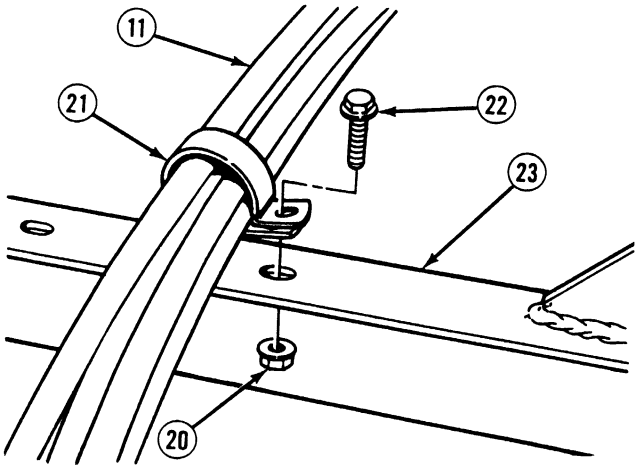
(f) Loosen cable nut (10) and pull cable (11) out of rear electrical box (19).

(g) Remove locknut (13) and box connector (14) from rear electrical box (19).



(h) Remove eight locknuts (20), cushion clips (21) and screws (22) from cable (11) and trailer frame (23). Discard locknuts.

(i) Remove cable (11) from trailer frame (23).



(2) *Installation.*

NOTE

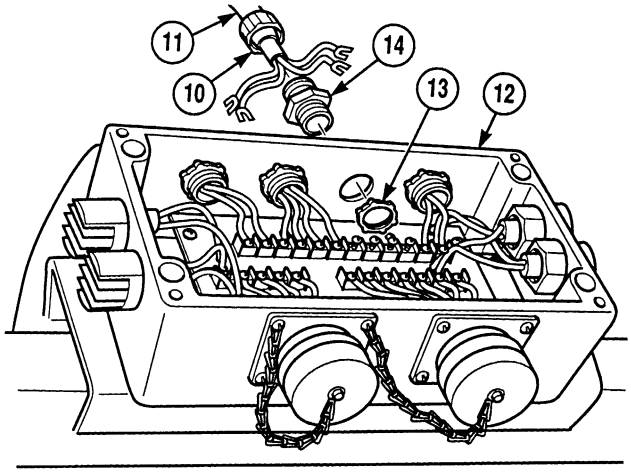
- Ensure cable is properly aligned before installing clamps.
- Install cable ties as required.

(a) Position cable (11) on trailer frame (23).

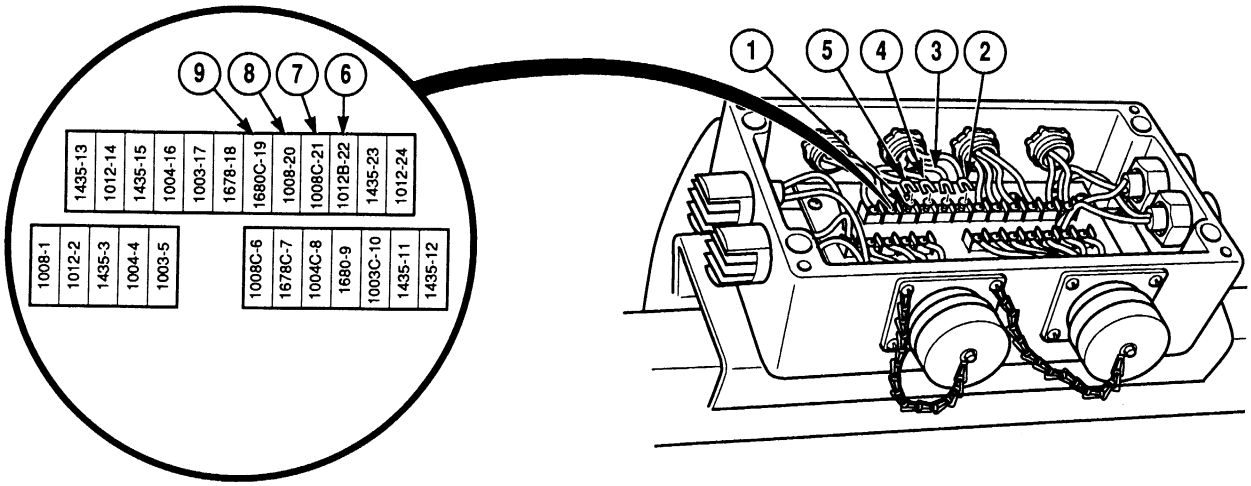
(b) Install cable (11) on trailer frame (23) with eight cushion clips (21), screws (22) and locknuts (20).

(c) Install box connector (14) on front electrical box (12) with locknut (13).

(d) Install cable (11) on box connector (14) and tighten cable nut (10).



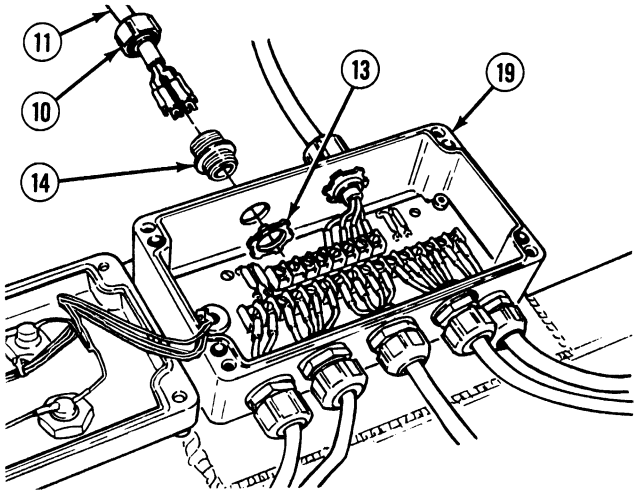
4-30. WIRE HARNESS REPLACEMENT (CONT).

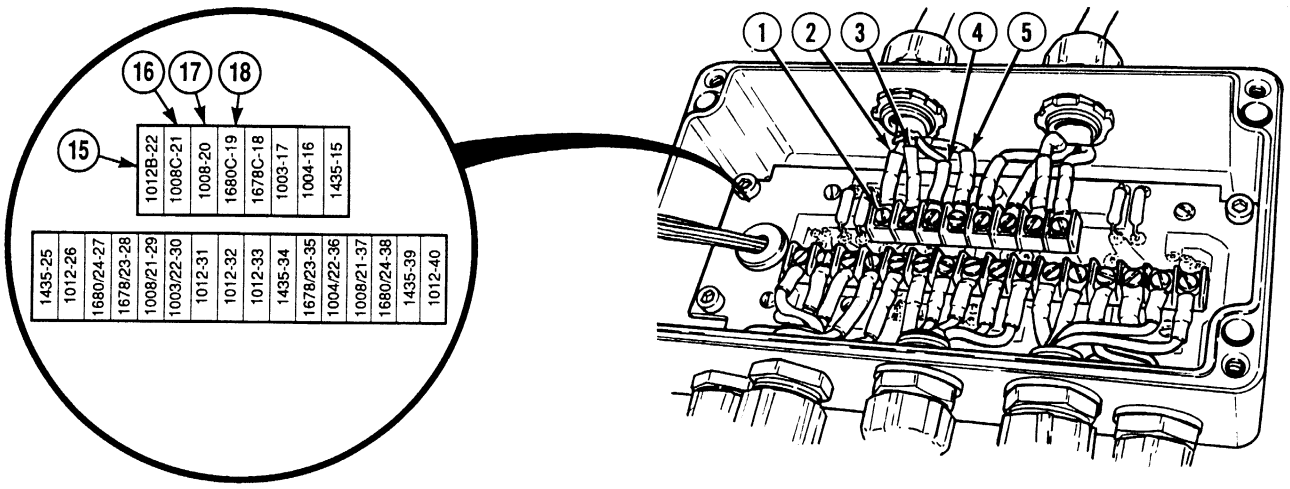


(e) Position wire 1012B-22 (2), wire 1008C-21 (3), wire 1008C-20 (4) and wire 1680C-19 (5) on terminal 1012B-22 (6), terminal 1008C-21 (7), terminal 1008-20 (8) and terminal 1680C-19 (9) and tighten four screws (1).

(f) Install box connector (14) on rear electrical box (19) with locknut (13).

(g) Install cable (11) on box connector (14) and tighten nut (10).

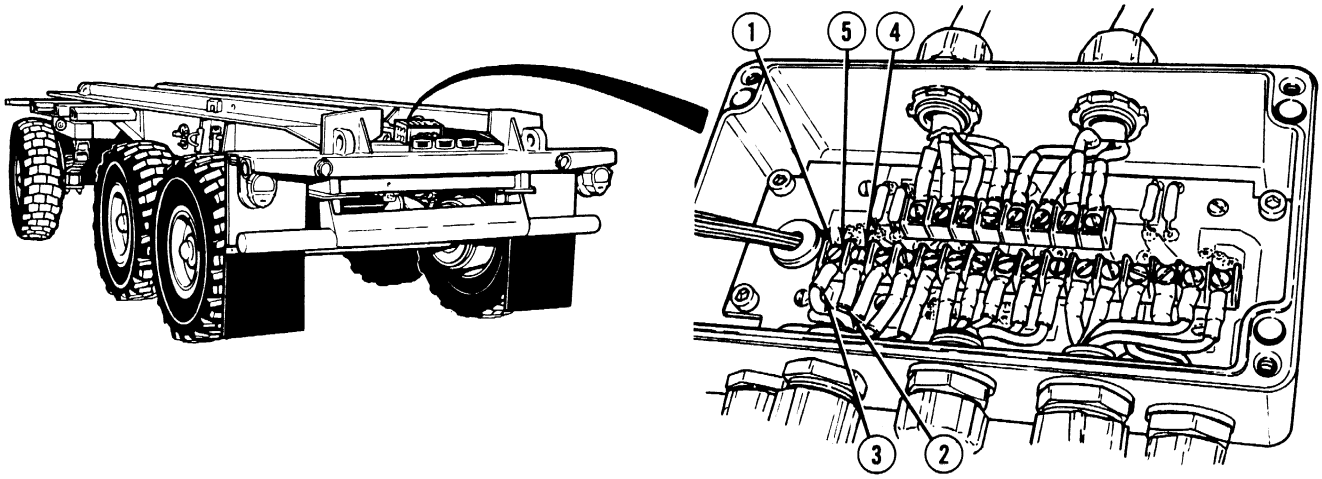




(h) Position wire 1012B-22 (2), wire 1008C-21 (3), wire 1008-20 (4) and wire 1680C-19 (5) on terminal 1012B-22 (15), terminal 1008C-21 (16), terminal 1008-20 (17) and terminal 1680C-19 (18) and tighten four screws (1).

(i) Refer to Subparagraphs ***a.*** and ***b.*** and install front and rear electrical box covers.

g. Rear Side Marker Harness (Left Side) Replacement.



NOTE

- Tag and mark all wires prior to removal.
- Remove cable ties as required.

(1) *Removal.*

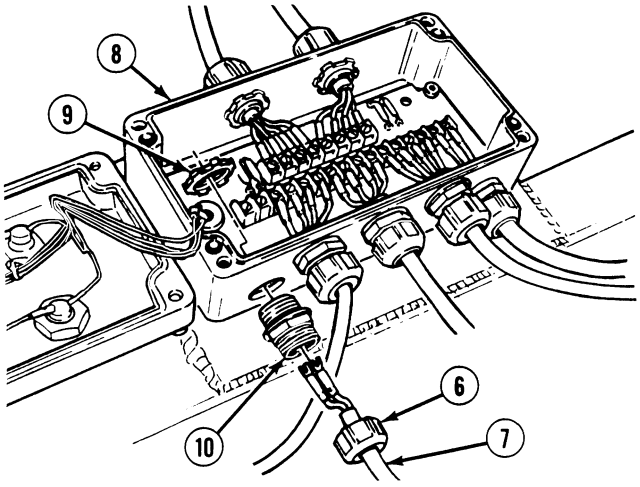
(a) Refer to Subparagraph ***b.*** and remove rear electrical box cover.

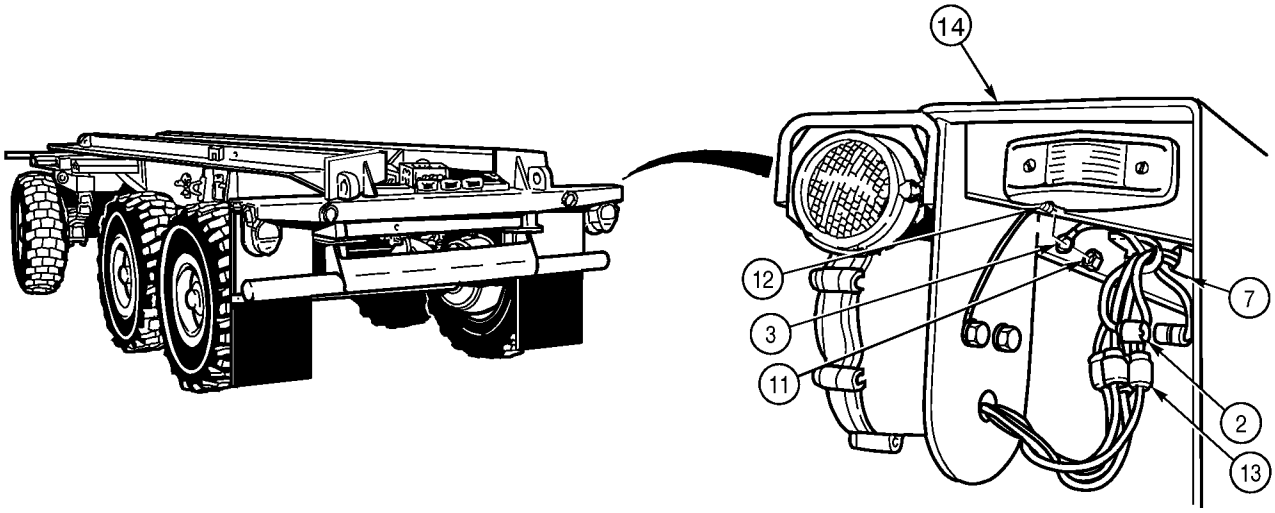
(b) Loosen two screws (1) and remove wire 1012-26 (2) and wire 1435-25 (3) from terminal 1012-26 (4) and terminal 1435-25 (5).

4-30. WIRE HARNESS REPLACEMENT (CONT).

(c) Loosen cable nut (6) and pull cable (7) out of rear electrical box (8).

(d) Remove locknut (9) and box connector (10) from rear electrical box (8).





(e) Remove locknut (11) and wire 1435-25 (3) from screw (12). Discard locknut.

(f) Disconnect wire 1012-26 (2) from wire 489 (13).

(g) Remove cable (7) from trailer frame (14).

(2) *Installation.*

NOTE

Install cable ties as required.

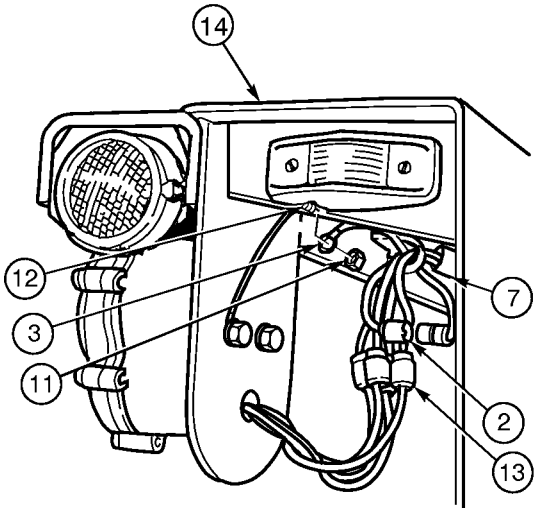
(a) Position cable (7) on trailer frame (14).

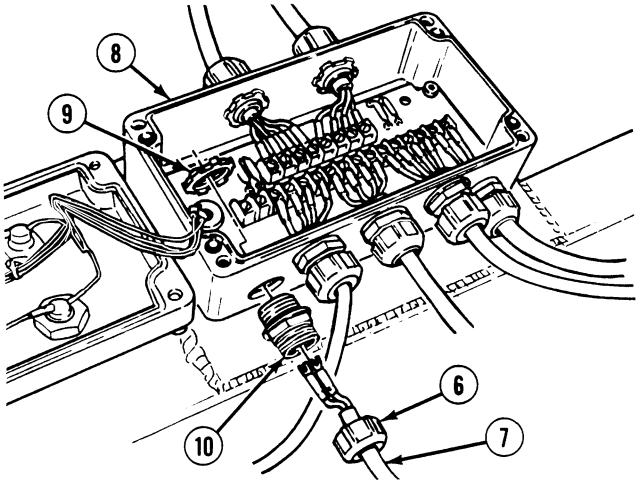
(b) Connect wire 1012-26 (2) on wire 489 (13).

(c) Install wire 1435-25 (3) on screw (12) with locknut (11).

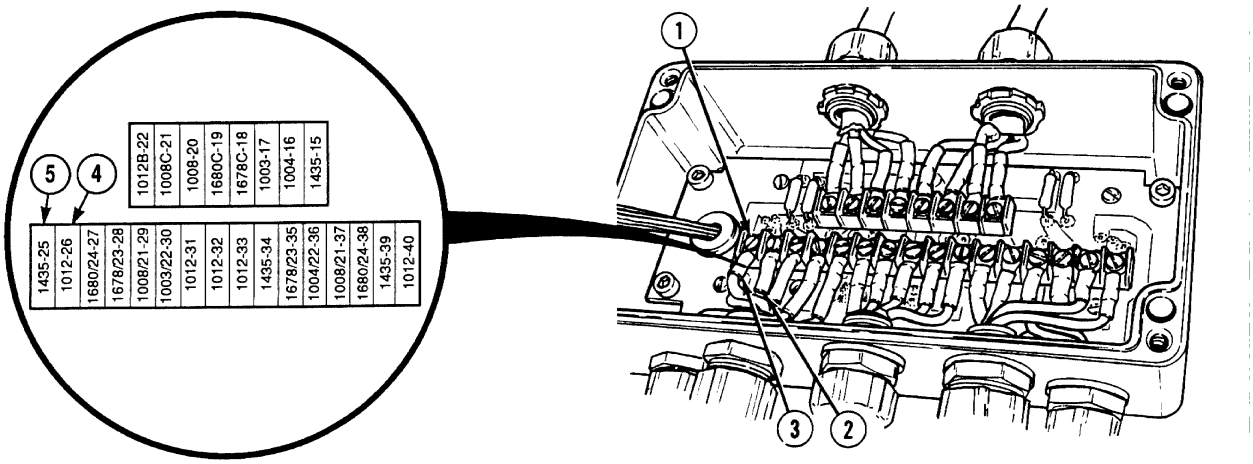
(d) Install box connector (10) on electrical box (8) with locknut (9).

(e) Install cable (7) on box connector (10) and tighten nut (6).





4-30. WIRE HARNESS REPLACEMENT (CONT).

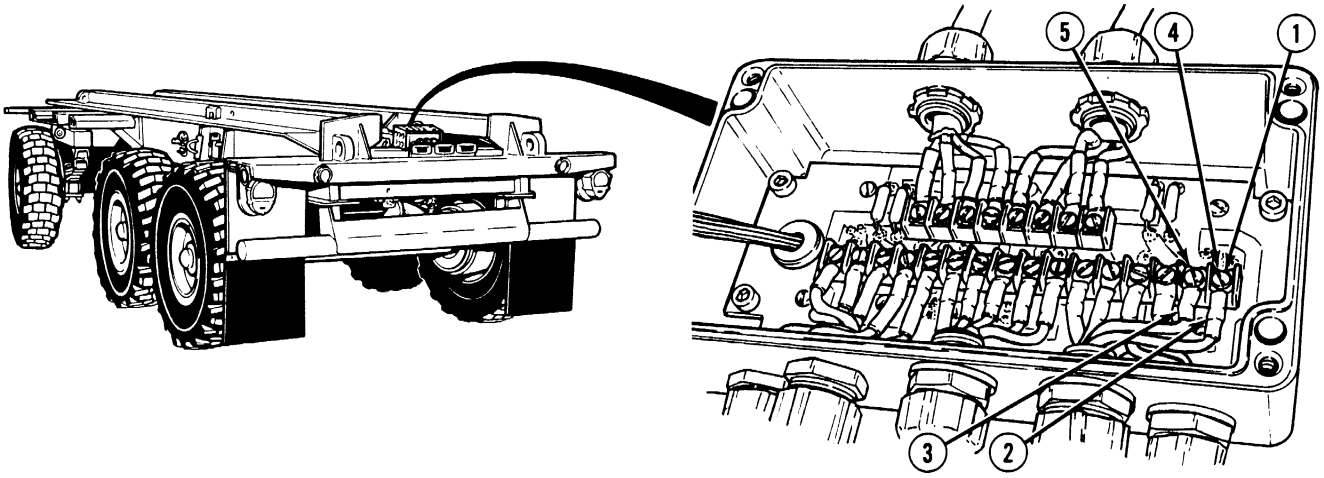


(f) Position wire 1435-25 (2) on terminal 1435-25 (5) and tighten screw (1).

(g) Position wire 1012-26 (3) on terminal 1012-26 (4) and tighten screw (1).

(h) Refer to Subparagraph ***b.*** and install rear electrical box cover.

h. Rear Side Marker Harness (Right Side) Replacement.



NOTE

- Tag and mark all wires prior to removal.
- Remove cable ties as required.

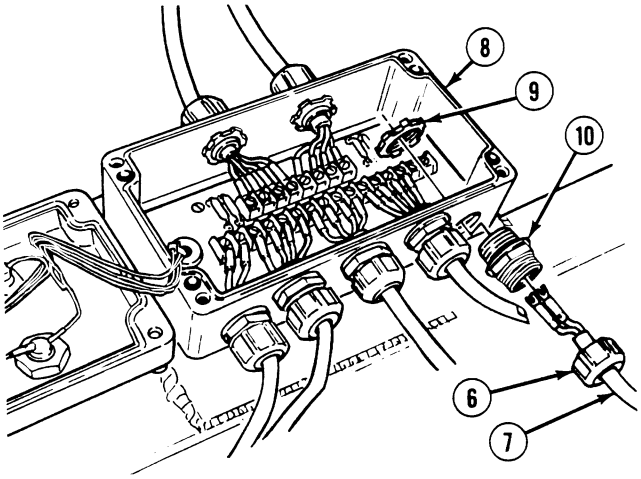
(1) *Removal.*

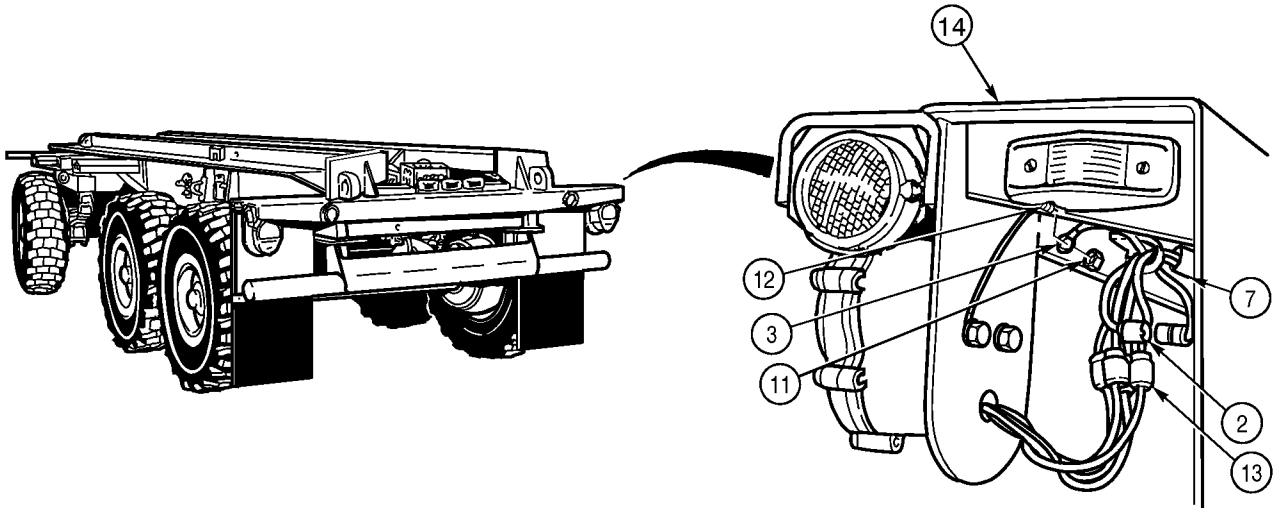
(a) Refer to Subparagraph ***b.*** and remove rear electrical box cover.

(b) Loosen two screws (1) and remove wire 1012-40 (2) and wire 1435-39 (3) from terminal 1012-40 (4) and terminal 1435-39 (5).

(c) Loosen cable nut (6) and pull cable (7) out of rear electrical box (8).

(d) Remove locknut (9) and box connector (10) from rear electrical box (8).





(e) Remove locknut (11) and wire 1435-39 (3) from screw (12). Discard locknut.

(f) Disconnect wire 1012-40 (2) from wire 489 (13).

(g) Remove cable (7) from trailer frame (14).

4-30. WIRE HARNESS REPLACEMENT (CONT).

(2) *Installation.*

NOTE

- Ensure that cables are properly aligned prior to tightening cable clamps.
- Install cable ties as required.

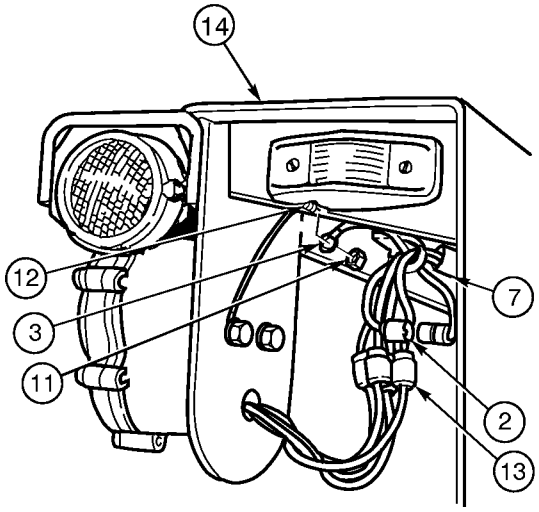
(a) Position cable (7) on trailer frame (14).

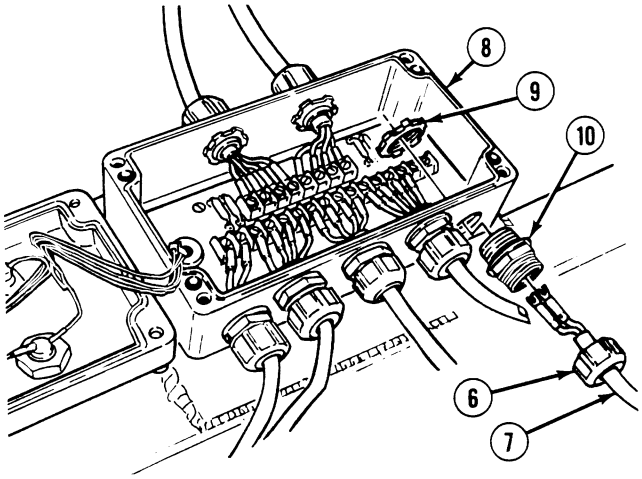
(b) Connect wire 1012-40 (2) on wire 489 (13).

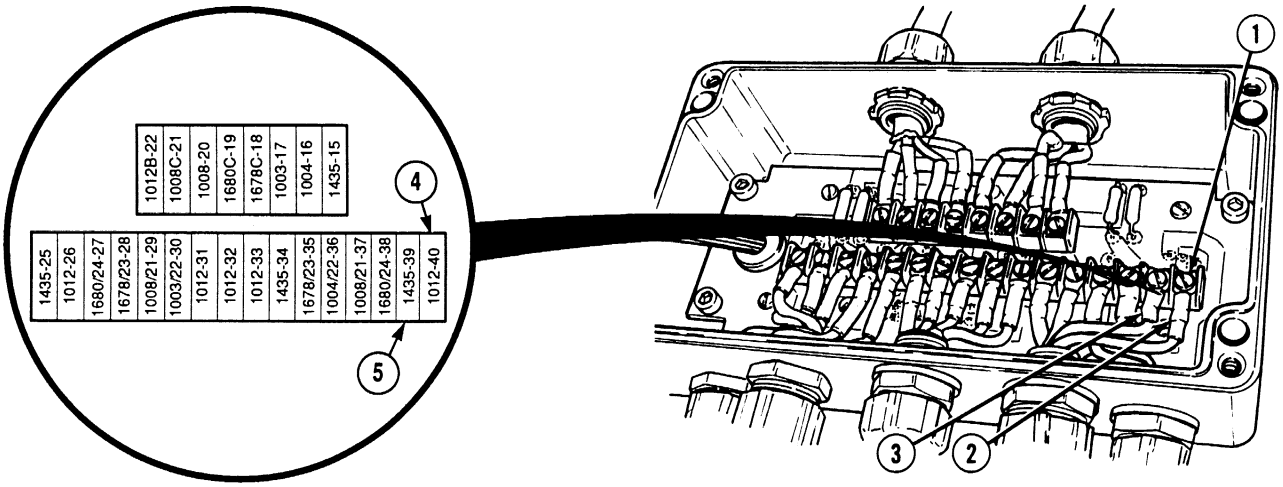
(c) Install wire 1435-39 (3) on screw (12) with locknut (11).

(d) Install box connector (10) on electrical box (8) with locknut (9).

(e) Install cable (7) on box connector (10) and tighten nut (6).





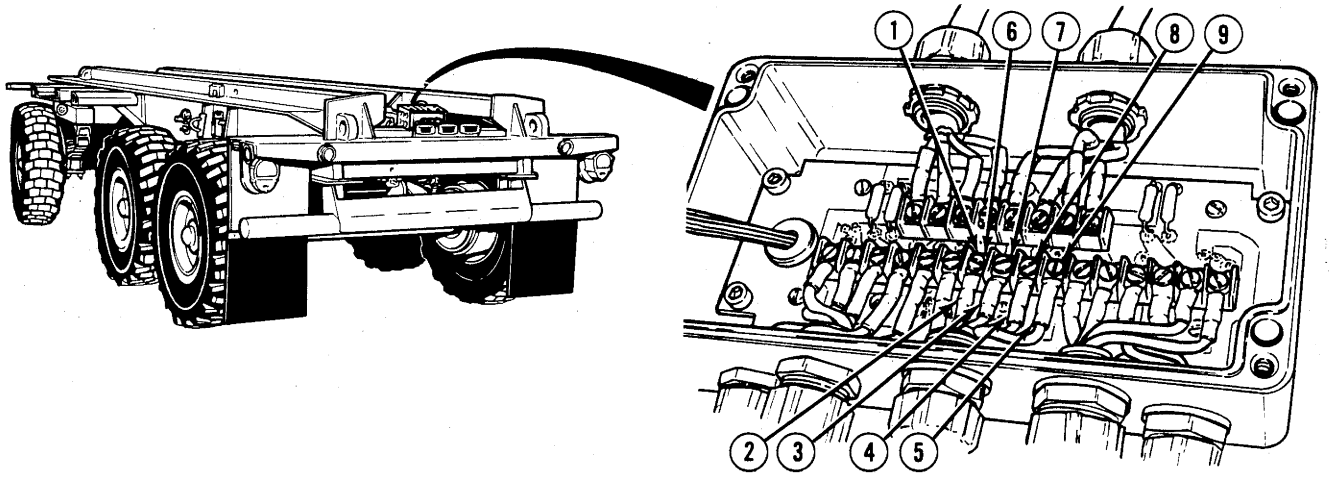


(f) Position wire 1435-39 (3) on terminal 1435-39 (5) and tighten screw (1).

(g) Position wire 1012-40 (2) on terminal 1012-40 (4) and tighten screw (1).

(h) Refer to Subparagraph ***b.*** and install rear electrical box cover.

i. Rear (Center) Marker Light Harness Replacement.



(1) *Removal.*

NOTE

- Tag and mark all wires prior to removal.
- Replace cable ties as required.

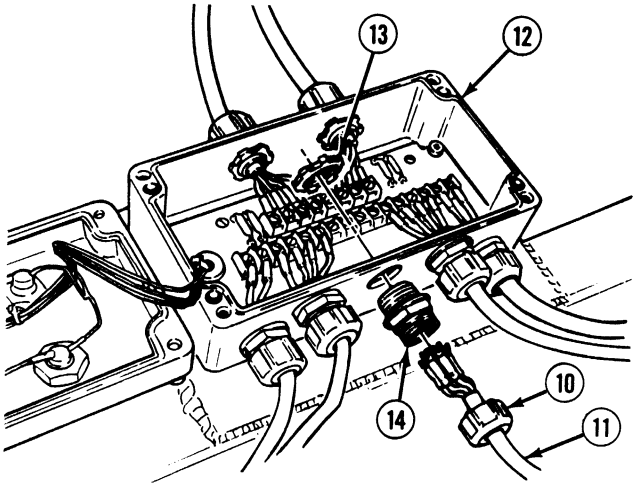
(a) Refer to Subparagraph ***b.*** and remove rear electrical box cover.

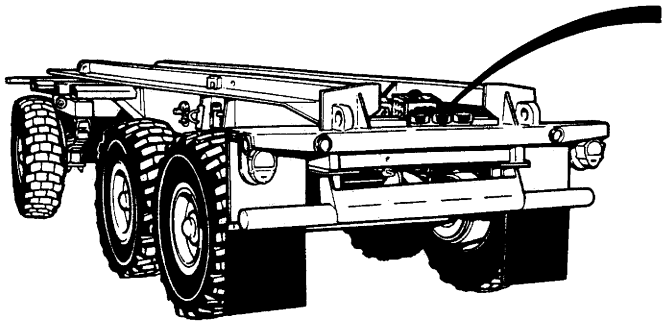
(b) Loosen four screws (1) and remove wire 1012-31 (2), wire 1012-32 (3), wire 1012-33 (4) and wire 1435-34 (5) from terminal 1012-31 (6), terminal 1012-32 (7), terminal 1012-33 (8) and terminal 1435-34 (9).

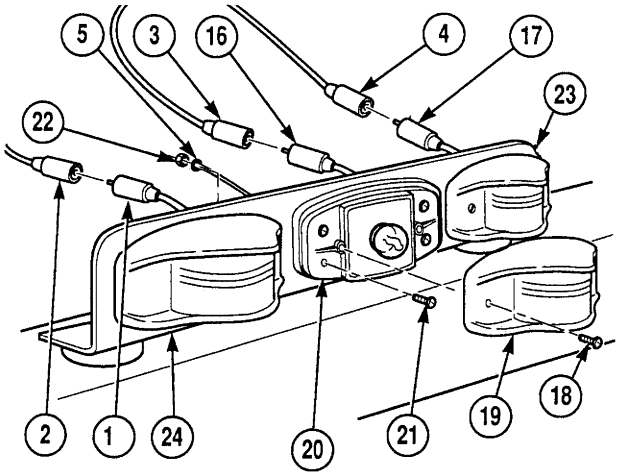
4-30. WIRE HARNESS REPLACEMENT (CONT).

(c) Loosen cable nut (10) and pull cable (11) out of rear electrical box (12).

(d) Remove locknut (13) and box connector (14) from rear electrical box (12).







(e) Disconnect wire 1012-31 (2), wire 1012-32 (3) and wire 1012-33 (4) from wire 489 (15), wire 489 (16) and wire 459 (17).

(f) Remove two screws (18) and lens cover (19) from center marker light (20).

(g) Remove screw (21), locknut (22) and wire 1435-34 (5) from marker light bracket (23). Discard locknut.

(2) *Installation.*

NOTE

Install cable ties as required.

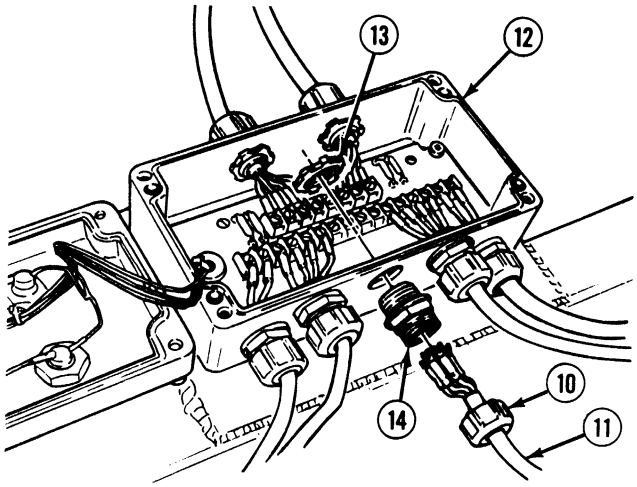
(a) Install wire 1435-34 (5) on marking light (20) with locknut (22) and screw (21).

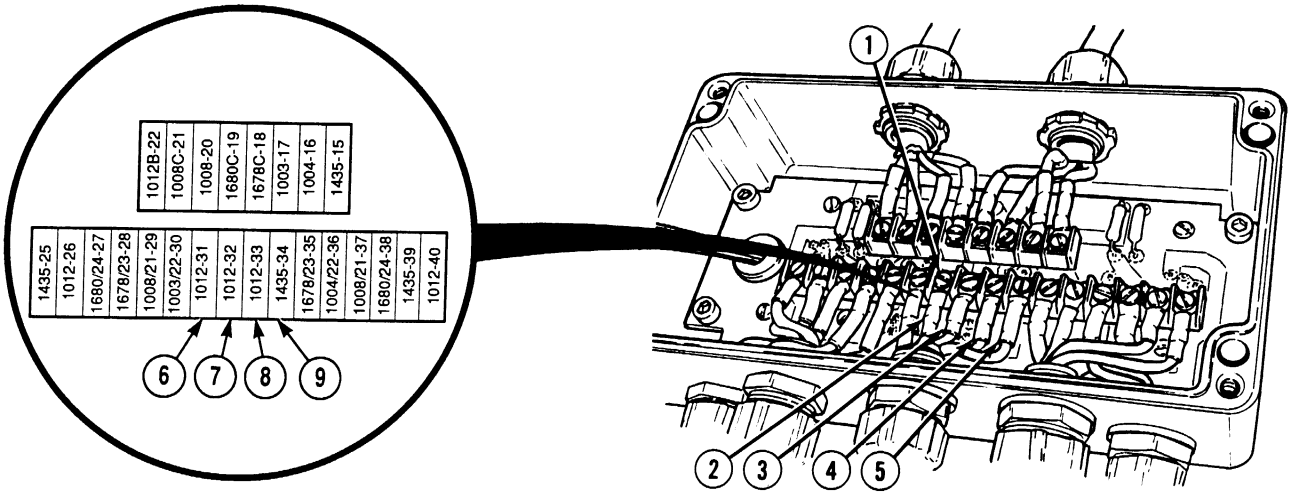
(b) Install lens cover (19) on center marker light (20) with two screws (18).

(c) Install wire 1012-31 (2), wire 1012-32 (3) and wire 1012-33 (4) on wire 489 (15), wire 489 (16) and wire 459 (17).

(d) Install box connector (14) on electrical box (12) with locknut (13).

(e) Install cable (11) on box connector (14) and tighten nut (10).





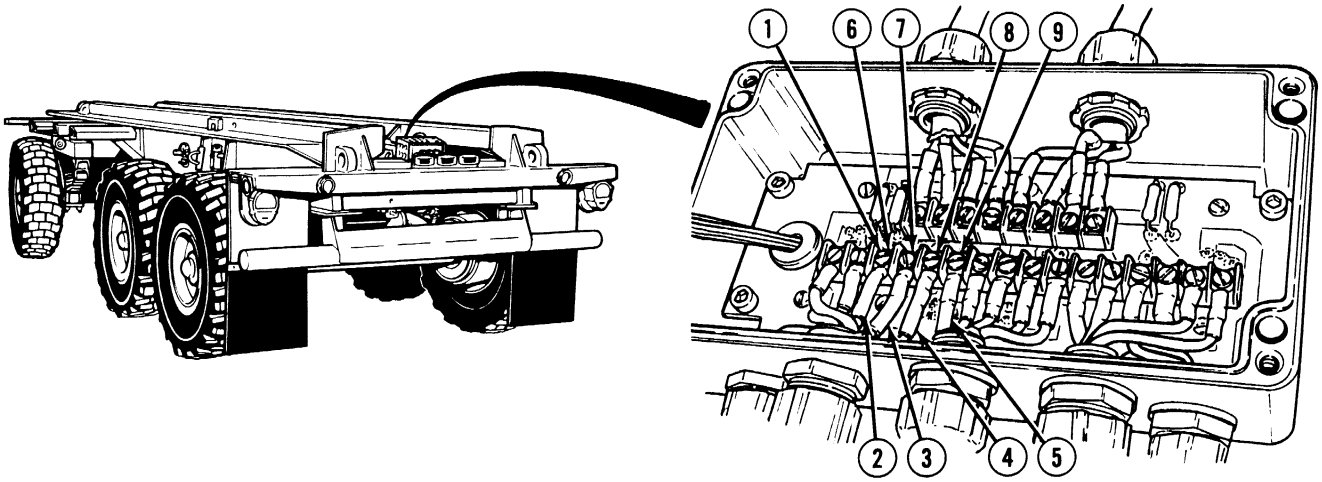
(f) Position wire 1012-31 (2), wire 1012-32 (3), wire 1012-33 (4) and wire 1435-34 (5) on terminal 1012-31 (6), terminal 1012-32 (7), terminal 1012-33 (8) and terminal 1435-34 (9) and tighten four screws (1).

(g) Refer to Subparagraph ***b.*** and install rear electrical box cover.

4-30. WIRE HARNESS REPLACEMENT (CONT).

j. Composite Light Harness (Left Side) Replacement.

(1) *Removal.*



NOTE

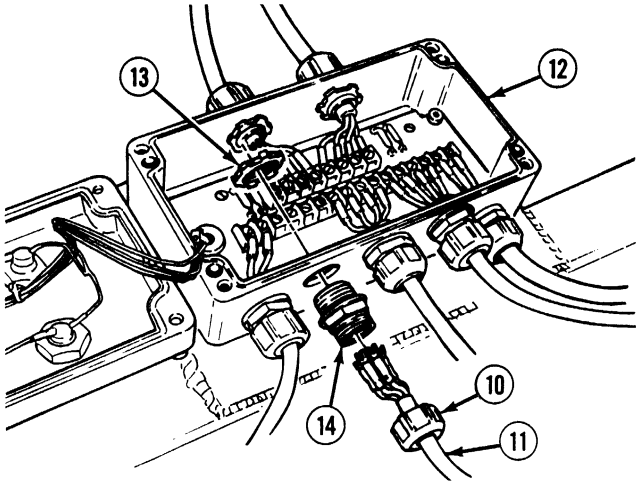
- Tag and mark all wires prior to removal.
- Replace cable ties as required.

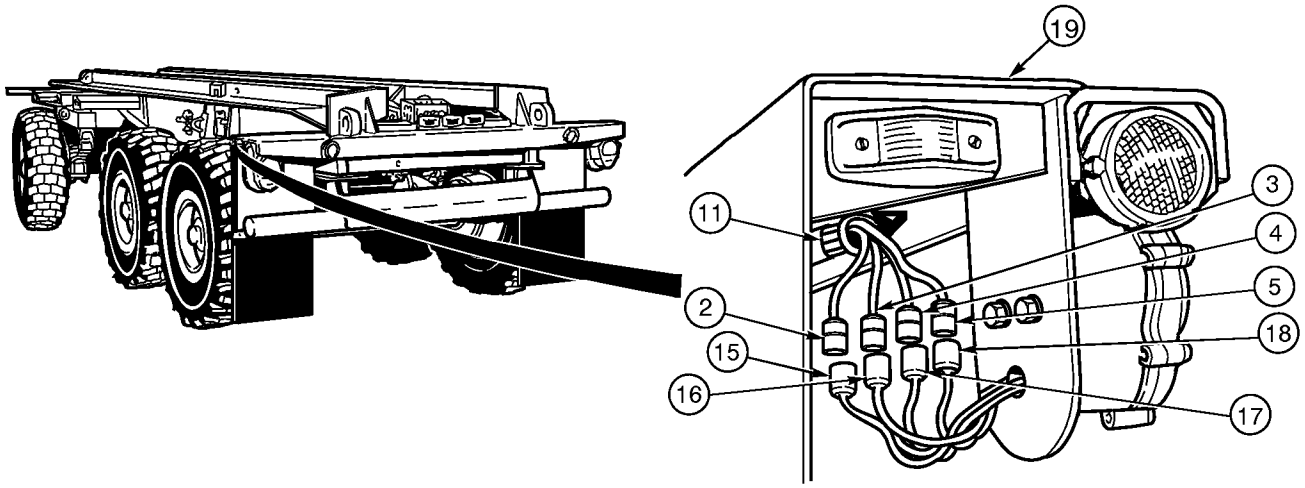
(a) Refer to Subparagraph ***b.*** and remove rear electrical box cover.

(b) Loosen four screws (1) and remove wire 1680/24-27 (2), wire 1678/23-28 (3), wire 1008/21-29 (4) and wire 1003/22-30 (5) from terminal 1680/24-27 (6), terminal 1678/23-28 (7), terminal 1008/21-29 (8) and terminal 1003/22-30 (9).

(c) Loosen cable nut (10) and pull cable (11) out of rear electrical box (12).

(d) Remove locknut (13) and box connector (14) from rear electrical box (12).





(e) Remove wire 1680/24-27 (2), wire 1678/23-28 (3), wire 1008/21-29 (4), and wire 1003/22-30 (5) from composite light wire 24 (15), wire 23 (16), wire 21 (17) and wire 22 (18).

(f) Remove cable (11) from trailer frame (19).

(2) *Installation.*

NOTE

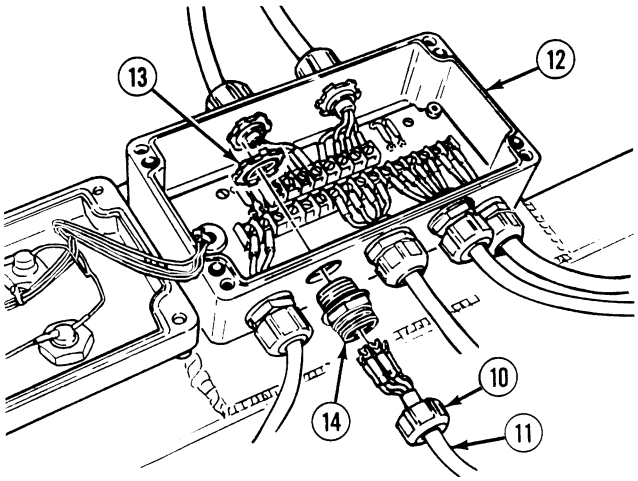
Install cable ties as required.

(a) Position cable (11) on trailer frame (19).

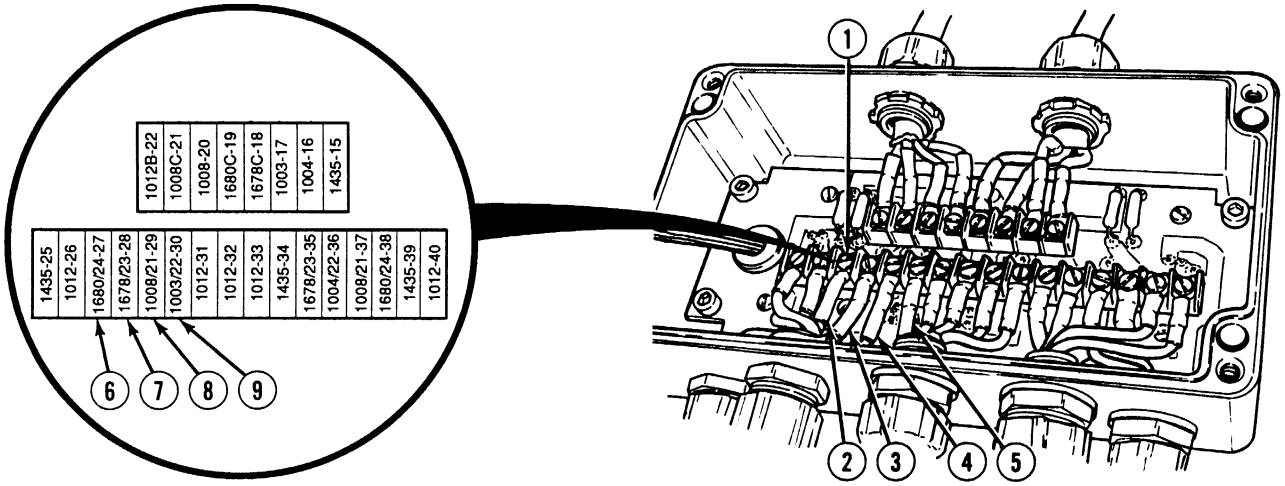
(b) Install wire 1680/24-27 (2), wire 1678/23-28 (3) wire 1008/21-29 (4) and wire 1003/22-30 (5) on composite light wire 24 (15), wire 23 (16), wire 21 (17) and wire 22 (18).

(c) Install box connector (14) on box (12) with locknut (13).

(d) Install cable (11) on rear electrical box (12) and tighten nut (10).



4-30. WIRE HARNESS REPLACEMENT (CONT).

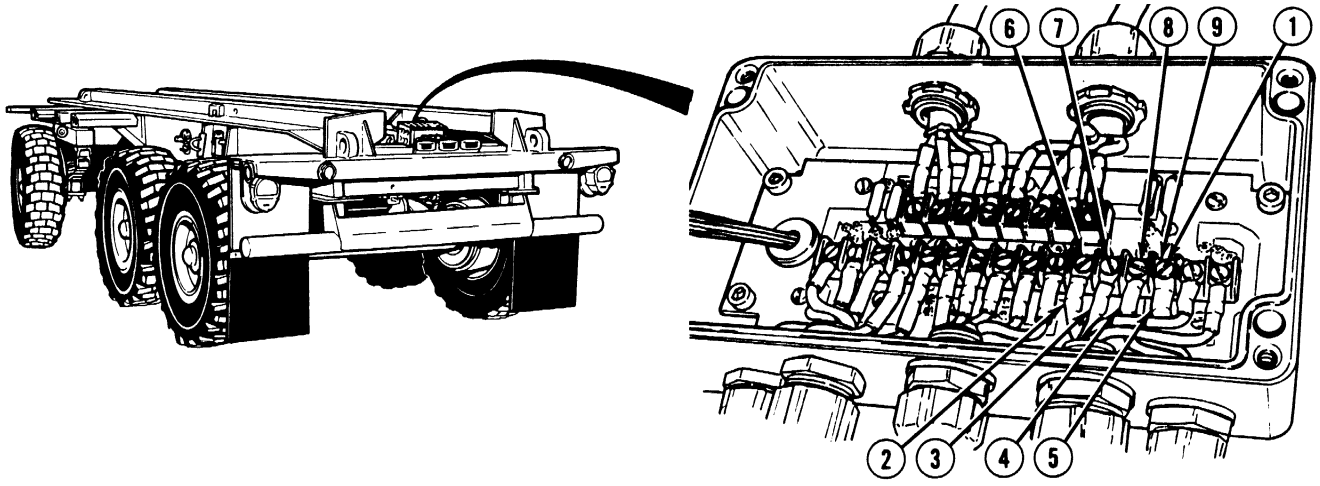


(e) Install wire 1680/24-27 (2), wire 1678/23-28 (3), wire 1008/21-29 (4) and wire 1003/22-30 (5) on terminal 1680/24-27 (6), terminal 1678/23-28 (7), terminal 1008/21-29 (8) and terminal 1003/22-30 (9). Tighten four screws (1).

(f) Refer to Subparagraph ***b.*** and install rear electrical box cover.

k. Composite Light Harness (Right Side) Replacement.

(1) *Removal.*



NOTE

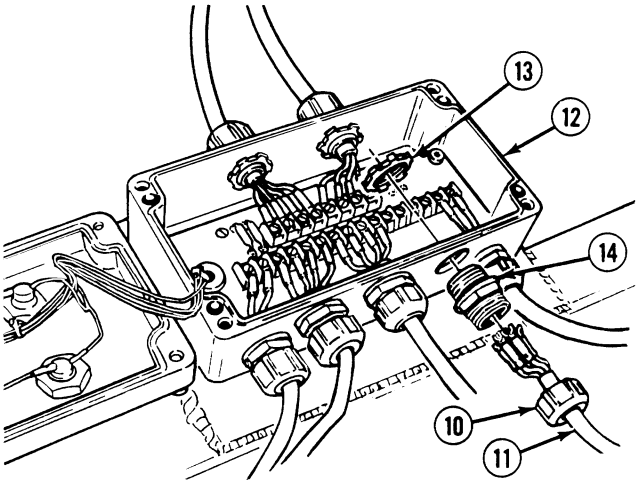
- Tag and mark all wires prior to removal.
- Remove cable ties as required.

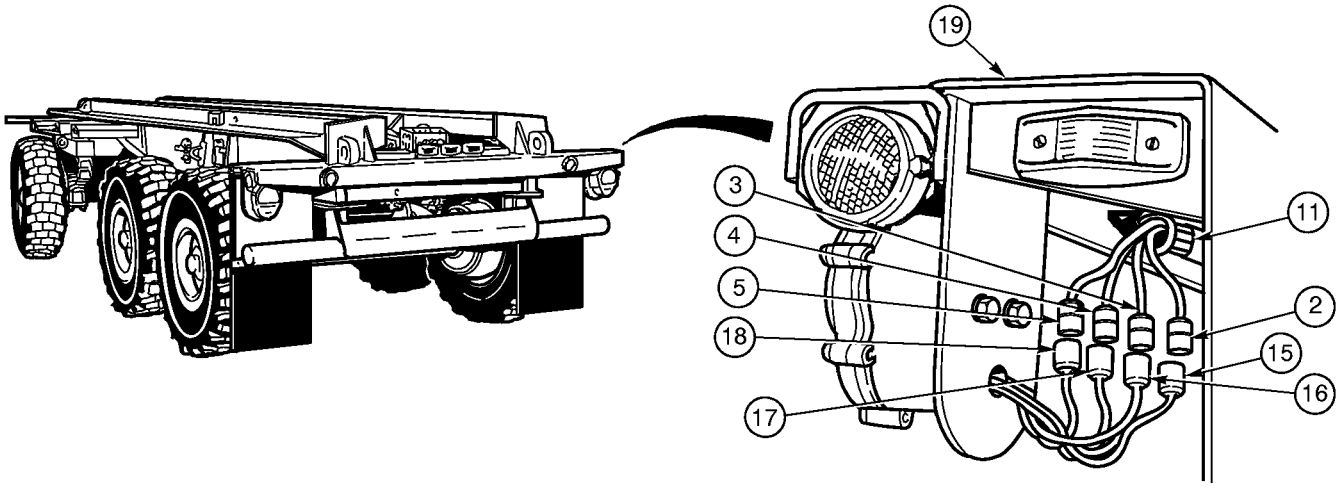
(a) Refer to Subparagraphs ***a.*** and ***b.*** and remove front and rear electrical box covers.

(b) Loosen four screws (1) and remove wire 1678/23-35 (2), wire 1004/22-36 (3), wire 1008/21-37 (4) and wire 1680/24-38 (5) from terminal 1678/23-35 (6), terminal 1004/22-36 (7), terminal 1008/21-37 (8) and terminal 1680/24-38 (9).

(c) Loosen cable nut (10) and pull cable (11) out of box (12).

(d) Remove locknut (13) and box connector (14) from rear electrical box (12).





(e) Disconnect wire 1680/24-38 (5), wire 1678/23-35 (2), wire 1004/22-36 (3) and wire 1008/21-37 (4) from composite light wire 24 (15), wire 23 (16), wire 22 (17) and wire 21 (18).

(f) Remove cable (11) from trailer frame (19).

(2) *Installation.*

NOTE

Install cable ties as required.

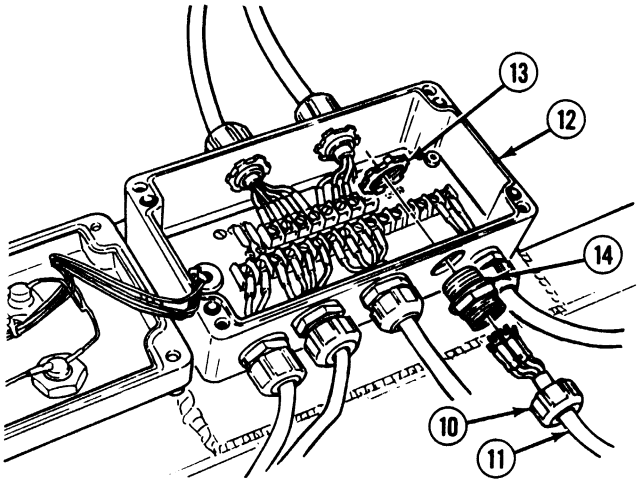
(a) Position cable (11) on trailer frame (19).

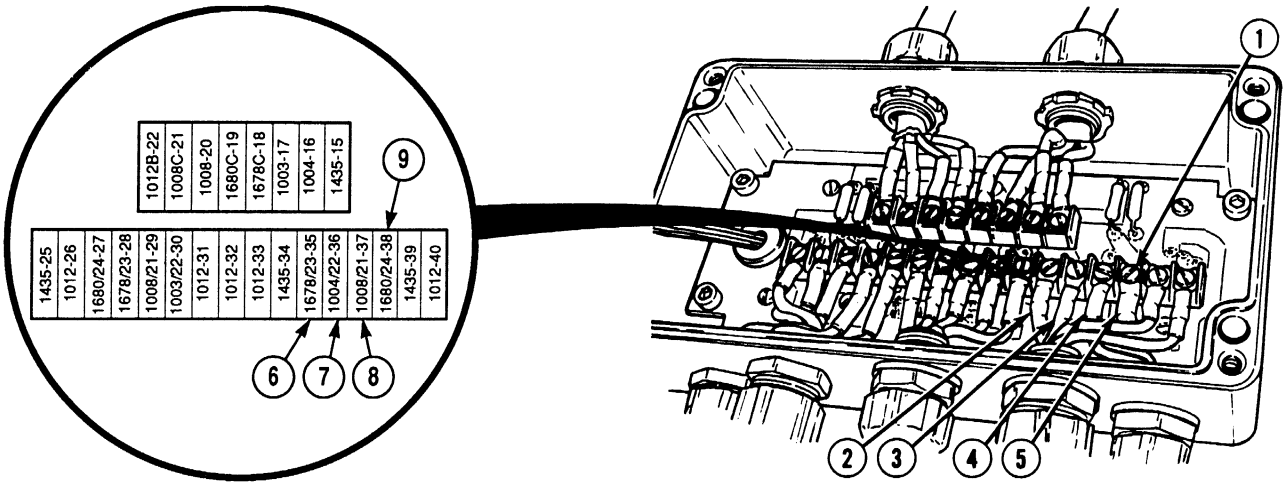
(b) Connect wire 1680/24-38 (5), wire 1678/23-35 (2), wire 1004/22-36 (3) and wire 1008/21-37 (4) on composite light wire 24 (15), wire 23 (16), wire 22 (17) and wire 21 (18).

4-30. WIRE HARNESS REPLACEMENT (CONT).

(c) Install box connector (14) on electrical box (12) with locknut (13).

(d) Install cable (11) on box connector (14) and tighten nut (10).



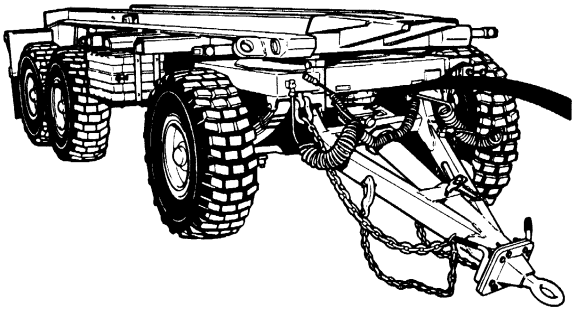


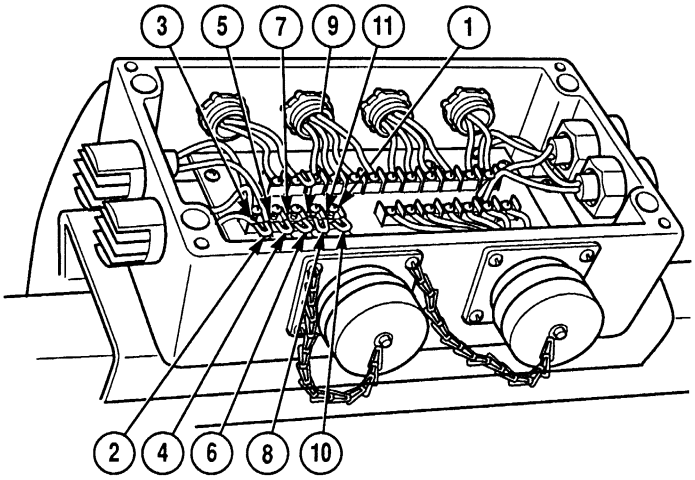
(e) Position wire 1678/23-35 (2), wire 1004/22-36 (3), wire 1008/21-37 (4), wire 1680/24-38 (5) on terminal 1678/23-35 (6), terminal 1004/22-36 (7), terminal 1008/21-37 (8) and terminal 1680/24-38 (9) and tighten four screws (1).

(f) Refer to Subparagraph ***b.*** and install rear electrical box cover.

I. 12 Volt Connector Replacement.

(1) *Removal.*





(a) Loosen five screws (1).

(b) Remove wire 1008-1 (2) from terminal 1008-1 (3).

(c) Remove wire 1012-2 (4) from terminal 1012-2 (5).

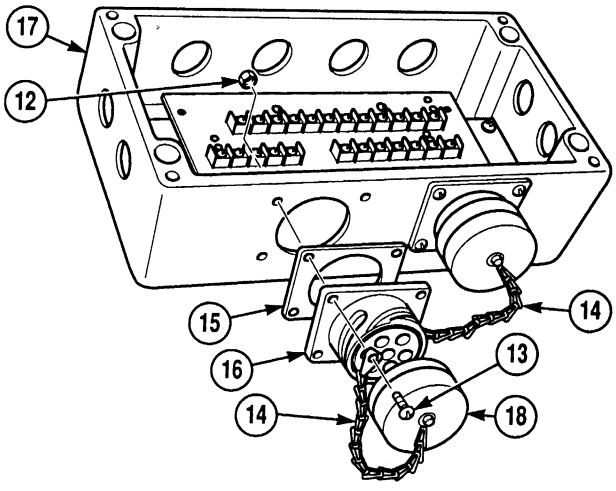
(d) Remove wire 1435-3 (6) from terminal 1435-3 (7).

(e) Remove wire 1004-4 (8) from terminal 1004-4 (9).

(f) Remove wire 1003-5 (10) from terminal 1003-5 (11).

(g) Remove four locknuts (12), screws (13), two chains (14), gasket (15) and electrical connector (16) from front electrical box (17). Discard locknuts and gasket.

(h) Remove cover (18) from connector (16).

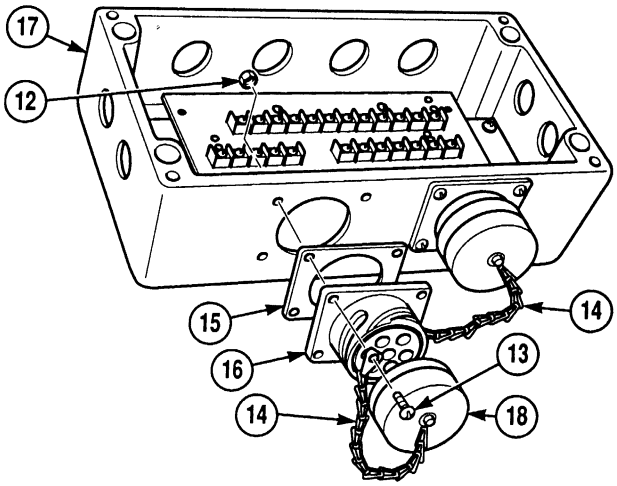


4-30. WIRE HARNESS REPLACEMENT (CONT).

(2) *Installation.*

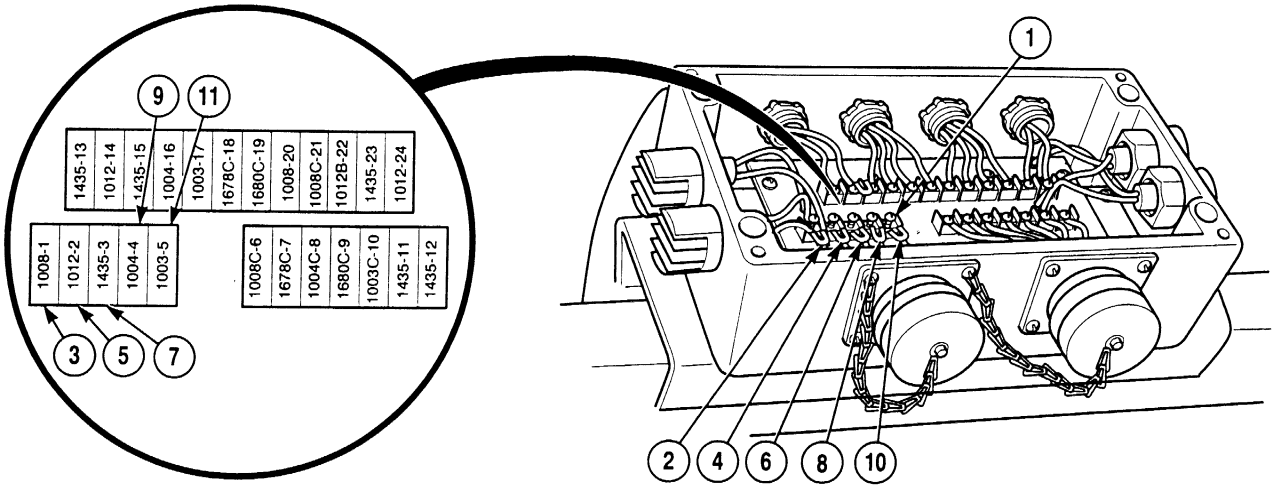
WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



(a) Apply adhesive sealant on gasket (15).

(b) Install gasket (15), electrical connector (16) and two chains (14) on electrical box (17) with four screws (13) and locknuts (12).



(c) Install wire 1003-5 (10) on terminal 1003-5 (11).

(d) Install wire 1004-4 (8) on terminal 1004-4 (9).

(e) Install wire 1435-3 (6) on terminal 1435-3 (7).

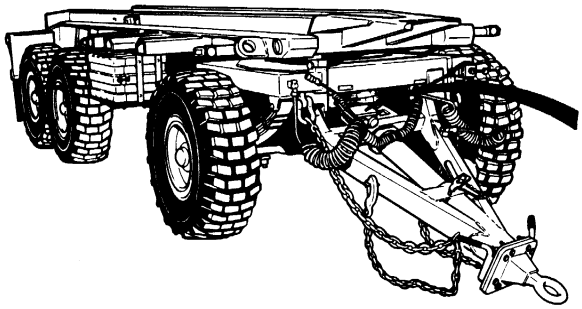
(f) Install wire 1012-2 (4) on terminal 1012-2 (5).

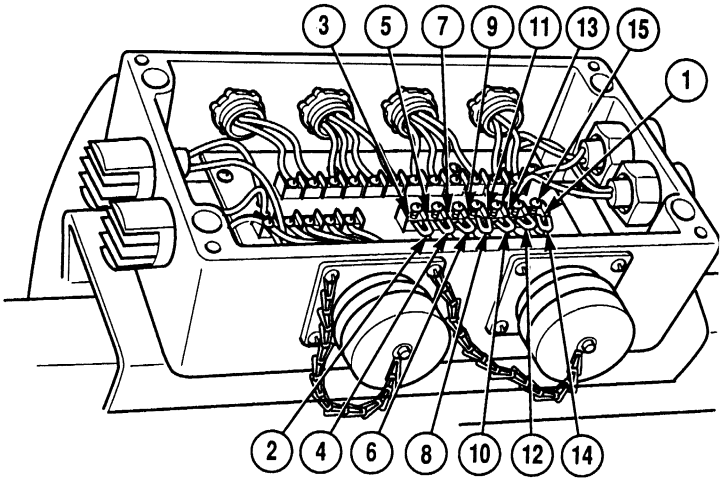
(g) Install wire 1008-1 (2) on terminal 1008-1 (3).

(h) Tighten five screws (1).

m. 24 Volt Connector Replacement.

(1) *Removal.*





(a) Loosen seven screws (1).

(b) Remove wire 1008C-6 (2) from terminal 1008C-6 (3).

(c) Remove wire 1678C-7 (4) from terminal 1678C-7 (5).

(d) Remove wire 1004C-8 (6) from terminal 1004C-8 (7).

(e) Remove wire 1680C-9 (8) from terminal 1680C-9 (9).

(f) Remove wire 1003C-10 (10) from terminal 1003-10 (11).

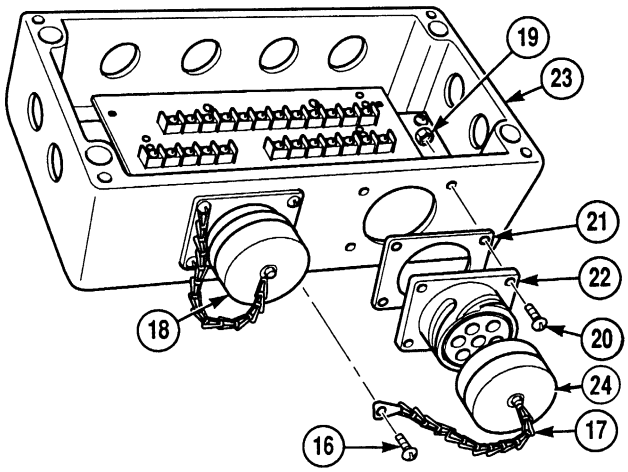
(g) Remove wire 1435-11 (12) from terminal 1435-11 (13).

(h) Remove wire 1435-12 (14) from terminal 1435-12 (15).

(i) Remove screw (16) and chain (17) from electrical connector (18).

(j) Remove four locknuts (19), screws (20), gasket (21) and electrical connector (22) from front electrical box (23). Discard locknuts and gasket.

(k) Remove cover (24) from electrical connector (22).

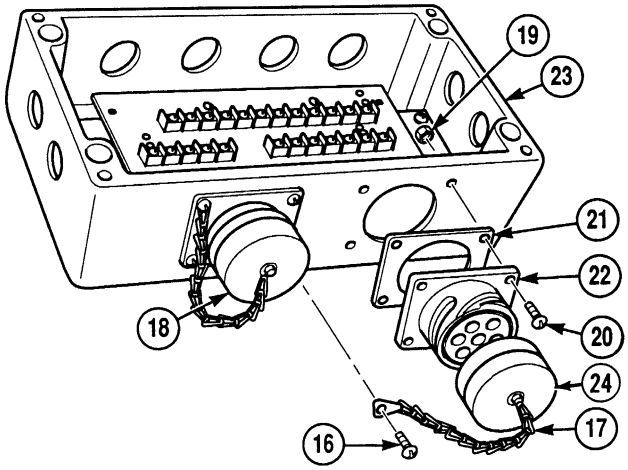


4-30. WIRE HARNESS REPLACEMENT (CONT).

(2) *Installation.*

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

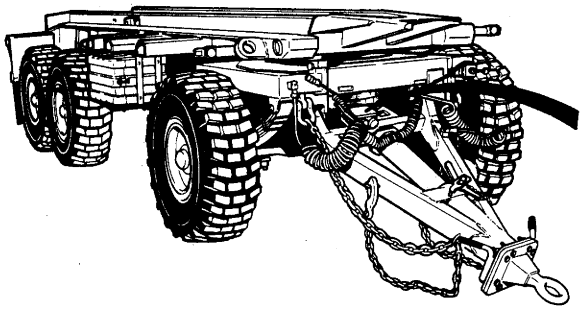


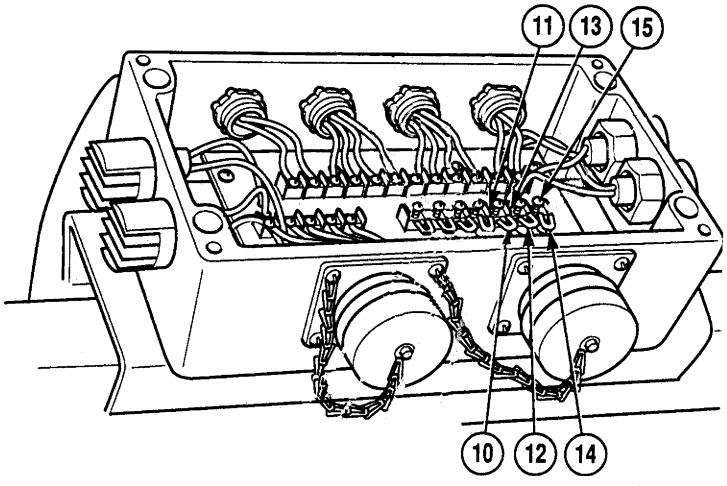
(a) Apply adhesive sealant on gasket (21).

(b) Install gasket (21) and electrical connector (22) on front electrical box (23) with four screws (20) and locknuts (19).

(c) Install chain (17) on electrical connector (18) with screw (16).

(d) Install cover (24) on electrical connector (22).

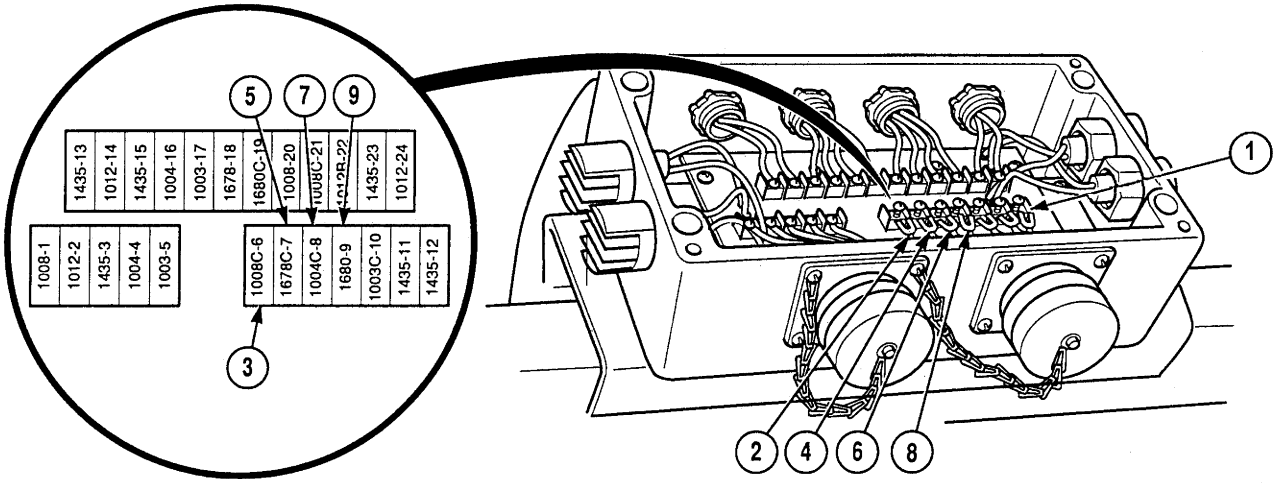




(e) Install wire 1435-12 (14) on terminal 1435-12 (15).

(f) Install wire 1003C-10 (10) on terminal 1003-10 (11).

(g) Install wire 1435-11 (12) on terminal 1435-11 (13).



(h) Install wire 1680C-9 (8) on terminal 1680C-9 (9).

(i) Install wire 1004C-8 (6) on terminal 1004C-8 (7).

(j) Install wire 1678C-7 (4) on terminal 1678C-7 (5).

(k) Install wire 1008C-6 (2) on terminal 1008C-6 (3).

(l) Tighten seven screws (1).

4-30. WIRE HARNESS REPLACEMENT (CONT).

n. Wire Harness Replacement (Drawbar Extension).

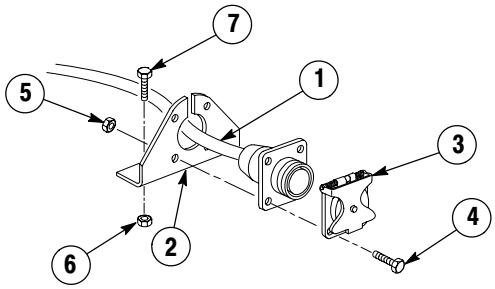
(1) *Removal.*

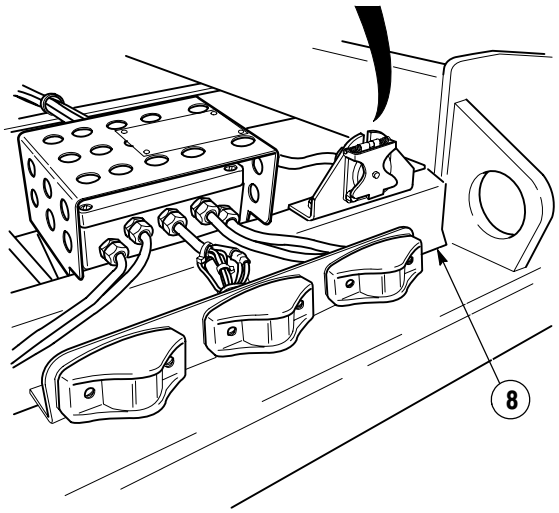
(a) Disconnect wire harness (1) from bracket (2) by removing cover (3), four screws (4) and four locknuts (5). Discard locknuts.

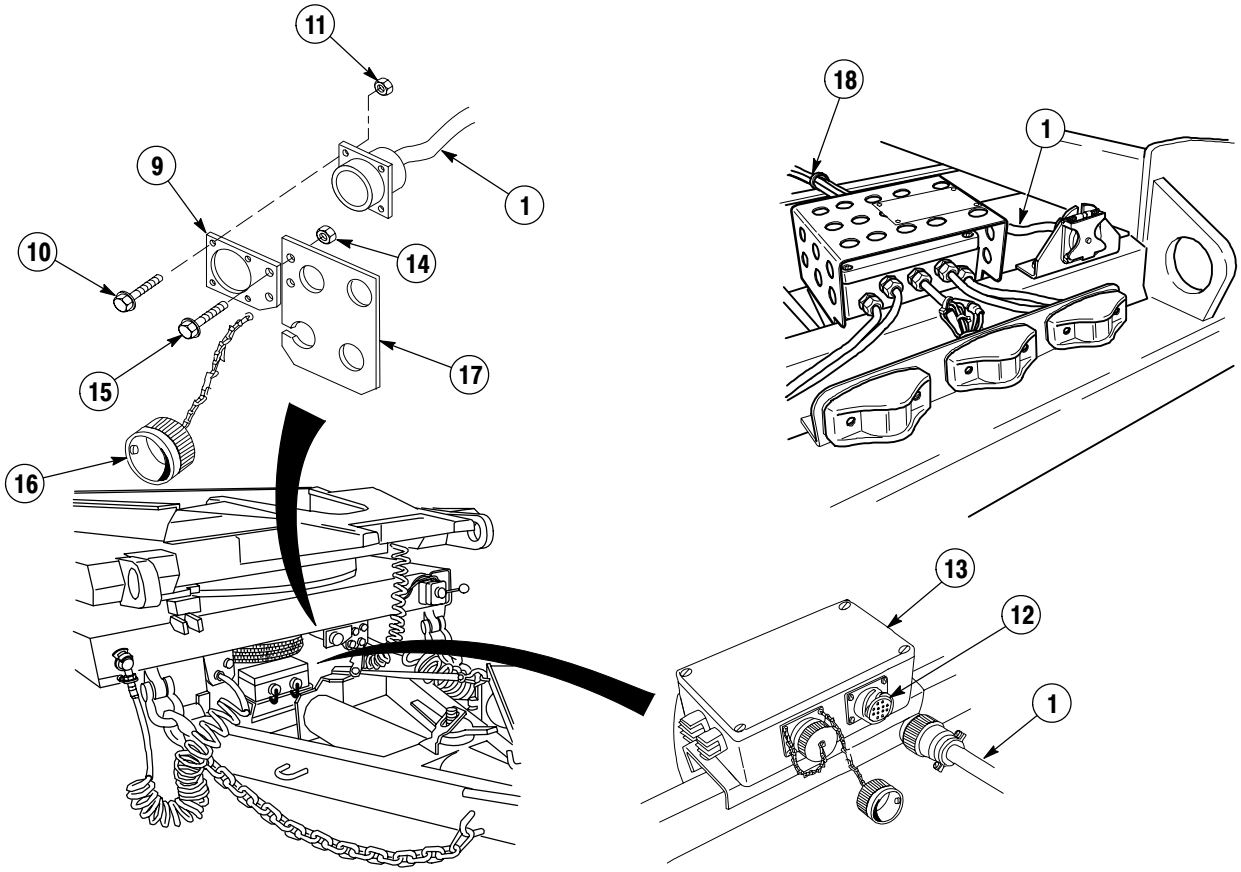
NOTE

Perform Step (b) if bracket is damaged.

(b) Remove two locknuts (6), screws (7) and bracket (2) from cross brace (8). Discard locknuts.







(c) Disconnect wire harness (1) from bracket (9) by removing four screws (10) and locknuts (11). Discard locknuts.

(d) Disconnect wire harness (1) from 12 pin receptacle (12) on front electrical box (13).

NOTE

Perform Step (e) if bracket is damaged.

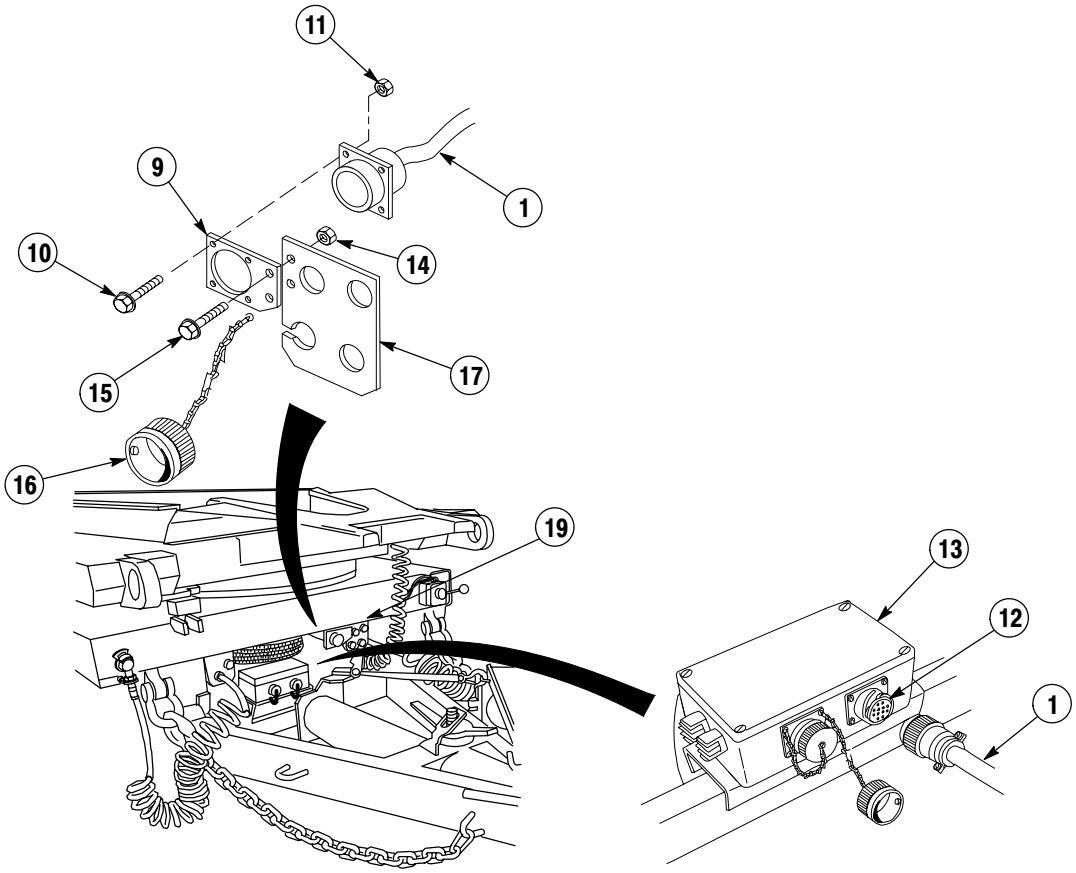
(e) Remove two locknuts (14), screws (15), cover with chain (16) and bracket (9) from bracket (17).

NOTE

Remove cable ties as required.

(f) Remove cable ties and wire harness (1) from remaining wire harnesses (18).

4-30. WIRE HARNESS REPLACEMENT (CONT).



(2) *Installation.*

(a) Position wire harness (1) on trailer frame (19).

(b) Connect wire harness (1) to 12 pin receptacle (12) on front electrical box (13).

NOTE

Perform Step (c) if bracket was removed.

(c) Install bracket (9) and cover with chain (16) on bracket (17) with two screws (15) and locknuts (14).

(d) Connect wire harness (1) to bracket (9) with four screws (10) and locknuts (11).

NOTE

Perform Step (e) if bracket was removed.

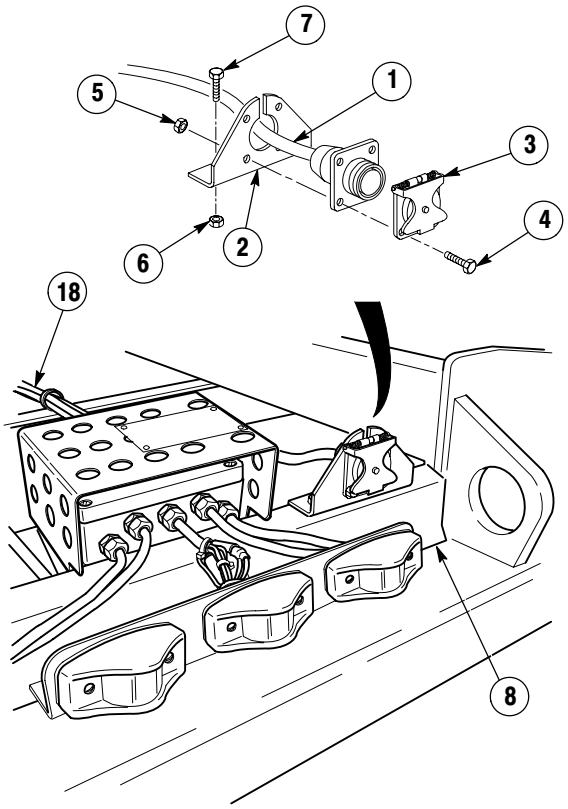
(e) Install bracket (2) on cross brace (8) with two screws (7) and locknuts (6).

(f) Connect wire harness (1) to bracket (2) and cover (3) with four screws (4) and locknuts (5).

NOTE

Install cable ties as required.

(g) Install wire harness (1) to existing wire harnesses (18) with cable ties.



o. Follow-On Maintenance:

- Connect intervehicular cables, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR.

This task covers:

a. 12 Volt Cable Repair b. 24 Volt Cable Repair c. Auxiliary Light Bar 24 Volt Cable Repair

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Tool Kit, Electrical (Item 48, Appendix J)
Gun, Heat (Item 16, Appendix J)
Pencil, Soldering, Electric (Item 30, Appendix J)

Materials/Parts
Heatshrink (AR), (Item 13, Appendix E)
Tags, Identification (Item 23, Appendix E)

Materials/Parts - Continued
Contact, Electrical (AR) (Item 12, Appendix I)
Contact, Electrical (AR) (Item 13, Appendix I)
Contact, Electrical (AR) (Item 14, Appendix I)
Lockwashers (8), (Item 57, Appendix I)

Equipment Condition
Cable removed from trailer, (TM 9-2320-364-10) or (Para 4-30)

a. 12 Volt Cable Repair.

(1) *Disassembly.*

CAUTION

Terminals come in different styles and sizes. To prevent damage, ensure to use only the exact replacement. Do not attempt to modify terminal to fit.

NOTE

Repeat procedure as necessary.

(a) Remove two screws (1), lockwashers (2) and cable clamps (3) from nut (4). Discard lockwashers.

(b) Remove nut (4), grommet (5), seal (6) and boot (7) from connector (8).

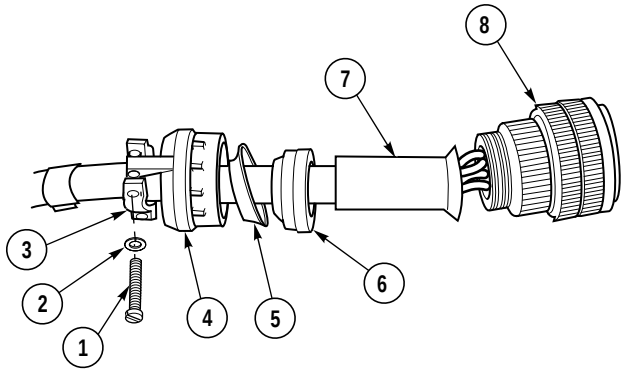
(c) Remove sleeve (9), collar (10), spring washer (11) and washer (12) from connector (8).

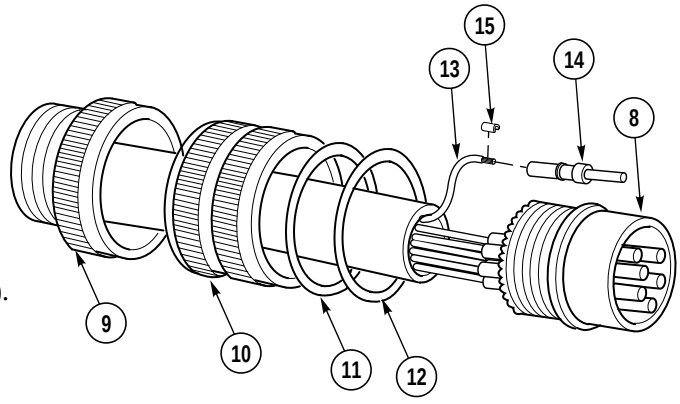
NOTE

Tag and mark all wires prior to removal.

(d) Remove wire (13) and terminal (14) from connector (8).

(e) Cut off terminal (14) at end of wire (13). Remove insulation (15) 1/4 inch (.635 cm) from end of wire (13). Discard terminal.





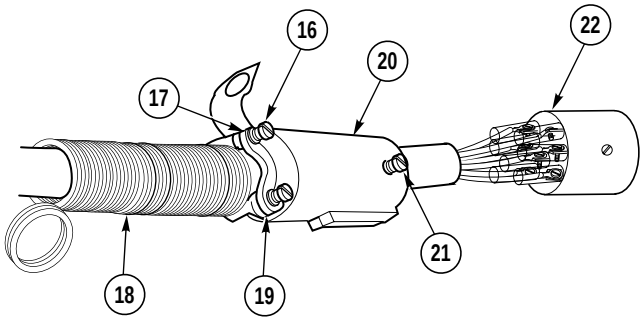
(f) Remove two screws (16), lockwashers (17), spring (18) and cable clamp (19) from housing (20). Discard lockwashers.

(g) Remove two screws (21) and connector (22) from housing (20).

(h) Remove plastic cover (23), screw (24) and terminal end (25) from connector (22).

(i) Cut terminal end (25) from wire (13). Discard terminal end.

(j) Remove insulation 1/4 in. (.635 cm) from end of wire.



(2) *Assembly.*

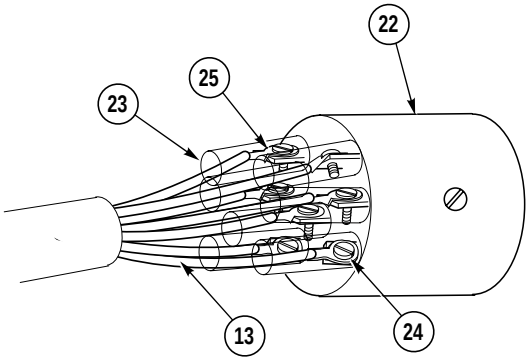
(a) Install terminal end (25) on wire (13).

(b) Install terminal end (25) on connector (22) with screw (24).

(c) Install plastic covers (23) on connector (22).

(d) Install connector (22) in housing (20) with two screws (21).

(e) Install cable clamp (19) and spring (18) on housing (20) with two lockwashers (17) and screws (16).



4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR (CONT).

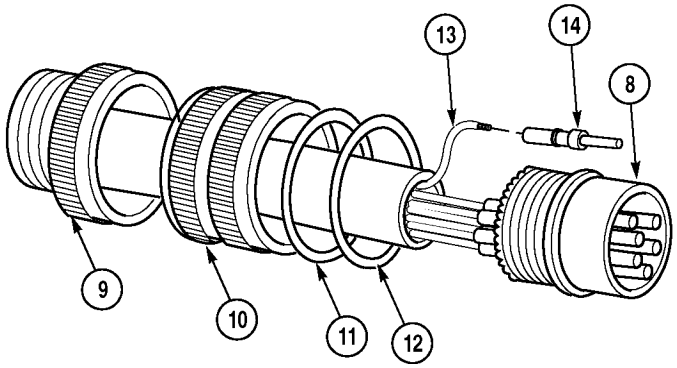
WARNING

Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

(f) Install terminal (14) on wire (13).

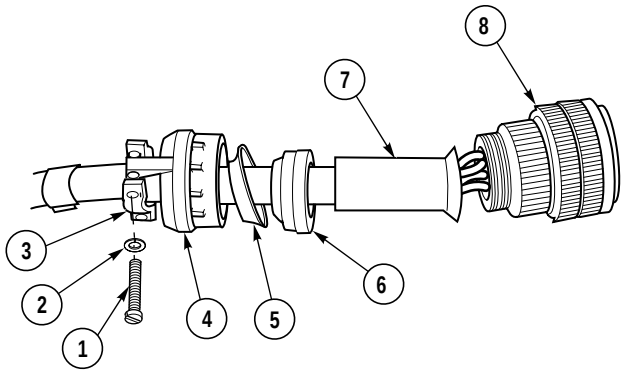
(g) Install seven terminals (14) in connector (8).

(h) Install washer (12), spring washer (11), collar (10) and sleeve (9) on connector (8).



(i) Install boot (7), seal (6), grommet (5) and nut (4) on connector (8).

(j) Install two cable clamps (3) on connector (8) with two lockwashers (2) and screws (1).



b. 24 Volt Cable Repair.

CAUTION

Terminals come in different styles and sizes. To prevent damage, ensure to use only the exact replacements. Do not attempt to modify terminal to fit.

NOTE

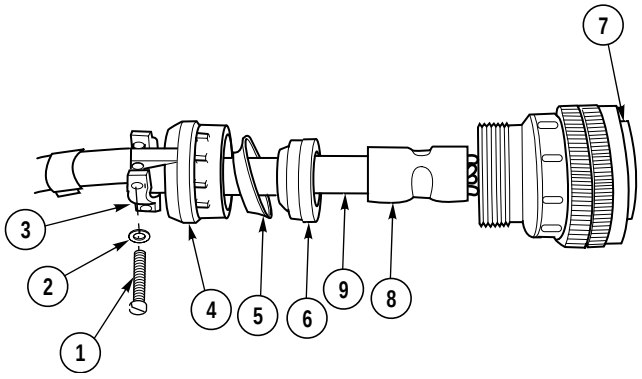
Repeat procedure as necessary.

(1) *Disassembly.*

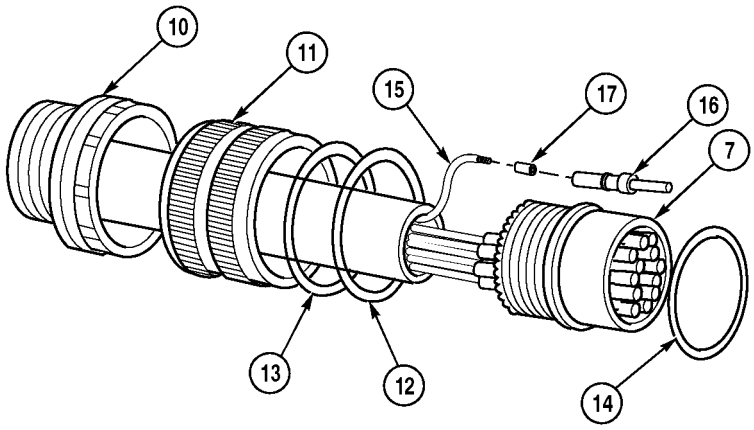
(a) Remove two screws (1), lockwashers (2) and cable clamps (3) from nut (4). Discard lockwashers.

(b) Remove nut (4), grommet (5) and seal (6) from connector (7).

(c) Cut and discard heat shrink (8) from cable (9).



4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR (CONT).



(d) Remove sleeve (10), collar (11), washer (12), spring washer (13) and gasket (14) from connector (7).

NOTE

Tag and mark all wires prior to removal.

(e) Remove wire (15) and terminal (16) from connector (7).

NOTE

Cut as close to damaged terminal as possible.

(f) Cut off terminal (16) at end of wire (15). Remove insulation (17) 1/4 inch (.635 cm) from end of wire (15). Discard terminal.

(2) *Assembly.*

(a) Install heat shrink (8) to end of cable (9).

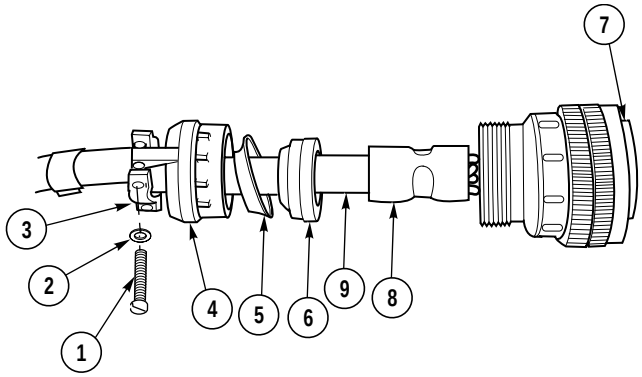
(b) Install terminal (16) on wire (15).

(c) Install terminal (16) on connector (7).

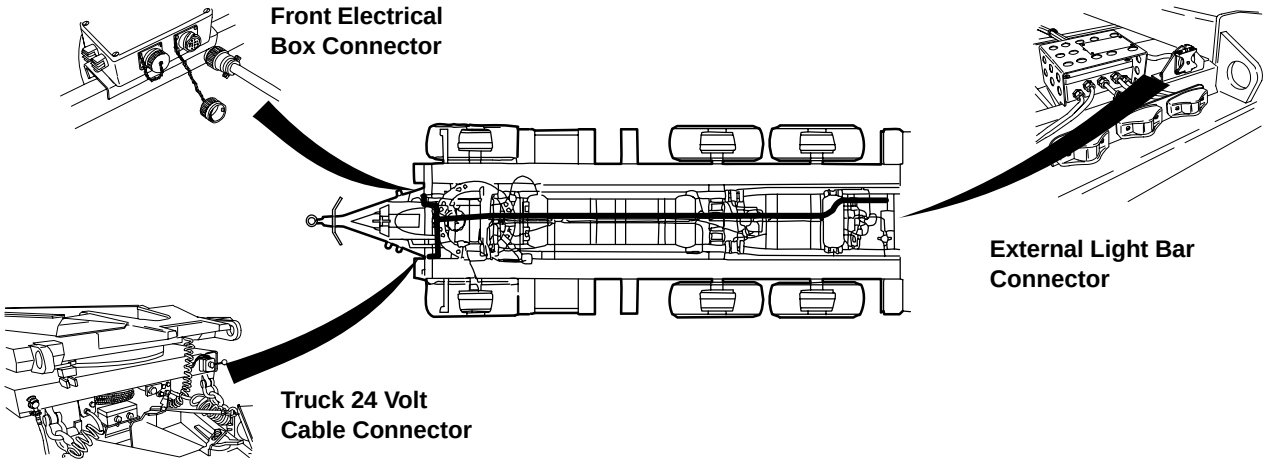
(d) Install gasket (14), spring washer (13), washer (12), collar (11) and sleeve (10) on connector (7).

(e) Install seal (6), grommet (5) and nut (4) on connector (7).

(f) Install two cable clamps (3) on nut (4) with two lockwashers (2) and screws (1).



c. Auxiliary Light Bar 24 Volt Cable Repair.



(1) *Disassembly, Front Electrical Box Connector.*

CAUTION

Terminals come in different styles and sizes. To prevent damage, ensure to use only the exact replacements. Do not attempt to modify terminal to fit.

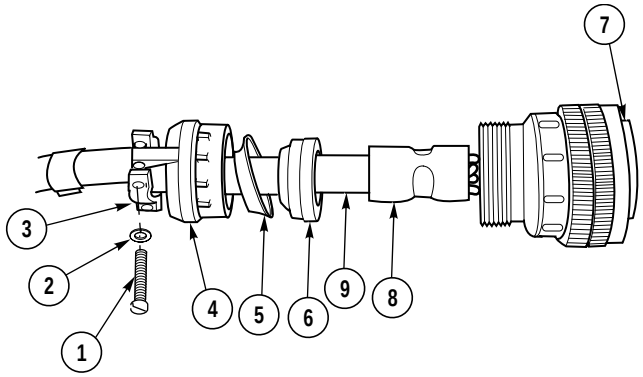
NOTE

Repeat procedure as necessary.

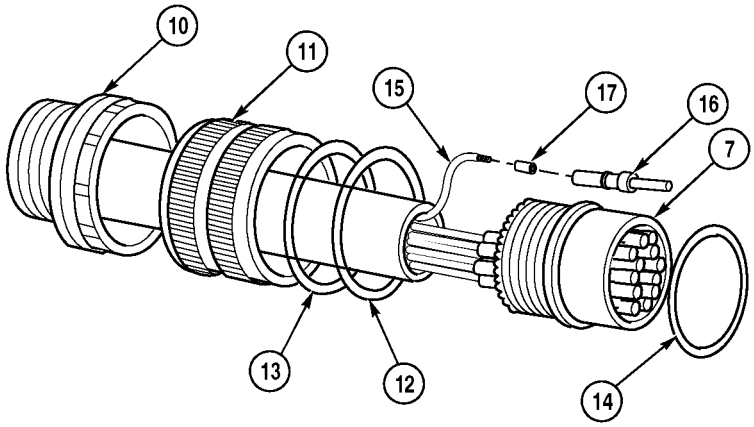
(a) Remove two screws (1), lockwashers (2) and cable clamps (3) from nut (4). Discard lockwashers.

(b) Remove nut (4), grommet (5) and seal (6) from connector (7).

(c) Cut and discard heat shrink (8) from cable (9).



4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR (CONT).



(d) Remove sleeve (10), collar (11), washer (12), spring washer (13) and gasket (14) from connector (7).

NOTE

Tag and mark all wires prior to removal.

(e) Remove wire (15) and terminal (16) from connector (7).

NOTE

Cut as close to damaged terminal as possible.

(f) Cut off terminal (16) at end of wire (15). Remove insulation (17) 1/4 inch (.635 cm) from end of wire (15). Discard terminal.

(2) *Disassembly, External Light Bar Connector.*

CAUTION

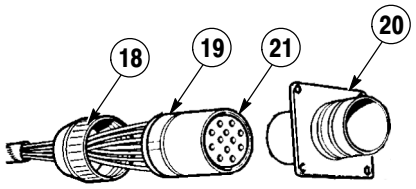
Terminals come in different styles and sizes. To prevent damage, ensure to use only the exact replacements. Do not attempt to modify terminal to fit.

NOTE

Repeat procedure as necessary.

(a) Remove collar (18) and grommet (19) from electrical connector housing (20).

(b) Remove electrical connector (21) from electrical connector housing (20).



NOTE

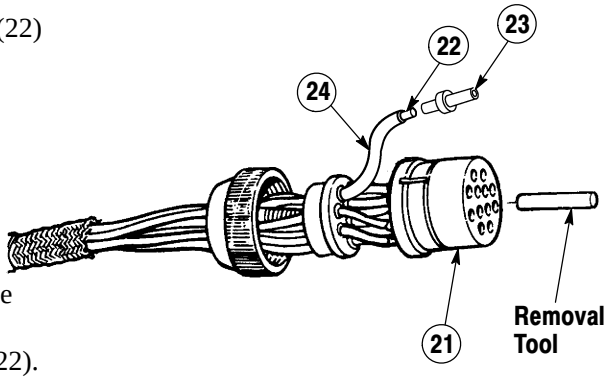
Tag and mark all wires prior to removal.

(c) Using removal tool, remove wire (22) with terminal (23) from electrical connector (21).

NOTE

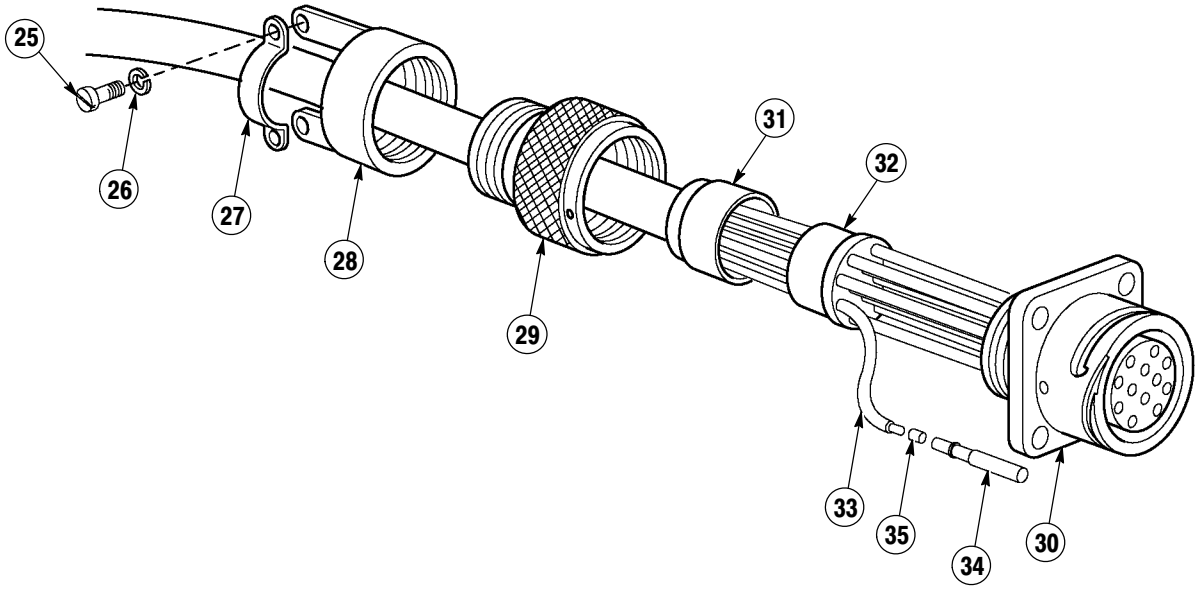
Cut as close to damaged terminal as possible.

(d) Cut off terminal (23) at end of wire (22). Remove insulation (24) 1/4 inch (.635 cm) from end of wire (22). Discard terminal.



4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR (CONT).

(3) *Disassembly, Truck 24 Volt Cable Connector.*



CAUTION

Terminals come in different styles and sizes. To prevent damage, ensure to use only the exact replacements. Do not attempt to modify terminal to fit.

NOTE

Repeat procedure as necessary.

(a) Remove two screws (25), lockwashers (26) and cable clamp (27) from housing (28). Discard lockwashers.

(b) Remove housing (28) from backshell (29).

(c) Remove backshell (29) from connector (30).

(d) Remove compression ring (31) and grommet (32) from connector (30).

NOTE

Tag and mark all wires prior to removal.

(e) Remove wire (33) and terminal (34) from connector (30).

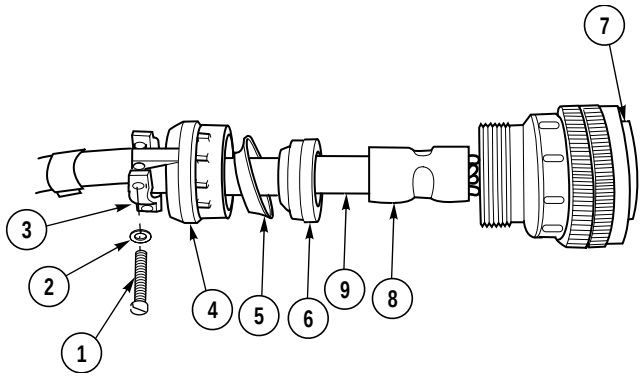
NOTE

Cut as close to damaged terminal as possible.

(f) Cut off terminal (34) at end of wire (33). Remove insulation (35) 1/4 inch (.635 cm) from end of wire. Discard terminal.

(4) Assembly, Front Electrical Box Connector.

(a) Install heat shrink (8) to end of cable (9).



WARNING

Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

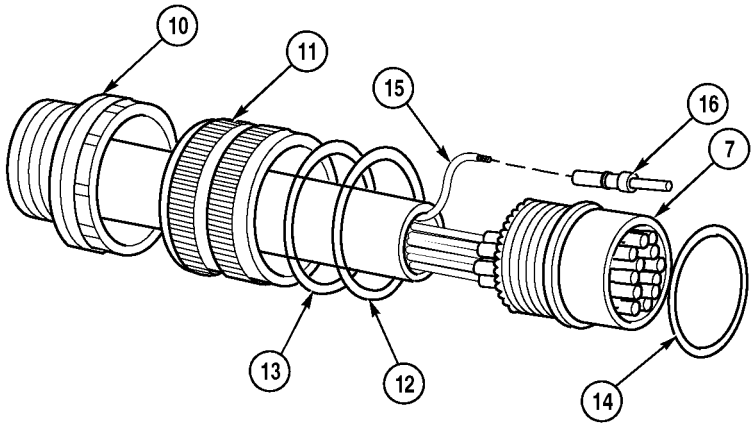
(b) Install terminal (16) on wire (15).

(c) Install terminal (16) on connector (7).

(d) Install gasket (14), spring washer (13), washer (12), collar (11) and sleeve (10) on connector (7).

(e) Install seal (6), grommet (5) and nut (4) on connector (7).

(f) Install two cable clamps (3) on nut (4) with two lockwashers (2) and screws (1).



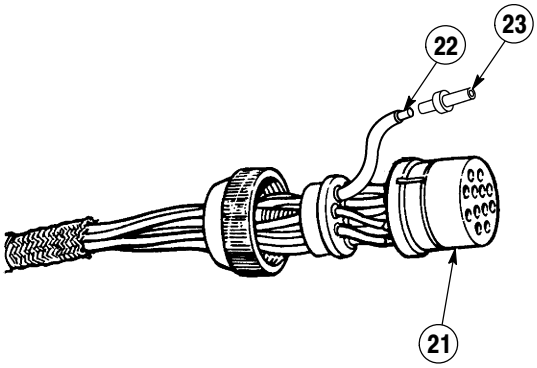
4-31. 12 VOLT AND 24 VOLT TRAILER LIGHT CABLE REPAIR (CONT).

(5) Assembly, External Light Bar Connector.

WARNING

Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

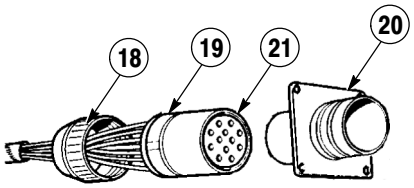
(a) Install terminal (23) on wire (22).



(b) Install terminal (23) and wire (22) in electrical connector (21).

NOTE

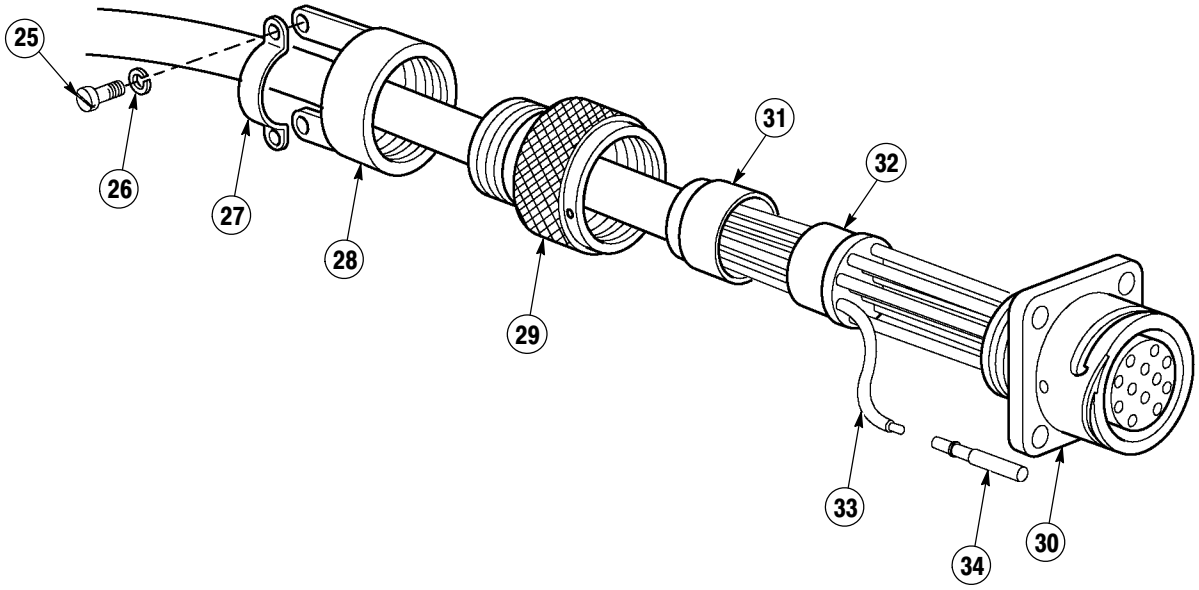
Align tab with keyway.



(c) Install electrical connector (21) in electrical connector housing (20).

(d) Install grommet (19) and collar (18) into electrical connector housing (20).

(6) *Assembly, Truck 24 Volt Cable Connector.*



WARNING

Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

(a) Install terminal (34) on wire (33).

(b) Install terminal (34) and wire (33) on connector (30).

(c) Install terminal (34), grommet (32) and compression ring (31) on connector (30).

(d) Install backshell (29) and housing (28) on connector (30).

(e) Install cable clamp (27) on housing (28) with two lockwashers (26) and screws (25).

d. Follow-On Maintenance:

- Connect cable to trailer, (TM 9-2320-364-10) or (Para 4-30).

END OF TASK

4-32. FLATRACK LOCK INTERVEHICULAR CABLE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

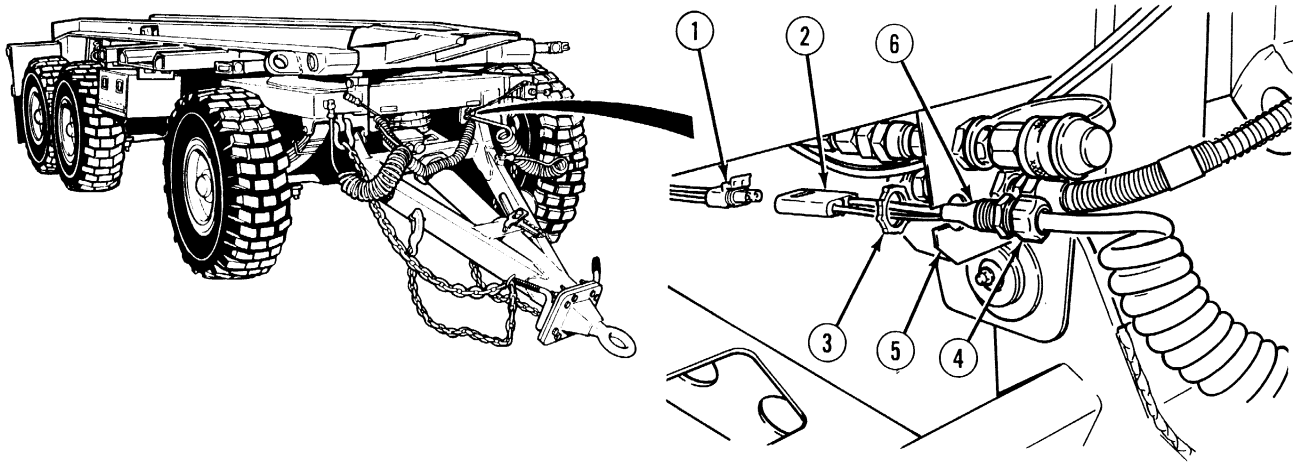
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Tool, Removal (Item 48, Appendix J)

Materials/Parts
Locknut (Item 30, Appendix I)
Locknut (Item 44, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Intervehicular cable disconnected, (Para 2-9)
Load lock status line disconnected from truck, (Para 2-9)

a. Removal.



NOTE

Connector is removed by gently prying up on tab and pulling connectors apart.

(1) Disconnect connector (1) from connector (2).

(2) Remove locknut (3) from connector (4) and bracket (5).

(3) Remove connector (4) and wire assembly (6) from bracket (5).

(4) Open latch (7) on connector (2).

(5) Insert and push removal tool in connector (2) and remove wire (8).

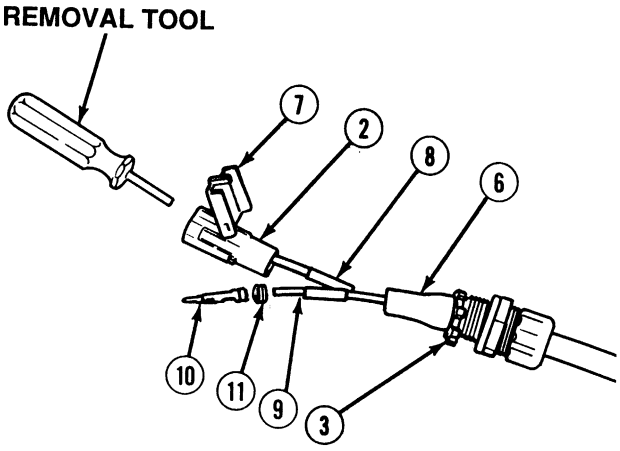
(6) Insert and push removal tool in connector (2) and remove wire (9).

(7) Remove contacts (10) and boots (11) from wires (8) and (9).

(8) Remove locknut (3) from wire assembly (6). Discard locknut.

(9) Remove locknut (12), screw (13) and twist bracket (14) from clamp (15). Discard locknut.

(10) Remove clamp (15) from wire assembly (6).



b. Installation.

NOTE

Clamp is properly installed when positioned on the fourteenth coil from the trailer end of the wire assembly.

(1) Install clamp (15) on wire assembly (6).

(2) Install twist bracket (14) on clamp (15) using screw (13) and locknut (12).

(3) Install contacts (10) and boots (11) to wire (8) and (9).

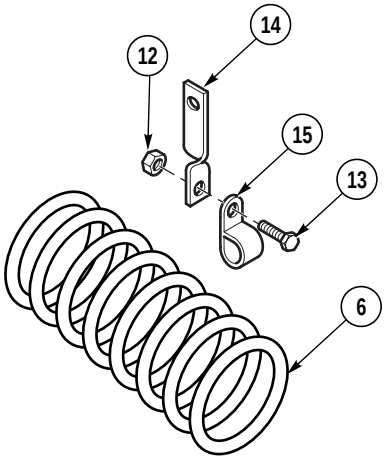
(4) Install locknut (3) over wires (8) and (9).

(5) Install wires (8) and (9) on connector (2).

(6) Close latch (7) on connector (2).

(7) Install wire assembly (6) on bracket (5).

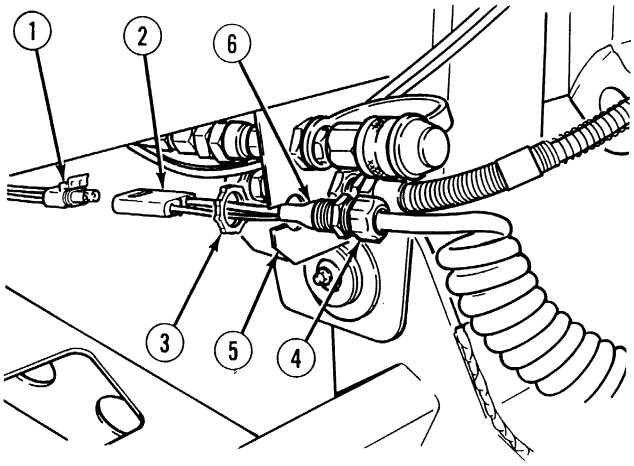
(8) Tighten locknut (3) on connector (4) and bracket (5).



NOTE

Ensure male and female ends of connectors are securely latched together.

(9) Connect connector (2) on connector (1).



c. Follow-On Maintenance:

- Install intervehicular cable on truck, (Para 2-9).
- Install load lock cable, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-33. FLATRACK LOCK SENSOR REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

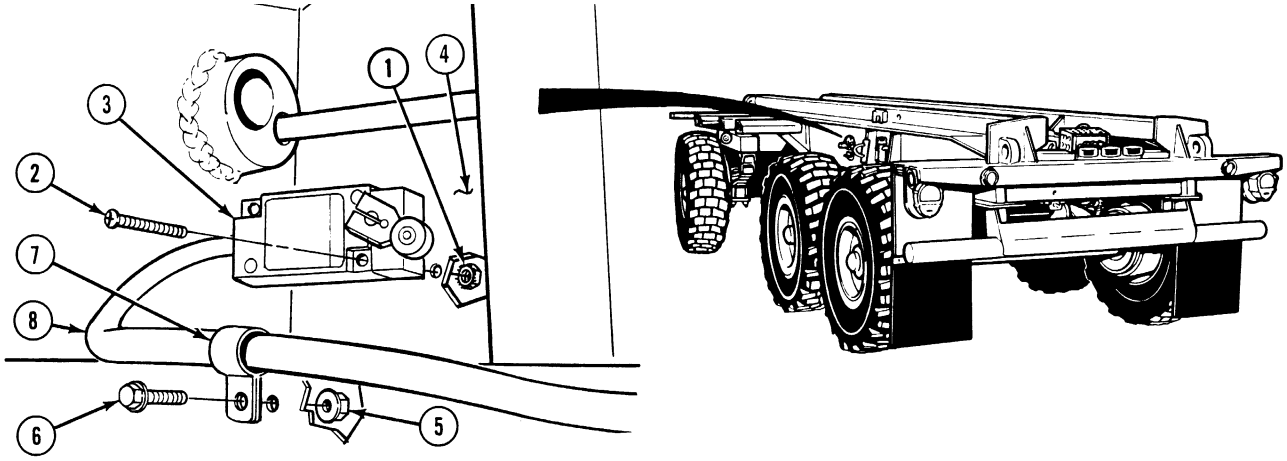
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Materials/Parts
Cable Ties (Item 8, Appendix E)
Locknut (2) (Item 33, Appendix I)
Locknut (9) (Item 36, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Load Lock status line disconnected from truck, (Para 2-9)
Flatrack locks on sensor side caged, (Para 4-65)

a. Removal.



CAUTION

Remove paint from screw threads prior to removing locknuts or damage to screw threads may result.

(1) Remove two locknuts (1) and screws (2) from sensor (3) and frame (4). Discard locknuts.

(2) Remove sensor (3) from frame (4).

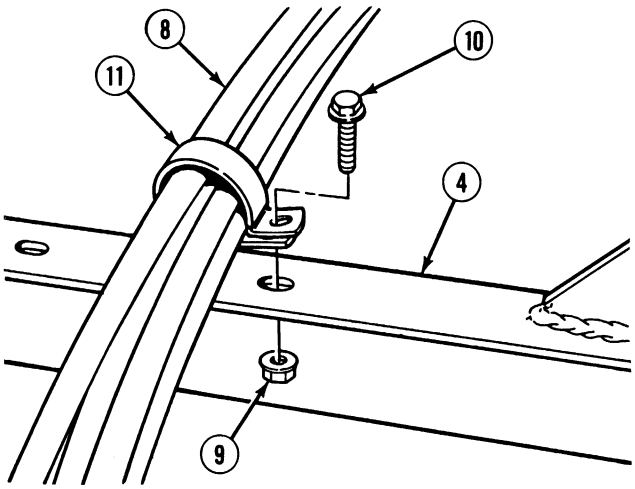
(3) Remove two locknuts (5), screws (6) and clamps (7) from cable (8) and frame (4). Discard locknuts.

(4) Remove seven locknuts (9), screws (10) and clamps (11) from cable (8) and frame (4). Discard locknuts.

NOTE

Remove cable ties as required.

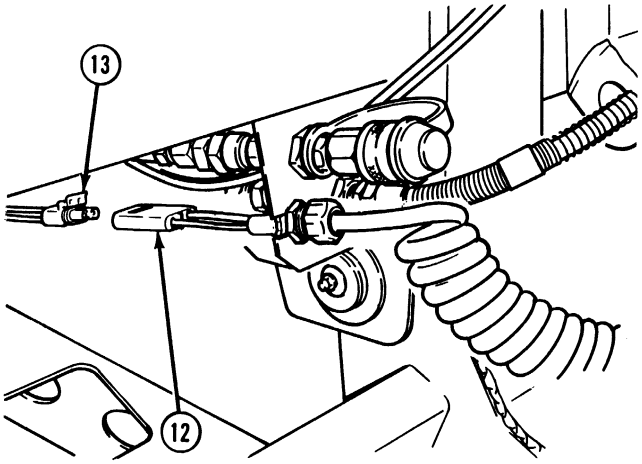
(5) Remove cable (8) from trailer frame (4).



NOTE

Connector is removed by gently prying up on tab and pulling connectors apart.

(6) Pull connector (12) from connector (13).



b. Installation.

NOTE

Ensure male and female ends of connectors are securely latched together.

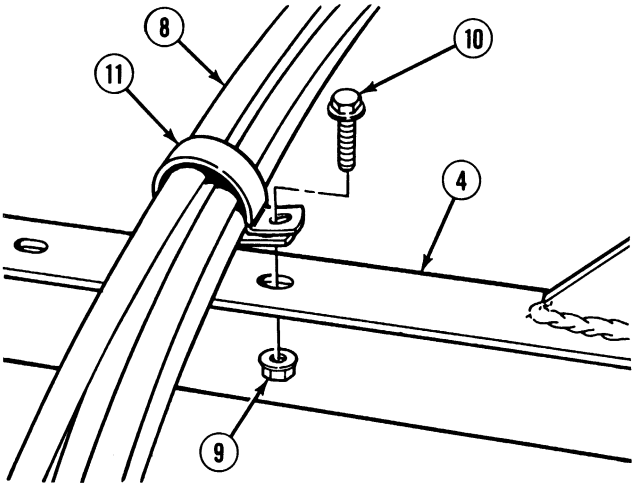
(1) Connect connector (13) to connector (12).

NOTE

Install cable ties as required.

(2) Install cable (8) on frame (4).

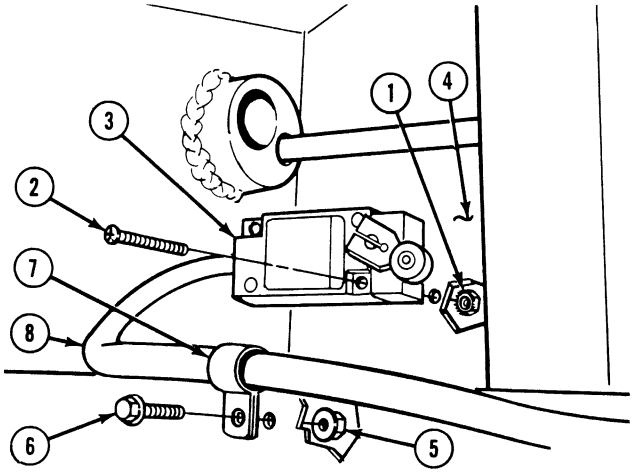
(3) Install seven clamps (11) on cable (8) and frame (4) with locknuts (9) and screws (10).



4-33. FLATRACK LOCK SENSOR REPLACEMENT (CONT).

(4) Install two clamps (7) on cable (8) and frame (4) with locknuts (5) and screws (6).

(5) Install sensor (3) on frame (4) with two screws (1) and locknuts (2).



c. Follow-On Maintenance:

- Uncage flatrack lock on sensor side, (Para 4-65).
- Connect load lock intervehicular cable, (Para 2-9).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-34. ADJUST BRAKES.

This task covers:

a. Adjust b. Follow-On Maintenance

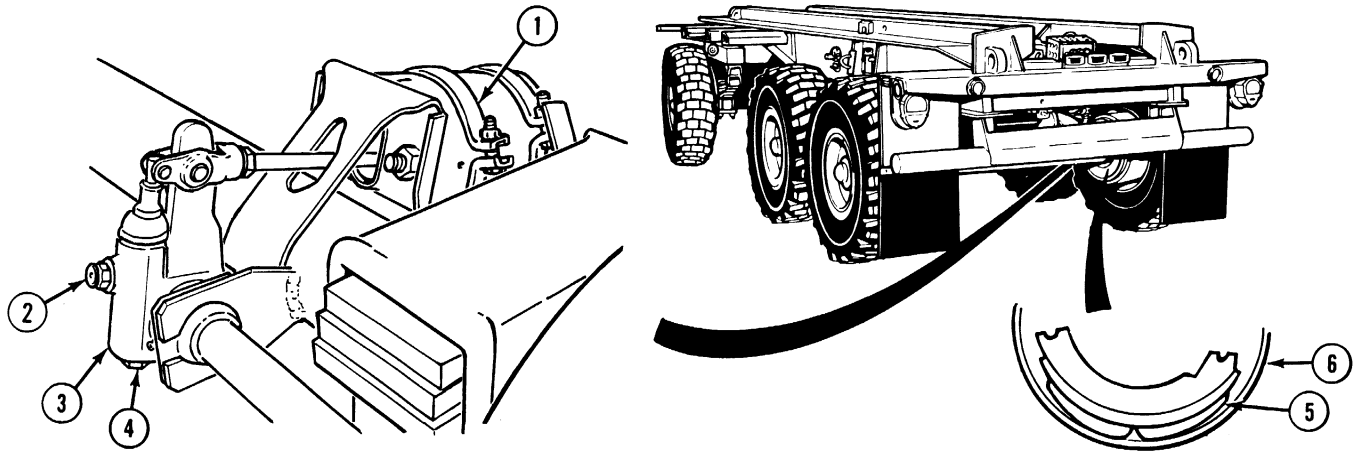
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)
Wrench, Torque (0-60 N·m) (Item 60, Appendix J)

Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)

a. Adjust.



CAUTION

Button must be pulled out before turning the manual adjusting nut or damage to equipment will result.

NOTE

This procedure must be performed for each brake.

(1) Refer to Para 2-16 and cage brake chamber (1).

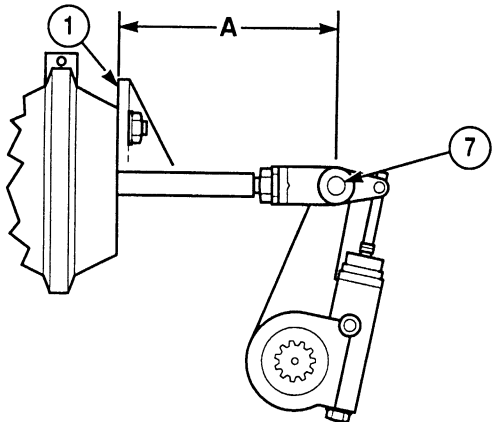
(2) Pull out button (2) from slack adjuster (3).

(3) Turn manual adjusting nut (4) counterclockwise until brake linings (5) contact brake drum (6).

(4) Turn manual adjusting nut (4) clockwise 1/2 turn.

4-34. ADJUST BRAKES (CONT).

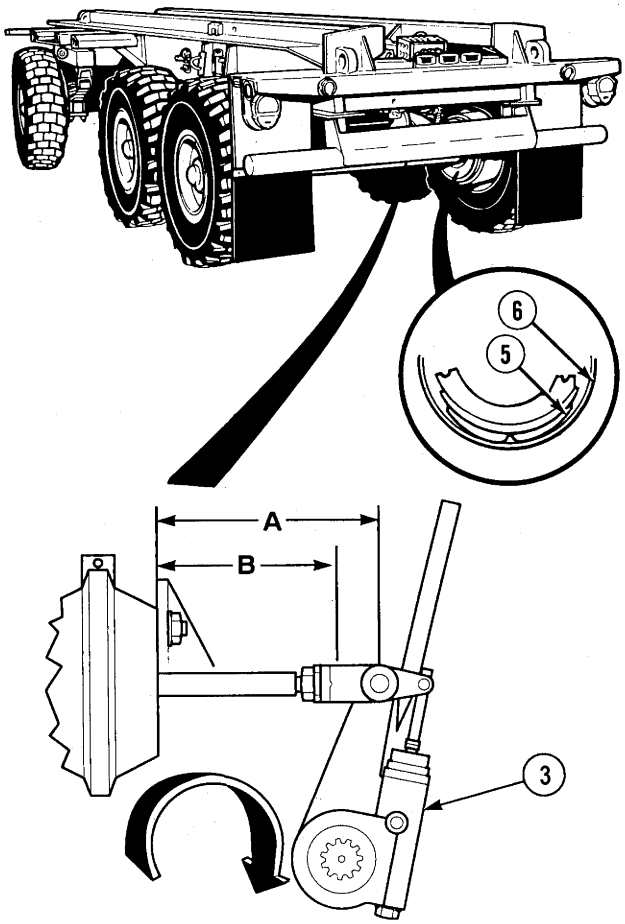
(5) Measure distance between center of large clevis pin (7) and bottom of brake chamber (1), (measurement A) with brake in released position. Record measurement.



NOTE

- The free stroke sets the clearance between the linings and brake drum.
- If when checking free stroke as part of Preventive Maintenance, the free stroke is not within specifications, refer to troubleshooting (Para 4-16) to correct the problem prior to proceeding.
- The difference between measurement B and measurement A is the free stroke. Free stroke must be between 5/8 to 3/4 in. (16-19 mm).

