

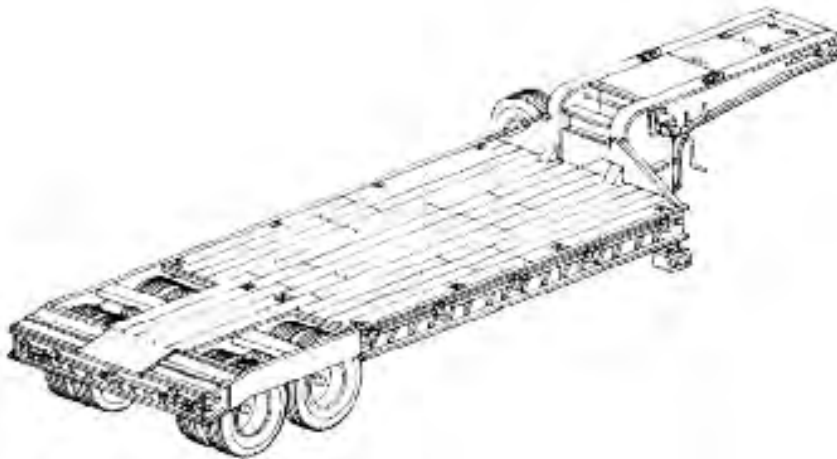
# TM 9-2330-211-14&P

## TECHNICAL MANUAL

**OPERATOR'S, UNIT, DIRECT SUPPORT, AND  
GENERAL SUPPORT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)**

**FOR**

**SEMITRAILER, LOWBED: 25 TON,  
4 WHEEL, M172A1 (NSN 2330-00-317-644B)**



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This manual supersedes TM 9-2330-211-14&P dated 5 September 1984, and all changes.

Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1991

CHANGE  
No. 2

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington D.C., 17 June 1999

**TECHNICAL MANUAL**  
**OPERATOR'S, UNIT, DIRECT SUPPORT, AND**  
**GENERAL SUPPORT MAINTENANCE MANUAL**  
**(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)**  
**FOR**  
**SEMITRAILER, LOWBED: 25 TON,**  
**4 WHEEL, M172A1 (NSN 2330-00-317-6448)**

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| C-1 through C-4 (Blank)       | C-1 through C-4 (Blank)   |
| Appendix F:                   | Appendix F:               |
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Official:



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Secretary of the Army*  
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DENNIS J. REIMER  
*General, United States Army  
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DEPARTMENT OF THE ARMY  
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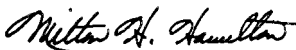
18-1 and Figure 19  
I-3 and I-4  
I-9 and I-10  
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GORDON R. SULLIVAN  
General, United States Army  
*Chief of Staff*

Official:

  
MILTON H. HAMILTON  
*Administrative Assistant to the  
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DISTRIBUTION:

To be distributed IAW DA FORM 12-39-E (Block 0712) Operator, Unit, Direct Support and General Support maintenance requirements for TM 9-2330-211-14&P.

**FOR FIRST AID INFORMATION, REFER TO FM 21-11.**

**WARNING**

**ASBESTOS HAZARD**

DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

**WARNING**

**COMPRESSED AIR**

Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.

**WARNING**

**COUPLING AND UNCOUPLING OPERATIONS**

All persons not involved in coupling and uncoupling operations must stand clear of tractor and semitrailer to prevent possible injury.

**WARNING**

**DRY CLEANING SOLVENT**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38 °C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

**WARNING**

**HIGH PRESSURE AIR**

- Wear safety goggles when opening air reservoir draincock to protect eyes from high pressure air.
- Always release air from system before working on airbrake system. Failure to do so could result in personal injury.

**WARNING**

**NONOPERATIONAL LIGHTS**

Do not operate semitrailer with burned out or missing running, stop, or turn lights. Not being seen could result in damage to equipment and injury to personnel.

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FOR

**SEMITRAILER, LOWBED: 25 TON,  
4 WHEEL, M172A1 (NSN 2330-00-317-6448)**

Current as of 27 February 1991

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (*Recommended Changes to Publications and Blank Forms*), or DA Form 2028-2, located in 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. A reply will be furnished to you.

You may also provide DA Form 2028-2 information to TACOM via datafax or e-mail:

- TACOM's fax number is DSN 793-0726 or (309) 782-0726
- TACOM's e-mail address is amsta-ac-nml@ria-emh2.army.mil

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\* This manual supersedes TM 9-2330-211-14&P, dated 5 September 1984, and all changes.

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**CHAPTER 1**  
**INTRODUCTION**

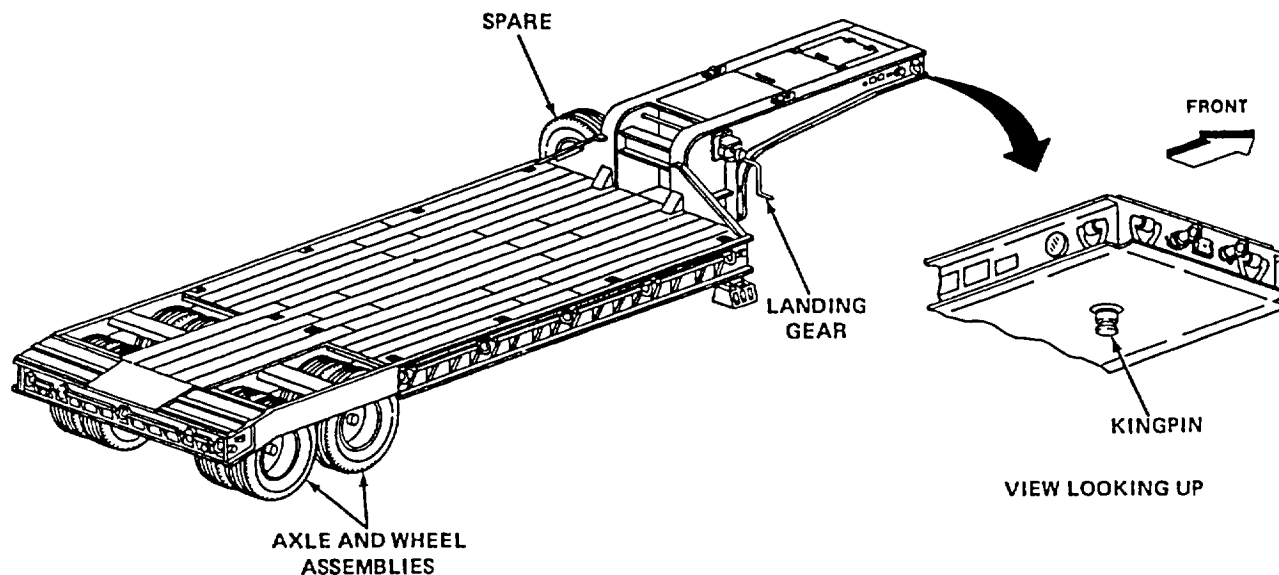
**1-1. OVERVIEW**

The purpose of this chapter is to acquaint you with the M172A1 semitrailer equipment, size, shape, and operation.

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**1-2. SCOPE**

*Type of Manual.* Operator's, Unit, Direct Support, and General Support Maintenance (Including Repair Parts and Special Tools Lists).

*Model Number and Equipment Name.* M172A1, 25 Ton Lowbed Semitrailer.

*Purpose of Equipment.* Carries equipment on highways and/or off-road.

TA506781

**1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS**

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)*.

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

Refer to TM 750-244-6, *Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use*.

**1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)**

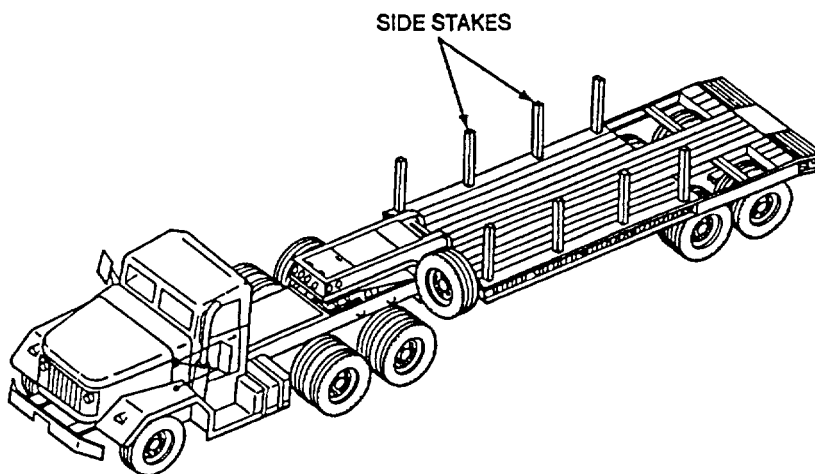
If your semitrailer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know what you don't like about the design or performance. Put it on an SF Form 368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-IM-OPIL, Warren, MI 48397-5000. We will send you a reply.

**Section II. EQUIPMENT DESCRIPTION AND DATA**

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**1-6. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES**

The M172A1 Lowbed Semitrailer is designed to be pulled by a tractor equipped with a fifth wheel. Side stakes can be added to configure for various types of cargo.



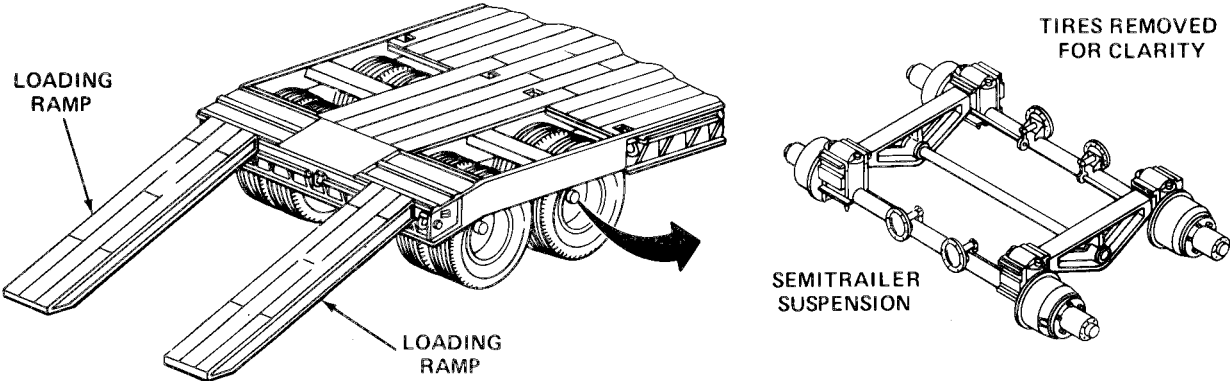
**1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**

The semitrailer suspension has two rear-mounted axles that are attached to a walking beam assembly. The walking beam assembly is attached to the frame of the semitrailer.

Two loading ramps are furnished with the semitrailer. The ramps are used to load and unload the semitrailer.

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1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Con't)



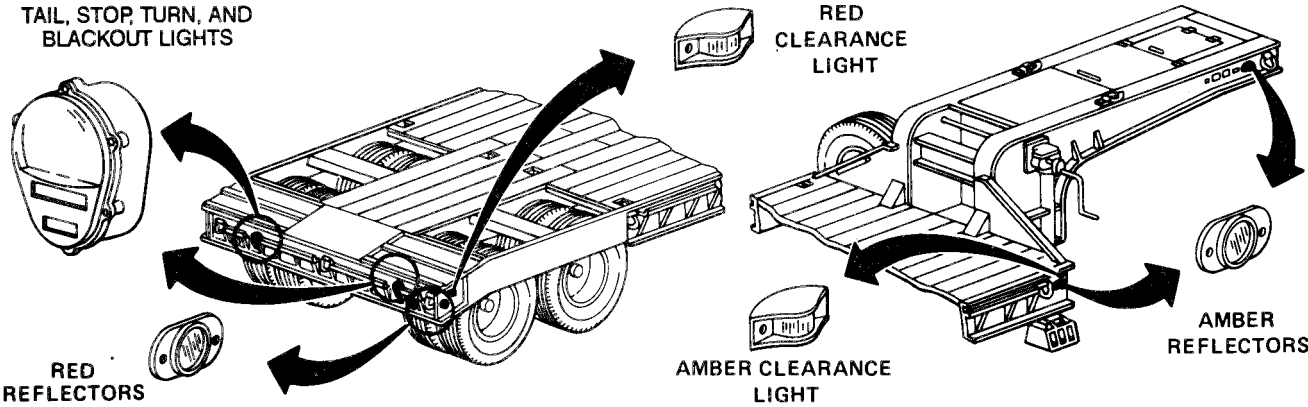
A composite service tail, stop, turn signal, and blackout light is mounted at both left and right rear of semitrailer.

A red clearance light is mounted on both left and right sides, at rear of semitrailer.

An amber clearance light is mounted on both left and right sides, near the front of the semitrailer.

There are two red reflectors at each rear corner of the semitrailer.

There are two amber reflectors at each front corner of the semitrailer, and one on the left and right side of the gooseneck.

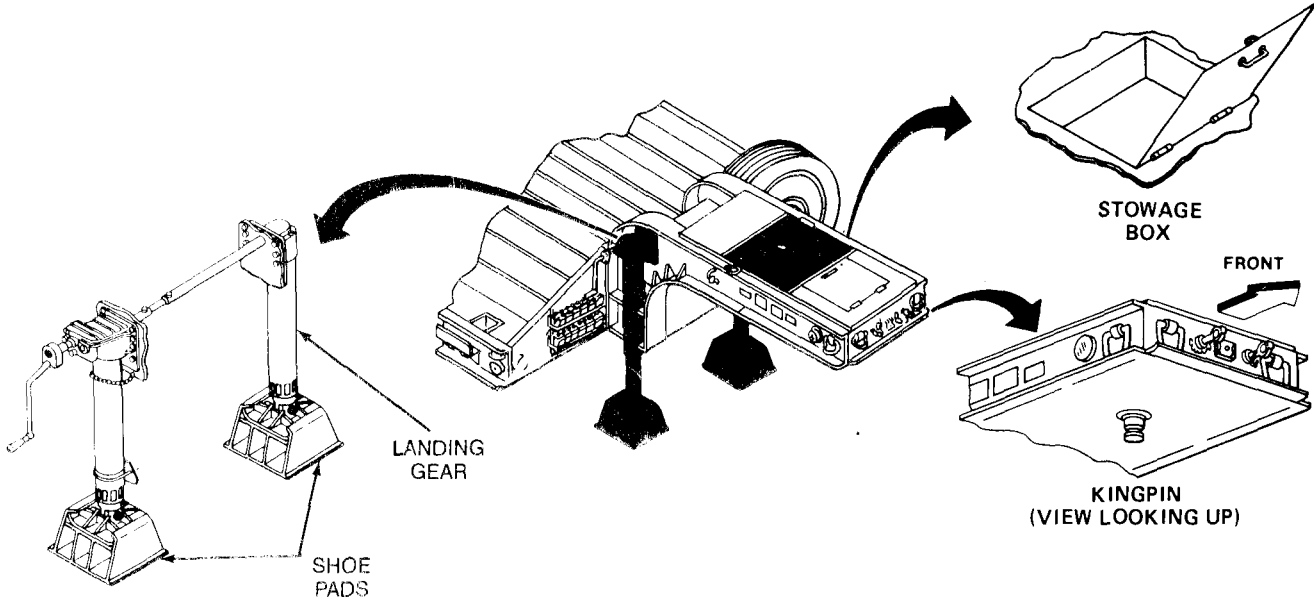


**1-7. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Con't)**

A stowage box that is opened with a pull handle is located on the top forward portion of the gooseneck.

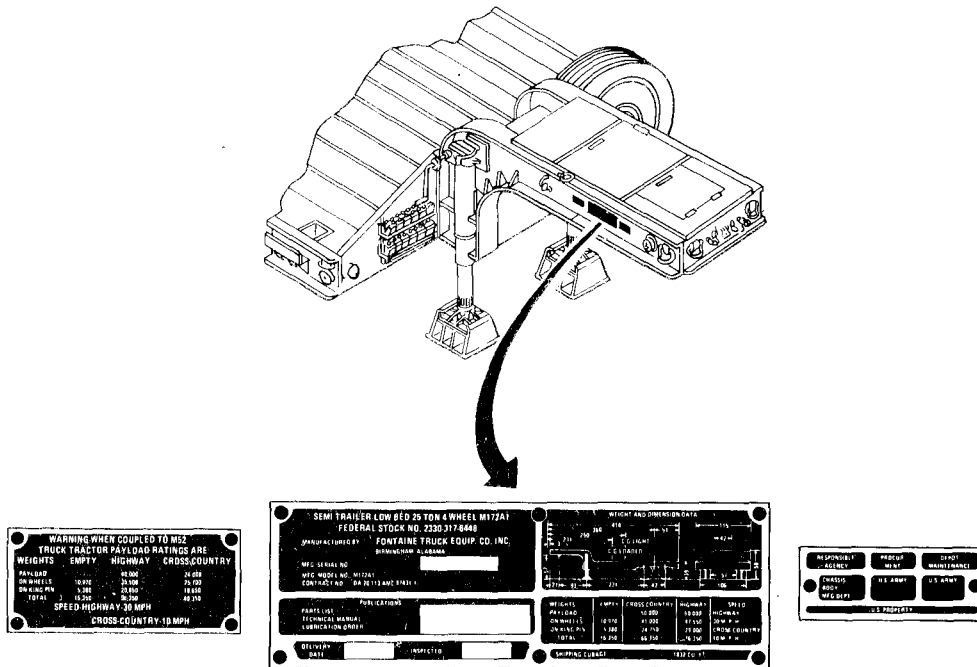
A kingpin extends below a fifth wheel upper plate and fits into the tractor fifth wheel when semitrailer is coupled.

A manually operated two speed landing gear supports the front of the semitrailer when not coupled. Shoe pads keep the landing gear legs from sinking into the ground.



**1-8. LOCATION AND DESCRIPTION OF DATA PLATES**

Data, payload, and service plates are located at the right side of the frame on the gooseneck.



**1-9. EQUIPMENT DATA**

Equipment and performance data for the M172A1 semitrailer and major components are listed here. All weights and dimensions are approximate.

|                                   |  |
|-----------------------------------|--|
| <b>Dimensions-Overall:</b>        |  |
| Length.....                       | 414 in. (10.52 m)                                  |
| Width.....                        | 115 in. (2.92 m)                                   |
| Height.....                       | 68 in. (1.72 m)                                    |
| <b>Dimensions-Deck:</b>           |  |
| Length.....                       | 192 in. (4.88 m)                                   |
| Width.....                        | 115 in. (2.92 m)                                   |
| Height, Normal.....               | 39 3/8 in. (100 cm)                                |
| <b>Weights:</b>                   |  |
| Curb Weight (Complete)            |  |
| Vehicle Less Cargo.....           | 16,500 lb (7,491 kg)                               |
| Maximum Cargo Weight.....         | 50,000 lb (22,700 kg)                              |
| Gross Weight Including Cargo..... | 66,500 lb (30,191 kg)                              |
| <b>Axles:</b>                     |  |
| Quantity.....                     | 2, Tubular   |
| Wheel Bearing Manufacturer.....   | Timken, Detroit Axle Co.                           |
| Type.....                         | Taper  |
| Suspension.....                   | Tandem with Walking Beam                           |
| Hub Manufacturer.....             | Timken, Detroit Axle Co.                           |
| Hub Quantity.....                 | 2 with Left Studs<br>2 with Right Studs            |
| <b>Wheels:</b>                    |  |
| Type.....                         | Desi   |
| Manufacturer.....                 | Budd Wheel   |
| Rim Size.....                     | 15 x 7.50  |
| Rim Type.....                     | Advance Military                                   |
| <b>Tires:</b>                     |  |
| Quantity (Including Spare).....   | 9  |
| Size.....                         | 10.00R15   |
| Ply.....                          | Radial   |
| Type.....                         | Military Light Truck Rib                           |
| Tread Design.....                 | Highway  |
| Recommended Air Pressure:         |  |
| Highway.....                      | 80 psi (552 kPa)                                   |
| Secondary.....                    | 80 psi (552 kPa)                                   |
| Off Road.....                     | Not Available                                      |
| <b>Service Brakes:</b>            |  |
| Manufacturer.....                 | Standard Forge and Axle Co.                        |
| Type.....                         | S-cam, Two-shoe, Double Anchor, Internal Expanding |
| Actuation.....                    | Air  |
| Airbrake System Manufacturer..... | Midland  |
| Type.....                         | Airbrake Chamber Activated                         |

1-9. EQUIPMENT DATA (Con't)

|                                |                             |
|--------------------------------|-----------------------------|
| <b>Landing Gear:</b>           |                             |
| Type .....                     | Vertical Screw              |
| Manufacturer .....             | Austin                      |
| Model .....                    | J3202                       |
| <b>Electrical System</b> ..... | 24 Volts, 12 Pin Receptacle |

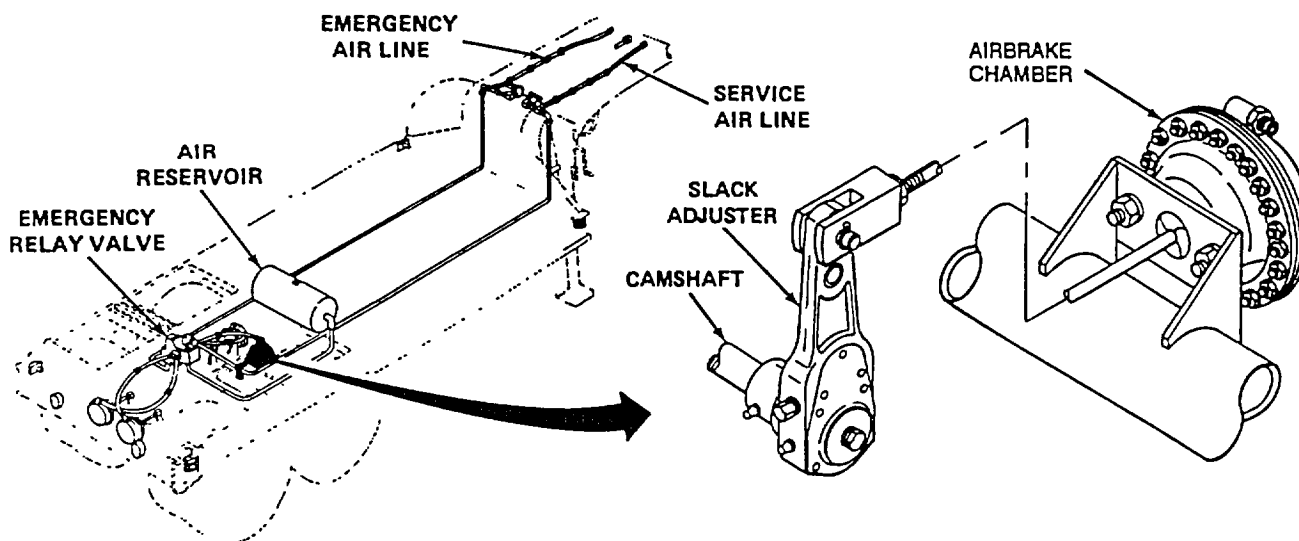
Section III. PRINCIPLES OF OPERATION

|                       | <i>Page</i> |                       | <i>Page</i> |
|-----------------------|-------------|-----------------------|-------------|
| Airbrake System ..... | 1-6         | Lighting System ..... | 1-7         |

1-10. AIRBRAKE SYSTEM

Tractor air supply pressure should not be less than 50 psi (345 kPa) for proper brake application. When the brake air hose is connected between the tractor and the semitrailer, air flows through the emergency air line and emergency relay valve. Air pressure is built up to equal the pressure in the system of the tractor.

When pressure is applied to the brake pedal of the tractor, air pressure is directed through the service air line to the emergency relay valve. This valve releases reservoir air to the airbrake chambers. Air pressure behind the airbrake chamber diaphragms moves the slack adjusters. The slack adjusters operate the camshafts, which forces the brakeshoes against the drum. Brakeshoe and drum friction slows, stops, and/or holds the semitrailer until the brake pedal/lever is released, allowing applied air to vent.



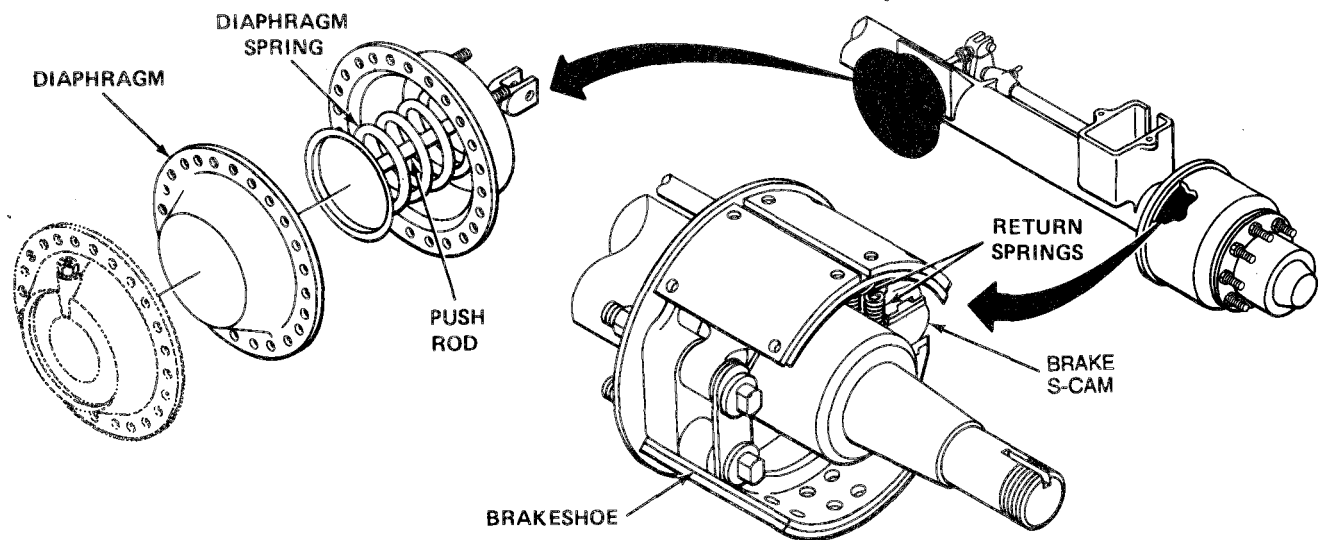
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## 1-10. AIRBRAKE SYSTEM (Con't)

**Emergency Relay Valve.** The emergency relay valve is located above and between the front and rear axles. It speeds up the brake application by releasing reservoir air to airbrake chambers for service brakes. It also automatically applies emergency braking if the semitrailer breaks away from the tractor. Available connections are to the emergency air line, service air line, air reservoir tanks, airbrake chambers, and to an exhaust port that vents the used compressed air.

**Airbrake Chamber Assembly.** There are four airbrake chambers, two on each axle. The airbrake chamber converts the energy of compressed air into the mechanical force and motion necessary to operate the brake. As air pressure enters the airbrake chamber behind the diaphragm of the chamber, the diaphragm pushes the push rod outward. The outward motion of the push rod rotates the slack adjuster.

**Brakeshoe Assembly.** There are two brakeshoes on each wheel and tire assembly. The rotating slack adjuster turns the camshaft and the brake S-cam. The brake S-cam pushes the brakeshoes outward to contact the inside of the drum. This action applies the brakes. When all air pressure is released from the airbrake chamber, the brakeshoe return spring and airbrake chamber spring return the brakeshoes to a released position.



## 1-11. LIGHTING SYSTEM

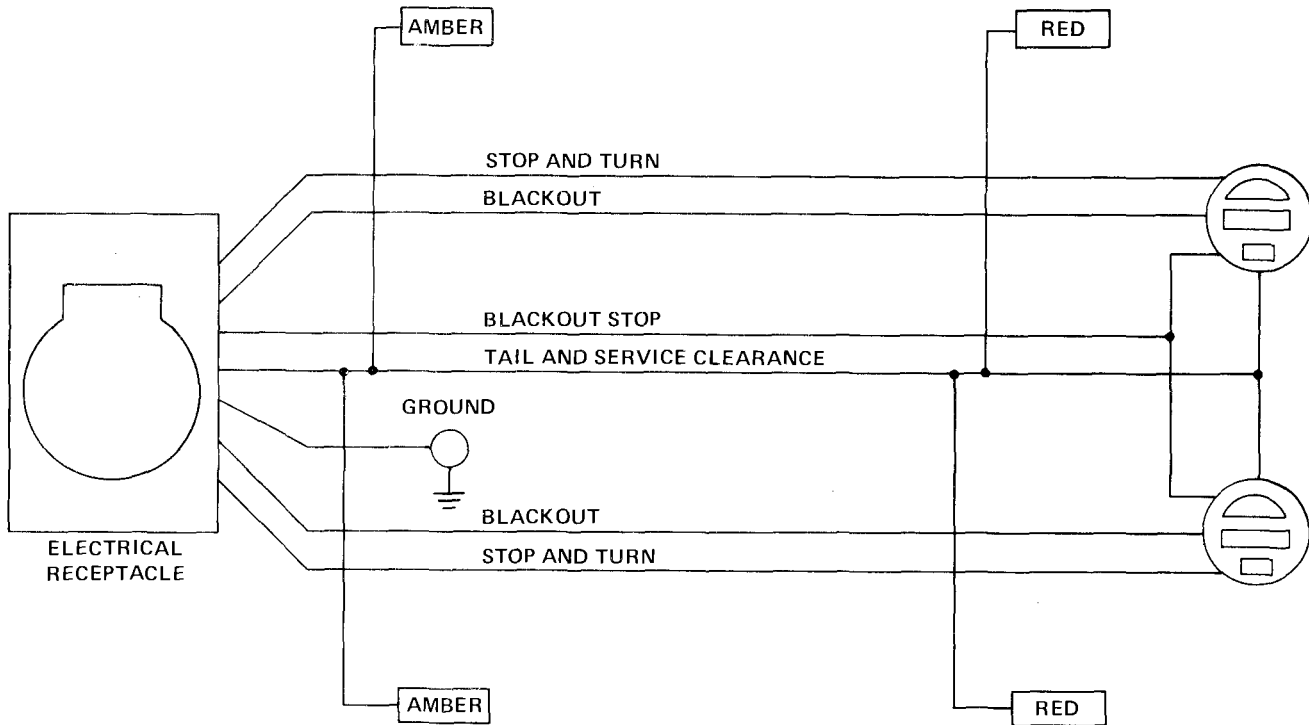
The intervehicular receptacle on the front of the semitrailer gooseneck receives lighting power from the tractor. The power is sent through a single wiring harness to the clearance lights and composite lights.

**Composite Tail, Turn, Stop, and Blackout Lights.** The composite tail, turn, stop, and blackout lights, located on left and right rear of semitrailer, have four bulbs each. One bulb functions as a taillight when the service lights are turned to ON, and one bulb functions as both turn and stoplight. The third and fourth bulbs function as blackout light and blackout stoplight when the blackout light switch is turned to ON. The blackout lights automatically turn off the tail, stop, turn, and clearance lights if both switches are on at the same time.



1-11. LIGHTING SYSTEM (Con't)

*Clearance Service Lights.* The clearance service lights are located at front and rear of both sides. They go on when either the tractor clearance lights or the service lights are turned to ON. They go off automatically when the blackout lights are turned to ON.



## CHAPTER 2 OPERATING INSTRUCTIONS

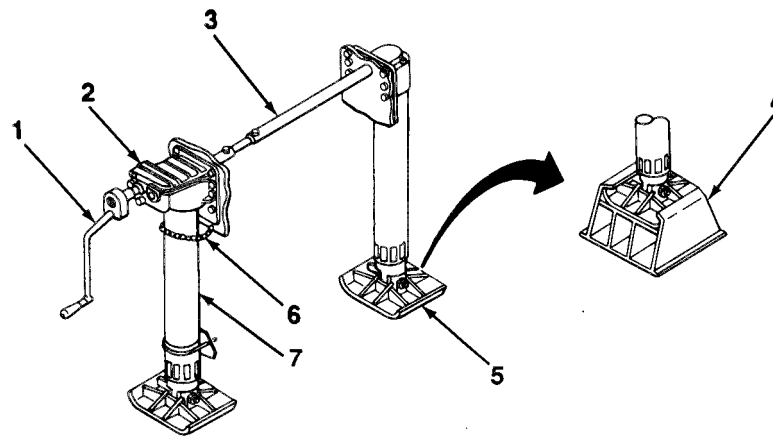
### 2-1. OVERVIEW

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

|             |   | Page |
|-------------|---|------|
| Section I   | Description and Use of Operator's Controls and Indicators. . . . .        | 2-1  |
| Section II  | Operator/Crew Preventive Maintenance Checks and Services (PMCS) . . . . . | 2-6  |
| Section III | Operation Under Usual Conditions . . . . .                                | 2-11 |
| Section IV  | Operation Under Unusual Conditions . . . . .                              | 2-21 |

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

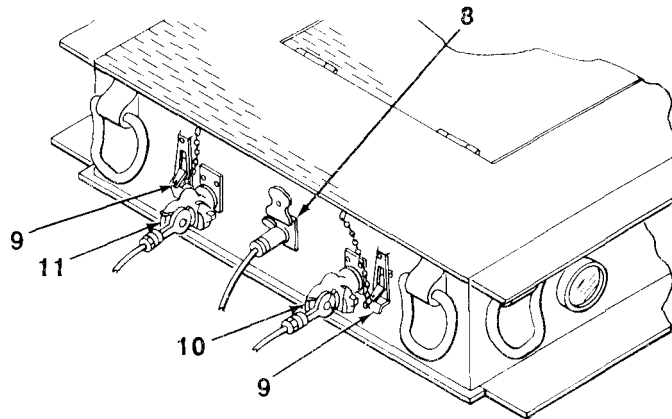
#### 2-2. CONTROLS AND INDICATORS



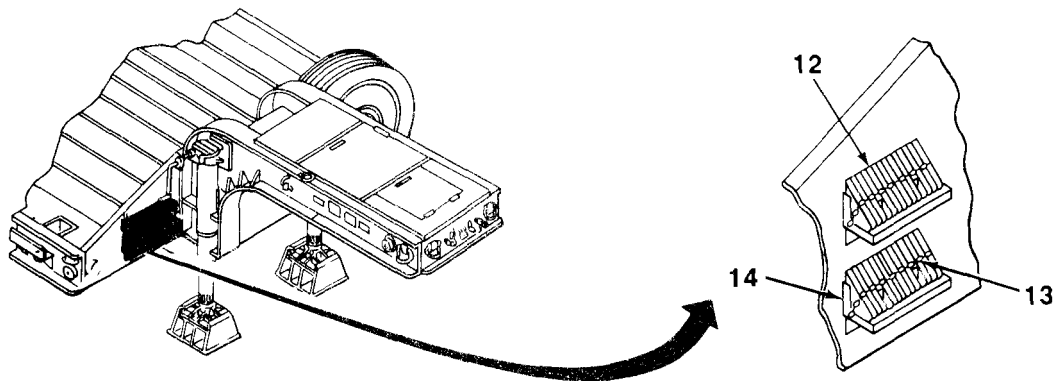
| KEY | CONTROL OR INDICATOR | FUNCTION  |
|-----|----------------------|---|
| 1   | Handcrank            | Operates landing gear. Turning handcrank clockwise lowers landing gear; counterclockwise raises landing gear. Pull out handcrank for high speed, and push in for low speed operation. |
| 2   | Gearbox              | Operated by handcrank. Moves legs up or down.   |
| 3   | Shaft                | When turned by gearbox, moves left leg.   |
| 4   | Shoe Pad             | Used to extend the length of landing gear legs.   |
| 5   | Landing Gear Shoe    | Keeps leg from sinking into the ground.   |
| 6   | Handcrank Stow Chain | Stows handcrank when handcrank is not in use.   |
| 7   | Leg                  | Two legs support weight of semitrailer.   |

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**2-2. CONTROLS AND INDICATORS (Con't)**



| KEY | CONTROL OR INDICATOR            | FUNCTION   |
|-----|---------------------------------|--|
| 8   | Electrical Receptacle Connector | Provides connection between tractor electrical system and semitrailer 24 volt lights. A cover keeps foreign matter out when cable is disconnected. |
| 9   | Dummy Couplings                 | Cover emergency and service air couplings when not coupled to tractor. Keep foreign matter out of semitrailer air lines.                           |
| 10  | Emergency Air Coupling          | Provides connection between semitrailer emergency brake system and tractor air supply system.  |
| 11  | Service Air Coupling            | Provides connection between semitrailer service brake system and tractor air supply system.  |

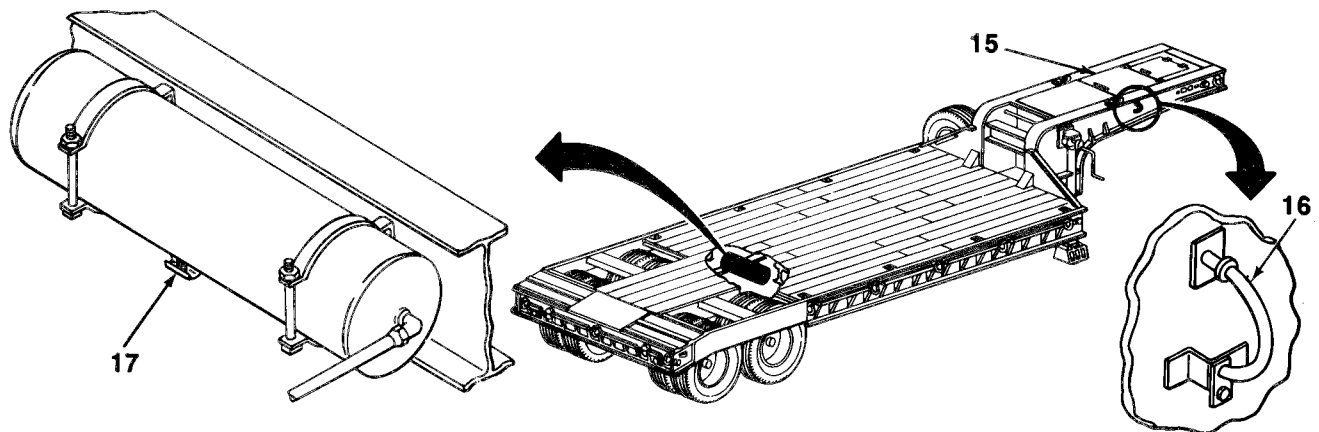


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2-2. CONTROLS AND INDICATORS (Con't)

| KEY | CONTROL OR INDICATOR | FUNCTION   |
|-----|----------------------|--|
| 12  | Chock Blocks         | One placed in front of each outer forward wheel and tire assembly. One placed behind each rear outer wheel and tire assembly to keep it from moving. |
| 13  | Chains               | Fasten chock blocks to semitrailer to keep them from being misplaced.  |
| 14  | Stowage Brackets     | Stow chock blocks when not in use. Located on right front of semi-trailer.   |

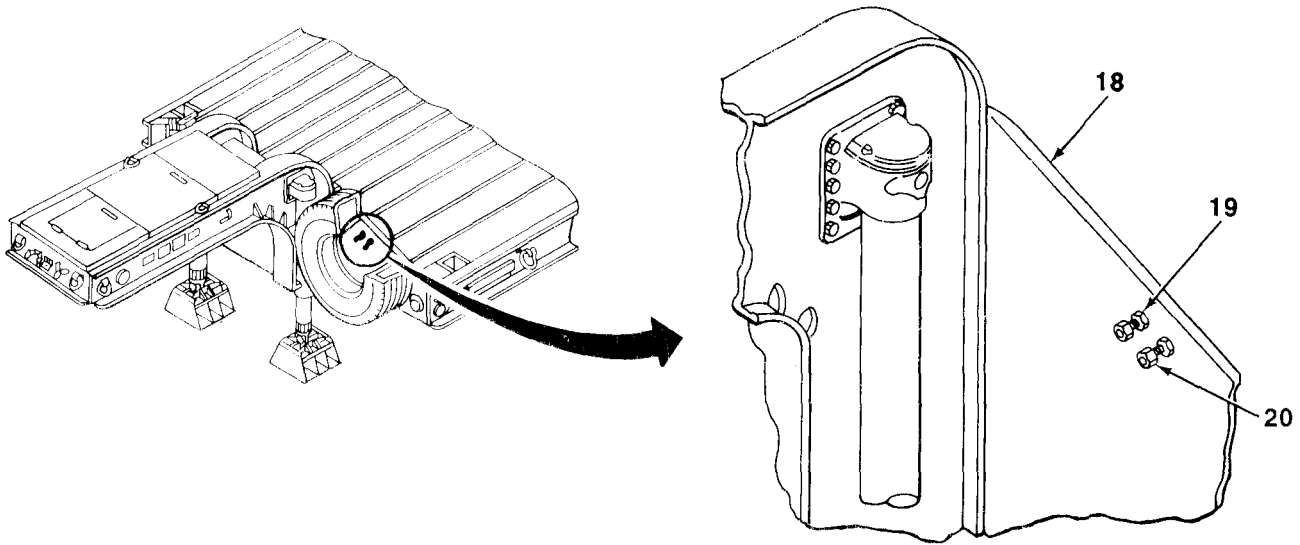
**STOWAGE BOX AND AIR RESERVOIR**



| KEY | CONTROL OR INDICATOR    | FUNCTION  |
|-----|-------------------------|---|
| 15  | Stowage Box Door        | Hinged to fold flush with the floor deck.   |
| 16  | Latches                 | Hold stowage box door closed. Located on right and left sides of the gooseneck.   |
| 17  | Air Reservoir Draincock | Used to drain moisture and/or air from semitrailer brake system. Air reservoir located on frame ahead of forward rear axle. |

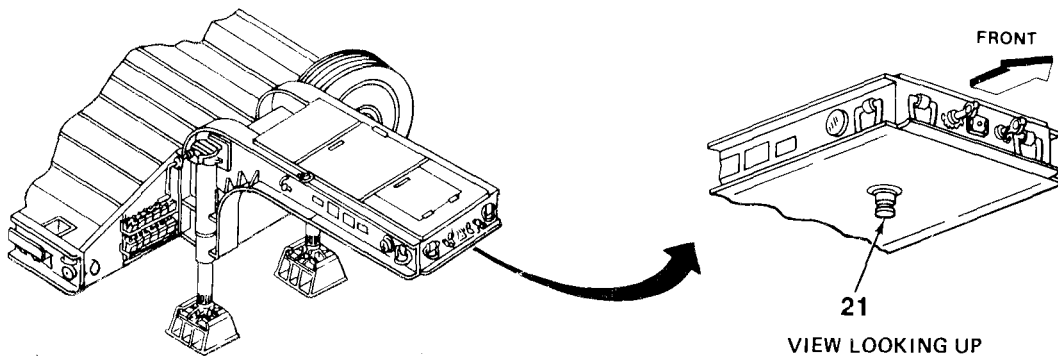
2-2. CONTROLS AND INDICATORS (Con't)

SPARE WHEEL AND TIRE CARRIER



| KEY | CONTROL OR INDICATOR | FUNCTION   |
|-----|----------------------|--|
| 18  | Gooseneck Gusset     | Mounting location for spare wheel and tire assembly. |
| 19  | Studs                | Hold spare wheel and tire assembly in position.      |
| 20  | Nuts                 | Fasten spare wheel and tire assembly to the studs.   |

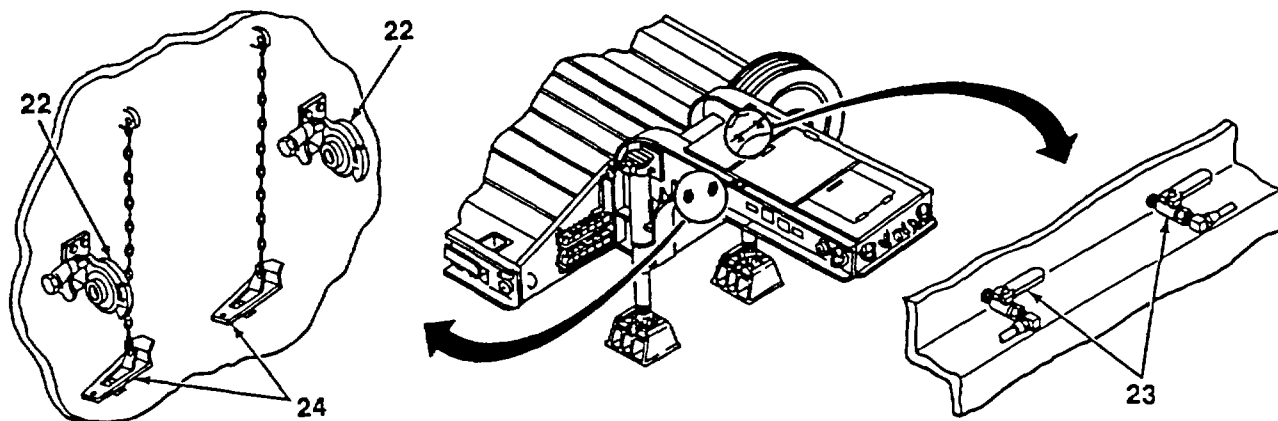
KINGPIN



2-2. CONTROLS AND INDICATORS (Con't)

| KEY | CONTROL OR INDICATOR | FUNCTION   |
|-----|----------------------|--|
| 21  | Kingpin              | Attaches to fifth wheel of tractor. Reversing kingpin provides either a 2 1/2 or 3 1/2 In. (6.4 or 8.9 cm) connection to the fifth wheel of tractor. |

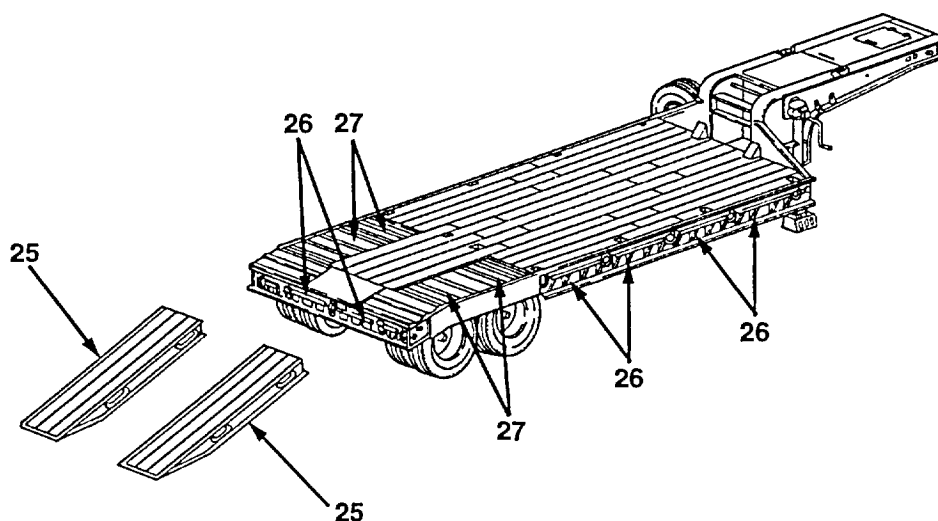
DOLLY AIR COUPLINGS AND BALL VALVES



| KEY | CONTROL OR INDICATOR | FUNCTION   |
|-----|----------------------|--|
| 22  | Dolly Air Couplings  | Located at rear underside of gooseneck. Connect service and emergency air lines from dolly to semitrailer. |
| 23  | Ball Valves          | Located In gooseneck well. Shut off air lines to dolly when hose couplings are disconnected.               |
| 24  | Dummy Couplings      | Cover dolly air couplings when not coupled to dolly. Keep foreign matter out of semitrailer air lines.     |

2-2. CONTROLS AND INDICATORS (Con't)

LOADING RAMP AND WHEEL COVER PLATES



| KEY | CONTROL OR INDICATOR | FUNCTION   |
|-----|----------------------|--|
| 25  | Loading Ramps        | Furnished to load and unload semitrailer.  |
| 26  | Ramp Clips           | Two ramp clips are located on rear beam and four are located on each side member. Loading ramps rest on clips during loading and unloading. Clips are constructed so that when properly positioned, the loading ramp cannot tip. |
| 27  | Wheel Cover Plates   | Depending on mission, wheel cover plates should be placed on load bed to cover wheel openings during loading and unloading operations.   |

Section II. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

|  | <i>Page</i> |                                | <i>Page</i> |
|--|-------------|--------------------------------|-------------|
| General .....  | 2-6         | Specific PMCS Procedures ..... | 2-7         |
| Operator/Crew Preventive Maintenance Checks and Services (PMCS), Table 2-1 ..... | 2-8         |                                |             |

2-3. GENERAL

Every mission begins and ends with paperwork. There isn't much of it, but you have to keep it up. The forms and records you fill out have several uses. They are a permanent record of the services, repairs, and modifications made on your vehicle. They are reports to Unit maintenance and to your commander. They are also a checklist for you when you want to know what is wrong with the vehicle after its last use, and whether those faults have been fixed. For the information you need on forms and records, refer to DA Pam 738-750.

2-6 Change 2

### 2-3. GENERAL (Con't)

Perform your *Before* (B) PMCS just before you operate the vehicle. Pay attention to the CAUTIONs and WARNINGs.

Perform your *During* (D) PMCS while the equipment and/or its component systems are in operation. Pay attention to the CAUTIONs and WARNINGs.

Perform your *After* (A) PMCS right after operating the vehicle. Pay attention to the CAUTIONs and WARNINGs.

Perform your *Weekly* (W) PMCS once each week.

### 2-4. SPECIFIC PMCS PROCEDURES

Always perform your PMCS in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.

When you perform your PMCS, take along a rag or two.

The EQUIPMENT IS NOT READY/AVAILABLE IF column tells you why your equipment cannot be used if the ITEM TO BE INSPECTED does not meet PROCEDURE needs.

While performing PMCS, observe CAUTION and WARNING paragraphs preceding those operations that could endanger your safety or result in damage to the equipment.

If something doesn't work, troubleshoot it with the instructions in this manual or notify your supervisor.

If anything looks wrong and you can't fix it, write it on your DA Form 2404 (*Equipment Inspection and Maintenance Worksheet*). The ITEM NO. column is the source for the numbers used on the TM Item Number column on DA Form 2404. If you find something seriously wrong, report it immediately to unit maintenance.

#### **WARNING**

**Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**

**Keep it Clean.** Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Item 13, Appendix E) to clean metal surfaces. Use soap (Item 4, Appendix E) and water when you clean rubber or plastic material.

**Bolts, Nuts, and Screws.** Check that they are not loose, missing, bent, or broken. You can't try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. Tighten any that you find loose.

**Welds.** Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to unit maintenance.

**Electric Wires and Connectors.** Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connections and ensure that the wires are in good condition.

**Hoses.** Look for wear, damage, and leaks. Ensure that clamps and fittings are tight. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, either correct it or report it to unit maintenance.

**Leakage Definitions.** It is important to know how fluid leakage affects the status of the semitrailer. The following are types/classes of leakage an operator must know to determine whether the semitrailer is mission-capable. Learn these leakage definitions. When in doubt, notify your supervisor.



**2-4. SPECIFIC PMCS PROCEDURES (Con't)**

**Leakage Definitions for Operator/Crew PMCS**

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

**CAUTION**

**When operating with Class I or Class II leaks, continue to check fluid levels in addition to that required in PMCS. Parts without fluid will stop working or may be damaged.**

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

Report Class III leaks IMMEDIATELY to your supervisor.

*Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS).*

| ITEM NO. | INTERVAL |   |   |   | ITEM TO BE INSPECTED PROCEDURE: CHECK FOR AND HAVE REPAIRED, FILLED, OR ADJUSTED AS NEEDED  | EQUIPMENT IS NOT READY/AVAILABLE IF:                 |
|----------|----------|---|---|---|---|--|
|          | B        | D | A | W |   |  |
| 1        | •        | • |   |   | <p style="text-align: center;"><b>NOTE</b></p> <p>Perform (W) as well as (B) PMCS if:</p> <ul style="list-style-type: none"> <li>- You are the assigned operator but have not used semitrailer since the last weekly.</li> <li>- You are using the semitrailer for the first time.</li> </ul> <p>MAKE THE FOLLOWING WALKAROUND CHECKS</p> <p><b>BODY/ACCESSORIES</b></p> <ul style="list-style-type: none"> <li>a. Visually check for loose, missing, or damaged parts.</li> <li>b. Check lights (1) and reflectors (2) for conditions and proper operation.</li> </ul> | <p>Running, stop, or turn lights do not operate.</p> |
|          |          |   |   |   |   |  |

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) (Con't).

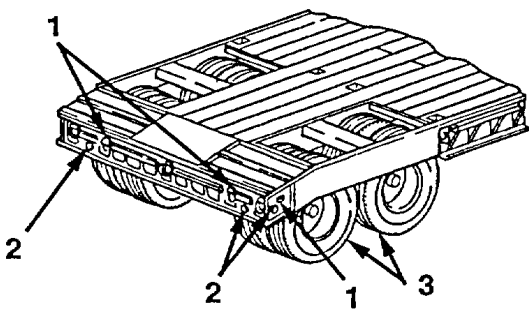
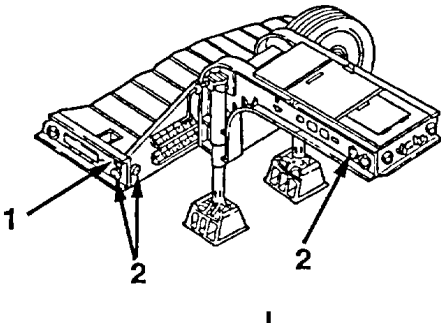
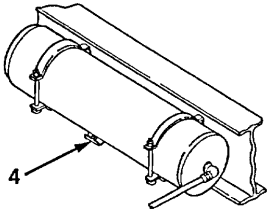
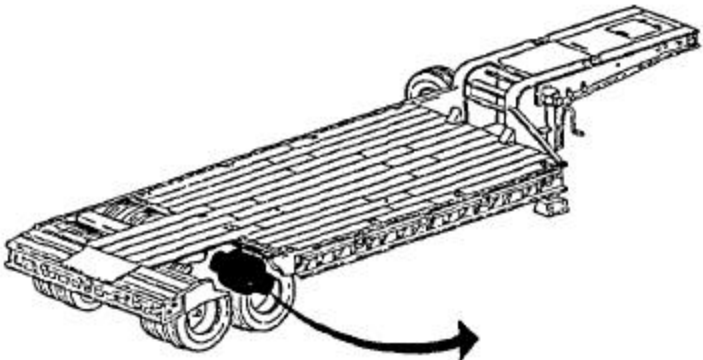
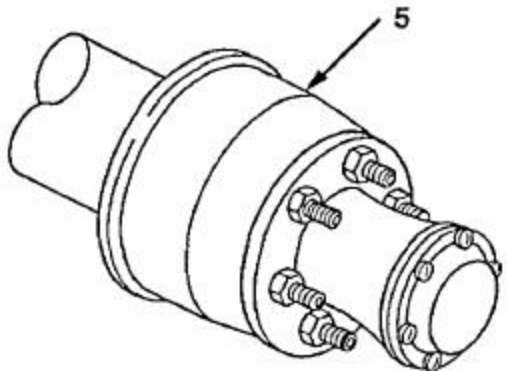
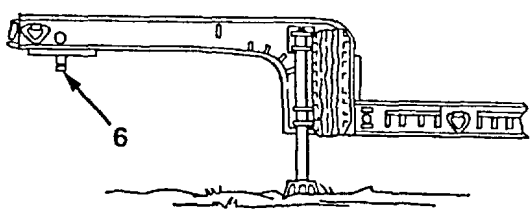
| ITEM NO.             | INTERVAL         |                  |   |  | ITEM TO BE INSPECTED<br>PROCEDURE: CHECK FOR AND HAVE REPAIRED,<br>FILLED, OR ADJUSTED AS NEEDED  | EQUIPMENT IS NOT<br>READY/AVAILABLE IF:                |                  |                      |                  |                     |               |  |
|----------------------|------------------|------------------|---|--|---|--|------------------|----------------------|------------------|---------------------|---------------|--|
|                      | B                | D                | A | W  |   |  |                  |                      |                  |                     |               |  |
| 3                    |                  |                  |   |  | <p align="center"><b>WARNING</b></p> <p align="center">Loading/unloading operations with wheel openings uncovered may cause serious injury or death to the operator.</p> <p><b>TIRES</b></p> <ul style="list-style-type: none"> <li>a. Visually check all tires (3) for gouges, cracks, tread separation, and foreign objects.</li> <li>b. Check tire pressure. Recommended radial-ply tire pressures are:                             <table border="0" style="margin-left: 20px;"> <tr> <td>Highway .....</td> <td>80 psi (552 kPa)</td> </tr> <tr> <td>Secondary Road .....</td> <td>80 psi (552 kPa)</td> </tr> <tr> <td>Cross Country .....</td> <td>Not Available</td> </tr> </table> </li> </ul> | Highway .....  | 80 psi (552 kPa) | Secondary Road ..... | 80 psi (552 kPa) | Cross Country ..... | Not Available | Two tires are flat, missing, or unserviceable. |
|                      | Highway .....    | 80 psi (552 kPa) |   |  |   |  |                  |                      |                  |                     |               |  |
| Secondary Road ..... | 80 psi (552 kPa) |                  |   |  |   |  |                  |                      |                  |                     |               |  |
| Cross Country .....  | Not Available    |                  |   |  |   |  |                  |                      |                  |                     |               |  |
|                      |                  |                  |   |   |   |  |                  |                      |                  |                     |               |  |
| 4                    |                  |                  |   |  | <ul style="list-style-type: none"> <li>c. Inspect wheel nuts for tightness. Tighten if necessary. Have unit maintenance torque inner nuts to 300-350 lb.-ft. (407-475 N*m) and outer nuts to 450-500 lb.-ft. (610-678 N*m).</li> </ul> <p><b>AIR RESERVOIR</b></p> <p align="center"><b>WARNING</b></p> <p align="center">Wear safety goggles when opening air reservoir draincock to protect eyes from high pressure air.</p> <ul style="list-style-type: none"> <li>a. Open draincock (4) and drain all moisture from the air reservoir.</li> <li>b. Close draincock (4).</li> </ul>                              | Two or more wheel nuts are missing from any one wheel. |                  |                      |                  |                     |               |  |

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (PMCS) (Con't).

| ITEM NO.   | B - Before |   |   |   | D - During   | A - After | W - Weekly   |
|--|------------|---|---|---|--|-----------|--|
|  | INTERVAL   |   |   |   | ITEM TO BE INSPECTED<br>PROCEDURE: CHECK FOR AND HAVE REPAIRED,<br>FILLED, OR ADJUSTED AS NEEDED   |           | EQUIPMENT IS NOT<br>READY/AVAILABLE IF:  |
|  | B          | D | A | W |  |           |  |
| 5  |            |   |   |   | <p><b>BRAKES</b></p> <ul style="list-style-type: none"> <li>a. Check for leaks in airbrake system by stopping engine of tractor when air pressure is at maximum. Observe air pressure gage for one minute and note any drop in air pressure reading. Notify Unit maintenance of any leaks found.</li> <li>b. Apply semitrailer brakes and observe if they operate properly.</li> </ul> <p style="text-align: center;"><b>WARNING</b></p> <p style="text-align: center;"><b>Cautionously feel each wheel hub and drum. Wheel hubs and drums maybe hot. Failure to follow this warning may result in burns.</b></p> <ul style="list-style-type: none"> <li>c. Check drums and wheel hubs (5) immediately after operation; check for a drum and wheel hub that is hotter or cooler than the others. An overheated drum and wheel hub indicates an improperly adjusted or defective service brake, or dry wheel bearing. An abnormally cool condition indicates an inoperative brake. Report any abnormal conditions to Unit maintenance.</li> </ul> |           | <p>Any leaks are evident.</p> <p>Semitrailer brakes inoperative.</p>   |
|   |            |   |   |   |  |           |  |
| 6  |            |   |   |   | <p><b>KINGPIN</b></p> <p>Check the kingpin (6) for any cracks and gouges.</p>  |           | <p>A crack of any size is noted anywhere on the kingpin or associated welds.</p> <p>A nick, chip, or gouge deeper than 1/8 in. (3.18 mm) is noted anywhere on the wear surface of the kingpin.</p> |
|    |            |   |   |   |  |           |  |

Section III. OPERATION UNDER USUAL CONDITIONS

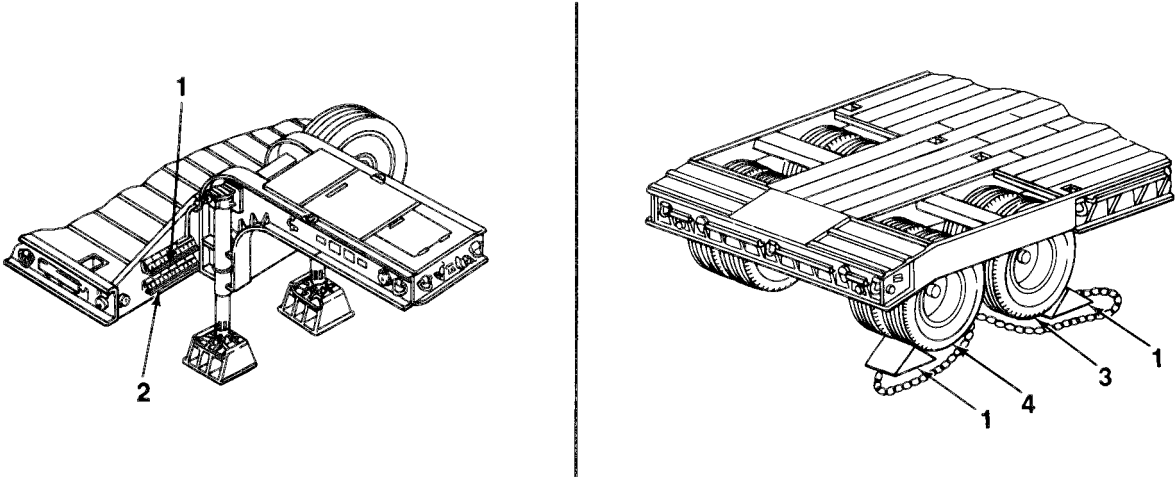
|                 |             |                           |             |
|-----------------|-------------|---------------------------|-------------|
|                 | <i>Page</i> |                           | <i>Page</i> |
| After Use ..... | 2-19        | Preparation for Use ..... | 2-11        |
| Operation ..... | 2-18        |                           |             |

**2-5. PREPARATION FOR USE**

Perform all *Before* (B) Operator/Crew Preventive Maintenance Checks and Services in Table 2-1 before doing the procedures below.

**POSITIONING CHOCK BLOCKS**

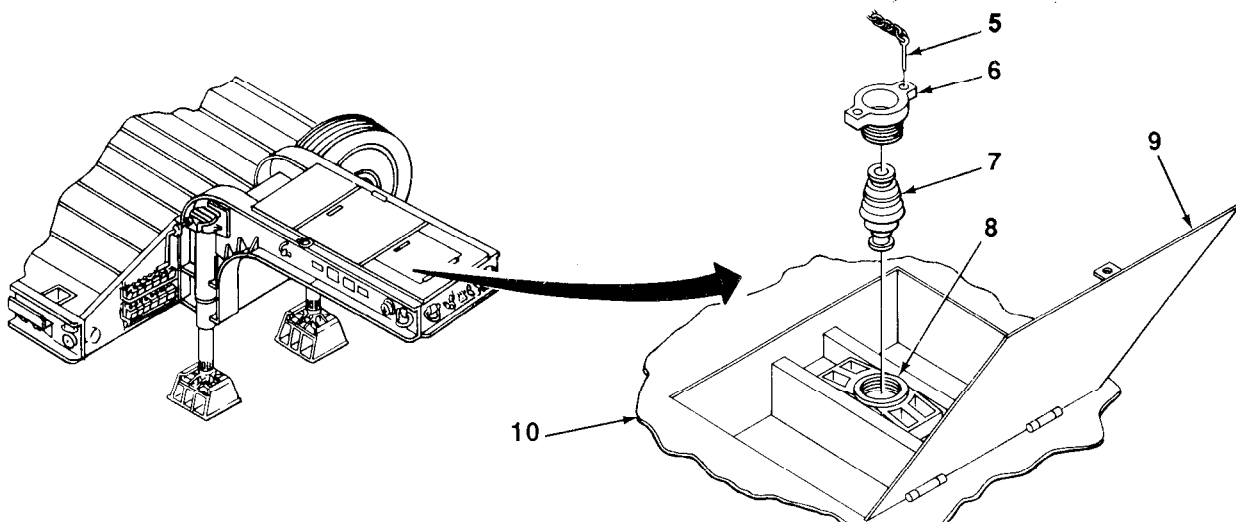
1. Take chock blocks (1) out of stowage brackets (2).
2. Place one chock block (1) in front the outer forward wheel and tire assembly (3) and one behind the outer rear wheel and tire assembly (4).
3. Repeat steps 1 and 2 for other side of semitrailer.



## 2-5. PREPARATION FOR USE (Con't)

### KINGPIN INSTALLATION

1. Ensure that proper size kingpin (7) is installed to match the tractor (para 2-2). Install kingpin for either a 2½ or 3½ in. (6.4 or 8.9 cm) coupling.
2. To change the kingpin (7), open hinged access door (9) on top of the gooseneck. Open access door by unlocking a bolt-type latch located in and operated through the stowage box door (10).
3. Place kingpin (7) into socket (8). Screw on clamp retainer (6) and lock into position with locking pin (5). Insert locking pin through holes in clamp retainer and socket.
4. Close access door (9) and secure latch.



### COUPLING

#### **WARNING**

All persons not involved in coupling operation must stand clear of tractor and semitrailer to prevent possible injury.

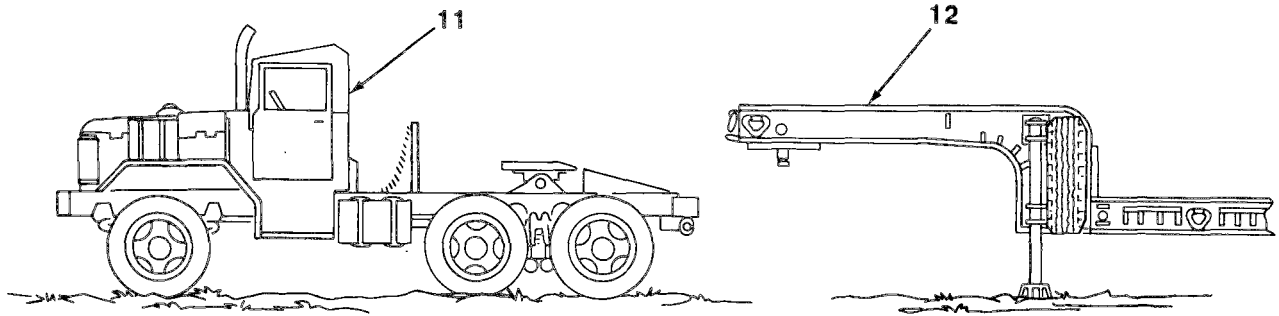
#### **NOTE**

The 5 ton tractor is compatible with the M172A1 and is suitable for towing semitrailers with loads up to 15 tons. It is not suitable for loads exceeding 15 tons due to its limited towing and braking abilities. The 10 ton tractor is also compatible with the M172A1 and is capable of towing this vehicle with loads up to 25 tons.

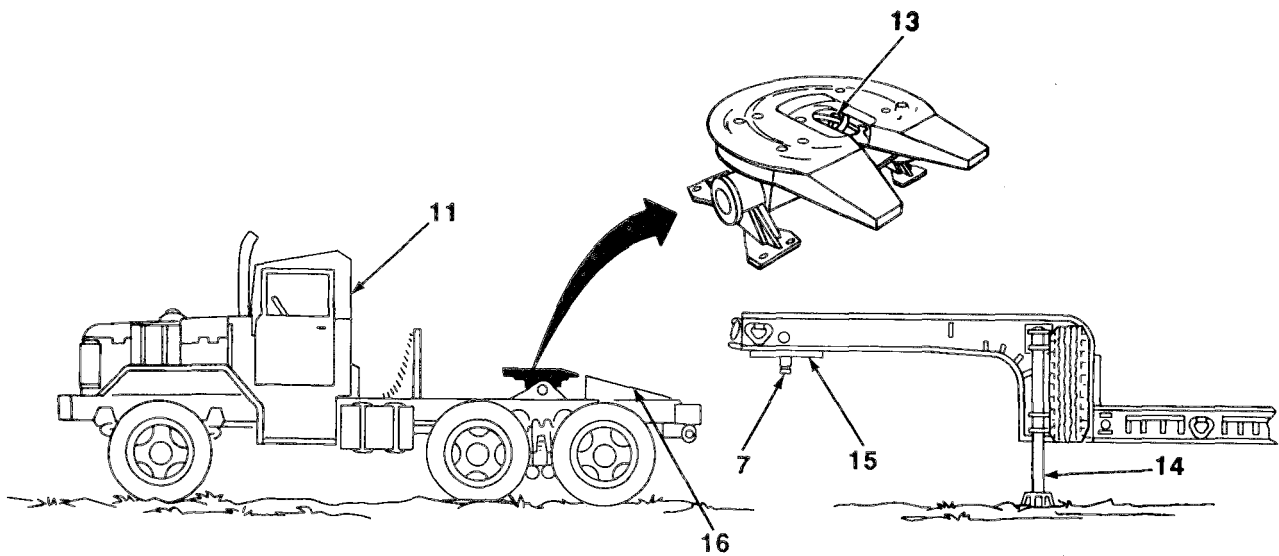
1. Aline tractor (11) with semitrailer (12).
2. Review and perform tractor operating procedures to prepare tractor for coupling. Refer to applicable tractor technical manual.

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2-5. PREPARATION FOR USE (Con't)



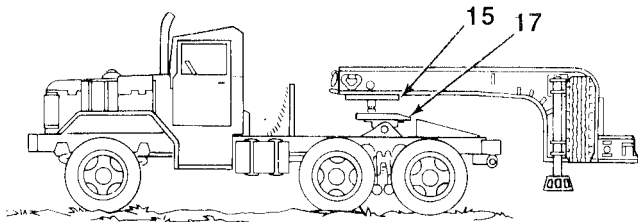
3. Slowly back tractor (11) into position. Ensure that kingpin (7) is alined with fifth wheel jaws (13) and that fifth wheel jaws are open.
4. Before fifth wheel approach ramps (16) make contact with kingpin plate (15), perform the following:
  - a. Check that kingpin plate (15) is above approach ramps (16).
  - b. Adjust kingpin (7) height as needed by raising or lowering landing gear (14). Refer to RAISING LANDING GEAR in this paragraph or to paragraph 2-7.
5. Slowly back tractor (11) until fifth wheel jaws (13) engage kingpin (7).



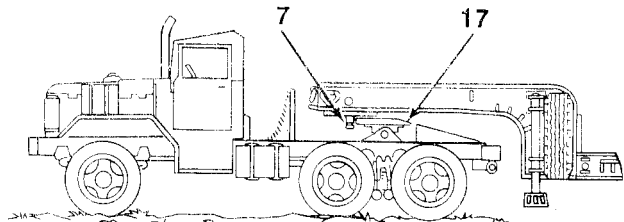
2-5. PREPARATION FOR USE (Con't)

6. Visually check coupling.

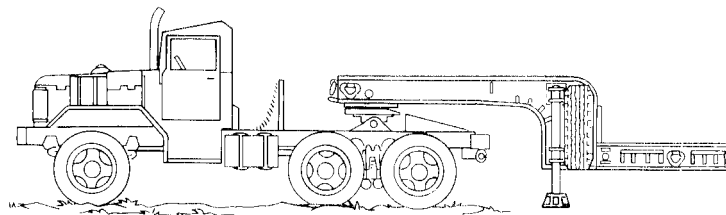
- a. There must be no daylight between kingpin plate (15) and fifth wheel (17).
- b. Kingpin (7) must not be hooked over front of fifth wheel (17).



INCORRECT

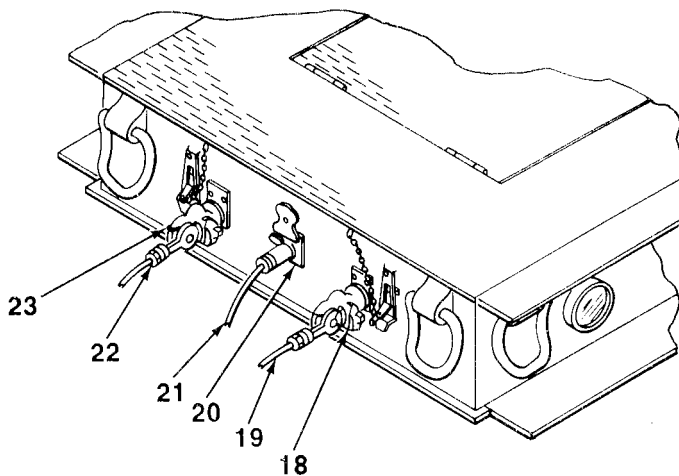


INCORRECT



CORRECT

- 7. Ease tractor forward to check coupling. If coupling is not locked, rock tractor back and forth slowly until kingpin is locked.
- 8. If coupling failed, repeat steps 1 through 7.
- 9. Raise cover on semitrailer electrical receptacle connector (20) and push electrical cable (21) straight in.
- 10. Connect service air line (22) to right semitrailer service air coupling (23).
- 11. Connect emergency air line (19) to left semitrailer emergency air coupling (18).
- 12. Check air lines (19 and 22) and electrical cable (21) to ensure that they are supported, and will not catch or chafe.
- 13. Turn on tractor air supply, and apply tractor brakes to pressurize semitrailer airbrake system.