(6) Using a pry bar, move slack adjuster (3) so that linings (5) are against drum (6). Measure the distance from center of large clevis (7) to bottom of brake chamber (1) again, (measurement B).



CAUTION

- Do not set free stroke shorter than 5/8 in. (16 mm). If free stroke is too short, brake linings can drag and damage brakes.
- The button must be pulled out before turning the manual adjusting nut or damage to equipment will result.

NOTE

Perform Step (7) if free stroke is more than 3/4 in. (19 mm) or less than 5/8 in. (16 mm).

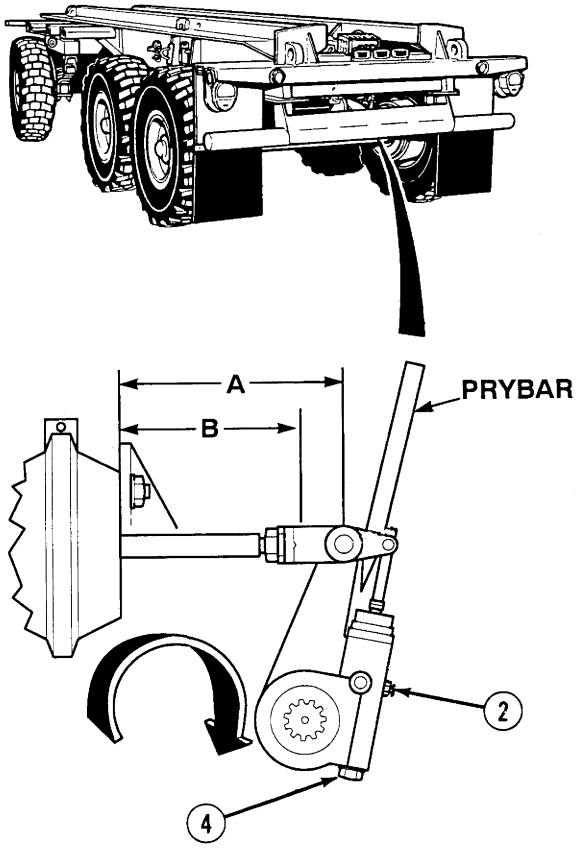
(7) Pull out button (2) and turn manual adjusting nut (4), 1/8 turn at a time in the required direction and check the free stroke again.

(8) Refer to Para 2-16 and uncage brakes.

NOTE

Repeat Steps (1) through (6) for each brake.

(9) Refer to Para 2-9 and hook up trailer air lines on truck.



4-34. ADJUST BRAKES (CONT).

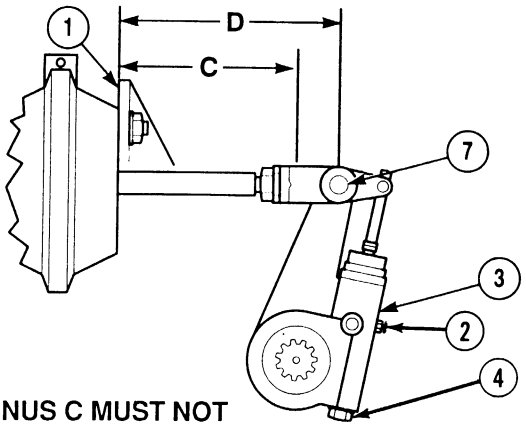
WARNING

- Do not work under trailer unless the wheels of the truck and trailer are chocked, the trailer is on level ground and the truck engine is shut off. Failure to chock wheels of truck and trailer could cause serious injury or death to personnel.
- An assistant must be in the truck cab at all times while checking brakes under trailer to prevent truck movement. Failure to have an assistant in truck cab to prevent truck movement could cause serious injury or death to personnel.
- Do not hook up trailer drawbar or trailer safety chains while checking brakes under truck. If trailer safety chains or drawbar are hooked up, the trailer could be dragged if the truck should move, causing serious injury or death to personnel.

(10) With the aid of an assistant, start truck and allow air pressure to build up to 100 psi (689 kPa) minimum.

(11) Measure distance between center of large clevis pin (7) and bottom of brake chamber (1) (measurement C), with brake in released position. Record measurement.

(12) With the aid of an assistant, apply brakes while measuring distance from center of large clevis pin (7) to bottom of brake chamber (1) (measurement D).



D MINUS C MUST NOT EXCEED 2 IN. (51mm)

CAUTION

- The adjusted stroke must not exceed two in. (51 mm), or damage to the brakes may result.
- The adjusted stroke should be as short as possible, but not so short that the free stroke is less than 5/8 in. (16 mm).
- The button must be pulled out before turning the manual adjusting nut or damage to equipment will result.

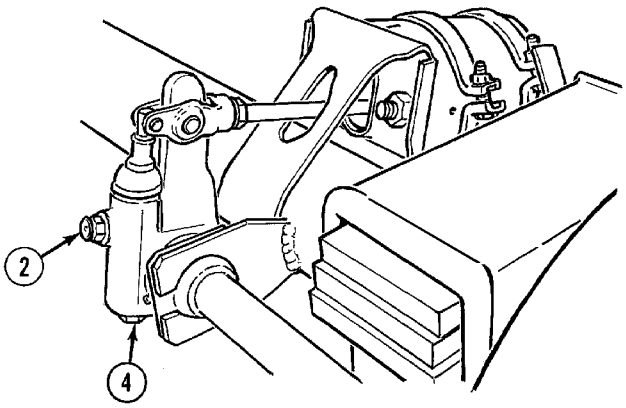
NOTE

The difference between the measurements D and C is the adjusted chamber stroke.

(13) Pull out button (2) and turn manual adjusting nut (4) on slack adjuster (3) to adjust the brake. The adjusted stroke length must not exceed two in. (51 mm).

CAUTION

The button must be pulled out before turning the manual adjusting nut or damage to equipment will result.



NOTE

- Pull out button and turn adjusting nut counterclockwise to shorten adjusted stroke and clockwise to lengthen adjusted stroke.
- Perform Step (14) only if stroke length exceeds 2 in. (51 mm).

(14) Pull out button (2) and turn manual adjusting nut (4) 1/8 turn at a time in the required direction and check the adjusted stroke again.

(15) Repeat Steps (8) through (14) for each brake.

NOTE

If brake shoes were replaced, perform Steps (16) and (17).

(16) Attach trailer to truck (Para 2-9 or Para 2-11) and perform several heavy brake applications during road test.

(17) Test trailer service brake system (Para 2-7).

(a) If trailer passes service brake system test, proceed to Follow-On Maintenance.

(b) If trailer fails service brake system test, repeat Steps (1) through (17).

b. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-35. BRAKE REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Compressor Unit, Air (Item 5, Appendix J)
Gloves, Chemical and Oil Protective (Item 11, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Gun, Air Blow (Item 15, Appendix J)
Pliers, Brake Repair (Item 31, Appendix J)
Pliers, Retaining Ring (Item 32, Appendix J)
Respirator, Air Filtering (Item 36, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)
Wrench, Torque (0-60 N·m) (Item 60, Appendix J)

Materials/Parts
Grease (Item 12, Appendix E)
Solvent, Drycleaning (Item 22, Appendix E)
Bushing (2) (Item 8, Appendix I)

Materials/Parts - Continued
Bushing, Camshaft Assembly (Item 9, Appendix I)
Clip, Retaining (Item 15, Appendix I)
Clip, Retaining (Item 16, Appendix I)
Pin, Anchor (Item 61, Appendix I)
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (2) (Item 63, Appendix I)
Retainer Assembly (Item 71, Appendix I)
Roller (2) (Item 73, Appendix I)
Seal (2) (Item 78, Appendix I)
Spring (Item 82, Appendix I)
Spring (2) (Item 83, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Wheel bearings and hub removed, (Para 4-58)

a. Removal.

WARNING

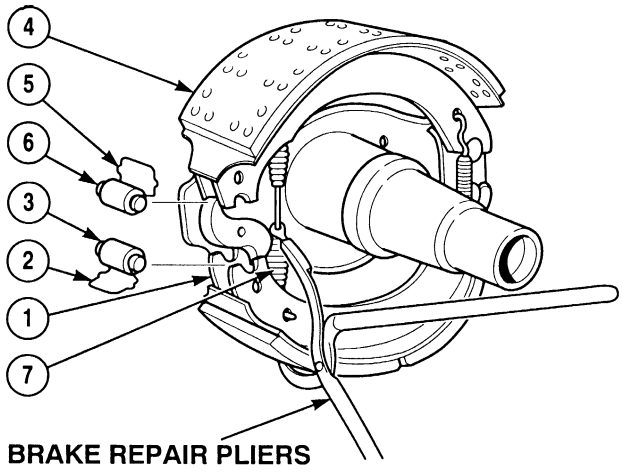
- Brake shoes may be covered with dust. Breathing this dust may be harmful to your health. Do not use compressed air to clean brake shoes. Wear a filter mask approved for use against brake dust. Failure to comply may result in injury or death to personnel.
- Brake shoe springs are under tension. Wear eye protection and use caution when removing springs or serious injury to personnel could result.

CAUTION

When one brake shoe needs to be replaced, all brake shoes for that axle must be replaced. Damage to equipment could occur.

NOTE

Use a pry bar to raise or lower brake shoes from rollers or pins.



(1) Push down on lower brake shoe (1) and remove roller retaining clip (2) and lower cam roller (3) from lower brake shoe (1). Discard roller retaining clip and cam roller.

(2) Lift up on upper brake shoe (4) and remove upper roller retaining clip (5) and upper cam roller (6) from upper brake shoe (4). Discard roller retaining clip and cam roller.

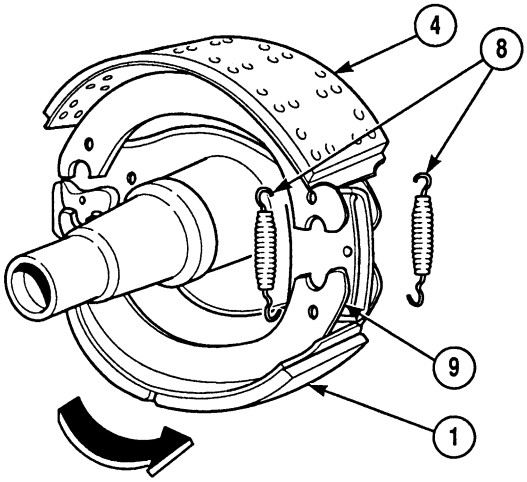
CAUTION

Ensure lower fork of brake spring pliers is seated in rivet hole of lower brake shoe. Failure to seat brake spring pliers correctly may cause damage to brake lining.

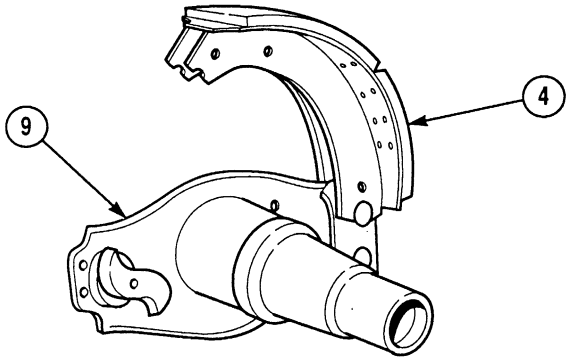
(3) Attach brake spring pliers to spring (7) and remove spring from brake shoe. Discard spring.

4-35. BRAKE REPLACEMENT (CONT).

(4) Rotate lower brake shoe (1) downward and remove brake return springs (8) and lower shoe (1) from brake shoe (4) and spider (9). Discard springs.

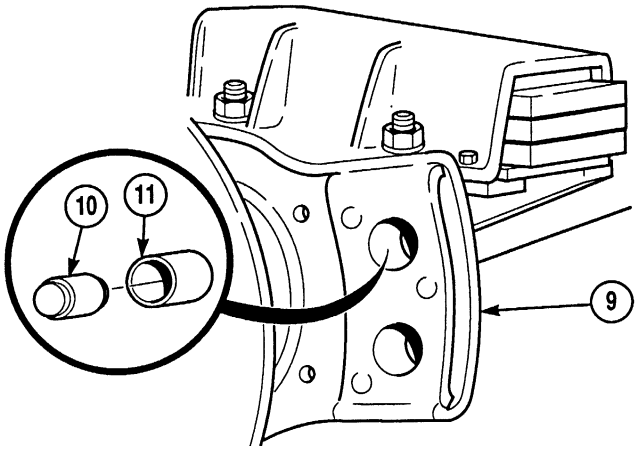


(5) Remove brake shoe (4) from spider (9).



(6) Remove two anchor pins (10) from anchor pin bushings (11). Discard anchor pins.

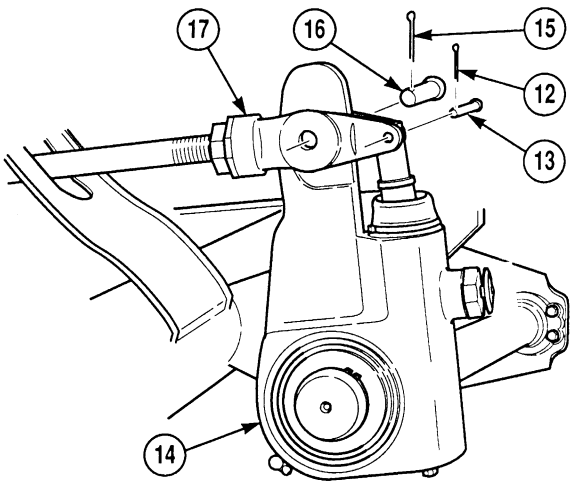
(7) Remove two anchor pin bushings (11) from spider (9). Discard anchor pin bushings.



(8) Remove cotter pin (12) and pin (13) from slack adjuster (14). Discard cotter pin.

(9) Remove cotter pin (15) and pin (16) from slack adjuster (14). Discard cotter pin.

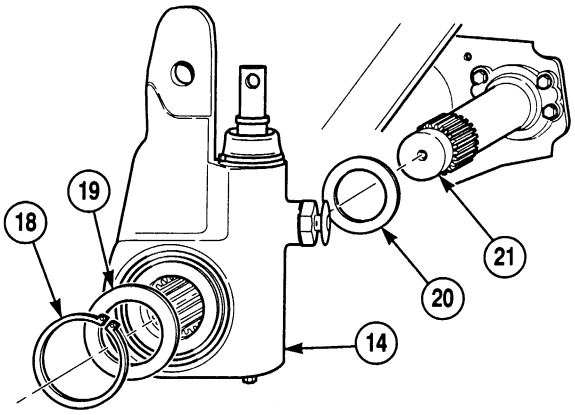
(10) Pull slack adjuster (14) away from clevis (17).



WARNING

Use care when removing retaining rings. Retaining rings are under spring tension and can act as projectiles when released and could cause severe eye injury.

(11) Remove retaining ring (18), washer (19), slack adjuster (14) and washer (20) from S-cam shaft (21).



4-35. BRAKE REPLACEMENT (CONT).

(12) Remove four short self-tapping screws (22) and camshaft bushing assembly (23) from bracket (24). Discard camshaft bushing assembly.

(13) Remove four long self-tapping screws (25) from retainer assembly (26). Discard retainer assembly.

WARNING

Use care when removing retaining rings. Retaining rings are under spring tension and can act as projectiles when released and could cause severe eye injury.

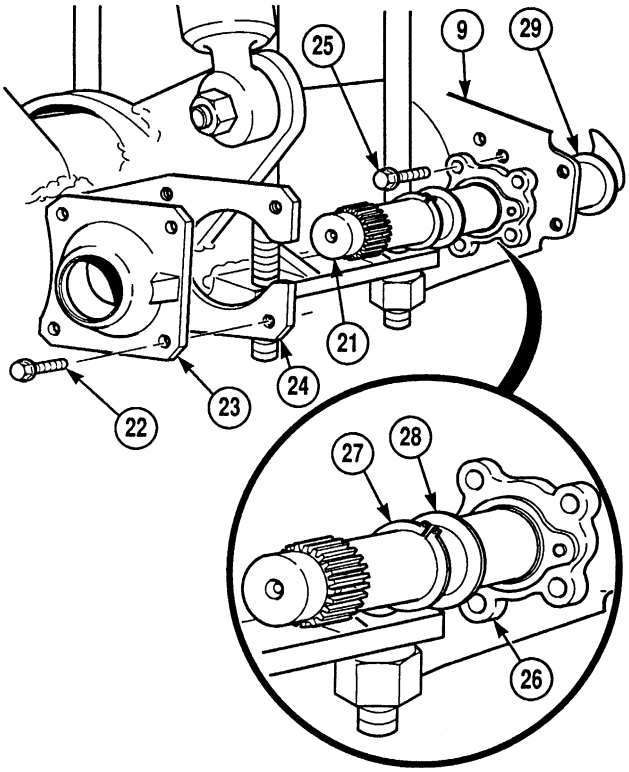
(14) Remove retaining ring (27) and washer (28) from S-cam shaft (21).

CAUTION

Do not interchange camshafts from side-to-side, changing camshafts from side-to-side could cause damage to equipment.

(15) Remove S-cam shaft (21) and washer (29) from spider (9).

(16) Remove retainer assembly (26) from spider (9).



b. Cleaning/Inspection.

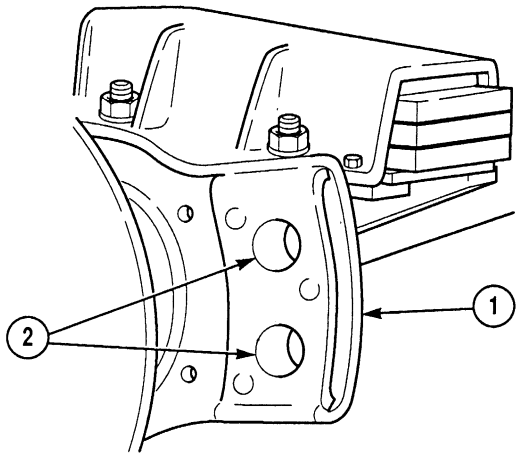
WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc).

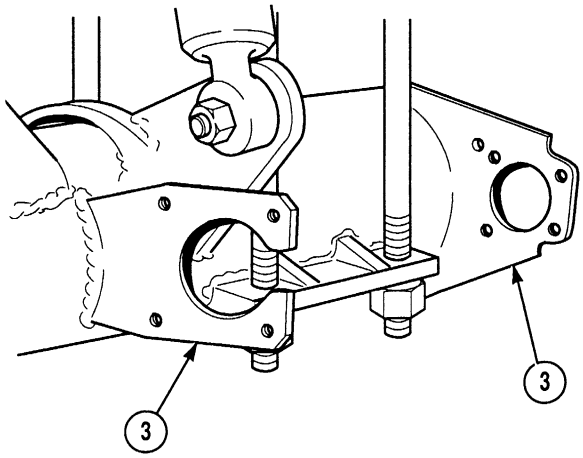
(1) Clean parts with P-D-680 drycleaning solvent.

(2) Dry parts, except bearings, with compressed air.

(3) Inspect spider (1) for expanded anchor pin holes (2) and cracks.

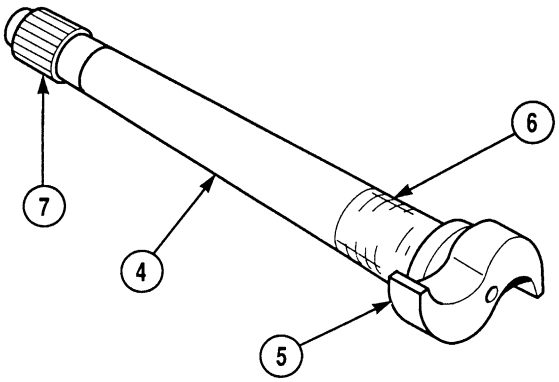


(4) Check S-cam brackets (3) for broken welds, cracks and correct alignment.

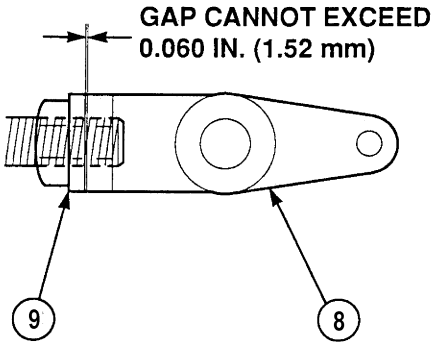


4-35. BRAKE REPLACEMENT (CONT).

(5) Check camshaft (4) for cracks, wear and corrosion. Check cam head (5), bearing journals (6) and splines (7). Replace damaged camshafts.



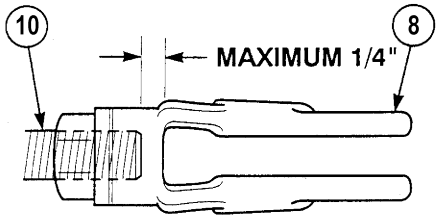
(6) Check gap between clevis (8) and collar (9). If gap exceeds 0.060 in. (1.52 mm) replace clevis.

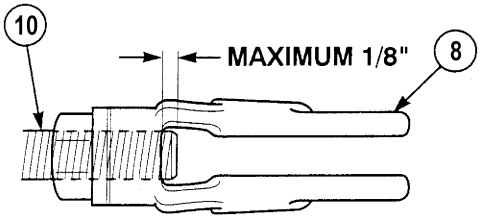


NOTE

Push rod must be within 1/4 in. (6.35 mm) of the opening in the clevis. Rod must also not extend more than 1/8 in. (3.18 mm) through the clevis.

(7) Check position of push rod (10) in clevis (8).





(8) Check bushing (11) for excessive wear. If bushing is excessively worn or missing, replace slack adjuster.

(9) Loosen adjusting pawl (12) from slack adjuster (13).

(10) Tighten adjusting pawl (12) on slack adjuster (13) and tighten to 180 to 240 lb-in (20-27 N·m).

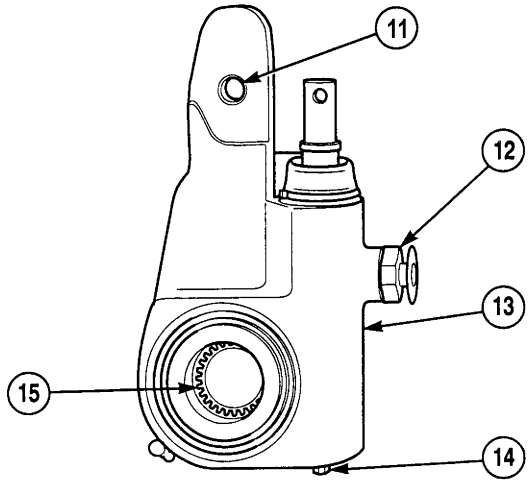
CAUTION

Turn adjusting nut only to the left. Rotating nut in the wrong direction will damage pawl teeth.

NOTE

The torque must remain less than 25 lb-in (3 N·m). If torque value exceeds specifications, slack adjuster is not working correctly. Refer to Para 4-36 and replace slack adjuster.

(11) Check slack adjuster (13) by rotating adjusting nut (14) to the left with a lb-in torque wrench. Turn gear (15) 360 degrees by turning adjusting nut (14) 22 rotations.

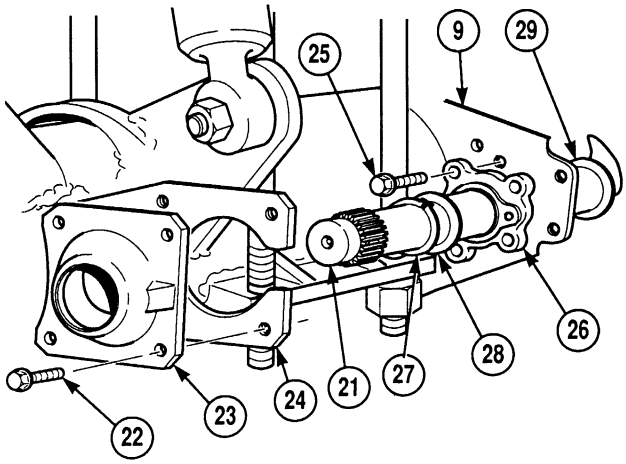


4-35. BRAKE REPLACEMENT (CONT).

c. Installation.

(1) Install four long self tapping screws (25) and retainer assembly (26) on spider (9).

(2) Install washer (29) and S-cam shaft (21) in retainer (26).



WARNING

Use care when removing retaining rings. Retaining rings are under spring tension and can act as projectiles when released and could cause severe eye injury.

(3) Install washer (28) and retaining ring (27) on S-cam shaft (21).

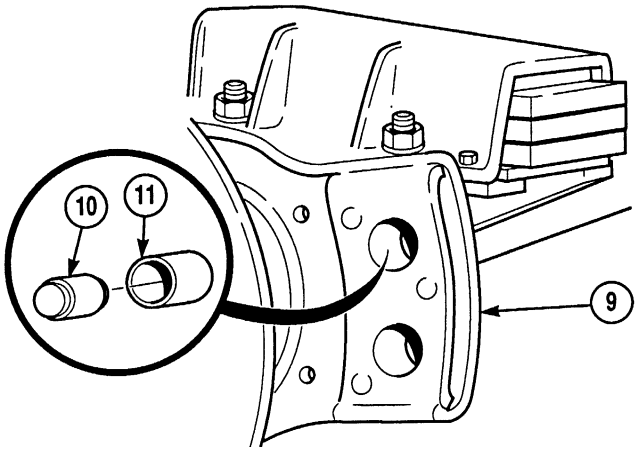
NOTE

Grease fitting on cam shaft bushing assembly must face front of trailer.

(4) Install four short self-tapping screws (22) and cam shaft bushing assembly (23) on bracket (24).

(5) Install two anchor pin bushings (11) on spider (9).

(6) Lubricate two anchor pins (10) with grease and install in anchor pin bushings (11).

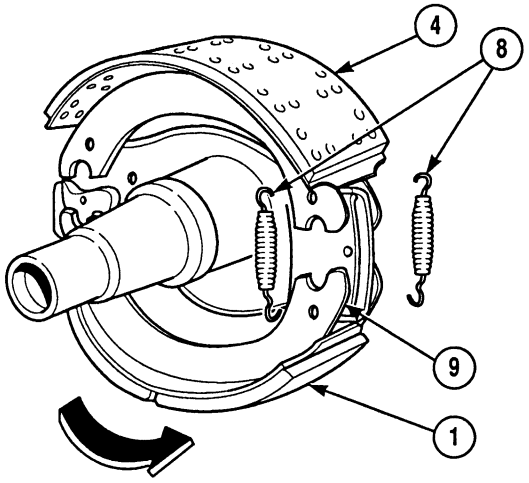


(7) Position upper brake shoe (4) and lower brake shoe (1) on spider (9).

WARNING

Brake shoe springs are under tension. Wear eye protection and use caution when installing springs or serious injury to personnel could result.

(8) Install two return springs (8) on upper brake shoe (4) and lower brake shoe (1).

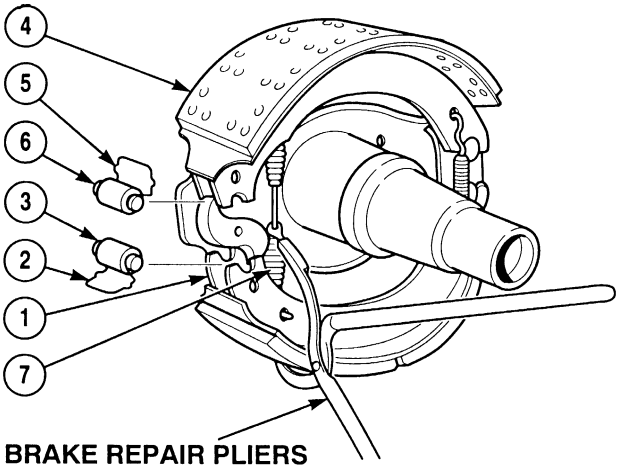


(9) Using brake spring pliers install spring (7) on upper brake shoe (4) and lower brake shoe (1).

(10) Install spring clips (2) and (5) on cam rollers (3) and (6).

CAUTION

Do not get grease on parts of cam rollers that contact S-cam. Lubricating this part may cause damage to equipment.



BRAKE REPAIR PLIERS

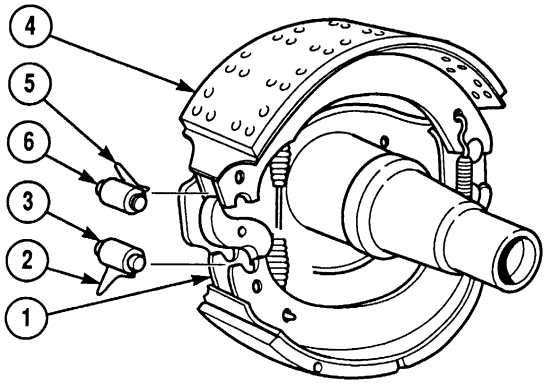
(11) Apply grease to ends of cam rollers (3) and (6) that will contact brake shoes.

NOTE

- When installing cam rollers and spring clips ensure that tips of spring clips are facing towards brake shoes and two bends in spring fit in holes in brake shoes.
- Use pry bar to raise or lower shoes from rollers or pins.

(12) Pull down on lower brake shoe (1) and install lower cam roller (3) and spring clip (2), as one assembly.

(13) Pull up on upper brake shoe (4) and install upper cam roller (6) and spring clip (5) as one assembly.



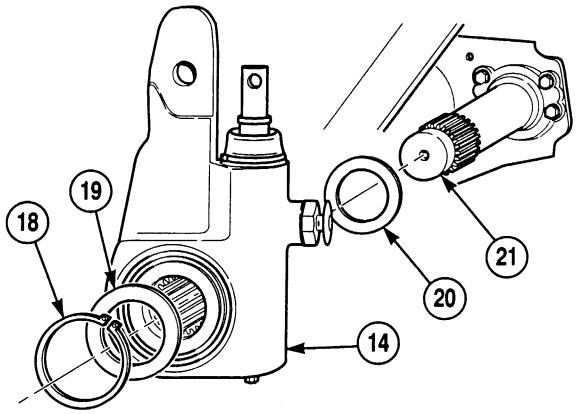
4-35. BRAKE REPLACEMENT (CONT).

(14) Lubricate splines of S-cam shaft (21) with grease.

WARNING

Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released and could cause severe eye injury.

(15) Install washer (20), slack adjuster (14), washer (19) and retaining ring (18) on S-cam shaft (21).

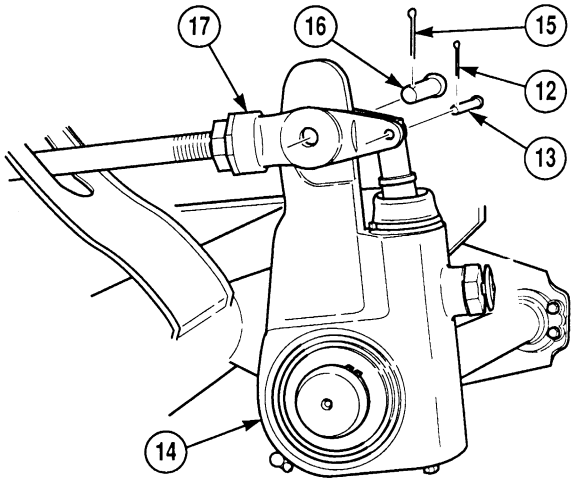


NOTE

Push rod must be within 1/4 in. (6.35 mm) of opening in clevis. The rod must also not extend more than 1/8 in. (3.18 mm) through clevis.

(16) Install clevis (17), pin (16) and cotter pin (15) on slack adjuster (14).

(17) Install pin (13) and cotter pin (12) on slack adjuster (14).



d. Follow-On Maintenance:

- Install wheel bearings and hub, (Para 4-58).
- Adjust brakes, (Para 4-34).
- Lubricate fittings, (Para 4-8).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-36. SLACK ADJUSTER REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Adjustment
e. Follow-On Maintenance

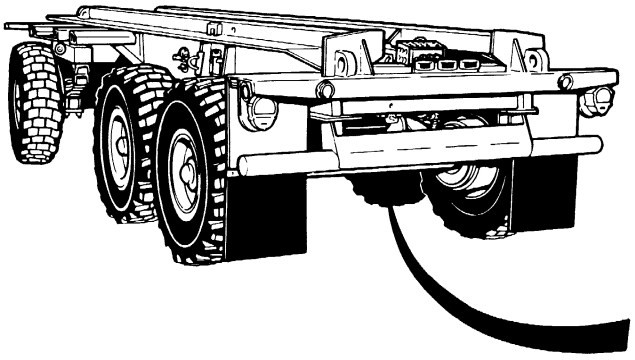
INITIAL SETUP

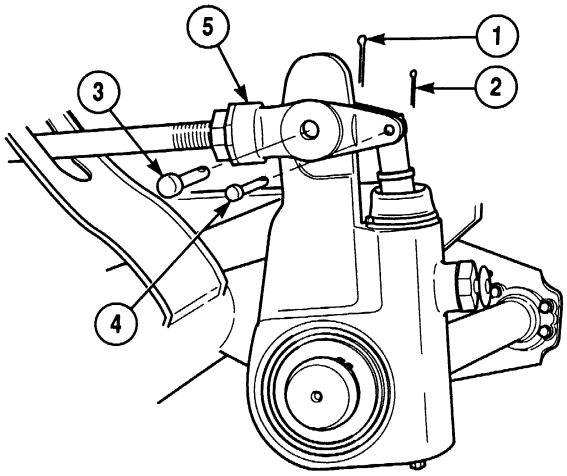
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Pliers, Retaining Ring (Item 32, Appendix J)
Wrench Set, Crowfoot 15/16 in. (Item 58, Appendix J)
Wrench, 1-1/8 in. (Item 54, Appendix J)
Wrench, Torque (0 to 175 lb-ft [0-237 N·m]) (Item 61, Appendix J)
Template, Slack Adjuster (Appendix F)

Materials/Parts
Grease (Item 12, Appendix E)
Pin, Cotter (Item 62, Appendix I)
Pin, Cotter (2) (Item 63, Appendix I)
Strap, Tie Down (Item 84, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Brakes caged, (Para 2-16)
Air system drained, (Para 2-21)

a. Removal.





NOTE

Each axle has two slack adjusters.

(1) Remove cotter pins (1) and (2), pin (3) and pin (4) from clevis (5). Discard cotter pins.

4-36. SLACK ADJUSTER REPLACEMENT (CONT).

WARNING

Use care when removing retaining rings. Retaining rings are under tension and can act as projectiles when released and could cause severe eye injury.

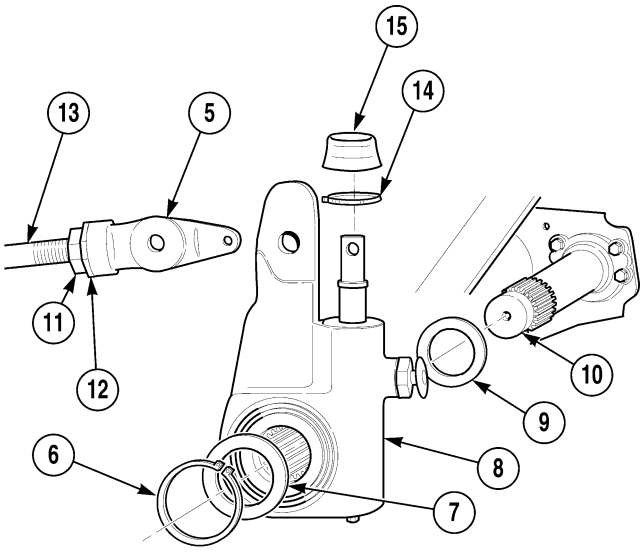
(2) Remove retaining ring (6), washer (7), slack adjuster (8) and washer (9) from camshaft end (10).

NOTE

If the original slack adjuster is installed, do not remove the clevis in Step (3).

(3) Loosen jam nut (11) and turn locking collar nut (12) to remove clevis (5) from shaft (13).

(4) Remove tie down strap (14) and boot (15) from slack adjuster (8). Discard tie strap.

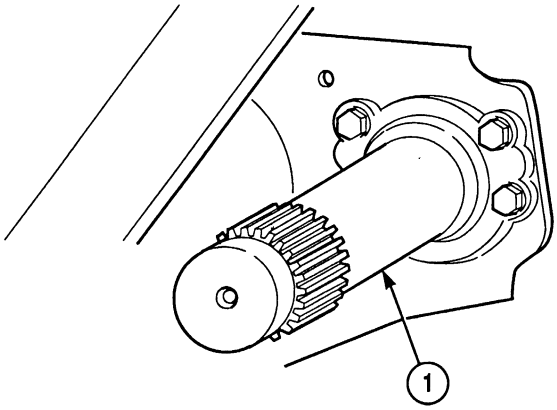


b. Cleaning/Inspection.

(1) Inspect camshaft (1) splines for cracks, chipping or wear.

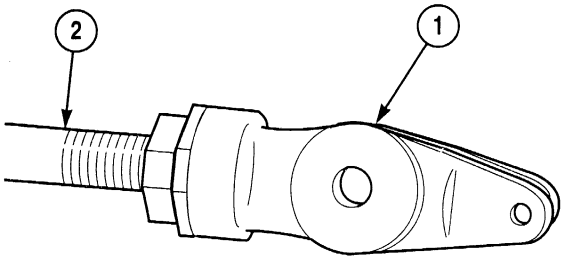
(2) Inspect camshaft (1) for bends and cracks.

(3) Replace all damaged parts.



c. Installation.

(1) Install clevis (1) on push rod (2).

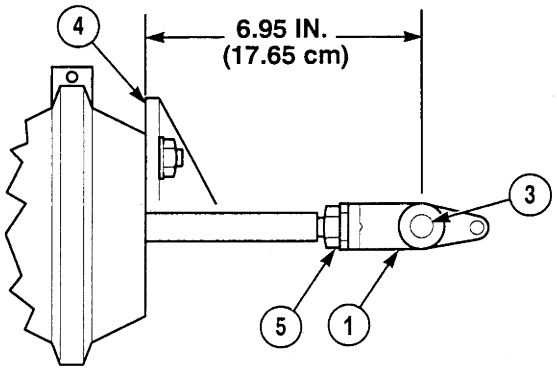


NOTE

Distance between the brake chamber bracket and the center of the large hole in the clevis should be 6.95 in. (17.65 cm).

(2) Measure the distance between the center of large hole (3) in clevis (1) and the brake chamber bracket (4).

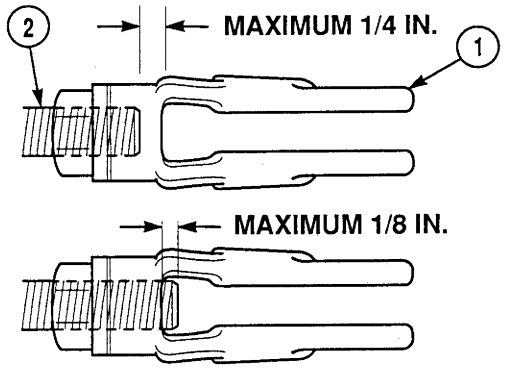
(3) Turn locking collar nut (5) to adjust clevis (1).



NOTE

Push rod must be within 1/4 in. (6.35 mm) of the opening in the clevis. The rod must also not extend more than 1/8 in. (3.18 mm) through the clevis.

(4) Measure thread engagement between clevis (1) and push rod (2).



4-36. SLACK ADJUSTER REPLACEMENT (CONT).

(5) Position boot (6) or slack adjuster (7).

(6) Install tie down strap (8) on boot (6) and slack adjuster (7).

WARNING

Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released and could cause severe eye injury.

NOTE

Attempt to align the holes in clevis and slack adjuster as closely as possible when installing slack adjuster.

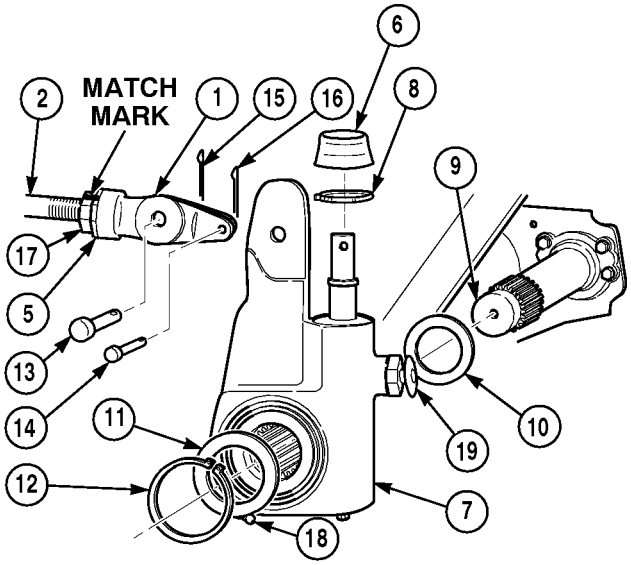
(7) Lubricate splines of camshaft (9) with grease.

(8) Install washer (10), slack adjuster (7), washer (11) and retaining ring (12), on camshaft (9).

(9) Install pin (13), pin (14) and two cotter pins (15) and (16) on clevis (1) and slack adjuster (7).

(10) Turn jam nut (17) on push rod (2) against locking collar nut (5). Tighten jam nut to 20 to 30 lb-ft (27-41 N·m).

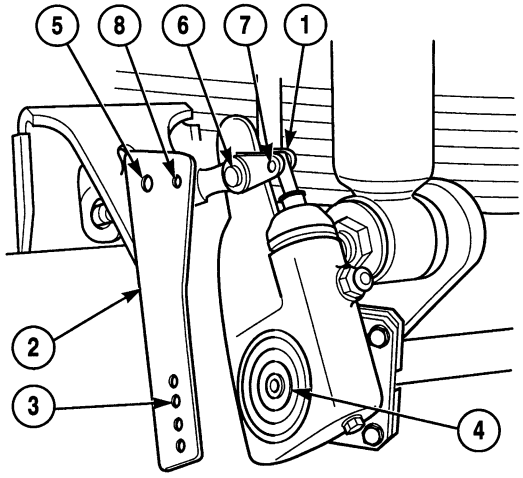
(11) Refer to (Para 4-8) and apply grease to fitting (18) until grease purges from pressure relief seal under pawl button (19).



NOTE

When checking the position of the clevis, be certain that your line of sight is square to the clevis and template to get an accurate measurement.

d. Adjustment. Check position of clevis (1) with template (2) by aligning camshaft hole (3) on template with camshaft (4) and large clevis pin hole (5) on template with the large clevis pin (6). When these two holes are aligned, the small pin (7) in clevis should be completely visible in slot (8) in template.



e. Follow-On Maintenance

- Uncage brakes, (Para 2-16).
- Adjust brakes, (Para 4-34).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-37. BRAKE CHAMBER REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench, Torque (0 to 175 lb-ft [0-237 N·m]) (Item 61, Appendix J)

Material/Parts
Tags, Identification (Item 23, Appendix E)
Sealing Compound (Item 17, Appendix E)
Locknut (2) (Item 43, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Brake chamber caged, (Para 2-16)

WARNING

- Ensure that air pressure in brake lines is drained to 0 psi (0 kpa) prior to replacing brake chambers. If air pressure is not released, parts and lines could blow off and harm personnel. Air tanks have more than 30 psi (207 kpa) pressure in them. Do not drain air tanks with any part of body in air spray path. Skin embolisms and or debris in eyes can occur from released pressure.
- Do not remove air chamber prior to compressing brake spring with caging bolt. The brake spring is under pressure. Failure to cage the chamber could cause serious injury or death to personnel.
- Do not attempt to disassemble brake chambers. Brake chambers contain springs under pressure. Attempting to disassemble brake chambers could result in serious injury or death to personnel.

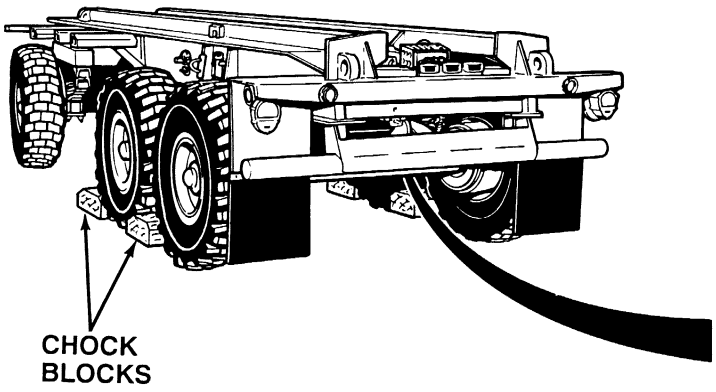
CAUTION

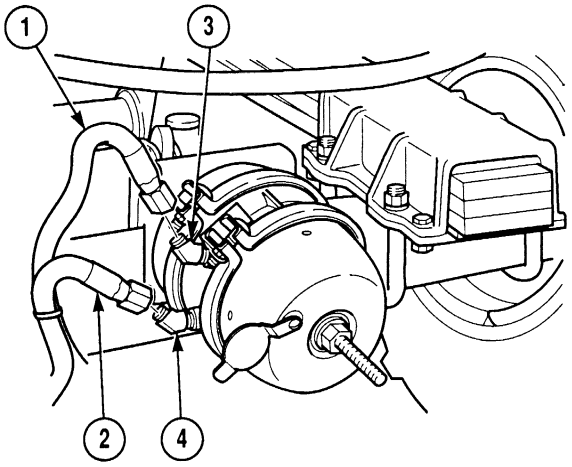
Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag and mark all air lines, fittings and connector prior to removal.
- Cap and plug air lines and connectors after removal.

a. Removal.





NOTE

Refer to Table 4-17 for air line numbers.

(1) Remove air lines (1) and (2) from elbows (3) and (4).

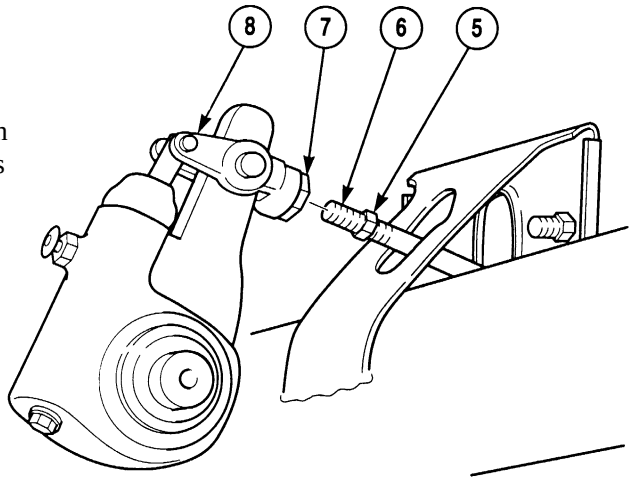
Table 4-17. Axle Air Lines

Axle	Left Side		Right Side	
	Service Port	Spring Port	Service Port	Spring Port
1	2547	2023	2545	2022
2	2015	2139	2017	2138
3	2016	2141	2018	2140

(2) Loosen jam nut (5) on brake chamber push rod (6).

(3) Turn collar nut (7) until brake chamber push rod (6) is backed out of slack adjuster clevis (8).

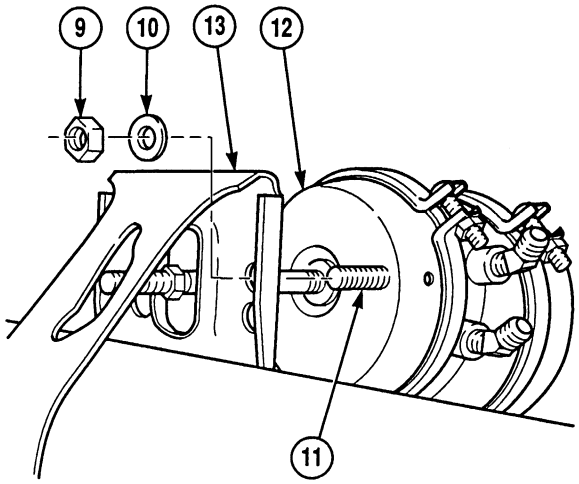
(4) Remove jam nut (5) from brake chamber push rod (6).



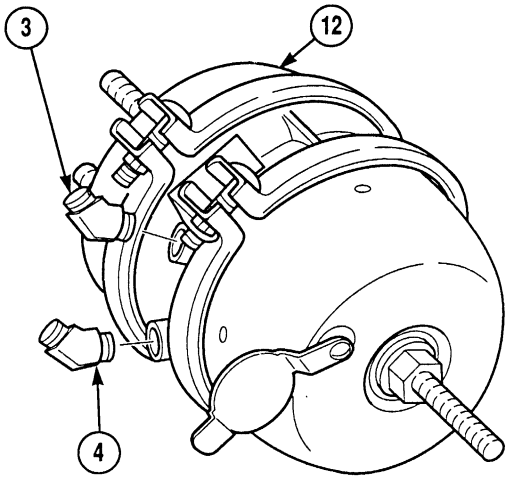
4-37. BRAKE CHAMBER REPLACEMENT (CONT).

(5) Remove two locknuts (9) and washers (10) from brake chamber mounting studs (11). Discard locknuts.

(6) Remove brake chamber (12) from bracket (13).



(7) Remove elbows (3) and (4) from brake chamber (12).



b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

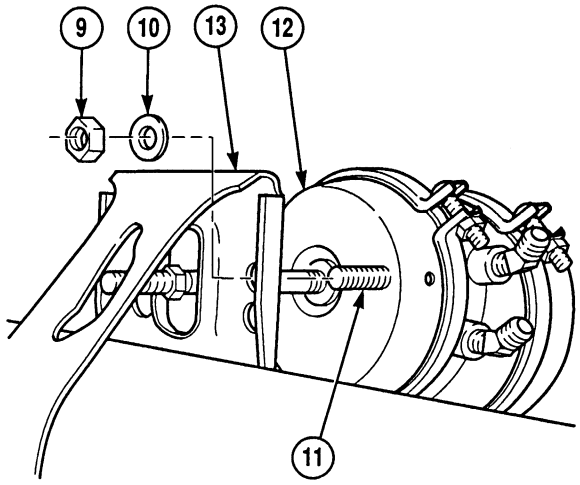
Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of elbows (3) and (4).

(2) Install two elbows (3) and (4) on brake chamber (12).

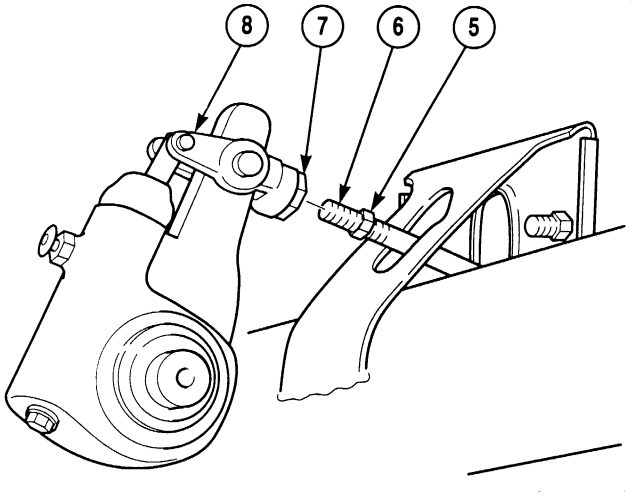
(3) Install brake chamber (12) on bracket (13).

(4) Install two washers (10) and locknuts (9) on brake chamber mounting studs (11).

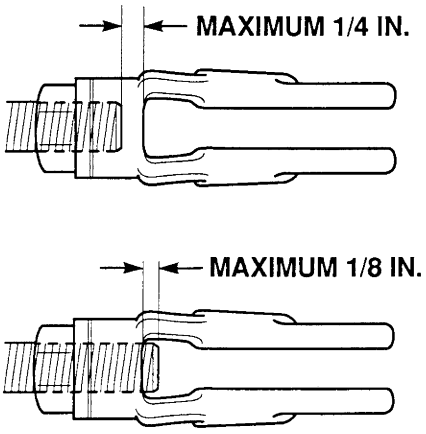


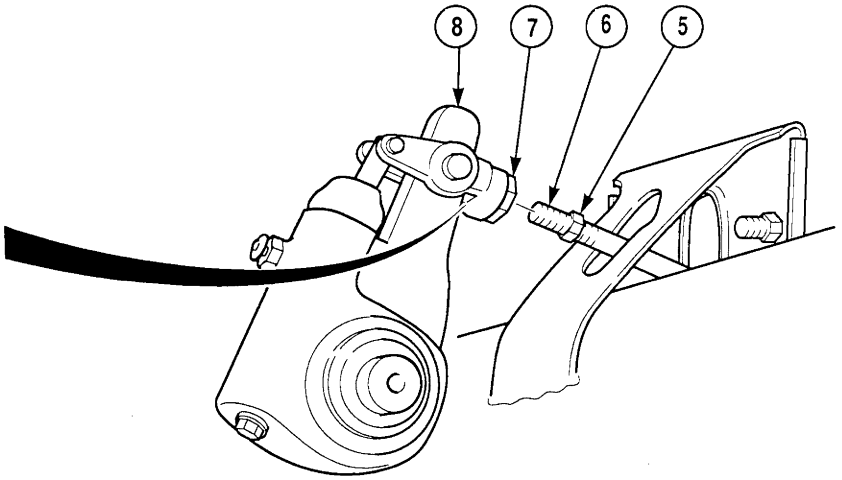
(5) Install jam nut (5) on brake chamber push rod (6).

(6) Install brake chamber push rod (6) on slack adjuster clevis (8) by turning locking collar nut (7).



4-37. BRAKE CHAMBER REPLACEMENT (CONT).





NOTE

Push rod must be within 1/4 in. (6.35 mm) of the opening in the clevis. The rod must also not extend more than 1/8 in. (3.18 mm) through the clevis.

(7) Check position of slack adjuster clevis (8) on brake chamber push rod (6).

(8) Turn jam nut (5) against locking collar nut (7). Tighten jam nut to 20 to 30 lb-ft (27-41 N·m).

NOTE

Refer to Table 4-18 for air line numbers.

(9) Install two air lines (1) and (2) on elbows (3) and (4).

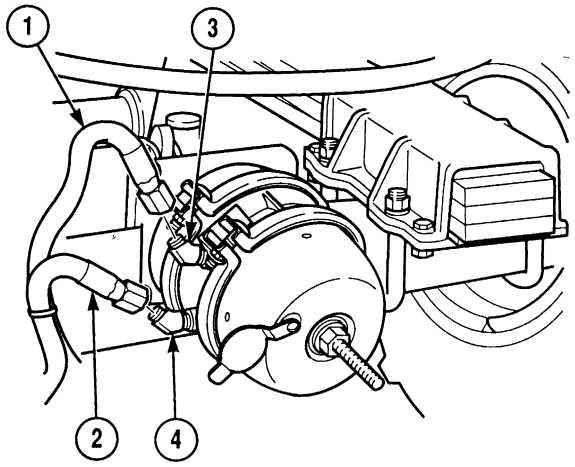


Table 4-18. Axle Air Lines

Axle	Left Side		Right Side	
	Service Port	Spring Port	Service Port	Spring Port
1	2547	2023	2545	2022
2	2015	2139	2017	2138
3	2016	2141	2018	2140

c. Follow-On Maintenance:

- Uncage brake, (Para 2-16).
- Adjust brake, (Para 4-34).
- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-38. RELAY VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Materials/Parts
Tags, Identification (Item 23, Appendix E)
Sealing Compound (Item 17, Appendix E)
Locknut (2) (Item 26, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)

4-38. RELAY VALVE REPLACEMENT (CONT).

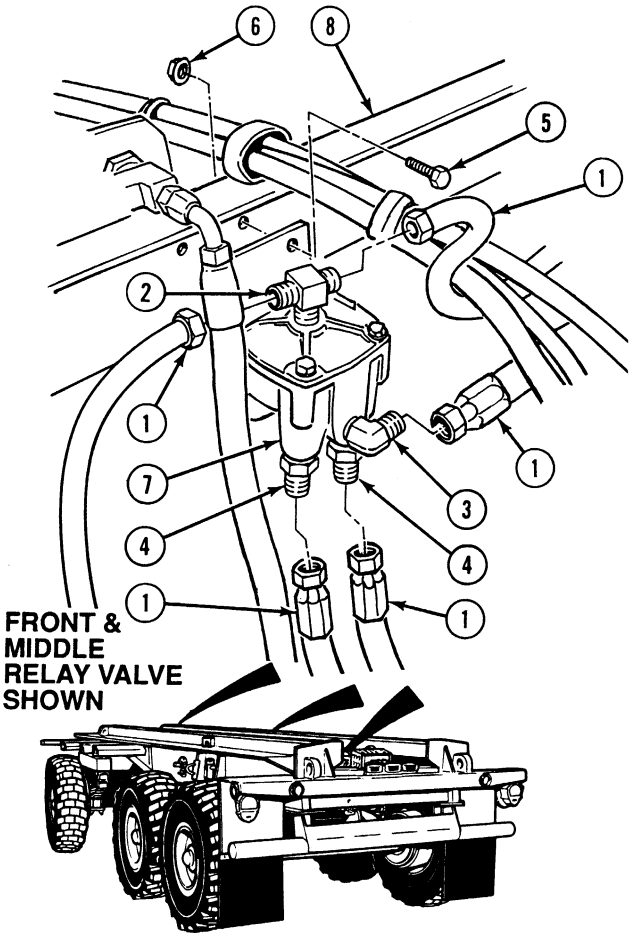
a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- All three relay valves are removed and installed the same way. The rear relay valve has only four airlines attached and an elbow rather than a "T" fitting on top of the valve like the front and middle valves.
- Tag all air lines and fittings prior to removal.
- Cap and plug all air lines and connectors after removal.
- Refer to Table 4-19 for air line numbers.



(1) Remove five air lines (1) from T-fitting (2), elbow (3) and two adapters (4).

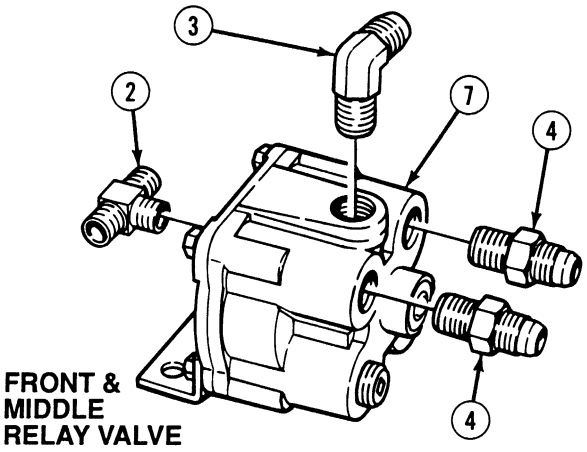
(2) Remove two screws (5), locknuts (6) and relay valve (7) from frame (8). Discard locknuts.

Table 4-19. Hose Numbers

Valve	Upper		Lower		Rear
	Left	Right	Left	Right	
Front	2638	2639	2547	2545	2548
Middle	2638	2637	2015	2017	2019
Rear	2637*	–	2016	2014	2014

* one line only

(3) Remove T-fitting (2), elbow (3) and two adapters (4) from relay valve (7).



b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of T-fitting (2).

(2) Install T-fitting (2) on relay valve (7).

(3) Apply sealing compound on threads of elbow (3).

(4) Install elbow (3) on relay valve (7).

(5) Apply sealing compound on threads of two adapters (4).

(6) Install two adapters (4) on relay valve (7).

4-38. RELAY VALVE REPLACEMENT (CONT).

(7) Install relay valve (7) on frame (8) with two screws (5) and locknuts (6).

(8) Install two air lines (1) on adapters (4).

(9) Install air line (1) on elbow (3).

(10) Install two air lines (1) on T-fitting (2).

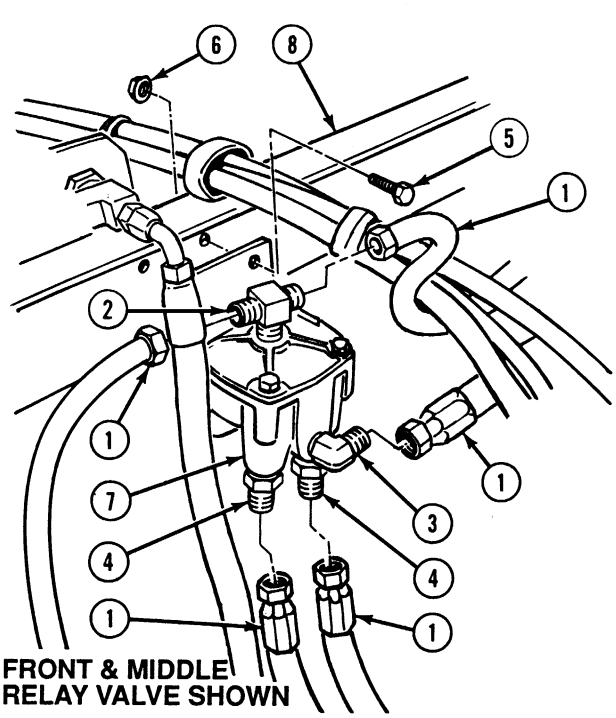


Table 4-20. Hose Numbers

Valve	Upper		Lower		Rear
	Left	Right	Left	Right	
Front	2638	2639	2547	2545	2548
Middle	2638	2637	2015	2017	2019
Rear	2637*	–	2016	2018	2014

* one line only

c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-9).

END OF TASK

4-39. SERVICE BRAKE AIR LINE AND FITTINGS REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench, 1-1/8 in. (Item 54, Appendix J)
Wrench, 1-1/4 in. (Item 55, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Lockwasher (Item 49, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

Cap and plug all air lines and connectors after removal.

(1) Remove air line (1) from adapter (2).

(2) Remove air line 2255 (3) from adapter (4).

(3) Remove adapter (2) from bulkhead coupler (5).

(4) Remove nut (6) and lockwasher (7) from bulkhead coupler (5). Discard lockwasher.

(5) Remove bulkhead coupler (5) and adapter (4) from bracket (8).

(6) Remove adapter (4) from bulkhead connector (5).

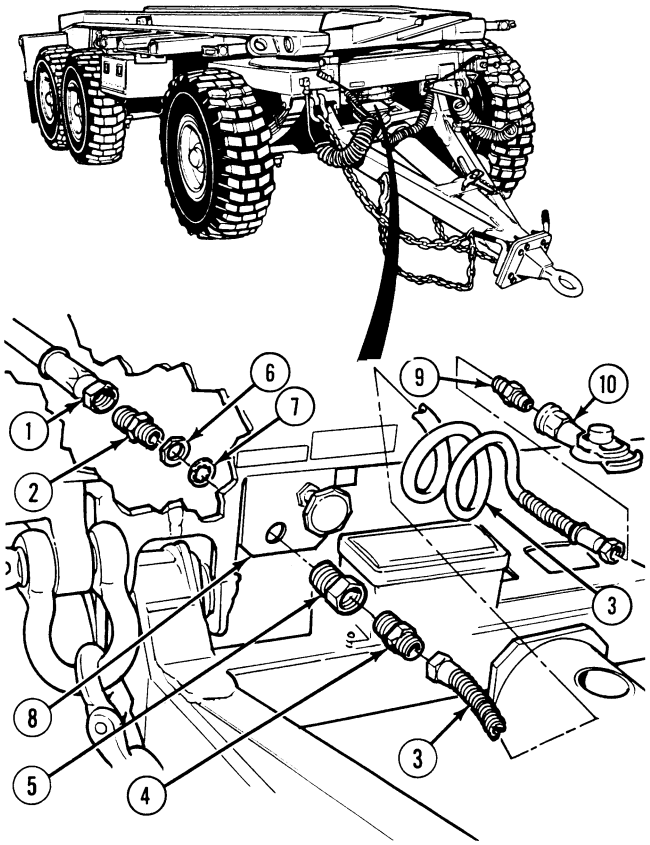
(7) Remove adapter (9) and gladhand (10) from air line (3).

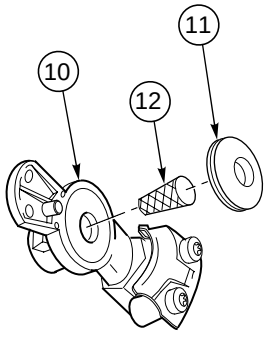
(8) Remove adapter (9) from gladhand (10).

NOTE

Perform step (9) if seal or screen is damaged.

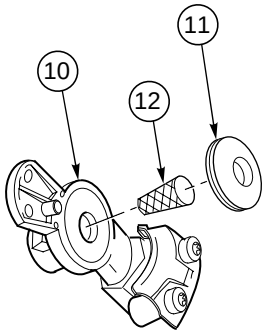
(9) Remove seal (11) and screen (12) from gladhand (10).





4-39. SERVICE BRAKE AIR LINE AND FITTINGS REPLACEMENT (CONT).

b. Installation.



NOTE

Perform step (1) if seal or screen was removed.

(1) Install screen (12) and seal (11) on gladhand (10).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(2) Apply sealing compound on threads of adapter (9).

(3) Install adapter (9) and gladhand (10) on air line (3).

(4) Install bulkhead coupler (5) on bracket (8) with lockwasher (7) and nut (6).

(5) Apply sealing compound on threads of fitting (4).

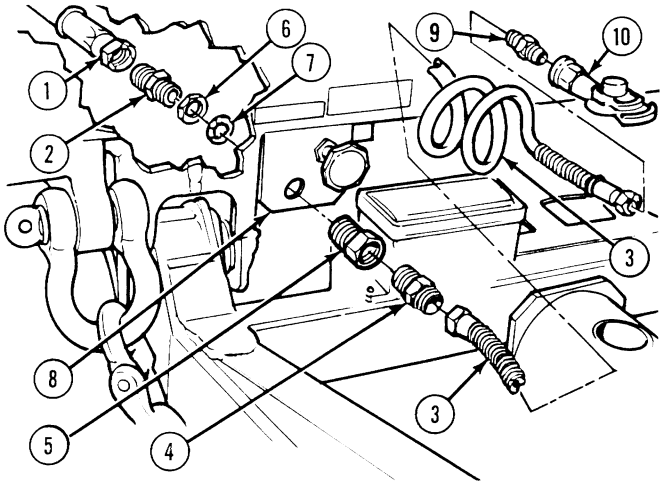
(6) Install adapter (4) on bulkhead coupler (5).

(7) Install air line 2255 (3) on adapter (4).

(8) Apply sealing compound on threads of adapter (2).

(9) Install air line (1) on adapter (2).

(10) Install adapter (2) on bulkhead coupler (5).



c. Follow-On Maintenance:

- Start engine, (TM 9-2320-364-10).
- Build air pressure to 125 psi (861 kPa), (Para 2-22).
- Shut OFF engine, (TM 9-2320-364-10).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-40. EMERGENCY BRAKE AIR LINE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench, 1-1/8 in. (Item 54, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)

Materials/Parts - Continued
Cable Ties (Item 8, Appendix E)
Lockwasher (Item 49, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

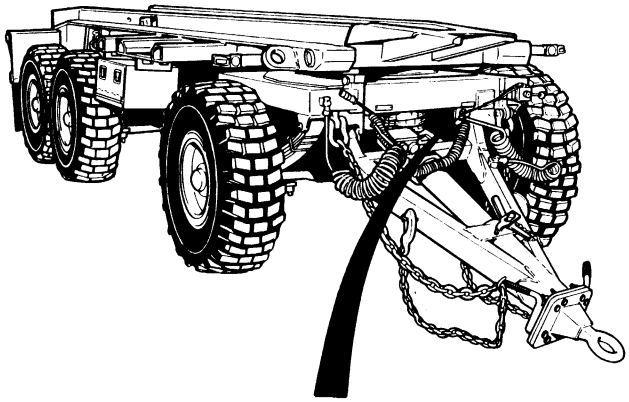
a. Removal.

CAUTION

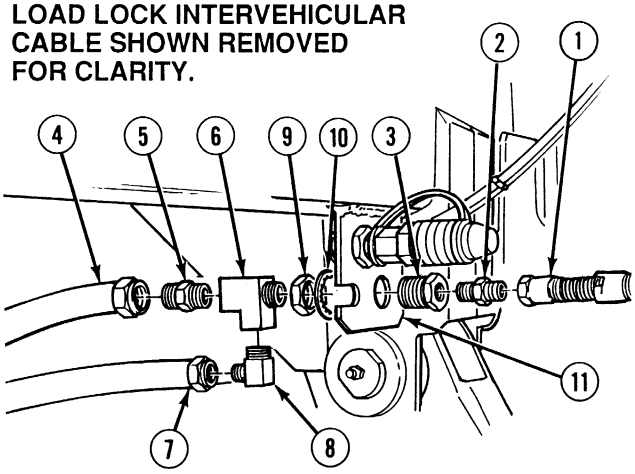
Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines and fittings prior to removal.
- Remove cable ties as required.
- Cap and plug all air lines and fittings after removal.



LOAD LOCK INTERVEHICULAR CABLE SHOWN REMOVED FOR CLARITY.



(1) Remove emergency air line (1) from adapter fitting (2).

(2) Remove adapter (2) from bulkhead coupler (3).

(3) Remove air line 2254 (4) from adapter fitting (5).

(4) Remove adapter fitting (5) from T-fitting (6).

(5) Remove air line 2223 (7) from elbow (8).

(6) Remove elbow (8) from T-fitting (6).

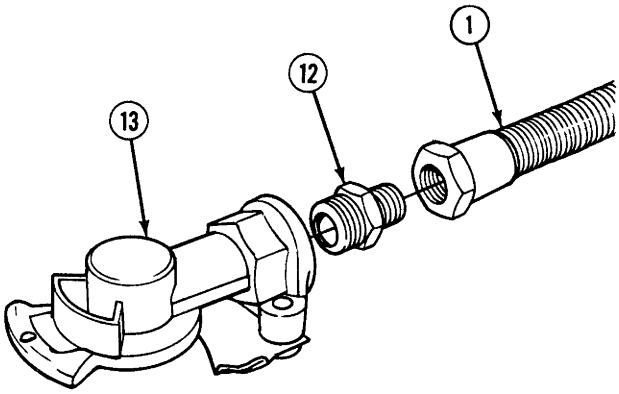
(7) Remove T-fitting (6) from bulkhead adapter (3).

(8) Remove nut (9), lockwasher (10) and bulkhead coupler (3) from bracket (11). Discard lockwasher.

4-40. EMERGENCY BRAKE AIR LINE REPLACEMENT (CONT).

(9) Remove adapter fitting (12) with gladhand (13) from air line (1).

(10) Remove adapter fitting (12) from gladhand (13).



NOTE

Perform step (11) if seal or screen is damaged.

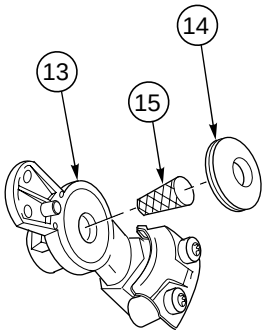
(11) Remove seal (14) and screen (15) from gladhand (13).

b. Installation.

NOTE

Perform step (1) if seal or screen was removed.

(1) Install screen (15) and seal (14) on gladhand (13).

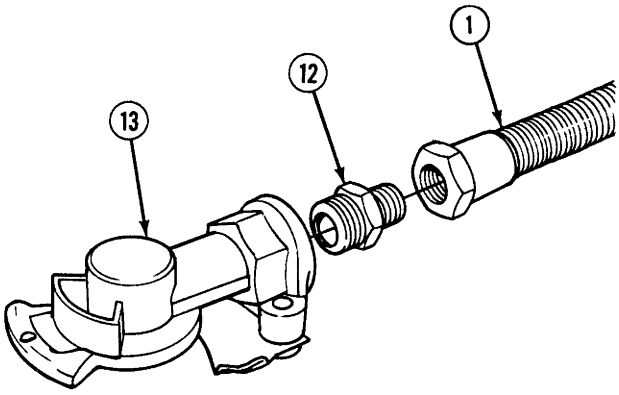


WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.



(2) Apply sealing compound on threads of fitting (12).

(3) Install adapter fitting (12) on emergency air line (1).

(4) Install gladhand (13) on adapter fitting (12).

(5) Install bulkhead fitting (3) on bracket (11) with lockwasher (10) and nut (9).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(6) Apply sealing compound on threads of fitting (6).

(7) Install fitting (6) in bulkhead fitting (3).

(8) Apply sealing compound on threads of elbow (8).

(9) Install elbow (8) on fitting (6).

(10) Apply sealing compound on threads of adapter fitting (5).

(11) Install adapter fitting (5) on fitting (6).

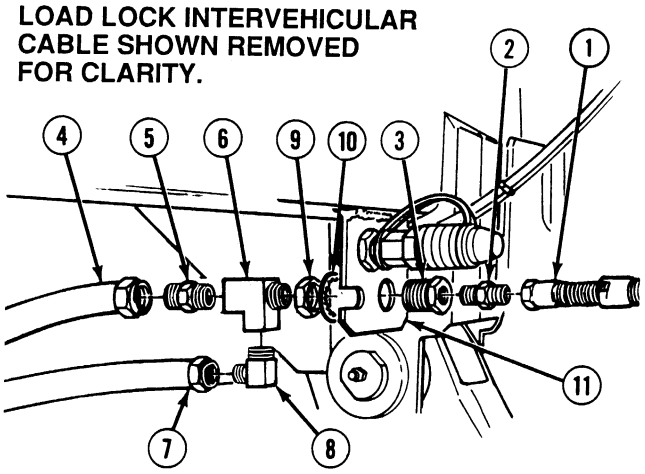
(12) Install air line 2223 (7) on elbow (8).

(13) Install air line 2254 (4) on adapter fitting (5).

(14) Apply sealing compound on threads of fitting (2).

(15) Install adapter fitting (2) on bulkhead coupler (3).

(16) Install air line (1) on adapter fitting (2).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-41. AIR RESERVOIR NO. 1 REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

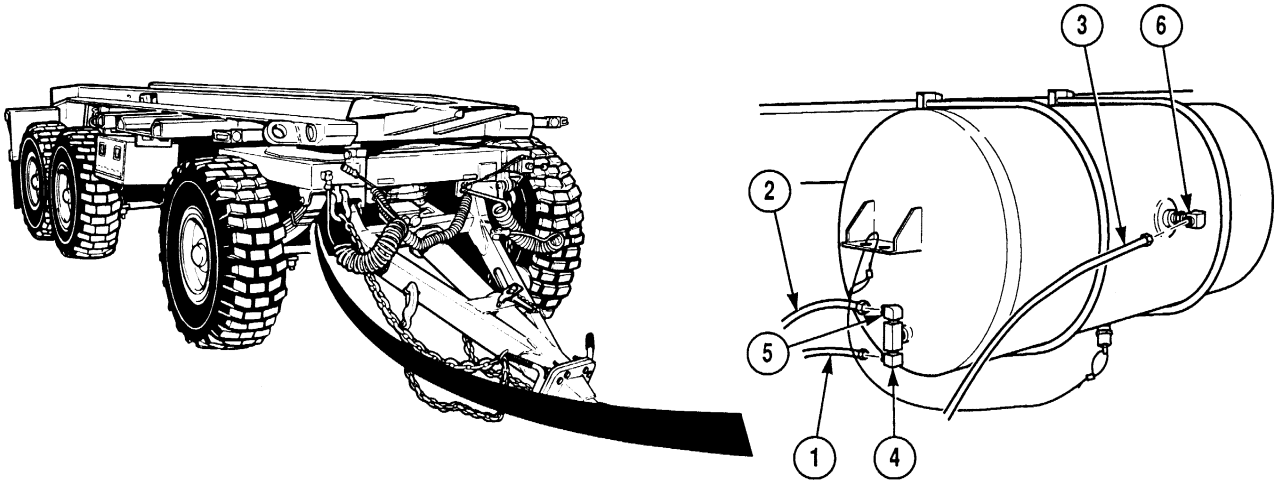
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (4) (Item 26, Appendix I)

a. Removal.



CAUTION

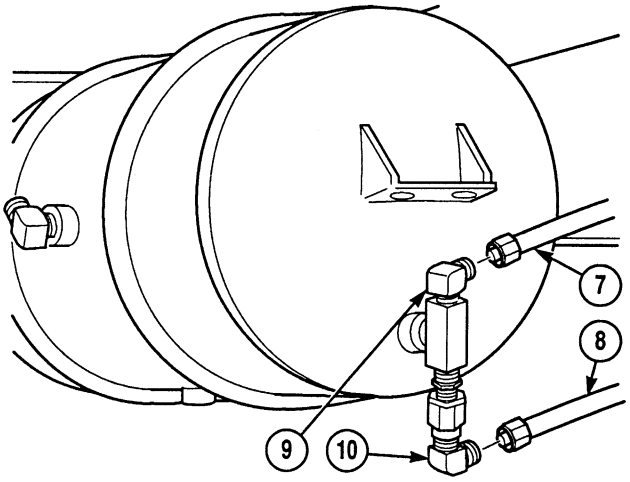
Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines and fittings prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2228 (1), 2248 (2) and 2224 (3) from three elbows (4), (5) and (6).

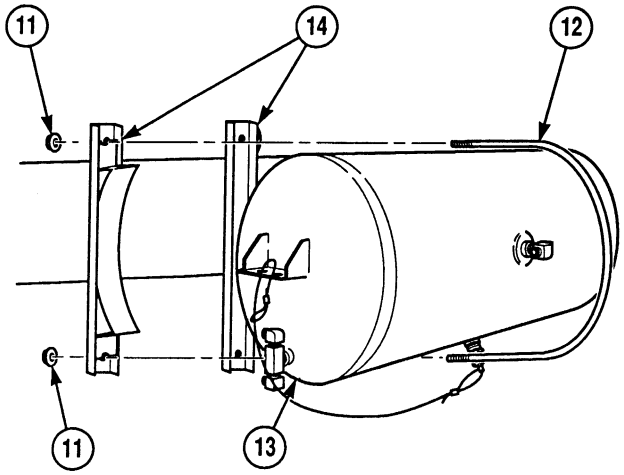
(2) Remove air lines 2615 (7) and 2229 (8) from elbows (9) and (10).



WARNING

Support reservoir when removing locknuts, to prevent reservoir from falling. Failure to comply may result in injury to personnel.

(3) Remove four locknuts (11), two U-bolts (12) and air reservoir (13) from brackets (14). Discard locknuts.



4-41. AIR RESERVOIR NO. 1 REPLACEMENT (CONT).

(4) Remove elbow (9) from T-fitting (15).

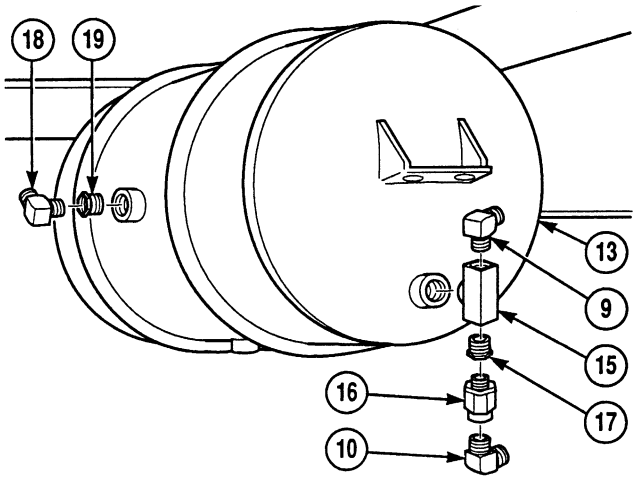
(5) Remove elbow (10) from check valve (16).

CAUTION

Do not loosen check valve by its body. Damage to check valve may result.

NOTE

Valve is marked with an arrow indicating the direction in which it should be installed. Note direction of arrow before removal.



(6) Remove check valve (16) from reducer (17).

(7) Remove reducer (17) from T-fitting (15).

(8) Remove T-fitting (15) from air reservoir (13).

(9) Remove elbow (18) from reducer (19).

(10) Remove reducer (19) from air reservoir (13).

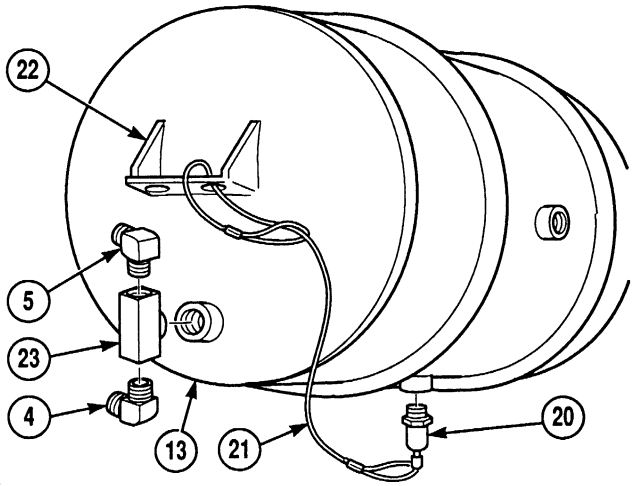
(11) Remove drain valve (20) from air reservoir (13).

(12) Remove cable (21) from air reservoir bracket (22).

(13) Remove elbow (4) from T-fitting (23).

(14) Remove elbow (5) from T-fitting (23).

(15) Remove tee fitting (23) from air reservoir (13).



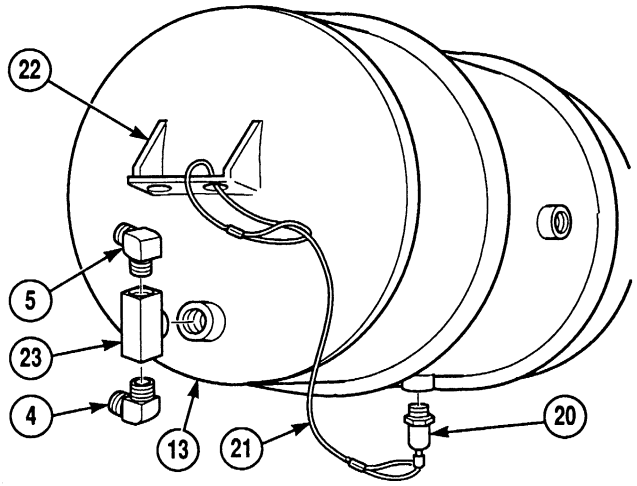
b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.



(1) Apply sealing compound on threads of T-fitting (23).

(2) Install T-fitting (23) in air reservoir (13).

(3) Apply sealing compound on threads of elbow (5).

(4) Install elbow (5) on T-fitting (23).

(5) Apply sealing compound on threads of elbow (4).

(6) Install elbow (4) on T-fitting (23).

(7) Install drain valve (20) and cable (21) on air reservoir bracket (22).

(8) Apply sealing compound on threads of drain valve (20).

(9) Install drain valve (20) on air reservoir (13).

4-41. AIR RESERVOIR NO. 1 REPLACEMENT (CONT).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(10) Apply sealing compound on threads of reducer (19).

(11) Install reducer (19) on air reservoir (13).

(12) Apply sealing compound on threads of elbow (18).

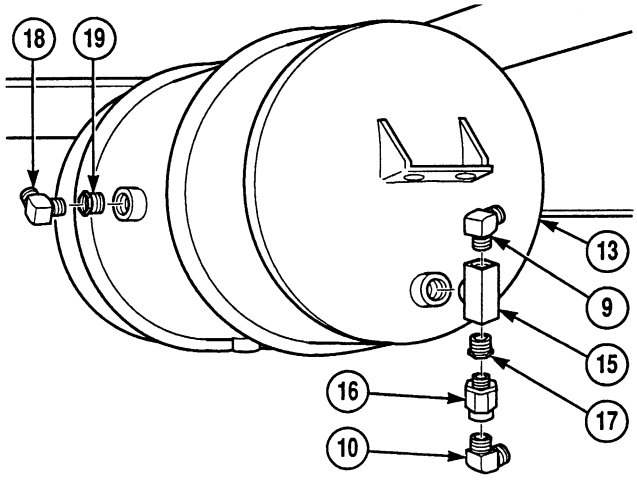
(13) Install elbow (18) on reducer (19).

(14) Apply sealing compound on threads of T-fitting (15).

(15) Install T-fitting (15) on air reservoir (13).

(16) Apply sealing compound on threads of reducer (17).

(17) Install reducer (17) on T-fitting (15).



CAUTION

Do not tighten check valve by its body. Damage to check valve may result.

NOTE

The valve is marked with an arrow indicating the direction in which it should be installed. Note direction of arrow before installation.

(18) Apply sealing compound on threads of check valve (16).

(19) Install check valve (16) on reducer (17).

(20) Apply sealing compound on threads of elbow (10).

(21) Install elbow (10) on check valve (16).

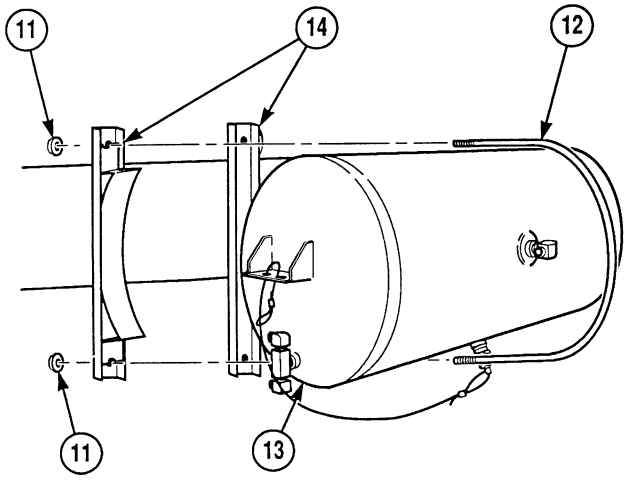
(22) Apply sealing compound on threads of elbow (9).

(23) Install elbow (9) on T-fitting (15).

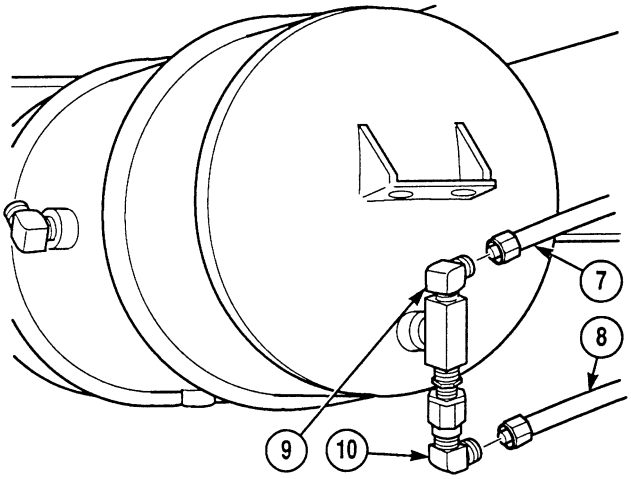
NOTE

- Drain valve must be at the bottom when installing air reservoir.
- U-bolts must be installed through notches on each end of bracket.

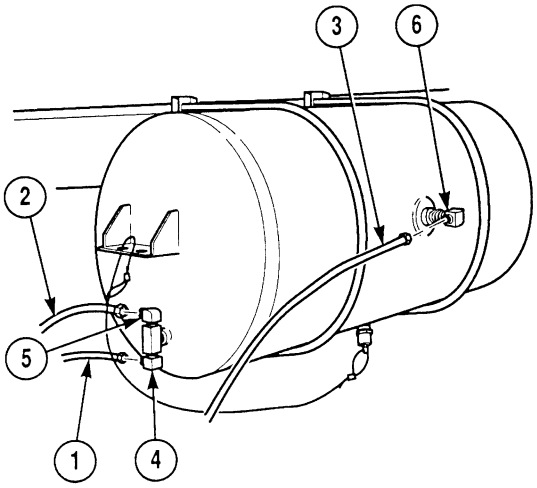
(24) Install air reservoir (13) on brackets (14) with two U-bolts (12) and four locknuts (11).



(25) Install air lines 2615 (7) and 2229 (8) on elbows (9) and (10).



(26) Install air lines 2228 (1), 2248 (2) and 2224 (3) to elbows (4), (5) and (6).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-42. AIR RESERVOIR NO. 2 REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

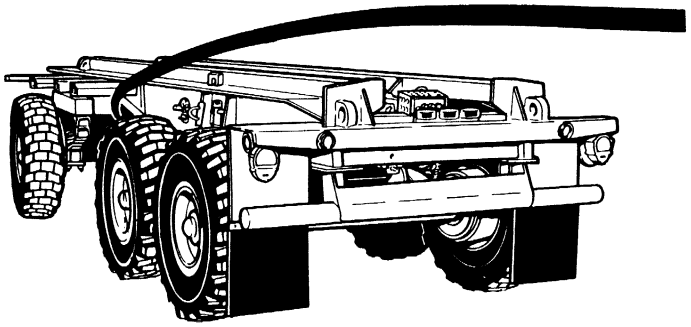
INITIAL SETUP

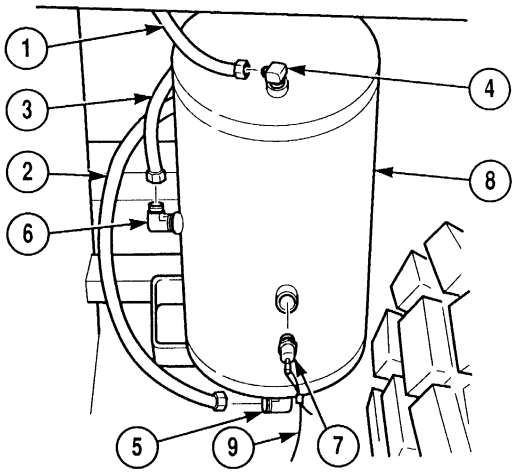
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (4) (Item 26, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.





CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

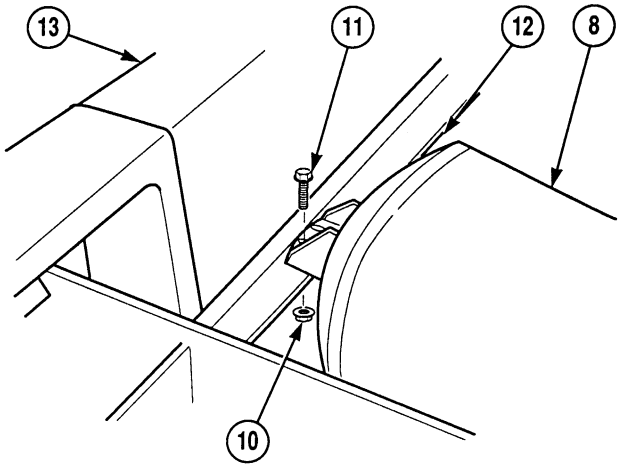
- Tag all air lines and fittings prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2605 (1), 2606 (2) and 2019 (3) from elbows (4), (5) and (6).

(2) Remove drain valve (7) from air reservoir (8) and allow it to hang from cable (9).

(3) Remove four locknuts (10) and screws (11) from air reservoir (8) and support bracket (12). Discard locknuts.

(4) Remove air reservoir (8) from trailer (13).

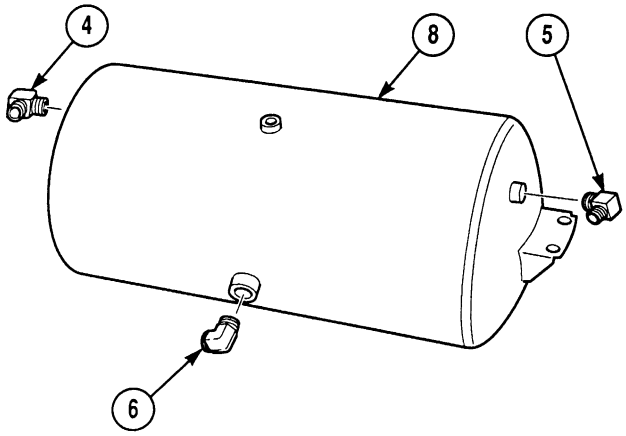


(5) Remove elbows (4), (5) and (6) from air reservoir (8).

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of elbow (4).

(2) Install elbow (4) on air reservoir (8).

(3) Apply sealing compound on threads of elbow (5).

(4) Install elbow (5) on air reservoir (8).

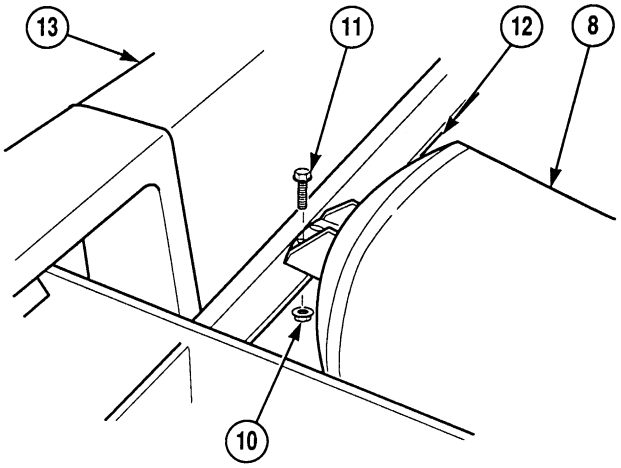
(5) Apply sealing compound on threads of elbow (6).

(6) Install elbow (6) on air reservoir (8).

4-42. AIR RESERVOIR NO. 2 REPLACEMENT (CONT).

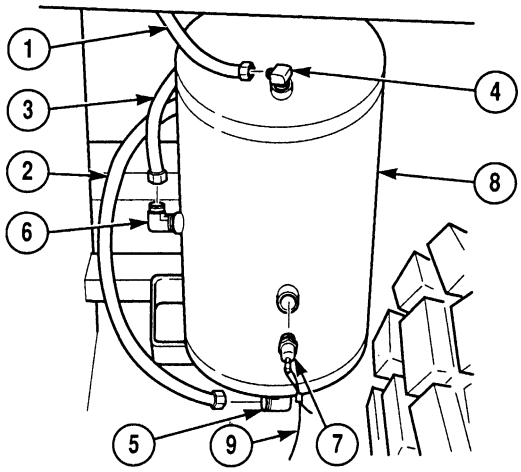
(7) Position air reservoir (8) on trailer (13).

(8) Install air reservoir on support brackets (12) with four screws (11) and locknuts (10).



(9) Install drain valve (7) with cable (9) on air reservoir (8).

(10) Install air lines 2605 (1), 2606 (2), and 2019 (3) on elbows (4), (5) and (6).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-43. AIR RESERVOIR NO. 3 REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (4) (Item 26, Appendix I)
Locknut (3) (Item 40, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Drawbar lowered, (Para 2-23)

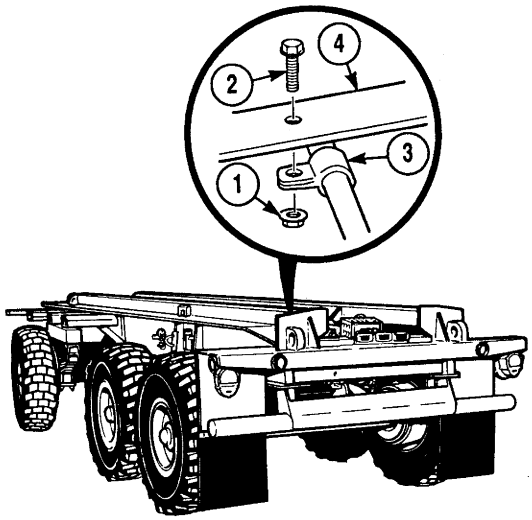
a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines and fittings prior to removal.
- Cap and plug all air lines and connectors after removal.



(1) Remove locknut (1), screw (2) and clamp (3) from crossmember (4). Discard locknut.

4-43. AIR RESERVOIR NO. 3 REPLACEMENT (CONT).

(2) Remove air line 2606 (5) from reducer (6).

(3) Remove air lines 2080 (7) and 2014 (8) from fitting (9) and elbow (10).

(4) Remove drain valve (11) from air reservoir (12) and allow it to hang from cable (13).

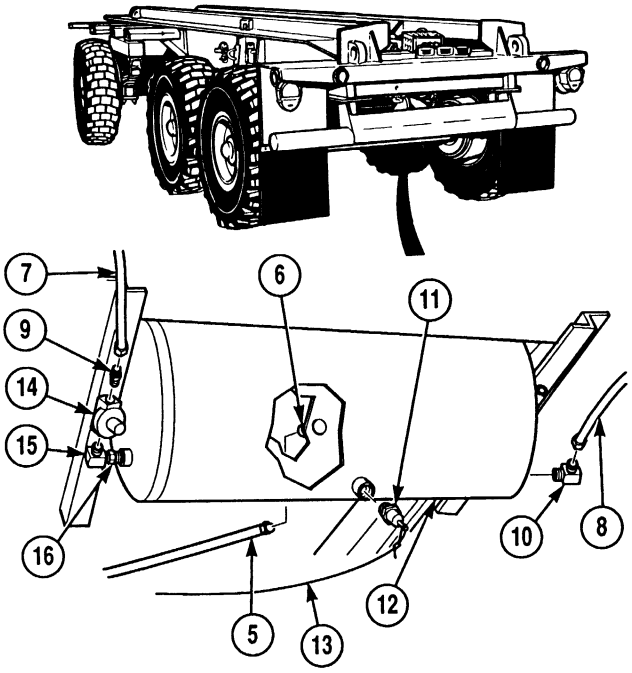
(5) Remove elbow (10) and reducer (6) from air reservoir (12).

(6) Remove pressure hold back valve (14) and fitting (9) from elbow (15).

(7) Remove fitting (9) from pressure hold back valve (14).

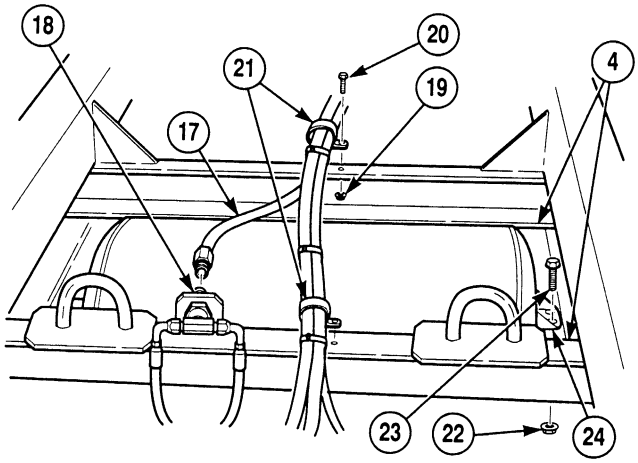
(8) Remove elbow (15) from fitting (16).

(9) Remove fitting (16) from air reservoir (12).



(10) Remove air hose 2143 (17) from fitting (18).

(11) Remove two locknuts (19), screws (20) and clamps (21) from crossmembers (4). Discard locknuts.

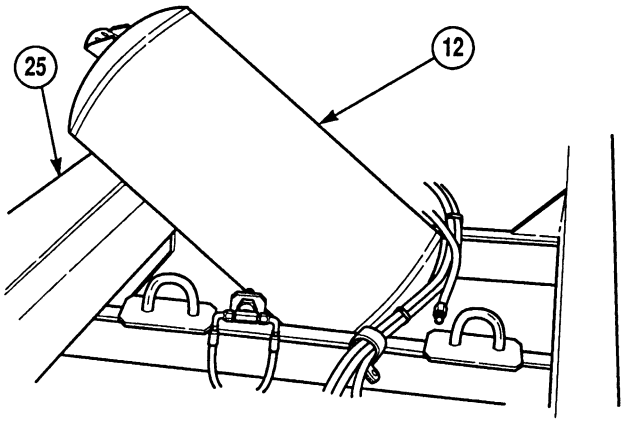


NOTE

Electrical and air lines may need to be pulled to one side.

(12) Remove four locknuts (22) and screws (23) from air reservoir bracket (24). Discard locknuts.

(13) Rotate air reservoir (12) on end and remove from trailer frame (25).



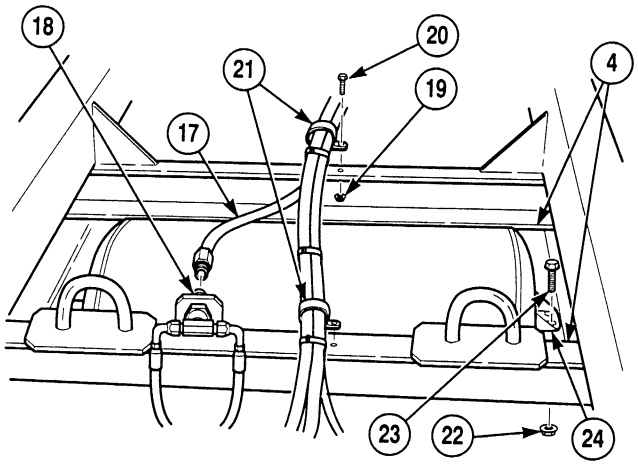
b. Installation.

(1) Position air reservoir (12) in trailer frame (25).

(2) Install air reservoir (12) on air reservoir brackets (24) with four screws (23) and locknuts (22).

(3) Install two clamps (21), screws (20) and locknuts (19) on crossmembers (4).

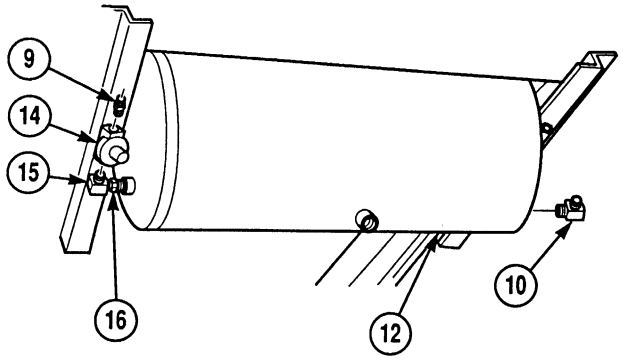
(4) Install air hose 2143 (17) on fitting (18).



4-43. AIR RESERVOIR NO. 3 REPLACEMENT (CONT).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(5) Apply sealing compound on threads on both ends of fitting (16).

(6) Install fitting (16) on air reservoir (12).

(7) Apply sealing compound on threads of elbow (15).

(8) Install elbow (15) on fitting (16).

(9) Apply sealing compound on threads of elbow (15).

(10) Install pressure hold back valve (14) on elbow (15).

(11) Apply sealing compound on threads of fitting (9).

(12) Install fitting (9) on pressure hold back valve (14).

(13) Apply sealing compound on threads of elbow (10).

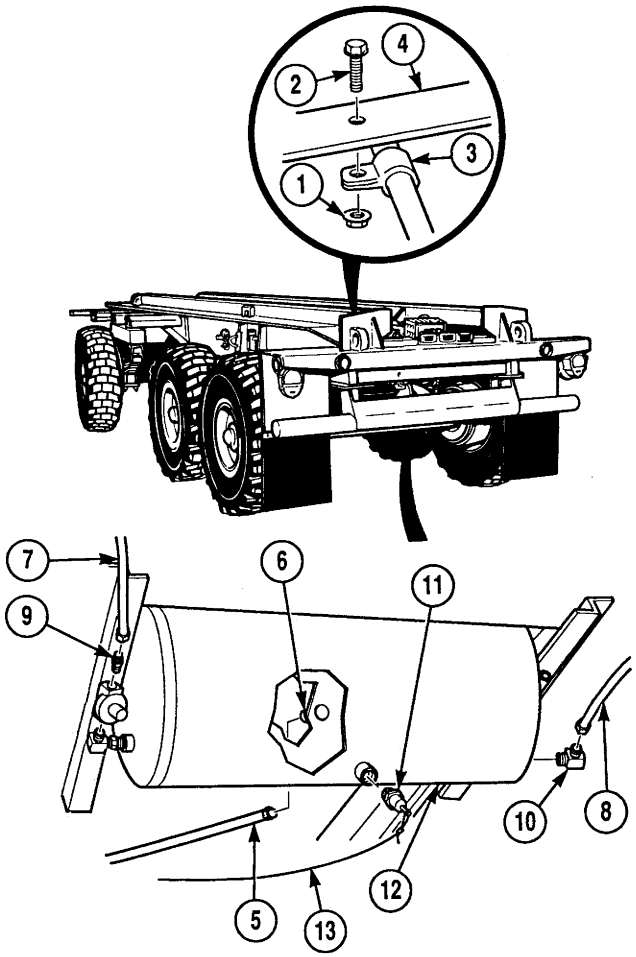
(14) Install elbow (10) on air reservoir (12).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.



(15) Apply sealing compound on threads of reducer (6).

(16) Install reducer (6) on air reservoir (12).

(17) Apply sealing compound on threads of drain valve (11).

(18) Install drain valve (11) and cable (13) on air reservoir (12).

(19) Install air lines 2080 (7) and 2014 (8) on fitting (9) and elbow (10).

(20) Install air line 2606 (5) on reducer (6).

(21) Install air line 2606 (5) on crossmember (4) with clamp (3), screw (2) and locknut (1).

c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-44. DRAWBAR AIR ASSIST CONTROL REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Lockwasher (2) (Item 56, Appendix I)

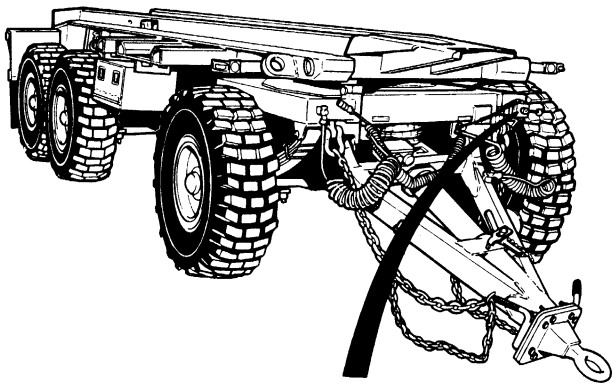
a. Removal.

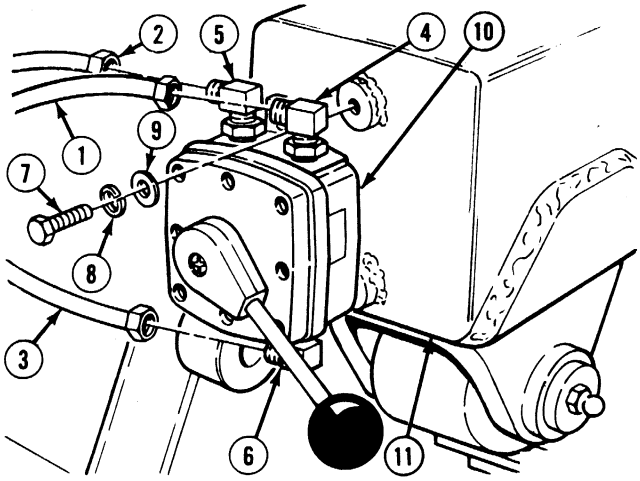
CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.





(1) Remove air lines 2225 (1), 2228 (2) and 2226 (3) from elbows (4), (5) and (6).

(2) Remove two screws (7), lockwashers (8), washers (9) and valve (10) from turntable (11). Discard lockwashers.

(3) Remove elbows (4), (5) and (6), from reducers (12), (13) and (14).

(4) Remove reducers (12), (13) and (14) from valve (10).

(5) Remove plug (15) from valve (10).

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of plug (15).

(2) Install plug (15) in valve (10).

(3) Apply sealing compound on threads of reducer (14).

(4) Install reducer (14) on valve (10).

(5) Apply sealing compound on threads of elbow (6).

(6) Install elbow (6) on reducer (14).

(7) Apply sealing compound on threads of reducer (13).

(8) Install reducer (13) on valve (10).

(9) Apply sealing compound on threads of elbow (4).

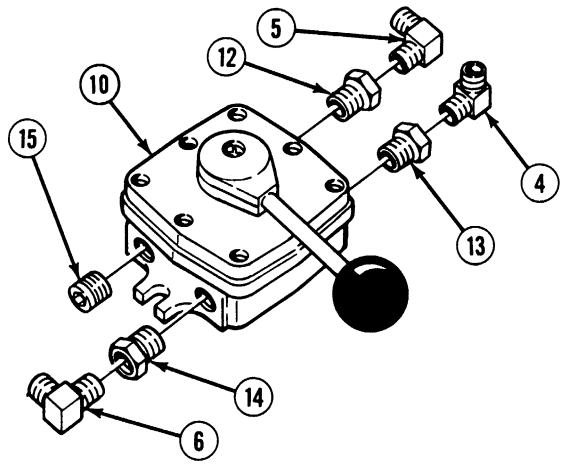
(10) Install elbow (4) on reducer (13).

(11) Apply sealing compound on threads of reducer (12).

(12) Install reducer (12) on valve (10).

(13) Apply sealing compound on threads of elbow (5).

(14) Install elbow (5) on reducer (12).



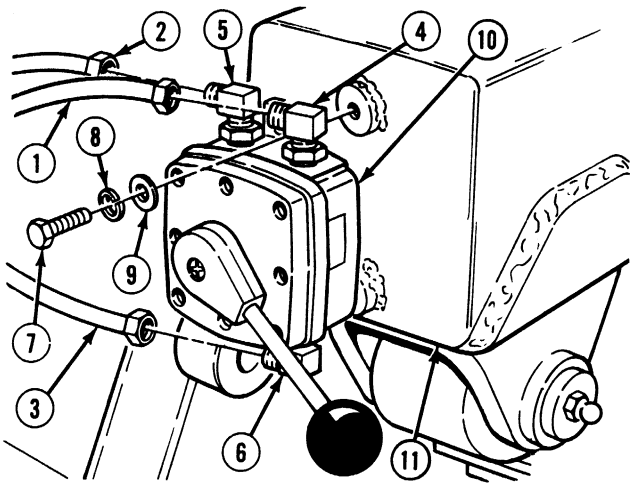
4-44. DRAWBAR AIR ASSIST CONTROL REPLACEMENT (CONT).

NOTE

Input and exhaust ports on valve face up.

(15) Install valve (10) on turntable (11) with two washers (9), lockwashers (8) and screws (7).

(16) Install air lines 2225 (1), 2228 (2) and 2226 (3), on fittings (4), (5) and (6).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Check for proper operation, (TM 9-2320-364-10).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-45. DRAWBAR AIR SYSTEM QUICK DISCONNECT REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench, Combination 1-1/4 in. (Item 55, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)
Flatrack lock intervehicular cables removed, (Para 4-32)

a. Removal.

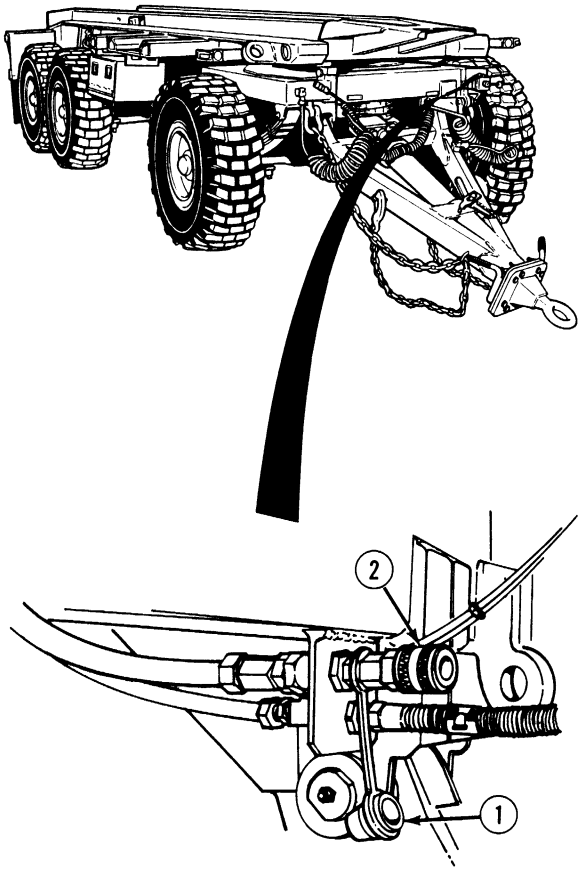
CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag and mark all air lines and fittings before removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove protective cover (1) from quick disconnect (2).



4-45. DRAWBAR AIR SYSTEM QUICK DISCONNECT REPLACEMENT (CONT).

(2) Remove quick disconnect (2) and protective cover (1) from fitting (3).

(3) Remove adapter fitting (3) from bulkhead adapter (4).

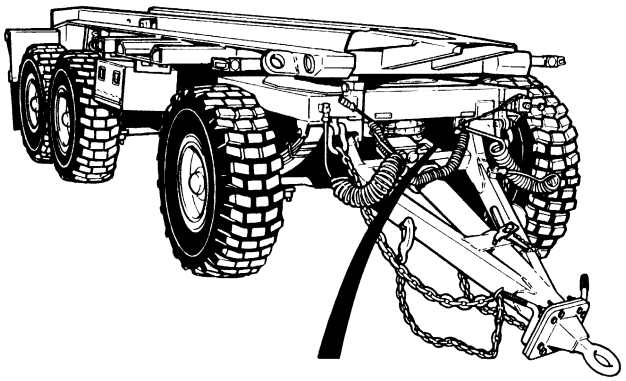
(4) Remove air line 2229 (5) from fitting (6).

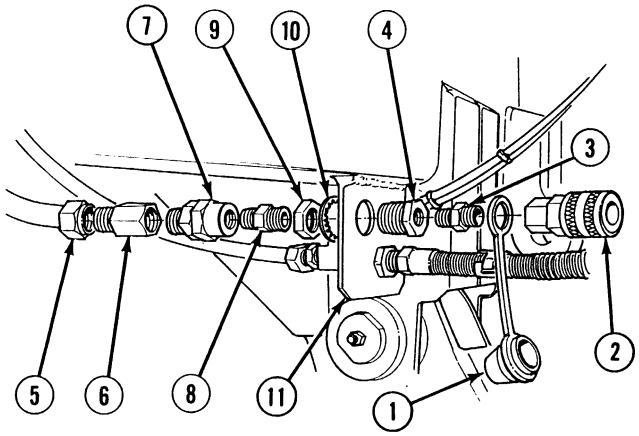
(5) Remove filter (7) from fitting (8).

(6) Remove adapter fitting (6) from filter (7).

(7) Remove fitting (8) from bulkhead adapter (4).

(8) Remove nut (9), lockwasher (10) and bulkhead adapter (4) from bracket (11).





b. Installation.

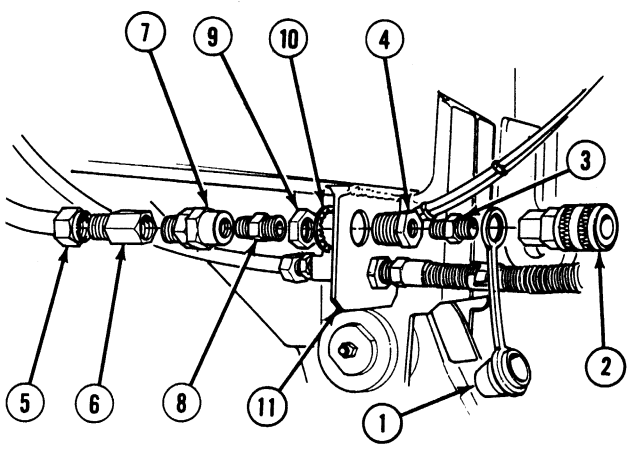
(1) Install bulkhead adapter (4) on bracket (11), with lockwasher (10) and nut (9).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.



(2) Apply sealing compound on threads on both ends of fitting (8).

(3) Install fitting (8) on bulkhead adapter (4).

(4) Apply sealing compound on threads of filter (7).

(5) Install filter (7) on fitting (8).

(6) Apply sealing compound on threads of fitting (6).

(7) Install fitting (6) on filter (7).

(8) Install air line 2229 (5) on fitting (6).

(9) Apply sealing compound on threads of both ends of fitting (3).

(10) Install fitting (3) on bulkhead adapter (4).

(11) Install protective cover (1) and quick disconnect (2) on adapter fitting (3).

(12) Install protective cover on quick disconnect (2).

c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-46. PARKING BRAKE AIR SUPPLY CONTROL VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench, 1-1/16 in. (Item 53, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (2) (Item 29, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

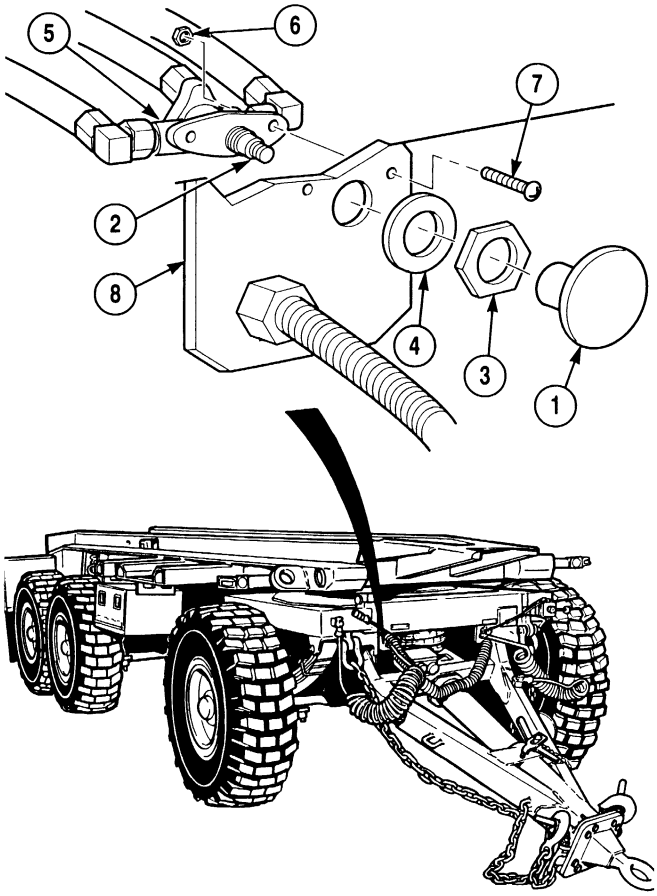
NOTE

- Tag all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

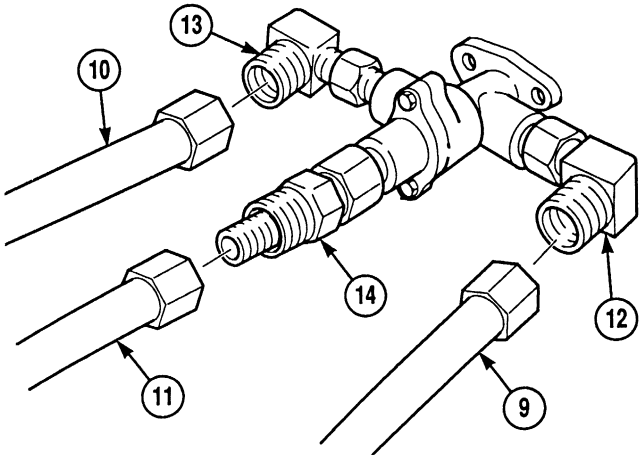
(1) Remove knob (1) from shaft (2).

(2) Remove nut (3) and washer (4) from valve (5).

(3) Remove two locknuts (6), screws (7) and valve (5) from bracket (8). Discard locknuts.



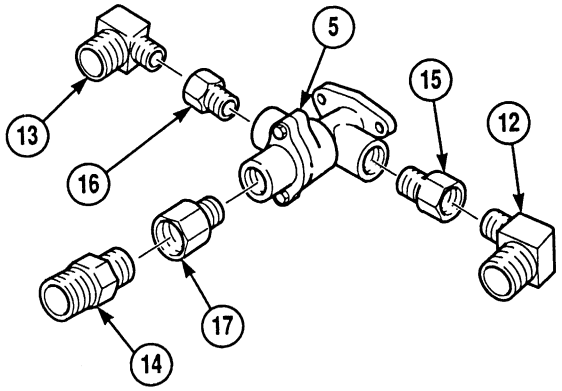
(4) Remove air lines 2620 (9), 2615 (10) and 2254 (11) from elbow (12), elbow (13) and fitting (14).



(5) Remove elbows (12) and (13) and fitting (14), with adapters (15), (16) and (17) from valve (5).

(6) Remove elbows (12) and (13) from adapters (15) and (16).

(7) Remove fitting (14) from adapter (17).



b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of elbow (12).

4-46. PARKING BRAKE AIR SUPPLY CONTROL VALVE REPLACEMENT (CONT).

(2) Install elbow (12) on adapter (15).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(3) Apply sealing compound on threads of adapter (15).

(4) Install adapter (15) on valve (5).

(5) Apply sealing compound on threads of elbow (13).

(6) Install elbow (13) on adapter (16).

(7) Apply sealing compound on threads of adapter (16).

(8) Install adapter (16) on valve (5).

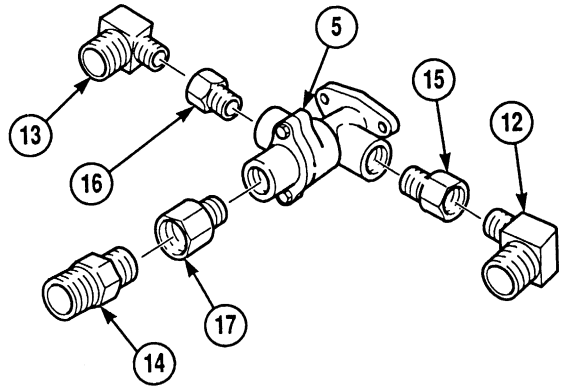
(9) Apply sealing compound on threads fitting (14).

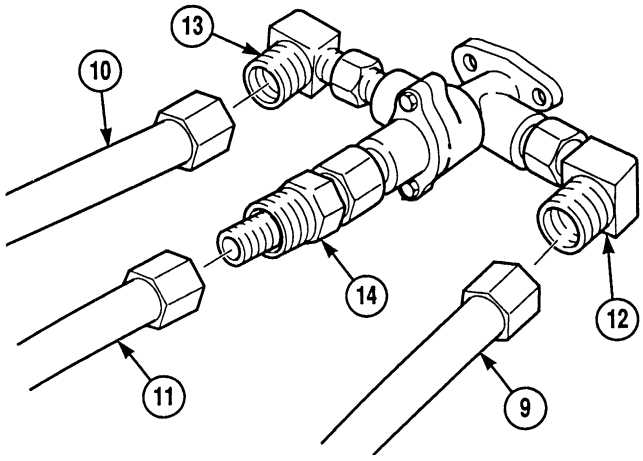
(10) Install fitting (14) on adapter (17).

(11) Apply sealing compound on threads of fitting (17).

(12) Install adapter (17) on valve (5).

(13) Install air lines 2620 (9), 2615 (10) and 2254 (11) on elbow (12), elbow (13) and fitting (14).



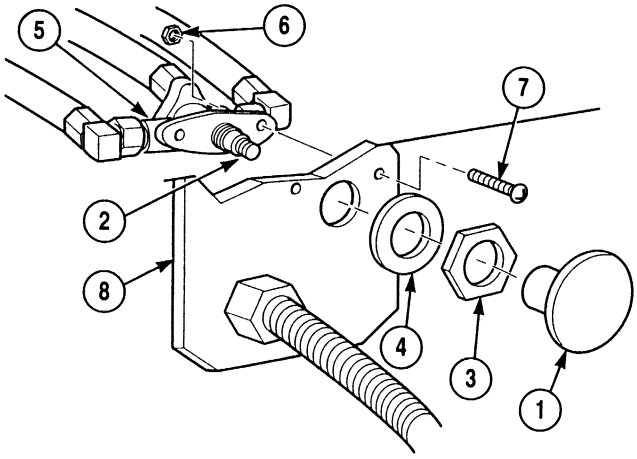


NOTE

Ensure that the screw holes are at the top of the valve during installation.

(14) Install valve (5) on bracket (8) with two screws (7) and locknuts (6).

(15) Install washer (4) and nut (3) on shaft (2).



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(16) Apply sealing compound to threads of shaft (2).

(17) Turning to the right, install knob (1) on shaft (2).

c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-47. AIR LINE REPLACEMENT.

This task covers:

a. Air Line Replacement b. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)

Materials/Parts
Cable Ties (Item 7, Appendix E)
Cable Ties (Item 8, Appendix E)
Tags, Identification (Item 23, Appendix E)

a. Air Line Replacement.

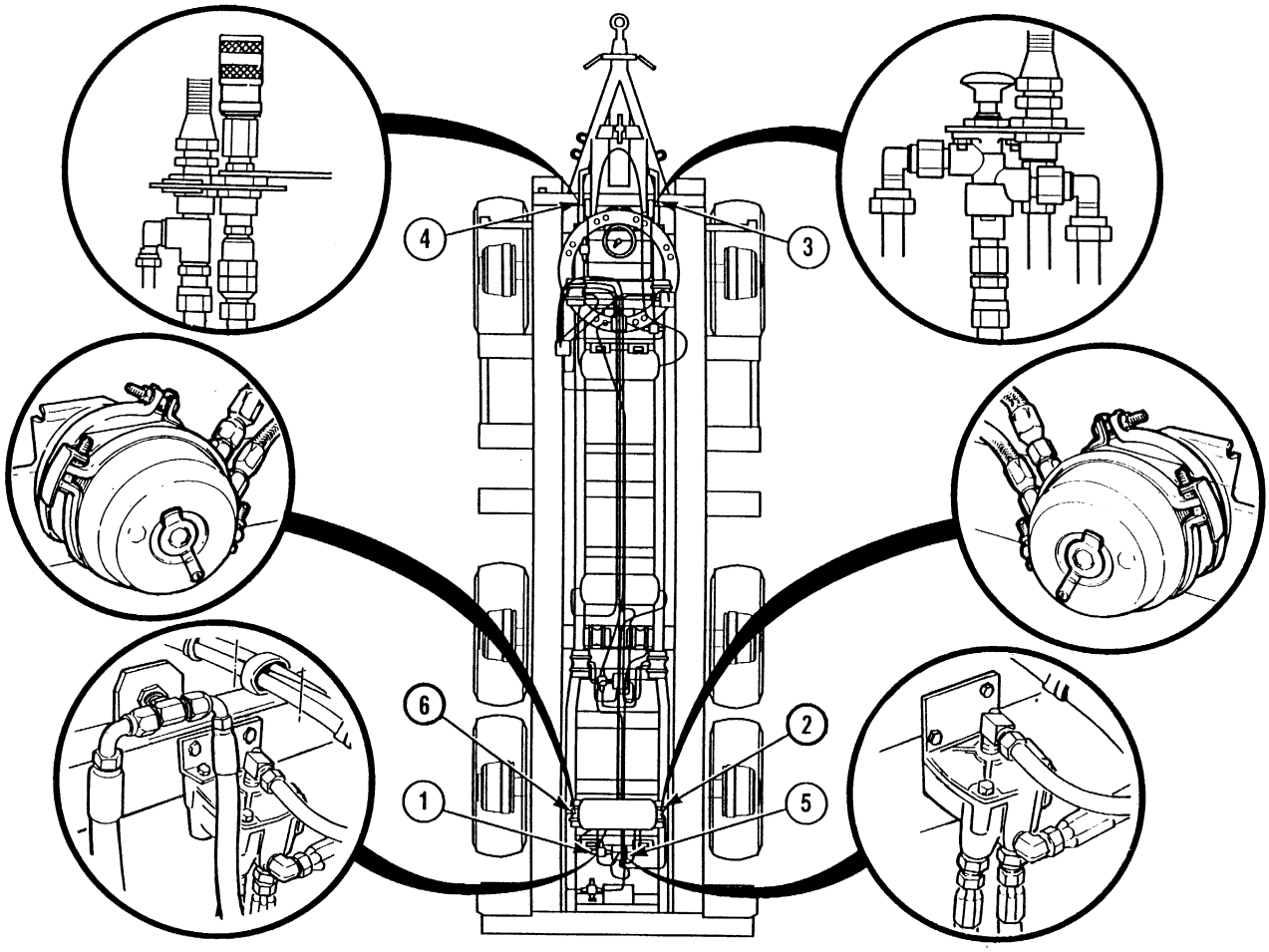
CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- This procedure shows the location of air lines and tubes on the trailer. It will never be necessary to remove all air lines and tubes at one time.
- As items are removed, cap and plug all hoses, tubes and connectors.
- Tag and mark air lines prior to removal.
- Remove cable ties as required.

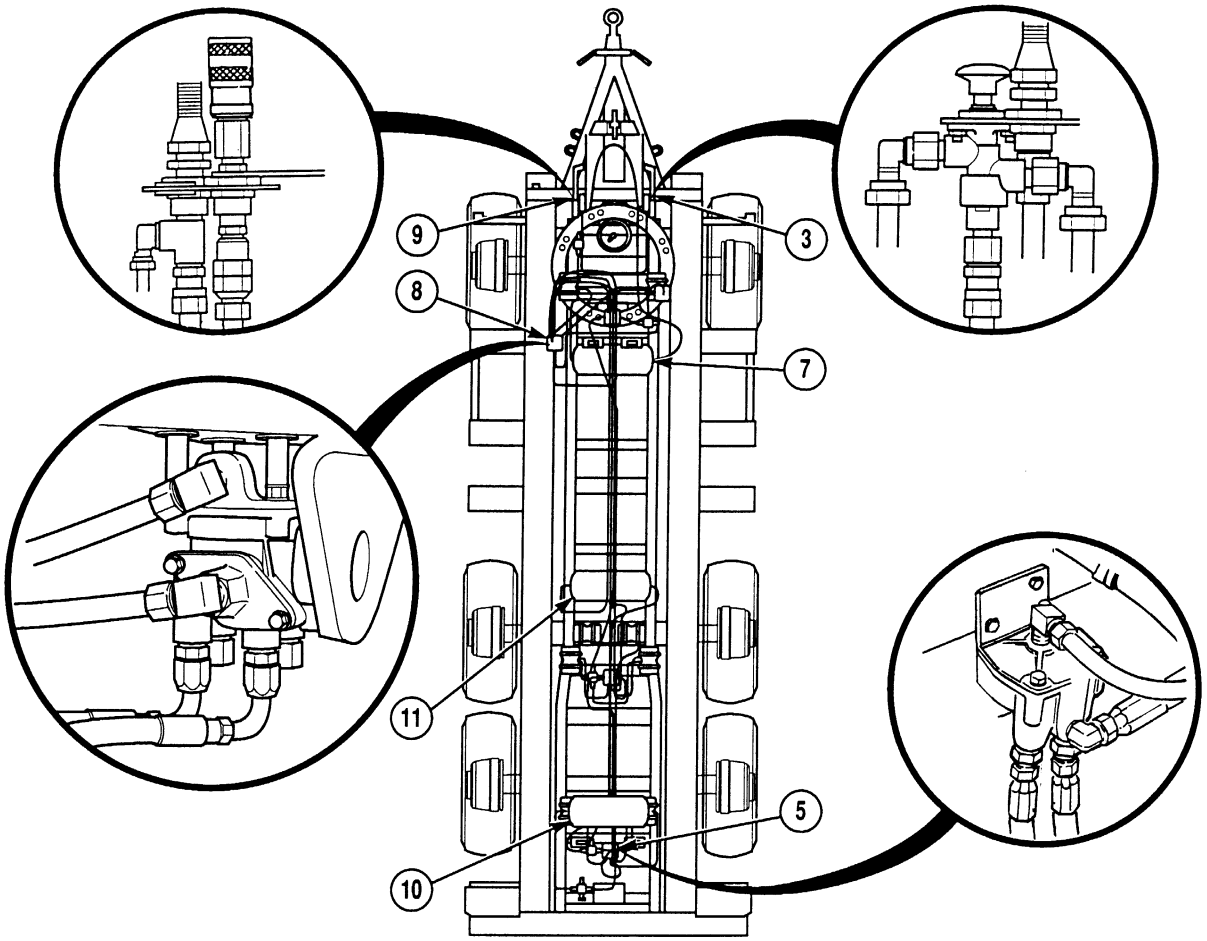
Table 4-21. Air Lines And Hoses



Line No.	From (Location on Component)	To (Location on Component)
2141	Bulkhead Fitting (Left) (1)	Right Brake Chamber (Spring Brake Port) (2)
2254	Emergency Valve (Center) (3)	Emergency Brake Gladhand (Rear, Right) (4)
2016	No. 3 Relay Valve (Left, Rear, Lower, DEL Port) (5)	Left Brake Chamber (Service Air Port) (6)
2018	No. 3 Relay Valve (Right, Rear, Lower, DEL Port) (5)	Right Brake Chamber (Service Air Port) (2)

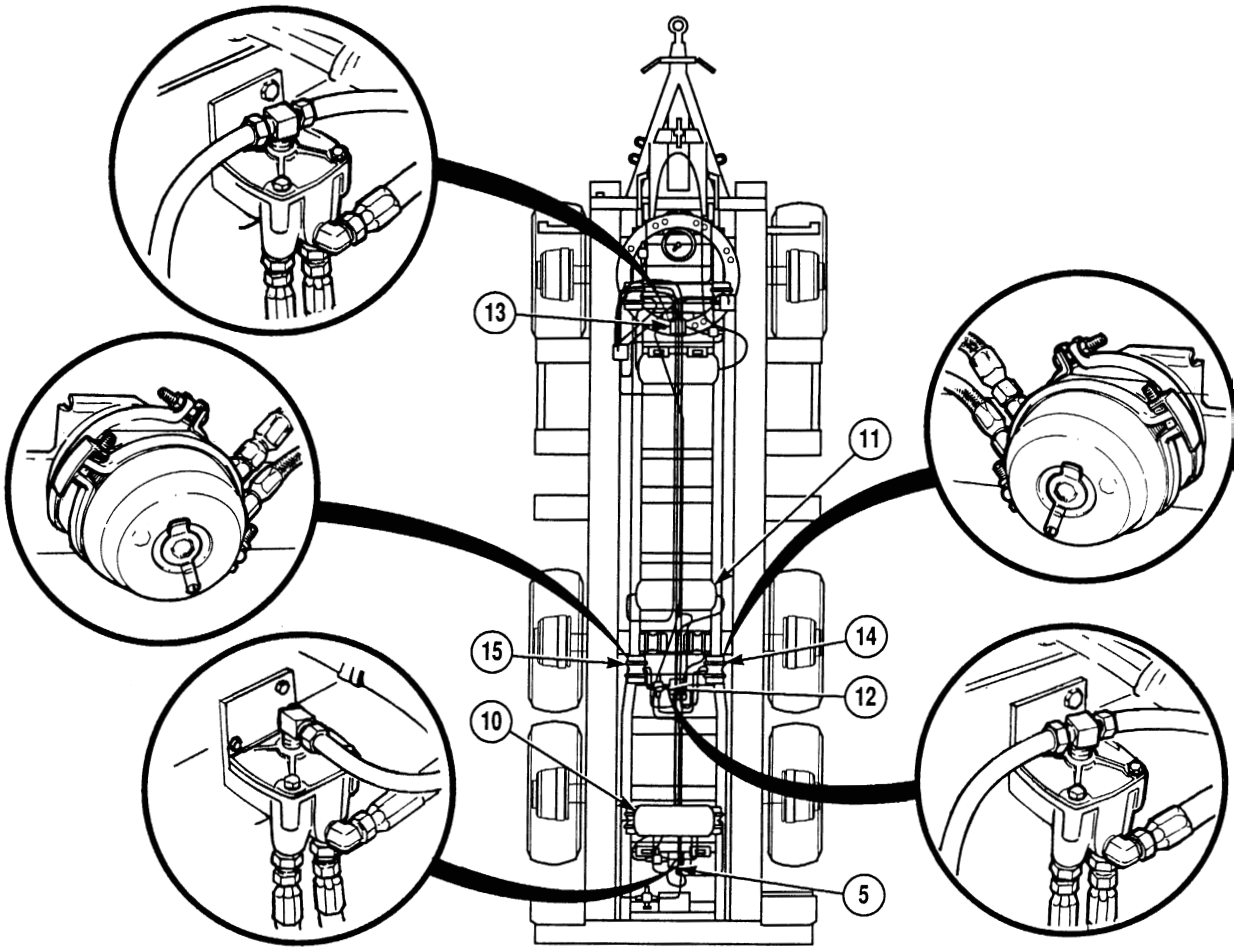
4-47. AIR LINE REPLACEMENT (CONT).

Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2615	Emergency Brake Valve (Left) (3)	No. 1 Air Tank (Right Top) (7)
2620	Emergency Brake Valve (Right) (3)	Multifunction Valve (Front Upper) (8)
2229	Coupler (9)	No. 1 Air Tank (Right Bottom) (7)
2014	No. 3 Relay Valve (Rear) (5)	No. 3 Air Tank (Right Side) (10)
2424	No. 1 Air Tank (Rear) (7)	Multifunction Valve (Service Tank A Port) (8)
2605	No. 2 Air Tank (Left Side) (11)	Multifunction Valve (Front Lower) (8)

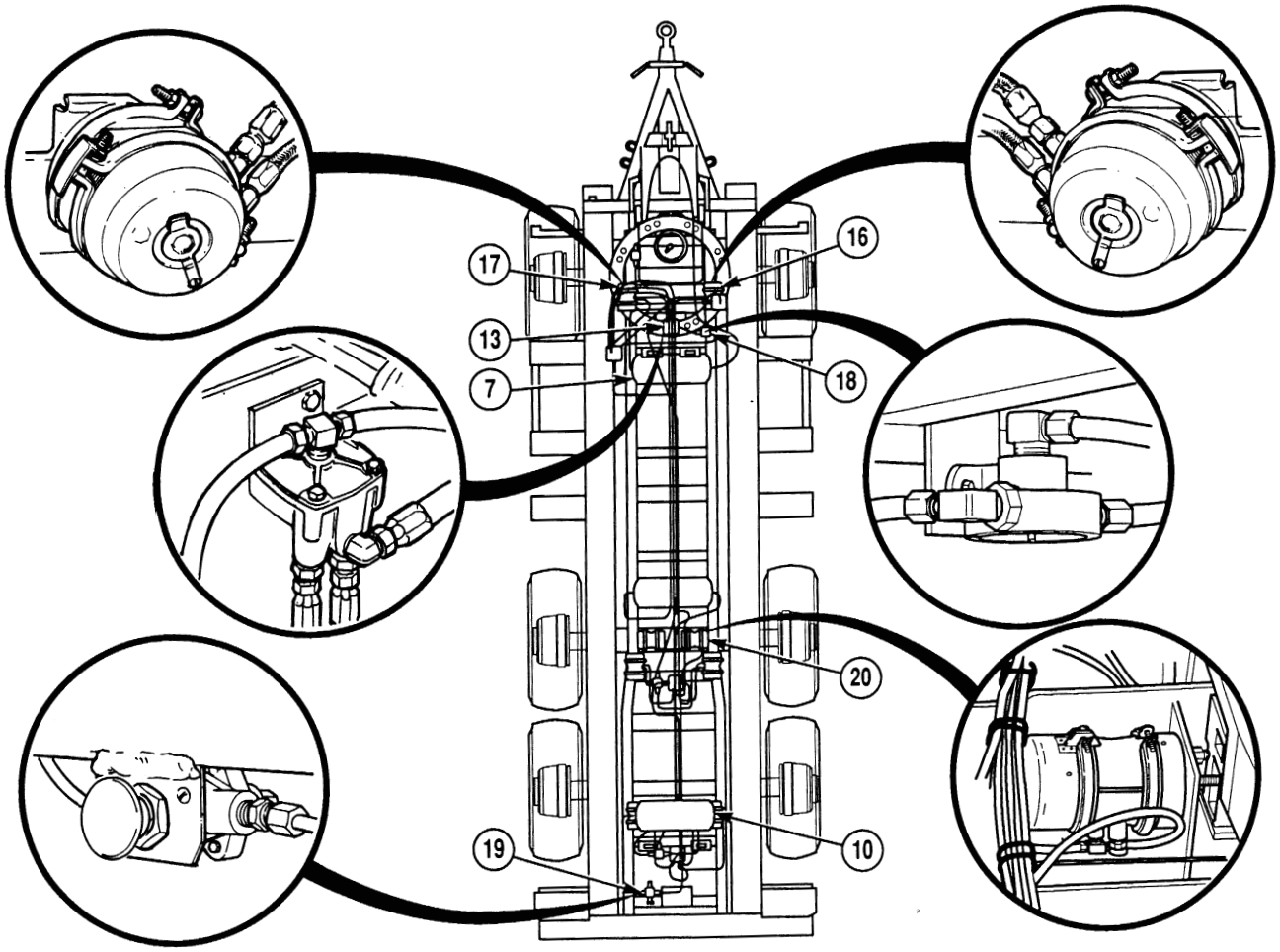
Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2019	No. 2 Relay Valve (Rear) (12)	No. 2 Air Tank (Rear) (11)
2637	No. 2 Relay Valve (Top Left) (12)	No. 3 Relay Valve (Top) (5)
2638	No. 2 Relay Valve (Top Right) (12)	No. 1 Relay Valve (Top Left) (13)
2017	No. 2 Relay Valve (Right, Rear, Lower, DEL Port) (12)	Right Brake Chamber (Service Brake Port) (14)
2015	No. 2 Relay Valve (Left, Rear, Lower, DEL Port) (12)	Left Brake Chamber (Service Brake Port) (15)
2606	No. 2 Air Tank (Right Side) (11)	No. 3 Air Tank (Front) (10)

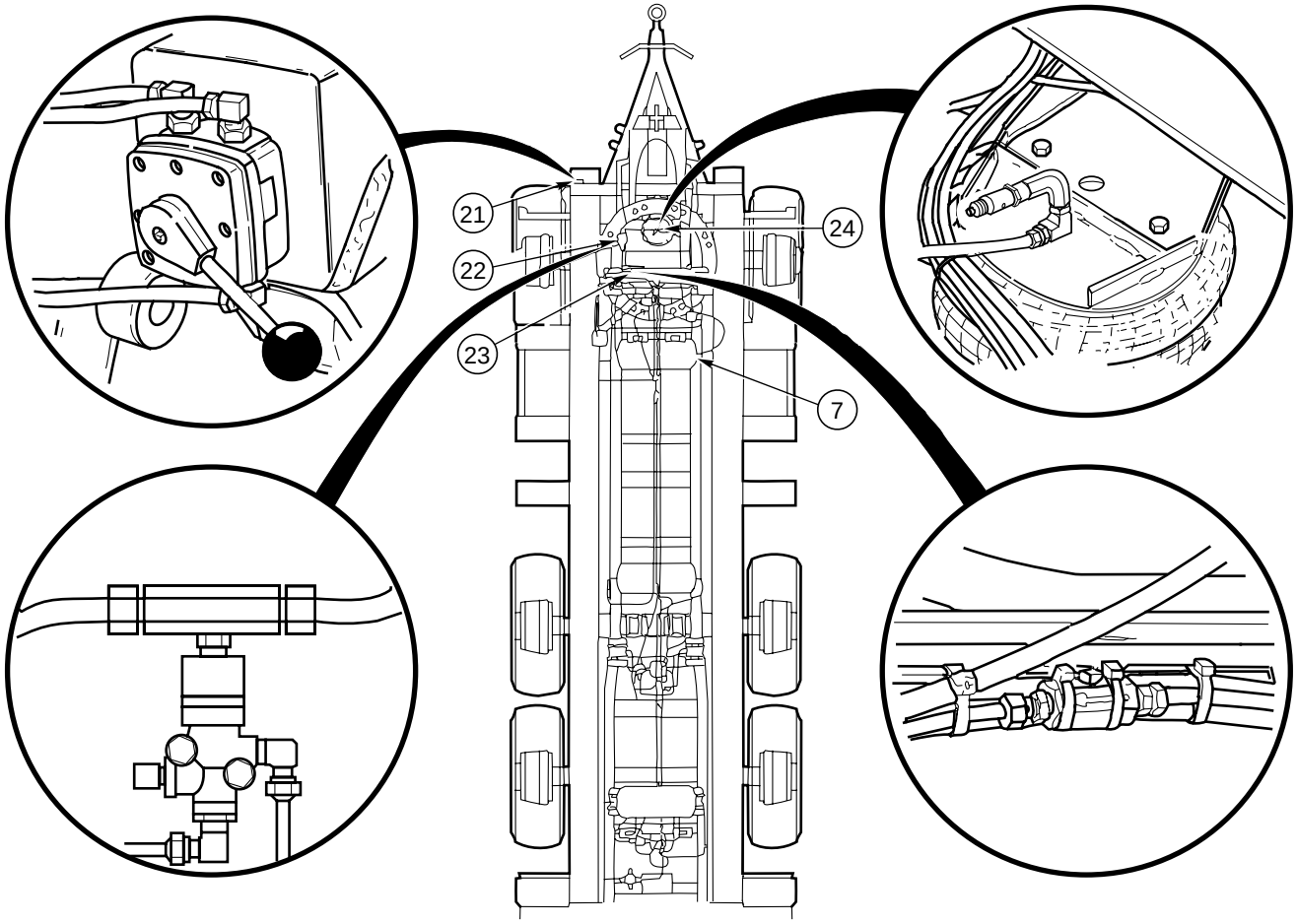
4-47. AIR LINE REPLACEMENT (CONT).

Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2545	No. 1 Relay Valve (Right, Front, Lower, DEL Port) (13)	Right Brake Chamber (Service Air Port) (16)
2547	No. 1 Relay Valve (Left, Front, Lower DEL Port) (13)	Left Brake Chamber (Service Brake Port) (17)
2548	No. 1 Relay Valve (Front Port) (13)	No. 1 Air Tank (Left Side Upper Port) (7)
2639	No. 1 Relay Valve (Left Side) (13)	Quick Release Valve (Right Side) (18)
2080	Load Lock Control Valve (Left Side) (19)	No. 3 Air Tank (Left Side) (10)
2078	Load Lock Control Valve (Right Side) (19)	Right Load Lock Air Chamber (Rear Right) (20)

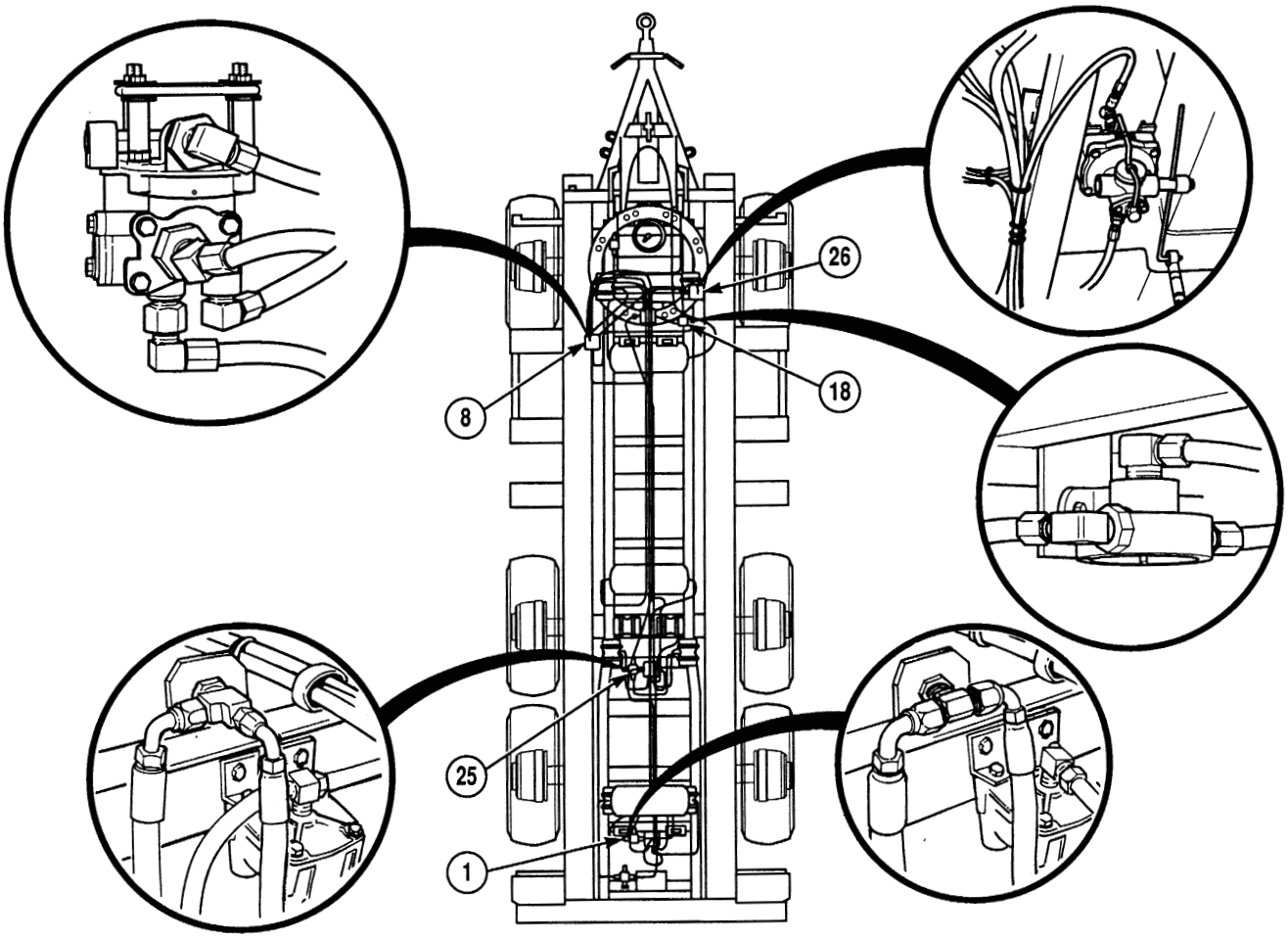
Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2228	Valve (Top INLET) (21)	No. 1 Air Tank (Left Bottom) (7)
2226	Valve (Bottom CYL) (21)	Inversion Valve (Bottom) (22)
2225	Valve (Top EXH) (21)	Inversion Valve (Front Upper) (22)
2224	Inversion Valve (Front Middle) (22)	Safety Valve (24)
2231	Inversion Valve (Rear Upper) (22)	Check Valve (Front) (23)
2232	Check Valve (Rear) (23)	Exhaust

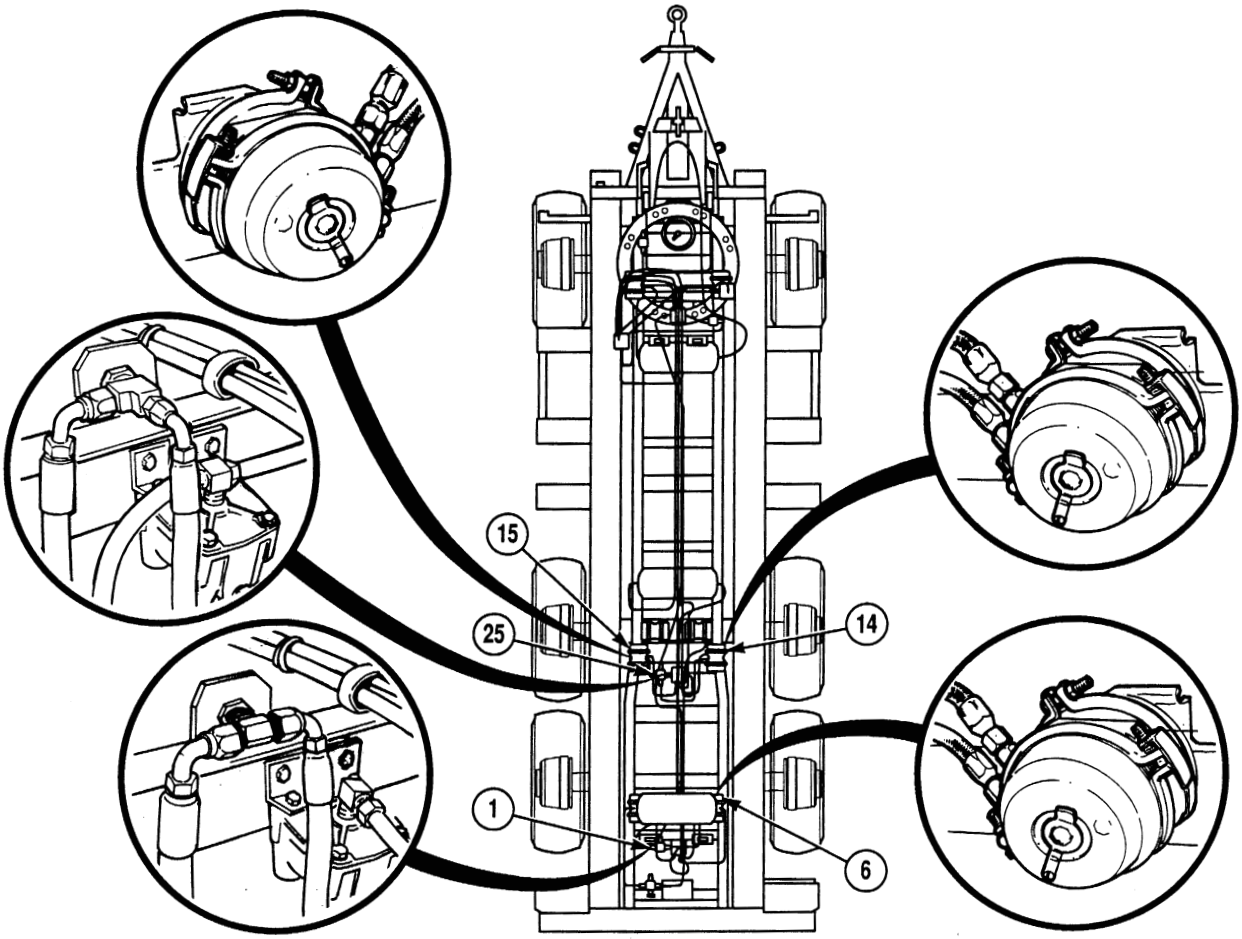
4-47. AIR LINE REPLACEMENT (CONT).

Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2143	Multifunction Valve (Lower, Rear, Left) (8)	Bulkhead Fitting (Front) (1)
2142	Multifunction Valve (Lower, Rear, Right) (8)	Bulkhead Fitting (Front) (25)
2260	Quick Release Valve (Right Side) (18) (Rear Upper Control Port) (8)	Multifunction Valve (8)
2660	Brake Power Regulator (Lower Front) (26)	Quick Release Valve (Top) (18)

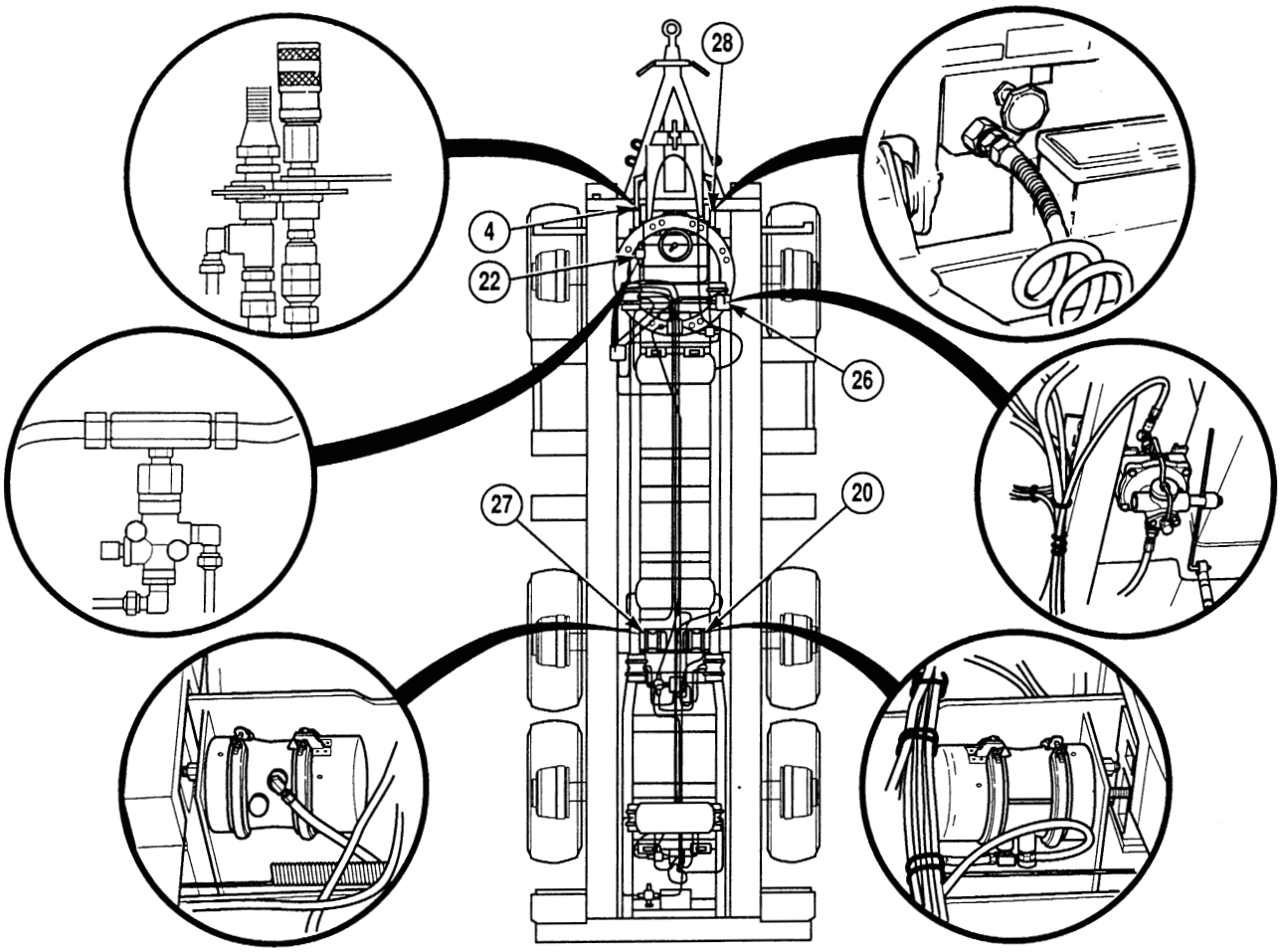
Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2138	Bulkhead Fitting (Rear) (25)	Right Brake Chamber (Spring Brake Port) (14)
2139	Bulkhead Fitting (Left Rear) (25)	Left Brake Chamber (Spring Brake Port) (15)
2140	No. 2 Bulkhead Fitting (Right Side) (1)	Right Brake Chamber (Spring Brake Port) (6)

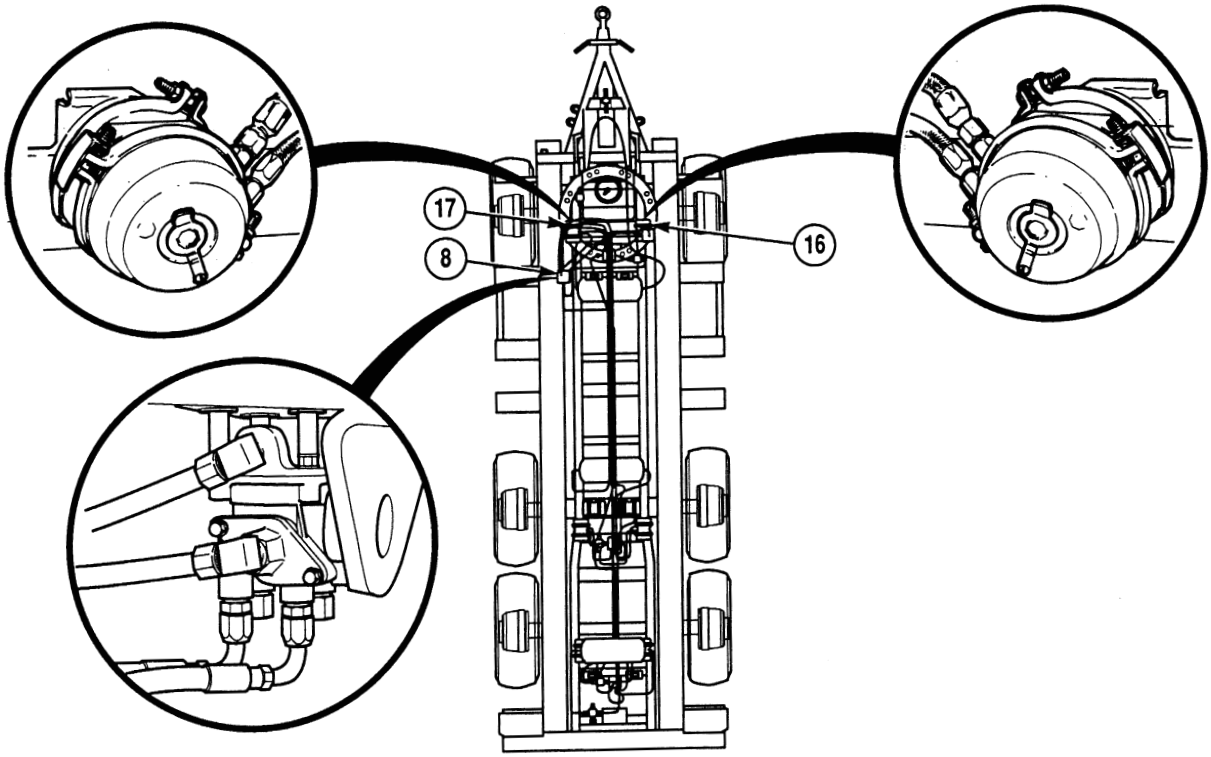
4-47. AIR LINE REPLACEMENT (CONT).

Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2081	Left Load Lock Air Chamber (Rear) (27)	Right Load Lock Air Chamber (Rear Left) (20)
2255	Service Air Gladhand (Rear) (28)	Brake Power Regulator Valve (Top Rear) (26)
2223	Emergency Brake Gladhand (Rear Left) (4)	Inversion Valve (Rear Lower) (22)

Table 4-21. Air Lines And Hoses - CONT.



Line No.	From (Location on Component)	To (Location on Component)
2023	Multifunction Valve (Lower, Front, Left) (8)	Left Brake Chamber (Spring Brake Port) (17)
2022	Multifunction Valve (Lower, Front, Right) (8)	Right Brake Chamber (Spring Brake Port) (16)

b. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-48. DRAWBAR AIR BAG/SAFETY VALVE REPLACEMENT/ADJUSTMENT.

This task covers:

a. Removal
b. Installation
c. Adjustment
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Lifting Device Minimum Capacity 425 lbs. (193 kg)
Pressure Test Kit (Item 34, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Sealing Compound (Item 19, Appendix E)

Materials/Parts - Continued
Tags, Identification (Item 23, Appendix E)
Lockwasher (2) (Item 51, Appendix I)

Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

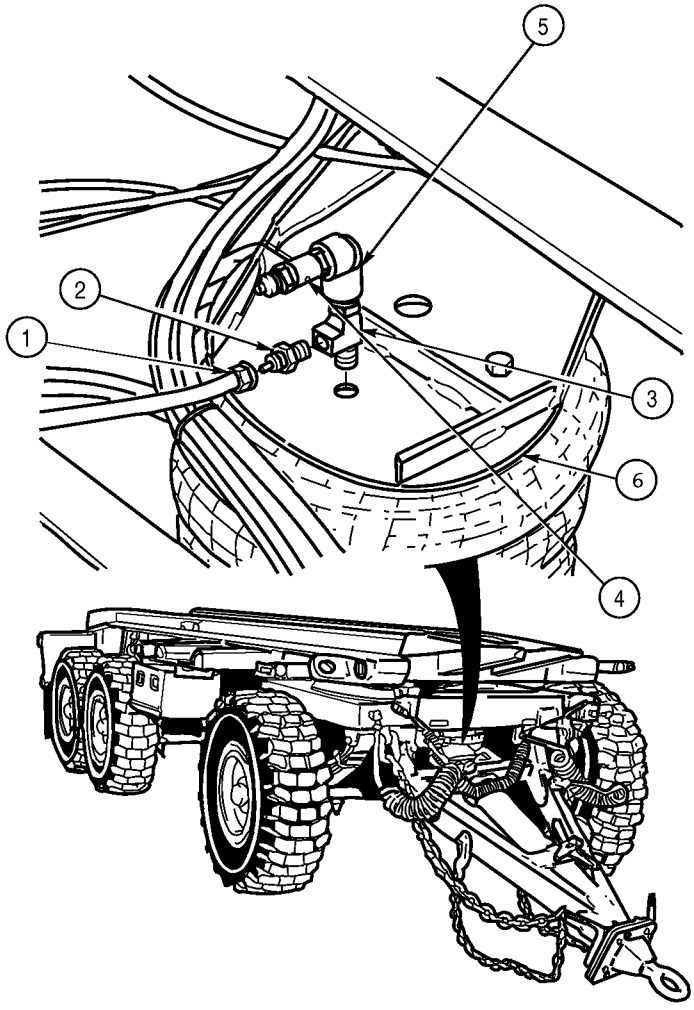
NOTE

- Tag air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air line 2224 (1) from adapter (2).

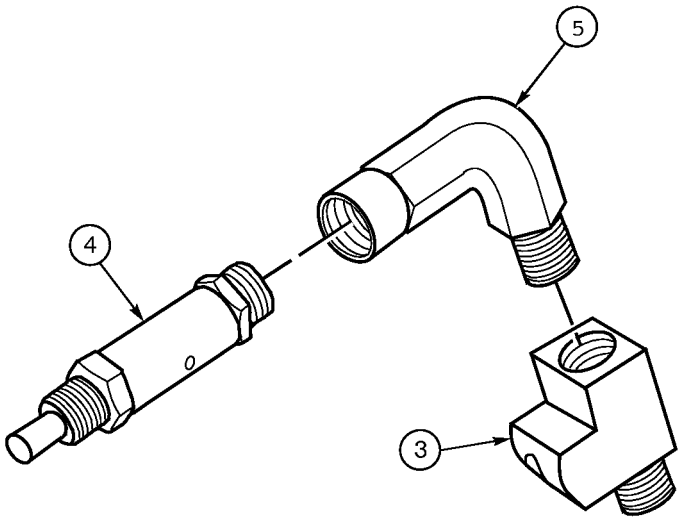
(2) Remove adapter fitting (2) from T-fitting (3).

(3) Remove T-fitting (3) and valve (4) and elbow (5) from air bag (6).



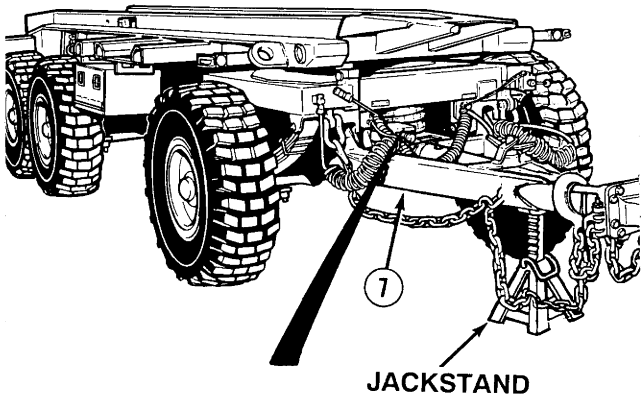
(4) Remove valve (4) from elbow (5).

(5) Remove elbow (5) from T-fitting (3).



WARNING

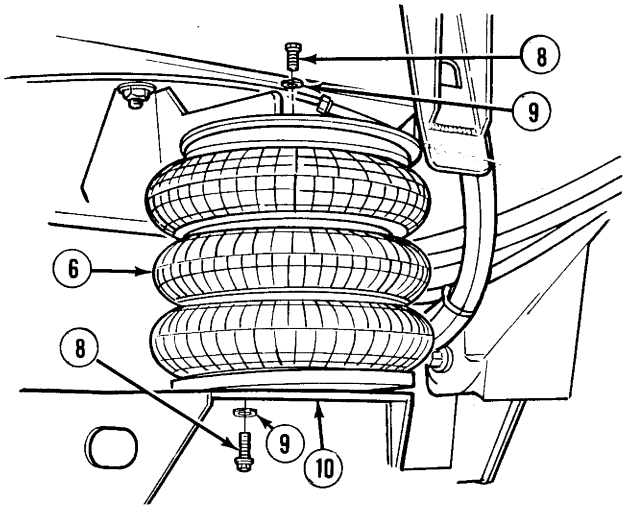
- Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to removal to prevent possible injury to personnel.
- Ensure air pressure is depleted prior to starting this task. Working on air lines or air bag without depleting air pressure could cause serious injury or death to personnel.



(6) Using lifting device and aid of an assistant, raise drawbar (7) and support with jackstand.

(7) Remove four screws (8) and lockwashers (9) from drawbar (7) and turntable (10) and air bag (6). Discard lockwashers.

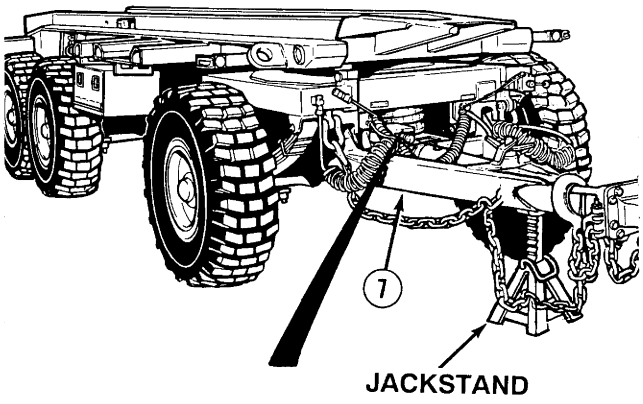
(8) Remove air bag (6) from drawbar (7).



4-48. DRAWBAR AIR BAG/SAFETY VALVE REPLACEMENT/ADJUSTMENT (CONT).

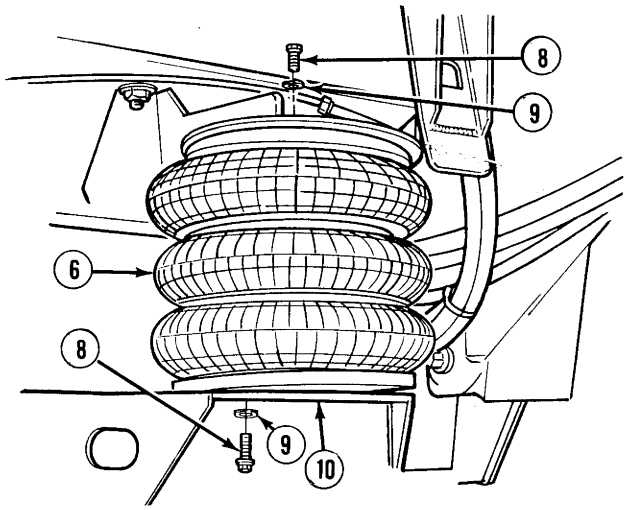
b. Installation.

(1) Position air bag (6) on drawbar (7).



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(2) Apply sealing compound to threads of screws (8).

(3) Install four lockwashers (9) and screws (8) on turntable (10) drawbar (7) and air bag (6).

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(4) Using lifting device and aid of assistant raise drawbar (7), remove jackstand and lower drawbar to ground.

WARNING

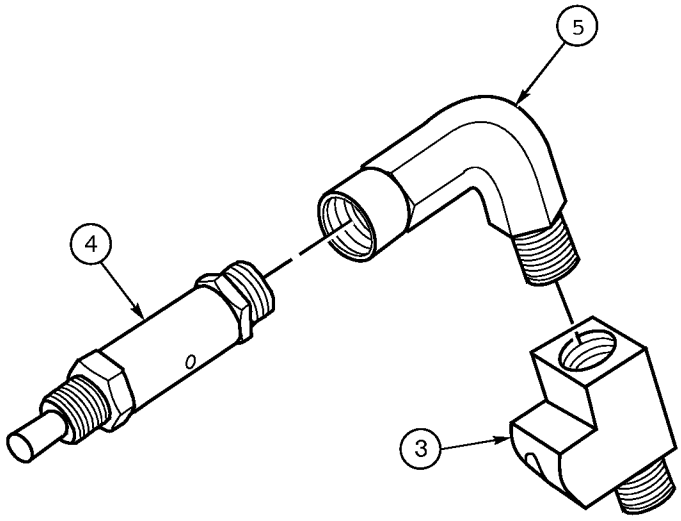
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(5) Apply sealing compound to threads of elbow (5) and install on T-fitting (3).

(6) Apply sealing compound to threads of valve (4) and install on elbow (5).



(7) Apply sealing compound on threads of T-fitting (3).

NOTE

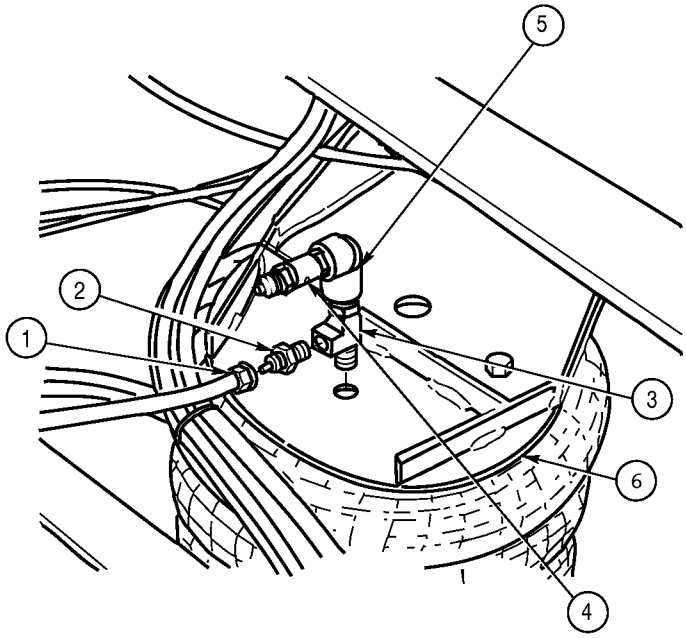
Drain hole in valve must face down.

(8) Install T-fitting (3), elbow (5) and valve (4) on air bag (6).

(9) Apply sealing compound on threads of adapter (2).

(10) Install adapter (2) on T-fitting (4).

(11) Install air line 2224 (1) on adapter (2).



4-48. DRAWBAR AIR BAG/SAFETY VALVE REPLACEMENT/ADJUSTMENT (CONT).

c. Adjustment.

WARNING

- If airlines are disconnected when they are under 125 ± 5 psi (862 ± 34 kPa), they can whip around and cause personal injury. Care should be exercised when disconnecting an air hose that is thought to be under pressure.
- Remain clear of drawbar when it is raised. If drawbar falls it will cause injury or death to personnel.

(1) Drain trailer air system, (Para 2-21).

(2) Connect 0-160 psi (0-1103 kPa) pressure gage to air hose 2224 (1) and adapter (2).

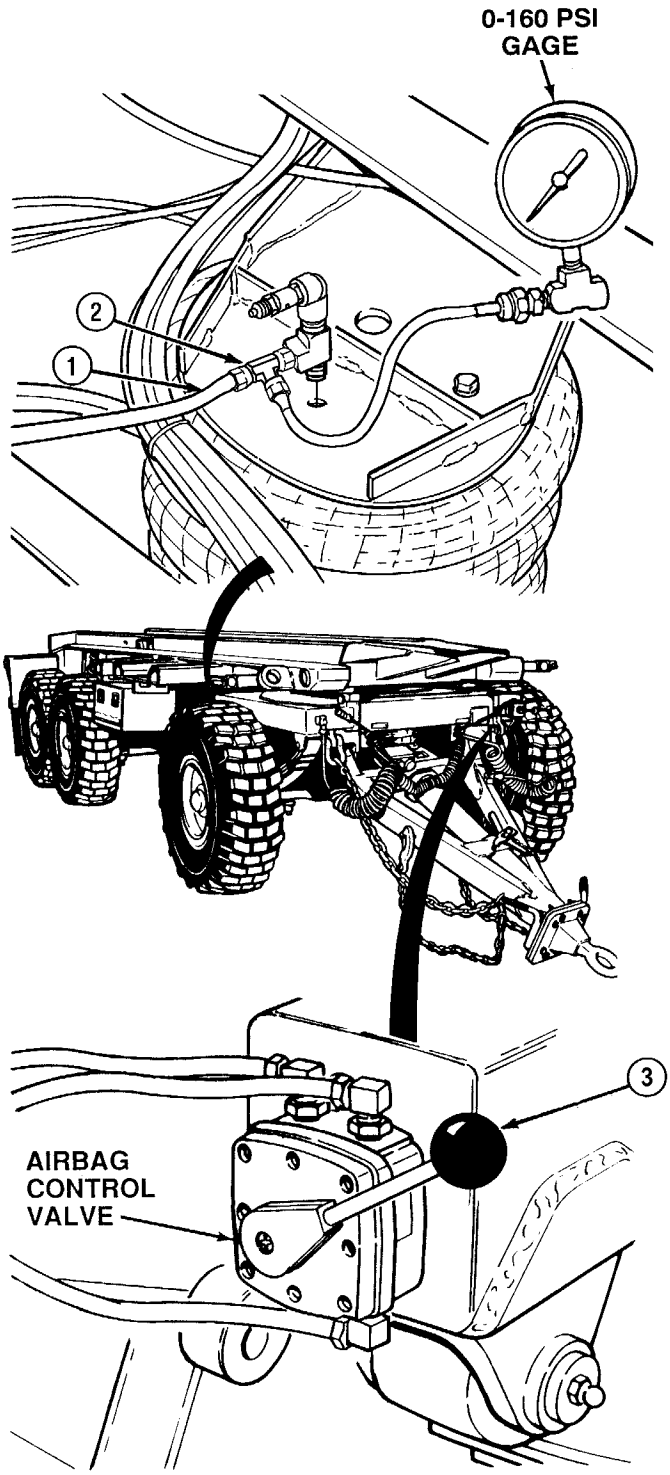
(3) Charge trailer air system, (Para 2-22).

(4) With aid of an assistant, raise air bag control lever (3) to up position until 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, is observed on 0-160 psi (0-1103 kPa) pressure gage.

NOTE

- If safety valve releases at less than 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, perform Steps (5) through (11).
- If safety valve releases at 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, no adjustment is needed. Proceed to Follow-On Maintenance.

(5) Drain trailer air system, (Para 2-21).



(6) While holding adjustment screw (4), loosen jam nut (5) on safety valve (6).

(7) Apply sealing compound to threads of valve (6) and install on elbow (7).

NOTE

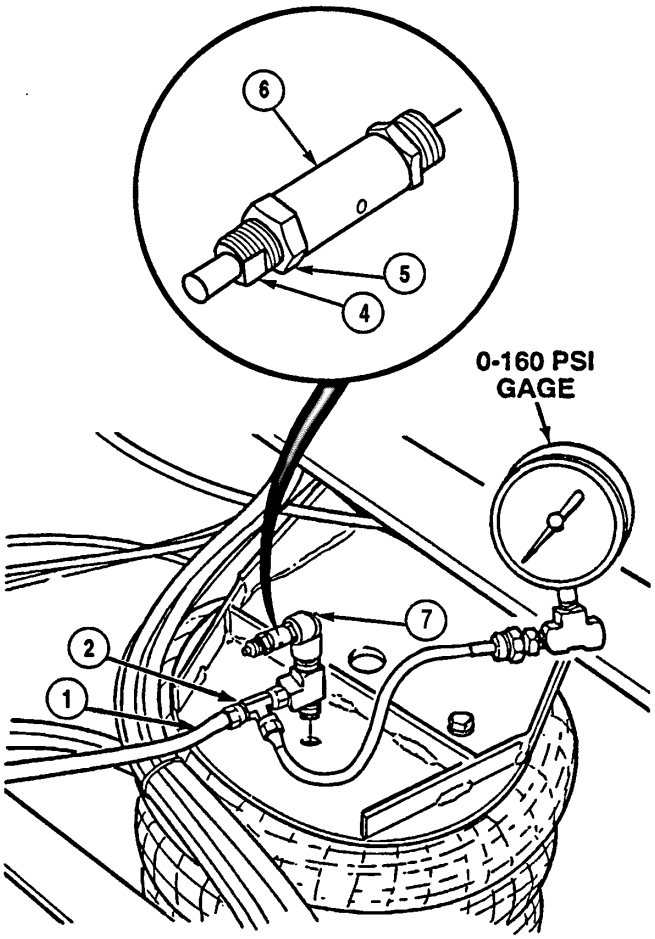
If safety valve can not be adjusted to release at 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension, replace valve.

(8) Repeat Steps (3) through (7) until safety valve releases at 53-56 psi (365-386 kPa) or 95-100 psi (655-689 kPa) if equipped with drawbar extension.

(9) Drain trailer air system, (Para 2-21).

(10) Disconnect 0-160 psi (0-1103 kPa) pressure gage from air hose 2224 (1) and adapter (2).

(11) Install air hose 2224 (1) to adapter (2).



d. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-49. INVERSION VALVE REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Follow-On Maintenance

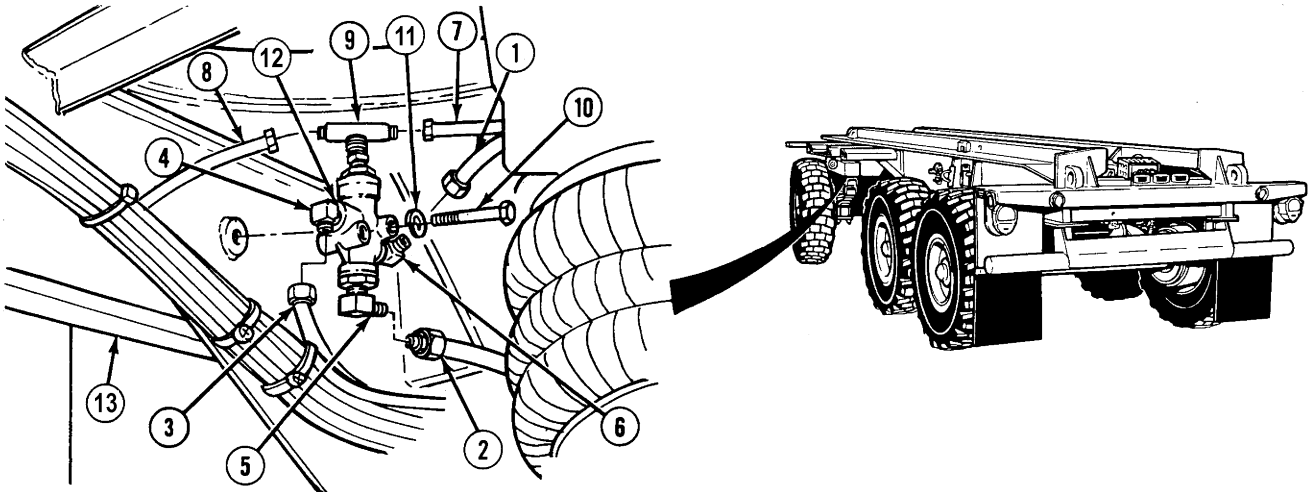
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

Materials/Parts
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Lockwasher (2) (Item 52, Appendix I)

a. Removal.



CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2224 (1), 2226 (2) and 2223 (3) from elbows (4), (5) and (6).

(2) Remove air lines 2225 (7) and 2231 (8) from tee fitting (9).

(3) Remove two screws (10), lockwashers (11) and inversion valve (12) from frame (13). Discard lockwashers.

(4) Remove three elbows (4), (5) and (6) from inversion valve (12).

(5) Remove tee fitting (9) from inversion valve (12).

b. Cleaning/Inspection. Visually inspect inside of inversion valve (12) for corrosion and debris.

c. Installation.

WARNING

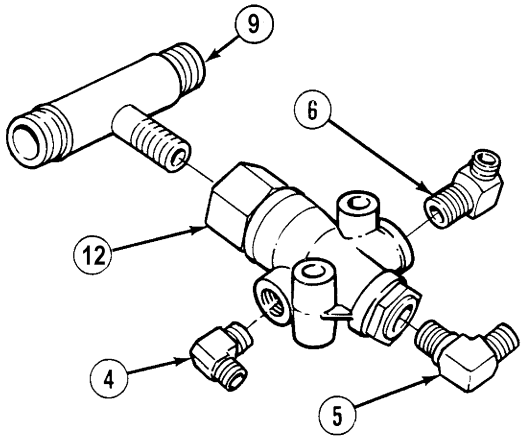
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(1) Apply sealing compound on threads of tee fitting (9).

(2) Install tee fitting (9) on inversion valve (12).

(3) Apply sealing compound on threads of elbows (4), (5) and (6).

(4) Install elbows (4), (5) and (6) on inversion valve (12).

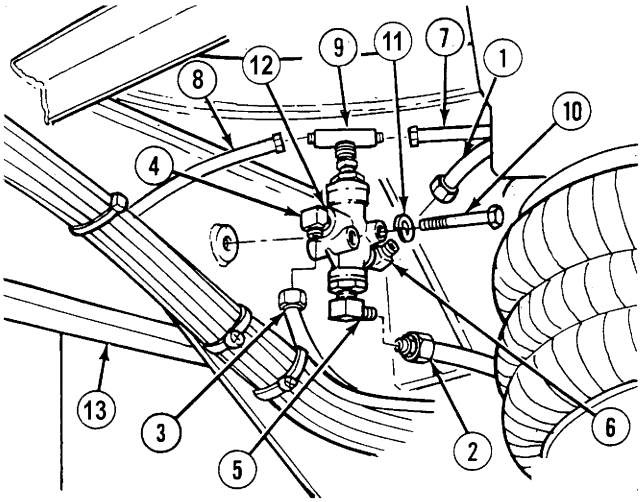


4-49. INVERSION VALVE REPLACEMENT (CONT).

(5) Install inversion valve (12) on frame (13) with two lockwashers (11) and screws (10).

(6) Install air lines 2224 (1), 2226 (2) and 2223 (3) on elbows (4), (5) and (6).

(7) Install air lines 2225 (7) and 2231 (8) on tee fitting (9).



d. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-50. RELIEF VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

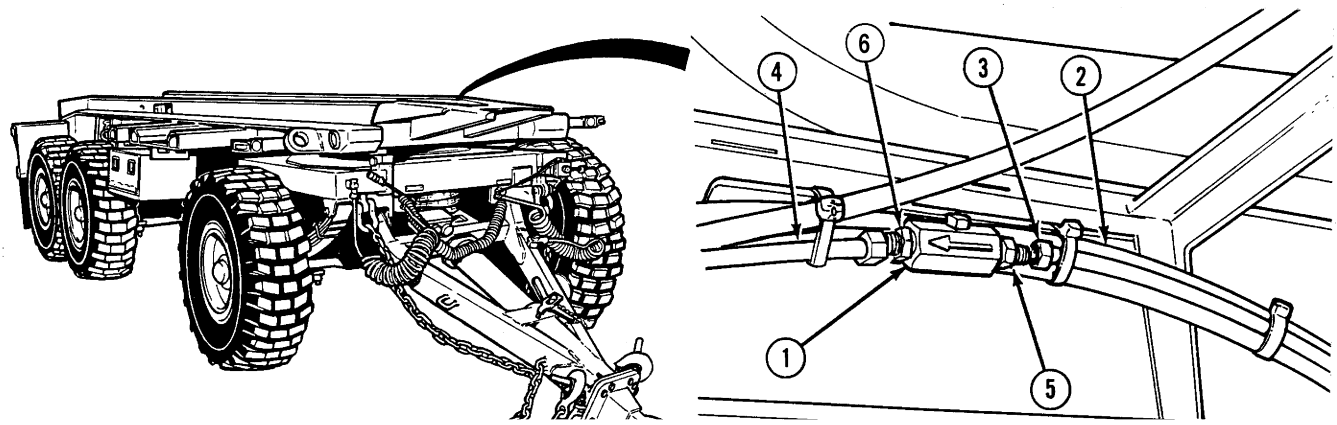
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Materials/Parts
Cable Ties (Item 8, Appendix E)
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.



CAUTION

Equipment may be damaged by foreign matter if hoses, tubes and connectors are not plugged and capped when removed.

NOTE

- Tag all air lines prior to removal.
- Remove cable ties as required.
- Cap and plug all air lines and connectors after removal.

(1) Remove valve (1) from air lines (2).

NOTE

The relief valve is marked with an arrow to show proper direction during installation. Note direction of arrow, or if arrow is missing or obscured, mark relief valve to aid in installation.

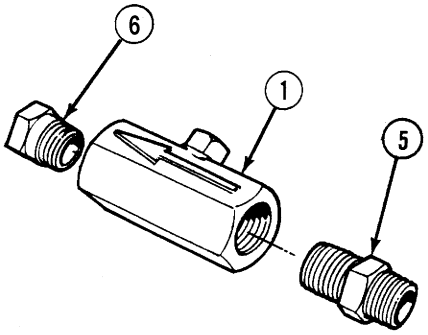
(2) Remove air line 2231 (3) and 2232 (4) from adapter (5) and fitting (6).

4-50. RELIEF VALVE REPLACEMENT (CONT).

(3) Remove fitting (6) from valve (1).

(4) Remove adapter (5) from valve (1).

b. Installation.



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

NOTE

Install cable ties as required.

(1) Apply sealing compound on threads of adapter (5).

(2) Install adapter (5) on valve (1).

(3) Apply sealing compound on threads of fitting (6).

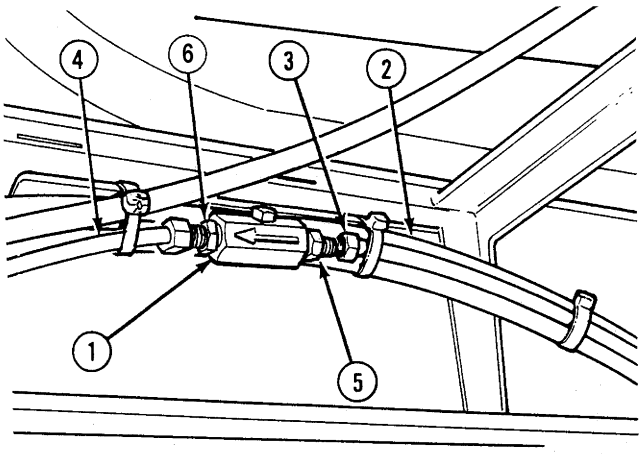
(4) Install fitting (6) on valve (1).

NOTE

Refer to direction of arrow marking on valve to ensure proper installation.

(5) Install air lines 2231 (3) and 2232 (4) on adapter (5) and fitting (6).

(6) Install valve (1) on air lines (2).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-51. QUICK RELEASE VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

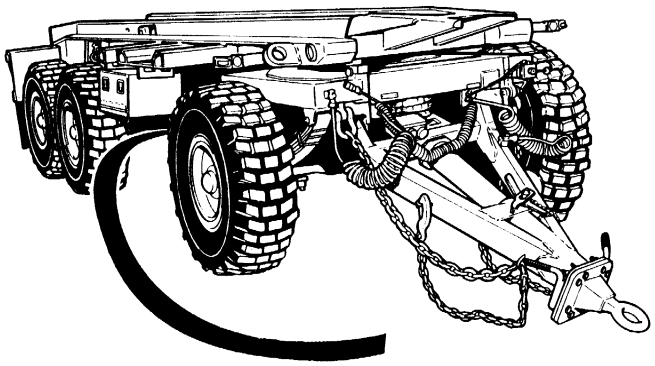
INITIAL SETUP

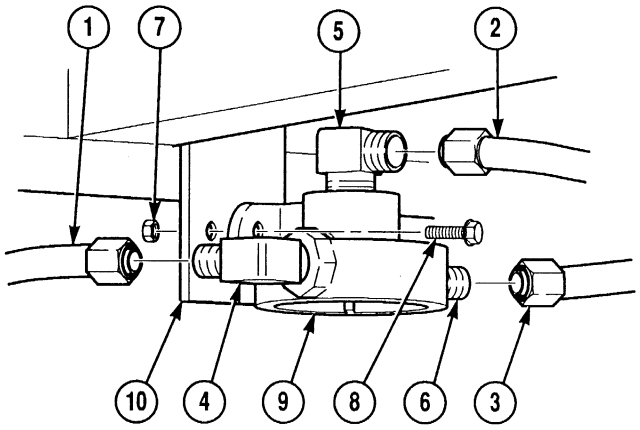
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (2) (Item 40, Appendix I)

a. Removal.





CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag and mark all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2260 (1), 2660 (2) and 2639 (3) from elbows (4) and (5) and fitting (6).

(2) Remove two locknuts (7), screws (8) and quick release valve (9) from bracket (10). Discard locknuts.

(3) Remove two elbows (4) and (5) and fitting (6) from quick release valve (9).

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of fitting (6).

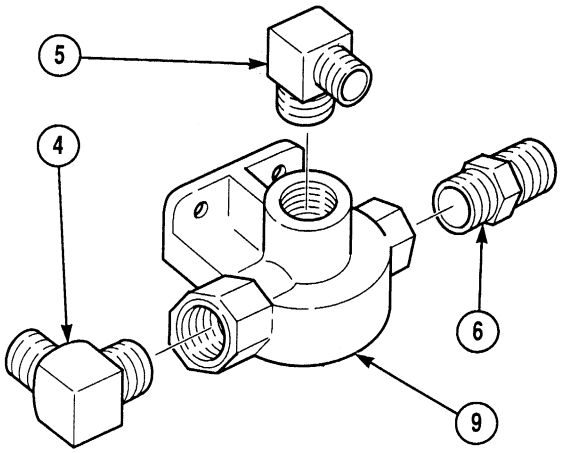
(2) Install fitting (6) on quick release valve (9).

(3) Apply sealing compound on threads of elbow (5).

(4) Install elbow (5) on quick release valve (9).

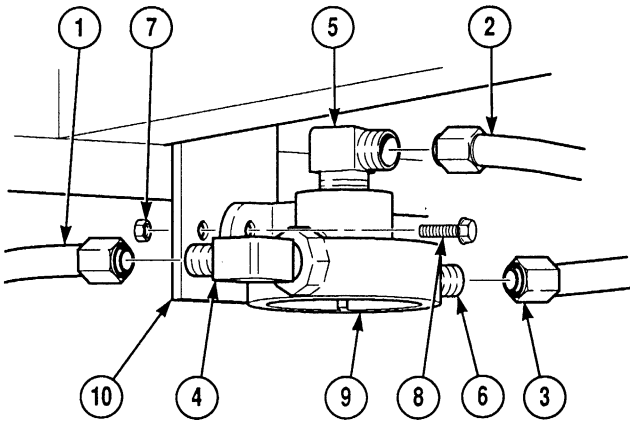
(5) Apply sealing compound on threads of elbow (4).

(6) Install elbow (4) on quick release valve (9).



(7) Install quick release valve (9) on bracket (10) with two screws (8) and locknuts (7).

(8) Install air lines 2260 (1), 2660 (2) and 2639 (3) on elbows (4) and (5) and fitting (6).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-52. MULTIFUNCTION VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

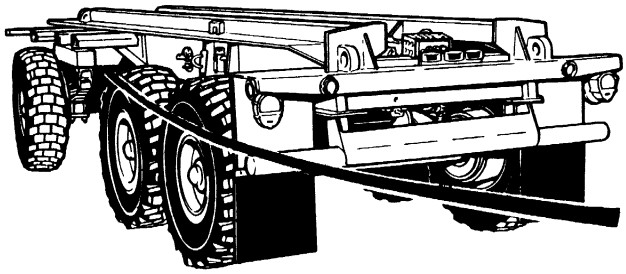
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

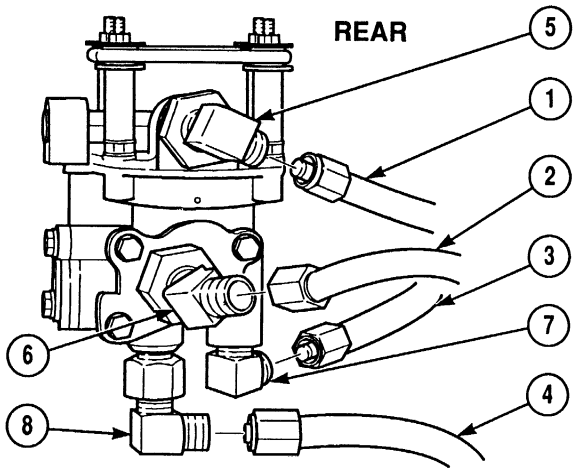
Materials/Parts
Sealing Compound (Item 17, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Mountings (4) (Item 7, Appendix I)

Materials/Parts - Continued
Locknut (4) (Item 41, Appendix I)
Lockwasher (Item 52, Appendix I)
Ring (4) (Item 72, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

a. Removal.





CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

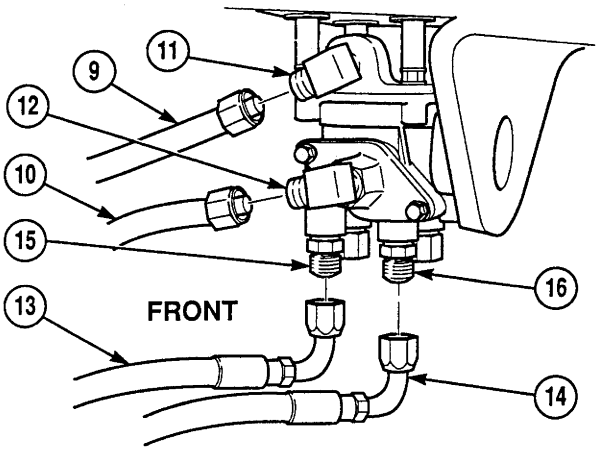
NOTE

- Tag and mark all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2260 (1), 2424 (2), 2142 (3) and 2143 (4) from elbows (5), (6), (7) and (8).

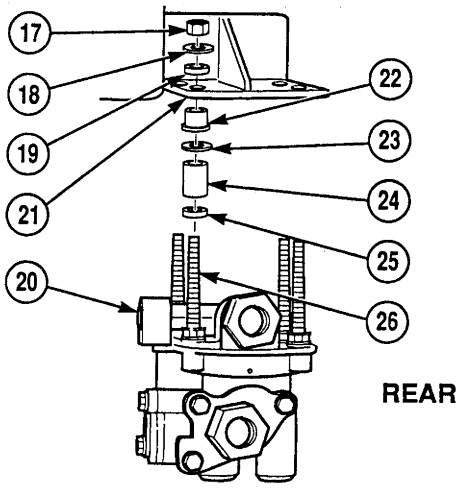
(2) Remove air lines 2620 (9) and 2605 (10) from elbows (11) and (12).

(3) Remove air lines 2022 (13) and 2023 (14) from fittings (15) and (16).



(4) Remove four locknuts (17), washers (18), rings (19) and multifunction valve (20) from bracket (21). Discard locknuts and rings.

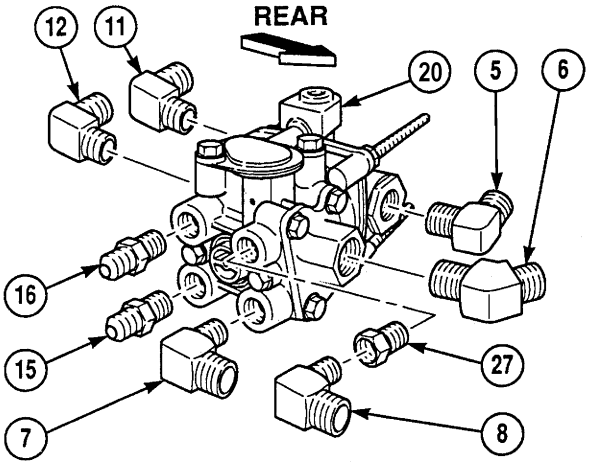
(5) Remove four mounts (22), washers (23), spacers (24) and washers (25) from studs (26). Discard mounts.



(6) Remove elbow (5), elbow (6), elbow (7), fitting (15), fitting (16), elbow (11) and elbow (12) from valve (20).

(7) Remove elbow (8) with adapter (27) from valve (20).

(8) Remove elbow (8) from adapter (27).

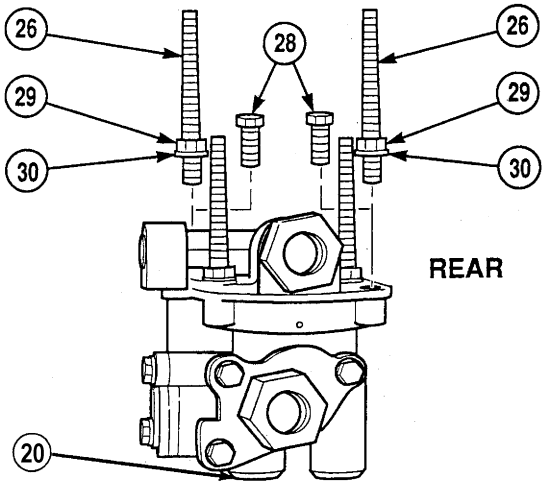


4-52. MULTIFUNCTION VALVE REPLACEMENT (CONT).

b. Installation.

NOTE

- If replacing valve with new valve, perform Steps (1) through (6).
- Only remove two screws at a time.
- Screws must be removed diagonally from each other.



(1) Remove two screws (28) from new valve (20). Discard screws.

(2) Remove two nuts (29), lockwashers (30) and studs (26) from old valve (20). Discard lockwashers.

(3) Insert two 1/4 in. (6.4 mm) by 3/4 in. (19 mm) screws (28) in old valve.

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(4) Apply sealing compound to stud holes.

(5) Install two studs (26), nut (29) and lockwasher (30) in new valve (20).

(6) Repeat Steps (1) through (5) for remaining two studs (26).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(7) Apply sealing compound on threads of elbow (5).

(8) Install elbow (5) on valve (20).

(9) Apply sealing compound on threads of elbow (6).

(10) Install elbow (6) on valve (20).

(11) Apply sealing compound on threads of elbow (7).

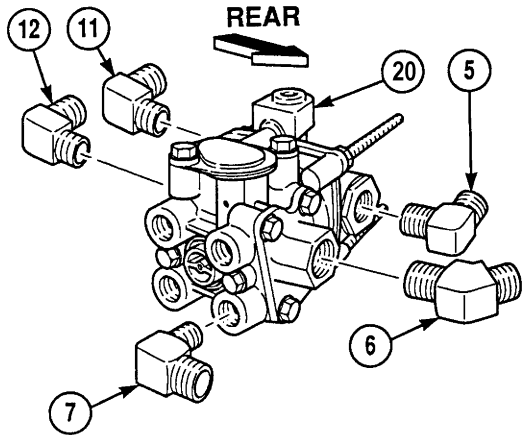
(12) Install elbow (7) on valve (20).

(13) Apply sealing compound on threads of elbow (11).

(14) Install elbow (11) on valve (20).

(15) Apply sealing compound on threads of elbow (12).

(16) Install elbow (12) on valve (20).



4-52. MULTIFUNCTION VALVE REPLACEMENT (CONT).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(17) Apply sealing compound on threads of elbow (8).

(18) Install elbow (8) on adapter (27).

(19) Apply sealing compound on threads of adapter (27).

(20) Install adapter (27) on valve (20).

(21) Apply sealing compound on threads of fitting (16).

(22) Install fitting (16) on valve (20).

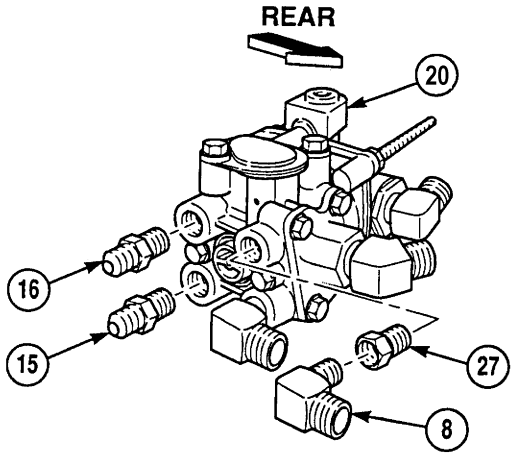
(23) Apply sealing compound on threads of fitting (15).

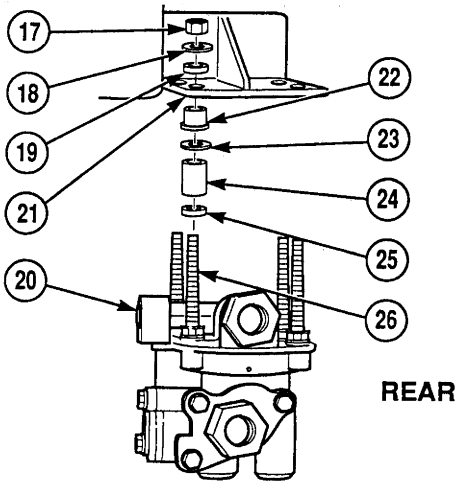
(24) Install fitting (15) on valve (20).

(25) Position four washers (25), spacers (24), washers (23) and mounts (22) on studs (26).

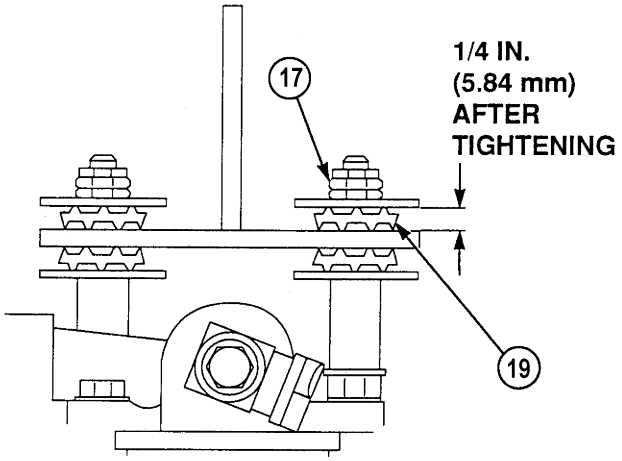
(26) Apply sealing compound on top of four studs (26).

(27) Position multifunction valve (20) on bracket (21) with four mounts (19), washers (18) and locknuts (17).



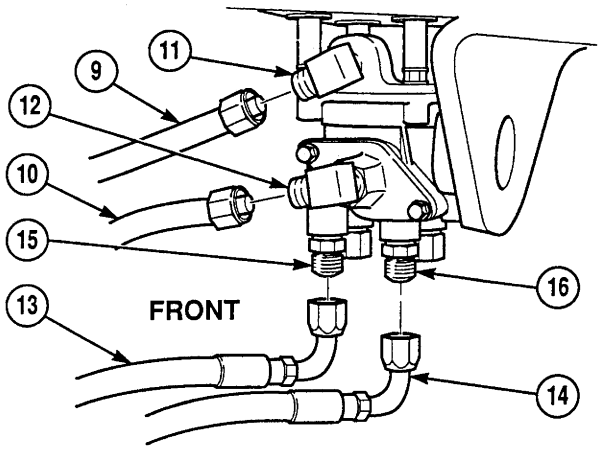


(28) Tighten locknuts (17) until mounts (19) are compressed to 1/4 in. (6.35 mm).

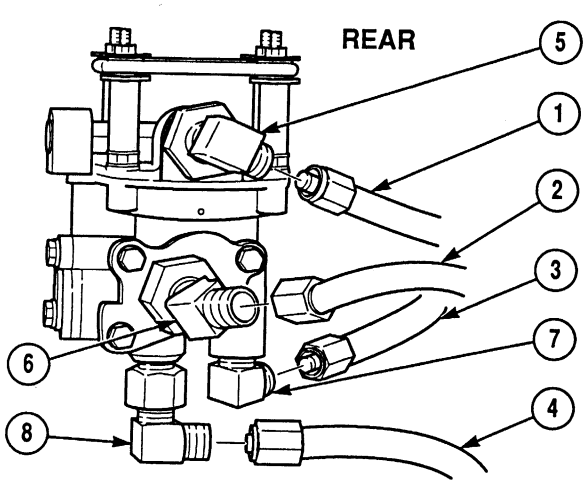


(29) Install air lines 2022 (13) and 2023 (14) on fittings (15) and (16).

(30) Install air lines 2620 (9) and 2605 (10) on elbows (11) and (12).



(31) Install air lines 2143 (4), 2142 (3), 2424 (2) and 2260 (1) on elbows (8), (7), (6) and (5).



c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-53. BRAKE POWER REGULATOR VALVE REPLACEMENT/ADJUSTMENT.

This task covers:

a. Removal
b. Installation
c. Adjustment
d. Follow-On Maintenance

INITIAL SETUP

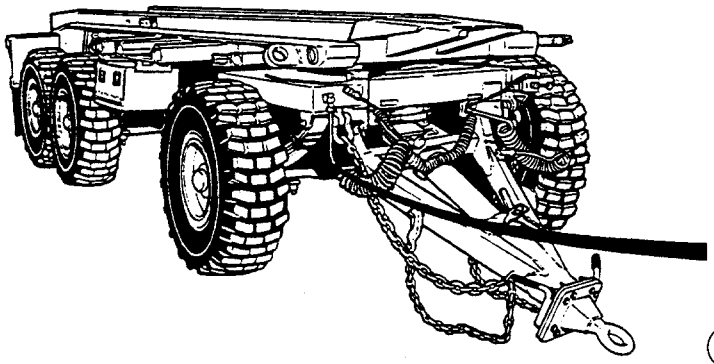
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Wrench 1-1/16 in. (Item 53, Appendix J)

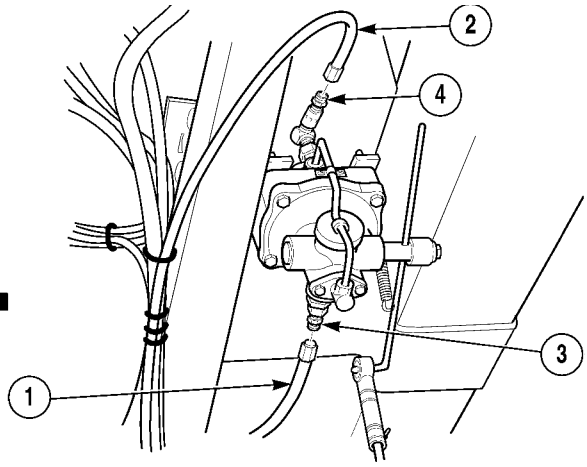
Materials/Parts
Sealing Compound (Item 17, Appendix E)
Soap Solution (Item 21, Appendix E)
Tags, Identification (Item 23, Appendix E)

Materials/Parts - Continued
Locknut (2) (Item 33, Appendix I)
Lockwasher (6) (Item 55, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Drawbar lowered, (Para 2-23)

a. Removal.





CAUTION

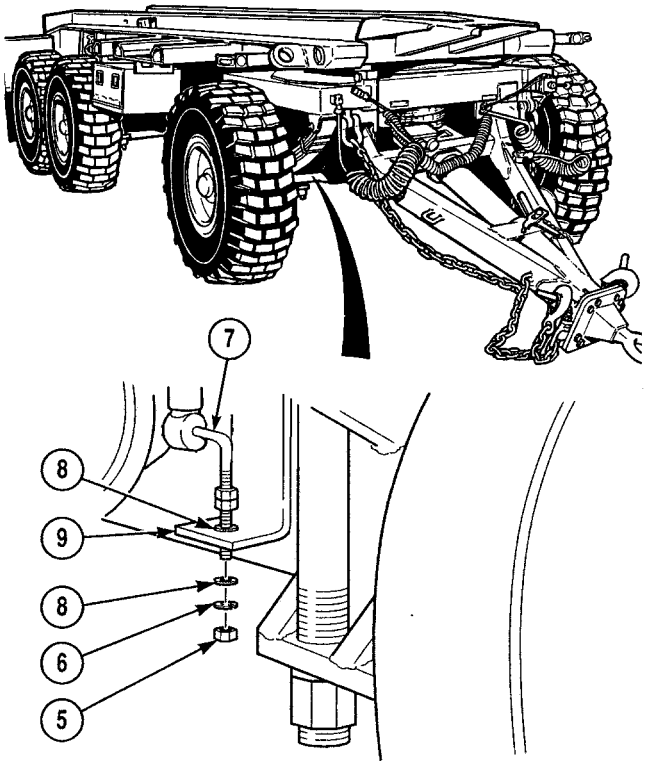
Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag and mark all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

(1) Remove air lines 2660 (1) and 2255 (2) from adapter (3) and reducer (4).

(2) Remove nut (5), lockwasher (6), elbow (7) and two washers (8) from bracket (9). Discard lockwasher.



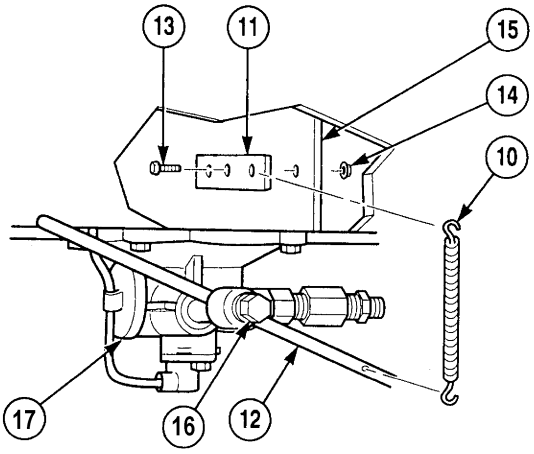
(3) Remove spring (10) from bracket (11) and rod (12).

NOTE

Perform Step (4) if bracket is damaged.

(4) Remove two screws (13), locknuts (14) and bracket (11) from frame (15). Discard locknuts.

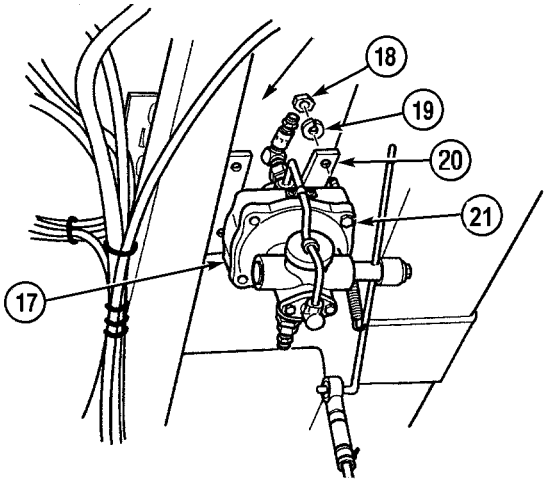
(5) Loosen screw (16) and remove rod (12) from valve (17).



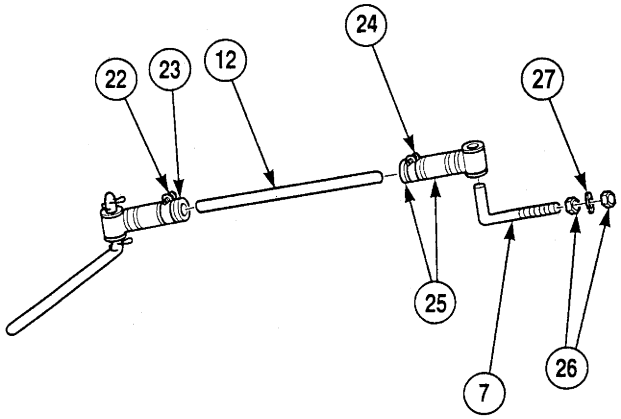
4-53. BRAKE POWER REGULATOR VALVE REPLACEMENT/ADJUSTMENT (CONT).

CAUTION

Do not remove screws from brake power regulator. The halves of the regulator can separate, causing damage to regulator.



(6) Remove four nuts (18), lockwashers (19) and valve (17) from valve bracket (20). Leave screws (21) in valve body. Discard lockwashers.

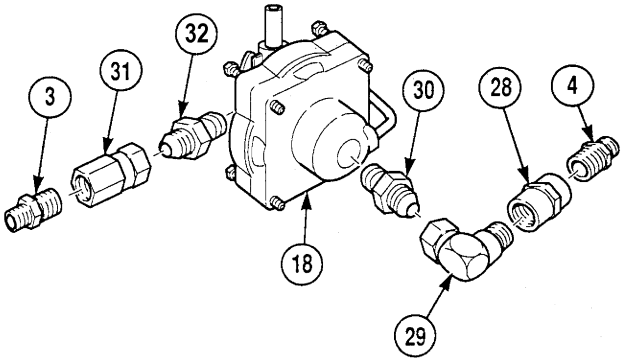


(7) Loosen clamp (22) and remove rubber connector (23) from rod (12).

(8) Loosen clamp (24) and remove rubber connector (25) from rod (12).

(9) Remove elbow (7) from rubber connector (25).

(10) Remove two nuts (26) and lockwasher (27) from elbow (7). Discard lockwasher.



(11) Remove reducer (4) from adapter (28).

(12) Remove adapter (28) from elbow (29).

(13) Remove elbow (29) from adapter (30).

(14) Remove adapter (30) from valve (17).

(15) Remove straight adapter (3) from connector (31).

(16) Remove female connector (31) from adapter (32).

(17) Remove adapter (32) from valve (17).

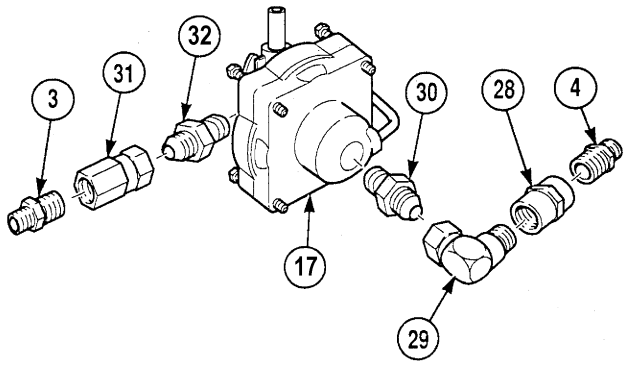
b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.



(1) Apply sealing compound on threads of adapter (32).

(2) Install adapter (32) on valve (17).

(3) Install female connector (31) on adapter (32).

(4) Apply sealing compound on the inside threads of straight adapter (3).

(5) Install straight adapter (3) on female connector (31).

(6) Apply sealing compound to threads of adapter (30).

(7) Install adapter (30) on valve (17).

(8) Apply sealing compound on threads of elbow (29).

(9) Install elbow (29) on adapter (30).

(10) Apply sealing compound on threads of adapter (28).

(11) Install adapter (28) on elbow (29).

(12) Apply sealing compound on the inside threads of reducer (4).

(13) Install reducer (4) on adapter (28).

4-53. BRAKE POWER REGULATOR VALVE REPLACEMENT/ADJUSTMENT (CONT).

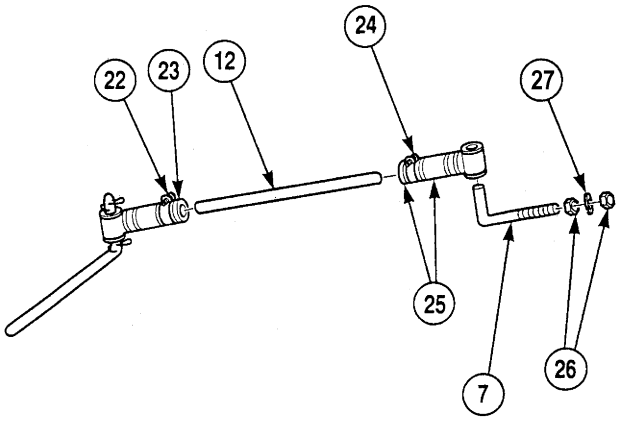
(14) Install two nuts (26) and lockwasher (27) on elbow (7).

(15) Install elbow (7) on rubber connector (25).

(16) Install rubber connector (25) on rod (12) and tighten clamp (24).

(17) Apply soap solution to rod (12) and rubber connector (23).

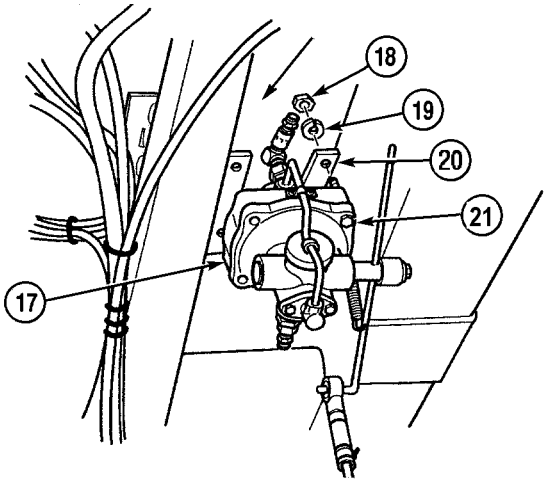
(18) Install rod (12) on rubber connector (23) and tighten clamp (22).



CAUTION

Ensure linkage faces away from frame or damage to equipment may result.

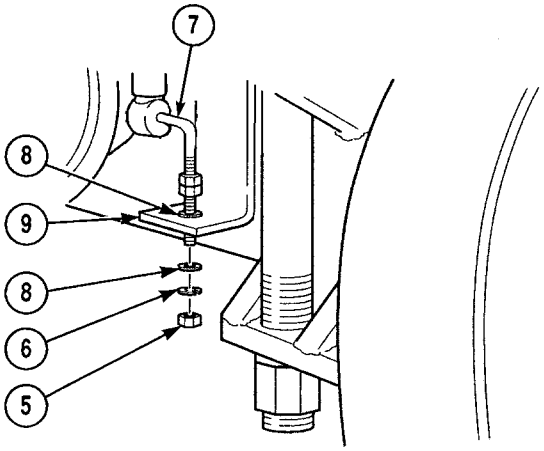
(19) Install valve (17) and four screws (21) on bracket (20) with four lockwashers (19) and nuts (18).



CAUTION

Ensure linkage faces away from frame or damage to equipment may result.

(20) Install two washers (8) and elbow (7) on bracket (9) with lockwasher (6) and nut (5).



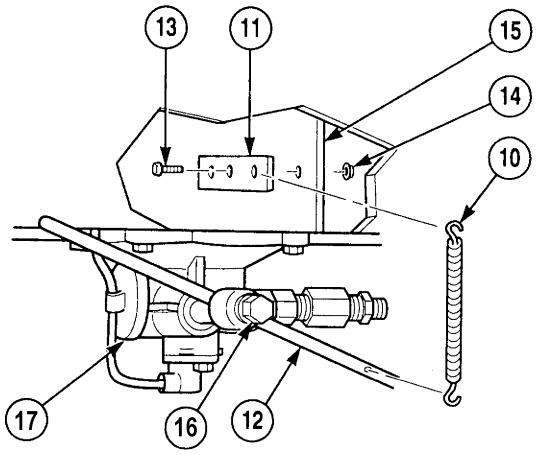
(21) Install rod (12) in valve (17) and tighten screw (16).

NOTE

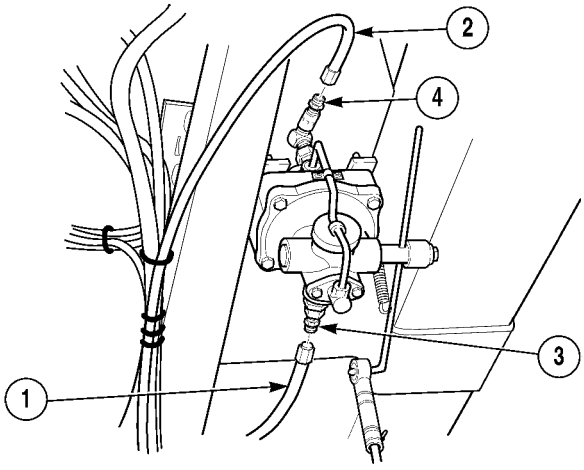
Perform Step (22) if bracket was removed.

(22) Install bracket (11) on frame (15) with two screws (13) and locknuts (14).

(23) Install spring (10) on bracket (11) and rod (12).



(24) Install air lines 2660 (1) and 2255 (2) on adapter (3) and reducer (4).

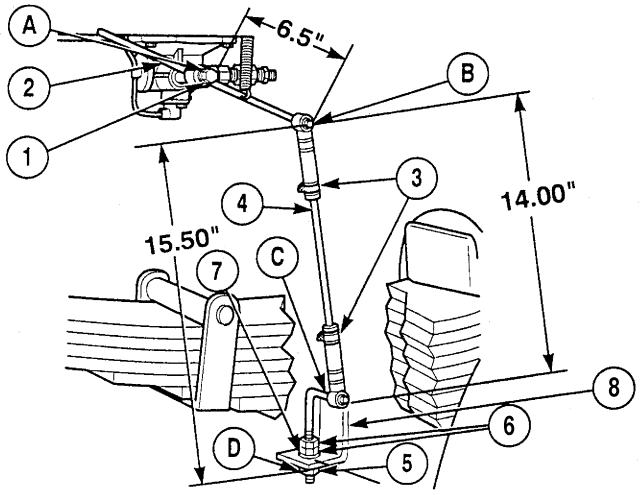


4-53. BRAKE POWER REGULATOR VALVE REPLACEMENT/ADJUSTMENT (CONT).

c. Adjustment.

WARNING

Adjusting rods must be properly aligned prior to operating the trailer or the trailer brakes may not apply correctly causing serious injury or death to personnel.



(1) Loosen screw (1) and move rod (2) until distance from point A to point B is 6.5 in. (16.51 cm). Tighten screw (1).

(2) Loosen clamp or clamps (3) and adjust rod (4) until distance between points B and C is 14 in. (35.56 cm).

(3) Tighten clamp (3) on rod (4).

(4) Loosen locknut (5) and turn two nuts (6) until distance between B and D is 15.5 in. (39.37 cm).

(5) Tighten two nuts (6) against lockwasher (7) and locknut (5) against bracket (8).

d. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-54. LOAD LOCK AIR SUPPLY CONTROL VALVE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Cap and Plug Set (Item 2, Appendix J)

Material/Parts
Sealing Compound (Item 17, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (2) (Item 29, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar lowered, (Para 2-23)
Air system drained, (Para 2-21)

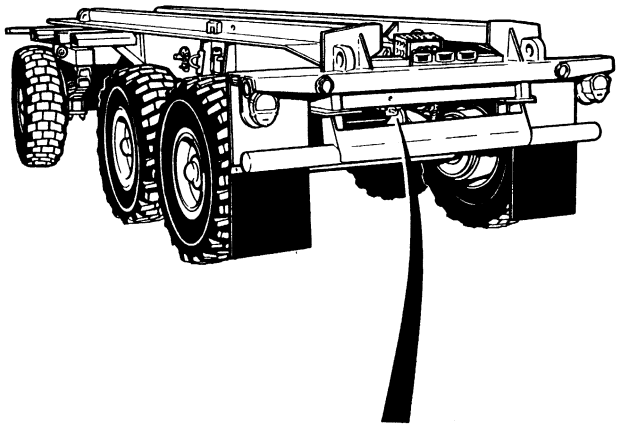
a. Removal.

CAUTION

Equipment may be damaged by foreign matter if hoses, tubes, and connectors are not plugged and capped when removed.

NOTE

- Tag and mark all air lines and fittings before removal.
- Cap and plug all air lines and connectors after removal.

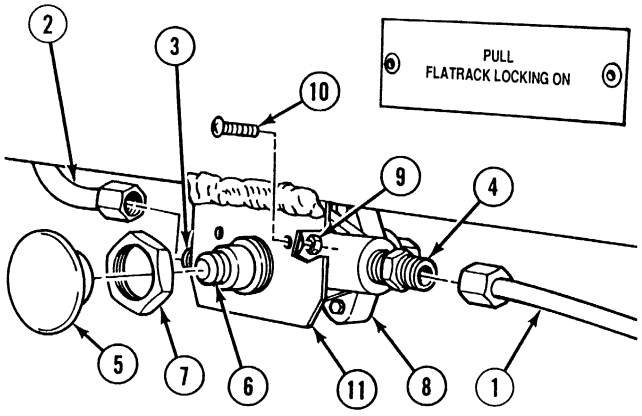


(1) Remove air lines 2080 (1) and 2078 (2) from fittings (3) and (4).

(2) Turn knob (5) counterclockwise and remove from shaft (6).

(3) Remove nut (7) from load lock valve (8).

(4) Remove two locknuts (9), screws (10) and load lock valve (8) from bracket (11). Discard locknuts.

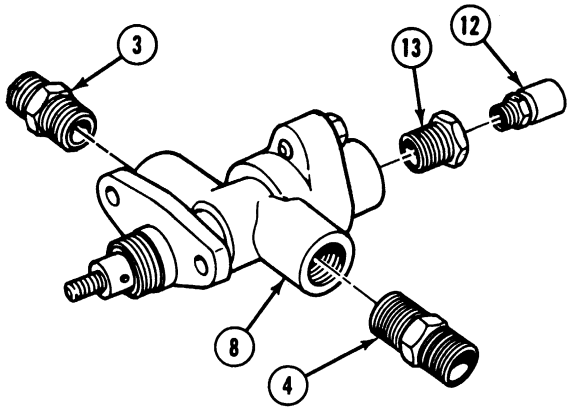


4-54. LOAD LOCK AIR SUPPLY CONTROL VALVE REPLACEMENT (CONT).

(5) Remove adapter fittings (3) and (4) from load lock valve (8).

(6) Remove breather valve (12) from reducer fitting (13).

(7) Remove reducer fitting (13) from valve (8).



b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

(1) Apply sealing compound on threads of reducer fitting (13).

(2) Install reducer fitting (13) on load lock valve (8).

(3) Apply sealing compound on threads of breather valve (12).

(4) Install breather valve (12) on reducer fitting (13).

(5) Apply sealing compound on threads of fitting (4).

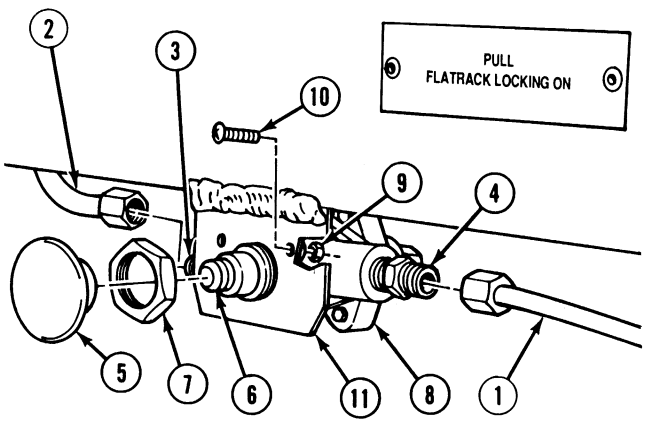
(6) Install fitting (4) on load lock valve (8).

(7) Apply sealing compound on threads of fitting (3).

(8) Install fitting (3) on load lock valve (8).

(9) Install load lock valve (8) on bracket (11), with two screws (10) and locknuts (9).

(10) Install nut (7) on load lock valve (8).



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(11) Apply sealing compound to threads of shaft (6).

(12) Install knob (5) on shaft (6).

(13) Install air lines 2080 (1) and 2078 (2) on fittings (3) and (4).

c. Follow-On Maintenance:

- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-55. TIRE REPAIR.

Refer to TM 9-2610-200-14, Operator/Unit/Direct Support/General Support Maintenance Manual for Care, Maintenance, Repair and Inspection of Pneumatic Tires and Inner Tubes.

4-56. WHEEL/TIRE ASSEMBLY REPAIR.

This task covers:

a. Disassembly
b. Cleaning/Inspection
c. Assembly
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Brush, Wire (Item 1, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Inflator-Gage, Tire (Item 18, Appendix J)
Inserter and Remover, Valve Core (Item 19, Appendix J)
Iron, Tire (2) (Item 20, Appendix J)
Iron, Tire, Lock Ring (Item 21, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)
Socket Set, Deepwell (Item 41, Appendix J)
Wrench, Crowsfoot (Item 58, Appendix J)
Wrench, Torque (0-60 N·m) (Item 60, Appendix J)
Wrench, Torque (0-175 lb-ft [0-237 N·m]) (Item 61, Appendix J)
Wooden Stand (Appendix F)
Lifting Device Minimum Capacity 425 lbs. (193 kg)

Material/Parts

Oil, Lubricating (Item 15, Appendix E)
Sealing Compound (Item 19, Appendix E)
Solution, Soap (Item 21, Appendix E)
Wire, Non-electrical (Item 25, Appendix E)
Packing, Preformed (Item 58, Appendix I)
Packing, Preformed (Item 60, Appendix I)
Valve Core (Item 89, Appendix I)
Valve Spud, Pneumatic (Item 90, Appendix I)

References

TM 9-2610-200-14

Equipment Condition

Tire removed from trailer, (Para 4-57)

General Safety Instructions

- Do not take tire pressure readings or perform wheel/tire repairs without first reading warnings or personal injury or death may result.
- Failure to comply with these procedures may result in faulty positioning of the tire and/or rim parts, and cause the assembly to burst with explosive force, sufficient to cause serious physical injury or death. Never mount or use damaged tires or rims.

a. Disassembly.

WARNING

- Wheel/tire assembly weighs 425 lbs (193 kg). Use suitable lifting device to lift wheel/tire assembly and prevent possible injury to personnel.
- Wheel/tire must be deflated in a safety cage or personal injury or death may result.

NOTE

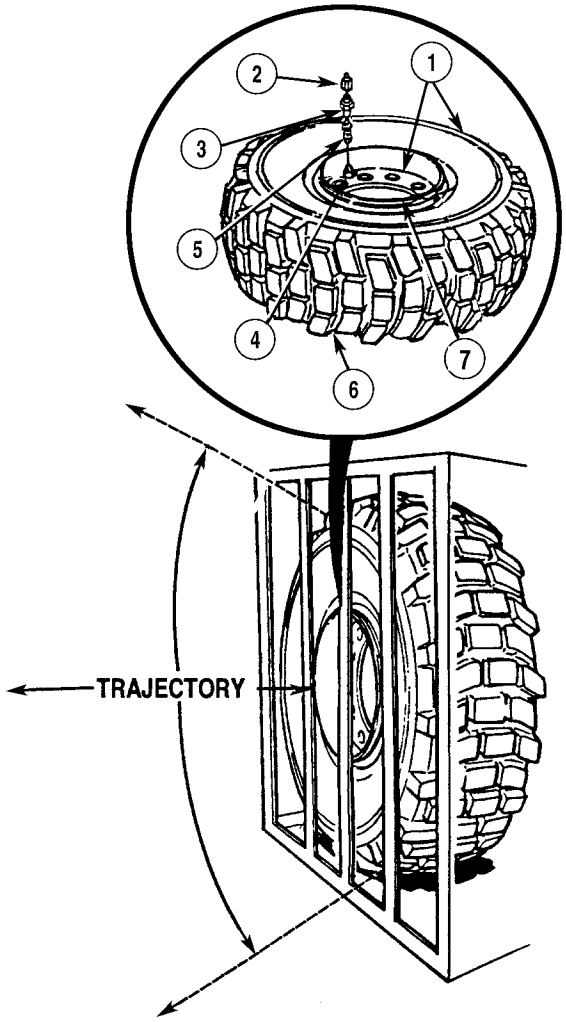
Refer to TM 9-2610-200-14 for construction of safety cage.

(1) Using lifting device, position wheel/tire assembly (1) in safety cage.

(2) Remove cap (2) and adapter (3) from stem (4).

WARNING

- Always completely deflate tire by removing valve core from valve stem before attempting demounting operation. After air has finished exhausting from valve stem, carefully run a piece of wire through valve stem to ensure it is not plugged and tire is completely deflated. Failure to comply may result in injury to personnel.
- High air pressure may be released from valve stem when valve core is removed. Stay clear of valve stem after core is removed. Ensure all personnel wear suitable eye protection. Failure to comply may result in serious in injury to personnel.
- Stand clear of trajectory area during deflation or personal injury or death may result.

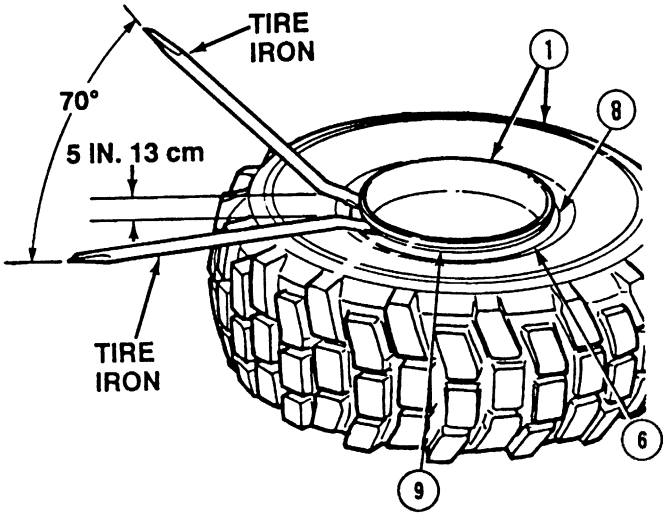


(3) Using valve core inserter and remover, remove valve core (5) from stem (4) and completely deflate tire (6). Discard valve core.

(4) Remove wheel/tire assembly (1) from safety cage and position on wooden stand with lock ring (7) facing up.

4-56. WHEEL/TIRE ASSEMBLY REPAIR (CONT).

(5) Insert the goose-necked end of two tire irons between tire (6) and side ring (8) approximately five in. (13 cm) apart.



CAUTION

- Ensure not to tear the chafer fabric when unseating the tire bead or damage to tire may result.
- Use tire lubricant as necessary to avoid damaging tire beads or bead seats during demounting.

(6) Pry both tire irons outward and sideways through an arc of about 70 degrees. Leave one tire iron in position and place the second tire iron approximately five in. (13 cm) away. Repeat this procedure until tire bead (9) is completely unseated.

WARNING

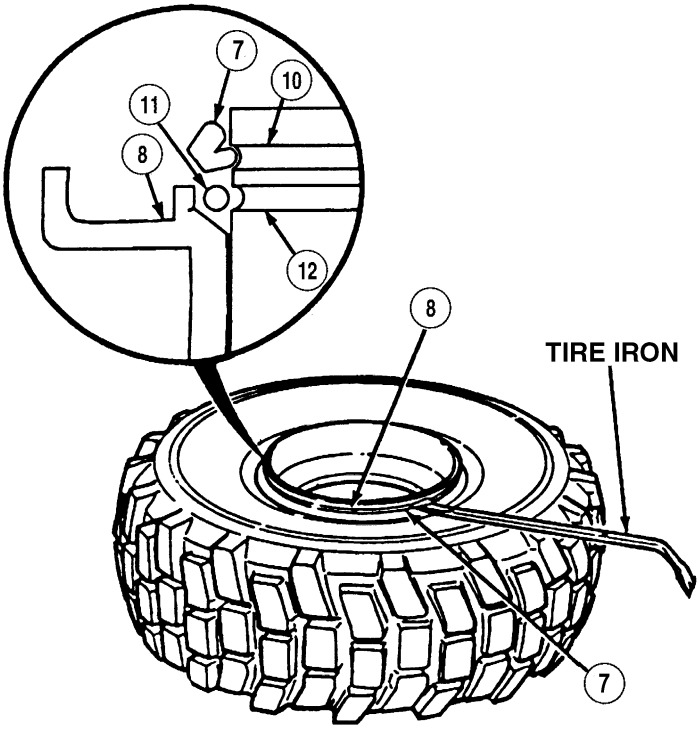
Lock ring is under tension. If lock ring breaks loose it could cause injury to personnel. Keep hands and fingers away from lock ring when removing.

NOTE

Ensure side ring and tire side wall are depressed below lock ring and preformed packing.

(7) Using tire iron, pry under lock ring (7) and remove from lock ring groove (10).

(8) Remove preformed packing (11) from preformed packing groove (12). Cut in two and discard preformed packing.



(9) Remove side ring (8) from tire (6).

WARNING

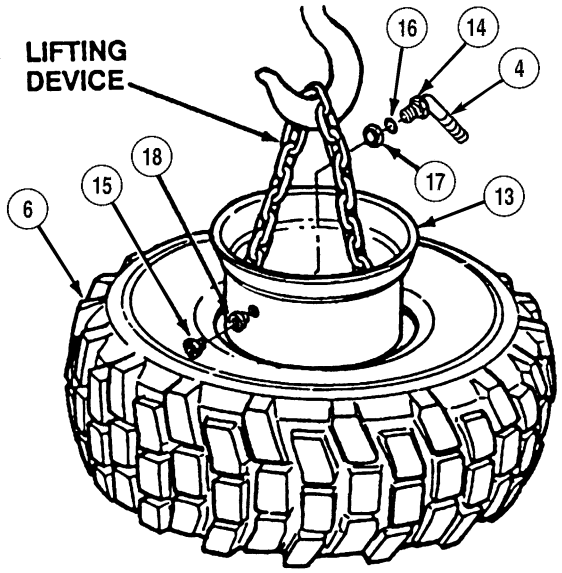
Wheel/tire assembly weighs 425 lbs (193 kg). Use suitable lifting device to lift wheel/tire assembly and prevent possible injury to personnel.

(10) Using lifting device, turn wheel/tire assembly (1) over on blocks so flange is facing up.

(11) Repeat Step (7) to unseat tire bead (9) from wheel/tire assembly (1).

WARNING

Wheel weighs 110 lbs (50 kg). Use suitable lifting device to lift wheel assembly and prevent possible injury to personnel.



(12) Using lifting device, remove wheel (13) from tire (6).

(13) Loosen nut (14) and remove stem (4) from rim spud (15).

(14) Remove preformed packing (16) from stem (4). Discard preformed packing.

(15) Remove and discard nut (17), rim spud (15) and grommet (18) from wheel (13).

b. Cleaning/Inspection.

(1) Inspect tire tread for nails, glass and other foreign particles and for irregular wear, cuts and blisters.

(2) Inspect bead of tire for damaged rim seal ridges.

(3) Inspect complete inside surface of inner liner for imperfections, discoloration or irregular surfaces that may indicate excessive heat, breaks or other fabric damage.

(4) Check rim for cracks, dents, dirt and rust, especially in the lock ring groove. Clean rust and dirt from rim using a wire brush, especially from the lock ring groove and the preformed packing groove to ensure proper seating.

(5) Paint wheel assembly parts as needed to protect against rust.

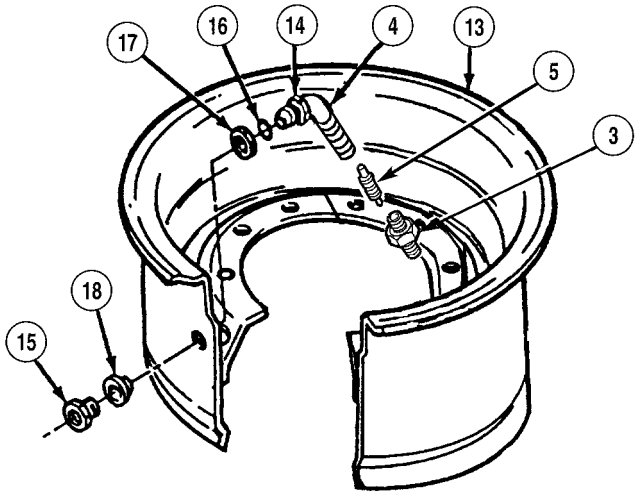
(6) Do not use a lock ring or side ring if they are bent, distorted, cracked or heavily corroded. Destroy all damaged parts.

(7) Remove rust, gummy rubber deposits, nicks and gouges in the rim bead seat surfaces.

4-56. WHEEL/TIRE ASSEMBLY REPAIR (CONT).

c. Assembly.

(1) Install grommet (18) on rim spud (15).



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(2) Apply sealing compound to first two threads of rim spud (15).

(3) Install rim spud (15) in wheel (13) with nut (17). Tighten nut to 15 to 17 lb-ft (20 to 23 N·m).

(4) Coat preformed packing (16) with tire lubricant.

(5) Install preformed packing (16) on stem (4).

(6) Apply sealing compound to first two threads of nut (14).

(7) Install stem (4) into rim spud (15) and tighten nut (14) to 70 to 80 lb-in (8 to 9 N·m).

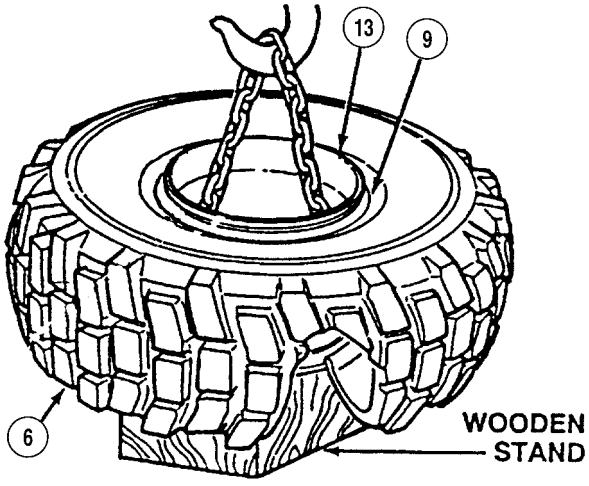
(8) Install valve core (5) into stem (4).

(9) Install adapter (3) on stem (4).

WARNING

Wheel weighs 110 lbs (50 kg). Use suitable lifting device to lift wheel assembly and prevent possible injury to personnel.

(10) Using a lifting device, position wheel (13) on wooden stand with flange side facing down.



CAUTION

Never use silicone, solvents, or petroleum based lubricants on tire bead or tire bead seat areas. Failure to comply may result in damage to equipment.

(11) Lubricate tire bead (9) and bead seat areas of wheel (13) with tire lubricant, making sure excess lubricant does not run down into tire (6).

(12) Position tire (6) on wheel (13).

NOTE

Standing on side ring may aid in assembly.

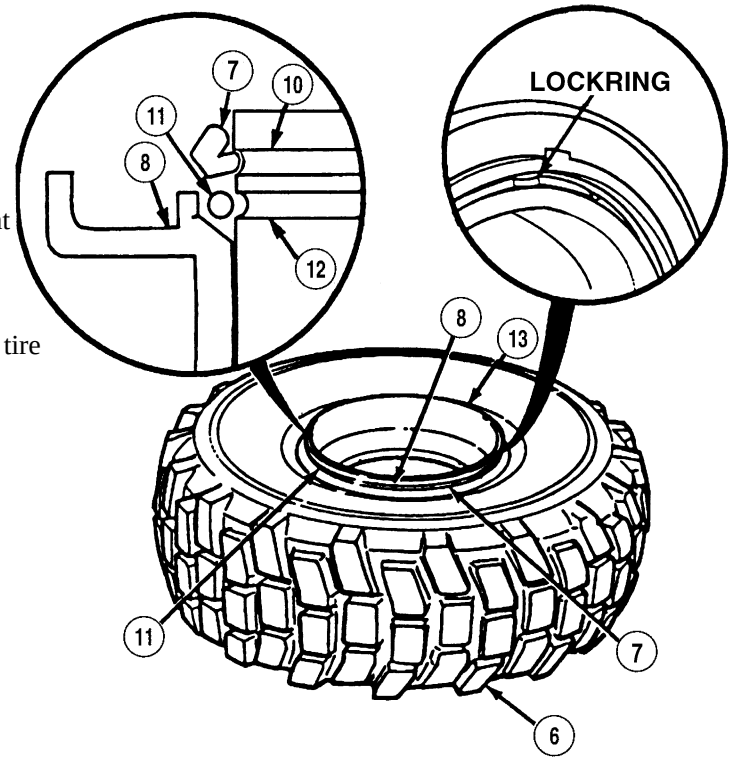
(13) Lubricate and position side ring (8) on wheel (13) and tire (6) and push straight down, ensuring side ring (8) does not bind on wheel (13).

(14) Lubricate preformed packing (11) with tire lubricant.

NOTE

It may be necessary to hold down side ring with flat end of tire tool to expose preformed packing groove.

(15) Install preformed packing (11) in preformed packing groove (12).



WARNING

- When lock ring snaps into position it could pinch hands and fingers. Do not allow hands or fingers to get between lock ring and lock ring groove when installing lock ring or injury to personnel may result.
- When installing lock ring, ensure the bulge is facing up or lock ring could unseat causing serious injury to personnel.
- Cracked, broken, bent or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated or damage, injury or death may result.
- No heat shall be applied to a multi-piece wheel or wheel component or damage, injury or death may result.

(16) Install lock ring (7) in lock ring groove (10) with bulge in lock ring (7) facing up.

WARNING

Lock ring must be fully seated in lock ring groove around the entire circumference or lock ring could unseat during tire inflation causing serious injury to personnel.

(17) Check that lock ring (7), preformed packing (11), side ring (8) and wheel (13) are assembled correctly.

4-56. WHEEL/TIRE ASSEMBLY REPAIR (CONT).

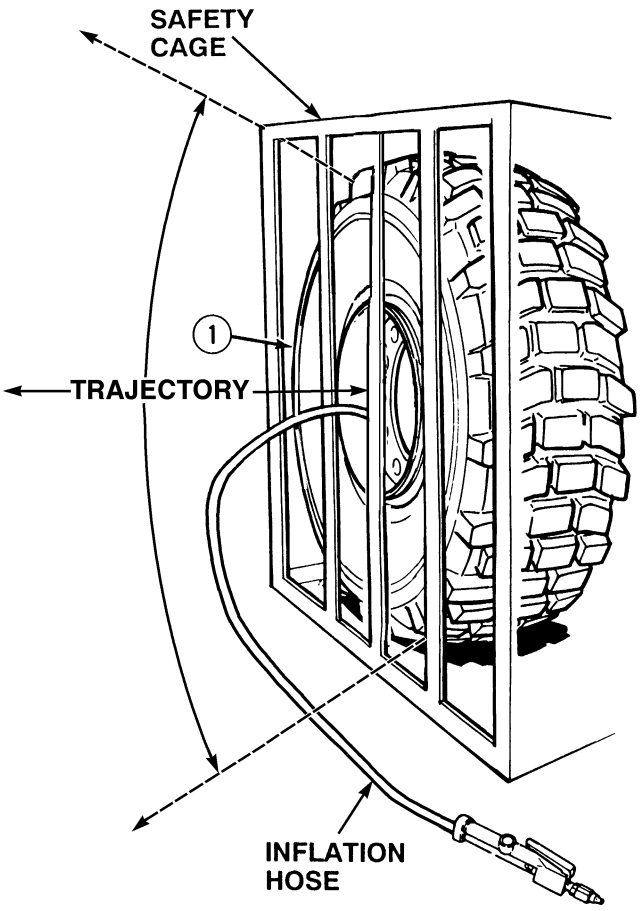
WARNING

- Wheel/tire assembly weighs 425 lbs (193 kg). Use suitable lifting device to lift wheel/tire assembly and prevent possible injury to personnel.
- Failure to place wheel/tire assembly in safety cage prior to initial inflation could result in serious injury or death to personnel.
- When a wheel/tire is in a restraining device, do not rest or lean any part of body or equipment on or against the restraining device, or injury or death may result.

NOTE

Refer to TM 9-2610-200-14 for construction of safety cage.

(18) Using lifting device, position wheel/tire assembly (1) in safety cage.



WARNING

- While changing tires or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.
- Improperly seated lock rings and side rings may blow off during inflation. Never attempt to seat a lock ring or side ring during or after inflation. Serious injury or death may result.
- When inflating tires, always use an inflation hose with an in-line gage and a clip-on chuck. The gage and valve must be mounted a minimum of ten feet (3 m) away from air chuck.
- All personnel must remain a minimum of ten feet (3 m) away from tire and not in possible path of lock ring or side ring. Failure to comply may result in serious injury or death.
- Do not inflate above 5 psi (34 kPa) or personal injury or death may result.
- No attempt shall be made to correct the seating of side and lock rings by hammering, striking or forcing the components while the tire is pressurized, or damage, injury or death may result.
- Whenever multi-piece rim wheels are being handled, personnel shall stay out of the trajectory unless the supervisor can demonstrate that performance of the servicing makes the personnel's presence in the trajectory necessary or damage, injury or death may result.

(19) Using an inflation hose with an in-line gage and clip-on chuck, inflate wheel/tire assembly (1) to 5 psi (34 kPa).

WARNING

Improperly seated lock rings or side rings may blow off at any time. Never attempt to seat a lock ring or side ring during or after inflation. Serious injury or death could result.

(20) Repeat Step (17).

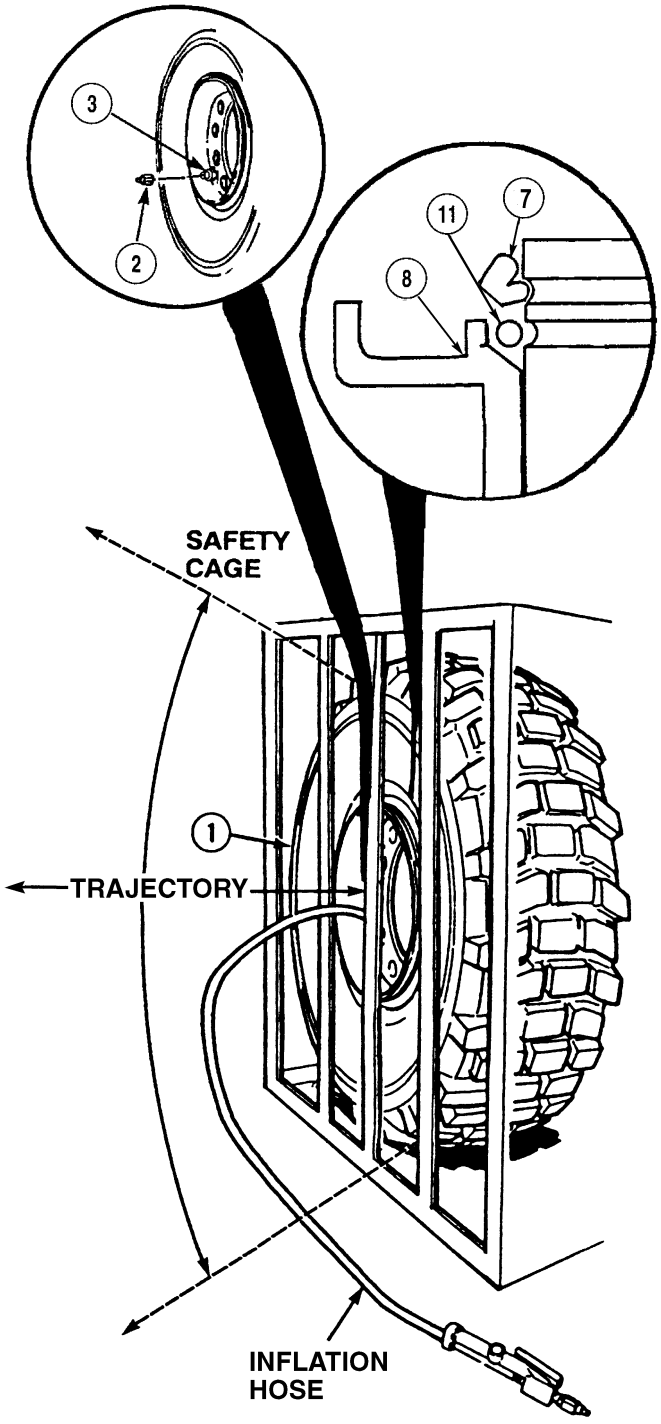
WARNING

Never inflate tires over 40 psi (276 kPa) to seat tire beads. If beads do not seat, deflate, demount and check tire/rim parts. Relubricate and remount tires. Serious injury or death could result if these procedures are not followed.

(21) If wheel/tire assembly (1) is properly assembled, continue to inflate to 20 psi (138 kPa).

WARNING

Ensure that tire and rim parts are in proper position and that tire lower sidewall circumferential groove to the top of the rim flange does not vary more than 1/8 in. (3.2 mm), and that each bead does not vary more than 1/8 in. (3.2 mm) around the circumference or from one bead to the other. Measurements exceeding 1/8 in. (3.2 mm) require unseating tire beads, relubricating tire beads and remounting tire, or serious injury or death may result when tire is removed from safety cage.



(22) Inflate wheel/tire assembly (1) to 87 psi (600 kPa) and check tire/rim parts for proper assembly.

(23) If wheel/tire assembly (1) is not properly assembled, deflate tire and reposition lock ring (7), preformed packing (11), and side ring (8). Relubricate parts and repeat Steps (19), (20), and (21).

(24) Install cap (2) on adapter (3).

(25) Remove wheel/tire assembly (1) from safety cage.

d. Follow-On Maintenance:

- Install tire on trailer, (Para 4-57).

END OF TASK

4-57. WHEEL/TIRE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Jack, Dolly Type Hydraulic (Item 22, Appendix J)
Jackstand (Item 24, Appendix J)
Lift, Wheel Truck (Item 27, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0 to 813 N·m]) (Item 62, Appendix J)

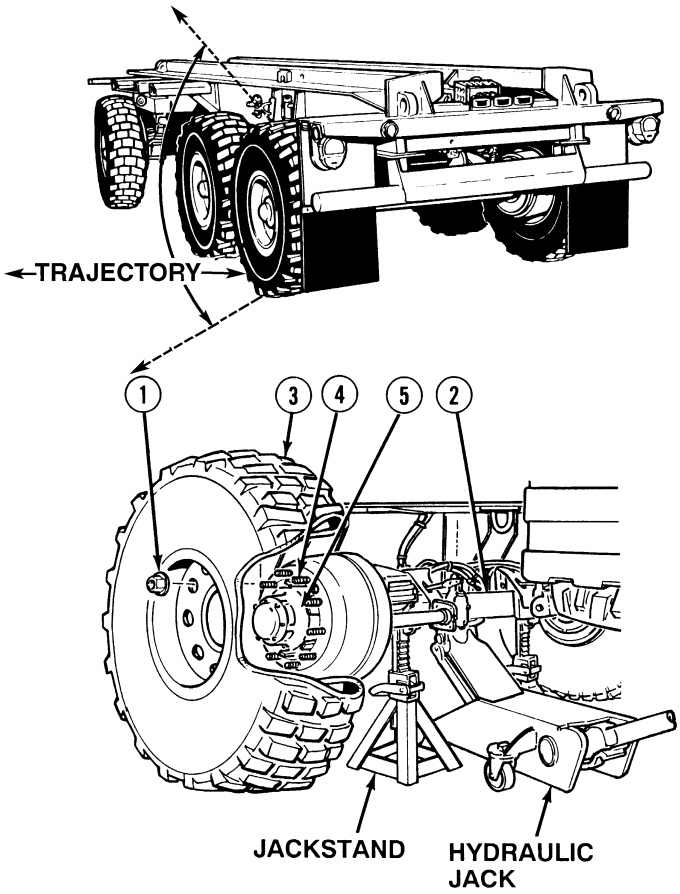
Material/Parts
Oil, Lubricating (Item 15, Appendix E)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.

WARNING

- Never crawl under trailer when performing maintenance unless trailer is securely blocked. Trailer may fall and cause serious injury or death to personnel.
- Tire weighs 425 lbs (193 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.
- Wheel/tire must be inflated in a safety cage or personal injury or death may result.
- If tire has been driven on underinflated or overinflated, or there is obvious or suspected damage on the tire or wheel components, the tire must be completely deflated. To deflate the tire, remove the valve core from the valve stem and stand out of the trajectory area or personal injury or death may result.
- While changing tire or while performing tire maintenance, stay out of the trajectory as shown by the area indicated. Failure to follow proper procedures may result in injury or death to personnel.



NOTE

Trajectory area as shown applies to all wheel/tire assemblies.

(1) Take tire pressure reading on tire/wheel to be changed and compare to Table 4-22. If tire is underinflated or overinflated, or there is obvious damage or suspected damage to wheel or tire, completely deflate tire before removing from trailer (Para 3-6).

(2) Loosen ten lugnuts (1) but do not remove.

(3) Position hydraulic jack under axle (2).

(4) Using jack, raise axle (2) approximately 2 in. until tire (3) just clears ground and position jackstand under axle (2).

(5) Lower jack until axle (2) rests on jackstand.

(6) Remove ten lugnuts (1) from studs (4).

(7) Using lifting device, remove tire (3) from wheel hub (5).

WARNING

If tire has been run flat, or is overinflated or underinflated when tire pressure is measured and operating terrain is compared to Table 4-22, or wheel/tire assembly has obvious or suspected damage, it is not safe to adjust tire pressure. Completely deflate tire according to Para 3-6, and remove the tire from the axle. Failure to follow these procedures may result in serious personal injury or death.

Table 4-22. Unsafe Inflation Pressures

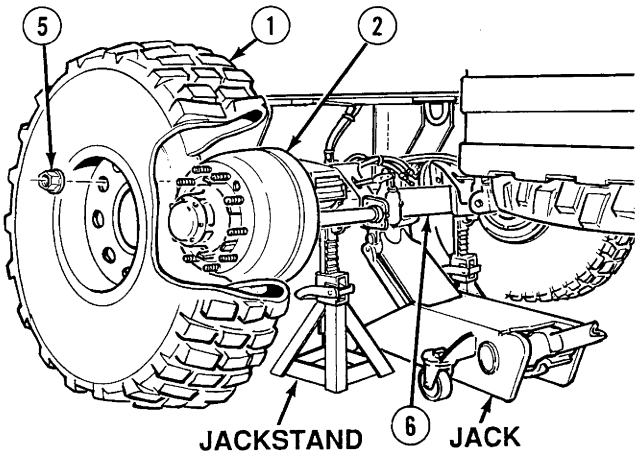
	FRONT TIRES ARE:	**REAR TIRES ARE:**	**FRONT TIRES ARE:**	**REAR TIRES ARE:**
	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Overinflated. Tire pressure measured is 25% or more above standard pressure. **Do not adjust pressure if above pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**	Underinflated. Tire pressure measured is 80% or less than the standard tire pressure. **Do not adjust pressure if below pressure shown below.**
Highway	109 psi (752 kPa)	100 psi (690 kPa)	70 psi (483 kPa)	64 psi (441 kPa)
Cross-Country	64 psi (441 kPa)	58 psi (400 kPa)	41 psi (283 kPa)	37 psi (255 kPa)
Mud, Sand and Snow	40 psi (276 kPa)	36 psi (248 kPa)	26 psi (179 kPa)	23 psi (159 kPa)

4-57. WHEEL/TIRE REPLACEMENT (CONT).

b. Installation.

WARNING

- Never crawl under trailer when performing maintenance unless trailer is securely blocked. Trailer may fall and cause serious injury or death to personnel.
- Tire weighs 425 lbs (193 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.



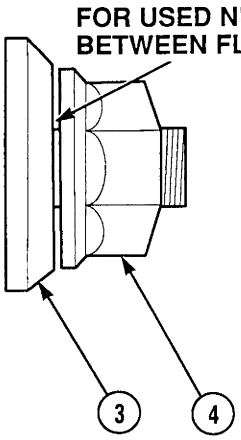
(1) Using lifting device, position tire (1) back on wheel hub (2).

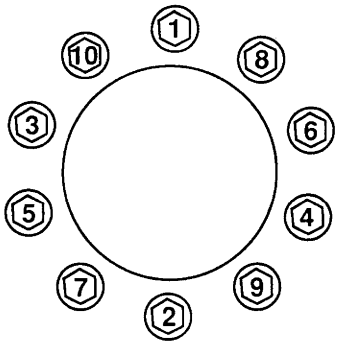
WARNING

Ensure studs are fully seated in slots before tightening nuts, or wheel could come off during operation of trailer, resulting in injury or death of personnel.

NOTE

If installing used lugnuts, Perform Step (2).





TIGHTENING SEQUENCE

(2) Apply two drops of oil between flange (3) and hex (4) of lugnut (5).

(3) Install ten lugnuts (5) and tighten in the sequence shown.

(4) Using jack, raise axle (6) and remove jackstand.

WARNING

When returning axle to the ground, ensure personnel are out of the trajectory as shown by the area indicated. Failure to comply may result in serious injury or death to personnel.

(5) Lower jack and axle (6).

(6) Tighten ten lugnuts (5) to 400 to 450 lb-ft (542 to 610 N·m) in the sequence shown.

c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-58. WHEEL BEARING (SERVICE) AND HUB REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Gloves, Chemical and Oil Protective (Item 11, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Hammer, Hand, Soft Plastic (Item 17, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)
Socket 3-1/4 in. (Item 44, Appendix J)
Socket 3-13/16 in. (Item 45, Appendix J)
Wrench, Torque (0-60 N·m) (Item 60, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-813 N·m]) (Item 62, Appendix J)
Lifting Device Minimum Capacity 125 lbs (57 kg)
Sling, Lifting

Materials/Parts
Grease (Item 12, Appendix E)
Sealing Compound (Item 18, Appendix E)
Solvent, Drycleaning (Item 22, Appendix E)
Gasket (Item 19, Appendix I)
Seal, Oil (Item 77, Appendix I) (Hub Mounted)
Seal, Oil (Item 80, Appendix I) (Spindle Mounted)

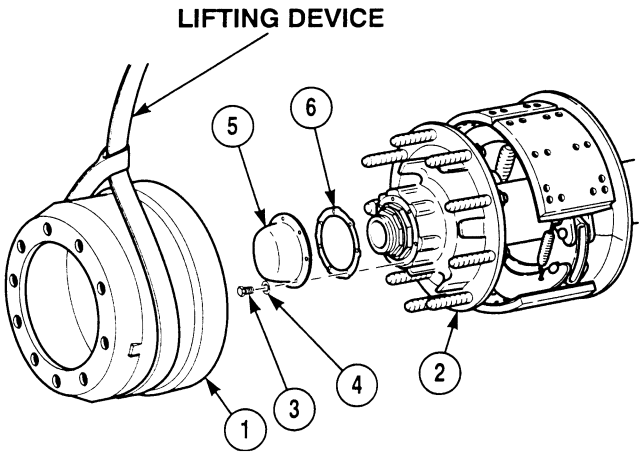
Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Wheel removed, (Para 4-57)
Brakes caged, (Para 2-16)

a. Removal.

WARNING

Brake drum weighs 125 lbs (57 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.



(1) Attach lifting device on brake drum (1).

(2) Using lifting device and the aid of an assistant remove brake drum (1) from hub (2).

(3) Remove lifting device from brake drum (1).

(4) Remove six screws (3), washers (4), hub cap (5) and gasket (6) from hub (2). Discard gasket.

4-58. WHEEL BEARING (SERVICE) AND HUB REPLACEMENT (CONT).

WARNING

Hub weighs 65 lbs (29 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(5) Attach lifting device on hub (2).

(6) Remove set screw (7) from lockwasher (8).

(7) Using 3-1/4 in. socket, remove nut (9) from axle spindle (10).

(8) Remove lockwasher (8) from axle spindle (10).

(9) Using 3-13/16 in. socket, remove nut (11) from axle spindle (10).

(10) Remove outer bearing (12) from hub (2).

(11) Using lifting device and the aid of an assistant, remove hub (2) from axle spindle (10).

(12) Remove lifting device from hub (2).

(13) Remove seal (13) from hub (2). Discard seal.

(14) Remove inner bearings (12) and two bearing cups (14) from hub (2).

NOTE

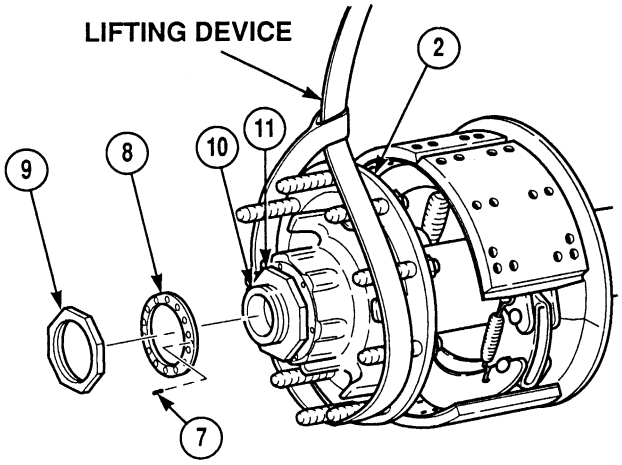
Perform Step (15) for spindle mounted seals.