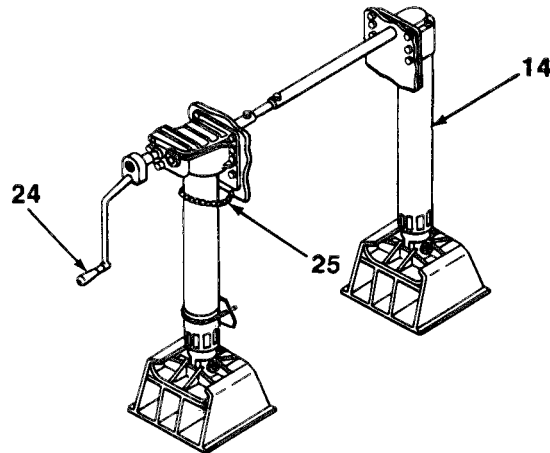


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**2-5. PREPARATION FOR USE (Con't)**

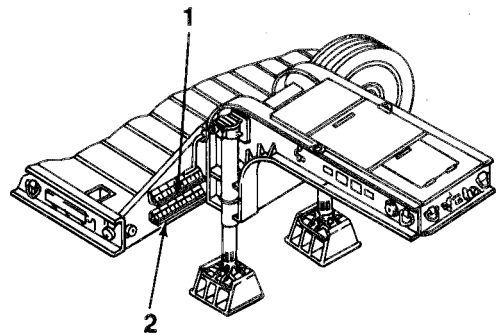
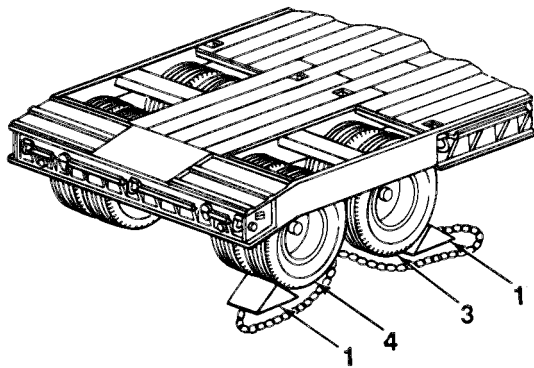
**RAISING LANDING GEAR**

1. Check coupling lock by trying to ease tractor and semitrailer forward. If properly coupled, go to step 2. If not properly coupled, repeat COUPLING.
2. Unhook landing gear handcrank (24) from chain (25).
3. Pull handcrank (24) outward approximately 2 in. (5 cm) for high speed operation and turn counterclockwise until landing gear (14) is fully raised.
4. Lower handcrank (24) and stow chain (25).



**REMOVING CHOCK BLOCKS**

1. Remove chock blocks (1) from outer forward wheel and tire assembly (3) and outer rear wheel and tire assembly (4).
2. Repeat step 1 for other side of semitrailer.
3. Place chock blocks (1) in stowage brackets (2) on right front of semitrailer and loop chains over bracket ends.





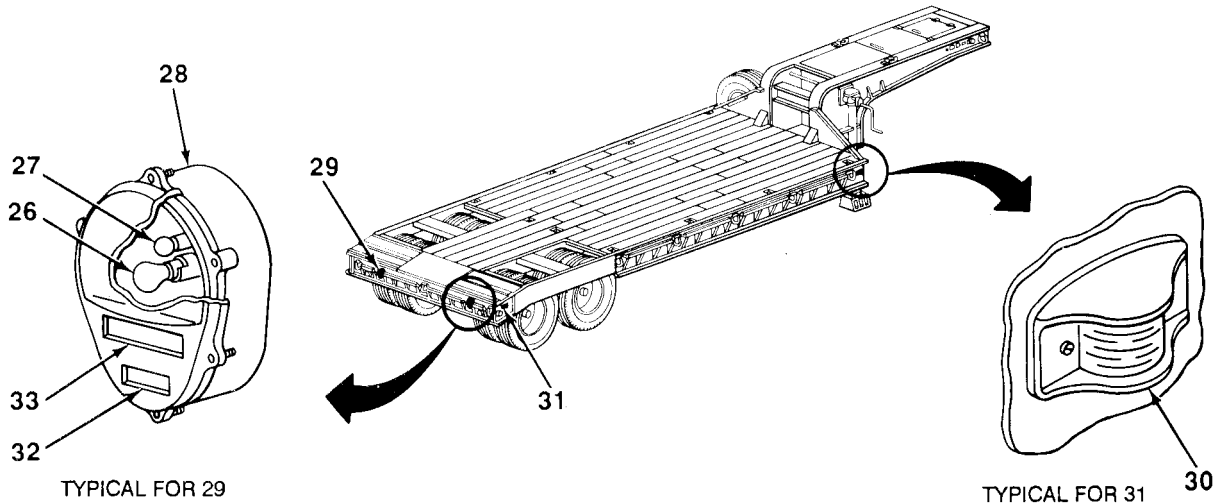
## 2-5. PREPARATION FOR USE (Con't)

### CHECKING LIGHTS

#### **WARNING**

**Do not operate semitrailer with burned out or missing running, stop, or turn lights. Not being seen could result in damage to equipment and injury to personnel.**

1. Turn on service drive lights in tractor and check that amber and red clearance lights (30 and 31) are lit.
2. Check that service taillights (27) are lit.
3. Have an assistant apply service brakes while you check that both brake lights (26) are lit. Check that both brake lights go off when brakes are released.
4. Operate left turn signal and check that left turn signal light (29) flashes. Operate right turn signal and check that right turn signal light (28) flashes.
5. Select blackout lights in tractor. Check that amber and red clearance lights (30 and 31) go out and that both blackout taillights (33) are lit.
6. Have assistant apply service brakes. Check that blackout stoplights (32) become lit and that they go out when brake pedal is released.



### CHECKING BRAKES

1. Apply tractor's semitrailer handbrake control.
2. Have assistant watch semitrailer wheels as you move semitrailer forward. Semitrailer wheels should not move. If they move, check tractor-to-semi-trailer air line connections.

### LOADING RAMPS AND WHEEL COVER PLATES – INSTALLATION

1. Carry two loading ramps (34) into position with handles (39).

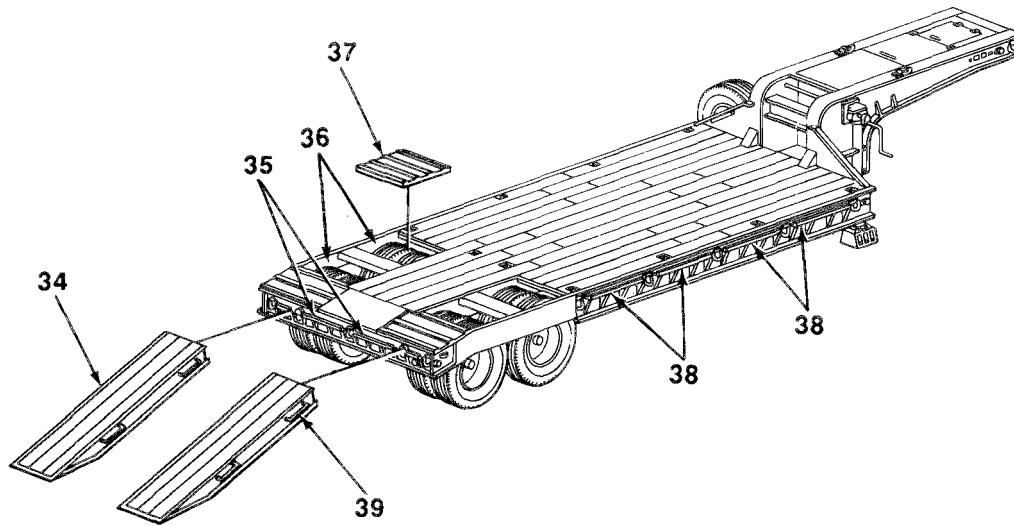
#### **NOTE**

**The equipment operator's manual will tell you from which side to load onto the semitrailer and how to secure your load.**

2. Place two loading ramps (34) on two ramp clips (35) or on two of the four ramp clips (38).
3. Place the four wheel cover plates (37) over the four wheel openings (36).

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2-5. PREPARATION FOR USE (Con't)



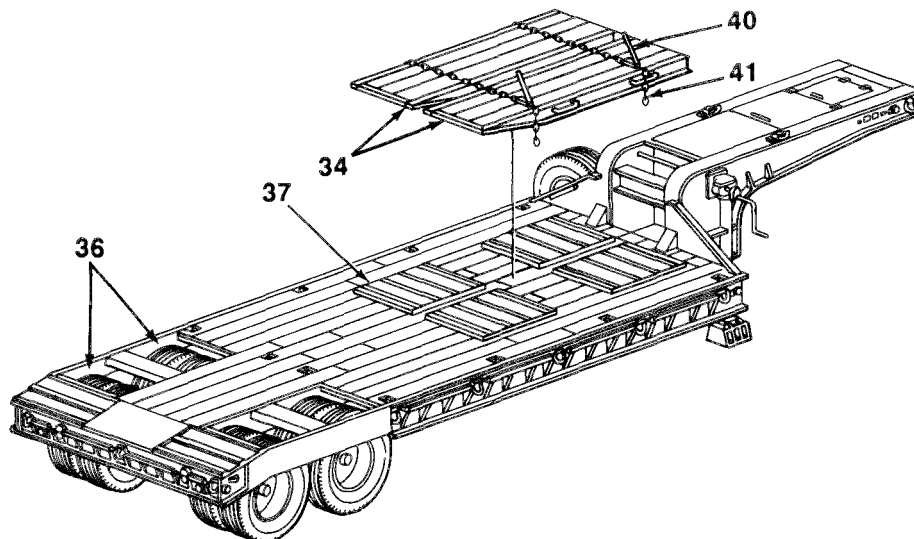
**LOADING RAMPS AND WHEEL COVER PLATES – STORAGE AFTER USE**

1. Pick up and carry four wheel cover plates (37) from wheel openings (36) to the forward part of load bed. Position on load bed as shown.
2. Pickup and carry two loading ramps (34) and place on top of wheel cover plates (37). Position loading ramps so that wheel cover plates are directly underneath.

**WARNING**

**The loading ramps should always be lashed on top of the load bed when traveling. Falling ramps could result in damage to equipment or injury to personnel.**

3. Use lashing chains (41) and loadbinders (40) to secure loading ramps (34) and wheel cover plates (37) in place.



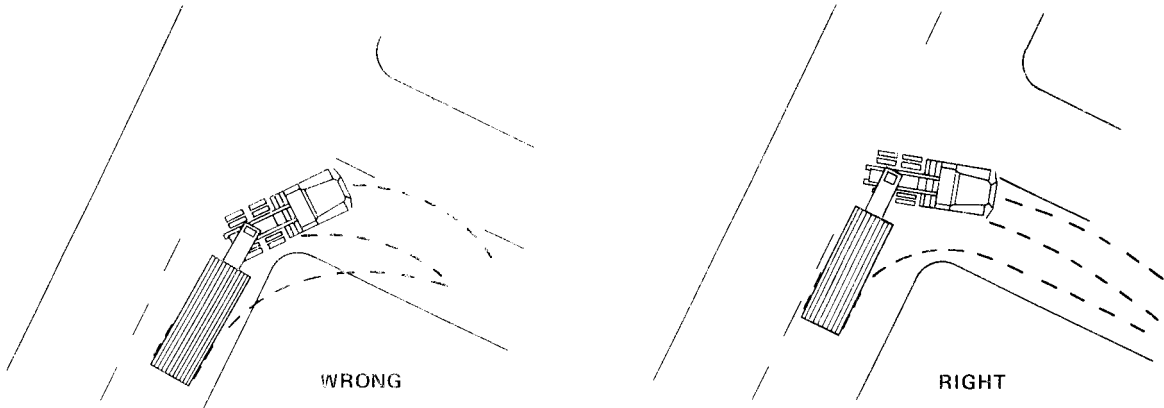
## 2-6. OPERATION

### DRIVING

When driving the tractor and semitrailer, the overall length of the unit must be kept in mind when passing other vehicles and when turning. Because the unit is hinged in the middle, backing is also affected.

### TURNING

When turning corners, allow for the fact that the semitrailer wheels turn inside the turning radius of the tractor. Make a right turn at a road intersection by driving the tractor about halfway into the intersection and then cut sharply to the right. This will keep the semitrailer off the curb.

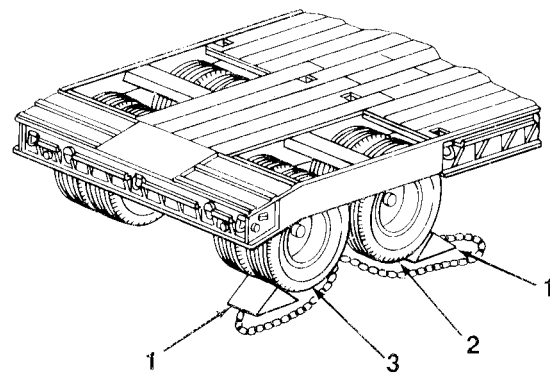


### STOPPING

The brakes of the tractor and the semitrailer are applied at the same time in normal operation when the driver steps on the brake pedal. Brake pressure must be applied gradually and smoothly. The semitrailer brakes may be applied separately by using the semitrailer handbrake control lever on the steering column. On steep downgrades or slippery surfaces, the semitrailer brakes must be applied before the tractor brakes. This will reduce the possibility of jackknifing the semitrailer.

### PARKING

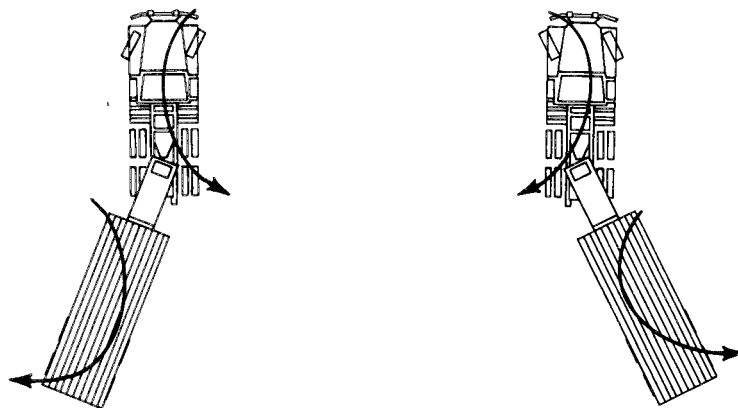
When parking tractor and semitrailer to leave unattended, set parking brake on tractor, and turn off engine before leaving cab. Block the semitrailer wheels with chock blocks (1). Block in front of the outer forward wheel and tire assembly (2), and behind the outer rear wheel and tire assembly (3).



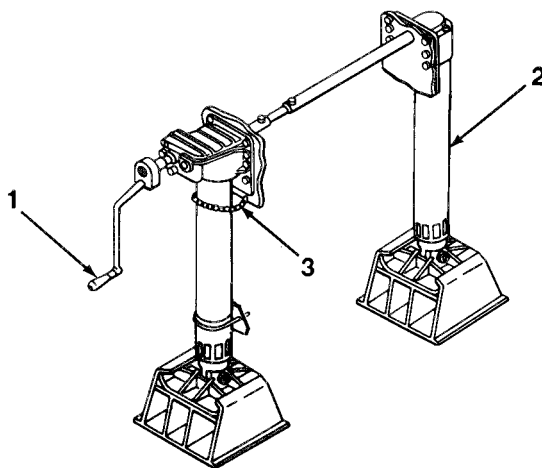
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**2-6. OPERATION (Con't)****BACKING**

When possible, use an assistant as a ground guide to direct you while backing. Adjust rearview mirrors before backing. When backing, the rear of the semitrailer will move in the opposite direction from which the front tractor wheels are turned. If the wheels are turned to the right, the semitrailer will go left. If the wheels are turned to the left, the semitrailer will go right.

**2-7. AFTER USE****LOWERING LANDING GEAR**

1. Unhook handcrank (1) from chain (3).
2. Turn handcrank (1) clockwise until legs (2) are extended.

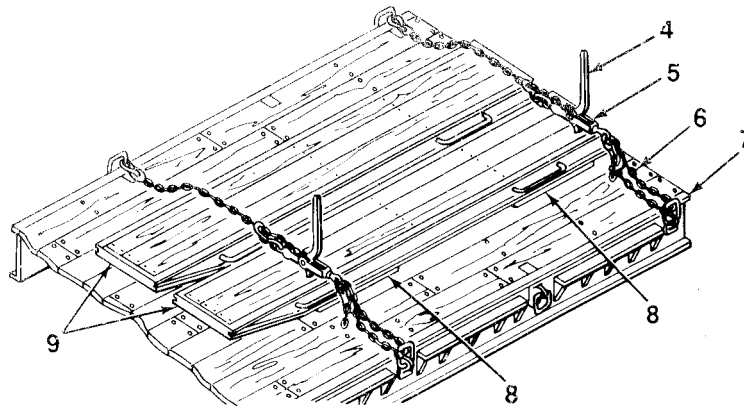
**POSITIONING CHOCK BLOCKS**

Refer to instructions in paragraph 2-5.

**2-7. AFTER USE (Con't)**

**LOADING RAMPS AND WHEEL COVER PLATES - REMOVAL FROM STORAGE**

1. Release loadbinder handle (4) so the loadbinder (5) and lashing chain (6) are loose from the frame (7).
2. Remove loadbinders (5) and lashing chains (6) from loading ramps (9) and wheel cover plates (8).
3. Move loading ramps (9) and wheel cover plates (8) into position for unloading operations.
4. After use, return loading ramps (9) and wheel cover plates (8) to load bed for storage

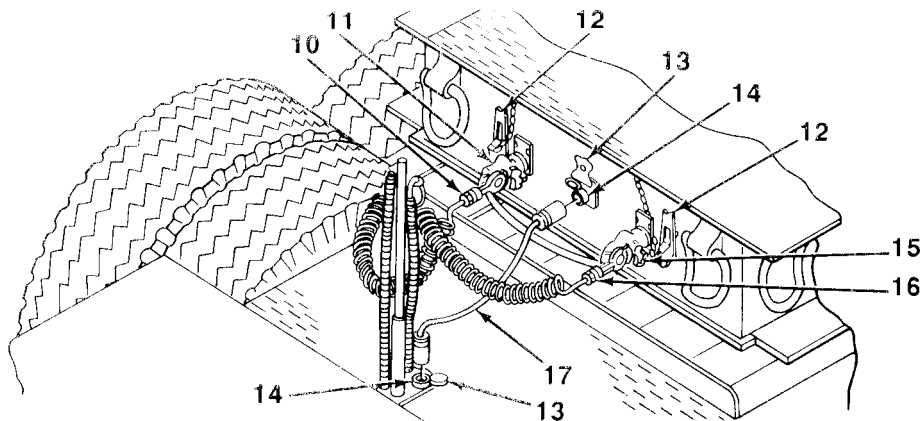


**UNCOUPLING**

**WARNING**

**All persons not involved in uncoupling operation must stand clear of tractor and semitrailer to prevent possible injury.**

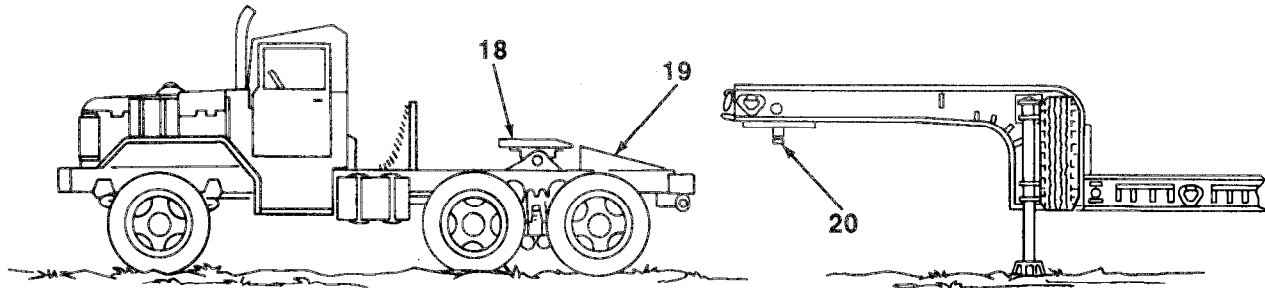
1. Shut off tractor-to-semitrailer air supply.
2. Disconnect service air line (10) and emergency air line (16) from semitrailer air couplings (11 and 15).
3. Place dummy couplings (12) on semitrailer air couplings (11 and 15) for protection.
4. Disconnect electrical cable (17) from semitrailer and tractor by pulling straight out from electrical receptacle connectors (14). Ensure that receptacle covers (13) are closed.



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**2-7. AFTER USE (Con't)**

5. Stow electrical cable (17).
6. Release semitrailer kingpin (20) from tractor fifth wheel (18). Refer to tractor operator's manual for instructions.
7. Slowly move tractor forward until semitrailer is clear of approach ramps (19).



**Section IV. OPERATION UNDER UNUSUAL CONDITIONS**

|   | <i>Page</i> |   | <i>Page</i> |
|---|-------------|---|-------------|
| Fording . . . . .                                   | 2-22        | Operation on Rocky Terrain . . . . .        | 2-22        |
| Operation in Extreme Cold . . . . .                 | 2-21        | Operation in Saltwater Areas . . . . .      | 2-22        |
| Operation in Extreme Heat . . . . .                 | 2-21        | Operation in Sandy or Dusty Areas . . . . . | 2-22        |
| Operation in Mud . . . . .                          | 2-22        | Operation in Snow . . . . .                 | 2-22        |
| Operation in Rainy or Humid<br>Conditions . . . . . | 2-22        |   |             |

**2-8. OPERATION IN EXTREME HEAT**

Do not park the semitrailer in sunlight for long periods of time because the effects of heat and sunlight shorten the life of tires. If possible, shelter or cover semitrailer.

**2-9. OPERATION IN EXTREME COLD**

1. Extreme cold can cause lubricants to thicken or congeal, insulation to crack and cause electrical short circuits, and construction material to become hard, brittle, and easily damaged or broken.
2. Tires may freeze to the ground or have a flat spot if underinflated.
3. Brakeshoes may freeze to the drums and need to be heated to prevent damage to mating surfaces.
4. Refer to FM 9-207 and FM 21-305 for special instructions on driving hazards in extreme cold
5. When parking short term, park in a sheltered area out of the wind.
6. If high, dry ground is not available for long-term parking, place a footing of planks or brush under semitrailer wheels and landing gear.
7. Remove all built-up ice, snow, and mud as soon as possible after shutdown.
8. Cover and shield the semitrailer with canvas, if available. Keep ends of canvas off the ground to keep from freezing to the ground.

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## 2-10. OPERATION IN RAINY OR HUMID CONDITIONS

Inspect, clean, and lubricate inactive equipment often to stop rust and fungus from forming on it.

## 2-11. OPERATION IN SANDY OR DUSTY AREAS

### CAUTION

**Do not tow, pull, or push semitrailer by rear bumper. Damage to equipment may result.**

1. Clean, inspect, and lubricate more often in dusty or sandy areas.
2. Reduce tire pressure to 45 psi (310 kPa) while operating the semitrailer in beach and desert sand. Return tire pressure to 100 psi (690 kPa) after sand operation.

## 2-12. OPERATION IN SNOW

Refer to FM 21-305 for special instructions on operation in snow.

## 2-13. OPERATION IN MUD

### CAUTION

**Do not tow, pull, or push semitrailer by rear bumper. Damage to equipment may result.**

1. Reduce tire pressure to 60 psi (414 kPa) while operating the semitrailer in soft mud.
2. If one or more wheels sink into the mud, you may need to jack up the mired wheel and put planking or matting under it.
3. Clean off all mud after operation. Return tire pressure to 100 psi (690 kPa).

## 2-14. OPERATION IN SALTWATER AREAS

Saltwater will cause early rust and corrosion. Clean, inspect, and lubricate often.

## 2-15. OPERATION IN ROCKY TERRAIN

1. Reduce tire pressure to 60 psi (414 kPa) when moving on rough or rocky terrain.
2. Before driving over stumps or rocks, ensure that the semitrailer can clear them. Such objects can damage components on the underside of the semitrailer. Beware of low hanging tree limbs that can damage cargo.
3. Do not operate without a serviceable spare wheel and tire assembly. There is a greater chance of tire puncture during operation on rough or rocky terrain.
4. Return tire pressure to 100 psi (690 kPa) after operation on rough or rocky terrain.

## 2-16. FORDING

1. Before fording, check the bottom surface condition. If bottom surface is too soft, do not ford.
2. After fording, apply the brakes a few times to help dry out the brakeshoe linings. Ensure that the semitrailer brakes are working properly before driving at normal speeds.
3. Drain areas where water has accumulated and dry all wet surfaces.
4. Lubricate all unpainted surfaces. Dry all lubrication points and lubricate them (para 3-2).

# CHAPTER 3

## OPERATOR MAINTENANCE

### 3-1. OVERVIEW

This chapter contains the lubrication and troubleshooting instructions and maintenance procedures authorized at operator-level.

|             |  | <i>Page</i> |
|-------------|--|-------------|
| Section I   | Lubrication Instructions . . . . .                 | 3-1         |
| Section II  | Operator/Crew Troubleshooting Procedures . . . . . | 3-8         |
| Section III | Operator Maintenance . . . . .                     | 3-14        |

### Section I. LUBRICATION INSTRUCTIONS

#### NOTE

**These lubrication instructions are MANDATORY.**

### 3-2. LUBRICATION INSTRUCTIONS

#### GENERAL

Keep all lubricants in closed containers and store in a clean, dry place away from external heat. Keep container covers clean and allow no dust, dirt, or other foreign material to mix with the lubricants. Keep all lubrication equipment clean and ready for use.

#### CLEANING

Keep all external parts not requiring lubrication free of lubricants. Before lubricating the equipment, wipe all lubrication points free of dirt and grease. Clean all lubrication points after servicing to prevent accumulation of foreign matter.

#### LUBRICATION INTERVAL

Service the lubrication points at the proper intervals as specified in the Lubrication Chart. The intervals specified are based on operation under normal conditions. Modification of the recommended intervals may be required under unusual operating conditions.

#### LUBRICATION CHART

Refer to the following Lubrication Chart for lubrication under normal conditions. Refer to FM 9-207 for instructions on lubrication in weather below 0°F (-18°C). Refer to TM 9-238 for lubrication before and after fording. Clean and inspect all lubrication points after operating in mud, dust, sand, or other unusual conditions.



## LUBRICATION CHART

### SEMITRAILER, LOWBED: 25 TON, 4 WHEEL, M172A1 (2330-00-317-6448)

Intervals (on-condition or hard time) and related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all services prescribed for a particular interval. Decrease the intervals if your lubricants are contaminated, or if you are operating equipment under adverse conditions, including longer-than-usual operating hours. The intervals may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

Dotted leader lines indicate lubrication is required on both sides of the equipment.

#### **WARNING**

**Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT**

**use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**

Clean all fittings and area around lubrication points with dry cleaning solvent (Item 13, Appendix E) or equivalent before lubricating equipment. After lubrication, wipe off excess oil or grease to prevent accumulation of foreign matter.

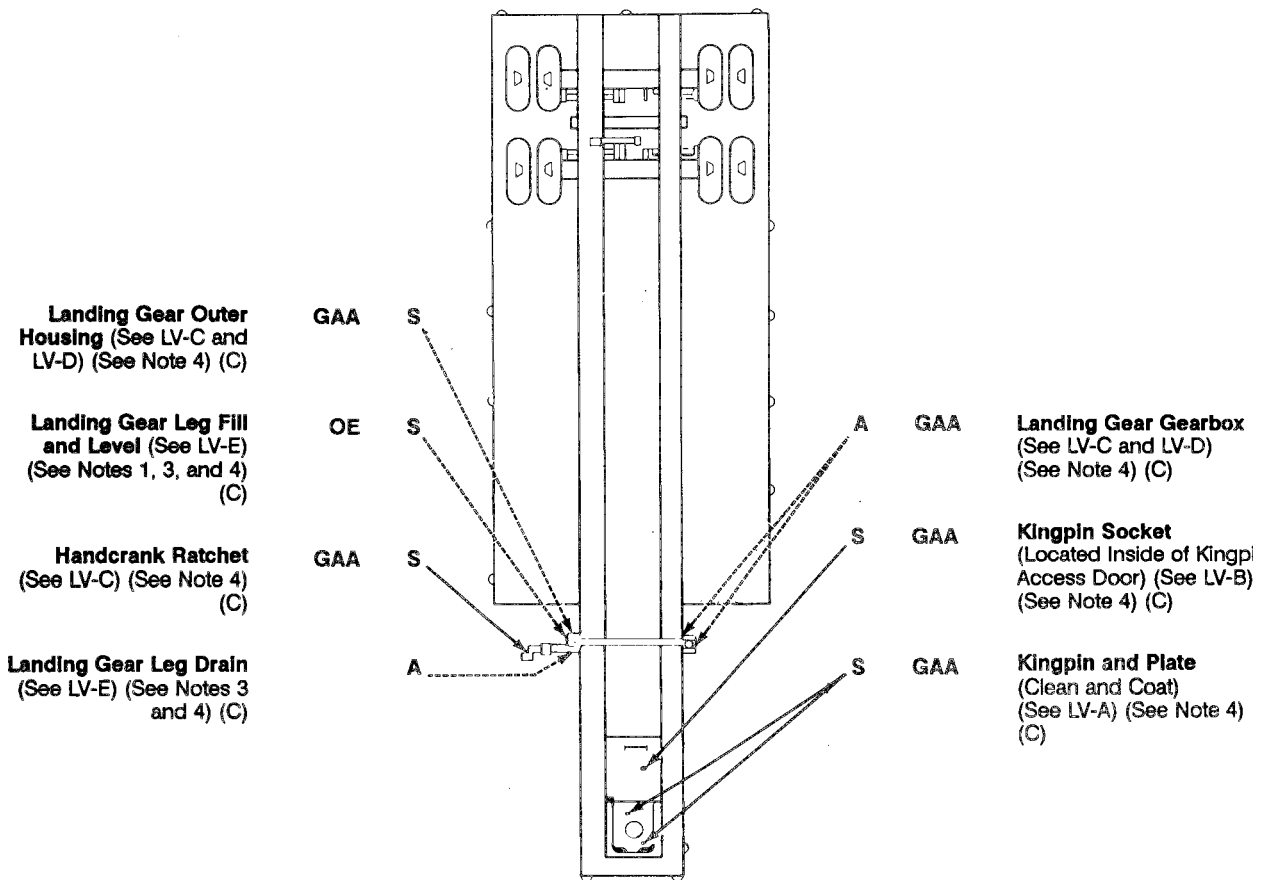
The lowest level of maintenance authorized to lubricate a point is indicated in parentheses by use of the following: (C) Operator/Crew; or (O) Unit Maintenance.

#### **NOTE**

**LV is Localized View.**

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



**Landing Gear Outer Housing** (See LV-C and LV-D) (See Note 4) (C)

**Landing Gear Leg Fill and Level** (See LV-E) (See Notes 1, 3, and 4) (C)

**Handcrank Ratchet** (See LV-C) (See Note 4) (C)

**Landing Gear Leg Drain** (See LV-E) (See Notes 3 and 4) (C)

GAA

S

OE

S

GAA

S

A

GAA

A

GAA

S

GAA

S

**Landing Gear Gearbox** (See LV-C and LV-D) (See Note 4) (C)

**Kingpin Socket** (Located Inside of Kingpin Access Door) (See LV-B) (See Note 4) (C)

**Kingpin and Plate** (Clean and Coat) (See LV-A) (See Note 4) (C)

**TOTAL MAN-HOURS\***

| INTERVAL | MAN-HOUR |
|----------|----------|
| S        | 1.8      |
| A        | 4.0      |

\* The man-hours time specified is the time you need to do all services prescribed for a particular interval.

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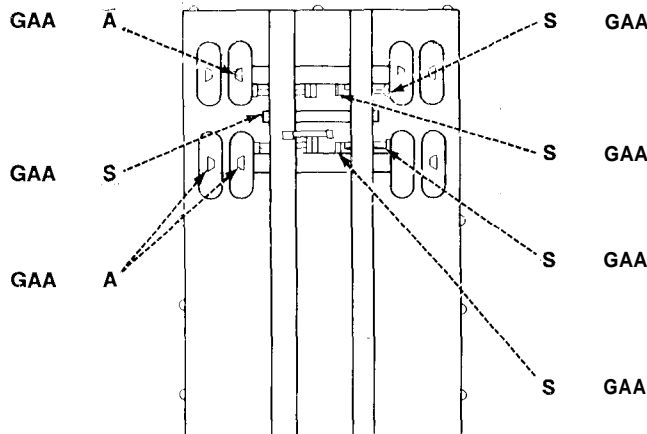
LUBRICANT • INTERVAL

INTERVAL • LUBRICANT

**Wheel Bearings**  
(Every 12,000 Miles or  
Annually, Remove, Clean,  
Dry, and Pack) (See LV-F)  
(See Note 4) (O)

**Trunnion Axle**  
(See LV-H) (See Note 4)  
(C)

**Wheel Bearings**  
(Every 12,000 Miles or  
Annually, Remove, Clean,  
Dry, and Pack) (See LV-F)  
(See Note 4) (O)



**GAA Camshaft**  
(2 Fittings Each  
Camshaft) (See LV-G)  
(See Note 4) (C)

**GAA Slack Adjuster**  
(1 Fitting) (See LV-G)  
(See Note 4) (C)

**GAA Camshaft**  
(2 Fittings Each  
Camshaft) (See LV-G)  
(See Note 4) (C)

**GAA Slack Adjuster**  
(1 Fitting) (See LV-G)  
(See Note 4) (C)

**TOTAL MAN-HOURS\***

| INTERVAL | MAN-HOUR |
|----------|----------|
| S        | 1.8      |
| A        | 4.0      |

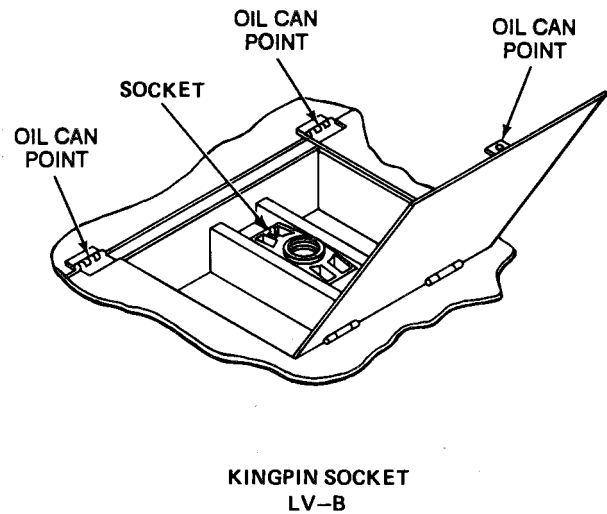
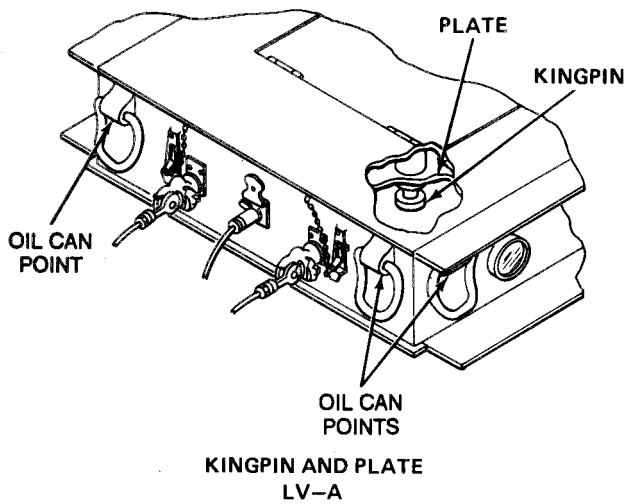
\* The man-hours time specified is the time you need to do all services prescribed for a particular interval.

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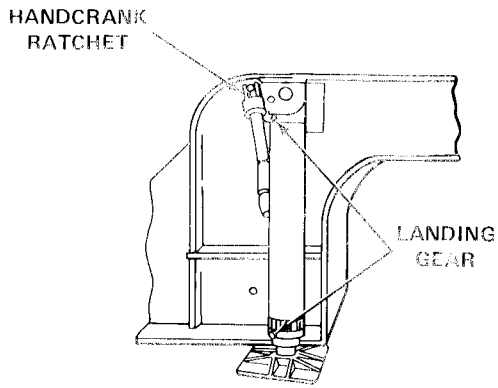
- KEY -

| LUBRICANTS  | EXPECTED TEMPERATURES      |                                   |                                  | INTERVALS                        |
|---|----------------------------|-----------------------------------|----------------------------------|----------------------------------|
|   | ABOVE +32°F<br>(ABOVE 0°C) | +40°F to -10°F<br>(+4°C to -23°C) | 0°F to -65°F<br>(-18°C to -54°C) |                                  |
| OE/HDO<br>(MIL-L-2104)<br>Lubricating Oil, Internal<br>Combustion Engine,<br>Tactical Service | OE/HDO-30                  | OE/HDO-10                         | —                                | S - Semiannual<br><br>A - Annual |
| OEА<br>(MIL-L-46167)<br>Lubricating Oil, Internal<br>Combustion, Arctic                       | —                          | —                                 | OEА<br>(Note 1)                  |                                  |
| PL-M<br>(MIL-L-3150)<br>Lubricating Oil,<br>Preservative                                      | PL Medium                  | —                                 | —                                |                                  |
| PL-S<br>(VV-L-800)<br>Lubrication Oil,<br>Preservative  | —                          | PL Special                        | PL Special                       |                                  |
| GAA<br>(MIL-G-10924)<br>Grease,<br>Automotive and Artillery                                   | GAA                        | GAA                               | GAA                              |                                  |

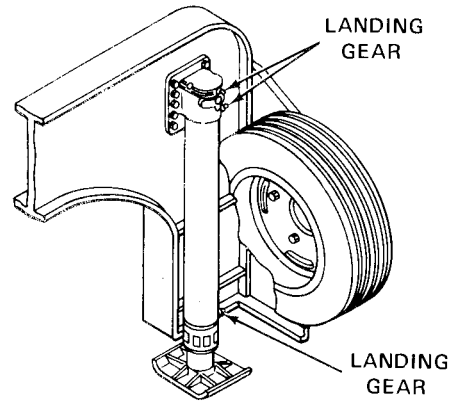
FOR ARCTIC OPERATIONS REFER TO FM 9-207.



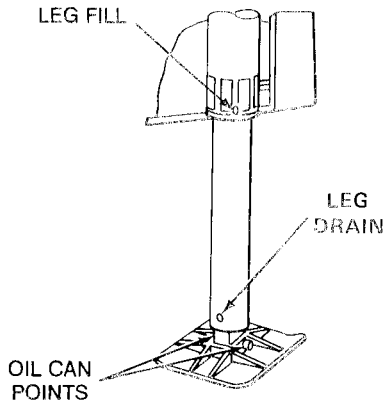
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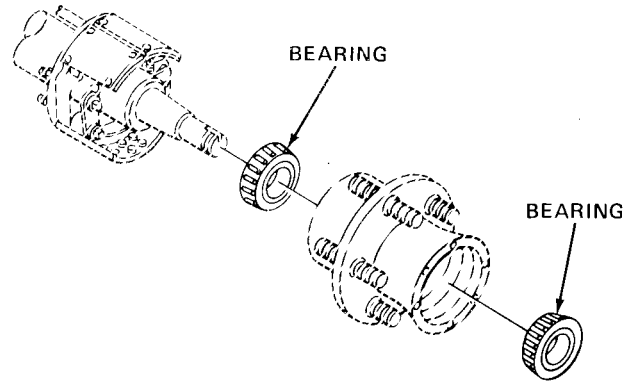
LANDING GEAR—RIGHT  
LV-C



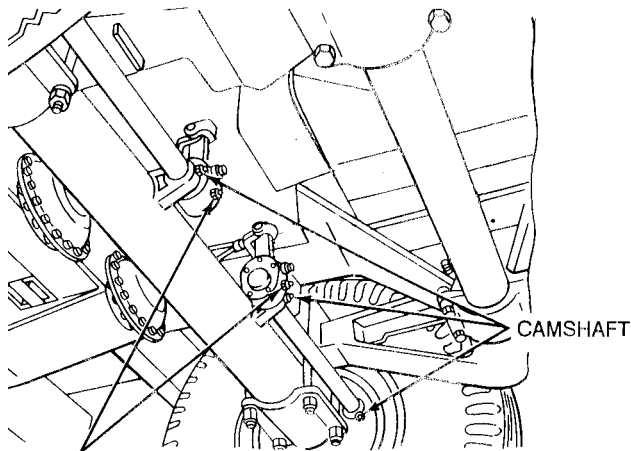
LANDING GEAR—LEFT  
LV-D



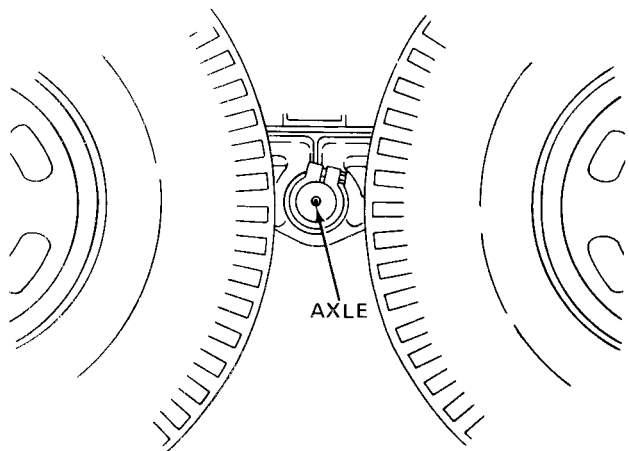
LANDING GEAR LEG FILL AND DRAIN  
LV-E



WHEEL BEARINGS  
LV-F



SLACK ADJUSTER REAR AXLE BRAKE MECHANISM  
LV-G



TRUNNION AXLE  
LV-H

TA506810

**NOTES:**

**1. FOR OPERATION OF SEMITRAILER IN PROTRACTED COLD TEMPERATURES BELOW -10°F (-23°C).** Remove lubricants prescribed in the key for temperatures above -10°F (-23°C). Clean parts with dry cleaning solvent. Lubricate with lubricants specified in the key for temperature 0°F to -65°F (-18°C to -54°C).

**2. OIL CAN POINTS.** Every 1,000 miles (1,600 kilometers) or monthly, lubricate door hinges and latches, wheel lug threads, landing gear handcrank ratchet, landing gear shoe pins, lashing rings, and loadbinders with appropriate PL.

**3. LANDING GEAR LEGS.**

- a. Semiannually, extend, clean, and coat with appropriate PL.
- b. Semiannually, check oil level. Remove cotter pin, loosen gib plug, fully extend leg, and remove upper plug. Maintain oil level even with filler hole.
- c. Annually, remove bottom plug and drain all oil. Fill with oil to maintain level even with filler hole.

4. in sandy areas, halve lubrication interval.

## Section II OPERATOR/CREW TROUBLESHOOTING PROCEDURES

|                                  | <i>Page</i> |   | <i>Page</i> |
|----------------------------------|-------------|---|-------------|
| Explanation of Columns . . . . . | 3-8         | Operator/Crew Troubleshooting,          |             |
| General . . . . .                | 3-8         | Table 3-1 . . . . .                     | 3-9         |
|                                  |             | Troubleshooting Symptom Index . . . . . | 3-8         |

### 3-3. GENERAL

Table 3-1 in this section lists the common malfunctions that you may find during operation of the semitrailer or its components. Perform the tester inspections and corrective actions in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed, or is not corrected by the listed corrective actions, notify your supervisor.

### 3-4. EXPLANATION OF COLUMNS

*Malfunction.* Visual or operational indication that something is wrong with the semitrailer.

*Test or Inspection.* Procedure to isolate the problem to a component or system.

*Corrective Action.* Procedure to correct problem.

### 3-5. TROUBLESHOOTING SYMPTOM INDEX

This troubleshooting symptom index is provided as a quick way to get you to the troubleshooting procedure that will help you solve the problem you are having. It lists all the malfunctions covered in Table 3-1.

**Troubleshooting  
Procedure  
Page**

#### BRAKES

|                               |      |
|-------------------------------|------|
| Brakes Do Not Apply . . . . . | 3-10 |
| Brakes Grab . . . . .         | 3-12 |

#### ELECTRICAL SYSTEM

|  |      |
|--|------|
| All Lamps Do Not Light . . . . .                         | 3-9  |
| One or More Lamps (But Not All) Will Not Light . . . . . | 3-10 |

#### LANDING GEAR

|   |      |
|---|------|
| Landing Gear Is Difficult to Raise or Lower . . . . . | 3-12 |
|---|------|

#### TIRES

|  |      |
|--|------|
| Excessively Worn, Scuffed, or Cupped Tires . . . . . | 3-13 |
|--|------|

#### NOTE

**Semitrailer must be coupled to tractor when performing electrical or airbrake system tests.**

Table 3-1. Operator/Crew Troubleshooting.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

**ELECTRICAL SYSTEM**

**1. ALL LAMPS DO NOT LIGHT.**

- Step 1. Turn on tractor lights and check their operation. Refer to tractor operator's manual.  
 If tractor lamps do not light, notify unit maintenance.
- Step 2. Check tractor-to-semitrailer electrical cable (1) for proper connection (para 2-5).  
 If electrical cable (1) is not properly connected, disconnect and connect properly (para 2-5).
- Step 3. Check semitrailer and tractor cable connectors (2 and 5) and sockets (4 and 6) for bent, broken, dirty, or corroded pins (3).  
 If pins (3) or sockets (4 and 6) are dirty or corroded, clean them (para 3-6).  
 If pins (3) are broken, notify unit maintenance.  
 If all lamps still do not light, notify unit maintenance.

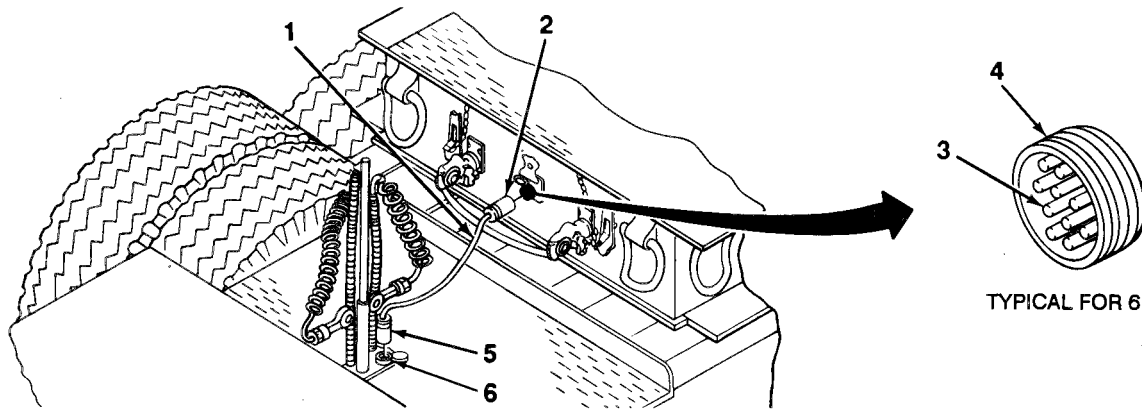




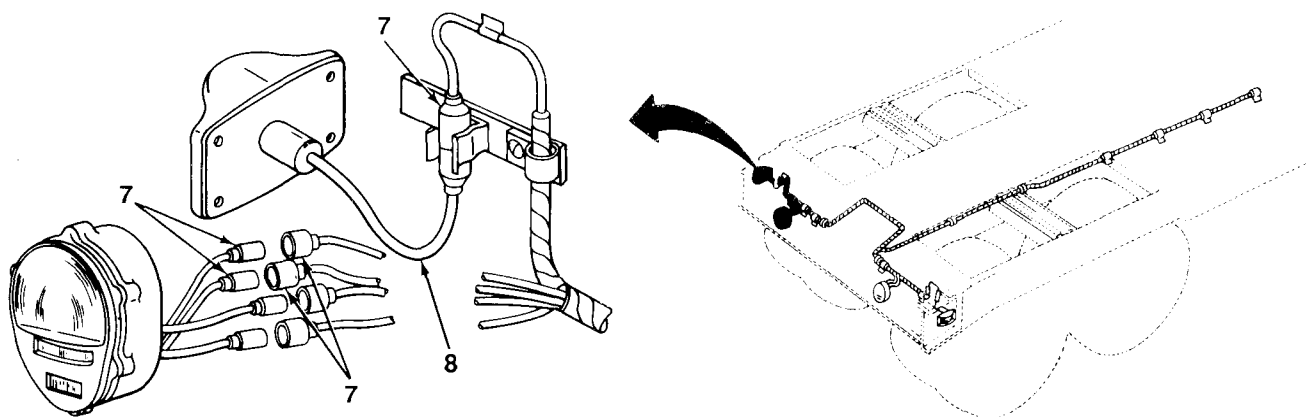
Table 3-1. Operator/Crew Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

**2. ONE OR MORE LAMPS (BUT NOT ALL) WILL NOT LIGHT**

Check for broken lead wires (8) or loose connectors (7).

If connectors (7) are loose, or if lead wires (8) are broken, notify unit maintenance.



**BRAKES**

**3. BRAKES DO NOT APPLY.**

Step 1. Check that air supply from tractor is turned on. Refer to tractor operator's manual.

If air is turned off, turn on air.

Step 2. Check air pressure in tractor. Refer to tractor operator's manual.

If pressure is low or not present, troubleshoot tractor air system.

Step 3. Check connection of air lines (9) to air couplings (10) (para 2-5).

If air lines (9) are not properly connected, disconnect and connect properly (para 2-5).

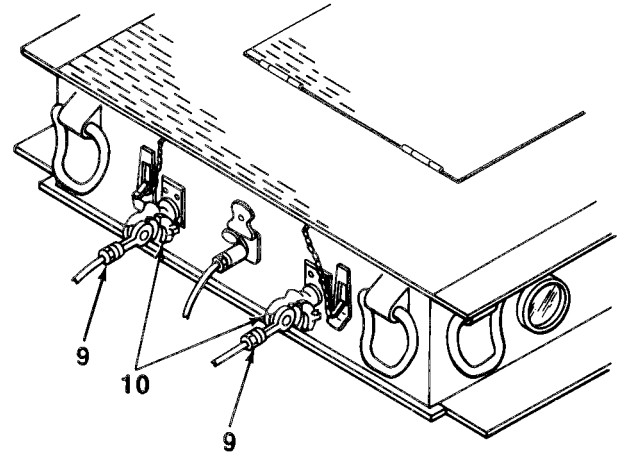
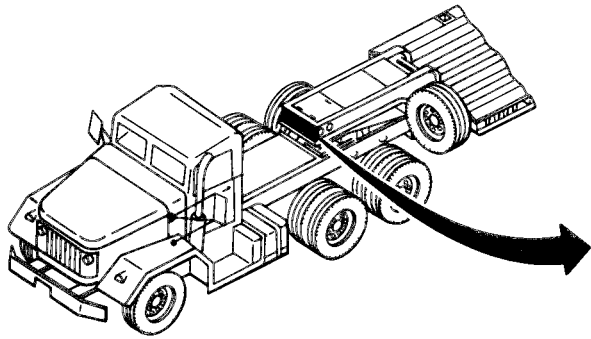
Step 4. Check for dirty, leaking, or damaged air couplings (10).

If air couplings (10) are dirty, clean.

If air couplings (10) are damaged or leaking, notify unit maintenance.

Table 3-1. Operator/Crew Troubleshooting (Con't).

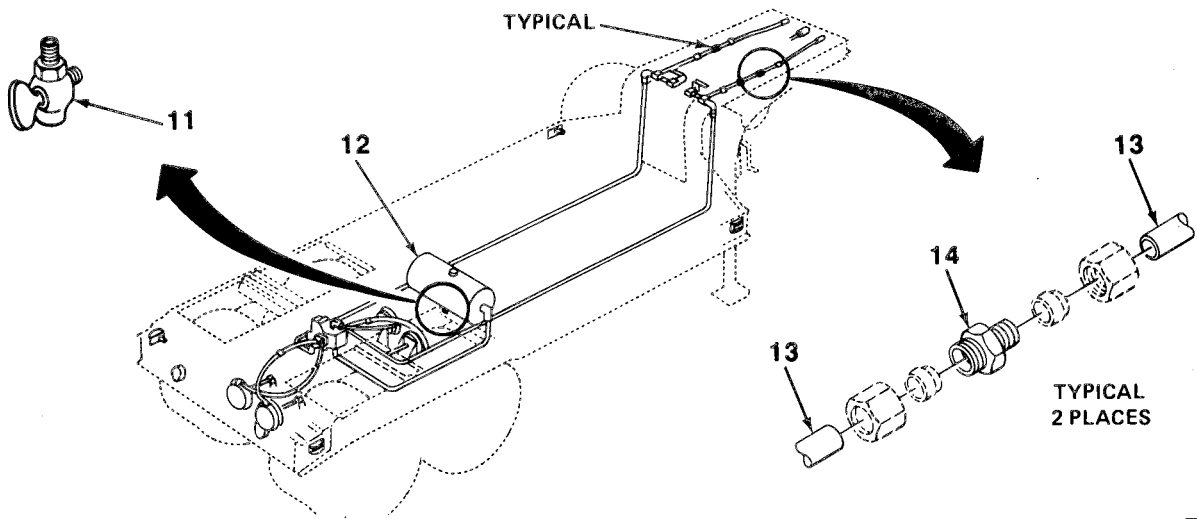
| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|



**WARNING**

**Wear safety goggles when working with airbrake system to protect eyes from high pressure air.**

- Step 5. Check brake hoses (13) and fittings (14) for damage or leaking by listening for hissing sound while system is under pressure.
- Step 6. Check semitrailer air reservoir (12) for open draincock (11).
  - If draincock (11) is open, close.
  - If draincock (11) is closed and brakes still do not apply, notify unit maintenance.



TA506813

Table 3-1. Operator/Crew Troubleshooting (Con't).

---

|                           |  |
|---------------------------|--|
| <b>MALFUNCTION</b>        |  |
| <b>TEST OR INSPECTION</b> |  |
| <b>CORRECTIVE ACTION</b>  |  |

---

**4. BRAKES GRAB.**

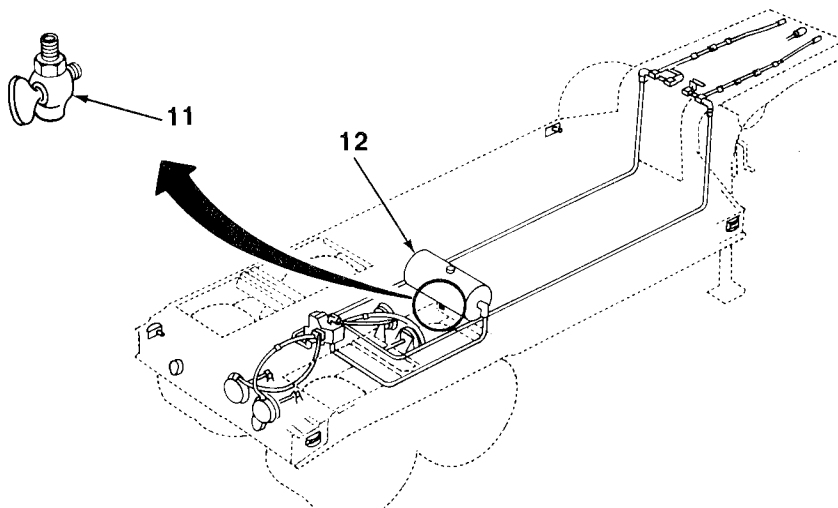
**WARNING**

**Wear safety goggles when opening air reservoir draincock to protect eyes from high pressure air.**

Check for moisture in semitrailer air reservoir (12) by opening draincock (11).

If moisture is in air reservoir (12), allow to drain and close draincock (11).

If air reservoir (12) is dry and brakes still grab, notify unit maintenance.




---

**LANDING GEAR**

**5. LANDING GEAR IS DIFFICULT TO RAISE OR LOWER.**

Step 1. Check for misaligned or broken handcrank (15).

If handcrank (15) is misaligned or broken, notify unit maintenance.

Step 2. Check for dirt on lower landing gear leg (17).

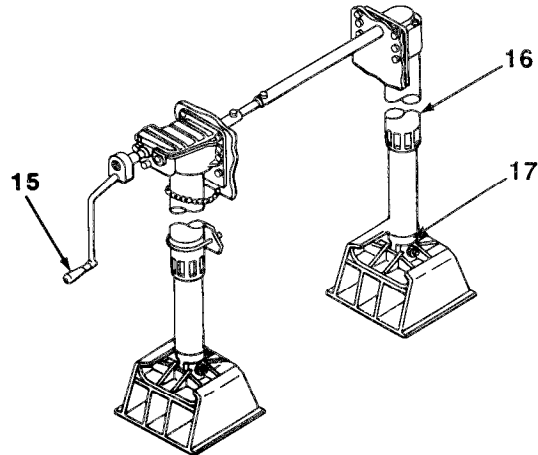
If lower landing gear leg (17) is dirty, clean (para 3-11).

Step 3. Check for misaligned, damaged, or bent landing gear legs (16 and 17).

If landing gear legs (16 and 17) are misaligned, damaged, or bent, notify unit maintenance.

Table 3-1. Operator/Crew Troubleshooting (Con't).

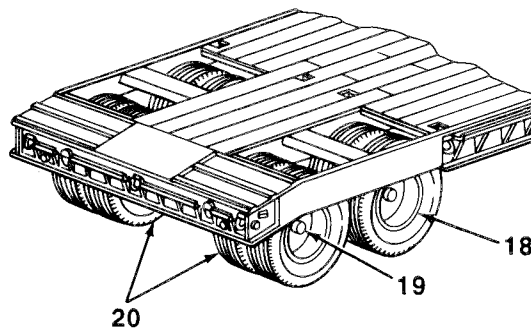
| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|



**TIRES**

**6. EXCESSIVELY WORN, SCUFFED, OR CUPPED TIRES.**

- Step 1. Check pressure of all tires (20).  
If tire pressure is not 100 psi (690 kPa), inflate tires (20) to correct pressure.
- Step 2. Check for loose, cracked, or broken wheels (18).  
If wheels (18) are loose, tighten nuts (19). Torque inner nuts to 300-350 lb.-ft. (407-475 N·m). Torque outer nut to 450-500 lb.-ft. (610-678 N·m).  
If wheels (18) are cracked or broken, notify unit maintenance.
- Step 3. Check suspension system for damage and loose or missing bolts and nuts.  
If suspension system is damaged or has loose or missing bolts and nuts, notify unit maintenance.
- Step 4. Check tracking for indication of axle misalignment.  
If axle appears to be misaligned, notify unit maintenance.



TA506815

### Section III. OPERATOR MAINTENANCE

|                                 |             |  |             |
|---------------------------------|-------------|--|-------------|
|                                 | <i>Page</i> |  | <i>Page</i> |
| Air Couplings . . . . .         | 3-15        | Landing Gear Legs . . . . .                    | 3-23        |
| Air Reservoir . . . . .         | 3-17        | <b>Spare Wheel and Tire Assembly</b> . . . . . | 3-22        |
| Electrical Connectors . . . . . | 3-14        | Wheel and Tire Assembly . . . . .              | 3-18        |

#### 3-6. ELECTRICAL CONNECTORS

*This Task Covers:*

Cleaning

*Initial Setup:*

Materials/Parts:

- Brush (Item 1, Appendix E)
- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

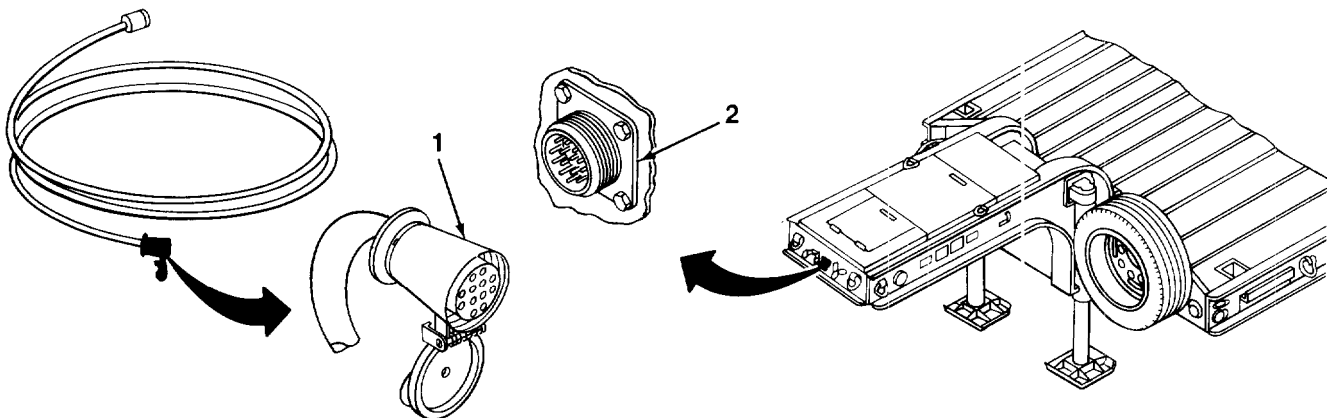
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

#### CLEANING

Front of  
semitrailer

Tractor-to-semitrailer  
electrical cable  
connector (1) and  
semitrailer receptacle  
connector (2)

a. Using rags, wipe off any build-up of grease and dirt.



TA506816

**3-6. ELECTRICAL CONNECTORS (Con't)**

---

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

---

**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

- b. Clean, using brush and dry cleaning solvent.
- c. Allow to dry.

**TASK ENDS HERE**

**3-7. AIR COUPLINGS**

---

*This Task Covers:*

Cleaning

---

*Initial Setup:*

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
  - Rags (Item 11, Appendix E)
-

3-7. AIR COUPLINGS (Con't)

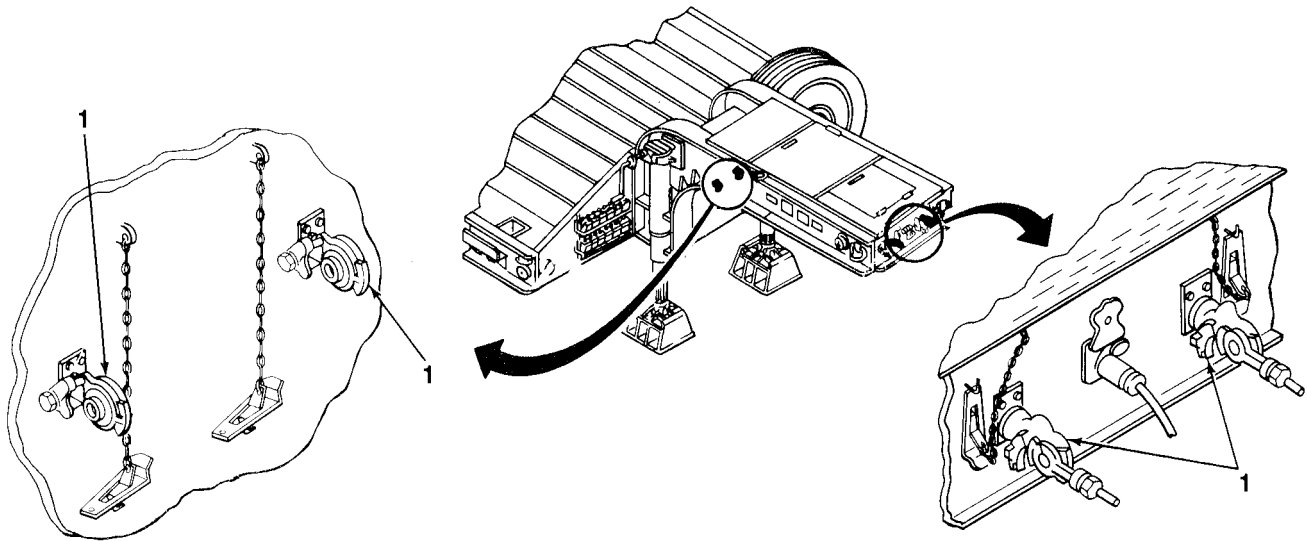
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

CLEANING

Front of semitrailer and under gooseneck

Four air couplings (1)

a. Using rags, wipe off any build-up of grease and dirt.



**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

b. Clean, using a rag moistened with dry cleaning solvent.

c. Allow to dry.

TASK ENDS HERE

TA506817

**3-8. AIR RESERVOIR**

*This Task Covers:*

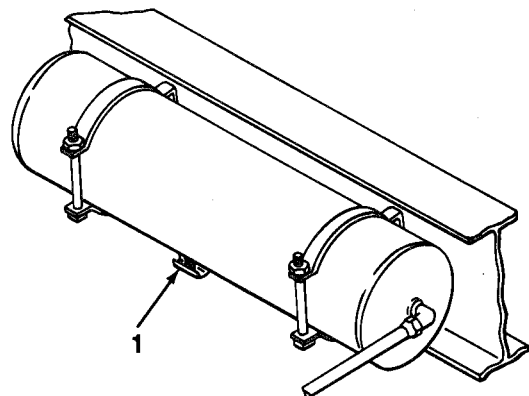
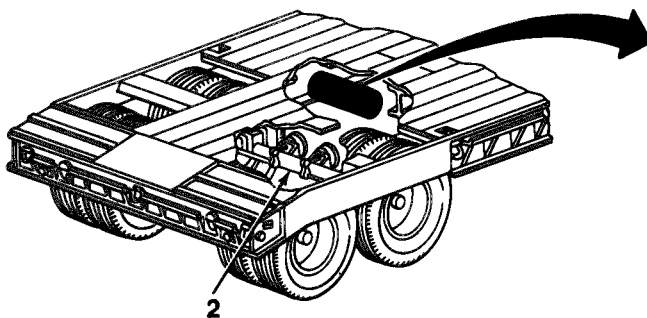
Servicing

*Initial Setup*

**Tools/Test Equipment:**

- Safety goggles

|  | LOCATION  | ITEM                        | ACTION  | REMARKS   |
|--|---|-----------------------------|---|---|
| <b>SERVICING</b>   |   |                             |   |   |
| 1.   | Tractor   | Semitrailer air supply      | Turn off.   | Refer to tractor operator's manual.                 |
| <p><b>WARNING</b></p> <p><b>Wear safety goggles when opening air reservoir draincock to protect eyes from high pressure air.</b></p> |   |                             |   |   |
| 2.   | Rear of semitrailer above and in front of forward rear axle (2) | Air reservoir draincock (1) | a. Open and allow to drain completely.<br>b. Close. |   |
| 3.   | Tractor   | Semitrailer air supply      | Turn on.  | Refer to tractor operator's manual.                 |
| 4.   | Rear of semitrailer above and in front of forward rear axle (2) | Air reservoir draincock (1) | Check for leaks.                                    | <b>If leaks are found, notify unit maintenance.</b> |



**TASK ENDS HERE**

TA506818



3-9. WHEEL AND TIRE ASSEMBLY

This Task Covers:

a. Removal

b. Installation

Initial Setup:

**Materials/Parts:**

- 4 x 4 x 6 wooden blocks

**Tools/Test Equipment**

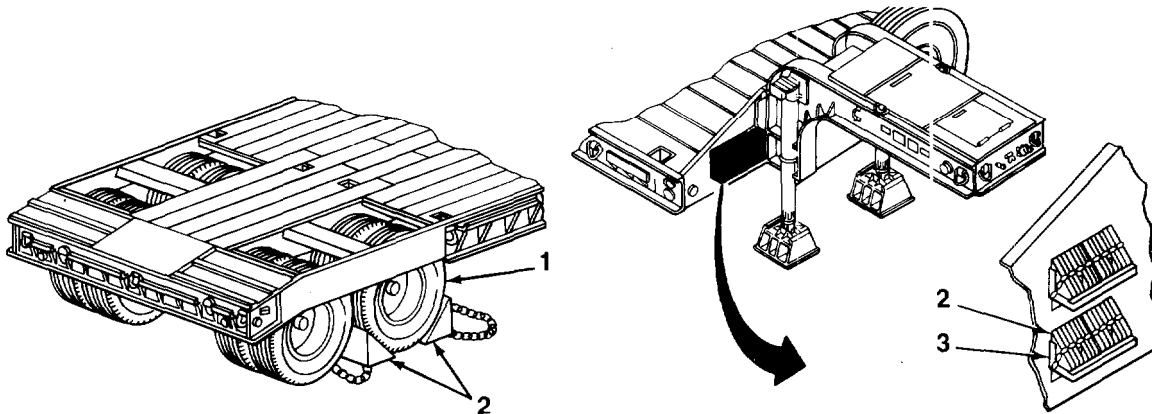
- Jack and handle, hydraulic
- Wrench and handle, 1 1/2 g

**Personnel Required: Two**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

- |    |                               |                  |  |
|----|-------------------------------|------------------|--|
| 1. | Wheel and tire assemblies (1) | Chock blocks (2) | a. Take out of stowage bracket (3).<br>b. Block front and rear of wheel and tire assemblies (1) not being removed. |
|----|-------------------------------|------------------|--|



**NOTE**

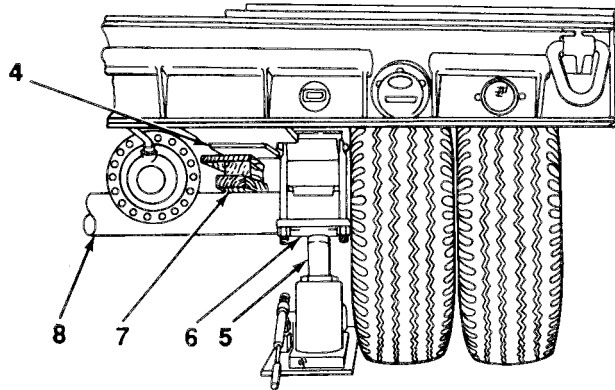
The inner and outer nuts are marked with either an R or L. The R stands for right-hand threads; right-hand nuts are turned counterclockwise for removal. The L stands for left-hand threads; left-hand nuts are turned clockwise for removal. Two types of nuts are shown, depending on the semitrailer.

- |    |                             |                    |  |
|----|-----------------------------|--------------------|--|
| 2. | Stop block (4) and axle (8) | Wooden blocks (7)  | Place between stop block (4) and axle (8).   |
| 3. | Shackle box bracket (6)     | Hydraulic jack (5) | a. Position under shackle box bracket (6).<br>b. Using handle, raise until it touches shackle box bracket (6). |

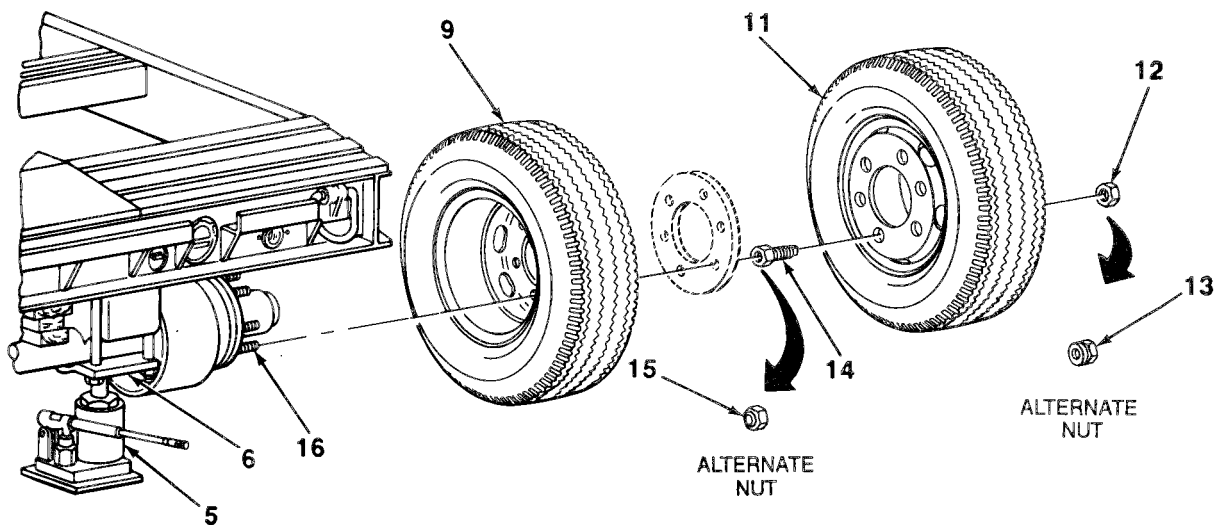
TA506819

3-9. WHEEL AND TIRE ASSEMBLY (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

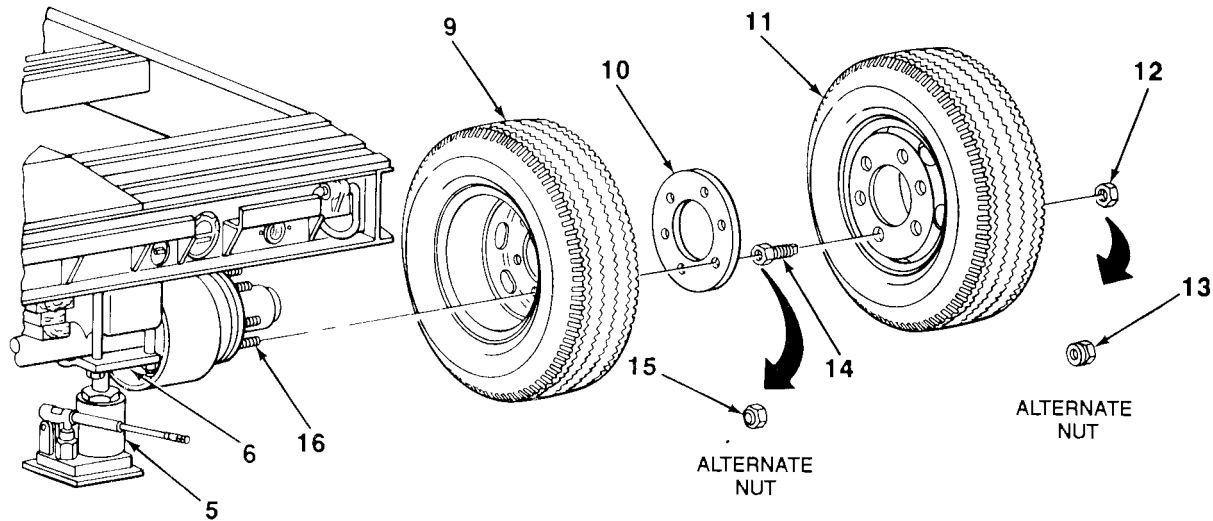


- |    |                                    |                                   |   |
|----|------------------------------------|-----------------------------------|---|
| 4. | Nuts (14) or studs (16)            | six nuts (12 or 13)               | Using lug wrench, loosen.   |
| 5. | Shackle box bracket (6)            | Hydraulic jack (5)                | Using handle, raise semitrailer until outer wheel and tire assembly (11) is off ground. |
| 6. | Nuts (14) or studs (16)            | Six nuts (12 or 13)               | Using lug wrench, unscrew and take off.   |
| 7. | Outer wheel and tire assembly (11) | With help of assistant, take off. |   |



3-9. WHEEL AND TIRE ASSEMBLY (Con't)

| LOCATION  | ITEM                    | ACTION                             | REMARKS  |
|---|-------------------------|------------------------------------|--|
| <b>NOTE</b>   |                         |                                    |  |
| <b>If inner wheel and tire assembly does not need to be removed, go to step 17.</b> |                         |                                    |  |
| 8.  | Shackle box bracket (6) | Hydraulic jack (5)                 | Using handle, lower until inner wheel and tire assembly (9) is on the ground.  |
| 9.  | Studs (16)              | Six nuts (14 or 15)                | Using lug wrench, loosen.  |
| 10.   | Shackle box bracket (6) | Hydraulic jack (5)                 | Using handle, raise until inner wheel and tire assembly (9) is off the ground. |
| 11.   | Studs (16)              | Six nuts (14 or 15)                | Using lug wrench, unscrew and take off.  |
| 12.   |                         | Spacer plate (10)                  | Pull off from studs (16).  |
| 13.   |                         | Inner wheel and tire assembly (9). | With help of assistant, take off.  |



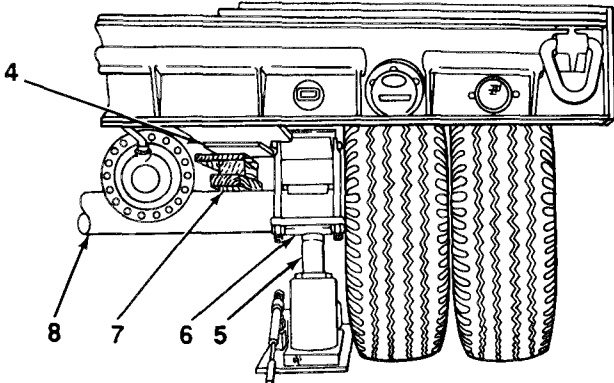
INSTALLATION

|     |            |                                   |   |
|-----|------------|-----------------------------------|---|
| 14. | Studs (16) | Inner wheel and tire assembly (9) | With help of assistant, place on studs (16).  |
| 15. |            | Spacer plate (10)                 | Slide over studs (16).  |
| 16. |            | Six nuts (14 or 15)               | a. Have assistant hold inner wheel and tire assembly (9).<br>b. Using lug wrench, screw on and tighten six nuts (14 or 15). |

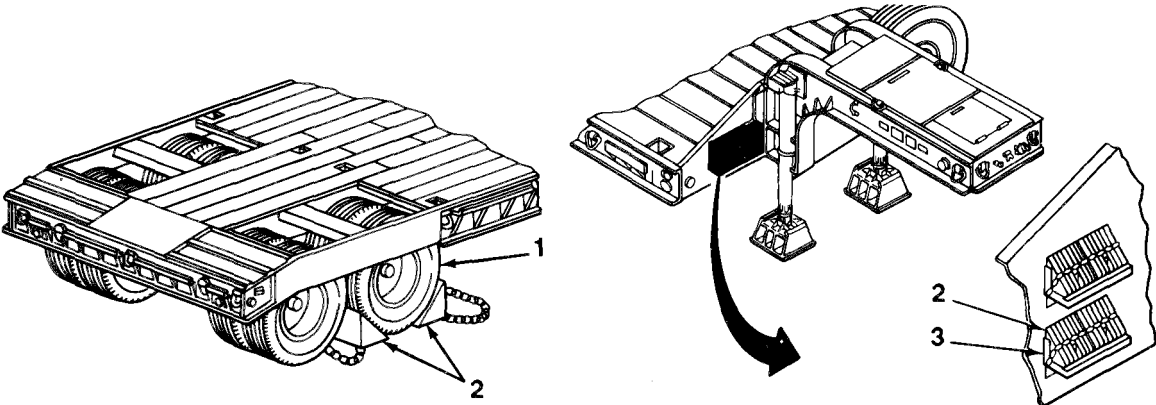
TA506821

3-9. WHEEL AND TIRE ASSEMBLY (Con't)

|     | LOCATION                    | ITEM                               | ACTION   | REMARKS |
|-----|-----------------------------|------------------------------------|--|---------|
| 17. | Nuts (14) or studs (16)     | Outer wheel and tire assembly (11) | With help of assistant, place onto nuts (14) or studs (16).  |         |
| 18. |                             | Six nuts (12 or 13)                | a. Have assistant hold outer wheel and tire assembly (11).<br>b. Using lug wrench, screw on and tighten six nuts (12 or 13). |         |
| 19. | Shackle box bracket (6)     | Hydraulic jack (5)                 | Using handle, lower until wheel and tire assemblies (9 and 11) are on the ground.  |         |
| 20. | Stop block (4) and axle (8) | Wooden blocks (7)                  | Take out.  |         |



- 21. Wheel and tire assemblies (1)      Chock blocks (2)      Remove from front and rear of wheel and tire assemblies (1).
- 22. Right front corner of semitrailer      Chock blocks (2)      Put into stowage brackets (3).