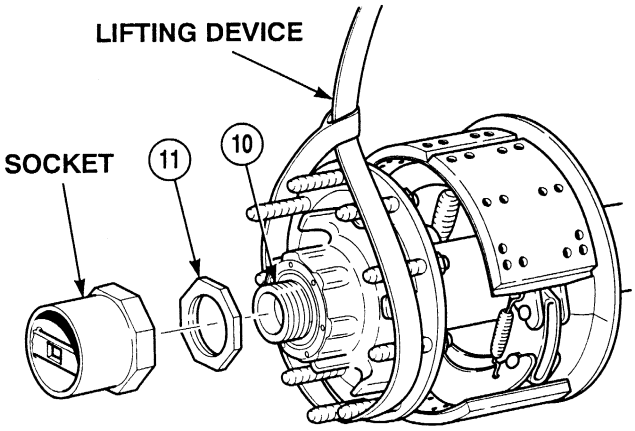
(15) Remove wiper ring (15) from axle spindle (10).

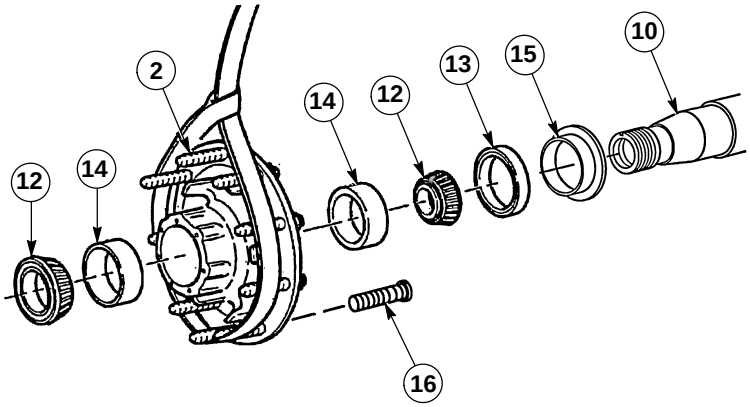
NOTE

Perform Step (16) if studs are damaged.

(16) Remove studs (16) from hub (2). Discard damaged studs.







b. Cleaning/Inspection.

(1) Inspect bearing parts for corrosion or damage. Replace all parts that are corroded or damaged.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Do not use compressed air to clean bearings. Bearings can come apart causing injury or death to personnel.

(2) Clean all bearing parts with drycleaning solvent and allow to air dry.

(3) Clean inside and outside of spindle with drycleaning solvent. Ensure 1/32 in. (.8 mm) hole inside center of spindle is not plugged. Drill 1/32” (.8 mm) hole if hole is not present.

c. Installation.

NOTE

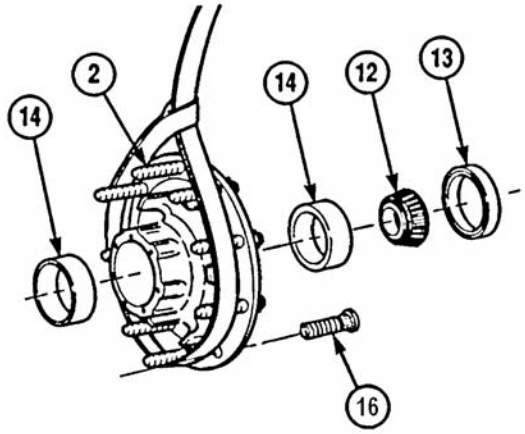
If studs were removed, perform Step (1).

(1) Install stud (16) in hub (2) until base of stud is seated against back edge of hub.

(2) Apply light film of grease on inside of hub (2) and on two bearing cups (14).

(3) Install two bearing cups (14) in hub (2).

(4) Pack area of hub (2) between two bearing cups (14) with grease up to smallest diameter of bearing cups.



NOTE

Perform Steps (5) and (6) for hub mounted seals.

(5) Pack inner bearing (12) with grease and install in hub (2).

NOTE

The wider edge of seal goes on hub first.

(6) Install seal (13) in hub (2).

4-58. WHEEL BEARING (SERVICE) AND HUB REPLACEMENT (CONT).

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

NOTE

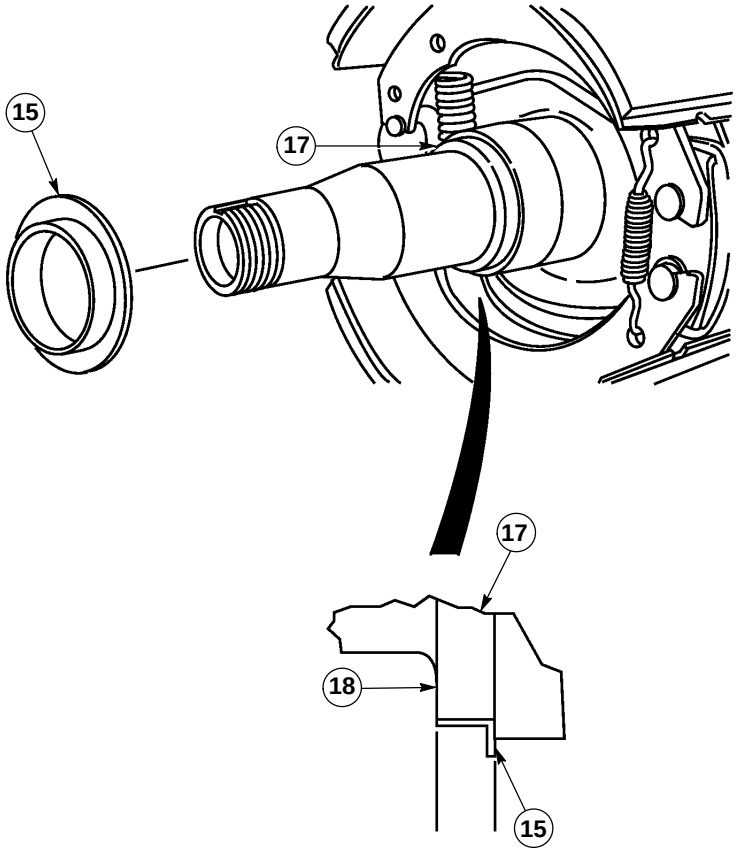
Perform Steps (7) through (11) for spindle mounted seals.

(7) Apply a thin coat of sealing compound around wiper ring collar (17).

CAUTION

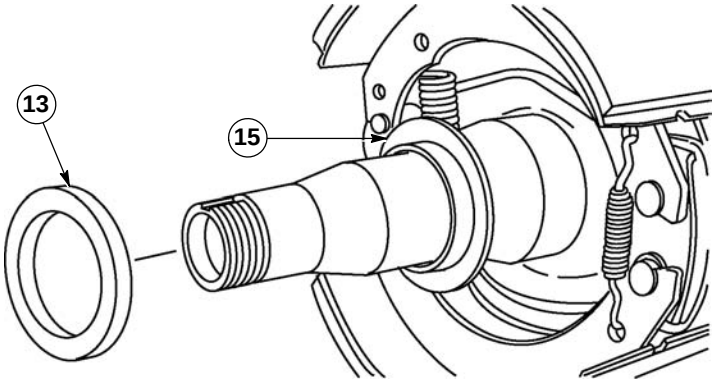
Ensure wiper ring is installed evenly on wiper ring collar. Failure to comply may result in damage to equipment.

(8) Using soft face hammer and brass drift, tap evenly around base of wiper ring (15) and install wiper ring (15) on wiper ring collar (17) until edge is flush with spindle shoulder (18).

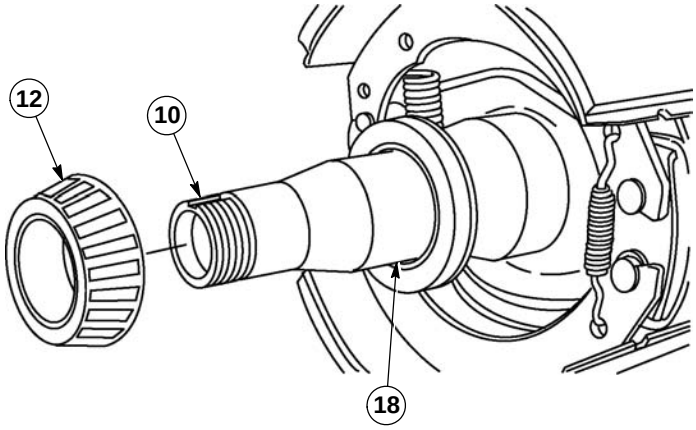


(9) Apply a light film of grease on inside and outside diameters of seal (13).

(10) Install seal (13) on wiper ring (15) until seal is fully seated.



(11) Pack inner bearing (12) with grease and install on spindle (10) until edge is flush with spindle shoulder (18).



4-58. WHEEL BEARING (SERVICE) AND HUB REPLACEMENT (CONT).

(12) Apply light film of grease on spindle (10).

WARNING

Hub weighs 65 lbs (29 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(13) Install lifting device on hub (2).

(14) Using lifting device and aid of an assistant, install hub (2) on spindle (10).

(15) Remove lifting device from hub (2).

(16) Pack outer bearing (12) with grease.

NOTE

Ensure nipple on adjusting nut is pointing outward during installation.

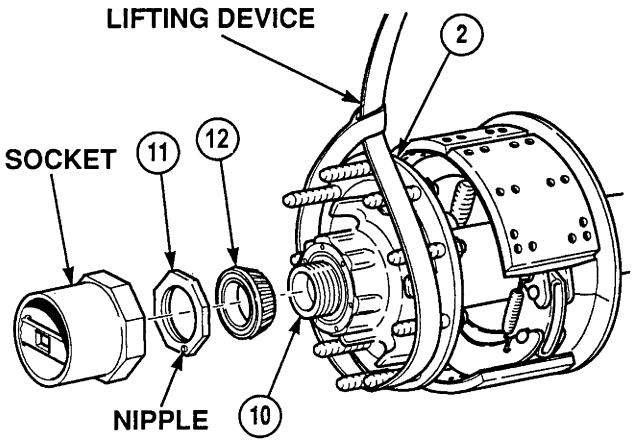
(17) Install outer bearing (12) and adjusting nut (11) on spindle (10). Tighten adjusting nut to 100 lb-ft (136 N·m).

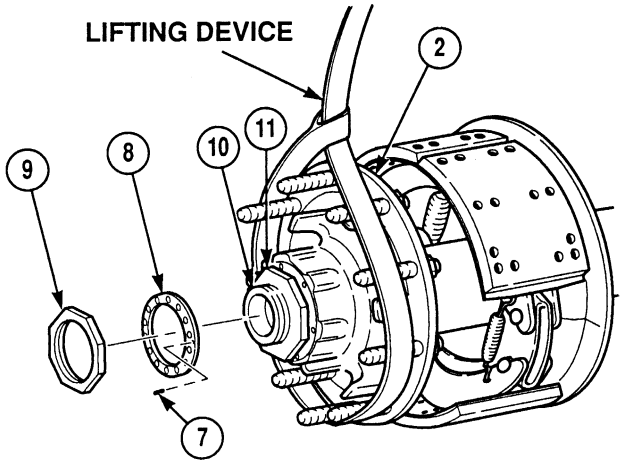
(18) Loosen adjusting nut (11), then tighten adjusting nut to 50 lb-ft (68 N·m).

(19) Loosen adjusting nut (11) 1/6 to 1/4 turn.

(20) Install lockwasher (8) and nut (9) on spindle (10) and tighten to 250-300 lb-ft (339-407 N·m).

(21) Install set screw (7) on lockwasher (8).





(22) Install gasket (6) and hub cap (5) with six washers (4) and screws (3) on hub (2). Tighten screws to 180 to 240 lb-in (20-27 N·m).

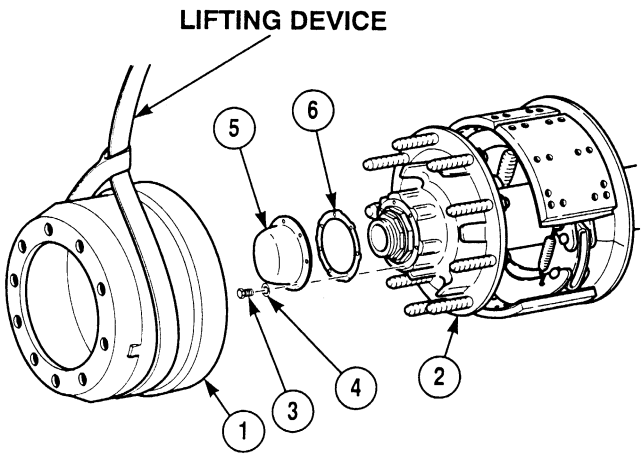
WARNING

Brake drum weighs 125 lbs (57 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(23) Attach lifting device on brake drum (1).

(24) Using lifting device and the aid of an assistant, install brake drum (1) on hub (2).

(25) Remove lifting device from brake drum (1).



d. Follow-On Maintenance:

- Uncage brake, (Para 2-16)
- Install wheel, (Para 4-57).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-59. DRAWBAR LIFTING HANDLE/TOW RING/ADJUSTING PIN REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Follow-On Maintenance

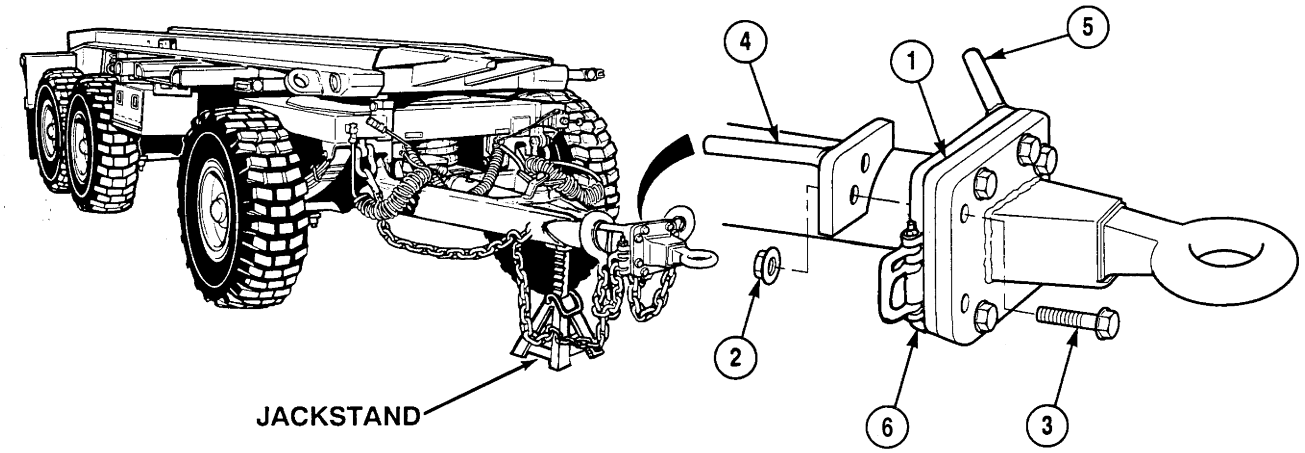
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Brush, Wire (Item 1, Appendix J)
Grinder, Electric, Portable (Item 14, Appendix J)
Jackstand (Item 24, Appendix J)
Lifting Device Minimum Capacity 425 lbs (193 kg)
Multiplier, Torque (Item 29, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Socket, Set Deepwell (Item 41, Appendix J)
Socket, 3 1/8 in. (Item 43, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-813 N·m]) (Item 62, Appendix J)

Materials/Parts
Adhesive (Item 3, Appendix E)
Locknut (8) (Item 24, Appendix I)
Pin, Cotter (Item 67, Appendix I)
Pin, Cotter (2) (Item 69, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar extended, (Para 2-10)
Drawbar extension stowed (if equipped), (Para 2-10)

a. Removal.



WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(1) Support drawbar (1) in level position on jackstand.

(2) Remove four upper locknuts (2), screws (3) and two handles (4) and (5) from plate (6) and drawbar (1). Discard locknuts.

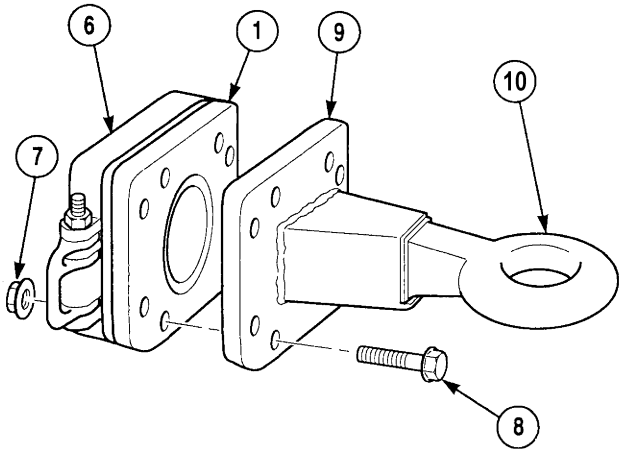
WARNING

Drawbar tow ring and mounting plate will fall off when mounting screws are removed. Care should be taken to keep towing ring from falling. Possible injury to personnel may result.

NOTE

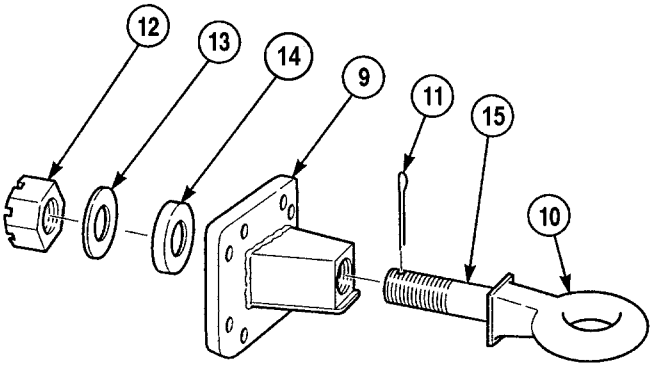
Retain two locknuts for assembly.

(3) Remove four lower locknuts (7), screws (8), tow ring bracket (9) and drawbar tow ring (10) from plate (6) and drawbar (1). Discard two locknuts.



(4) Remove cotter pin (11), castle nut (12), washer (13), and spacer (14) from drawbar tow ring shaft (15). Discard cotter pin.

(5) Remove drawbar tow ring (10) from tow ring bracket (9).



(6) Lift locking gate (16) from adjusting pin (17).

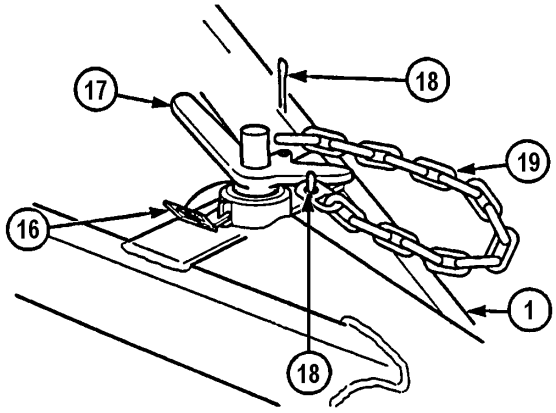
(7) Remove cotter pin (18) from adjusting pin (17) and chain (19). Discard cotter pin.

(8) Remove adjusting pin (17) from drawbar (1).

NOTE

Perform Step (9) if replacing chain. If not, go to step (10).

(9) Remove other cotter pin (18) and link from chain (19) from drawbar (1). Discard cotter pin.



4-59. DRAWBAR LIFTING HANDLE/TOW RING/ADJUSTING PIN REPLACEMENT (CONT).

WARNING

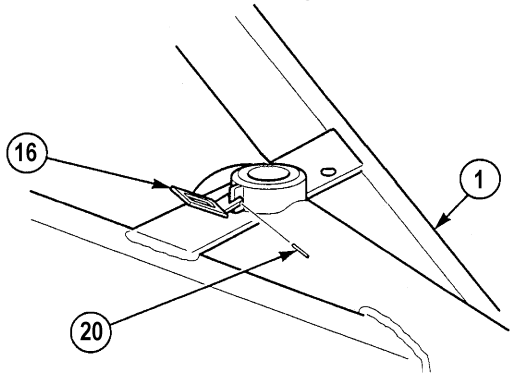
- CARC paint contains isocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.
- DO NOT grind or sand painted equipment without high efficiency air purifying respirators in use.

NOTE

- Perform Steps (10) and (11) if replacing locking in place. If roll pin is welded, it will have to be ground off. If roll pin is staked, it may be driven out.
- Roll pin may be welded or staked in place. If roll pin is welded, it will have to be ground off. If roll pin is staked, it may be driven out.

(10) Using a wire brush, remove CARC paint from area four in. (102 mm) around cutting point.

(11) Using a grinder, cut weldments and remove roll pin (20) and locking gate (16) from drawbar (1).

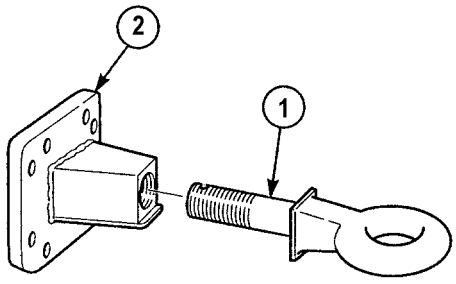


b. Cleaning/Inspection.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

(1) Clean all metal parts with drycleaning solvent.
(2) Wire brush all corrosion from metal parts.
(3) Inspect tube assembly for cracked welds.
(4) Coat with rust inhibitor before installation.
(5) Inspect drawbar tow ring (1) for bends and stripped threads.
(6) Inspect tow ring bracket (2) for bent or gouged lower lip.
(7) Replace damaged parts.



c. Installation.

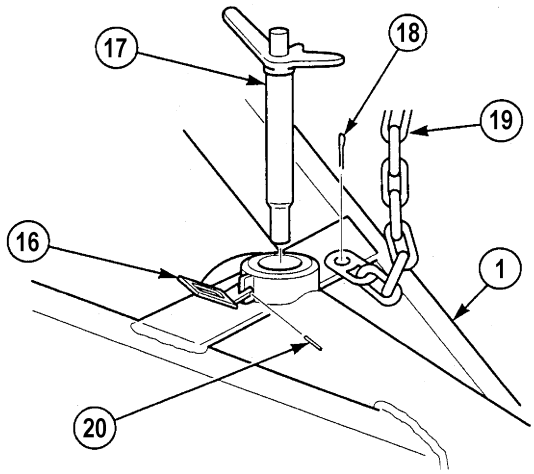
NOTE

Perform Step (1) if locking gate was removed.

(1) Install locking gate (16) on drawbar (1) with roll pin (20).

(2) Install adjusting pin (17) on drawbar (1).

(3) Install chain (19) on drawbar (1) with cotter pin (18).

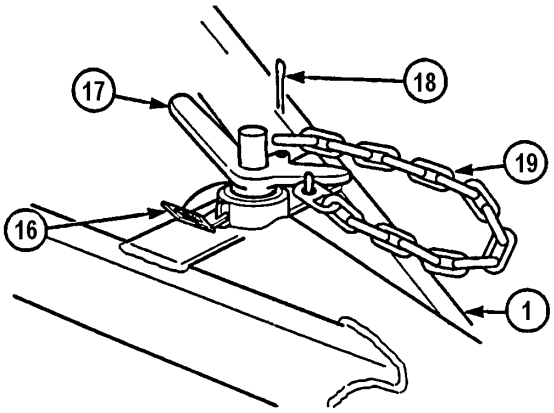


(4) Install chain (19) on adjusting pin (17) with cotter pin (18).

(5) Close locking gate (16) on adjusting pin (17).

NOTE

Step (6) temporarily installs tow ring bracket on drawbar to aid in torquing of castle nut. Use bottom two holes of tow ring bracket and upper two holes of drawbar.



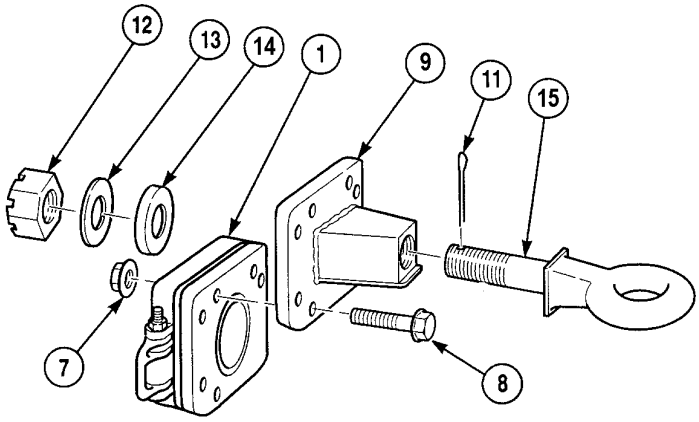
(6) Install tow ring bracket (9) on drawbar (1) with two screws (8) and locknuts (7).

NOTE

If torque requirements can not be achieved, tow ring bracket should be replaced.

(7) Position drawbar tow ring shaft (15) in tow ring bracket (9).

(8) Install spacer (14), washer (13) and castle nut (12) on drawbar tow ring shaft (15). Tighten castle nut to 2000 lb-ft (2712 N·m) minimum.



NOTE

If grooves in castle nut do not align with hole in drawbar tow ring shaft, perform Step (9).

(9) Tighten castle nut (12) to next slot in nut.

(10) Install cotter pin (11) through castle nut (12) and drawbar tow ring shaft (15). Spread sides of cotter pin (11) against castle nut (12).

(11) Remove two locknuts (7), screws (8) and tow ring bracket (9) from drawbar (1). Discard locknuts.

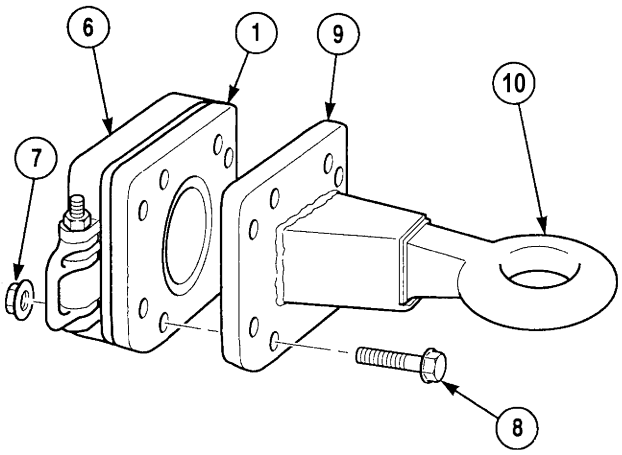
4-59. DRAWBAR LIFTING HANDLE/TOW RING/ADJUSTING PIN REPLACEMENT (CONT).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(12) Apply a thin film of sealant on tow ring bracket (9).

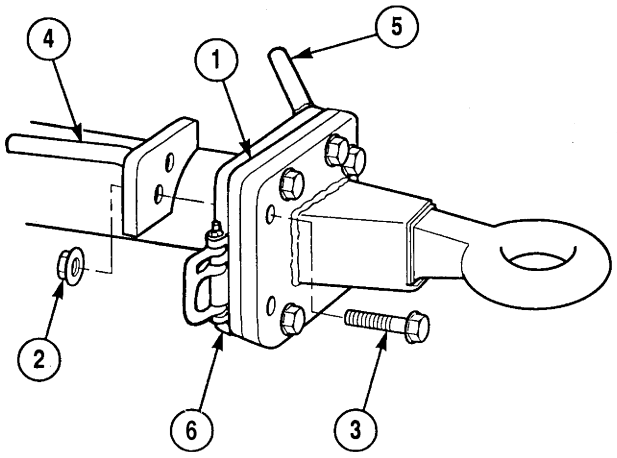
(13) Install tow ring bracket (9) and drawbar tow ring (10) on drawbar (1) and plate (6) with four lower screws (8) and locknuts (7). Tighten screws to 410 lb-ft (556 N·m).



(14) Install two handles (4) and (5) on plate (6) and drawbar (1) with four upper screws (3) and locknuts (2). Tighten locknuts to 410 lb-ft (556 N·m).

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to removal to prevent possible injury to personnel.



(15) Remove jackstand from under drawbar (1).

d. Follow-On Maintenance:

- Spot paint exposed areas, (TB 43-0209).
- Retract drawbar, (Para 2-10).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-60. SAFETY CHAIN REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

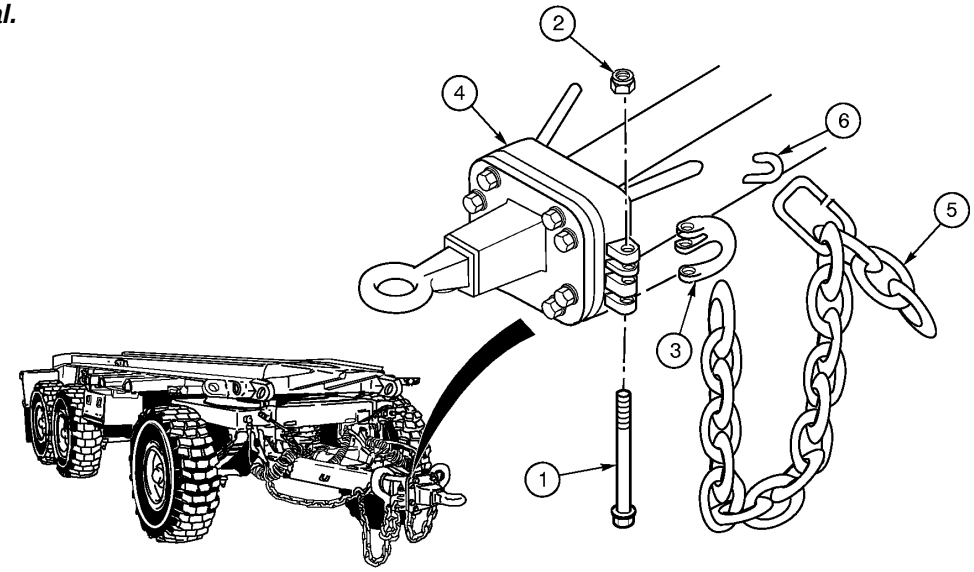
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive, (Item 50, Appendix J)

Materials/Parts
Locknut (2) (Item 42, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.



NOTE

Right and left safety chains are removed the same way. Left side shown.

(1) Remove screw (1), locknut (2), and link coupling (3) from plate (4). Discard locknut.

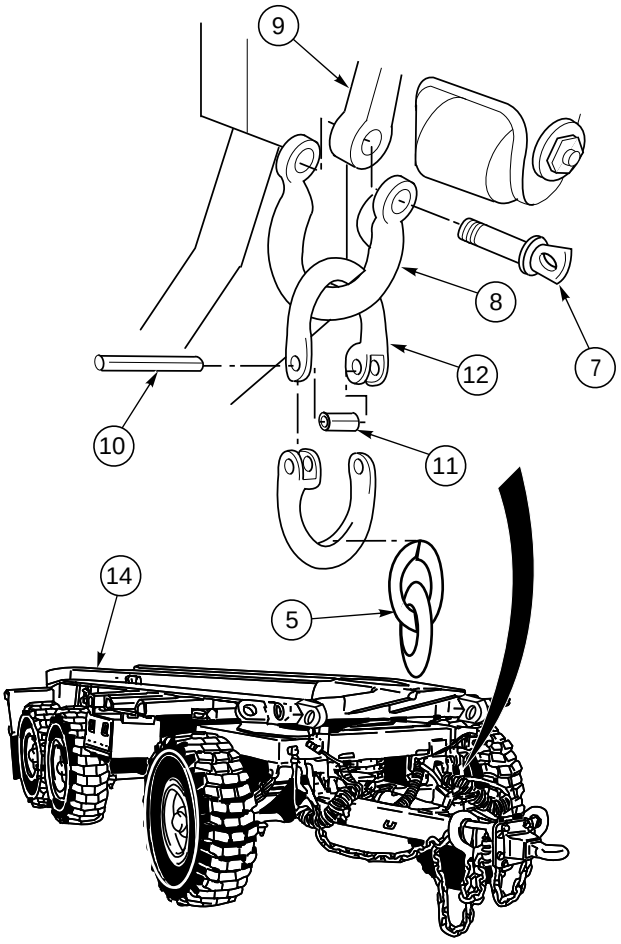
(2) Remove safety chain (5) from link coupling (3) and hook (6).

4-60. SAFETY CHAIN REPLACEMENT (CONT).

(3) Remove pin (7) from shackle (8) and running gear (9).

(4) Remove load pin (10), stud assembly (11), link coupling (12), and shackle (8) from safety chain (5).

(5) Repeat steps (1) through (4) for right side.



b. Installation.

NOTE

Right and left safety chains are removed the same way. Left side shown.

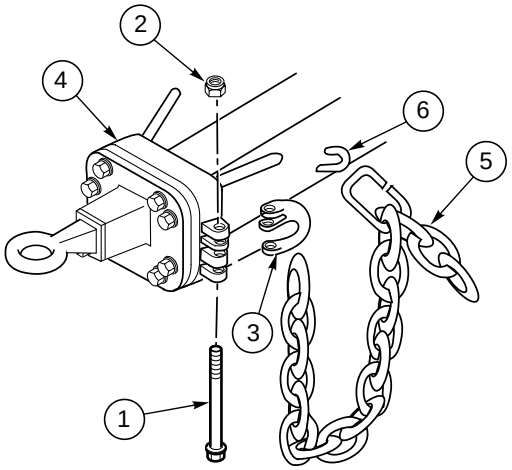
(1) Install shackle (8) on link coupling (12) and install link coupling onto safety chain (5) using stud assembly (11) and load pin (10).

(2) Install shackle (8) on running gear (9) with pin (7).

(3) Install safety chain (5) on hook (6).

(4) Install link coupling (3) on safety chain (5) and install link coupling on plate (4) with screw (1) and locknut (2).

(5) Repeat steps (1) through (4) for right side.



c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-61. SPARE TIRE BRACKET REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

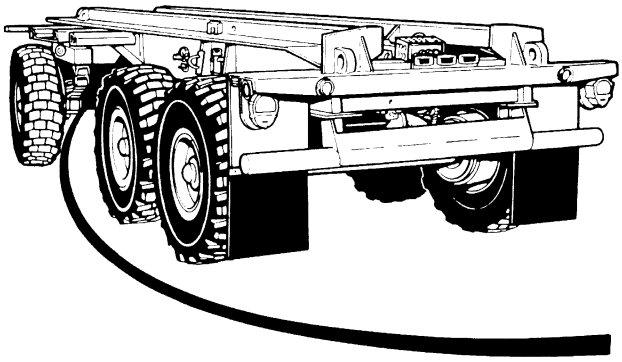
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

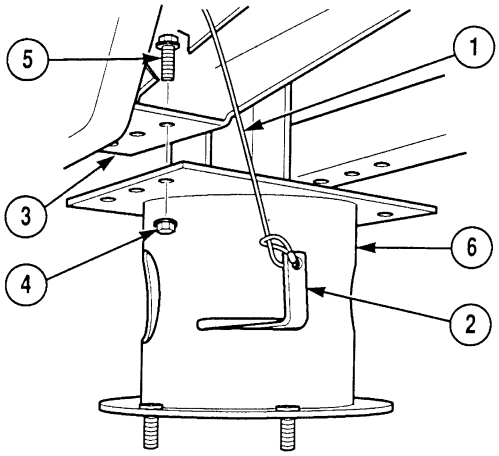
Materials/Parts
Cable (Item 11, Appendix I)
Locknut (6) (Item 22, Appendix I)
Locknut (Item 44, Appendix I)

Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Spare tire removed, (Para 3-5)
Spare tire winch removed, (Para 4-62)

a. Removal.





(1) Cut and remove cable (1) from handle (2) and crossmember (3). Discard cable.

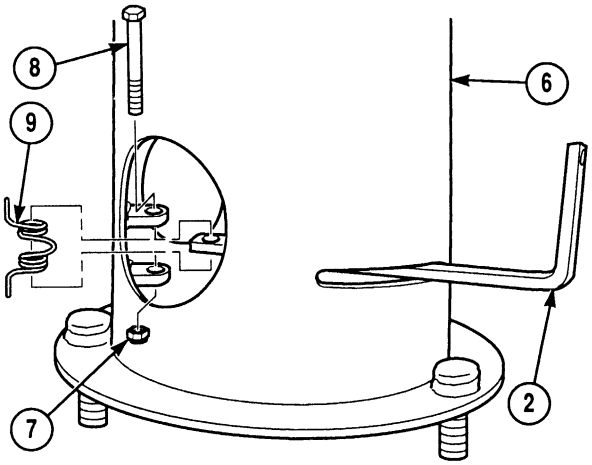
(2) With the aid of an assistant, remove six locknuts (4), screws (5) and spare tire bracket (6) from trailer crossmembers (3). Discard locknuts.

4-61. SPARE TIRE BRACKET REPLACEMENT (CONT).

WARNING

Use care when removing springs. Springs are under tension and can act as projectiles when released. Injury to personnel may result.

(3) Remove locknut (7), screw (8), spring (9) and handle (2) from spare tire bracket (6). Discard locknut.

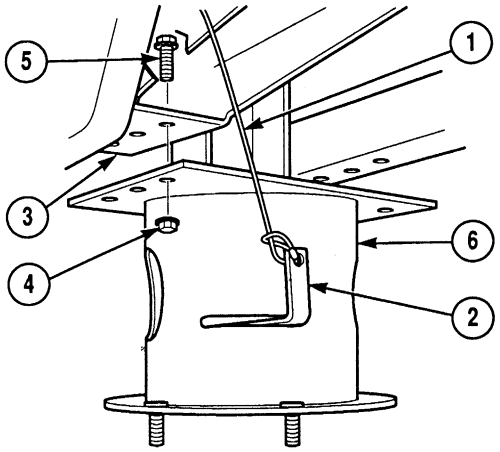


b. Installation.

(1) Install spring (9) and handle (2) on spare tire bracket (6) with screw (8) and locknut (7).

(2) With the aid of an assistant, install spare tire bracket (6) on trailer crossmembers (3) with six screws (5) and locknuts (4).

(3) Install cable (1) on handle (2) and crossmember (3).



c. Follow-On Maintenance:

- Install spare tire winch, (Para 4-62).
- Install spare tire, (Para 3-5).

END OF TASK

4-62. SPARE TIRE WINCH REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

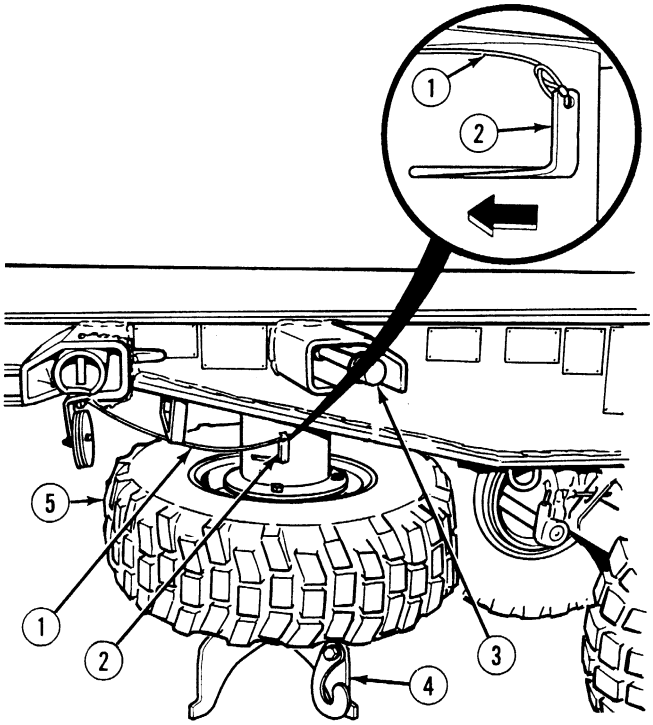
Materials/Parts
Locknut (5) (Item 25, Appendix I)
Locknut (3) (Item 35, Appendix I)

Materials/Parts - Continued
Locknut (Item 39, Appendix I)
Locknut (Item 44, Appendix I)

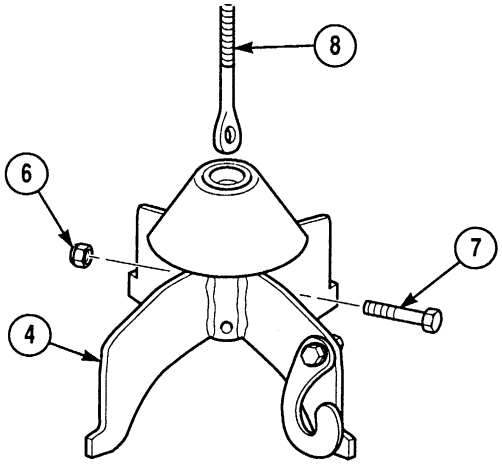
Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.

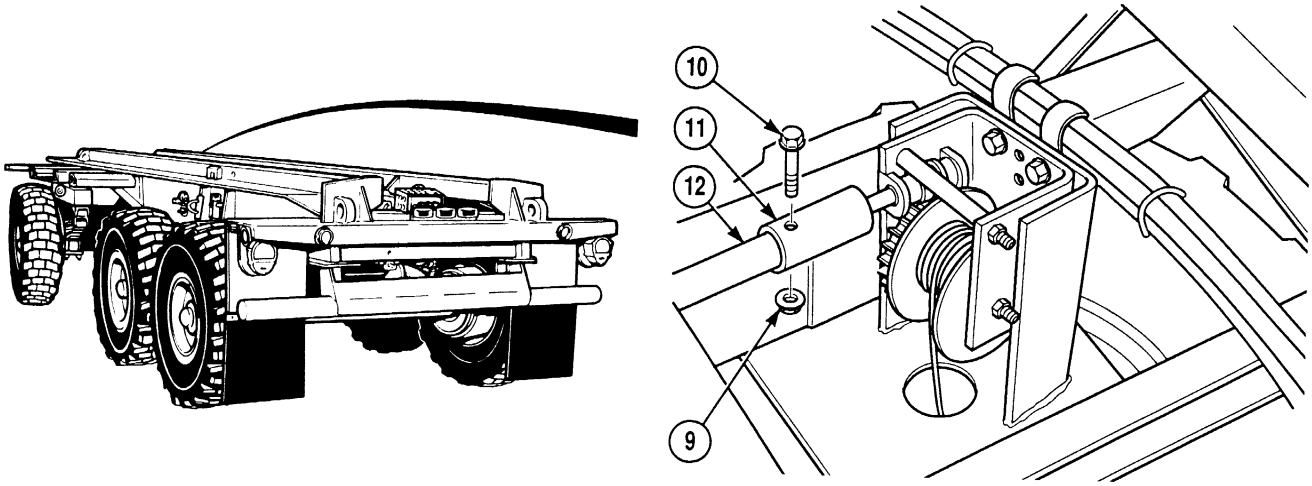
(1) Pull safety latch cable (1) on handle (2) to Unlocked position and hold while turning rod assembly (3) counterclockwise to lower lift assembly (4) from spare tire (5).



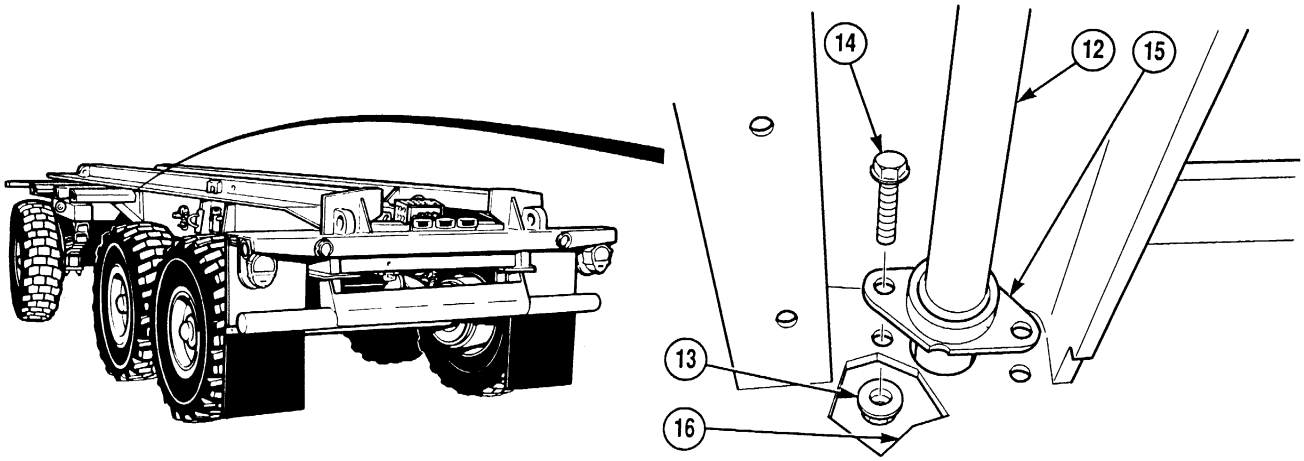
(2) Remove locknut (6), screw (7) and cable (8) from lift assembly (4). Discard locknut.



4-62. SPARE TIRE WINCH REPLACEMENT (CONT).



(3) Remove locknut (9) and screw (10) from winch shaft (11) and winch rod assembly (12). Discard locknut.



(4) Remove two locknuts (13) and screws (14) from flanged bearing (15) and remove winch rod assembly (12) from frame (16). Discard locknuts.

NOTE

Perform Step (5) if flanged bearing is damaged.

(5) Remove flanged bearing (15) from winch rod assembly (12).

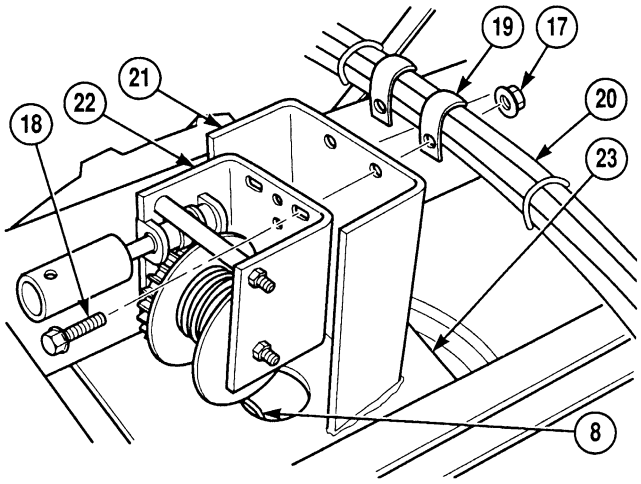
NOTE

Allow cushion clamps to remain on cable in Step (6).

(6) Remove three locknuts (17), screws (18) and two cushion clamps (19) on cable (20) from winch bracket (21). Discard locknuts.

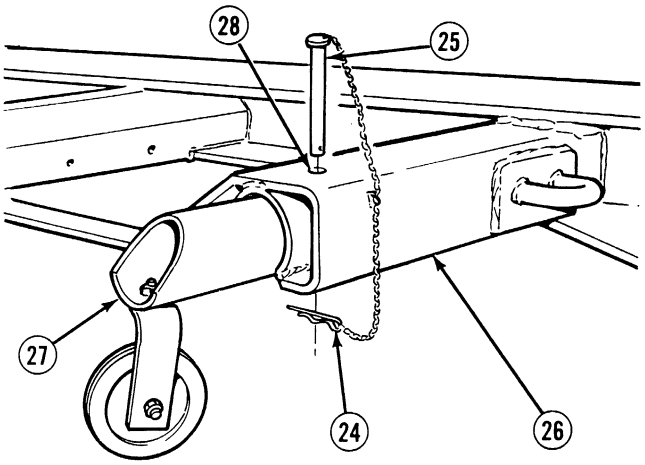
(7) Remove winch (22) from winch bracket (21).

(8) Pull cable (8) from hole in tire carrier (23).



(9) Remove locking pin (24) and pin (25) from pulley support tube bracket (26) and extend pulley support tube (27) from pulley support tube bracket until hole (28) in pulley support tube is aligned.

(10) Install pin (25) and locking pin (24) in hole (28) of pulley support tube (27) and pulley support bracket (26).

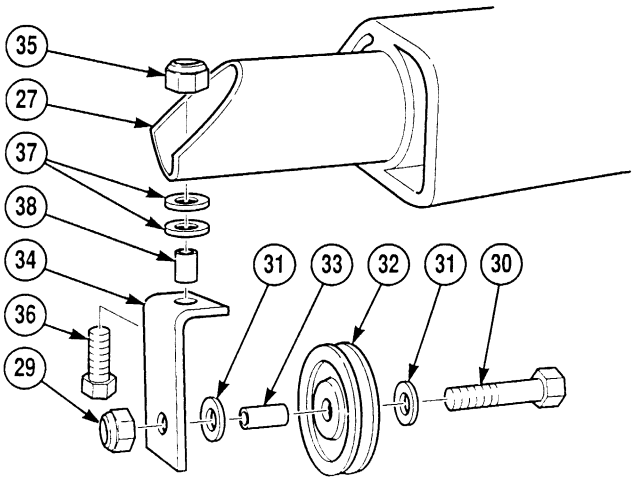


(11) Remove locknut (29), screw (30), two washers (31), pulley (32) and spacer (33) from pulley support bracket (34). Discard locknut.

(12) Remove spacer (33) from pulley (32).

(13) Remove locknut (35), screw (36), two washers (37), spacer (38) and pulley support bracket (34) from pulley support tube (27). Discard locknut.

(14) Remove locking pin (24), pin (25) and pull pulley support tube (27) from pulley support bracket (26).



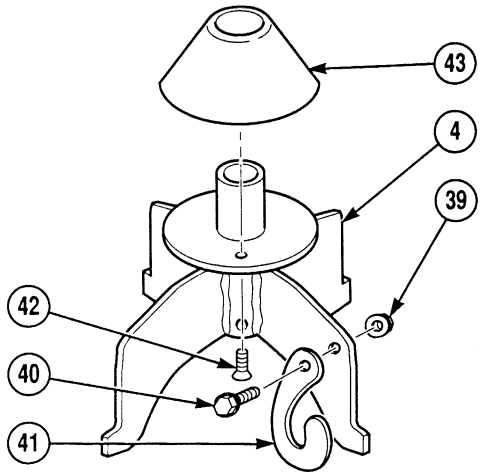
4-62. SPARE TIRE WINCH REPLACEMENT (CONT).

NOTE

Note position of hook on lift assembly bracket prior to removal to aid in installation.

(15) Remove locknut (39), screw (40) and hook (41) from lift assembly bracket (4). Discard locknut.

(16) Remove two screws (42) and cone (43) from lift assembly bracket (4).



b. Installation.

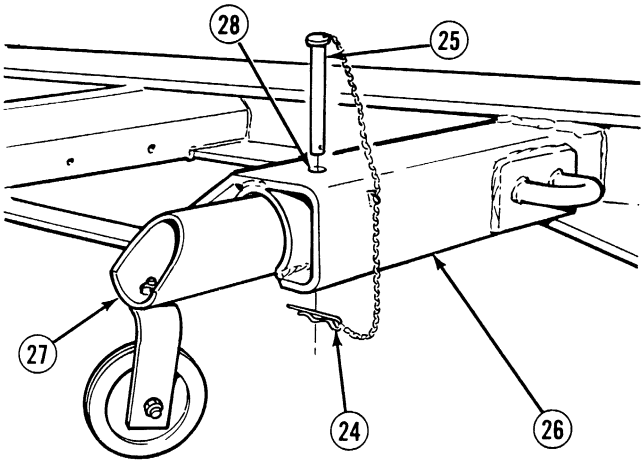
(1) Install cone (43) on lift assembly bracket (4) with two screws (42).

NOTE

Hook is properly installed when screw and locknut are tightened and hook rotates freely.

(2) Install hook (41), on lift assembly bracket (4) with screw (40) and locknut (39).

(3) Install pulley support tube (27) on pulley support bracket (26) and install pin (25) and locking pin (24) in hole (28).



NOTE

Pulley support bracket is properly installed when screw and locknut are tightened and bracket rotates freely.

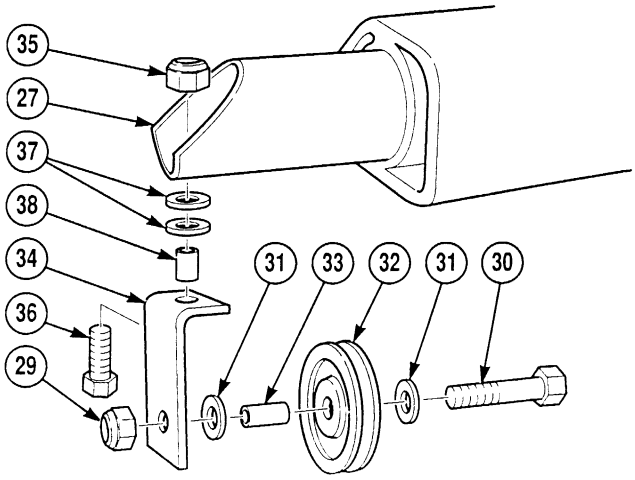
(4) Install spacer (38), pulley support bracket (34), two washers (37), screw (36) and locknut (35) on pulley support tube (27).

(5) Install spacer (33) on pulley (32).

NOTE

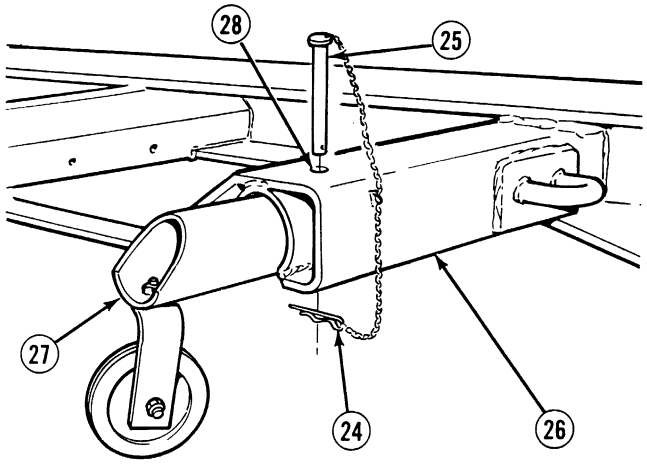
Pulley is properly installed when screw and locknut are tightened and pulley rotates freely.

(6) Install pulley (32), spacer (33), two washers (31), screw (30) and locknut (29) on pulley support bracket (34).



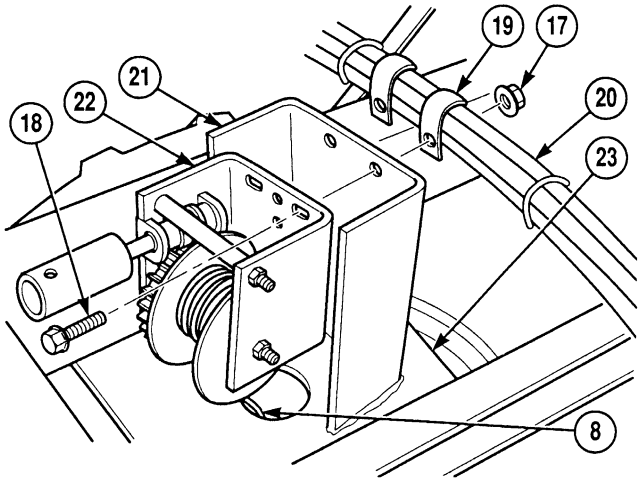
(7) Remove locking pin (24) and pin (25) from pulley support tube (27) and return pulley support tube to retracted position.

(8) Install pin (25) through pulley support tube bracket (26) and pulley support tube (27) and install locking pin (24).



(9) Install winch (22) on winch bracket (21) with three screws (18), two cushion clamps (19), cable (20) and three locknuts (17).

(10) Pay winch cable (8) down through hole in tire carrier (23).



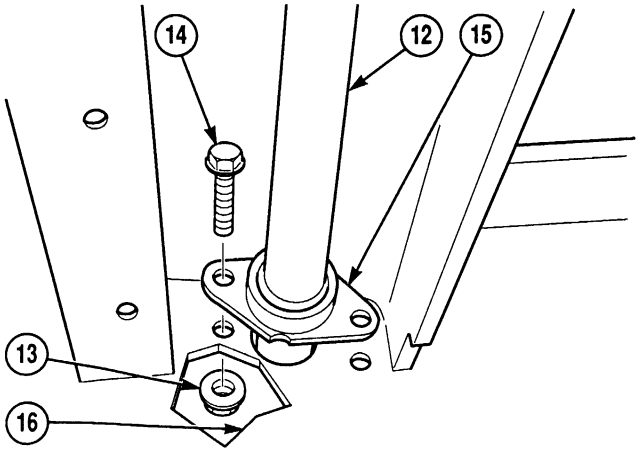
NOTE

Perform Step (11) if flanged bearing was removed.

(11) Install flanged bearing (15) on winch rod assembly (12).

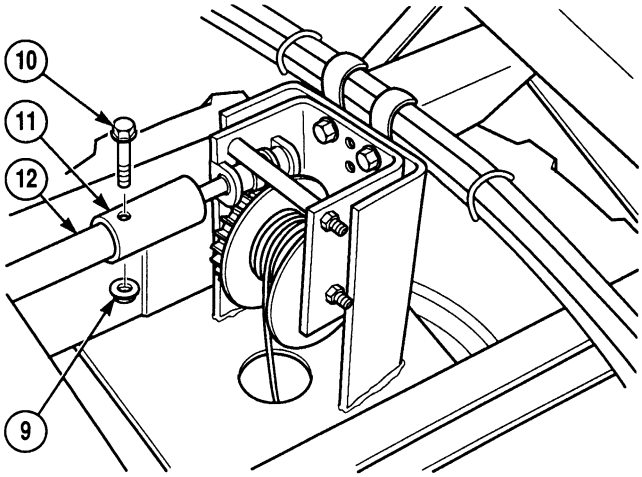
(12) Install winch rod assembly (12) through frame (16) and position end in winch shaft (11).

(13) Install two screws (14) and locknuts (13) on frame (16).



4-62. SPARE TIRE WINCH REPLACEMENT (CONT).

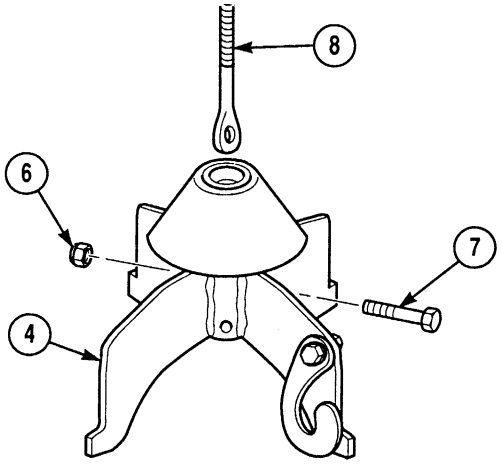
(14) Install screw (10) through winch rod assembly (12) and winch shaft (11) and install locknut (9).



(15) Install cable (8) on lift assembly (4) with screw (7) and locknut (6).

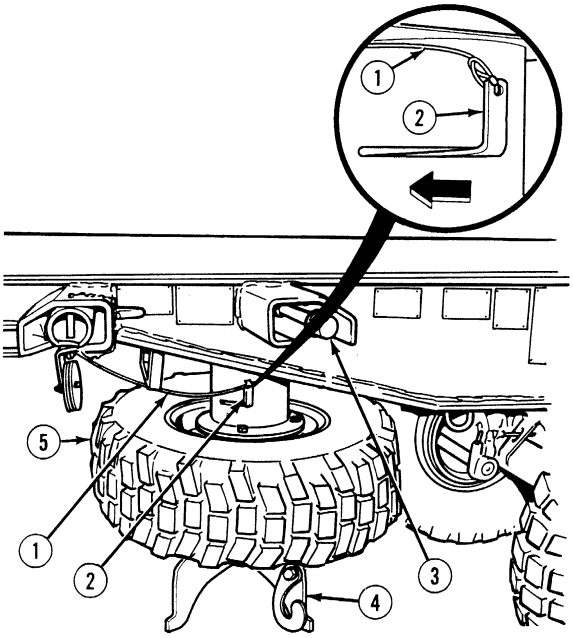
CAUTION

Ensure there is tension on cable when reeling in cable to prevent knotting and binding. Failure to comply may result in damage to equipment.



(16) Turn rod assembly (3) to the right to raise lift assembly (4) against spare tire (5).

(17) Pull cable (1) to ensure handle (2) is returned to the Locked position.



c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-63. SPARE TIRE WINCH CABLE REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Gloves, Heavy Duty (Item 12, Appendix J)

Materials/Parts - Continued
Locknut (Item 34, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.

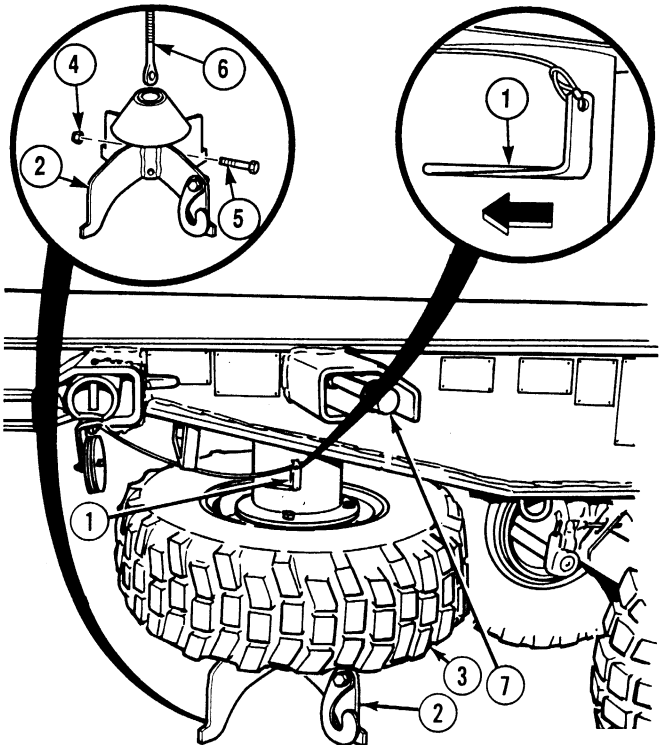
(1) Release handle (1) and lower lift assembly (2) from spare tire assembly (3).

(2) Remove locknut (4), screw (5) and cable assembly (6) from lift assembly (2). Discard locknut.

WARNING

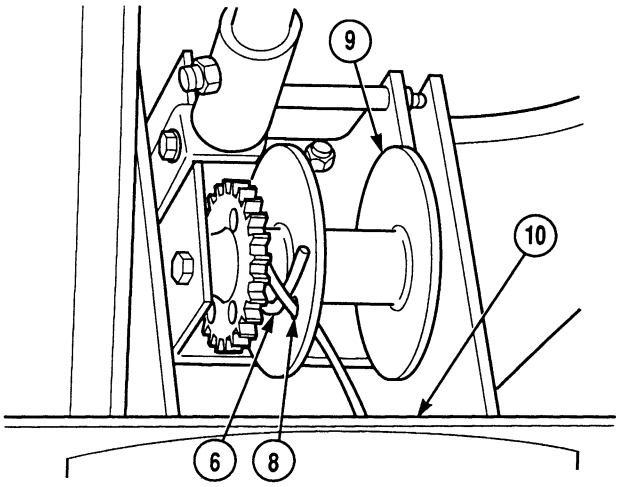
Wire rope can become frayed or contain broken wires. Wear heavy, leather-palmed work gloves when handling wire rope. Frayed or broken wires can injure hands.

(3) Turn winch rod assembly (7) counterclockwise while pulling cable assembly (6) until cable assembly is completely payed out.



4-63. SPARE TIRE WINCH CABLE REPLACEMENT (CONT).

(4) Pull cable assembly (6) from hole (8) in winch (9) and pull cable assembly (6) from spare tire bracket (10).



b. Installation.

WARNING

Wire rope can become frayed or contain broken wires. Wear heavy, leather-palmed work gloves when handling wire rope. Frayed or broken wires can injure hands.

(1) Feed cable assembly (6) through spare tire bracket (10).

(2) Install cable assembly (6) through hole (8) and install on winch (9).

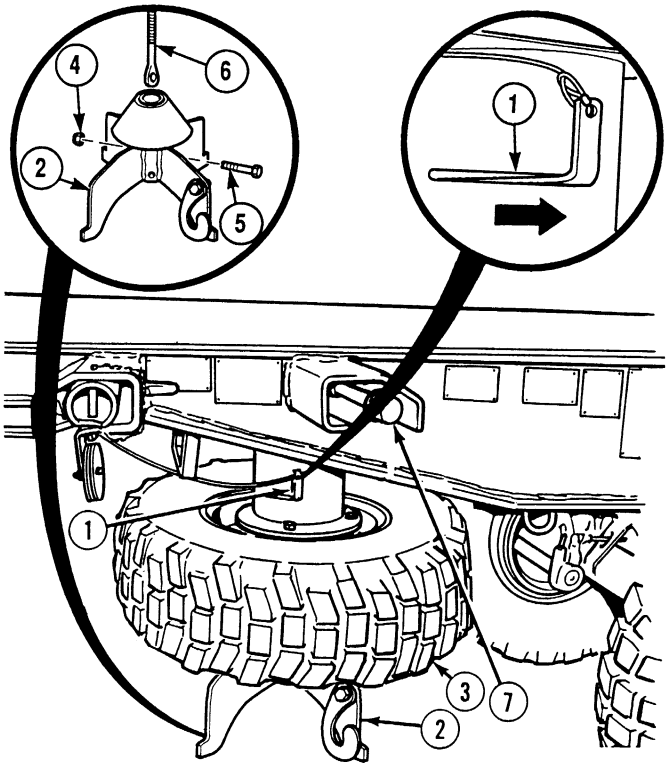
CAUTION

Ensure there is tension on cable when reeling in cable to prevent knotting and binding. Failure to comply may result in damage to equipment.

(3) Turn winch rod assembly (7) clockwise until approximately four ft (1.2 m) of cable assembly is left.

(4) Install cable assembly (6) on lift assembly (2) with screw (5) and locknut (4).

(5) Raise lift assembly (2) to spare tire assembly (3).



c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-64. SHOCK ABSORBER/MOUNT REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Socket Set 3/4 in. (Item 39, Appendix J)
Socket, 1-1/8 in. (Item 42, Appendix J)
Wrench Set, Crowfoot (Item 58, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-813 N·m]) (Item 62, Appendix J)

Materials/Parts
Locknut (4) (Item 46, Appendix I)
Locknut (4) (Item 47, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Slack adjusters removed, (Para 4-36)

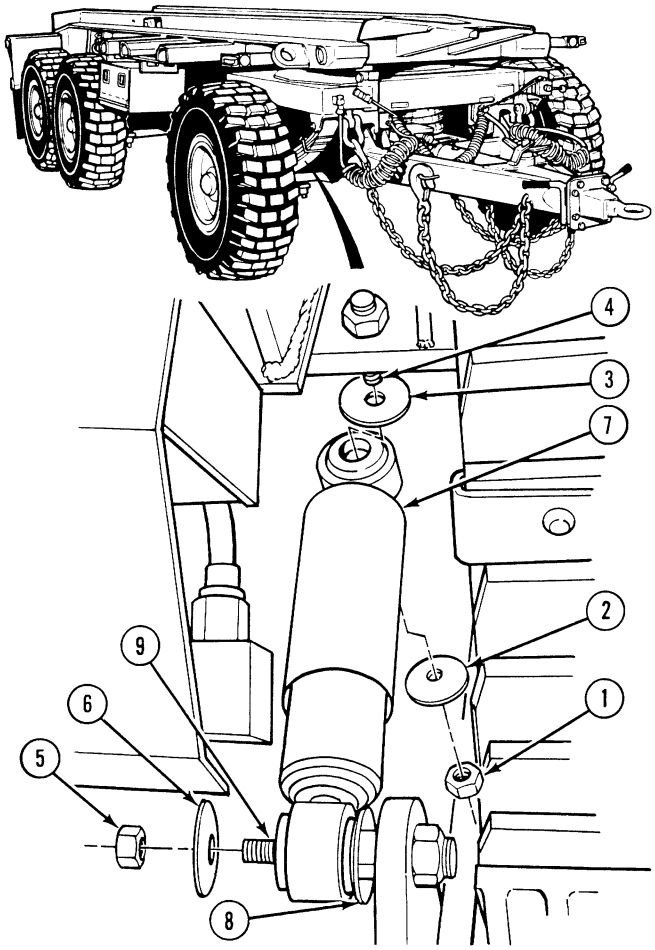
a. Removal.

NOTE

Both shocks are removed the same way.

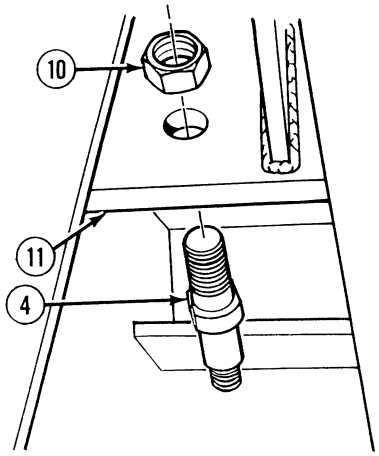
(1) Remove locknut (1), washer (2) and washer (3) from upper shock mount (4). Discard locknut.

(2) Remove locknut (5), washer (6), shock absorber (7) and washer (8) from lower shock mount (9). Discard locknut.

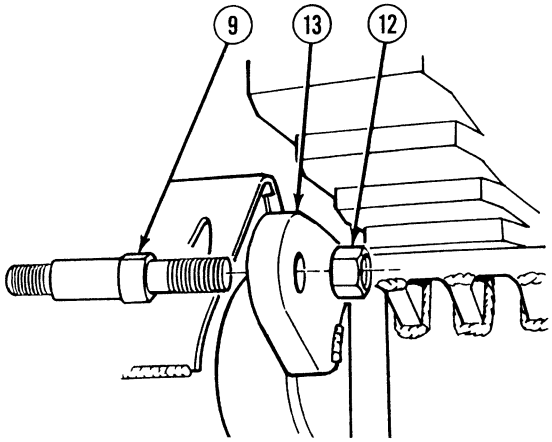


4-64. SHOCK ABSORBER/MOUNT REPLACEMENT (CONT).

(3) Remove locknut (10) and upper shock mount (4) from frame (11). Discard locknut.



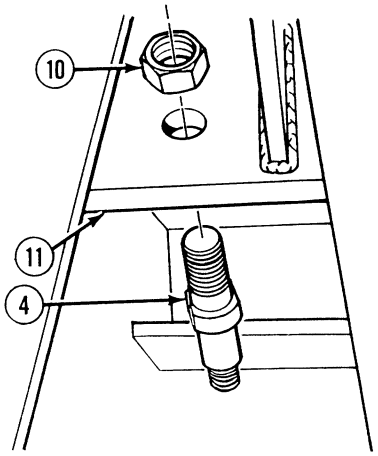
(4) Remove locknut (12) and lower shock mount (9) from bracket (13). Discard locknut.



b. Installation.

(1) Install lower shock mount (9) and locknut (12) on bracket (13). Tighten locknut to 410 lb-ft (556 N·m).

(2) Install upper shock mount (4) and locknut (10) on frame (11). Tighten to 410 lb-ft (556 N·m).



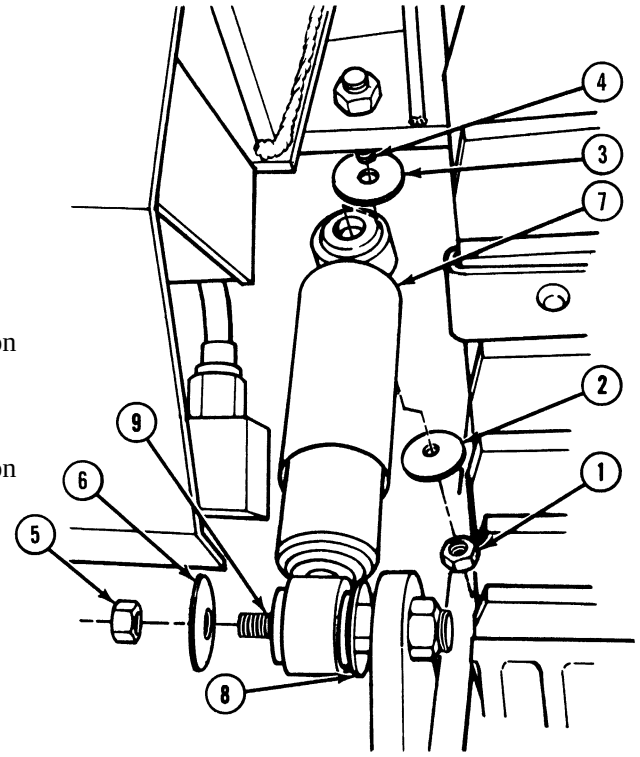
NOTE

- Both shocks are installed the same way.
- Ensure that the concave side of the washers are facing away from the shock absorber on installation.

(3) Position washer (8), lower part of shock absorber (7), washer (6) and locknut (5) on shock mount (9).

(4) Position washer (3), upper part of shock absorber (7), washer (2) and locknut (1) on upper shock mount (4).

(5) Tighten locknuts (5) and (1) on mounting studs (4) and (9) to 170 lb-ft (230 N·m).



c. Follow-On Maintenance:

- Install slack adjusters, (Para 4-36).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-65. FLATRACK LOCK AIR CHAMBER CAGE/UNCAGE.

This task covers:

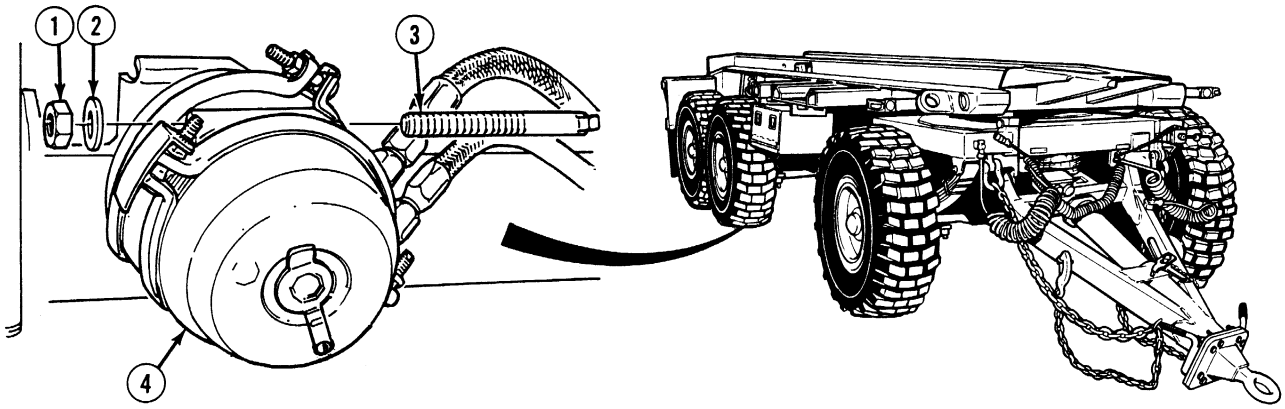
a. Cage b. Uncage c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Cage.



WARNING

- Flatrack lock air chamber contains a spring that is under great pressure. Never work directly behind flatrack lock air chamber or attempt to disassemble flatrack lock air chamber. Serious injury or death could result to personnel.
- If top of flatrack air chamber is clogged with mud, sand, or dirt, do not proceed with caging operation unless flatrack air chamber can be cleared or serious injury or death could result to personnel.

NOTE

Caging bolts, nuts and washers must be removed from brake air chambers to cage the flatrack lock air chambers. The caging bolts are the same on both types of air chambers.

(1) Remove nut (1) and washer (2) from caging bolt (3) and remove caging bolts (3) from two brake chambers (4) on any axle.

(2) Remove protective cap (5) on rear portion of flatrack lock air chambers (6).

(3) Insert T-end of caging bolt (3) into hole on rear of flatrack lock air chamber (6).

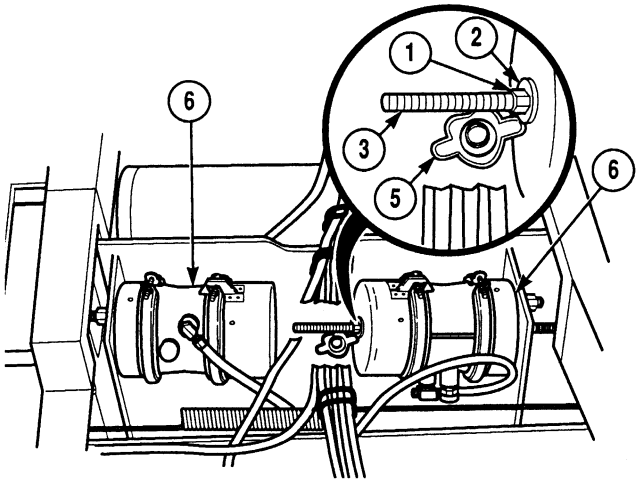
(4) Rotate caging bolt (3) counterclockwise 1/4 turn until it stops.

CAUTION

Tighten only until spring is fully compressed. Do not tighten over 50 lb-ft (67.8 N·m) or damage may occur to air chamber.

NOTE

- If caging bolt cannot be pulled directly out it is properly inserted.
- Spring is fully compressed when caging bolt is sticking out approximately three in. (7.62 cm).



(5) Install nut (1) and washer (2) on caging bolt (3). Tighten until spring is fully compressed.

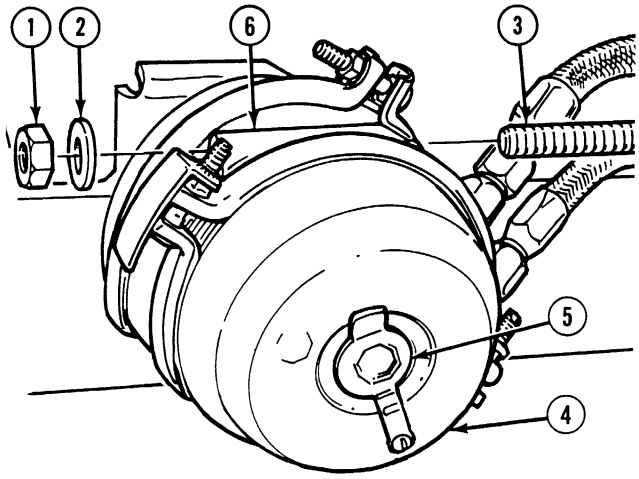
(6) Repeat Steps (1) through (5) for the other flatrack air chamber.

b. Uncage.

(1) Remove nuts (1), washers (2) and remove caging bolts (3) from brake chambers (4).

(2) Install protective caps (5) on rear of flatrack air chambers (6).

(3) Install caging bolts (3) in storage position on brake chambers (4), with washers (2) and nuts (1).



c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-66. FLATRACK LOCK REPLACEMENT.

This task covers:

a. Removal
b. Cleaning/Inspection
c. Installation
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Rod, Unlocking (Item 8, Appendix C)

Material/Parts
Compound, Anti-Seize (Item 5, Appendix E)
Bushing (2) (Item 2, Appendix I)
Pin, Cotter (2) (Item 66, Appendix I)
Pin, Cotter (Item 68, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Flatrack removed, (TM 9-2320-364-10)
Air system drained, (Para 2-21)
Flatrack lock chamber caged, (Para 4-65)

a. Removal.

WARNING

Use care when removing springs. Springs are under tension and can act as projectiles when released. Injury to personnel may result.

NOTE

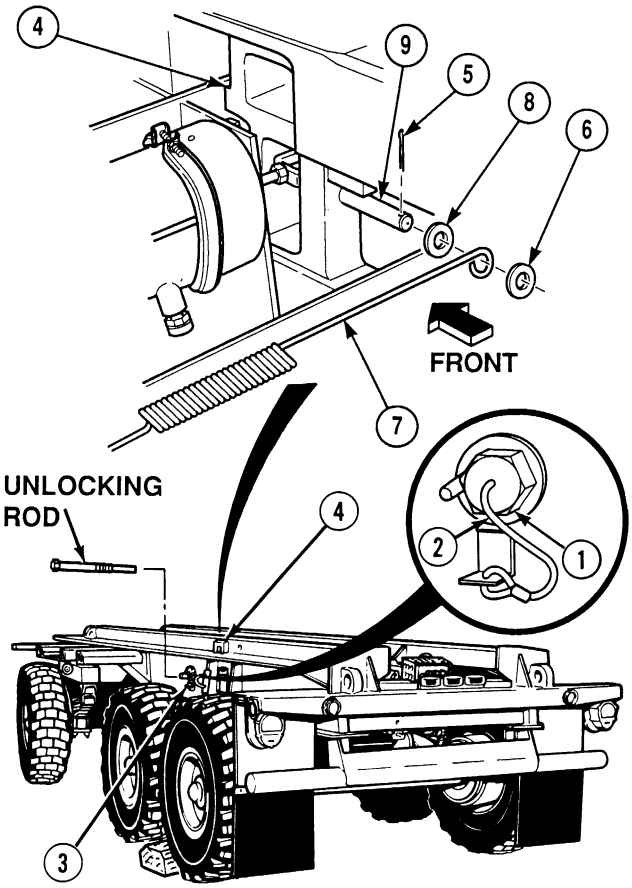
Both flatrack locks are removed the same way. Right side shown.

(1) Remove cap (1) on cable (2) from threaded frame hole (3).

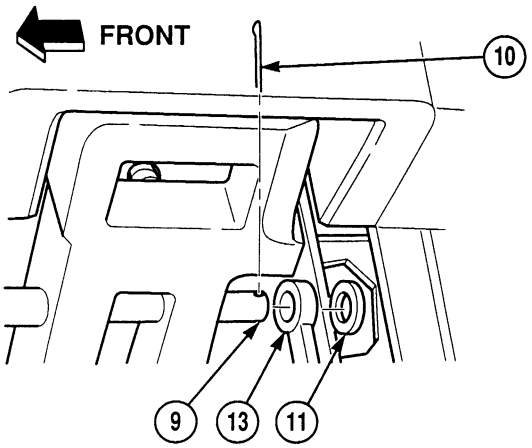
(2) Install unlocking rod into opposite threaded frame hole (3) of flatrack load lock (4).

(3) Turn unlocking rod clockwise until flatrack load lock (4) is retracted.

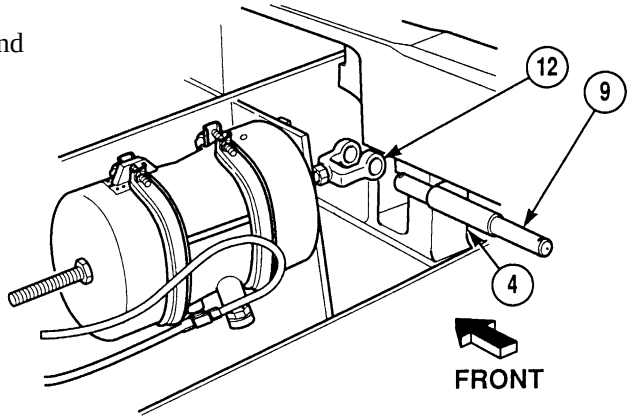
(4) Remove cotter pin (5), washer (6), coil spring (7) and washer (8) from upper locking pin (9). Discard cotter pin.



(5) Remove cotter pin (10) and washer (11) from upper locking pin (9). Discard cotter pin.



(6) Remove upper locking pin (9) from clevis (12), load lock indicating rod (13) and load lock (4).

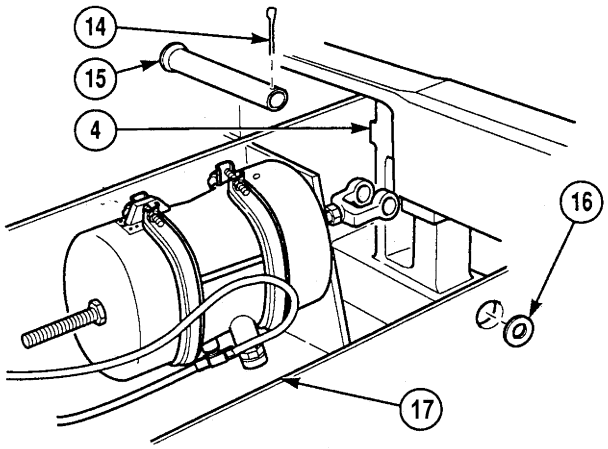


(7) Remove and discard cotter pin (14) from lower locking pin (15).

(8) Remove one washer (16) from load lock (4).

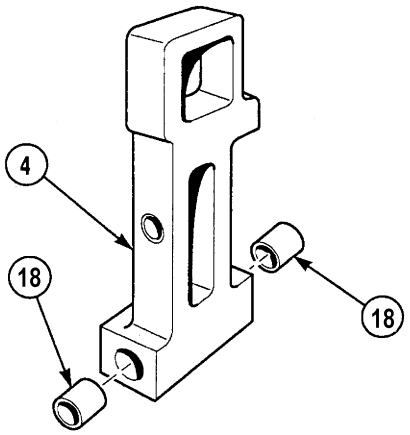
(9) Remove locking pin (15) from load load lock (4).

(10) Remove load lock (4) from frame (17).

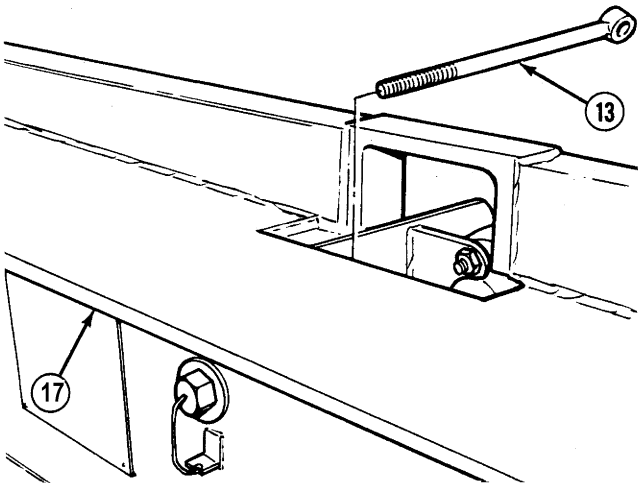


4-66. FLATRACK LOCK REPLACEMENT (CONT).

(11) Remove and discard two bushings (18) from load lock (4).



(12) Remove load lock indicating rod (13) from frame (17).



b. Cleaning/Inspection. Inspect load lock indicating rod (13) for cracks or bends.

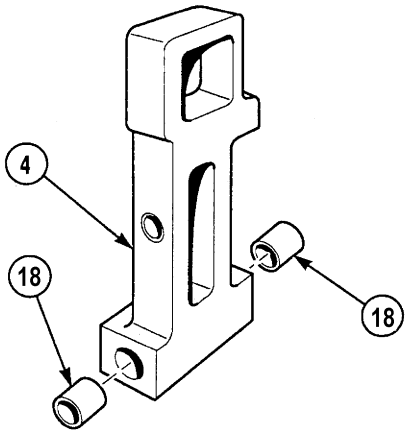
c. Installation.

(1) Install load lock indicating rod (13) on frame (17).

(2) Install two bushings (18) on load lock (4).

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



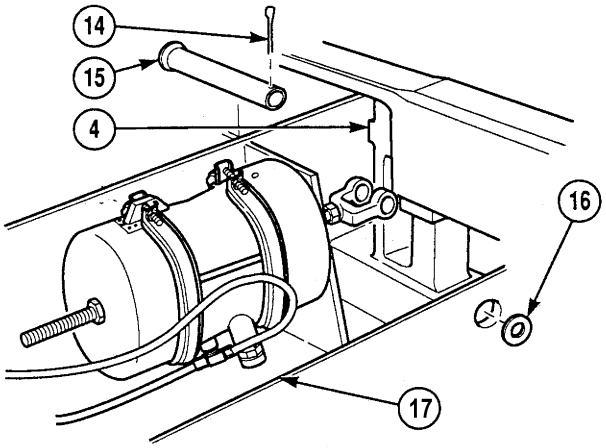
(3) Apply anti-seize compound on lock (4).

(4) Position load lock (4) on frame (17).

(5) Install lower locking pin (15) on load lock (4).

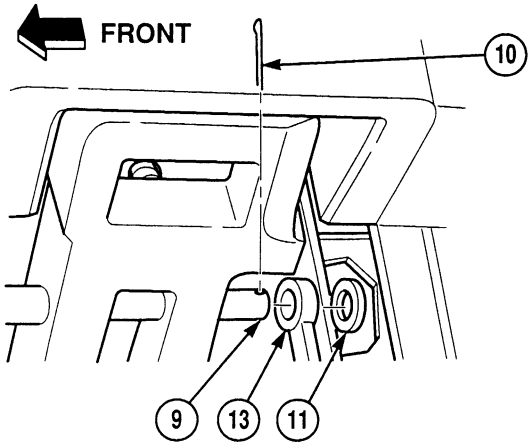
(6) Install washer (16) on lower locking pin (15).

(7) Install cotter pin (14) on lower locking pin (15).

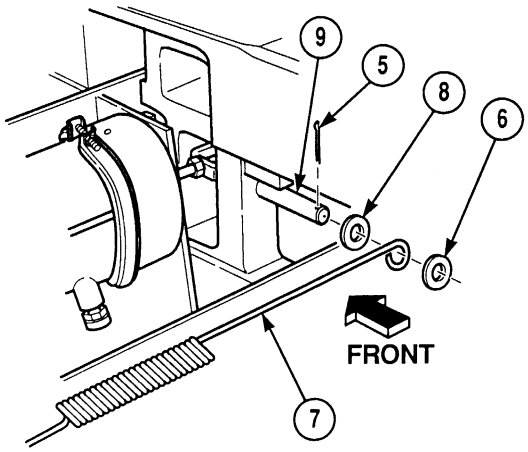


(8) Install upper locking pin (9) through load lock indicating pin (13).

(9) Install load lock indicating rod (13), washer (11) and cotter pin (10) on upper locking pin (9).



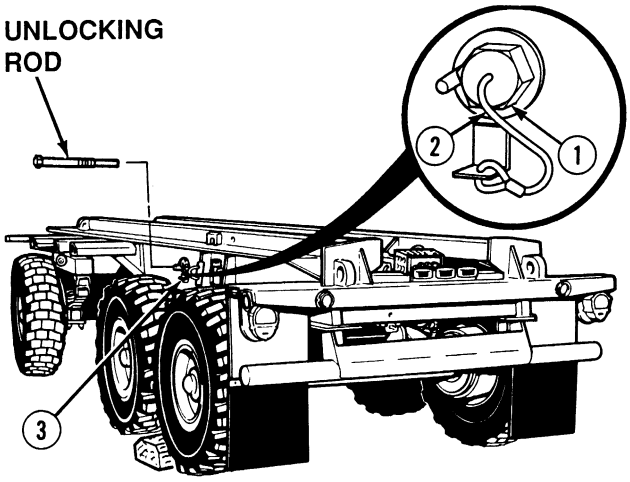
(10) Install washer (8), coil spring (7), washer (6) and cotter pin (5) on upper locking pin (9).



4-66. FLATRACK LOCK REPLACEMENT (CONT).

(11) Remove unlocking rod from threaded frame hole (3).

(12) Install cap (1) on cable (2) in threaded frame hole (3).



d. Follow-On Maintenance:

- Uncage flatrack lock chambers, (Para 4-65).
- Charge air system, (Para 2-22).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-67. FLATRACK AIR CHAMBER REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

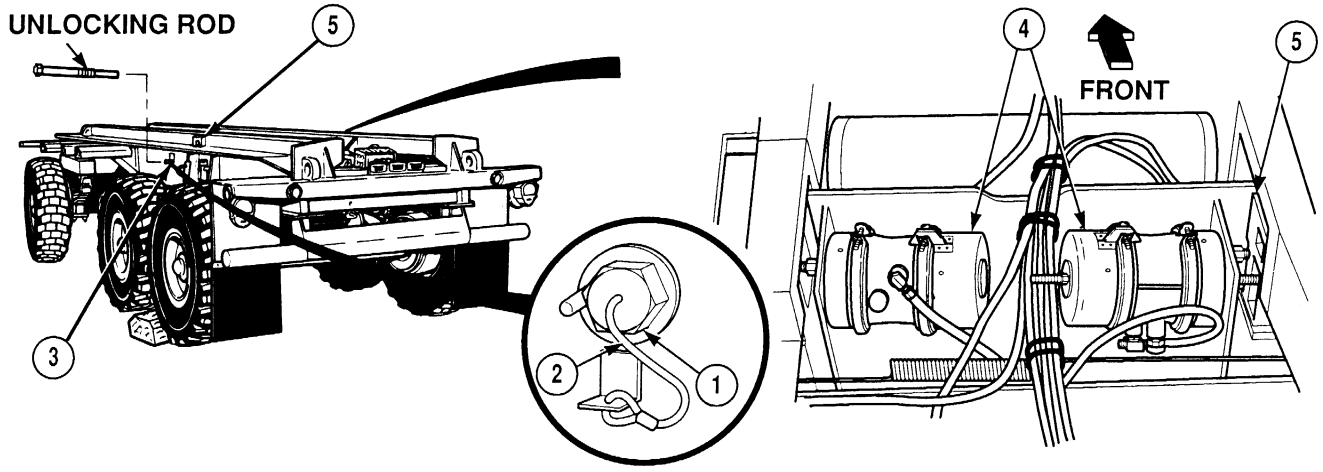
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Rod, Unlocking (Item 8, Appendix C)
Cap and Plug Set (Item 2, Appendix J)

Materials/Parts
Sealing Compound (Item 17, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (2) (Item 43, Appendix I)
Pin, Cotter (2) (Item 66, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Flatrack air chamber caged, (Para 4-65)

a. Removal.



WARNING

Brake chamber contains a spring that is under great pressure. Never work directly behind brake chamber or attempt to disassemble brake chamber. Serious injury or death could result to personnel.

NOTE

Both flatrack air chambers are removed the same way. Right side shown.

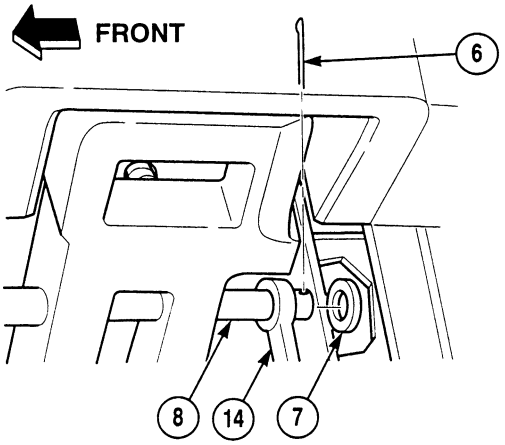
(1) Remove cap (1) on cable (2) from threaded frame hole (3).

(2) Install unlocking rod into opposite threaded frame hole (3) of flatrack air chamber (4) being replaced.

(3) Turn unlocking rod clockwise until flatrack lock (5) is retracted.

4-67. FLATRACK AIR CHAMBER REPLACEMENT (CONT).

(4) Remove cotter pin (6) and washer (7) from locking pin (8). Discard cotter pin.

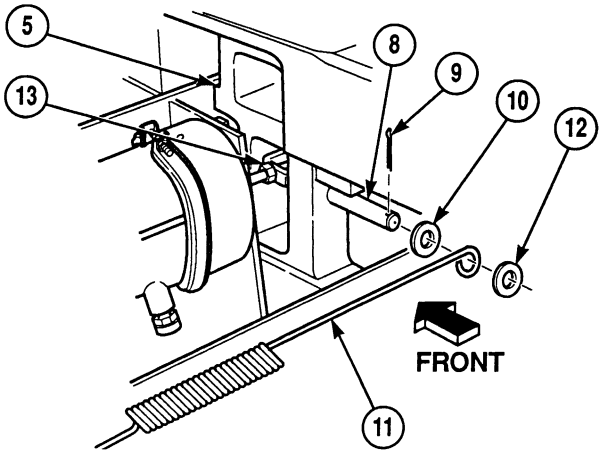


WARNING

Use care when removing springs. Springs are under tension and can act as projectiles when released. Injury to personnel may result.

(5) Remove cotter pin (9), washer (10), coil spring (11) and washer (12) from opposite end of locking pin (8). Discard cotter pin.

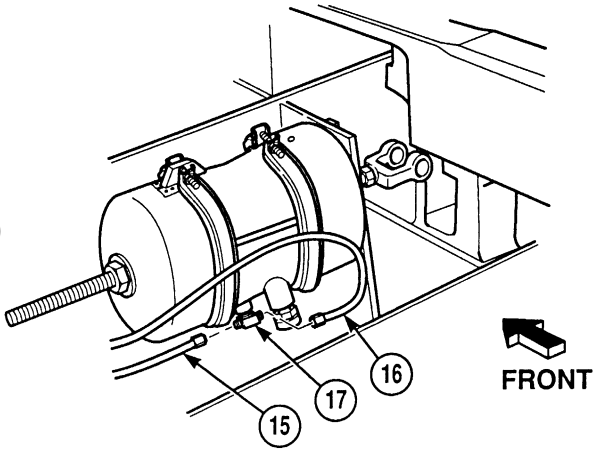
(6) Pull locking pin (8) from clevis (13), load lock (5) and lock indicating rod (14).



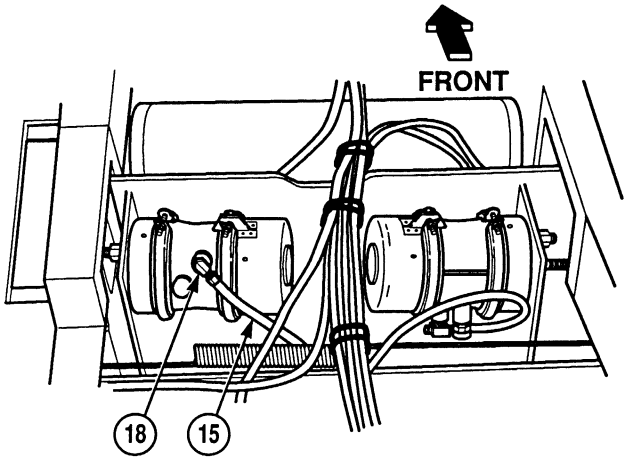
NOTE

- Tag and mark all air lines and hoses prior to removal.
- Cap and plug all air lines and connectors after removal.
- If removing left side load lock air chamber perform Steps (7) and (9), if removing right side load lock air chamber perform Steps (8) and (9).

(7) Disconnect air lines 2078 (15) and 2081 (16) from T-fitting (17).



(8) Disconnect air line 2078 (15) from elbow fitting (18).

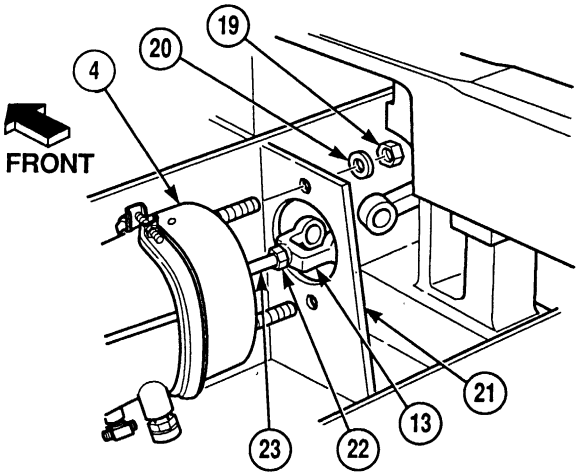


(9) Remove two locknuts (19), washers (20) and load lock air chamber (4) from frame (21). Discard locknuts.

NOTE

- Matchmark clevis and push rod shaft prior to removal of clevis.
- Perform Step (10) if clevis should be removed.

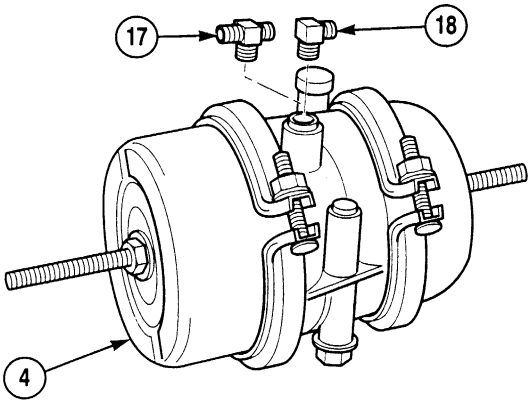
(10) Loosen locking nut (22) and remove clevis (13) from push rod (23).



NOTE

If removing right side load lock air chamber, remove elbow. If removing left side load lock air chamber, remove T-fitting.

(11) Remove elbow (18) or T-fitting (17) from load lock air chamber (4).



4-67. FLATRACK AIR CHAMBER REPLACEMENT (CONT).

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

CAUTION

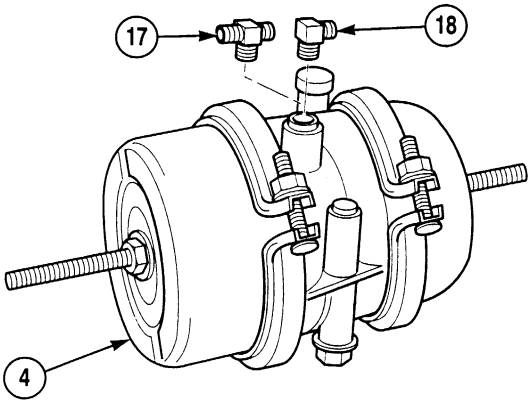
Use sealing compound sparingly and only on threads. Do not apply compound on hose connections. Damage to equipment may result.

NOTE

If installing right side load lock air chamber, install elbow. If installing left side load lock air chamber, install T-fitting.

(1) Apply sealing compound on threads of elbow (18) or T-fitting (17).

(2) Install elbow (18) or T-fitting (17) on load lock air chamber (4).

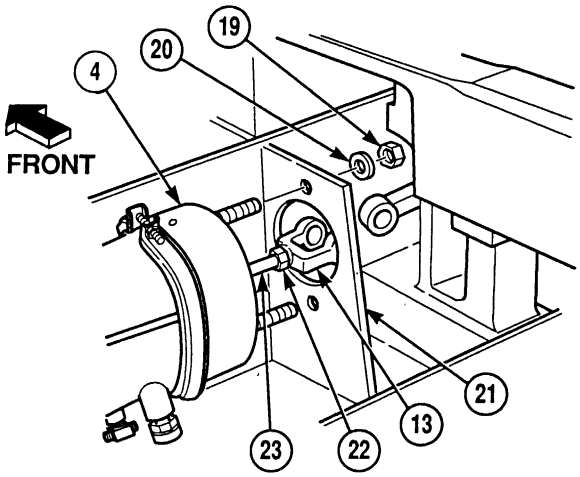


NOTE

- Perform Step (3) if clevis was removed.
- Install clevis in position noted prior to removal.

(3) Install clevis (13) on push rod (23). Tighten locking nut (22).

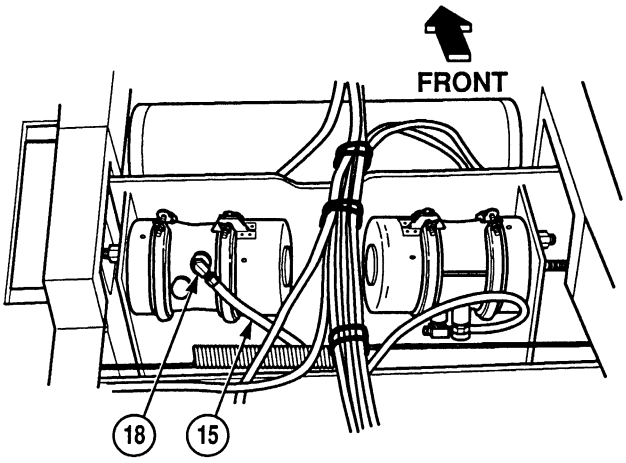
(4) Install load lock air chamber (4) on frame (21) with two washers (20) and locknuts (19).



NOTE

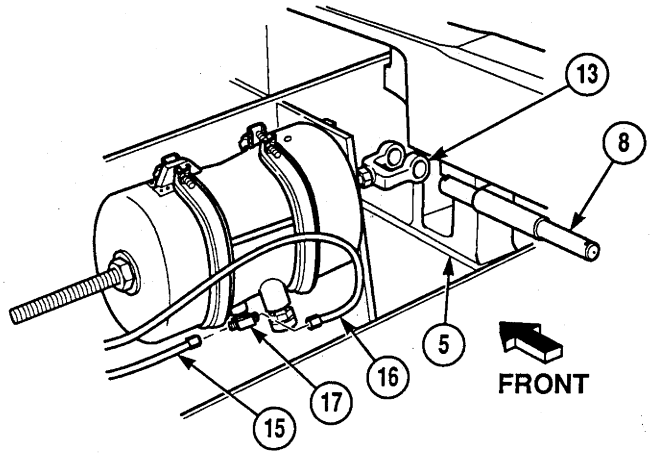
If installing right side load lock air chamber perform Step (5). If installing left side load lock air chamber, perform Step (6).

(5) Install air line 2078 (15) on elbow fitting (18).

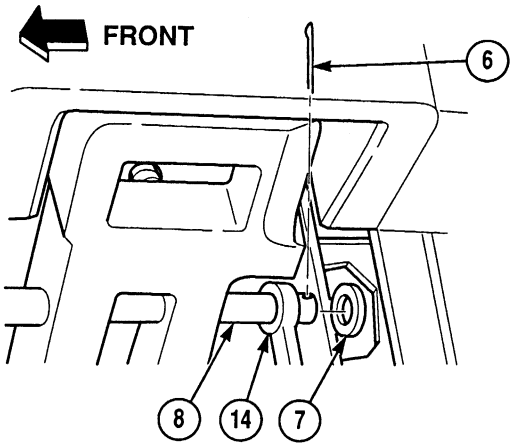


(6) Install air lines 2078 (15) and 2081 (16) on fitting (17).

(7) Install locking pin (8) through load lock (5) and clevis (13).



(8) Install load lock indicating rod (14), washer (7) and cotter pin (6) on locking pin (8).

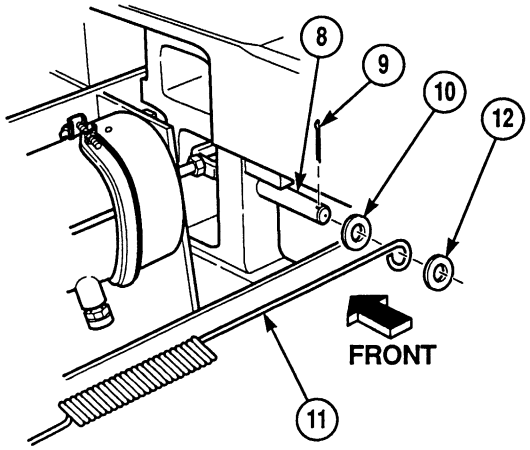


4-67. FLATRACK AIR CHAMBER REPLACEMENT (CONT).

WARNING

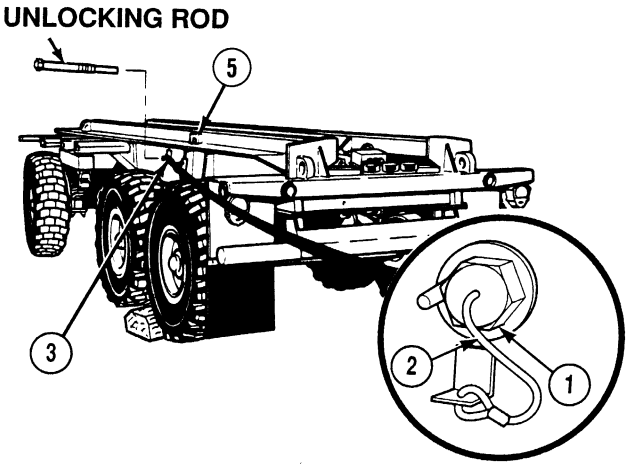
Use care when installing springs. Springs are under tension and can act as projectiles when released. Injury to personnel may result.

(9) Install washer (10), coil spring (11) and washer (12) on locking pin (8) with cotter pin (9).



(10) Turn unlocking rod to the left and remove from threaded hole (3) of flatrack load lock (5) to extend load lock.

(11) Install cap (1) on cable (2) in threaded hole (3).



c. Follow-On Maintenance:

- Uncage flatrack air chamber, (Para 4-65).
- Charge air system, (Para 2-22).
- Check for air leaks, (Para 4-7).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-68. STOWAGE BOX REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Equipment Condition
Wheels chocked, (Para 2-20)
Fire extinguisher removed, (Para 2-19)

Materials/Parts
Adhesive (Item 1, Appendix E)
Locknut (6) (Item 26, Appendix I)
Locknut (8) (Item 31, Appendix I)
Locknut (4) (Item 33, Appendix I)
Locknut (8) (Item 38, Appendix I)
Seal, Door (Item 79, Appendix I)

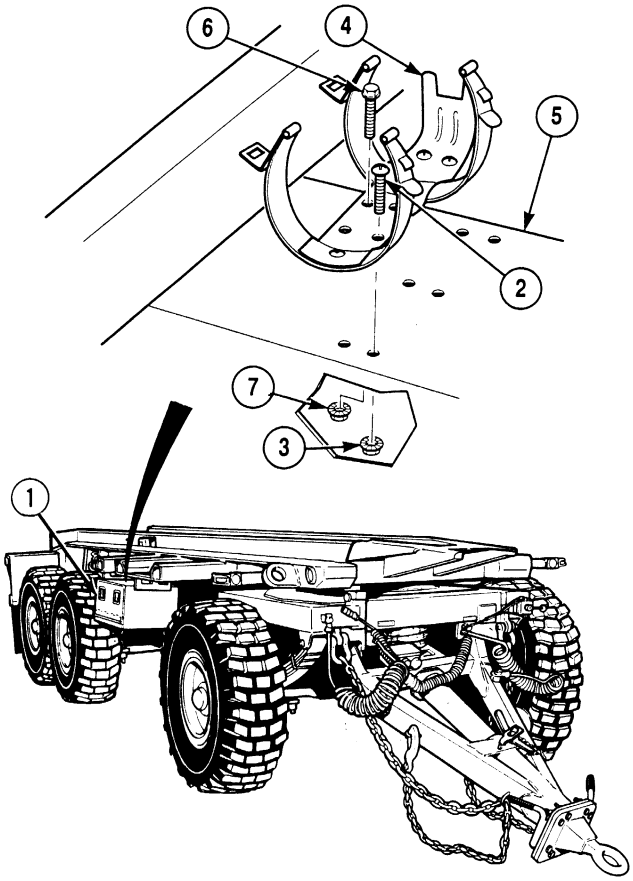
a. Removal.

(1) Open stowage box door (1).

(2) Remove four screws (2) and locknuts (3) from fire extinguisher bracket (4) and stowage box (5). Discard locknuts.

(3) Remove two screws (6) and locknuts (7) from fire extinguisher bracket (4) and stowage box (5). Discard locknuts.

(4) Remove fire extinguisher bracket (4) from stowage box (5).



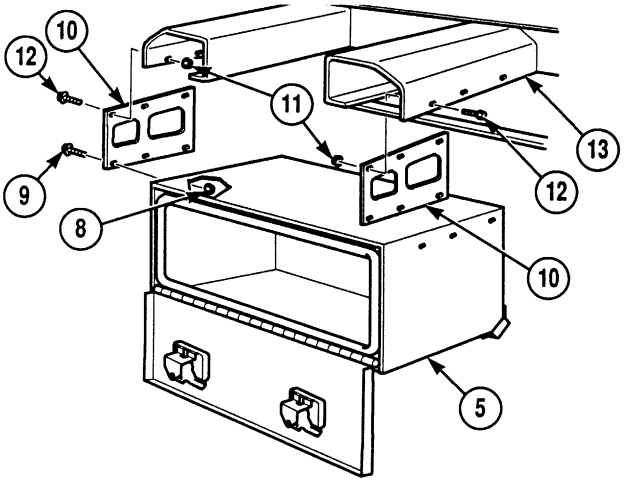
4-68. STOWAGE BOX REPAIR (CONT).

(5) Remove six locknuts (8), screws (9) and stowage box (5) from brackets (10). Discard locknuts.

NOTE

Perform Step (6) if brackets are damaged.

(6) Remove six locknuts (11), screws (12) and two brackets (10) from trailer (13). Discard locknuts.



b. Disassembly.

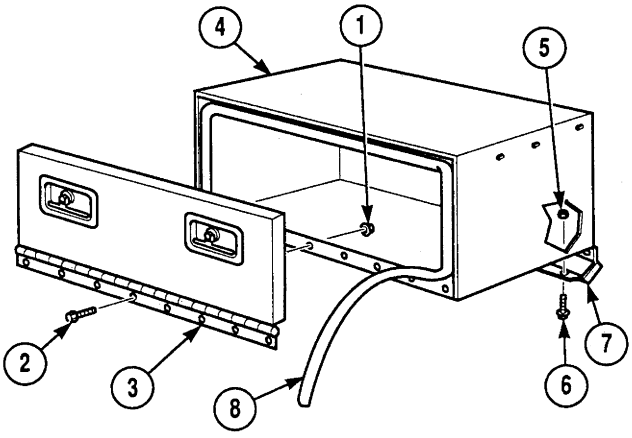
(1) Remove eight locknuts (1), screws (2) and door (3) from stowage box (4).

(2) Remove six locknuts (5), screws (6) and water guard (7) from stowage box (4). Discard locknuts.

NOTE

Perform Step (3) only if door seal is damaged.

(3) Remove door seal (8) from stowage box (4). Discard door seal.



c. Cleaning/Inspection.

(1) Visually inspect box for obvious cracks or damage that would impair operation.

(2) Remove dirt and mud from inside box.

d. Assembly.

NOTE

Perform Steps (1) and (2) if door seal was removed.

(1) Coat new door seal (8) with adhesive.

NOTE

Install door seal so that seam of door seal is on the bottom side of the box assembly.

(2) Install door seal (8) on stowage box (4).

(3) Install water guard (7) on stowage box (4) with six screws (6) and locknuts (5).

(4) Install door (1) on stowage box (4) with eight screws (3) and locknuts (2).

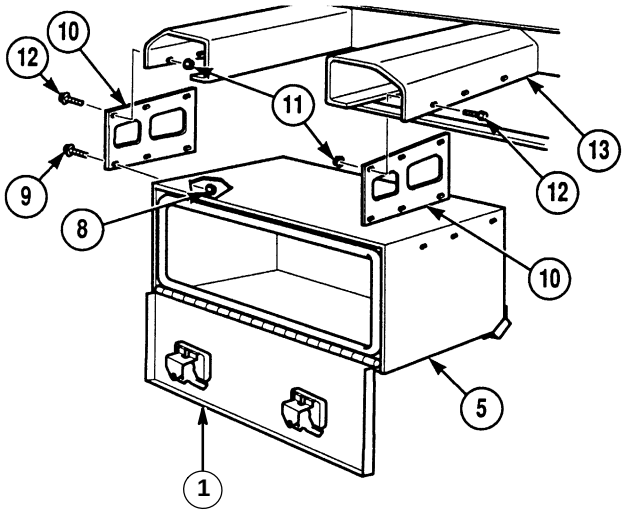
e. Installation.

NOTE

Perform Step (1) if brackets were removed.

(1) Install brackets (10) on trailer (13) with six screws (12) and locknuts (11).

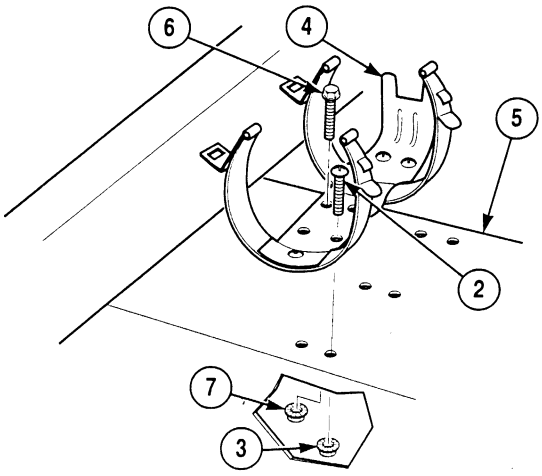
(2) Install stowage box (5) on bracket (10) with six screws (9) and locknuts (8).



(3) Install fire extinguisher bracket (4) on stowage box (5) with two screws (6) and locknuts (7).

(4) Install four screws (2) and locknuts (3) on stowage box (5) and fire extinguisher bracket (4).

(5) Close stowage box door (1).



f. Follow-On Maintenance:

- Install fire extinguisher, (Para 2-19).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-69. BUMPER REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Lifting Device (2) Minimum Capacity 120 lbs (55 kg)

Material/Parts
Locknut (4) (Item 22, Appendix I)

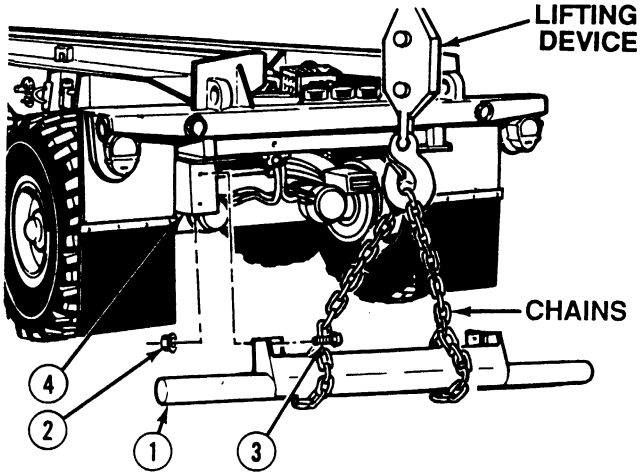
Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.

WARNING

Bumper weighs 120 lbs (54 kg). Attach two suitable lifting devices prior to removal to prevent possible injury to personnel.



(1) Attach lifting device on bumper (1).

(2) Remove four locknuts (2) and screws (3) from bumper (1) and frame (4). Discard locknuts.

(3) With the aid of an assistant, move bumper (1) away from frame (4).

(4) Remove lifting device from bumper (1).

b. Installation.

WARNING

Bumper weighs 120 lbs (54 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(1) Attach lifting device on bumper (1).

(2) With the aid of an assistant, position bumper (1) against frame (4) with lifting devices and align holes.

(3) Install bumper (1) on frame (4) with four screws (3) and locknuts (2).

(4) Remove lifting device from bumper (1).

c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-70. FLATRACK TRANSPORT PIN AND SPRING CLIP REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

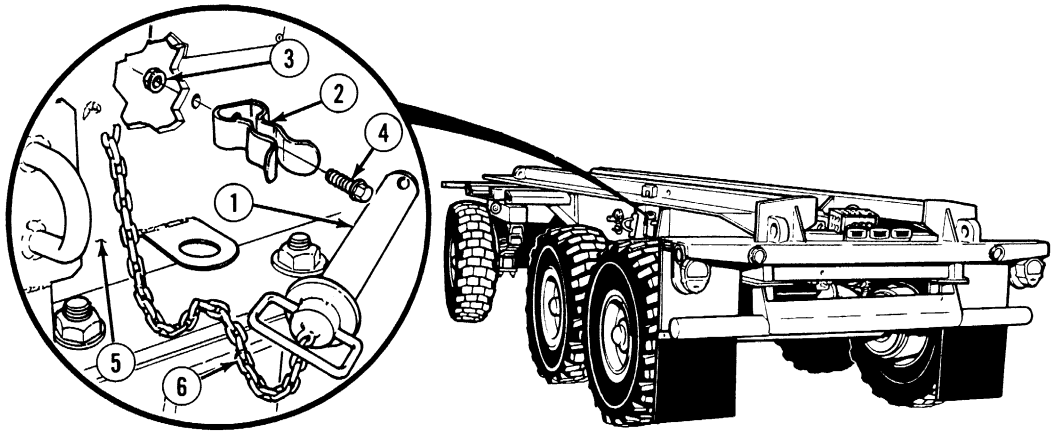
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Brush, Wire Scratch (Item 1, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Grinder, Portable Electrical (Item 14, Appendix J)
Respirator, Air Filtering (Item 36, Appendix J)
Torch Set, Cutting and Welding (Item 51, Appendix J)

Materials/Parts
Locknut (Item 33, Appendix I)

References
TB 43-0209
TC 9-237

Equipment Condition
Wheels chocked, (Para 2-20)

a. Removal.



NOTE

Both pins are removed the same way.

(1) Remove transport pin (1) from spring clip (2).

(2) Remove locknut (3), screw (4) and spring clip (2) from frame (5). Discard locknut.

(3) Cut chain (6) and remove transport pin (1) from frame (5).

(4) Cut and remove chain (6) from frame (5).

4-70. FLATRACK TRANSPORT PIN AND SPRING CLIP REPLACEMENT (CONT).

b. Installation.

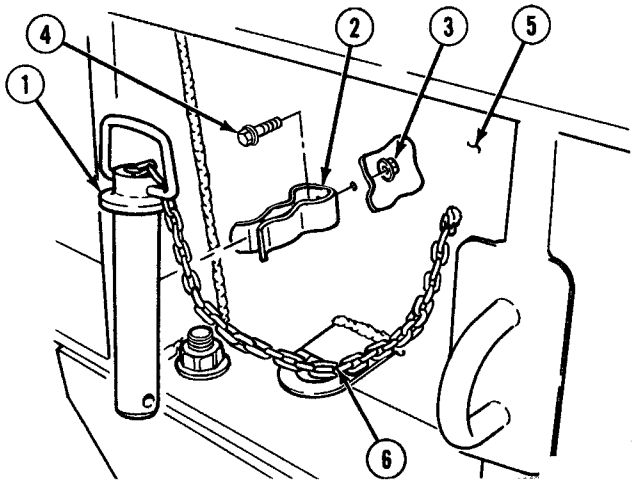
WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.

(1) Using a wire scratch brush, remove paint from area four in. (102 mm) around welding points on frame (5) and transport pin (1).

WARNING

Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.



(2) Weld chain (6) on transport pin (1).

(3) Weld chain (6) on frame (5).

(4) Install spring clip (2) on trailer frame (5) with screw (4) and locknut (3).

(5) Install transport pin (1) on spring clip (2).

c. Follow-On Maintenance:

- Spot paint exposed areas, (TB 43-0209).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-71. REFLECTOR/REFLECTOR BRACKET/DATA PLATE REPLACEMENT.

This task covers:

a. Reflector Replacement (Front Yellow)
b. Reflector Replacement (Front White)
c. Reflector Replacement (Rear Red)
d. Reflector Bracket Replacement
e. Data Plate Replacement
f. Follow-On Maintenance

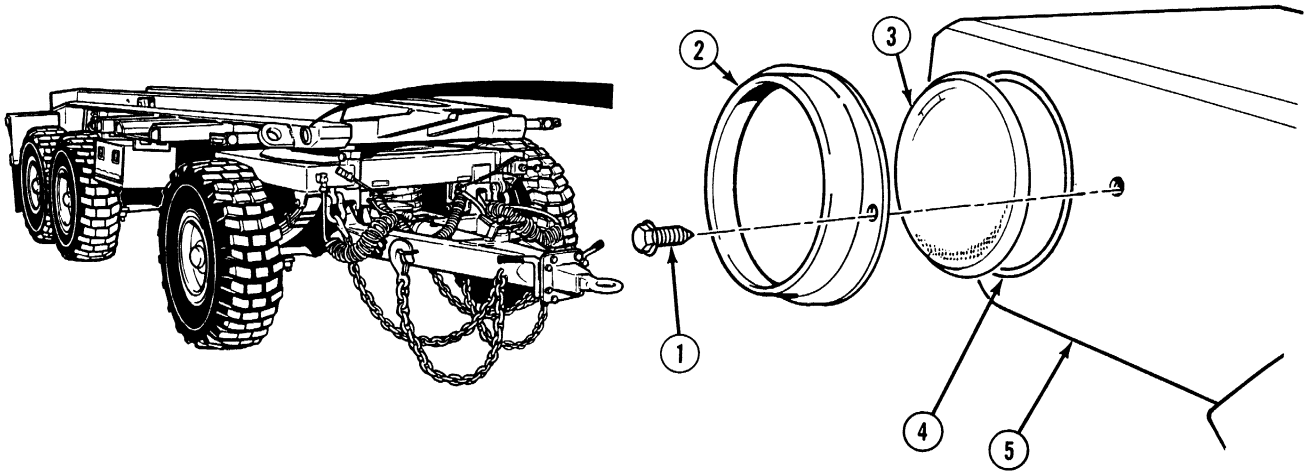
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive, (Item 50, Appendix J)
Drill Set, Twist (Item 8, Appendix J)
Drill, Electric, Portable (Item 7, Appendix J)
Socket Set, 3/8 in. (Item 40, Appendix J)

Materials/Parts
Locknut (Item 31, Appendix I)
Locknut (Item 33, Appendix I)
Screw, Drive (Item 75, Appendix I)
Screw, Self Tapping (Item 76, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Reflector Replacement (Front Yellow).



NOTE

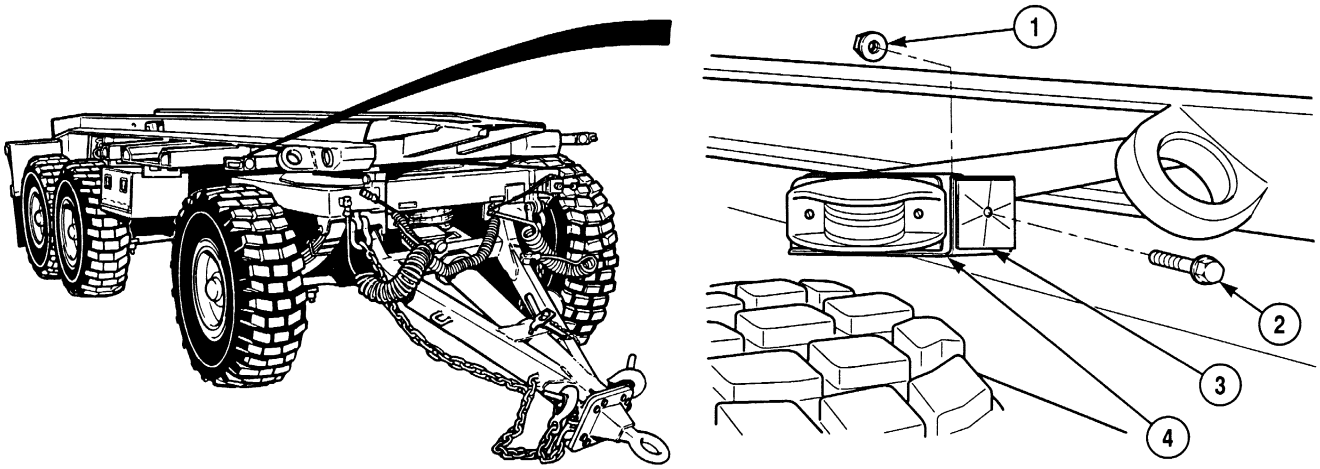
Both reflectors are removed and installed the same way.

(1) *Removal.* Remove two screws (1), bracket (2), reflector (3) and gasket (4) from trailer (5).

(2) *Installation.* Install gasket (4), reflector (3) and bracket (2) with two screws (1) on trailer (5).

4-71. REFLECTOR/REFLECTOR BRACKET/DATA PLATE REPLACEMENT (CONT).

b. Reflector Replacement (Front White).



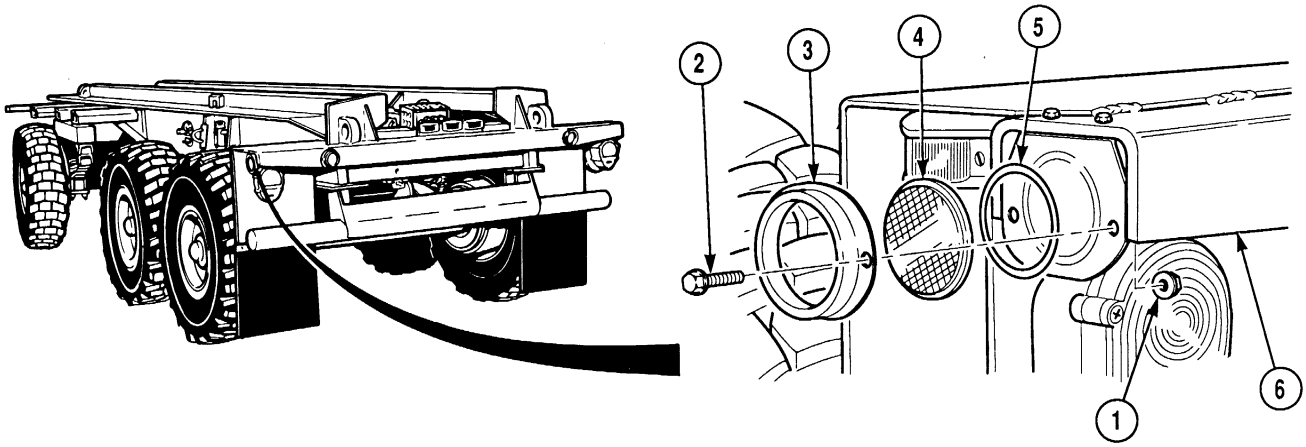
NOTE

Both reflectors are removed and installed the same way.

(1) *Removal.* Remove locknut (1), screw (2) and reflector (3) from bracket (4). Discard locknut.

(2) *Installation.* Install reflector (3) on bracket (4) with screw (2) and locknut (1).

c. Reflector Replacement (Rear Red).



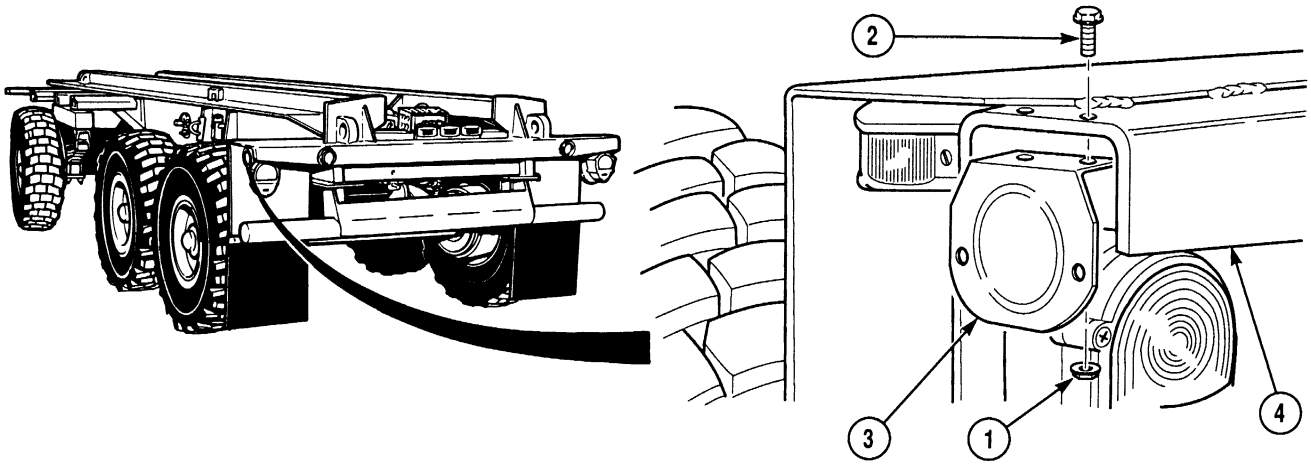
NOTE

Both reflectors are removed and installed the same way.

(1) *Removal.* Remove two locknuts (1), screws (2), bracket (3), reflector (4) and gasket (5) from trailer (6). Discard locknuts.

(2) *Installation.* Install gasket (5), reflector (4), bracket (3), two screws (2) and locknuts (1) on trailer (6).

d. Reflector Bracket Replacement.



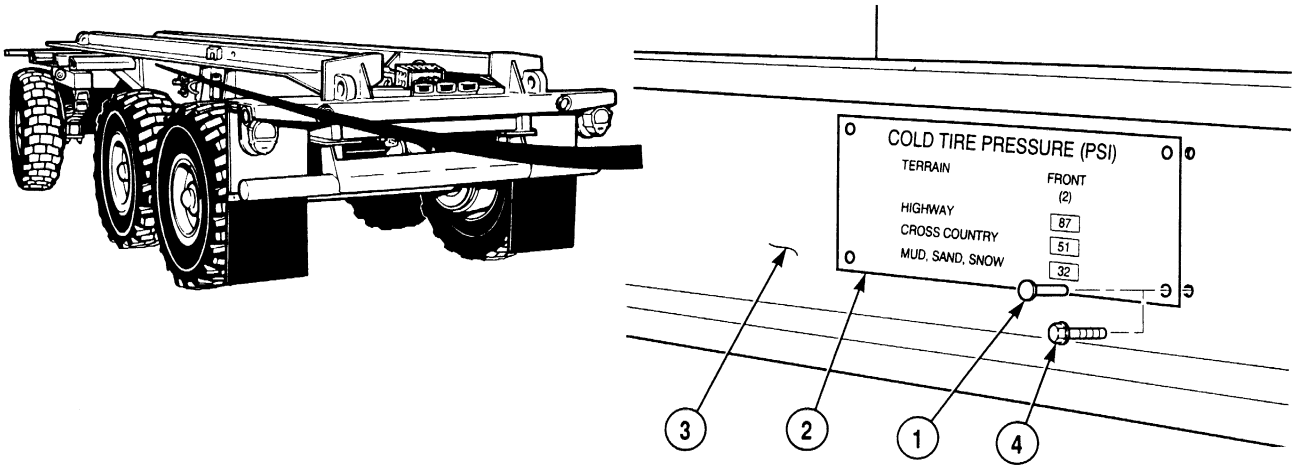
NOTE

Both brackets are removed and installed the same way.

(1) *Removal*. Remove two locknuts (1), screws (2) and mounting bracket (3) from trailer (4). Discard locknuts.

(2) *Installation*. Install mounting bracket (3) on frame (4) with two screws (2) and locknuts (1).

e. Data Plate Replacement.



NOTE

- Number of rivets may vary depending on which data plate is being replaced.
- If data plate is secured with screws, proceed to Step (b).

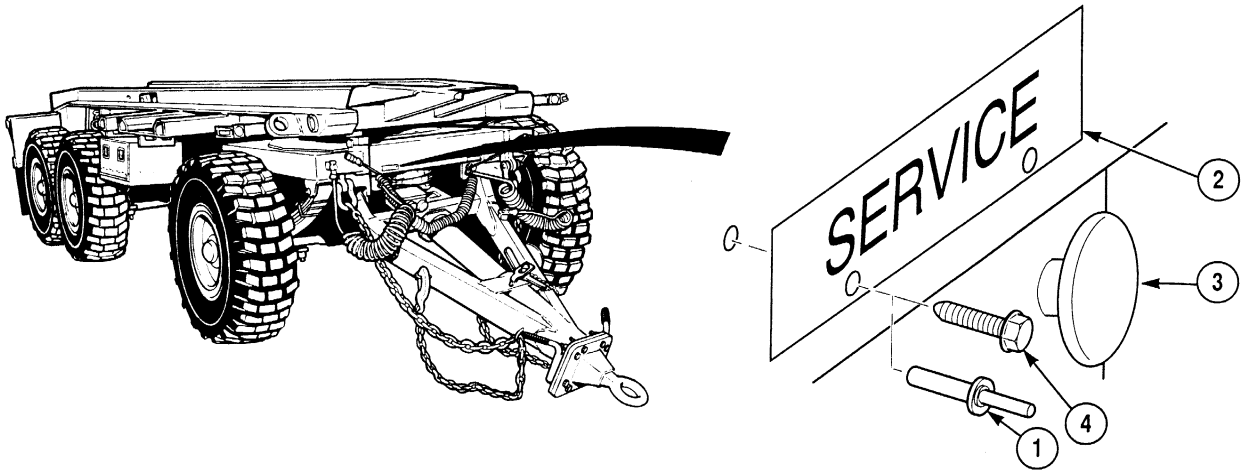
(1) *Removal.*

(a) Drill out pop rivets (1) and remove data plate (2) from trailer (3).

(b) Remove screws (4) and data plate (2) from trailer (3). Discard screws.

4-71. REFLECTOR/REFLECTOR BRACKET/DATA PLATE REPLACEMENT (CONT).

(2) *Installation.*



NOTE

Number of screws or rivets may vary depending on which data plate is being replaced.

(a) Install data plate (2) on trailer (3) with screws (4).

(b) Install data plate (2) on trailer (3) with rivets (1).

f. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

Section VI. PREPARATION FOR STORAGE OR SHIPMENT

4-72. GENERAL.

Commanders are responsible that all material issued or assigned to their command is maintained in a serviceable condition, properly cared for, and that personnel under their command comply with technical instructions. Lack of time, lack of trained personnel or lack of proper tools may result in a unit being incapable of performing maintenance for which it is responsible. In such cases, Unit commanders, with approval of Major Commanders, may place material that is beyond the maintenance capability of the Unit in administrative storage or return it to supply agencies. When preparing the trailer for administrative storage, the Unit commander will be responsible for processing the material, including all tools and equipment, in such a manner as to protect it against corrosion, deterioration and physical damage during shipment or periods of administrative storage.

4-73. STORAGE INSTRUCTIONS.

a. Short Term Storage. No special provisions are required for short term storage of the trailer. The unit should be operated at intervals no greater than 90 days.

b. Long Term Storage. To prepare the unit for long term storage:

(1) Lubricate all fitting and oil can points in accordance with Paragraph 4-8.

(2) Wipe a thin coat of grease (Item 12, Appendix E) on exposed portion of drawbar.

(3) Drain air reservoirs completely, (Para 2-21).

4-74. SHIPPING INSTRUCTIONS.

a. Preparation for Shipment. Preservation and other protective measures taken in the preparation of material and accompanying tools and equipment for shipment must be sufficient to protect the trailer against deterioration and physical damage during shipment.

b. Army Shipping Documents. Prepare all Army shipping documents accompanying freight in accordance with AR 725-50.

4-75. RAIL SHIPPING INSTRUCTIONS.

This task covers:

a. Preparation Prior to Rail Shipment
b. Marking
c. Preparation After Rail Shipment
d. Follow-On Maintenance

INITIAL SETUP

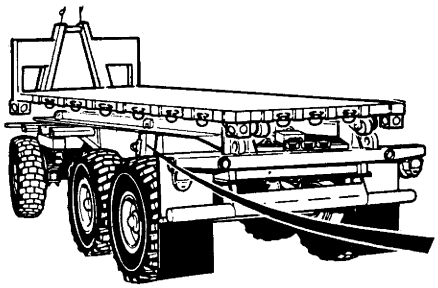
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

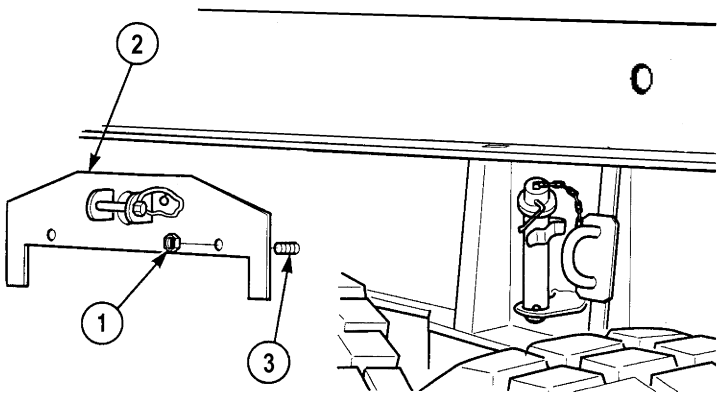
Material/Parts
Locknut (4) (Item 22, Appendix I)

References
AR 746-1
TM 9-2320-364-10

Equipment Condition
Wheels chocked, (Para 2-20)
Flatrack locked to trailer, (Para 2-13)

a. Preparation Prior to Rail Shipment.





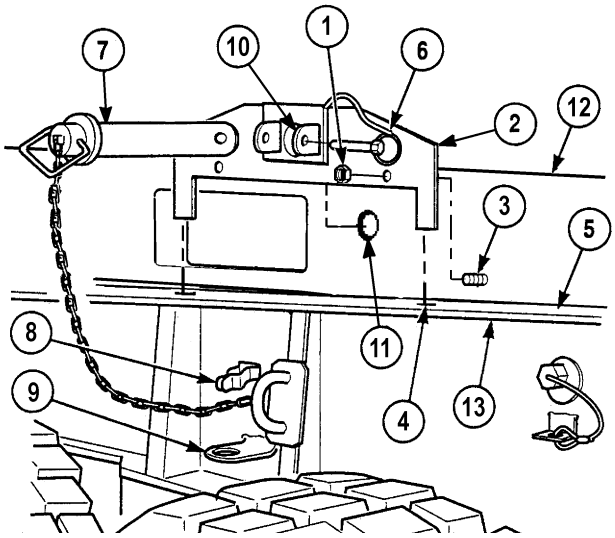
WARNING

Rail load locking pins must be installed to lock flatrack to trailer for rail transport. Failure to use locking pins to lock flatrack to trailer could cause severe injury or death to personnel.

NOTE

- Right and left rail-load locking pins are installed the same way.
- Refer to TM 9-2320-364-10 and insure that the flatrack rollers are against the stops at rear of trailer. This will help to align the holes in the trailer and flatrack.

(1) Remove two locknuts (1) and reinforcement plate (2) from studs (3). Discard locknuts.



(2) Install reinforcement plate (2) in holes (4) in trailer chassis (5).

(3) Remove locking pin (6) from reinforcement plate (2).

(4) Remove transport pin (7) from clip (8) and bracket (9).

(5) Insert transport pin (7) through hole (10) in reinforcement plate (2), hole (11) in flatrack (12) and hole (not shown) in trailer rail (13).

(6) Install locking pin (6) through two tabs on reinforcement plate (2) to secure transport pin (7).

(7) Repeat steps (1) through (6) for remaining transport pin (7).

b. Marking. Refer to AR 746-1 for Marking of Supplies for Shipment.

c. Preparation After Rail Shipment.

(1) Remove locking pin (6) from reinforcement plate (2).

(2) Remove transport pin (7) from hole (11) in flatrack (12), hole (10) in reinforcement plate (2) and hole (not shown) in trailer rail (13).

(3) Install transport pin (7) on bracket (9) and clip (8).

(4) Remove reinforcement plate (2) from holes (4) in trailer chassis (5).

(5) Install reinforcement plate (2) on studs (3) with two locknuts (1).

(6) Install locking pin (6) on reinforcement plate (2).

(7) Repeat Steps (1) through (6) for remaining transport pin (7).

d. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT.

This task covers:

a. Stacking b. Unstacking c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanics: Automotive (Item 50, Appendix J)
Strap, Tiedown (2) (Item 11, Appendix C)
Chains, Lifting
Load Binder (4) (Item 5, Appendix C)
Lifting Device Minimum Capacity 10 Tons (9074 kg)

Personnel Required
Two

Materials/Parts
Locknuts (4) (Item 42, Appendix I)

Equipment Condition
Flatracks removed, (TM 9-2320-364-10)
Parking brakes applied on lower trailer, (Para 2-15)
Wheels chocked on lower trailer, (Para 2-20)
Drawbars retracted on both trailers, (Para 2-10)
Air systems on both trailers charged with air, (Para 2-22)

a. Stacking.

WARNING

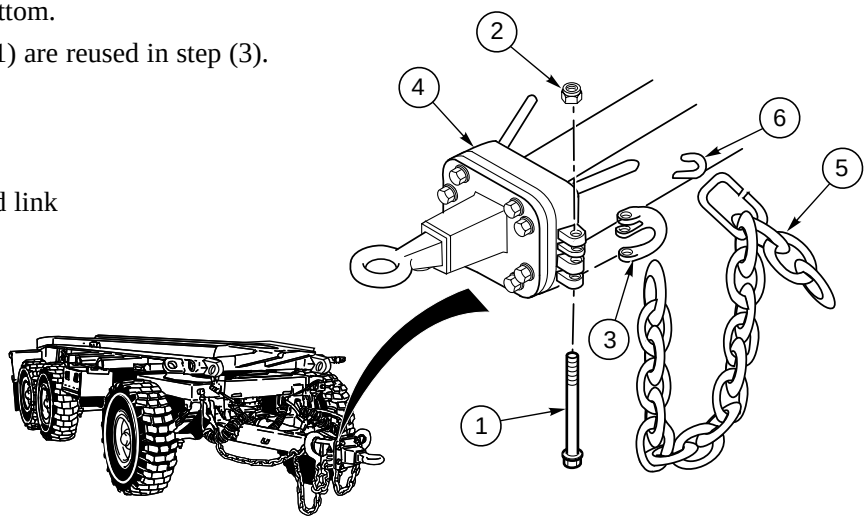
- Stacking of trailers is done only for Air (C-141, C-5A, C-17 aircraft), Sea (LACV-30 and larger vessels) and Rail (50 in. [1.27 m] high rail car) transport. The stacking of trailers is not to be used for highway transport. Use of this procedure for highway transport may cause damage to equipment and serious injury or death to personnel.
- Trailer stacking procedure must be done with both trailers on a level, stable surface or serious injury or death to personnel could result.

NOTE

- Right and left safety chains are removed the same way, left side shown.
- Steps (1) through (4) are for the trailer that will be on top. Steps (5) through (8) are for the trailer that will be on the bottom.
- Locknuts removed in step (1) are reused in step (3).

(1) Remove screw (1), locknut (2), and link coupling (3) from plate (4).

(2) Remove safety chain (5) from link coupling (3) and hook (6).

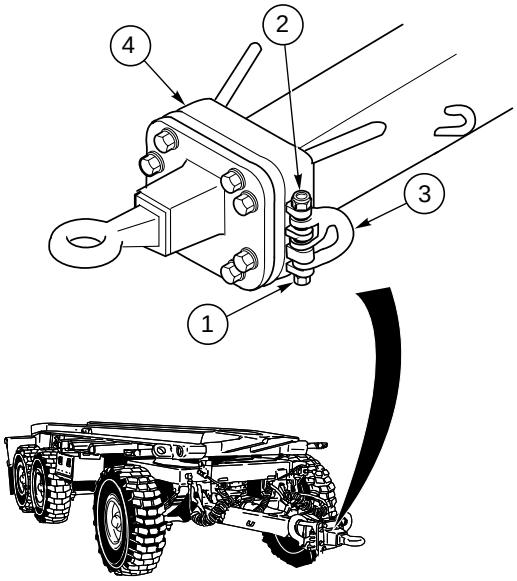


(3) Install link coupling (3) on plate (4) with screw (1) and locknut (2).

(4) Repeat Steps (1) through (3) for right side.

(5) Remove safety chains from bottom trailer (Para 4-60).

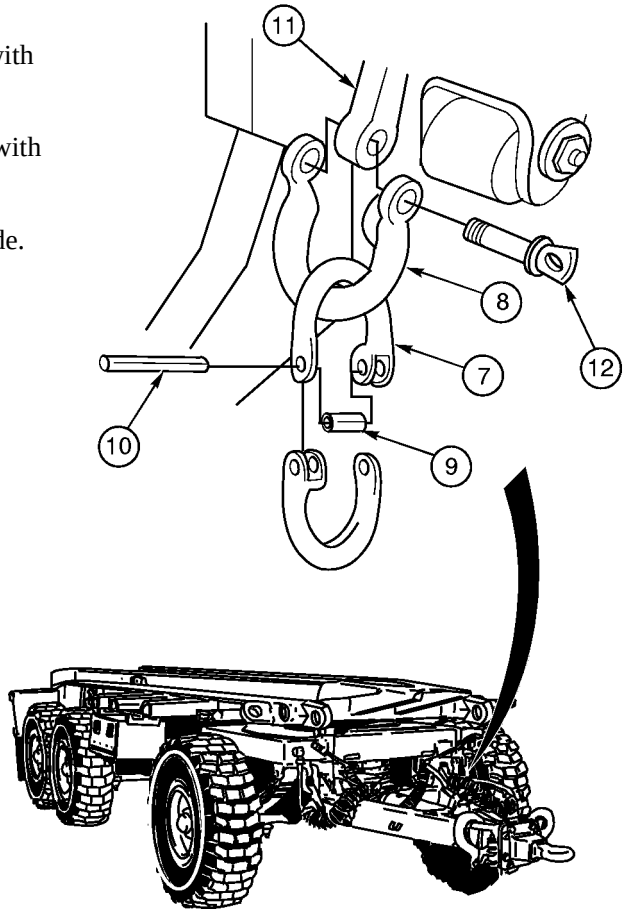
(6) Install link coupling (3) on plate (4) with screw (1) and locknut (2).



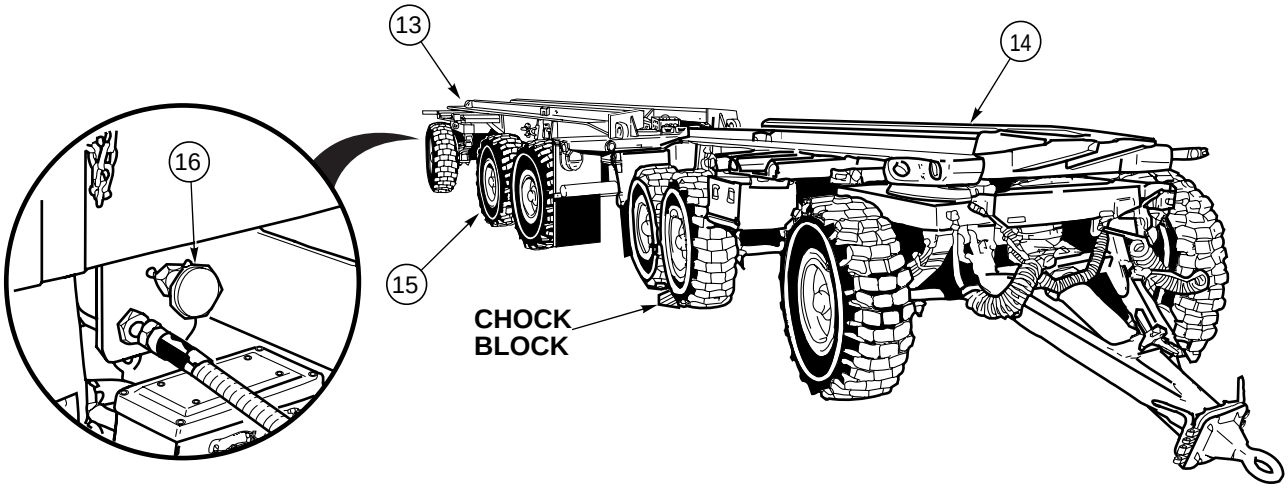
(7) Install link coupling (7) on shackle (8) with stud assembly (9) and load pin (10).

(8) Install shackle (8) on running gear (11) with pin (12).

(9) Repeat Steps (6), (7) and (8) for right side.



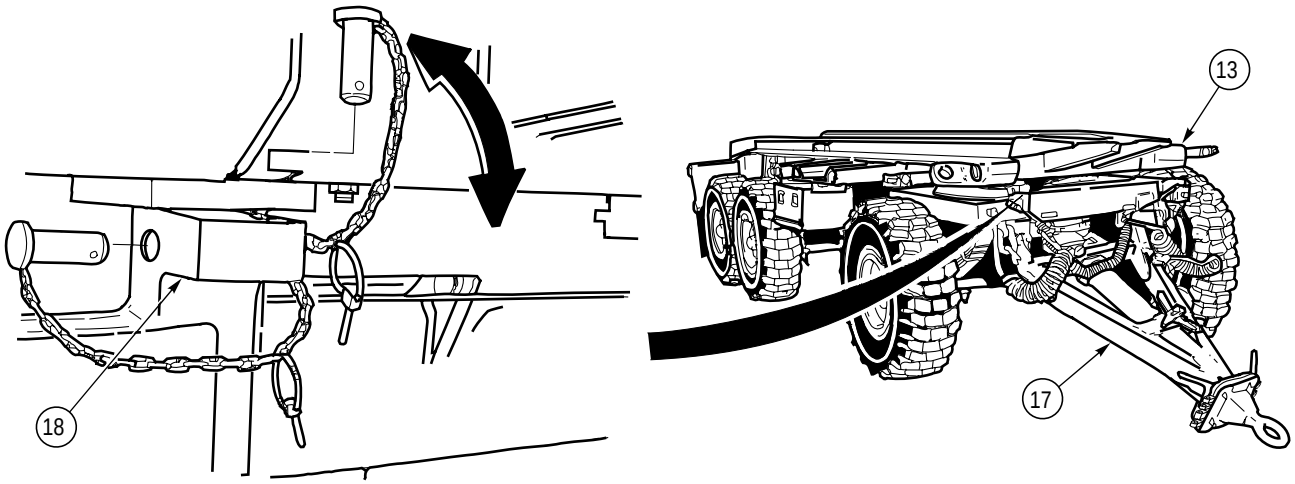
4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



(10) Position trailer (13) (upper trailer) to trailer (14) (lower trailer) back to back.

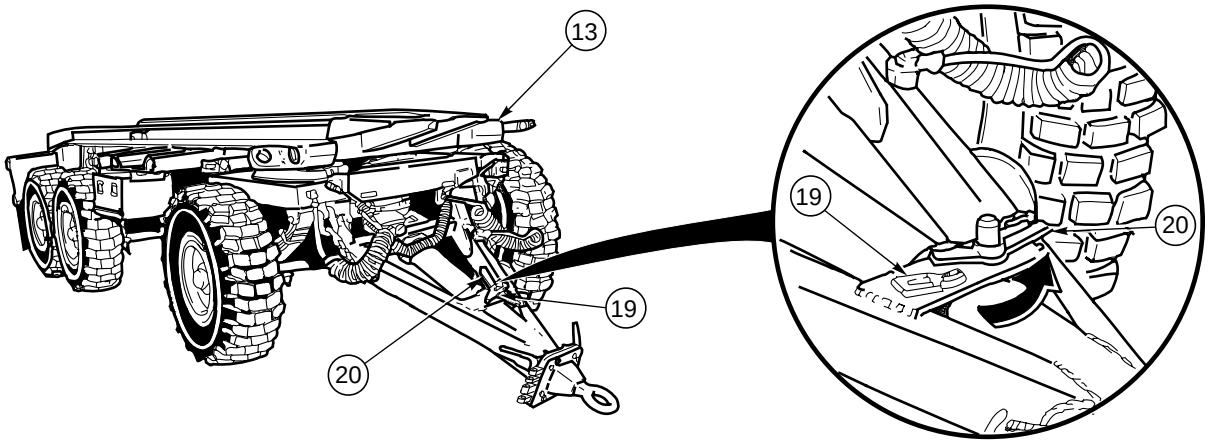
(11) Chock tires (15) on trailer (13), (Para 2-20).

(12) Release brakes (16) on trailer (13), (Para 2-15).



(13) Lower drawbar (17) on trailer (13), (Para 2-23).

(14) Unpin trailer turntable (18) on trailer (13), (Para 2-12).

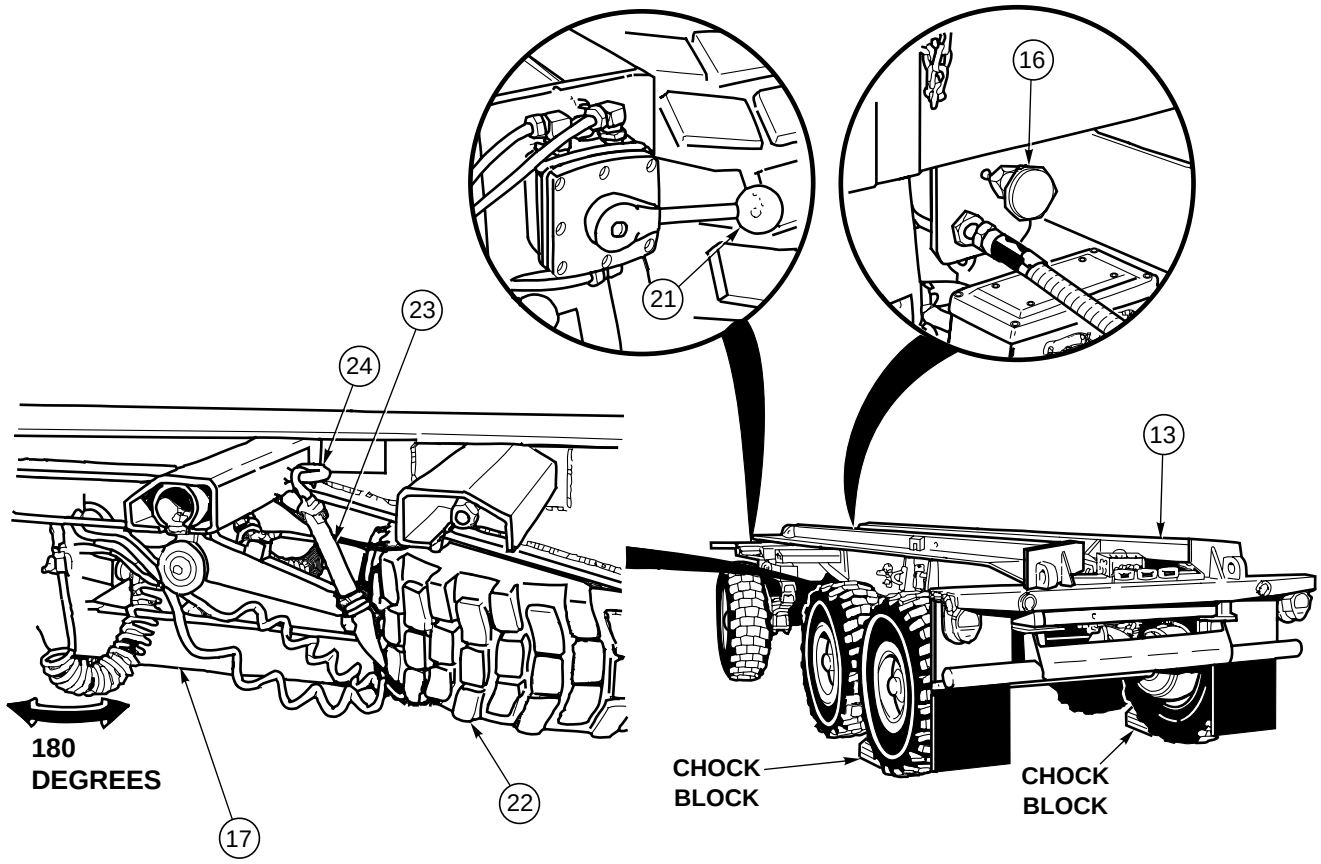


NOTE

The chain on locking pin must be positioned towards the rear of the drawbar.

(15) Lift locking gate (19) and rotate drawbar locking pin (20) on trailer (13) 90 degrees.

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



CAUTION

Drawbar and turntable may only be rotated 180 degrees (back and forth in the same direction). Drawbar may not be rotated 360 degrees. Rotating the drawbar and turntable 360 degrees will cause damage to the connections on the drawbar and turntable.

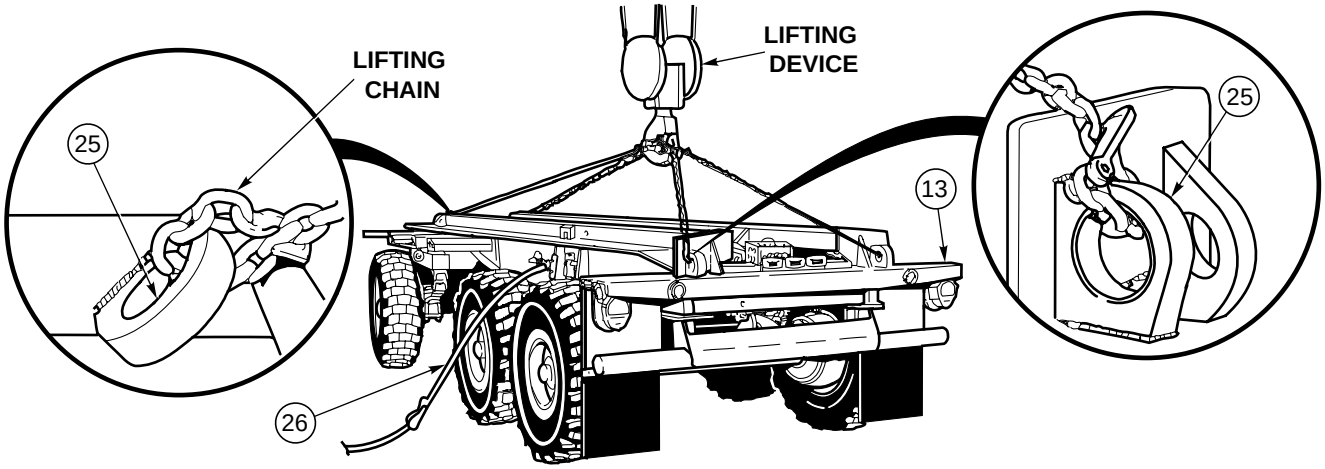
(16) Rotate drawbar (17) on trailer (13) 180 degrees towards the left until the drawbar is pointed to the rear of trailer (13).

(17) Move drawbar assist lever (21) to RAISE position and raise drawbar (17) on trailer (13) until it contacts spare tire (22). Return drawbar air assist lever (21) to NEUTRAL position.

(18) Refer to Para 2-15 and apply parking brake (16) on trailer (13).

(19) Route ratchet strap (23) under drawbar (17) of trailer (13) and attach ends of ratchet strap (23) to tiedown rings (24) on trailer (13).

(20) Tighten ratchet strap (23) to hold drawbar (17) securely against spare tire (22) of trailer (13).



WARNING

- Trailer weighs 16,500 lb (7,491 kg). Attach suitable lifting device to prevent possible injury to personnel.
- All personnel must stay clear of trailers while lifting is in progress. Failure to stay clear of trailers while lifting could cause serious injury or death to personnel.

NOTE

If trailer is not level while lifting, lower trailer and adjust lifting chains.

(21) Attach lifting chains and lifting device to four lifting eyes (25) on front and rear of trailer (13).

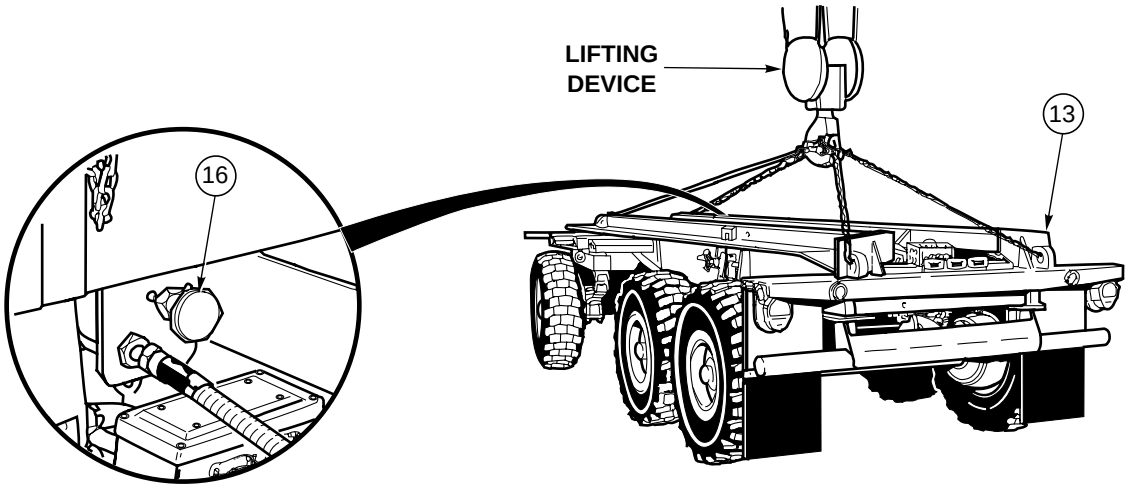
NOTE

- Ratchet strap is used for a guiding strap.
- Attach a guiding strap to trailer to aid in controlling the trailer while lifting.

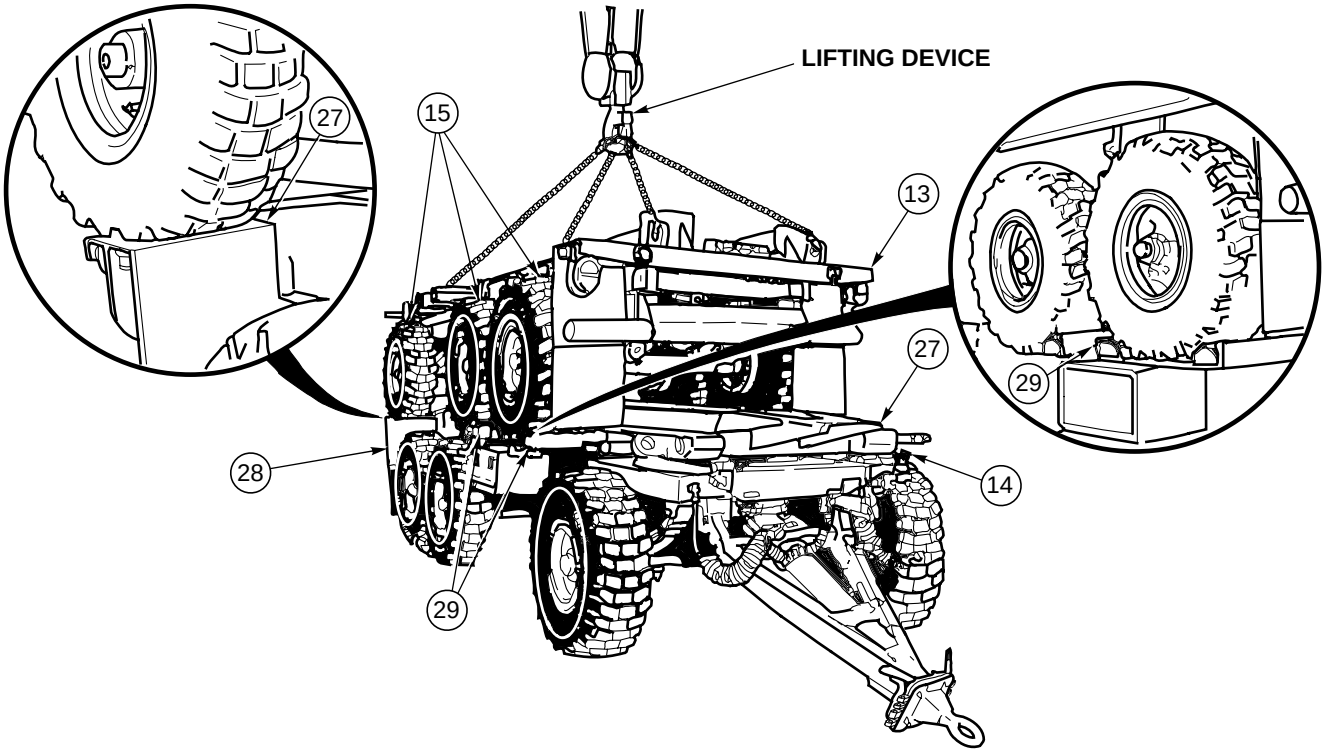
(22) Attach guide strap (26) to trailer (13).

(23) With the aid of an assistant, lift trailer (13) approximately six in. (15.25 cm) off ground and visually inspect that trailer will lift in a level manner.

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



(24) Release parking brakes (16) on trailer (13) (Para 2-15).



(25) If trailer (13) is level, continue lifting until tires (15) of trailer (13) are approximately one ft (30.5 cm) above deck (27) of trailer (14).

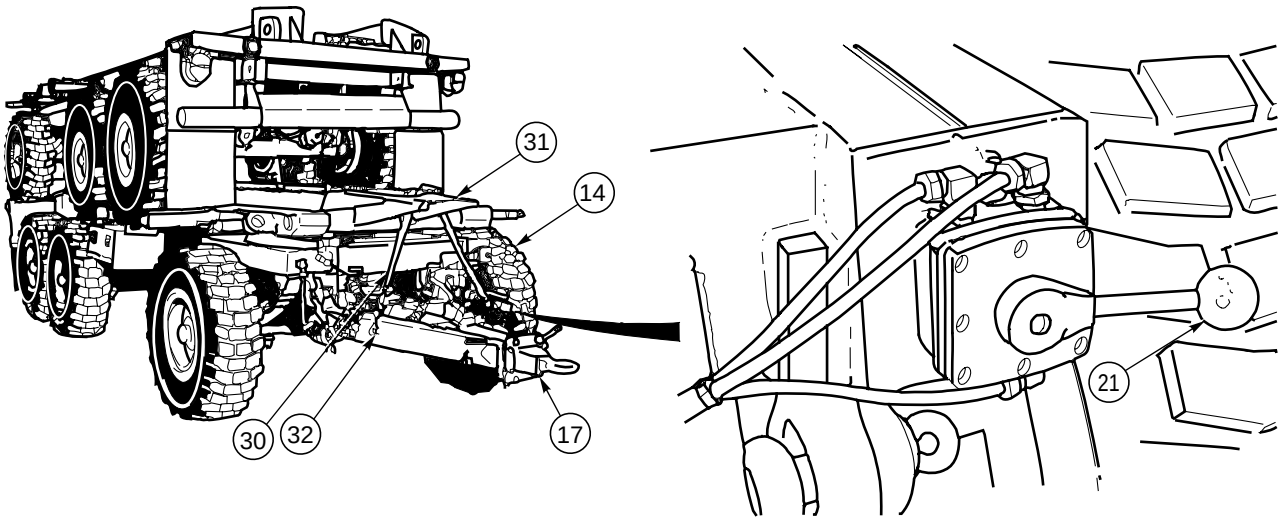
(26) Move trailer (13) over trailer (14) until front tires (15) of trailer (13) are over rear fenders (28) of trailer (14) and rear tires (15) of trailer (13) are aligned with brackets (29) on trailer (14).

(27) Lower trailer (13) onto trailer (14).

(28) Visually inspect that trailer (13) is seated evenly on trailer (14).

(29) Apply parking brakes (16) on trailer (13) (Para 2-15) and stow wheel chocks (Para 2-20).

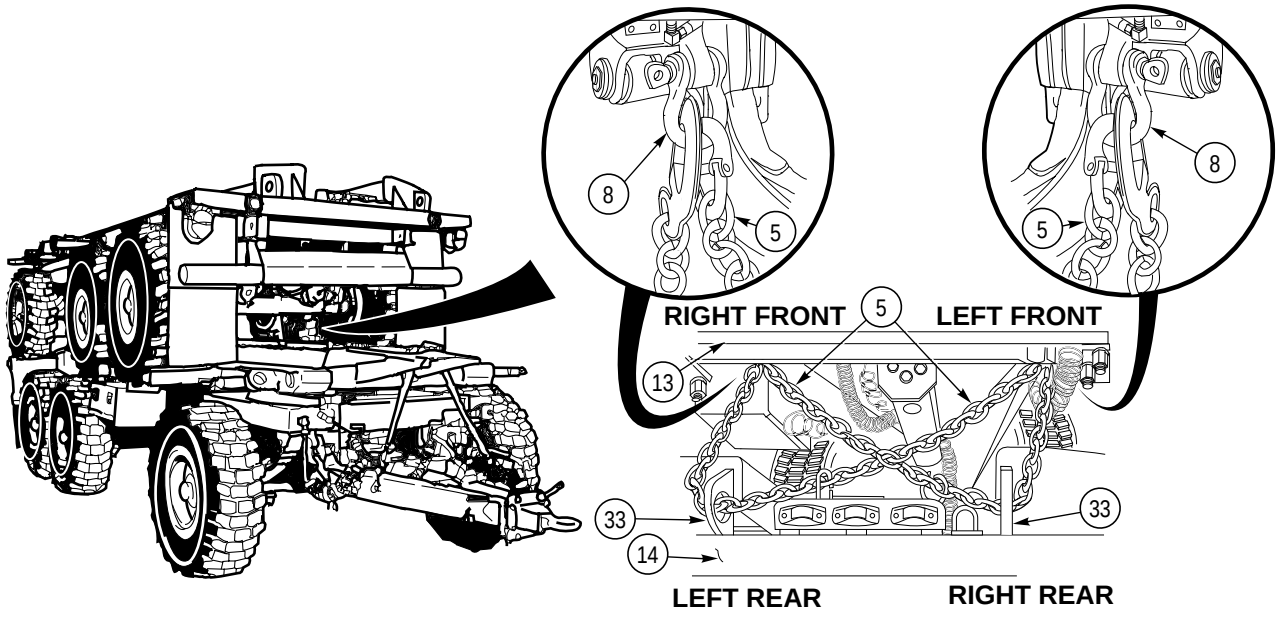
(30) Remove guide strap (26) from trailer (13).



(31) Move air assist lever (21) on trailer (14) to RAISE position and raise drawbar (17) to highest position. Return air assist lever (21) to NEUTRAL position.

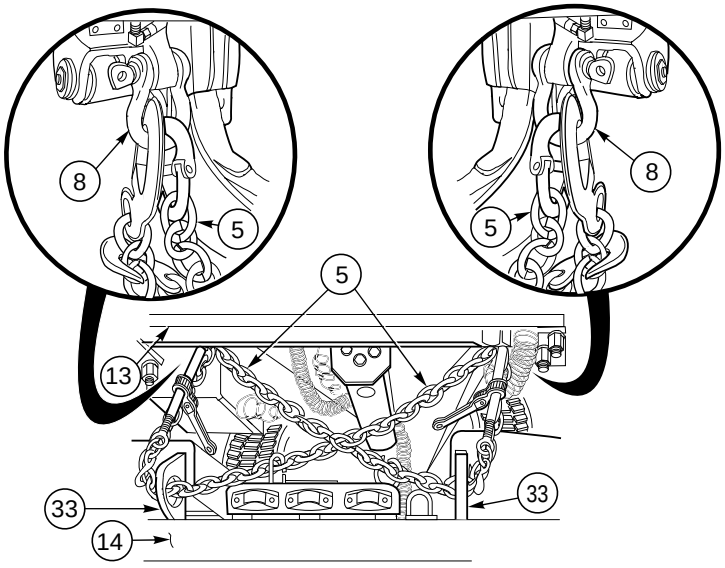
(32) Route ratchet strap (30) through front bumper (31) of trailer (14) and attach ends of ratchet strap (30) to tiedown rings (32) on drawbar (17). Tighten ratchet strap securely.

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



(33) Route safety chain (5) from right front of trailer (13) through tiedown eye (33) on right rear of trailer (14) and install on shackle (8) on left front of trailer (13).

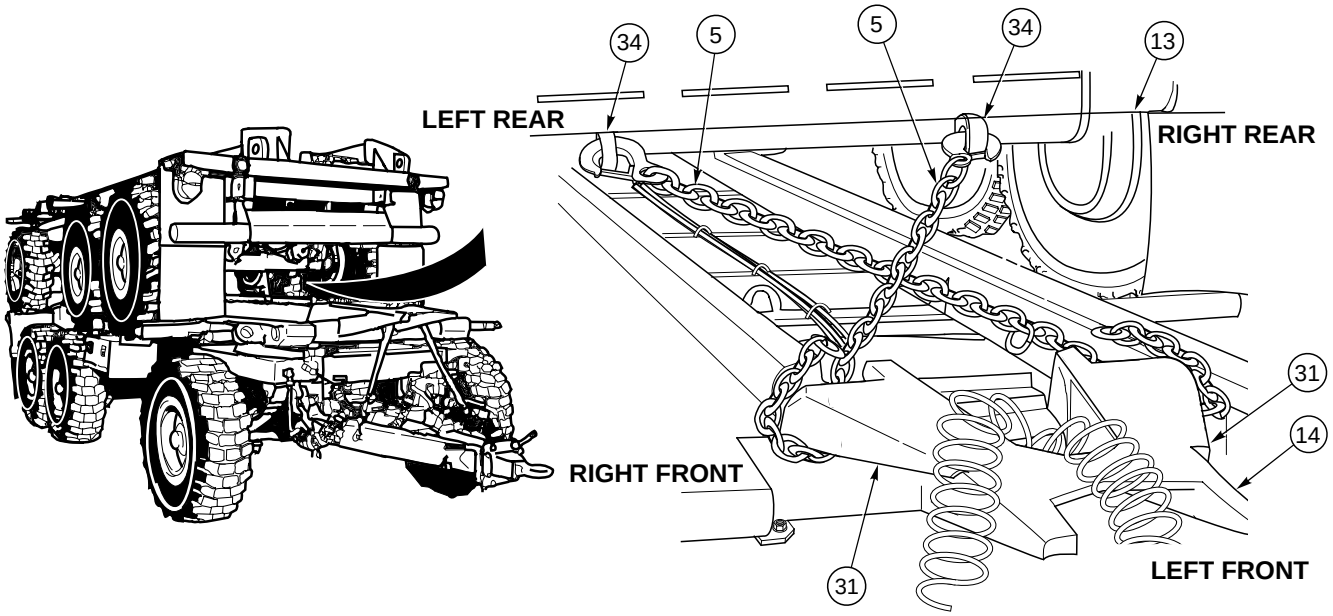
(34) Route safety chain (5) from left front of trailer (13) through tiedown eye (33) on left rear of trailer (14) and install on shackle (8) on right front of trailer (13).



NOTE

- Load binders must be in extended position.
- Load binders will be tightened in Step (40).

(35) Position load binders on each safety chain (5) between tiedown eyes (33) and shackle (8).



NOTE

Safety chains removed in Step (5) are used in Step (34) and (36).

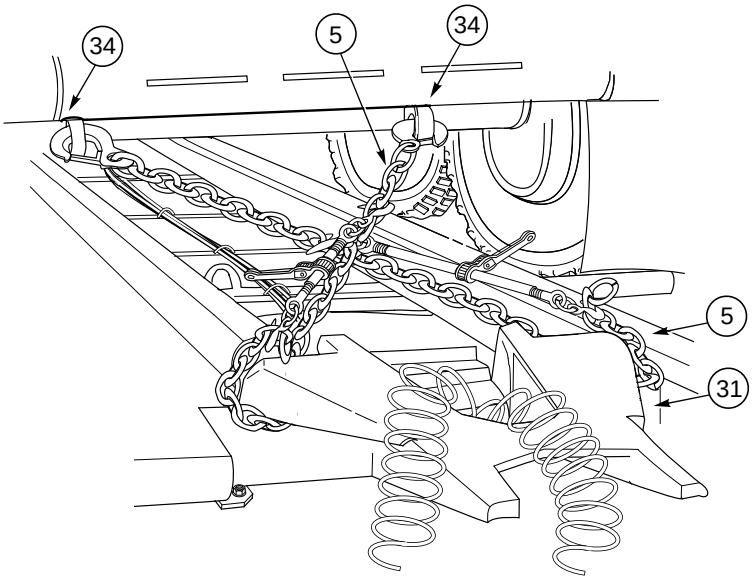
(36) Hook safety chain (5) in right rear axle tiedown bracket (34) on trailer (13).

(37) Position opposite end of safety chain (5) through opening in right front side of bumper (31) on trailer (14).

(38) Hook safety chain (5) in left rear axle tiedown bracket (34) on trailer (13).

(39) Position opposite end of safety chain (5) through opening in left front of bumper (31) on trailer (14).

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



NOTE

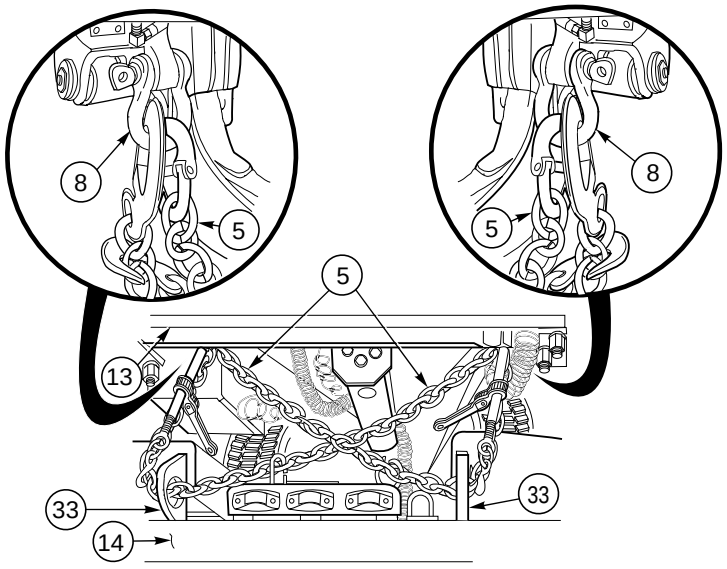
Load binders must be in extended position.

(40) Position load binder near the end of each safety chain (5) between bumper (31) and rear axle tiedown bracket (34).

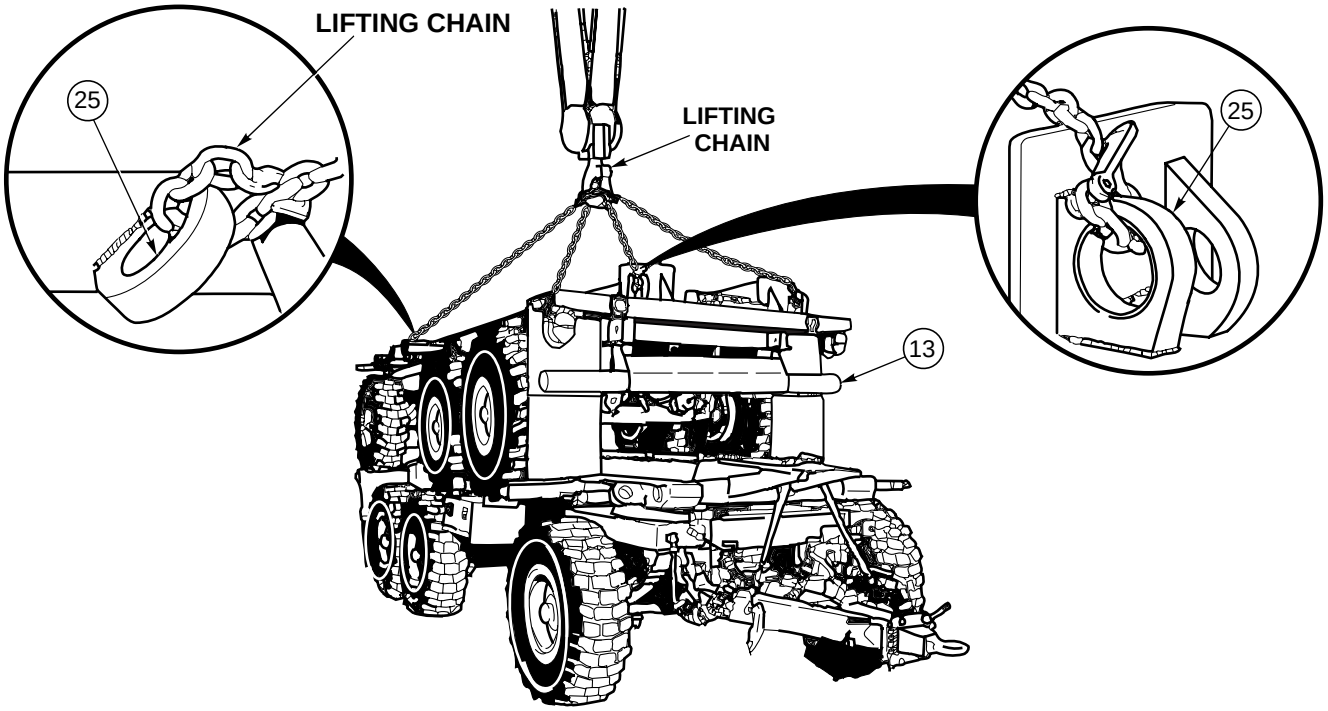
(41) Tighten two load binders between bumper (31) and axle tiedown brackets (34).

(42) Tighten two load binders (33) between shackles (8) and tiedown eyes (33).

(43) Remove lifting device and lifting chains from trailer (13).



b. Unstacking.

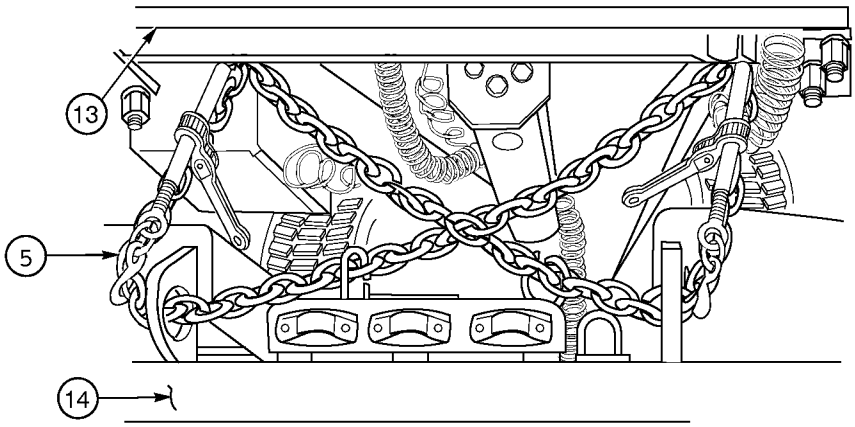


WARNING

- Trailer weighs 16,500 lb (7,491 kg). Attach suitable lifting device to prevent possible injury to personnel.
- All personnel must stay clear of trailers while lifting is in progress. Failure to stay clear of trailers while lifting could cause serious injury or death to personnel.

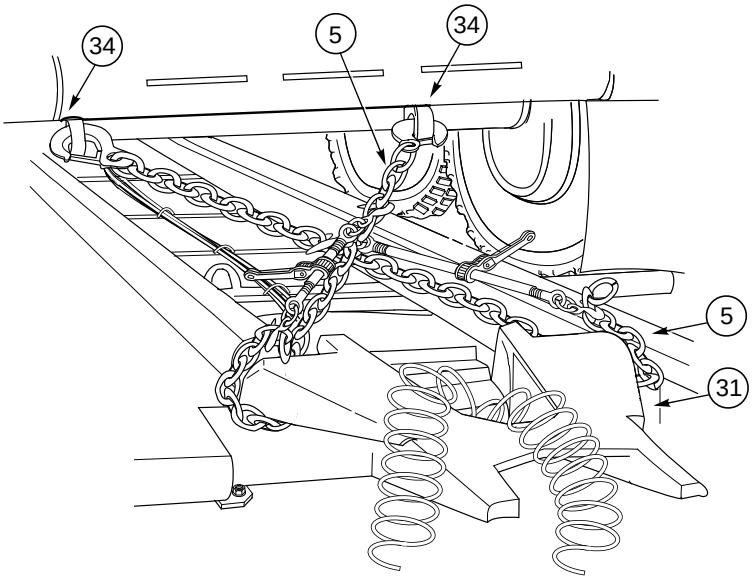
(1) Charge trailer (13) and trailer (14) air system, (Para 2-22).

(2) Attach lifting device to four lifting eyes (25) on front and rear of trailer (13) and attach lifting device.



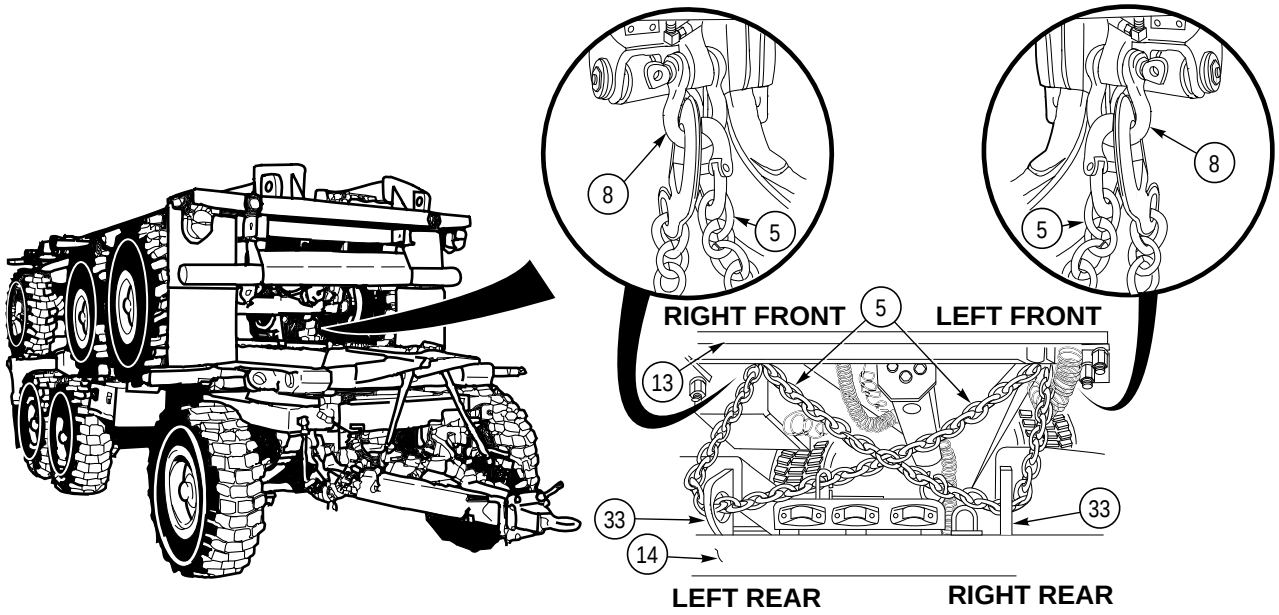
(3) Remove two load binders from safety chains (5) between trailer (13) and (14).

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).

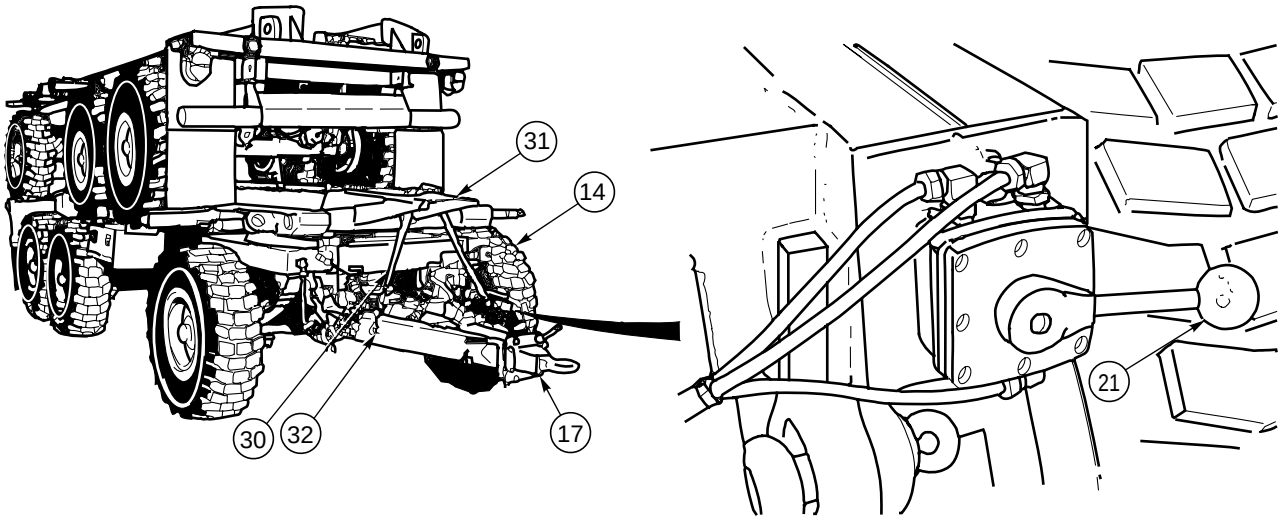


(4) Remove two load binders from safety chains (5) between bumper (31) and axle tiedown brackets (34).

(5) Remove two safety chains (5) from bumper (31) and axle tiedown brackets (34).



(6) Remove two safety chains (5) from shackles (8) on trailer (13) and tiedown eyes (33) on trailer (14).



WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). If there is no air pressure in the drawbar air assist system, the drawbar may fall. Serious injury or death could result.

(7) Slowly loosen ratchet strap (30) on drawbar (17).

(8) Move air assist lever (21) to LOWER position and lower drawbar (17).

(9) Return air assist lever (21) to NEUTRAL position.

(10) Remove ratchet strap (30) from tiedown rings (32) on drawbar (17) and front bumper (31).

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).

WARNING

All personnel must stay clear of trailers while lifting is in progress. Failure to stay clear of trailers while lifting could cause serious injury or death to personnel.

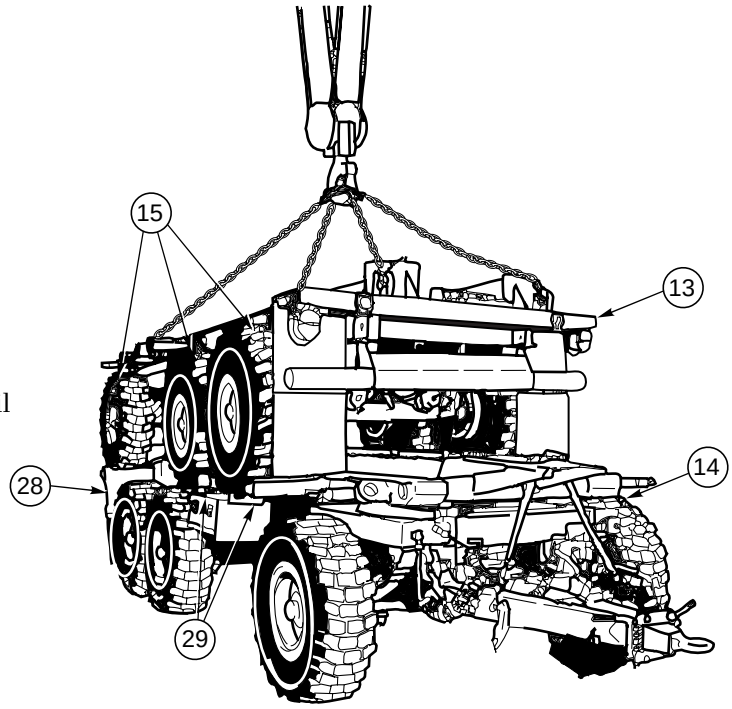
NOTE

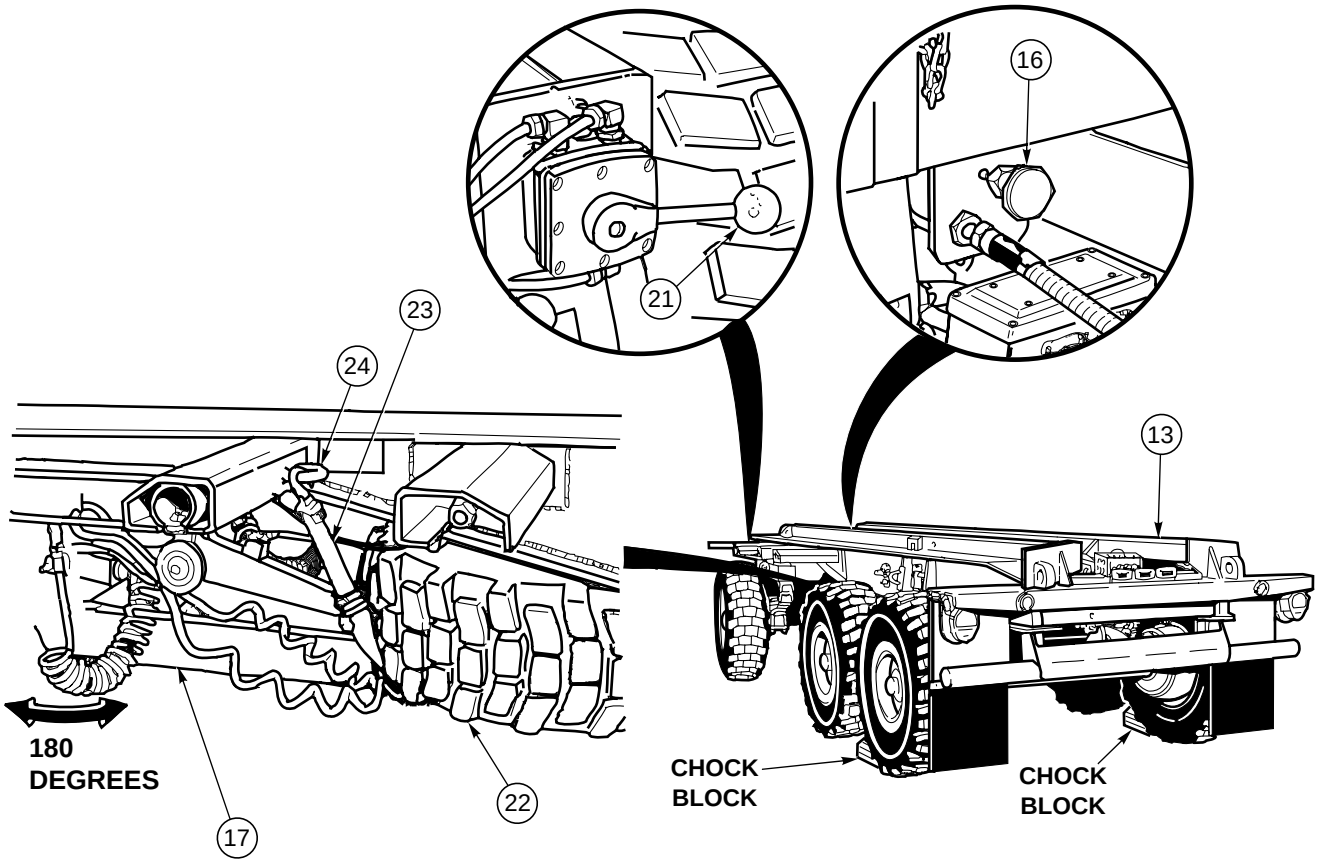
If trailer is not level while lifting, lower trailer and adjust lifting chains.

(11) Using lifting device and the aid of an assistant, raise trailer (13) slightly and visually check that trailer is level.

(12) If trailer (13) is level, continue lifting until tires (15) of trailer (13) have cleared fenders (28) and brackets (29) of trailer (14).

(13) Move trailer (13) away from trailer (14) and lower trailer (13) to ground.





WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). If there is no air pressure in the drawbar air assist system, the drawbar may fall. Serious injury or death could result.

(14) Slowly loosen ratchet strap (23) on drawbar (17) on trailer (13).

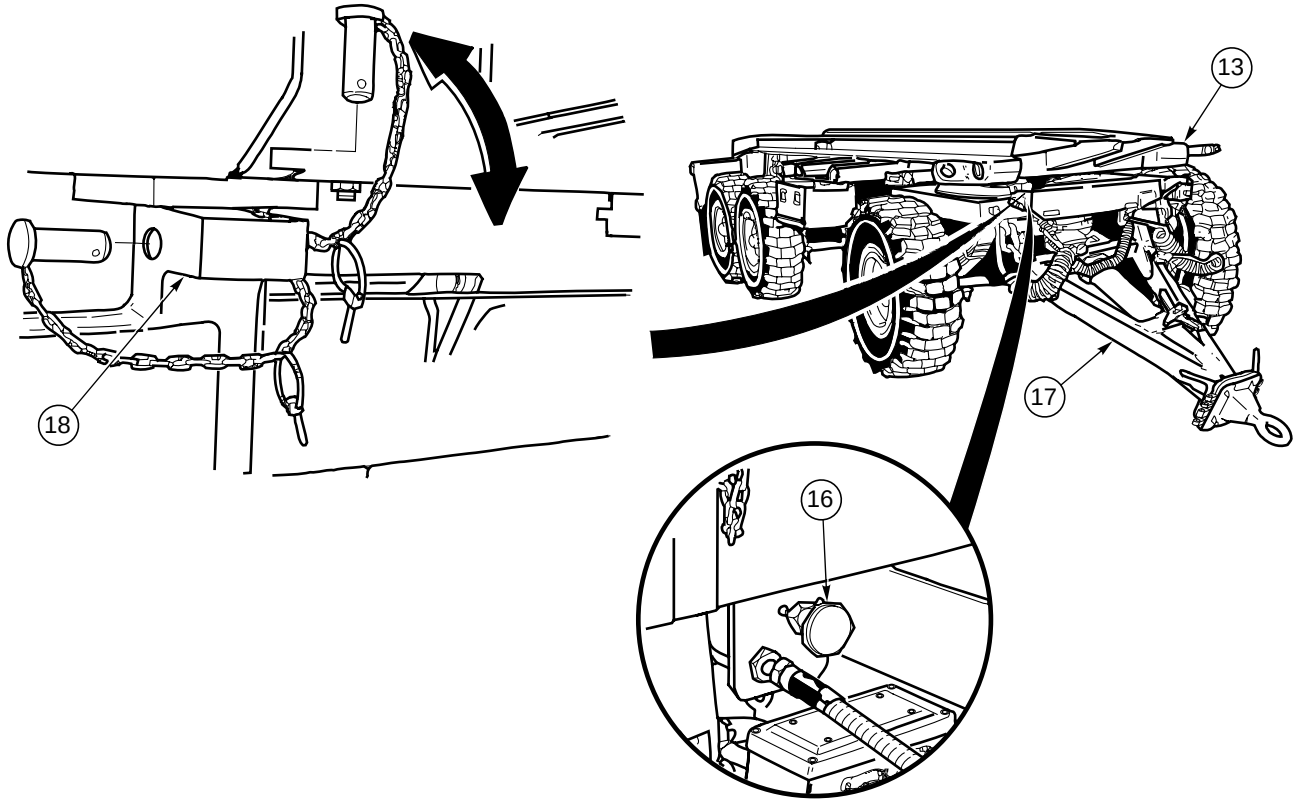
(15) Remove ratchet strap (23) from drawbar (17) and tiedown rings (24) on trailer (13).

(16) Move air assist lever (21) to LOWER position to lower drawbar (17) away from spare tire (22) on trailer (13).

(17) Chock tires of trailer (13), (Para 2-20).

(18) Release parking brakes (16) on trailer (13).

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



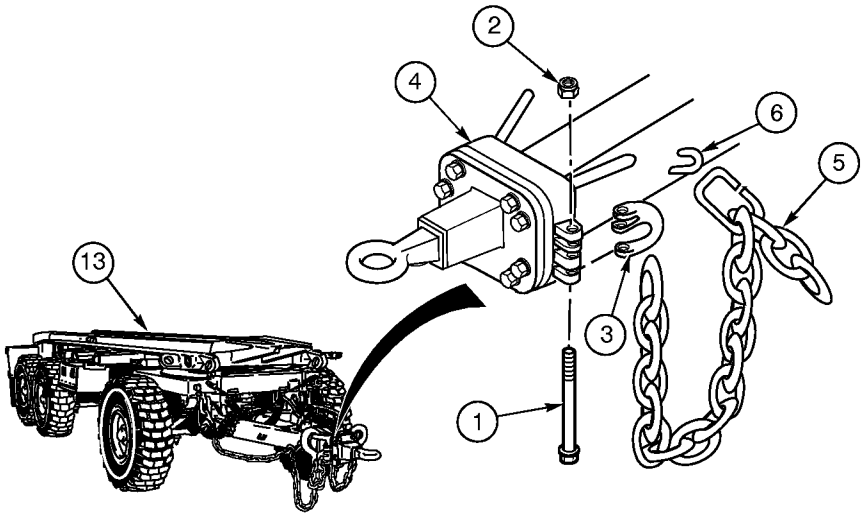
CAUTION

Drawbar and turntable may only be rotated 180 degrees (back and forth in the same direction). Drawbar may not be rotated 360 degrees. Rotating the drawbar and turntable 360 degrees will cause damage to the connections on the drawbar and turntable.

(19) Rotate drawbar (17) 180 degrees to the right (clockwise), until the drawbar is pointed to the front of the trailer (13).

(20) Pin turntable (18) on trailer (13), (Para 2-12).

(21) Apply parking brake (16) on trailer (13), (Para 2-15).



(22) Remove screw (1), locknut (2), and link coupling (3) from plate (4) on trailer (13). Discard locknuts.

(23) Position link coupling (3) on safety chain (5).

(24) Install link coupling (3) on plate (4) using screw (1) and locknut (2).

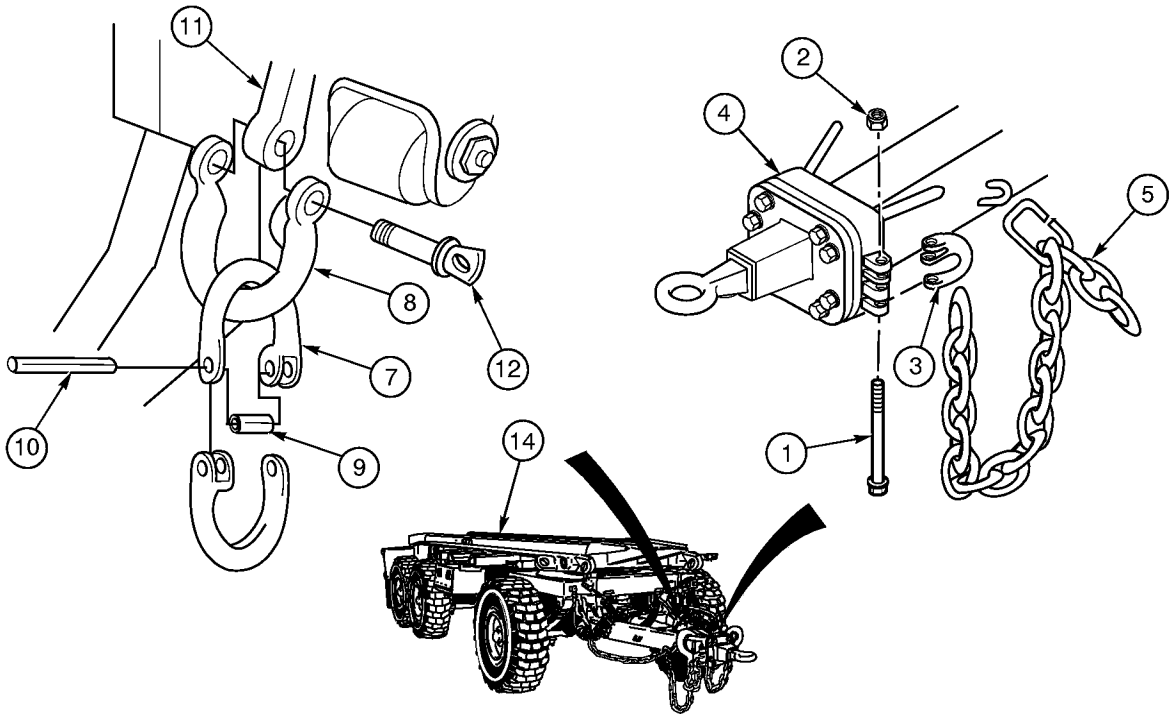
NOTE

Safety chain has an extra large link that must be installed on hook.

(25) Install safety chain (5) on hook (6).

(26) Repeat Steps (22) through (25) for other side.

4-76. TRAILER STACKING FOR AIR, SEA OR RAIL TRANSPORT (CONT).



NOTE

Components removed in Steps (27) through (29) are used in Step (30).

(27) Remove pin (12) and shackle (8) from running gear (11) and trailer (14).

(28) Remove load pin (10), stud assembly (9), and link coupling (7) from shackle (8).

(29) Remove screw (1), locknut (2) and link coupling (3) from plate (4) on trailer (14).

(30) Repeat Steps (27), (28) and (29) for other side.

(31) Install two safety chains (5) on trailer (14).

c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

4-77. TRAILER PREPARATION FOR LIFTING.

This task covers:

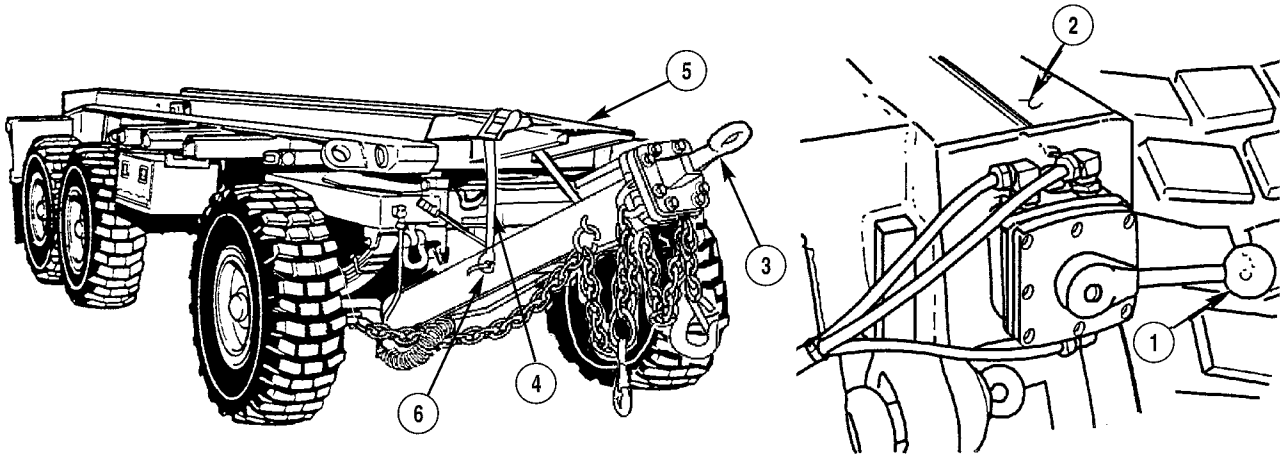
a. Preparation For Lifting b. Preparation After Lifting c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Strap, Tiedown (Item 11, Appendix C)

Equipment Condition
Flatrack removed, (TM 9-2320-364-10)
Parking brakes applied, (Para 2-15)
Wheels chocked, (Para 2-20)
Drawbar retracted, (Para 2-10)
Air system charged with air, (Para 2-22)
Turntable pinned, (Para 2-12)

a. Preparation for Lifting.

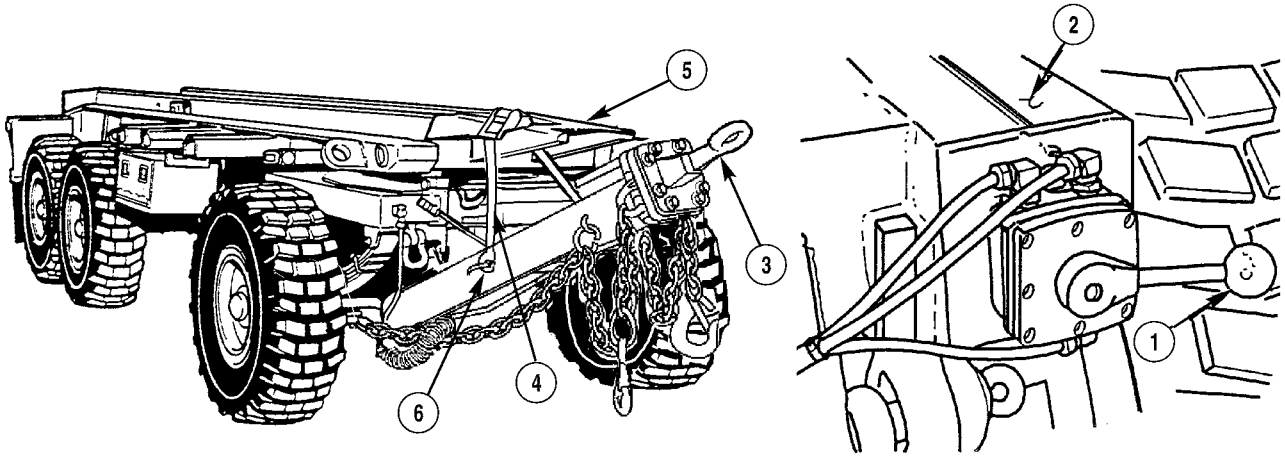


(1) Move air assist lever (1) on trailer (2) to RAISE position and raise drawbar (3) to highest position. Return air assist lever (1) to NEUTRAL position.

(2) Route ratchet strap (4) through front bumper (5) of trailer (2) and attach ends of ratchet strap (5) to rings (6) on drawbar (3). Tighten ratchet strap securely.

4-77. TRAILER PREPARATION FOR LIFTING (CONT).

b. Preparation After Lifting.



(1) Charge air system, (Para 2-22).

(2) Move air assist lever (1) on trailer (2) to RAISE position.

WARNING

Do not stand in front of, or under drawbar. Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). If there is no air pressure in the drawbar air assist system, the drawbar will fall. Serious injury or death could result.

(3) Remove ratchet strap (4) from bumper (5) and rings (6).

(4) Move air assist lever (1) to LOWER position and lower drawbar (3).

(5) Return air assist lever (1) to NEUTRAL position.

c. Follow-On Maintenance:

- Unpin turntable, (Para 2-12).
- Remove wheel chocks, (Para 2-20).

END OF TASK

4-78. DRAWBAR EXTENSION REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-on Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Compressor Unit, Air (Item 5, Appendix J)
Gloves, Chemical and Oil Protective (Item 11, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Gun, Air Blow (Item 15, Appendix J)
Jackstand (Item 24, Appendix J)
Lifting Device Minimum Capacity 850 lbs (386 kg)
Multiplier, Torque (Item 29, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-813 N·m]) (Item 62, Appendix J)

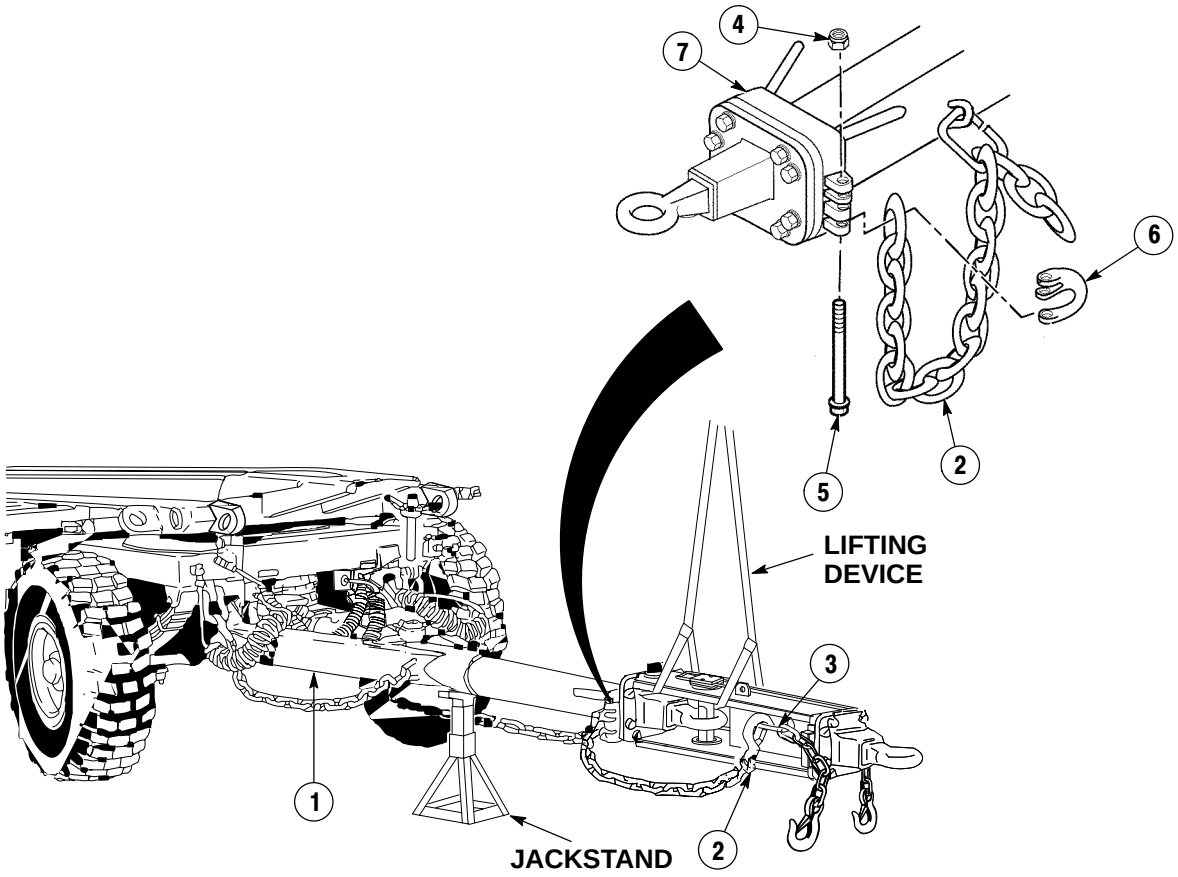
Personnel Required
Two

Materials/Parts
Adhesive (Item 3, Appendix E)
Solvent, Dry Cleaning (Item 22, Appendix E)
Wooden Block (2) (Appendix F)
Bushing (2) (Item 1, Appendix I)
Locknut (16) (Item 24, Appendix I)
Locknut (6) (Item 25, Appendix I)
Locknut (Item 38, Appendix I)
Locknut (2) (Item 42, Appendix I)
Locknut (4) (Item 44, Appendix I)
Lockwasher (2) (Item 51, Appendix I)
Lockwasher (6) (Item 54, Appendix I)
Pin, Cotter (2) (Item 67, Appendix I)
Pin, Cotter (Item 69, Appendix I)
Rope, Wire (Item 74, Appendix I)
Swagging Sleeve (Item 85, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)
Drawbar extension in forward position, (Para 2-10)

4-78. DRAWBAR EXTENSION REPAIR (CONT).

a. Removal.



WARNING

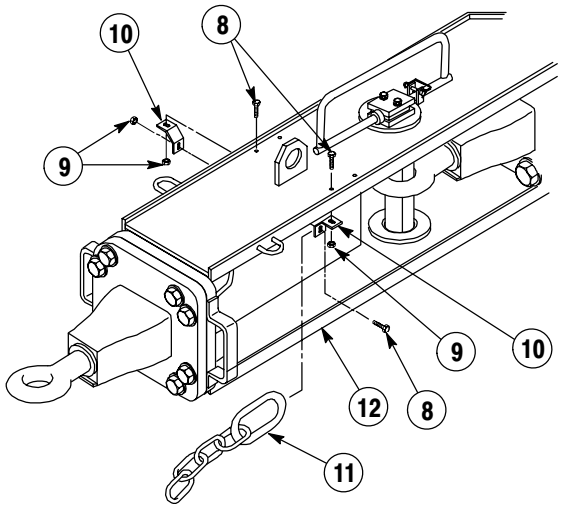
Drawbar with extension weighs 850 lbs (386 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(1) Using lifting device, support drawbar structure (1) in level position on jackstand.

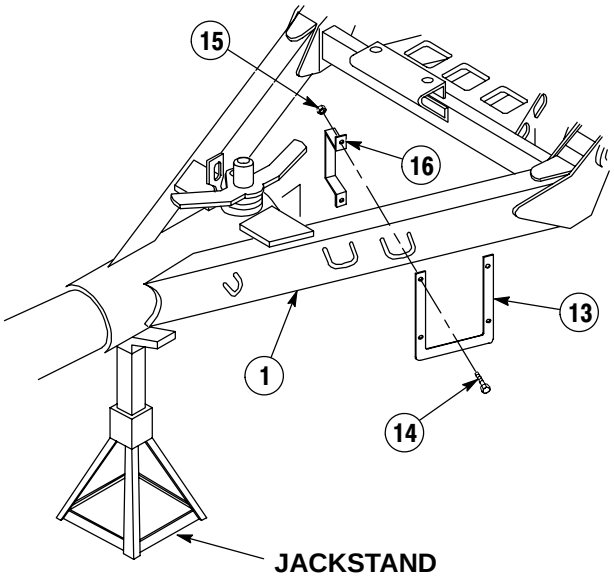
(2) Unhook two safety chains (2) from safety chain loop (3).

(3) Remove two locknuts (4), screws (5) and link couplings (6) from plate (7). Discard locknuts.

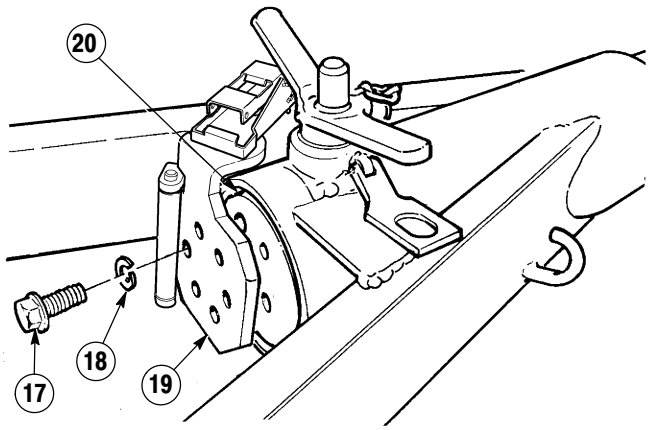
(4) Remove six screws (8), locknuts (9), four chain brackets (10) and two safety chains (11) from drawbar extension body (12). Discard locknuts.



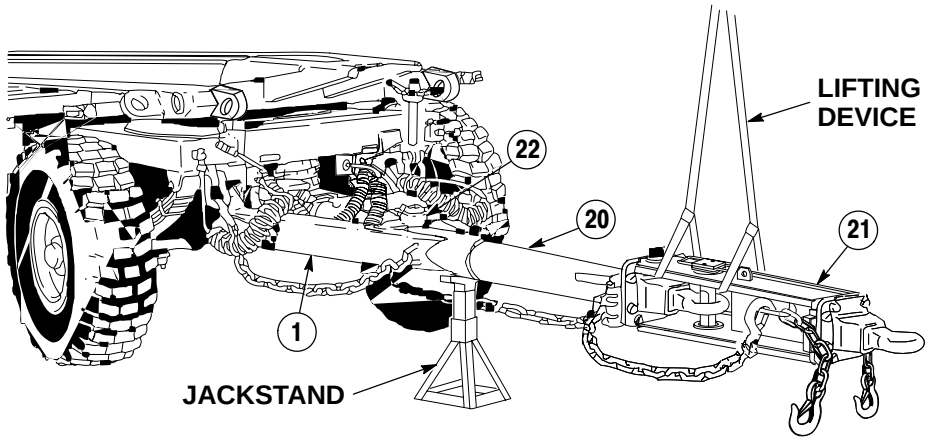
(5) Remove retaining guide (13) from drawbar structure (1) by removing four screws (14), locknuts (15) and two clamps (16). Discard locknuts.



(6) Remove six screws (17), lockwashers (18) and plate (19) from tube assembly (20). Discard lockwashers.



4-78. DRAWBAR EXTENSION REPAIR (CONT).



WARNING

Drawbar with extension weighs 850 lbs (386 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(7) With lifting device attached to drawbar extension assembly (21), remove adjusting pin (22) from tube assembly (20).

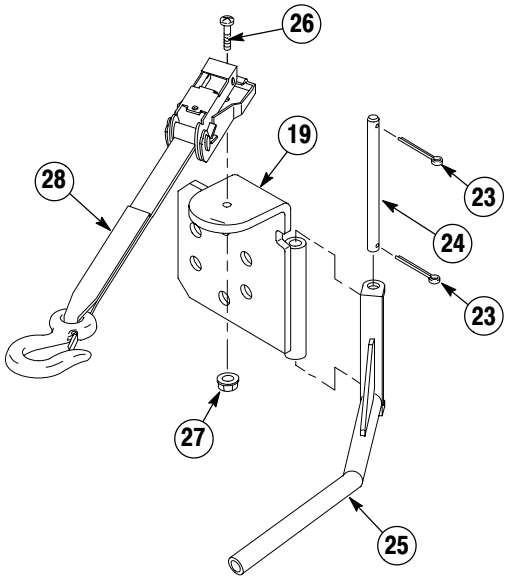
(8) With the aid of an assistant, steady drawbar extension assembly (21) while removing tube assembly (20) from drawbar structure (1).

(9) Lower drawbar extension assembly (21) and tube assembly (20) on two wooden blocks.

b. Disassembly.

(1) Remove two cotter pins (23), hinge pin (24) and safety arm (25) from plate (19). Discard cotter pins.

(2) Remove screw (26), locknut (27) and safety strap (28) from plate (19). Discard locknut.

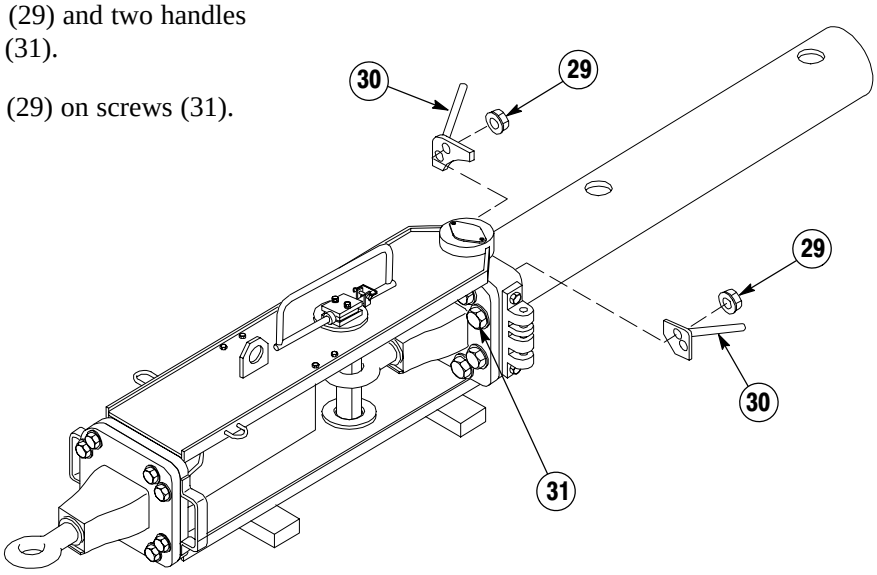


NOTE

Do not discard locknuts in Step (3).

(3) Remove four locknuts (29) and two handles (30) from four screws (31).

(4) Position four locknuts (29) on screws (31).

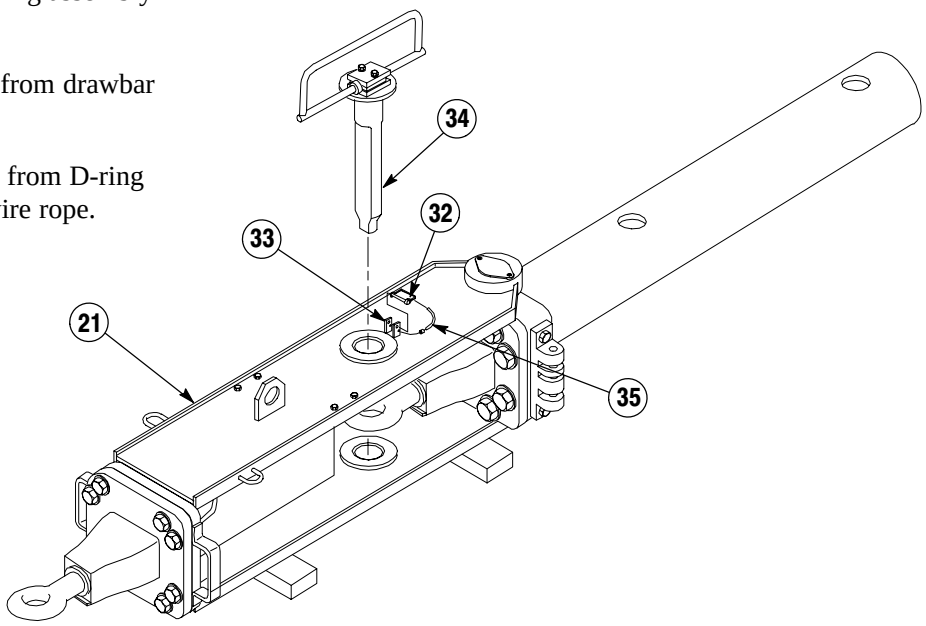


4-78. DRAWBAR EXTENSION REPAIR (CONT).

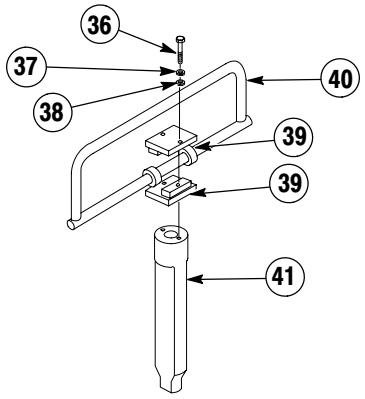
(5) Remove lock pin (32) from D-ring assembly lock (33).

(6) Remove D-ring assembly (34) from drawbar extension assembly (21).

(7) Cut wire rope (35) and remove from D-ring assembly lock (33). Discard wire rope.

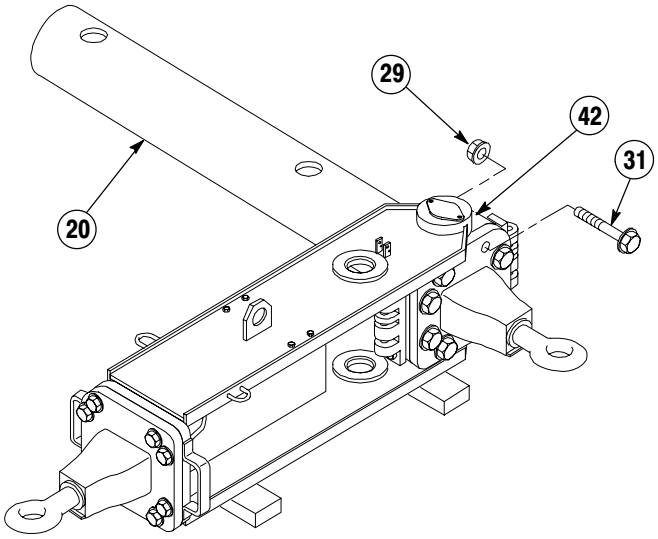


(8) Remove two screws (36), washers (37), lockwashers (38), D-ring clamp plates (39) and D-ring (40) from pin assembly (41). Discard lockwashers.



(9) Rotate tube assembly (20) to left.

(10) Remove eight screws (31) and locknuts (29) from plate (42). Discard locknuts.

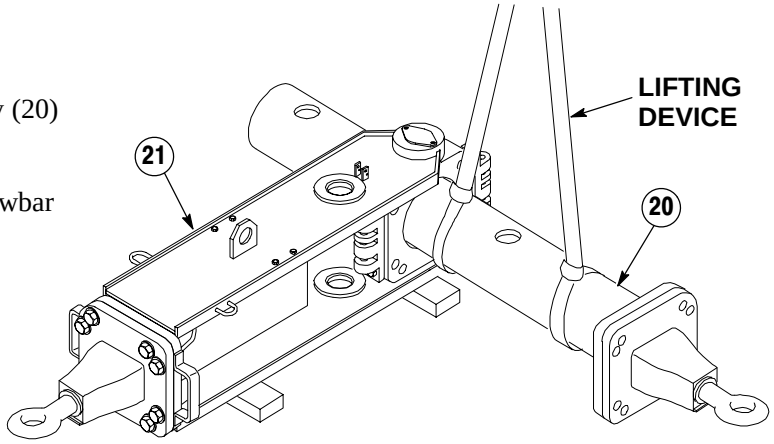


WARNING

Tube assembly weighs 187 lbs (85 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

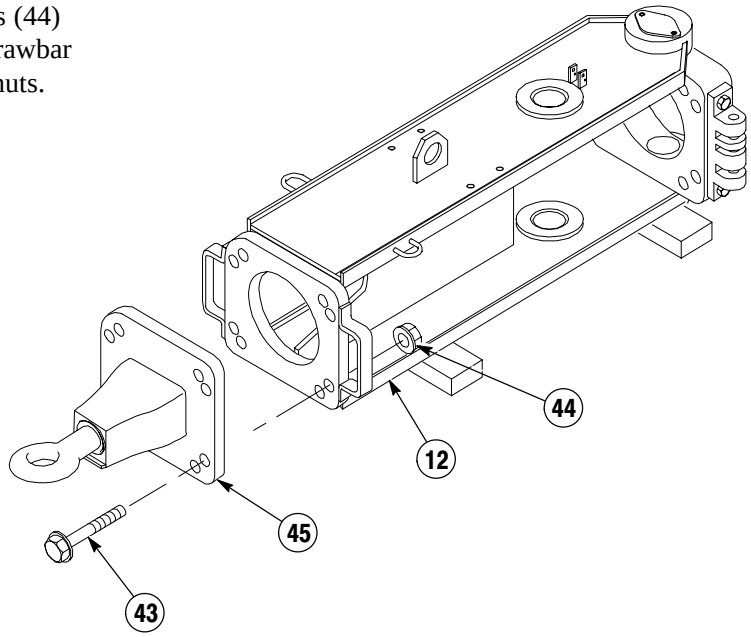
(11) Attach lifting device to tube assembly (20) as shown.

(12) Remove tube assembly (20) from drawbar extension assembly (21).



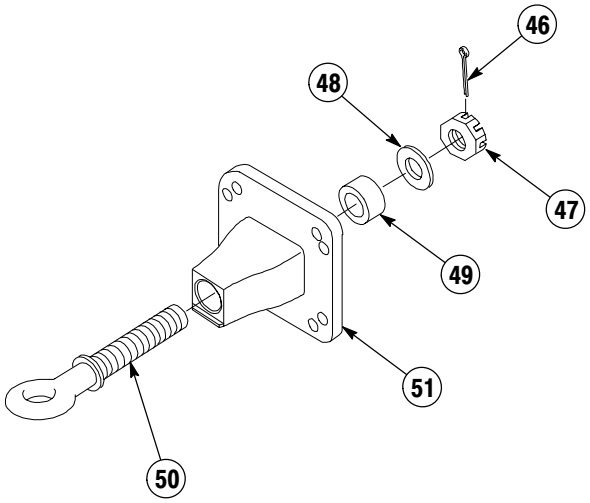
4-78. DRAWBAR EXTENSION REPAIR (CONT).

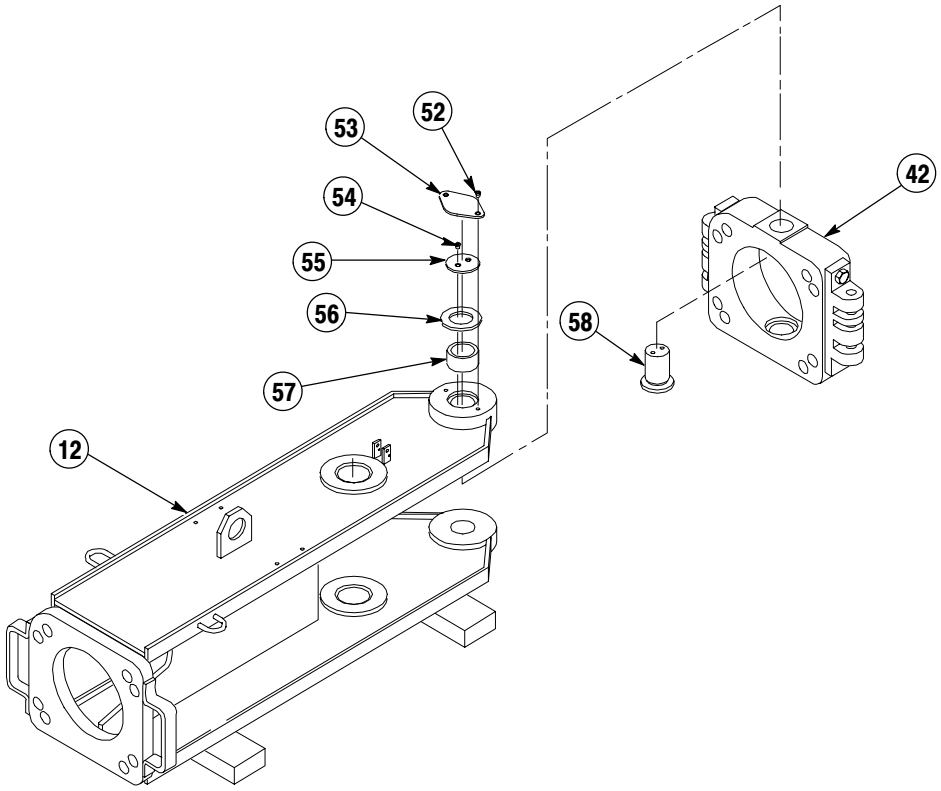
(13) Remove eight screws (43), locknuts (44) and tow ring assembly (45) from drawbar extension body (12). Discard locknuts.



(14) Remove cotter pin (46), castle nut (47), washer (48) and spacer (49) from drawbar tow ring shaft (50). Discard cotter pin.

(15) Remove drawbar tow ring shaft (50) from tow ring bracket (51).





(16) Remove two screws (52) and plate (53).

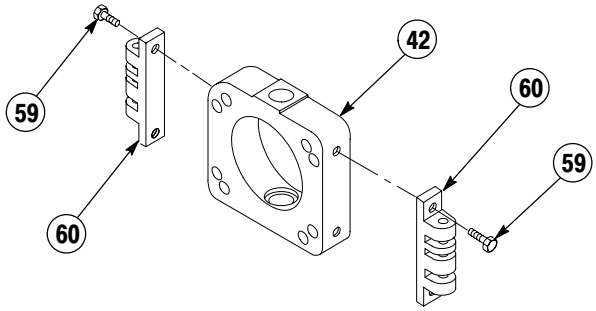
(17) Remove two screws (54), plate (55), bushing (56) and bearing (57). Discard bushing.

(18) Remove pivot pin (58) from plate (42).

(19) Repeat Steps (16) through (18) for remaining pivot pin.

(20) Remove plate (42) from drawbar extension body (12).

(21) Remove four screws (59) and two chain mounts (60) from plate (42).



4-78. DRAWBAR EXTENSION REPAIR (CONT).

c. Cleaning/Inspection.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.

- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

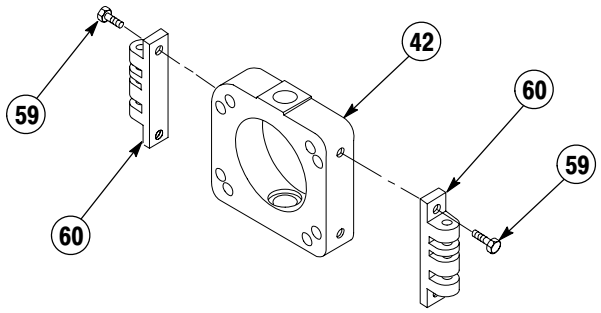
(1) Clean inside of drawbar structure with drycleaning solvent and dry with compressed air.

(2) Clean and inspect drawbar.

(3) Inspect drawbar extension structure for warpage or damage that would impair operation.

d. Assembly.

(1) Install two chain mounts (60) on plate (42) with four screws (59).



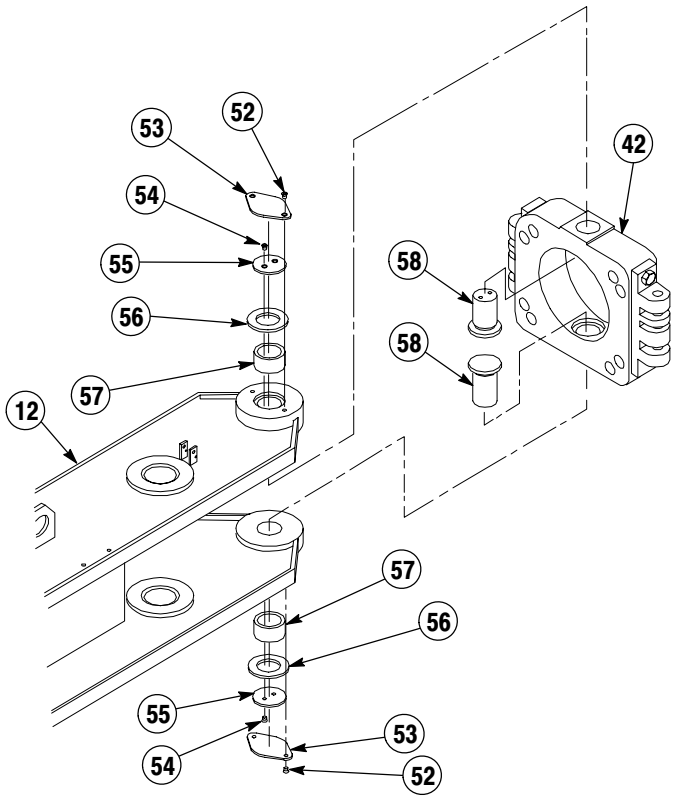
(2) Install two bearings (57) in drawbar extension body (12) until fully seated.

(3) Position plate (42) in drawbar extension body (12).

(4) Position two pivot pins (58) through holes in plate (42) and through two bearings (57).

(5) Install two bushings (56) and plates (55) on pivot pins (58) with four screws (54).

(6) Install two plates (53) on drawbar extension body (12) with four screws (52).



WARNING

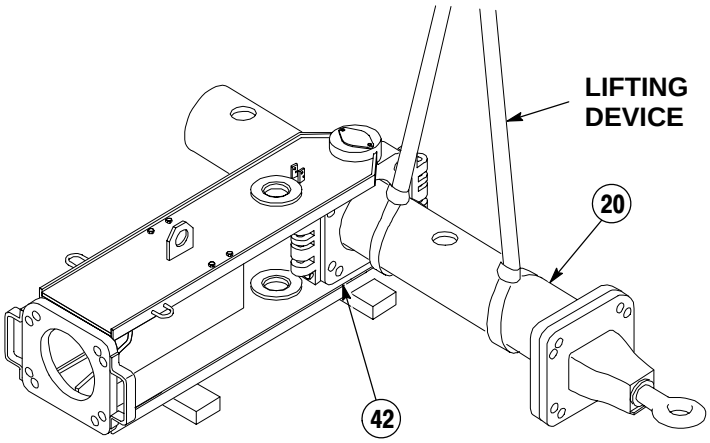
Tube assembly weighs 187 lbs (85 kg). Attach suitable lifting device to prevent possible injury to personnel.

(7) Attach lifting device to tube assembly (20) as shown.

(8) Position tube assembly (20) through plate (42).

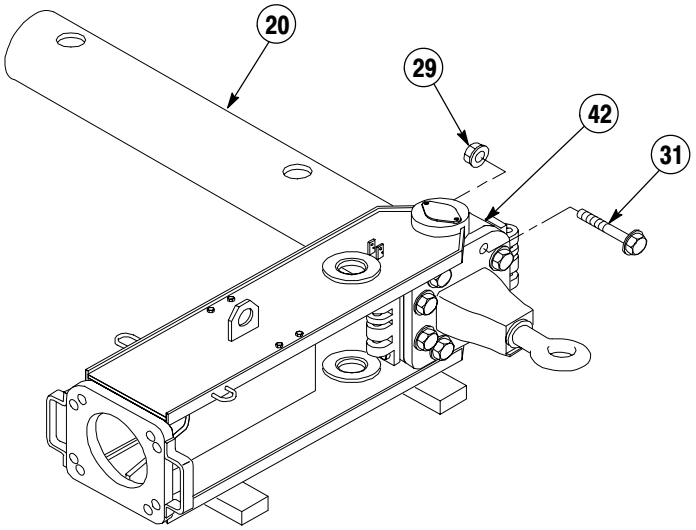
(9) Remove lifting device from tube assembly (20).

(10) Position tube assembly (20) in plate (42) until fully seated.

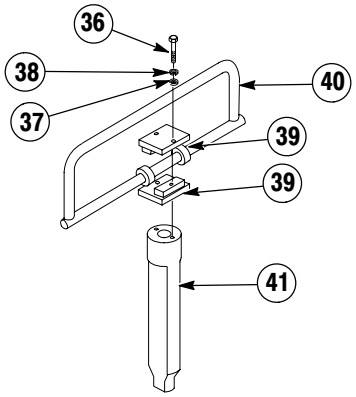


4-78. DRAWBAR EXTENSION REPAIR (CONT).

(11) Position four screws (31) and locknuts (29) into bottom holes of plate (42) and tube assembly (20).



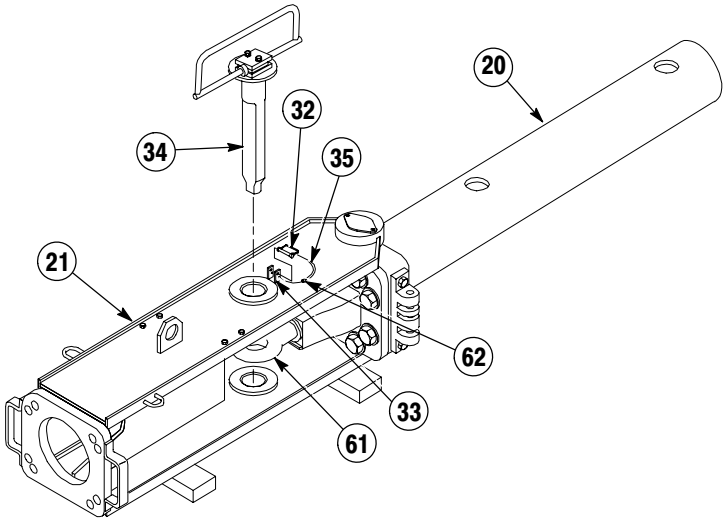
(12) Install two D-ring clamp plates (39) and D-ring (40) on pin assembly (41) with two screws (36), washers (37) and lockwashers (38).



(13) Rotate tube assembly (20) forward and install D-ring assembly (34) in drawbar extension assembly (21) and tow ring (61).

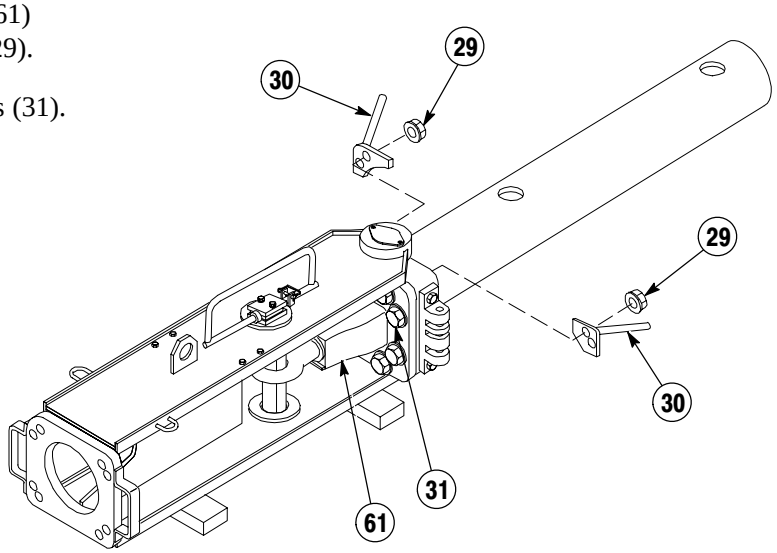
(14) Loop wire rope (35) through hole in D-ring assembly lock (33) and through loop on lock pin (32).

(15) Install swagging sleeve (62) on wire rope (35).



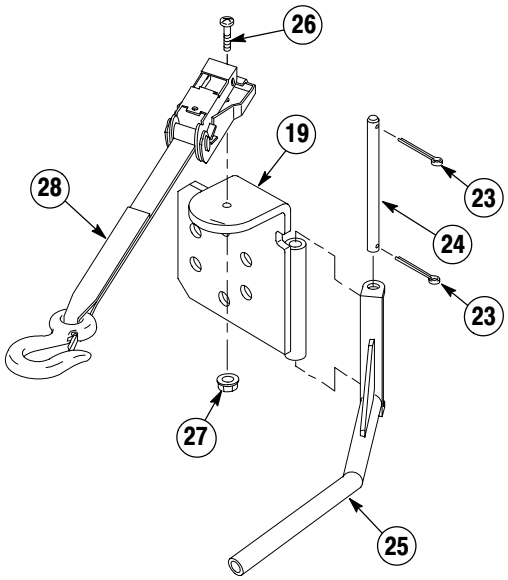
(16) Install two handles (30) in tow ring (61) with four screws (31) and locknuts (29).

(17) Tighten eight locknuts (29) on screws (31).



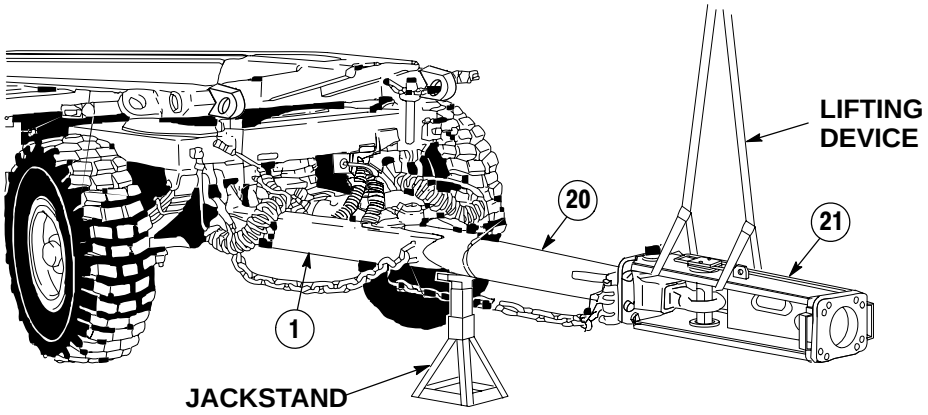
(18) Install safety strap (28) on plate (19) with screw (26) and locknut (27).

(19) Install safety arm (25) on plate (19) with hinge pin (24) and two cotter pins (23).



4-78. DRAWBAR EXTENSION REPAIR (CONT).

e. Installation.



WARNING

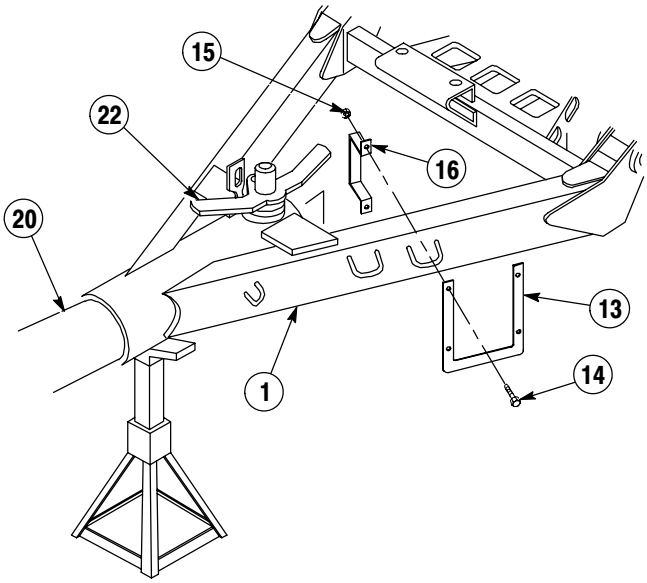
Drawbar with extension weighs 850 lbs (386 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(1) Attach lifting device to drawbar extension assembly (21) as shown. Ensure drawbar extension assembly is level when lifted.

(2) With the aid of an assistant, steady drawbar extension assembly (21) and install tube assembly (20) in drawbar structure (1).

(3) Install adjusting pin (22) in tube assembly (20) with tube assembly in extended mode.

(4) Position retaining guide (13) on drawbar structure (1) with two clamps (16), four screws (14) and locknuts (15).

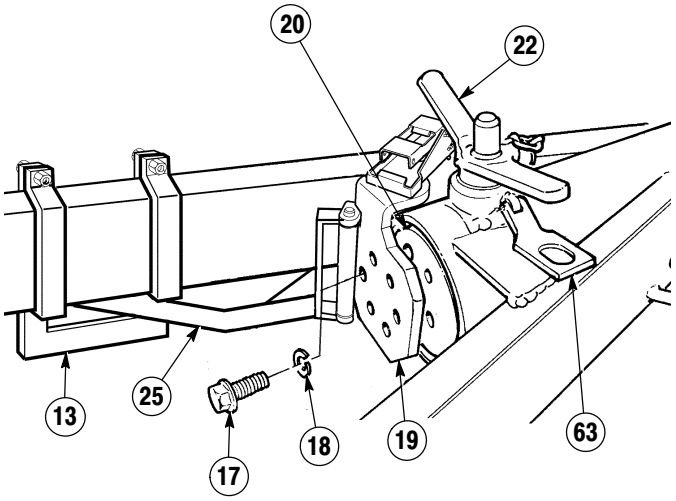


WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(5) Apply adhesive sealant on end of tube assembly (20).

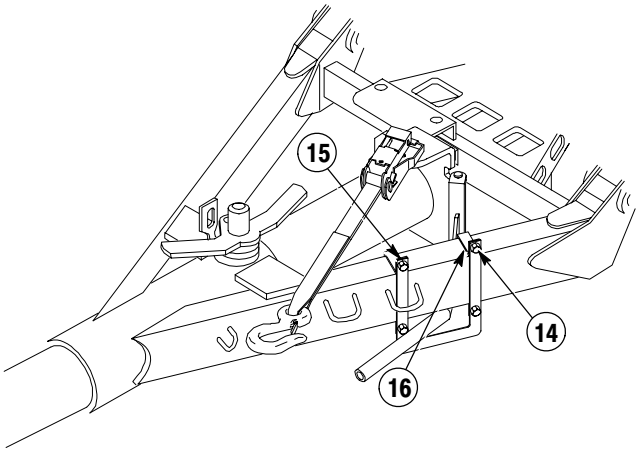
(6) Position safety arm (25) through retaining guide (13) and install plate (19) on tube assembly (20) with six screws (17) and lockwashers (18). Tighten screws to 410 lb-ft (556 N·m).



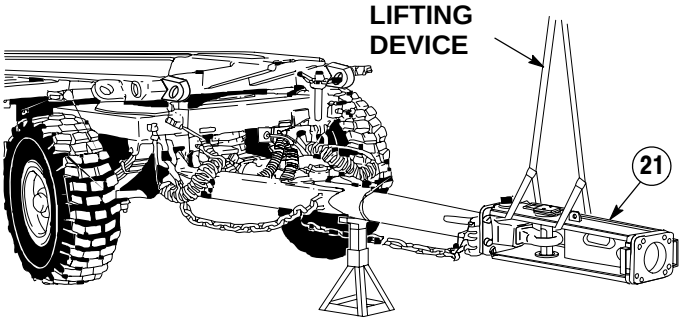
(7) Remove adjusting pin (22) and position tube assembly (20) in retracted position.

(8) Install adjusting pin (22) and raise hinge assembly locking latch (63) into locked position.

(9) Tighten four locknuts (15) on screws (14) and two clamps (16).

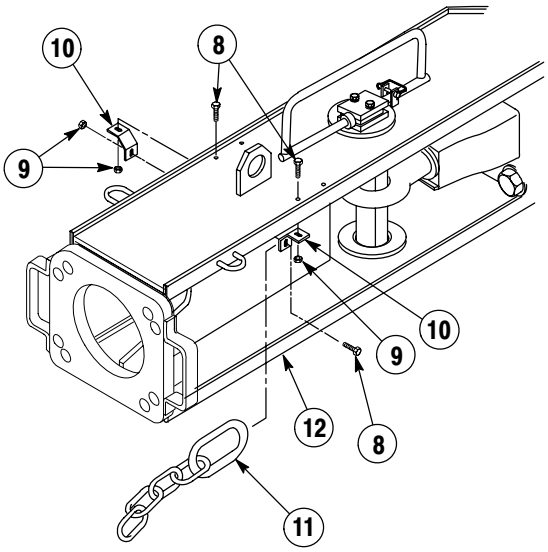


(10) Remove lifting device from drawbar extension assembly (21).

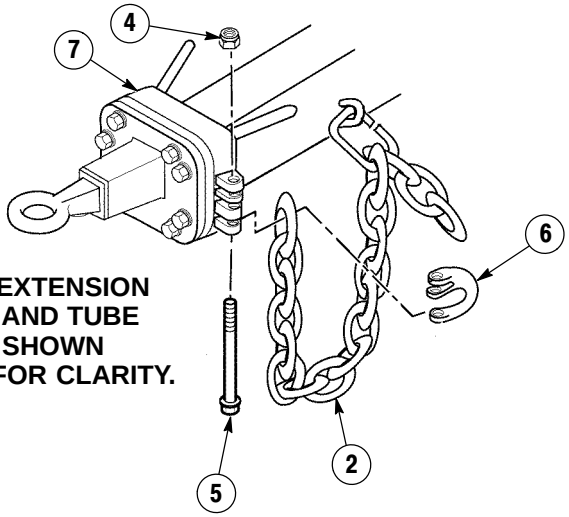


4-78. DRAWBAR EXTENSION REPAIR (CONT).

(11) Install two safety chains (11) on drawbar extension body (12) with four chain brackets (10), six screws (8) and locknuts (9).

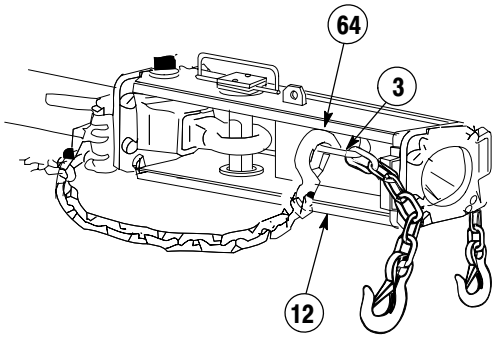


(12) Install two link couplings (6) and safety chains (2) on plate (7) with two screws (5) and locknuts (4).



DRAWBAR EXTENSION ASSEMBLY AND TUBE ASSEMBLY SHOWN REMOVED FOR CLARITY.

(13) Connect chain hook (64) to safety chain loop (3) on drawbar extension body (12).



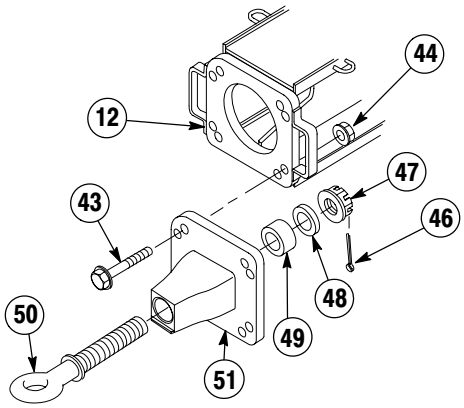
NOTE

Step (14) temporarily installs tow ring bracket on drawbar extension to aid in torquing of castle nut. Use top two holes of tow ring bracket and lower left two holes of drawbar.

(14) Install tow ring bracket (51) on drawbar extension body (12) with two screws (43) and locknuts (44). Do not tighten locknuts.

(15) Position drawbar tow ring shaft (50) in tow ring bracket (51).

(16) Install spacer (49), washer (48) and castle nut (47) on drawbar tow ring shaft (50). Tighten castle nut to 2000 lb-ft (2712 N·m) minimum.



NOTE

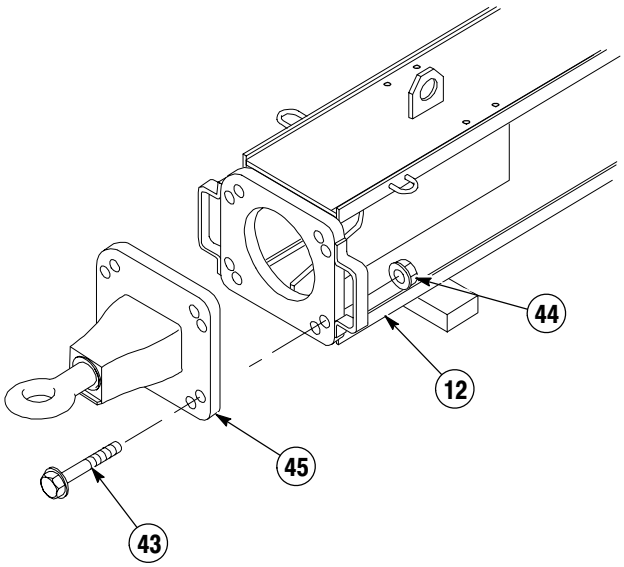
If grooves in castle nut do not align with hole in drawbar tow ring shaft, perform Step (17).

(17) Tighten castle nut (47) to next slot in nut.

(18) Install cotter pin (46) through castle nut (47) and drawbar tow ring shaft (50). Spread sides of cotter pin (46) against castle nut (47).

(19) Remove two screws (43), two locknuts (44) and tow ring assembly (45) from drawbar extension body (12).

(20) Install tow ring assembly (45) on drawbar extension body (12) with eight screws (43) and locknuts (44).



f. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

CHAPTER 5

DIRECT SUPPORT MAINTENANCE

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT

5-1. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment refer to Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-2. SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT.

Refer to Appendix B, Section III, of the Maintenance Allocation Chart (MAC) for a list of tool kits authorized for the trailer. Refer to the Repair Parts and Special Tools List (RPSTL), TM 9-2330-385-24P for a list of special tools.

5-3. REPAIR PARTS.

Repair parts are listed and illustrated in the Unit, Direct Support (DS) and General Support (GS) Repair Parts and Special Tools List (RPSTL), TM 9-2330-385-24P, covering Unit, Direct Support and General Support maintenance for the trailer.

Section II. SERVICE UPON RECEIPT

5-4. UNPACKING AND DEPROCESSING.

a. Unpacking. Upon receipt of a new trailer, the receiving organization must ensure it has been properly prepared for service and is in good condition. Inspect all assemblies, subassemblies and accessories to be sure they are in proper working order. Secure, clean and correctly adjust and/or lubricate as needed, Para 4-8. Check all tools and equipment (Appendix C and Appendix D) to be sure every item is there in good condition, clean and properly stowed.

b. Deprocessing. Read all tags attached to the trailer and follow all precaution checks.

5-5. SERVICE BEFORE OPERATION.

a. Inspection and Servicing Equipment.

(1) Refer to Chapter 2 for operating instructions for the trailer.

(2) When trailer is received, inspect all items for damage that may have occurred during shipping and unloading operations. Pay close attention to any loose or missing nuts, bolts, screws, access plates, drain plugs, draincocks, oil plugs, assemblies, subassemblies, or components that may be easily lost or broken in transit. Check Appendix C to make sure all items are accounted for and are in good condition. Carefully list all discrepancies.

(3) Follow general procedures for all services and inspections.

b. Inspection and Servicing Equipment.

(1) When trailer is received, inspect all items for damage that may have occurred during shipping and unloading operations. Pay close attention to any loose or missing nuts, bolts, screws, access plates, drain plugs, draincocks, oil plugs, assemblies, subassemblies, or components that may be easily lost or broken in transit. Check Appendix C to make sure all items are accounted for and are in good condition. Carefully list all discrepancies.

(2) Follow general procedures for all services and inspections.

Section III. TROUBLESHOOTING

5-6. TROUBLESHOOTING INTRODUCTION.

Refer to Table 5-1 for a list of common malfunctions arranged alphabetically. The troubleshooting procedures are in para 5-10 and contain tests, inspections and corrective actions. Before troubleshooting, be sure all Preventive Maintenance Checks and Services (PMCS) have been performed. Perform tests, inspections and corrective actions in the order listed. Try to return the trailer or component to operation after each test, inspection and corrective action has been performed.

5-7. TROUBLESHOOTING SYMPTOMS.

Table 5-1 lists the most common malfunctions found during operation of the trailer. Tests or inspections and corrective actions should be performed in the order listed. This symptom index lists corrective actions that can be performed by Direct Support.

5-8. INTRODUCTION TO LOGIC TREE TROUBLESHOOTING.

a. Page Layout. Troubleshooting is divided into symptoms peculiar to a trailer system or component, for example, air system or inversion valve.

(1) Determine the symptom or condition that indicated a problem or failure. Refer to the System Symptom Index, Table 5-1.

(2) Go to the referenced page to begin troubleshooting. Open the manual flat so both the right and left pages are displayed before you. The information on all facing pages is important.

(3) All diagnostic logic and flowcharts are on the left-hand page, with supporting information, warnings, cautions, notes and test instructions on the right-hand page. Pages are setup so you do not need anymore than the necessary information, warnings, cautions and notes about a particular question. The experienced technician generally read just the left-hand page and refer to information on the right-hand page when needed: all critical information for decision making is on the left-hand page.

b. How to Begin Troubleshooting.

(1) Identify the symptom or fault.

(2) Follow the diagnostic procedure. Answer question no. 1 on the left-hand page and follow the YES or NO path to either the remedy or the next page. Helpful information about the problem is also on the left-hand page. Look on the right-hand page for additional specific instructions.

(3) Observe WARNINGS, CAUTIONS and NOTES. If you see the WARNING symbol on the left-hand page, look on the right-hand page for the test of the warning. The warning message on the right-hand page will also have the symbol above it. If you see the CAUTION symbol on the left-hand page, look on the right-hand page for the text of the caution. The caution message on the right-hand page will also have the symbol above it. If you see the NOTE symbol on the left-hand page, look on the right-hand page for the text of the caution. The note message on the right-hand page will also have the symbol above it.

c. Measurements Required for Troubleshooting.

(1) *Resistance Measurements.*

(a) Connect red test lead to Volt-Ohm input connector and black lead to COM input connector on meter.

(b) Set the function/range switch to the desired ohm position. If the magnitude of the resistance is not known, set the switch to the highest range, then reduce until a satisfactory reading is obtained.

5-8. INTRODUCTION TO LOGIC TREE TROUBLESHOOTING (CONT).

(c) Connect test leads to the circuit being measured. When measuring high resistance, be careful not to contact adjacent points, even if they are insulated. Some insulators have a relative low insulation resistance which can affect the resulting measurement.

(d) Read the resistance value on the digital display.

(2) *Continuity Checks.*

(a) Place the function/range switch in any ohm range.

NOTE

Some meters show "1+m", or simply "1" when function/range switch is in any ohm position.

(b) Connect the red lead to the volt-ohm connector and black lead to COM input connector on the meter. With the test leads separated or measuring and out-of-range resistance, the digital display will indicate "OL" (Over-Limit).

(c) Put one test probe at one end of the wire or circuit to be tested. Use the other test lead to trace the circuit. When continuity is established, an ohm symbol will appear in the upper left corner of the digital display. If contact in the wire is maintained long enough (about 1/4 of a second), the OL will disappear and the resistance value of the wire or circuit will appear next to the symbol.

(d) If your multimeter does not work in this manner, read the manufacturer's operating instructions before performing troubleshooting.

(3) *Voltage Measurements.*

(a) Connect the red test lead to the volt-ohm input connector and the black lead to the COM input on the meter. If a DC-AC switch is present, make sure it is switched to the DC position.

(b) Set the function/range switch to the desired volts position. If the magnitude of the voltage is not known, set the switch to a range which will be able to read most voltages seen on the trailer. Then reduce the range until a satisfactory reading is obtained.

(c) Connect the test leads to the circuit being measured. Following the voltage measurement point, the color test tube used is given in parenthesis (red is volt-ohm connection and black is the COM connection).

5-9. DIRECT SUPPORT (DS) TROUBLESHOOTING PROCEDURES.

Refer to Table 5-1 for a list of common malfunctions which are found in the troubleshooting procedures. The troubleshooting procedures contain test and inspection instructions required to determine the malfunction's cause and corrective actions for repairing the faulty equipment. Before troubleshooting, be sure all Preventive Maintenance Checks and Services (PMCS) have been performed. Try to return the component to operation after each test, inspection and corrective action has been performed.

5-10. WHEEL ASSEMBLY AND TIRE TROUBLESHOOTING PROCEDURES.

This paragraph covers wheel assembly and tire troubleshooting procedures. The Wheel and Tire Fault Index, Table 5-1, lists faults for the wheel and tire system of the trailer.

Table 5-1. Wheel and Tire Fault Index

5-10. WHEEL ASSEMBLY AND TIRE TROUBLESHOOTING PROCEDURES (CONT).