**3-9. WHEEL AND TIRE ASSEMBLY (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

FOLLOW-ON MAINTENANCE:

- **Have unit maintenance torque inner nuts to 300-350 lb.-ft. (407-475 N•m) and outer nuts to 450-500 lb.-ft. (610-678 N•m).**
- **Turn in wheel and tire assembly to unit maintenance.**

**TASK ENDS HERE**

**3-10. SPARE WHEEL AND TIRE ASSEMBLY**

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|

*Initial Setup:*

**Tools/Test Equipment:**

- Wrench and handle, lug
- Wrench, stud nut

**Personnel Required: Two**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**REMOVAL**

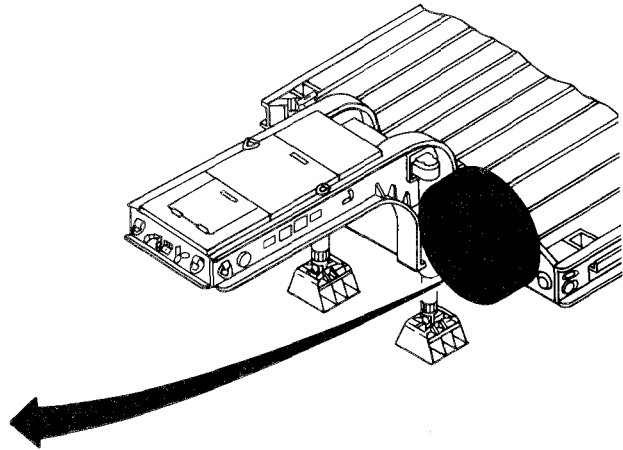
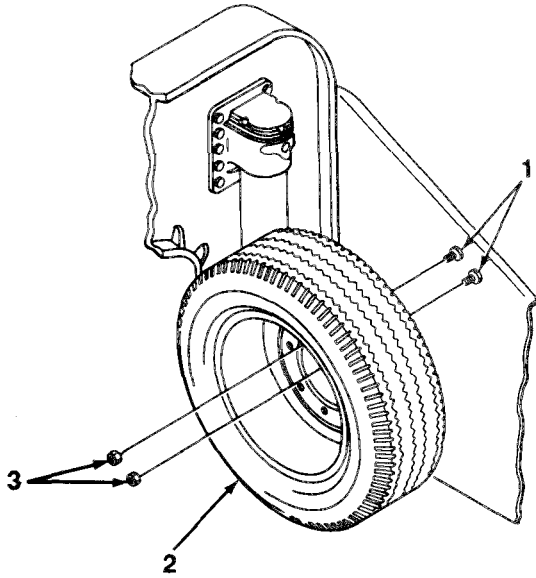
- |    |           |                                   |   |
|----|-----------|-----------------------------------|---|
| 1. | Studs (1) | Two nuts (3)                      | Using lug wrench and handle, unscrew counterclockwise and take off. |
| 2. | Studs (1) | Spare wheel and tire assembly (2) | With help of assistant, lift off.                                   |

**INSTALLATION**

- |    |           |                                   |  |
|----|-----------|-----------------------------------|--|
| 3. | Studs (1) | Spare wheel and tire assembly (2) | With help of assistant, place on.                  |
| 4. |           | Two nuts (3)                      | Using lug wrench and handle, screw on and tighten. |

**3-10. SPARE WHEEL AND TIRE ASSEMBLY (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



**TASK ENDS HERE**

**3-11. LANDING GEAR LEGS**

*This Task Covers:*

Cleaning

*Initial Setup:*

**Materials/Parts**

- Brush (Item 1, Appendix E)
- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

3-11. LANDING GEAR LEGS (Con't)

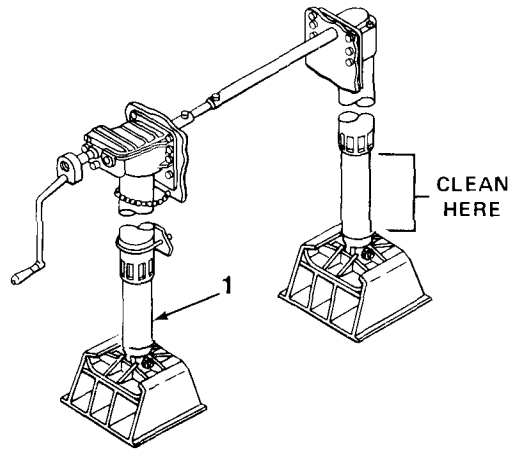
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

CLEANING

Lower portion of landing gear leg (1) above shoe

Landing gear leg (1)

a. Using rags, wipe off any build-up of grease and dirt.



**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

- b. Using brush and dry cleaning solvent, clean.
- c. Allow to dry.
- d. Lubricate in accordance with Lubrication Chart (para 3-2).

TASK ENDS HERE

## CHAPTER 4

### UNIT MAINTENANCE

#### 4-1. OVERVIEW

This chapter contains all of the maintenance authorized to be performed by unit maintenance. Included are Service Upon Receipt of Material, Preventive Maintenance Checks and Services (PMCS), and troubleshooting and maintenance procedures,

|              |  | <i>Page</i> |
|--------------|--|-------------|
| Section I    | Repair Parts; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment . . . . . | 4-1         |
| Section II   | Service Upon Receipt . . . . .   | 4-2         |
| Section III  | Unit Preventive Maintenance Checks and Services (PMCS) . . . . .   | 4-3         |
| Section IV   | Unit Troubleshooting Procedures . . . . .  | 4-9         |
| Section V    | Electrical System Maintenance . . . . .  | 4-21        |
| Section VI   | Brake System Maintenance . . . . .   | 4-49        |
| Section VII  | Wheel, Hub, and Drum Maintenance. . . . .  | 4-95        |
| Section VIII | Frame and Towing Attachments Maintenance . . . . .   | 4-104       |
| Section IX   | Accessory Items Maintenance . . . . .  | 4-141       |
| Section X    | Preparation for Storage or Shipment ... . . . .  | 4-145       |

#### Section I. REPAIR PARTS; SPECIAL TOOLS; TEST MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

|                                      |     | <i>Page</i>  | <i>Page</i> |
|--------------------------------------|-----|--|-------------|
| Common Tools and Equipment . . . . . | 4-1 | Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment . . . . . | 4-1         |
| Repair Parts . . . . .               | 4-1 |  |             |

#### 4-2. COMMON TOOLS AND EQUIPMENT

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

#### 4-3. SPECIAL TOOLS; TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

For a listing of all tools required to maintain the semitrailer refer to Section III of the Maintenance Allocation Chart (MAC), Appendix B of this manual.

#### 4-4. REPAIR PARTS

Repair parts are listed and illustrated in Appendix F of this manual.



**Section II. SERVICE UPON RECEIPT**

|   |             |  |             |
|---|-------------|--|-------------|
|   | <i>Page</i> |  | <i>Page</i> |
| Preliminary Servicing and Adjustment of Equipment . . . . . | 4-2         | Service Upon Receipt of Material . . . . . | 4-2         |

**4-5. SERVICE UPON RECEIPT OF MATERIAL**

| LOCATION   | ITEM  | ACTION  | REMARKS  |
|--|---|---|--|
| 1.   | Attached to conspicuous part of semitrailer | DD Form 1397  | Read and follow all instructions.  |
| 2.   |   | Metal strapping, plywood, tapes, seats, and wrappings | Remove.  |
| <p><b>WARNING</b></p> <p><b>Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.</b></p> |   |   |  |
| 3.   |   | Coated exterior parts                                 | Remove rust preventive compound with dry cleaning solvent (Item 13, Appendix E).   |
| 4.   |   | Semitrailer   | <ul style="list-style-type: none"> <li>a. Inspect for damage received during shipping.</li> <li>b. If damage is found, submit DD Form 6, <i>Package Improvement Report</i>.</li> </ul>               |
| 5.   |   | Equipment packing slip                                | <ul style="list-style-type: none"> <li>a. Check against equipment to see if shipment is complete.</li> <li>b. Report all discrepancies in accordance with instructions in DA Pam 738-750.</li> </ul> |

**4-6. PRELIMINARY SERVICING AND ADJUSTMENT OF EQUIPMENT**

Perform the Operator/Crew and Unit Preventive Maintenance Checks and Services (PMCS) contained in Chapters 2 and 4 of this manual.

Lubricate all points as shown in the Lubrication Chart, regardless of interval (para 3-2).

Schedule the next Preventive Maintenance Checks and Services (PMCS) on DD Form 314, *Preventive Maintenance Schedule and Record*.

**4-6. PRELIMINARY SERVICING AND ADJUSTMENT OF EQUIPMENT (Con't)**

Report all deficiencies on DA Form 2407, *Maintenance Request*, if the deficiencies appear to involve unsatisfactory design.

Perform a break-in road test of 25 mi (40 km) at a maximum speed of 30 mi/h (48 km/h).

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

|  |                    |                               |                    |
|--|--------------------|-------------------------------|--------------------|
| General .....  | <i>Page</i><br>4-3 | Specific PMCS Procedures..... | <i>Page</i><br>4-3 |
| Unit Preventive Maintenance Checks and Services (PMCS), Table 4-1..... | 4-4                |                               |                    |

**4-7. GENERAL**

To ensure that your vehicle is ready for operation at all times, inspect it systematically so you can discover any defects and have them corrected before they result in serious damage or failure. Table 4-1 contains your Unit PMCS. The item numbers indicate the sequence of minimum inspection requirements. If you're operating the vehicle and notice something wrong that could damage the equipment if you continue operation, stop operation immediately.

Record all deficiencies and shortcomings, along with the corrective action taken, on DA Form 2404, *Equipment Inspection and Maintenance Worksheet*. The Item Number column is the source for the numbers used on the TM Number column on DA Form 2404.

The item numbers of the table indicate the sequence of the PMCS. Perform at the interval shown below:

**[Text Deleted]**

Perform your *Semiannual (S)* PMCS once each six months.

If something doesn't work, troubleshoot it with the instructions in this manual or notify your supervisor.

Always do your preventive maintenance in the same order, so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.

If anything looks wrong and you can't fix it, write it down on your DA Form 2404. If you find something seriously wrong, report it to direct support as soon as possible.

**4-8. SPECIFIC PMCS PROCEDURES**

**WARNING**

- **Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**
- **Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.**

*Keep It Clean.* Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Item 13, Appendix E) to clean metal surfaces. Use soap (Item 4, Appendix E) and water when you clean rubber or plastic material.

**4-8. SPECIFIC PMCS PROCEDURES (Con't)**

*Bolts, Nuts, and Screws.* Check that they are not loose, missing, bent, or broken. You can't try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. Tighten any that you find loose.

*Welds.* Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to direct support.

*Electric Wires and Connectors.* Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connections and ensure that the wires are in good condition.

*Hoses.* Look for wear, damage, and leaks. Ensure that clamps and fittings are tight. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, either correct it if authorized by the MAC (Appendix B) or report it to direct support.

*Lubrication.* If instructions in the Lubrication Chart have been followed, the semitrailer is considered to be adequately lubricated.

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS).

S-SEMIANNUAL

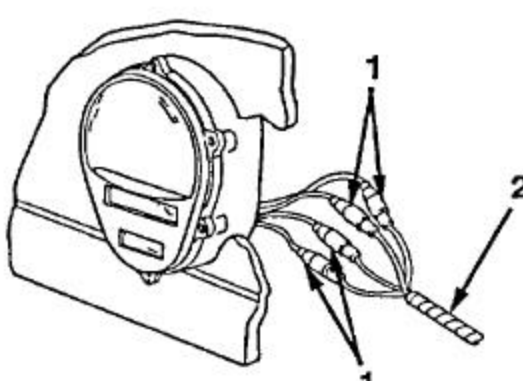
| ITEM NO. | INTERVAL<br>S | PROCEDURE   |
|----------|---------------|---|
| 1        |               | <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Perform Operator/Crew PMCS prior to or in conjunction with Unit PMCS if:</b></p> <p style="text-align: center;">a. <b>There is a delay between the daily operation and the Unit PMCS.</b><br/>b. <b>Regular operator is not assisting/participating.</b></p> <p><b>LIGHTS AND REFLECTORS</b></p> <ul style="list-style-type: none"> <li>• a. Check for loose mounting and electrical connectors (1).</li> <li>• b. Check for bare wires and frayed insulation (2).</li> </ul>  |
| 2        |               | <p><b>SERVICE BRAKES</b></p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;"><b>Brakes may require more frequent adjustment depending on how much use the semitrailer receives.</b></p> <ul style="list-style-type: none"> <li>• a. Check brakeshoes (3) for wear and proper adjustment. If brakeshoe linings are worn within 0.03 in. (0.76 mm) of rivet or screw heads, replace brakeshoes. Check minor or major adjustment as required (para 4-20 or 4-22).</li> <li>• b. Check brake components for proper operation.</li> </ul>  |

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS) (Con't).

S-SEMIANNUAL

| ITEM NO. | INTERVAL<br>S | PROCEDURE   |
|----------|---------------|---|
| 3        |               | <div> </div> <p><b>LANDING GEAR</b></p> <ul style="list-style-type: none"> <li>• a. Remove gearbox cover (4) and check for damaged gears and contaminated lubricant.</li> <li>• b. Check for damaged lower leg tubes (5), missing or damaged pins, or sheared woodruff keys.</li> </ul> <div> </div> |

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS) (Con't).

S-SEMIANNUAL

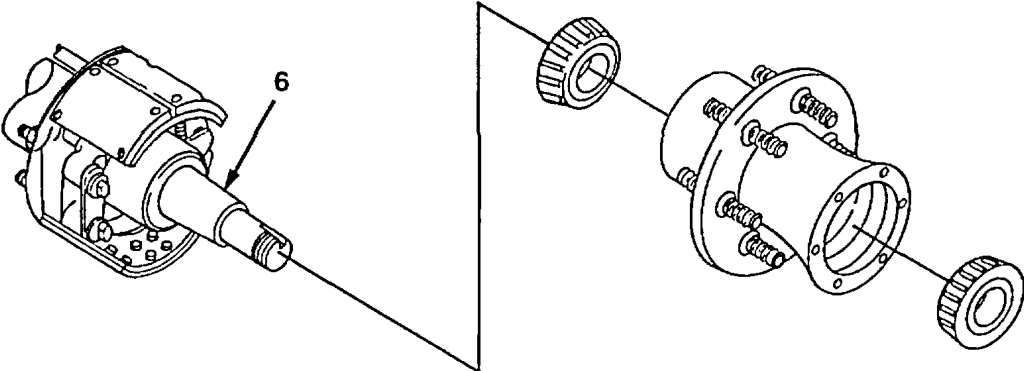
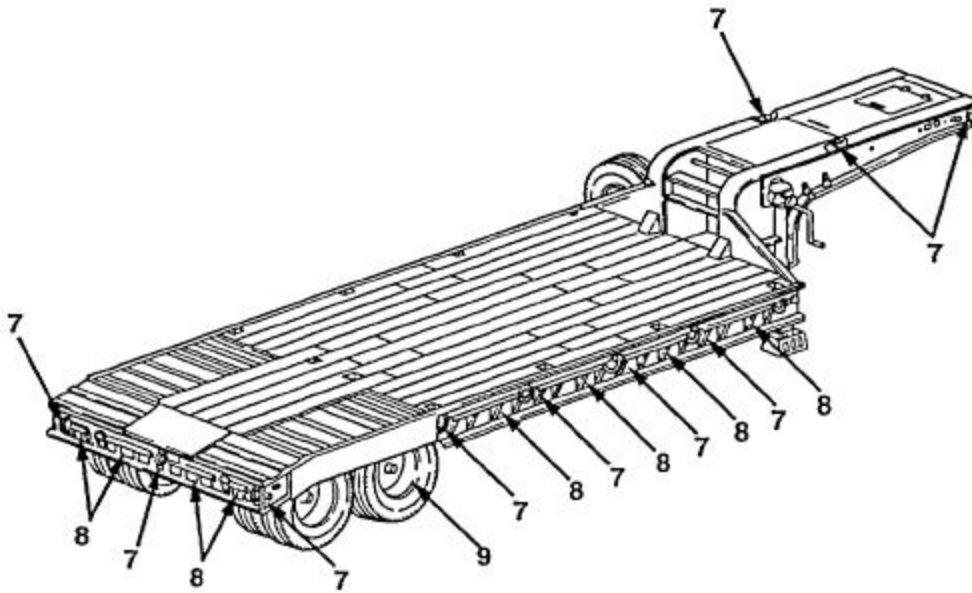
| ITEM NO. | INTERVAL<br>S | PROCEDURE  |
|----------|---------------|--|
| 4        |               | <p><b>AXLE</b></p> <ul style="list-style-type: none"> <li>Check for bent axle (6). Check for loose or missing U-bolts and nuts.</li> </ul>                           |
| 5        |               | <p><b>LOADING AND LASHING EQUIPMENT</b></p> <ul style="list-style-type: none"> <li>Inspect for broken or missing lashing rings (7) and ramp clips (8).</li> </ul>  |

Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS) (Con't).

S-SEMIANNUAL

| ITEM NO. | INTERVAL<br>S | PROCEDURE  |
|----------|---------------|--|
| 6        |               | <p><b>WHEELS</b></p> <ul style="list-style-type: none"> <li>a. Inspect wheels (9) for damage.</li> <li>b. Torque inner wheel nuts to 300-350 lb.-ft. (407-475 N•m). Torque outer wheel nuts to 450-500 lb.-ft. (610-678 N•m).</li> </ul>   |
| 7        |               | <p><b>KINGPIN</b></p> <ul style="list-style-type: none"> <li>a. Inspect the kingpin (10) for wear of 1/18 in. (1.6 mm) over 1/4 in. (6.4 mm) of the circumference of the pin. Check for wear over the kingpin surface causing the diameter to be reduced by 1/16 in. (1.6 mm). Inspect the retainer (13) for breaks or damage.</li> <li>b. Inspect locking pin (12) and chain (11) for broken links and loose or broken mounting pins or bolts.</li> </ul> |
| 8        |               | <p><b>ROAD TEST</b></p> <ul style="list-style-type: none"> <li>a. Perform road test. Pay special attention to items that were repaired or adjusted.</li> </ul>   |

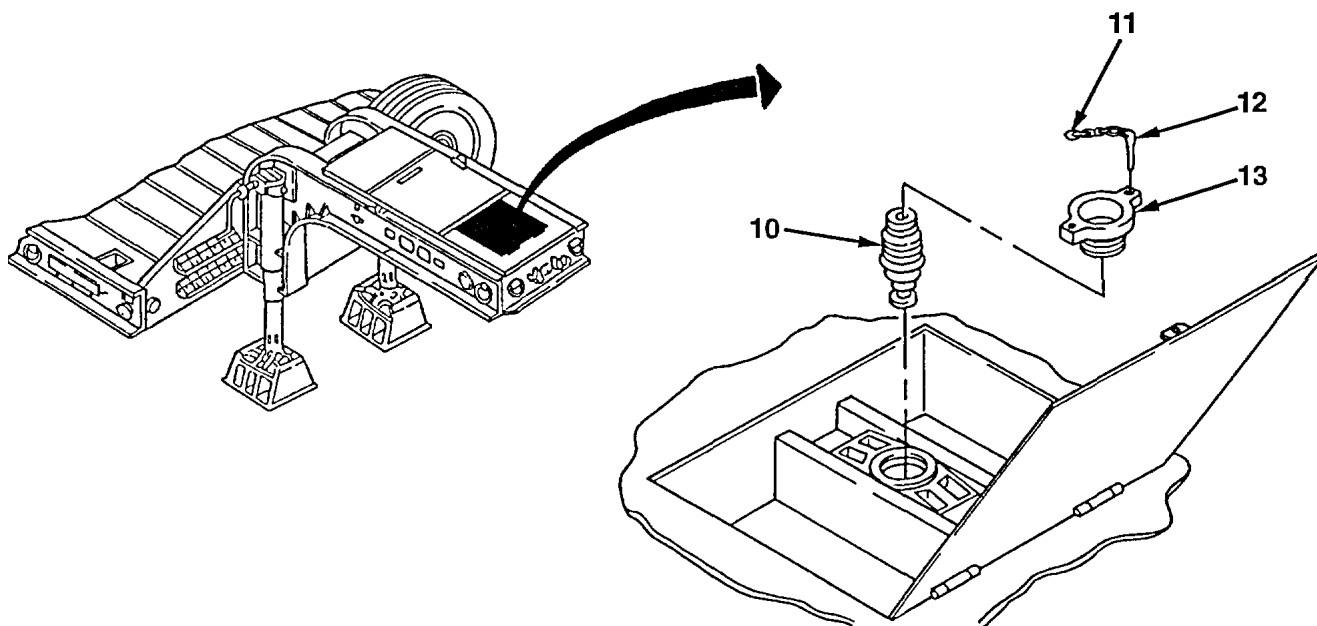
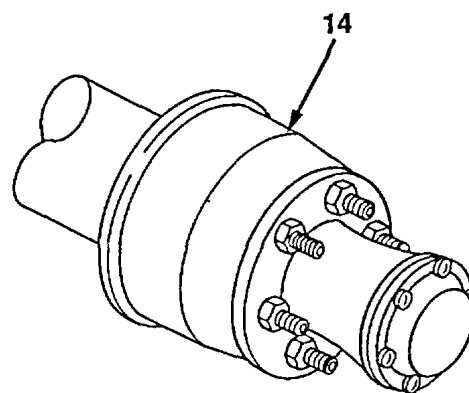
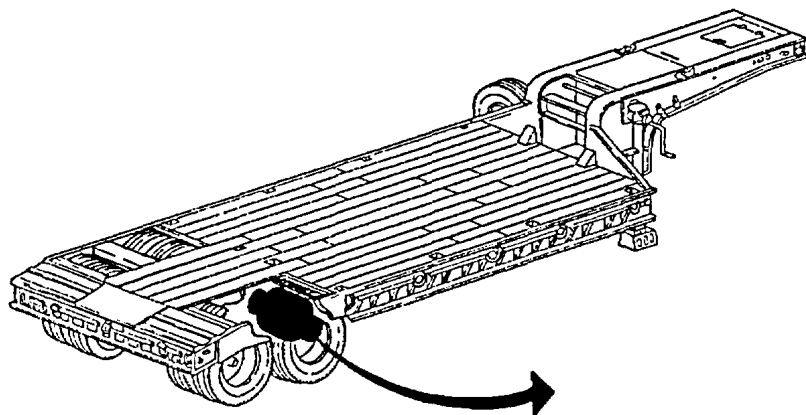


Table 4-1. Unit Preventive Maintenance Checks and Services (PMCS) (Con't).

S-SEMIANNUAL

| ITEM NO. | INTERVAL<br>S | PROCEDURE   |
|----------|---------------|---|
| 8        |               | <p><b>ROAD TEST (Con't)</b></p> <p style="text-align: center;"><b>WARNING</b></p> <p style="text-align: center;"><b>Cautiously feel each wheel hub and drum. Wheel hubs or drums may be hot. Failure to follow this warning may result in burns.</b></p> <ul style="list-style-type: none"> <li>• b. Check drums and wheel hubs (14) immediately after road test; check for a drum and wheel hub that is hotter or cooler than the others. An overheated drum and wheel hub indicates an improperly adjusted or defective service brake or dry wheel bearing. An abnormally cool condition indicates an inoperative service brake.</li> </ul> |



## Section IV. UNIT TROUBLESHOOTING PROCEDURES

|                                  | <i>Page</i> |   | <i>Page</i> |
|----------------------------------|-------------|---|-------------|
| Explanation of Columns . . . . . | 4-9         | Unit Troubleshooting, Table 4-2 . . . . . | 4-10        |
| General . . . . .                | 4-9         | Troubleshooting Symptom Index . . . . .   | 4-9         |

### 4-9. GENERAL

Table 4-2 in this section lists the common malfunctions that maybe found during the operation or maintenance of the semitrailer or components. You should perform the test or inspections and corrective actions in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by the listed corrective actions, notify your supervisor.

### 4-10. EXPLANATION OF COLUMNS

**Malfunction.** Visual or operational indication that something is wrong with the semitrailer.

**Test or Inspection.** Procedure to isolate the problem to a component or system.

**Corrective Action.** Procedure to correct problem.

### 4-11. TROUBLESHOOTING SYMPTOM INDEX

This symptom index is provided as a quick way to get you to the part of the troubleshooting table that will help you solve the problem you are having. It lists all the malfunctions covered in Table 4-2.

|  | <b>Troubleshooting<br/>Procedure<br/>Page</b> |
|--|---|
| <b>BRAKES</b>  |   |
| Brakes Drag (One or More Drums Running Hot) . . . . .    | 4-18  |
| Brakes Will Not Release . . . . .                        | 4-12  |
| Grabbing Brakes . . . . .                                | 4-17  |
| No Brakes or Weak Brakes . . . . .                       | 4-14  |
| Slow Brake Application or Slow Release . . . . .         | 4-16  |
| <b>ELECTRICAL SYSTEM</b>                                 |   |
| All Lamps Do Not Light.. . . .                           | 4-10  |
| Dim or Flickering Lights . . . . .                       | 4-12  |
| One or More Lamps (But Not All) Will Not Light . . . . . | 4-11  |
| <b>LANDING GEAR</b>                                      |   |
| Landing Gear is Difficult to Raise or Lower . . . . .    | 4-19  |

### NOTE

**Semitrailer must be coupled to tractor when performing electrical or airbrake system tests.**



Table 4-2. Unit Troubleshooting.

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

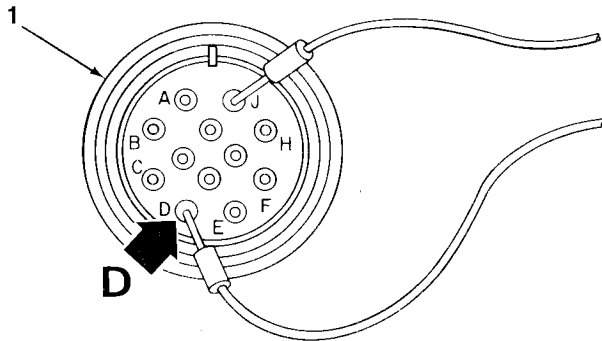
ELECTRICAL SYSTEM

1. ALL LAMPS DO NOT LIGHT.

Step 1. Check for open circuit in wiring.

With tractor lights turned on, check tractor-to-semitrailer connector (1) by measuring voltage between ground contact (D) and other contacts.

If measurement is not approximately 24 volts, refer to tractor operator's manual to perform tractor troubleshooting.

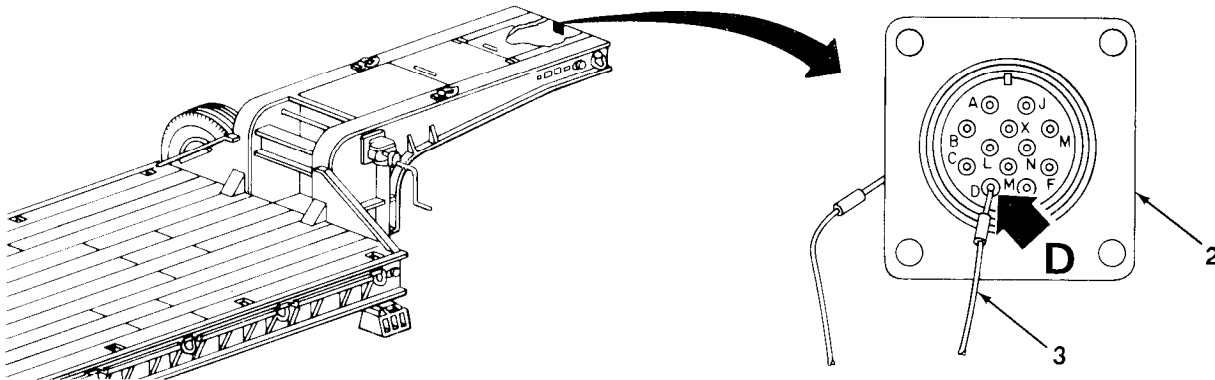


- A. LEFT B.O. TAIL
- B. LEFT SERVICE STOP
- C. RIGHT B.O. TAIL
- D. GROUND
- E. SERVICE TAIL AND CLEARANCE
- F. B.O. STOP
- H. B.O. CLEARANCE
- J. RIGHT SERVICE STOP

Check receptacle (2) by measuring continuity between ground contact (D) and other bare metal on semitrailer.

If measurement is not zero, remove, clean, and install ground wire (3).

If measurement is still not zero, replace receptacle (2) (para 4-18).



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Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

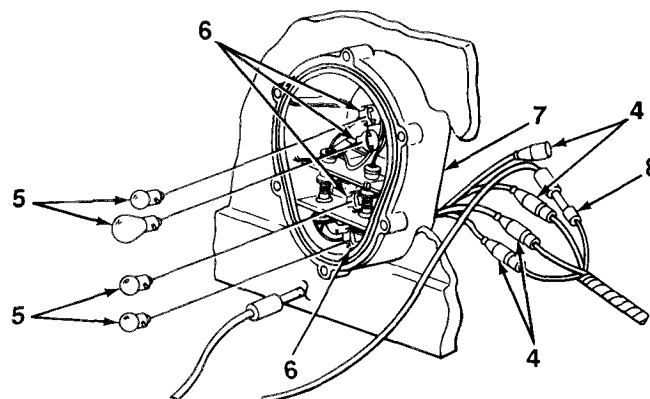
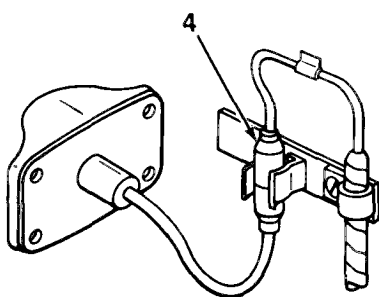
With semitrailer lights turned on, disconnect wiring harness connector (8) and measure voltage between wiring harness connector and other bare metal on semitrailer.

If measurement is not approximately 24 volts, replace wiring harness (para 4-14) or repair broken wire (para 4-16).

Step 2. Check all connectors (4), lamp sockets (6), and lamps (5) for corrosion and damage.

If connectors (4), sockets (6), or lamps (5) are corroded, scrape and clean off corrosion.

If connectors (4) are damaged, replace (para 4-15). If sockets (6) or lamps (5) are damaged, replace (para 4-12 or 4-13).



**2. ONE OR MORE LAMPS (BUT NOT ALL) WILL NOT LIGHT.**

Step 1. Check for burned out lamp (5) and loose connectors (4).

If lamp (5) is burned out, replace (para 4-12 or 4-13).

If connector (4) is loose, tighten.

Step 2. Check for loose or broken light assembly (7).

If light assembly (7) is loose, tighten.

If light assembly (7) is broken, replace (para 4-12 or 4-13).

Step 3. Check for corroded and broken lamp contact and socket (6).

If contact or socket (6) is corroded, scrape and clean.

If contact or socket (6) is broken, replace (para 4-12 or 4-13).

Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

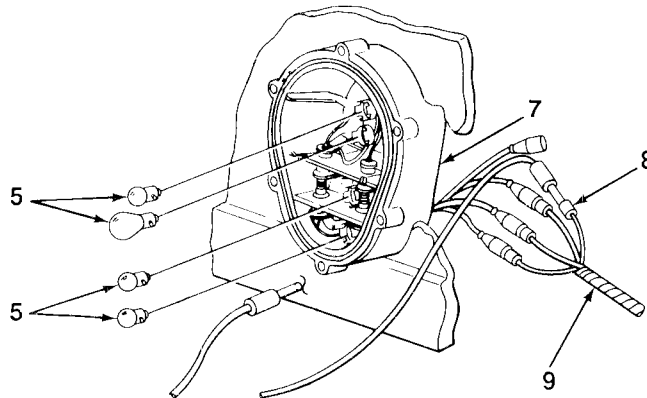
Step 4. Check for broken cable.

Disconnect wiring harness connector (8) at inoperative lamp (5) and measure continuity between wiring harness connector and bulb contact.

If measurement is not zero, replace light assembly (7) (para 4-12 or 4-13).

Turn semitrailer lights on and measure voltage between wiring harness connector (8) and good metal ground.

If measurement is not approximately 24 volts, replace wiring harness or repair wiring harness wire (9) (para 4-14 or 4-16).



**3. DIM OR FLICKERING LIGHTS.**

Check for loose ground wire in electrical receptacle connector at front of semitrailer.

If ground wire is loose, tighten.

**BRAKES**

**4. BRAKES WILL NOT RELEASE.**

Step 1. Check for restrictions in air lines and hoses.

If air line or hoses have a restriction, repair (para 4-28).

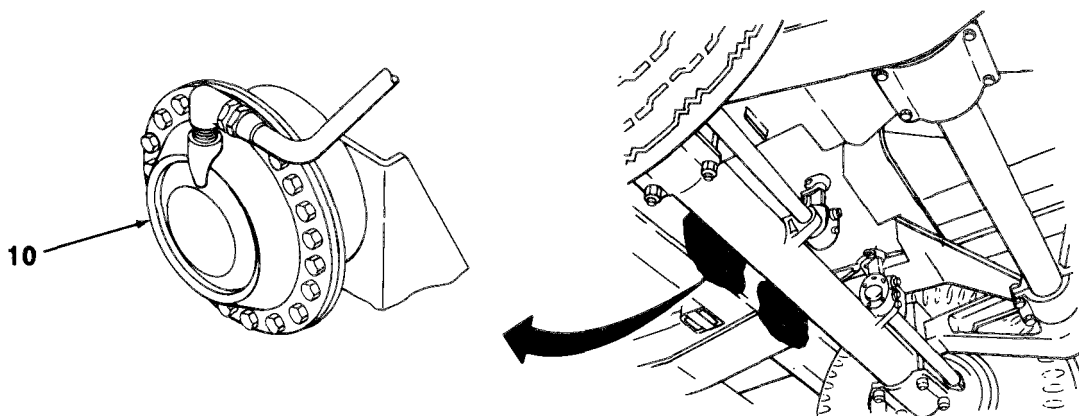
Step 2. Apply tractor brakes and release. Emergency relay valve should vent airbrake chamber (10) air through exhaust port when tractor brakes are released.

If airbrake chamber (10) air is not vented when tractor brakes are released, replace emergency relay valve (para 4-31).

TA506832

Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|



Step 3. Check brakeshoe adjustment.

Jack up the axle so wheel rotates freely.

If wheel does not rotate freely, adjust the hex head (11) located on slack adjuster (para 4-23).

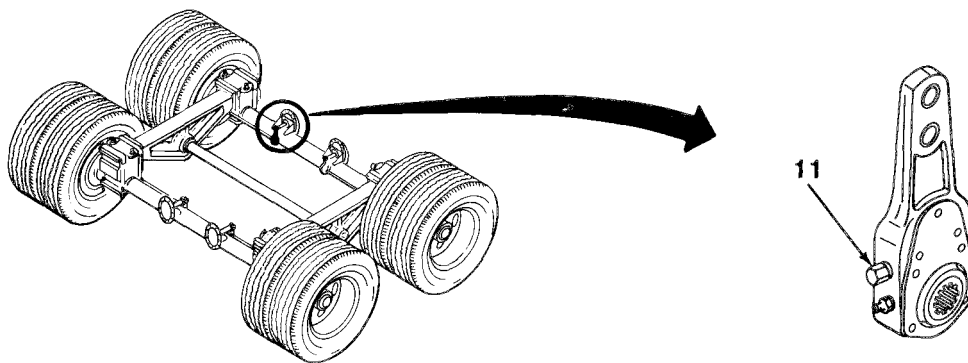
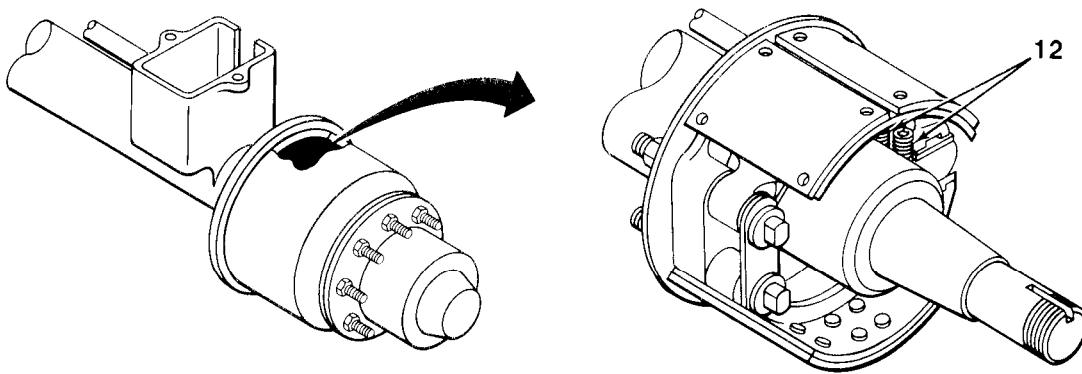


Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

- Step 4. Remove wheel and drum, and check for distorted or broken brakeshoe return springs (12) (para 4-21).
- If return springs (12) are distorted or broken, replace return springs (para 4-21).
- If brakes still will not release, check camshaft (para 4-24).



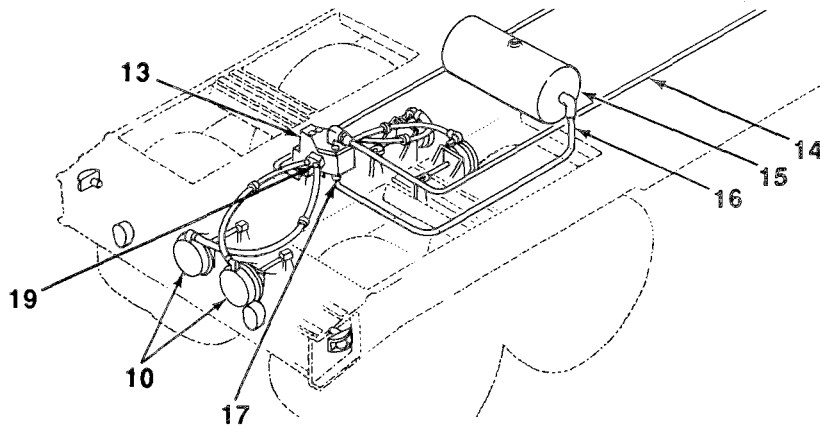
**5. NO BRAKES OR WEAK BRAKES.**

- Step 1. Check for restricted and leaking service air line (14).
- If service air line (14) is restricted or damaged, repair (para 4-28).
- Step 2. Disconnect service air line (14) at emergency relay valve (13). Apply and release service brakes. Air should escape when brakes are applied, and stop when brakes are released.
- If airflow does not react as stated above, service air line (14) is clogged. Repair service air line (para 4-28).
- Step 3. Visually inspect air line (16) between air reservoir (15) and emergency relay valve (13) for dents, cracks, and breaks.
- If air line (16) is dented, cracked, or broken, repair (para 4-28).
- Step 4. Cautiously loosen air reservoir fitting (17) at emergency relay valve (13) (para 4-28). Air should escape; no air means a clogged air line.
- If air line is clogged, repair (para 4-28).
- Step 5. Cautiously loosen air line fitting (19) at emergency relay valve (13) that supplies air to airbrake chambers (10). Have assistant apply brakes and note airflow to airbrake chambers.
- If there is no airflow to airbrake chambers (10), emergency relay valve (13) is defective. Replace emergency relay valve (para 4-31).

TA506834

Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|



Step 6. Check for dented, cracked, and leaking airbrake chamber (10).

If airbrake chamber (10) is dented, cracked, or leaking, replace (para 4-30).

Step 7. Adjust brakes at slack adjuster (20) (para 4-20).

If brakes will not adjust, remove wheels, drum (21), and hub (22), and replace broken and worn brake components (para 4-21).

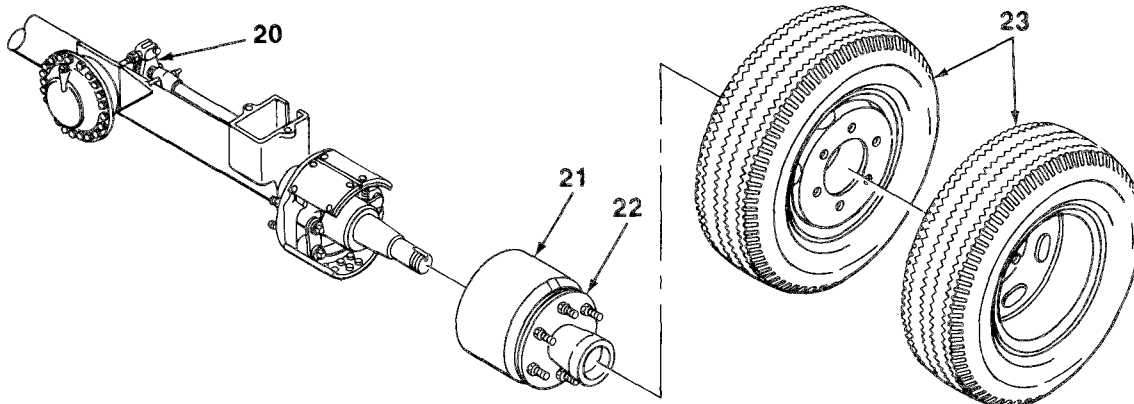


Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

**6. SLOW BRAKE APPLICATION OR SLOW RELEASE.**

Step 1. Check for restriction in air lines and hoses.

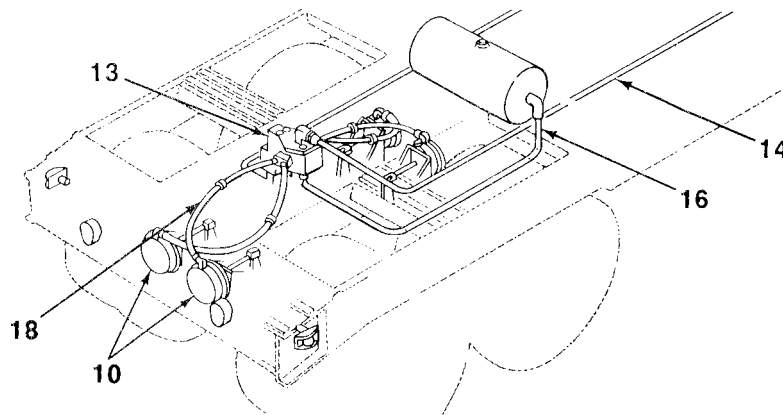
If air lines or hoses are restricted, repair (para 4-28).

Step 2. Loosen service air line (14) coming into emergency relay valve (13) and apply brakes. Air should leak when brakes are applied and stop when released.

If air does not leak when brakes are applied, service air line (14) is clogged. Repair service air line (para 4-28).

Step 3. Cautiously loosen air line (16) at emergency relay valve (13). Apply and release brakes.

If no air is leaking, air line (16) is clogged. Repair air line (para 4-28).



Step 4. Loosen air line (18) to airbrake chamber (10) at emergency relay valve (13). Apply and release brakes. Air should leak when brakes are applied and stop when released.

If air does not leak when brakes are applied, the emergency relay valve (13) is defective. Replace emergency relay valve (para 4-31).

Step 5. Check airbrake chambers (10) for dents and cracks.

If airbrake chambers (10) are dented or cracked, replace (para 4-30).

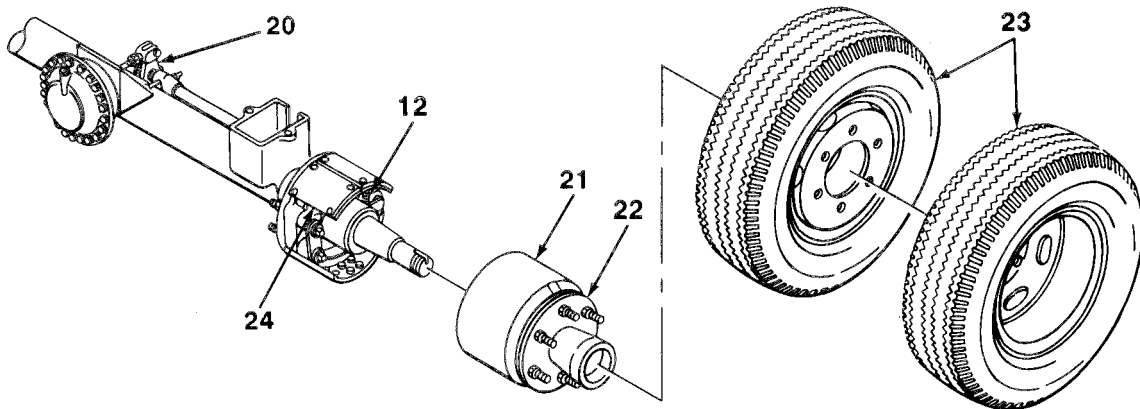
Step 6. Apply brakes. Listen and feel for airbrake chamber (10) leaks other than those caused by first applying brakes. If leak is not obvious, put soap (Item 4, Appendix E) solution on seams and check for bubbles.

If airbrake chambers (10) are leaking, replace (para 4-30).

TA506836

Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION  | CORRECTIVE ACTION  |
|-------------|---|--|
| Step 7.     | Remove wheels (23), drum (21), and hub (22). Check for distorted or broken brakeshoe return springs (12) (para 4-21). | If return springs (12) are distorted or broken, replace (para 4-21). |



## 7. GRABBING BRAKES.

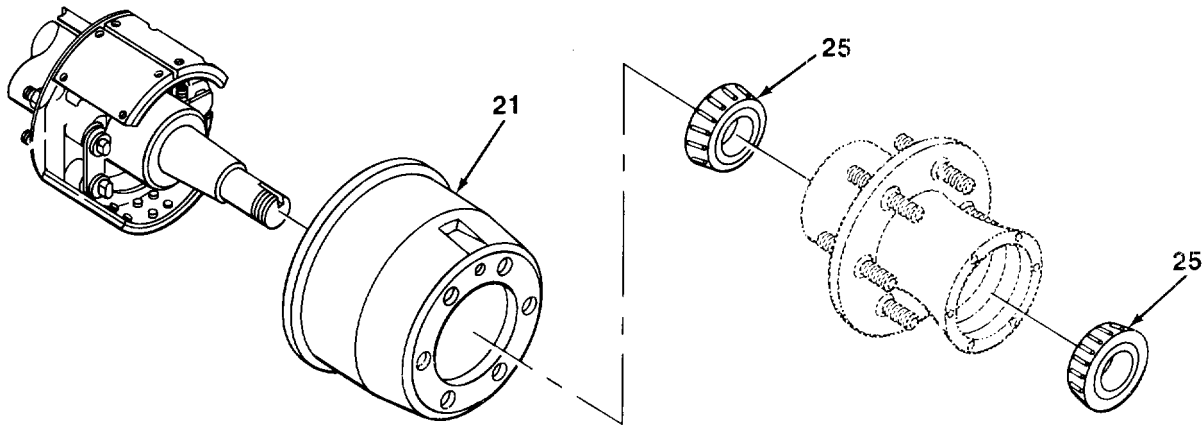
- Step 1. Jack up axle so wheels (23) rotate freely and check brake adjustment.  
 If wheels (23) do not rotate freely, adjust hex head located on slack adjuster (20) (para 4-20).
- Step 2. Remove wheels (23), drum (21), and hub (22). Check for grease on brakeshoe linings (24).  
 If grease is present, replace brakeshoes (para 4-21). Replace oil seal (para 4-33).
- Step 3. Check for loose or worn brakeshoe linings (24).  
 If brakeshoe linings (24) are loose or worn close to head of screws, replace brakeshoes (para 4-21).
- Step 4. Check for cracked, scored, or deformed drum (21).  
 If drum (21) is cracked, scored, or deformed, replace (para 4-33).



Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION |
|-------------|--------------------|-------------------|
|-------------|--------------------|-------------------|

- Step 5. Check for loose or worn wheel bearings (25) (para 4-33).  
 If wheel bearings (25) are loose, adjust (para 4-33).  
 If wheel bearings (25) are worn, replace (para 4-33).



8. BRAKES DRAG (ONE OR MORE DRUMS RUNNING HOT).

- Step 1. Jack up axle so wheel (23) rotates freely. Check brake adjustment: (para 4-20).  
 If wheel (23) does not rotate freely, adjust hex head(11) located on slack adjuster (para 4-20).

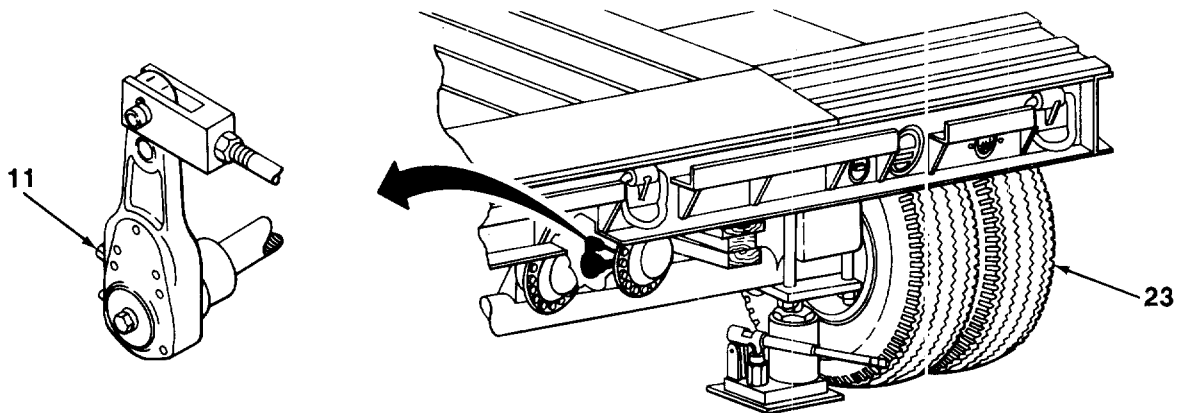
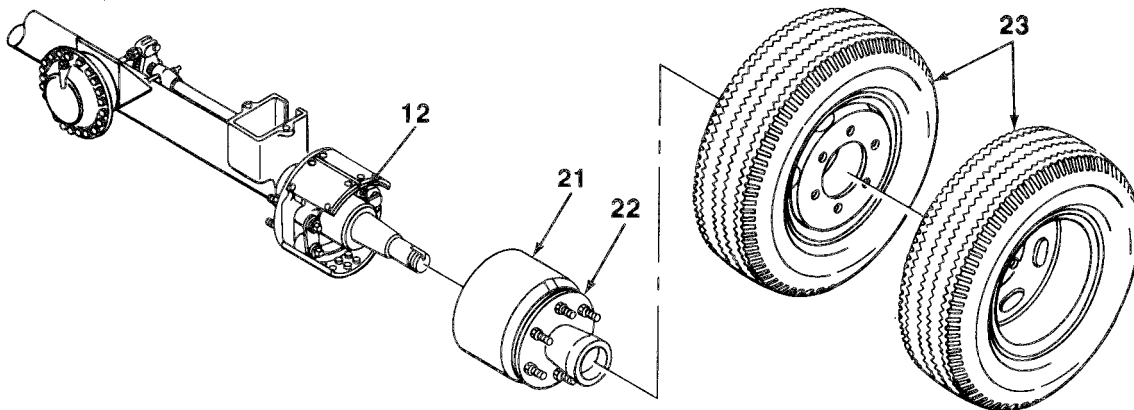


Table 4-2. Unit Troubleshooting (Con't).

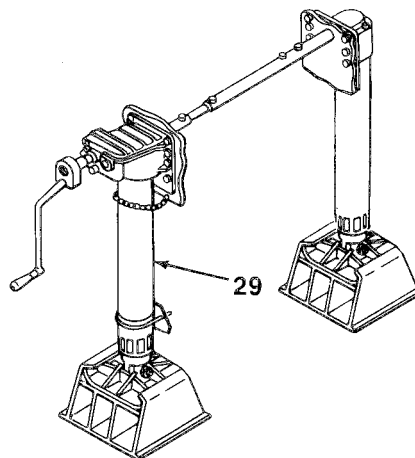
| MALFUNCTION | TEST OR INSPECTION | CORRECTIVE ACTION  |
|-------------|--------------------|--|
|             | Step 2.            | Remove wheels (23), drum (21), and hub (22). Check for distorted and broken brakeshoe return springs (12).<br>If return springs (12) are defective, replace (para 4-21). |
|             | Step 3.            | Check for evidence of out-of-round drum (21) (para 4-33).<br>If drum (21) is out-of-round, replace (Para 4-33).  |



**LANDING GEAR**

**9. LANDING GEAR IS DIFFICULT TO RAISE OR LOWER.**

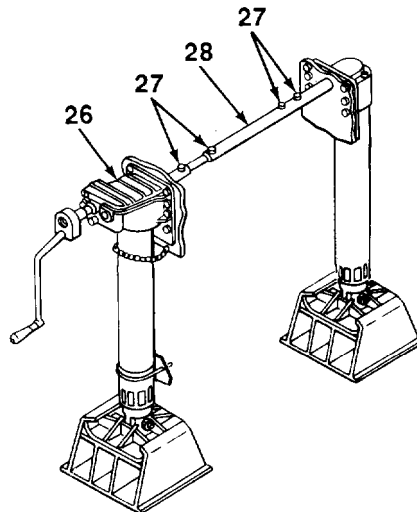
- Step 1. Check for misaligned or damaged landing gear leg (29).  
If landing gear leg (29) is misaligned or damaged, replace (para 4-38 or 4-39).



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Table 4-2. Unit Troubleshooting (Con't).

| MALFUNCTION | TEST OR INSPECTION  | CORRECTIVE ACTION   |
|-------------|---|---|
| Step 2.     | Check for bent shaft (28) or sheared retaining pins (27). | <p>If shaft (28) is bent, straighten.</p> <p>If retaining pins (27) are sheared, replace.</p> |
| Step 3.     | Check gearbox (26) for binding or broken gear teeth.      | If gearbox (26) is binding or sounds like it has broken gear teeth, repair (para 4-39).       |



## Section V. ELECTRICAL SYSTEM MAINTENANCE

|                                      | <i>Page</i> |                                 | <i>Page</i> |
|--------------------------------------|-------------|---------------------------------|-------------|
| Clearance Light Assemblies ... ..    | 4-23        | Wire Connectors... . . . .      | 4-38        |
| Composite Light Assemblies . . . . . | 4-21        | Wiring Diagram . . . . .        | 4-48        |
| Ground Wire Repair . . . . .         | 4-44        | Wiring Harness . . . . .        | 4-28        |
| Receptacle . . . . .                 | 4-46        | Wiring Harness Repair . . . . . | 4-41        |

### 4-12. COMPOSITE LIGHT ASSEMBLIES

*This Task Covers:*

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>a. Lamp, Lens, and Door Assembly Replacement</li> <li>b. Removal of Composite Light Assembly</li> </ul> | <ul style="list-style-type: none"> <li>c. Installation of Composite Light Assembly</li> </ul> |
|--|---|

*Initial Setup:*

**Materials/Parts:**

- Marker tags (Item 14, Appendix E)

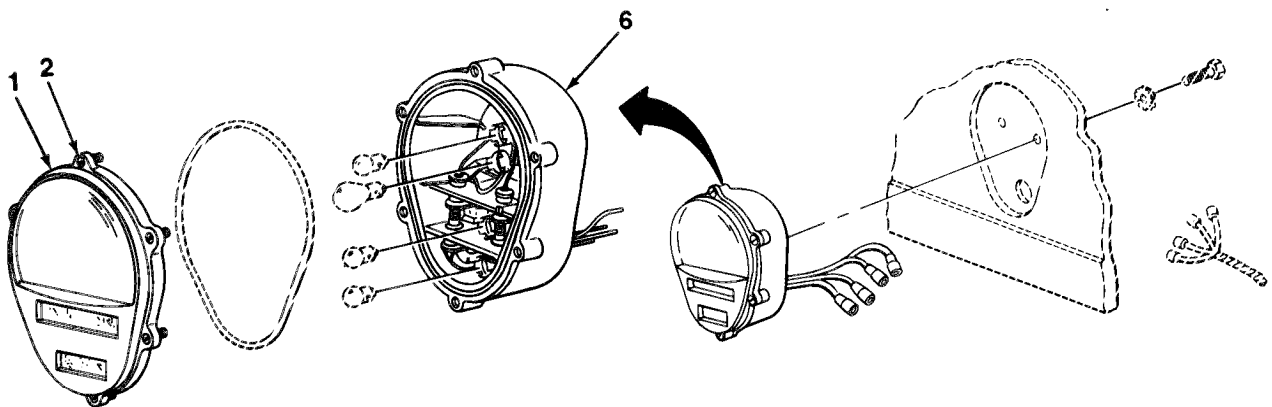
**Tools/Test Equipment:**

- Handle, ratchet, 1/2 in. drive
- Screwdriver, flat-tip
- Socket, 9/16 in., 1/2 in. drive

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**LAMP, LENS, AND DOOR ASSEMBLY REPLACEMENT**

- |  |                       |  |  |
|--|-----------------------|--|--|
| <p>1. Door and lens assembly (7) to composite light body (6)</p> | <p>Six screws (2)</p> | <p>Using screwdriver, unscrew. Screws (2) will stay in door and lens assembly (1).</p> |  |
|--|-----------------------|--|--|



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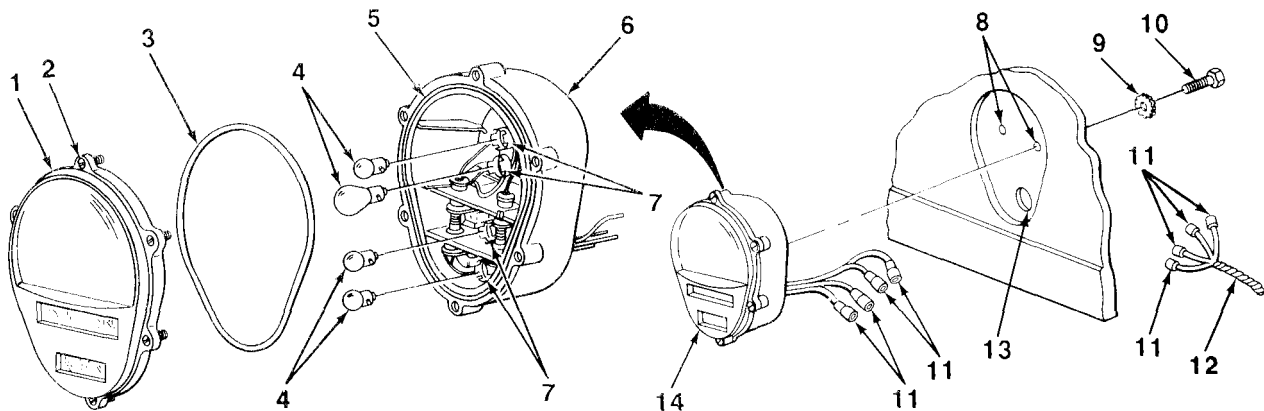
4-12. COMPOSITE LIGHT ASSEMBLIES (Con't)

| LOCATION | ITEM  | ACTION                | REMARKS  |
|----------|---|-----------------------|--|
|          |   |                       |  |
| 2.       | Door and lens assembly (1) and composite light body (6) | Separate.             |  |
| 3.       | Composite light body (6)                                | Preformed packing (3) | Take out of groove (5) and inspect.<br><b>If damaged, discard preformed packing (3).</b> |

**NOTE**

**Top lamp in composite light assembly is taillight, second lamp is stop-turn lamp, third down is blackout taillight, and bottom lamp is blackout stoplight.**

|    |                          |                |  |
|----|--------------------------|----------------|--|
| 4. | Composite light body (6) | Four lamps (4) | a. Push in, turn ¼ turn counterclockwise and remove.<br>b. Inspect for broken filament.<br><b>If filament is broken, discard lamp (4).</b> |
|----|--------------------------|----------------|--|



|    |                          |                            |   |
|----|--------------------------|----------------------------|---|
| 5. |                          | Four lamps (4)             | Place in proper socket (7), push in, and turn ¼ turn clockwise. |
| 6. | Composite light body (6) | Preformed packing (3)      | Place in groove (5).  |
| 7. | Composite light body (6) | Door and lens assembly (1) | Place in position on composite light body (6).                  |
| 8. |                          | Six screws (2)             | Using screwdriver, screw in.                                    |

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**4-12. COMPOSITE LIGHT ASSEMBLIES (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL OF COMPOSITE LIGHT ASSEMBLY

**NOTE**

**If wire identification tags are missing or are not readable, wires should be tagged to aid in installation.**

|     |   |                                     |  |
|-----|---|-------------------------------------|--|
| 9.  | Composite light assembly (14) to wiring harness (12). | Four electrical connectors (11)     | Separate.  |
| 10. | Composite light assembly (14) to semitrailer          | Two screws (10) and lockwashers (9) | Using socket and handle, unscrew and take out.   |
| 11. |   | Composite light assembly (14)       | Carefully feed connector halves (11) through hole (13) in bracket and take off of semitrailer. |

INSTALLATION OF COMPOSITE LIGHT ASSEMBLY

|     |                             |                                     |   |
|-----|-----------------------------|-------------------------------------|---|
| 12. |                             | Composite light assembly (14)       | a. Feed connector halves (11) through hole (13).<br>b. Place into position and aline with screw holes (8).                                |
| 13. |                             | Two screws (10) and lockwashers (9) | Screw into back of light assembly (14) and tighten using socket and handle.   |
| 14. | Back of light assembly (14) | Four connector halves (11)          | Match and connect to four wiring harness connector halves (11) with the same wire numbers.<br><b>Refer to wiring diagram (para 4-19).</b> |

**FOLLOW-ON MAINTENANCE:**

- Check operation of lights.

**TASK ENDS HERE**

**4-13. CLEARANCE LIGHT ASSEMBLIES**

*This Task Covers:*

- |                                    |   |
|------------------------------------|---|
| a. Lamp and Lens Replacement       | c. Installation of Clearance Light Body |
| b. Removal of Clearance Light Body |   |

*Initial Setup:*

**Materials/Parts:**

- Abrasive cloth (Item 2, Appendix E)

**Tools/Test Equipment:**

- Screwdriver, cross-tip
- Screwdriver, flat-tip
- Wrench, open-end,  $\frac{3}{8}$  in.

4-13. CLEARANCE LIGHT ASSEMBLIES (Con't)

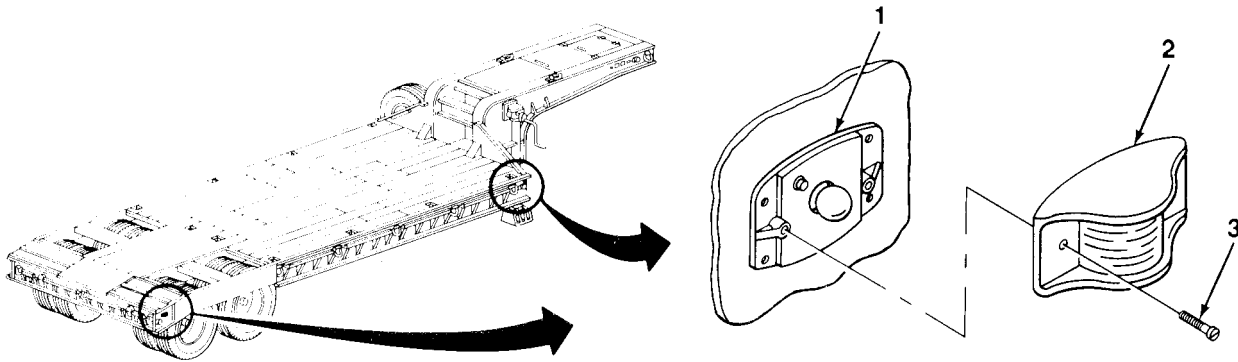
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

LAMP AND LENS REPLACEMENT

**NOTE**

All clearance light lamps and lens are removed the same way. Only one light is shown in this paragraph.

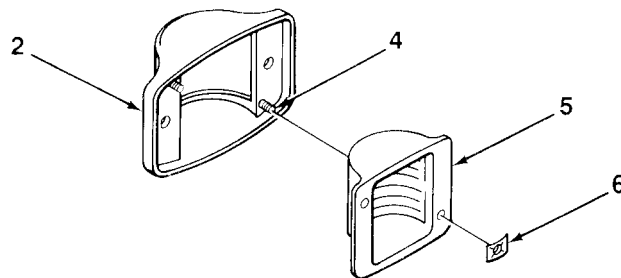
- |    |                                     |                   |   |
|----|-------------------------------------|-------------------|---|
| 1. | Lens retainer (2) to light body (1) | Two screws (3)    | Using flat-tip screwdriver, unscrew and take out. |
| 2. | Lens retainer (2)                   | Lens retainer (2) | Take off light body (1).                          |



**NOTE**

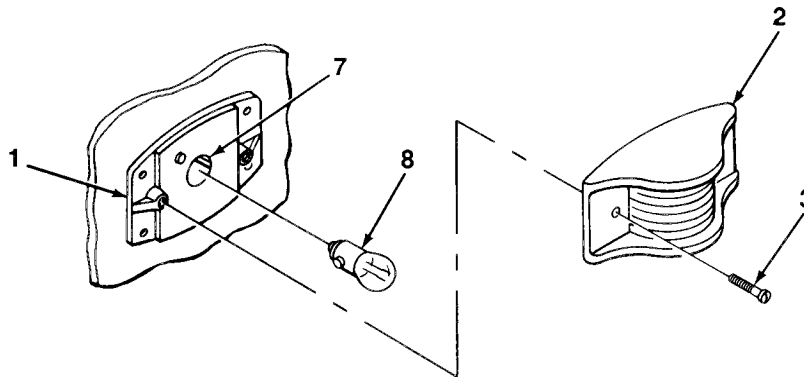
If replacing lens (5), perform steps 3 through 6.

- |    |                                |                                |   |
|----|--------------------------------|--------------------------------|---|
| 3. | Lens retainer (2)              | Two push-on nuts (6)           | Using flat-tip screwdriver, work off.             |
| 4. | Lens (5) and lens retainer (2) | Lens (5) and lens retainer (2) | Separate.<br>If lens (5) is broken, discard lens. |



4-13. CLEARANCE LIGHT ASSEMBLIES (Con't)

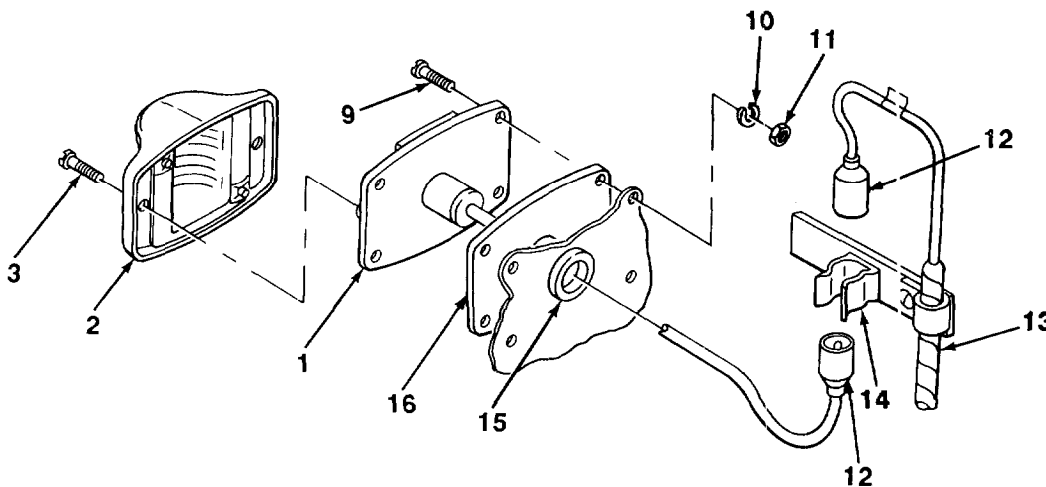
|  | LOCATION       | ITEM                 | ACTION  | REMARKS  |
|--|----------------|----------------------|---|--|
| 5.   |                | Lens (5)             | Position in lens retainer (2).  |  |
| 6.   |                | Two push-on nuts (6) | Push onto studs (4).  |  |
| <b>NOTE</b>  |                |                      |   |  |
| <b>If replacing lamp (8), perform steps 7 through 9.</b> |                |                      |   |  |
| 7.   | Light body (1) | Lamp (8)             | a. Push in, turn ¼ turn counterclockwise and take out.<br>b. Inspect for broken filament and corrosion. | <b>If filament is broken, discard lamp (8). If contacts are corroded, clean with abrasive cloth.</b> |
| 8.   | Light body (1) | Lamp socket (7)      | Inspect for corrosion.  | <b>If corroded, clean with abrasive cloth.</b>   |
| 9.   | Light body (1) | Lamp (8)             | Place in lamp socket (7), push in, and turn ¼ turn clockwise to detent.                                 |  |
| 10.  |                | Lens retainer (2)    | Place on light body (1).  |  |
| 11.  |                | Two screws (3)       | Screw into light body (1) using flat-tip screwdriver.   |  |





4-13. CLEARANCE LIGHT ASSEMBLIES (Con't)

| LOCATION   | ITEM                                     | ACTION  | REMARKS   |
|--|--|---|---|
| REMOVAL OF CLEARANCE LIGHT BODY  |  |   |   |
| NOTE   |  |   |   |
| <b>All clearance light assemblies are removed the same way.<br/>Only one light is shown in this paragraph.</b> |  |   |   |
| 12.  | Lens retainer (2)<br>to light body (1)   | Two screws (3)  | Using flat-tip screwdriver, unscrew and take out.   |
| 13.  |  | Lens retainer (2)                                       | Take off of light body (1).   |
| 14.  | Light body (1)<br>to wiring harness (13) | Connector halves(12)                                    | a. Remove from clip (4).<br>b. Pull apart.  |
| 15.  | Light body (1)<br>to semitrailer         | Four nuts (1 1),<br>lockwashers (10),<br>and screws (9) | Using cross-tip screwdriver and $\frac{3}{8}$ in. wrench, unscrew and take out.                               |
| 16.  |  | Light body (1)  | Guide connector half (12) through hole (15) and take out. Inspect gasket (16) for damage. Replace if damaged. |



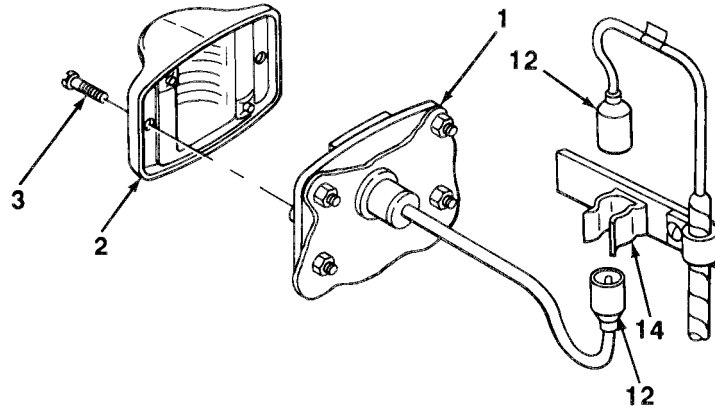
INSTALLATION OF CLEARANCE LIGHT BODY

|     |             |   |   |
|-----|-------------|---|---|
| 17. | Semitrailer | Light body (1)<br>and gasket (16).                      | Position gasket (16) at semitrailer. Guide connector half (12) through hole (15) and align screw holes. |
| 18. |             | Four screws (9),<br>lockwashers (10),<br>and nuts (11 ) | Screw in and tighten using cross-tip screwdriver and $\frac{3}{8}$ in. wrench.                          |

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4-13. CLEARANCE LIGHT ASSEMBLIES (Con't)

|     | LOCATION  | ITEM                  | ACTION  | REMARKS |
|-----|-----------|-----------------------|---|---------|
| 19. |           | Connector halves (12) | Push together until seated.                           |         |
| 20. | Clip (14) | Connector halves (12) | Push into clip (14).                                  |         |
| 21. |           | Lens retainer (2)     | Place on light body (1).                              |         |
| 22. |           | Two screws (3)        | Screw into light body (1) using flat-tip screwdriver. |         |



**FOLLOW-ON MAINTENANCE:**

- Check operation of lights.

**TASK ENDS HERE**

4-14. WIRING HARNESS

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Equipment Conditions:

- Stowage box doors open (para 2-2).

Materials/Parts:

- Marker tags (Item 14, Appendix E)

Personnel Required: Two

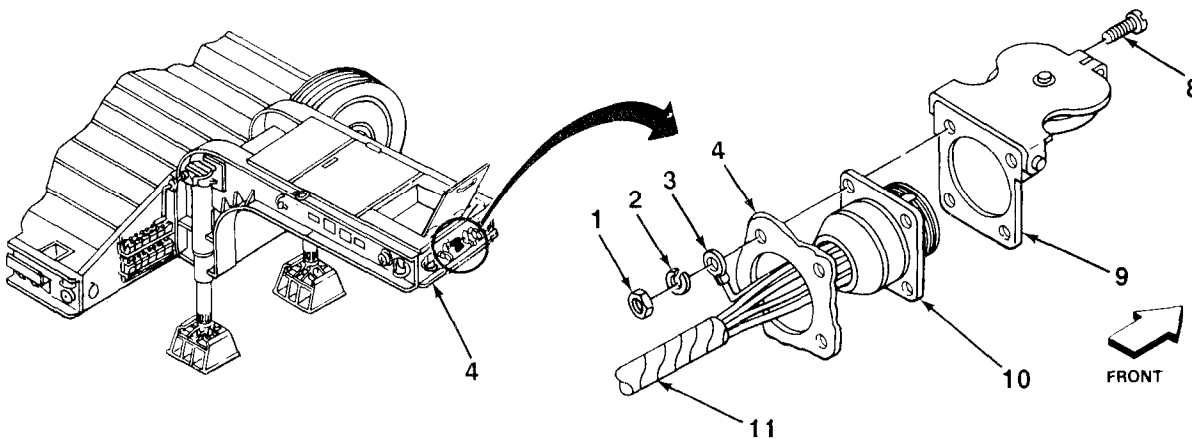
Tools/Test Equipment:

- Chisel
- Extension, 6 in. long,  $\frac{3}{8}$  in. drive
- Handle, ratchet,  $\frac{3}{8}$  in. drive
- Pliers, slip-joint
- Screwdriver, flat-tip
- Socket,  $\frac{7}{16}$  in.,  $\frac{3}{8}$  in. drive
- Wrench, open-end,  $\frac{7}{16}$  in.

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

- |    |   |   |  |
|----|---|---|--|
| 1. | Cover (9) and receptacle assembly (10) to semitrailer (4) | Four nuts (1), lockwashers (2), ground wire (3), and screws (8) | Using screwdriver, $\frac{7}{16}$ in. socket, $\frac{3}{8}$ in. extension, and $\frac{3}{8}$ in. handle, unscrew and take out. |
| 2. | Front of semitrailer (4)                                  | Cover (9) and receptacle assembly (10)                          | Pull away from semitrailer (4) and separate.   |



- |    |  |  |   |
|----|--|--|---|
| 3. | Under right side of gooseneck (17), two clips (13) | Two nuts (15), lockwashers (14), and screws (12) | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove. |
| 4. | Wiring harness (11)                                | Two clips (13)                                   | Spread and remove.  |

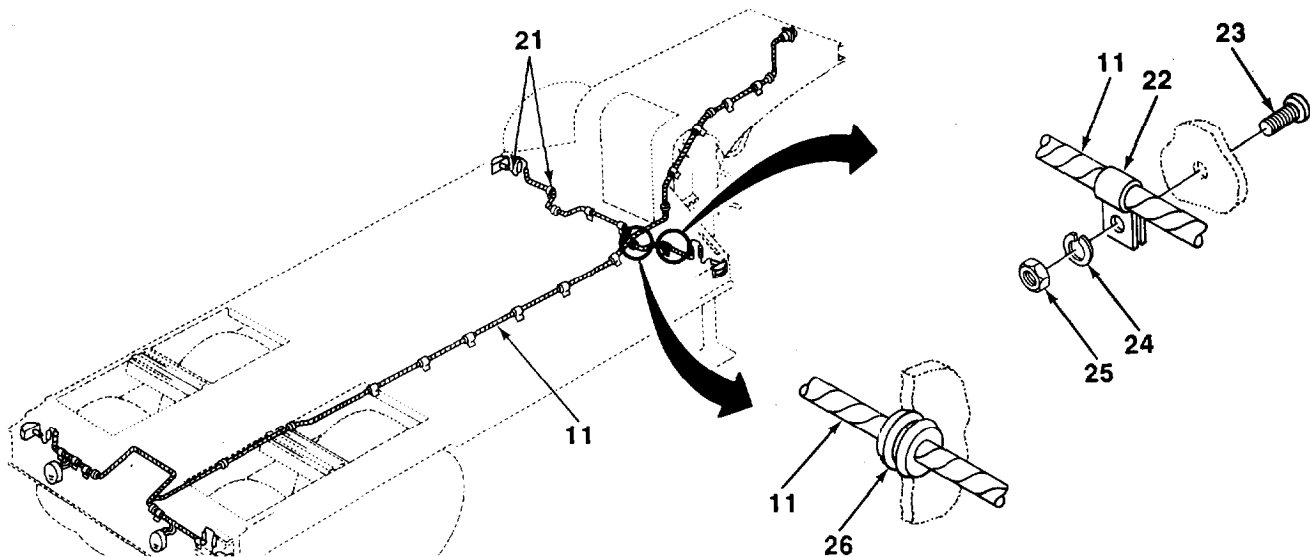
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4-14. WIRING HARNESS (Con't)

| LOCATION   | ITEM                                    | ACTION   | REMARKS  |
|--|---|--|--|
|  |   |  |  |
| 5.   | Three grommets (18)                     | Pull out and remove from wiring harness (11) using pliers. | Pull out and remove from wiring harness (11) using pliers. |
| <b>NOTE</b>  |   |  |  |
| <b>Remaining clearance lights-to-wiring harness connections are removed the same way as, the right front. Check tags for readability. If not readable, tag to aid in installation.</b> |   |  |  |
| 6.   | Behind front right clearance light (19) | Two electrical connectors (20)                             | Remove from clip and pull apart halves.                    |
| 7.   | Remaining clearance lights (16)         | Repeat step 6 for each clearance light (16).               | Repeat step 6 for each clearance light (16).               |

4-14. WIRING HARNESS (Con't)

|     | LOCATION   | ITEM   | ACTION<br>REMARKS   |
|-----|--|--|---|
| 8.  | Two clips (22) to right front crossbeam                      | Two screws (23), nuts (25), and lockwashers (24) | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove. |
| 9.  | Wiring harness (11)  | Two clips (22)                                   | Spread and remove.  |
| 10. |  | One grommet (26)                                 | Pull out and remove from wiring harness (11) using pliers.                    |
| 11. | Two front left clearance light clips (21) to front crossbeam | Two screws (23), nuts (25), and lockwashers (24) | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove. |
| 12. | Wiring harness (11)  | Two clips (21)                                   | Spread and remove.  |

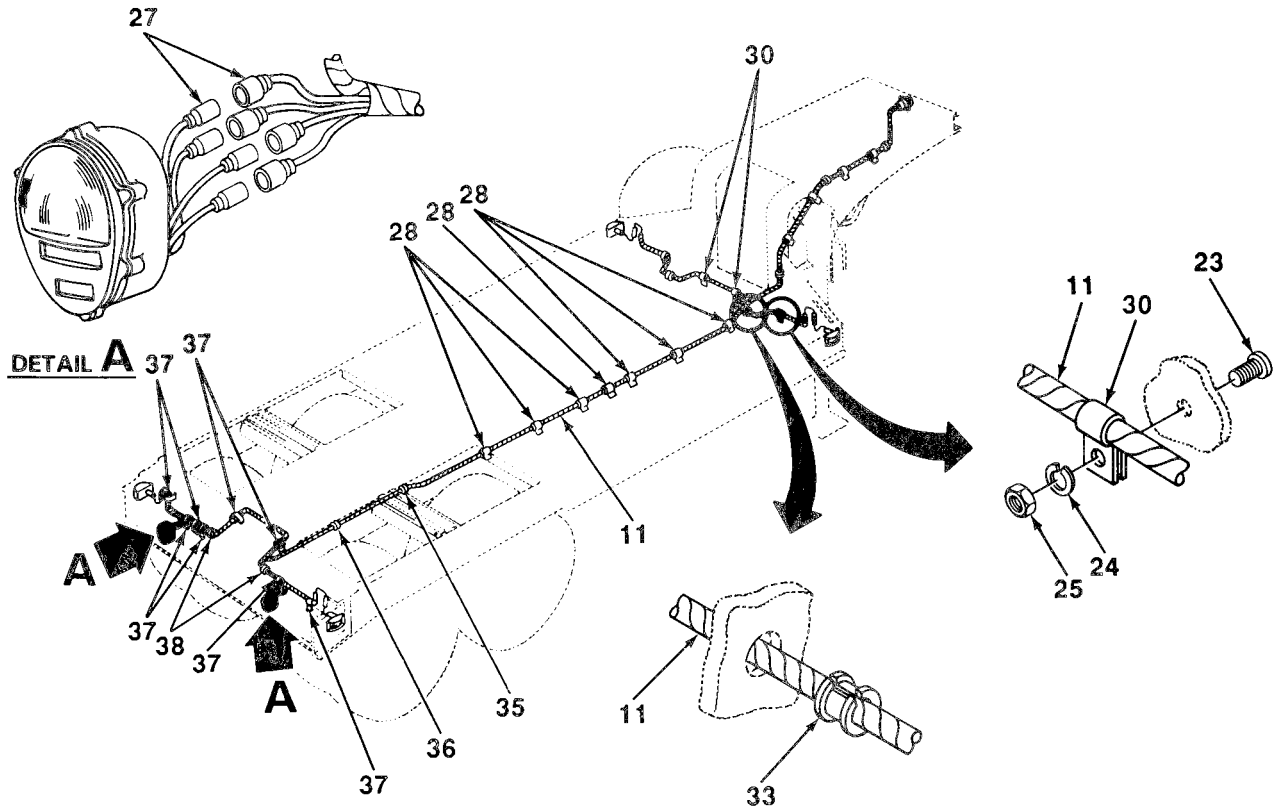


|     |  |  |   |
|-----|--|--|---|
| 13. | Wiring harness (11) and two clips (30) | Two screws (23), nuts (25), and lockwashers (24)   | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove. |
| 14. | Wiring harness (11)                    | Two clips (30)                                     | Spread and remove.  |
| 15. |  | One grommet (33)                                   | Pull out and remove from wiring harness (11) using pliers.                    |
| 16. | Seven clips (28) to right main beam    | Seven screws (23), nuts (25), and lockwashers (24) | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove. |
| 17. | Wiring harness (11)                    | Seven clips (28)                                   | Spread and remove.  |

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4-14. WIRING HARNESS (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

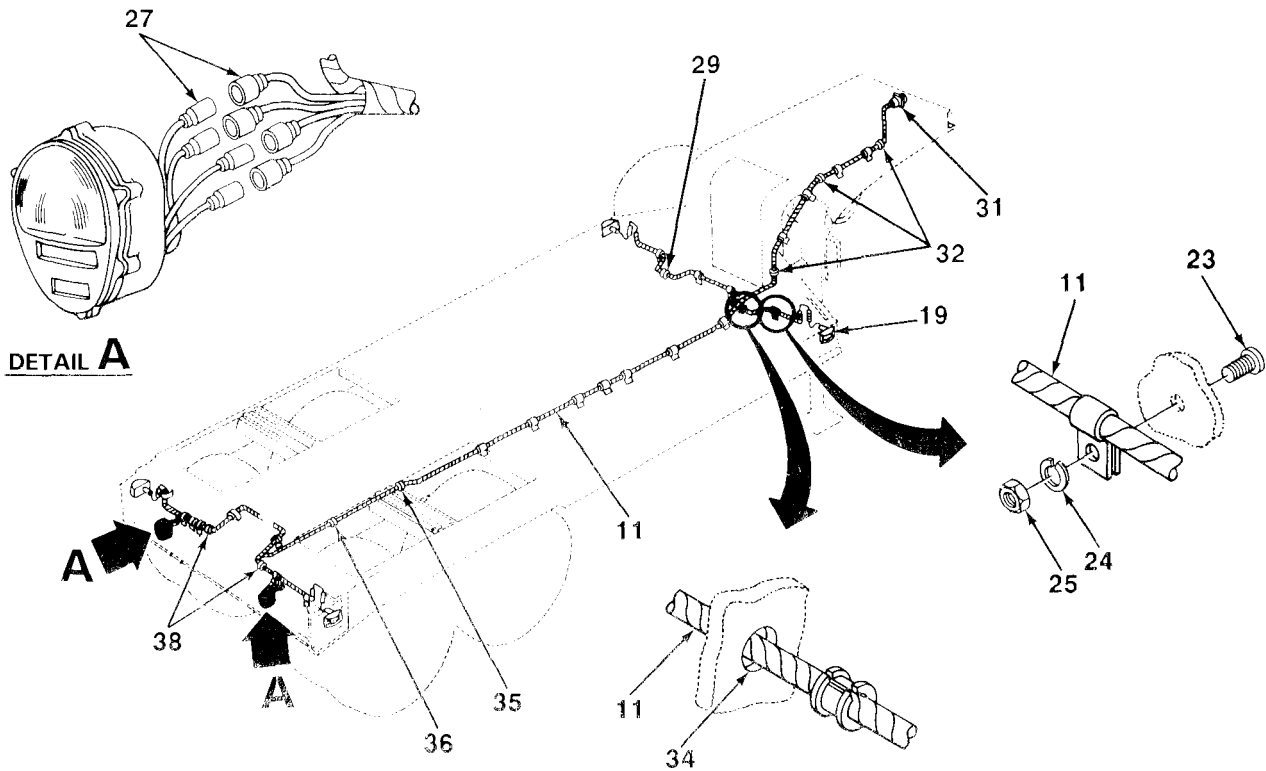


- |     |  |  |   |
|-----|--|--|---|
| 18. | Right main beam at axle crossbeam      | One grommet (35)                                   | Pull out and remove from wiring harness (11) using pliers.  |
| 19. | Eight clips (37) to crossbeam          | Eight screws (23), nuts (25), and lockwashers (24) | Using $\frac{7}{16}$ in. wrench and flat-tip screwdriver, unscrew and remove.   |
| 20. | Rear crossbeam and wiring harness (11) | Eight clips (37)                                   | Spread and remove.  |
| 21. | Rear of two main beams                 | Two grommets (38)                                  | Pull out and remove from wiring harness (11) using pliers.  |
| 22. | Rear crossbeam                         | Grommet (36)                                       | Pull out and remove from wiring harness (11) using pliers.  |
| 23. | Rear of semitrailer                    | Eight composite light electrical connectors (27)   | a. Check wire markers for readability.<br><b>If not readable, tag to aid in assembly.</b><br>b. Pull apart four electrical connectors (27) on each. |

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4-14. WIRING HARNESS (Con't)

|     | LOCATION             | ITEM                                | ACTION  | REMARKS |
|-----|----------------------|-------------------------------------|---|---------|
| 24. |                      | Rear of wiring harness (11)         | Feed through two grommet (38) holes at rear of left and right main beams, through grommet (36) hole at crossbeam, and then through grommet (35) hole at axle crossbeam. |         |
| 25. |                      | Clearance light wiring harness (11) | Pull through grommet holes (29 and 34) on left and right main beams.  |         |
| 26. | Front of semitrailer | Wiring harness (11)                 | Feed forward through three grommet (32) holes.  |         |
| 27. |                      | Wiring harness (11)                 | Pull entire harness through receptacle hole (31) in front of gooseneck until free.  |         |



INSTALLATION

NOTE

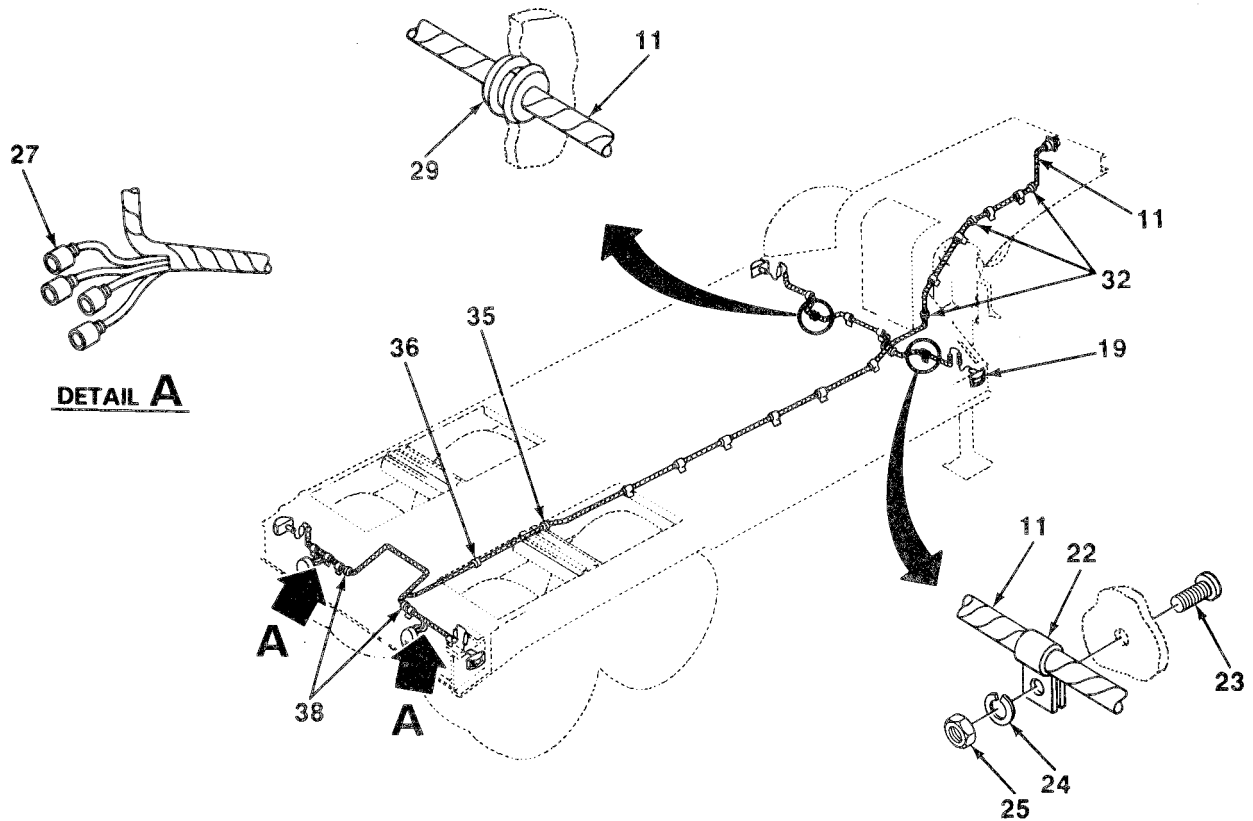
An assistant maybe needed to feed wiring harness through gooseneck, axle crossbeam, and rear crossbeam grommet holes.

|     |                      |                     |   |
|-----|----------------------|---------------------|---|
| 28. | Front of semitrailer | Wiring harness (11) | a. Feed wiring harness (11) through receptacle hole (31) in front of gooseneck. Start with composite light connectors (27) and feed rearward through three grommet (32) holes in gooseneck. |
|-----|----------------------|---------------------|---|

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4-14. WIRING HARNESS (Con't)

|     | LOCATION                                       | ITEM   | ACTION   | REMARKS |
|-----|--|--|--|---------|
| 28. | (Con't)  |  | b. Feed wiring harness (11) rearward along inside of right main beam through axle grommet (35) hole, crossbeam grommet (36), and grommet holes in left and right main beams.<br><b>Longer lead goes to the left side.</b><br>c. Feed clearance light branches of wiring harness (11) through left grommet (29) hole and right grommet hole (34) in main beam.<br><b>Longer lead goes to the left side.</b> |         |
| 29. | Back side of front right clearance light (19). | Wiring harness (11)                              | Pull wiring harness (11) along crossbeam to clearance light (19) and allow enough slack for connections.   |         |
| 30. | Right front crossbeam                          | Two clips (22)                                   | Put on wiring harness (11).  |         |
| 31. | Two clips (22)                                 | Two screws (23), lockwashers (24), and nuts (25) | Screw on and tighten using $\frac{7}{16}$ in. wrench and flat-tip screwdriver.   |         |

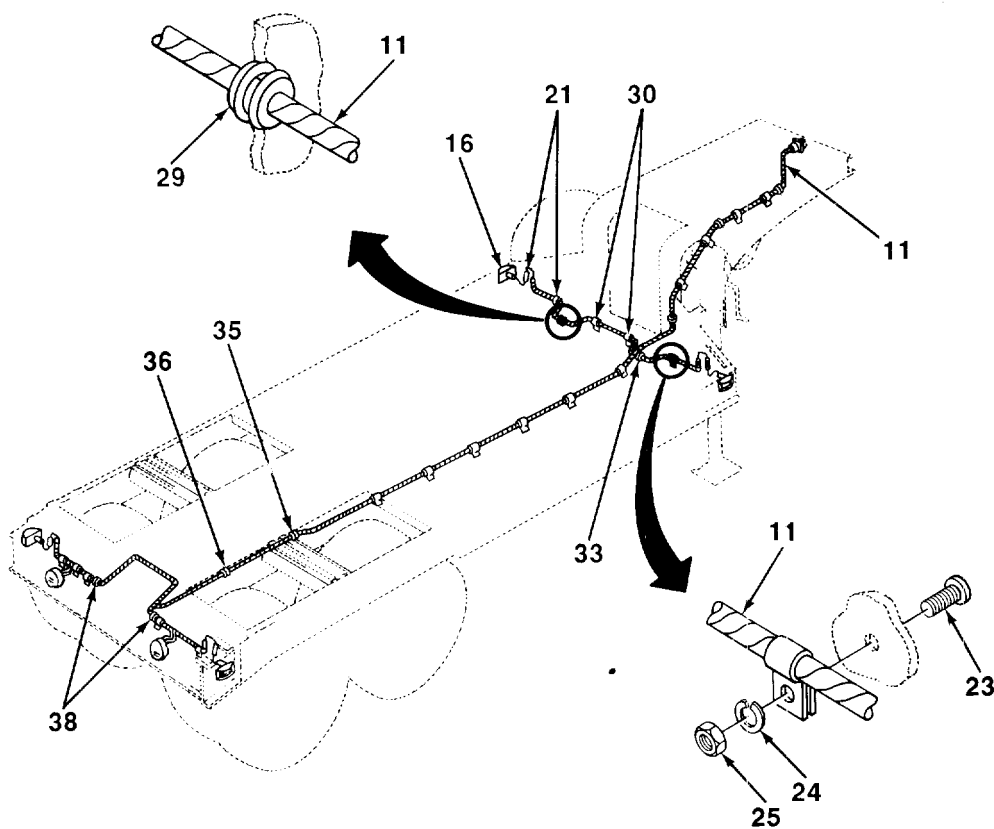


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4-14. WIRING HARNESS (Con't)

|     | LOCATION                                     | ITEM   | ACTION  | REMARKS |
|-----|--|--|---|---------|
| 32. | Right main beam                              | Grommet (33)                                     | Put onto wiring harness (11 ) and push into place.  |         |
| 33. | Back side of front left clearance light (16) | Wiring harness (11)                              | Pull wiring harness (11 ) along crossbeam to clearance light (16) and allow enough slack for connections. |         |
| 34. | Center front crossbeam                       | Two clips (30)                                   | Put on wiring harness (11).   |         |
| 35. | Two clips (30)                               | Two screws (23), lockwashers (24), and nuts (25) | Screw on and tighten using $\frac{7}{16}$ in. wrench and flat-tip screwdriver.                            |         |

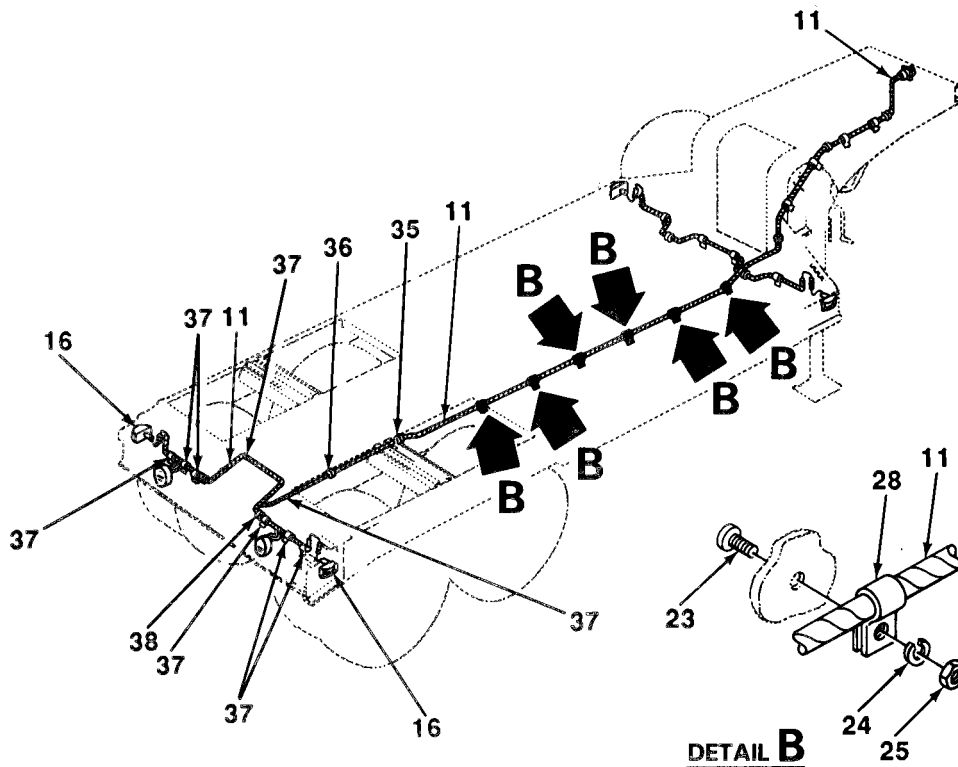


|     |                      |  |  |  |
|-----|----------------------|--|--|--|
| 36. | Left main beam       | Grommet (29)                                     | Put onto wiring harness (11) and push into place.                              |  |
| 37. | Left front crossbeam | Two clips (21)                                   | Put on wiring harness (11),  |  |
| 38. | Two clips (21)       | Two screws (23), lockwashers (24), and nuts (25) | Screw in and tighten using $\frac{7}{16}$ in. wrench and flat-tip screwdriver. |  |
| 39. | Right main beam      | Seven clips (28)                                 | Put onto wiring harness (11).  |  |

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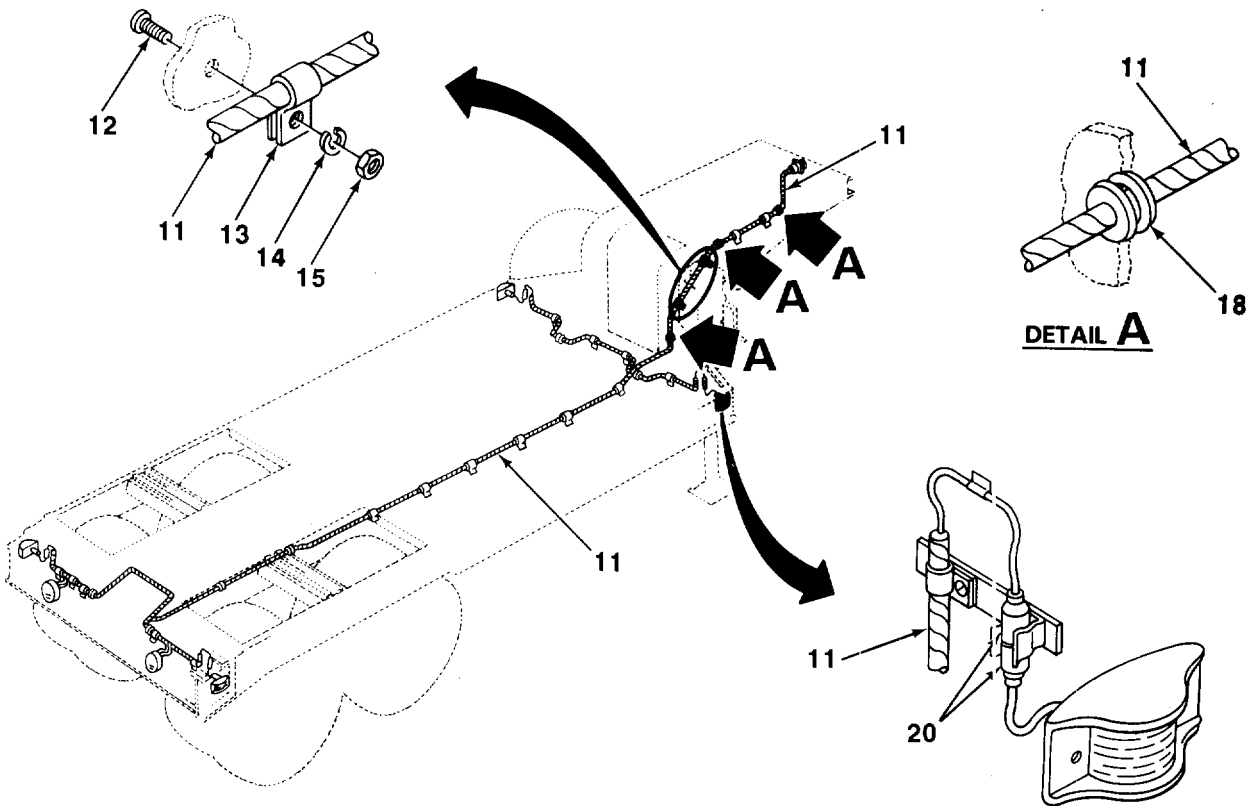
4-14. WIRING HARNESS (Con't)

|     | LOCATION  | ITEM   | ACTION   | REMARKS |
|-----|---|--|--|---------|
| 40. | Seven clips (28)  | Seven screws (23), lockwashers (24), and nuts (25) | Screw on and tighten using $\frac{3}{16}$ in. wrench and flat-tip screwdriver.   |         |
| 41. | Rear of semitrailer   | Wiring harness (11)                                | Starting at main beam, pull wiring harness (11) along crossbeam to left and right clearance lights (16).                 |         |
| 42. | Wiring harness (11) to rear of semitrailer                        | Eight clips (37)                                   | Put onto wiring harness (11).<br><b>Ensure that there is enough slack for composite and clearance light connections.</b> |         |
| 43. | Eight harness clips (37)  | Eight screws (23), lockwashers (24), and nuts (25) | Screw on and tighten using $\frac{3}{16}$ in. wrench and flat-tip screwdriver.   |         |
| 44. | Grommet holes at rear of main beam, crossbeam, and axle crossbeam | Four grommets (38, 36, and 35)                     | Put onto wiring harness (11) and push into place.  |         |



4-14. WIRING HARNESS (Con't)

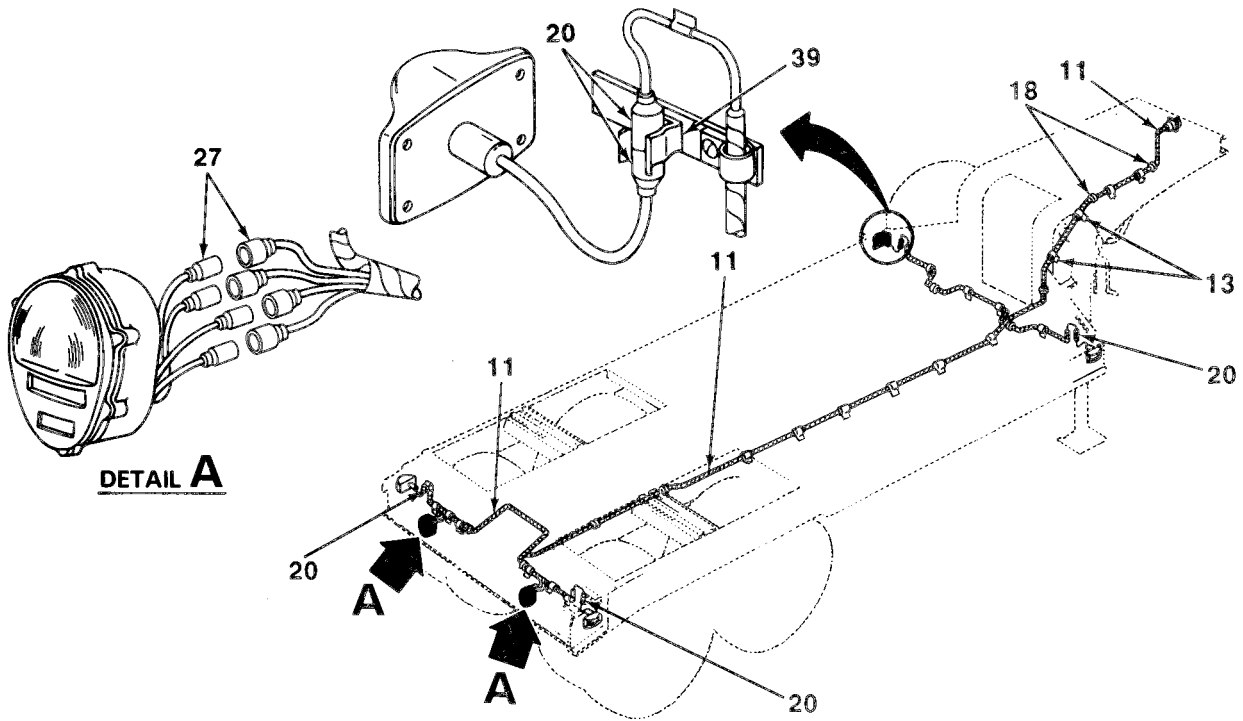
|     | LOCATION         | ITEM   | ACTION   | REMARKS |
|-----|------------------|--|--|---------|
| 45. | Inside gooseneck | Two clips (13)                                   | Put onto wiring harness (11) and allow enough slack for connection.  |         |
| 46. | Two clips (13)   | Two screws (12), lockwashers (14), and nuts (15) | Screw on and tighten using 7/16 in. wrench and flat-tip screwdriver. |         |



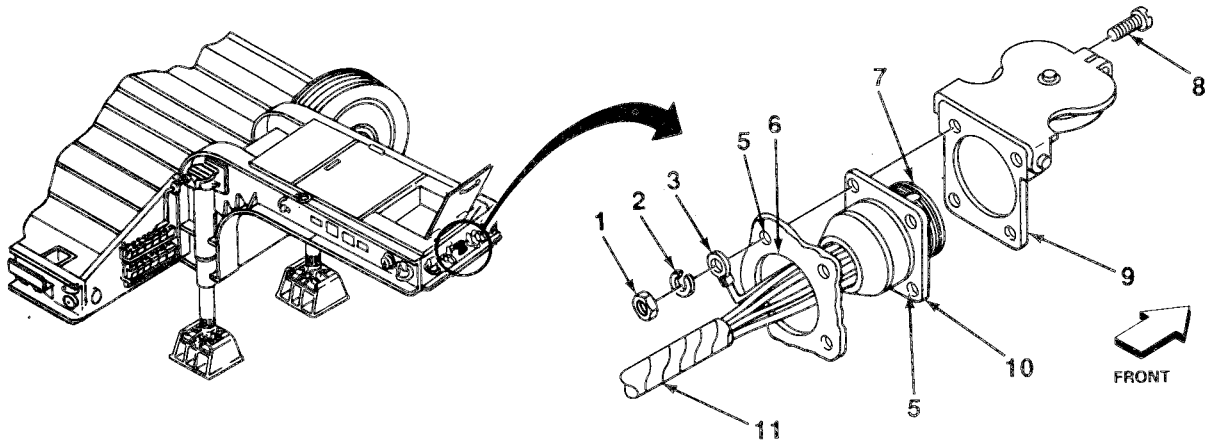
|     |                               |  |   |  |
|-----|-------------------------------|--|---|--|
| 47. |                               | Three grommets (18)  | Put onto wiring harness (11) and push into place.   |  |
| 48. | Front and rear of semitrailer | Four clearance light electrical connectors (20) and eight composite light light electrical connectors (27) | Match and connect to electrical connectors with same wire numbers. Wire number 24-484 goes to left blackout taillight, 22-461 to left service stop, 24-483 to right blackout tail, 21 to service taillights, 489 to service clearance, 23 to left and right blackout stop, and 22-460 to right service stop.<br><b>Refer to wiring diagram (para 4-19).</b> |  |
| 49. |                               | Four clearance light and eight composite light clips (39)  | Place electrical connectors (20 and 27') into clips (39).   |  |

4-14. WIRING HARNESS (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |   |   |  |
|-----|---|---|--|
| 50. | Front of semitrailer                                      | Receptacle assembly (10) and cover (9)                          | Push wiring harness (11) back into center hole (6) and align screw holes (5).<br><b>Ensure that grommet notch (7) is at top.</b> |
| 51. | Cover (9) and receptacle assembly (10) to screw holes (5) | Four screws (8), ground wire (3), lockwashers (2), and nuts (1) | screw in and tighten using wrench, socket, and handle.   |



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**4-14. WIRING HARNESS (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**FOLLOW-ON MAINTENANCE:**

- Check operation of lights.
- Close stowage box doors (para 2-2).

**TASK ENDS HERE**

**4-15. WIRE CONNECTORS**

*This Task Covers:*

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>a. Male Connector Repair</li> <li>b. Female Connector Repair</li> </ul> | <ul style="list-style-type: none"> <li>c. Marker Band Replacement</li> </ul> |
|--|--|

*Initial Setup:*

**Materials/Parts:**

- Contact (as required)
- Insulating compound (Item 3, Appendix E)
- Shell (as required)
- Terminal assembly (as required)

**Tools/Test Equipment:**

- Crimping tool
- Pliers, diagonal cutting
- Screwdriver, flat-tip
- Stripper, wire, hand

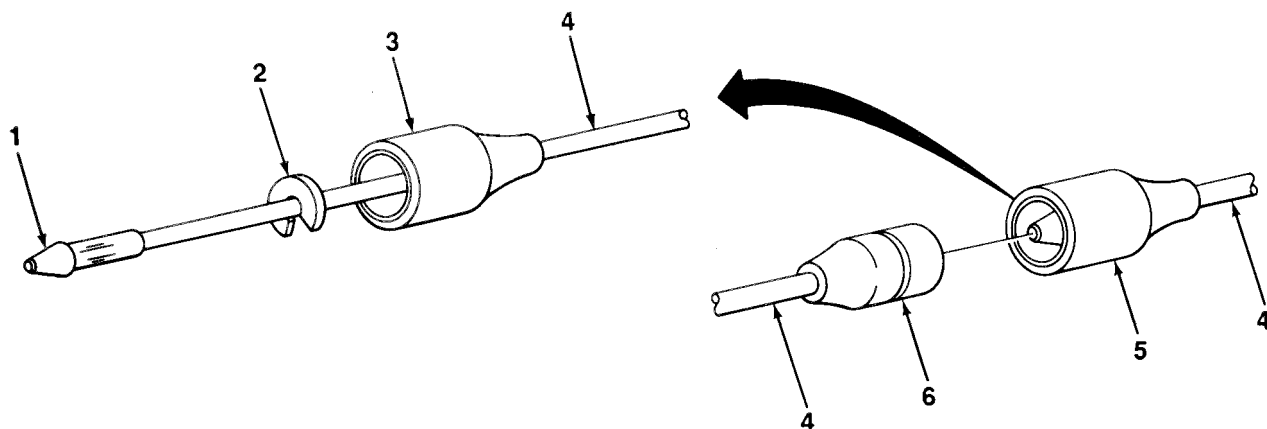
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**MALE CONNECTOR REPAIR**

|    |                |                      |   |
|----|----------------|----------------------|---|
| 1. | Wire lead (4)  | Connectors (5 and 6) | Separate halves.  |
| 2. | Connector (5)  | Shell (3)            | Slide up wire lead (4) until clear of contact (1) and slotted washer (2).   |
| 3. |                | Slotted washer (2)   | Slip off of wire lead (4).  |
| 4. | Wire lead (4)  | Shell (3)            | Slide off over contact (1).   |
| 5. | Wire lead (4)  | Contact (1)          | Cut off wire lead (4) using cutting pliers. Discard contact.<br><b>Ensure that enough wire remains to make connection after repair.</b>   |
| 6. | Wiring harness | Wire lead (4)        | <ul style="list-style-type: none"> <li>a. Using wire stripper, strip insulation at end equal to depth of new contact (1).</li> <li>b. Apply insulating compound to end and slide on shell (3).</li> <li>c. Slide end into new contact (1) and crimp using crimping tool.</li> </ul> |

4-15. WIRE CONNECTORS (Con't)

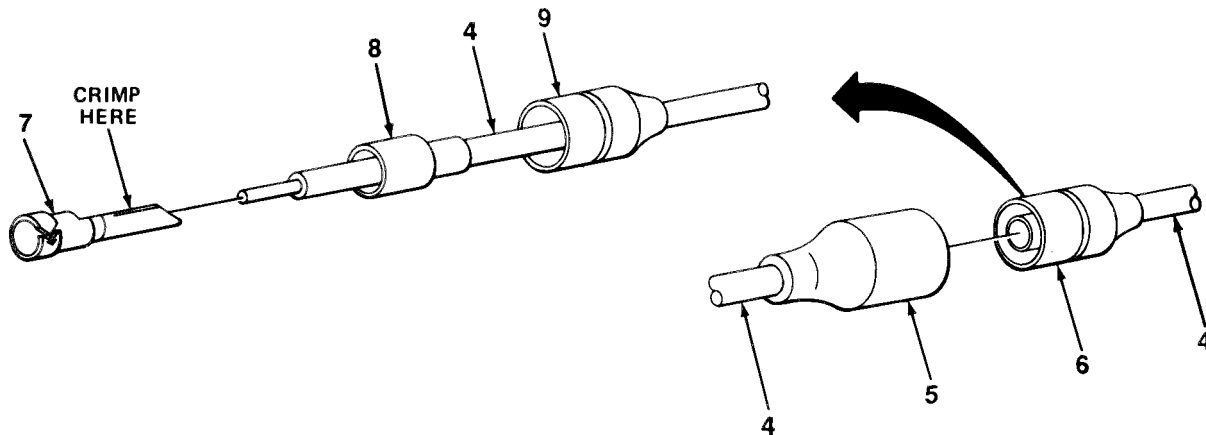
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- 7. Shell (3) Slide down wire lead (4).
- 8. Wire lead (4) Slotted washer (2) Place on wire lead (4) at contact (1).

FEMALE CONNECTOR REPAIR

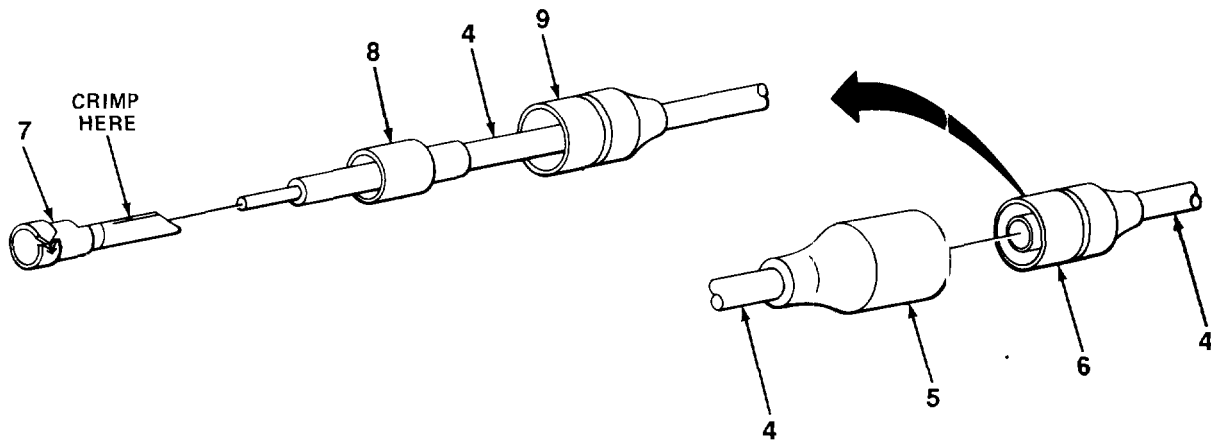
- 9. Wire lead (4) Connectors (5 and 6) Separate halves.
- 10. Connector (6) Shell (9) Slide up wire lead (4) until clear of terminal (7).
- 11. Wire lead (4) Terminal (7) Using cutting pliers, cut off wire lead (4). Discard terminal.  
**Ensure that enough wire remains to make connection after repair.**
- 12. Wire lead (4) Shell (9) and insulator (8) Slide off wire lead (4).



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4-15. WIRE CONNECTORS (Con't)

|     | LOCATION    | ITEM                        | ACTION   | REMARKS |
|-----|-------------|-----------------------------|--|---------|
| 13. |             | Wire lead (4)               | a. Using wire stripper, strip insulation 1/8 in. (3.2 mm) from end.<br>b. Apply insulating compound to end and slide on shell (9) and insulator (8). |         |
| 14. |             | New terminal (7)            | Slide onto wire lead (4). Crimp end over insulation and center over bare wire using crimping tool.   |         |
| 15. |             | Shell (9) and insulator (8) | Slide down over terminal (7) until seated.   |         |
| 16. |             | Connectors (5 and 6)        | Apply insulating compound to outside of male connector and push together until seated.   |         |
| 17. | Semitrailer | Lights                      | Check for operation.   |         |

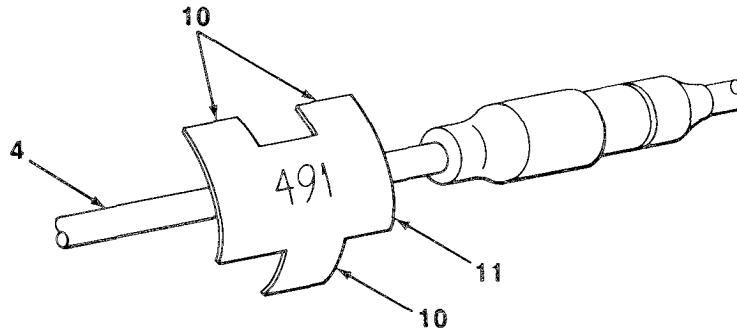


MARKER BAND REPLACEMENT

|     |               |                             |  |
|-----|---------------|-----------------------------|--|
| 18. | Wire lead (4) | Marker band (11)            | Using flat-tip screwdriver, open tab ends (10) and take off.<br><b>Note number on marker band (11) and discard.</b>                          |
| 19. |               | <b>New</b> marker band (11) | Place on wire lead (4) and bend tab ends (10) over wire lead (4) using crimping tool.<br><b>Mark number of wire lead on new marker band.</b> |

**4-15. WIRE CONNECTORS (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



**TASK ENDS HERE**

**4-16. WIRING HARNESS REPAIR**

*This Task Covers:*

Repair

*Initial Setup:*

**Materials/Parts:**

- Connectors (as required)
- Electrical wire (as required)

**Personnel Required:** Two

**Tool/Test Equipment:**

- Crimping tool
- Pliers, diagonal cutting
- Screwdriver, flat-tip
- Stripper, wire, hand
- Wrench, open-end,  $\frac{7}{16}$  in.



4-16. WIRING HARNESS REPAIR (Con't)

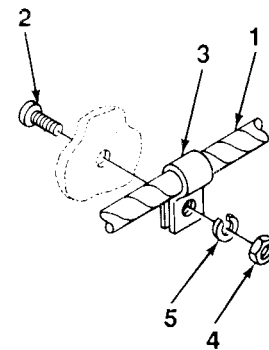
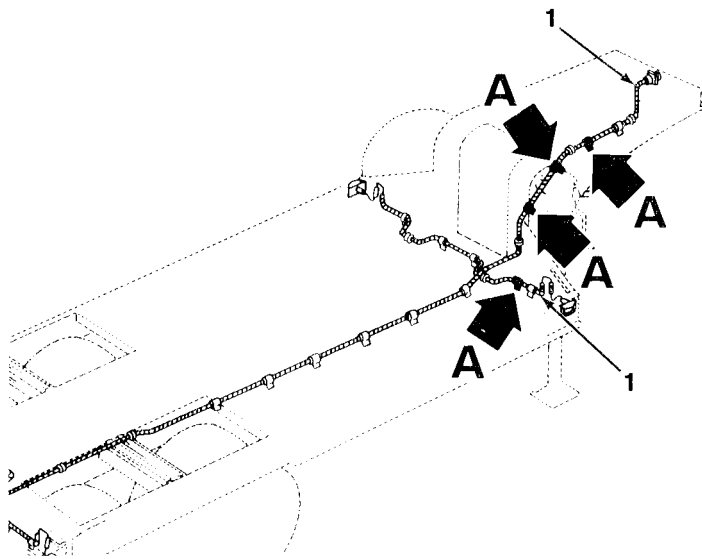
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REPAIR

**NOTE**

**All wiring harness repairs are similar to the repair covered in this paragraph.**

- |    |                                       |  |   |
|----|---------------------------------------|--|---|
| 1. | Wiring harness (1) and five clips (3) | Five screws (2), nuts (4), and lockwashers (5) | Using $\frac{1}{16}$ in. wrench and flat-tip screwdriver, unscrew and take off. |
| 2. | Wiring harness (1)                    | Five clips (3)                                 | Spread apart and remove.  |



**DETAIL A**

- |    |                    |   |  |
|----|--------------------|---|--|
| 3. | Wiring harness (1) | Defective wire lead (6)   | <p>a. Cut wire lead (6) at each end of wiring harness (1) using cutting pliers.<br/> <b>Ensure that correct wire lead (6) is cut and that enough lead remains to make connection for repair.</b></p> <p>b. Measure length of wiring harness (1) section to repair and cut new wire to match. Use cutting pliers.</p> |
| 4. |                    | Wire lead (7) to receptacle and wire lead (9) to light assembly | Using wire stripper, strip insulation from ends of wire leads (7 and 9) equal to depth of connector (10).  |
| 5. |                    | Replacement wire (8)  | <p>a. Using wire stripper, strip insulation from both ends of replacement wire (8) equal to depth of connector (10).</p> <p>b. Lay replacement wire (8) along wiring harness (1) section to repair. Feed through four grommets (11).</p>   |

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4-16. WIRING HARNESS REPAIR (Con't)

| LOCATION | ITEM   | ACTION   | REMARKS  |
|----------|--|--|--|
|          |  |  |  |
| 6.       | Replacement Wire (8)                         | Connector (10)                                 | <p>a. Slide one end of connector (10) onto end of replacement wire (8).</p> <p>b. Slide other end of connector (10) onto wire lead (7) to receptacle.</p> <p>c. Crimp connector (10) at both ends using crimping tool.</p> <p>d. Repeat a through c for other end of replacement wire (8) to light assembly wire lead (9).</p> |
| 7.       | Wiring harness (1) and replacement wire (8). | Five clips (3)                                 | Put onto wiring harness (1) and replacement wire (8).  |
| 8.       | Five clips (3)                               | Five screws (2), lockwashers (5), and nuts (4) | Screw on and tighten using $\frac{1}{16}$ in. wrench and flat-tip screwdriver.   |

**FOLLOW-ON MAINTENANCE:**

- Check operation of lights.

TASK ENDS HERE

TA506861

4-17. GROUND WIRE REPAIR

This Task Covers:

Repair

Initial Setup:

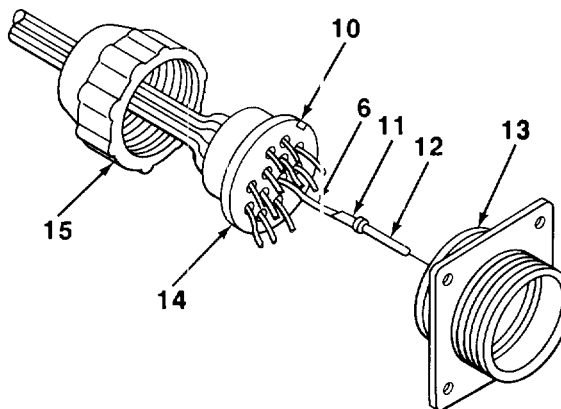
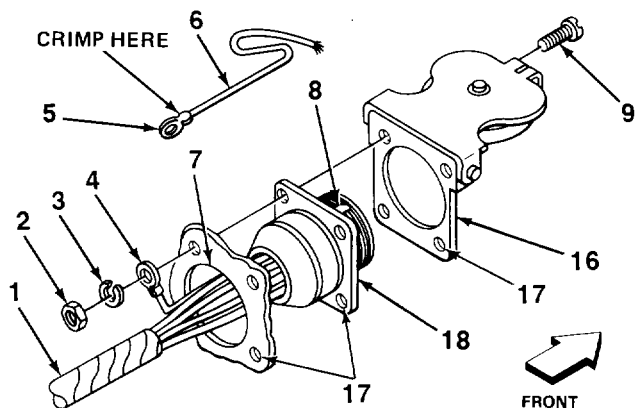
Materials/Parts:

- Connector (as required)
- Electrical wire (as required)
- Solder (Item 12, Appendix E)
- Terminal (as required)

Tools/Test Equipment:

- Crimping tool
- Extension, 6 in., 1/2 in. dr ve
- Handle, ratchet, 1/2 in. dr ve
- Pliers, diagonal cutting
- Screwdriver
- Socket, 7/16 in., 1/2 in. drive
- Stripper, wire, hand
- Wrench, open-end, 7/16 in.

|               | LOCATION                                | ITEM  | ACTION | REMARKS   |
|---------------|---|---|--------|---|
| <b>REPAIR</b> |   |   |        |   |
| 1.            | Cover (16) and receptacle assembly (18) | Four nuts (2), lockwashers (3), ground wire (4), and four screws (9). |        | Using screwdriver, socket, extension, and handle, unscrew and take out. |
| 2.            | Front of semitrailer                    | Cover (16) and receptacle assembly (18)                               |        | Pull away from semitrailer until clear.                                 |
| 3.            | Receptacle connector (13)               | Nut (15)  |        | Unscrew and remove.   |
| 4.            | Receptacle connector (13)               | Bushing (14)  |        | Pull out of receptacle connector (13).                                  |



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**4-17. GROUND WIRE REPAIR (Con't)**

|     | LOCATION  | ITEM  | ACTION   | REMARKS |
|-----|---|---|--|---------|
| 5.  | Bushing (14)  | Defective contact pin (12)  | a. Using pliers, pull contact pin (12) out of bushing (14).<br>b. Using soldering tool, heat solder well (11) and remove from ground wire (6). Discard contact pin (12).<br>c. Measure length of ground wire (6) removed and cut new wire to match using cutting pliers. |         |
| 6.  |   | Replacement ground wire (6)   | Using wire stripper, strip insulation from both ends of replacement ground wire (6) equal to depth of solder well (11) and ring terminal (5) to be installed.  |         |
| 7.  | Replacement ground wire (6)                                 | Replacement contact pin (12)  | a. Place solder well (11) onto end of replacement ground wire (6) and solder using soldering tool.<br>b. Push solder well (11) into bushing (14) until seated.   |         |
| 8.  | Receptacle connector (13)                                   | Bushing (14)  | Push bushing (14) into receptacle connector (13).<br><b>Ensure that notch (10) is aligned with receptacle connector (13).</b>  |         |
| 9.  |   | Nut (15)  | Screw nut (15) onto receptacle connector (13).   |         |
| 10. | Replacement   | Ring terminal (5)   | a. Slide onto end of replacement ground wire (6).<br>b. Crimp at wire end using crimping tool.   |         |
| 11. | Front of semitrailer  | Cover (16) and receptacle assembly (18)                                     | Push wiring harness (1) back into center hole (7) and align screw holes (17).<br><b>Ensure that notch (8) is at top.</b>   |         |
| 12. | Cover (16) and receptacle assembly (18) to screw holes (17) | Four screws (9), replacement ground wire (6), lockwashers (3), and nuts (2) | Screw in and tighten using wrench, socket and handle.  |         |

**FOLLOW-ON MAINTENANCE:**

- Check operation of lights.

**TASK ENDS HERE**

4-18. RECEPTACLE

This Task Covers:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Replacement of Contact Pin</li> </ul> | <ul style="list-style-type: none"> <li>c. Installation</li> </ul> |
|---|---|

Initial Setup:

Materials/Parts:

- Contact pin (as required)
- Solder (Item 12, Appendix E)

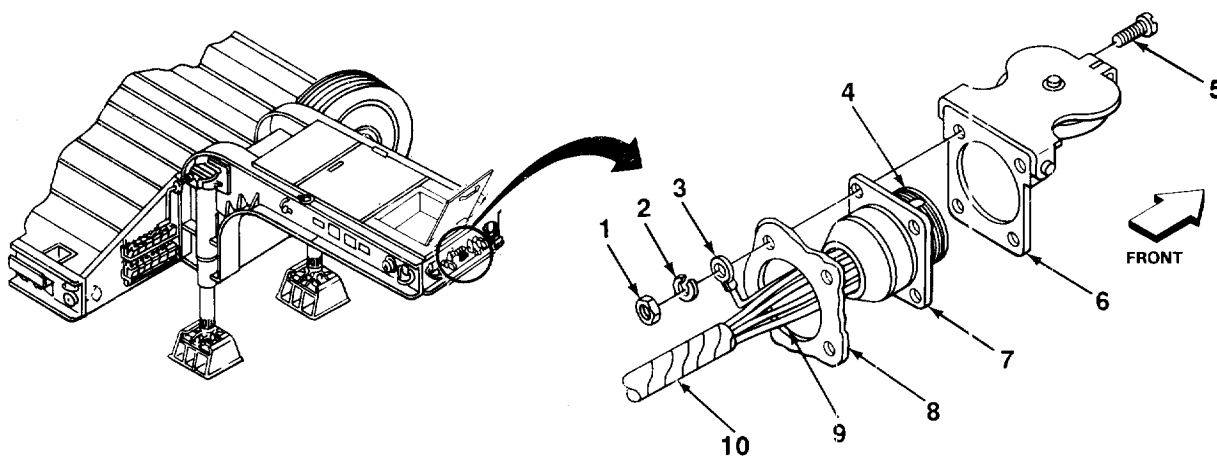
Personnel Required: Two

Tools/Test Equipment:

- Extension, 6 in., 1/2 in. drive
- Handle, ratchet, 1/2 in. drive
- Pliers, long round-nose
- Screwdriver, flat-tip
- Socket, 7/16 in., 1/2 in. drive
- Soldering gun
- Wrench, open-end, 7/16 in.

REMOVAL

- |  |  |  |
|--|--|--|
| <p>1. Cover (6) and receptacle assembly (7) to semitrailer (8)</p> | <p>Four nuts (1), lockwashers (2), ground wire (3), and screws (5)</p> | <p>Using screwdriver, socket, extension, and handle, unscrew and take out.</p> |
| <p>2. Front of semitrailer</p>                                     | <p>Cover (6) and receptacle assembly (7)</p>                           | <p>Pull away from semitrailer until clear.</p>                                 |



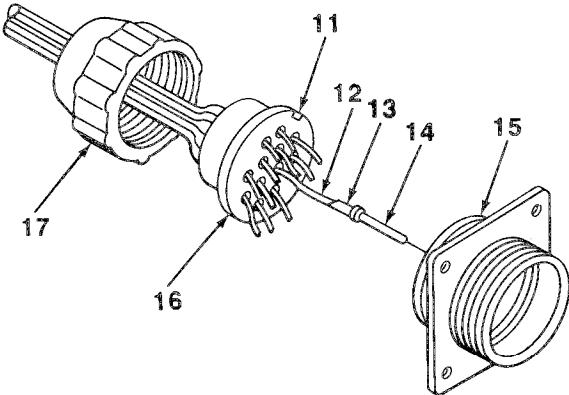
REPLACEMENT OF CONTACT PIN

- |                                     |                     |   |
|-------------------------------------|---------------------|---|
| <p>3. Receptacle connector (15)</p> | <p>Nut (17)</p>     | <p>Unscrew and remove.</p>                    |
| <p>4. Receptacle connector (15)</p> | <p>Bushing (16)</p> | <p>Pull out of receptacle connector (15).</p> |

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4-18. RECEPTACLE (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



|    |                           |                              |  |
|----|---------------------------|------------------------------|--|
| 5. | Bushing (16)              | Defective contact pin (14)   | <ol style="list-style-type: none"> <li>Using pliers, pull contact pin (14) out of bushing (16).</li> <li>Using soldering tool, heat solder well (13) and remove from wire (12).</li> </ol> |
| 6. | Wire (12)                 | Replacement contact pin (14) | <ol style="list-style-type: none"> <li>Place solder well (13) onto wire (12) and solder using soldering tool.</li> <li>Push solder well (13) into bushing (16) until seated.</li> </ol>    |
| 7. | Receptacle connector (15) | Bushing (16)                 | <p>Push bushing (16) into receptacle connector (15).<br/> <b>Ensure that notch (11) is alined with receptacle connector (15).</b></p>  |
| 8. |                           | Nut (17)                     | <p>Screw nut (17) onto receptacle connector (15).</p>  |

INSTALLATION

|     |  |   |   |
|-----|--|---|---|
| 9.  | Front of semitrailer                                 | Cover (6) and receptacle assembly (7)                           | <p>Push wiring harness (10) back into center hole (9) and aline screw holes.<br/> <b>Ensure that notch (4) is at top.</b></p> |
| 10. | Cover (6) and receptacle assembly (7) to screw holes | Four screws (5), ground wire (3), lockwashers (2), and nuts (1) | <p>Screw in and tighten using screwdriver, socket extension, and handle.</p>  |

**FOLLOW-ON MAINTENANCE:**

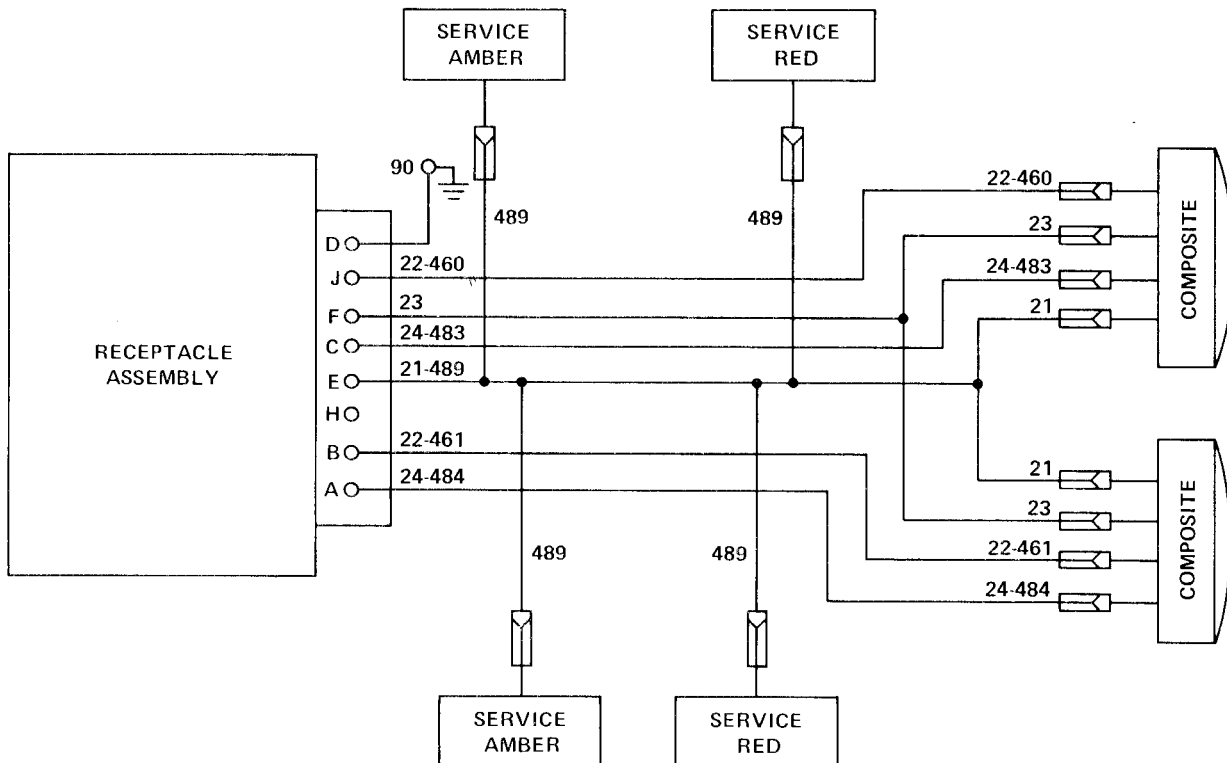
- Check operation of lights.

TASK ENDS HERE

4-19. WIRING DIAGRAM

NOTE

This paragraph contains the semitrailer wiring diagram. Refer to this diagram when performing electrical troubleshooting or when performing electrical repair and maintenance.



**Section VI. BRAKE SYSTEM MAINTENANCE**

|   | <i>Page</i> |   | <i>Page</i> |
|---|-------------|---|-------------|
| Airbrake Chamber . . . . .                      | 4-83        | Brakeshoes - Major Adjustment . . . . . | 4-58        |
| Air Coupling and Preformed Packing. . . . .     | 4-65        | Brakeshoes - Minor Adjustment . . . . . | 4-49        |
| Air Filters . . . . .                           | 4-67        | Brakeshoes Replacement . . . . .        | 4-52        |
| Air Lines and Fittings . . . . .                | 4-72        | Camshaft . . . . .                      | 4-62        |
| Air Lines and Fittings - Leak Testing . . . . . | 4-70        | Emergency Relay Valve . . . . .         | 4-85        |
| Air Reservoir and Draincock . . . . .           | 4-91        | Slack Adjuster . . . . .                | 4-60        |
| Brake Hose . . . . .                            | 4-80        |   |             |

**4-20. BRAKESHOES - MINOR ADJUSTMENT**

*This Task Covers:*

Minor Adjustment

*Initial Setup:*

**Equipment Conditions:**

- Chockblocks installed (para 2-5).
- Air released from system (para 3-8)

**Materials/Parts:**

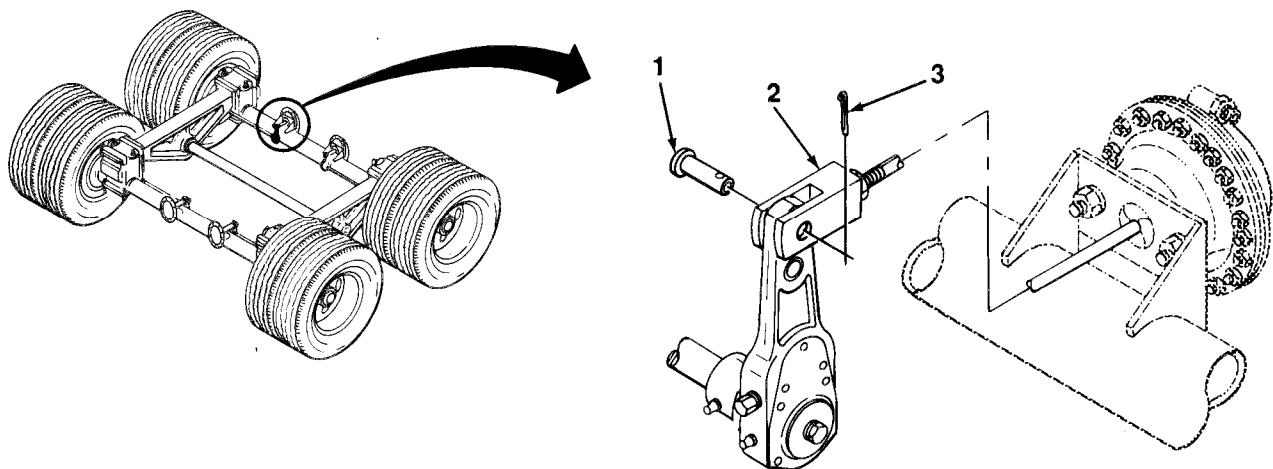
- Cotter pin
- 1 x 4 x 8 wooden block

**Tools/Test Equipment:**

- Hammer, ball-peen
- Hydraulic jack and handle
- Pliers, slip-joint
- Punch, drive-in
- Wrench, open-end, 5/16 in.

**Personnel Required:** Two

| LOCATION                | ITEM           | ACTION         | REMARKS                             |
|-------------------------|----------------|----------------|-------------------------------------|
| <b>MINOR ADJUSTMENT</b> |                |                |                                     |
| 1.                      | Clevis pin (1) | Cotter pin (3) | Using pliers, pull out and discard. |
| 2.                      | Clevis (2)     | Clevis pin (1) | Using hammer and punch, push out.   |



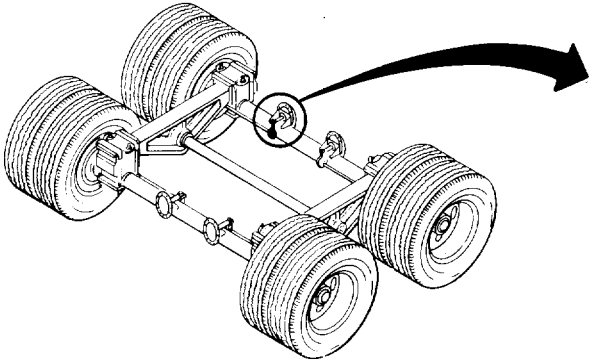
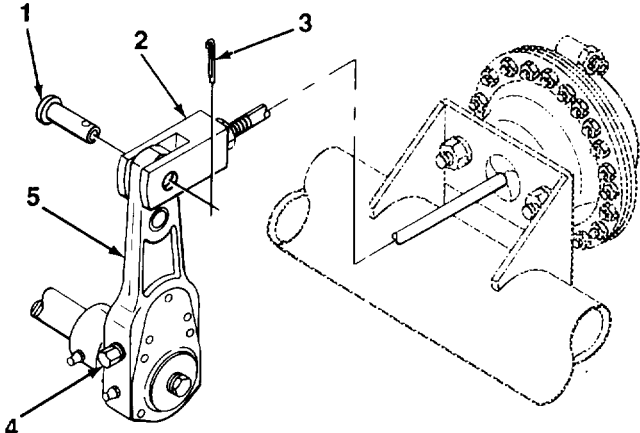
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4-20. BRAKESHOES - MINOR ADJUSTMENT (Con't)

|    | LOCATION                          | ITEM               | ACTION | REMARKS   |
|----|-----------------------------------|--------------------|--------|---|
| 3. |                                   | Slack adjuster (5) |        | Allow clevis (2) and slack adjuster (5) to rest in a neutral position.  |
| 4. | Clevis (2) and slack adjuster (5) | Clevis pin (1)     |        | a. Try to slide clevis pin (1) through clevis (2) and slack adjuster (5).<br>b. If clevis pin (1) slides through clevis (2) and slack adjuster (5), go to step 6.<br>c. If clevis pin (1) does not slide through clevis (2) and slack adjuster (5), go to step 5. |
| 5. | Slack adjuster (5)                | Hex head (4)       |        | Using 9/16 in. wrench, turn hex head (4) in or out so that clevis pin ("1) slides through clevis (2) and slack adjuster (5).  |
| 6. | Clevis pin (1)                    | Cotter pin (3)     |        | Using pliers, insert and bend.  |

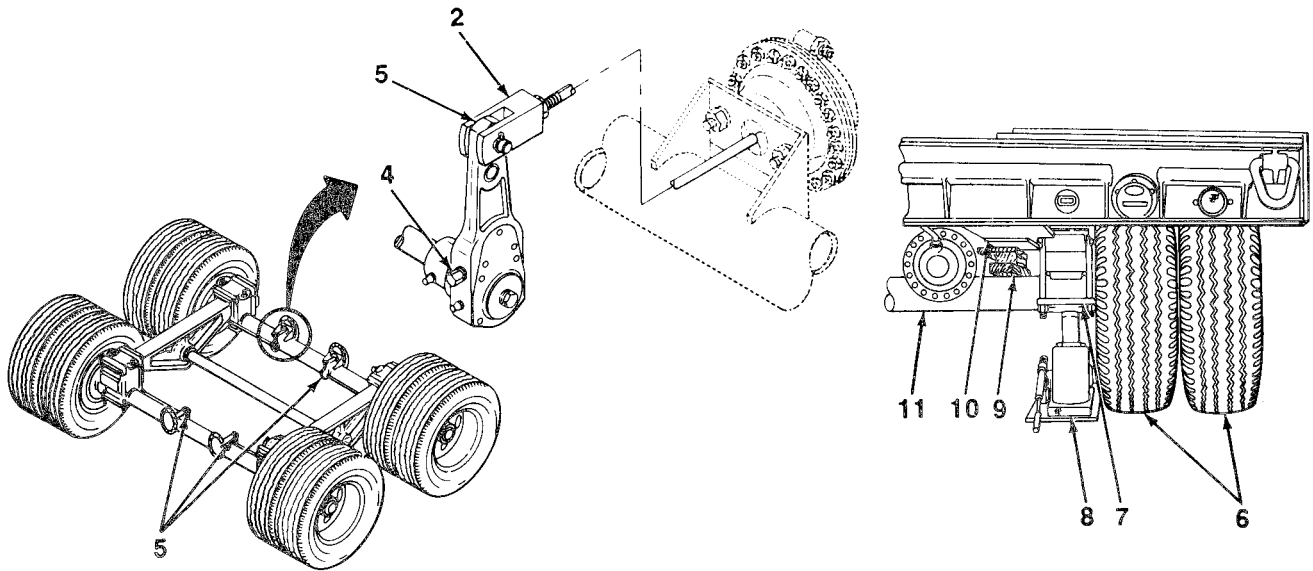



|     |                               |                    |  |  |
|-----|-------------------------------|--------------------|--|--|
| 7.  | Stop block (10) and axle (11) | Wooden block (9)   |  | Place between stop block (10) and axle (11).   |
| 8.  | Shackle box bracket (7)       | Hydraulic jack (8) |  | a. Position under shackle box bracket (7').<br>b. Using handle, raise until wheel assemblies (6) are clear of ground.  |
| 9.  | Slack adjuster (5)            | Hex head (4)       |  | a. Using 9/16 in. wrench, turn in hex head (4) until wheel assemblies (6) cannot be turned.<br>b. Using 9/16 in. wrench, turn out hex head (4) until wheel assemblies (6) turn freely. |
| 10. | Shackle box bracket (7)       | Hydraulic jack (8) |  | Lower hydraulic jack (8) using handle, and take out from under shackle box bracket (7).  |

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4-20. BRAKESHOES – MINOR ADJUSTMENT (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |                                 |   |  |
|-----|---------------------------------|---|--|
| 11. | Stop block (10) and axle (11)   | Wooden block (9)  | Remove from stop block (10) and axle (11). |
| 12. | Other three slack adjusters (5) | Repeat steps 1 through 11 to adjust brakeshoes at other wheels. |  |

**FOLLOW-ON MAINTENANCE:**

- Remove chock blocks (para 2-5).
- Check brake operation.