1. TRAILER FAILS TO FOLLOW TRUCK; PULLS TO ONE SIDE OR WANDERS.

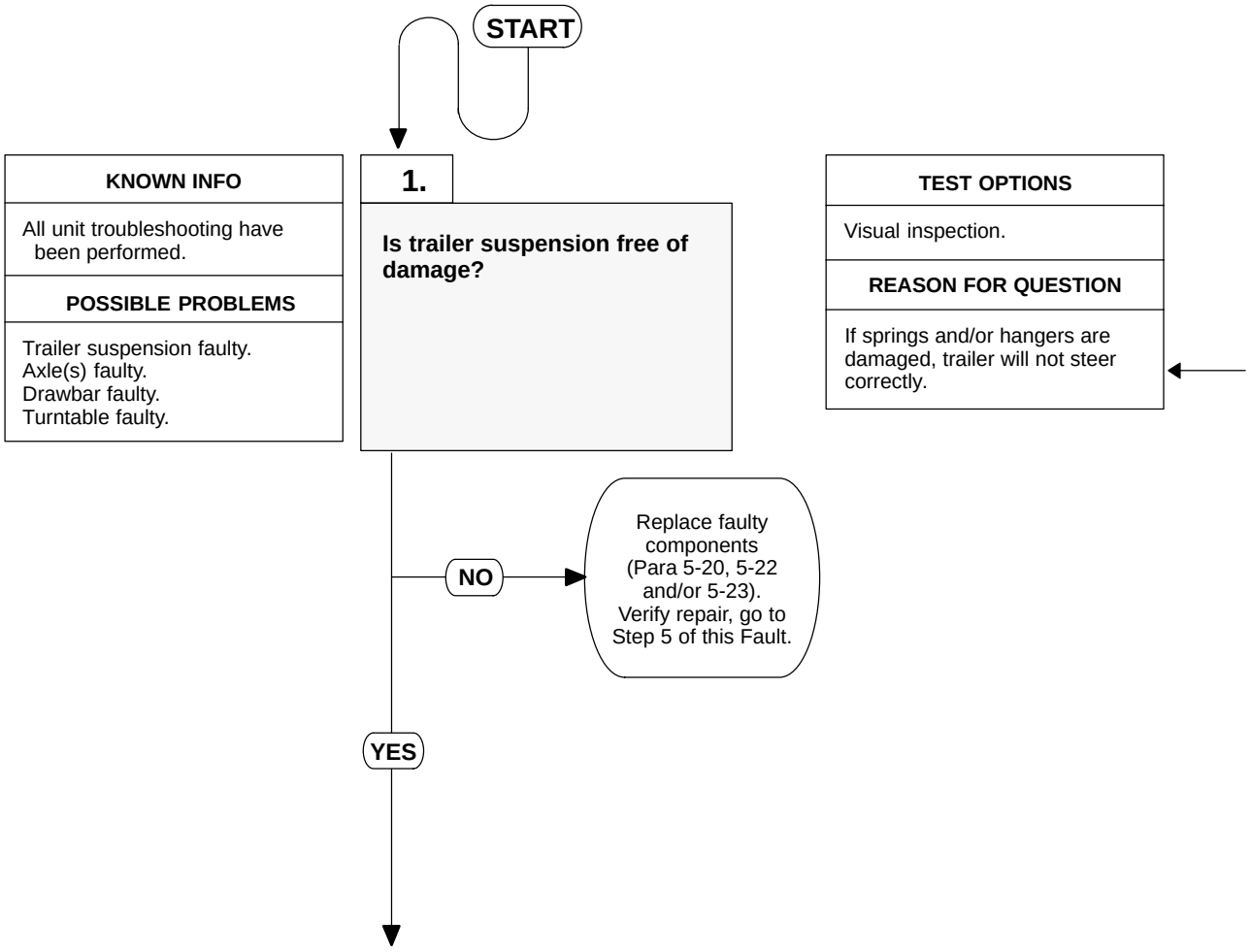
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

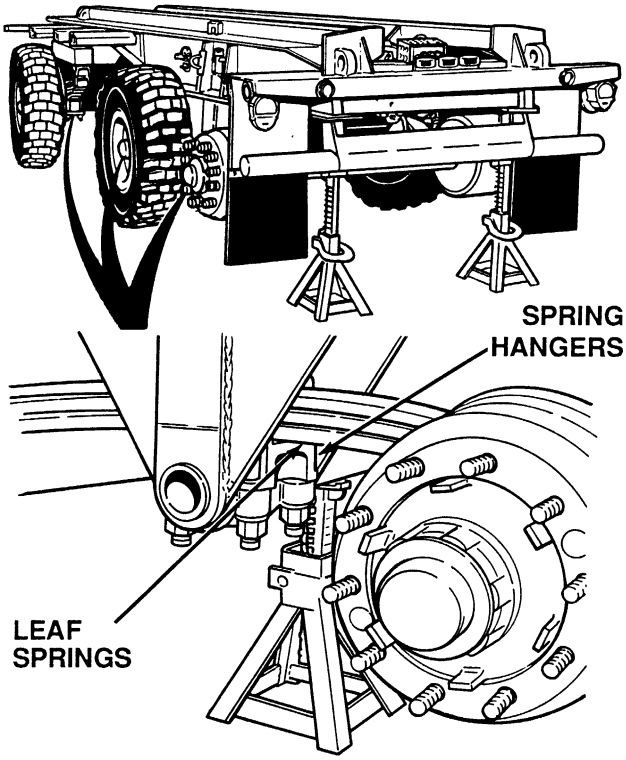
References
TM 9-2320-364-10

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Trailer air system charged, (Para 2-22)

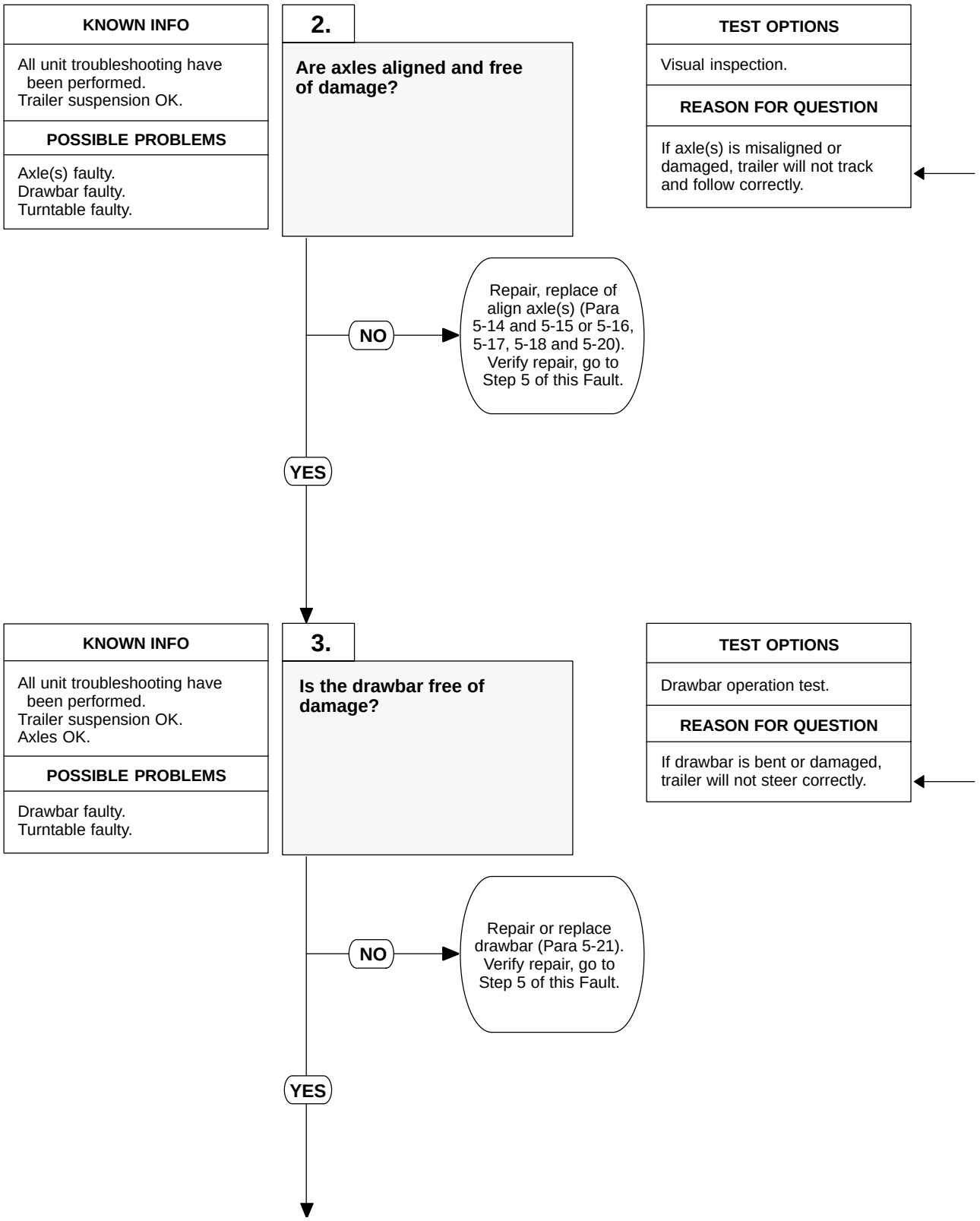


VISUAL INSPECTION

(1) Inspect trailer alignment.
  (a) If trailer leans to one side, go to lower side and perform Step (2) below.
  (b) If trailer does not lean, go to Step (2) of this Fault.
(2) Inspect springs and hangers on suspect side of trailer.
  (a) If springs and/or hangers are broken or worn, replace springs and/or hangers (Para 5-20, 5-22 and/or 5-23).
  (b) If springs and/or hangers are not broken or worn, springs and hangers are OK.



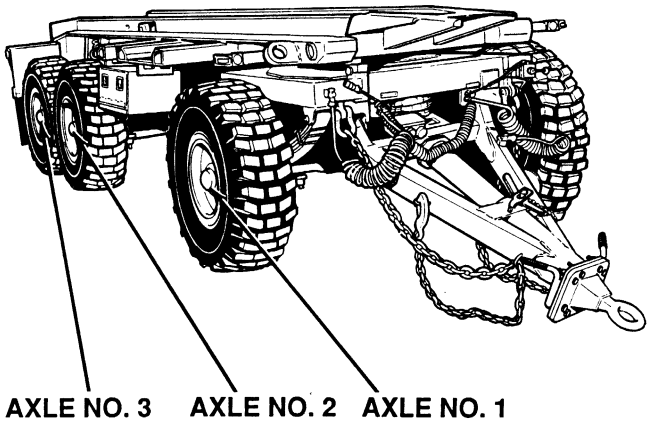
1. TRAILER FAILS TO FOLLOW TRUCK; PULLS TO ONE SIDE OR WANDERS (CONT).



VISUAL INSPECTION

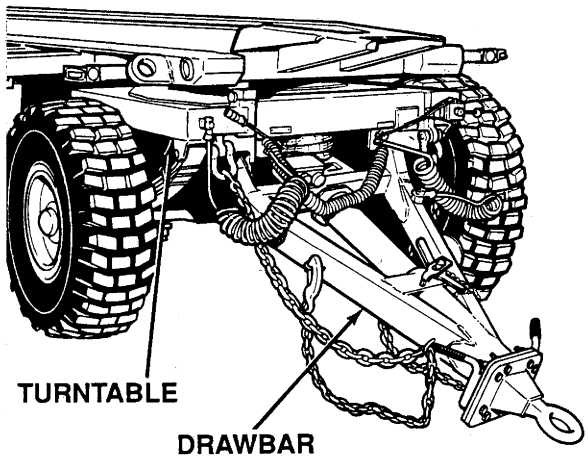
Inspect axles for damage and misalignment.

(1) If axle(s) is damaged, repair or replace axle(s) (Para 5-14 and 5-15 or 5-16, 5-17 and 5-18).
(2) If axle(s) is misaligned, realign axle(s) (Para 5-16 through 5-20).
(3) If axles are aligned and not damaged, axles are OK.

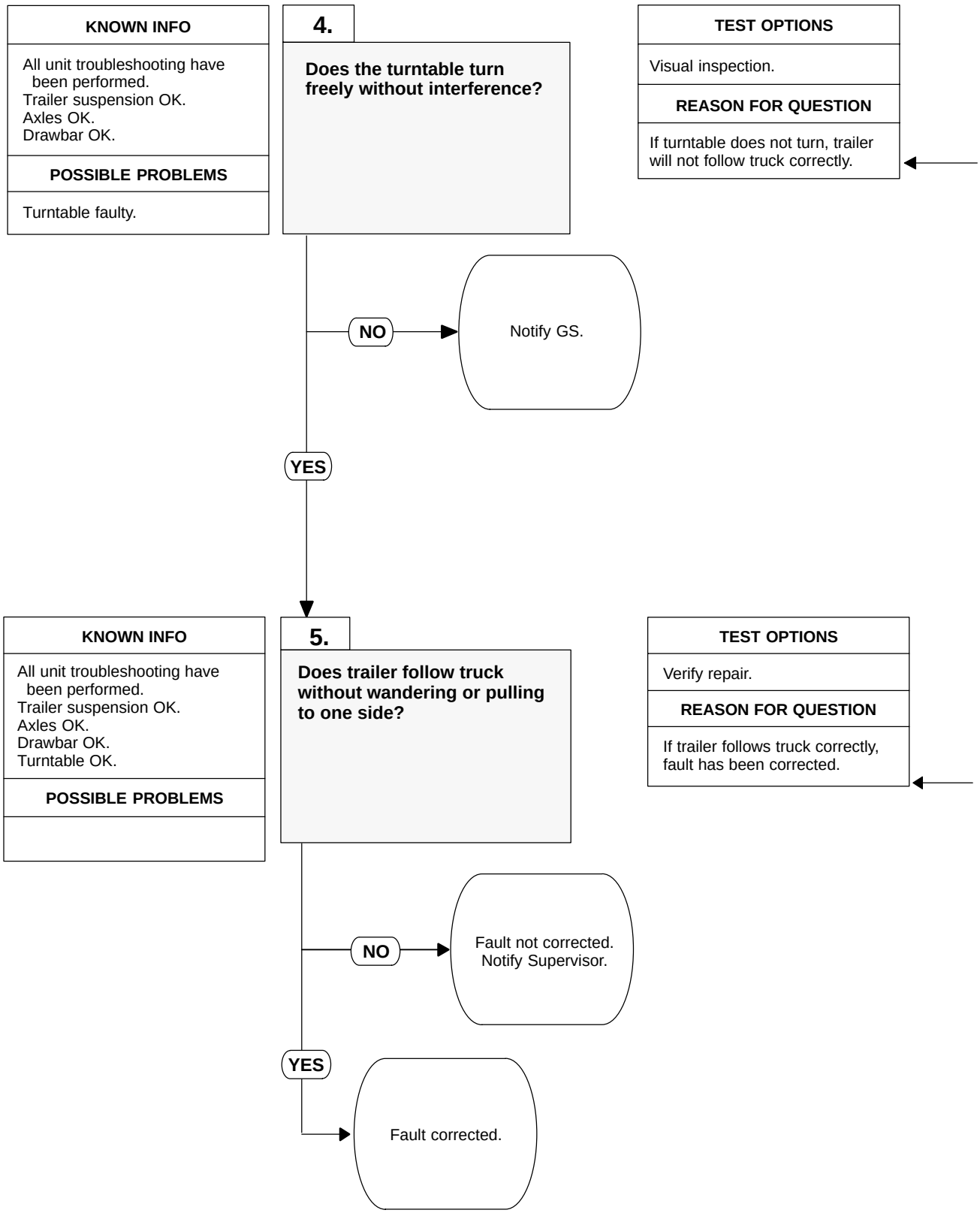


DRAWBAR OPERATION TEST

(1) Inspect drawbar for loose, bent, or damaged parts.
  (a) If parts are loose, tighten loose parts (Para 5-21).
  (b) If parts are damaged, replace damaged parts (Para 5-21).
(2) Raise and lower air bag control lever and observe drawbar movement (Para 2-23).
  (a) If the drawbar binds and is difficult to raise and lower, repair or replace necessary parts (Para 5-21).
  (b) If drawbar movement is smooth and free of interference, drawbar is OK.

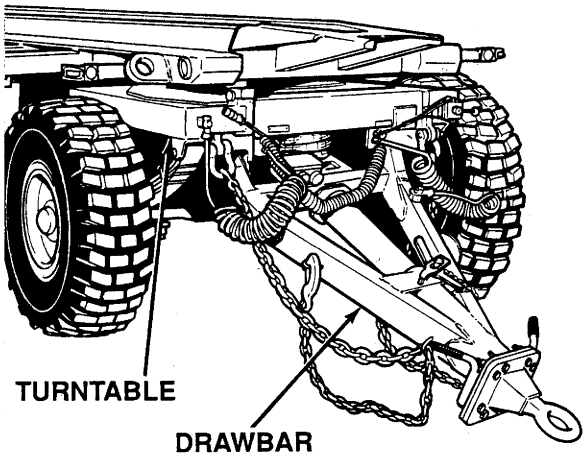


1. TRAILER FAILS TO FOLLOW TRUCK; PULLS TO ONE SIDE OR WANDERS (CONT).



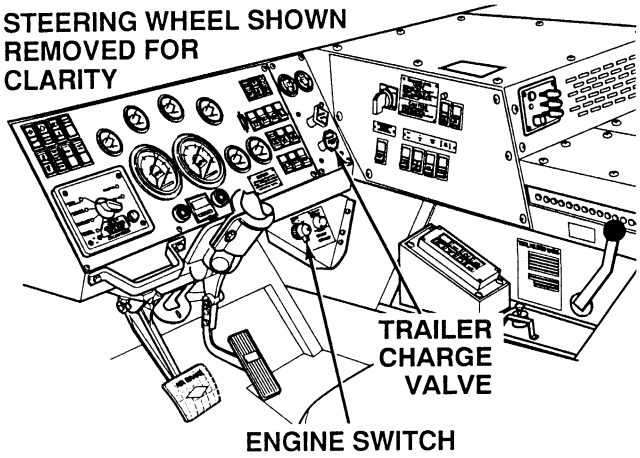
VISUAL INSPECTION

(1) Raise up trailer (Para 5-14) and support front suspension so front wheels are off the ground.
(2) While assistant rotates drawbar, observe turntable movement. Turntable should turn freely without interference.
  (a) If there is interference with turntable movement, perform Step (3) below, and notify GS Maintenance.
  (b) If there is no interference with turntable movement, turntable is OK.
(3) Remove support from front suspension and lower trailer to ground.



VERIFY REPAIR

(1) Connect trailer to truck, (Para 2-9).
(2) Connect emergency and service air supply gladhands to truck.
(3) Start engine (TM 9-2320-364-10).
(4) Push in trailer charge valve in truck.
(5) While assistant drives truck and pulls trailer, observe trailer.
  (a) If trailer does not follow truck correctly, fault not corrected. Perform Steps (6) through (8) below, and notify Supervisor.
  (b) If trailer follows truck correctly, fault has been corrected.
(6) Stop truck.
(7) Pull out trailer charge valve in truck.
(8) Turn OFF ENGINE switch.



5-10. WHEEL ASSEMBLY AND TIRE TROUBLESHOOTING PROCEDURES (CONT).

2. TRAILER SAGS IN BACK OR FRONT OR LEANS TO ONE SIDE.

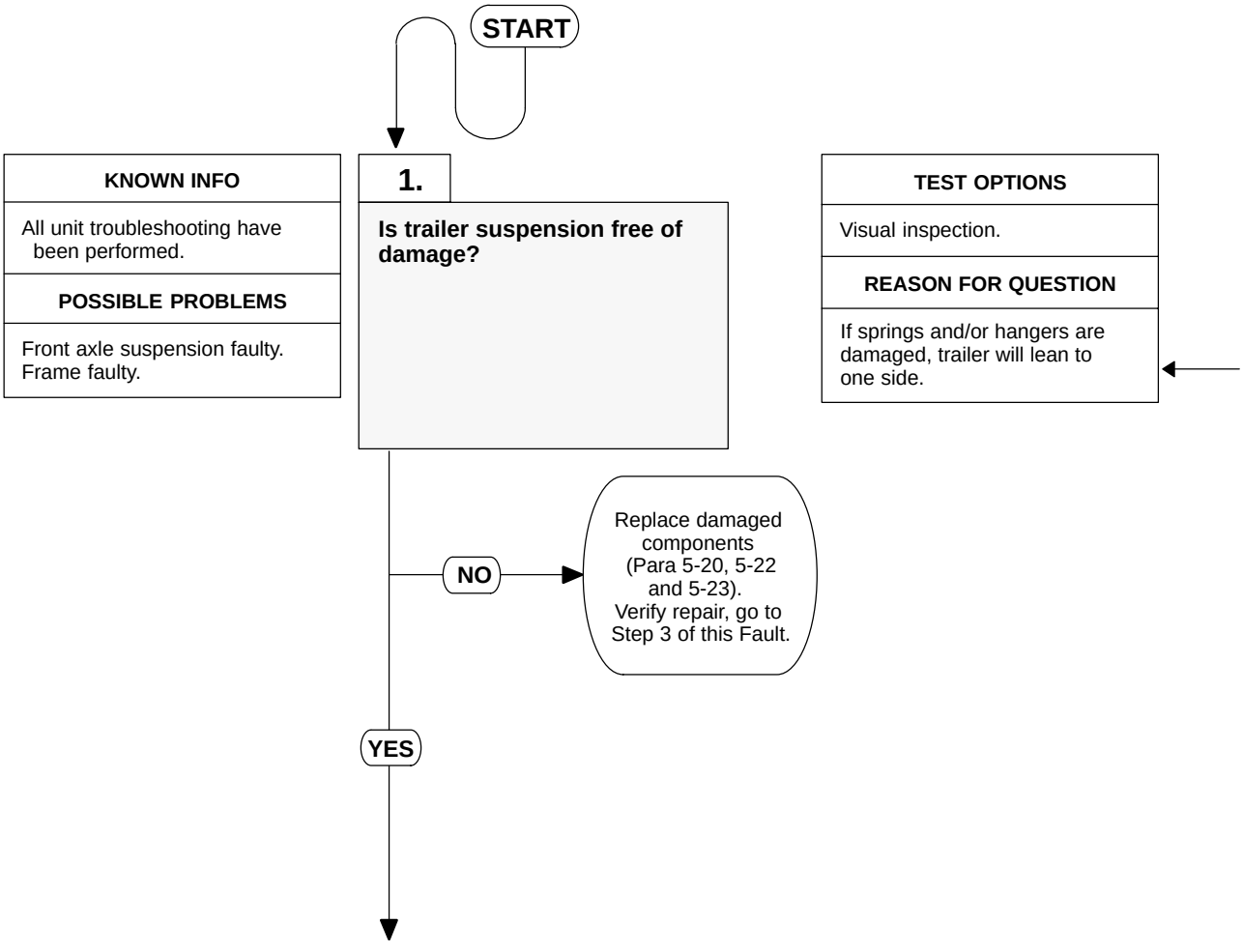
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

Personnel Required
Two

References
TM 9-2320-364-10
TC 9-237

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheels chocked, (TM 9-2320-364-10)
Trailer air system charged, (Para 2-22)

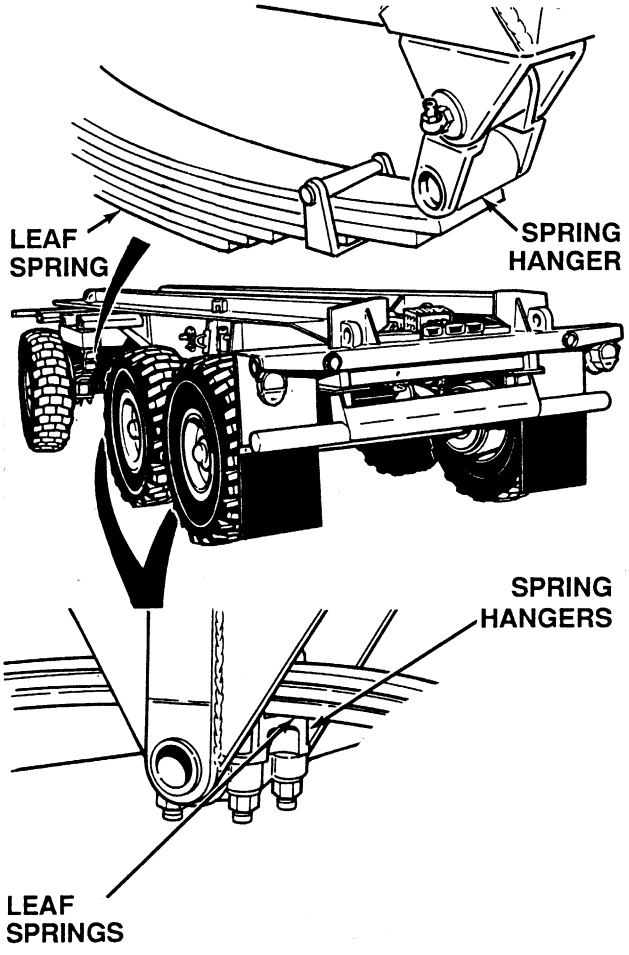


VISUAL INSPECTION

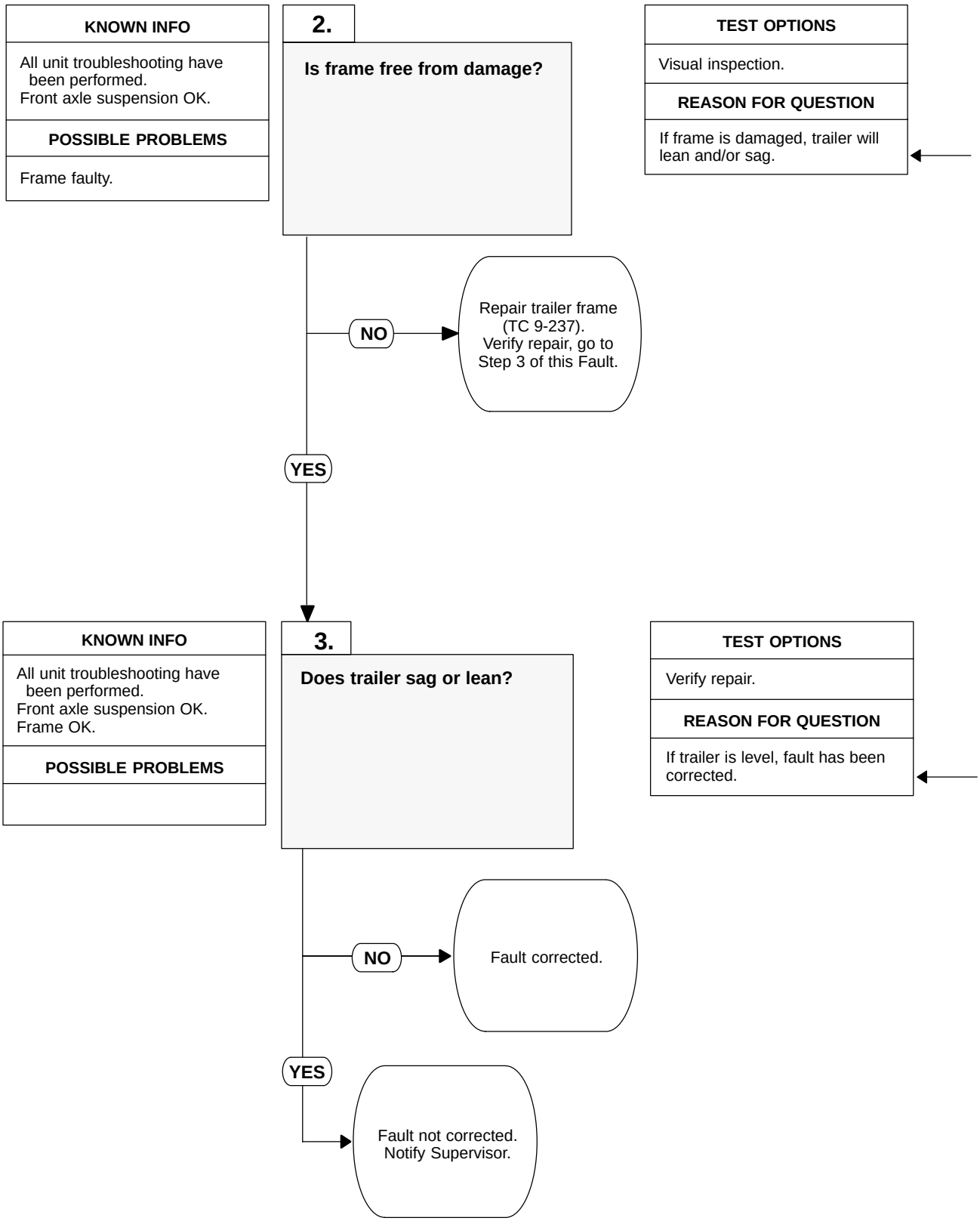
Inspect springs and hangers on suspect axle and side of trailer.

(1) If springs and/or hangers are broken or worn, replace springs and/or hangers (Para 5-20, 5-22 and 5-23).

(2) If springs and/or hangers are not broken or worn, springs and hangers are OK.



2. TRAILER SAGS IN BACK OR FRONT OR LEANS TO ONE SIDE (CONT).



VISUAL INSPECTION

Inspect frame for cracks or broken welds.
(1) If frame is damaged, repair frame (TC 9-237).
(2) If frame is not damaged, frame is OK.

VERIFY REPAIR

Inspect trailer for sagging and leaning.
(1) If trailer sags or leans, fault not corrected. Notify Supervisor.
(2) If trailer does not sag or lean, fault has been corrected.

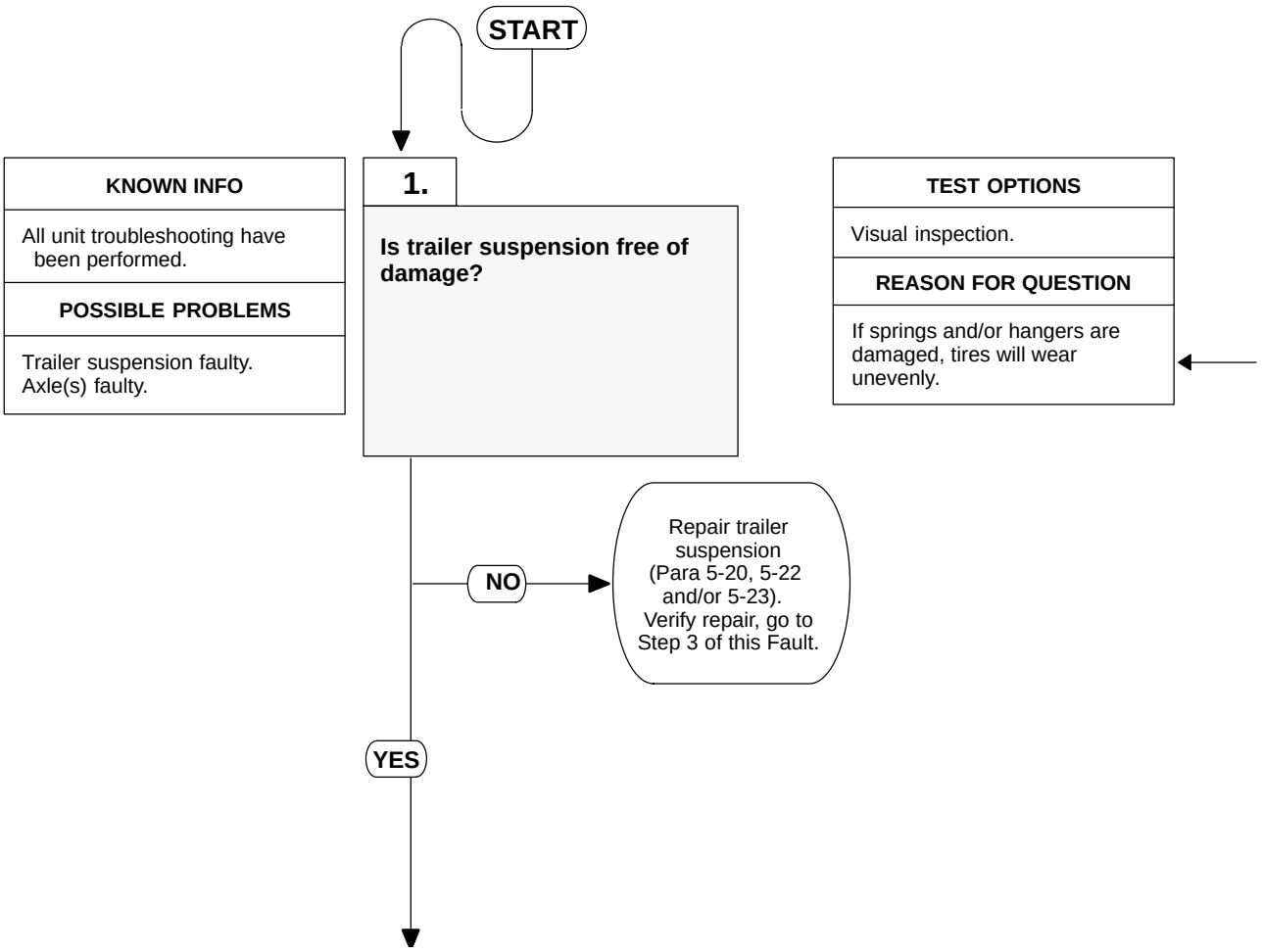
3. TIRES WEAR UNEVENLY.

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)

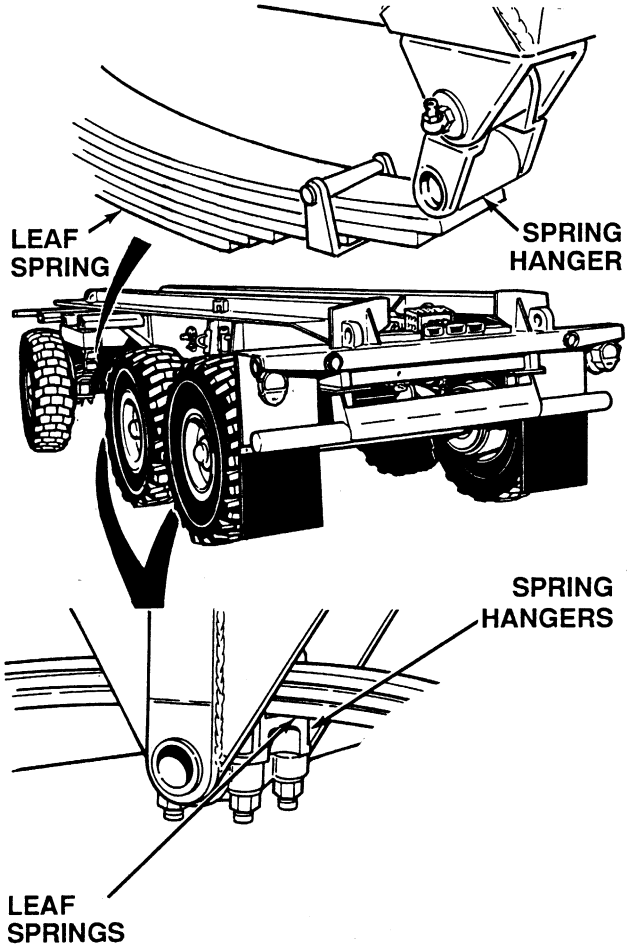
References
TM 9-2330-364-10
TC 9-237

Equipment Condition
Engine OFF, (TM 9-2320-364-10)
Parking brake applied, (TM 9-2320-364-10)
Wheel chocked, (TM 9-2320-364-10)
Trailer air system charged, (Para 2-22)

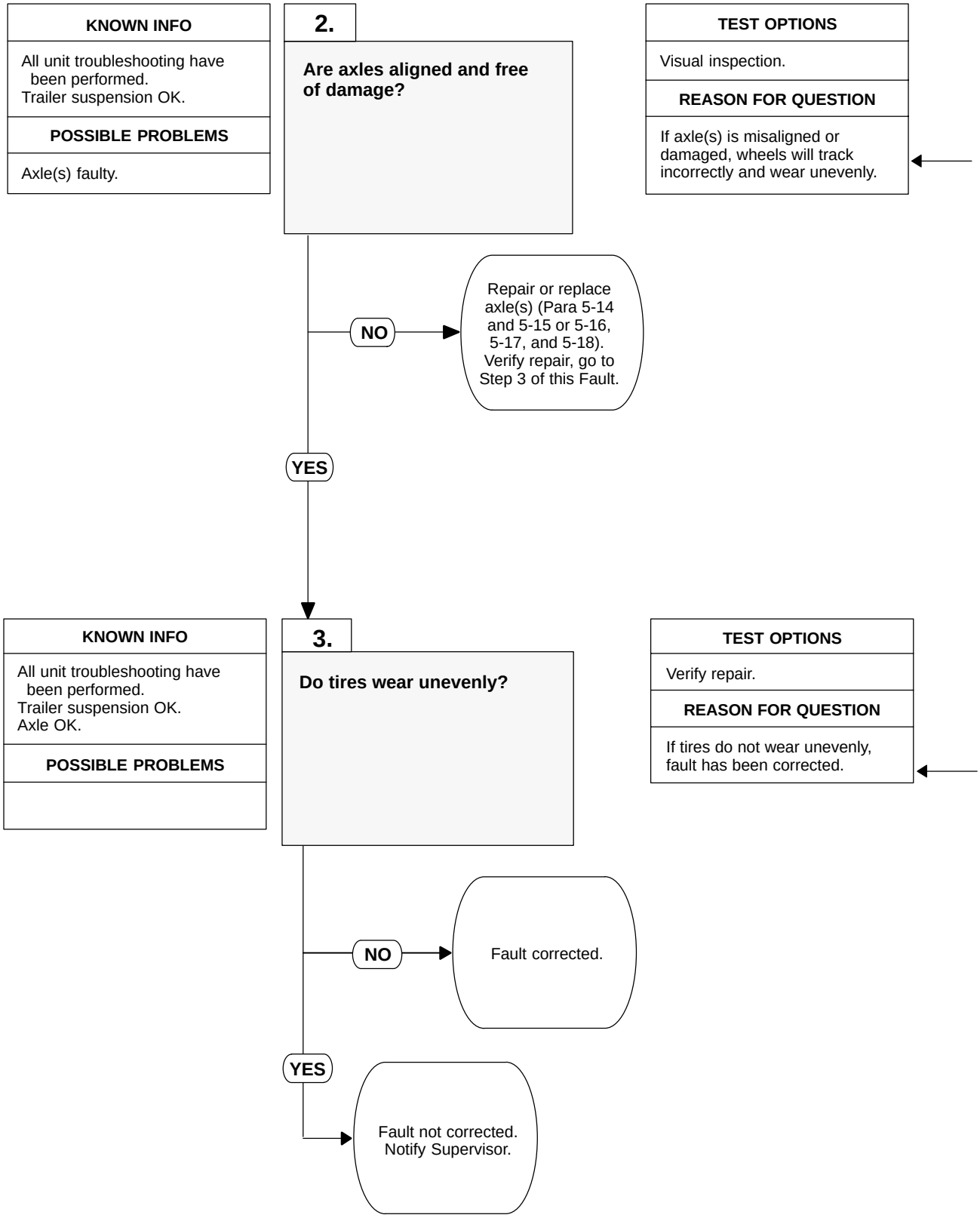


VISUAL INSPECTION

(1) Inspect trailer alignment.
  (a) If trailer leans to one side, go to lower side and perform Step (2) below.
  (b) If trailer does not lean, go to Step (2) of this Fault.
(2) Inspect springs and hangers on suspect side of trailer.
  (a) If springs and/or hangers are broken or worn, replace springs and/or hangers (Para 5-20, 5-22 and 5-23).
  (b) If springs and/or hangers are not broken or worn, springs and hangers are OK.

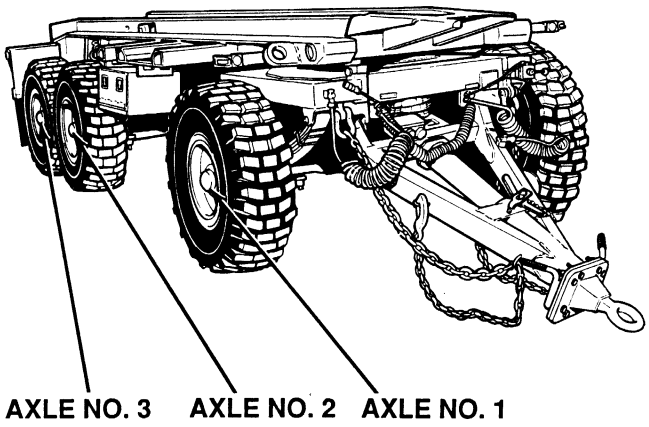


3. TIRES WEAR UNEVENLY (CONT).



VISUAL INSPECTION

Inspect axles for damage and misalignment.
(1) If axle(s) is damaged, repair or replace axle(s), (Para 5-14/5-15 or 5-16, 5-17 and 5-18).
(2) If axle(s) is misaligned, realign axle(s), (Para 5-16 through 5-18).
(3) If axles are aligned and not damaged, axles are OK.



VERIFY REPAIR

(1) Remove a tire from suspect axle and install a new tire, (Para 4-57).
(2) Inspect tire treads as required for uneven wear as required.
(a) If tires are worn unevenly, fault not corrected. Notify Supervisor.
(b) If tires have not worn unevenly, fault has been corrected.

Section IV. DIRECT SUPPORT MAINTENANCE PROCEDURES

5-11. INTRODUCTION.

Instructions in this section provide general procedures to be followed for inspection, removal, cleaning, repair, replacement, or installation of components, and testing authorized at the Direct Support Maintenance level as specified by the Maintenance Allocation Chart (MAC).

a. Servicing. All services are performed at the Unit Maintenance level of maintenance according to the MAC. If the trailer needs further service, refer to Chapter 4.

b. Ground Handling. For ground handling instructions refer to Chapter 2.

c. Operational Checks. All operational checks included in the maintenance procedures will include the techniques and methods required to assure the satisfactory performance of the trailer. Reference the Operator's instructions, Chapter 2, for operation procedures.

d. Inspection of Components.

(1) Inspect all surfaces in contact with gaskets, packings, or seals for nicks and burrs which might damage the new seal upon assembly. If any defect is found, remove it before assembly.

NOTE

Defects which may cause bearing binding or misalignment are cause for rejection. Nicks or gouges outside race load areas are not cause for rejection.

(2) Inspect bearings for rusted or pitted balls, races, or separators. Inspect balls and races for abrasion and serious discoloration.

(3) Cuts or grooves parallel to ball or roller rotation and fatigue pits (not minor machine marks or scratches and cracks found during magnetic particle inspection) are causes for bearing rejection.

(4) Visually inspect all castings and weldments for cracks.

(5) Clean all parts before inspection. Check for defects such as physical distortion, wear, cracks and pitting.

e. Cleaning Procedures.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

(1) When cleaning ball or roller bearings, place in a basket and suspend in a container of drycleaning solvent, P-D-680 (Item 22, Appendix E). If necessary, use a brush (Item 6, Appendix E) to remove caked grease or chips. Avoid rotating bearings before solid particles are removed to prevent damaging races and balls. Lubricate bearings after cleaning.

(2) Do not clean preformed packings or other rubber parts in drycleaning solvent. Wipe with a clean, dry, lint-free cloth (Item 11, Appendix E).

(3) For exterior cleaning of frame and structural components, use soap solution (Item 21, Appendix E). Leave application on items surface for approximately ten minutes before rinsing. Rinse with hot or cold water under pressure. If available, use hot water under 80 to 120 lb (36-54 kg) pressure. An ordinary garden hose may be used if no other equipment is available. If pressurized water supply is not available, wash painted surfaces with a soap solution (Item 21, Appendix E) and water.

(4) Electrical parts such as coils, connectors, switches and insulated wiring, should not be soaked or sprayed with cleaning solutions. Clean these parts with a clean, dry cloth (Item 11, Appendix E) moistened with drycleaning solvent P-D-680 (Item 22, Appendix E).

(5) A degreasing machine may be used to remove heavy grease and oil from metal parts.

f. Removal and Disassembly of Components.

(1) Welding and brazing processes may be used to repair cracks in external parts, such as brackets, panels and framework. Because of time required and the chance of subsequent failure, such repairs should be attempted only when replacement parts are not available. Welding and brazing of castings and running parts or parts under great stress will only be done in emergencies. Refer to TC 9-237 for proper welding and brazing procedures.

(2) Replace any screw, nut, or fitting with damaged threads. Inspect tapped holes for thread damage. If cross-threading is evident, retap the hole for the next oversize screw or stud. If retapping will weaken the part, or if the cost of the part makes retapping impractical, replace the part. Chasing the threads with proper size tap or die may be adequate.

(3) Reshape elongated mounting holes to round and drill to receive bushing with required inner diameter. Stake bushing in place with center punch.

(4) Remove protective grease coatings from new parts before installation.

(5) To replace a preformed packing, first clean groove, then stretch packing and place into position. Place component on flat surface and uniformly press packing into position.

(6) Coat oil seals evenly with oil or grease before installing. Install oil seals with seal lip facing in, applying an even force to outer edge of seal. If oil seals are to be installed over keyed or splined shafts, use a guide to prevent sharp edge of the keyway or splines from cutting the seal. Construct guides of very thin gauge sheet metal and shape to the required diameter. Make certain guide edges are not sharp and are bent slightly inward so they do not cut the seal.

(7) Remove parts only if repair or replacement is required. Do not disassemble a component any further than necessary to accomplish needed repairs.

5-11. INTRODUCTION (CONT).

g. Painting. Instructions for preparation of material for paint, how to paint and materials to be used are in TM 43-0139. Instructions for camouflage painting are contained in FM 20-3. Stenciling and marking military vehicles are called out in TB 43-0209. Data plates location and description are referenced in Chapter 2.

h. Lubrication. Refer to Para 4-8 for lubrication procedures and requirements for the trailer. The instructions include types and grades of lubrications used, lube points, locations and frequency of required lubrication.

i. Assembly. Lubricate bearings before reassembly with the type of lubricant normally used in the related housing or container. This will provide lubrication during the first run-in until lubricant from the system can reach the bearings.

j. Installation. Put hoses, tubes, lines and, electrical wiring in place by matching identification tags, markings on equipment and using illustrations presented. Use sealing compounds as required in each maintenance task. When installing screws and nuts, be sure to tighten to values given.

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.
- DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
- BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and a suitable fire extinguisher kit near by, and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

k. Welding Procedures. Welding may be used to repair cracks in steel parts. These repairs should be made only when replacement parts are not available. Do not weld running parts. Visually inspect all welds for cracks. Parts that carry a great load should receive magnetic particle inspection. Critical nonferrous parts may be inspected with florescent penetrant.

l. Sheet Metal Repair. Straighten minor body dents by bumping with a soft-faced hammer while using a wooden block backing. Repair minor skin cracks by installing patches.

m. Preparation for Storage and Shipment.

(1) Refer to Chapter 4, Section VI for preparation for storage and shipment.

(2) If trailer is being shipped overseas, refer to TB 9-2300-281-35: Standards for Overseas Shipment or Domestic Issue of Special Purpose Vehicles.

(3) Check using command for administrative storage requirements. If no requirements have been established refer to AR 750-1.

5-12. FRONT ELECTRICAL BOX REPAIR.

This task covers:

a. Resistor/Circuit Board Test
b. Resistor Replacement
c. Circuit Board Replacement
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Gun, Heat (Item 16, Appendix J)
Multimeter, Digital (Item 28, Appendix J)
Pencil, Soldering, Electric (Item 30, Appendix J)

Material/Parts
Adhesive (Item 2, Appendix E)
Adhesive Sealant (Item 4, Appendix E)

Material/Parts - Continued
Heat Shrink (Item 14, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Lockwasher (4) (Item 50, Appendix I)

Equipment Condition
Front electrical box removed, (Para 4-25)
12 volt and 24 volt connectors removed, (Para 4-30)

a. Resistor/Circuit Board Test.

(1) Loosen four captive screws (1) and remove box cover (2) from box (3).

(2) Set multimeter select switch to ohms.

NOTE

Observe multimeter reading for a measurement of 7.7 ohms ± 0.077 ohms. If measurement is incorrect, replace resistor.

(3) Connect positive multimeter lead to either terminal of resistor (4).

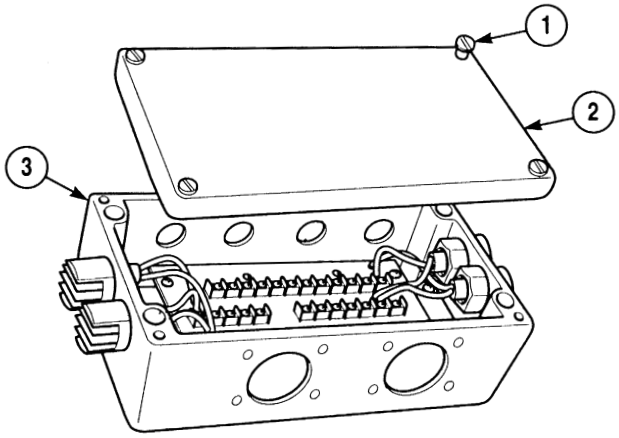
(4) Connect negative multimeter lead to opposite terminal of resistor (4).

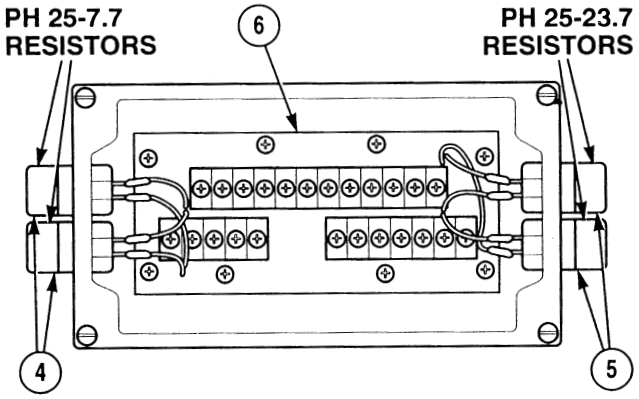
NOTE

Observe multimeter reading for a measurement of 23.7 ohms ± 0.237 ohms. If measurement is incorrect, replace resistor. If measurement is correct, replace circuit board.

(5) Connect positive multimeter lead to either terminal of resistor (5).

(6) Connect negative multimeter lead to opposite terminal of resistor (5).





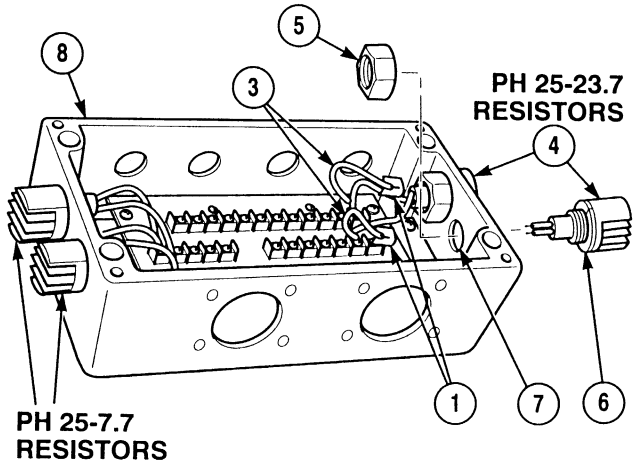
5-12. FRONT ELECTRICAL BOX REPAIR (CONT).

b. Resistor Replacement.

(1) *Removal.*

NOTE

- Tag and mark all wires prior to removal.
- All resistors are removed the same way.
- Two different resistor values are mounted on the box, PH-25-23.7 and PH-25-7.7. Locations of these resistors are shown.



(a) Peel back heat shrink (1) from wires (2).

(b) Remove wires (3) from resistor (4).

(c) Remove nut (5) from resistor (4).

(d) Remove resistor (4) and washer (6) from hole (7) in box (8).

(e) Repeat Steps (a) through (d) for remaining resistors (4).

(2) *Installation.*

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(a) Apply adhesive sealant around edge of resistor hole (7).

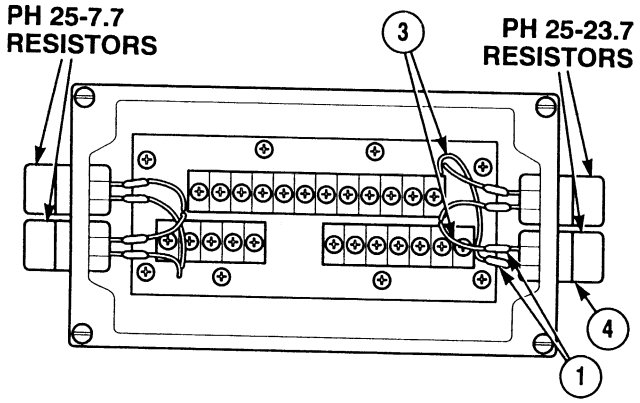
(b) Apply sealing compound on threads of resistor (4).

(c) Install resistor (4) and washer (6) on box (8) with nut (5).

(d) Slide two sections of heat shrink (1) over wires (3).

WARNING

Allow adhesives to dry completely prior to soldering. Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.



(e) Solder wires (3) to resistor (4).

(f) Slide heat shrink (1) forward over wires (3).

(g) Apply heat to heat shrink (1).

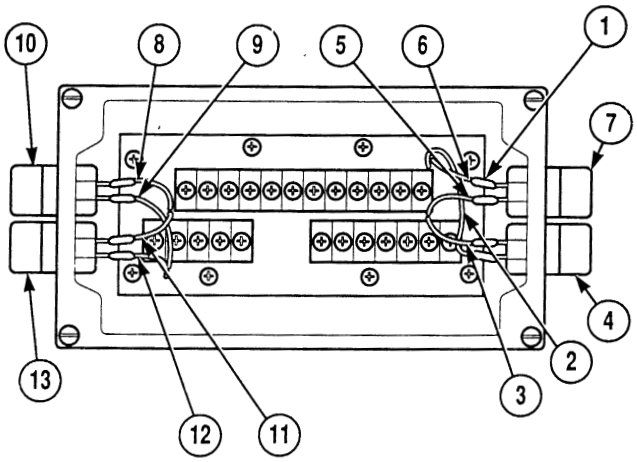
(h) Repeat Steps (a) through (g) for the other resistors (4).

c. Circuit Board Replacement.

(1) *Removal.*

NOTE

Tag and mark all wires prior to removal.



(a) Remove heat shrink (1) from wires (2) and (3).

(b) Remove wires (2) and (3) from resistor (4).

(c) Remove heat shrink (1) from wires (5) and (6).

(d) Remove wires (5) and (6) from resistor (7).

(e) Remove heat shrink (1) from wires (8) and (9).

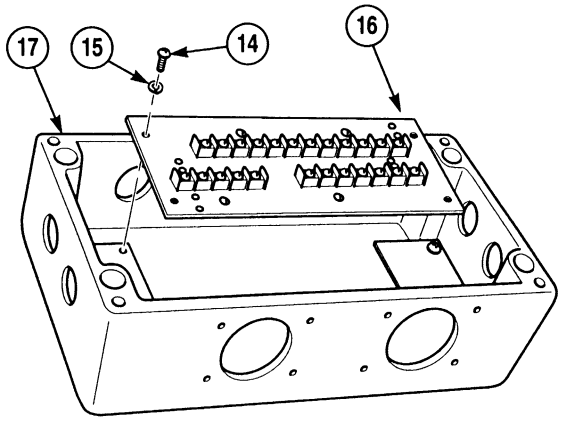
(f) Remove wires (8) and (9) from resistor (10).

(g) Remove heat shrink (1) from wires (11) and (12).

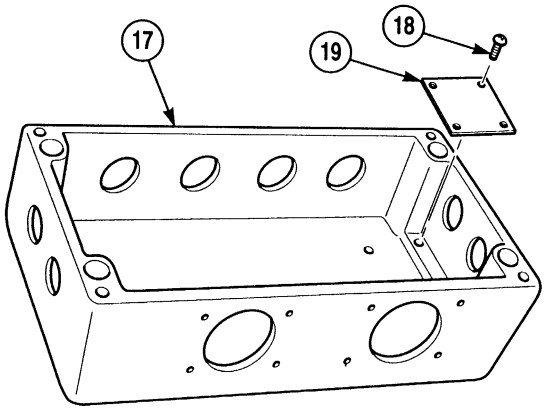
(h) Remove wires (11) and (12) from resistor (13).

5-12. FRONT ELECTRICAL BOX REPAIR (CONT).

(i) Remove four screws (14), lockwashers (15) and circuit board (16) from circuit box (17). Discard lockwashers.



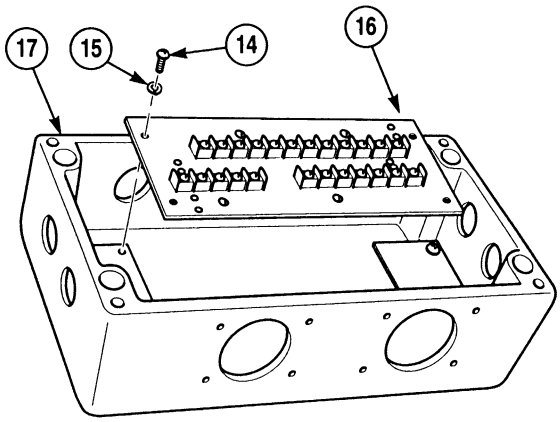
(j) Remove four screws (18) and two spacers (19) from box (17).



(2) *Installation.*

(a) Install two spacers (19) on box (17) with four screws (18).

(b) Install circuit board (16) on box (17) with four lockwashers (15) and screws (14).



WARNING

Allow adhesives to dry completely prior to soldering. Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

(c) Slide heat shrink over wires (2) and (3).

(d) Solder wires (2) and (3) to resistor (4).

(e) Slide heat shrink (1) forward over wires (2) and (3).

(f) Slide heat shrink over wires (5) and (6).

(g) Solder wires (5) and (6) to resistor (7).

(h) Slide heat shrink (1) forward over wires (5) and (6).

(i) Slide heat shrink over wires (8) and (9).

(j) Solder wires (8) and (9) to resistor (10).

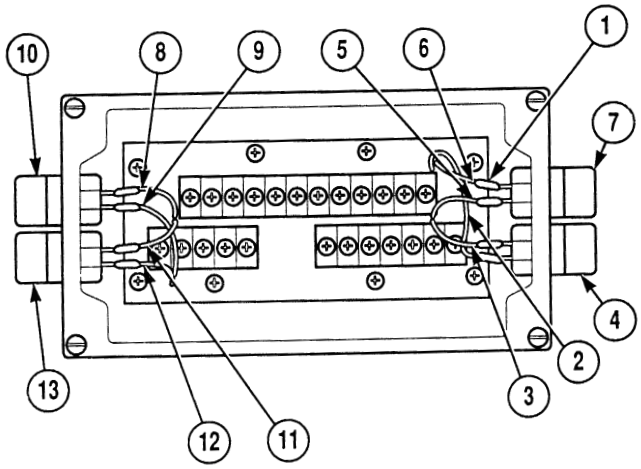
(k) Slide heat shrink (1) forward over wires (8) and (9).

(l) Slide heat shrink (1) over wires (11) and (12).

(m) Solder wires (11) and (12) to resistor (13).

(n) Slide heat shrink (1) forward over wires (11) and (12).

(o) Apply heat to heat shrink (1) on wires.



d. Follow-On Maintenance:

- Install front electrical box, (Para 4-25).
- Install 12 volt and 24 volt connectors, (Para 4-30).

END OF TASK

5-13. REAR ELECTRICAL BOX REPAIR.

This task covers:

a. Resistor/Circuit Board Test
b. Resistor Replacement
c. Circuit Board Replacement
d. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's
(Item 49, Appendix J)
Gun, Heat (Item 16, Appendix J)
Multimeter, Digital (Item 28, Appendix J)
Pencil, Soldering, Electric (Item 30, Appendix J)

Materials/Parts
Adhesive Sealant (Item 4, Appendix E)
Cable Ties (Item 8, Appendix E)
Heat Shrink (Item 14, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)

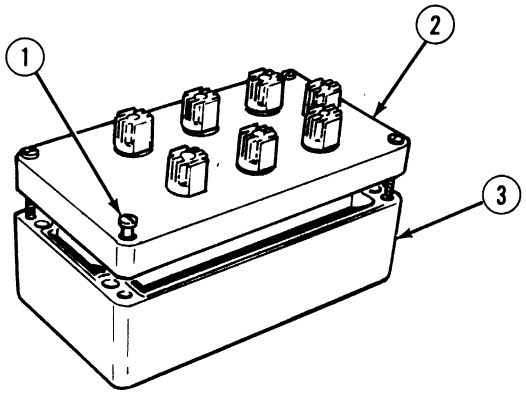
Equipment Condition
Rear electrical box removed, (Para 4-26)

a. Resistor/Circuit Board Test.

NOTE

Box cover will be connected to the box by wires. Set cover to one side to gain access to the box.

(1) Loosen four captive screws (1) and remove box cover (2) from box (3).



(2) Set multimeter select switch to ohms.

NOTE

Observe multimeter reading for a measurement of 24.1 ohms ± 0.241 ohms. If measurement is incorrect, replace resistor.

(3) Connect positive multimeter lead to either terminal of resistor (4).

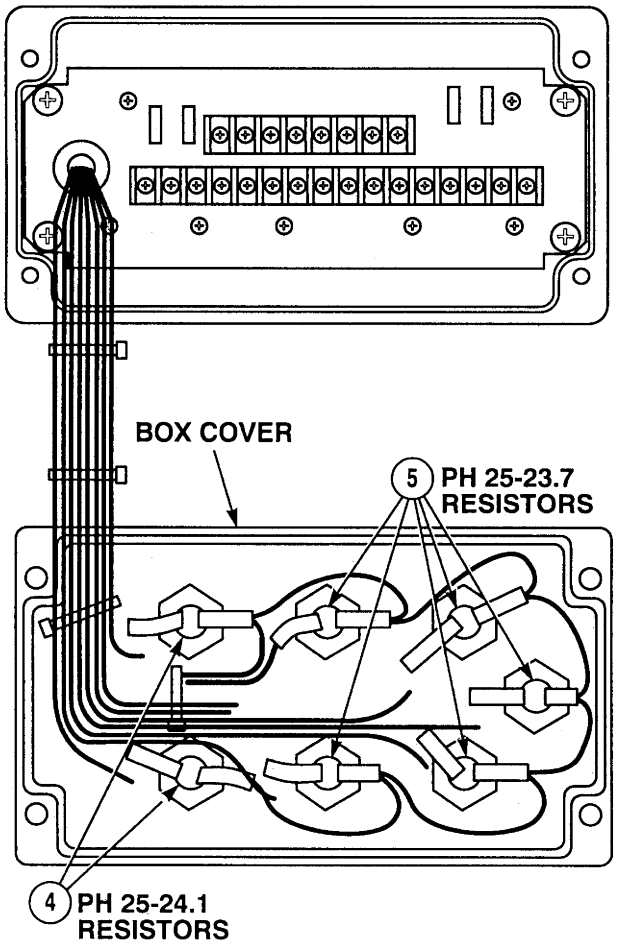
(4) Connect negative multimeter lead to opposite terminal of resistor (4).

NOTE

Observe multimeter reading for a measurement of 23.3 ohms ± 0.233 ohms. If measurement is incorrect, replace resistor. If measurement is correct, replace circuit board.

(5) Connect positive multimeter lead to either terminal of resistor (5).

(6) Connect negative multimeter lead to opposite terminal of resistor (5).

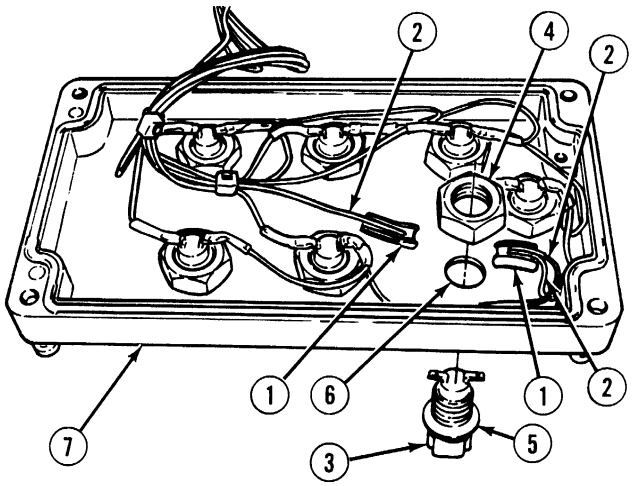


b. Resistor Replacement.

(1) *Removal.*

NOTE

- Tag and mark all wires prior to removal.
- Cut cable ties as required.
- All resistors are removed the same way.
- Two different resistor values are mounted on the box cover, PH-25-24.1 and PH-25-23.7. Locations of these resistors are shown.



(a) Remove heat shrink (1) from wires (2).

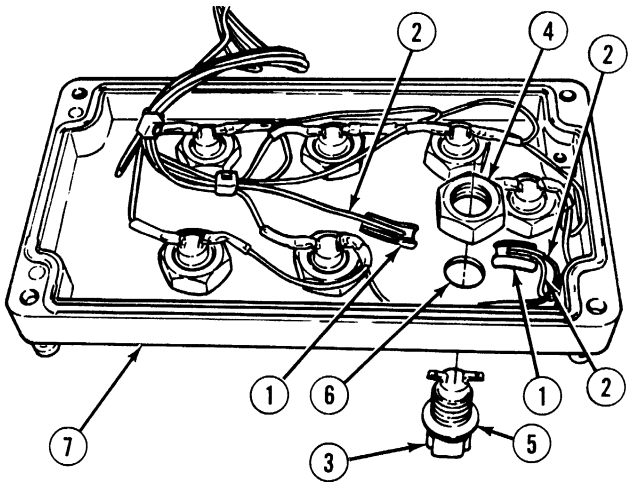
5-13. REAR ELECTRICAL BOX REPAIR (CONT).

(b) Remove wires (2) from resistor (3).

(c) Remove nut (4) from resistor (3).

(d) Remove resistor (3) and washer (5) from hole (6) in cover (7).

(e) Repeat Steps (a) through (d) for remaining resistors (3).



(2) *Installation.*

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

NOTE

Replace cable ties as required.

(a) Apply adhesive sealant around edge of resistor hole (6).

(b) Apply sealing compound on threads of resistor (3).

(c) Install resistor (3) and washer (5) on cover (7) with nut (4).

(d) Slide two sections of heat shrink (1) over wires (2).

WARNING

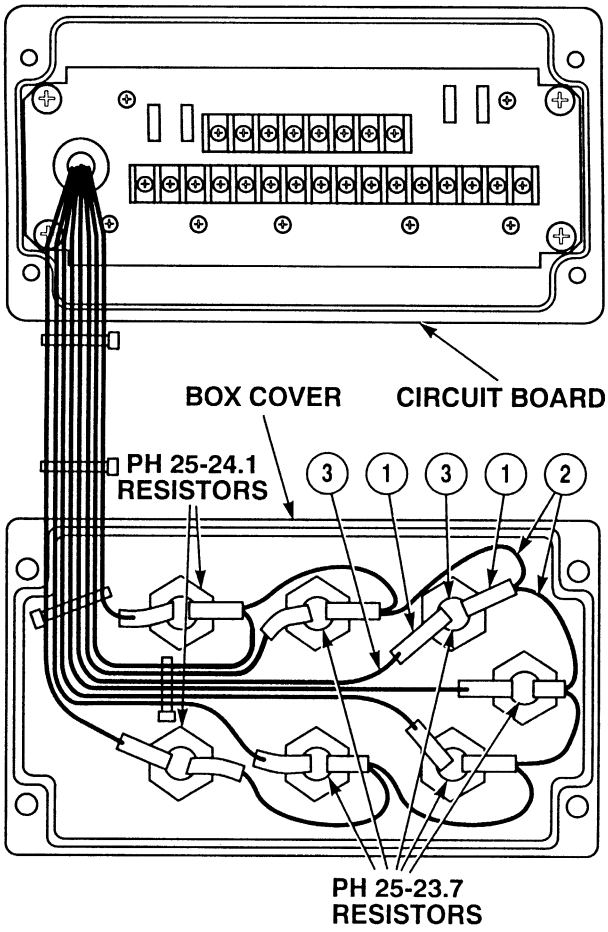
Allow adhesives to dry completely prior to soldering. Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.

(e) Solder wires (2) to resistor (3).

(f) Slide heat shrink (1) forward over wires (2).

(g) Apply heat to heat shrink (1).

(h) Repeat Steps (a) through (g) for the remaining resistors (3).



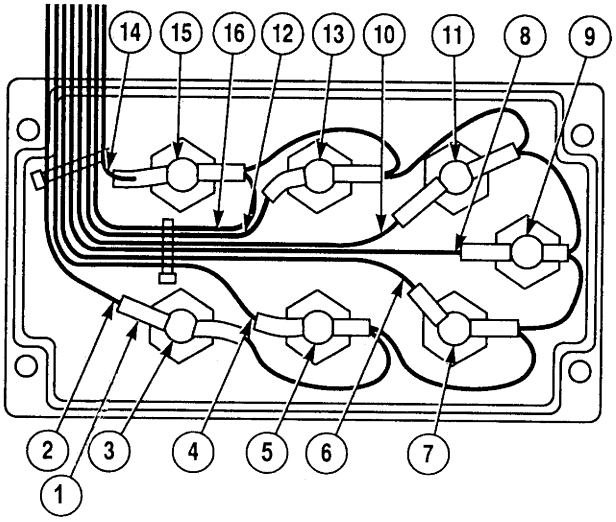
5-13. REAR ELECTRICAL BOX REPAIR (CONT).

c. Circuit Board Replacement.

(1) *Removal.*

NOTE

- Tag and mark all wires prior to removal.
- Cut cable ties as required.



(a) Remove heat shrink (1) from wire (2).

(b) Remove wire (2) from resistor (3).

(c) Remove heat shrink (1) from wire (4).

(d) Remove wire (4) from resistor (5).

(e) Remove heat shrink (1) from wire (6).

(f) Remove wire (6) from resistor (7).

(g) Remove heat shrink (1) from wire (8).

(h) Remove wire (8) from resistor (9).

(i) Remove heat shrink (1) from wire (10).

(j) Remove wire (10) from resistor (11).

(k) Remove heat shrink (1) from wire (12).

(l) Remove wire (12) from resistor (13).

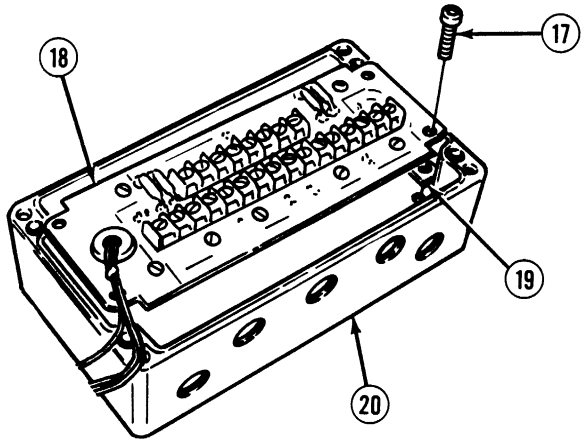
(m) Remove heat shrink (1) from wire (14).

(n) Remove wire (14) from resistor (15).

(o) Remove heat shrink (1) from wire (16).

(p) Remove wire (16) from resistor (15).

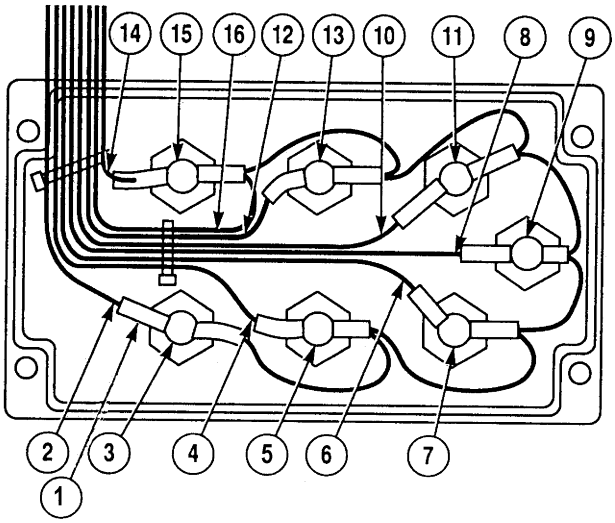
(q) Remove four screws (17), circuit board (18) and two spacers (19) from circuit box (20).



(2) *Installation.*

WARNING

Allow adhesives to dry completely prior to soldering. Solder and soldering tool become extremely hot. Failure to follow proper procedures could cause serious injury or death to personnel.



(a) Slide heat shrink (1) over wire (2).

(b) Solder wire (2) to resistor (3).

(c) Slide heat shrink (1) forward over wire (2).

(d) Slide heat shrink over wire (4).

(e) Solder wire (4) to resistor (5).

(f) Slide heat shrink (1) forward over wire (4).

(g) Slide heat shrink over wire (6).

(h) Solder wire (6) to resistor (7).

(i) Slide heat shrink (1) forward over wire (6).

(j) Slide heat shrink over wire (8).

(k) Solder wire (8) to resistor (9).

(l) Slide heat shrink (1) forward over wire (8).

(m) Slide heat shrink over wire (10).

(n) Solder wire (10) to resistor (11).

(o) Slide heat shrink (1) forward over wire (10).

(p) Slide heat shrink (1) over wire (12).

(q) Solder wire (12) to resistor (13).

(r) Slide heat shrink (1) forward over wire (12).

(s) Slide heat shrink over wire (14).

(t) Solder wire (14) to resistor (15).

(u) Slide heat shrink (1) forward over wire (14).

(v) Slide heat shrink over wire (16).

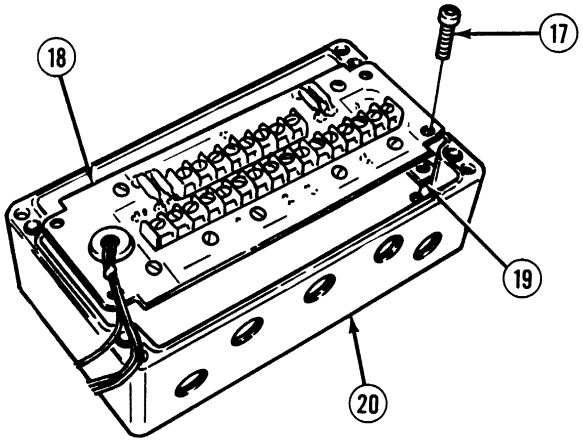
(w) Solder wire (16) to resistor (15).

(x) Slide heat shrink (1) forward over wire (16).

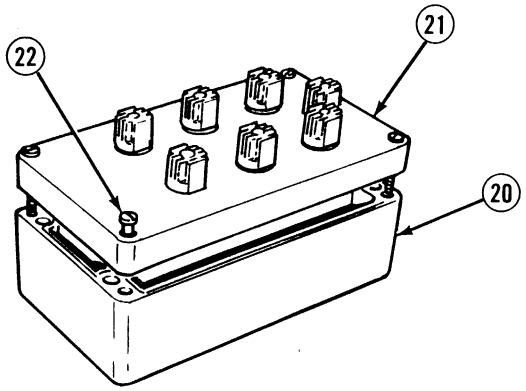
(y) Apply heat to heat shrink (1).

5-13. REAR ELECTRICAL BOX REPAIR (CONT).

(z) Install two spacers (19) and circuit board (18) with four screws (17) on circuit box (20).



(aa) Install cover (21) on box (20) with four captive screws (22).



d. Follow-On Maintenance:

- Install rear electrical box, (Para 4-26).

END OF TASK

5-14. AXLE NO. 1 REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Brush, Wire Scratch (Item 1, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Jack, Stabilizer (2) (Item 23, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Lift, Transmission (Item 26, Appendix J)
Respirator, Air Filtering (Item 36, Appendix J)
Socket Set, 1 in. (Item 38, Appendix J)
Socket, Set, 3/4 in. (Item 39, Appendix J)
Welding Machine, Arc (Item 52, Appendix J)
Wrench, Impact Electric, 1 in. External (Item 59, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-814 N·m]) (Item 62, Appendix J)

Materials/Parts
Oil, Lubricating (Item 15, Appendix E)
Tags, Identification (Item 23, Appendix E)
Lockwasher (Item 48, Appendix I)
Lockwasher (8) (Item 53, Appendix I)
U-bolt (4) (Item 88, Appendix I)

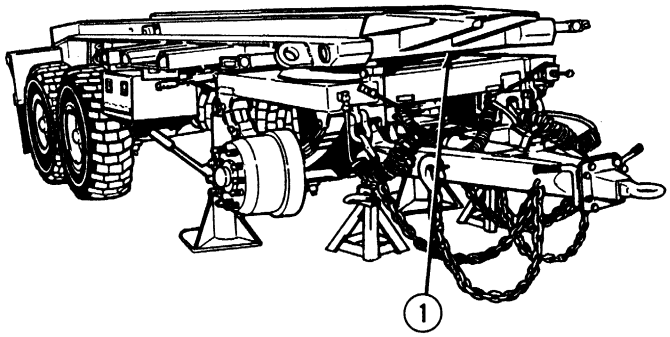
Personnel Required
Two

References
TC 9-237
TB 43-0209

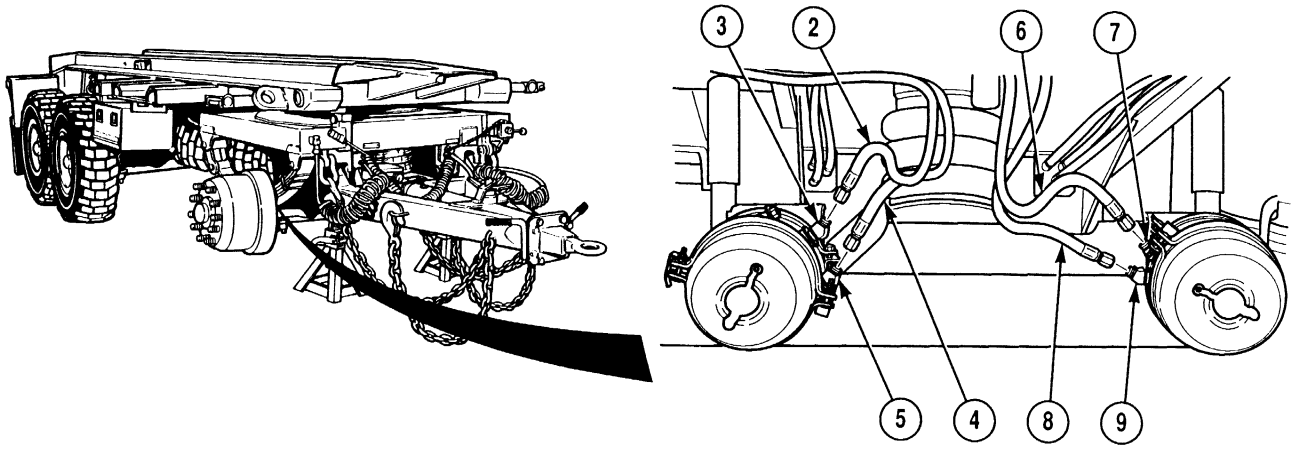
Equipment Condition
Wheels chocked, (Para 2-20)
Wheels removed, (Para 4-57)
Shock absorbers removed, (Para 4-64)

a. Removal.

(1) Position jackstands under front of trailer frame (1).



5-14. AXLE NO. 1 REPAIR (CONT).



NOTE

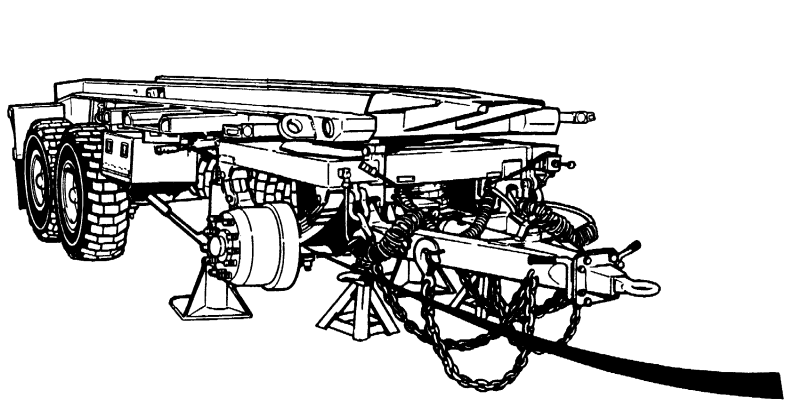
- Tag and mark all air lines prior to removal.
- Cap and plug all air lines and connectors after removal.

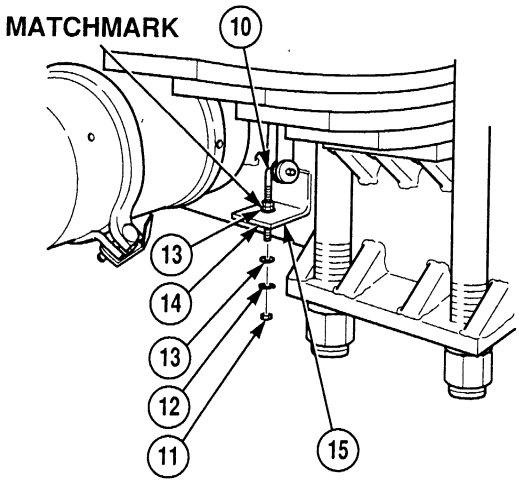
(2) Remove air line 2547 (2) from elbow (3).

(3) Remove air line 2023 (4) from elbow (5).

(4) Remove air line 2022 (6) from elbow (7).

(5) Remove air line 2545 (8) from elbow (9).





CAUTION

Location of adjusting rod must be marked for proper setting of load sensing valve during assembly. Damage to equipment may result.

(6) Matchmark adjusting rod (10) and remove nut (11), lockwasher (12), adjusting rod and two washers (13) from bracket (14) on axle (15). Discard lockwasher.

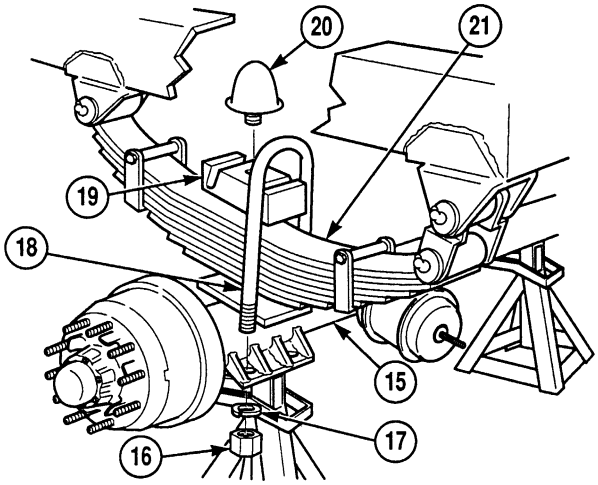
NOTE

Note the orientation of axles prior to removal to aid in installation.

(7) Remove four nuts (16) and lockwashers (17) from left side of axle (15). Discard lockwashers.

(8) Remove two U-bolts (18), spring shoe (19) and rubber stop (20) from springs (21) on left side of axle (15). Discard U-bolts.

(9) Repeat Steps (7) and (8) for right side of axle.

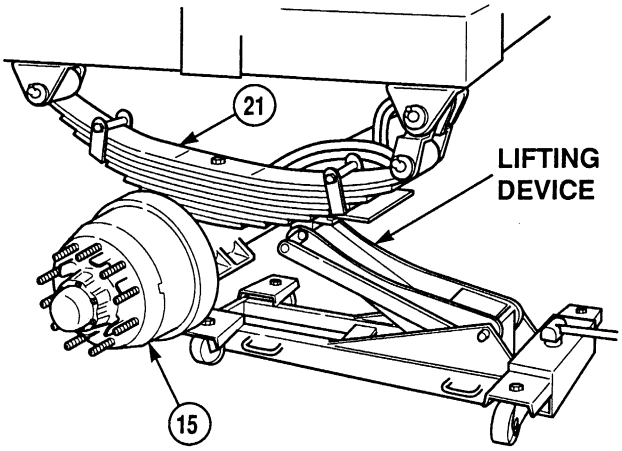


WARNING

Axle assembly weighs 1,565 lbs (710 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(10) Using lifting device and the aid of an assistant, raise axle (15) and remove axle from beneath spring (21).

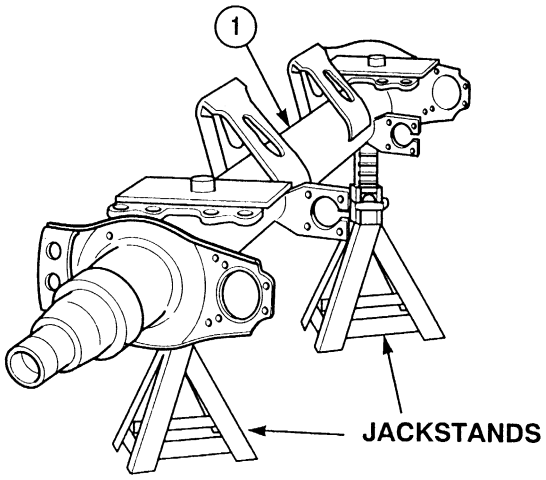
(11) Support axle (15) on jackstands and remove lifting device.



b. Disassembly.

(1) Refer to Para 4-35 and remove brakes from axle (1).

(2) Refer to Para 4-37 and remove brake chambers from axle (1).



5-14. AXLE NO. 1 REPAIR (CONT).

c. Cleaning/Inspection.

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
  - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

CAUTION

- Welds are not permitted near the top or bottom center lines of the axle beams. Welding in these areas could cause damage to equipment.
- On all axles vertical welds are not permitted further than 1 in. (25.4 mm) below the horizontal center line of the axle beam. Welding in these areas could cause damage to equipment.
- On all axles, horizontal welds are not permitted further than 1 1/2 in. (38.1 mm) below the horizontal center line of the axle beam. Welding in these areas could cause damage to equipment.

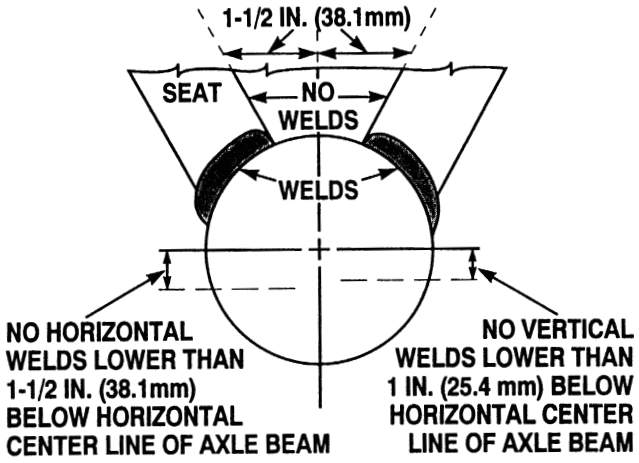
NOTE

Minor welding repair may be made to brackets of axle, refer to TC 9-237 for proper welding procedures.

(1) Inspect for minor cracks to axle brackets.

(2) Using a wire scratch brush, remove paint from area four in. (102 mm) around welding point.

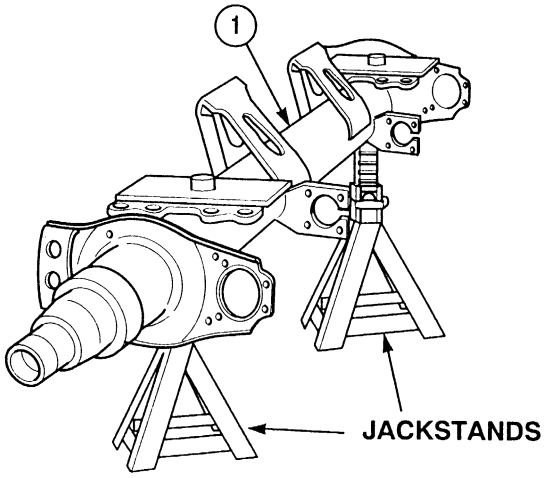
(3) Weld minor cracks as required.



d. Assembly.

(1) Refer to Para 4-37 and install brake chambers on axle (1).

(2) Refer to Para 4-35 and install brakes on axle (1).



e. Installation.

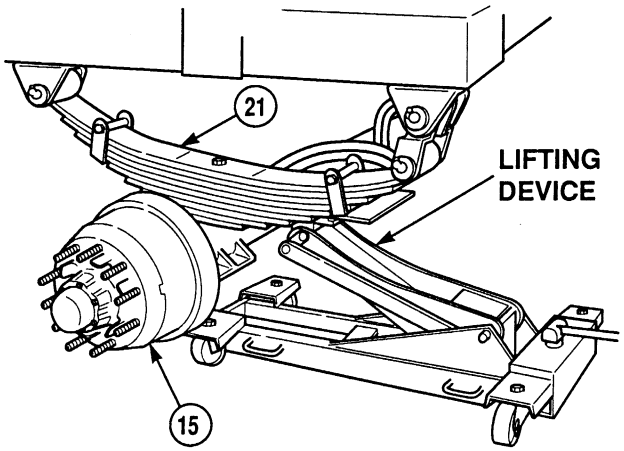
WARNING

Axle assembly weighs 1565 lbs (710 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(1) Position axle (15) on lifting device.

(2) Using lifting device and the aid of an assistant, position axle (15) under springs (21).

(3) Support axle (15) with jackstands.



NOTE

Tighten nuts only enough to secure axle in place safely.

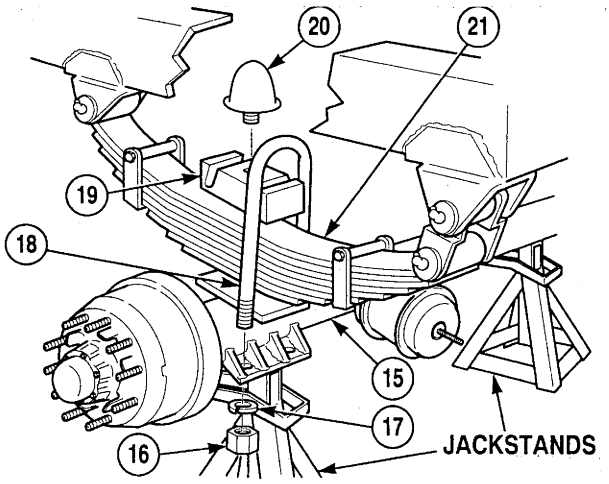
(4) Install rubber stop (20), spring shoe cap (19), two U-bolts (18), four lockwashers (17) and four nuts (16) on spring (21) and left side of axle (15).

(5) Repeat Step (4) for the right side of axle (15).

(6) Refer to Para 5-16 and check axle alignment.

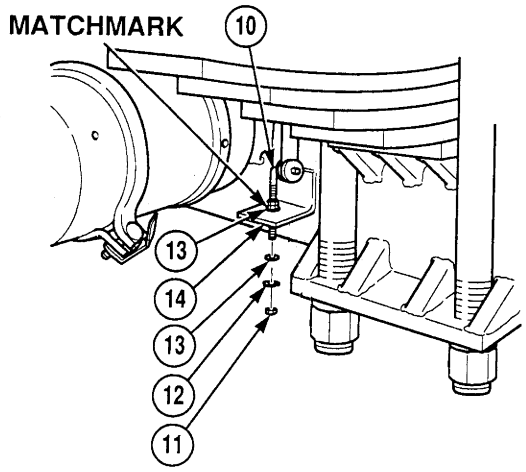
(7) Once axle (15) is aligned, tighten nuts (16) on right side of axle to 600 lb-ft (814 N·m).

(8) Refer to Para 5-16 and recheck alignment.



5-14. AXLE NO. 1 REPAIR (CONT).

(9) Refer to matchmarks on adjusting rod (10) and install washer (13), adjusting rod, washer (13), lockwasher (12) and nut (11) on bracket (14).

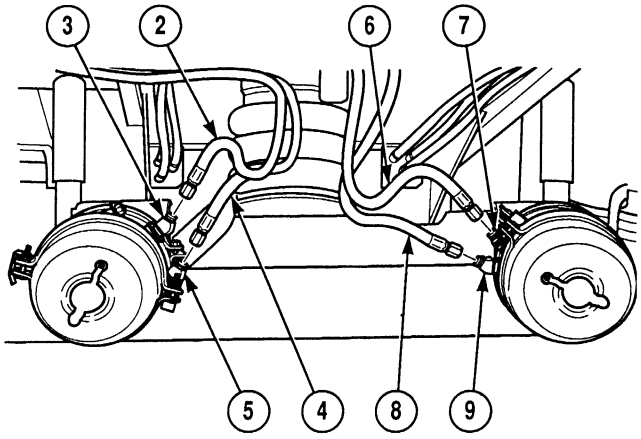


(10) Install air line 2545 (8) on elbow (9).

(11) Install air line 2022 (6) on elbow (7).

(12) Install air line 2023 (4) on elbow (5).

(13) Install air line 2547 (2) on elbow (3).



f. Follow-On Maintenance:

- Install shock absorbers, (Para 4-64).
- Install wheels, (Para 4-57).
- Charge air system, (Para 2-22).
- Check for air leaks, (Para 2-7).
- Adjust brakes, (Para 4-34).
- Spot paint exposed surfaces, (TB 43-0209).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-15. AXLE NO. 2 AND 3 REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Brush, Wire Scratch (Item 1, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Jackstand (4) (Item 24, Appendix J)
Lift, Transmission (Item 26, Appendix J)
Respirator, Air Filtering (Item 36, Appendix J)
Socket Set, 1 in. (Item 38, Appendix J)
Socket, Set, 3/4 in. (Item 39, Appendix J)
Welding Machine, Arc (Item 52, Appendix J)
Wrench, Impact Electric, 1 in. External (Item 59, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-814 N·m]) (Item 62, Appendix J)

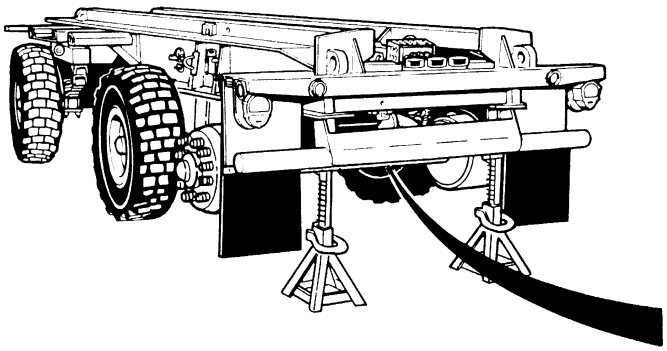
Materials/Parts
Tags, Identification (Item 23, Appendix E)

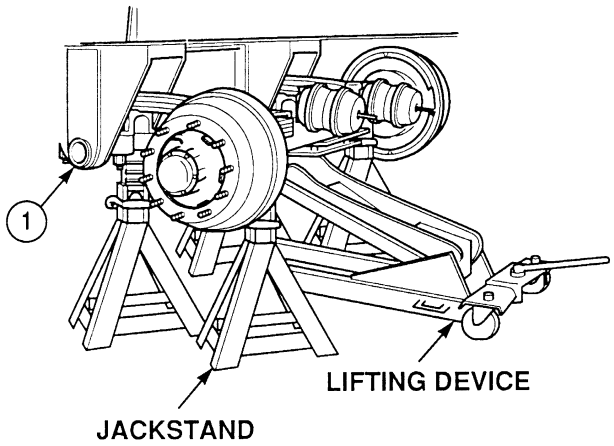
Personnel Required
Two

References
TC 9-237
TB 43-0209

Equipment Condition
Front wheels chocked, (Para 2-20)
Wheels removed, (Para 4-57)
Axle tiedown brackets removed (#3 axle only), (Para 5-19)

a. Removal.





WARNING

Axle assembly weighs 1,565 lbs (710 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

NOTE

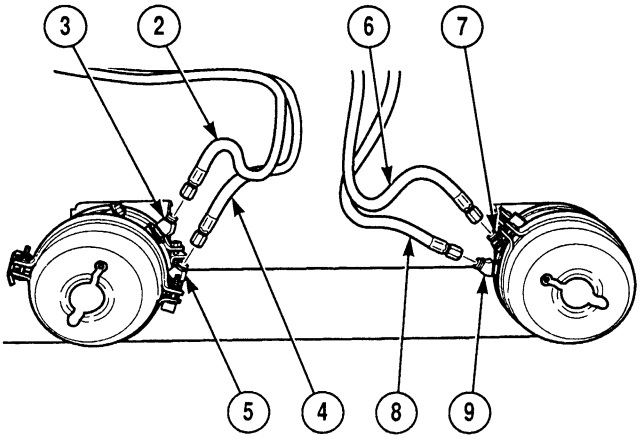
Both axles are removed the same way. Axle No. 3 shown.

(1) Position jackstands under spring hanger assembly (1).

5-15. AXLE NO. 2 AND 3 REPAIR (CONT).

NOTE

- Tag air lines prior to removal.
- Cap and plug all air lines and connectors after removal.
- Refer to Table 5-2 for air line numbers.



(2) Remove air line (2) from fitting (3).

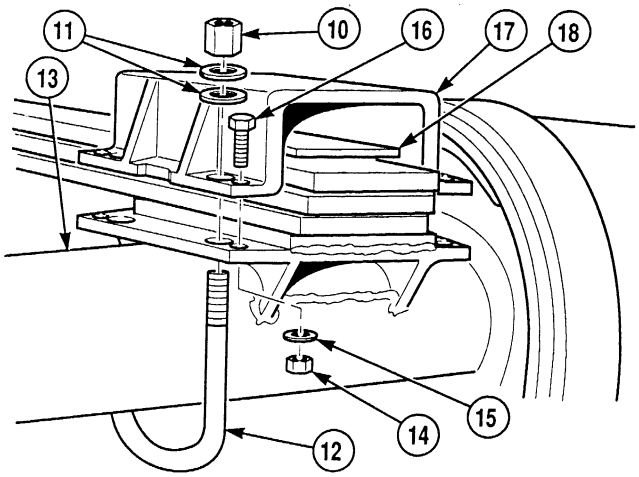
(3) Remove air line (4) from fitting (5).

(4) Remove air line (6) from fitting (7).

(5) Remove air line (8) from fitting (9).

Table 5-2. Axle No. 2 and 3 Air Lines

Axle	Left Side		Right Side	
	Service Port	Spring Port	Service Port	Spring Port
2	2015	2139	2017	2138
3	2016	2141	2018	2140



(6) Remove four nuts (10), eight washers (11) and two axle U-bolts (12) from left side of axle (13).

(7) Repeat Step (6) for right side of axle (13).

(8) Remove four nuts (14), washers (15), screws (16), spring seat cap (17) and two rubber pads (18) from left side of axle (13).

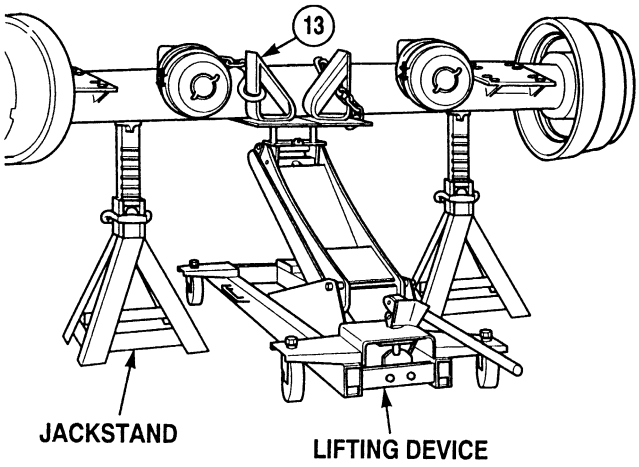
(9) Repeat Step (8) for right side of axle (13).

WARNING

Axle assembly weighs 1,565 lbs (710 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(10) Using lifting device and the aid of an assistant, raise axle (13) and remove jackstands.

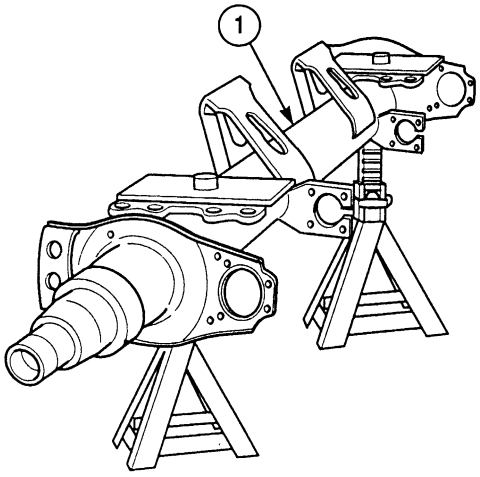
(11) Using lifting device and the aid of an assistant, move axle (13) to work area and support on jackstands or other suitable support.



b. Disassembly.

(1) Refer to Para 4-35 and remove brakes from axle (1).

(2) Refer to Para 4-37 and remove brake chambers from axle (1).



5-15. AXLE NO. 2 AND 3 REPAIR (CONT).

c. Cleaning/Inspection.

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
  - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

CAUTION

- Welds are not permitted near the top or bottom center lines of the axle beams. Welding in these areas could cause damage to equipment.
- On all axles vertical welds are not permitted further than one in. (25.4 mm) below the horizontal center line of the axle beam. Welding in these areas could cause damage to equipment.
- On all axles, horizontal welds are not permitted further than 1 1/2 in. (38.1 mm) below the horizontal center line of the axle beam. Welding in these areas could cause damage to equipment.

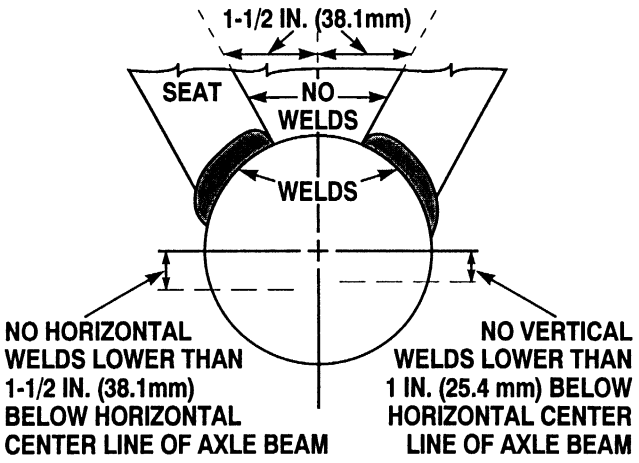
NOTE

Minor welding repair may be made to brackets of axle, refer to TC 9-237 for proper welding procedures.

(1) Inspect for minor cracks to axle brackets.

(2) Using a wire scratch brush, remove paint from area four in. (102 mm) around welding point.

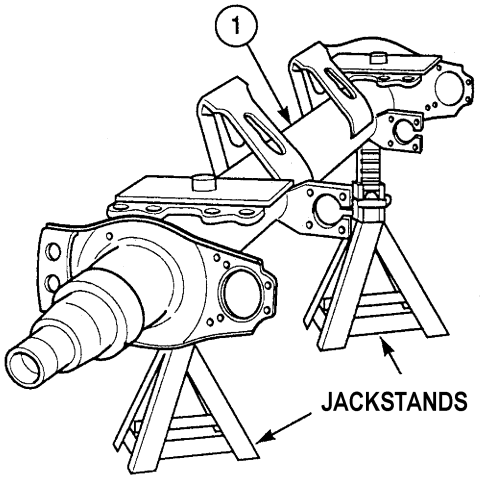
(3) Weld minor cracks as required.



d. Assembly.

(1) Refer to Para 4-37 and install brake chambers on axle (1).

(2) Refer to Para 4-35 and install brakes on axle (1).



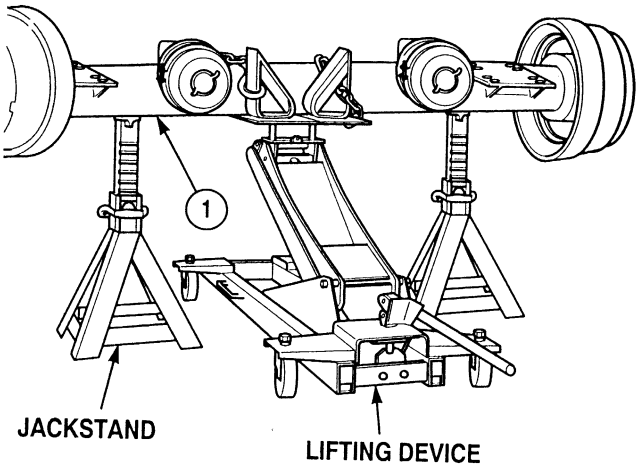
e. Installation.

WARNING

Axle assembly weighs 1,565 lbs (710 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(1) Attach lifting device to axle (1).

(2) Using lifting device and the aid of an assistant, position axle (1) and support with jackstands.



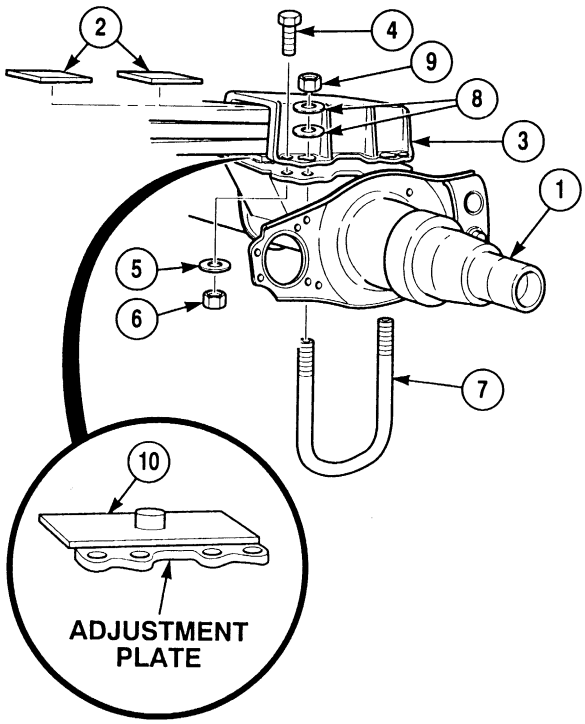
5-15. AXLE NO. 2 AND 3 REPAIR (CONT).

NOTE

- If replacing axle with new assembly, one side of the axle will have the adjustment plate welded while the other will not. This unwelded plate will allow axle adjustment and will be welded once alignment is completed. If installing the same axle, the adjustment plates will already be welded on each side. Alignment procedures will be necessary if installing a new axle. If installing the same axle, alignment only needs to be verified.
- Steps (3) and (4) apply to side of axle that has adjustment plate welded.

(3) Install two rubber pads (2), spring seat cap (3), four screws (4), washers (5) and nuts (6) on axle (1). Tighten nuts to 130 lb-ft (176 N·m).

(4) Install two axle U-bolts (7), eight washers (8) and four nuts (9) on axle (1). Tighten nuts to 220 lb-ft (298 N·m).



NOTE

Steps (5) and (6) apply to side of axle that does not have the adjustment plate welded.

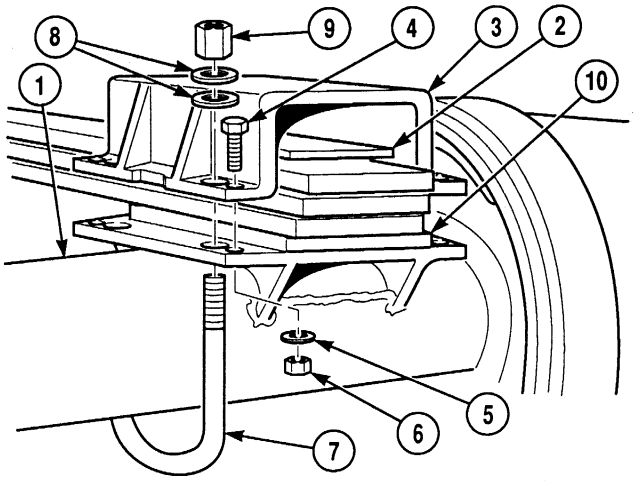
(5) Position adjustment plate (10), two rubber pads (2), spring seat cap (3), four screws (4), washers (5) and nuts (6) on axle (1).

(6) Position two axle U-bolts (7), eight washers (8) and four nuts (9).

NOTE

Alignment of Axle No. 1 (Para 5-16) must be performed prior to aligning Axle No. 2 (Para 5-17) and Axle No. 3 (Para 5-18).

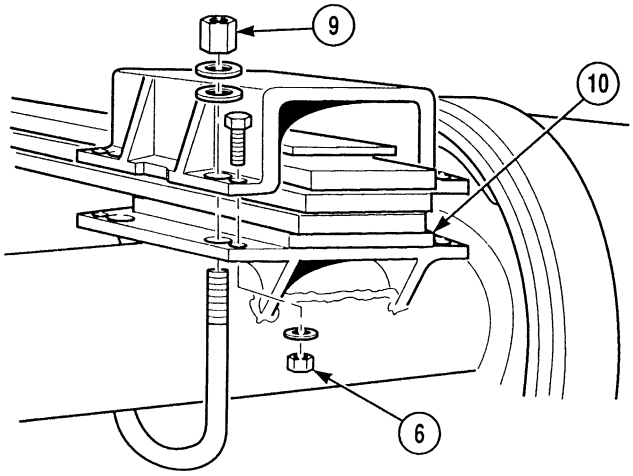
(7) Perform alignment procedures (Para 5-16, 5-17 or Para 5-18).



(8) Tighten nuts (6) to 130 lb-ft (176 N·m) on side of axle that has adjusting plate (10) unwelded.

(9) Tighten nuts (9) to 220 lb-ft (298 N·m) on side of axle that has adjusting plate (10) unwelded.

(10) Recheck axle alignment.



WARNING

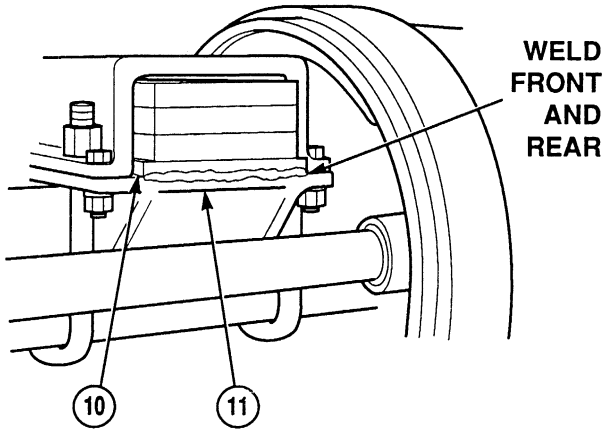
- CARC paint contains isocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
  - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

(11) Using a wire scratch brush, remove paint from an area four in. (102 mm) around welding points on adjusting plate (10) and spring seat (11).

NOTE

Adjusting plate must be welded on both the front and rear.

(12) Weld adjusting plate (10) to spring seat (11).



5-15. AXLE NO. 2 AND 3 REPAIR (CONT).

NOTE

Refer to Table 5-3 for air line numbers.

(13) Install air line (12) on fitting (13).

(14) Install air line (14) on fitting (15).

(15) Install air line (16) on fitting (17).

(16) Install air line (18) on fitting (19).

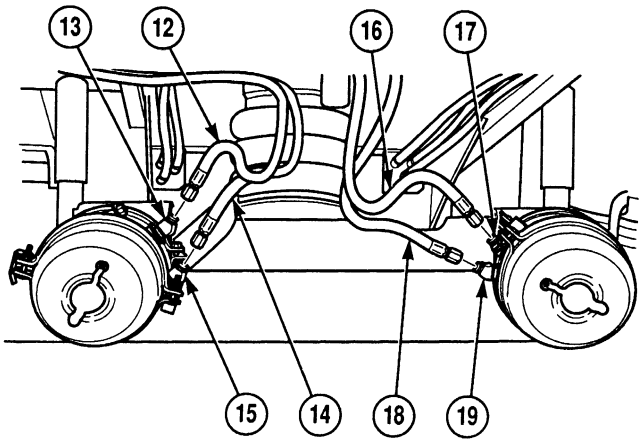


Table 5-3. Axle No. 2 and 3 Air Lines

Axle	Left Side		Right Side	
	Service Port	Spring Port	Service Port	Spring Port
2	2015	2139	2017	2138
3	2016	2141	2018	2140

f. Follow-On Maintenance:

- Install wheels, (Para 4-57).
- Adjust brakes, (Para 4-34).
- Charge air system, (Para 2-22).
- Check for air leaks, (Para 2-7).
- Spot paint exposed surfaces, (TB 43-0209).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-16. AXLE NO. 1 ALIGNMENT.

This task covers:

a. Alignment b. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Jack, Stabilizer (2) (Item 23, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Plumb Bob (Item 33, Appendix J)
Socket Set, 1 in. (Item 38, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Tape Measurer (Item 47, Appendix J)
Wrench, Impact Electric, 1 in. External (Item 59, Appendix J)
Wrench, Torque (0 to 600 lb-ft [0-814 N·m]) (Item 62, Appendix J)

Personnel Required
Two

Materials/Parts
Chalk, Marking White (Item 9, Appendix E)
Lockwasher (8) (Item 48, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Front wheels removed, (Para 4-57)
Drawbar level, (Para 2-23)

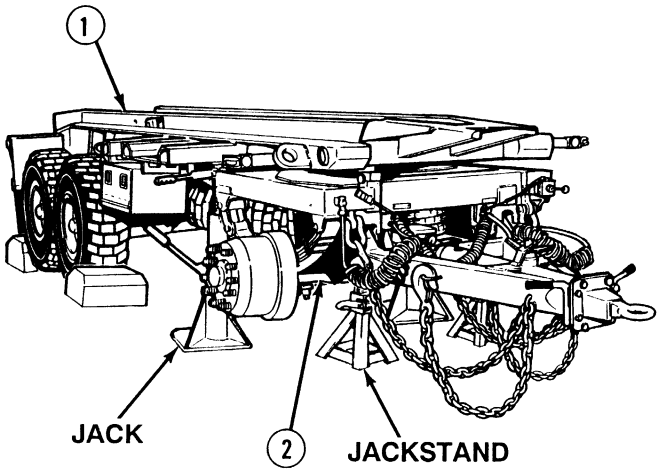
a. Alignment.

CAUTION

Trailer must be on a hard level surface when performing axle alignment. An uneven surface could cause a misreading resulting in an improper alignment. Damage to equipment could result.

NOTE

This procedure is used if Axle No. 1 has been removed or replaced, or as part of troubleshooting.



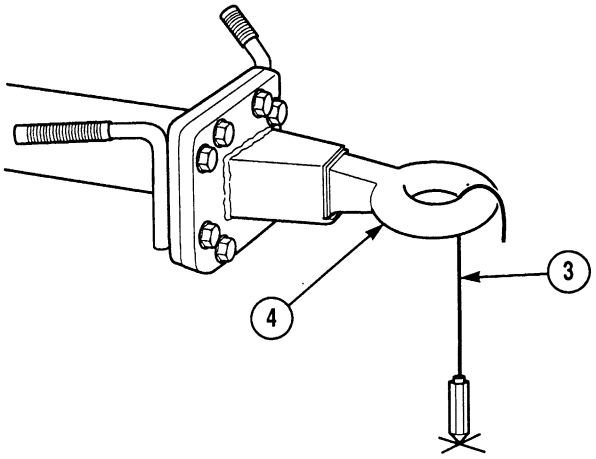
(1) Support trailer frame (1) with two stabilizer jacks.

(2) Remove two jackstands from under front axle (2).

5-16. AXLE NO. 1 ALIGNMENT (CONT).

(3) Refer to Para 2-12 and pin the trailer turntable.

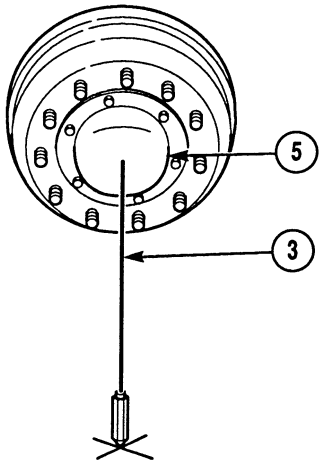
(4) Drop a plumb line (3) from center of tow ring (4) to floor and mark point of contact on floor with chalk.



NOTE

Center of spindle covers are marked with an indentation.

(5) Drop a plumb line (3) from center of two spindle covers (5) to floor and mark two points of contact on floor with chalk.



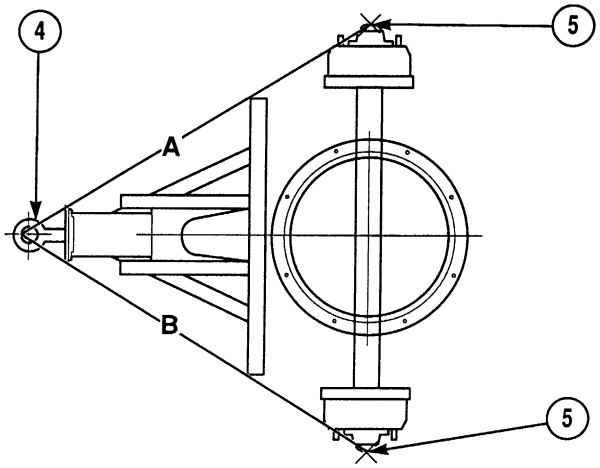
NOTE

Distance A and B must be within 1/8 in. (3.2 mm) of each other.

(6) Measure distance A and B from mark on floor under tow ring (4) to marks on floor under spindle covers (5).

NOTE

If distance A and B are within 1/8 in. (3.2 mm) of each other, alignment is correct, go to Step ***b. Follow-On Maintenance.*** If distance is not correct perform Step (7).



WARNING

When aligning axle, do not remove nuts in Step (7). Failure to comply will result in axle falling and possible injury or death to personnel.

NOTE

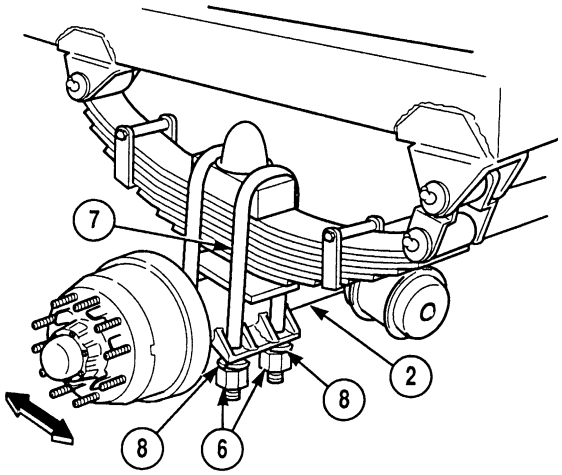
Loosen nuts only enough to allow axle to be moved.

(7) Loosen eight nuts (6) on four U-bolts (7).

(8) Adjust axle (2) by moving axle forward or backwards until a 1/8 in. (3.2 mm) tolerance is obtained.

NOTE

Replace lockwashers in sequence outlined in Steps (9) through (16) to maintain axle alignment and to prevent axle from shifting.



(9) Remove two nuts (6) and lockwashers (8) on forward left U-bolt (7). Discard lockwashers.

(10) Install two lockwashers (8) and nuts (6) on forward left U-bolt (7).

(11) Remove two nuts (6) and lockwashers (8) on rear left U-bolt (5). Discard lockwashers.

(12) Install two nuts (6) and lockwashers (8) on rear left U-bolt (7). Discard lockwashers.

(13) Remove two nuts (6) and lockwashers (8) on forward right U-bolt (7). Discard lockwashers.

(14) Install two lockwashers (8) and nuts (6) on forward right U-bolt (7).

(15) Remove two nuts (6) and lockwashers (8) on rear right U-bolt (7). Discard lockwashers.

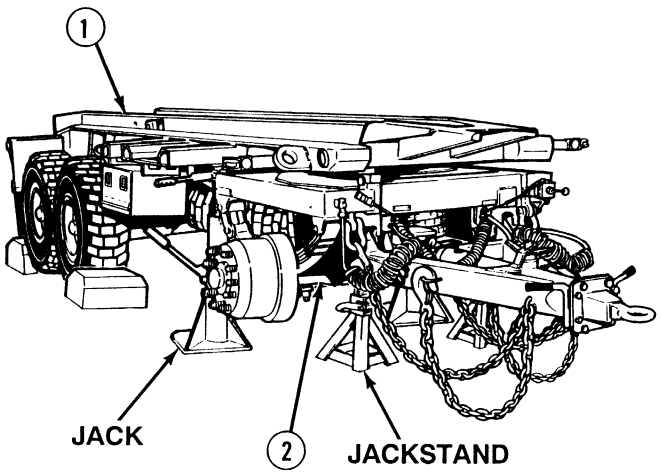
(16) Install two lockwashers (8) and nuts (6) on rear right U-bolt (7).

(17) Tighten eight nuts (6) on U-bolt (8) to 600 lb-ft (813 N·m).

(18) Position two jackstands under axle (2).

5-16. AXLE NO. 1 ALIGNMENT (CONT).

(19) Remove two stabilizer jacks from trailer frame (1) leaving jackstands under axle (2).



b. Follow-On Maintenance:

- Install front wheels, (Para 4-57).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-17. AXLE NO. 2 ALIGNMENT.

This task covers:

a. Alignment b. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Dividers, Mechanics (Item 6, Appendix J)
Jack (Item 22, Appendix J)
Jack, Stabilizer 56 in. (2) (Item 23, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Plumb Bob (Item 33, Appendix J)
Socket Set, 1 in. (Item 38, Appendix J)
Socket, Set, 3/4 in. (Item 39, Appendix J)
Tape Measurer (Item 47, Appendix J)
Wrench, Impact Electric, 1 in. External (Item 59, Appendix J)

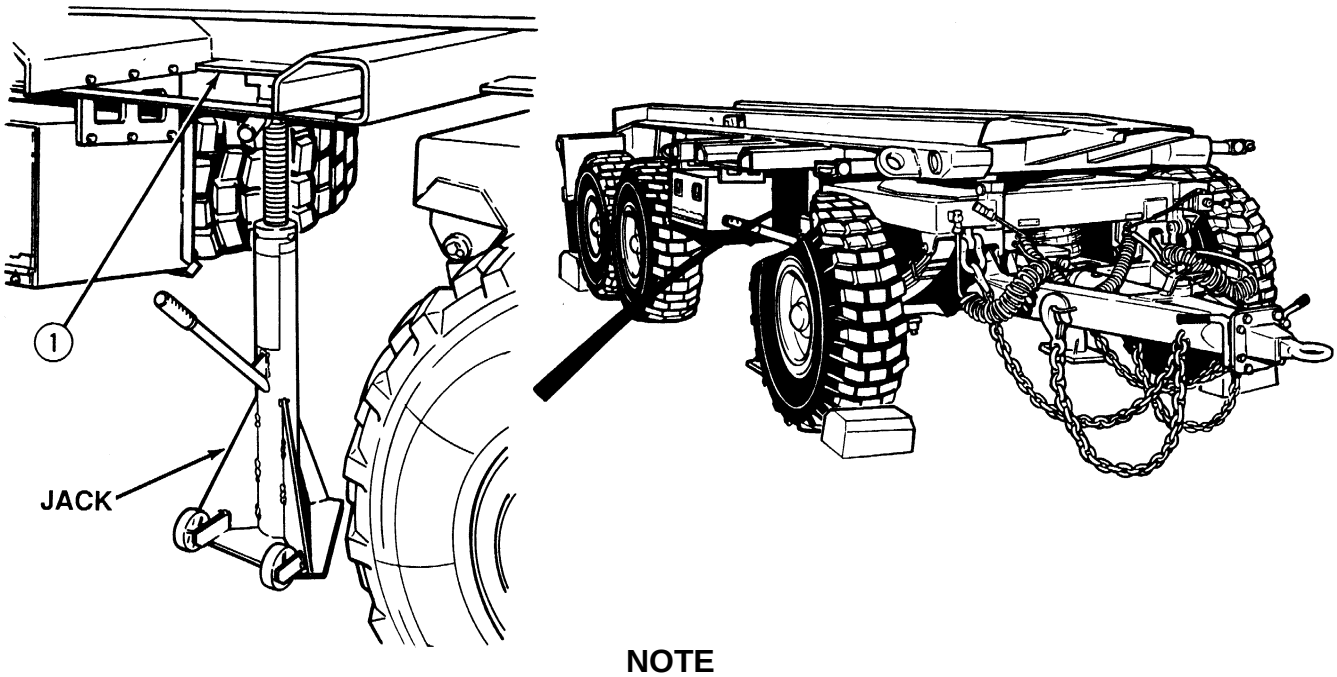
Tools and Special Tools - Continued
Wrench, Torque (0 to 600 lb-ft [0-814 N·m]) (Item 62, Appendix J)

Personnel Required
Two

Materials/Parts
Chalk, Marking White (Item 9, Appendix E)
Tape Adhesive (Item 24, Appendix E)

Equipment Condition
Wheels chocked, (Para 2-20)

a. Alignment.

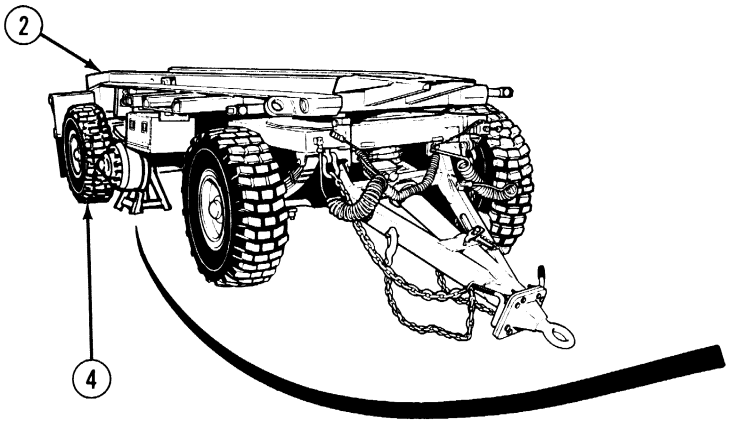


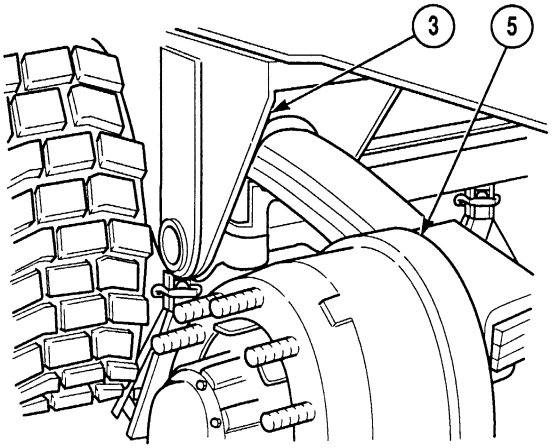
NOTE

- Both front tires must be approximately one in. (25 mm) off the floor.
- Ensure stabilizer jacks do not interfere with a straight line between center of Axle No. 1 and ends of Axle No. 2.

(1) Using stabilizer jacks, raise and support front of trailer frame (1).

5-17. AXLE NO. 2 ALIGNMENT (CONT).





NOTE

Rear tires must be approximately one in. (25 mm) off the floor.

(2) Using a jack, raise rear of trailer (2) and support on two jackstands under suspension hanger assembly (3).

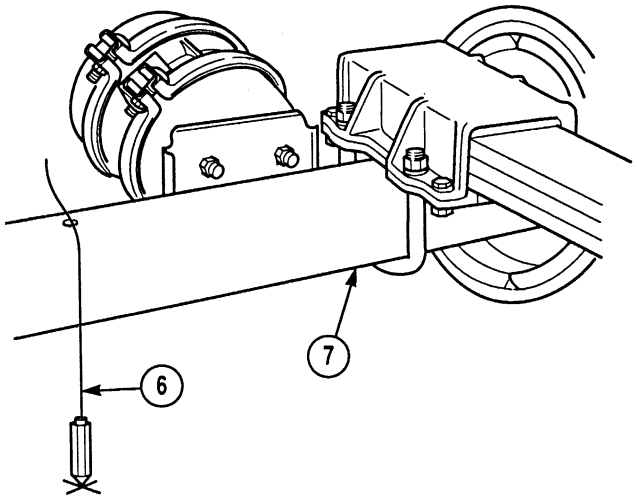
(3) Refer to Para 4-57 and remove tires (4) from Axle No. 2 (5).

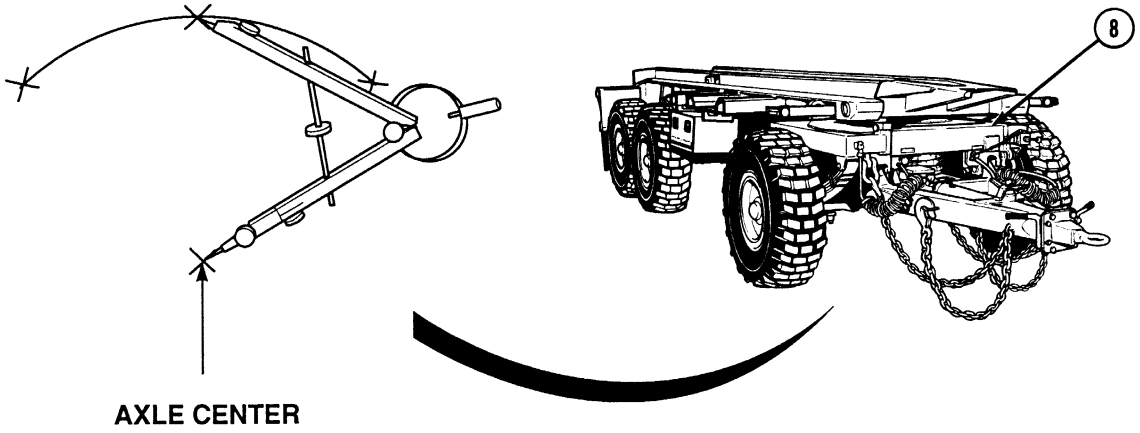
NOTE

Plumb bob is properly positioned when the tip is almost touching floor and string is tight.

(4) Tape plumb bob to Axle No. 1.

(5) Hang plumb bob (6) over center mark of axle No. 1 (7) and mark where it touches floor.





NOTE

Steps (6) and (7) have plumb bob still positioned in center of Axle No. 1.

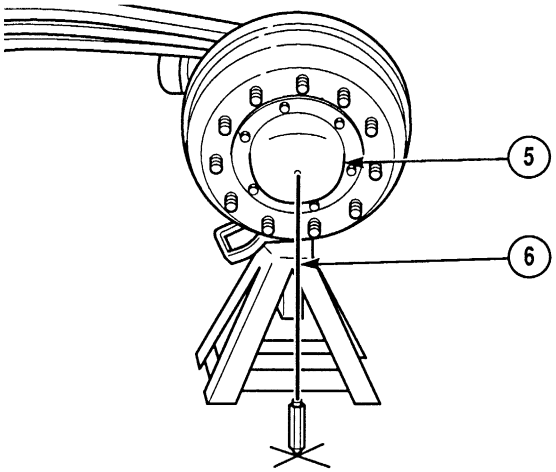
(6) Rotate turntable (8) to left of center approximately 45 degrees and make a second mark where plumb bob touches floor.

(7) Rotate turntable (8) to right of center approximately 45 degrees and make a third mark where plumb bob touches floor.

(8) Remove plumb bob from Axle No. 1.

(9) Using a mechanical divider, position mechanical divider so arc of mechanical divider intersects all three marks on floor. Mark where point of compass touches floor. This point is center of Axle No. 1.

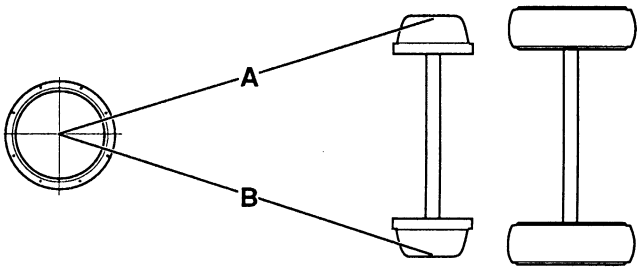
(10) Drop plumb bob (6) off center of both spindle cover centers of Axle No. 2 (5) and make a mark where plumb bob touches floor.



5-17. AXLE NO. 2 ALIGNMENT (CONT).

NOTE

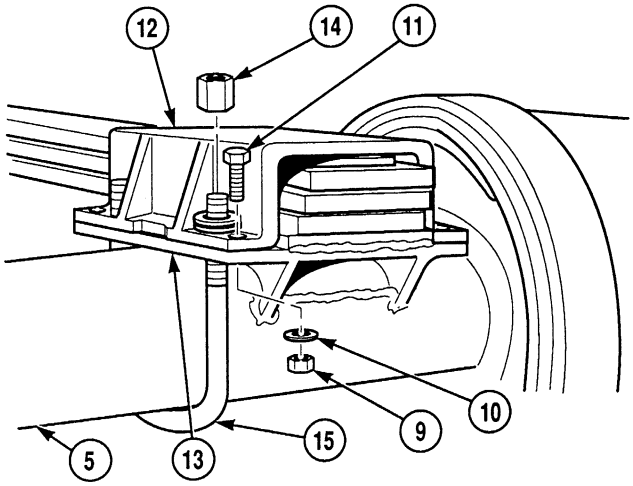
Distance A and B must be within 1/8 in. (3.2 mm) of each other.



(11) Measure distance A and B.

NOTE

If distance A and B are within 1/8 in. (3.2 mm) of each other, alignment is correct, go to Step (18). If distance is not within 1/8 in. perform Step (12).



(12) Remove eight nuts (9), washers (10) and screws (11) from spring seat cap (12) and spring seat (13).

WARNING

When aligning axle, do not remove nuts in Step (13). Failure to comply will result in axle falling and possible injury or death to personnel.

NOTE

Loosen nuts only enough to allow axle to be moved.

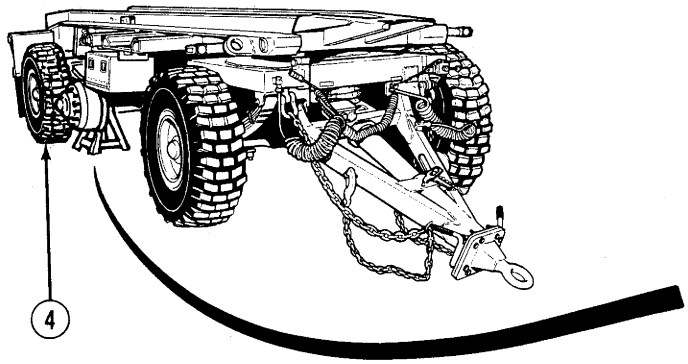
(13) Loosen eight nuts (14) on four U-bolts (15).