**TASK ENDS HERE**

**4-21. BRAKESHOES REPLACEMENT**

*This Task Covers:*

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Cleaning and Inspection</li> </ul> | <ul style="list-style-type: none"> <li>c. Installation</li> </ul> |
|--|---|

*Initial Setup:*

**Equipment Conditions:**

- Wheel and tire assemblies removed (para 3-9).
- Hub and drum assembly removed (para 4-33).

**Materials/Parts:**

- Brakeshoe return springs (if required)
- Dry cleaning solvent (Item 13, Appendix E)

**Tools/Test Equipment:**

- Drift, brass
- Extension, 3 in., ½ in. drive
- Hammer, ball-peen
- Handle, ratchet, ½ in. drive
- Pliers, slip-joint
- Punch, drive-in
- Screwdriver, flat-tip
- Socket, ¾ in., ½ in. drive
- Wrench, open-end, 5/8 in.
- Wrench, open-end, ¾ in.
- Wrench, open-end, 1 ½ in.

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**WARNING**

**DO NOT** handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.

**CAUTION**

Do not get grease, oil, solvent, or fingerprints on lining surfaces. This will cause glazed linings and uneven braking, resulting in replacing otherwise good linings.

**NOTE**

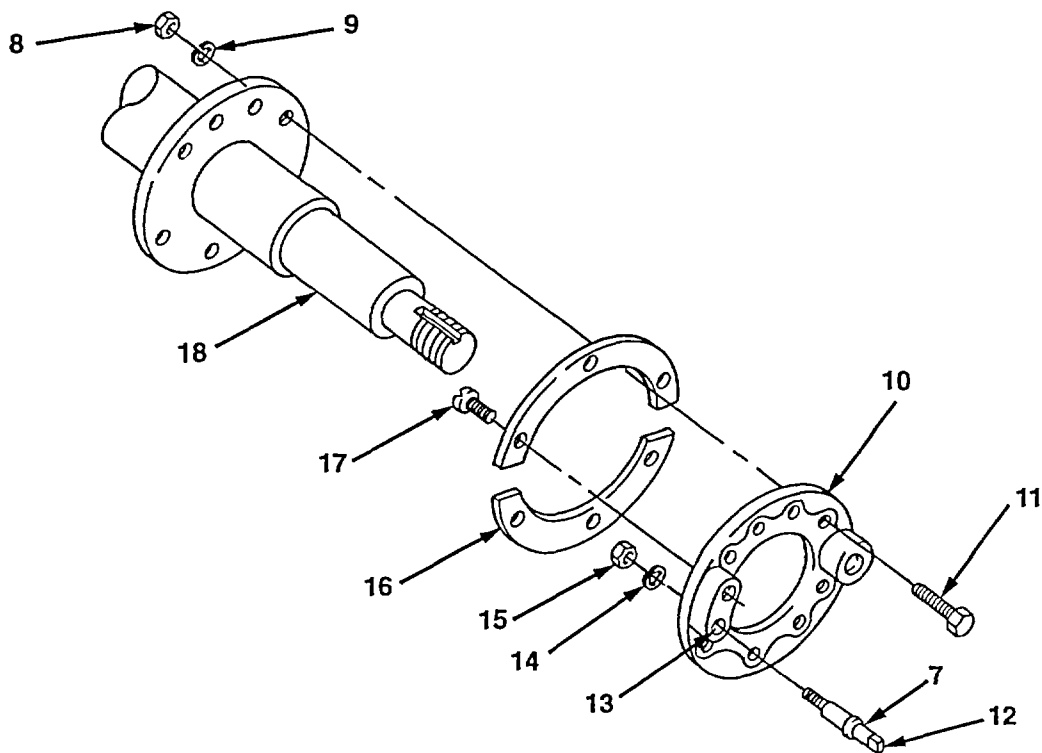
All four sets of brakeshoes and linings are removed the same way. Only one is covered in this procedure. Repeat the procedure for remaining sets of brakeshoes and linings.

4-21. BRAKESHOES REPLACEMENT (Con't)

|    | LOCATION                                | ITEM                         | ACTION  | REMARKS |
|----|---|------------------------------|---|---------|
| 1. | Two brakeshoe assemblies (3)            | Two brakeshoe linings (2)    | a. Inspect for cracks or scoring.<br>b. If cracked or scored, replace brakeshoe assemblies (3).<br>c. If brakeshoe linings (2) are worn within 0.03 in. (0.762 mm) of rivet or screw heads (1), replace brakeshoe assemblies (3). |         |
| 2. | Two anchor pins (7)                     | Two retaining rings (6)      | Using pliers, pull off.   |         |
| 3. |   | Anchor pin link (5)          | Take off of anchor pins (7).  |         |
|    |   |                              |   |         |
| 4. |   | Two brakeshoe assemblies (3) | Using flat-tip screwdriver, pull off from two anchor pins (7).  |         |
| 5. |   | Two return springs (4)       | Using pliers, pull ends off brakeshoe assemblies (3).   |         |
| 6. | Cam end of two brakeshoe assemblies (3) | Camshaft                     | Remove (para 4-24).   |         |

4-21. BRAKESHOES REPLACEMENT (Con't)

| LOCATION | ITEM                | ACTION   | REMARKS   |
|----------|---------------------|--|---|
| 7.       | Rear of spider (10) | Two anchor pin lockwashers (14) and nuts (15)    | a. Hold flattened ends (12) of anchor pins (7) with 5/8 in. wrench.<br>b. Using 1 1/8 in. wrench, unscrew and take off. |
| 8.       |                     | Two anchor pins (7)                              | Using brass drift and hammer, drive out.  |
| 9.       |                     | Eight screws (11), lockwashers (9), and nuts (8) | Using 3/4 in. socket, extension, handle, and 3/4 in. wrench, unscrew and take out.                                      |
| 10.      |                     | Spider (10)                                      | Pull off axle (18).   |
| 11.      | Rear of spider (10) | Six screws (17)                                  | Using flat-tip screwdriver, unscrew and take out.   |
| 12.      | Spider (10)         | Shield (16)                                      | Pull apart and separate.  |



4-21. BRAKESHOES REPLACEMENT (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

CLEANING AND INSPECTION

**WARNING**

- **DO NOT** handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.
- Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and **DO NOT** breathe vapors. **DO NOT** use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

|     |                 |  |  |
|-----|-----------------|--|--|
| 13. | All metal parts | a. Clean using dry cleaning solvent.<br>b. Inspect for cracks or damage.<br>c. If cracked or damaged, replace. |  |
|-----|-----------------|--|--|

INSTALLATION

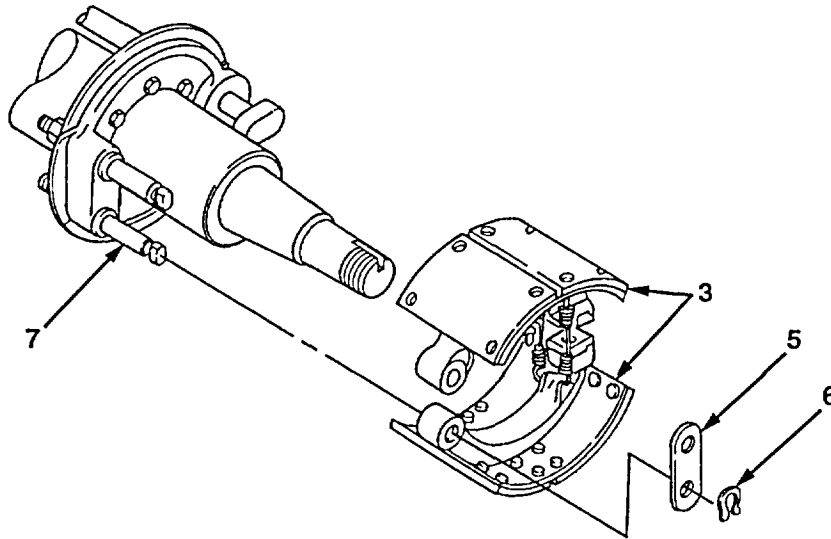
|     |                     |  |   |
|-----|---------------------|--|---|
| 14. | Spider (10)         | Shield (16)  | Place in position and align screw holes.  |
| 15. | Rear of spider (10) | Six screws (17)  | Using flat-tip screwdriver, screw in and tighten.   |
| 16. | Axle (18)           | Spider (10)  | Slide onto axle (18) and align screw holes.   |
| 17. | Spider (10)         | Eight screws (11),<br>lockwashers (9),<br>and nuts (8) | Using 3/4 in. socket, handle, and 3/4 in. wrench, screw in and tighten.   |
| 18. |                     | Two anchor pins (7)                                    | Push into two anchor pin holes (13).  |
| 19. | Two anchor pins (7) | Two anchor pin<br>lockwashers (14)<br>and nuts (15)    | a. Screw on until fingertight.<br>b. Hold flattened ends (12) of anchor pins (7) with 5/8 in. wrench.<br>c. Using 1 1/8 in. wrench, screw in and tighten. |

4-21. BRAKESHOES REPLACEMENT (Con't)

|     | LOCATION                                | ITEM                         | ACTION  | REMARKS |
|-----|---|------------------------------|---|---------|
| 20. | Cam end of two brakeshoe assemblies (3) | Camshaft                     | Install (para 4- 24).   |         |
| 21. |   | Two return springs (4)       | Using pliers, slip ends of return springs (4) onto brakeshoe assemblies (3).<br><b>The hooks face inward.</b> |         |
|     |   |                              |   |         |
| 22. | Two anchor pins (7)                     | Two brakeshoe assemblies (3) | Push brakeshoe assemblies (3) onto anchor pins (7).   |         |
| 23. |   | Anchor pin link (5)          | Slip onto anchor pins (7).  |         |
| 24. |   | Two retaining rings (6)      | Using drive-pin punch and hammer, carefully tap onto anchor pins (7).   |         |

4-21. BRAKESHOES REPLACEMENT (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



**FOLLOW-ON MAINTENANCE:**

- Install hub and drum assembly (para 4-33).
- Install wheel and tire assemblies (para 3-9).
- Check wheel bearing adjustment (para 4-33).
- Perform major adjustment (para 4-22).
- Perform minor adjustment (para 4-20).
- Remove chock blocks (para 2-5).
- Check brake operation.

**TASK ENDS HERE**



**4-22. BRAKESHOES-MAJOR ADJUSTMENT**

*This Task Covers:*

Major Adjustment

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).
- Wheel and tire assemblies removed (para 3-9).

**Tools/Test Equipment:**

- Gage, feeler
- Screwdriver, flat-tip
- Wrench, open-end, 7/16 in.
- Wrench, open-end, 5/8 in.
- Wrench, open-end, 1 1/8 in.

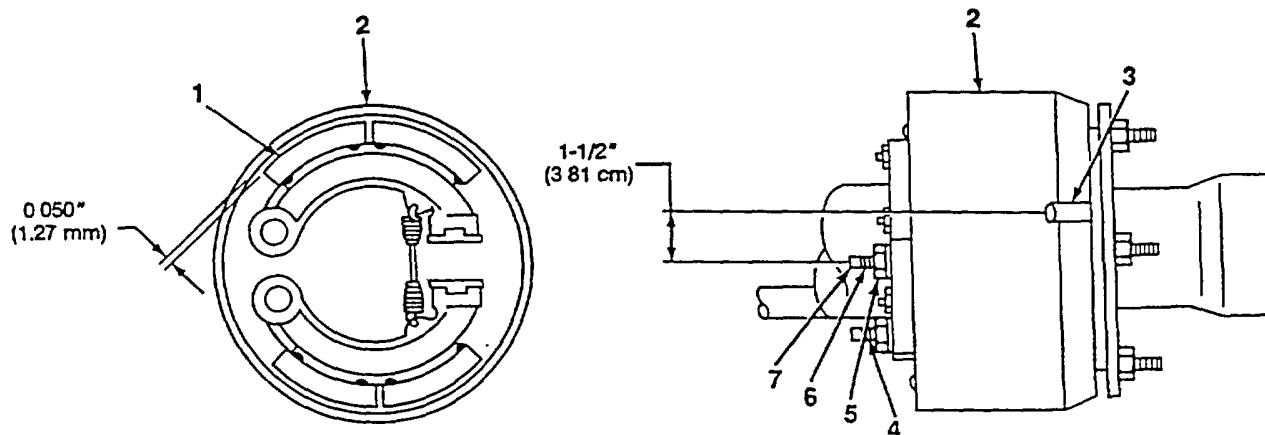
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

MAJOR ADJUSTMENT

**NOTE**

- A major adjustment must be performed after new brakeshoe linings are installed.
- All four brakeshoes are adjusted the same way. Only one is covered in this procedure.

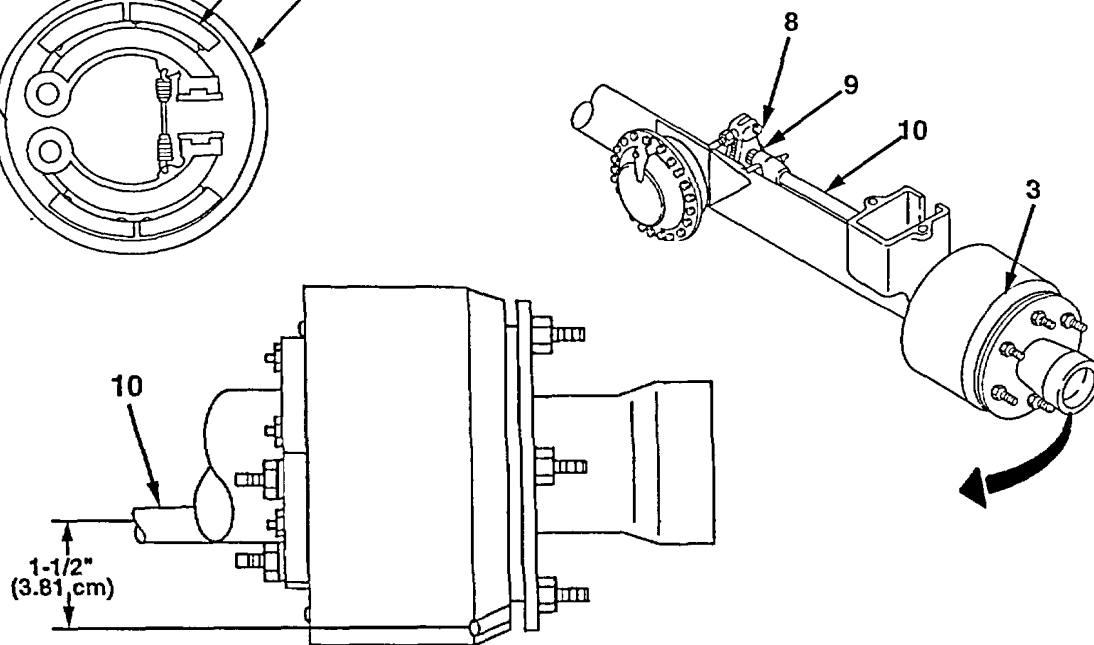
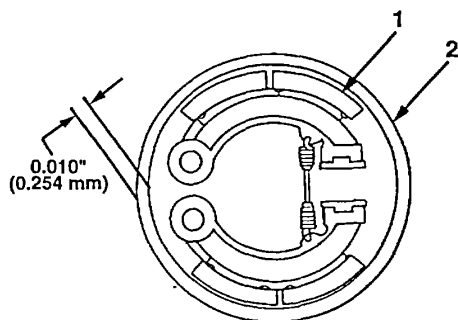
|    |                      |                     |   |
|----|----------------------|---------------------|---|
| 1. | Upper anchor pin (6) | Nut (5)             | Using 1 1/8 in. wrench, unscrew partway.  |
| 2. | Drum (2)             | Inspection hole (3) | a. Rotate drum (2) until inspection hole (3) is 1 1/2 in. (3.81 cm) above upper anchor pin (6).<br>b. Put 0.050 in. (1.27 mm) feeler gage into inspection hole (3) to check clearance between surface of drum (2) and brakeshoe lining (1). |



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4-22. BRAKESHOES-MAJOR ADJUSTMENT (Con't)

|    | LOCATION             | ITEM                | ACTION  | REMARKS |
|----|----------------------|---------------------|---|---------|
| 3. | Upper anchor pin (6) | Flattened ends (7)  | Using 5/8 in. wrench, turn flattened ends (7) on upper anchor pin (6) until 0.050 in. (1.27 mm) clearance is obtained.  |         |
| 4. | Flattened ends (7)   | Nut (5)             | Hold flattened ends (7) with 5/8 in. wrench, and with 1 1/8 in. wrench, screw in nut (5) and tighten.   |         |
| 5. | Drum (2)             | Inspection hole (3) | a. Using 0.50 in. (1.27 mm) feeler gage, check clearance between surface of drum (2) and brakeshoe lining (1).<br>b. If not within tolerance, repeat steps 2 through 5a until proper clearance is obtained.<br>c. Repeat steps 2 through 5 for lower anchor pin (4).  |         |
| 6. | Camshaft (10)        | Inspection hole (3) | a. Rotate drum (2) until inspection hole (3) is 1 1/2 in. (3.81 cm) below camshaft (10).<br>b. Put 0.010 in. (0.254 mm) feeler gage into inspection hole (3) to check clearance between surface of drum (2) and brakeshoe lining (1).   |         |
| 7. | Slack adjuster (8)   | Hex head (9)        | a. Using 7/16 wrench, turn hex head (9) in or out until 0.010 in. (0.254 mm) clearance is obtained between surface of drum (2) and brakeshoe lining (1).<br>b. Check clearance between surface of drum (2) and brakeshoe lining (1) using 0.010 in. (0.254 mm) feeler gage.<br>c. If not within tolerance, repeat steps 7a and 7b until proper clearance is obtained. |         |



**4-22. BRAKESHOES-MAJOR ADJUSTMENT (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**FOLLOW-ON MAINTENANCE:**

- Install wheel and tire assemblies (para 3-9).
- Perform minor brake adjustment (para 4-20).

**TASK ENDS HERE**

**4-23. SLACK ADJUSTER**

*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).
- Wheel bearing adjustment checked (para 4-33).

**Tools/Test Equipment:**

- Hammer, ball-peen
- Handle, ratchet, ½ in. drive
- Hydraulic jack and handle
- Pliers, slip-Joint
- Punch, drive-pin
- Socket, ½ In., ½ In. drive
- Wrench, open-end, 7/16 In.

**Materials/Parts:**

- Cotter pin

**Personnel Required:** Two

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

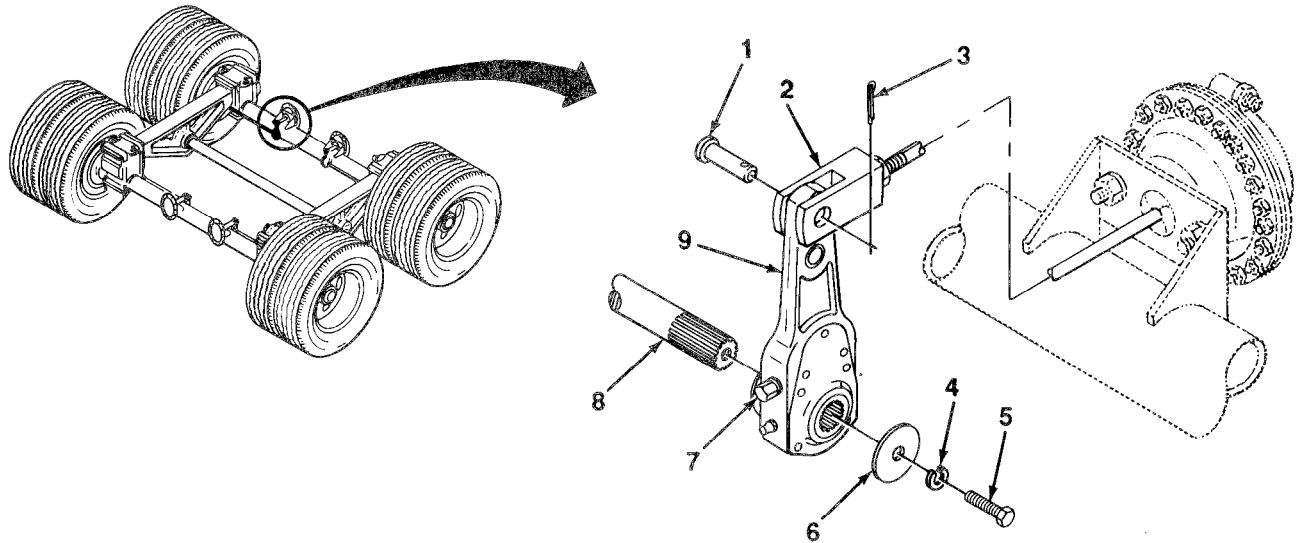
**All slack adjusters are replaced the same way. Only one is covered in this procedure.**

**REMOVAL**

|    |                    |   |  |
|----|--------------------|---|--|
| 1. | Clevis pin (1)     | Cotter pin (3)                                    | Using pliers, pull out and discard.                  |
| 2. | Clevis (2)         | Clevis pin (1)                                    | Using drive-pin punch and hammer, push out.          |
| 3. | Camshaft (8)       | Bolt (5),<br>lockwasher (4),<br>and keywasher (6) | Using ½ in. socket and handle, unscrew and take off. |
| 4. | Slack adjuster (9) |   | Using hammer, hit and slide off end of camshaft (8). |

4-23. SLACK ADJUSTER (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



INSTALLATION

|                                      |   |   |
|--------------------------------------|---|---|
| 5. Camshaft (8)                      | Slack adjuster (9)                          | Slide slack adjuster (9) onto camshaft (8) so that slack adjuster is straight up.   |
| 6. Clevis (2) and slack adjuster (9) | Clevis pin (1)                              | a. Aline clevis (2) with slack adjuster (9).<br>b. Try to slide clevis pin (1) through clevis (2) and slack adjuster (9).<br>c. If clevis pin (1) slides through clevis (2) and slack adjuster (9), go to step 8.<br>d. If clevis pin (1) does not slide through clevis (2) and slack adjuster (9), go to step 7. |
| 7. Slack adjuster (9)                | Hex head (7)                                | Using $\frac{7}{16}$ in. wrench, turn hex head (7) in or out so that clevis pin (1) slides through clevis (2) and slack adjuster (9).   |
| 8. Clevis pin (1)                    | Cotter pin (3)                              | Using pliers, insert and bend.  |
| 9. Camshaft (8)                      | Keywasher (6), lockwasher (4), and bolt (5) | Screw in and tighten using $\frac{1}{2}$ in. socket and handle.   |

**FOLLOW-ON MAINTENANCE:**

- Perform minor brake adjustment (para 4-20).
- Remove chock blocks (para 2-5).
- Check brake operation.

TASK ENDS HERE

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**4-24. CAMSHAFT**

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).
- Wheel and tire assemblies removed (para 3-9).
- Hub and drum assembly removed (para 4-33).
- Brakeshoes removed (para 4-21).
- Slack adjuster removed (para 4-23).

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
- Grease (Item 5, Appendix E)
- Retaining rings (two required)

**Tools/Test Equipment**

- Drift, brass
- Hammer, ball-peen
- Screwdriver, flat-tip

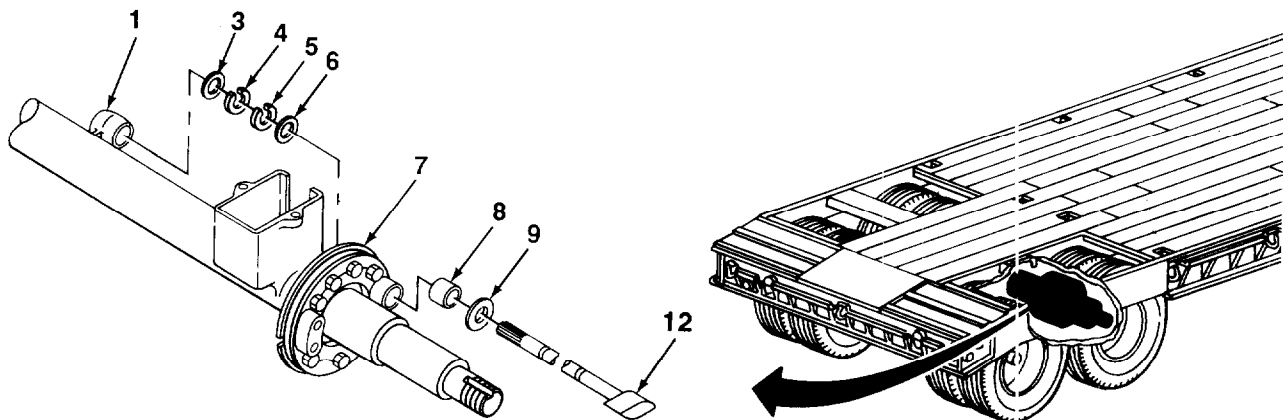
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**NOTE**

- All camshafts are removed the same way. Only one is covered in this procedure.
- Camshafts are right- and left-handed and are not interchangeable. Mark or identify properly.

- |    |  |                    |   |
|----|--|--------------------|---|
| 1. | Camshaft (12)<br>at bushing<br>bracket (1) | Retaining ring (4) | Using flat-tip screwdriver, pull off and discard. |
| 2. | Camshaft (12)<br>at rear of spider (7)     | Retaining ring (5) | Using flat-tip screwdriver, pull off and discard. |



4-24., CAMSHAFT (Con't)

|    | LOCATION            | ITEM                  | ACTION | REMARKS   |
|----|---------------------|-----------------------|--------|---|
| 3. | Bushing bracket (1) | Camshaft (12)         |        | Using brass drift and hammer, push camshaft (12) through bushing bracket (1). |
| 4. | Camshaft (12)       | Two washers (3 and 6) |        | Slide off.  |
| 5. | Front of spider (7) | Camshaft (12)         |        | Pull out.   |
| 6. | Camshaft (12)       | Spacer washer (9)     |        | Take off.   |
| 7. | Front of spider (7) | Sleeve bearing (8)    |        | Using hammer and brass drift, take out.                                       |

**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

- |    |   |   |
|----|---|---|
| 8. | Camshaft (12), spacer washer (9), and two washers (3 and 6) | <ul style="list-style-type: none"> <li>a. Clean using dry cleaning solvent.</li> <li>b. Check camshaft (12) for chipped surfaces, cracks, or damage.</li> <li>c. If camshaft (12) is chipped, cracked, or damaged, replace.</li> <li>d. If washers (3 and 6) are damaged, replace.</li> </ul> |
|----|---|---|

INSTALLATION

**WARNING**

Use of the wrong camshaft at any location will render the related brake inoperable, which may result in damage to equipment or injury to personnel.

**NOTE**

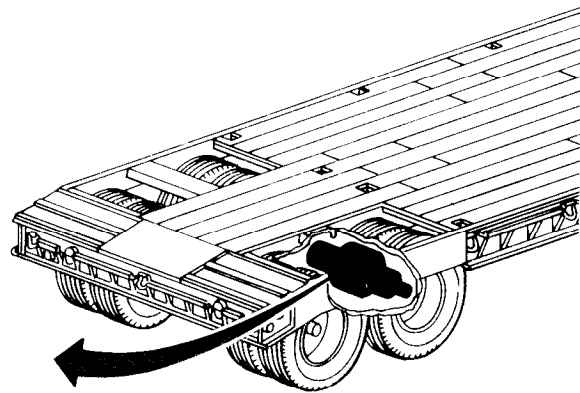
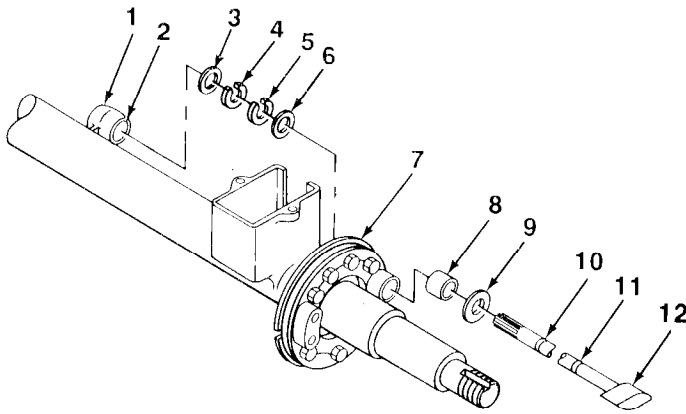
The correct locations for the camshaft, looking forward from the rear of the semitrailer are:

- NSN 2530-00-353-221, P/N 8687050  
Front axle - street side (left)  
Rear axle - curbside (right)
- NSN 2530-00-353-2211, P/N 8687051  
Front axle - curbside (right)  
Rear axle - street side (left)

- |    |                     |                    |   |
|----|---------------------|--------------------|---|
| 9. | Front of spider (7) | Sleeve bearing (8) | <ul style="list-style-type: none"> <li>a. Using hammer and brass drift, put in place.</li> <li>b. Apply thin coat of grease to inside of sleeve bearing (8), not more than <math>\frac{1}{16}</math> in. (1.6 mm).</li> </ul> |
|----|---------------------|--------------------|---|

4-24. CAMSHAFT (Con't)

|     | LOCATION                            | ITEM                              | ACTION   | REMARKS |
|-----|-------------------------------------|-----------------------------------|--|---------|
| 10. | Bushing bracket (1)                 | Bushing (2)                       | Apply thin coat of grease to inside of bushing (2), not more than $\frac{1}{16}$ in. (1.6 mm). |         |
| 11. | Camshaft (12)                       | Spacer washer (9)                 | Slide onto cam end.  |         |
| 12. | Sleeve bearing (8)                  | Camshaft (12)                     | Push halfway through sleeve bearing (8).   |         |
| 13. | Camshaft (12) at rear of spider (7) | Washer (6) and retaining ring (5) | Slide washer (6) then retaining ring (5) onto camshaft (12).                                   |         |



|     |                                      |                                       |   |  |
|-----|--------------------------------------|---------------------------------------|---|--|
| 14. | Camshaft (12) at bushing bracket (1) | Retaining ring (4) and washer (3)     | Slide retaining ring (4) then washer (3) onto camshaft (12).  |  |
| 15. | Front of spider (7)                  | Camshaft (12)                         | Push camshaft (12) into spider (7) as far as it will go.  |  |
| 16. | Rear of spider (7)                   | One washer (6) and retaining ring (5) | a. Hold washer (6) to rear of spider (7).<br>b. Using flat-tip screwdriver, slip retaining ring (5) into retaining ring groove (11).  |  |
| 17. | Camshaft (12) at bushing bracket (1) | One retaining ring (4) and washer (3) | a. Hold washer (3) to bushing bracket (1).<br>b. Using flat-tip screwdriver, slip retaining ring (4) into retaining ring groove (10). |  |

**4-24. CAMSHAFT (Con't)**

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| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

---

**FOLLOW-ON MAINTENANCE:**

- Lubricate camshaft (para 3-2).
- Install slack adjuster (para 4-23).
- install brakeshoes (para 4-21).
- Install hub and drum assembly (para 4-33).
- Install wheel and tire assemblies (para 3-9).
- Remove chock blocks (para 2-5).
- Check brake operation.

**TASK ENDS HERE**

**4-25. AIR COUPLING AND PREFORMED PACKING**

*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)
- Rags (Item 11, Appendix E)

**Tools/Test Equipment:**

- Pliers, slip-joint
- Screwdriver, flat-tip
- Wrench, open-end 1 in.
- Wrench, open-end, 1 ¼ in. (two required)



4-25. AIR COUPLING AND PREFORMED PACKING (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

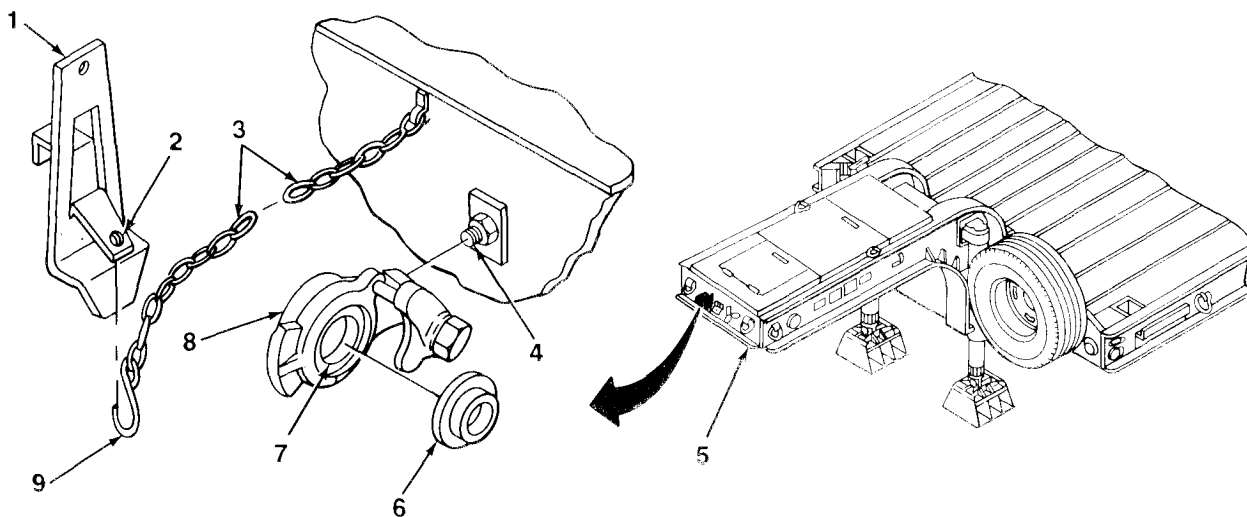
**WARNING**

Always release air from susem before working on air coupling. Failure to do so could result in personal injury.

**NOTE**

Both air couplings and preformed packings are removed the same way. Only one is shown in this procedure.

- |    |  |                        |   |
|----|--|------------------------|---|
| 1. | Air coupling (8) to front of semitrailer (5) | Dummy air coupling (1) | Uncouple and let hang on chain (3) to allow for wrench clearance.                                       |
| 2. |  | Air coupling (8)       | Using two 1 ¼ in. wrenches, unscrew and take off of nipple (4).   |
| 3. | Air coupling (8)                             | Preformed packing (6)  |   |
| 4. | Chain (3) to front of semitrailer (5)        | Dummy air coupling (1) | If replacement is required, use pliers to open one end of S-link (9) and remove dummy air coupling (1). |



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**4-25. AIR COUPLING AND PREFORMED PACKING (Con't)**

| LOCATION     | ITEM                   | ACTION   | REMARKS  |
|--------------|------------------------|--|--|
| INSTALLATION |                        |  |  |
| 5.           | Dummy air coupling (1) | a. Hook S-link (9) through hole (2).<br>b. Close S-link (9) with pliers. |  |
| 6.           | Air coupling (8)       | Prefomed packing (6)   | a. Insert one end into groove(7) on air coupling (8).<br>b. Using screwdriver, push preformed packing (6) down flat into groove (7). Prefomed packing must be flat and free of twists or bulges.     |
| 7.           | Air coupling (8)       |  | a. Wrap threaded end of nipple (4) with anti seize tape.<br>b. Hand screw air coupling (8) onto nipple (4) until fingertight.<br>c. Tighten air coupling (8) using 1 1/4 in. and 15/16 in. wrenches. |
| 8.           | Dummy air coupling (1) | install on air coupling (8).   |  |

**FOLLOW-ON MAINTENANCE:**

- Remove chock blocks (para 2-5).
- Check brake operation.

**TASK ENDS HERE**

**4-26. AIR FILTERS**

*This Task Covers:*

- |            |                       |
|------------|-----------------------|
| a. Removal | b. Splicing Air Lifes |
|------------|-----------------------|

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)
- Coupling nuts
- Detergent (Item 4, Appendix E)
- Nonmetallic hose

**Tools/Test Equipment:**

- Cutter, tube
- Handle, ratchet, 1/2 in. drive
- Socket, 9/16 in., 1/2 in. drive
- Tape, measuring
- Wrench, open-end, 5/8 in. (two required)
- Wrench, open-end, 9/16 in.

**4-26. AIR COUPLINGS AND PREFORMED PACKING (Con't)**

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**WARNING**

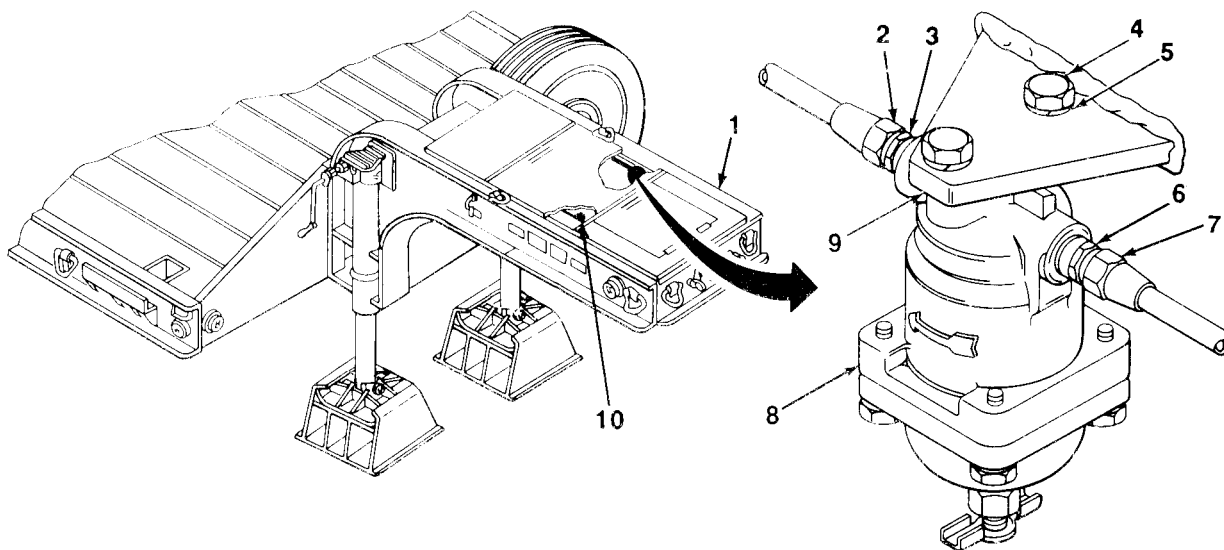
Always release air from system before working on air filter. Failure to do so could result in personal injury.

**NOTE**

Air filters are no longer required. When air filters fail they will be permanently replaced with a piece of air line nonmetallic hose.

**REMOVAL**

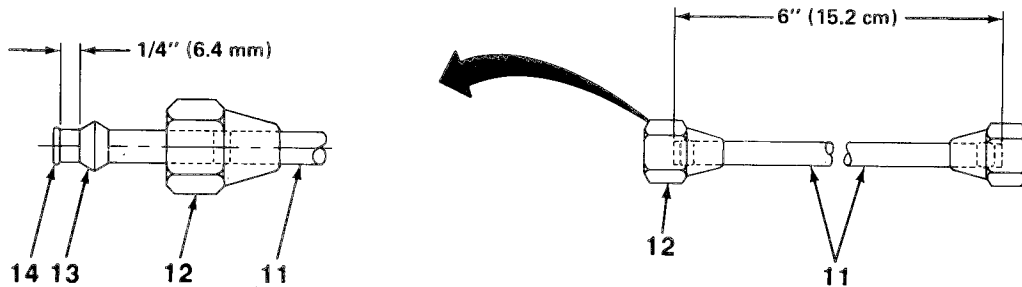
- |    |  |   |   |
|----|--|---|---|
| 1. | Emergency air filter (8) at underside of gooseneck (1) | Inbound coupling nut (7) and adapter (6)              | Using two 5/8 in. wrenches, unscrew and separate.   |
| 2. |  | Adapter (6)   | Using 9/16 in. wrench, unscrew and take out.  |
| 3. |  | Outbound coupling nut (2) and adapter (3)             | Repeat steps 1 and 2.   |
| 4. | Mounting bracket (9)                                   | Two screws (4) and lockwashers (5)                    | Using 9/16 in. socket and handle, unscrew and take out. Discard screws (4), lockwashers (5), and air filter (8). Save adapters (3 and 6). |
| 5. |  | Service air filter (10) at underside of gooseneck (1) | Repeat steps 1 through 4.   |



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4-26. AIR FILTERS (Con't)

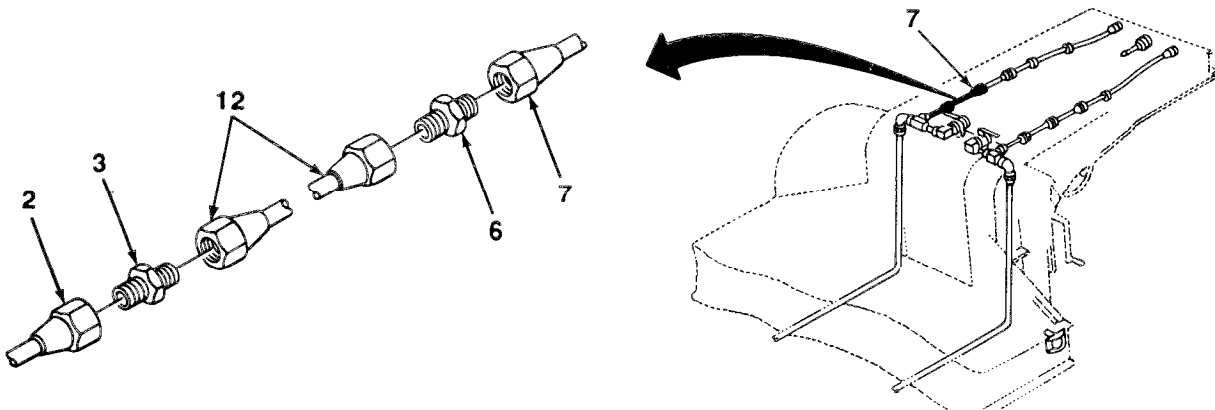
| LOCATION                  | ITEM                  | ACTION  | REMARKS   |
|---------------------------|-----------------------|---|---|
| <b>SPLICING AIR LINES</b> |                       |   |   |
| 6.                        | Nonmetallic hose (11) | Using measuring tape and tube cutter, cut 6 in. (15.2 cm) length of nonmetallic hose. |   |
| 7.                        | Nonmetallic hose (11) | Coupling nut (12)   | Slide onto nonmetallic hose (11), small end first.          |
| 8.                        | Sleeve (13)           |   | Slide onto nonmetallic hose (11) 1/4 in. (6.4 mm) past end. |
| 9.                        | Insert (14)           |   | Slide into end of nonmetallic hose (11)                     |



**NOTE**

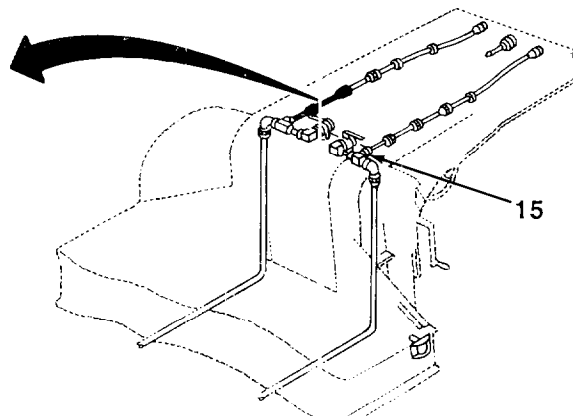
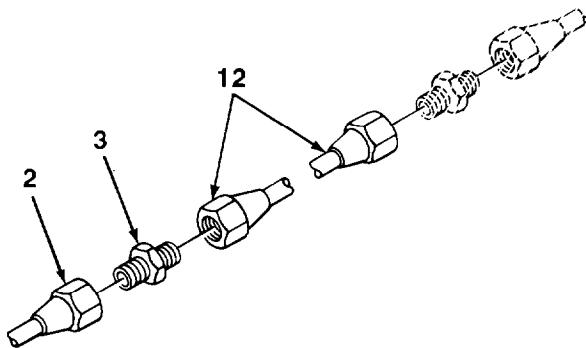
Repeat steps 7 through 9 for other end of nonmetallic hose.

|     |   |                   |   |
|-----|---|-------------------|---|
| 10. | Emergency air line inbound coupling nut (7) | Adapter (6)       | a. Wrap adapter (6) threads with antiseize tape.<br>b. Hand screw in adapter (6) until fingertight.<br>c. Using two 5/8 in. wrenches, screw in and tighten. |
| 11. | Adapter (6)                                 | Coupling nut (12) | Install coupling nut (12) to adapter (6).   |



**4-26. AIR FILTERS (Con't)**

|     | LOCATION   | ITEM   | ACTION   | REMARKS |
|-----|--|--|--|---------|
| 12. | Emergency air line<br>outbound coupling<br>nut (2) | Adapter (3)                                      | Repeat step 10.  |         |
| 13. | Adapter (3)  | Coupling nut (12)                                | Repeat step 11.  |         |
| 14. |  | Service air line<br>inbound coupling<br>nut (15) | Repeat steps 10 through 13 to splice service air line. |         |



**FOLLOW-ON MAINTENANCE:**

- . Remove chock blocks (para 2-5).
- . Check for leaks (para 4-27).

**TASK ENDS HERE**

**4-27. AIR LINES AND FITTINGS– LEAK TESTING**

*This Task Covers:*

Leak Testing

*Initial Setup:*

**Equipment Conditions:**

- Air reservoir filled.

**Materials/Parts:**

- Brush (Item 1, Appendix E)
- Detergent (Item 4, Appendix E)

4-27. AIR LINES AND FITTINGS - LEAK TESTING (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

LEAK TESTING

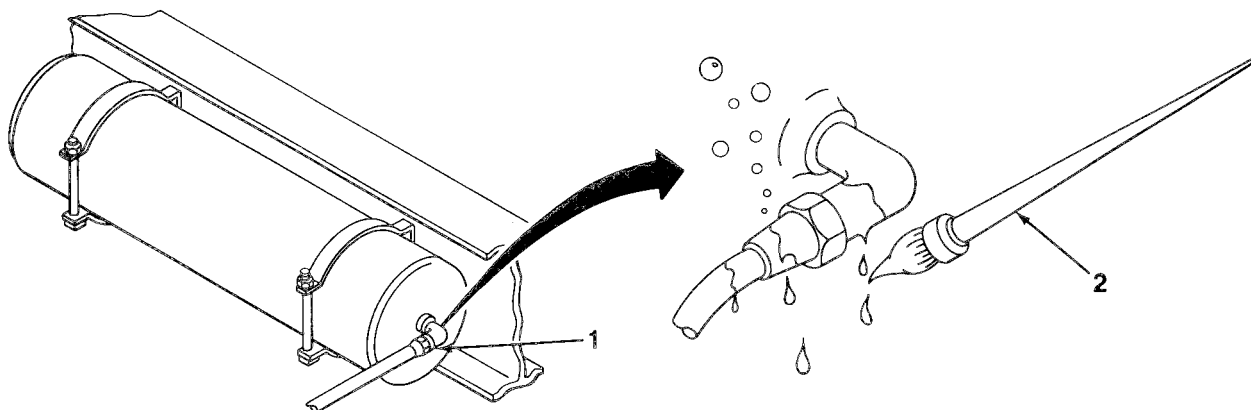
**NOTE**

If air line or fitting leakage is suspected, the sound of escaping air will give a general indication of the area of leakage. To find the exact location, perform the following procedure.

Air system

Area of suspected leak (1)

- a. Using brush (2), apply detergent to area of suspected leak (1).
- b. Watch for bubbles in detergent.
- c. Repeat as required to find leak.



**FOLLOW-ON MAINTENANCE:**

Repair leaking air line or fitting (para 4-28).

**TASK ENDS HERE**

**4-28. AIR LINES AND FITTINGS**

*This Task Covers:*

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Repair</li> </ul> | <ul style="list-style-type: none"> <li>c. Installation</li> </ul> |
|---|---|

*Initial Setup:*

**Equipment Conditions:**

- Air released from system (para 3-8).
- Wheels chocked (para 2-5).
- Air couplings removed (para 4-25).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)

**Tools/Test Equipment:**

- Handle, ratchet,  $\frac{3}{8}$  in. drive
- Socket,  $\frac{3}{8}$  in.,  $\frac{3}{8}$  in. drive
- Wrench, adjustable
- Wrench, open-end,  $\frac{9}{16}$  in.
- Wrench, open-end,  $\frac{5}{8}$  in.
- Wrench, open-end,  $\frac{3}{4}$  in.
- Wrench, open-end,  $\frac{7}{8}$  in.
- Wrench, open-end, 1  $\frac{1}{8}$  in.
- Wrench, open-end, 1  $\frac{3}{8}$  in. (two required)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**WARNING**

**Always release air from system before working on air lines and fittings. Failure to do so could result in personal injury.**

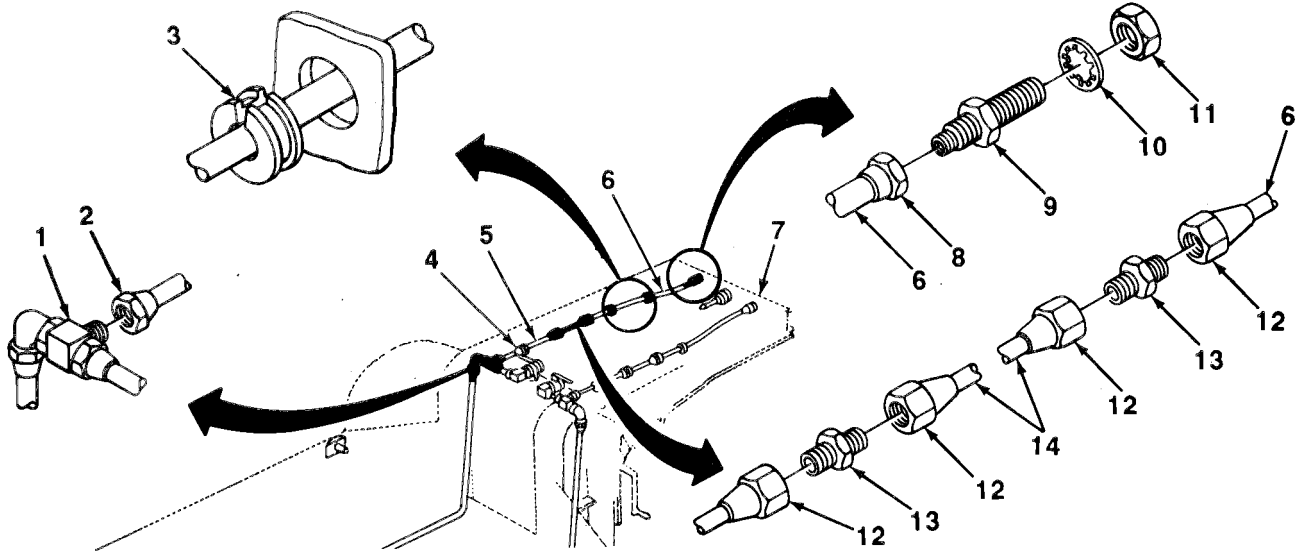
**NOTE**

- **Air lines can either be replaced or repaired depending on the length of the damaged line. If the damaged line is short, replace it. If the damaged line is long, repair it. Leaking fittings can either be tightened or replaced, depending on the situation. Typical procedures are shown.**
- **It may not be necessary to perform this entire procedure to accomplish the needed repair. Perform only those steps that are necessary.**

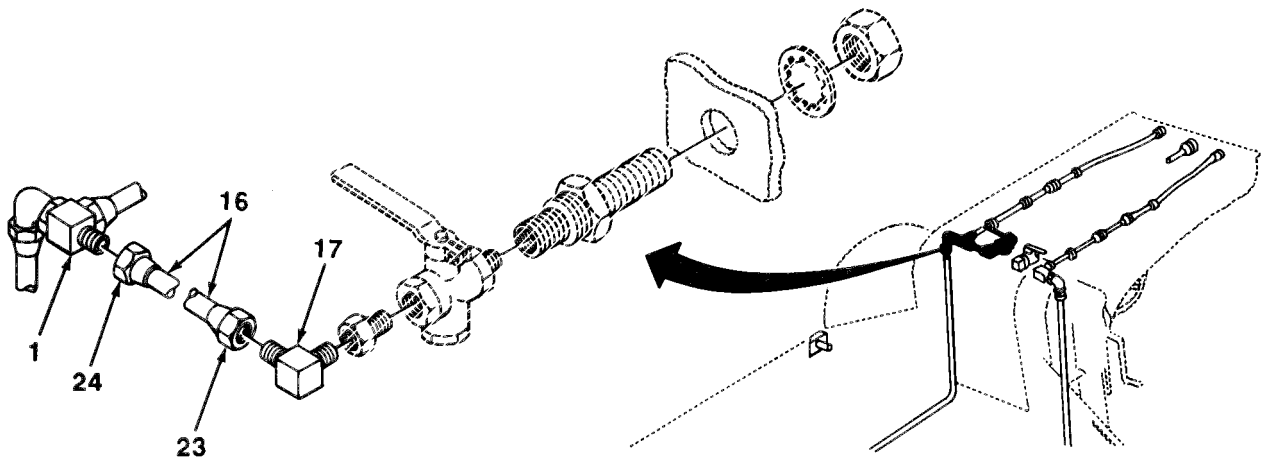
|    |   |  |  |
|----|---|--|--|
| 1. | Front of gooseneck (7) and bulkhead fitting (9) | Nut (11) and lockwasher (10)                         | Using two 1 $\frac{3}{8}$ in. wrenches, unscrew and take off.  |
| 2. | Bulkhead fitting (9)                            | Nut (8)  | a. Using 1 $\frac{3}{8}$ in. wrench and and $\frac{5}{8}$ in. wrench, unscrew and take apart.<br>b. Pull bulkhead fitting (9) out. |
| 3. | Gooseneck (7)                                   | Four nuts (12), two adapters (13), and air line (14) | Using a $\frac{5}{8}$ in. wrench and a $\frac{9}{16}$ in. wrench, unscrew and take off. Take out air line (14).                    |
| 4. |   | Air line (6)   | Pull out towards rear of semitrailer.  |
| 5. |   | Two grommets (3)                                     | Using pliers, pull out.  |

4-28. AIR LINES AND FITTINGS (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



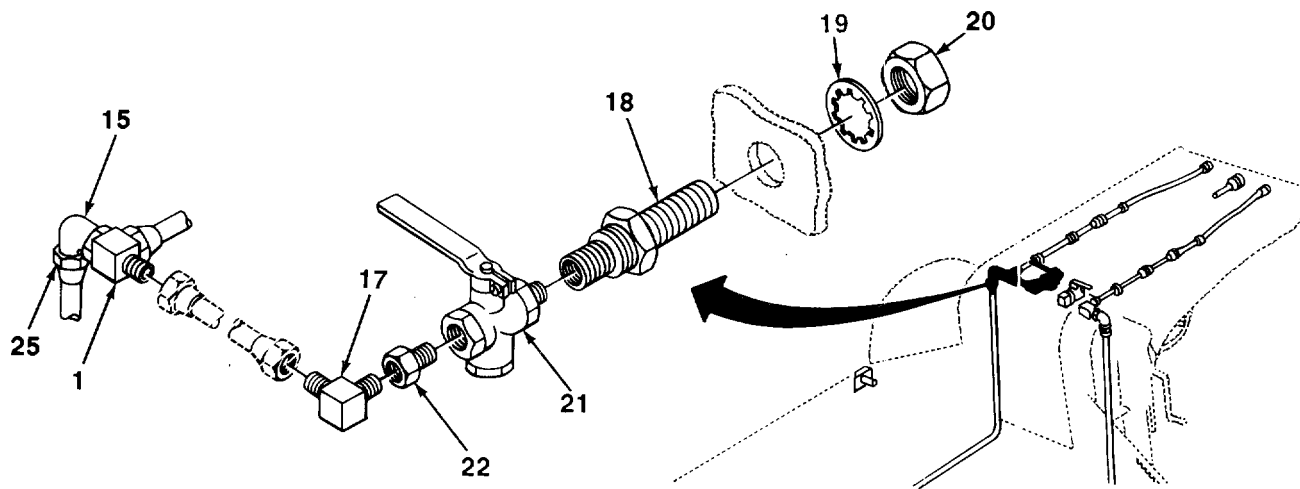
|     |                              |              |  |
|-----|------------------------------|--------------|--|
| 6.  | Tee (1)                      | Nut (2)      | Using $\frac{5}{8}$ in. wrench, unscrew and take off.                                  |
| 7.  | Gooseneck (7)                | Air line (5) | Pull out.  |
| 8.  |                              | Grommet (4)  | Using pliers, pull out.  |
| 9.  | Tee (1)                      | Nut (24)     | Using $\frac{5}{8}$ in. wrench and adjustable wrench, unscrew and take off.            |
| 10. | Elbow (17) and air line (16) | Nut (23)     | a. Using $\frac{5}{8}$ in. wrench, unscrew and take out.<br>b. Take out air line (16). |





4-28. AIR LINES AND FITTINGS (Con't)

|     | LOCATION              | ITEM                         | ACTION<br>REMARKS  |
|-----|-----------------------|------------------------------|--|
| 11. | Adapter (22)          | Elbow (17)                   | Using 3/4 in. wrench and 7/8 in. wrench, unscrew and take out.                         |
| 12. | Ball valve (21)       | Adapter (22)                 | Using 1 3/8 in. wrench and 7/8 in. wrench, unscrew and take out.                       |
| 13. | Bulkhead fitting (18) | Ball valve (21)              | Using 1 3/8 in. wrench, unscrew and take out.  |
| 14. |                       | Nut (20) and lockwasher (19) | a. Using 1 3/8 in. wrench, unscrew and take out.<br>b. Pull out bulkhead fitting (18). |
| 15. | Elbow (15)            | Tee (1)                      | Using 5/8 in. wrench and 3/4 in. wrench, unscrew and take out.                         |
| 16. | Nut (25)              | Elbow (15)                   | Using adjustable wrench and 5/8 in. wrench, unscrew and take-out.                      |



|     |                                |              |  |
|-----|--------------------------------|--------------|--|
| 17. | Adapter (34) and air line (32) | Nut (33)     | a. Using 9/16 in. wrench and 5/8 in. wrench, unscrew and take out.<br>b. Take out air line (32). |
| 18. | Bulkhead fitting (35)          | Adapter (34) | Using 9/16 in. wrench and 1 1/8 in. wrench, unscrew and take out.                                |
| 19. | Elbow (38)                     | Nut (39)     | Using 5/8 in. wrench, unscrew and take out.  |
| 20. | Bulkhead fitting (35)          | Elbow (38)   | Using 1 1/8 in. wrench and 3/4 in. wrench, unscrew and take out.                                 |

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4-28. AIR LINES AND FITTINGS (Con't)

|        | LOCATION                           | ITEM                               | ACTION  | REMARKS |
|--------|------------------------------------|------------------------------------|---|---------|
|        |                                    |                                    |   |         |
| 21.    | Bulkhead (36)                      | Bulkhead fitting (35) and nut (37) | a. Using two 1 1/8 in. wrenches, unscrew and take off.<br>b. Take bulkhead fitting (35) out of bulkhead (36). |         |
| 22.    | Left main frame (27) and stud (28) | Nut (31) and lockwasher (30)       | Using 3/8 in. socket and handle, unscrew and take off.  |         |
| 23.    | Air line (40)                      | Clamp (29)                         | Spread and take off.<br><b>Repeat steps 22 and 23 for clamps (41, 42, and 43).</b>                            |         |
| 24.    | Emergency relay valve (44)         | Nut (26)                           | Unscrew and take off using 5/8 in. wrench.  |         |
| 25.    | Left main frame (27)               | Air line (40)                      | Pull out.   |         |
| REPAIR |                                    |                                    |   |         |

**NOTE**

For information on procedures for splicing air lines, refer to paragraph 4-26.

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4-28. AIR LINES AND FITTINGS (Con't)

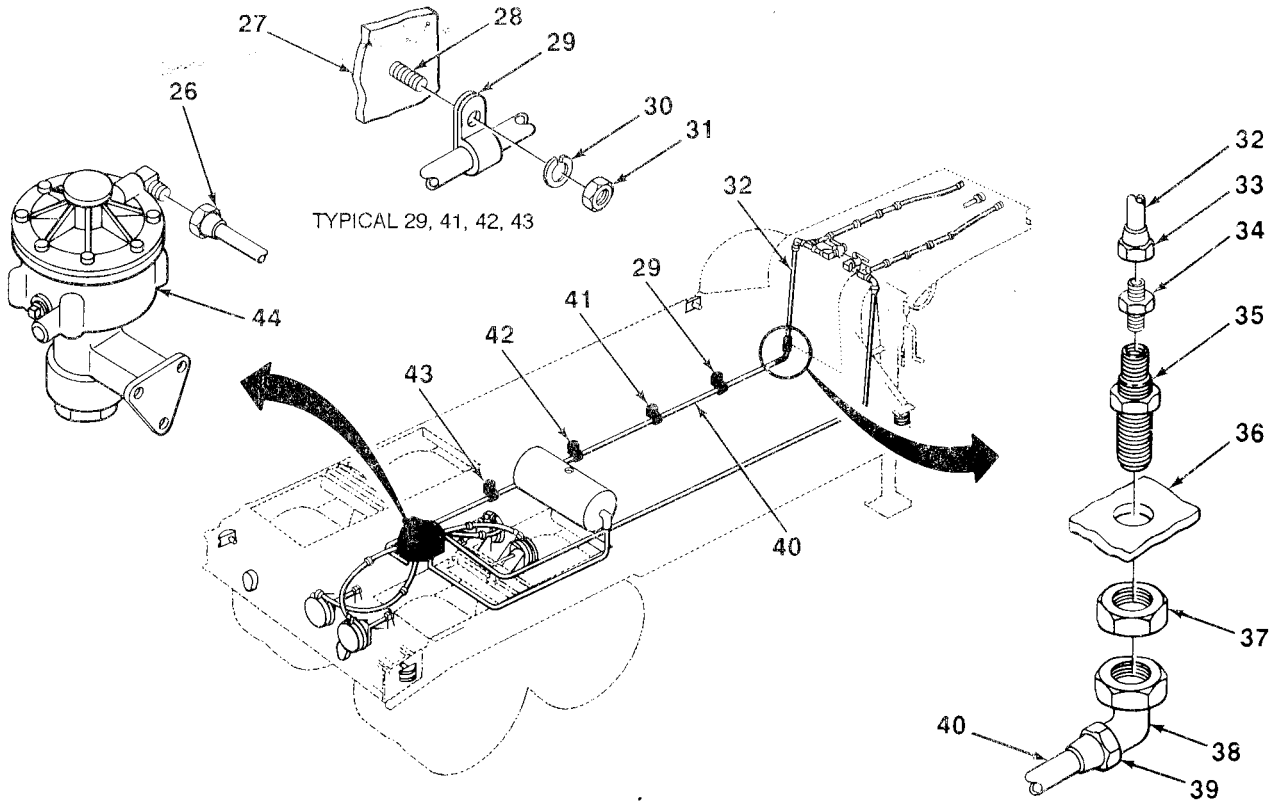
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

INSTALLATION

NOTE

Wrap all male air line and fitting threads two turns counterclockwise with antiseize tape before installing.

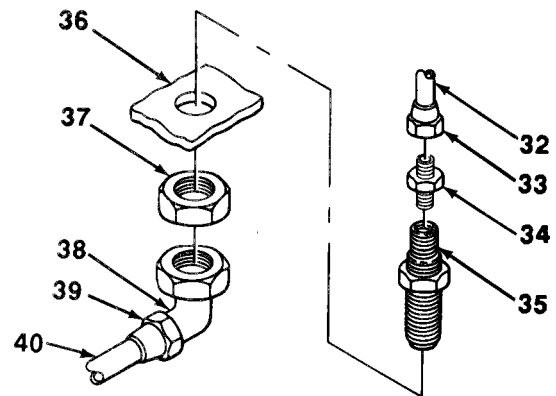
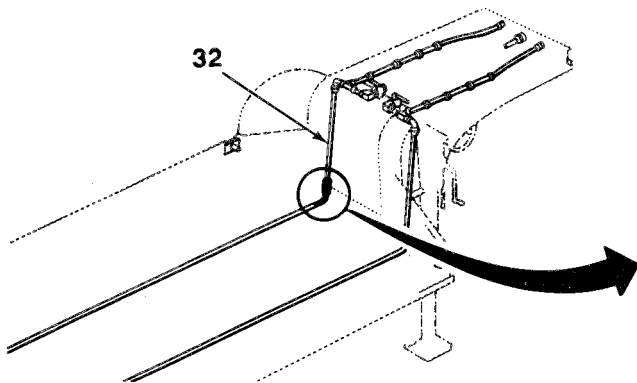
|     |                             |                              |   |
|-----|-----------------------------|------------------------------|---|
| 26. | Left main frame (27)        | Air line (40)                | Put in place.   |
| 27. | Emergency relay valve (44)  | Nut (26)                     | Put on and tighten using $\frac{5}{8}$ in. wrench.  |
| 28. | Air line (40) and stud (28) | clamp (29)                   | a. Spread clamp (29) and put around air line (40). Squeeze shut.<br>b. Put clamp (29) on stud (28).                           |
| 29. | Stud (28)                   | Nut (31) and lockwasher (30) | Put on and tighten using $\frac{3}{8}$ x in. socket and handle.<br><b>Repeat steps 28 and 29 for clamps (41, 42, and 43).</b> |



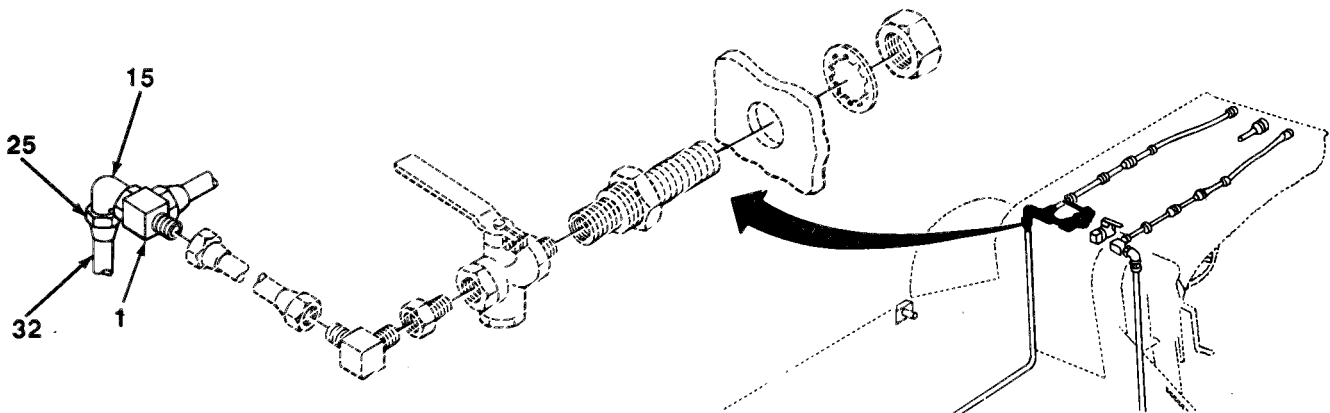
TA506886

4-28. AIR LINES AND FITTINGS (Con't)

|     | LOCATION              | ITEM                                       | ACTION   | REMARKS |
|-----|-----------------------|--|--|---------|
| 30. | Bulkhead (36)         | Bulkhead fitting (35) and fitting nut (37) | a. Put bulkhead fitting (35) in bulkhead (36).<br>b. Screw on and tighten nut (37) using two 1 1/8 in. wrenches. |         |
| 31. | Bulkhead fitting (35) | Elbow (38)                                 | Put on and tighten using 3/4 in. wrench and 1 1/8 in. wrench.  |         |
| 32. | Elbow (38)            | Nut (39)                                   | Put on and tighten using 5/8 in. wrench.   |         |
| 33. | Bulkhead fitting (35) | Adapter (34)                               | Put on and tighten using 9/16 in. wrench and 1 1/8 in. wrench.   |         |
| 34. | Adapter (34)          | Air line (32) and nut (33)                 | Put air line (32) in place and tighten slip nut (33) using 5/8 in. wrench.                                       |         |



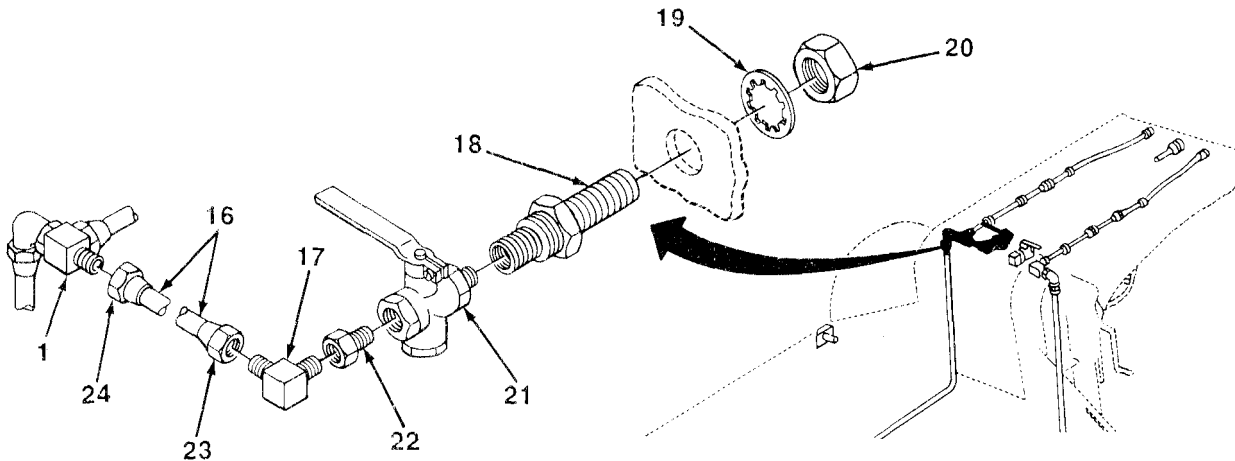
|     |                            |                        |  |  |
|-----|----------------------------|------------------------|--|--|
| 35. | Tee (1)                    | Elbow (15)             | Put on and tighten using 5/8 in. wrench and adjustable wrench. |  |
| 36. | Air line (32) and nut (25) | Elbow (15) and tee (1) | Put on and tighten using 5/8 in. wrench and adjustable wrench. |  |



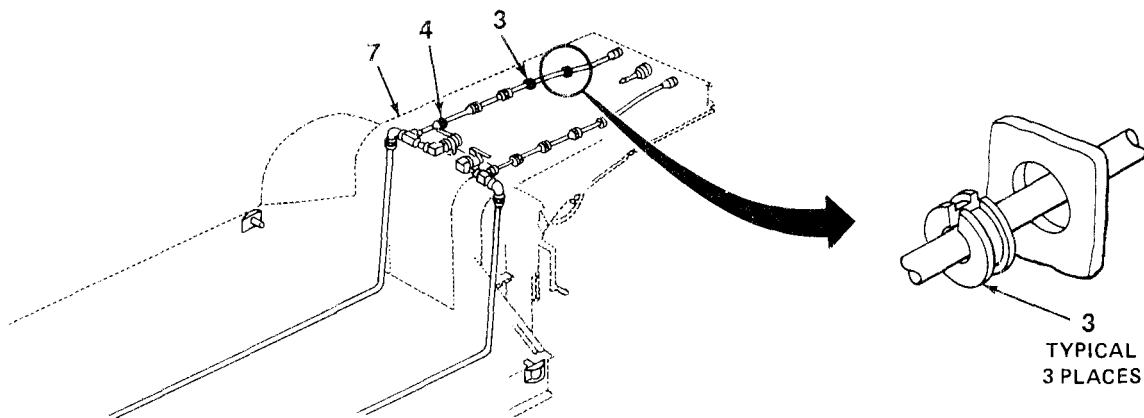
TA506887

4-28. AIR LINES AND FITTINGS (Con't)

|     | LOCATION               | ITEM                                   | ACTION   | REMARKS |
|-----|------------------------|--|--|---------|
| 37. | Bulkhead fitting (18)  | Lockwasher (19) and nut (20)           | a. Put bulkhead fitting (18) through bulkhead.<br>b. Put on lockwasher (19) and nut (20) and tighten using two 1 3/8 in. wrenches. |         |
| 38. | Bulkhead fitting (18)  | Ball valve (21)                        | Screw in and tighten using 1 3/8 in. wrench and 7/8 in. wrench.  |         |
| 39. | Ball valve (21)        | Adapter (22)                           | Put in and tighten using 1 3/8 in. wrench and 7/8 in. wrench.  |         |
| 40. | Adapter (22)           | Elbow (17)                             | Put in and tighten using 3/4 in. wrench.   |         |
| 41. | Tee (1) and elbow (17) | Air line (15) and two nuts (23 and 24) | a. Put air line (16) in place.<br>b. Tighten nuts (23 and 24) using 3/4 in. wrench and 5/8 in. wrench.                             |         |

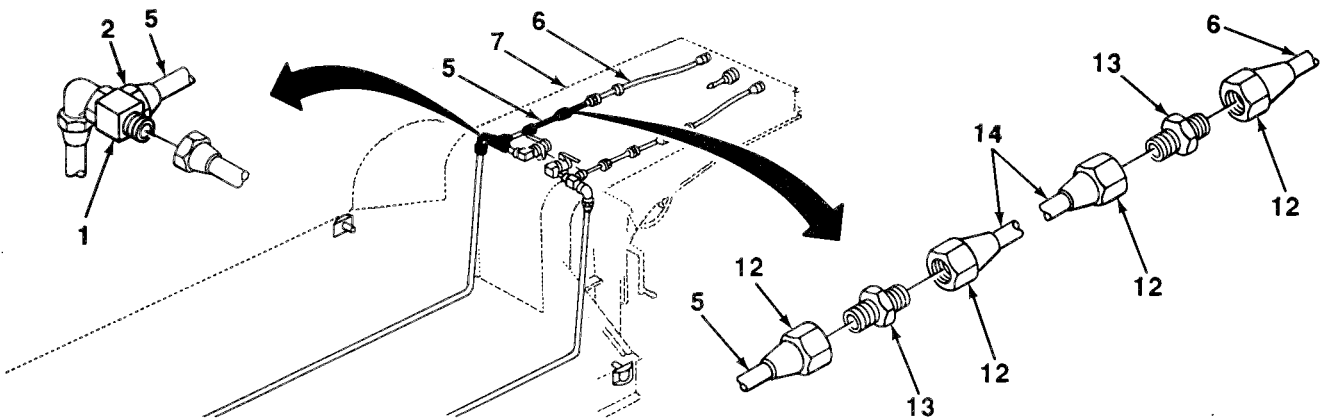


42. Gooseneck (7) Three grommets (3 and 4) Put in place.

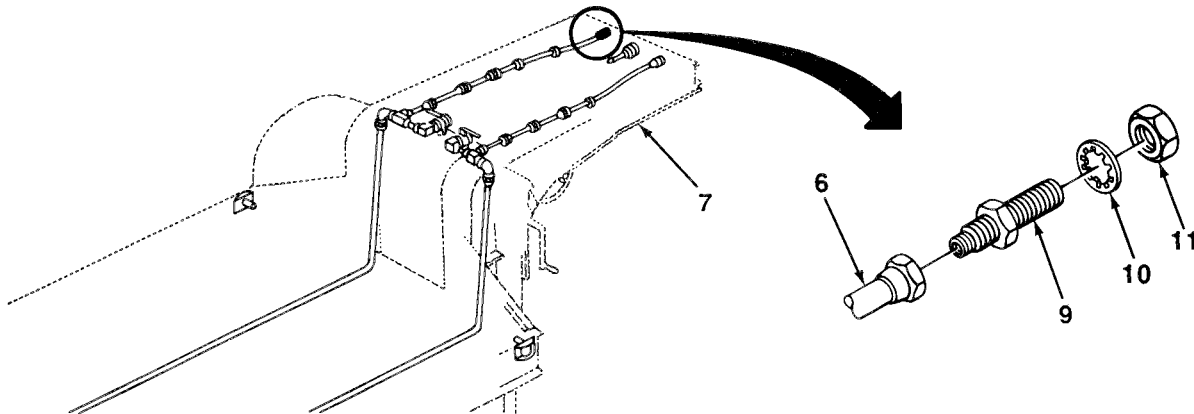


4-28. AIR LINES AND FITTINGS (Con't)

|     | LOCATION      | ITEM                       | ACTION   | REMARKS |
|-----|---------------|----------------------------|--|---------|
| 43. | Gooseneck (7) | Air line (5)               | Put in place.  |         |
| 44. | Tee (1)       | Nut (2)                    | Put on and tighten using $\frac{5}{8}$ in. wrench.                               |         |
| 45. | Nut (12)      | Adapter(13)                | Put in and tighten using $\frac{9}{16}$ in. wrench and $\frac{5}{8}$ in. wrench. |         |
| 46. | Adapter (13)  | Air line (14) and nut (12) | Put on and tighten using $\frac{9}{16}$ in. wrench and $\frac{5}{8}$ in. wrench. |         |
| 47. | Nut (12)      | Adapter (13)               | Put in and tighten using $\frac{9}{16}$ in. wrench and $\frac{5}{8}$ in. wrench. |         |
| 48. | Gooseneck (7) | Air line (6)               | Put in place.  |         |
| 49. | Adapter (13)  | Nut (12)                   | Put on and tighten using $\frac{9}{16}$ in. wrench and $\frac{5}{8}$ in. wrench. |         |



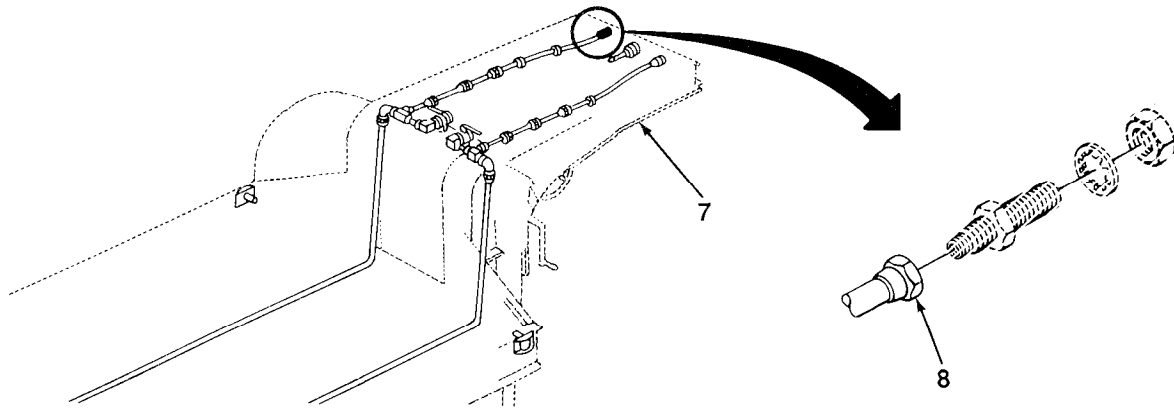
|     |                      |                              |   |  |
|-----|----------------------|------------------------------|---|--|
| 50. | Gooseneck (7)        | Bulkhead fitting (9)         | Put in place.   |  |
| 51. | Bulkhead fitting (9) | Lockwasher (10) and nut (11) | Put on and tighten using two $1\frac{3}{8}$ in. wrenches. |  |



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4-28. AIR LINES AND FITTINGS (Con't)

| LOCATION | ITEM    | ACTION  | REMARKS |
|----------|---------|---|---------|
|          | Nut (8) | Put on and tighten using 1 3/8 in. wrench and 5/8 in. wrench. |         |



**FOLLOW-ON MAINTENANCE:**

- Install air couplings (para 4-25).
- Remove chock blocks (para 2-5).
- Check for leaks (para 4-27).
- Check brake operation.

**TASK ENDS HERE**

4-29. BRAKE HOSE

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5).
- Air released from system (para 3-8).

**Materials/Parts:**

- Anti seize tape (Item 15, Appendix E)

**Tools/Test Equipment:**

- Wrench, open-end, 3/4 in.
- Wrench, open-end, 7/8 in.
- Wrench, pipe

4-29. BRAKE HOSE (Con't)

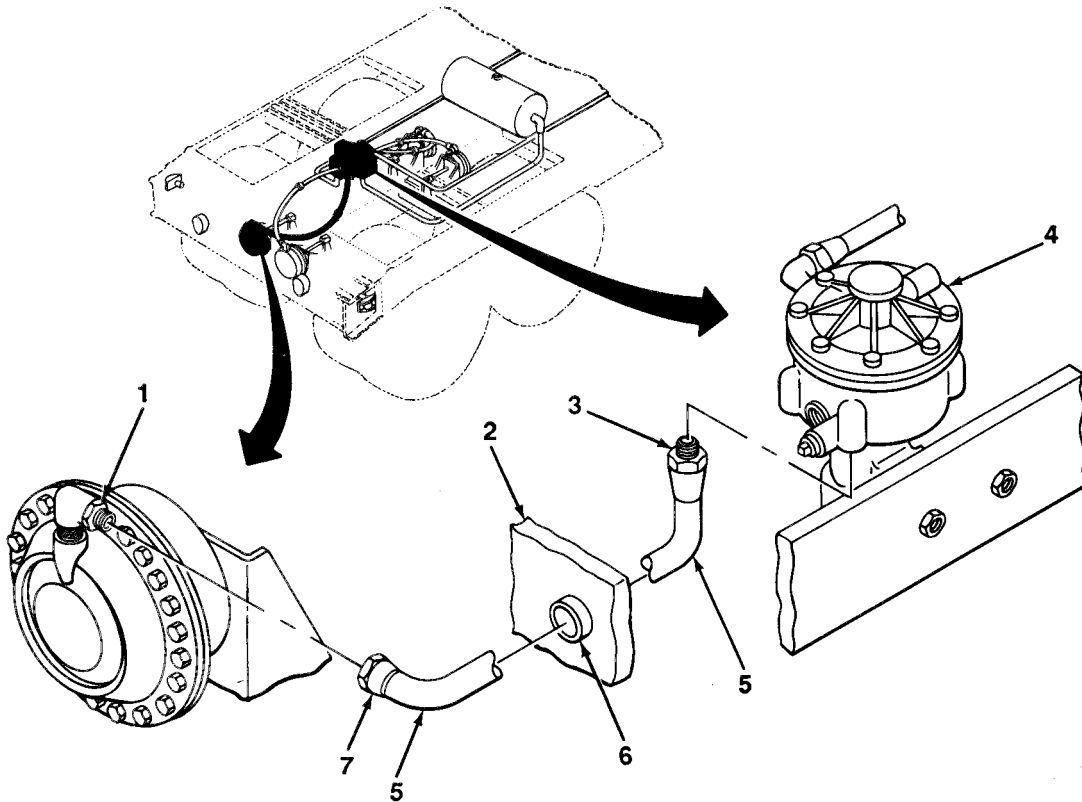
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**WARNING**

Always release air from system before working on brake hose or fittings. Failure to do so could result in personal injury.

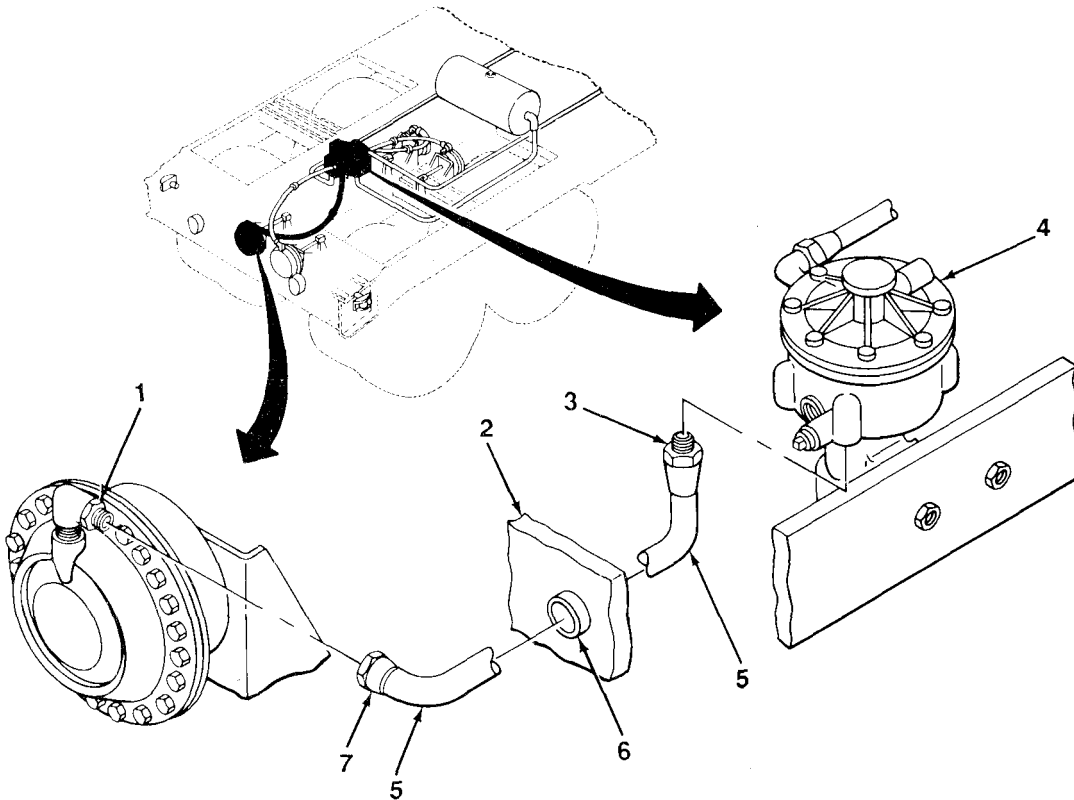
- |    |                                 |                |   |
|----|---------------------------------|----------------|---|
| 1. | Adapter (1)                     | Nut (7)        | Using $\frac{3}{4}$ in. wrench and $\frac{7}{8}$ in. wrench, hold adapter (1), unscrew nut (7), and remove. |
| 2. | Emergency relay valve (4)       | Nut (3)        | Using $\frac{7}{8}$ in. wrench, unscrew and remove.   |
| 3. | Grommet (6)<br>at crossbeam (2) | Brake hose (5) | Pull through and discard.   |





4-29. BRAKE HOSE (Con't)

|                     | LOCATION                     | ITEM           | ACTION   | REMARKS |
|---------------------|------------------------------|----------------|--|---------|
| <b>INSTALLATION</b> |                              |                |  |         |
| 4.                  | Emergency relay valve (4)    | Nut (3)        | a. Wrap nut (3) threads with antiseize tape.<br>b. Screw in nut (3) by hand until fingertight.<br>c. Using $\frac{7}{8}$ in. wrench, screw in and tighten.                                   |         |
| 5.                  | Grommet (6) at crossbeam (2) | Brake hose (5) | Pull through.  |         |
| 6.                  | Adapter (1)                  | Nut (7)        | a. Wrap adapter (1) threads with anti seize tape.<br>b. Screw in nut (7) by hand until fingertight.<br>c. Using $\frac{3}{4}$ in. wrench and $\frac{7}{8}$ in. wrench, screw in and tighten. |         |



**FOLLOW-ON MAINTENANCE:**

- Remove chock blocks (para 2-5).
- Check for leaks (para 4-27).

**TASK ENDS HERE**

**4-30. AIRBRAKE CHAMBER**

*This Task Covers:*

- a. Removal
- b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (Para 2-5)
- Air released from system (para 3-8).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)
- Cotter pin
- Detergent (Item 4, Appendix E)

**Tools/Test Equipment:**

- Extension, socket wrench, ½ in. drive
- Hammer, ball-peen
- Handle, ratchet, ½ in. drive
- Pliers, slip-joint
- Punch, drive-pin
- **Socket**, in., ½ in. drive
- Wrench, open-end, 7/8 in.
- Wrench, open-end, 1 in.
- Wrench, pipe

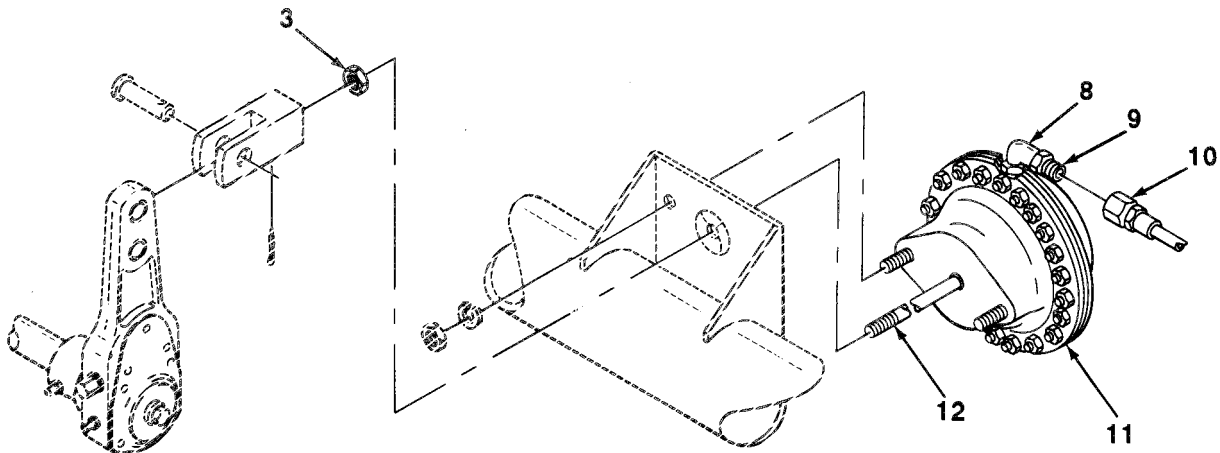
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**WARNING**

**Always release air from system before working on airbrake chambers. Failure to do so could result in personal injury.**

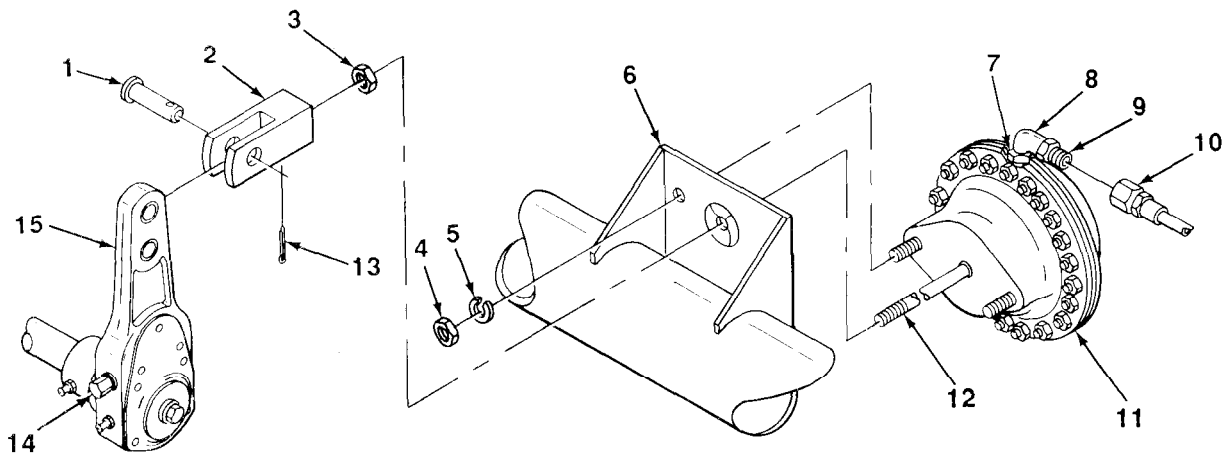
- |                          |                           |  |
|--------------------------|---------------------------|--|
| 1. Adapter (9)           | Outer union nut (10)      | Using ¾ in. wrench and 7/8 wrench, hold adapter (9), unscrew outer union nut (10), and remove. |
| 2. Airbrake chamber (11) | Elbow (8) and adapter (9) | Using pipe wrench, unscrew and remove as an assembly.  |
| 3. Pushrod (12)          | Nut (3)                   | Using 1 in. wrench, unscrew part way.  |



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4-30. AIRBRAKE CHAMBER (Con't)

|     | LOCATION                                      | ITEM                             | ACTION   | REMARKS |
|-----|---|----------------------------------|--|---------|
| 4.  | (Clevis pin (1)                               | Cotter pin (13)                  | Using pliers, pull out and discard.  |         |
| 5.  | Slack adjuster (15)                           | Hex nut (14)                     | Using $\frac{7}{16}$ in. wrench, turn until clevis pin (1) is loose.   |         |
| 6.  |   | Clevis pin (1)                   | a. Using hammer and drive punch, push out.<br>b. Using $\frac{7}{16}$ in. wrench, turn hex nut (14) until slack adjuster (15) is away from clevis (2). |         |
| 7.  | Pushrod (12)                                  | Clevis (2)                       | Using pliers, unscrew and remove.  |         |
| 8.  | Pushrod (12)                                  | Nut (3)                          | Using 1 in. wrench, unscrew and remove.  |         |
| 9.  | Airbrake chamber (11) to mounting bracket (6) | Two nuts (4) and lockwashers (5) | Using $\frac{15}{16}$ in. socket, handle, and extension, unscrew and remove.   |         |
| 10. |   | Airbrake chamber (11)            | Slide out.   |         |



INSTALLATION

|     |                       |                                  |   |
|-----|-----------------------|----------------------------------|---|
| 11. | Mounting bracket (6)  | Airbrake chamber (11)            | Slide into position. Hole (7) for elbow (8) goes on top.  |
| 12. |                       | Two nuts (4) and lockwashers (5) | Using $\frac{15}{16}$ in. socket, handle, and extension, screw in and tighten.  |
| 13. | Pushrod (12)          | Nut (3)                          | Using 1 in. wrench, screw on as far as possible.  |
| 14. | Airbrake chamber (11) | Elbow (8) and adapter (9)        | a. Wrap elbow (8) threads with antiseize tape.<br>b. Screw in elbow (8) until fingertight.<br>c. Using pipe wrench, screw in and tighten.                                 |
| 15. | Adapter (9)           | Outer union nut (10)             | a. Wrap adapter (9) threads with antiseize tape.<br>b. Screw in outer union nut (10) until fingertight.<br>c. Using two $\frac{7}{8}$ in. wrenches, screw in and tighten. |

**4-30. AIRBRAKE CHAMBER (Con't)**

|     | LOCATION                           | ITEM            | ACTION<br>REMARKS   |
|-----|------------------------------------|-----------------|---|
| 16. | Pushrod (12)                       | Clevis (2)      | Using pliers, screw on until two turns of thread are exposed.   |
| 17. | Clevis (2) and slack adjuster (15) | Clevis pin (1)  | a. Aline clevis (2) with slack adjuster (15).<br>b. Try to slide clevis pin (1) through clevis (2) and slack adjuster (15).<br>c. If clevis pin (1) slides through clevis (2) and slack adjuster (15), go to step 19.<br>d. If clevis pin (1) does not slide through clevis (2) and slack adjuster (15), go to step 18. |
| 18. | Slack adjuster (15)                | Hex head (14)   | Using $\frac{7}{16}$ in. wrench, turn hex head (14) so that clevis pin (1) slides through clevis (2) and slack adjuster (15).   |
| 19. | Clevis pin (1)                     | Cotter pin (13) | Using pliers, insert and bend.  |
| 20. | Pushrod (12)                       | Nut (3)         | Using $\frac{7}{16}$ in. wrench, tighten against clevis (2).  |

**FOLLOW-ON MAINTENANCE:**

- Perform minor brake adjustment (para 4-20).
- Remove chock blocks (para 2-5).
- Check brake operation.

**TASK ENDS HERE**

**4-31. EMERGENCY RELAY VALVE**

*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5)
- Air released from system (para 3-8).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)
- Marker tags (Item 14, Appendix E)

**Personnel Required: Two**

**Tools/Test Equipment:**

- Handle, ratchet,  $\frac{1}{2}$  in. drive
- Socket,  $\frac{9}{16}$  in.,  $\frac{1}{2}$  in. drive
- Wrench, open-end,  $\frac{9}{16}$  in.
- Wrench, open-end,  $\frac{5}{8}$  in.
- Wrench, open-end,  $\frac{3}{4}$  in.
- Wrench, open-end,  $\frac{7}{8}$  in.

4-31. EMERGENCY RELAY VALVE (Con't)

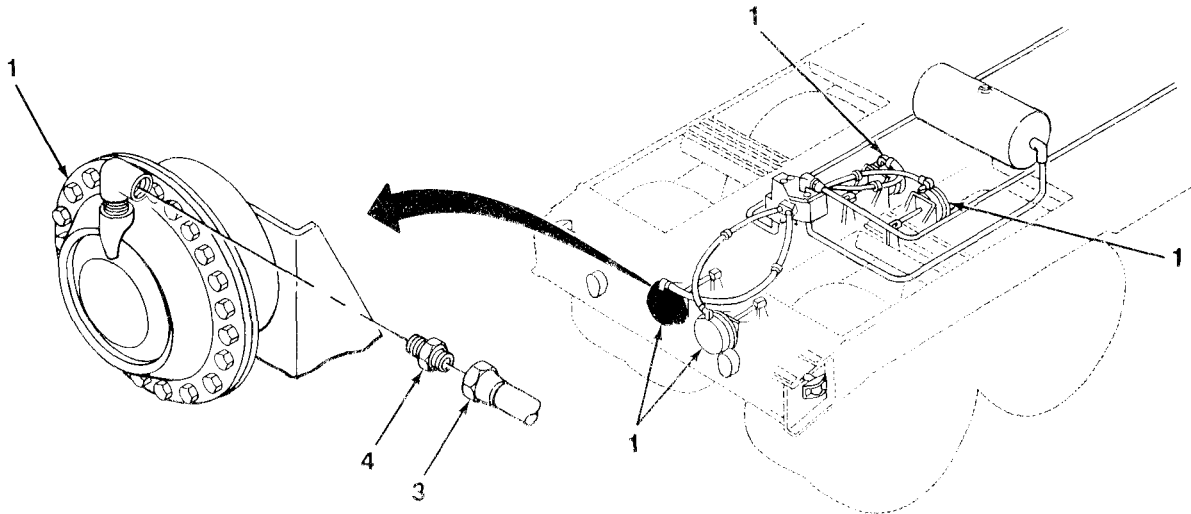
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

**WARNING**

Always release air from system before working on emergency relay valve. Failure to do so could result in personal injury.

- |    |   |                           |   |
|----|---|---------------------------|---|
| 1. | Four adapters (4) to four airbrake chambers (1) | Four outer union nuts (3) | Using $\frac{3}{4}$ in. wrench and $\frac{7}{8}$ in. wrench, hold adapters (4), unscrew outer union nuts (3), and remove. |
|----|---|---------------------------|---|



- |    |                           |                          |   |
|----|---------------------------|--------------------------|---|
| 2. | Emergency relay valve (6) | Four brake hose nuts (5) | a. Using $\frac{11}{16}$ in. wrench, unscrew and separate.<br>b. Tag each brake hose to identify. |
|----|---------------------------|--------------------------|---|

**CAUTION**

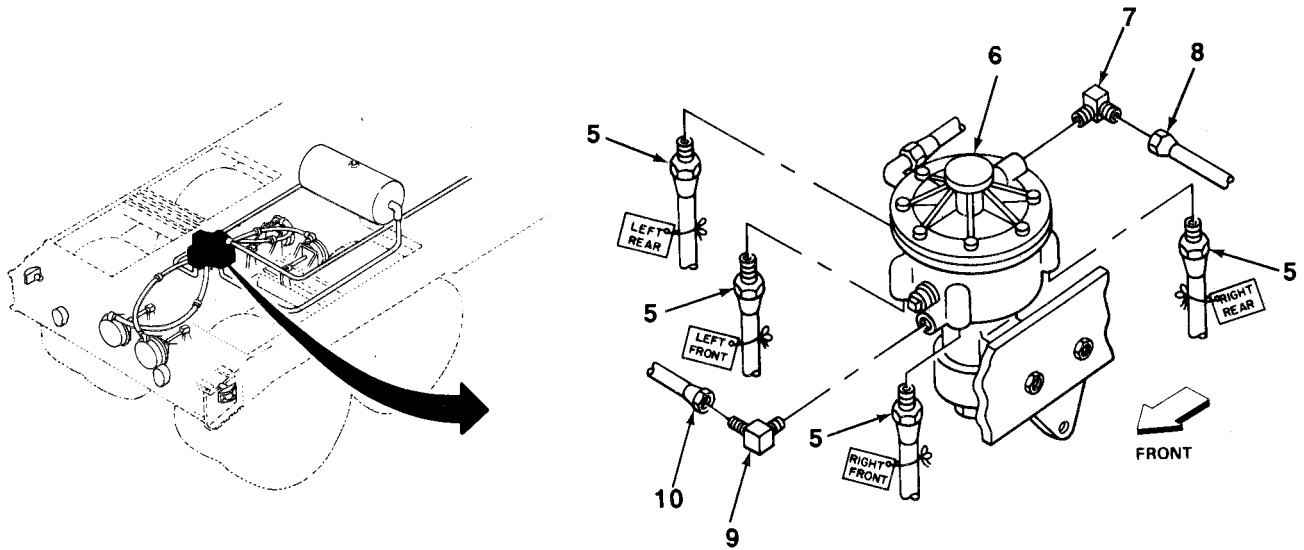
Use caution not to kink tubing or damage to tubing will result.

- |    |   |  |   |
|----|---|--|---|
| 3. | Service line elbow (9) and emergency line elbow (7) | Service line coupling nut (10) and emergency line Coupling nut (8) | a. Using $\frac{5}{8}$ in. wrench and $\frac{9}{16}$ in. wrench, unscrew and separate.<br>b. Push service and emergency lines aside. Do not kink tubing.<br>c. Tag each line to identify. |
|----|---|--|---|

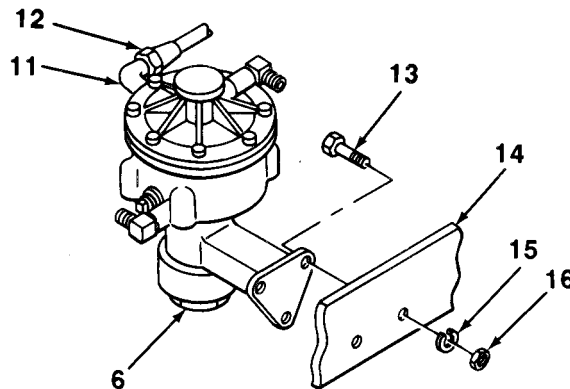
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4-31. EMERGENCY RELAY VALVE (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

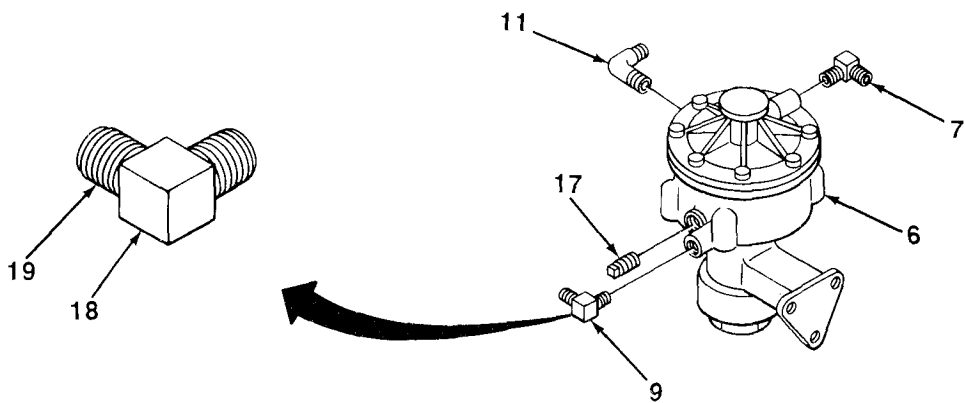


- |    |   |  |   |
|----|---|--|---|
| 4. | Air reservoir line elbow (11)                 | Air reservoir line coupling nut (12)             | a. Using $\frac{5}{8}$ in. wrench and $\frac{7}{8}$ in. wrench, unscrew and separate.<br>b. Tag line to identify.                                     |
| 5. | Emergency relay valve (6) at crossmember (14) | Two screws (13), lockwashers (15), and nuts (16) | Using $\frac{3}{16}$ in. socket, handle, and $\frac{3}{16}$ in. wrench, unscrew and remove.<br><b>Do not allow emergency relay valve (6) to drop.</b> |



4-31. EMERGENCY RELAY VALVE (Con't)

|    | LOCATION                  | ITEM  | ACTION  | REMARKS |
|----|---------------------------|---|---|---------|
| 6. | Emergency relay valve (6) | Service line elbow (9) and emergency line elbow (7) | a. Using $\frac{9}{16}$ in. wrench. unscrew and take out.<br>b. Check if threaded end (19) or wrench fitting (18) is cracked, worn, or rounded.<br>c. Discard if cracked, worn, or rounded. |         |
| 7. |                           | Air reservoir line elbow (11)                       | a. Using $\frac{5}{8}$ in. wrench, unscrew and remove.<br>b. Check if cracked, worn, or rounded.<br>c. Discard if cracked, worn, or rounded.  |         |
| 8. |                           | Square head plug (17)                               | a. Using $\frac{3}{8}$ in. wrench, unscrew and remove.<br>b. Check if cracked, worn, or rounded.<br>c. Discard if cracked, worn, or rounded.  |         |



INSTALLATION

|     |                           |   |   |
|-----|---------------------------|---|---|
| 9.  | Emergency relay valve (6) | Service line elbow (9) and emergency line elbow (7) | a. Wrap elbow (7 and 9) threads with antiseize tape.<br>b. Screw in elbows (7 and 9) by hand until finger-tight.<br>c. Using $\frac{9}{16}$ in. wrench, screw in and tighten. |
| 10. |                           | Air reservoir line elbow (11)                       | a. Repeat 9a and 9b<br>b. Using $\frac{5}{8}$ in. wrench, screw in and tighten.   |
| 11. |                           | Square head plug (17)                               | a. Repeat 9a and 9b.<br>b. Using $\frac{3}{8}$ in. wrench, screw in and tighten.  |

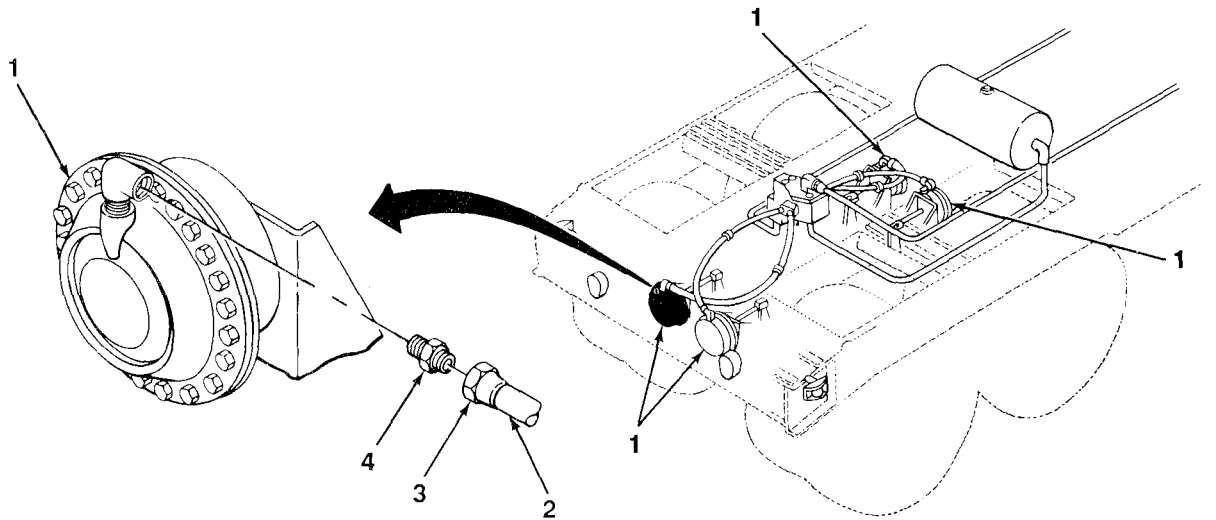
4-31. EMERGENCY RELAY VALVE (Con't)

|     | LOCATION                      | ITEM                                 | ACTION   | REMARKS |
|-----|-------------------------------|--------------------------------------|--|---------|
| 12. | Crossbeam (14)                | Emergency relay valve (6)            | Place into position.   |         |
| 13. | Emergency relay valve (6)     | Two screws (13)                      | Slide into crossbeam (14).   |         |
| 14. | Two screws (13)               | Two nuts (16) and lockwashers (15).  | Using $\frac{9}{16}$ in. socket, handle, and $\frac{9}{16}$ in. wrench, screw in and tighten.  |         |
| 15. | Service line elbow (9)        | Service line coupling nut (10)       | a. Wrap service line elbow (9) threads with antiseize tape.<br>b. Screw in service line coupling nut (10) by hand until fingertight.<br>c. Tighten using $\frac{5}{8}$ in. wrench and $\frac{9}{16}$ in. wrench. |         |
|     |                               |                                      |  |         |
| 16. | Emergency line elbow (7)      | Emergency line coupling nut (8)      | Repeat steps 15a through 15c.  |         |
| 17. | Air reservoir line elbow (11) | Air reservoir line coupling nut (12) | a. Repeat steps 15a and 15b.<br>b. Using $\frac{5}{8}$ in. wrench and $\frac{7}{8}$ in. wrench, screw in and tighten.  |         |
| 18. | Emergency relay valve (6)     | Four brake hose nuts (5)             | a. Identify each tag.<br>b. Wrap brake hose nut (5) threads with antiseize tape.<br>c. Screw In brake hose nuts (5) by hand until fingertight.<br>d. Tighten using $\frac{7}{8}$ in. wrench.                     |         |



4-31. EMERGENCY RELAY VALVE (Con't)

|     | LOCATION  | ITEM                                 | ACTION   | REMARKS |
|-----|---|--------------------------------------|--|---------|
| 19. | Four adapters (4) to four airbrake chambers (1) | Four brake hose outer union nuts (3) | a. Remove any kinks that may have formed on hose (2).<br>b. Wrap adapter (4) threads with antiseize tape.<br>c. Screw in brake hose outer union nuts (3) by hand until fingertight.<br>d. Using $\frac{3}{4}$ in. wrench and $\frac{7}{8}$ in. wrench, screw in and tighten. |         |



**FOLLOW-ON MAINTENANCE:**

- Remove chock blocks (para 2-5).
- Check for leaks (para 4-27).
- Check brake operation.

TASK ENDS HERE

**4-32. AIR RESERVOIR AND DRAINCOCK**

*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Chock blocks installed (para 2-5)
- Air released from system (para 3-8).

**Materials/Parts:**

- Antiseize tape (Item 15, Appendix E)

**Personnel Required:** Two

**Tools/Test Equipment:**

- Handle, ratchet, 1/2 in. drive
- Socket, deep-well, 9/16 in., 1/2 in. drive
- Wrench, open-end, 1/2 in.
- Wrench, open-end, 9/16 in. (two required)
- Wrench, open-end, 7/8 in.
- Wrench, pipe

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

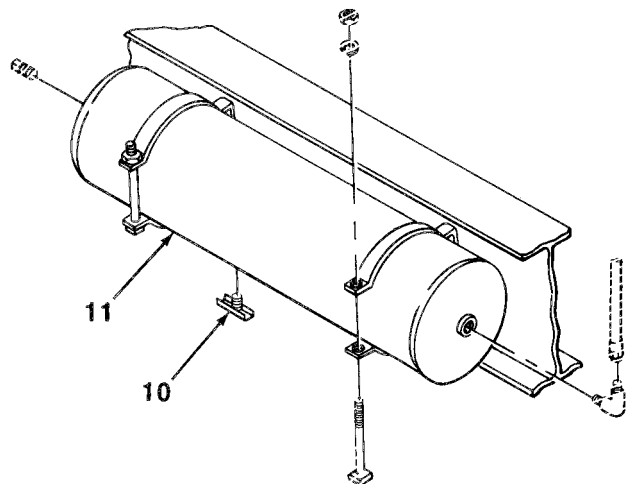
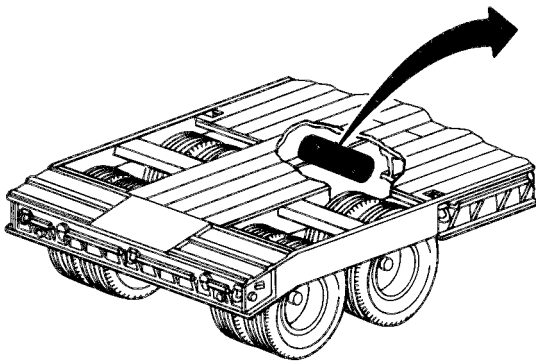
**WARNING**

Always release air from system before working on air reservoir. Failure to do so could result in personal injury.

**NOTE**

If only replacing draincock, perform steps 1 and 16.

- |                       |                |  |
|-----------------------|----------------|--|
| 1. Air reservoir (11) | Draincock (10) | Using 9/16 in. wrench, unscrew and remove. |
|-----------------------|----------------|--|



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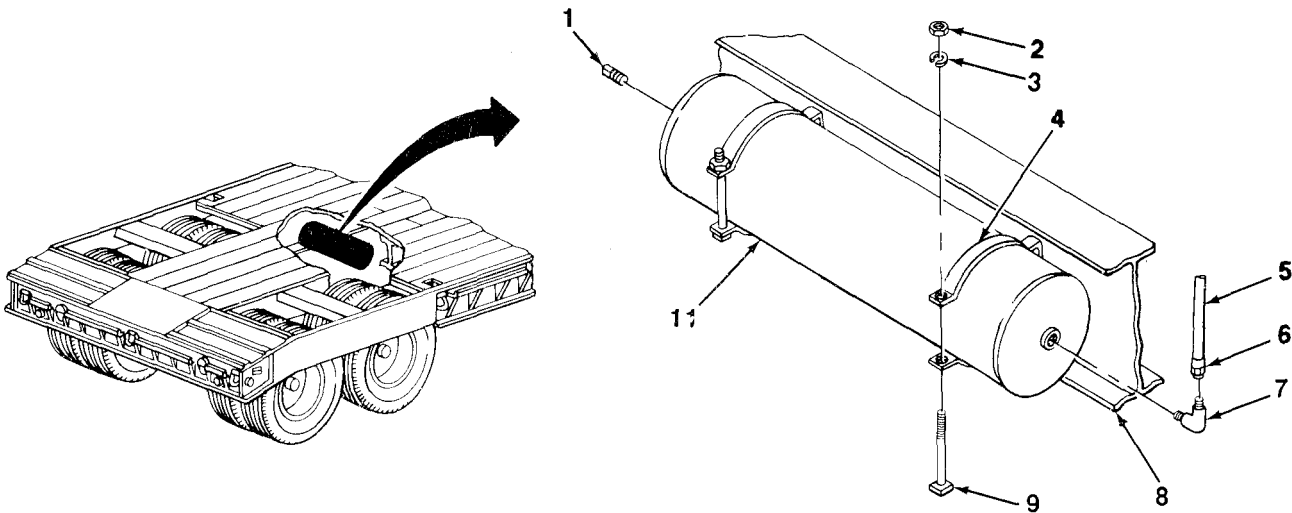
4-32. AIR RESERVOIR AND DRAINCOCK (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**CAUTION**

**Use caution not to kink airline or damage to air line will result.**

|    |                           |   |   |
|----|---------------------------|---|---|
| 2. | Elbow (7)                 | Air line coupling nut (6)                     | Using pipe wrench and $\frac{7}{8}$ in. wrench, unscrew and remove.<br><b>Do not kink air line (5).</b>   |
| 3. | Four retaining straps (4) | Two screws (9), lockwashers (3), and nuts (2) | a. Using $\frac{9}{16}$ in. socket, handle, and $\frac{9}{16}$ in. wrench, unscrew and remove.<br>b. Pull two screws (9) off four retaining straps (4).<br><b>It maybe necessary to cut screws (9).</b> |
| 4. | Four retaining straps (4) | Four retaining straps (4)                     | Have assistant spread and hold retaining straps (4) apart.  |

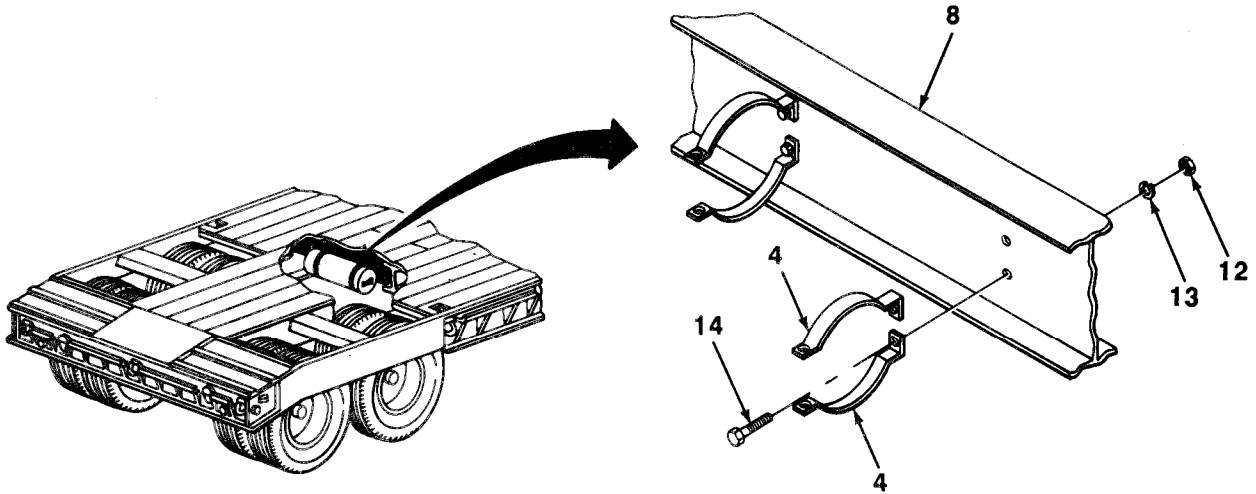


|    |  |   |   |
|----|--|---|---|
| 5. | Air reservoir (11)                     | Air reservoir (11)                                | Slide air reservoir (11) between retaining straps (4) and remove.                           |
| 6. | Air reservoir (11)                     | Elbow (7)   | Using pipe wrench, unscrew and remove.  |
| 7. | Pipe plug (1)                          | Pipe plug (1)                                     | Using $\frac{1}{2}$ in. wrench, unscrew and remove.   |
| 8. | Four retaining straps (4) to frame (8) | Four screws (14), lockwashers (13), and nuts (12) | Using $\frac{9}{16}$ in. socket, handle, and $\frac{9}{16}$ in. wrench, unscrew and remove. |

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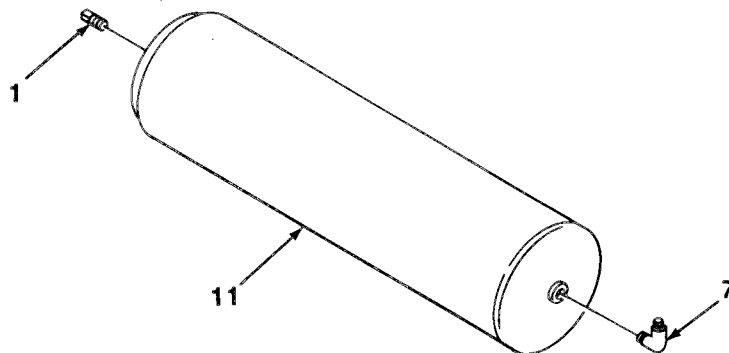
4-32. AIR RESERVOIR AND DRAINCOCK (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



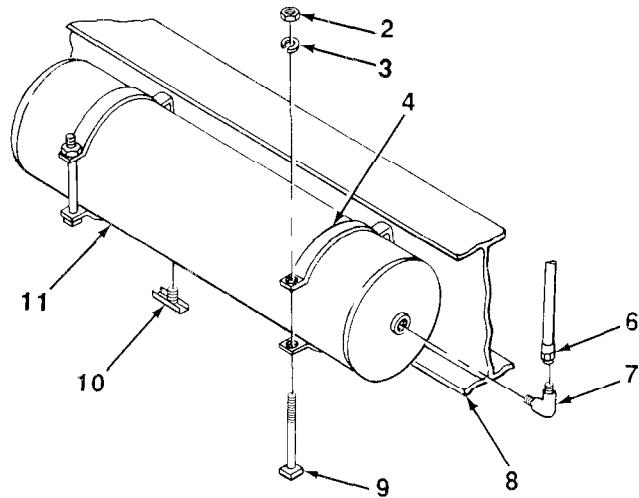
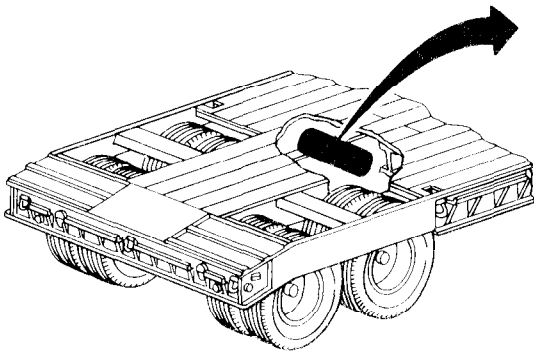
INSTALLATION

- |     |  |   |  |
|-----|--|---|--|
| 9.  | Four retaining straps (4) to frame (8) | Four screws (14), lockwashers (13), and nuts (12) | Using $\frac{9}{16}$ in. socket, handle, and $\frac{9}{16}$ in. wrench, screw in and tighten.  |
| 10. | Air reservoir (11)                     | Pipe plug (1)                                     | a. Wrap pipe plug (1) threads with antiseize tape.<br>b. Screw in pipe plug (1) until fingertight.<br>c. Tighten using $\frac{1}{2}$ in. wrench. |
| 11. |  | Elbow (7)   | a. Wrap elbow (7) threads with antiseize tape.<br>b. Screw in elbow (7) until fingertight.<br>c. Using pipe wrench, screw in and tighten.        |



4-32. AIR RESERVOIR AND DRAINCOCK (Con't)

|     | LOCATION                  | ITEM  | ACTION   | REMARKS |
|-----|---------------------------|---|--|---------|
| 12. | Frame (8)                 | Four retaining straps (4)                     | Have assistant spread and hold retaining straps (4) apart.   |         |
| 13. | Four retaining straps (4) | Air reservoir (11)                            | Slide air reservoir (11) between retaining straps (4) and push in.   |         |
| 14. |                           | Two screws (9), lockwashers (3), and nuts (2) | a. Slide two screws (9) through four retaining straps with threaded end of screws on top.<br>b. Using two $\frac{9}{16}$ in. wrenches, screw in tight.                                 |         |
| 15. | Elbow (7)                 | Air line coupling nut (6)                     | a. Wrap elbow (7) threads with antiseize tape.<br>b. Screw in air line coupling nut (6) until fingertight.<br>c. Using pipe wrench and $\frac{7}{8}$ in. wrench, screw in and tighten. |         |
| 16. | Air reservoir (11)        | Draincock (10)                                | a. Wrap draincock (10) threads with antiseize tape.<br>b. Screw in draincock (10) by hand until fingertight.<br>c. Tighten using $\frac{9}{16}$ in. wrench.                            |         |



**FOLLOW-ON MAINTENANCE:**

1. Remove chock blocks (para 2-5).
2. Check for leaks (para 4-27).
3. Check brake operation.

TASK ENDS HERE

TA506903

**Section VII. WHEEL, HUB, AND DRUM MAINTENANCE**

|   |             |                                 |             |
|---|-------------|---------------------------------|-------------|
|   | <i>Page</i> |                                 | <i>Page</i> |
| Hub, Drum, Wheel Bearings, and<br>Axle Seal . . . . . | 4-95        | Wheel, Tire, and Tube . . . . . | 4-103       |

**4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL**

*This Task Covers:*

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Cleaning and Inspection</li> </ul> | <ul style="list-style-type: none"> <li>c. Installation</li> </ul> |
|--|---|

*Initial Setup:*

**Equipment Conditions:**

- Air released from system (para 3-8).
- Wheel and tire assemblies removed (para 3-9).

**Materials/Parts:**

- Access cover gasket
- Axle seal
- Dry cleaning solvent (Item 13, Appendix E)
- Grease (Item 5, Appendix E)

**Personnel Required:** Two

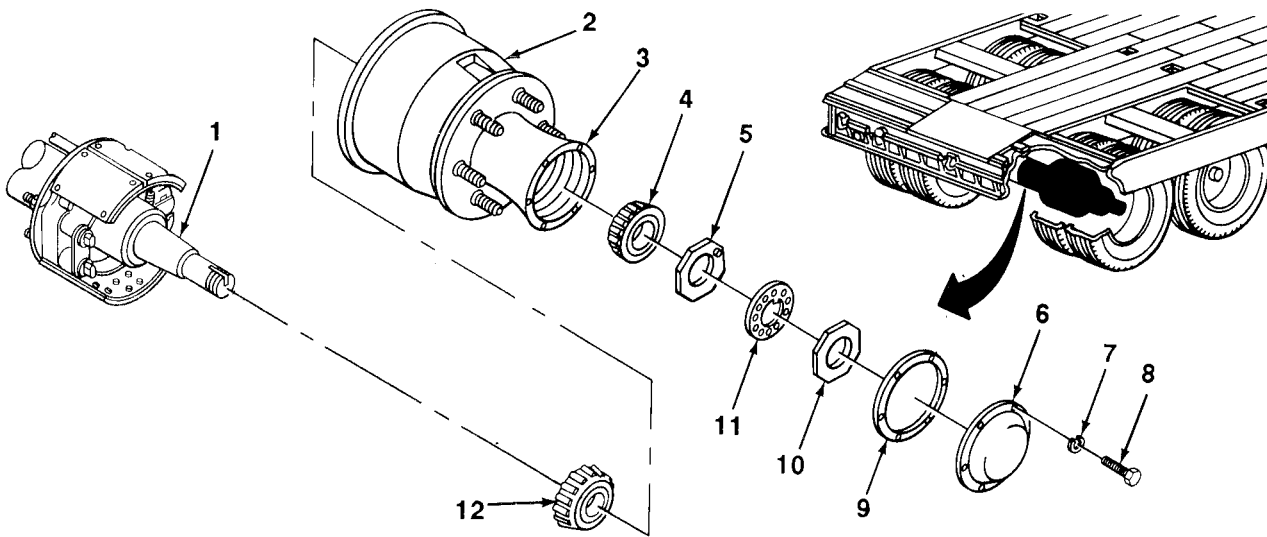
**References:** TM 9-214

**Tools/Test Equipment:**

- Drift, brass
- Extension, 18 in., 3/4 in. drive
- Hammer, ball-peen
- Hammer, plastic face
- Handle, ratchet, 3/8 in. drive
- Handle, ratchet, 3/4 in. drive
- Punch, drive-pin
- Screwdriver, flat-tip
- Socket, 7/16 in., 3/8 in. drive
- Socket, 1 1/16 in., 3/4 in. drive
- Socket, locknut, 3 3/8 in., 8-point, 3/4 in. drive
- Socket, locknut, 3 3/4 in., 8-point, 3/4 in. drive

4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

|                | LOCATION                    | ITEM                               | ACTION  | REMARKS |
|----------------|-----------------------------|------------------------------------|---|---------|
| <b>REMOVAL</b> |                             |                                    |   |         |
| 1.             | Access cover (6) at hub (3) | Six screws (8) and lockwashers (7) | Using $\frac{7}{16}$ in. socket and handle, unscrew and remove.   |         |
| 2.             | Hub (3)                     | Access cover (6) and gasket (9)    | a. Remove.<br>b. Discard gasket (9).  |         |
| 3.             | Axle spindle (1)            | Jamnut (10)                        | Using $3\frac{3}{8}$ in. locknut socket and handle, unscrew and remove.   |         |
| 4.             |                             | Keywasher (11)                     | Slide off.  |         |
| 5.             |                             | Wheel bearing adjusting nut (5)    | Using $3\frac{3}{4}$ in. locknut socket and handle, unscrew and remove. Remove outer bearing cone (4).  |         |
| 6.             |                             | Hub (3) and drum (2)               | a. Have assistant help in lifting and pulling off of axle spindle (1).<br>b. Remove inner bearing cone (12) from axle spindle (1) or rear of hub (3). |         |

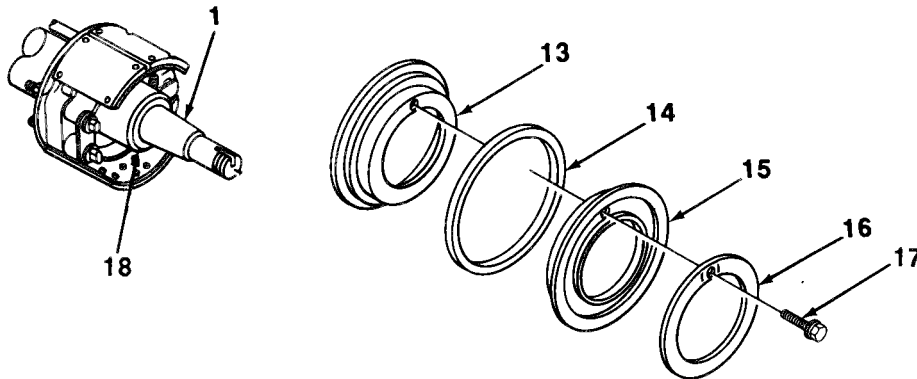


|    |                   |  |   |  |
|----|-------------------|--|---|--|
| 7. | Outer spacer (16) | Screw (17)   | Using flat-tip screwdriver, unscrew and take off.   |  |
| 8. | Axle spindle (1)  | Outer spacer (16), collar (15), gasket (14), axle seal (13), and ring (18) | a. Pull off.<br>b. Discard items 13 through 17.<br>c. Burn off tack weld and discard ring (18). |  |

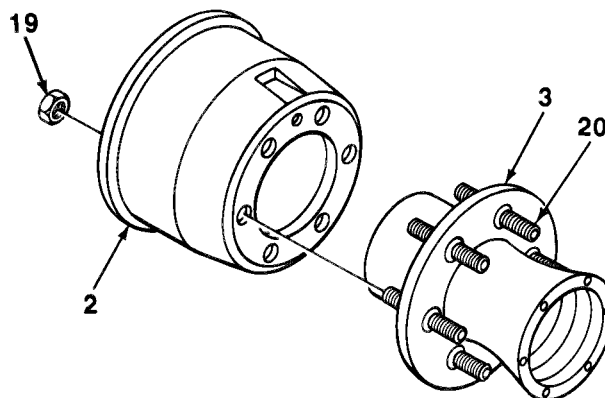
TA506904

4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |  |                   |   |
|-----|--|-------------------|---|
| 9.  | Six studs (20)<br>at inside of<br>drum (2) | Six hex nuts (19) | a. Have assistant hold drum (2).<br>b. Using $1\frac{1}{8}$ in. socket extension and handle,<br>unscrew and remove. |
| 10. | Hub (3)                                    | Drum (2)          | Lift off drum (2) and separate.   |





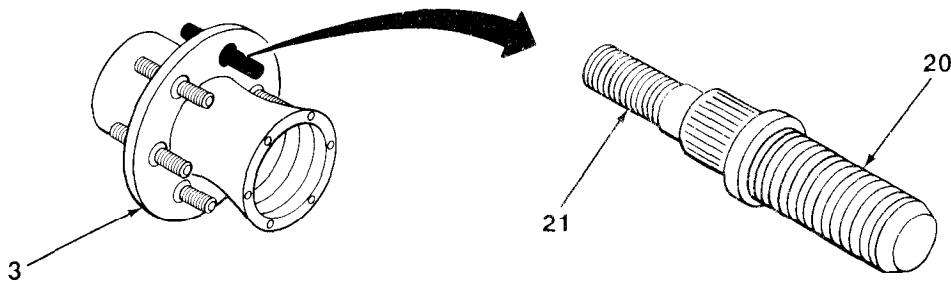
4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

Remove only studs that are cracked, broken, or damaged.

|     |         |           |  |
|-----|---------|-----------|--|
| 11. | Hub (3) | Stud (20) | Using hammer, drive out. Hit stud (20) on short threaded end (21). |
|-----|---------|-----------|--|



CLEANING AND INSPECTION

**WARNING**

- **DO NOT** handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.
- Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and **DO NOT** breathe vapors. **DO NOT** use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

|     |           |  |
|-----|-----------|--|
| 12. | All parts | Clean thoroughly using dry cleaning solvent. |
|-----|-----------|--|

TA506906

4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

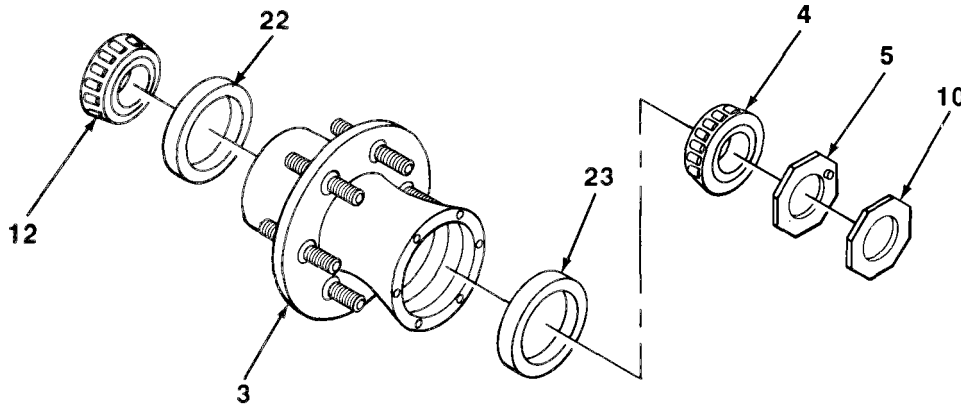
**CAUTION**

Do not dry bearing cones with compressed air. Spinning dry will damage bearing cones.

**NOTE**

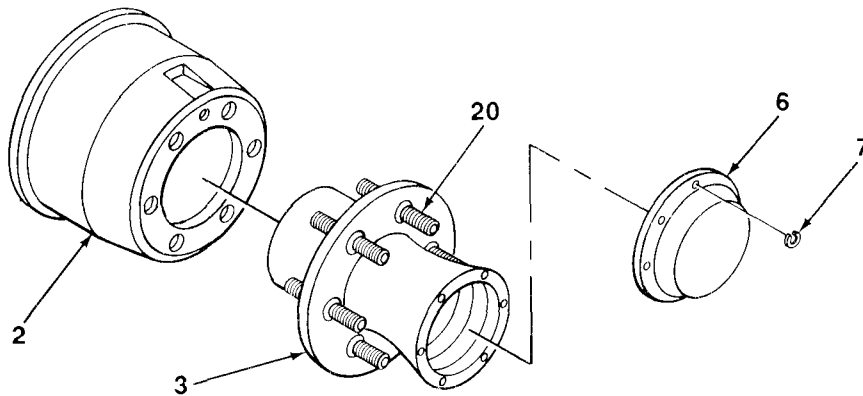
If replacing a bearing cone, the bearing cup must also be replaced. If replacing a bearing cup, the bearing cone must also be replaced.

|     |         |                              |   |
|-----|---------|------------------------------|---|
| 13. | Hub (3) | Two bearing cones (4 and 12) | a. Inspect in accordance with TM 9-214,<br>b. If damaged, replace.    |
| 14. |         | Two bearing cups (22 and 23) | a. Inspect in accordance with TM 9-214.<br>b. If damaged, replace.    |
| 15. |         | Two nuts (5 and 10)          | a. Inspect threads for damage.<br>b. If threads are damaged, replace. |



4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM                | ACTION  | REMARKS |
|----------|---------------------|---|---------|
| 16.      | Studs (20)          | a. Inspect threads for damage.<br>b. If threads are damaged, chase with die.  |         |
| 17.      | Access cover (6)    | a. Inspect for damage.<br>b. If damaged, replace.   |         |
| 18.      | Hub (3)             | a. Inspect flange and hub areas for cracks.<br>b. If cracked, replace.  |         |
| 19.      | Drum (2)            | a. Inspect for cracks and scoring.<br>b. If cracked or scored, replace.<br>c. Check for obvious out-of-round condition. If out-of-round, replace. |         |
| 20.      | Six lockwashers (7) | a. Inspect for damage.<br>b. If damaged, replace.   |         |



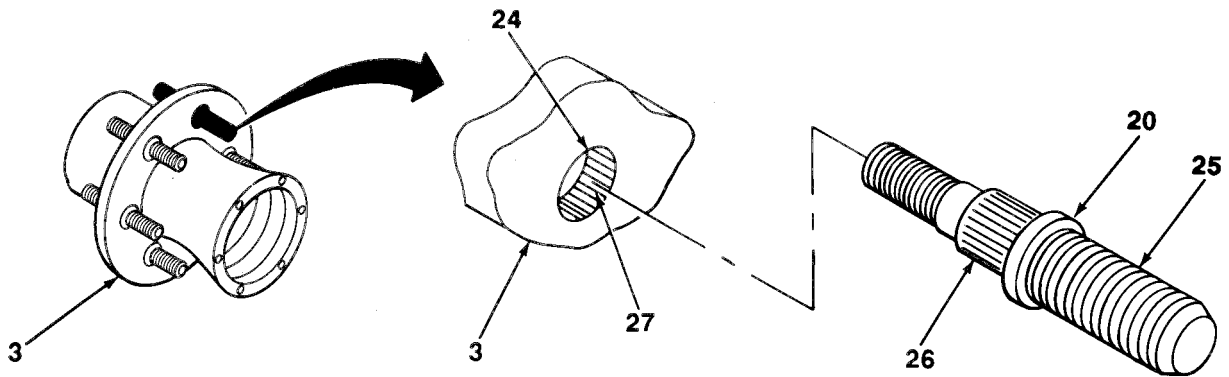
|     |              |   |  |
|-----|--------------|---|--|
| 21. | Axle spindle | a. Inspect bearing surfaces for pitting or grooves.<br>b. If bearing surface is pitted or grooved, notify direct support maintenance.<br>c. Inspect for stripped threads.<br>d. If threads are stripped, notify direct support maintenance. |  |
|-----|--------------|---|--|

INSTALLATION

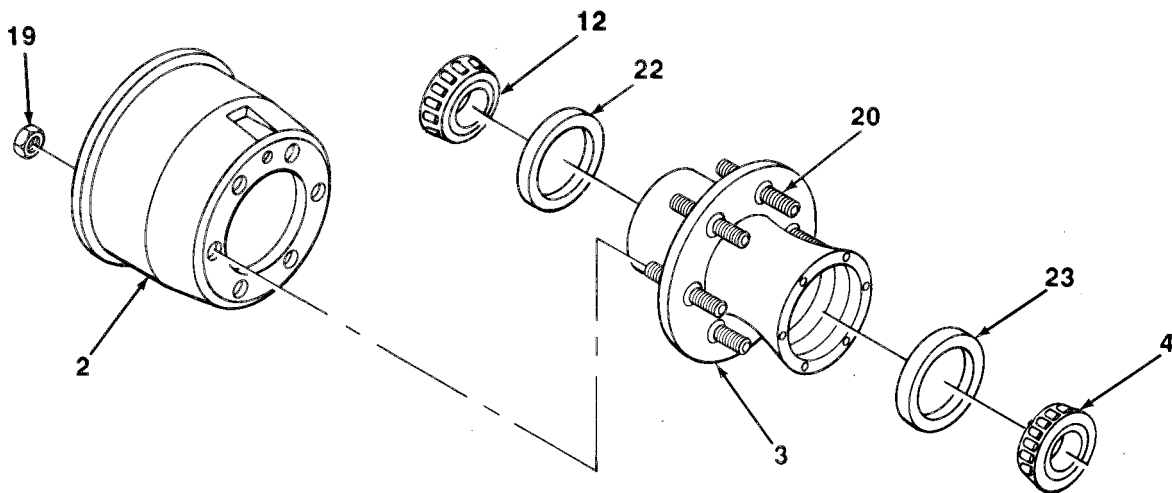
|     |         |               |   |
|-----|---------|---------------|---|
| 22. | Hub (3) | New stud (20) | a. Aline flutes (27) in hole (24) with flutes (26) on stud (20).<br>b. Using brass drift and hammer, drive in, hitting on large end (25). |
|-----|---------|---------------|---|

4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |                                      |                              |  |
|-----|--------------------------------------|------------------------------|--|
| 23. |                                      | Two bearing cups (22 and 23) | a. Using brass drift and hammer, tap inner bearing cup (22) into position.<br>b. Turn hub (3) over and repeat step a for outer bearing cup (23). |
| 24. | Drum (2)                             | Hub (3)                      | a. Lift and align studs (20) on hub (3) with holes in drum (2).<br>b. Slide together.  |
| 25. | Six studs (20) at inside of drum (2) | Six hex nuts (19)            | a. Have helper hold hub (3).<br>b. Using 1 1/16 in. socket and handle, screw in and tighten.   |
| 26. | Hub (3)                              | Two bearing cups (22 and 23) | Apply thin coating of grease.  |
| 27. |                                      | Two bearing cones (4 and 12) | Pack with grease.  |



TA506909

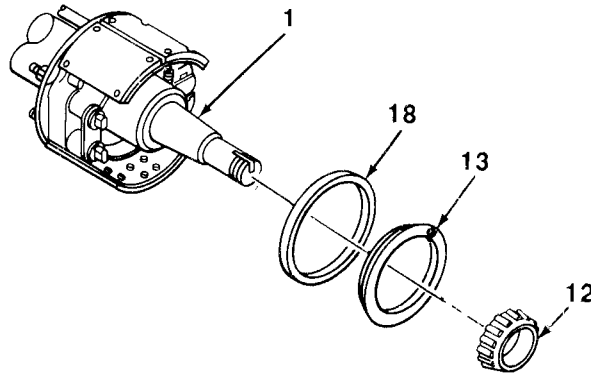
4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

**One-part seal (13) replaces old four-part seal.**

|     |                              |   |  |
|-----|------------------------------|---|--|
| 28. | Ring (18) and axle seal (13) | a. Slide ring (18) on axle spindle (1) and seat with ball-peen hammer and drift.<br>b. Slide axle seal (13) on axle spindle (1) as far as it will go. |  |
| 29. | Inner bearing cone (12)      | Slide on.   |  |



**NOTE**

**Studs in hub are marked either R or L. The R stands for right-hand threads; the L stands for left-hand threads. Hubs with right-hand threads must go on the right side. Hubs with left-hand threads must go on the left side.**

|     |                  |   |  |
|-----|------------------|---|--|
| 30. | Axle spindle (1) | Hub (3), drum (2), and outer bearing cone (4) | a. Have assistant help lift and slide hub (3) and drum (2) onto axle spindle (1) as far as it will go.<br>b. Be careful not to damage axle spindle (1) threads.<br>c. Slide outer bearing cone (4) on axle spindle (1).  |
| 31. |                  | Wheel bearing adjusting nut (5)               | a. Screw on by hand. The dowel (30) faces outward.<br>b. Using 3¾ in. locknut socket and handle, screw in until hub (3) binds on axle spindle (1).<br>c. Unscrew wheel bearing adjusting nut (5) 1/8 turn.<br>d. Check adjustment by rocking drum (2) on axle spindle (1).<br>e. If properly adjusted, movement between drum (2) and top edge of spider (28) will be hardly visible.<br>f. If not properly adjusted, repeat steps 31b through 31e until properly adjusted. |

TA506910

4-33. HUB, DRUM, WHEEL BEARINGS, AND AXLE SEAL (Con't)

| LOCATION | ITEM             | ACTION                             | REMARKS  |
|----------|------------------|------------------------------------|--|
|          |                  |                                    |  |
| 32.      | Axle spindle (1) | Keywasher(11)                      | <ul style="list-style-type: none"> <li>a. Aline keywasher tab (31) with axle spindle keyway (29).</li> <li>b. Slide on.</li> <li>c. Keywasher hole (32) must aline with dowel (30).</li> <li>d. If keywasher hole (32) does not aline with dowel (30), slide keywasher (11) off axle spindle (1).</li> <li>e. Using 3¾ in. locknut socket and handle, unscrew wheel bearing adjusting nut (5) so that dowel (30) alines with next hole (32) on keywasher(11).</li> </ul> |
| 33.      |                  | Jamnut (10)                        | Using 3¼ in. locknut socket and handle, screw in and tighten.  |
| 34.      | Hub (3)          | Gasket (9)                         | <ul style="list-style-type: none"> <li>a. Coat lightly with grease.</li> <li>b. Place on hub (3) with holes alined.</li> </ul>   |
| 35.      | Gasket (9)       | Access cover (6)                   | Place on gasket (9) and aline holes.   |
| 36.      | Access cover (6) | Six screws (8) and lockwashers (7) | Using 7/16 in. socket and handle, screw in and tighten.  |

**FOLLOW-ON MAINTENANCE:**

1. Perform major brake adjustment (para 4-22).
2. Install wheel and tire assembly (para 3-9).

**TASK ENDS HERE**

**4-34. WHEEL, TIRE, AND TUBE**

Refer to TM 9-2610-200-24 for information on wheel, tire, and tube maintenance.

## Section VIII. FRAME AND TOWING ATTACHMENTS MAINTENANCE

|                              | <i>Page</i> |                              | <i>Page</i> |
|------------------------------|-------------|------------------------------|-------------|
| Kingpin and Retainer .....   | 4-104       | Left Landing Gear Leg .....  | 4-113       |
| Landing Gear Handcrank ..... | 4-106       | Right Landing Gear Leg ..... | 4-126       |
| Landing Gear Shoes .....     | 4-110       | Spare Wheel Carrier .....    | 4-139       |

### 4-35. KINGPIN AND RETAINER

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|

*Initial Setup:*

**Tools/Test Equipment:**

- Torch, acetylene cutting
- Wrench, open-end, 7/16 in.