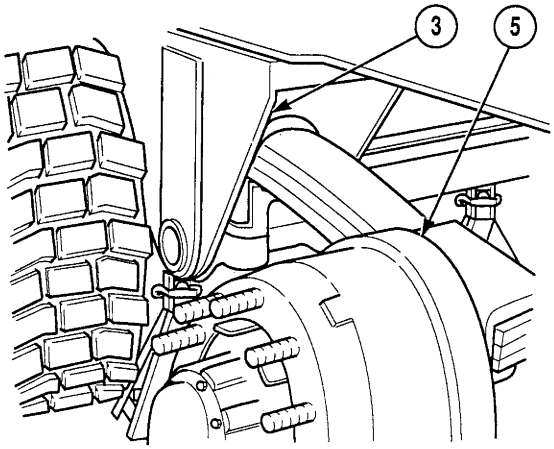
(14) Adjust Axle No. 2 (5) by moving axle ends forward or backwards until a 1/8 in. (3.2 mm) tolerance is obtained.

(15) Install eight screws (11), washers (10) and nuts (9) to spring seat cap (12) and spring seat (13). Tighten to 130 lb-ft (176 N·m).

(16) Remove eight nuts (14) from four U-bolts (15).

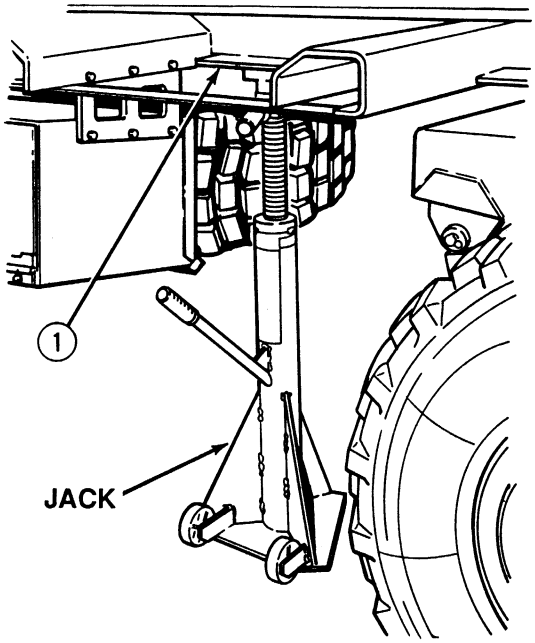
(17) Install eight nuts (14) to four U-bolts (15). Tighten to 220 lb-ft (298 N·m).





(18) Refer to Para 4-57 and install tires (4) on Axle No. 2 (5).

(19) Remove two stabilizer jacks from frame (1).



b. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

5-18. AXLE NO. 3 ALIGNMENT.

This task covers:

a. Alignment b. Follow-On Maintenance

INITIAL SETUP

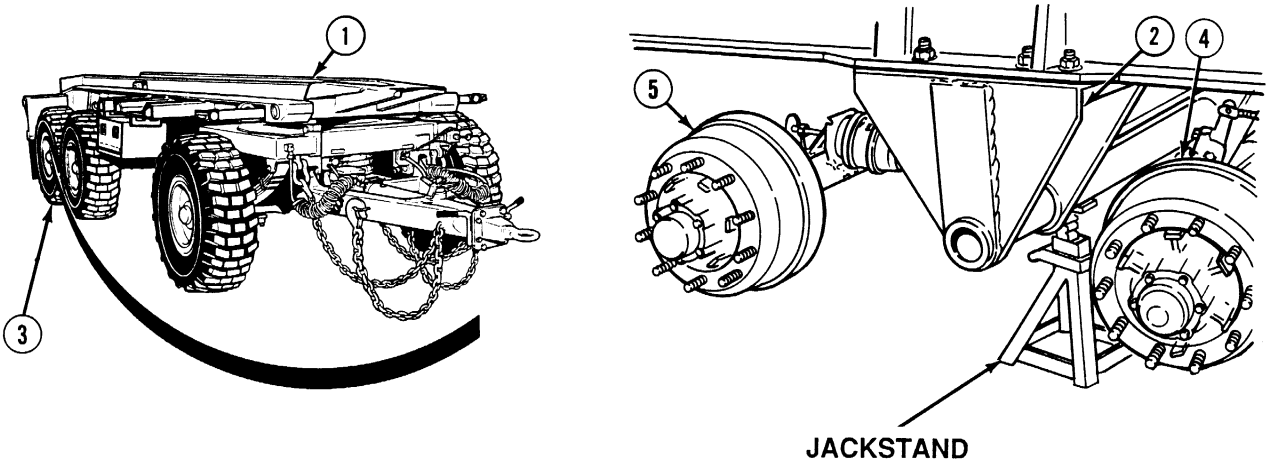
Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Jack (Item 22, Appendix J)
Jack, Stabilizer (2) (Item 23, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Plumb Bob (Item 33, Appendix J)
Socket Set, 1 in. (Item 38, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Tape Measurer (Item 47, Appendix J)
Wrench, Impact Electric (Item 59, Appendix J)
Wrench, Torque (0-600 lb-ft [0-814 N·m]) (Item 62, Appendix J)

Personnel Required
Two

Materials/Parts
Chalk, Marking White (Item 9, Appendix E)

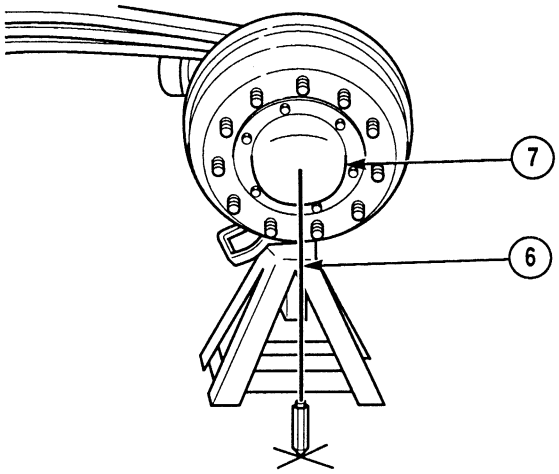
Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar level, (Para 2-23)

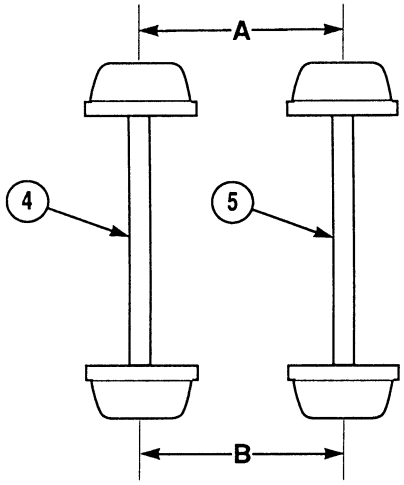
a. Alignment.



(1) Using a jack, raise rear of trailer (1) and support on two jackstands under suspension hanger assembly (2) so rear tires (3) are off ground.

(2) Refer to Para 4-57 and remove rear wheels (3) from Axle No. 2 (4) and Axle No. 3 (5).





NOTE

Center of axle spindle covers are marked with an indentation.

(3) Drop a plumb bob (6) from center of spindle cover (7) on Axle No. 2 (4) and mark on floor where it touches.

(4) Repeat Step (3) for opposite side of Axle No. 2 (4).

(5) Drop a plumb bob (6) from center of spindle cover (7) on Axle No. 3 (5) and mark on floor where it touches.

(6) Repeat Step (5) for opposite side of Axle No. 3 (5).

NOTE

If distance A and B are within 1/16 in. (1.59 mm) of each other alignment is correct, go to Step (14). If not, perform Step (7).

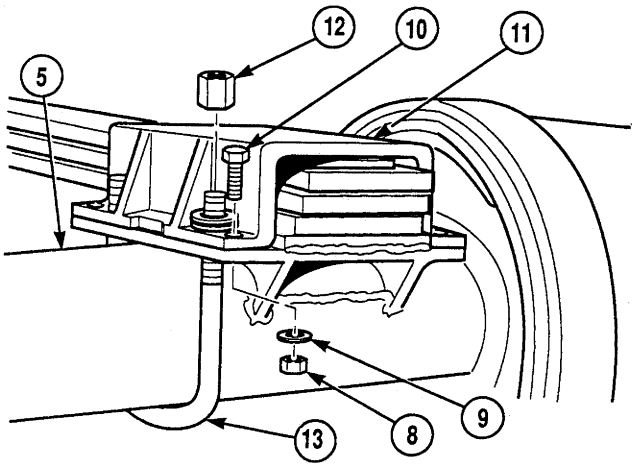
(7) With the aid of an assistant, measure distance between marks from Axle No. 2 (4) and Axle No. 3 (5) on floor using a tape measure.

NOTE

If distance A and B are not within 1/16 in. (1.59 mm) of each other Axle No. 3 requires adjustment. Perform Steps (8) through (14).

5-18. AXLE NO. 3 ALIGNMENT (CONT).

(8) Remove eight nuts (8), washers (9) and screws (10) on bracket (13).



WARNING

When aligning axle, do not remove nuts in Step (9). Failure to comply will result in axle falling and possible injury or death to personnel.

NOTE

Loosen nuts only enough to allow axle to be moved.

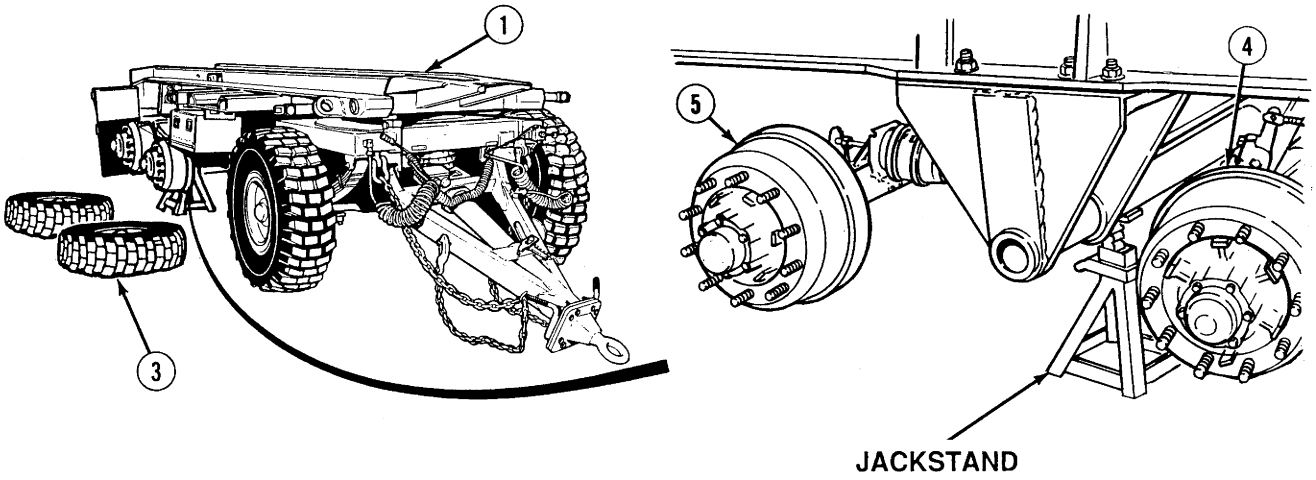
(9) Loosen eight nuts (12) on four U-bolts (13).

(10) Adjust Axle No. 3 (5) by moving axle ends forward or backwards until a 1/16 in. (1.59 mm) tolerance is obtained.

(11) Install eight screws (10), washers (9) and nuts (8) on bracket (11). Tighten nut to 130 lb-ft (176 N·m).

(12) Remove eight nuts (12) from four U-bolts (13).

(13) Install eight nuts (12) on four U-bolts (13). Tighten nuts to 220 lb-ft (298 N·m).



(14) Refer to Para 4-57 and install rear tires (3) on Axle No. 2 (4) and Axle No. 3 (5).

(15) Using a jack, raise rear of trailer (1) and remove two jackstands.

(16) Lower trailer (1) to ground.

b. Follow-On Maintenance:

- Lower drawbar, (Para 2-23).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-19. AXLE TIEDOWN BRACKET REMOVAL/INSTALLATION.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

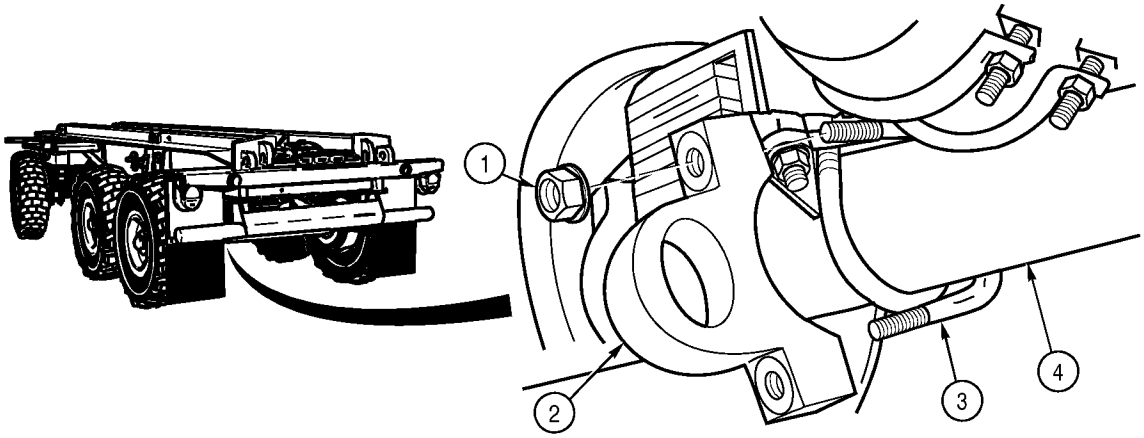
INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Protractor, Magnetic (Item 35, Appendix J)

Materials/Parts
Locknuts (2) (Item 24, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)

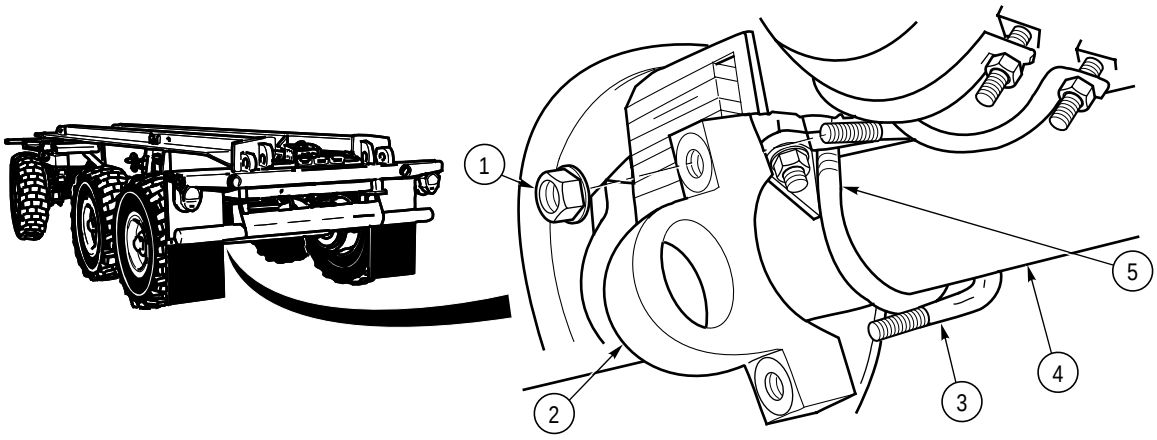
a. Removal.



NOTE

Right and left axle tiedown brackets are removed and installed the same way.

(1) Remove two locknuts (1), axle tiedown bracket (2), and "U" bolt (3) from axle (4).



b. Installation.

(1) Position “U” bolt (3), axle tiedown bracket (2), and two locknuts (1) on axle (4), 0.500 in. (12.7 cm) from suspension hanger “U” bolt (5).

NOTE

Axle tiedown angle measurement must be taken with relationship to frame. If frame is not level, the angle the frame is at must be added or subtracted from axle tiedown bracket angle measurement.

(2) Set axle tiedown bracket (2) at 11 degrees and tighten two locknuts (1).

c. Follow-On Maintenance:

- Remove wheel chocks, (Para 2-20).

END OF TASK

5-20. SUSPENSION HANGER ASSEMBLY REPLACEMENT (REAR).

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

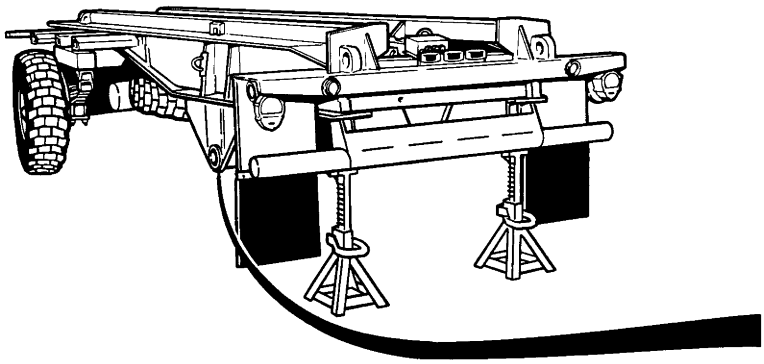
Tools and Special Tools
Tool Kit, General Mechanic's
(Item 49, Appendix J)
Jack (Item 22, Appendix J)
Jackstand (2) (Item 24, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Wrench, 1-1/2 in. (Item 57, Appendix J)
Wrench, Torque (0-600 lb-ft [0-814 N·m])
(Item 62, Appendix J)
Lifting Device Minimum Capacity 270 lb (123 kg)

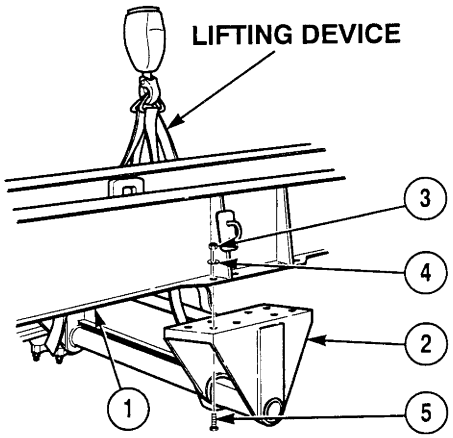
Materials/Parts
Locknut (16) (Item 45, Appendix I)
Screw (16) (Item 75, Appendix I)
Washer (16) (Item 91, Appendix I)

Personnel Required
Two

Equipment Condition
Spring assemblies removed, (Para 5-23)
Front wheels chocked, (Para 2-20)

a. Removal.





WARNING

The suspension hanger assembly weighs 270 lbs (122 kg). Attach a suitable lifting device prior to removal to prevent possible injury to personnel.

NOTE

An assistant is required for entire task.

(1) Support trailer frame (1) on jackstands.

(2) Remove jackstands from suspension hanger assembly (2).

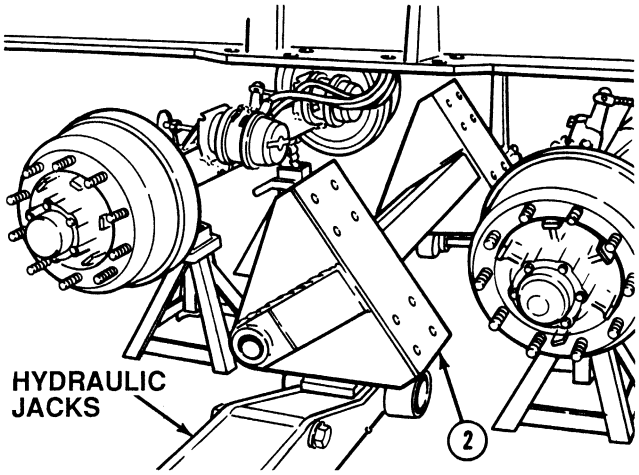
(3) Attach lifting device on suspension hanger assembly (2).

(4) Remove sixteen locknuts (3), washers (4) and screws (5) from suspension hanger assembly (2) and frame (1). Discard locknuts, washers and screws.

(5) Lower suspension hanger assembly (2) on two floor jacks.

(6) Remove lifting device from suspension hanger assembly (2).

(7) Using two floor jacks remove suspension hanger assembly (2) from under trailer.



b. Installation.

WARNING

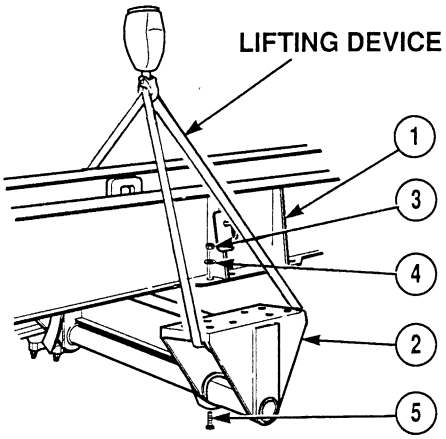
The suspension hanger assembly weighs 270 lbs (122 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

(1) Using two floor jacks position suspension hanger assembly (2) under trailer.

(2) Attach lifting device on suspension hanger assembly (2) and raise it into position.

(3) Install sixteen screws (5), washers (4) and locknuts (3) on suspension hanger assembly (2) and frame (1). Tighten locknuts to 680 ± 50 lb-ft (921 ± 68 N·m).

(4) Remove lifting device from suspension hanger assembly (2).



c. Follow-On Maintenance:

- Install spring assemblies, (Para 5-23).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-21. DRAWBAR REPAIR.

This task covers:

a. Removal
b. Disassembly
c. Cleaning/Inspection
d. Assembly
e. Installation
f. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Chisel, Cold 1/2 in. (Item 3, Appendix J)
Compressor Unit, Air (Item 5, Appendix J)
Driver, Bushing (Item 9, Appendix J)
Gloves, Chemical and Oil Protective (Item 11, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Gun, Air Blow (Item 15, Appendix J)
Jackstand (3) (Item 24, Appendix J)
Lift, Transmission (Item 26, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Wrench, 1-13/16 in. (Item 56, Appendix J)
Wrench, 1-1/2 in. (Item 57, Appendix J)
Wrench, Torque (0-600 lb-ft [0-814 N·m]) (Item 62, Appendix J)
Chain, Lifting
Lifting Device Minimum Capacity 425 lb (193 kg)

Materials/Parts
Adhesive Sealant (Item 3, Appendix E)

Materials/Parts - Continued
Cable Tie (Item 7, Appendix E)
Cable Tie (Item 8, Appendix E)
Cloth, Crocus (Item 10, Appendix E)
Grease (Item 12, Appendix E)
Solvent, Drycleaning (Item 22, Appendix E)
Bushing (4) (Item 4, Appendix I)
Bushing (2) (Item 5, Appendix I)
Locknut (4) Item 33, Appendix I)
Lockwasher (4) (Item 51, Appendix I)
Lockwasher (6) (Item 54, Appendix I)
Pin, Cotter (2) (Item 65, Appendix I)
Seal, Wiper (2) (Item 81, Appendix I)

Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Drawbar retracted, (Para 2-10)
Air system drained, (Para 2-21)

a. Removal.

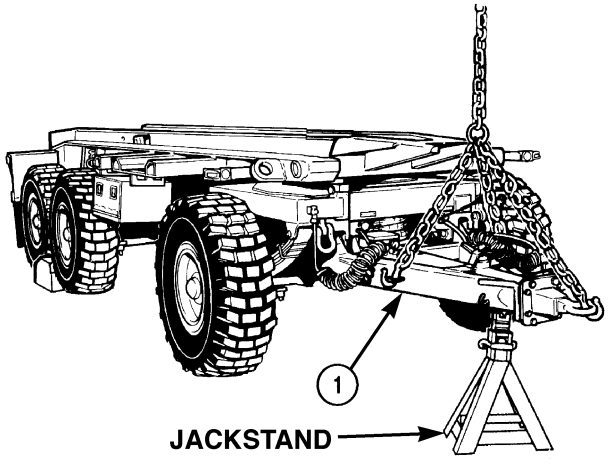
WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

(1) Remove safety chains.

(2) Attach lifting device to drawbar structure (1).

(3) Support front of drawbar structure (1) with jackstand.



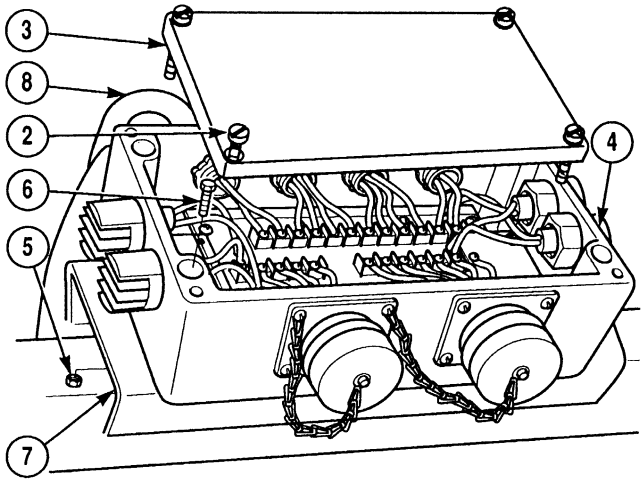
WARNING

Front electrical box may be hot. Use caution when working around electrical box to avoid burns.

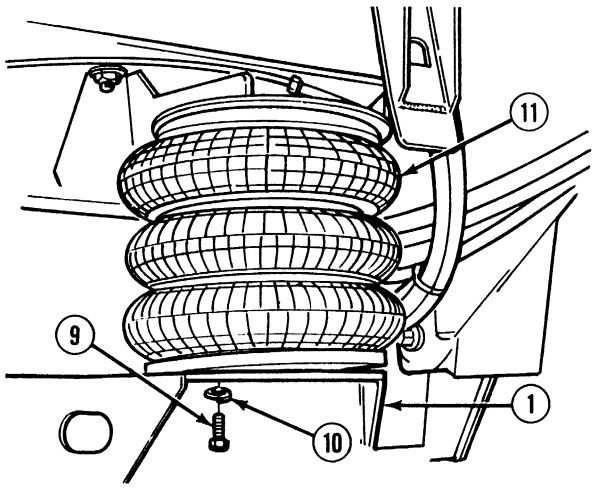
(4) Loosen four captive screws (2) and cover (3) from front electrical box (4).

(5) Remove four locknuts (5) and screws (6) from front electrical box (4) and bracket (7). Discard locknuts.

(6) Move electrical box (4) away from drawbar structure (1) and secure cables (8) out of the way with a cable tie.



(7) Remove two screws (9) and lockwashers (10) from bottom of drawbar (1) and air bag (11). Discard lockwashers.

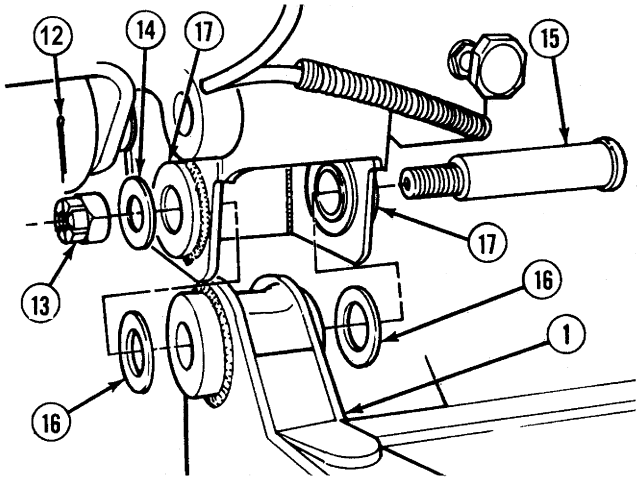


(8) Remove two cotter pins (12), castle nuts (13) and washers (14) from pins (15). Discard cotter pins.

WARNING

Keep hands and fingers out of pin hole or injury to personnel may result.

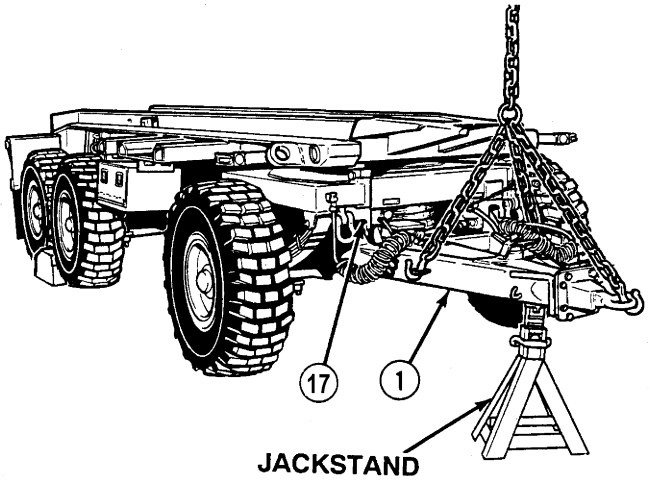
(9) Remove two pins (15) and spacers (16) from between trailer frame (17) and drawbar structure (1).



5-21. DRAWBAR REPAIR (CONT).

(10) With the aid of an assistant, use lifting device and raise drawbar (1) slightly and remove jackstand.

(11) With the aid of an assistant, use lifting device and remove drawbar (1) from trailer frame (17).



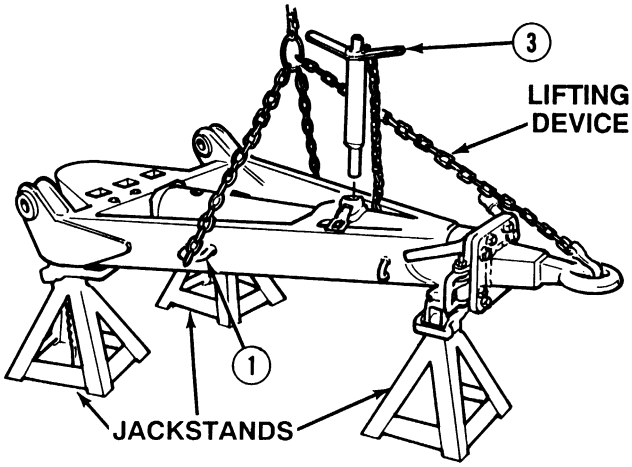
b. Disassembly.

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to installation to prevent possible injury to personnel.

(1) Attach lifting device to drawbar structure (1).

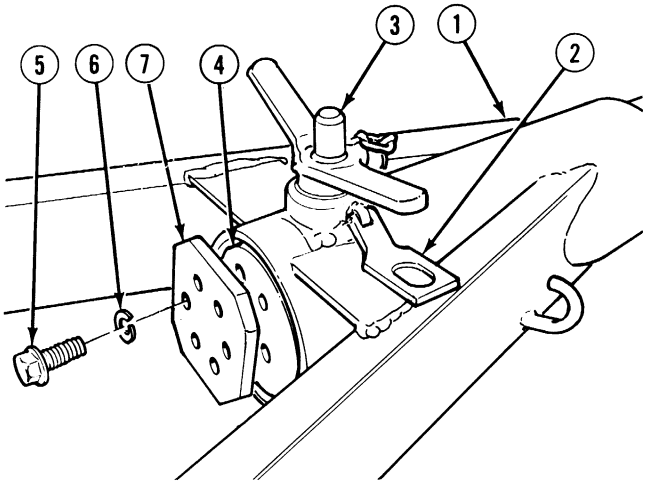
(2) With the aid of an assistant, use lifting device and raise drawbar structure (1) and support with three jackstands.

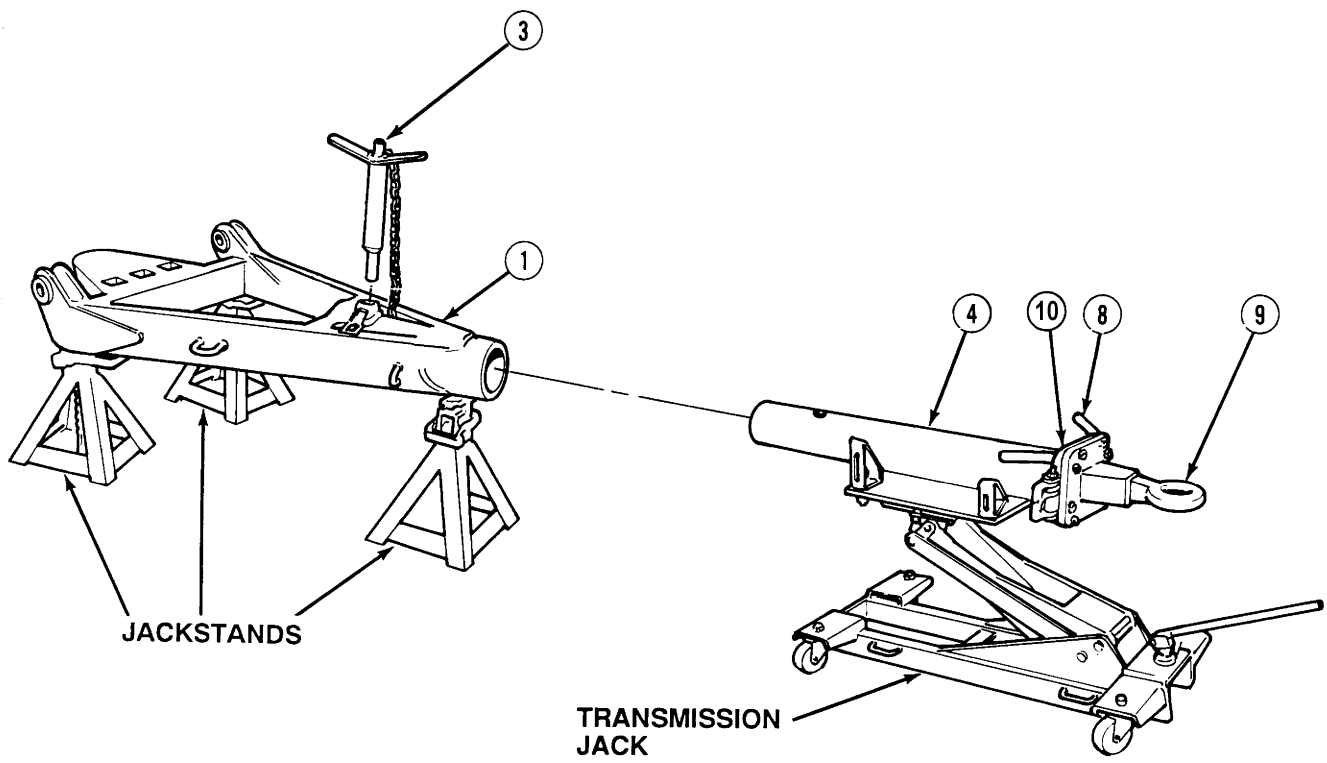


(3) Lift locking latch (2) and remove pin assembly (3).

(4) Extend tube assembly (4) and insert pin assembly (3) in rear hole of tube assembly (4).

(5) With the aid of an assistant, steady drawbar structure (1) while removing six screws (5), lockwashers (6) and plate (7) from tube assembly (4). Discard lockwashers.





WARNING

Drawbar shaft weighs 187 lbs (85 kg). Attach a suitable lifting device prior to removal to prevent possible injury to personnel.

(6) Remove pin assembly (3) from tube assembly (4).

(7) Attach lifting device to tube assembly (4).

(8) With the aid of an assistant, steady tube assembly (4) while pulling tube assembly out of drawbar structure (1).

(9) Using lifting device, lower tube assembly (4).

NOTE

Perform Steps (10) and (11) if replacing tube assembly.

(10) Remove drawbar lift handles (8) and tow ring (9) (Para 4-59).

(11) Remove plate (10) from tube assembly (4) (Para 4-59).

5-21. DRAWBAR REPAIR (CONT).

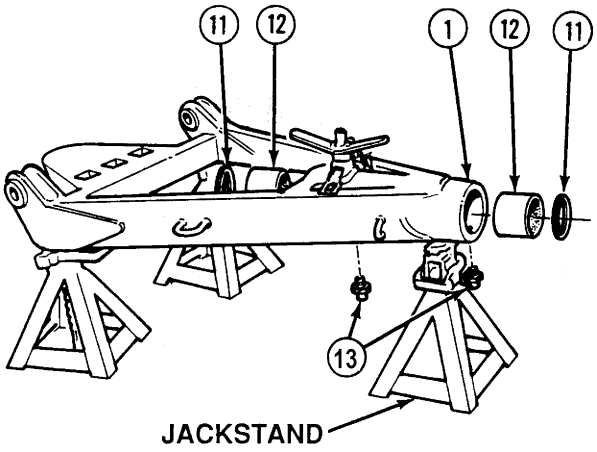
(12) Remove two wiper seals (11) from drawbar structure (1). Discard seals.

NOTE

Bushings have seams and are removed by prying one edge of seam inward.

(13) Remove two bushings (12) from drawbar structure (1). Discard bushings.

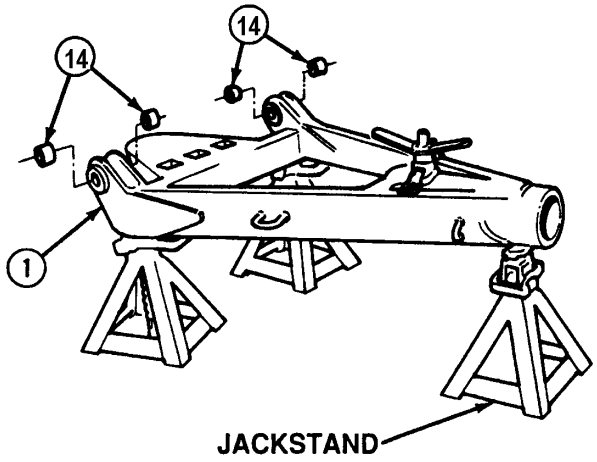
(14) Remove two grease fittings (13) from drawbar structure (1).



NOTE

Bushings have seams and are removed by prying one edge of seam, inward.

(15) Remove four bushings (14) from drawbar structure (1). Discard bushings.



c. Cleaning/Inspection.

(1) Inspect tube shaft for warpage or damage that would impair operation.

(2) Inspect drawbar structure for warpage or damage that would impair operation.

(3) Remove adhesive sealant from end plate of tube assembly.

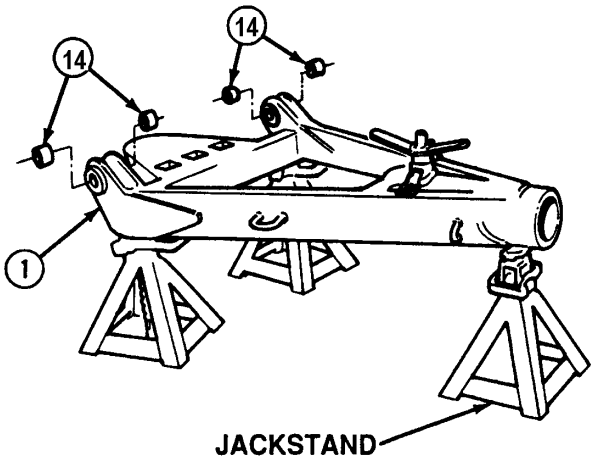
WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc).

(4) Clean inside of drawbar structure with drycleaning solvent and dry with compressed air.

d. Assembly.

(1) Install four bushings (14) on drawbar structure (1).



(2) Using bushing driver, install two bushings (12) in drawbar structure (1) until fully seated.

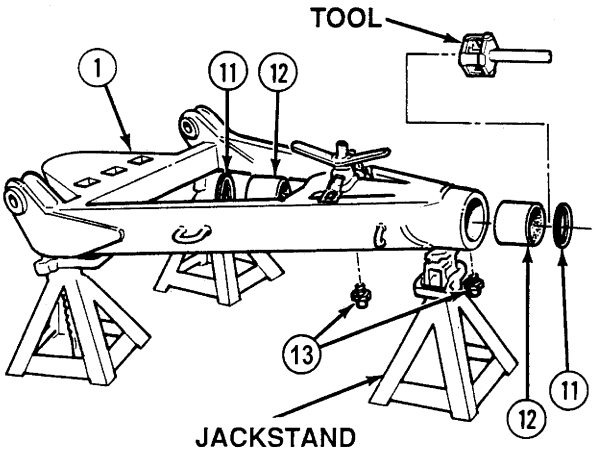
(3) Apply grease to two wiper seals (11).

NOTE

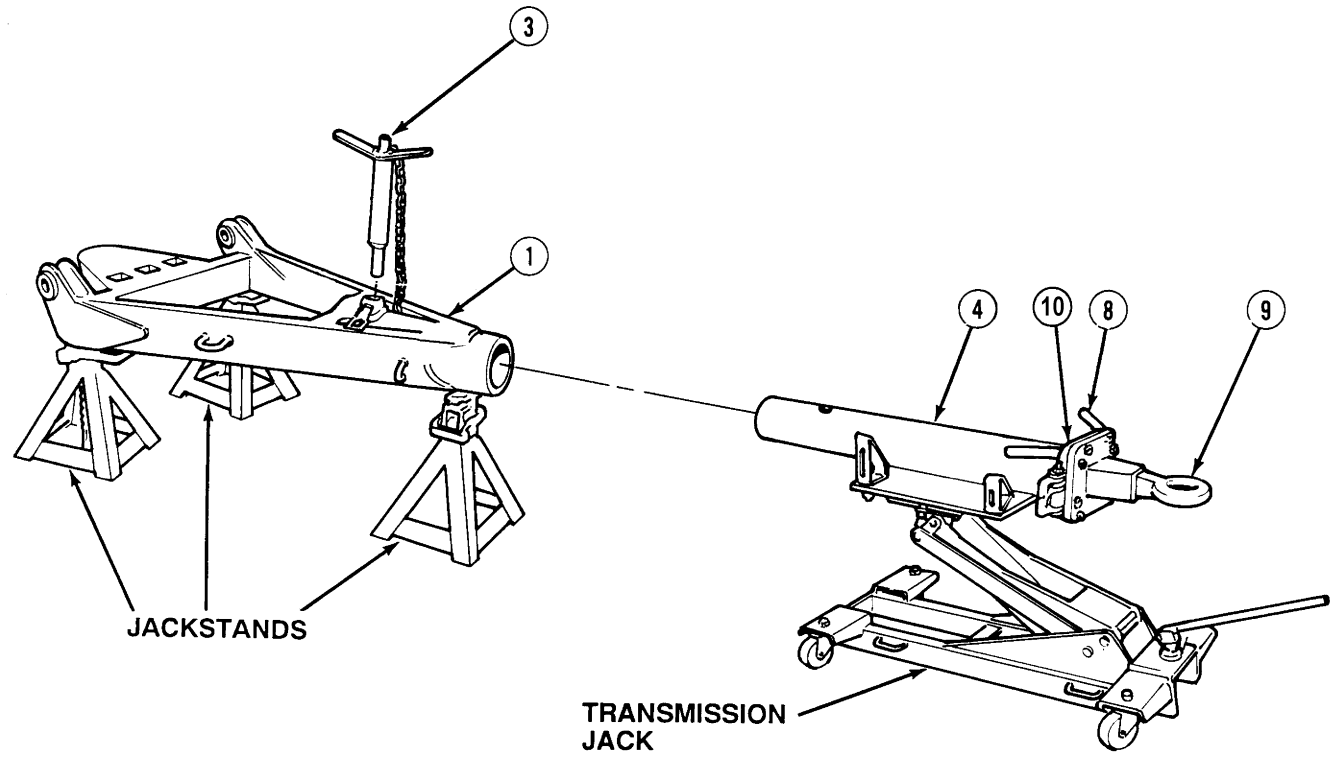
- Wiper seals seat in groove.
- Lips of wiper seals must face out.

(4) Install two wiper seals (11) in drawbar structure (1).

(5) Install two grease fittings (13) on drawbar structure (1).



5-21. DRAWBAR REPAIR (CONT).



NOTE

If tube assembly was replaced, perform Steps (6) and (7).

(6) Install plate (10) on tube assembly (4) (Para 4-59).

(7) Install drawbar lift handles (8) and tow ring (9) (Para 4-59).

WARNING

Drawbar shaft weighs 187 lbs (85 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

(8) Attach lifting device to tube assembly (4).

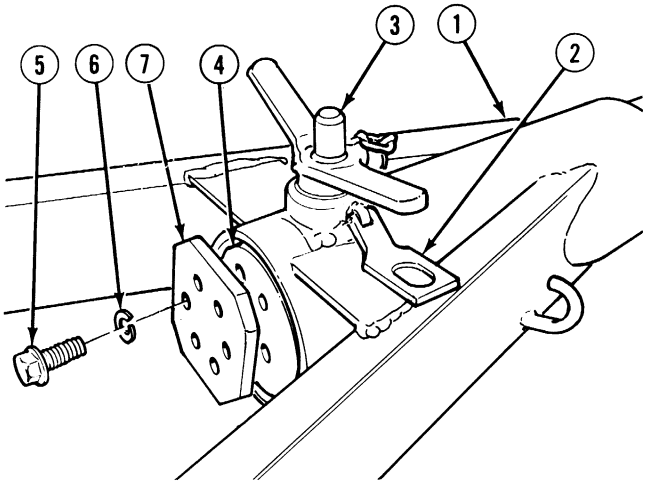
(9) With the aid of an assistant, steady tube assembly (4) and install tube assembly (4) in drawbar structure (1).

(10) Remove lifting device from tube assembly (4).

(11) Install pin assembly (3) in tube assembly (4) with tube assembly in extended mode.

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.



(12) Apply adhesive sealant on end of tube assembly (4).

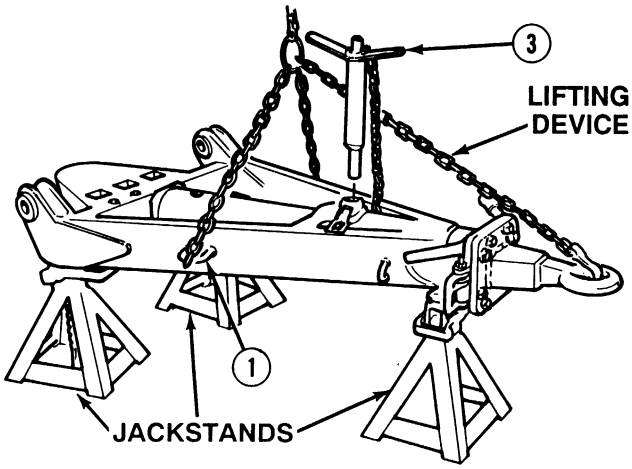
(13) With the aid of an assistant, steady drawbar structure (1) while installing plate (7) on tube assembly (4) with six screws (5) and lockwashers (6). Tighten screws to 410 lb-ft (556 N·m).

(14) Remove adjusting pin (3) and place tube assembly (4) in retracted position.

(15) Install pin assembly (3) and raise hinge assembly (2) into locked position.

(16) With the aid of an assistant, use lifting device and raise drawbar structure (1) and remove jackstand.

(17) With the aid of an assistant, lower drawbar structure (1) and remove lifting device.

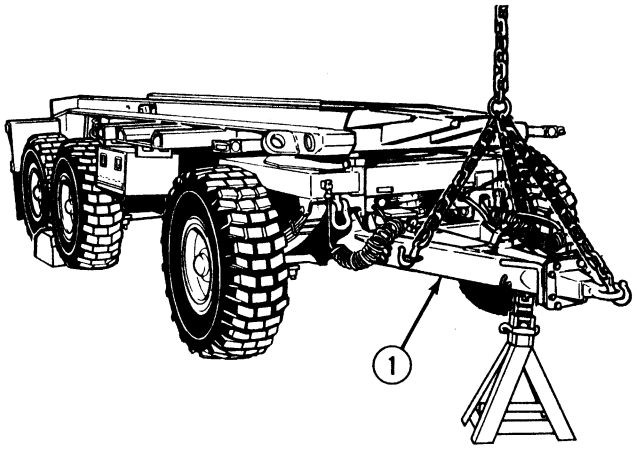


5-21. DRAWBAR REPAIR (CONT).

e. Installation.

WARNING

Drawbar weighs 425 lbs (193 kg), (850 lbs (386 kg) with drawbar extension, if equipped). Attach suitable lifting device prior to installation to prevent possible injury to personnel.



(1) Attach lifting device to drawbar structure (1).

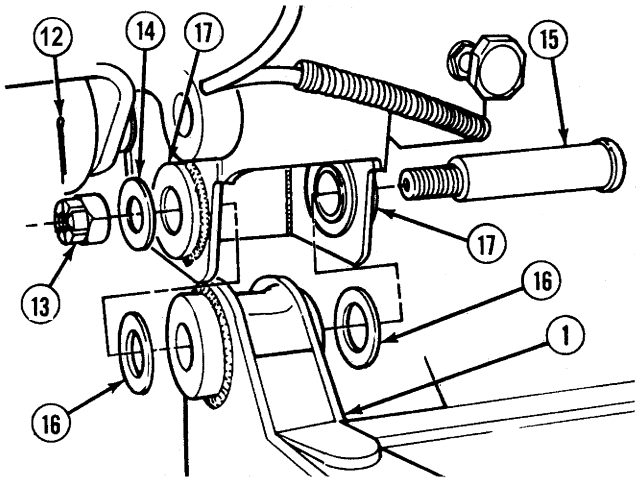
(2) With the aid of an assistant, use lifting device and raise drawbar (1) into position against trailer frame.

WARNING

Keep hands and fingers out of spring pin hole or injury to personnel may result.

NOTE

Care should be taken, not to drive bushings out of drawbar structure.

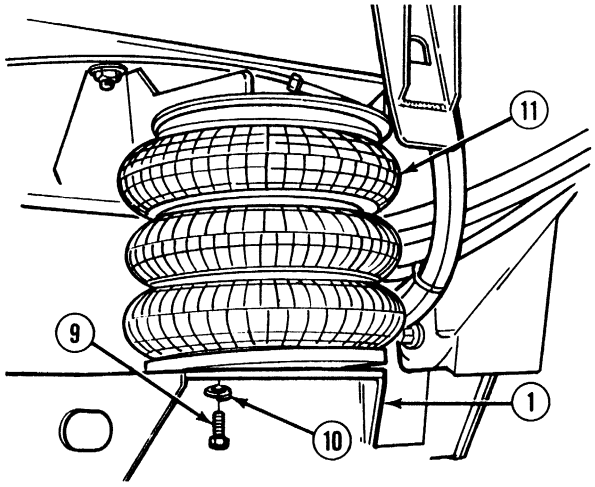


(3) Install drawbar (1) on trailer frame (17), with four spacers (16), two pins (15), washers (14) and castle nuts (13). Tighten castle nuts to 35 lb-ft (47 N·m). Tighten to next alignment slot.

(4) Install two cotter pins (12) in pins (15).

(5) Support drawbar structure (1) with jackstand.

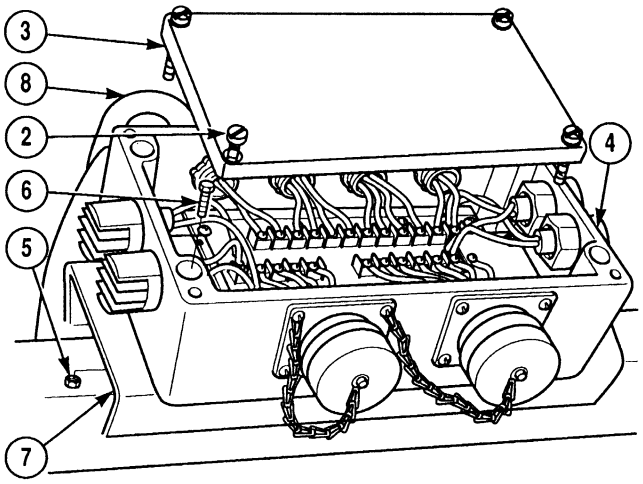
(6) Install air bag (11) on drawbar (1) with two screws (9) and lockwashers (10).



(7) Remove cable tie from cables (8).

(8) Install front electrical box (4) on bracket (7) with four screws (6) and locknuts (5).

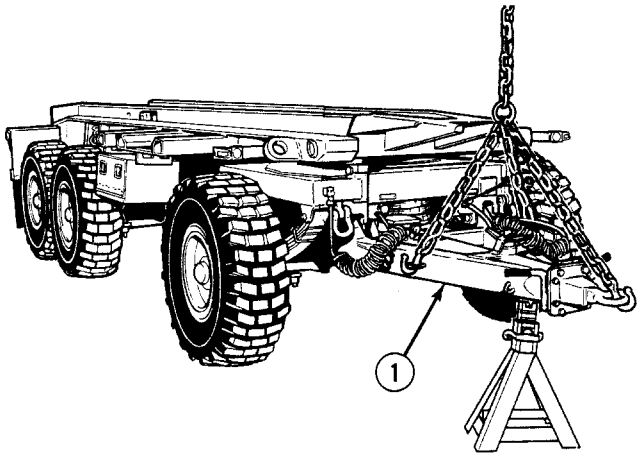
(9) Install cover (3) on front electrical box (4) with four captive screws (2).



(10) With the aid of an assistant, use lifting device and raise drawbar (1) and remove jackstand.

(11) Lower drawbar (1) and remove lifting device.

(12) Install safety chains.



f. Follow-On Maintenance:

- Lubricate drawbar, (Para 4-8).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-22. SPRING REPLACEMENT (AXLE NO.1).

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's
(Item 49, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Wrench Set, Crowfoot (Item 58, Appendix J)
Wrench, Torque (0-175 lb-ft [0-237 N·m])
(Item 61, Appendix J)
Lifting Device Minimum Capacity 270 lb (123 kg)

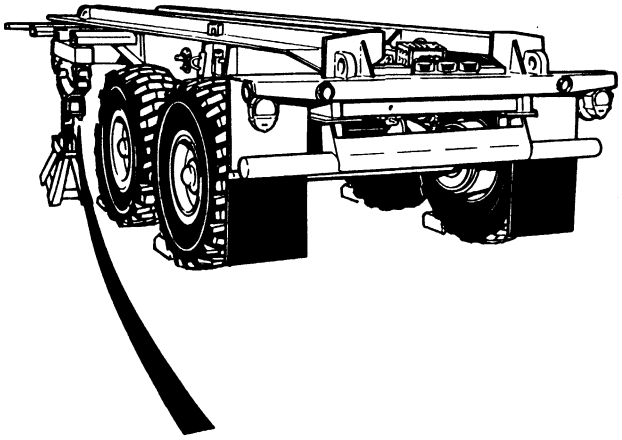
Materials/Parts
Grease (Item 12, Appendix E)

Materials/Parts - Continued
Bushing (2) (Item 3, Appendix I)
Pin, Cotter (6) (Item 64, Appendix I)

Personnel Required
Two

Equipment Condition
Wheels chocked, (Para 2-20)
Axle assembly removed, (Para 5-14)

a. Removal.



WARNING

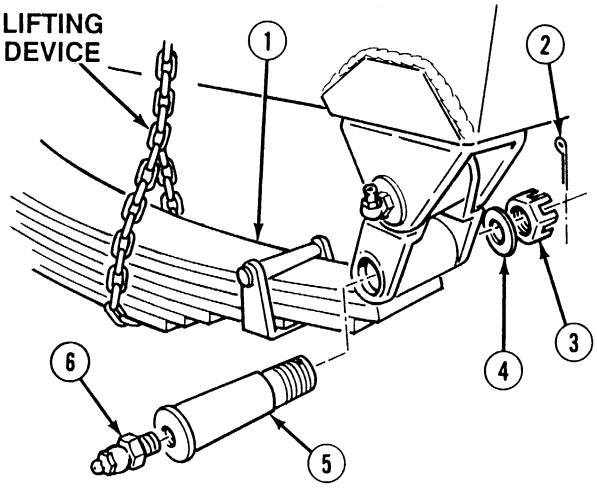
- Spring weighs 163 lbs (74 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.
- Keep hands and fingers out of spring pin hole or injury to personnel may result.

(1) With the aid of an assistant, attach lifting device to spring (1).

(2) Remove two cotter pins (2), castle nuts (3), washers (4) and spring pins (5) from both ends of spring assembly. Discard cotter pins.

(3) Lower spring (1).

(4) Remove lifting device from spring (1).

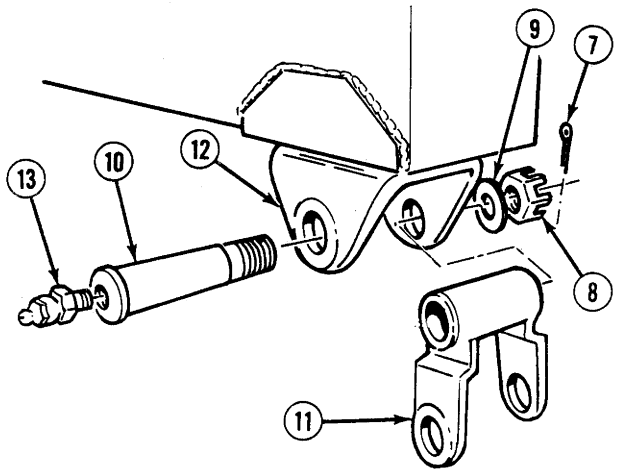


NOTE

Perform Step (5) if grease fittings are damaged.

(5) Remove grease fittings (6) from spring pins (5). Discard grease fittings.

(6) Remove cotter pin (7), castle nut (8), washer (9), pin (10) and spring hanger (11) from bracket (12).



NOTE

Perform Step (7) if grease fittings were damaged.

(7) Remove grease fitting (13) from pin (10). Discard grease fitting.

(8) Repeat Steps (1) through (7) for opposite side front spring.

b. Installation.

(1) Install spring hanger (11), pin (10), washer (9), castle nut (8) and cotter pin (7) on bracket (12). Tighten castle nut to 160 lb-ft (217 N·m).

(2) Align slot in nut (8) with hole in pin (10).

(3) Install cotter pin (7) in pin (10).

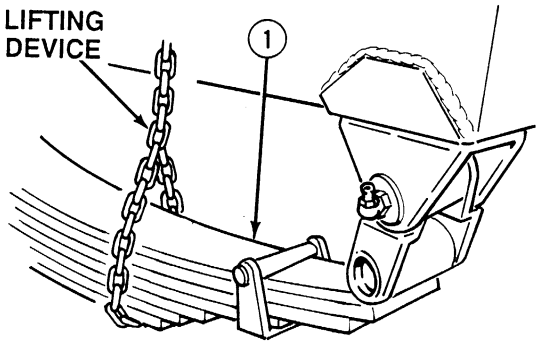
NOTE

Perform Step (4) if grease fittings were removed.

(4) Install grease fitting (13) on pin (10).

WARNING

- Spring weighs 163 lbs (74 kg). Attach suitable lifting device prior to installation to prevent possible injury to personnel.
- Keep hands and fingers out of spring pin hole or injury to personnel may result.



(5) With the aid of an assistant, attach lifting device and raise spring (1) into position.

5-22. SPRING REPLACEMENT (AXLE NO. 1) (CONT).

NOTE

- Front of spring has a double loop around spring bushing. Ensure spring is installed correctly.
- Do not install front pin all the way in. There must be enough room between pin and drawbar mount to install the castle nut.

(6) Install two pins (5), washers (4) and castle nuts (3) in spring (1) ends. Tighten castle nuts to 160 lb-ft (217 N·m).

(7) Align slot in castle nut (3) with hole in pin (5).

(8) Install cotter pin (2) in pin (5).

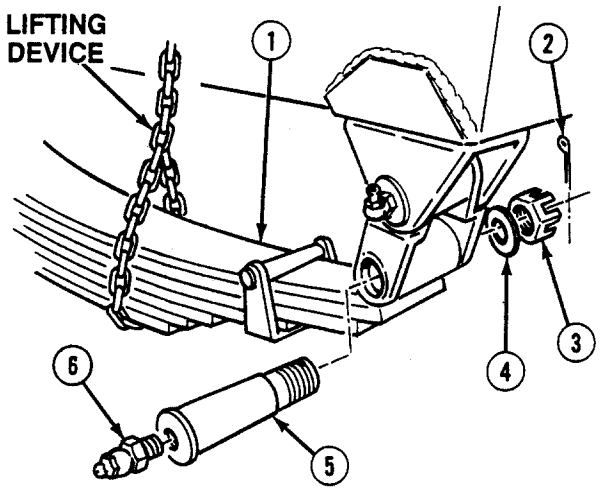
NOTE

Perform Step (9) if grease fittings were damaged.

(9) Install new grease fittings (6) in pins (5).

(10) Remove lifting device from spring (1).

(11) Repeat Steps (1) through (10) for opposite side front spring.



c. Follow-On Maintenance:

- Install axle, (Para 5-14).
- Lubricate fittings, (Para 4-8).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-23. SPRING ASSEMBLY REPLACEMENT (AXLES NO. 2 AND 3).

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

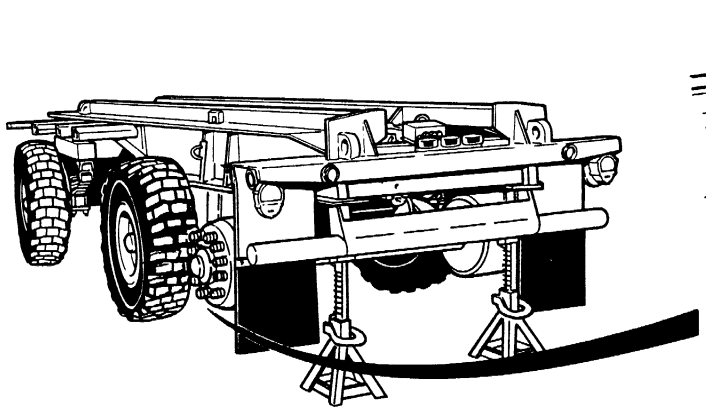
Tools and Special Tools
Tool Kit, General Mechanic's
(Item 49, Appendix J)
Jackstand (6) (Item 24, Appendix J)
Multiplier, Torque (Item 29, Appendix J)
Socket Set, 3/4 in. (Item 39, Appendix J)
Wrench, Torque (0-600 lb-ft [0-814 N·m])
(Item 62, Appendix J)
Lifting Device Minimum Capacity 8000 lbs
(3632 kg)

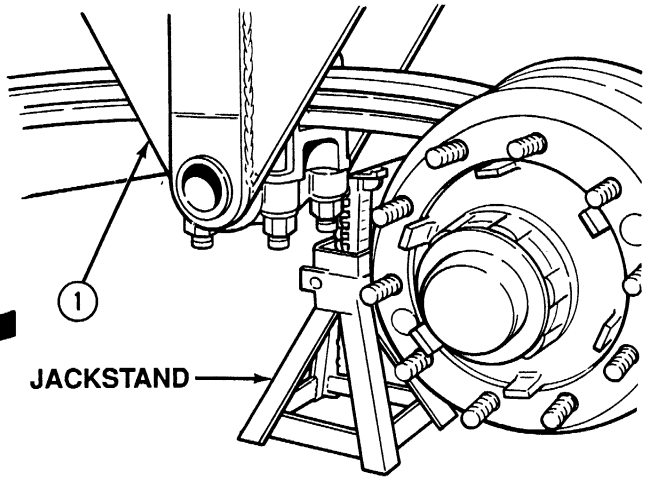
Materials/Parts
Bushing, Rubber (Item 10, Appendix I)
Liner Pad (Item 21, Appendix I)
Locknut (8) (Item 27, Appendix I)
Locknut (8) (Item 28, Appendix I)
U-bolt (4) (Item 86, Appendix I)
U-bolt (2) (Item 87, Appendix I)

Personnel Required
Two

Equipment Condition
Front wheels chocked, (Para 2-20)
Rear wheels removed (Axles No. 2 and 3),
(Para 4-57)

a. Removal.





WARNING

Rear of the trailer weighs approximately 8,000 lbs (3,632 kg). Attach suitable lifting device prior to lifting or lowering frame to prevent possible injury or death to personnel.

NOTE

Both rear springs are removed the same way.

(1) Support suspension hanger assembly (1) on jackstands.

5-23. SPRING ASSEMBLY REPLACEMENT (AXLES NO. 2 AND 3) (CONT).

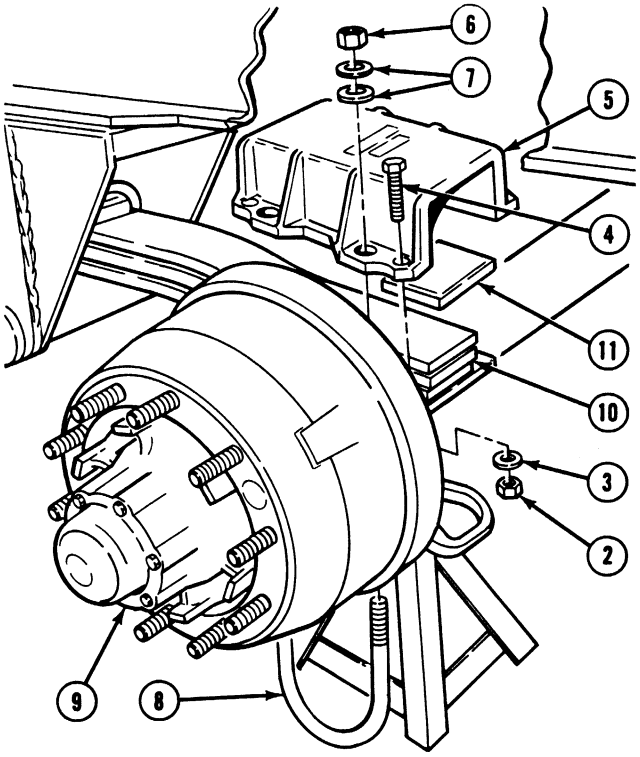
(2) Remove four locknuts (2), washers (3) and screws (4) from cap spring seat (5). Discard locknuts.

(3) Remove four locknuts (6), eight washers (7) and two U-bolts (8) from Axle No. 3 (9) and cap spring seat (5). Discard locknuts.

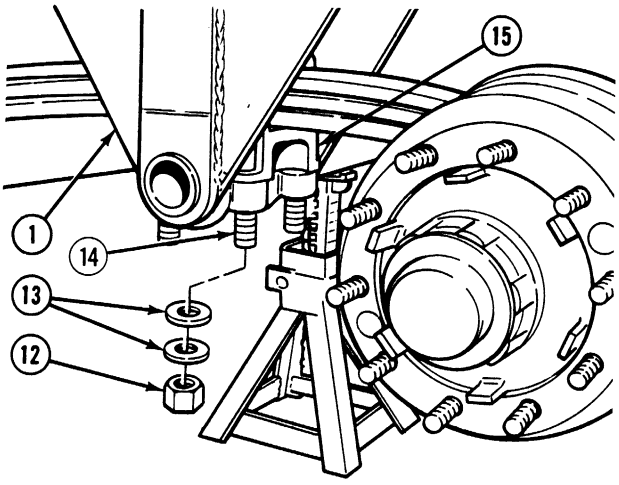
(4) Remove cap spring seat (5) from spring assembly (10).

(5) Remove two rubber pads (11) from spring assembly (10).

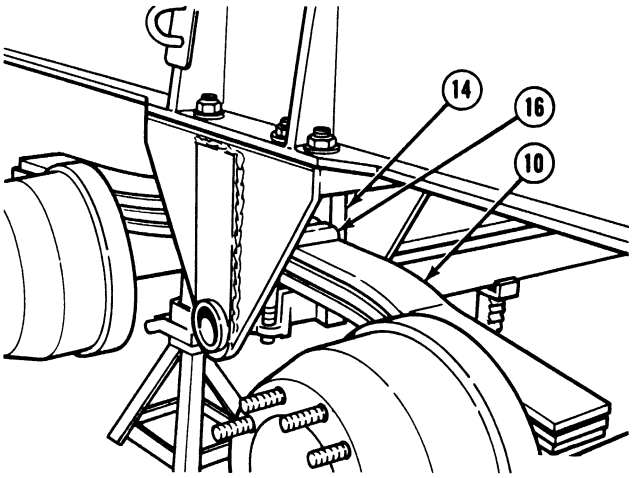
(6) Repeat Steps (2) through (5) for Axle No. 2 (9).



(7) Remove four nuts (12) and eight washers (13) from two U-bolts (14) and lower trunnion block (15) from suspension hanger assembly (1). Discard U-bolts.



(8) Remove two U-bolts (14) and top plate (16) from spring assembly (10). Discard U-bolts.



WARNING

Spring assembly weighs approximately 240 lbs (109 kg). Attach a suitable lifting device prior to removal to prevent possible injury or death to personnel.

NOTE

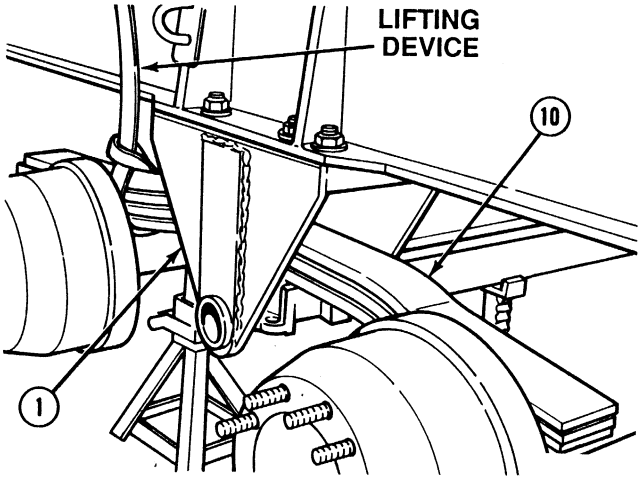
Lifting device is attached to front of spring assembly as close to center of spring assembly as possible.

(9) Attach to spring assembly (10).

(10) With the aid of an assistant, use lifting device and slide spring assembly (10) forward and remove from suspension hanger assembly (1).

(11) Lower spring assembly (10).

(12) Remove lifting device from spring assembly (10).

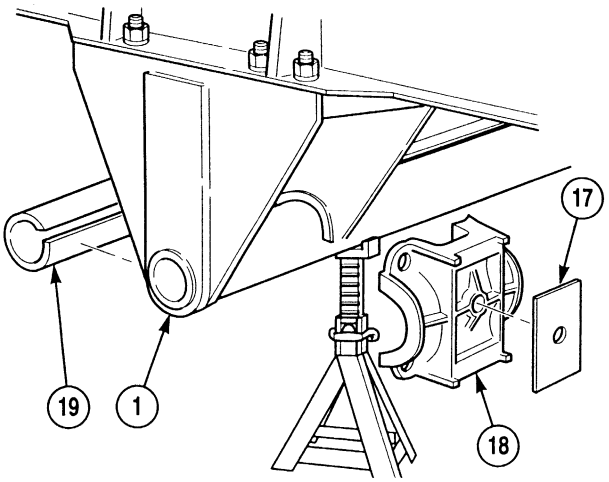


5-23. SPRING ASSEMBLY REPLACEMENT (AXLES NO. 2 AND 3) (CONT).

(13) Remove liner pad (17) from upper trunnion block (18). Discard liner.

(14) Remove upper trunnion block (18) from suspension hanger assembly (1).

(15) Remove rubber bushing (19) from suspension hanger assembly (1). Discard rubber bushing.



b. Installation.

NOTE

Tab on rubber bushing is inserted in upper trunnion block.

(1) Install rubber bushing (19) on suspension hanger assembly (1).

NOTE

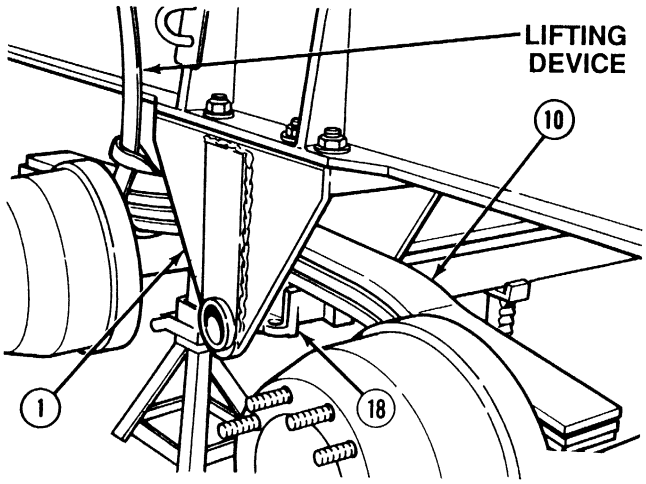
Upper trunnion block is installed over rubber bushing and between two washers on suspension hanger assembly.

(2) Position upper trunnion block (18) on rubber bushing (19).

(3) Position liner pad (17) on upper trunnion block (18).

WARNING

Spring assembly weighs approximately 240 lbs (109 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.



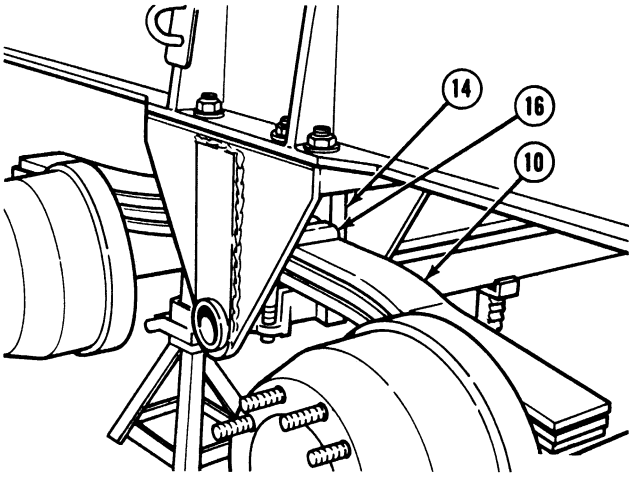
(4) Attach lifting device to spring assembly (10).

(5) With the aid of an assistant, raise and position spring assembly (10) on upper trunnion block (18) by sliding rearward through suspension hanger assembly (1).

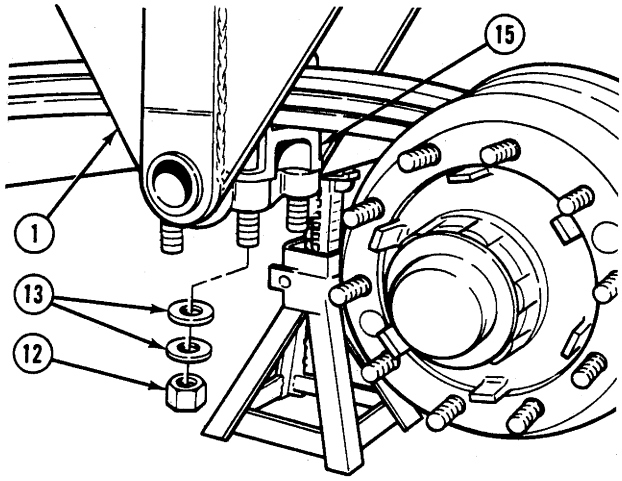
(6) Remove lifting device from spring assembly (10).

(7) Position top plate (16) on spring assembly (10).

(8) Install two U-bolts (14) around top plate (16) and spring assembly (10).



(9) Install lower trunnion block (15), eight washers (13) and four nuts (12) on suspension hanger assembly (1). Tighten nuts to 880 lb-ft (1193 N·m).



(10) Position two rubber pads (11) and cap spring seat (5) on spring assembly (10).

(11) Position two U-bolts (8) around Axle No. 2 (9) and through cap spring seat (5).

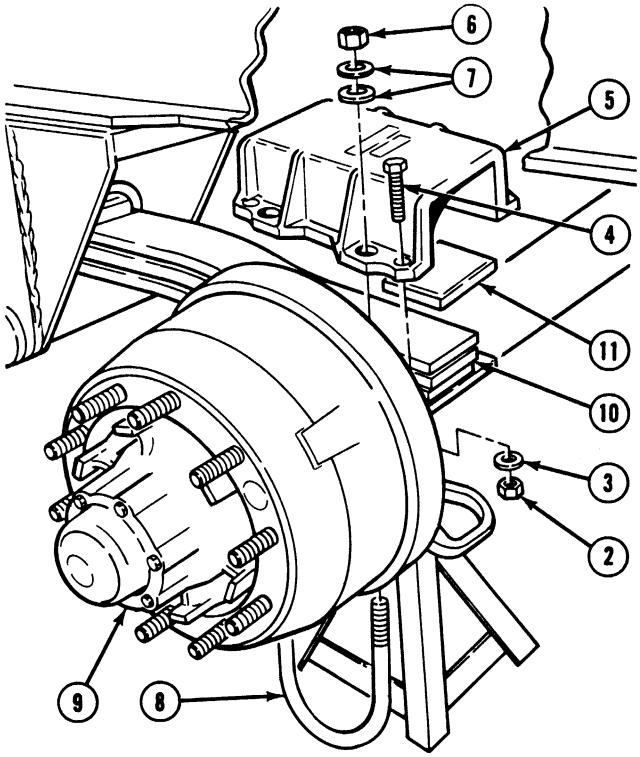
(12) Position four washers (7) and locknuts (6) on U-bolts (8).

(13) Position four screws (4), washers (3) and locknuts (2) through cap spring seat (5).

(14) Refer to Para 5-17 and 5-18 and align Axles No. 2 and 3.

(15) Tighten four locknuts (2) on screws (4) to 180 lb-ft (244 N·m).

(16) Tighten four locknuts (6) on U-bolts (8) to 300 lb-ft (407 N·m).

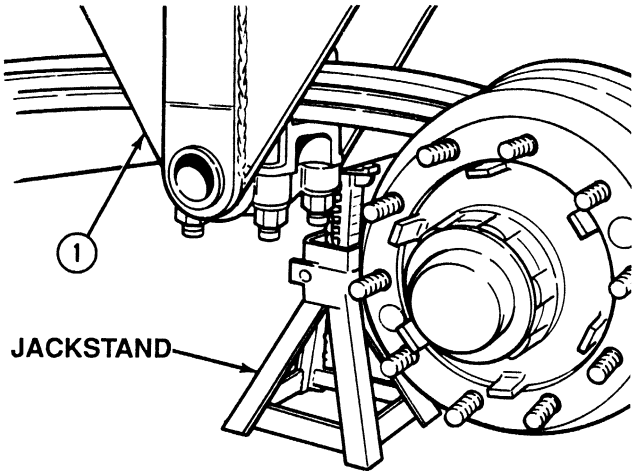


5-23. SPRING ASSEMBLY REPLACEMENT (AXLES NO. 2 AND 3) (CONT).

(17) Repeat Steps (1) through (14) for Axle No. 3 (9).

WARNING

Rear of the trailer weighs approximately 8,000 lbs (3,632 kg). Attach suitable lifting device prior to lifting or lowering frame to prevent possible injury or death to personnel.



(18) Remove jackstands from suspension hanger assembly (1).

c. Follow-On Maintenance:

- Install rear wheels (Axles No. 2 and 3), (Para 4-57).
- Remove wheel chocks, (Para 2-20).

END OF TASK

5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION.

This task covers:

a. Installation

b. Follow-on Maintenance

INITIAL SETUP

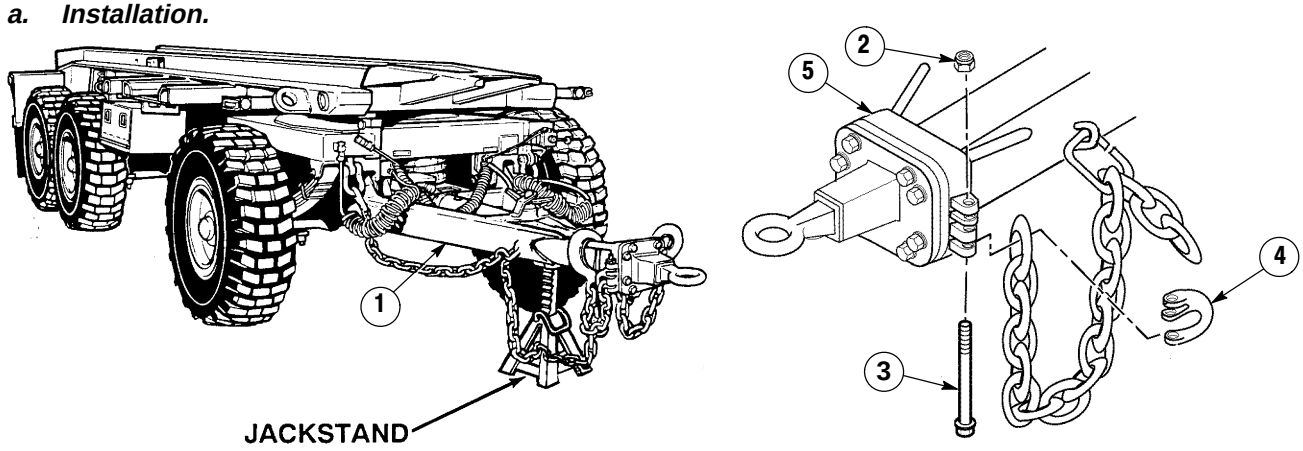
Tools and Special Tools
Tool Kit, General Mechanic's: Automotive (Item 50, Appendix J)
Drill, Electric, Portable (Item 7, Appendix J)
Drill Set, Twist (Item 8, Appendix J)
Jackstand (Item 24, Appendix J)
Lifting Device Minimum Capacity 850 lbs (386 kg)
Wrench, Torque (0 to 600 lb-ft [0-813 N·m]) (Item 62, Appendix J)

Personnel Required
Two

Materials/Parts
Adhesive (Item 3, Appendix E)
Sealing Compound (Item 17, Appendix E)
Kit, Extended Drawbar/Light Bar (Item 20, Appendix I)
Locknut (2) (Item 42, Appendix I)

Equipment Condition
Wheels chocked, (Para 2-20)
Air system drained, (Para 2-21)

a. Installation.



WARNING

Drawbar weighs 425 lbs (193 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

NOTE

- Extended drawbar/light bar kit is used for common bridge transport missions only. This kit is not intended to be used during normal PLS operations.
- Parts removed and not used for extended drawbar/light bar kit are required to convert trailer back to original configuration.

(1) Support drawbar assembly (1) in level position on jackstand.

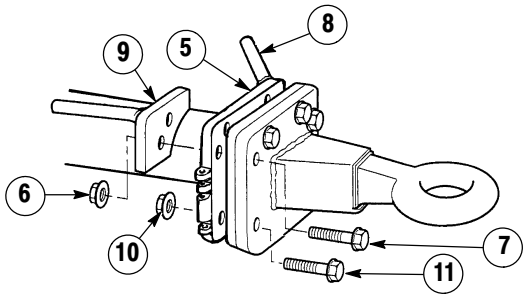
(2) Remove two locknuts (2), screws (3), and link couplings (4) from plate (5). Discard locknuts.

5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).

NOTE

- Note position of handles prior to removal.
- Do not remove two upper screws in Step (3). Screws are used to support tow ring to mounting plate.
- Do not discard two locknuts. Locknuts will be used in Step (6) to support tow ring.

(3) Remove four upper locknuts (6), lower two upper screws (7) and handles (8) and (9) from plate (5) and remaining two upper screws (7). Discard two locknuts.



WARNING

Drawbar tow ring and mounting plate will fall off when mounting screws are removed. Care should be taken to keep tow ring from falling. Possible injury to personnel may result.

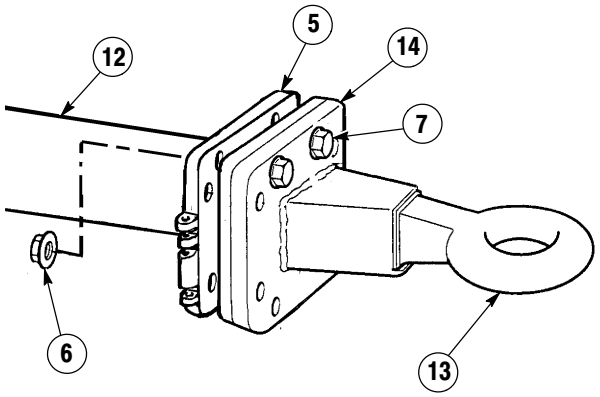
(4) Remove four lower locknuts (10) and screws (11). Discard locknuts.

NOTE

Do not break seal between drawbar and tube assembly.

(5) Move plate (5) rearward along tube assembly (12).

(6) Position two locknuts (6) on upper screws (7) to support tow ring (13) and mounting plate (14).



(7) Lift locking latch (15) and remove adjusting pin (16).

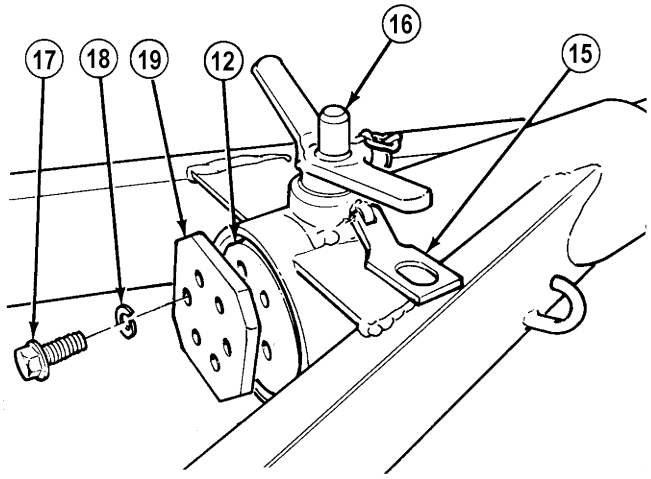
(8) Extend tube assembly (12) and install adjusting pin (16) in rear hole of tube assembly (12).

NOTE

Plate is sealed on tube assembly and may require prying to remove.

(9) Remove six screws (17), lockwashers (18) and plate (19) from tube assembly (12). Discard lockwashers.

(10) Remove adjusting pin (16) from tube assembly (12).



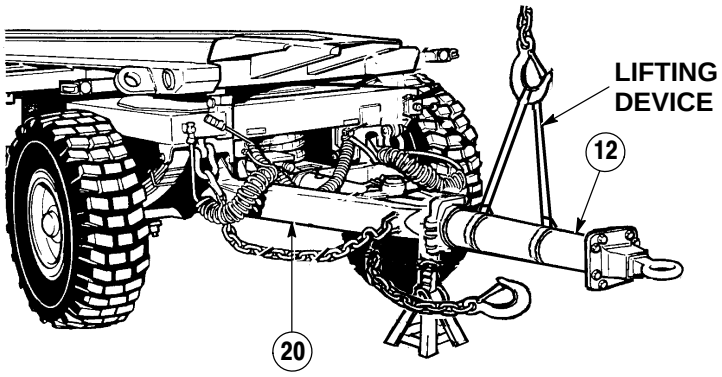
WARNING

Tube assembly weighs 187 lbs (85 kg). Attach a suitable lifting device prior to removal to prevent possible injury to personnel.

(11) Attach lifting device to tube assembly (12).

WARNING

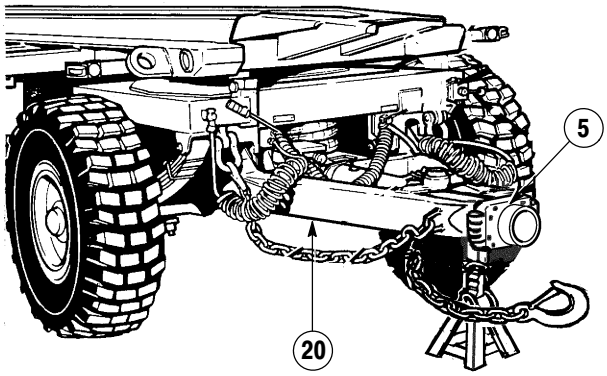
Drawbar weighs 425 lbs (193 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.



(12) With the aid of an assistant, steady tube assembly (12) while pulling tube assembly out of drawbar structure (20).

(13) Using lifting device, lower tube assembly (12).

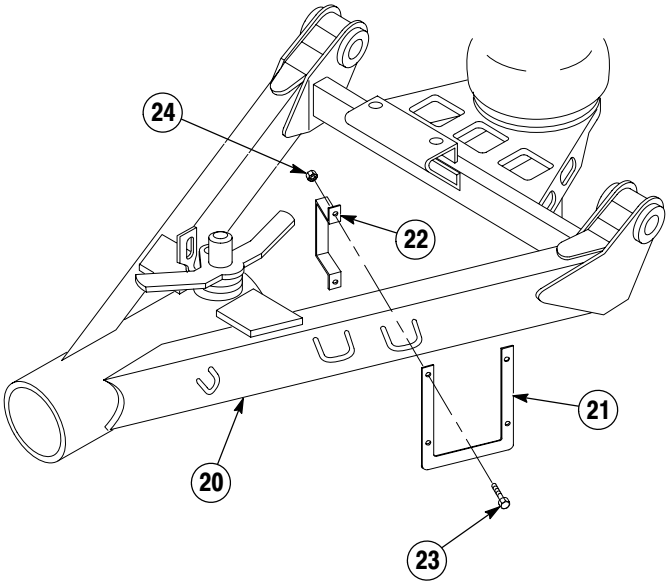
(14) Remove plate (5) from drawbar structure (20).



NOTE

Do not tighten locknuts in Step (15). Locknuts will be tightened in Step (30).

(15) Position retaining guide (21) on drawbar structure (20) with two clamps (22), four screws (23) and locknuts (24).



5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).

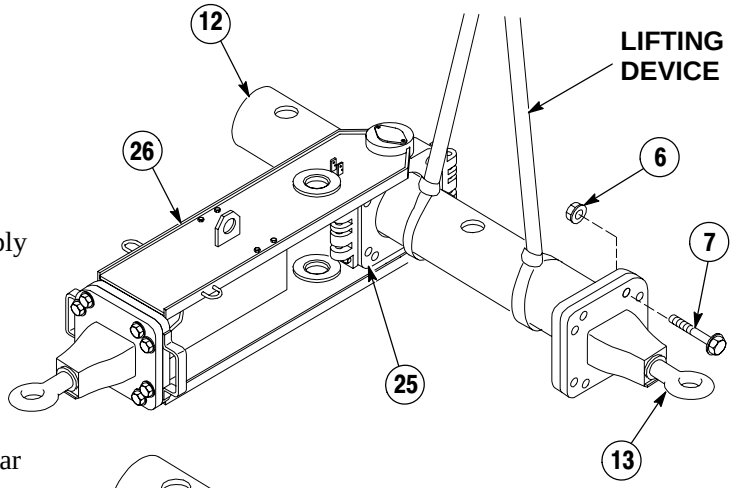
WARNING

Tube assembly weighs 187 lbs (85 kg). Attach suitable lifting device to prevent possible injury to personnel.

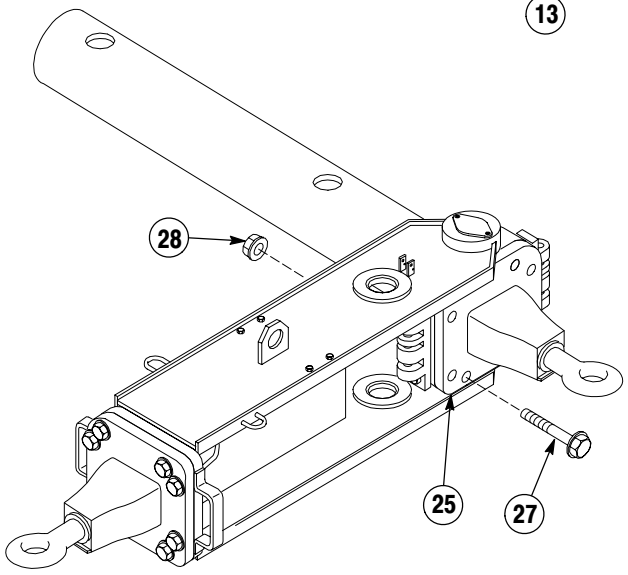
(16) Using lifting device, position tube assembly (12) through plate (25) on drawbar extension (26).

(17) Remove two locknuts (6) and screws (7) from tow ring (13). Discard locknuts.

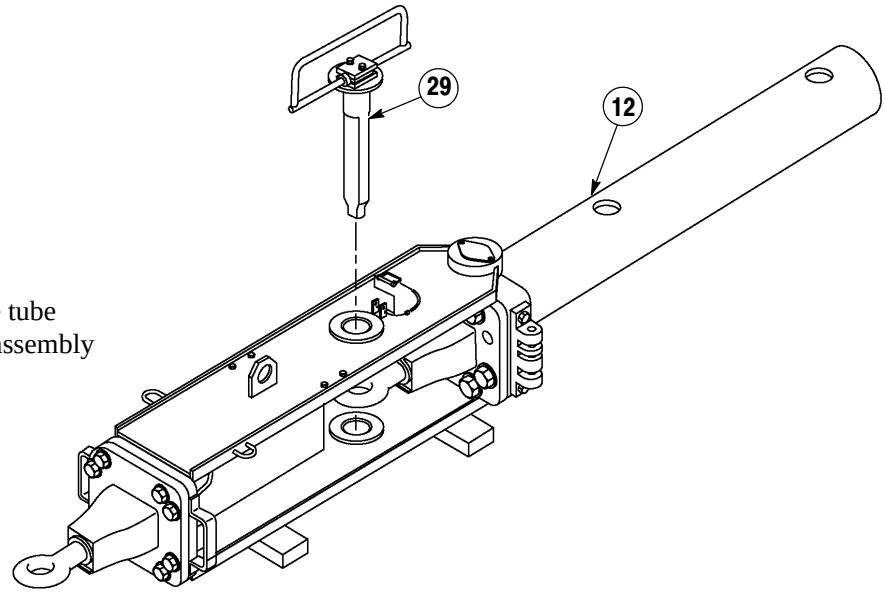
(18) Slide tube assembly (12) fully into drawbar plate (25) and remove lifting device.



(19) Position four screws (27) and locknuts (28) in bottom holes of plate (25).



(20) With the aid of an assistant, rotate tube assembly (12) and install D-ring assembly (29).

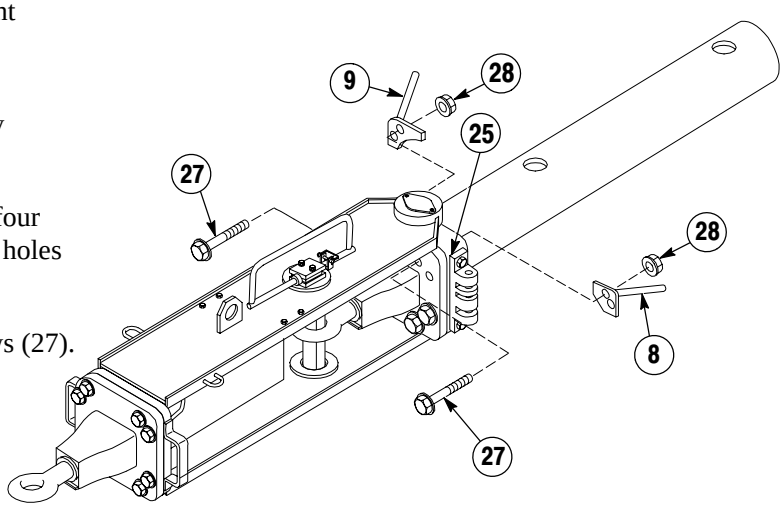


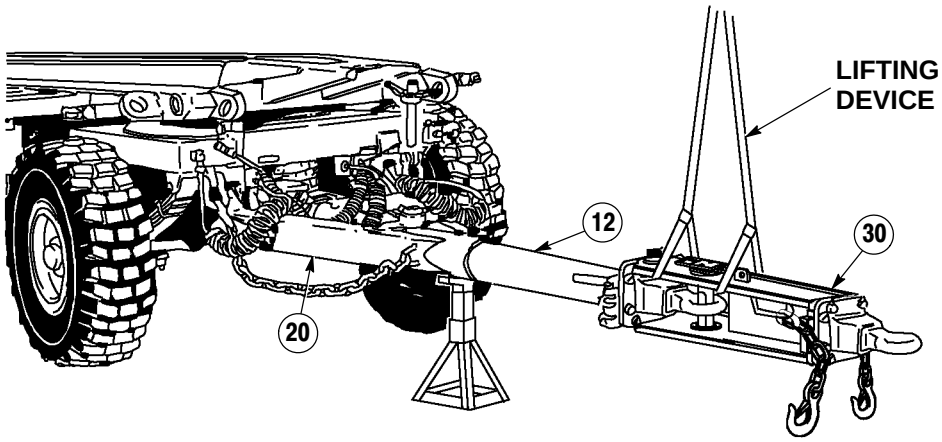
NOTE

- Handles in Step (21) are from extended drawbar/light bar kit.
- Handles should be flush with bracket when properly installed.

(21) Position two handles (9) and (8) on four screws (27) and locknuts (28) in top holes of plate (25).

(22) Tighten eight locknuts (28) on screws (27).





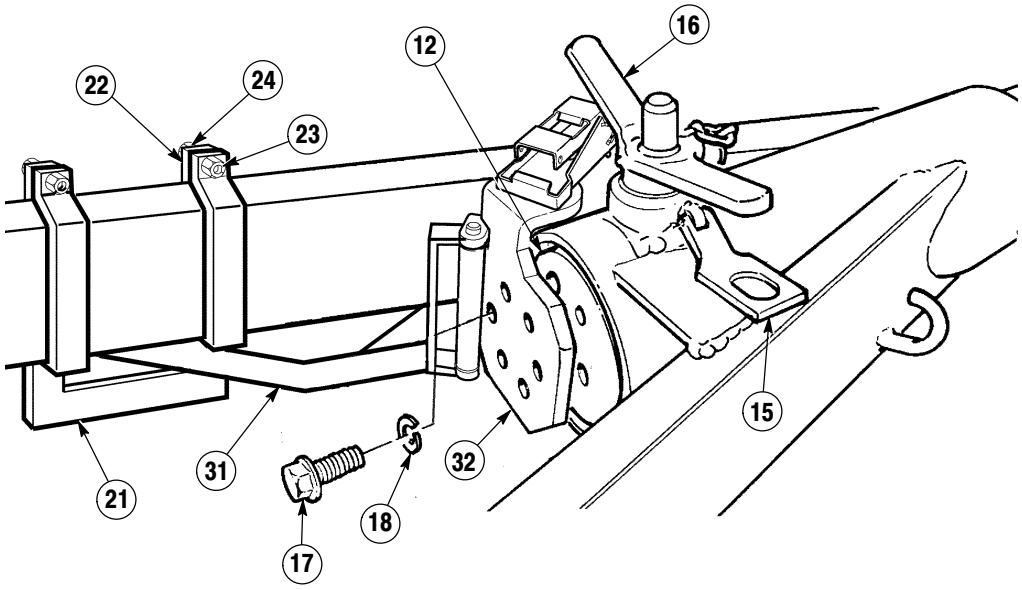
WARNING

Drawbar extension assembly and tube assembly weigh 625 lbs (283 kg). Attach suitable lifting device prior to installation to prevent injury to personnel.

(23) Attach lifting device to drawbar extension assembly (30) as shown. Ensure drawbar extension assembly is level when lifted.

(24) With the aid of an assistant, steady drawbar extension assembly (30) and install tube assembly (12) in drawbar structure (20).

5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).



(25) Install adjusting pin (16) in tube assembly (12) with tube assembly in extended mode.

WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

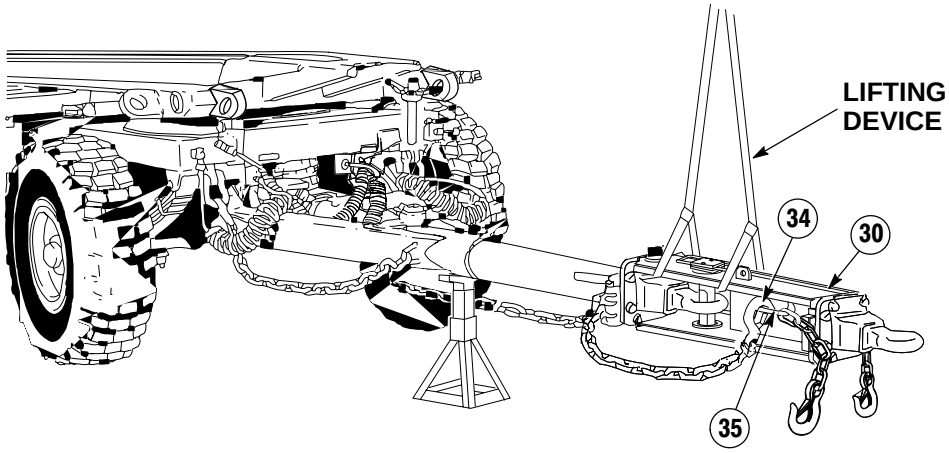
(26) Apply adhesive sealant on end of tube assembly (12).

(27) Position safety arm (31) in retaining guide (21) and install plate (32) on tube assembly (12) with six screws (17) and lockwashers (18). Tighten screws to 410 lb-ft (556 N·m).

(28) Remove adjusting pin (16) and position tube assembly (12) in retracted position.

(29) Install adjusting pin (16) and raise hinge assembly locking latch (15) into locked position.

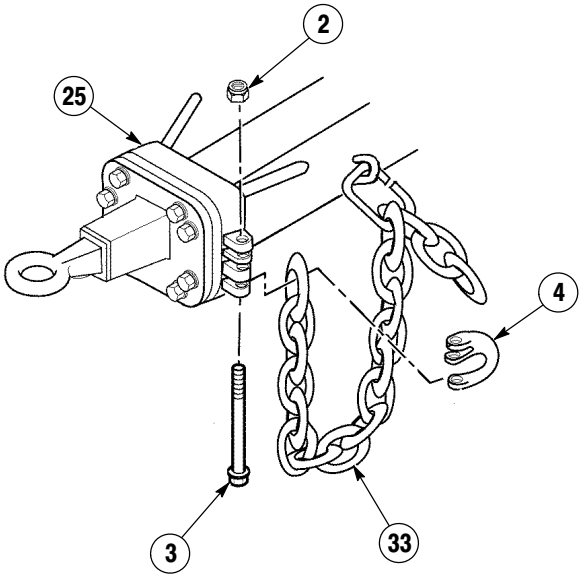
(30) Tighten four locknuts (24) on screws (23) and clamps (22).



(31) Remove lifting device from drawbar extension assembly (30).

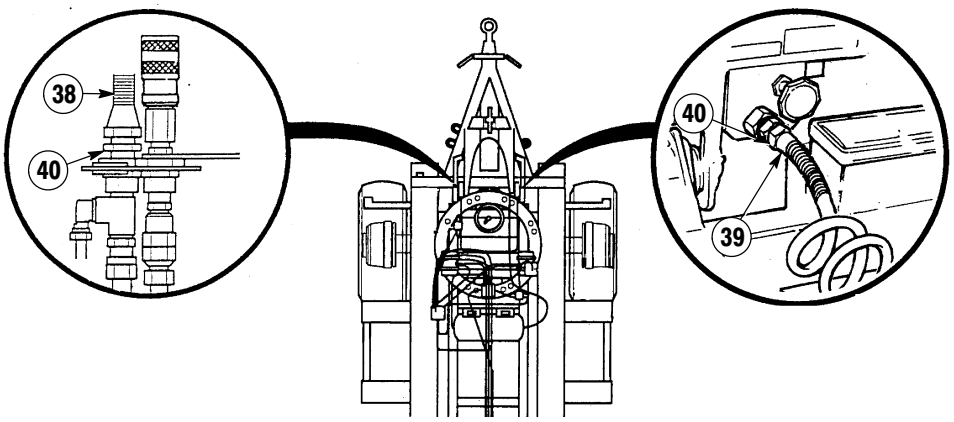
(32) Install two link couplings (4) and chains (33) on drawbar plate (25) with two screws (3) and locknuts (2).

(33) Connect chain hook (34) to safety chain loop (35) on drawbar extension assembly (30).



DRAWBAR EXTENSION SHOWN REMOVED FOR CLARITY.

5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).

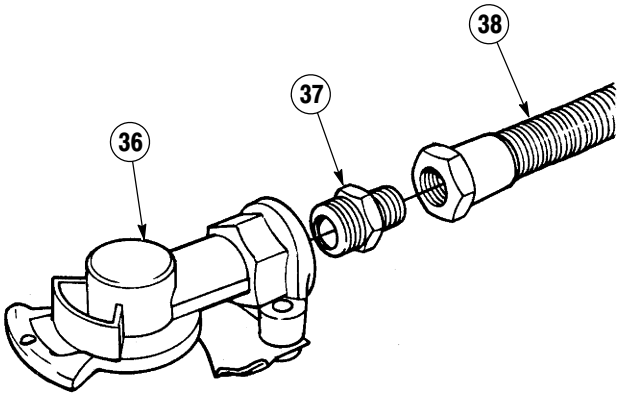


NOTE

Both gladhands and air hoses are removed the same way.

(34) Remove two gladhands (36) and adapter fittings (37) from emergency brake air line (38) and service brake air line (39).

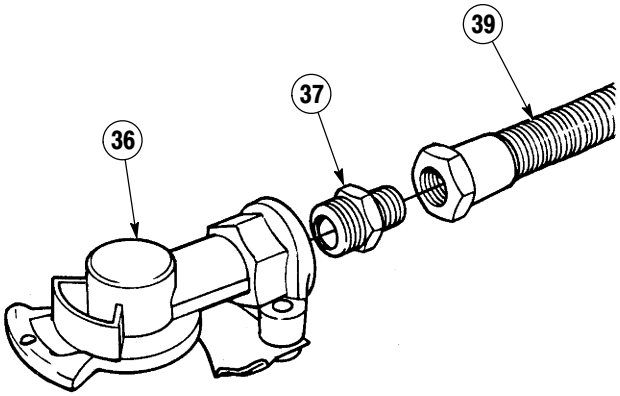
(35) Remove emergency brake air line (38) and service brake air line (39) from adapter fittings (40).



WARNING

Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(36) Apply sealing compound on threads of two adapter fittings (37) and (40).



NOTE

Air lines in Steps (37) and (38) are from extended drawbar/light bar kit.

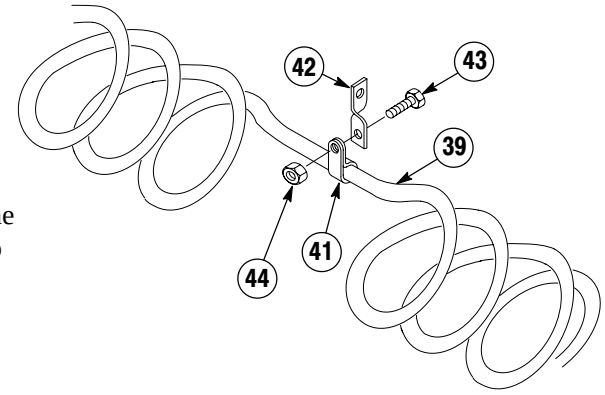
(37) Install emergency brake air line (38) and service brake air line (39) on two adapter fittings (40).

(38) Install two gladhands (36) and adapters (37) on emergency brake air line (38) and service brake air line (39).

NOTE

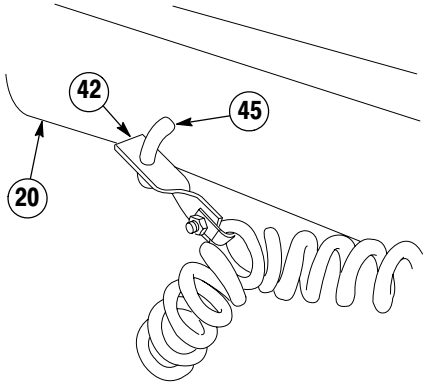
Clamp is properly installed when positioned on thirteenth coil from trailer end of service brake air line.

(39) Position clamp (41) on service brake air line (39) and install twist bracket (42) on clamp with screw (43) and locknut (44).

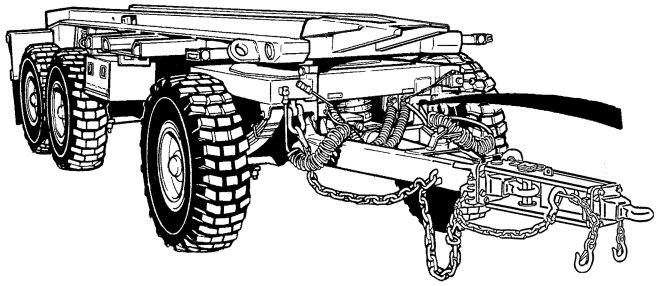


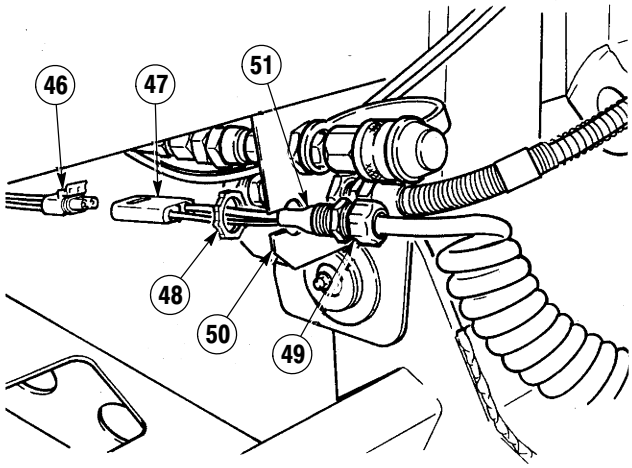
(40) Attach twist bracket (42) to hook (45) on side of the drawbar structure (20).

(41) Repeat Steps (39) and (40) for emergency brake air line.



5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).





NOTE

Connector is removed by gently prying up on tab and pulling connectors apart.

(42) Disconnect connector (46) from connector (47).

(43) Remove locknut (48) from connector (49) and bracket (50).

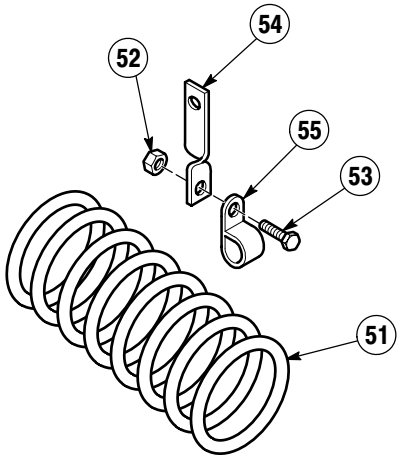
(44) Remove connector (49) and intervehicular cable (51) from bracket (50).

(45) Remove locknut (52), screw (53) and twist bracket (54) from clamp (55). Discard locknut.

(46) Remove clamp (55) from intervehicular cable (51).

NOTE

- Clamp is properly installed when positioned on thirtieth coil from trailer end of intervehicular cable.
- Intervehicular cable installed is from extended drawbar/ light bar kit.



(47) Position clamp (55) on trailer end of intervehicular cable (51).

(48) Install twist bracket (54) on clamp (55) with screw (53) and locknut (52).

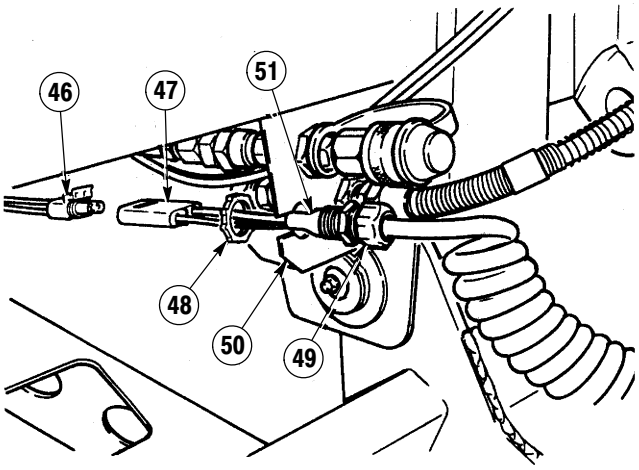
(49) Position intervehicular cable (51) on bracket (50).

(50) Tighten locknut (48) on connector (49) and bracket (50).

NOTE

Ensure male and female ends of connectors are securely latched together.

(51) Connect connector (47) on connector (46).



NOTE

Cables may be located in stowage box or connected to trailer.

(52) Disconnect 12 volt cable (56) from receptacle (57).

(53) Remove locknut (58), screw (59) and twist bracket (60) from clamp (61). Discard locknut.

(54) Remove clamp (61) from 12 volt cable (56).

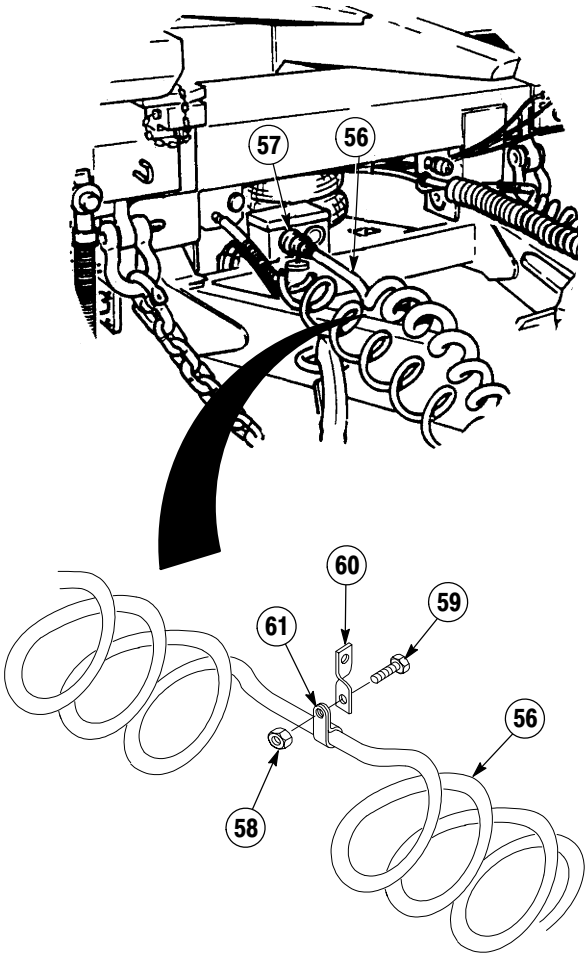
NOTE

- Clamp is properly installed when positioned on ninth coil from trailer end of 12 volt cable.
- 7 pin, 12 volt cable in Steps (55) and (57) is from extended drawbar/ light bar kit.

(55) Position clamp (61) on 12 volt cable (56).

(56) Install twist bracket (60) on clamp (61) with screw (59) and locknut (58).

(57) Install 12 volt cable (56) on receptacle (57) or stow in stowage box.



5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).

(58) Disconnect 24 volt cable (62) from receptacle (63).

(59) Remove locknut (64), screw (65) and twist bracket (66) from clamp (67). Discard locknut.

(60) Remove clamp (67) from 24 volt cable (62).

NOTE

- Clamp is properly installed when positioned on twentieth coil from trailer end of 24 volt cable.
- 12 pin, 24 volt cable in Steps (61) and (69) is from extended drawbar/light bar kit.

(61) Install clamp (67) on trailer end of 24 volt cable (62).

(62) Install twist bracket (66) on clamp (67) with screw (65) and locknut (64).

(63) Remove safety valve (68) from elbow (69).

WARNING

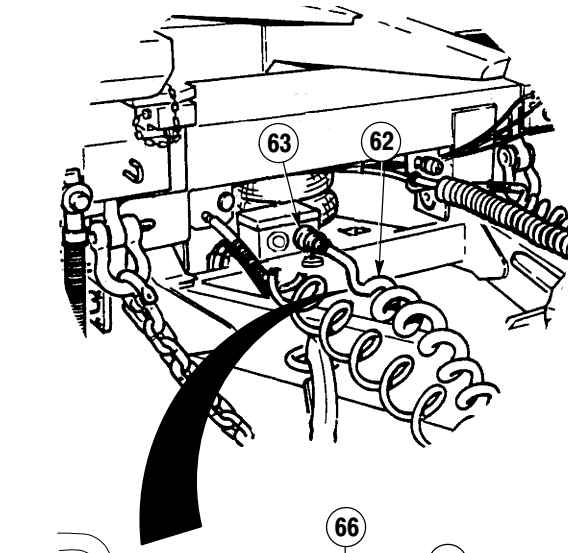
Adhesives, solvents and sealing compounds can burn easily, can give off harmful vapors and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

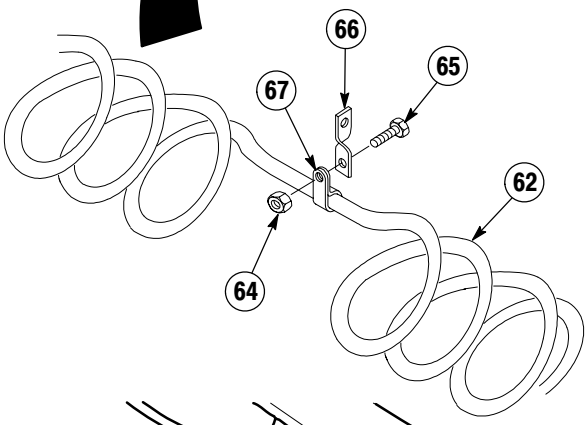
NOTE

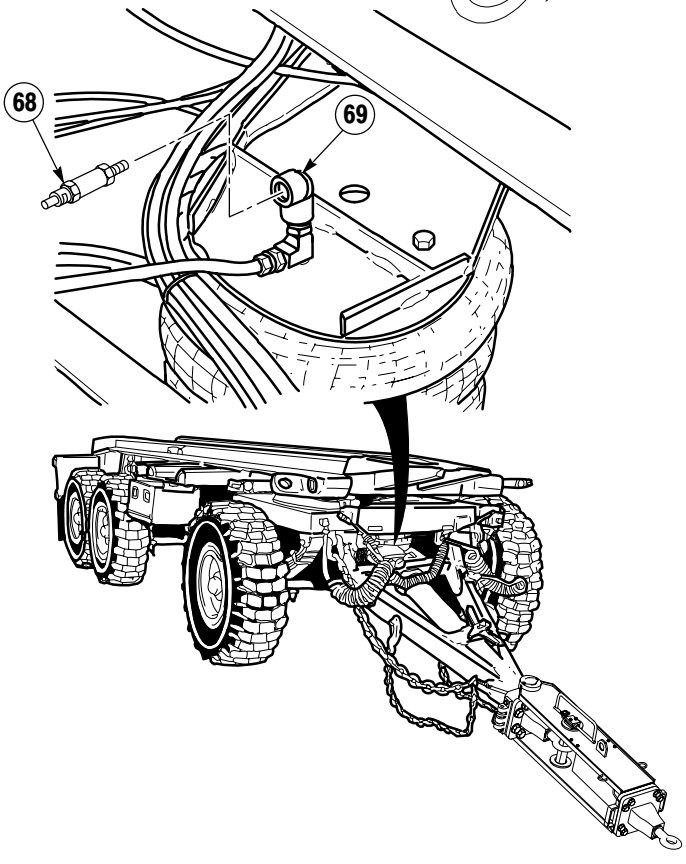
Safety valve in Steps (64) and (65) is from extended drawbar/light bar kit.

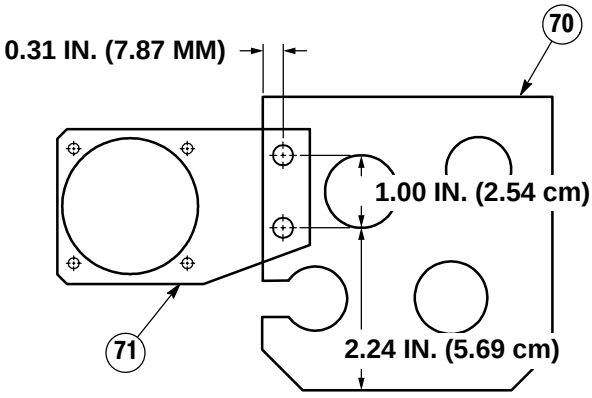
(64) Apply sealing compound on threads of safety valve (68).

(65) Install safety valve (68) on elbow (69).









(66) Drill two 9/32 inch (7.14 mm) holes in bracket (70) as shown.

(67) Install bracket (71) with two screws (72) and locknuts (73) on bracket (70).

NOTE

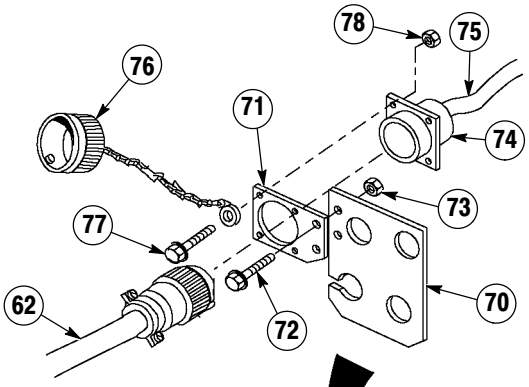
Wire harness is properly installed in bracket with notch facing up.

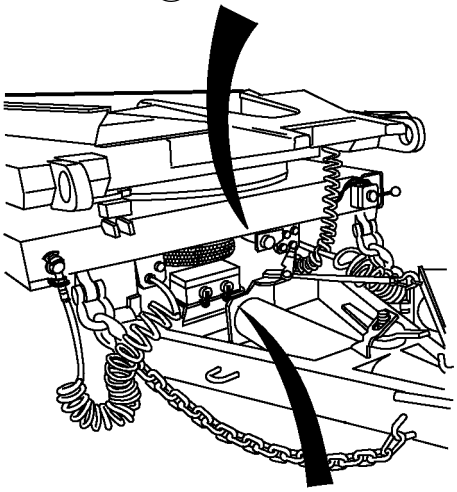
(68) Install connector (74) on wire harness (75) and cover and chain (76) on bracket (71) with four screws (77) and locknuts (78).

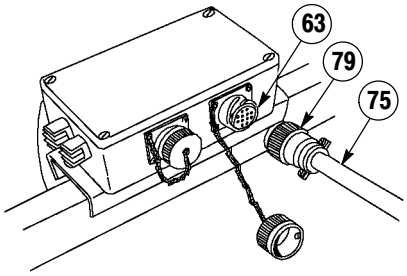
(69) Install 24 volt cable (62) on connector (74) or stow in stowage box.

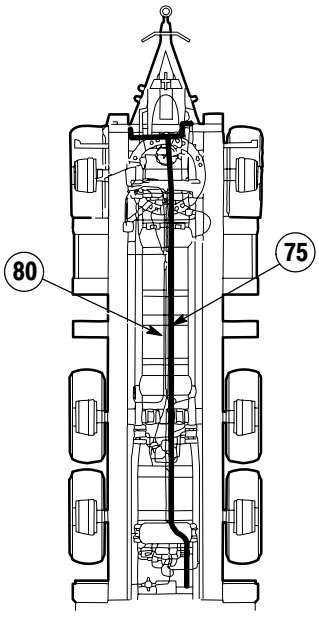
(70) Connect connector (79) on wiring harness (75) to receptacle (63).

(71) Position wire harness (75) to rear of trailer along existing wire harnesses (80).









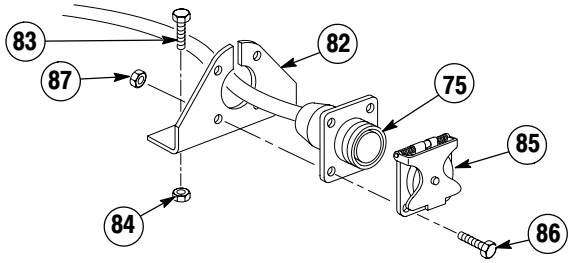
5-24. EXTENDED DRAWBAR/LIGHT BAR KIT INSTALLATION (CONT).

NOTE

Bracket in Step (72) can be used for template.

(72) Drill two 9/32 inch (7.14 mm) holes in cross brace (81) so edge of bracket (82) is flush with front of cross brace.

(73) Install bracket (82) with two screws (83) and locknuts (84).

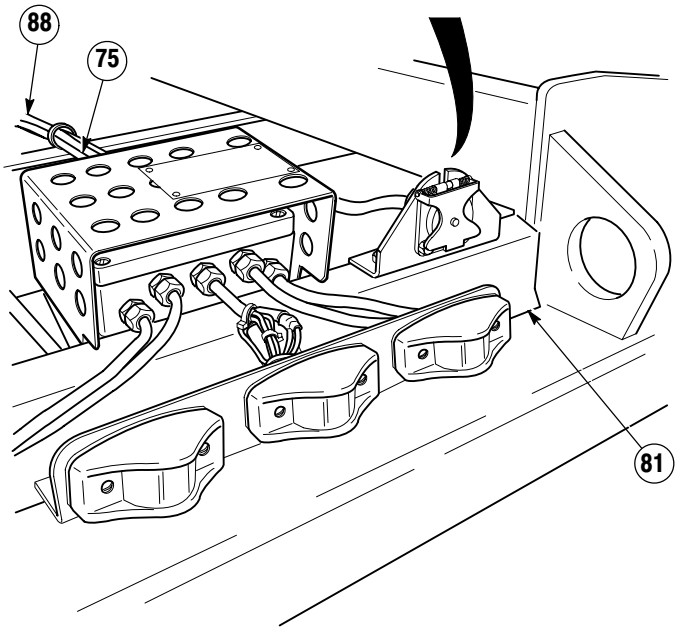


NOTE

Wire harness is properly installed in bracket with notch facing up.

(74) Install cover (85) and wire harness (75) on bracket (82) with four screws (86) and locknuts (87).

(75) Install cable ties as required to wire harness (75) and trailer harness (88).



b. Follow-On Maintenance:

- Connect trailer to truck, (Para 2-9 or Para 2-11).
- Check for air leaks, (Para 4-7).
- Disconnect trailer from truck, (Para 2-9 or Para 2-11).
- Remove wheel chocks, (Para 2-20).

END OF TASK

CHAPTER 6

GENERAL SUPPORT MAINTENANCE

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT

6-1. COMMON TOOLS AND EQUIPMENT.

For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

6-2. SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT.

Refer to Section III of the Maintenance Allocation Chart (MAC) for a list of tool kits authorized for the trailer.

6-3. REPAIR PARTS.

Repair parts are listed and illustrated in the Repair Parts and Special Tool List, TM 9-2330-385-24P, covering Unit, Direct Support, General Support and Depot maintenance for the trailer.

Section II. SERVICE UPON RECEIPT

6-4. UNPACKING AND DEPROCESSING.

a. Unpacking. Upon receipt of a new trailer, the receiving organization must ensure it has been properly prepared for service and is in good condition. Inspect all assemblies, subassemblies and accessories to be sure they are in proper working order. Secure, clean and correctly adjust and/or lubricate as needed, Para 4-8. Check all tools and equipment (Appendix C and Appendix D) to be sure every item is there in good condition, clean and properly stowed.

b. Deprocessing. Read all tags attached to the trailer and follow all precaution checks.

6-5. SERVICE BEFORE OPERATION.

a. Inspection and Servicing Equipment.

(1) Refer to Chapter 2 for operating instructions for the trailer.

(2) When trailer is received, inspect all items for damage that may have occurred during shipping and unloading operations. Pay close attention to any loose or missing nuts, bolts, screws, access plates, drain plugs, draincocks, oil plugs, assemblies, subassemblies or components that may be easily lost or broken in transit. Check Appendix C to make sure all items are accounted for and are in good condition. Carefully list all discrepancies.

(3) Follow general procedures for all services and inspections.

Section III. GENERAL SUPPORT MAINTENANCE PROCEDURES

6-6. INTRODUCTION.

Instructions in this section provide general procedures to be followed for inspection, removal, cleaning, repair, replacement, or installation of components, and testing authorized at the general support maintenance level as specified by the Maintenance Allocation Chart (MAC).

a. Servicing. All services are performed at the Unit Support level of maintenance according to the MAC. If the trailer needs further service, refer to Chapters 3, 4 and 5.

b. Ground Handling. For ground handling instructions refer to Chapter 4.

c. Operational Checks. All operational checks included in the maintenance procedures will include the techniques and methods required to assure the satisfactory performance of the trailer. Reference the Operator's instructions, Chapter 2, for operation procedures.

d. Inspection of Components.

(1) Inspect all surfaces in contact with gaskets, packings, or seals for nicks and burrs which might damage the new seal upon assembly. If any defect is found, remove it before assembly.

NOTE

Defects which may cause bearing binding or misalignment are cause for rejection. Nicks or gouges outside race load areas are not cause for rejection.

(2) Inspect bearings for rusted or pitted balls, races, or separators. Inspect balls and races for abrasion and serious discoloration.

(3) Cuts or grooves parallel to ball or roller rotation and fatigue pits (not minor machine marks or scratches and cracks found during magnetic particle inspection) are causes for bearing rejection.

(4) Visually inspect all castings and weldments for cracks.

(5) Clean all parts before inspection. Check for defects such as physical distortion, wear, cracks and pitting.

e. Cleaning Procedures. A degreasing machine may be used to remove heavy grease and oil from metal parts.

f. Removal and Disassembly of Components.

(1) Welding and brazing processes may be used to repair cracks in external parts, such as brackets, panels and framework. Because of time required and the chance of subsequent failure, such repairs should be attempted only when replacement parts are not available. Welding and brazing of castings and running parts or parts under great stress will only be done in emergencies. Refer to TC 9-237 for proper welding and brazing procedures.

(2) Replace any screw, nut, or fitting with damaged threads. Inspect tapped holes for thread damage. If cross-threading is evident, retap the hole for the next oversize screw or stud. If retapping will weaken the part, or if the cost of the part makes retapping impractical, replace the part. Chasing the threads with proper size tap or die may be adequate.

(3) Reshape elongated mounting holes to round and drill to receive bushing with required inner diameter. Stake bushing in place with center punch.

(4) Remove protective grease coatings from new parts before installation.

(5) To replace a preformed packing, first clean groove, then stretch packing and place into position. Place component on flat surface and uniformly press packing into position.

(6) Coat oil seals evenly with oil or grease before installing. Install oil seals with seal lip facing in, applying an even force to outer edge of seal. If oil seals are to be installed over keyed or splined shafts, use a guide to prevent sharp edge of the keyway or splines from cutting the seal. Construct guides of very thin gauge sheet metal and shape to the required diameter. Make certain guide edges are not sharp and are bent slightly inward so they do not cut the seal.

(7) Remove parts only if repair or replacement is required. Do not disassemble a component any further than necessary to accomplish needed repairs.

g. Painting. Instructions for preparation of material for paint, how to paint and materials to be used are in TM 43-0139. Instructions for camouflage painting are contained in FM 20-3. Stenciling and marking military vehicles are called out in TB 43-0209. Data plates location and description are referenced in Chapter 2.

h. Lubrication. Refer to Para 4-8 for lubrication procedures and requirements for the trailer. The instructions include types and grades of lubrications used, lube points, locations and frequency of required lubrication.

i. Installation. Put hoses, tubes, lines and, electrical wiring in place by matching identification tags, markings on equipment and using illustrations presented. Use sealing compounds as required in each maintenance task. When installing screws and nuts, be sure to tighten to values given.

6-6. INTRODUCTION (CONT).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.
- DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
- BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals, and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby, and requirements of TC 9-237 strictly followed.

j. Welding Procedures. Welding may be used to repair cracks in steel parts. These repairs should be made only when replacement parts are not available. Do not weld running parts. Visually inspect all welds for cracks. Parts that carry a great load should receive magnetic particle inspection. Critical nonferrous parts may be inspected with florescent penetrant.

k. Sheet Metal Repair. Straighten minor body dents by bumping with a soft-faced hammer while using a wooden block backing. Repair minor skin cracks by installing patches.

l. Preparation for Storage and Shipment.

(1) Refer to Chapter 4, Section VI for preparation for storage and shipment.

(2) If trailer is being shipped overseas, refer to TB 9-2300-281-35: Standards for Overseas Shipment or Domestic Issue of Special Purpose Vehicles.

(3) Check using command for administrative storage requirements. If no requirements have been established refer to AR 750-1.

6-7. BRAKE DRUM REPAIR.

This task covers:

a. Cleaning/Inspection b. Repair c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's (Item 49, Appendix J)
Gloves, Chemical and Oil Protective (Item 11, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Lathe, Brake Drum (Item 25, Appendix J)
Tape Measurer (Item 47, Appendix J)

Materials/Parts
Solvent, Drycleaning (Item 22, Appendix E)

Equipment Condition
Wheels chocked, (Para 2-20)
Brake drum removed, (Para 4-58)

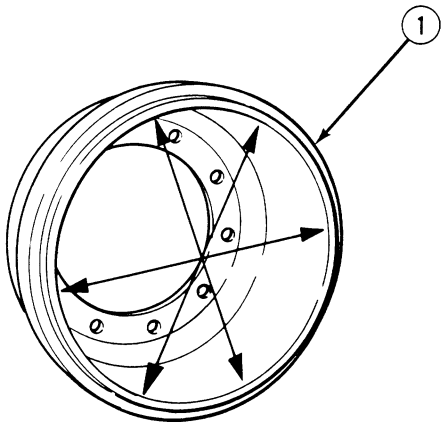
a. Cleaning/Inspection.

WARNING

- Drycleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles, face shield, and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type II Drycleaning Solvent is 140 degrees F (60 degrees C) and Type III Drycleaning Solvent is 200 degrees F (93 degrees C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Brake shoes may be covered with dust. Breathing this dust may be harmful to your health. Do not use compressed air to clean brake shoes. Wear a filter mask approved for use against brake dust. Failure to comply may result in injury or death to personnel.

(1) Clean brake drums (1) of all dirt and brake lining material with drycleaning solvent.

(2) Measure inside diameter of brake drum in at least three equally spaced points. If measurement at any point exceeds 16 5/8 in. (422.28 mm), replace drum.

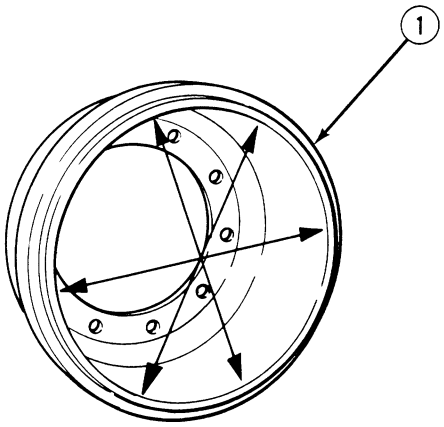


6-7. BRAKE DRUM REPAIR (CONT).

b. Repair.