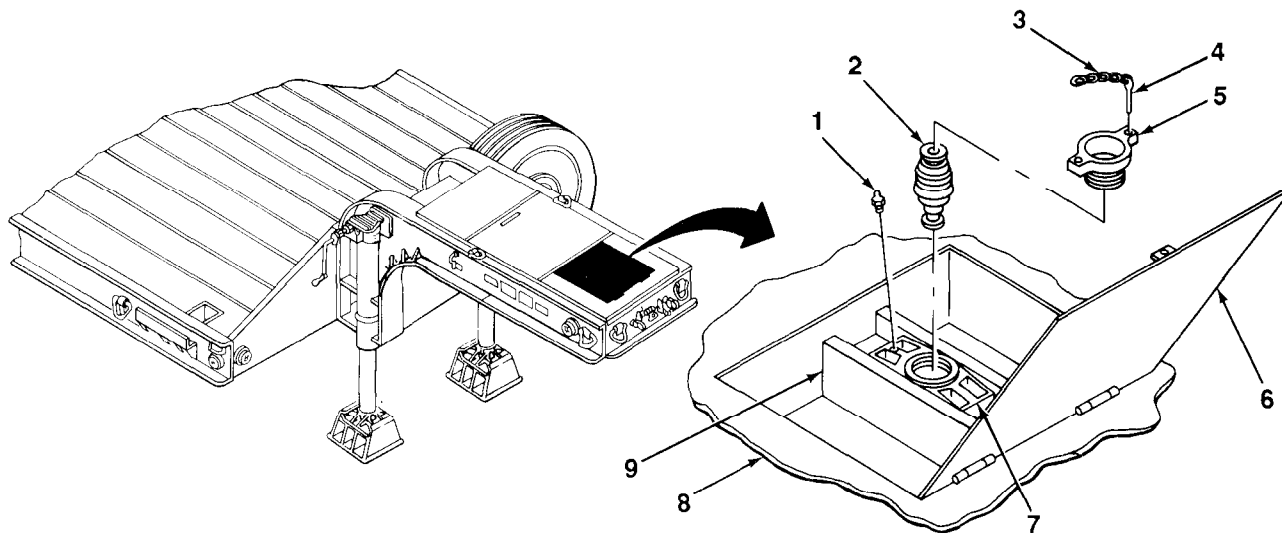
**References:**

- TM 9-237

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**REMOVAL**

- |    |              |                         |                     |
|----|--------------|-------------------------|---------------------|
| 1. | Frame (8)    | Kingpin access door (6) | Open.               |
| 2. | Retainer (5) | Lockpin (4)             | Pull out.           |
| 3. |              | Retainer (5)            | Unscrew and remove. |
| 4. | Socket (7)   | Kingpin (2)             | Remove.             |



TA506912

**4-35. KINGPIN AND RETAINER (Con't)**

|   | LOCATION                   | ITEM                    | ACTION   | REMARKS |
|---|----------------------------|-------------------------|--|---------|
| 5.  | Socket (7)                 | Lubrication fitting (1) | Using $\frac{7}{16}$ in. wrench, unscrew and remove. |         |
| 6.  | Crossbeam (9)              | Lockpin chain (3)       | Using torch, cut off.                                |         |
| INSTALLATION  |                            |                         |  |         |
| 7.  | Socket (7)                 | Lubrication fitting (1) | Screw in and tighten using $\frac{7}{16}$ in. wench. |         |
| <b>NOTE</b>   |                            |                         |  |         |
| <b>Match the kingpin with the tractor. The kingpin is reversible for either 2½ or 3½ in. (6.4 or 8.9 cm) tractor connections. Ensure that kingpin is installed to match the tractor coupling.</b> |                            |                         |  |         |
| 8.  | Socket (7)                 | Kingpin (2)             | Put in.  |         |
| 9.  | Kingpin (2) and socket (7) | Retainer (5)            | Screw in and tighten.                                |         |
| 10.   | Socket (7)                 | Lockpin (4)             | Put in.  |         |
| 11.   | Crossbeam (9)              | Lockpin chain (3)       | Put in position and weld (TM 9-237).                 |         |
| 12.   | Frame (8)                  | Kingpin access door (6) | Close.   |         |

**TASK ENDS HERE**



4-36. LANDING GEAR HANDCRANK

This Task Covers:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Disassembly</li> <li>c. Cleaning</li> </ul> | <ul style="list-style-type: none"> <li>d. Inspection and Replacement</li> <li>e. Assembly</li> <li>f. Installation</li> </ul> |
|---|---|

Initial Setup:

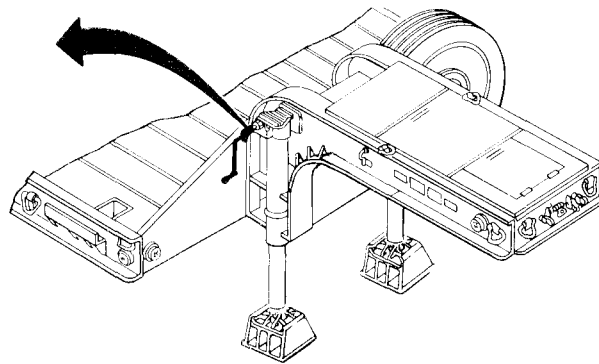
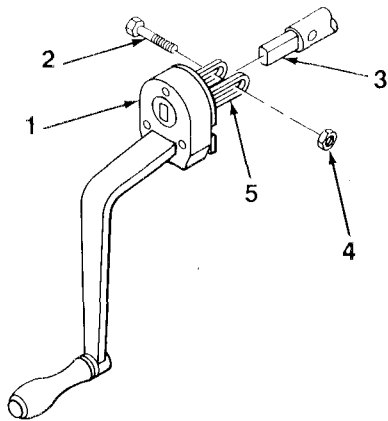
Materials/Parts:

- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)
- Rivet

Tools/Test Equipment:

- Drift, 3/8 in.
- Grinder, portable
- Hammer, hand
- Handle, ratchet, 3/8 in. drive
- Pliers, slip-joint, angle nose
- Screwdriver, flat-tip
- Socket, 7/16 in., 3/8 in. drive
- Wrench, box-end, 7/16 in.
- Wrench, box-end, 9/16 in.
- Wrench, open-end, 9/16 in.

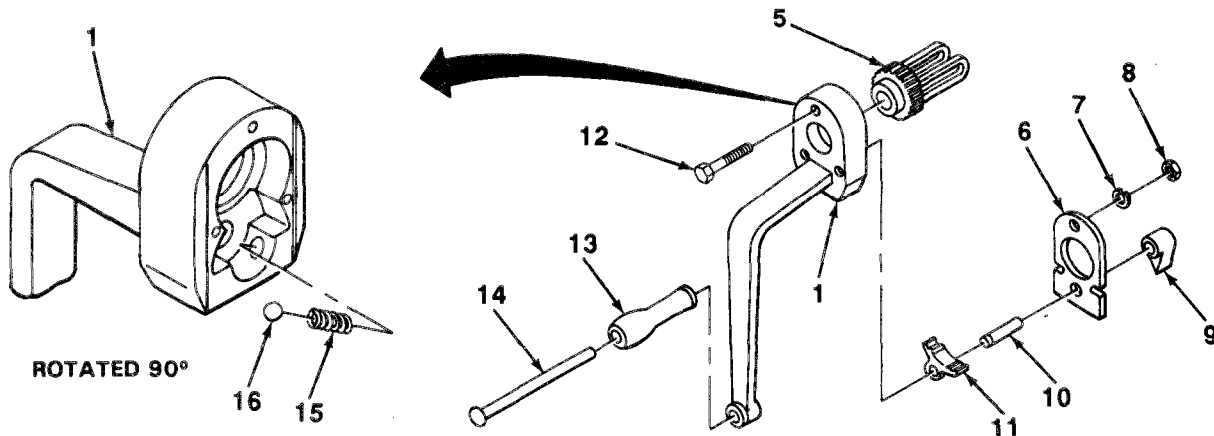
|                | LOCATION                      | ITEM                              | ACTION<br>REMARKS                                |
|----------------|-------------------------------|-----------------------------------|--|
| <b>REMOVAL</b> |                               |                                   |  |
| 1.             | Crank ratchet (5) and pin (3) | Bolt (2) and self-locking nut (4) | Using two 9/16 in. wrenches, unscrew and remove. |
| 2.             | Pin (3)                       | Handcrank assembly                | Remove.  |



TA506913

4-36. LANDING GEAR HANDCRANK (Con't)

|                    | LOCATION                          | ITEM  | ACTION  | REMARKS |
|--------------------|-----------------------------------|---|---|---------|
| <b>DISASSEMBLY</b> |                                   |   |   |         |
| 3.                 | Handcrank (1) and cover plate (6) | Three Screws (12), lockwashers (7) and nuts (8) | Using $\frac{7}{16}$ in. socket, handle, and $\frac{7}{16}$ in. wrench, unscrew and remove. |         |
| 4.                 | Handcrank (1)                     | Control lever (9) and cover plate (6)           | Remove.   |         |
| 5.                 | Control lever (9)                 | Roll pin (10)                                   | Using hammer and drift, drive out.  |         |
| 6.                 |                                   | Pawl (11) and crank ratchet (5)                 | Remove.   |         |
| 7.                 |                                   | Spring (15) and ball (16)                       | Take out.   |         |
| 8.                 | Handle (13)                       | Rivet (14)                                      | a. Using grinder, grind off rivet head.<br>b. Using drift and hammer, drive out.            |         |
| 9.                 | Handcrank (1)                     | Handle (13)                                     | Remove.   |         |



CLEANING

**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

|     |           |  |
|-----|-----------|--|
| 10. | All parts | a. Clean in dry cleaning solvent.<br>b. Wipe dry with clean, dry rags. |
|-----|-----------|--|

4-36. LANDING GEAR HANDCRANK (Con't)

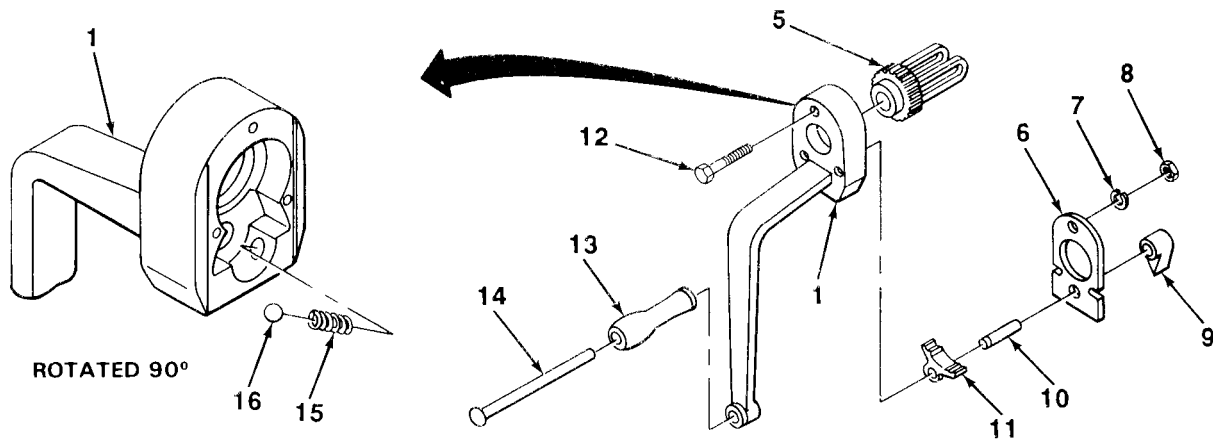
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

INSPECTION AND REPLACEMENT

**NOTE**

**Replace damaged or defective parts as needed.**

|     |                                 |   |
|-----|---------------------------------|---|
| 11. | Crank ratchet (5) and pawl (11) | Look for chipped and broken teeth.<br><b>If either part is damaged, replace both parts.</b> |
| 12. | Handcrank (1) and handle (13)   | Look for cracks, breaks, and bad dents.   |
| 13. | Spring (15)                     | Look for permanent set.   |
| 14. | Ball (16)                       | Look for out-of-round condition.  |



ASSEMBLY

|     |                                 |                           |  |
|-----|---------------------------------|---------------------------|--|
| 15. | Handcrank (1)                   | Handle (13)               | Place in position.   |
| 16. | Handle (13) and handcrank (1)   | Rivet (14)                | a. Put in.<br>b. Using hammer, flatten end until handle is secure. |
| 17. | Handcrank (1)                   | Ball (16) and spring (15) | Put in and hold down spring (15).                                  |
| 18. | Crank ratchet (5) and pawl (11) |                           | Put in position.   |
| 19. | Crank ratchet (5) and pawl (11) | Cover plate (6)           | Put on.  |
| 20. | Cover plate (6)                 | Control lever (9)         | Place in position.   |

TA506915

4-36. LANDING GEAR HANDCRANK (Con't)

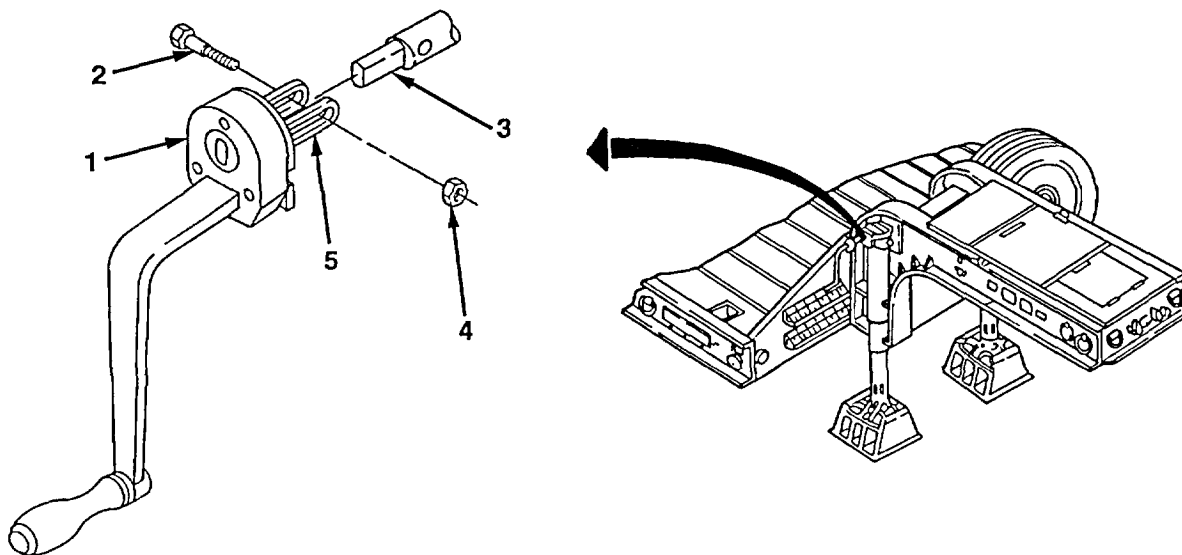
|     | LOCATION          | ITEM   | ACTION  | REMARKS |
|-----|-------------------|--|---|---------|
| 21. | Control lever (9) | Roll pin (10)                                    | a. Put in through control lever (9), cover plate (6), pawl (11), and seat into handcrank (1).<br>b. Using hammer, seat roll pin (10). |         |
| 22. | Cover plate (6)   | Three screws (12), lockwashers (7), and nuts (8) | Screw in and tighten using 7/16 in. socket, handle, and 7/16 in. wrench.  |         |

INSTALLATION

NOTE

Use flat washers (P/N PP0016-03) with optional handcrank (P/N LG0083-03).

|     |                           |                                   |   |  |
|-----|---------------------------|-----------------------------------|---|--|
| 23. | Pin (3)                   | Handcrank assembly                | Place in position.                                |  |
| 24. | Crank ratchet (5) and pin | Bolt (2) and self-locking nut (4) | Screw in and tighten using two 9/16 in. wrenches. |  |



TASK ENDS HERE

### 4-37. LANDING GEAR SHOES

*This Task Covers:*

- |             |                               |
|-------------|-------------------------------|
| a. Removal  | c. inspection and Replacement |
| b. Cleaning | d. Installation               |

*Initial Setup:*

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

**Personnel Required:** Two

**Tools/Test Equipment:**

- Brush, wire, cleaning
- Hammer, hand
- Jack, hydraulic hand, 10 ton
- Punch, drive-pin, 3/8 In.
- Trestle, automotive maintenance, 10 ton
- Wrench, open-end, 15/16 in. (two required)

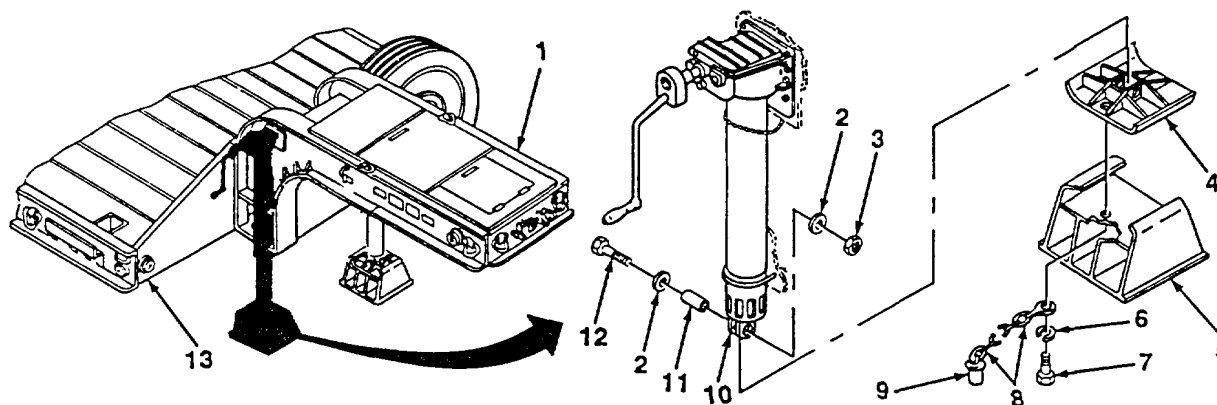
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

**This procedure covers replacement of one landing gear shoe. The procedure for the other shoe is the same.**

**REMOVAL**

- |    |                             |   |   |
|----|-----------------------------|---|---|
| 1. | Semitrailer (1)             | Comer (13)  | a. Using Jack, raise semitrailer until shoe (4) and pad assembly (5) are off ground.<br>b. Use Jackstand for support. |
| 2. | Lower leg (10) and shoe (4) | Screw (12), two washers (2), and self-locking nut (3) | Using two wrenches, with the aid of an assistant, unscrew and remove.   |
| 3. | Lower leg (10)              | Shoe (4) and pad assembly (5)                         | With the aid of an assistant, remove.   |



TA506917

**4-37. LANDING GEAR SHOES (Con't)**

|    | LOCATION         | ITEM   | ACTION                                   | REMARKS |
|----|------------------|--|--|---------|
| 4. |                  | Pin (11)   | Using hammer and punch, drive out.       |         |
| 5. | Shoe (4)         | Pin (9)  | Pull out.                                |         |
| 6. |                  | Pad assembly (5)   | With the aid of an assistant, slide off. |         |
| 7. | Pad assembly (5) | Screw (7),<br>lockwasher (6),<br>chain (8), and pin (9). | Using wrench, unscrew and remove.        |         |

## CLEANING

**WARNING**

**Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**

- |    |           |  |
|----|-----------|--|
| 8. | All parts | <ul style="list-style-type: none"> <li>a. Using brush, remove dirt and debris.</li> <li>b. Clean in dry cleaning solvent.</li> <li>c. Wipe dry with clean rags.</li> </ul> |
|----|-----------|--|

## INSPECTION AND REPLACEMENT

**NOTE**

**Replace damaged or defective parts as needed.**

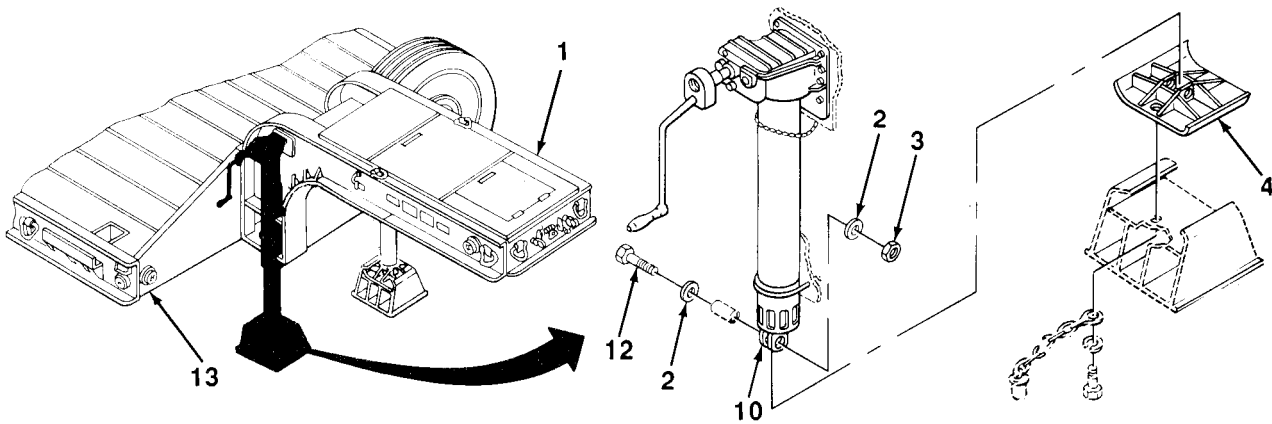
- |     |                                  |   |
|-----|----------------------------------|---|
| 9.  | Shoe (4) and<br>pad assembly (5) | <ul style="list-style-type: none"> <li>a. Look for cracks, breaks, and bad dents.</li> <li>b. Check that bottom is flat.</li> </ul> |
| 10. | Pin (11)                         | Check for cracks, bends, and breaks.  |

## INSTALLATION

- |     |                  |   |                                    |
|-----|------------------|---|------------------------------------|
| 11. | Pad assembly (5) | Pin (9), chain (8),<br>lockwasher (6),<br>and screw (7) | Screw in and tighten using wrench. |
| 12. | Shoe (4)         | Pad assembly (5)  | Put on.                            |
| 13. |                  | Pin (9)   | Put in.                            |
| 14. | Lower leg (10)   | Pin (11)  | Using hammer and punch, drive in.  |
| 15. |                  | Shoe (4) and pad<br>assembly (5)                        | Place in position.                 |

4-37. LANDING GEAR SHOES (Con't)

|     | LOCATION                    | ITEM  | ACTION  | REMARKS |
|-----|-----------------------------|---|---|---------|
| 16. | Shoe (4) and lower leg (10) | Screw (12), two washers (2), and self-locking nut (3) | Screw in and tighten using two wrenches.  |         |
| 17. | Semitrailer (1)             | Corner (13)   | a. Using jack, support semitrailer and take out jackstand.<br>b. Lower semitrailer and remove jack. |         |



TASK ENDS HERE

**4-38. LEFT LANDING GEAR LEG**

*This Task Covers:*

- a. Removal
- b. Disassembly
- c. Cleaning
- d. Inspection and Replacement
- e. Assembly
- f. Installation

*Initial Setup:*

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
- Grease (Item 5, Appendix E)
- Rags (Item 11, Appendix E)

**Personnel Required:** Two

**References:** TM 9-214

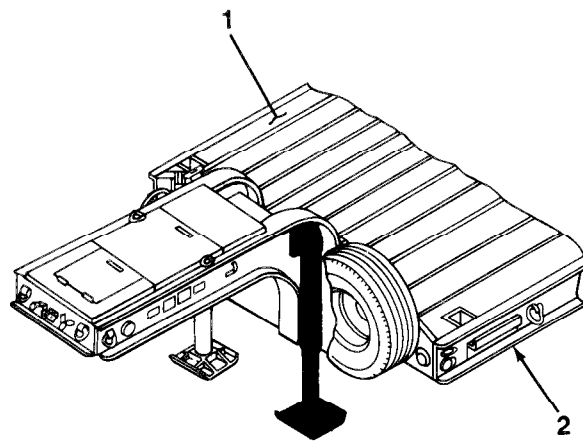
**Tools/Test Equipment:**

- Container, 1 gallon capacity
- Drift, brass, 3/4 in.
- Hammer, hand, ball-peen, 3 pound
- Handle, ratchet, 3/4 in. drive

**Tools/Test Equipment (Con't):**

- Hex key, socket-head, 3/16 in.
- Hoist, 5 ton, with cables
- Pliers, slip-joint, angle nose
- Puller kit, mechanical
- Punch, drive-pin, 3/16 in.
- Retrieving tool, magnetic
- Screwdriver, flat-tip
- Socket, 1 5/16 in., 3/4 in. drive
- Socket, 1 1/4 in., 3/4 in. drive
- Wrench, open-end, 5/16 in.
- Wrench, open-end, 7/16 in.
- Wrench, open-end, 9/16 in. (two required)
- Wrench, open-end, 15/16 in.

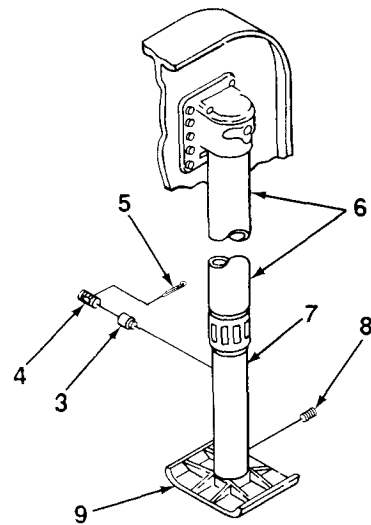
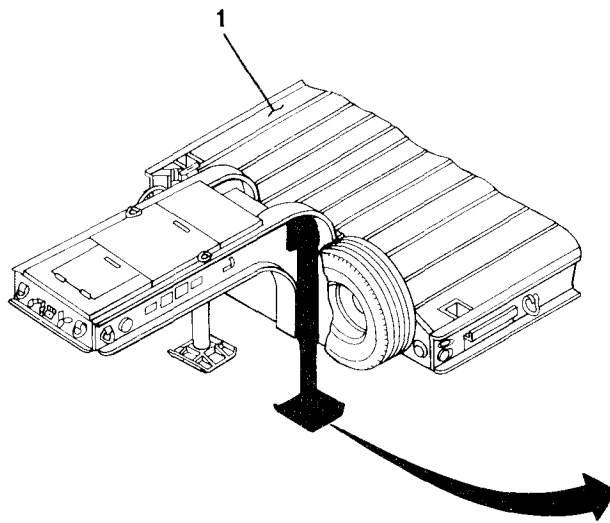
| LOCATION       | ITEM                           | ACTION  | REMARKS |
|----------------|--------------------------------|---|---------|
| <b>REMOVAL</b> |                                |   |         |
| 1.             | Semitrailer (1)<br>Corners (2) | a. Block rear wheels with chock blocks (para 2-5).<br>b. Using hoist, lift front of semitrailer until both corners (2) are 38 in. (96.5 cm) off ground. |         |





4-38. LEFT LANDING GEAR LEG (Con't)

|    | LOCATION           | ITEM               | ACTION  | REMARKS |
|----|--------------------|--------------------|---|---------|
| 2. | Landing gear       | Lower leg tube (7) | Extend as far as possible.  |         |
| 3. | Lower leg tube (7) | shoe (9)           | Remove (para 4-37).   |         |
| 4. |                    | Plug (8)           | a. Place container underneath to catch oil.<br>b. Using key, unscrew and remove.<br>c. Allow oil to drain.                |         |
| 5. | Upper leg (6)      | Cotter pin (5)     | Using pliers, straighten cotter pin (5) and pull out.   |         |
| 6. | Gib (3)            | Plug (4)           | Using screwdriver, unscrew and remove.  |         |
| 7. | Upper leg (6)      | Gib (3)            | Using magnet, remove.   |         |
| 8. | Upper leg (6)      | Lower leg tube (7) | Support the weight of lower leg tube (7) with a long plank, used as a lever. Rotate lower leg tube to unscrew and remove. |         |

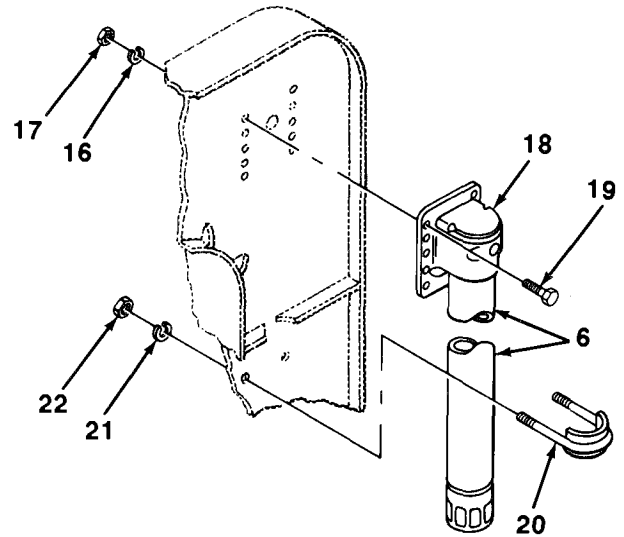
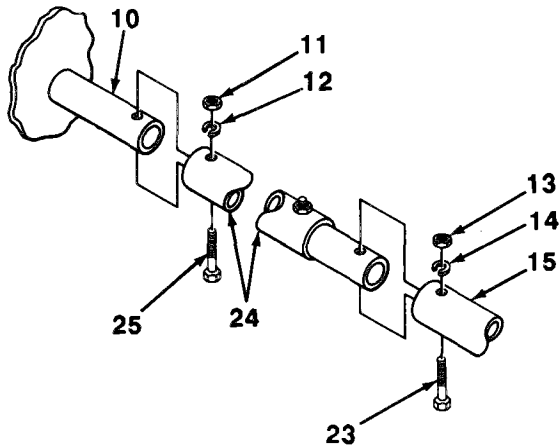


|     |                         |   |  |  |
|-----|-------------------------|---|--|--|
| 9.  | Shaft (15)              | Two bolts (23), lockwashers (14), and nuts (13) | Using two $\frac{9}{16}$ in. wrenches, unscrew and remove. |  |
| 10. | Intermediate shaft (24) | Bolt (25), lockwasher (12), and nut (11)        | Using two $\frac{9}{16}$ in. wrenches, unscrew and remove. |  |
| 11. | Shaft (10)              | Intermediate shaft (24) and shaft (15)          | a. Take out together.<br>b. Take apart.                    |  |

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4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |               |  |   |
|-----|---------------|--|---|
| 12. | Upper leg (6) | U-bolt (20), two lockwashers (21), and nuts (22) | Using $\frac{7}{8}$ in. socket and handle, unscrew and takeoff. <b>You may have to tap threaded ends of U-bolt to remove.</b> |
|-----|---------------|--|---|

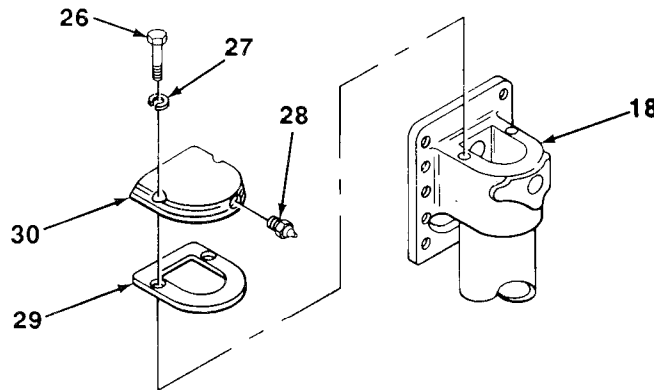
**WARNING**

**Landing gear leg is heavy and lifting can cause serious injury to personnel. Two people are needed to remove hardware and landing gear leg.**

- |     |                 |  |  |
|-----|-----------------|--|--|
| 13. | Gearbox (18)    | Eight screws (19), lockwashers (16), and nuts (17) | Using $\frac{15}{16}$ in. socket, handle with $\frac{3}{4}$ in. drive, and $\frac{15}{16}$ in. wrench, unscrew and remove. |
| 14. | Semitrailer (1) | Left landing gear leg assembly                     | Remove.  |

4-38. LEFT LANDING GEAR LEG (Con't)

|             | LOCATION     | ITEM                                 | ACTION   | REMARKS |
|-------------|--------------|--------------------------------------|--|---------|
| DISASSEMBLY |              |                                      |  |         |
| 15.         | Cover (30)   | Two screws (26) and lockwashers (27) | Using screwdriver, unscrew and take off.               |         |
| 16.         | Gearbox (18) | Cover (30) and gasket (29)           | Remove   |         |
| 17.         | Cover (30)   | Lubrication fitting (28)             | Using $\frac{5}{16}$ in. wrench, unscrew and take out. |         |



**WARNING**

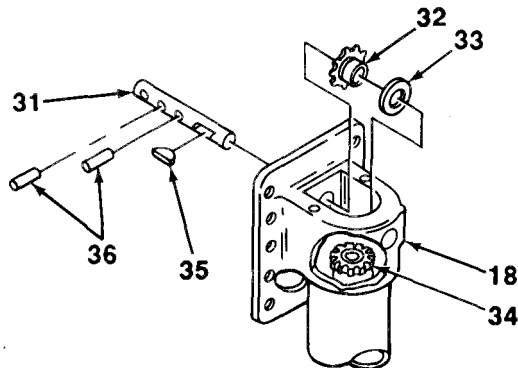
Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

|     |                      |               |  |  |
|-----|----------------------|---------------|--|--|
| 18. |                      | Gearbox (18)  | Using clean rag dampened with dry cleaning solvent, wipe grease from working parts.                          |  |
| 19. | Bevel gearshaft (31) | Two pins (36) | a. Turn bevel gearshaft (31) until pins (36) are visible.<br>b. Using hammer and punch, drive out pins (36). |  |

TA506922

4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



|     |              |                                     |           |
|-----|--------------|-------------------------------------|-----------|
| 20. | Gearbox (18) | Bevel gear shaft (31 ) and key (35) | Pull out. |
| 21. |              | Bevel gear (32) and washer (33)     | Remove.   |

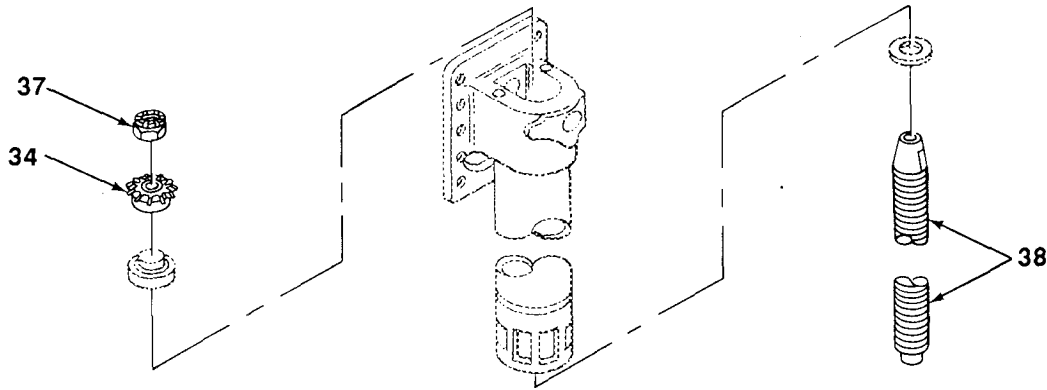
**WARNING**

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|     |                 |   |
|-----|-----------------|---|
| 22. | Bevel gear (34) | a. Using clean rag dampened with dry cleaning solvent, wipe away grease.<br>b. Jam bevel gear (34) with a block of wood so that it will not turn. |
|-----|-----------------|---|

4-38. LEFT LANDING GEAR LEG (Con't)

|     | LOCATION        | ITEM            | ACTION  | REMARKS |
|-----|-----------------|-----------------|---|---------|
| 23. | Screw (38)      | Locknut (37)    | a. Place board or padding underneath upper leg so screw (38) will not be damaged if it falls out.<br>b. Using 1 ¼ in. socket and handle with ¾ in. drive, unscrew and take out. |         |
| 24. | Bevel gear (34) | Screw (38)      | Using hammer and drift, drive out from hub of bevel gear (34).  |         |
| 25. | Gearbox (18)    | Bevel gear (34) | a. Take out block of wood.<br>b. Lift out bevel gear (34).  |         |



|     |               |                             |                              |
|-----|---------------|-----------------------------|------------------------------|
| 26. | Upper leg (6) | Screw (38) and bearing (41) | Take out from bottom of leg. |
| 27. | Screw (38)    | Key (42)                    | Remove using magnet.         |

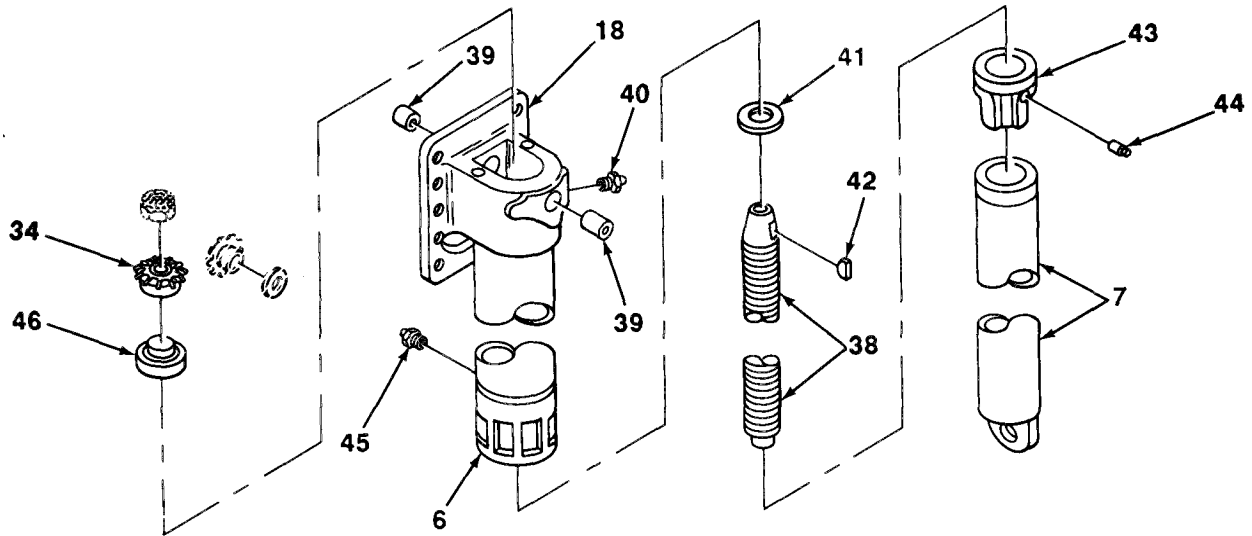
**NOTE**

**Do not remove bearing (46) or bushings (39) unless they are damaged.**

|     |               |                          |  |
|-----|---------------|--------------------------|--|
| 28. | Gearbox (18)  | Bearing (46)             | Using bearing puller, take out.              |
| 29. |               | Two bushings (39)        | Using brass drift and hammer, drive out.     |
| 30. |               | Lubrication fitting (40) | Using 7/16 in. wrench, unscrew and take out. |
| 31. | Upper leg (6) | Lubrication fitting (45) | Using 7/16 in. wrench, unscrew and take out. |

4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



|     |                    |               |         |
|-----|--------------------|---------------|---------|
| 32. | Nut (43)           | Two pins (44) | Remove. |
| 33. | Lower leg tube (7) | Nut (43)      | Remove. |

CLEANING

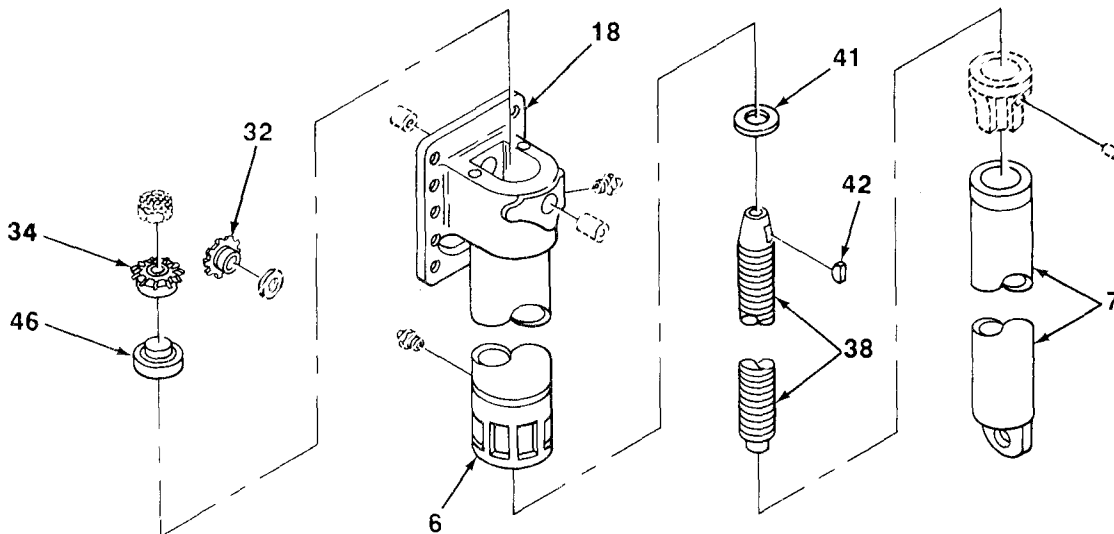
**WARNING**

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|     |   |   |
|-----|---|---|
| 34. | All metal parts except bearings (41 and 46) | a. Clean in dry cleaning solvent.<br>b. Wipe dry with clean dry rags. |
| 35. | Bearings (41 and 46)                        | Clean (TM 9-214).   |

4-38. LEFT LANDING GEAR LEG (Con't)

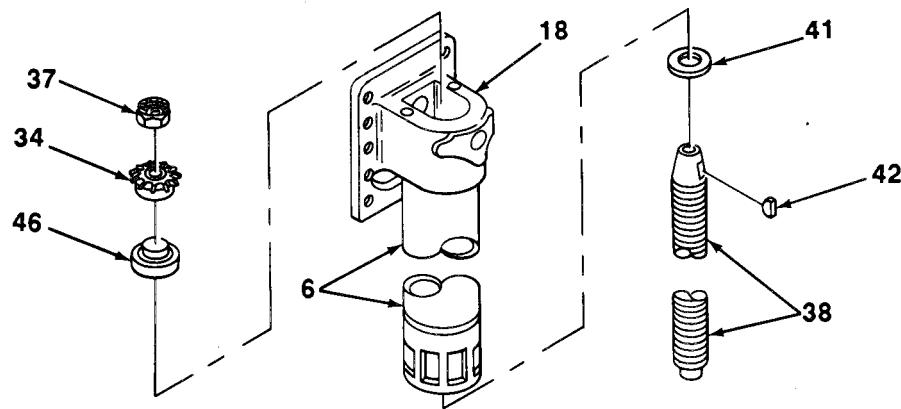
| LOCATION   | ITEM                           | ACTION   | REMARKS |
|--|--------------------------------|--|---------|
| INSPECTION AND REPLACEMENT                           |                                |  |         |
| <b>NOTE</b>  |                                |  |         |
| <b>Replace damaged or defective parts as needed.</b> |                                |  |         |
| 36.  | Bearings (41 and 46)           | Inspect (TM 9-214).  |         |
| 37.  | Bevel gears (32 and 34)        | Look for chipped and broken teeth.<br><b>If either bevel gear (32 or 34) is damaged, replace both bevel gears.</b>             |         |
| 38.  | Screw (38)                     | a. Look for cracks, breaks, scoring, and other signs of wear.<br>b. Look for damaged threads.<br>c. Look for damaged key slot. |         |
| 39.  | Gearbox (18) and upper leg (6) | Look for cracks, dents, and broken welds.<br><b>Gearbox (18) with welded upper leg (6) must be replaced as an assembly.</b>    |         |
| 40.  | Lower leg tube (7)             | Look for cracks, dents, and bends.   |         |
| 41.  | All threaded parts             | Look for crossed threads.  |         |
| 42.  | All other parts                | Look for breaks, cracks, damaged threads, and broken welds.  |         |



TA506926

4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM          | ACTION       | REMARKS  |
|----------|---------------|--------------|--|
| ASSEMBLY |               |              |  |
| 43.      | Screw (38)    | Bearing (41) | a. Hand pack with grease.<br>b. Seat on shoulder of screw (38).  |
| 44.      | Gearbox (18)  | Bearing (46) | a. Hand pack with grease.<br>b. Using hammer and drift, seat in bearing cup in gearbox (18).   |
| 45.      | Upper leg (6) | Screw (38)   | a. Turn upper leg (6) upside down.<br>b. Install screw (38) through bottom of upper leg (6) and seat bearing (41) against bottom of gearbox (18).<br>c. Lay upper leg (6) on its side. |



|     |            |                 |   |
|-----|------------|-----------------|---|
| 46. | Screw (38) | Key (42)        | Put in slot.  |
| 47. |            | Bevel gear (34) | a. Line up slot in bevel gear (34) with key (42).<br>b. Put bevel gear (34) on screw (38).  |
| 48. |            | Locknut (37)    | a. Jam bevel gear (34) with block of wood so it cannot turn.<br>b. Screw on locknut (37) and tighten using 1 3/8 in. socket and handle with 3/4 in. drive.<br><b>Tighten until there is no end play between bevel gear (34) and screw (38).</b><br>c. Take out block of wood. |



4-38. LEFT LANDING GEAR LEG (Con't)

|     | LOCATION              | ITEM                            | ACTION                                       | REMARKS |
|-----|-----------------------|---------------------------------|--|---------|
| 49. | Gearbox (18)          | Two bushings (39)               | Using hammer and brass drift, drive in.      |         |
| 50. |                       | Bevel gear-shaft (31)           | Slide in part way from back of gearbox (18). |         |
| 51. | Bevel gear-shaft (31) | Key (35)                        | Put in.                                      |         |
| 52. |                       | Bevel gear (32) and washer (33) | Slide on.                                    |         |
| 53. | Bushing (39)          | Bevel gear-shaft (31)           | Put in.                                      |         |

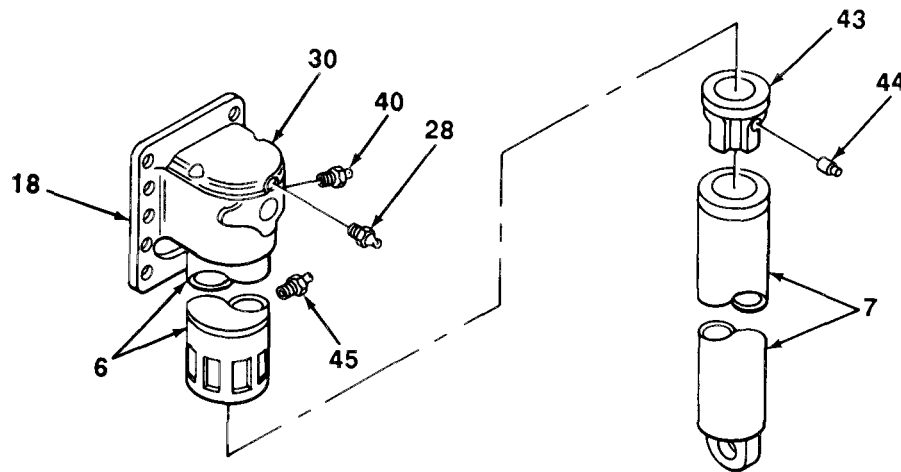
  
  

|     |   |   |   |  |
|-----|---|---|---|--|
| 54. | Bevel gear (32) and bevel gear-shaft (31)   | Two pins (36)                               | a. Line up holes.<br>b. Using hammer and $\frac{3}{16}$ in. punch, drive in.          |  |
| 55. | Gearbox (18)                                | Gasket (29) and cover (30)                  | a. Pack gearbox (18) with grease.<br>b. Place gasket (29) and cover (30) in position. |  |
| 56. | Cover (30)                                  | Two lockwashers (27) and screws (26)        | Screw in and tighten using screwdriver.   |  |
| 57. | Gearbox (18), cover (30), and upper leg (6) | Three lubrication fittings (28, 40, and 45) | Screw in and tighten using $\frac{7}{16}$ in. wrench and $\frac{5}{16}$ in. wrench.   |  |
| 58. | Lower leg tube (7)                          | Nut (43)                                    | Put in and line up holes.   |  |
| 59. |   | Two pins (44)                               | Put in.   |  |

TA506928

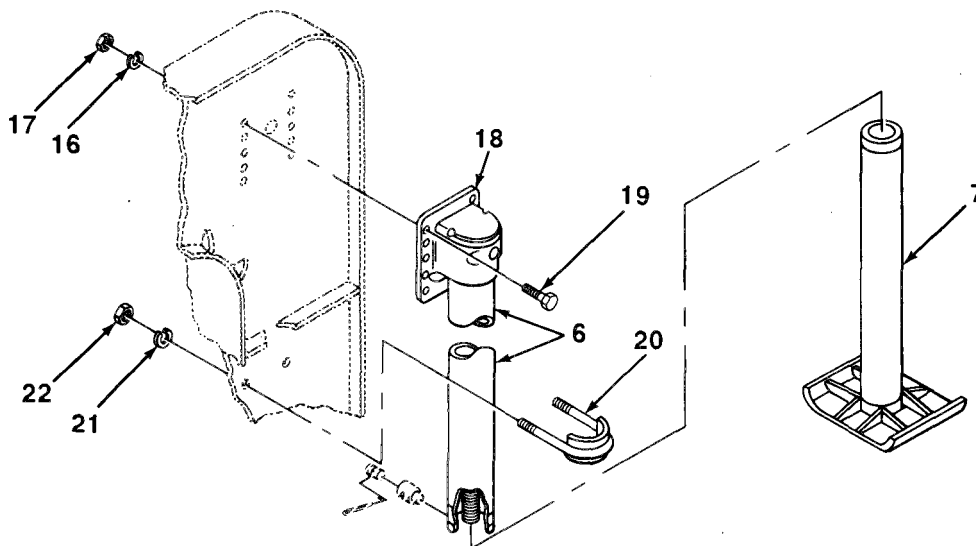
4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



INSTALLATION

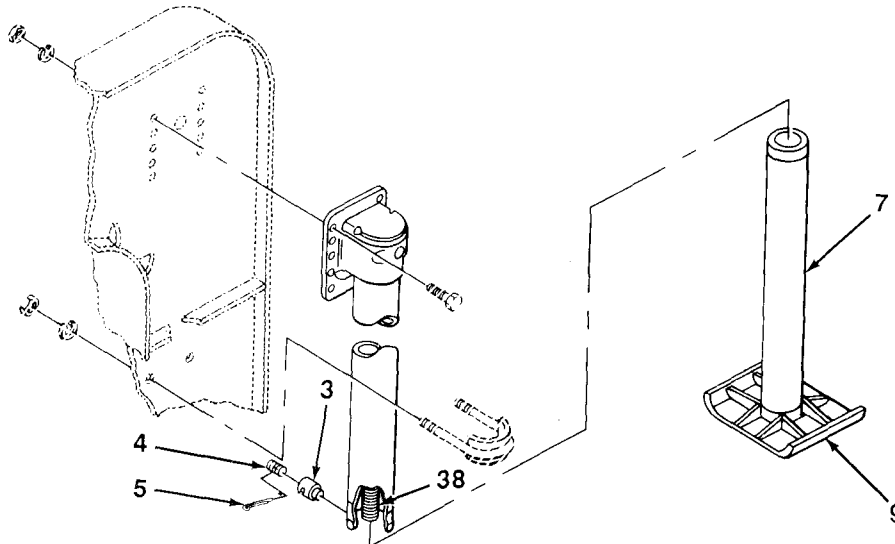
- |     |               |  |   |
|-----|---------------|--|---|
| 60. | Semitrailer   | Gearbox (18)                                       | With the aid of an assistant, place in position.  |
| 61. | Gearbox (18)  | Eight screws (19), lockwashers (16), and nuts (17) | With the aid of an assistant, screw in and tighten using $\frac{15}{16}$ in. socket, handle with $\frac{3}{4}$ in. drive, and $\frac{15}{16}$ in. wrench. |
| 62. | Upper leg (6) | U-bolt (20), two lockwashers (21), and nuts (22)   | Screw in and tighten using $\frac{7}{8}$ in. socket and handle.   |



TA506929

4-38. LEFT LANDING GEAR LEG (Con't)

|     | LOCATION           | ITEM                           | ACTION  | REMARKS |
|-----|--------------------|--------------------------------|---|---------|
| 63. |                    | Lower leg tube (7)             | a. Put in.<br>b. Turn counterclockwise to catch on screw (38).<br>c. Screw in until top of milled groove on lower leg tube (7) reaches and is alined with gib (3) opening in leg. |         |
| 64. |                    | Gib (3)                        | Put in.   |         |
| 65. | Gib (3)            | Plug (4)<br>and cotter pin (5) | a. Screw in and tighten using screwdriver.<br>b. Back off plug (4) until slot lines up with holes.<br>c. Put in cotter pin (5) and using pliers, bend ends over plug (4).         |         |
| 66. | Lower leg tube (7) | Shoe (9)                       | Install (para 4-37).  |         |

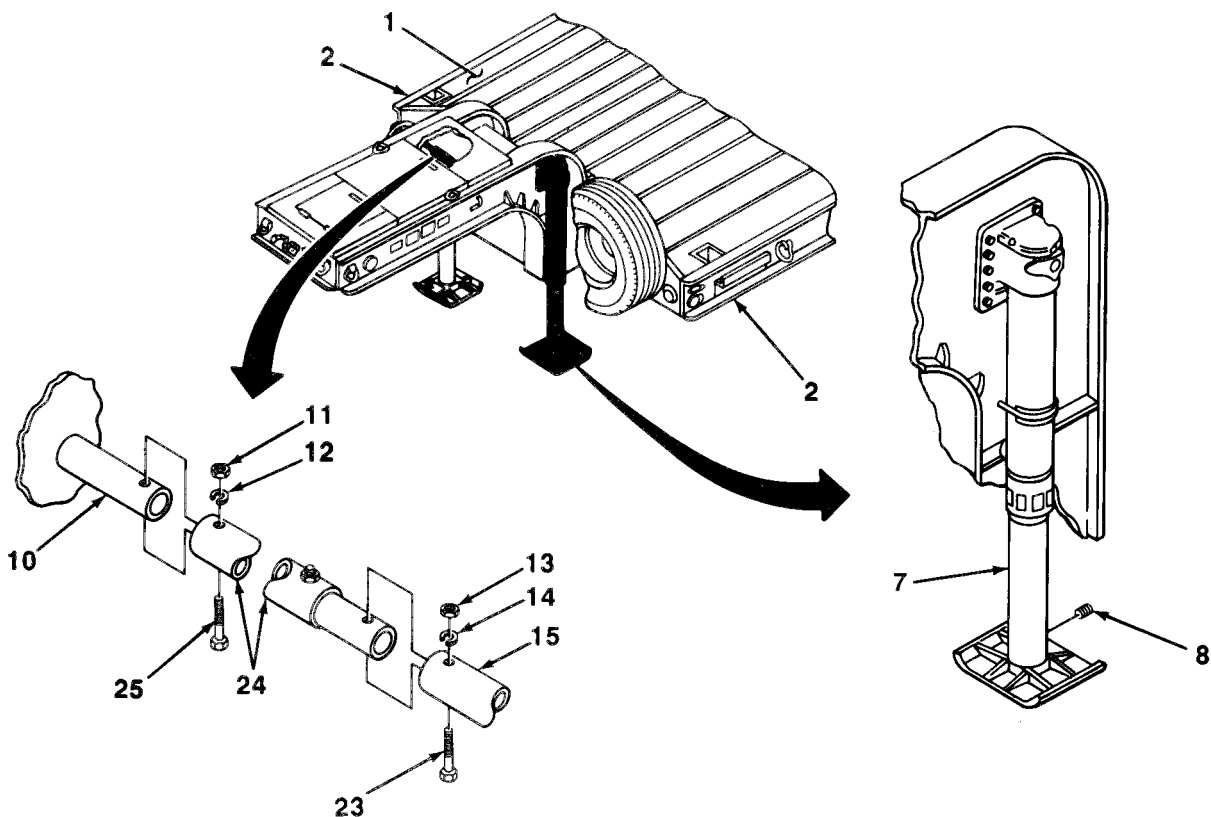


|     |                         |   |   |  |
|-----|-------------------------|---|---|--|
| 67. | Shaft (10)              | Shaft (15) and intermediate shaft (24)          | Slide on and line up holes.                                 |  |
| 68. | Intermediate shaft (24) | Bolt (25), lockwasher (12), and nut (11)        | Screw in and tighten using two $\frac{9}{16}$ in. wrenches. |  |
| 69. | Shaft (15)              | Two bolts (23), lockwashers (14), and nuts (13) | Screw in and tighten using two $\frac{9}{16}$ in. wrenches. |  |
| 70. | Lower leg tube (7)      | Plug (8)  | Screw in and tighten using $\frac{3}{16}$ in. key.          |  |

TA506930

4-38. LEFT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



- |     |                 |             |   |
|-----|-----------------|-------------|---|
| 71. | Semitrailer (1) | Corners (2) | <p>a. Using hoist, lower semitrailer until it rests on landing gear.<br/> <b>Make sure both legs are extended to the same length and are resting on the ground.</b></p> <p>b. Remove hoist.</p> <p>c. Remove chock blocks (para 2-5).</p> |
|-----|-----------------|-------------|---|

**FOLLOW-ON MAINTENANCE:**

- Lubricate landing gear leg (para 3-2).
- Check operation of landing gear (para 2-5).

TASK ENDS HERE

**4-39. RIGHT LANDING GEAR LEG**

*This Task Covers:*

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>a. Removal</li> <li>b. Disassembly</li> <li>c. Cleaning</li> </ul> | <ul style="list-style-type: none"> <li>d. Inspection and Replacement</li> <li>e. Assembly</li> <li>f. Installation</li> </ul> |
|---|---|

*Initial Setup:*

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
- Grease (Item 5, Appendix E)
- Rags (Item 11, Appendix E)

**Personnel Required:** Two

**References:** TM 9-214

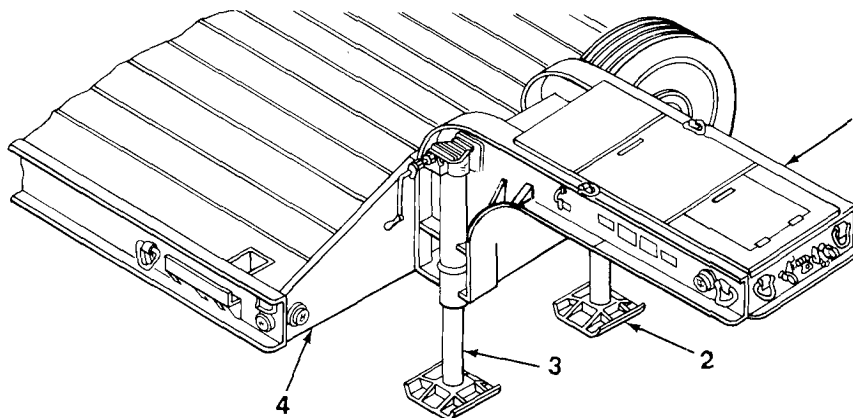
**Tools/Test Equipment:**

- Container, 1 gallon capacity
- Drift, brass, 3/4 in.
- Hammer, hand, ball-peen, 3 pound
- Handle, ratchet, 3/4 in. drive

**Tools/Test Equipment (Con't):**

- Hoist, 5 ton, with cables
- Key, socket-head, 3/16 in.
- Pliers, slip-joint, angle nose
- Puller kit, mechanical
- Punch, drive-pin, 3/16 in.
- Retrieving tool, magnetic
- Screwdriver, flat-tip
- Socket, 1 5/16 in., 3/4 in. drive
- Socket, 1 1/4 in., 3/4 in. drive
- Wrench, open-end, 3/8 in.
- Wrench, open-end, 7/16 in.
- Wrench, open-end, 9/16 in. (two required)
- Wrench, open-end, 1 5/16 in.

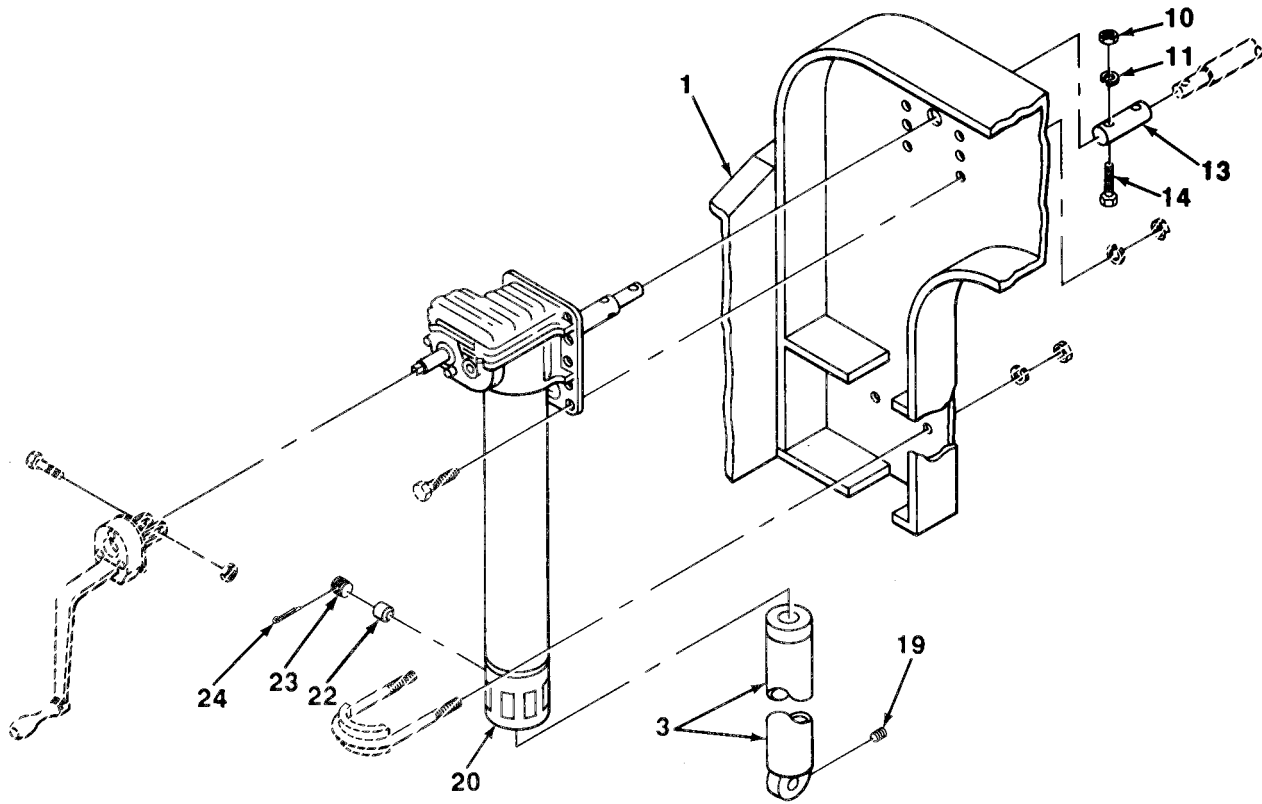
|                | LOCATION        | ITEM               | ACTION<br>REMARKS   |
|----------------|-----------------|--------------------|---|
| <b>REMOVAL</b> |                 |                    |   |
| 1.             | Semitrailer (1) | Corners (4)        | a. Block rear wheels with chock blocks (para 2-5).<br>b. Using hoist, lift front of semitrailer until both corners (4) are approximately 38 in. (96.5 cm) off ground. |
| 2.             | Landing gear    | Lower leg tube (3) | Extend as far as possible   |



TA506932

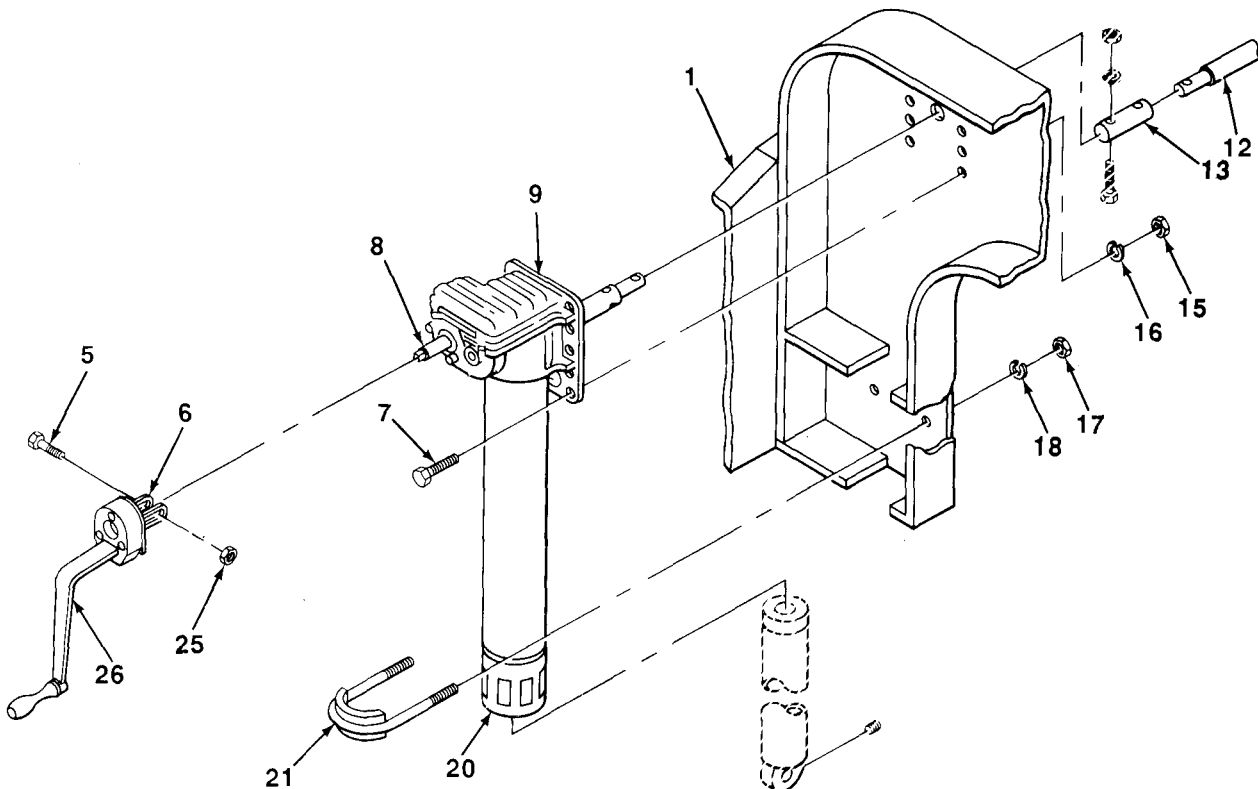
4-39. RIGHT LANDING GEAR LEG (Con't)

|    | LOCATION           | ITEM  | ACTION  | REMARKS |
|----|--------------------|---|---|---------|
| 3. | Lower leg tube (3) | Shoe (2)  | Remove (para 4-37).   |         |
| 4. | Lower leg tube (3) | Plug (19)                                       | a. Place container underneath to catch oil.<br>b. Using $\frac{3}{16}$ in. hex key, unscrew and take out.<br>c. Allow oil to drain. |         |
| 5. | Upper leg (20)     | Cotter pin (24)                                 | Using pliers, straighten cotter pin (24) and pull out.  |         |
| 6. | Gib (22)           | Plug (23)                                       | Using screwdriver, unscrew and take out.  |         |
| 7. | Upper leg (20)     | Gib (22)  | Using magnet, take out.   |         |
| 8. |                    | Lower leg tube (3)                              | Support weight of lower leg tube (3) with a long plank, used as a lever rotate lower leg tube to unscrew and take out.              |         |
| 9. | Shaft (13)         | Two bolts (14), lockwashers (11), and nuts (10) | Using two $\frac{9}{16}$ in. wrenches, unscrew and take out.  |         |



4-39. RIGHT LANDING GEAR LEG (Con't)

|     | LOCATION                       | ITEM   | ACTION   | REMARKS   |
|-----|--------------------------------|--|--|---|
| 10. | Intermediate shaft (12)        | Shaft (13)                                       | Slide onto.  |   |
| 11. | Upper leg (20)                 | U-bolt (21), two lockwashers (18), and nuts (17) | Using $\frac{7}{8}$ in. socket and handle, unscrew and take out. | <b>You may have to tap threaded ends with hammer to take off U-bolt (21).</b> |
| 12. | Crankshaft (8) and ratchet (6) | Bolt (5) and self-locking nut (25)               | Using two $\frac{9}{16}$ in. wrenches, unscrew and take out.     |   |
| 13. | Crankshaft (8)                 | Handcrank (26)                                   | Take off.  |   |



TA506934

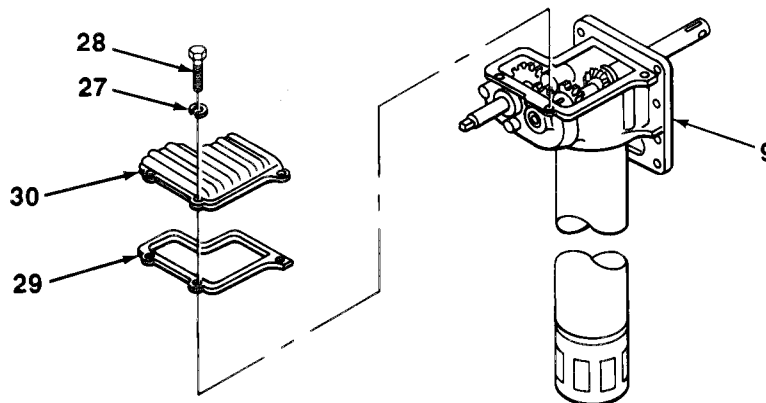
4-39. RIGHT LANDING GEAR LEG (Con't)

| LOCATION   | ITEM            | ACTION  | REMARKS   |
|--|-----------------|---|---|
| <b>WARNING</b>   |                 |   |   |
| <b>Landing gear leg is heavy and lifting can cause serious injury to personnel. Two people are needed to remove hardware and landing gear leg.</b> |                 |   |   |
| 14.  | Gearbox (9)     | Eight screws (7), lockwashers (16), and nuts (15) | Using $1\frac{5}{16}$ in. socket, handle, and $1\frac{5}{16}$ in. wrench, unscrew and take out. |
| 15.  | Semitrailer (1) | Right landing gear assembly                       | Take off.   |
| DISASSEMBLY  |                 |   |   |
| 16.  | Cover (30)      | Four screws (28) and lockwashers (27)             | Using screwdriver, unscrew and take out.  |
| 17.  | Gearbox (9)     | Cover (30) and gasket (29)                        | Take off.   |

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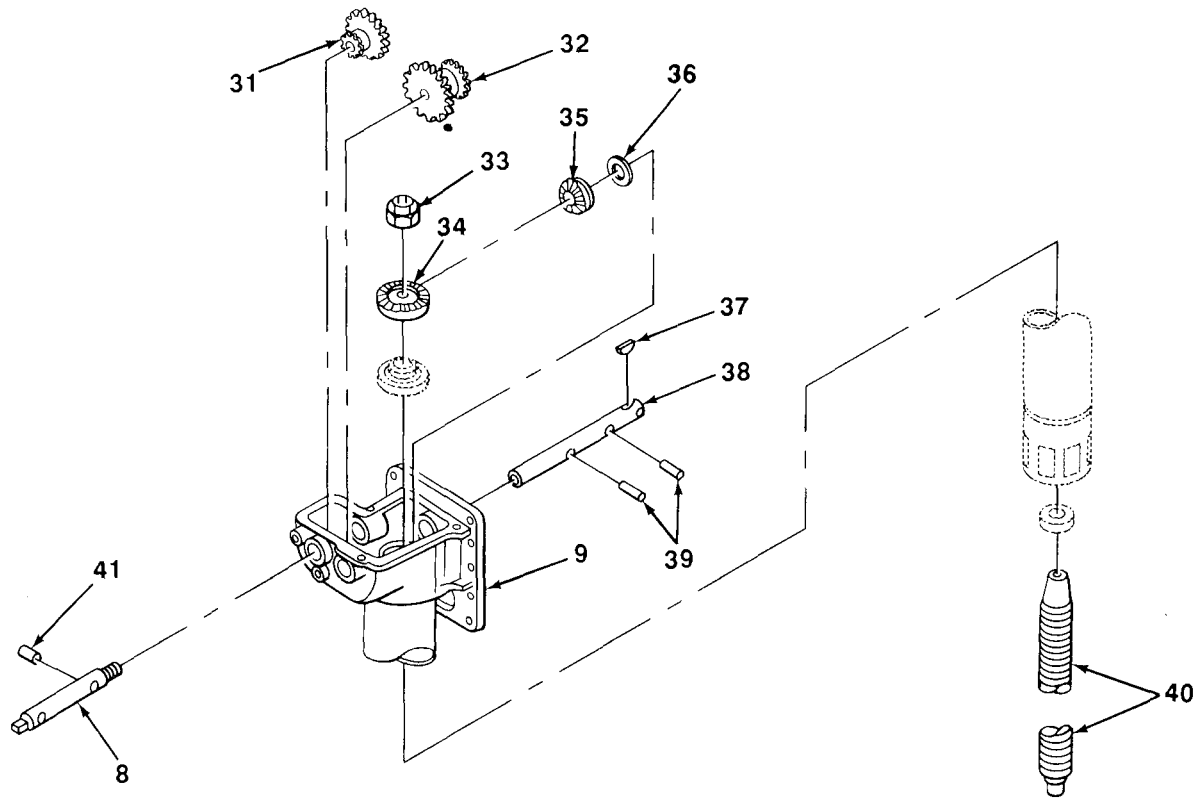
18. Gearbox (9) Using rag dampened with dry cleaning solvent, wipe away grease.