WARNING

Be sure to read the instructions on the use of the brake turning equipment in your shop to prevent possible injury or death to personnel.



(1) Install brake drum (1) on turning equipment.

(2) Turn brake drums (1) as needed to obtain a smooth clean finish, free of pits, grooves, or cracks.

(3) Remove brake drum (1) from turning equipment.

(4) Measure inside diameter of brake drum (1) in at least three equally spaced points. If measurement at any point exceeds 16-5/8 in. (422.28 mm), replace drum.

c. Follow-On Maintenance:

- Install brake drum, (Para 4-58).
- Remove wheel chocks, (Para 2-20).

END OF TASK

6-8. TURNTABLE/BEARING REPLACEMENT.

This task covers:

a. Removal b. Installation c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, General Mechanic's
(Item 49, Appendix J)
Brush, Wire Scratch (Item 1, Appendix J)
Cap and Plug Set (Item 2, Appendix J)
Clevis (4) (Item 4, Appendix J)
Eye, Lifting (4) (Item 10, Appendix J)
Gloves, Heavy Duty (Item 12, Appendix J)
Goggles, Industrial (Item 13, Appendix J)
Jack, Stabilizer (2) (Item 23, Appendix J)
Jackstands (4) (Item 24, Appendix J)
Respirator, Air Filtering (Item 36, Appendix J)
Sander, Disk Electric (Item 37, Appendix J)
Stand, Transport Engine (Item 46, Appendix J)
Torch Set, Cutting and Welding
(Item 51, Appendix J)
Wrench, Torque (0 to 600 [0-813 N·m])
(Item 62, Appendix J)
Lifting Device, Minimum Capacity 1000 lb
(453 kg)

Material/Parts
Cable Ties (Item 7, Appendix E)
Sealing Compound (Item 19, Appendix E)
Tags, Identification (Item 23, Appendix E)
Locknut (24) (Item 23, Appendix I)
Plate, Retainer (8) (Item 70, Appendix I)

Personnel Required
Two

References
TC 9-237
TB 43-0209
TM 9-2320-364-10

Equipment Condition
Wheels chocked, (Para 2-20)
Springs removed, (Para 5-22)
Brake power regulating valve removed,
(Para 4-53)
Multi-function valve removed, (Para 4-52)
Quick release valve removed, (Para 4-51)
Emergency air line removed, (Para 4-40)
Service air line removed, (Para 4-39)
Parking brake control removed, (Para 4-46)
Air Reservoir No. 1 removed, (Para 4-41)
Drawbar removed, (Para 5-21)
Drawbar air assist control removed, (Para 4-44)
Inversion valve removed, (Para 4-49)
Upper shock mount removed, (Para 4-64)
Air bag safety valve removed, (Para 4-48)
Air bag removed, (Para 4-48)
Relay valve removed, (Para 4-38)
Drawbar air system quick disconnect removed,
(Para 4-45)

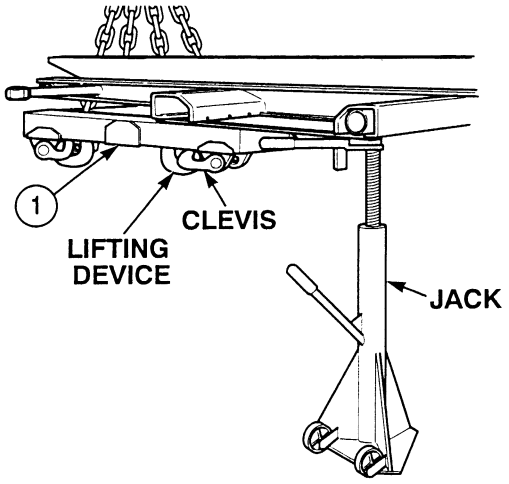
6-8. TURNTABLE/BEARING REPLACEMENT (CONT).

a. Removal.

WARNING

Turntable and bearing weighs 840 lbs (381 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

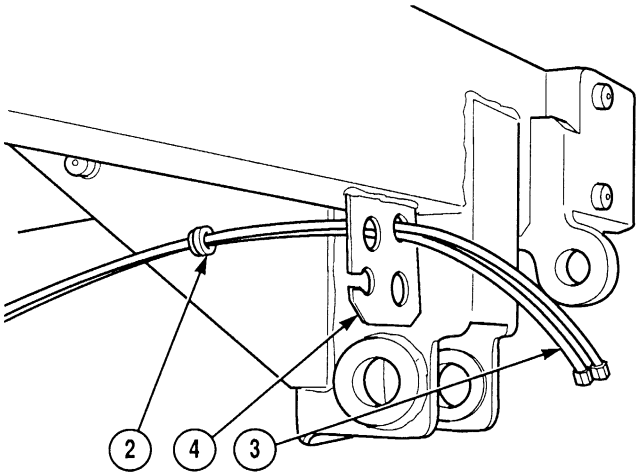
(1) Attach a lifting device and four clevises on turntable (1).



NOTE

- Tag and mark all air lines and wires before removal.
- Remove cable ties as required.
- Cap and plug all air lines and connectors after removal.
- Inspect all hoses, lines and fittings for cracks, bends, nicks, dents, stripped threads and cuts. Replace all damaged parts.

(2) Remove rubber grommet (2) and three air lines (3) from bracket (4).

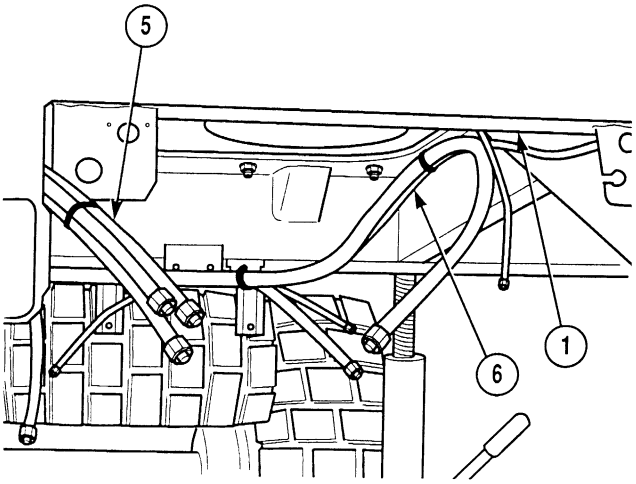


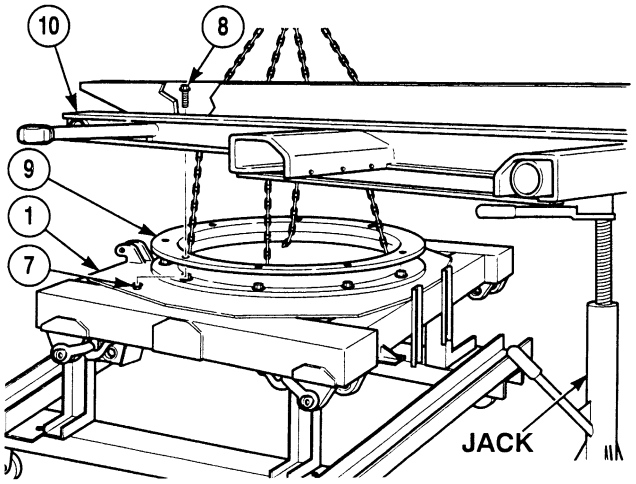
NOTE

Air lines are being bundled together to aid in installation.

(3) Using cable ties, bundle all air lines (5) and (6).

(4) Remove air lines (5) and (6) from turntable (1).





(5) Place an engine transport stand under turntable (1).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
  - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.

(6) Using a wire brush, remove CARC paint from area four in. (102 mm) around locknuts (7) and screws (8).

WARNING

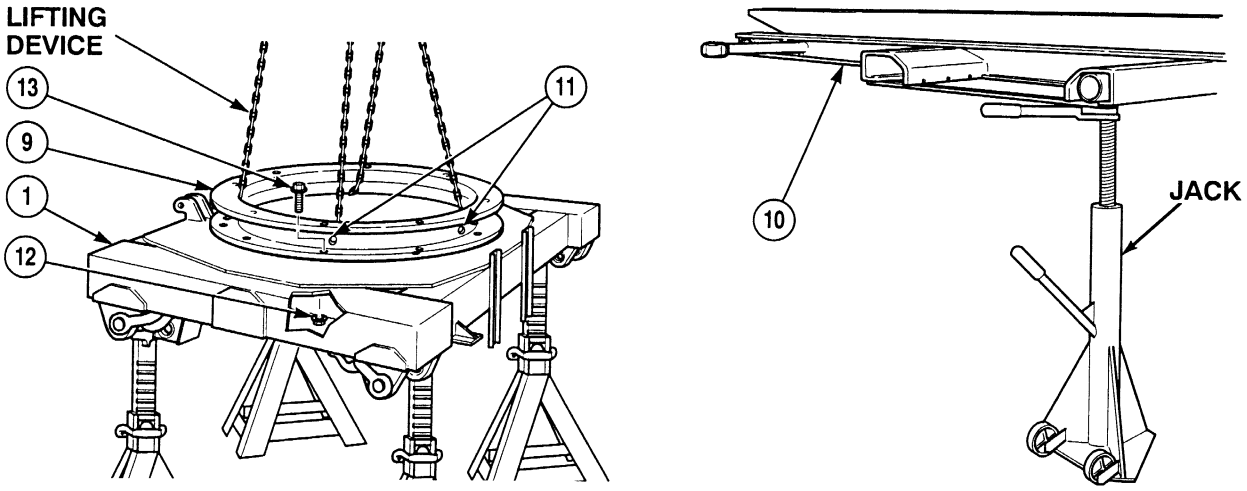
Unsafe torching practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to use a torch. Protective clothing and goggles must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby.

(7) With the aid of an assistant, heat twelve locknuts (7) with a torch.

(8) Remove twelve locknuts (7) and screws (8) from turntable bearing (9). Do not discard locknuts at this time.

(9) With the aid of an assistant, use lifting device to lower turntable (1) from trailer frame (10) onto engine transport stand.

6-8. TURNTABLE/BEARING REPLACEMENT (CONT).



(10) Remove lifting device.

(11) Pull turntable (1) from under trailer frame (10).

(12) With the aid of an assistant, using lifting device, position turntable (1) on four jackstands.

(13) Remove lifting device and four clevises from turntable.

NOTE

- Grease fittings may have to be removed to remove screws from bottom of turntable bearing.
- If grease fittings need to be removed, perform Step (14); if not, go to Step (15).

(14) Remove grease fittings (11) from turntable bearing (9).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.
- Unsafe torching practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to use a torch. Protective clothing and goggles must be worn; adequate protective equipment used, a suitable fire extinguisher kept nearby.

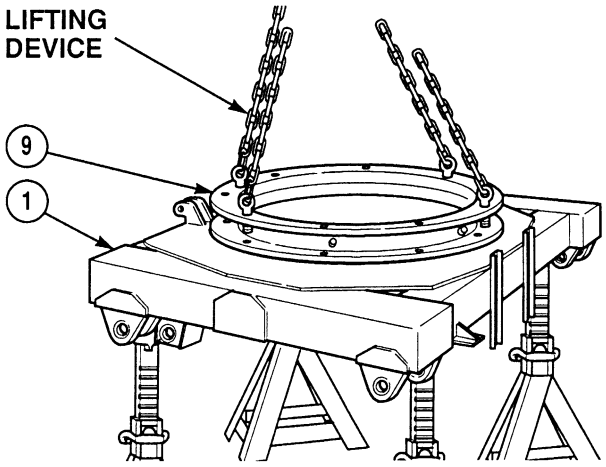
(15) Using a wire scratch brush, remove CARC paint from area four in. (102 mm) around locknuts (12) and screws (13).

(16) With the aid of an assistant, heat twelve locknuts (12) on turntable bearing (9) with torch.

(17) Remove twelve locknuts (12) and screws (13) from turntable bearing (9). Do not discard locknuts at this time.

WARNING

Turntable bearing weighs 135 lbs (61 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.



(18) Attach lifting device and four lifting eyes to turntable bearing (9).

(19) With the aid of an assistant, remove turntable bearing (9) from turntable (1).

(20) Remove lifting device and four lifting eyes from turntable bearing (9).

WARNING

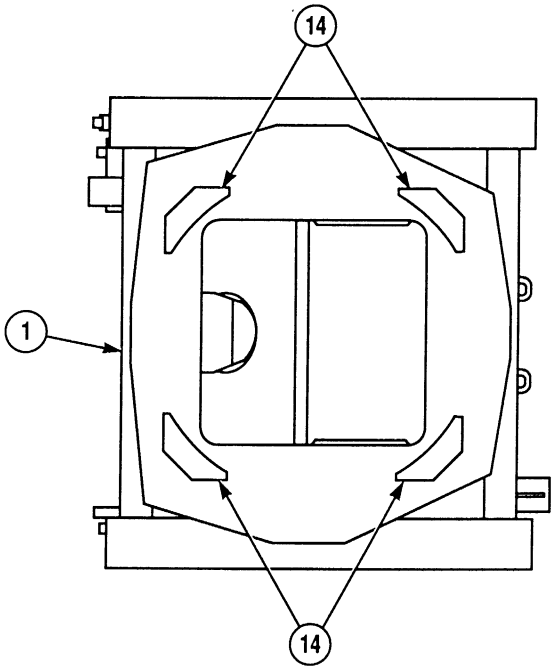
- CARC paint contains isocyanate (HDI) which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.

NOTE

- If a new turntable is to be installed, new plates will need to be welded to new turntable. Perform Steps (21) and (22).
- If a new bearing is to be installed, new plates will have to be installed on trailer and turntable. Perform Steps (21) and (24).

(21) Using a wire brush, remove CARC paint from area four in. (102 mm) around welding/grinding points.

(22) Grind off welds from retainer plates (14) and remove plates from turntable (1).



TOP VIEW

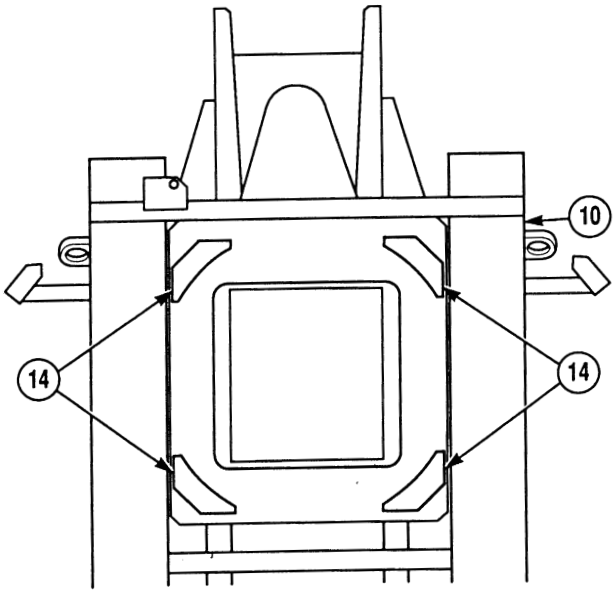
6-8. TURNTABLE/BEARING REPLACEMENT (CONT).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
- NEVER weld or cut CARC-coated materials.

(23) Using a wire brush, remove CARC paint from area four in. (102 mm) around welding/grinding points.

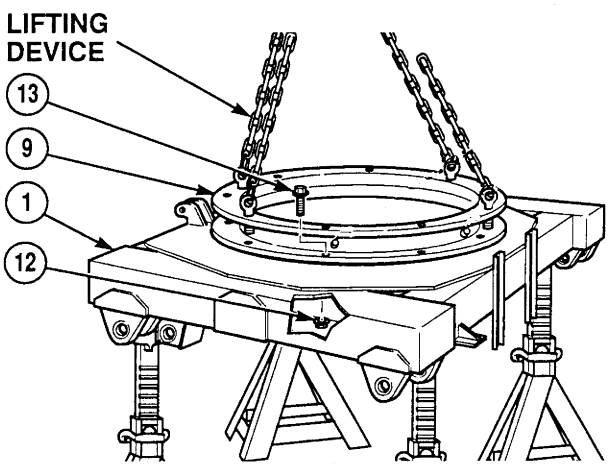
(24) Grind off welds from retainer plates (14) on trailer frame (10) and remove retainer plates.



VIEW FROM UNDER TRAILER

TURNTABLE
REMOVED FOR CLARITY

b. Installation.



WARNING

Turntable bearing weighs 135 lbs (61 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

NOTE

Install cable ties as required.

(1) Attach lifting device and four lifting eyes on turntable bearing (9).

(2) Position bearing (9) on turntable (1).

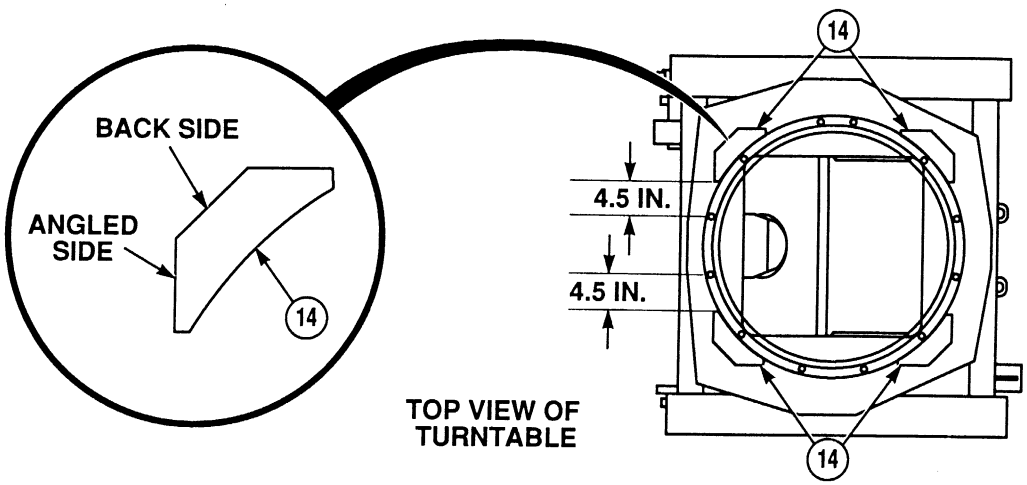
(3) Remove lifting device from turntable bearing (9).

NOTE

Locknuts used in Step (4) are the ones removed in Step (17) of ***a. Removal***.

(4) Position turntable bearing (9) on turntable (1) with 12 screws (13) and locknuts (12).

6-8. TURNTABLE/BEARING REPLACEMENT (CONT).



WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions in TC 9-237. Protective clothing and goggles must be worn; adjustable protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed or serious injury or death to personnel could result.

NOTE

- If a new turntable is to be installed new plates will need to be welded to new turntable.
- If a new bearing is to be installed new plates will have to be installed on trailer and turntable.
- Inside edge of retainer plates must be 4 1/2 in. (11.43 cm) from the center of the first mounting hole from the centerline of turntable (both front and rear). The rounded edge of the retainer plates must be tight against the turntable bearing.
- All weld beads are 3/16 in. (4.82 mm) thick. Angled sides of plates receive welds 1/2 in. (12.7 mm) long and 2 in. (50.8 mm) apart (measured from center of weld). Back sides of plates receive welds 1/2 in. (12.7 mm) long and 1 3/4 in. (43.18 mm) apart (measured from center of weld).

(5) Refer to TC 9-237 and weld four retainer plates (14) to turntable.

WARNING

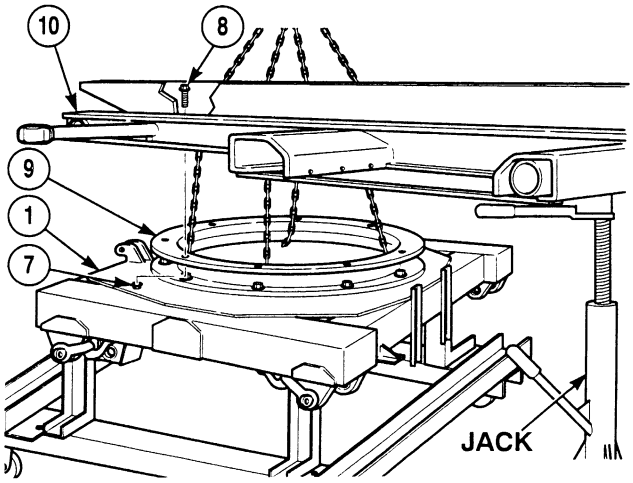
Turntable and bearing weighs 840 lbs (381 kg). Attach a suitable lifting device prior to removal to prevent possible injury to personnel.

(6) Attach lifting device and four clevises on turntable (1).

(7) Remove turntable (1) from four jackstands.

(8) Place turntable (1) on engine transport stand and remove lifting device.

(9) Position turntable (1) under trailer frame (10).



WARNING

Turntable and bearing weighs 840 lbs (381 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

(10) Attach lifting device and four clevises on turntable (1).

(11) Raise turntable (1) and bearing (9) into position under trailer frame (10).

NOTE

Locknuts used in Step (12) are the ones removed in Step (8) of ***a. Removal***.

(12) Position turntable bearing (9) and turntable (1) on trailer frame (10) with 12 screws (8) and locknuts (7).

6-8. TURNTABLE/BEARING REPLACEMENT (CONT).

NOTE

If a new turntable is being installed, perform Steps (13) through (18). If the original turntable is to be installed, perform Steps (13) through (15).

(13) Rotate turntable (1) until the left and right side members (15) of turntable are aligned with frame main rails (16).

(14) Align upper locking plate (17) and lower locking plate (18).

(15) Insert locking pin (19) through upper locking plate (17) and lower locking plate (18).

WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - NEVER weld or cut CARC-coated materials.
- Unsafe welding practices can cause serious injury from fire, explosions, or harmful agents. Allow only authorized personnel to weld or cut metals and follow safety precautions TC 9-237. Protective clothing and goggles must be worn; adequate protective equipment used and suitable fire extinguisher kit near by; and requirements of TC 9-237 strictly followed.

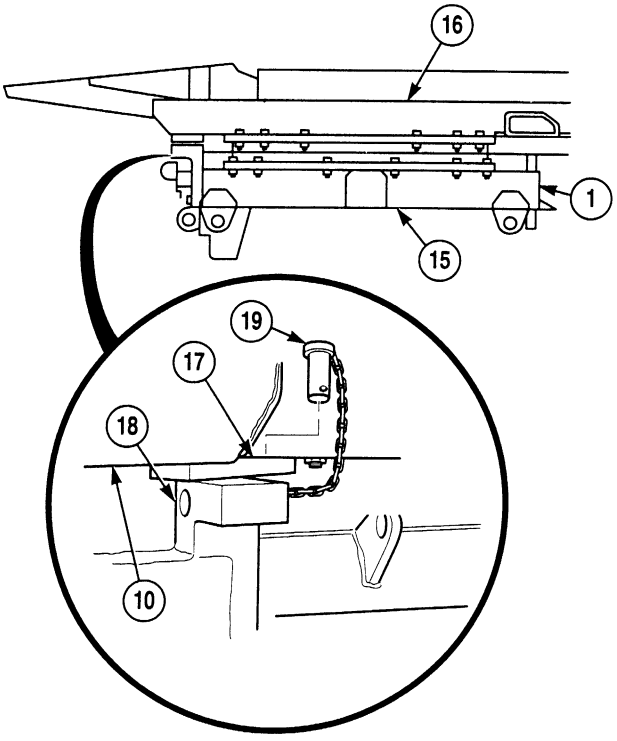
NOTE

If the left and right side members of turntable do not align with frame main rails when the locking pin is installed perform Steps (16) and (17). If frame main rails and left and right side members align, go to Step (19).

(16) Using a wire brush, remove CARC paint from area four in. (102 mm) around welding/grinding points.

(17) Grind off welds from upper locking plate (17) on trailer frame (10) and remove locking plate from frame.

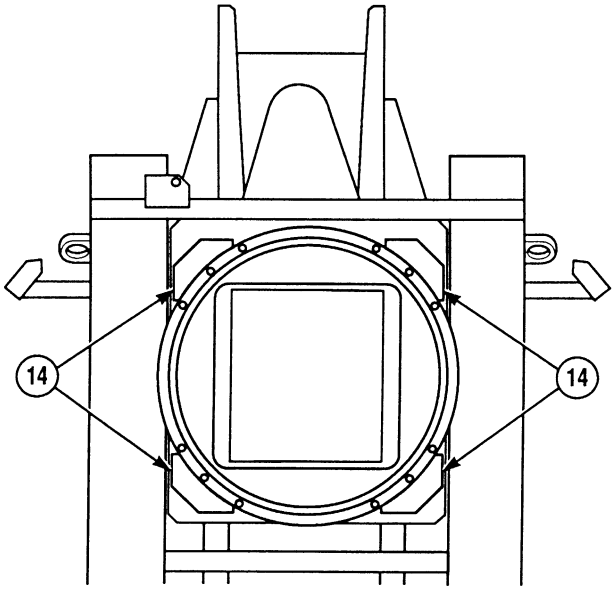
(18) Refer to TC 9-237 and tack weld upper locking plate (17) in place.



NOTE

The rounded edge of retainer plates must be tight against the turntable bearing. Each plate must be aligned above the lower plate on the turntable.

(19) Refer to TC 9-237 and tack weld upper retainer plates (14) to trailer.



VIEW FROM UNDER TRAILER

TURNTABLE
REMOVED FOR CLARITY

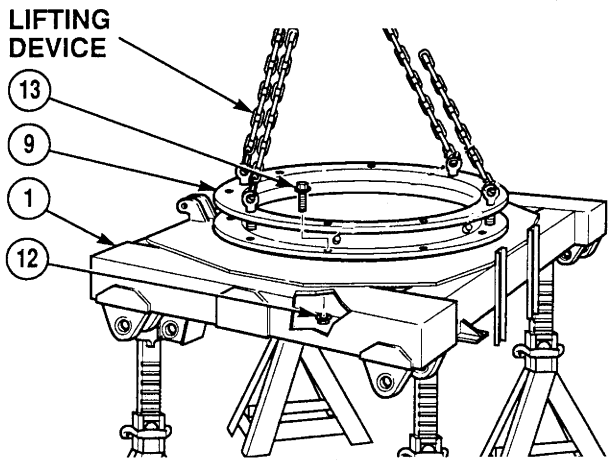
WARNING

Turntable and bearing weighs 840 lbs (381 kg). Attach a suitable lifting device prior to installation to prevent possible injury to personnel.

(20) Attach lifting device and four clevises to turntable (1).

(21) Refer to ***a. Removal*** Steps (8) through (13) and remove turntable (1). Discard locknuts.

(22) Remove 12 locknuts (12) and screws (13) from turntable bearing (9). Discard locknuts.



6-8. TURNTABLE/BEARING REPLACEMENT (CONT).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(23) Apply sealing compound on 12 screws (13).

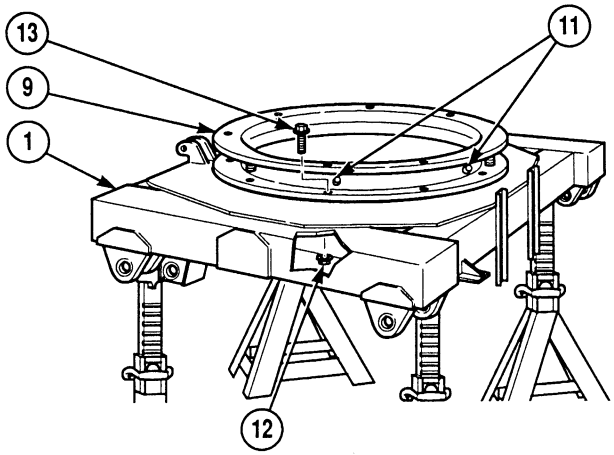
(24) Install turntable bearing (9) on turntable (1) with 12 screws (13) and locknuts (12).

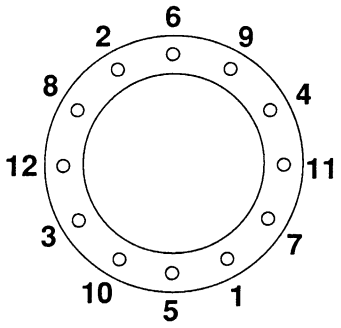
(25) With the aid of an assistant, tighten twelve locknuts (12) in sequence shown to 160 lb-ft (217 N·m).

(26) With the aid of an assistant, retighten twelve locknuts (12) in sequence shown to 212 lb-ft (287 N·m).

(27) If removed, install grease fittings (11) on turntable bearing (9).

(28) Refer to Steps (6) through (11) and position turntable on trailer frame.





TURNTABLE TIGHTENING SEQUENCE

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

(29) Apply sealing compound on threads of screws (8).

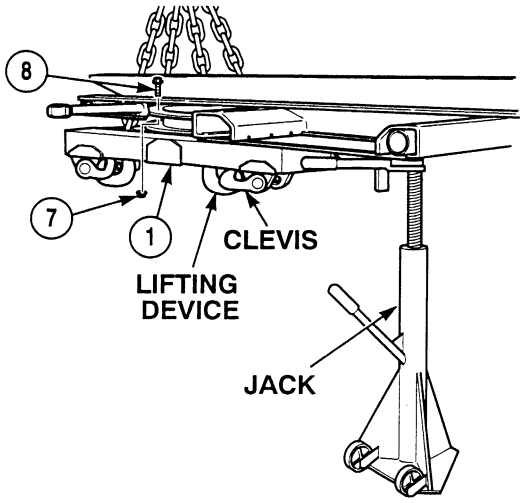
(30) Install turntable bearing (9) on trailer frame (10) with twelve screws (8) and nuts (7).

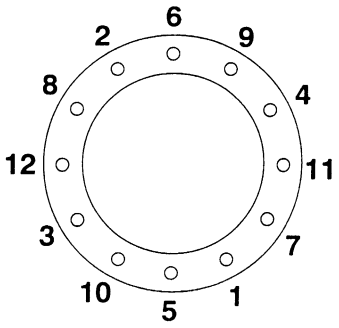
(31) With the aid of an assistant, tighten twelve locknuts (7) on turntable (1) in sequence shown to 160 lb-ft (217 N·m).

(32) With the aid of an assistant, retighten twelve locknuts (7) on turntable (1) in sequence shown to 212 lb-ft (288 N·m).

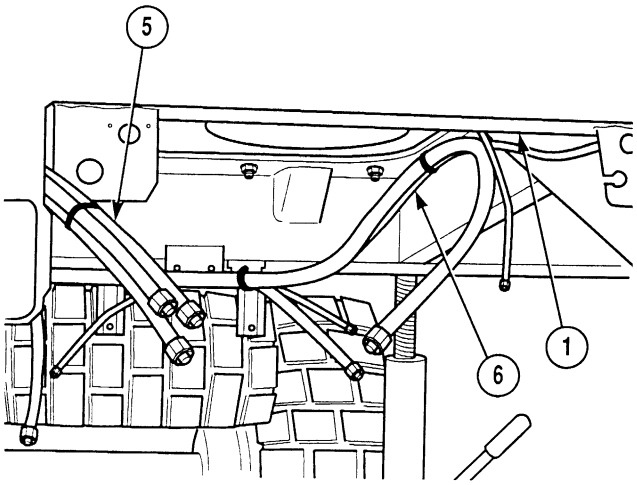
(33) Remove lifting device and four clevises from turntable (1).

(34) Install air lines (5) and (6) on turntable (1) with cable ties.



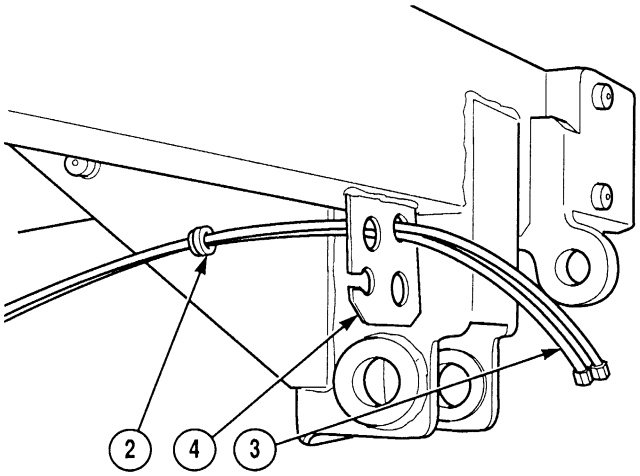


TURNTABLE TIGHTENING SEQUENCE



6-8. TURNTABLE/BEARING REPLACEMENT (CONT).

(35) Install three air lines (3) and rubber grommet (2) through bracket (4).



WARNING

- CARC paint contains isocyanate (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 cough, shortness of breath, pain during respiration, increased sputum production and chest tightness. The following precautions must be taken whenever using CARC paint:
  - ALWAYS use air line respirators when using CARC paint unless air sampling shows exposure to be below standards. Use chemical cartridge respirator if air sampling is below standards.
  - DO NOT let skin or eyes come in contact with CARC paint. Always wear protective equipment (gloves, ventilation mask, safety goggles, etc.).
  - DO NOT use CARC paint without adequate ventilation.
  - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.

(36) Refer to TB 43-0209 for painting procedures.

c. Follow-On Maintenance:

- Install drawbar air system quick disconnect, (Para 4-45).
- Install relay valve, (Para 4-38).
- Install air bag, (Para 4-48).
- Install air bag safety valve, (Para 4-48).
- Install upper shock mount, (Para 4-64).
- Install inversion valve, (Para 4-49).
- Install drawbar air assist control, (Para 4-44).
- Install drawbar, (Para 5-21).
- Install No. 1 air reservoir, (Para 4-41).
- Install parking brake control, (Para 4-46).
- Install service air line, (Para 4-39).
- Install emergency and service airlines, (Para 4-40).
- Install quick release valve, (Para 4-51).
- Install multi-function valve, (Para 4-52).
- Install brake power regulator valve, (Para 4-53).
- Install springs, (Para 5-22).
- Grease bearing, (Para 4-8).
- Install front wheels, (Para 4-5).
- Remove wheel chocks, (Para 2-20).
- Check operation, (TM 9-2320-364-10).

END OF TASK

APPENDIX A

REFERENCES

A-1. SCOPE.

Indexes should be consulted frequently for latest changes or revisions of references given in this appendix and for new publications relating to material covered in this publication.

A-2. DEPARTMENT OF THE ARMY PAMPHLETS.

Consolidated Index of Army Publications and Forms ..... DA PAM 25-30
The Army Maintenance Management System (TAMMS) ..... DA PAM 738-750

A-3. FORMS.

Recommended Changes to Publications and Blank Forms ..... DA Form 2028
Recommended Changes to Equipment Technical Publications ..... DA Form 2028-2
Equipment Inspection and Maintenance Worksheet ..... DA Form 2404
Equipment Control Record ..... DA Form 2408-9
Preventive Maintenance Schedule and Record ..... DA Form 314
Product Quality Deficiency Report (NSN 7540-00-105-0078) ..... SF 368

A-4. FIELD MANUALS.

Camouflage ..... FM 20-3
Basic Cold Weather Manual ..... FM 31-70
Manual for Wheel Vehicle Driver ..... FM 21-305
Northern Operations ..... FM 31-71
Operation and Maintenance of Ordnance Materiel in Cold Weather 0 degrees F to –65 degrees F ..... FM 9-207
Desert Operations (How to Fight) ..... FM 90-3
Vehicle Recover Operations ..... FM 20-22

A-5. TECHNICAL BULLETINS.

Color, Marking, and Camouflage Painting of Military Vehicles ..... TB 43-0209
Warranty Technical Bulletin ..... TB 9-2320-364-15
Standards for Overseas Shipment or Domestic Issue of Special Purpose Vehicles ..... TB 9-2300-281-35

A-6. TECHNICAL MANUALS.

Repair Parts and Special Tool Listing ..... TM 9-2330-385-24P
Care, Maintenance, and Repair of Pneumatic Tires and Inner Tubes ..... TM 9-2610-200-14
Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use (U.S. Army Tank-Automotive Command) ..... TM 750-244-6
Operator's Manual, Truck, M1074, Palletized Load System ..... TM 9-2320-364-10
Painting Instructions for Field Use ..... TM 43-0139

A-7. OTHER PUBLICATIONS.

Operator's Circular for Welding Theory and Application ..... TC 9-237
Requisitioning, Receipt, and Issue System ..... AR 725-50
Marking, Packaging, and Shipment of Supplies and Equipment ..... AR 746-1
Army Materiel Maintenance Policy ..... AR 750-1
Prevention of Motor Vehicle Accidents ..... AR 385-55

APPENDIX B

MAINTENANCE ALLOCATION CHART (MAC)

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. The Maintenance Allocation Chart (MAC) in Section II 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 will be consistent with the capacities and capabilities of the designated maintenance levels.

c. Section III lists the tools and test equipment required for each maintenance function as referenced from Section II.

d. Section IV lists remarks (identified by an alphabetic code in column 6 of MAC) to provide a ready reference to the definition of the remarks.

B-2. MAINTENANCE FUNCTIONS.

Maintenance functions will be limited to and defined as follows:

a. 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).

b. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments 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.

g. 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.

B-2. MAINTENANCE FUNCTIONS (CONT).

h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3rd position code of the SMR code.

i. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, and 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.

(1) Service inclues inspection, testing, service, adjustment, alignment, calibration and/or replacement.

(2) Fault locate/troubleshooting is 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).

(3) Disassemble/Assemble encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least component identified as maintenance signifacant (i.e., assigned an SMR code) for the category of maintenance under consideration.

(4) Actions include welding, grinding, riveting, straightening, facing, remachining and/or resurfacing.

j. Overhaul. The maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree to maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. 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 (hours/miles, etc.) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN SECTION II.

a. Column 1, Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "OO."

b. Column 2, Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2.

d. Column 4, Maintenance Level. Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the level of maintenance authorized to perform the function listed in Column 3. This 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 vary at different maintenance levels, appropriate work time figures will 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/quality control time in addition to the time required to

perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C	Operator or Crew	H	General Support Maintenance
O	Unit Maintenance	D	Depot Maintenance
F	Direct Support Maintenance		

e. Column 5, Tools and Equipment. Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. Column 6, Remarks. This column shall, when applicable, contain a letter code in alphabetic order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. Column 2, Maintenance Level. The lowest category of maintenance authorized to use the tool or test equipment.

c. Column 3, Nomenclature. Name or identification of the tool or test equipment.

d. Column 4, National Stock Number. The national stock number of the tool or test equipment.

e. Column 5, Tool Number. The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. Column 1, Reference Code. An alphabetic code listed in the sixth column of the MAC and first column of the Remarks section to identify remarks made to the MAC.

b. Column 2, Remarks. The complete text of the remarks made to the MAC.

Section II. MAINTENANCE ALLOCATION CHART

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot		
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Tools and Equipment	Remarks
06	ELECTRICAL SYSTEM								
0608	Miscellaneous Items:								
	Electric Box Assemblies	Replace		1.5				1,2	
		Repair			1.0			4	
0609	Lights:								
	Light Assembly	Inspect	0.1						
		Replace		0.3				1	
		Repair		0.5				1	
	Side Marker	Inspect	0.1						
		Replace		0.1				1	
	Lamps	Replace		0.2				1	
0613	Hull or Chassis Wiring Harness:								
	Main Wiring Harness	Test		*					B
		Replace		1.7				1,2	
		Repair		.05				1	C
	Intervehicluar Connector	Test		*					B
		Replace		0.3				1,2	
		Repair		0.8				2	C
	Locking Sensor	Replace		0.3				1	
10	FRONT AXLE								
1000	Front Axle Assembly:								
	Front Axle Assembly:	Inspect		0.1					
		Replace			0.9			4,5,7	
		Align			0.5				
11	REAR AXLE								
1100	Rear Axle Assembly:								
	Rear Axle Assembly	Inspect		0.1					
		Replace			1.2			4,5,7	
		Align			0.5				

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
12	BRAKES								
1202	Service Brakes:								
	Brakes	Inspect	0.1						
		Repair		0.5				1	
	Brake Shoe Assembly	Inspect		0.2					
		Replace		1.2				1	
	Camshaft and Slack Adjuster	Replace		0.4				4	
		Adjust		0.1				1	
1208	Air Brake System:								
	Brake Chamber	Inspect	0.1						
		Replace		0.3				1	
	Relay Valve	Inspect		0.1					
		Replace		0.6				1	
	Air Lines and Fittings	Inspect	0.1						
		Replace		0.1				1	
	Drawbar Air Bag	Inspect	0.1						
		Replace		0.1				1	
	Air Reservoirs	Inspect	0.1						
		Replace		0.6				1	
	Air Valves	Replace		0.4				1	
13	WHEELS AND TRACKS								
1311	Wheel Assembly:								
	Wheel Assembly	Inspect	0.1						
		Replace	0.2						
		Repair		0.4				1	
	Spare Tire	Replace	*						A
	Wheel Bearings	Service		1.0					
		Replace		0.6				1,8,9	
	Brake Drum	Replace		0.5				1	
		Repair				1.0		4,5	

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
1313	Tires, Tubes, Tire Chains:								
	Tire	Inspect Service Replace Repair	0.1 0.1 0.2	 *				 1	 A
14	STEERING								
1405	Steering Yokes:								
	Turntable Bearing	Inspect Replace		0.1	 3.2			 4,5	
	Turntable Assembly	Inspect Replace		0.1	 1.4			 4,5	
15	FRAME, TOWING ATTACHMENTS, AND DRAWBARS								
1501	Frame Assembly:								
	Frame Assembly	Inspect	0.1						
	Brackets (each)	Inspect Replace		0.1 0.4				 1	
	Suspension Hangers	Inspect Replace		0.1	 1.2			 4	
1503	Pintles and Towing Attachments:								
	Drawbar	Inspect Replace Repair	0.1		 0.8 1.0			 4 4,6	
	Drawbar Handles	Replace		0.4				1	
	Drawbar Safety Chain	Replace		0.1				1	
	Drawbar Tow Ring	Replace		*				1,3,10	A
1504	Spare Wheel Carrier and Tire Lock:								
	Spare Tire Mount	Inspect Replace	0.1	 1.3				 1	

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
1504	Spare Wheel Carrier and Tire Lock - CONT:								
	Spare Tire Winch	Replace		0.5				1	
	Spare Tire Pulley	Replace		0.5				1	
16	SPRINGS AND SHOCK ABSORBERS								
1601	Springs:								
	Spring and Saddle Assembly	Inspect Replace Repair		0.1	 1.2 1.1			 4 4,5	
1604	Shock Absorber Equipment:								
	Shock Absorbers	Inspect Replace		0.1 0.2				 1,2	
18	BODY, CAB, HOOD AND HULL								
1801	Body, Cab, Hood, and Hull Assemblies:								
	Mud Flaps	Inspect Replace	0.1	 0.2				 1	
	Flatrack Lock (each)	Inspect Replace	0.1	 0.8				 1	
	Flatrack Lock Air Chamber	Inspect Replace	0.1	 0.5				 1	
1808	Stowage Racks, Boxes, Straps, Carrying Cases, Cable Reels, Hose Reels, etc:								
	Stowage Boxes	Replace Repair		0.1 0.2				1 1	

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
					Direct	General			
Group	Component/Assembly	Maintenance	Unit		Support	Support	Depot	Tools and	
Number		Function	C	O	F	H	D	Equipment	Remarks
21	BUMPERS, GUARDS, AND MARINE FENDERS								
2101	Bumpers, Brackets, Guards, and Protective Devices:								
	Bumper	Replace		0.2				1	
22	BODY CHASSIS OR HULL, AND ACCESSORY ITEMS								
2202	Accessory Items:								
	Reflectors	Replace		0.1				1	
2210	Data Plates and Instruction Holders	Replace		0.1				1,2	
3307	Special Purpose Kits	Inspect Replace Repair Install		0.3 1.2 1.5	 1.0			 1 1 1	

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Tool or Test Equipment Ref Code	Maintenance Category	Nomenclature	National/ Nato Stock Number	Tool Number
1	O	Tool Kit, General Mechanic's: Automotive	5180-00-177-7033	SC 5180-90-N26
2	O	Shop Equipment, Automotive Maintenance and Repair: Common No. 1	4910-00-754-0654	SC 4910-95-A74
3	O	Shop Equipment, Automotive Maintenance and Repair: Common No. 2	4910-00-754-0650	SC 4910-95-A72-HR
4	F	Tool Kit, General Mechanic's	5180-00-699-5273	SC 5180-90-N05-HR
5	F	Shop Equipment, Automotive Maintenance and Repair: Field Maintenance, Basic	4910-00-754-0705	SC 4910-95-A31
6	F	Driver, Bushing		TL 15411
7	F	Jack, Stabilizer	5120-01-459-1916	LO-J
8	O	Socket, 3-13/16 in.	5120-01-431-3019	ANS1927A
9	O	Socket, 3-1/4 in.	5120-00-144-5321	ANS1909A
10	O	Socket, 3-1/8 in.	5120-00-104-4076	ANS1907A

Section IV. REMARKS

Reference Code	Remark
A	No specific times established. Times required for replacement or repair will depend on extent of work required.
B	No specific times established. Times required for test will depend on extent of testing required.
C	In the "O" category repair is limited to splicing of wires, taping of the harness or wires, and the replacement of wire ends.

APPENDIX C

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LIST

Section I. INTRODUCTION

C-1. SCOPE.

This appendix lists COEI and BII for the trailer to help you inventory the items for safe and efficient operation of the equipment.

C-2. GENERAL.

The COEI and BII lists are divided into the following sections:

a. Section II. Components of End Item (COEI). There is no COEI authorized for this equipment.

b. Section III. Basic Issue Items (BII). Section III contains the BII list. These essential items are required to place the trailer in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the trailer 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.

C-3. EXPLANATION OF COLUMNS.

The following provides an explanation of columns found in the tabular listings:

a. Column (1) - Illustration Number (Illus Number). This column indicates the number of the item called out in the illustration.

b. Column (2) - National Stock Number. Indicates the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.

c. Column (3) - Description. Indicates the Federal item name, and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Contractor and Government Entity (CAGE) Code in parentheses followed by the part number.

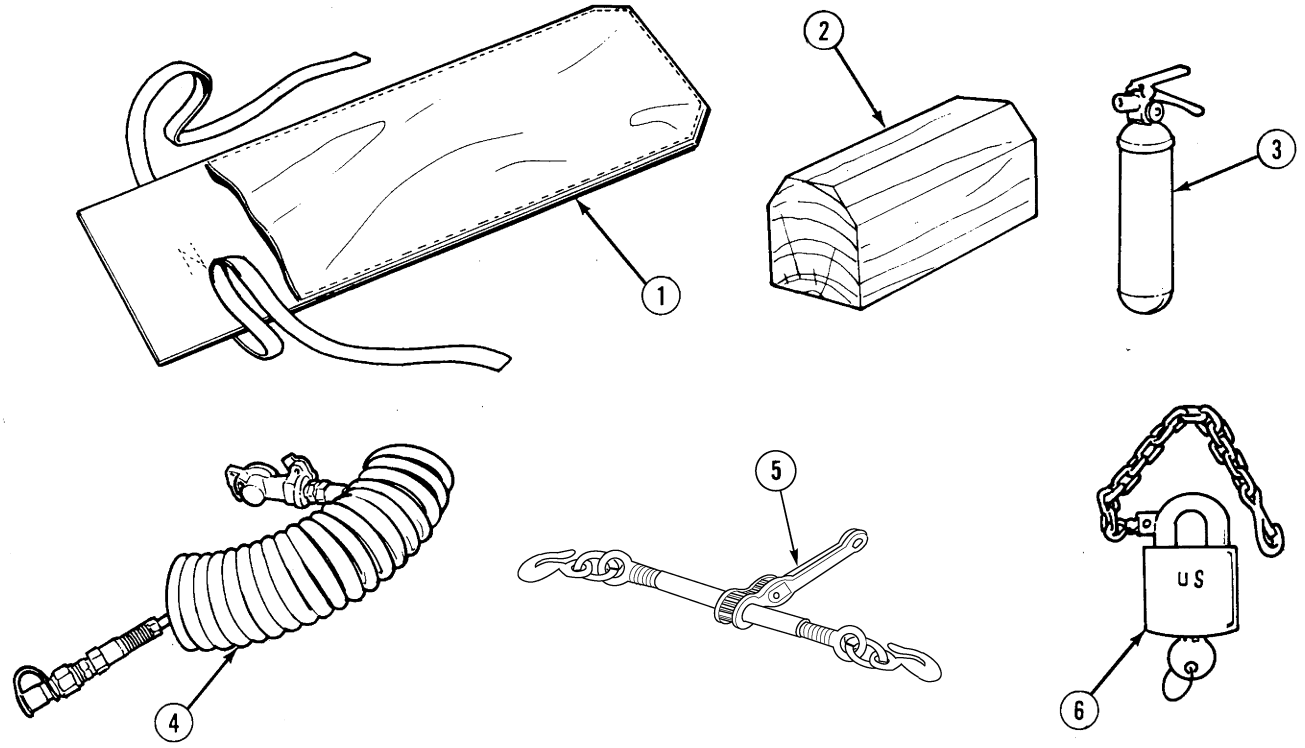
d. Column (4) - Unit of Issue (U/I). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (ea, in. pr).

e. Column (5) - Quantity Required (Qty Rqr). Indicates the quantity of the item authorized to be used with the equipment.

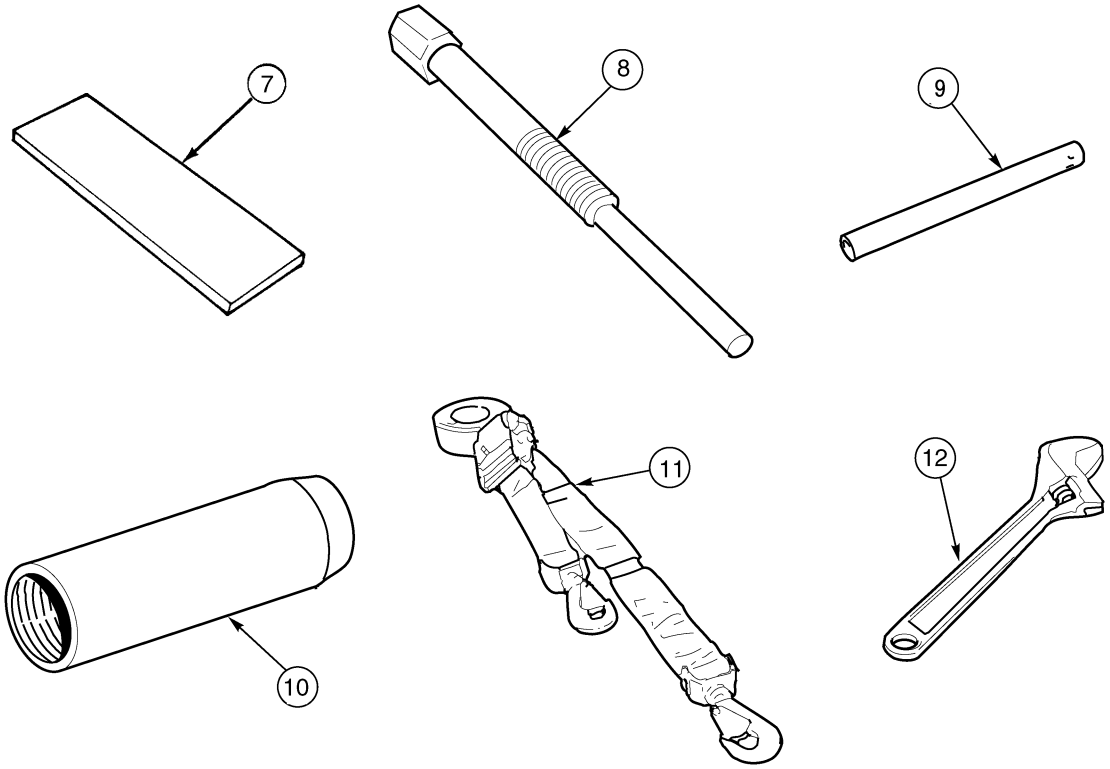
Section II. COMPONENTS OF END ITEM

There are no Components of End Item (COEI) authorized for this equipment.

Section III. BASIC ISSUE ITEMS



(1) Illus Number	(2) National Stock Number	(3) Description Cage and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
1	8105-01-394-5929	Bag, Tool (0B4P8), 199-1290	076	EA	1
2	2540-01-165-6136	Chock, Wheel (45152), 1350250	076	EA	2
3	4210-01-245-9850	Extinguisher, Fire (54905), A417T	076	EA	1
4	4720-01-368-7981	Hose Assembly, Air (45152), 1876750U	076	EA	1
5		Load Binder, 5/8 Ratchet (17855), L-140-R-C	076	EA	2
6	5340-00-158-3807	Padlock w/Chain (96906), MS35647-9	076	EA	1



(1) Illus Number	(2) National Stock Number	(3) Description Cage and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
7	5220-01-360-5582	Plate, Surface (45152), 1874160	076	EA	2
8	5120-01-375-0215	Rod, Unlocking (45152), 1873040	076	EA	2
9	5315-01-371-1763	Rod, Unlocking (45152), 1873050	076	EA	1
10	9330-01-371-0322	Sheath, Rubber (45152), 1864380	076	EA	2
11	3990-01-366-1607	Strap, Tiedown (98313), FDC5770-5	076	EA	1
12	5120-00-423-6728	Wrench, Adjustable (72368), AC115	076	EA	1

APPENDIX D

ADDITIONAL AUTHORIZATION LIST (AAL)

There are no Additional Authorized Items for the trailer.

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE.

This appendix lists expendable supplies and materials you will need to operate and maintain the trailer. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair parts and Heraldic Items) or CTA 8-100, Army Medical Department Expendable/Durable Items.

E-2. EXPLANATION OF COLUMNS.

a. Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative task box to identify the material (e.g., Compound, Antiseize, Item 5, Appendix E).

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed items.

C - Operator/Crew
O - Organizational Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. Column (3) - National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the item.

d. Column (4) - Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial And Government Entity (CAGE) code in parentheses followed by the part number.

e. Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	O		Adhesive	
			(45152) 149170	
			Sikaflex 221 gray	gl
2	O		Adhesive	
			(01139) RTV 108	
		8040-00-843-0802	3 ounce kit	oz
		8040-01-173-9815	12 ounce tube	oz
3	O		Adhesive	
			(71984) RTV 732 Clear	
		8040-00-701-9546	5 oz kit	oz
		8040-01-010-8758	12 oz kit	oz
			(80244) MIL-A-46106 Group 1 Type 1	
		8040-01-331-7469	3 oz tube	oz
		8040-01-331-7475	12 oz cartridge	oz
4	O	8040-01-260-1939	Adhesive Sealant	
			(71984) 738 RTV	oz
5	O		Antiseize Compound	
			(81349) MIL-A-907	
		8030-01-087-8254	8 oz can with brush applicator	
		8030-00-155-6444	16 oz aerosol can	oz
6	O		Brush, Paint	
		8020-00-178-8305	(96906) MS16866	ea
7	O		Cable Ties	
			(96906) MS3367-3	
		5975-01-273-8133	12 inches long, 100 per package	hd
8	O		Cable Ties	
			(96906) MS3367-1	
		5975-00-074-2072	6 inches long, 100 per package	hd
9	O		Chalk, Marking, White	
		7510-00-537-6426	(83030) 1400	ea
10	O		Cloth, Abrasive (Crocus)	
			(58536) A-A-1206	
		5350-00-221-0872	50 sheet package	sh

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
11	O		Cloth, Cleaning	
			(81349) MIL-C-85043	
		7920-00-165-7195	Type 1 - 10 lb box	lb
		7920-00-044-9281	Type 2 - 10 lb box	lb
12	O		Grease, Automotive And Artillery	
			(70878) 5542P	
			(81349) MIL-G-10924	
		9150-01-197-7688	2.25 oz tube	oz
		9150-01-197-7690	1.75 lb can	lb
		9150-01-197-7689	6.5 lb can	lb
13	O	5970-01-321-5808	Heat Shrink, Sealed	
			(00795) 537129	ea
14	O		Heat Shrink, Sealed	
			(45152) 1704950	ea
15	O		Lubricating Oil, Engine OE/HDO 30	
			(81349) MIL-L-2104	
		9150-00-186-6681	1 quart can	qt
		9150-00-188-9858	5 gallon can	gl
		9150-00-189-6729	55 gallon drum	gl
16	O		Lubricant, Tire and Rim	
		2460-00-256-5526	1 qt can	qt
		2460-00-256-5527	1 gal can	gl
		2460-00-256-5529	(5) 1 gal containers in a carton	gl
17	O		Sealing Compound	ml
		8030-01-054-0740	(05972) Loctite #567	ml
18	O		Sealing Compound	
			(80064) 1756371	
		8030-00-252-3391	11 oz tube	oz
19	O		Sealing Compound	
			(05972) Loctite #271	
			(80244) MIL-S-46163 Type 1 Grade K	
		8030-00-148-9833	10 ml bottle	ml
		8030-01-158-6070	50 ml bottle	ml
20	O		Silicone Compound, Anti-Corrosion	
			(71984) DC4-2OZ	
		6850-00-177-5094	2 ounce tube	oz

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
21	O		Solution, Soap	
			(81349) MIL-W-15000 Class C	
		6810-00-252-1345	1 quart bottle	qt
22	O		Solvent, Drycleaning	
			(58536) A-A-711	
			(81348) P-D-680	
		6850-00-664-5685	1 quart can	qt
		6850-00-264-9038	5 gallon can	gl
			(Environmentally Compliant Solvent)	
			(0K209) Breakthrough	
		6850-01-378-0679	5 gallon can	gl
23	O		Tag, Identification	
			(16956) 12-105	
		9905-00-720-3577	white	ea
24	O		Tape, Adhesive	
			(26066) 4516	
		7510-00-079-7604	36 yard roll	yd
25	O		Wire, Nonelectrical	
		9505-00-331-3275	(96906) MS20995C41	lb

APPENDIX F

ILLUSTRATED LIST OF MANUFACTURED ITEMS

Section I. INTRODUCTION

F-1. SCOPE.

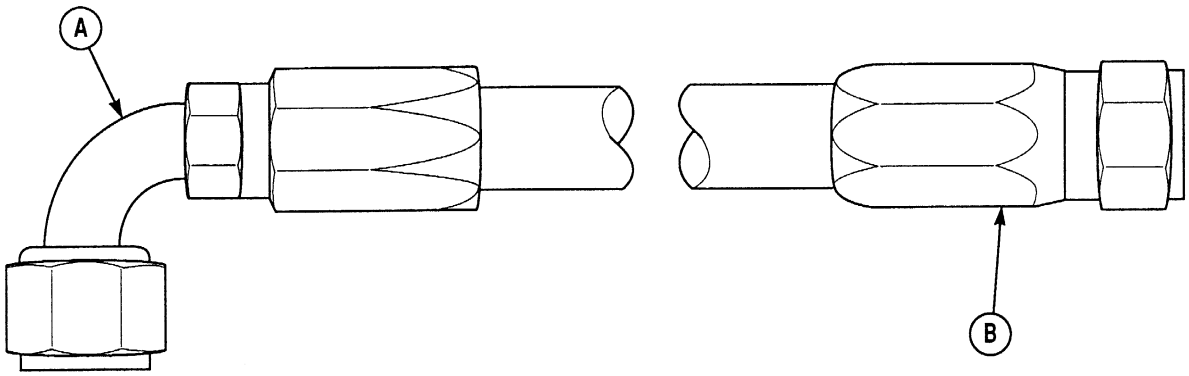
This appendix includes complete instructions for manufacturing or fabricating authorized items locally. All bulk materials needed to manufacture an item are listed by part number or specification number in a tabular list with an illustration, as needed.

Section II. MANUFACTURED ITEMS PART NUMBER INDEX

F-2. HOSE.

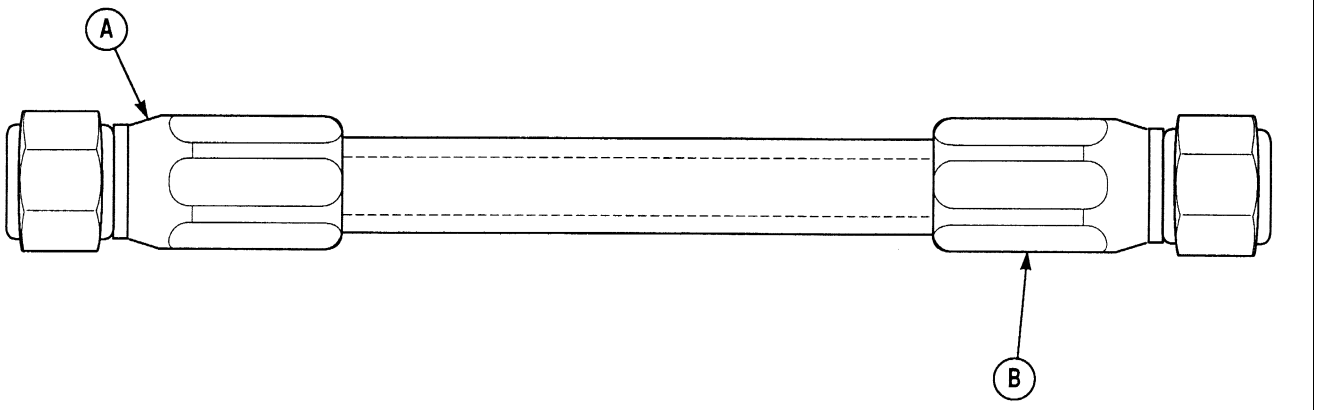
The following hoses are cut from bulk hose stock listed in Tables F-1 and F-2. Using fine-toothed hacksaw, cut hose to length required. Position fitting A in vise and install hose counter clockwise until hose bottoms in fitting. Back off one-quarter turn. Position fitting B in vise and install hose counter clockwise until hose bottoms on fitting. Back off one-quarter turn.

Table F-1. Hose Assemblies



Hose Assembly Part Number	Bulk Hose Part Number	Cut-off Length in. (mm)	Fitting A	Fitting B
118971A U-045	FC350-8	45 (114.3 cm)	Elbow 190296-8	Fitting 411-8S
118971A U-047	FC350-8	47 (119.4 cm)	Elbow 190296-8	Fitting 411-8S
118971A U-049	FC350-8	49 (124.5 cm)	Elbow 190296-8	Fitting 411-8S

Table F-2. Hose Assemblies

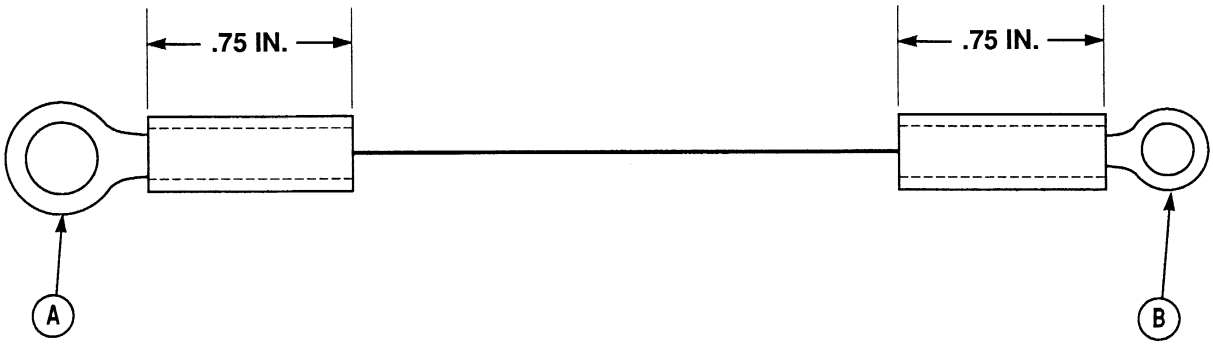


Hose Assembly Part Number	Bulk Hose Part Number	Cut-off Length in. (mm)	Fitting A	Fitting B
58989AX U-032	FC350-10	32 (813 mm)	Fitting 411-10S	Fitting 411-10S
58989AX U-036	FC350-10	36 (914 mm)	Fitting 411-10S	Fitting 411-10S
58989AX U-038	FC350-10	38 (965 mm)	Fitting 411-10S	Fitting 411-10S

F-3. WIRE ASSEMBLIES.

Fabricate from bulk wire stock listed in Table F-3. Using wire cutters cut a piece of 14 gage wire 6 in (152 mm) long. Using wire stripper, strip back 1/4 in. (6 mm) of each end of wire. Cut two pieces of sealed heatshrink listed in Table F-3, 3/4 in. (19 mm) long. Slide two pieces of sealed heatshrink over each end of wire. Using terminal crimpers, install terminal ring (A) listed in Table F-3, on end of each wire. Using terminal crimpers, install terminal ring (B) listed in Table F-3, on other end of wire. Slide one piece of sealed heatshrink to outside edge of crimped portion of terminal ring (A). Make sure all bare wire is covered. Shrink sealed heatshrink with heat gun. Slide one piece of sealed heatshrink to out side edge of crimped portion of terminal ring (B). Make sure all bare wire is covered. Shrink sealed heatshrink with heat gun.

Table F-3. Wire Assemblies

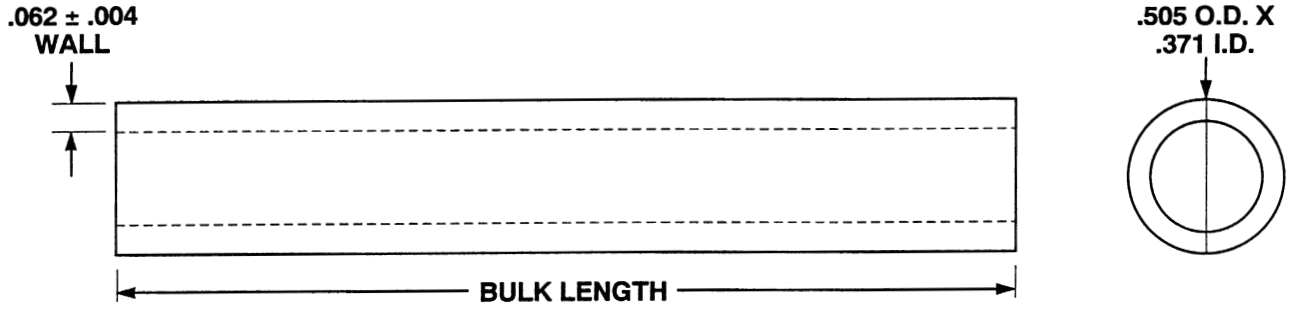


Wire Assembly Part Number	Bulk Wire Part Number	Wire Length Length in. (mm)	Terminal Ring A	Terminal Ring B	Sealed Heatshrink
1875690W-006	1244FX	6 (152 mm)	34125	321165	1704950

F-4. NYLON TUBING.

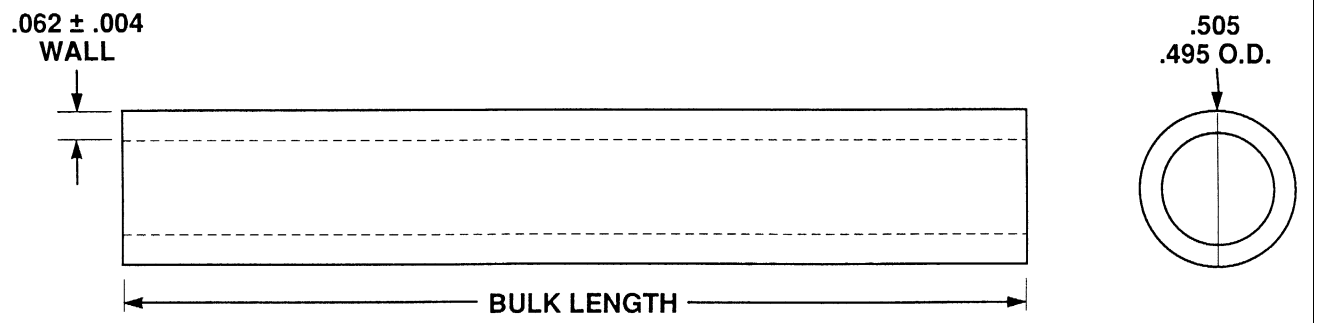
Fabricate from bulk tubing stock listed in Table F-4, F-5 and F-6. Using fine-toothed hacksaw, cut tubing to length required in Table F-5.

Table F-4. Tubing Nylon



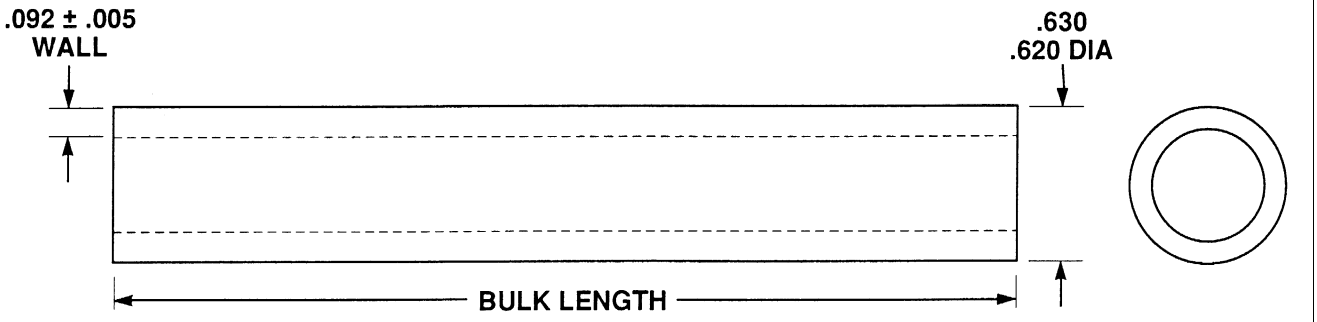
Tube Part Number	Bulk Tubing Part Number	Cut-off Length in. (mm)
23323FX-017	C606 Black	17 (432 mm)
23323FX-026	C606 Black	26 (660 mm)
23323FX-114	C606 Black	114 (2896 mm)
23323FX-24	C606 Black	24 (610 mm)

Table F-5. Tubing, Nylon



Tube Part Number	Bulk Tubing Part Number	Cut Off Length in. (mm)
31270AX-010	C608	10 (254 mm)
31270AX-010	C608	23 (584 mm)
31270AX-010	C608	40 (1016 mm)
31270AX-010	C608	41 (1041 mm)
31270AX-010	C608	100 (2540 mm)
31270AX-010	C608	208 (5283 mm)
31270AX-010	C608	212 (5385 mm)
31270AX-010	C608	265 (6731 mm)

Table F-6. Tubing, Nylon



Tube Part Number	Bulk Tubing Part Number	Cut Off Length in. (mm)
31271AX-025	3250-101	25 (635 mm)
31271AX-029	3250-101	29 (737 mm)
31271AX-055	3250-101	55 (1397 mm)
31271AX-073	3250-101	73 (1854 mm)
31271AX-076	3250-101	76 (1930 mm)
31271AX-106	3250-101	106 (2692 mm)
31271AX-109	3250-101	109 (2769 mm)
31271AX-210	3250-101	210 (5334 mm)

F-5. TEMPLATE.

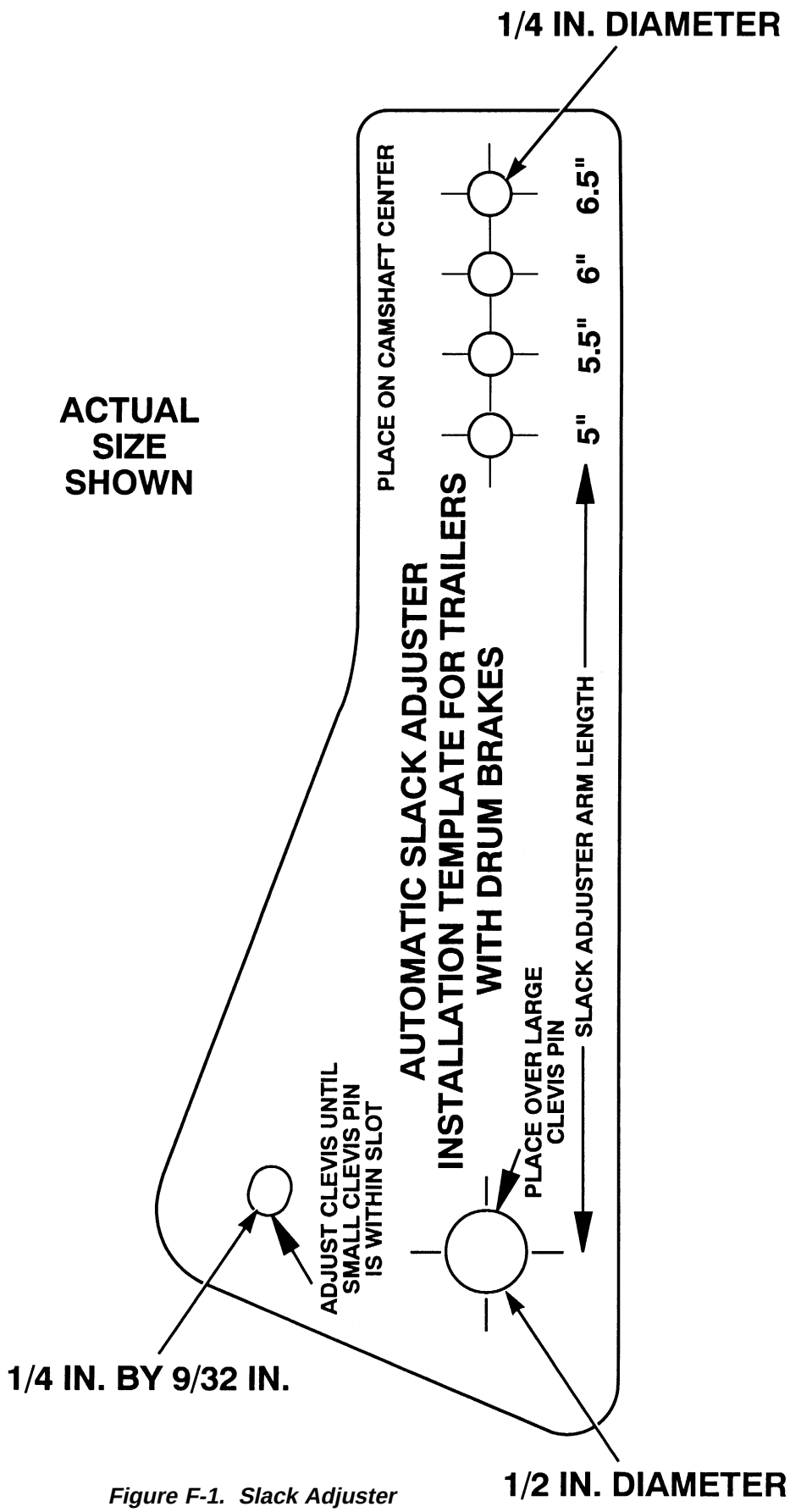
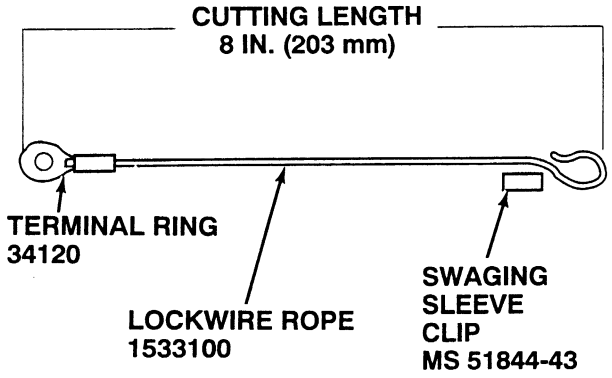


Figure F-1. Slack Adjuster

F-6. LOCKWIRE.

The lockwire is used in two places. The lockwire length is the same for each application. Crimped button stop caps are used to attach the lockwire to other components.

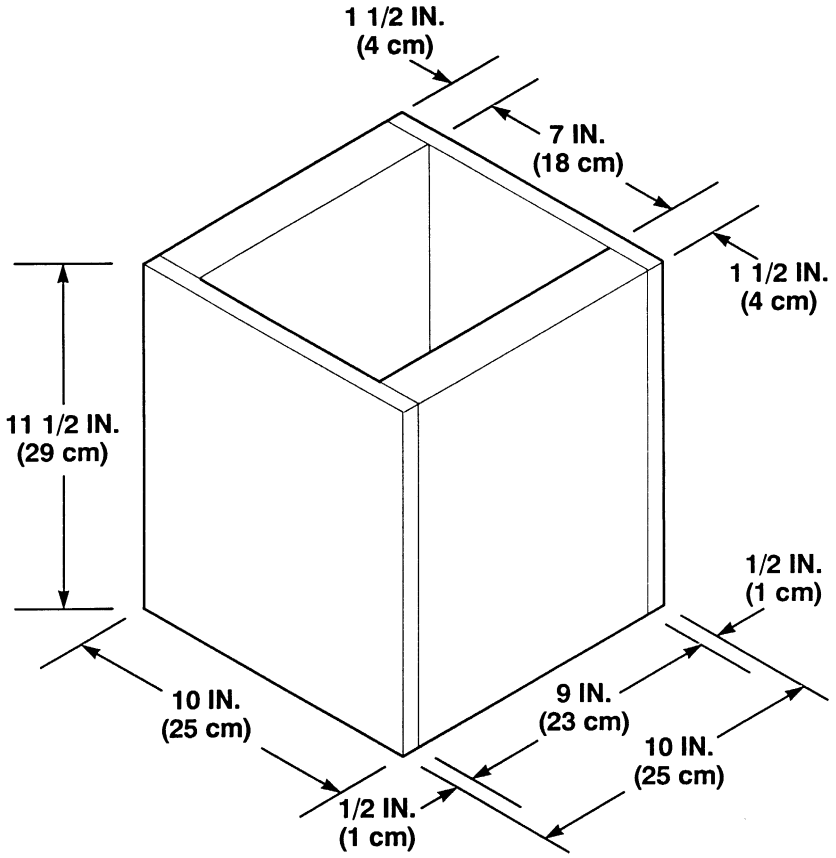


NOTES:

1. OBTAIN ALL COMPONENTS REQUIRED TO FABRICATE LOCKWIRE.
2. USE A FINE TOOTHED HACKSAW OR SUITABLE CUTTING DEVICE, AND CUT LOCKWIRE TO LENGTH.
3. INSERT WIRE INTO TERMINAL RING.
4. CRIMP TERMINAL TO WIRE.
5. SLIDE WIRE THROUGH HOLE IN COMPONENT, UNTIL LOCKWIRE COMES THROUGH OTHER SIDE.
6. SLIDE CAP ONTO LOCKWIRE, UNTIL CAP BOTTOMS AGAINST COMPONENT AND WIRE COMES THROUGH CAP.
7. CRIMP CAP TO LOCKWIRE.

Figure F-2. Lockwire.

F-7. WOODEN STAND.



NOTES:

1. FABRICATE FROM 1/2 IN. (1 CM) PLYWOOD AND MML 751 LUMBER STOCK.
2. USING A SAW, CUT TWO BLOCKS OF WOOD 9 IN. (23 CM) BY 11-1/2 IN. (29 CM) BY 1-1/2 IN. (4 CM).
3. USING A SAW, CUT TWO PIECES OF PLYWOOD 11-1/2 IN. (29 CM) BY 10 IN. (25 CM) BY 1/2 IN. (1 CM).
4. FABRICATE WOODEN STAND AS DIMENSIONED USING 6D NAILS.

Figure F-3. Wooden Stand.

F-8. WOODEN BLOCKS.

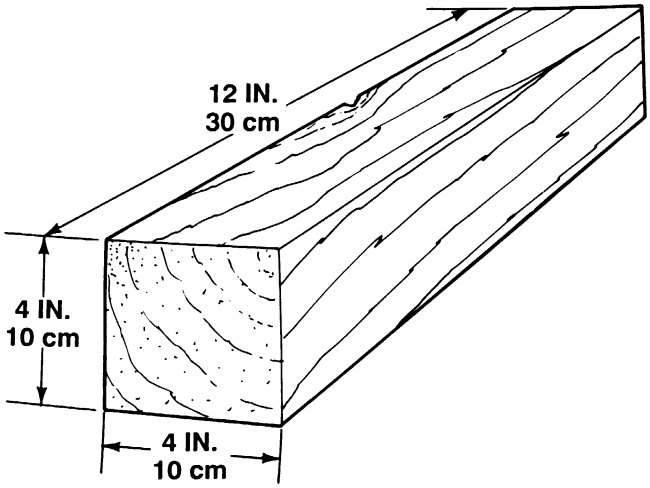


Figure F-4. Wooden Block.

a. Fabricate from MML751 lumber stock.

b. Using saw and standard planing machine, cut stock to size required in Table F-7.

Table F-7. Wooden Block

Para Number	Finished Dimensions of Block In. (cm)
4-78	4 by 4 by 12 in. (10 by 10 by 30 cm)

APPENDIX G

STOWAGE AND SIGN GUIDE

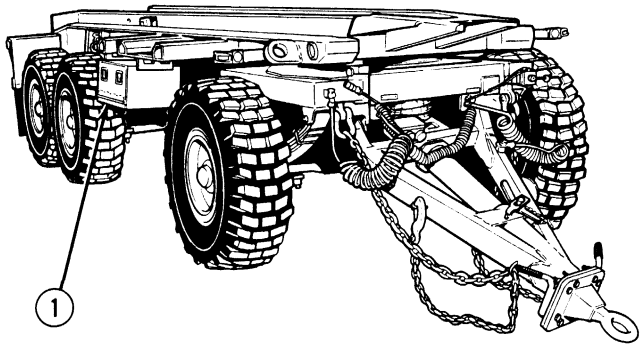
(FOR COEI, BII AND APPLICABLE AAL ITEMS)

G-1. SCOPE.

This appendix shows stowage locations for equipment, metal signs, decals and stencils that must be in place on the trailer.

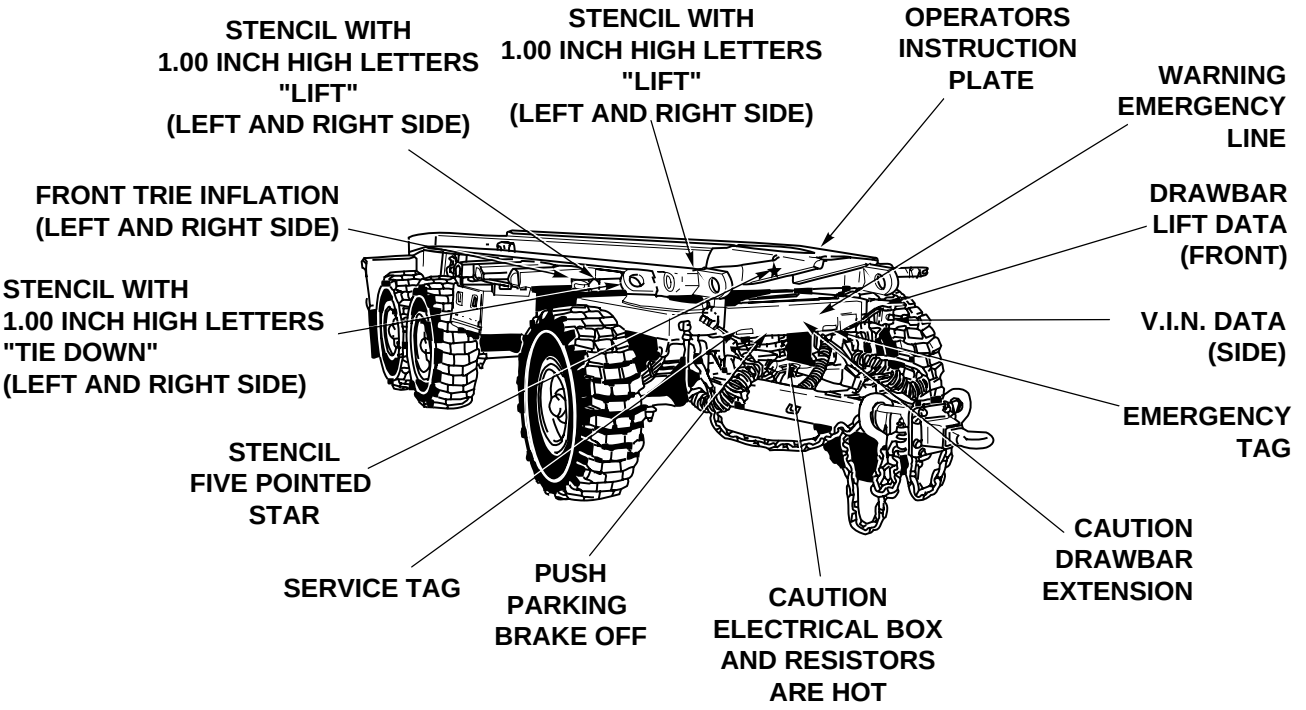
G-2. GENERAL.

Figure G-1 shows the stowage location for equipment. Figure G-2 shows the location of metal signs, decals, and stencils used on the trailer. Some of the decals and stencils contain cautions, warnings, or information needed to operate the trailer safely.



No.	Item Description	Quantity
1	Adjustable Wrench	1
1	Air Hose Assembly	1
1	Fire Extinguisher	1
1	Load Binder	2
1	Padlock with Chain	1
1	Rubber Sheath	2
1	Surface Plate	2
1	Tiedown Strap	5
1	Tool Bag	1
1	Unlocking Rod	1
1	Unlocking Rod	2
1	Wheel Chock	1
1	Unlocking Rod	2
1	Wheel Chock	1

Figure G-1. Stowage Locations



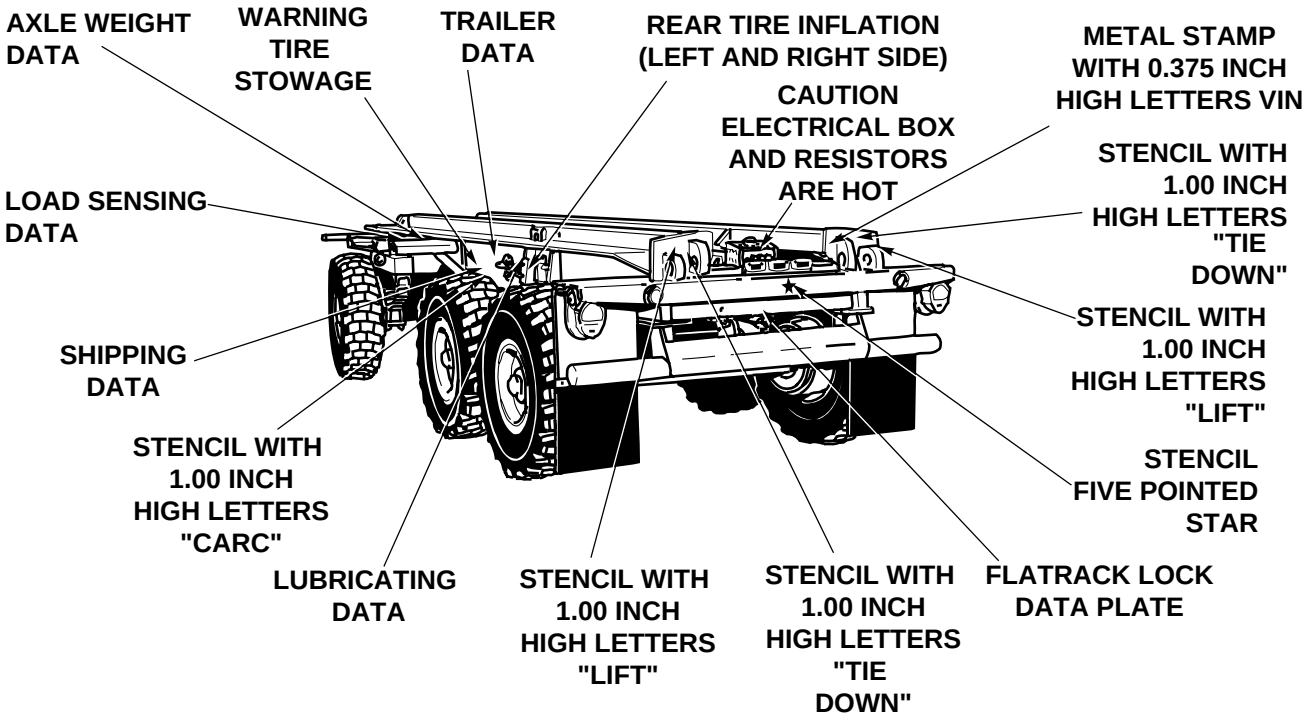


Figure G-2. Sign Guide

APPENDIX H

TORQUE LIMITS

H-1. SCOPE.

This section provides general torque limits for the screws, hoses and fittings used on the trailer. Special torque limits are listed in the maintenance procedures for applicable components. The general torque limits given in this appendix shall be used when specific torque limits are not indicated in the maintenance procedure. These general torque limits cannot be applied to screws that retain rubber components. The rubber components will be damaged before the torque limit is reached. If a special torque limit is not given in the maintenance instructions, tighten the screw or nut until it touches the metal bracket then tighten it one more turn.

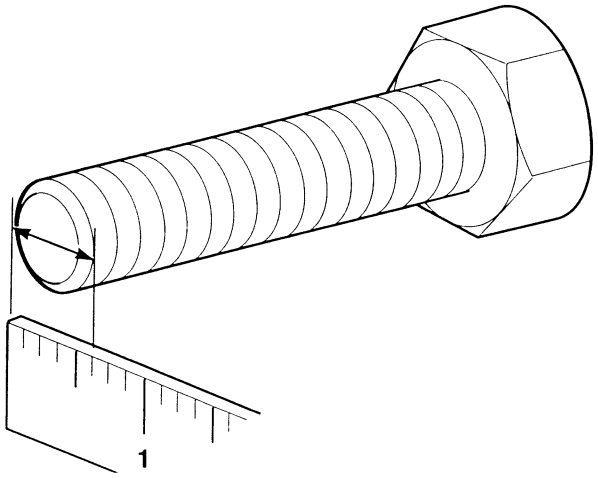
H-2. TORQUE LIMITS.

Table H-1 lists the torque limits for wet flange nuts. Table H-2 lists the torque limits for wet socket head capscrews. Table H-3 lists dry torque limits for capscrews. Dry torque limits are used on screws that do not have high pressure lubricants applied to the threads. Table H-4 lists wet torque limits for capscrews. Wet torque limits are used on screws that have high pressure lubricants applied to the threads. Table H-5 lists the torque limits for SAE 37 degree flare hose connections. Table H-6 lists the torque limits for SAE 45 degree flare hose connections. Table H-7 lists the torque limits for ORS preformed packing face seal hose connections. Table H-8 lists the torque limits for NPSM swivel connections.

H-3. HOW TO USE TORQUE TABLE.

a. Screws and Nuts.

(1) Measure the diameter of the screw you are installing with a ruler.



H-3. HOW TO USE TORQUE TABLE (CONT).

(2) Measure out one inch with a ruler and count the number of threads per inch.

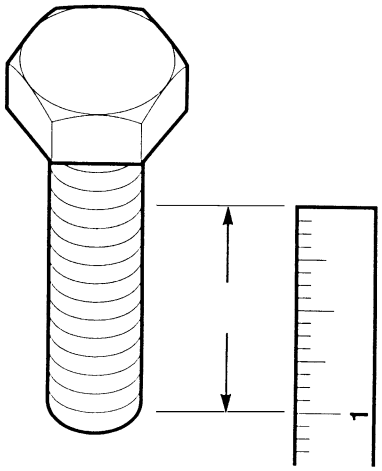
(3) Under the heading SIZE, look down the left hand column until you find the diameter of the screw you are installing (there will usually be two lines beginning with the same size).

(4) In the second column under SIZE, find the number of threads per inch that matches the number of threads per inch you counted in Step 2. (Not required for metric screws).

(5) To find the grade screw you are installing, match the markings on the head to the correct picture of CAPSCREW HEAD MARKINGS on the torque table.

(6) Look down the column under the picture you found in Step 5 until you find the torque limit (lb-ft or N·m) for the diameter and threads per inch of the screw you are installing.

(7) Use wet torque values.



CAPSCREW HEAD MARKINGS

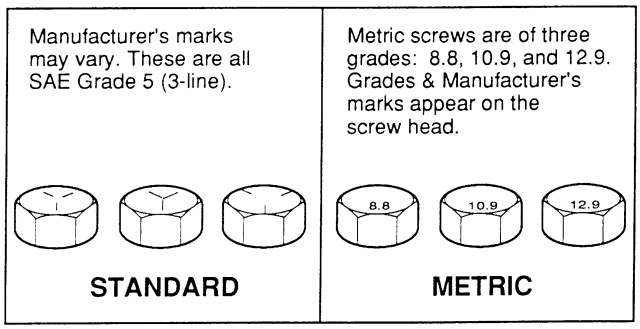


Table H-1. Torque Limits for Wet Flange Nuts

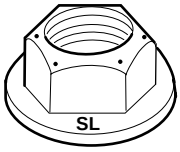
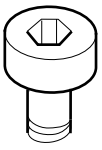
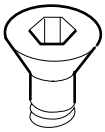
SPIRALOCK FLANGE NUT MARKINGS GRADE 8	DIAMETER		THREADS PER INCH	TORQUE	
	IN.	MM		LB-FT	N·m
	1/4	6.35	20	15	20
	5/16	7.94	18	25	34
	3/8	9.65	16	45	61
	1/2	12.70	13	110	149
	5/8	15.75	11	210	285
	3/4	19.05	10	375	508

Table H-2. Torque Limits For Wet Socket Head Cap Screws

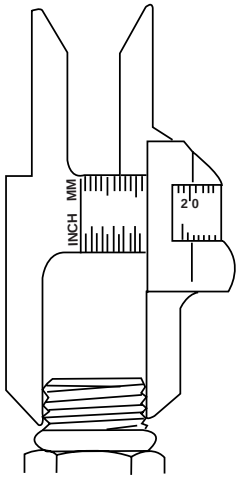
SOC HEAD/12 PT. / SOC FLAT HEAD	TORQUE IN FT LBS. (CAP SCREWS) LUBED		
	SIZE	SOC HD OR 12 PT	SOC FLAT HD
	.10–24	5	2.5
	.25–20	12	6
	.31–18	25	12
	.38–16	44	22
	.50–13	70	36
	.56–12	106	53
	.62–11	212	106
	.75–10	375	187
	1.00–8	781	

b. Hoses and Fittings.

NOTE

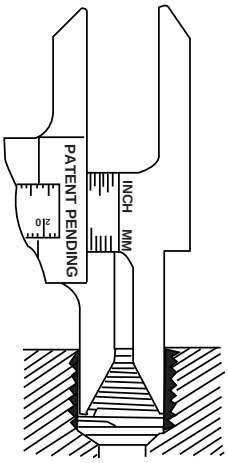
Most fluid piping system sizes are measured by dash numbers. These are universally used abbreviations for the size of the component expressed as the numerator of the fraction with the denominator always being 16. For example, a -04 port is 4/16 or 1/4-inch. Dash numbers are usually nominal (in name only) and are abbreviations that make ordering of components easier.

(1) Measure the I.D./O.D. diameter with a caliper as shown.



O.D.
(MALE THREADS)

(2) Under the heading MALE THREAD O.D. and FEMALE THREAD I.D., match the measurements with the row in table to determine proper torque.



I.D.
(FEMALE THREADS)

(3) To find the sealing surface angle, use a protractor and measure the sealing surface parallel to the center line of the fitting.

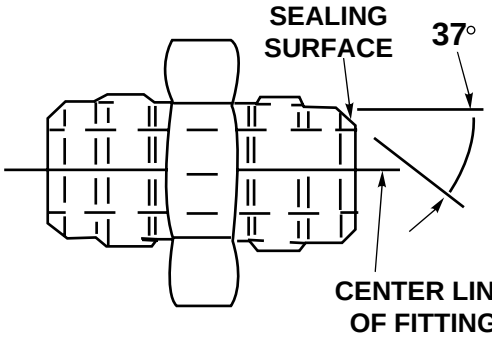
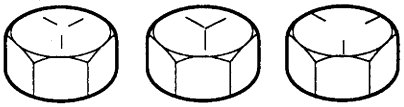
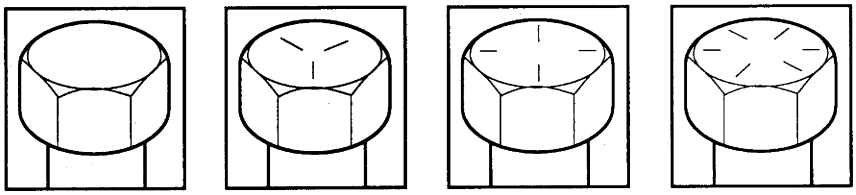


Table H-3. Torque Limits For Dry Fasteners

CAPSCREW HEAD MARKINGS



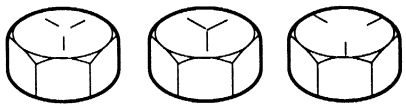


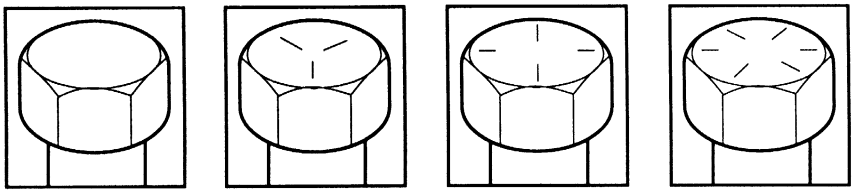
Manufacturer's marks may vary.
These are all SAE Grade 5 (3-line).

SIZE			TORQUE							
			SAE GRADE NO. 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	MILLIMETERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS
1/4	20	6.35	5	7	8	11	10	14	12	16
1/4	28	6.35	6	9	10	14	12	16	14	19
5/16	18	7.94	11	15	17	23	21	28	25	34
5/16	24	7.94	12	16	19	26	24	33	25	34
3/8	16	9.53	20	27	30	41	40	54	45	61
3/8	24	9.53	23	31	35	47	45	61	50	68
7/16	14	11.11	30	41	50	68	60	81	70	95
7/16	20		35	47	55	75	70	95	80	108
1/2	13	12.70	50	68	75	102	95	129	110	149
1/2	20		55	75	90	122	100	136	120	163
9/16	12	14.29	65	88	110	149	135	183	150	203
9/16	18		75	102	120	163	150	203	170	231
5/8	11	15.88	90	122	150	203	190	258	220	298
5/8	18		100	136	180	244	210	285	240	325
3/4	10	19.05	160	217	260	353	320	434	380	515
3/4	16		180	244	300	407	360	488	420	569
7/8	9	22.23	140	190	400	542	520	705	600	814
7/8	14		155	210	440	597	580	786	660	895
1	8	25.40	220	298	580	786	800	1085	900	1220
1	12		240	325	640	868	860	1166	1000	1356
1-1/8	7	25.58	300	407	800	1085	1120	1519	1280	1736
1-1/8	12		340	461	880	1193	1260	1709	1440	1953
1-1/4	7	31.75	420	597	1120	1519	1580	2142	1820	2468
1-1/4	12		460	624	1240	1681	1760	2387	2000	2712
1-3/8	6	34.93	560	759	1460	1980	2080	2820	2380	3227
1-3/8	12		640	868	1680	2278	2380	3227	2720	3688
1-1/2	6	38.10	740	1003	1940	2631	2780	3770	3160	4285
1-1/2	12		840	1139	2200	2983	3100	4204	3560	4827

Table H-4. Torque Limits For Wet Fasteners

CAPSCREW HEAD MARKINGS

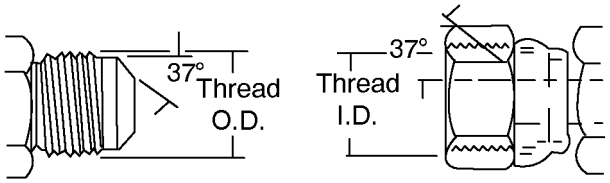




Manufacturer's marks may vary.
These are all SAE Grade 5 (3-line).

SIZE			TORQUE							
			SAE GRADE NO. 2		SAE GRADE NO. 5		SAE GRADE NO. 6 or 7		SAE GRADE NO. 8	
DIA. INCHES	THREADS PER INCH	MILLIMETERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS	POUNDS FEET	NEWTON METERS
1/4	20	6.35	4	6	6	8	8	11	9	12
1/4	28	6.35	5	7	7	9	9	12	10	14
5/16	18	7.94	8	11	13	18	16	22	18	24
5/16	24	7.94	9	12	14	19	18	24	20	27
3/8	16	9.53	15	20	23	31	30	41	35	47
3/8	24	9.53	17	23	25	34	30	41	35	47
7/16	14	11.11	24	33	35	47	45	61	55	75
7/16	20		25	34	40	54	50	68	60	81
1/2	13	12.70	35	47	55	75	70	95	80	108
1/2	20		40	54	65	88	80	108	90	122
9/16	12	14.29	50	68	80	108	100	136	110	149
9/16	18		55	75	90	122	110	149	130	176
5/8	11	15.88	70	95	110	149	140	190	170	231
5/8	18		80	108	130	176	160	217	180	244
3/4	10	19.05	120	163	200	271	240	325	280	380
3/4	16		140	190	220	298	280	380	320	434
7/8	9	22.23	110	149	300	407	400	542	460	624
7/8	14		120	163	320	434	440	597	500	678
1	8	25.40	160	217	440	597	600	814	680	922
1	12		170	231	480	651	660	895	740	1003
1-1/8	7	25.58	220	298	600	814	840	1139	960	1302
1-1/8	12		260	353	660	895	940	1275	1080	1464
1-1/4	7	31.75	320	434	840	1139	1100	1492	1360	1844
1-1/4	12		360	488	920	1248	1320	1790	1500	2034
1-3/8	6	34.93	420	570	1100	1492	1560	2115	1780	2414
1-3/8	12		460	624	1260	1709	1780	2414	2040	2776
1-1/2	6	38.10	560	760	1460	1980	2080	2820	2360	3200
1-1/2	12		620	841	1640	2224	2320	3146	2660	3607

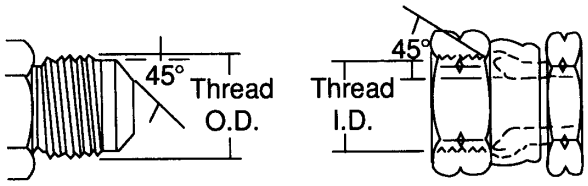
Table H-5. Torque Limits For 37 Degree Flare Hose Connections



Male Half **Female Half**

INCH SIZE	DASH NO.	THREAD SIZE	TORQUE LB.FT.	TORQUE N·m
1/4	04	7/16-20	11-12	15-16
3/8	06	9/16-18	18-21	24-28
1/2	08	3/4-16	36-39	49-53
5/8	10	7/8-14	57-62	77-84
3/4	12	1 1/16-12	79-87	107-118
7/8	14	1 3/16-12	83-91	113-123
1	16	1 5/16-12	108-113	146-153
1 1/4	20	1 5/8-12	127-133	172-180
1 1/2	24	1 7/8-12	158-167	214-224
2	32	2 1/2-12	245-258	332-350

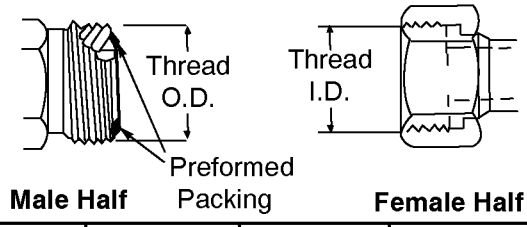
Table H-6. Torque Limits For 45 Degree Flare Hose Connections



Male Half **Female Half**

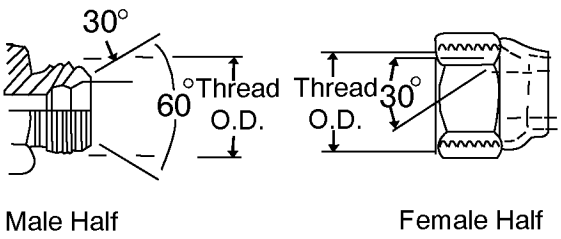
INCH SIZE	DASH NO.	THREAD SIZE	TORQUE LB.FT.	TORQUE N·m
1/4	04	7/16-20	8-9	11-12
3/8	06	5/8-18	18-20	24-27
1/2	08	3/4-16	36-38	49-51
5/8	10	7/8-14	52-54	70-73
3/4	12	1 1/16-14	71-74	97-100

Table H-7. Torque Limits For ORS Preformed Packing Face Seal Hose Connections



INCH SIZE	DASH NO.	THREAD SIZE	TORQUE LB.FT.	TORQUE N.M
1/4	04	9/16-18	10-12	14-16
3/8	06	11/16-16	18-20	24-27
1/2	08	13/16-16	32-35	43-47
5/8	10	1-14	46-50	62-68
3/4	12	1 3/16-12	65-70	88-95
1	16	1 7/16-12	108-113	146-153
1 1/4	20	1 11/16-12	127-133	172-180
1 1/2	24	2-12	158-167	214-226

Table H-8. Torque Limits For NPSM Swivel Connections



INCH SIZE	DASH NO.	NOMINAL THREAD SIZE	TORQUE LB.FT.	TORQUE N.M
1/8	02	1/8-27	3-4	4-5
1/4	04	1/4-18	10-11	14-15
3/8	06	3/8-18	16-18	22-24
1/2	08	1/2-14	25-27	34-37
3/4	12	3/4-14	46-48	62-65
1	16	1-11/2	80-83	108-113
1 1/4	20	1 1/4-11/2	130-134	176-182
1 1/2	24	1 1/2-11/2	160-164	217-222
2	32	2-11/2	170-174	231-240

APPENDIX I

MANDATORY REPLACEMENT PARTS LIST

Section I. INTRODUCTION

I-1. SCOPE.

This appendix lists all mandatory replacement parts required for performance of unit, direct support, and general support maintenance of the trailer. It authorizes the requisitioning, issue, and disposition of consumable repair parts. All consumable repair parts listed in the maintenance tasks are listed here for ease of reference.

I-2. EXPLANATION OF COLUMNS (SECTION II).

a. Column (1) - Replacement Part Reference Code. This number is assigned to the entry in the listing and is referenced in the narrative task box to identify the material e.g., Locknut (Item 23, Appendix I).

b. Column (2) - Maintenance Level. This column identifies the lowest level of maintenance that requires the listed items.

C - Operator/Crew
O - Organizational Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. Column (3) - Nomenclature. Indicates the federal item name and, if required, a description to identify the item.

d. Column (4) - Part Number. This is the vendor number assigned to the item.

e. Column (5) - National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the item.

Section II. MANDATORY REPLACEMENT PARTS LIST

(1) Index No.	(2) Maintenance Level	(3) Nomenclature	(4) Part Number	(5) National Stock Number
1	O	BUSHING	1875160	5310-01-394-9175
2	O	BUSHING	GLY.PG303440A	3120-01-359-8802
3	F	BUSHING	GLY.PGZ2028F	3120-01-359-7001
4	F	BUSHING	GLY.PGZ2616F	3120-01-366-1306
5	O,F	BUSHING	GLY.PGZ9660A	3120-01-425-5077
6	O	BUSHING	WB1-060	5340-01-108-2909
7	O	BUSHING	WB1-060	5340-01-108-2909
8	O	BUSHING, ANCHOR PIN	1225B496	3120-00-255-6042
9	O	BUSHING, CAMSHAFT ASSY	A-3105-G-1151	2530-01-363-2378
10	F	BUSHING, RUBBER	1225-F-1254-S	5365-01-358-7997
11	O	CABLE	1406140	4010-01-348-6039
12	O	CONTACT, ELECTRICAL	27914-26T9	5999-01-131-7436
13	O	CONTACT, ELECTRICAL	27915-26T9	5999-01-423-7676
14	O	CONTACT, ELECTRICAL	7716520	5999-00-485-8954
15	O	CLIP, RETAINING	11662296-9	5365-00-204-5061
16	O	CLIP, RETAINING	1229-T-4102-S	5365-01-358-8108
17	O	GASKET	16957	5330-01-271-1443
18	O	GASKET	16958	5330-01-358-9265
19	O	GASKET	2208N430	5330-01-576-3028
20	F	KIT, EXTENDED DRAWBAR/LIGHT BAR	3188600	
21	F	LINER, PAD	2215-R-1006-S	5365-01-359-2287
22	O	LOCKNUT	110310A	5310-01-159-8178
23	H	LOCKNUT	110311-A	5310-01-111-0645
24	O	LOCKNUT	110312A	5310-01-150-5918
25	O	LOCKNUT	115303A	5310-01-155-1905
26	O	LOCKNUT	115307A	5310-01-151-1036
27	F	LOCKNUT	1227-P-1420-S	5310-01-358-5545
28	F	LOCKNUT	1227-Q-1421-S	5310-01-358-5546
29	O	LOCKNUT	1244954-2	5310-00-074-1387
30	O	LOCKNUT	141	5975-00-152-1075
31	O	LOCKNUT	1571850	5310-01-288-5096
32	O	LOCKNUT	1571870	5310-01-352-7732
33	O,F	LOCKNUT	1600460	5310-01-346-9445
34	O	LOCKNUT	1-50S	5310-01-277-6093
35	O	LOCKNUT	21NE066	5310-00-014-5855
36	O	LOCKNUT	AN365-1024A	5310-00-208-1918
37	O	LOCKNUT	MS35649-264	5310-00-934-9761
38	O	LOCKNUT	21NE-040	5310-01-066-6759

(1) Index No.	(2) Maintenance Level	(3) Nomenclature	(4) Part Number	(5) National Stock Number
39	O	LOCKNUT	93604342	5310-01-081-5351
40	O	LOCKNUT	MS51922-9	5310-00-984-3806
41	O	LOCKNUT	MS51943-31	5310-00-061-4650
42	O	LOCKNUT	MS51943-37	5310-00-241-6659
43	O	LOCKNUT	NL-210	5310-01-325-7399
44	O	LOCKNUT	T893R	5310-01-288-1116
45	F	LOCKNUT	TLA-10008-GRC	5310-01-080-9201
46	O	LOCKNUT	RAILROADASR3-4-10	5310-00-269-6340
47	O	LOCKNUT	TLA-7809-GRC	5310-01-107-3586
48	F	LOCKWASHER	1554680	5310-01-358-8012
49	O	LOCKWASHER	207ACBH-6	4730-00-511-1677
50	F	LOCKWASHER	2850801	5310-01-371-4935
51	O,F	LOCKWASHER	351AX	5310-01-128-0450
52	O	LOCKWASHER	MS35338-44	5310-00-582-5965
53	F	LOCKWASHER	5634GX	5310-01-235-2038
54	F	LOCKWASHER	777-A	5310-01-061-4481
55	O	LOCKWASHER	810 420 006 4	5310-01-358-6624
56	O	LOCKWASHER	93613642	5310-01-068-8446
57	O	LOCKWASHER	MS35338-42	5310-00-045-3299
58	O	PACKING, PREFORMED	0-320M	5330-01-385-1681
59	O	PACKING, PREFORMED	11639519-2	5330-00-462-0907
60	O	PACKING, PREFORMED	OR-220-TG-A	5330-01-359-1500
61	O	PIN, ANCHOR	1259-N-274	5315-01-129-6898
62	O	PIN, COTTER	MS24665-353	5315-00-839-5822
63	O	PIN, COTTER	MS24665-319	5315-01-267-7570
64	F	PIN, COTTER	MS24665-446	5315-00-899-4119
65	F	PIN, COTTER	MS24665-448	5315-00-239-8031
66	O	PIN, COTTER	MS24665-493	5315-00-018-7988
67	O	PIN, COTTER	MS24665-624	5315-00-059-0217
68	O	PIN, COTTER	MS24665-703	5315-00-809-2886
69	O	PIN, COTTER	XB-121	5315-01-383-0048
70	H	PLATE, RETAINER	1873440	5340-01-369-9485
71	O	RETAINER ASSEMBLY	A-3105-L-1078	2530-01-359-8091
72	O	RING	WR1-060	5340-00-500-0036
73	O	ROLLER	1779R18	3120-00-322-6430
74	O	ROPE, WIRE	1533100	4010-01-315-7375
75	F	SCREW	124159A	5306-01-357-6916
76	O	SCREW, SELF-TAPPING	234 86500-382	5305-01-247-0028
77	O	SEAL	46304	5330-01-291-5071
78	O	SEAL	1205-Q-2123	5330-01-328-6090
79	O	SEAL, DOOR	125865A-074	9390-01-179-4508

(1) Index No.	(2) Maintenance Level	(3) Nomenclature	(4) Part Number	(5) National Stock Number
80	O	SEAL, OIL	A-1205-X-1662	5330-01-047-9367
81	F	SEAL, WIPER	702118A	5330-01-424-4598
82	O	SPRING	2258-Q-615-S	5360-01-158-1974
83	O	SPRING, RETURN	2858-Z-416-S	5360-01-358-6734
84	O	STRAP, TIE DOWN	2257-N-40	5975-01-444-5969
85	O	SWAGGING SLEEVE	MS51844-43	4030-01-258-0467
86	F	U-BOLT	15-X-1778-S	5306-01-359-2287
87	F	U-BOLT	10060-01	5306-01-098-7197
88	F	U-BOLT, SPRING	1874490	5306-01-359-1379
89	O	VALVE CORE	A-145-1	2640-01-422-0419
90	O	VALVE SPUD, PNEUMATIC	H-41	2640-01-356-9103
91	F	WASHER	28261AX	5310-01-352-2754

APPENDIX J

TOOL IDENTIFICATION LIST

Section I. INTRODUCTION

J-1. SCOPE.

This appendix is a list of tools, both common and special, test equipment and tool kits used at Unit, Direct Support and General Support Maintenance level to repair the trailer. This list is arranged alphabetically and shows the nomenclature, part number and National Stock Number when applicable.

J-2. EXPLANATION OF COLUMNS.

a. Column (1) - Index Number. This number is assigned to the entry in the listing and is referenced in the narrative task box to identify the material e.g., Wrench, Torque (Item 60, Appendix J).

b. Column (2) - Maintenance Level. This column identifies the lowest level of maintenance that requires the listed tools.

O - Unit Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. Column (3) - Description. Indicates the federal item name and, if required, a description to identify the item.

d. Column (4) - Tool Number. This is the vendor number assigned to the item.

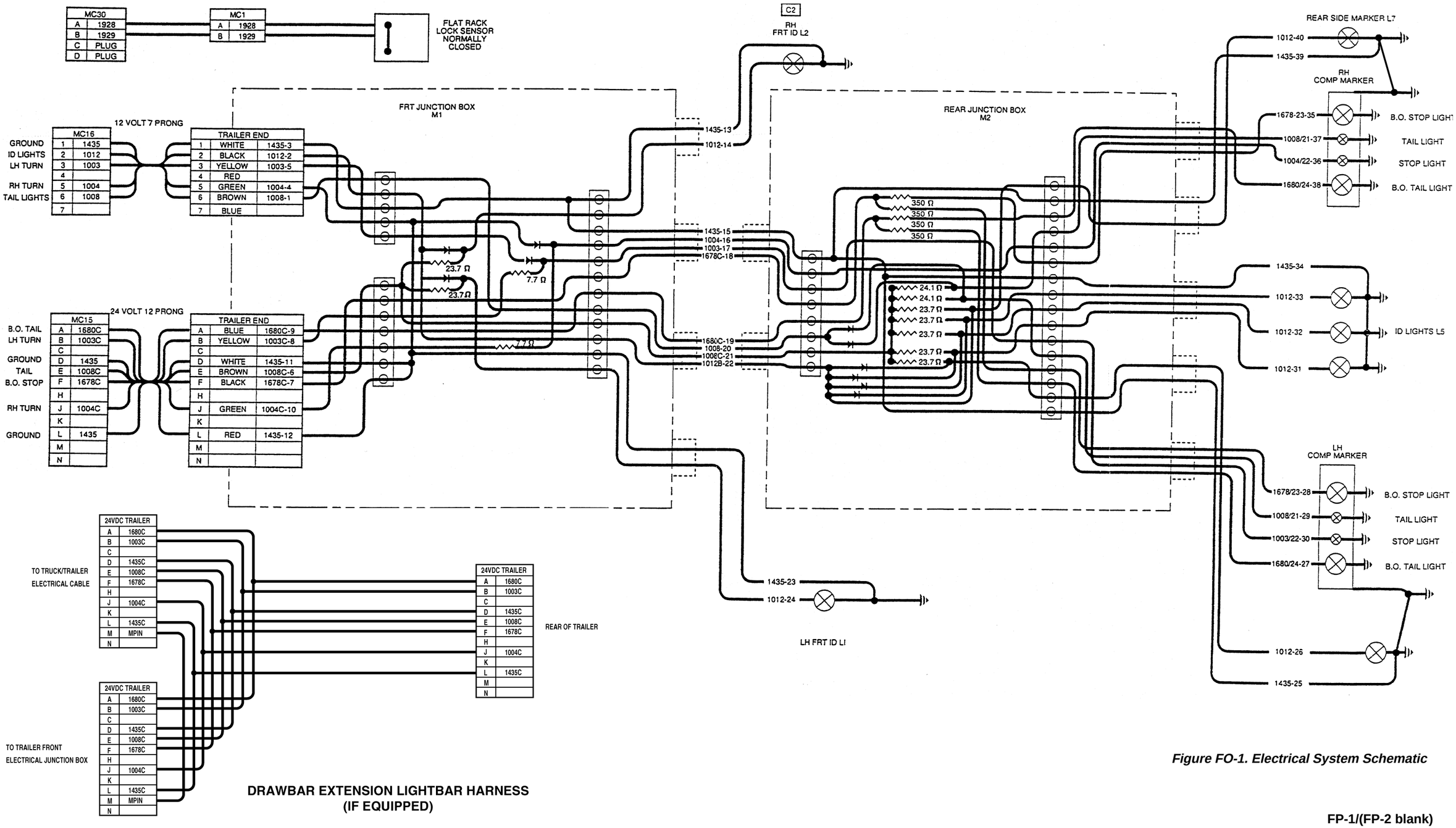
e. Column (5) - National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the item.

f. Column (6) - Reference. This column lists the supply catalog that the tool is located in.

Section II. COMMON TOOLS, TEST EQUIPMENT AND SPECIAL TOOLS/FIXTURES LIST

(1) Index No.	(2) Maintenance Level	(3) Description	(4) Tool Number	(5) National Stock Number	(6) Reference
1	O	Brush, Wire Scratch	HB178	7920-00-291-5815	SC 4910-95-A74
2	O,F	Cap and Plug Set	10935405	5340-00-450-5718	
3	F	Chisel, Cold, Hand 1/2 in.	GGG-C-313	5110-00-186-7107	SC 4910-95-A31
4	F	Clevis	G-213	4985-01-218-6348	
5	O,F	Compressor Unit, Air	MIL-C-13874	4120-00-752-9633	SC 4910-95-A72-HR
6	O	Dividers, Mechanics	GGG-D-351	5210-00-267-3371	
7	O	Drill, Electric, Portable	WD0061	5130-00-293-1849	SC 4910-95-A74
8	O	Drill Set, Twist	GGG-D-751	5133-00-293-0923	SC 4910-95-A74
9	F	Driver, Bushing	TL15411		
10	H	Eyes, Lifting	2BH944	5306-01-372-9275	
11	O,F,H	Gloves, Chemical and Oil Protective	ZZ-G-381	8415-00-641-4601	SC 4910-95-A74
12	O	Gloves, Heavy Duty	A-A50022	8415-00-268-7859	SC 4910-95-A72-HR
13	O,F,H	Goggles, Industrial	GGG-G-513	4240-00-269-7912	SC 4910-95-A74
14	O	Grinder, Electric Portable		5130-01-087-6822	SC 4910-95-A74
15	O,F	Gun, Air Blow	GGG-G-170	4940-00-333-5541	SC 4910-95-A72-HR
16	O	Gun, Heat	500	4940-00-561-1002	
17	O	Hammer, Soft Plastic	3-HD	5120-01-065-9037	SC 4910-95-A72-HR
18	O	Inflator-Gage, Tire	13213E9569	4910-00-441-8685	
19	O	Inserter and Remover, Valve Core	2661	5120-00-529-2728	
20	O	Iron, Tire	T52	5120-00-580-8924	
21	O	Iron, Tire, Lock Ring	T48A	5120-00-765-8536	
22	O,F	Jack, Dolly Type Hydraulic	780	4910-00-289-7233	SC 4910-95-A31
23	F	Jack, Stabilizer	LO-J		
24	O	Jackstand	306	4910-00-251-8013	SC 4910-95-A74
25	H	Lathe, Brake Drum	00L90	4910-01-028-9849	SC 4910-95-A31
26	F	Lift, Transmission and Differential	MIL-L-45047	4910-00-585-3622	
27	O,F	Lift Wheel Truck		5120-01-146-0896	
28	O,F	Multimeter, Digital	ANURM105C	6625-00-999-6282	SC 4910-95-A72-HR
29	O,F	Multiplier, Torque	292	5120-00-574-9318	SC 4910-95-A72-HR
30	F	Pencil, Soldering, Electric	W-TCP-K	3439-00-460-7198	
31	O	Pliers, Brake Repair	131A	5120-00-690-8044	SC 4910-95-A74
32	O	Pliers, Retaining Ring	2BH945	5120-00-293-0044	SC 4910-95-A74
33	F	Plumb Bob	GGG-P-501	5120-00-234-8949	
34	O	Pressure Test Kit	3SK911	4910-01-378-9068	
35	F	Protractor, Magnetic	2150A251	5210-01-415-0075	
36	O	Respirator, Air Filtering	GGG-M-125/6	4240-00-022-2524	SC 4910-95-A72-HR
37	O,F	Sander, Portable, Disk Electric	00S90	5130-00-596-9728	SC 4910-95-A31
38	F	Socket Set, 1 in. Drive	GGG-W-660	5130-00-357-5136	
39	O	Socket Set, 3/4 in. Drive	GGG-W-641	5120-00-204-1999	SC 4910-95-A72-HR
40	O,F	Socket Set, 3/8 in. Drive	221FSMY	5120-01-117-3876	SC 4910-95-A72-HR
41	O	Socket Set, Deepwell	GGG-W-641	5120-00-596-8622	SC 4910-95-A72-HR
42	O	Socket, 1-1/8 in.	1818	5120-00-239-0021	
43	O	Socket, 3-1/8 in.	ANS1907A	5120-00-104-4076	
44	O	Socket, 3-1/4 in.	ANS1909A	5120-01-144-5321	SC 4910-95-A74
45	O	Socket, 3-13/16 in.	ANS1927A		
46	F	Stand, Transport, Engine	8708857	4910-00-338-6673	SC 4910-95-A31
47	O	Tape Measurer	GGG-T-106	5210-00-554-7085	SC 4910-95-72-HR

(1) Index No.	(2) Maintenance Level	(3) Description	(4) Tool Number	(5) National Stock Number	(6) Reference
48	O	Tool Kit, Electric	7550526	5180-00-876-9336	SC 4910-95-A72-HR
49		Tool Kit, General Mechanic's		5180-00-699-5273	SC 5180-90-N05-HR
50	O,F	Tool Kit, General Mechanic's: Automotive		5180-00-177-7033	SC 5180-90-N26
51	O,F	Torch Set, Cutting and Welding	MIL-T-13880	3433-00-294-6743	
52	F	Welding Machine, Arc	MIL-W-52580	3431-00-903-5647	
53	O	Wrench, Combination 1-1/16 in.	GGG-W-636	5120-00-228-9515	SC 4910-95-A74
54	O	Wrench, Combination 1-1/8 in.	GGG-W-636	5120-00-228-9516	SC 4910-95-A74
55	O	Wrench, Combination 1-1/4 in.	GGG-W-636	5120-00-228-9517	SC 4910-95-A74
56	F	Wrench, Combination 1-13/16 in.	GGG-W-636	5120-00-081-9099	SC 4910-95-A74
57	F	Wrench, Combination 1-1/2 in.	A-A-1358	5120-00-277-8834	SC 4190-95-A74
58	O	Wrench, Crowfoot 1/2 in., 3/8 Drive	FRH-160-S	5120-01-114-4933	SC 4910-95-A74
59	F	Wrench, Impact Electric	34U	5130-00-889-9020	
60	O	Wrench, Torque (0 to 60 N·m)	A-A-2411	5120-01-112-9531	SC 4910-95-A72-HR
61	O	Wrench, Torque (0 to 175 lb-ft)	A-A-2411	5120-00-640-6364	SC 4910-95-A74
62	O	Wrench, Torque (0 to 600 lb-ft)	A-A-2411	5120-00-221-7983	SC 4910-95-A31



DRAWBAR EXTENSION LIGHTBAR HARNESS (IF EQUIPPED)

Figure FO-1. Electrical System Schematic

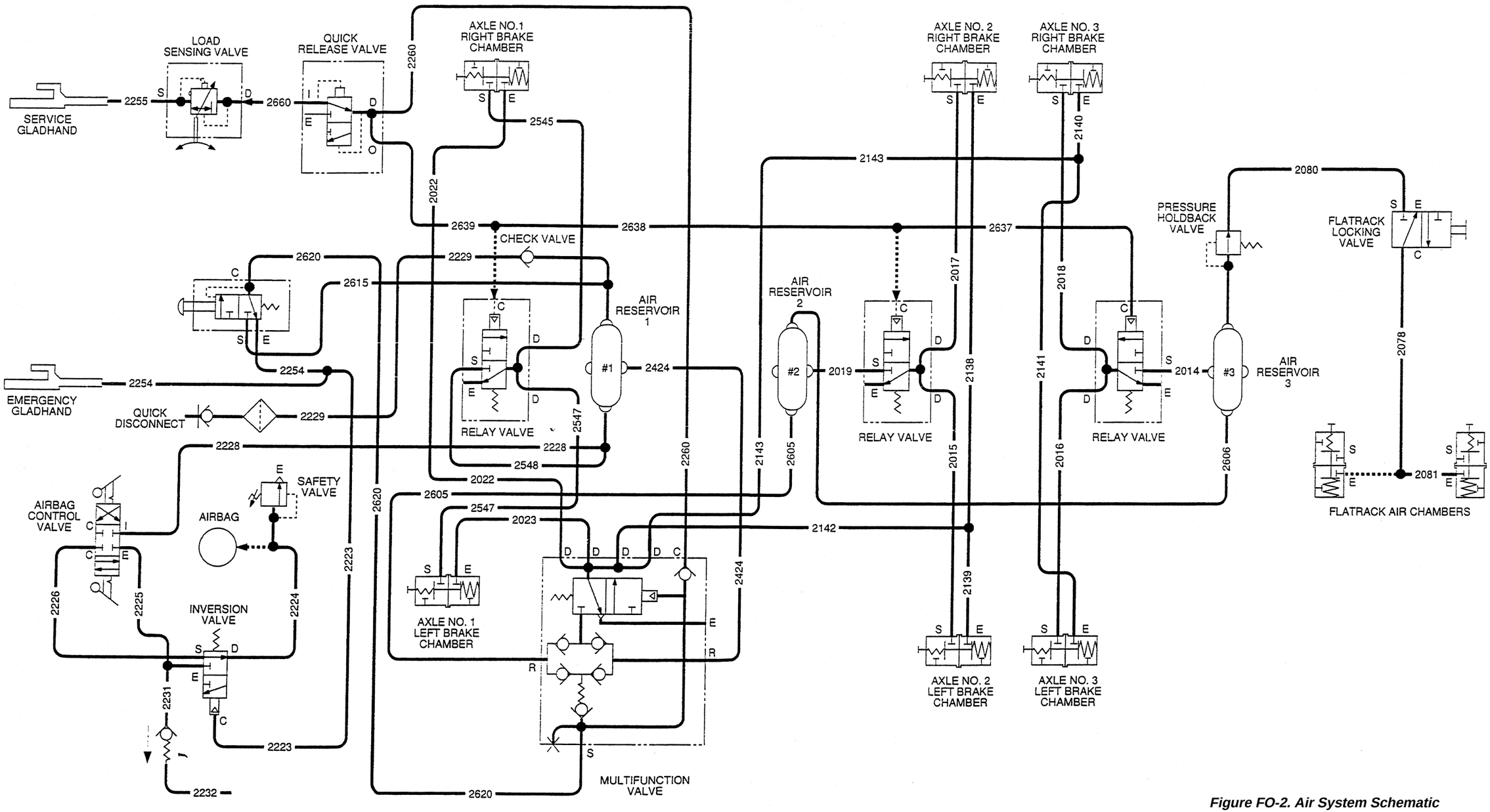


Figure FO-2. Air System Schematic

ALPHABETICAL INDEX

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Enter your mailing address

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Date you filled out this form

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-2330-385-14	Date of TM	Title of TM

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO.	TABLE NO
3		2	
109		51	

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Item 10. Change illustration. Reason: Tube end shown assembled on wrong side of lever cam.

Item 3. The NSN and P/N are not listed on the AMDF nor the MCRL. Request correct NSN and P/N be furnished.

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
Your title and telephone number

SIGN HERE:
Your signature

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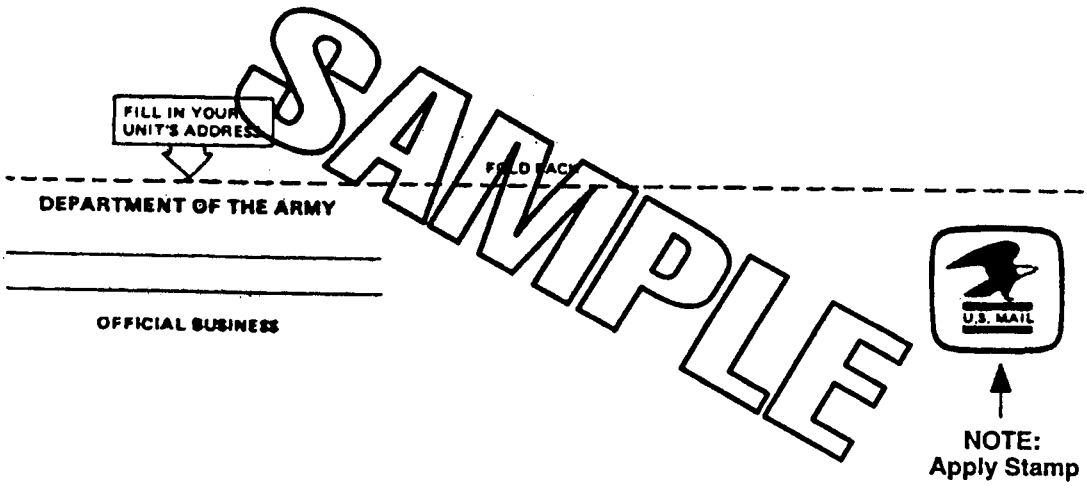

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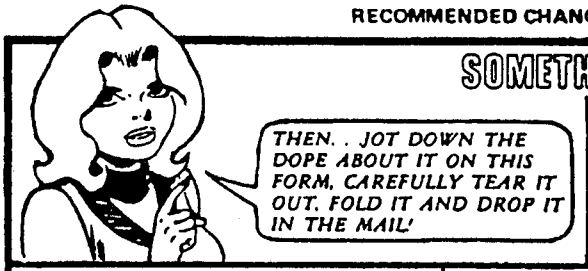

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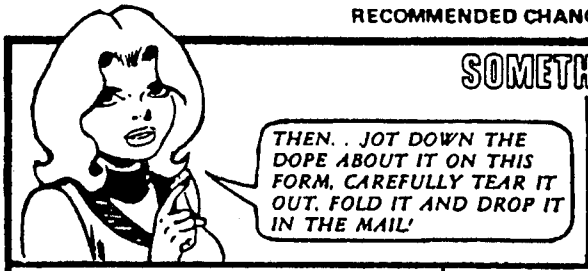

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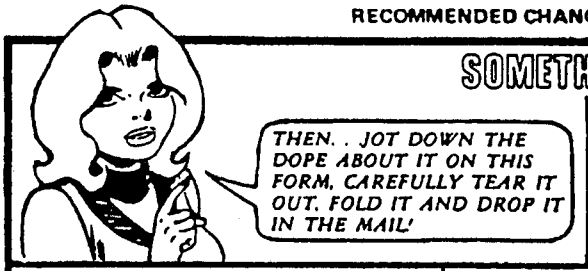

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SCHEMATICS

The following section contains the schematics for TM 9-2330-385-14.

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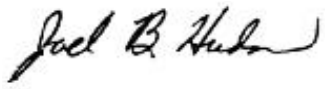
Official: 

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
9911817

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★U.S. GOVERNMENT PRINTING OFFICE: 1997 545–010/60527

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE
1 Centimeter=10 Millimeters=0.01 Meters=0.3937 Inches
1 Meter=100 Centimeters=1000 Millimeters=39.37 Inches
1 Kilometer=1000 Meters=0.621 Miles

WEIGHTS
1 Gram=0.001 Kilograms=1000 Milligrams=0.035 Ounces
1 Kilogram=1000 Grams=2.2 Lb
1 Metric Ton=1000 Kilograms=1 Megagram=1.1 Short Tons

LIQUID MEASURE
1 Milliliter=0.001 Liters=0.0338 Fluid Ounces
1 Liter=1000 Milliliters=33.82 Fluid Ounces

SQUARE MEASURE
1 Sq Centimeter=100 Sq Millimeters=0.155 Sq Inches
1 Sq Meter=10,000 Sq Centimeters=10.76 Sq Feet
1 Sq Kilometer=1,000,000 Sq Meters=0.386 Sq Miles

CUBIC MEASURE
1 Cu Centimeter=1000 Cu Millimeters=0.06 Cu Inches
1 Cu Meter=1,000,000 Cu Centimeters=35.31 Cu Feet

TEMPERATURE
5/9 (°F − 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° + 32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds/Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Km per Liter	Miles per Gallon	2.354
Km per Hour	Miles per Hour	0.621