4-39. RIGHT LANDING GEAR LEG (Con't)

|     | LOCATION              | ITEM   | ACTION  | REMARKS |
|-----|-----------------------|--|---|---------|
| 19. | Crankshaft (8)        | Pin (41)   | Using $\frac{3}{16}$ in. punch and hammer, drive out. |         |
| 20. | Gear cluster (31)     | Crankshaft (8) and pin (41)  | a. Pull out.<br>b. Take out pin.                      |         |
| 21. | Gearbox (9)           | Gear cluster (31)  | Take out.   |         |
| 22. | Bevel gear-shaft (38) | Two pins (39)  | Using hammer and $\frac{3}{16}$ in. punch, drive out. |         |
| 23. | Gearbox (9)           | Bevel gear-shaft (38)  | Slide out.  |         |
| 24. |                       | Bevel gear (35), rigid gear cluster (32), washer (36), and two pins (39) | Take out.   |         |
| 25. | Bevel gear-shaft (38) | Key (37)   | Take out.   |         |



TA506936

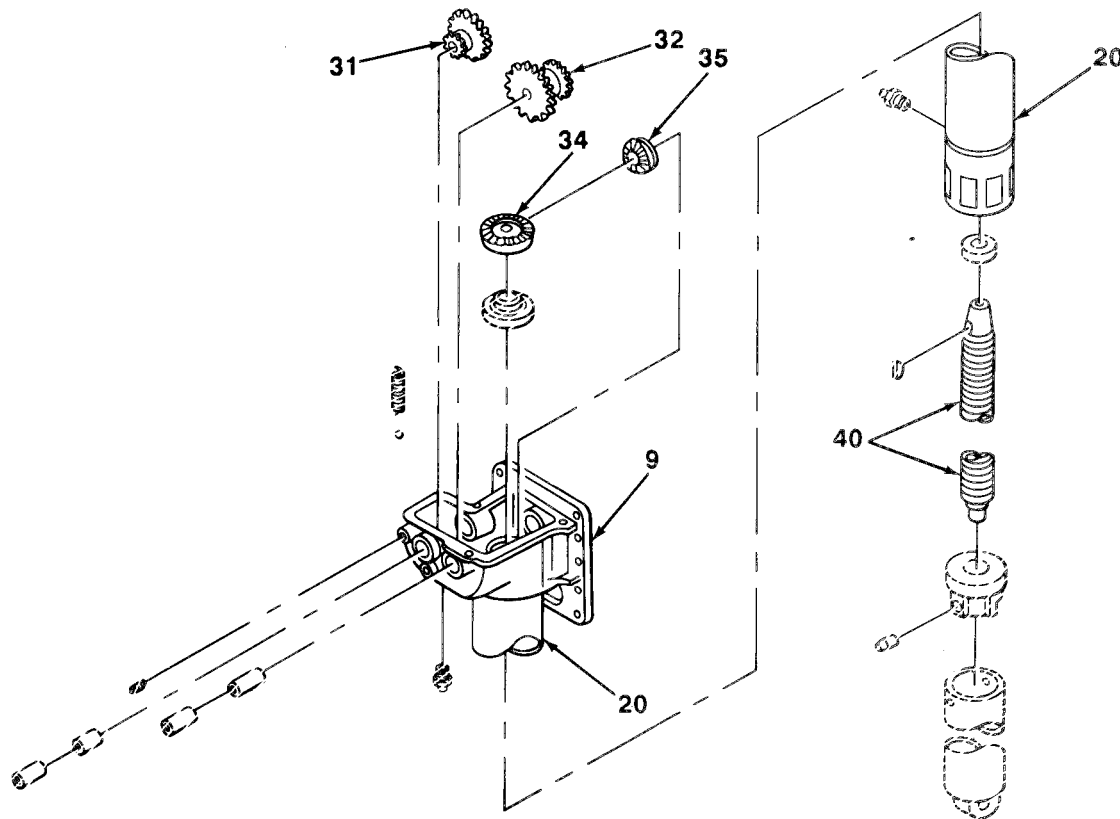
4-39. RIGHT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**WARNING**

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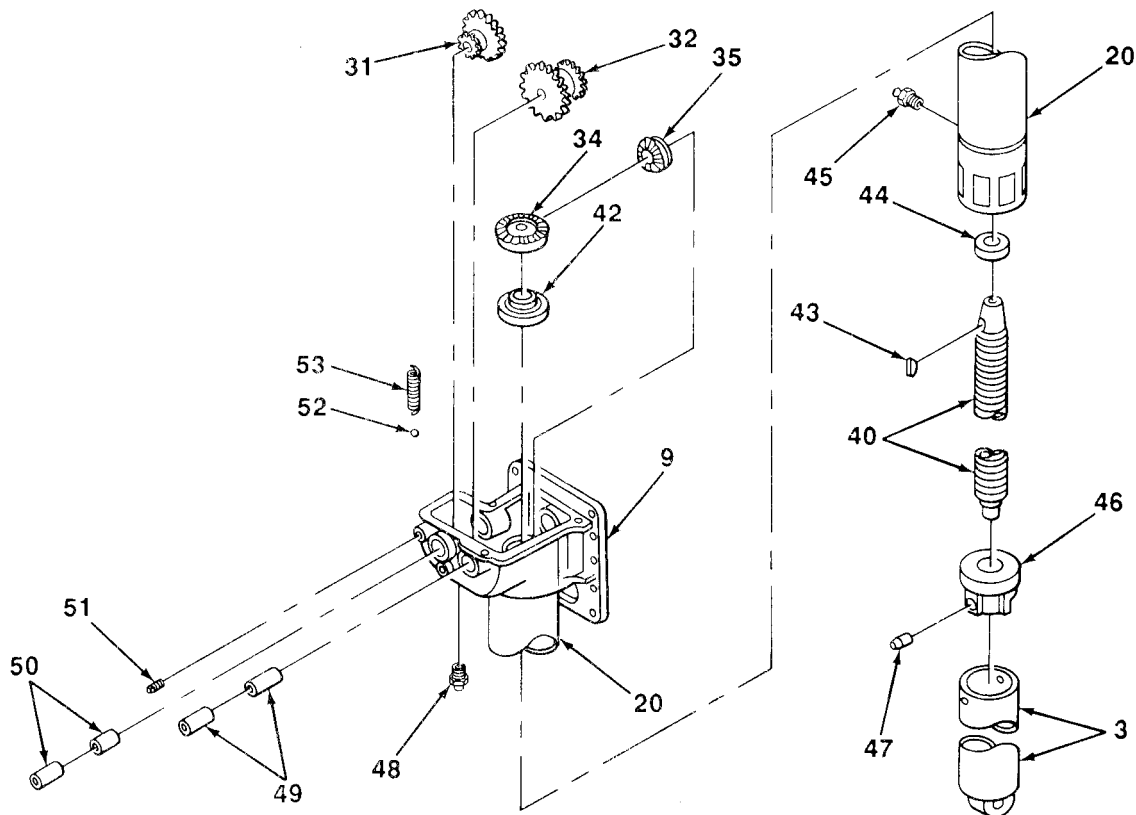
- |     |                                    |                 |  |
|-----|------------------------------------|-----------------|--|
| 26. | Gearbox (9)                        | Bevel gear (34) | <ul style="list-style-type: none"> <li>a. Using rag dampened with dry cleaning solvent, wipe away grease.</li> <li>b. Jam bevel gear (34) with a block of wood so it will not turn.</li> </ul> |
| 27. | Screw (40)                         | Locknut (33)    | using 1¼in. socket and handle, unscrew and take off.   |
| 28. | Bevel gear (34) and upper leg (20) | Screw (40)      | <ul style="list-style-type: none"> <li>a. Position board or padding underneath.</li> <li>b. Using hammer and drift, drive out.</li> <li>c. Take out from bottom of upper leg (20).</li> </ul>  |



TA506937

4-39. RIGHT LANDING GEAR LEG (Con't)

|   | LOCATION    | ITEM                      | ACTION  | REMARKS |
|---|-------------|---------------------------|---|---------|
| 29.   | Screw (40)  | Key (43) and bearing (44) | a. Take off key (43) using magnet.<br>b. Take off bearing (44). |         |
| <b>NOTE</b>   |             |                           |   |         |
| <b>Do not remove bearings (42 and 49) or bushings (50) unless they are damaged.</b> |             |                           |   |         |
| 30.   | Gearbox (9) | Bearing (42)              | Using puller, take out.   |         |
| 31.   |             | Two bearings (49)         | Using 3/4 in. punch and hammer, drive out.                      |         |
| 32.   |             | Two bushings (50)         | Using 3/4 in. punch and hammer, drive out,                      |         |
| 33.   |             | Spring (53) and ball (52) | Take out.   |         |
| 34.   |             | Two plugs (51)            | Using 3/8 in. wrench, unscrew and take out.                     |         |



TA506938

**4-39. RIGHT LANDING GEAR LEG (Con't)**

|     | LOCATION                        | ITEM                                 | ACTION   | REMARKS |
|-----|---------------------------------|--------------------------------------|--|---------|
| 35. | Gearbox (9) and upper leg (20)  | Two lubrication fittings (45 and 48) | Using $\frac{7}{16}$ in. wrench, unscrew and take out. |         |
| 36. | Lower leg tube (3) and nut (46) | Two pins (47)                        | Take out.  |         |
| 37. | Lower leg tube (3)              | Nut (46)                             | Take off.  |         |

CLEANING

**WARNING**

Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

|     |  |  |   |  |
|-----|--|--|---|--|
| 38. |  | All metal parts except bearings (42, 44, and 49) | a. Clean in dry cleaning solvent.<br>b. Wipe dry with clean dry rags. |  |
| 39. |  | Bearings (42, 44, and 49)                        | Clean (TM 9-214).   |  |

INSPECTION AND REPLACEMENT

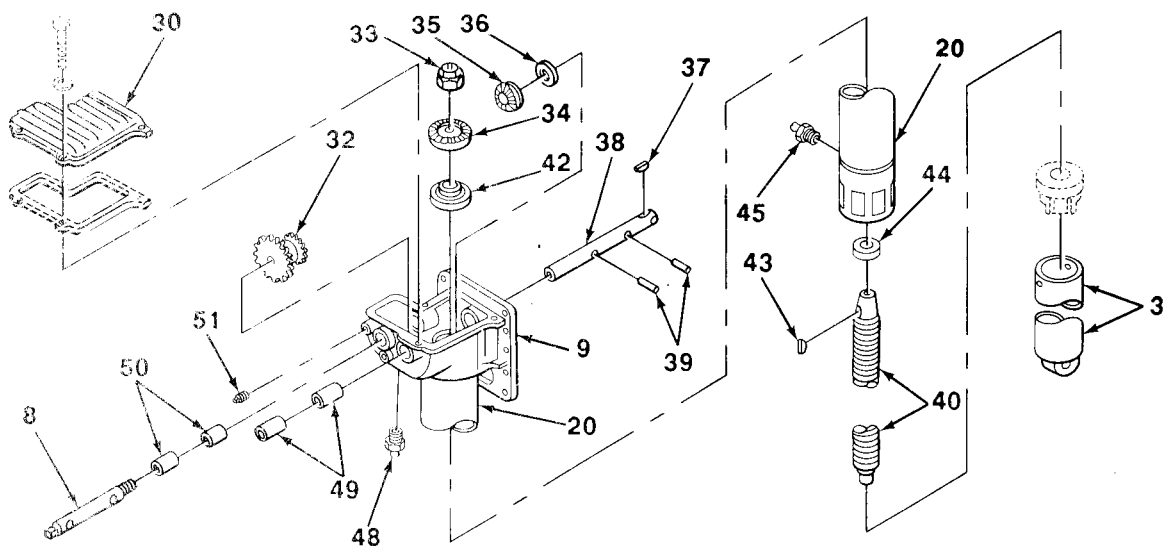
**NOTE**

Replace damaged or defective parts as needed.

|     |  |  |   |  |
|-----|--|--|---|--|
| 40. |  | Bearings (42, 44, and 49)  | Inspect (TM 9-214).   |  |
| 41. |  | Bevel gear (35 and 34), rigid gear cluster (32), and gear cluster (31) | a. Look for cracked, chipped, nicked, and broken teeth.<br>b. Look for score marks and other signs of wear in shaft bores.  |  |
| 42. |  | Screw (40)   | a. Look for cracks, breaks, score marks, and signs of wear.<br>b. Look for damaged threads.<br>c. Look for broken key slot. |  |

**4-39. RIGHT LANDING GEAR LEG (Con't)**

| LOCATION | ITEM  | ACTION                              | REMARKS |
|----------|---|-------------------------------------|---------|
| 43.      | Crankshaft (8) and bevel gearshaft (38)                     | Look for cracks, breaks, and dents. |         |
| 44.      | Gearbox (9), upper leg (20), lower leg tube (3), cover (30) | Look for cracks and dents.          |         |
| 45.      | All threaded parts  | Look for damaged threads.           |         |

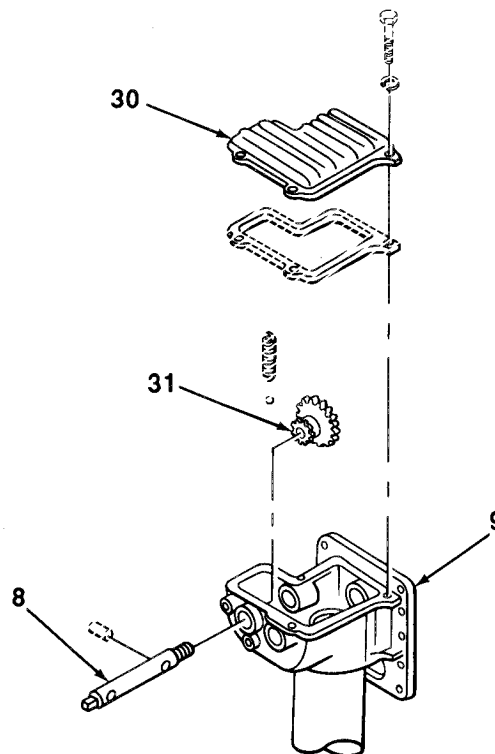


**ASSEMBLY**

|     |                                |                                      |   |
|-----|--------------------------------|--------------------------------------|---|
| 46. | Gearbox (9)                    | Two plugs (51)                       | Screw in and tighten using $\frac{3}{8}$ in. wrench.  |
| 47. | Gearbox (9) and upper leg (20) | Two lubrication fittings (45 and 48) | Screw in and tighten using $\frac{7}{16}$ in. wrench. |
| 48. | Gearbox (9)                    | Two bushings (50)                    | Drive in using hammer and brass drift.                |
| 49. | Gearbox (9)                    | Two bearings (49)                    | Drive in using hammer and brass drift.                |
| 50. | Gearbox (9)                    | Bearing (42)                         | Put in.   |
| 51. | Screw (40)                     | Bearing (44)                         | a. Hand pack with grease.<br>b. Put on.               |
| 52. | Gearbox (9)                    | Key (43)                             | Put in.   |
| 53. | Upper leg (20)                 | Screw (40) and bearing (44)          | Put in from bottom.                                   |

4-39. RIGHT LANDING GEAR LEG (Con't)

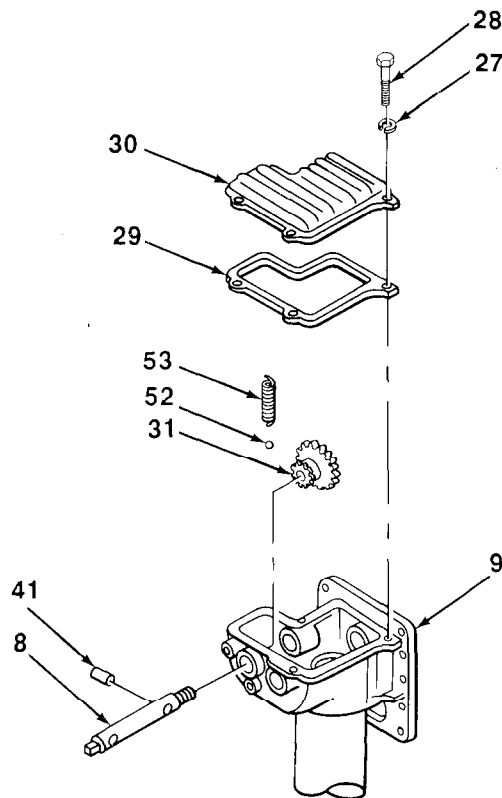
|     | LOCATION             | ITEM  | ACTION  | REMARKS   |
|-----|----------------------|---|---|---|
| 54. | Screw (40)           | Bevel gear (34)   | a. Lineup slot in bevel gear (34) with key (43).<br>b. Put bevel gear (34) on screw (40).<br>c. Jam bevel gear (34) with block of wood so it cannot turn. |   |
| 55. |                      | Locknut (33)  | Screw on and tighten using 1¼ in. socket and handle.  | <b>Tighten until there is no end play between bevel gear (34) and screw (40).</b> |
| 56. | Gearbox (9)          | Bevel gearshaft (38)                                      | Slide in part way from back of gearbox (9).   |   |
| 57. | Bevel gearshaft (38) | Key (37)  | Put in slot.  |   |
| 58. |                      | Washer (36), bevel gear (35), and rigid gear cluster (32) | Slide on.   |   |
| 59. | Gearbox (9)          | Bevel gearshaft (38)                                      | Seat into bushing (50) in front of gearbox (9).   |   |
| 60. | Bevel gearshaft (38) | Two pins (39)   | Using hammer and 3/16 in. punch, drive in.  |   |
| 61. | Gearbox (9)          | Crankshaft (8)  | Slide in part way.  |   |
| 62. | Crankshaft (8)       | Gear cluster (31)   | Slide on.   |   |



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4-39. RIGHT LANDING GEAR LEG (Con't)

|     | LOCATION          | ITEM                                  | ACTION   | REMARKS |
|-----|-------------------|---------------------------------------|--|---------|
| 63. | Gearbox (9)       | Crankshaft (8)                        | Seat into bearing in rear of gearbox (9).  |         |
| 64. | Gear cluster (31) | Pin (41)                              | Line up with holes in crankshaft (8) and drive in using hammer and $\frac{3}{16}$ in. punch. |         |
| 65. | Gearbox (9)       | Ball (52) and spring (53)             | Put in.  |         |
| 66. |                   | Gasket (29) and cover (30)            | a. Pack gearbox (9) with grease.<br>b. Place gasket (29) and cover (30) in position.         |         |
| 67. | Cover (30)        | Four lockwashers (27) and screws (28) | Screw in and tighten using screwdriver.  |         |

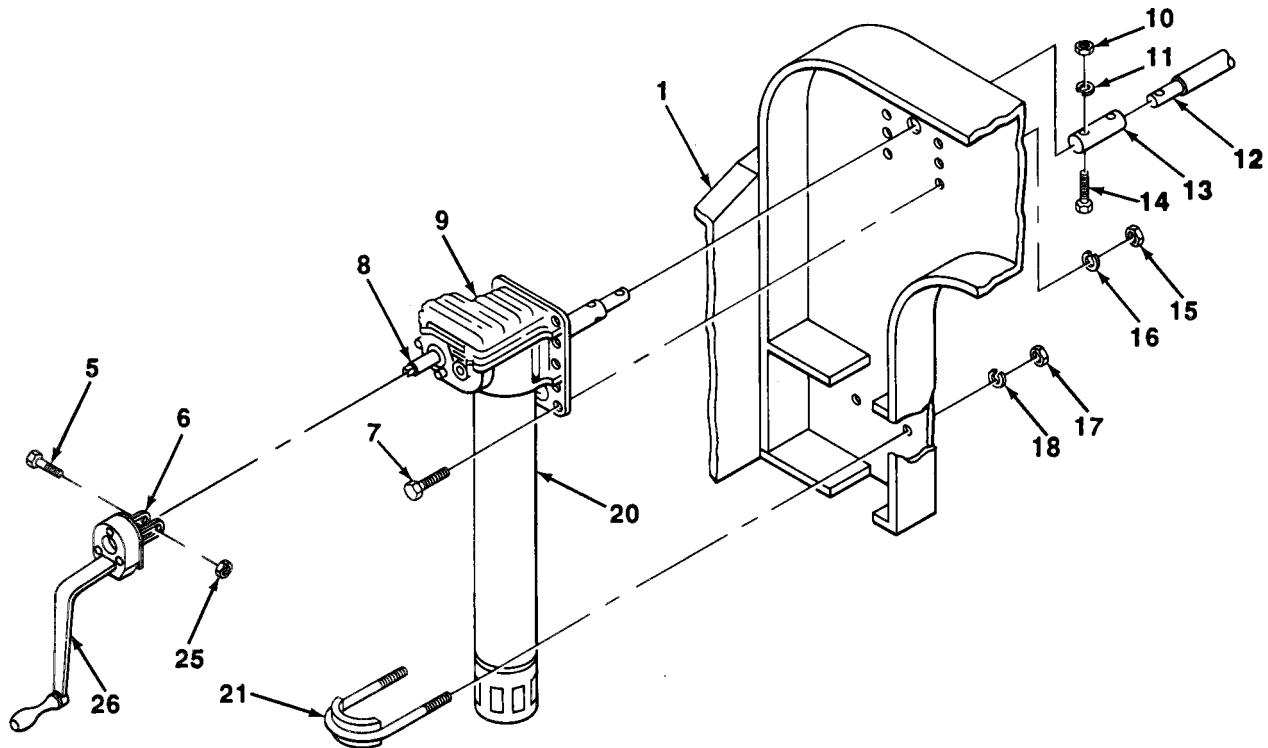


INSTALLATION

|     |                 |   |  |
|-----|-----------------|---|--|
| 68. | Semitrailer (1) | Gearbox (9)                                       | With the aid of an assistant, place in position and hold.  |
| 69. | Gearbox (9)     | Eight screws (7), lockwashers (16), and nuts (15) | Screw in and tighten using two $\frac{15}{16}$ in. socket, handle, and $\frac{15}{16}$ in. wrench. |

4-39. RIGHT LANDING GEAR LEG (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

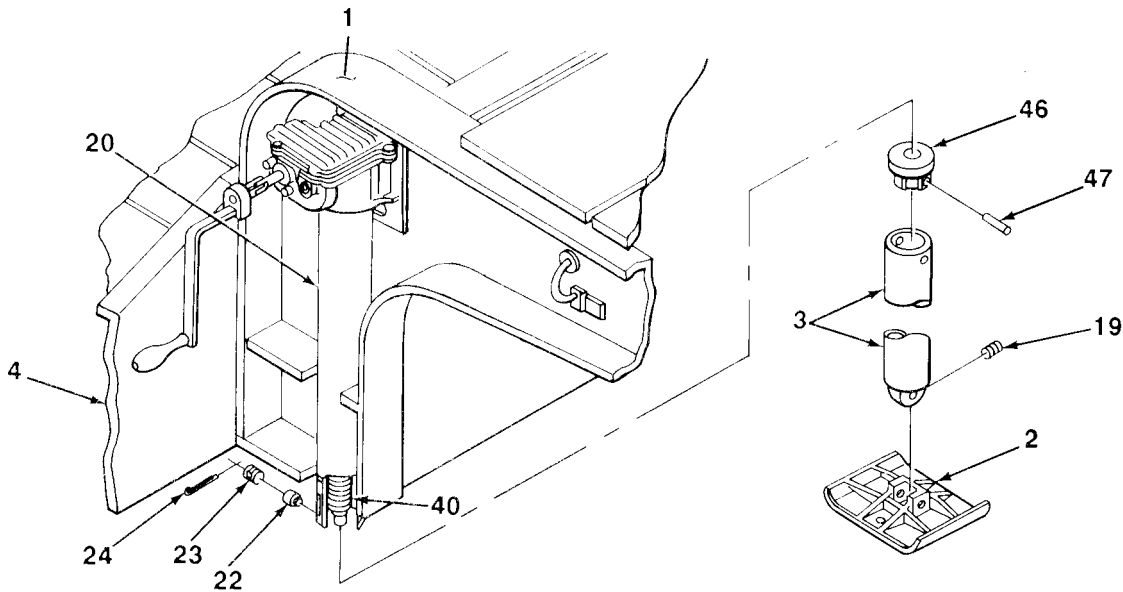


|     |                                |  |   |
|-----|--------------------------------|--|---|
| 70. | Upper leg (20)                 | U-bolt (21), two lockwashers (18), and nuts (17) | Screw in and tighten using $\frac{7}{8}$ in. socket and handle. |
| 71. | Crankshaft (8)                 | Handcrank (26)                                   | Put in position.  |
| 72. | Crankshaft (8) and ratchet (6) | Bolt (5) and self-locking nut (25)               | Screw in and tighten using two $\frac{9}{16}$ in. wrenches.     |
| 73. | Intermediate shaft (12)        | Shaft (13)                                       | Slide into position.  |
| 74. | Shaft (13)                     | Two bolts (14), lockwashers (11), and nuts (10)  | Screw in and tighten using two $\frac{9}{16}$ in. wrenches.     |



4-39. RIGHT LANDING GEAR LEG (Con't)

|     | LOCATION           | ITEM               | ACTION   | REMARKS |
|-----|--------------------|--------------------|--|---------|
| 75. | Lower leg tube (3) | Nut (46)           | Put on and line up holes.  |         |
| 76. | Nut (46)           | Two pins (47)      | Put in.  |         |
| 77. | Screw (40)         | Lower leg tube (3) | Screw on until top of milled groove on lower leg tube (3) can be seen through gib (22) opening.                        |         |
| 78. | Upper leg (20)     | Gib (22)           | Put in.  |         |
| 79. | Gib (22)           | Plug (23)          | a. Screw in and tighten with screwdriver.<br>b. Back off plug (23) until slot lines up with holes for cotter pin (24). |         |



|     |                    |                 |  |
|-----|--------------------|-----------------|--|
| 80. | Upper leg (20)     | Cotter pin (24) | Put in; using pliers, bend both ends of cotter pin (24).   |
| 81. | Lower leg tube (3) | Shoe (2)        | Install (para 4-37).   |
| 82. |                    | Plug (19)       | Screw in and tighten using $\frac{3}{16}$ in. hex key.   |
| 83. | Semitrailer (1)    | Corners (4)     | a. Using hoist, lower semitrailer and remove hoist.<br><b>Make sure both legs are extended to the same length and are resting on the ground.</b><br>b. Remove chock blocks (para 2-5). |

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**4-39. RIGHT LANDING GEAR LEG (Con't)**

---

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

---

**FOLLOW-ON MAINTENANCE:**

- Lubricate landing gear leg (para 3-2).
- Check operation of landing gear (para 2-5).

**TASK ENDS HERE**

**4-40. SPARE WHEEL CARRIER**

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|
- 

*Initial Setup:*

**Equipment Conditions:**

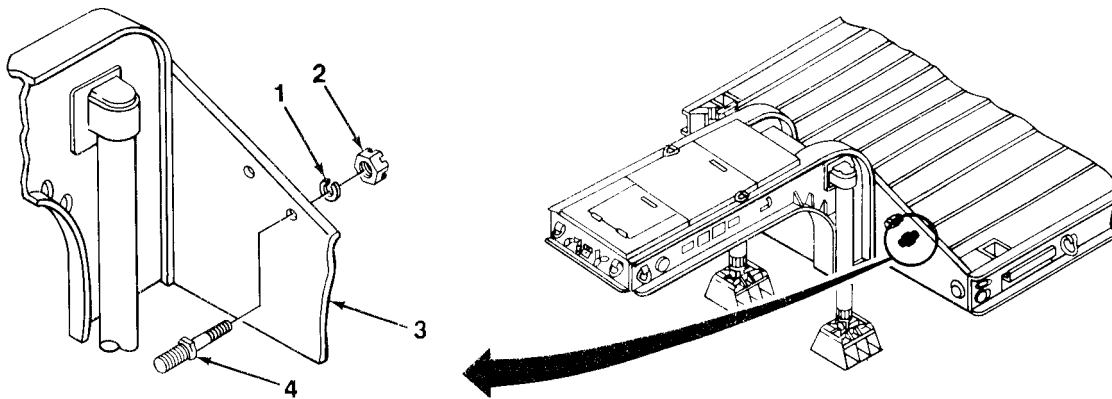
- Spare wheel and tire assembly removed (para 3-10).

**Tools/Test Equipment:**

- Wrench, box-end, 1 1/8 in.
  - Wrench, box-end, 1 1/2 in.
-

4-40. SPARE WHEEL CARRIER (Con't)

|                | LOCATION      | ITEM  | ACTION   | REMARKS |
|----------------|---------------|---|--|---------|
| <b>REMOVAL</b> |               |   |  |         |
| 1.             | Two studs (4) | Two self-locking nuts (2) and lockwashers (1) | Using 1 1/8 in. box-end wrench and 1 1/2 in. box-end wrench, unscrew and take off. |         |
| 2.             | Frame (3)     | Two studs (4)                                 | Take Off.  |         |



**INSTALLATION**

|    |               |   |  |
|----|---------------|---|--|
| 3. | Frame (3)     | Two studs (4)                                 | Put in place.  |
| 4. | Two studs (4) | Two lockwashers (1) and self-locking nuts (2) | Using 1 1/8 in. box-end wrench and 1 1/2 in. box-end wrench, screw in and tighten. |

**FOLLOW-ON MAINTENANCE:**

- Install spare wheel and tire assembly (para 3-10).

**TASK ENDS HERE**

Section IX. ACCESSORY ITEMS MAINTENANCE

|                       |             |                      |             |
|-----------------------|-------------|----------------------|-------------|
|                       | <i>Page</i> |                      | <i>Page</i> |
| Data Plates . . . . . | 4-142       | Reflectors . . . . . | 4-141       |

**4-41. REFLECTORS**

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|

*Initial Setup:*

**Tools/Test Equipment:**

- Screwdriver, flat-tip
- Wrench, open-end,  $\frac{7}{16}$  in.

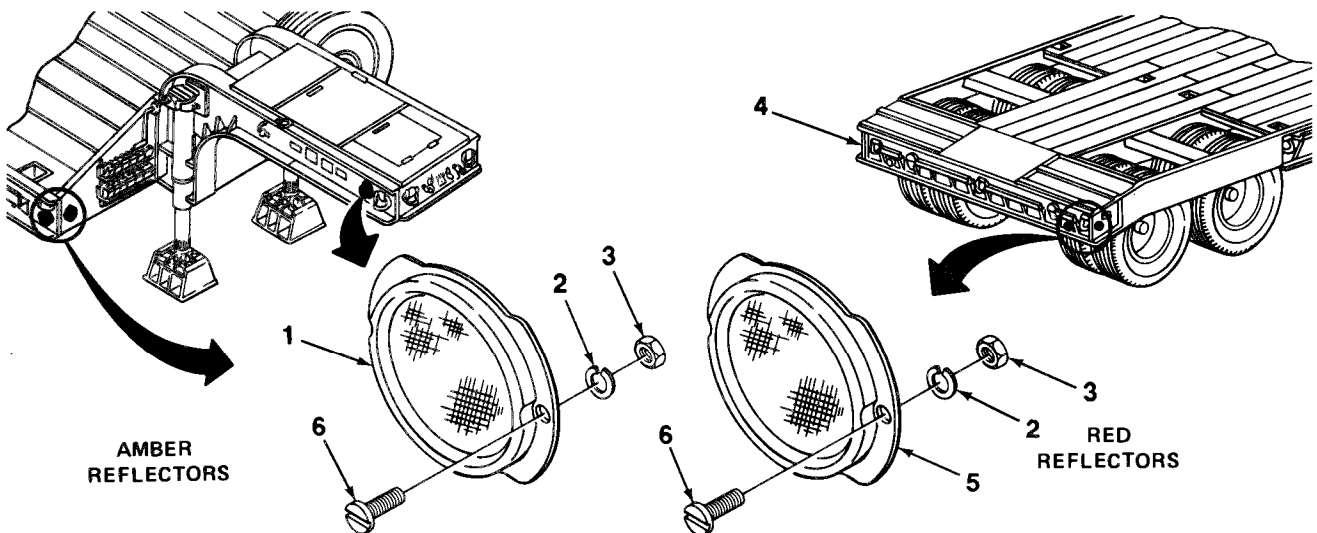
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

- There are two red reflectors at each rear corner of the semitrailer. There are two amber reflectors at each front corner and one on the left and right side of the gooseneck.
- All reflectors are removed the same way.

**REMOVAL**

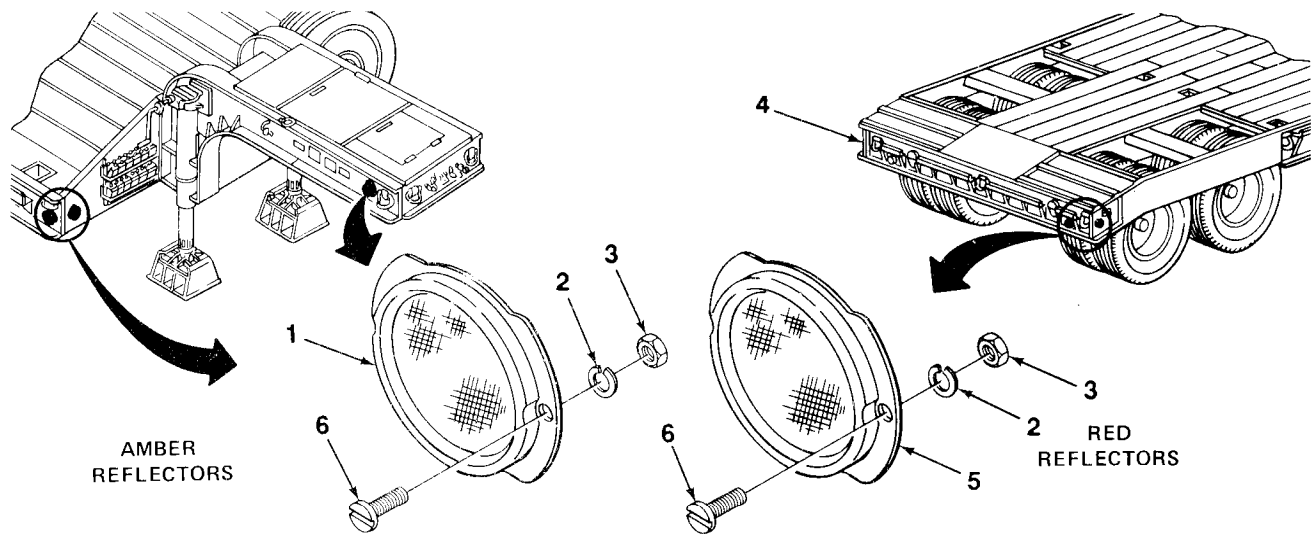
- |    |                                    |   |   |
|----|------------------------------------|---|---|
| 1. | Reflector (1 or 5)<br>to frame (4) | Two screws (6),<br>lockwashers (2),<br>and nuts (3) | Using flat-tip screwdriver and $\frac{7}{16}$ in. wrench, unscrew and remove. |
| 2. | Reflector (1 or 5)                 |   | Pull off.   |



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4-41. REFLECTORS (Con't)

| LOCATION              | ITEM   | ACTION  | REMARKS |
|-----------------------|--|---|---------|
| INSTALLATION          |  |   |         |
| 3. Frame (4)          | Reflector (1 or 5)                                 | a. Place in position.<br>b. Aline screw holes.                        |         |
| 4. Reflector (1 or 5) | Two screw (6),<br>lockwashers (2),<br>and nuts (3) | Using flat-tip screwdriver and 7/16 in. wrench, screw in and tighten. |         |



TASK ENDS HERE

4-42. DATA PLATES

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Hammer, ball-peen
- Punch, center-solid
- Screwdriver, Phillips

4-42. DATA PLATES (Con't)

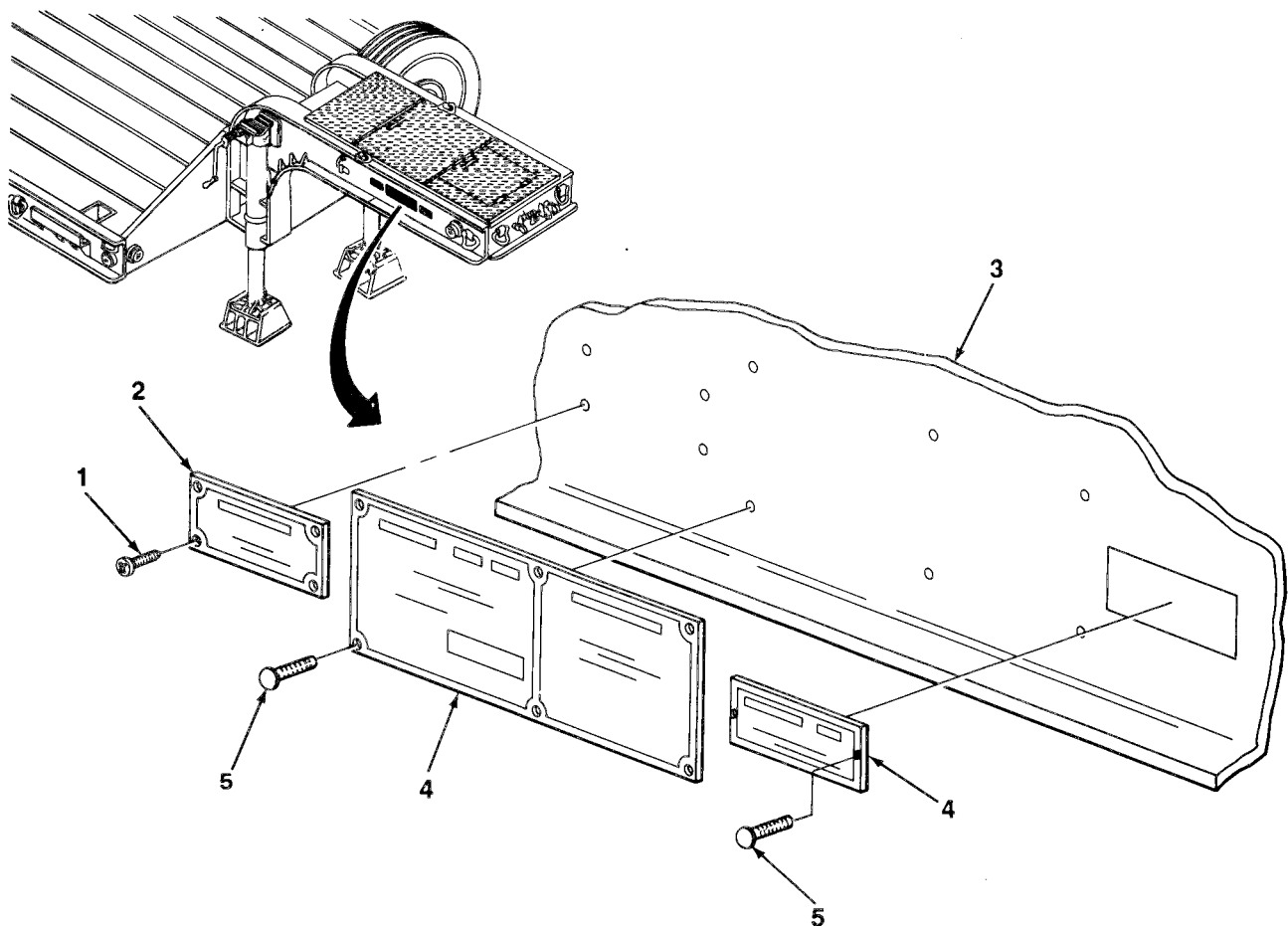
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

Various arrangements of data plates are used depending on the semitrailer. Data plates are fastened by either self-tapping or drive screws.

**REMOVAL**

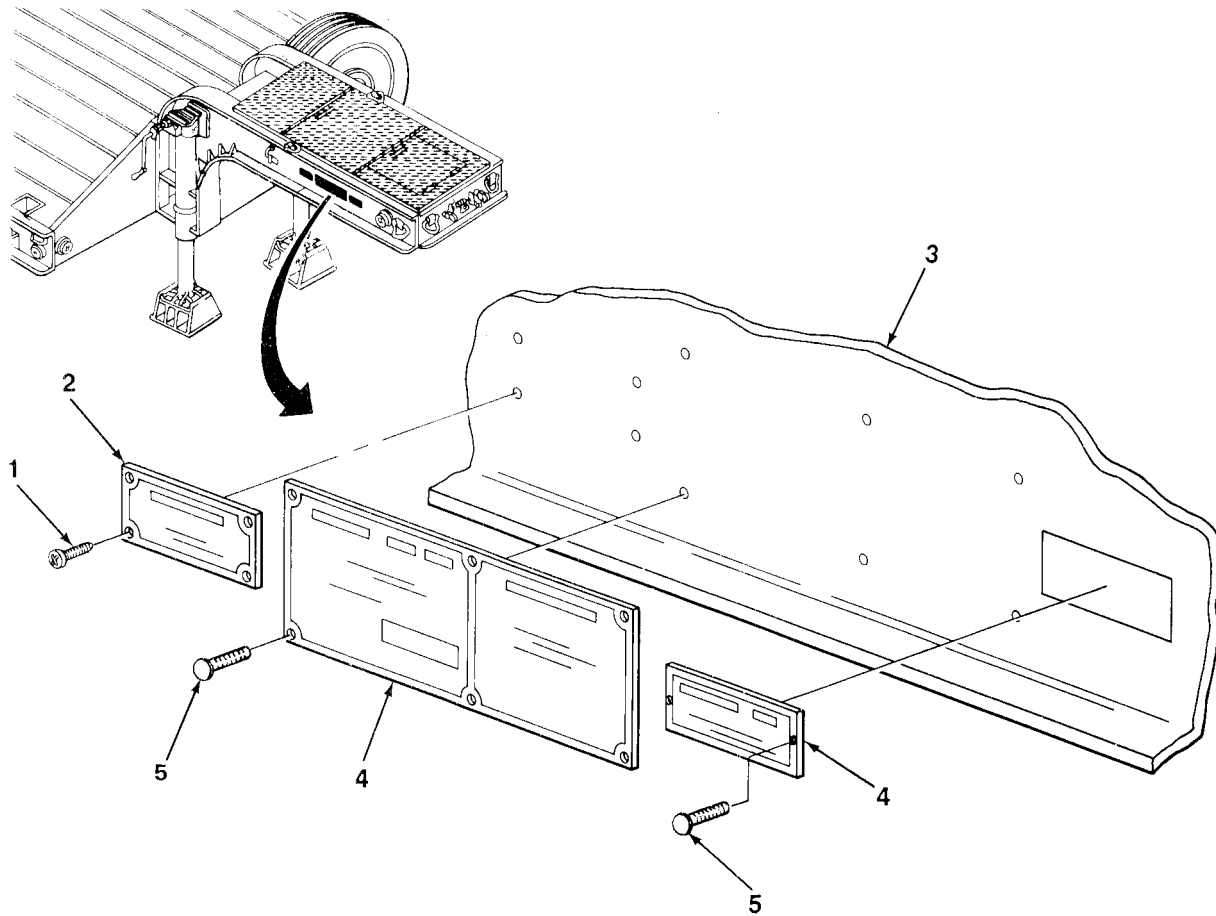
- |    |  |                          |  |
|----|--|--------------------------|--|
| 1. | Instruction plate (2) to right side of gooseneck (3) | Four screws (1)          | Using screwdriver, unscrew and take out. |
| 2. |  | Instruction plate (2)    | Remove.                                  |
| 3. | Instruction plate (4) to right side of gooseneck (3) | Drive screws (5)         | Using punch and hammer, remove.          |
| 4. |  | Identification plate (4) | Remove.                                  |



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4-42. DATA PLATES (Con't)

|                     | LOCATION                     | ITEM                     | ACTION   | REMARKS |
|---------------------|------------------------------|--------------------------|--|---------|
| <b>INSTALLATION</b> |                              |                          |  |         |
| 5.                  | Right side of gooseneck (3)  | Identification plate (4) | a. Place on right side of gooseneck (3).<br>b. Aline screw holes and hold. |         |
| 6.                  | Identification plate (4)     | Drive screws (5)         | Using hammer, drive in.  |         |
| 7.                  | Flight side of gooseneck (3) | Instruction plate (2)    | a. Place on right side of gooseneck (3).<br>b. Aline screw holes and hold. |         |
| 8.                  | Instruction plate (2)        | Four screws (1)          | Using screwdriver, install.  |         |



TASK ENDS HERE

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**Section X. PREPARATION FOR STORAGE OR SHIPMENT**

|   | <i>Page</i> |  | <i>Page</i> |
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| Care of Equipment in Administrative Storage .....         | 4-146       | Preparation of Equipment for Shipment .....                    | 4-148       |
| Definition of Administrative Storage .....                | 4-145       | Procedures for Common Components and Miscellaneous Items ..... | 4-147       |
| Exercise Schedule, Table 4-3 .....                        | 4-147       | Removal of Equipment from Administrative Storage .....         | 4-148       |
| General.. ..  | 4-145       |  |             |
| Preparation of Equipment for Administrative Storage ..... | 4-145       |  |             |

**4-43. GENERAL**

This section contains requirements and procedures for administrative storage of equipment that is issued to and in use by Army activities worldwide.

The requirements specified herein are necessary to maintain equipment in administrative storage in such a way as to achieve the maximum readiness condition.

Equipment that is placed in administrative storage should be capable of being readied to perform its mission within a 24 hour period, or as otherwise may be prescribed by the approving authority. Before equipment is placed in administrative storage, a current Preventive Maintenance Checks and Services (PMCS) should be completed and deficiencies corrected.

Report equipment in administrative storage as prescribed for all reportable equipment.

Perform inspections, maintenance services, and lubrication as specified herein.

Records and reports to be maintained for equipment in administrative storage are those prescribed by DA Pam 738-750, for equipment in use.

A 10% variance is acceptable on time, running hours, or mileage used to determine the required maintenance actions.

Accomplishment of applicable PMCS, as mentioned throughout this section, will be on a quarterly basis.

**4-44. DEFINITION OF ADMINISTRATIVE STORAGE**

The placement of equipment in administrative storage can be for short periods of time when a shortage of maintenance effort exists. Items should be ready for use within the time factors as determined by the directing authority. During the storage period, appropriate maintenance records will be kept.

**4-45. PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE**

*Storage Site.*

1. Select the best available site for administrative storage. Separate stored equipment from equipment in use. Conspicuously mark the area "Administrative Storage."
2. Covered space is preferred.
3. Open sites should be improved hardstand, if available. Unimproved sites should be firm, well-drained, and kept free of excessive vegetation.

*Storage Plan.*

1. Store equipment so as to provide maximum protection from the elements and to allow access for inspection, maintenance, and exercising. Anticipate removal or deployment problems and take suitable precautions.
2. Take into consideration environmental conditions, such as extreme heat or cold; high humidity; blowing sand, dust, or loose debris; soft ground; mud; heavy snows: or combinations thereof, and take adequate precautions.
3. Establish a fire plan and provide for adequate fire fighting equipment and personnel.



#### 4-45. PREPARATION OF EQUIPMENT FOR ADMINISTRATIVE STORAGE (Con't)

##### *Maintenance Services and Inspection,*

1. Maintenance Services. Prior to storage, perform the next scheduled unit PMCS.
2. Inspection. Inspect and approve the equipment prior to storage. Do not place equipment in storage in a nonmission-capable condition.

##### *Auxiliary Equipment and Basic Issue Items.*

1. Process auxiliary and basic issue items simultaneously with the major item to which they are assigned.
2. If possible, store auxiliary and basic issue items with the major item,
3. If stored apart from the major item, mark auxiliary and basic issue items with tags indicating the major item, its registration or serial number and location, and store in protective type closures. In addition, place a tag or list indicating the location of the removed items in a conspicuous place on the major item.

*Correction of Shortcomings and Deficiencies.* Correct all shortcomings and deficiencies prior to storage, or obtain a deferment from the approving authority.

*Lubrication.* Lubricate equipment in accordance with instructions in Chapter 3, Section I.

*General Cleaning, Painting, and Preservation.*

#### CAUTION

**Do not direct water or steam, under pressure, against unsealed electrical systems or any exterior opening. Failure to follow this caution may result in damage to equipment.**

1. Cleaning. Clean the equipment of dirt, grease, and other contaminants, but do not use vapor decreasing.
2. Painting. Remove rust and damaged paint by scraping, wire brushing, sanding, or buffing. Sand to a smooth finish and spot paint as necessary (TB 43-0209).
3. Preservation. After cleaning and drying, immediately coat unpainted metal surfaces with oil or grease, as appropriate (Chapter 3, Section I).

#### CAUTION

**Place a piece of barrier material between desiccant bags and metal surfaces.**

#### NOTE

Air circulation under draped covers reduces deterioration from moisture and heat.

4. Weatherproofing. Sunlight, heat, moisture (humidity), and dirt tend to accelerate deterioration. Install all covers (including vehicle protective closures) authorized for the equipment. Close and secure all openings except those required for venting and draining. Seal openings to prevent the entry of rain, snow, or dust. Insert desiccant when complete seal is required. Place equipment and provide blocking or framing to allow for ventilation and water drainage. Support cover away from item surfaces which may rust, rot, or mildew.

#### 4-46. CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE

*Maintenance Services.* After equipment has been placed in administrative storage, inspect, service, and exercise as specified herein.

*Inspection.* Inspection will usually be visual and must consist of at least a walkaround examination of all equipment to detect any deficiencies. Inspect equipment in open storage weekly and equipment in covered storage monthly.

**4-46. CARE OF EQUIPMENT IN ADMINISTRATIVE STORAGE (Con't)**

Inspect all equipment immediately after any severe storm or environmental change. The following are examples of things to look for during a visual inspection:

1. Low or flat tires.
2. Condition of preservatives, seals, and wraps.
3. Torn, frayed, or split canvas covers and tops.
4. Corrosion or other deterioration.
5. Missing or damaged parts.
6. Water in compartments.
7. Any other readily recognizable shortcomings or deficiencies.

*Repair During Administrative Storage.* Keep equipment in an optimum state of readiness. Accomplish the required services and repairs as expeditiously as possible. Whenever possible, perform all maintenance on-site.

*Exercising.* Exercise equipment in accordance with Table 4-3, *Exercise Schedule*, and the following instructions.

1. Vehicle Major Exercise. Depreserve equipment by removing only that material restricting exercise. Close all drains, remove chock blocks, and perform all before-operation checks. Couple semitrailer to tractor, and drive for at least 25 mi (40 km). Make several right and left 90° turns. Make several hard braking stops without skidding. Perform the following during exercising when it is convenient and safe: operate all other functional components and perform all during- and after-operation checks.
2. Scheduled Services. Scheduled services will include inspection per subparagraph *Inspection* above, and will be conducted in accordance with Table 4-3. Lubricate in accordance with instructions in Chapter 3, Section I.
3. Corrective Action. Immediately take action to correct shortcomings and deficiencies noted. Record inspection and exercise results on DA Form 2404. Record and report all maintenance actions on DA Form 2407. After exercising, restore the preservation to the original condition. Replenish lubricants used during exercising, and note the amount on DA Form 2408.

**Table 4-3. Exercise Schedule.**

| Weeks              | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
|--------------------|---|---|---|---|----|----|----|----|----|----|----|----|
| PMCS               |   |   |   |   |    | x  |    |    |    |    |    | x  |
| Scheduled Services |   | x |   | x |    | x  |    | x  |    | x  |    |    |
| Major Exercise     |   |   |   |   |    |    |    |    |    |    |    | x  |

*Rotation.* Rotate items in accordance with any rotational plan that will keep the equipment in an operational condition and reduce the maintenance effort.

**4-47. PROCEDURES FOR COMMON COMPONENTS AND MISCELLANEOUS ITEMS**

*Tires.* Visually inspect tires during each walkaround inspection. This inspection includes checking tires with a tire gage. Inflate, repair, or replace as necessary those found to be low, damaged, or excessively worn. Mark inflated and repaired tires with a crayon for checking at the next inspection.

*Air lines and Air Reservoir.* Drain air lines and air reservoir of condensation, and leave draincock open. Attach a caution tag, annotated to provide for closing of draincock when the equipment is exercised. Place tags in a conspicuous location.

*Seals.* Seals may develop leaks during storage, or shortly thereafter. If leaking persists, refer to the applicable maintenance section in this manual for corrective maintenance procedures.

#### **4-48. REMOVAL OF EQUIPMENT FROM ADMINISTRATIVE STORAGE**

*Activation.* Restore the equipment to normal operating condition in accordance with the instructions contained in Chapter 4, Section II.

*Servicing.* Resume the maintenance service schedule in effect at the commencement of storage, or service the equipment before the scheduled dates in order to produce a staggered maintenance workload.

#### **4-49. PREPARATION OF EQUIPMENT FOR SHIPMENT**

Refer to TM 55-200, TM 55-601, and TM 743-200-1 for additional instructions on processing, storage, and shipment of materiel.

Semitrailers that have been removed from storage for shipment do not have to be reprocessed if they will reach their destination within the administrative storage period. Reprocess only if inspection reveals any corrosion, or if anticipated in-transit weather conditions make it necessary.

When a semitrailer is received and has already been processed for domestic shipment, as indicated on DD Form 1397, the semitrailer does not have to be reprocessed for storage unless corrosion and deterioration are found during the inspection upon receipt. List on SF 364 all discrepancies found because of poor preservation, packaging, packing, marking, handling, loading, storage, or excessive preservation. Repairs that cannot be handled by the receiving unit must have tags attached listing needed repairs. A report of these conditions will be submitted by the unit commander for action by an ordnance maintenance unit.

## CHAPTER 5

### DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE

#### 5-1. OVERVIEW

This chapter contains information covering repair parts; special tools; test, measurement, and diagnostic equipment (TMDE); support equipment; general maintenance instructions; and detailed maintenance tasks that direct support and general support maintenance personnel may perform to maintain the semitrailer.

|             |  | <i>Page</i> |
|-------------|--|-------------|
| Section I   | Repair Parts; Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment . . . . . | 5-1         |
| Section II  | General Maintenance Instructions . . . . .   | 5-1         |
| Section III | Rear Axle Maintenance . . . . .  | 5-3         |
| Section IV  | Brakeshoe Maintenance . . . . .  | 5-14        |
| Section V   | Drum and Tire Maintenance . . . . .  | 5-17        |
| Section VI  | Body Maintenance . . . . .   | 5-20        |

### Section I. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

|                                      | <i>Page</i> |  | <i>Page</i> |
|--------------------------------------|-------------|--|-------------|
| Common Tools and Equipment . . . . . | 5-1         | Special Tools; Test, Measurement, and Diagnostic Equipment (TMDE); and Support Equipment . . . . . |             |
| Repair Parts . . . . .               | 5-1         |  | 5-1         |

#### 5-2. COMMON TOOLS AND EQUIPMENT

Refer to the Modified Table of Organization and Equipment (MTOE) that applies to your unit for authorized common tools and equipment.

#### 5-3. SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT

For a listing of all tools required to maintain the semitrailer, refer to Section III of the Maintenance Allocation Chart (MAC), Appendix B of this manual.

#### 5-4. REPAIR PARTS

Repair parts are listed and illustrated in Appendix F of this manual.

### Section II. GENERAL MAINTENANCE INSTRUCTIONS

|                               | <i>Page</i> |                       | <i>Page</i> |
|-------------------------------|-------------|-----------------------|-------------|
| General Information . . . . . | 5-2         | Scope . . . . .       | 5-1         |
|                               | 5-2         | Work Safety . . . . . | 5-2         |
| Inspection . . . . .          | 5-3         |                       |             |

#### 5-5. SCOPE

These general maintenance instructions contain general shop practices and specific methods you must be familiar with to properly maintain the semitrailer. You should read and understand the procedures here before starting direct support and general support tasks on the semitrailer.

## 5-6. WORK SAFETY

Before you start a task, think about the risks and hazards to your personal safety and the safety of others. Wear protective gear such as safety goggles or lenses, safety shoes, rubber apron, or gloves. Protect yourself against injury.

When lifting heavy parts, have someone help you. Make sure that lifting/jacking tool is working properly, that it meets the weight requirement of the part to be lifted, and that it is securely fastened to the part.

Always use power tools carefully.

Observe all WARNINGS and CAUTIONS found in this manual.

## 5-7. GENERAL INFORMATION

Before you begin a task, you should find out how much repair, modification, or replacement is needed to fix the equipment as described in this manual. Sometimes the reason for equipment failure can be seen right away, and therefore complete teardown is not necessary for repair. Disassemble equipment only as far as necessary to repair or replace broken parts.

All tags and forms attached to the equipment must be checked to learn the reason for removal from service. Also, check all Modification Work Orders (MWO) and Technical Bulletins (TB) for equipment changes and updates.

In some cases you may damage a part just by removing it. If the part appears to be good, and other parts behind it are not defective, leave it on and continue with procedure.

Here are a few simple rules:

1. Don't take out dowel pins or studs unless loose, bent, broken, or otherwise damaged.
2. Don't pull bearings or bushings unless damaged. If you have to get at parts behind them, pull off bearings or bushings very carefully.
3. Replace all gaskets, seals, and O-rings.

## 5-8. CLEANING

All parts should be cleaned before inspection and assembly and after repair. Wipe off dirt, grease, and grime from parts before removal.

### **WARNING**

- **Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 138°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**
- **Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.**

Clean inside and outside surfaces of metallic parts and all areas that get greasy and oily with dry cleaning solvent (Item 13, Appendix E). Clean out sludge and gum with stiff brush. Put small metal parts in a wire mesh basket before dipping in dry cleaning solvent. Use steam cleaning to take off grease and dirt build-up after dry cleaning solvent has been applied. Dry parts with clean dry rags. Clean off rust on metallic parts with a wire brush, abrasive cloth, or sandpaper. Use low pressure compressed air to clear away rust, cloth particles, and sand.

Clean bearings and bearing cups in accordance with TM 9-214, *Inspection, Care, and Maintenance of Antifriction Bearings*.

**5 - 8 . CLEANING (Con't)**

For additional information on cleaning procedures and materials, refer to TM 3-247, *Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Items Including Chemicals*.

Cover parts after cleaning to protect them from dust and debris, Parts that can rust should be lightly oiled.

**5-9. INSPECTION**

Inspect parts to find out which parts can be used and which parts must be replaced. Specifications and tolerances are given in this manual, but sometimes you, the inspector, must make the decision which parts are good, and which parts must be replaced.

To find out if you can use a part that is otherwise in good condition, check the clearance between mating surfaces. If clearance is within tolerance, the part may be used.

Carefully look at all machined surfaces and polished areas. Use a strong light to shine across polished surfaces to check for score marks, cracks, and other signs of wear.

Inspect gears for cracked, chipped, and worn down teeth. Look for metal-to-metal wear marks and pitting. When a gear is found to be damaged, replace it and its mating gear.

**Section III. REAR AXLE MAINTENANCE**

|                                  |             |   |             |
|----------------------------------|-------------|---|-------------|
|                                  | <i>Page</i> |   | <i>Page</i> |
| Axle and Shackle Boxes . . . . . | 5-6         | Trunnion Axle and Walking Beams . . . . . | 5-10        |
| Tandem Axle Assembly . . . . .   | 5-3         |   |             |

**5-10. TANDEM AXLE ASSEMBLY**

---

*This Task Covers:*

- |            |                 |
|------------|-----------------|
| a. Removal | b. Installation |
|------------|-----------------|
- 

*Initial Setup:*

**Equipment Conditions:**

- Air released from system (para 3-8).
- Chock blocks removed (para 2-5).

**Materials/Parts:**

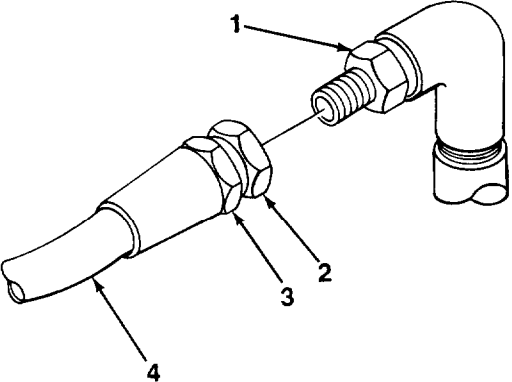
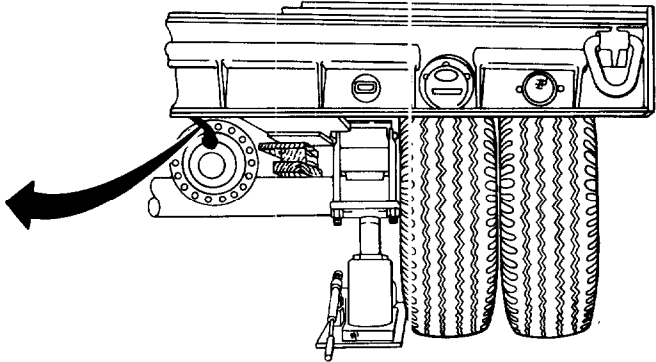
- Dry cleaning solvent (item 13, Appendix E)
- Rags (item 11, Appendix E)

Personnel Required: Three

**Tools/Test Equipment:**

- Handie, socket wrench, 3/4 in. drive, 18 in.
  - Hoist, 10 ton
  - Jack, hydraulic hand, 20 ton (two required)
  - Pipe, 1 in. ID, 30 in.
  - Pliers, long round-nose
  - Socket, 15/16 in. 3/4 in. drive
  - Trestle, motor vehicle maintenance, 20 ton
  - Wrench, open-end, 3/4 in.
  - Wrench, open-end, 7/8 in. (two required)
  - Wrench, open-end, 15/16 in.
-

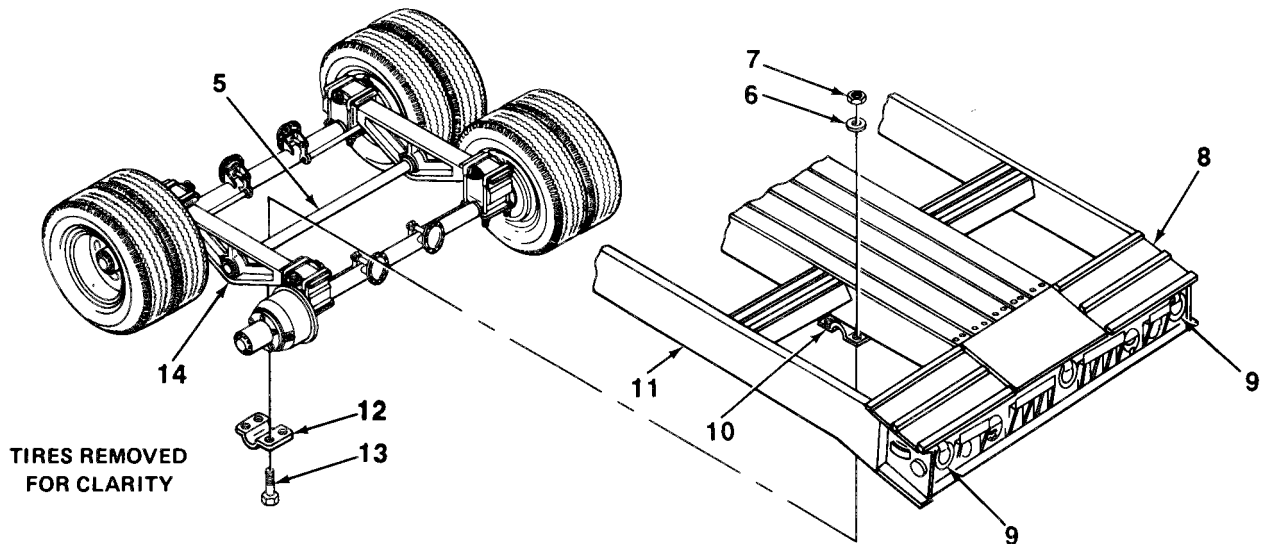
5-10. TANDEM AXLE ASSEMBLY (Con't)

| LOCATION   | ITEM   | ACTION  | REMARKS   |
|--|--|---|---|
| <b>REMOVAL</b>   |  |   |   |
| 1.   | Four adapters (1)  | Four outer union nuts (2), inner union nuts (3), and hoses (4)                      | <p>a. Using two 7/8 in. wrenches, hold inner union nut (3) and unscrew outer union nut (2) until it is free of adapter(1).</p> <p>b. Using 3/4 in. and 7/8 in. wrenches, unscrew outer union nut (2) and remove.</p> <p>c. Move hose (4) away from adapter (1).</p> |
|  |  |  |   |
| 2.   | Two housing bearing units (1 O) and housing bearing units (12) | Eight screws (13), lockwashers (6), and nuts (7)                                    | Using 3/4 in. socket, handle, pipe, and 3/4 in. wrench, unscrew and take out.   |
| 3.   | Trunnion axle (5)  | Two housing bearing units (12)  | Remove.   |
| 4.   | Semitrailer (8)  | Two lashing rings (9)   | Attach hoist chains and cable. Lift rear end of semitrailer (8). Using two assistants, roll tandem axle assembly (14) from under semitrailer.   |
| 5.   |  | Two main beams (11)   | <p>a. Place two jacks under main beams (11), just forward of tandem axle assembly (14).</p> <p>b. Lower semitrailer (8) until supported by jacks.</p>   |
| 6.   |  | Tandem axle assembly (14)   | Roll tandem axle assembly (14) backward to clear semitrailer (8).   |
| <b>INSTALLATION</b>  |  |   |   |
| 7.   | Semitrailer (8)  | Two lashing rings (9)   | Raise semitrailer (8) using hoist and chain until tandem axle assembly (14) can be placed under semitrailer.  |
| 8.   | Two housing bearing units (1 O)                                | Tandem axle assembly (14)   | Using two assistants, roll tandem axle assembly(14) under semitrailer (8) and position trunnion axle (5) directly under housing bearing units (10).   |

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5-10. TANDEM AXLE ASSEMBLY (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



|     |   |  |  |
|-----|---|--|--|
| 9.  |   | Two main beams (11)                              | Take out jacks.  |
| 10. | Tandem axle assembly (14)                                     | Semitrailer (8)                                  | Using hoist, lower onto tandem axle assembly (14).   |
| 11. | Trunnion axle (5)   | Two housing bearing units (12)                   | Place in position and hold.  |
| 12. | Two housing bearing units (10) and housing bearing units (12) | Eight screws (13), lockwashers (6), and nuts (7) | Screw in and tighten using $15/16$ in. socket, handle, pipe, and $15/16$ in. wrench.   |
| 13. | Four adapters (1)   | Four hoses (4)                                   | Move into position.  |
| 14. | Four outer union nuts (2) and inner union nuts (3)            |  | a. Screw on outer union nut (2) and tighten using $3/4$ in. and $7/8$ in. wrenches.<br>b. Tighten inner union nut (3) to outer union nut (2) using two $7/8$ in. wrenches. |

**FOLLOW-ON MAINTENANCE:**

- Install chock blocks (para 2-5).
- Check for air leaks (para 4-28).

**TASK ENDS HERE**



5-11. AXLE AND SHACKLE BOXES

This Task Covers:

- |                |                               |
|----------------|-------------------------------|
| a. Removal     | d. Inspection and Replacement |
| b. Disassembly | e. Assembly                   |
| c. Cleaning    | f. Installation               |

Initial Setup:

Equipment Conditions:

- Tandem axle assembly removed (para 5-10).

Materials/Parts:

- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

References: TM 9-237

Personnel Required: Two

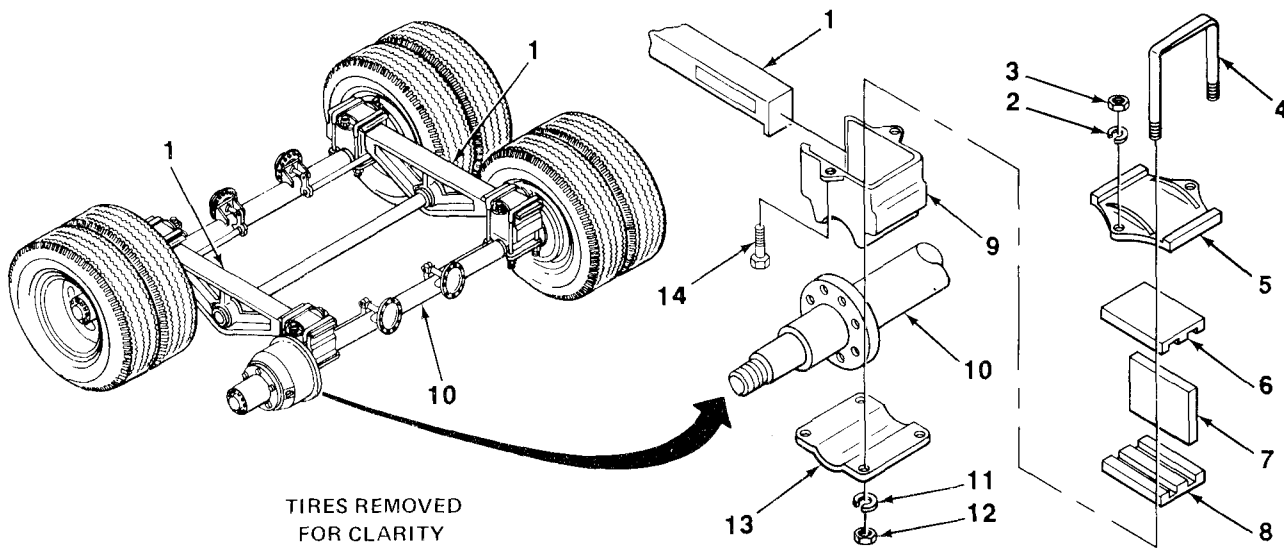
Tools/Test Equipment:

- Hammer, sledge
- Handle, socket wrench, 18 in., 3/4 in. drive
- Hoist, with lifting sling, 5 ton
- Pipe, 1 in. ID, 30 in.
- Socket, 15/16 in., 3/4 in. drive
- Socket, 1 1/4 in., 3/4 in. drive
- Torch outfit, cutting and welding
- Trestle, motor vehicle maintenance, 10 ton (two required)
- Wrench, open-end, 15/16 in.

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

REMOVAL

- |    |                              |   |  |
|----|------------------------------|---|--|
| 1. | Tandem axle assembly (10)    | Two walking beams (1)                                   | Attach lifting sling to walking beams (1) and secure sling to hoist. |
| 2. | Two access covers (5 and 13) | Four U-bolts (4), eight lockwashers (11), and nuts (12) | Using 1 1/4 in. socket, handle, and pipe, unscrew and take out.      |



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**5-11. AXLE AND SHACKLE BOXES (Con't)**

|                    | LOCATION                     | ITEM  | ACTION<br>REMARKS  |
|--------------------|------------------------------|---|--|
| 3.                 | Axle (10)                    | Two access covers (13)                            | Remove.  |
| 4.                 | Two access covers (5)        | Four bolts (14), lockwashers (2), and nuts (3)    | Using $1\frac{5}{16}$ in. socket, handle, and pipe, unscrew and take off.  |
| 5.                 | Shackle box bracket (9)      | Two access covers (5) and top linings (6)         | Remove.  |
| 6.                 | Axle (10)                    | Walking beams (1)                                 | a. Using hoist, raise until axle (10) can be rolled out from under walking beams (1).<br>b. Roll axle away from walking beams (1).<br>c. Lower walking beams (1) onto jacks. |
| <b>DISASSEMBLY</b> |                              |   |  |
| 7.                 |                              | Camshaft  | Remove (para 4-25).  |
| 8.                 |                              | Airbrake chamber                                  | Remove (para 4-30).  |
| 9.                 | Two shackle box brackets (9) | Four rubber strips (7) and two bottom linings (8) | Take out.  |
| 10.                | Axle (10)                    | Two shackle box brackets (9)                      | a. Using torch outfit, cut off.<br>b. Remove axle (10) from jacks.   |

**CLEANING**

**WARNING**

**Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F - 130°F (38°C - 59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.**

|     |  |           |   |
|-----|--|-----------|---|
| 11. |  | Axle (10) | a. Clean with dry cleaning solvent and wire brush.<br>b. Wipe dry with clean, dry rags. |
|-----|--|-----------|---|

**INSPECTION AND REPLACEMENT**

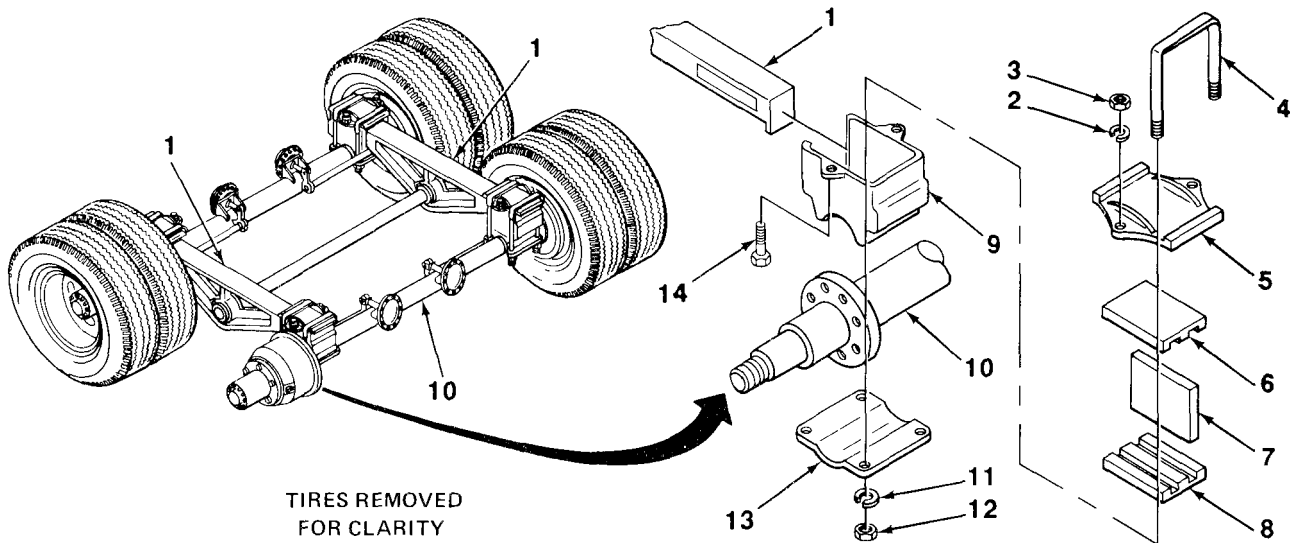
**NOTE**

**Replace damaged or defective parts as needed.**

|     |  |           |   |
|-----|--|-----------|---|
| 12. |  | Axle (10) | a. Check threaded ends for damage, burrs, distortion, and evidence of cross-threading.<br>b. Check bearing seat surfaces for scoring, galling, nicks, raised metal, and discoloration caused by heat. |
|-----|--|-----------|---|

5-11. AXLE AND SHACKLE BOXES (Con't)

|                 | LOCATION  | ITEM   | ACTION  | REMARKS |
|-----------------|-----------|--|---|---------|
| 12.             | (Con't)   |  | c. Check spindles for bending and cracks.<br>d. Check axle tube for bad dents, cracks, and bends. |         |
| 13.             |           | Two top linings (6),<br>bottom linings (8),<br>and four rubber<br>strips (7) | Check for wear and brittleness.   |         |
| 14.             | Jacks     | New axle (10)  | Place new axle (10) on jacks.   |         |
| <b>ASSEMBLY</b> |           |  |   |         |
| 15.             |           | Camshaft   | Install (para 4-24).  |         |
| 16.             |           | Airbrake chamber   | Install (para 4-30).  |         |
| 17.             | Axle (10) | Shackle box<br>brackets (9)  | Put in position and weld (TM 9-237)   |         |



INSTALLATION

|     |                                 |   |  |  |
|-----|---------------------------------|---|--|--|
| 18. |                                 | Walking beams (1)                                       | a. Using hoist, raise walking beams (1) off jacks.<br>b. Position axle (10) under walking beams (1). |  |
| 19. | Two shackle<br>box brackets (9) | Two bottom linings<br>(8) and four rubber<br>strips (7) | Put in place.  |  |
| 20. | Axle (10)                       | Two shackle<br>box brackets (9)                         | Put in position, directly under walking beams (1).   |  |

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**5-11. AXLE AND SHACKLE BOXES (Con't)**

|     | LOCATION   | ITEM  | ACTION   | REMARKS |
|-----|--|---|--|---------|
| 21. | Walking beam assembly (1)                                  | Two shackle box brackets (9)                            | a. Using hoist, lower walking beams (1) until firmly seated into shackle box brackets (9), with lip of each beam inserted into slot of shackle box brackets.<br>b. Using hoist, lower walking beam assembly until shackle box brackets (9) bear full weight of assembly, and lifting sling is slack. |         |
| 22. | Two shackle box brackets (9) and walking beam assembly (1) | Two top linings (6) and access covers (5)               | Put on.  |         |
| 23. | Two access covers (5) and shackle box brackets (9)         | Four bolts (14), lockwashers (2), and nuts (3)          | Screw in and tighten using $1\frac{5}{16}$ in. socket and handle.  |         |
| 24. | Axle (10)  | Two access covers (13)                                  | Place in position.   |         |
| 25. | Two access covers (5 and 13)                               | Four U-bolts (4), eight lockwashers (11), and nuts (12) | Screw in and tighten, using $1\frac{1}{4}$ in. socket and handle.  |         |
| 28. | Tandem axle assembly (10)                                  | Walking beam assembly (1)                               | Take off lifting sling and hoist.  |         |

**FOLLOW-ON MAINTENANCE:**

- Install tandem axle assembly (para 5-10).

**TASK ENDS HERE**

**5-12. TRUNNION AXLE AND WALKING BEAMS**

*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:*

**Equipment Conditions:**

- Tandem axle assembly removed (para 5-10).

**Materials/Parts:**

- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

**Personnel Required:** Two

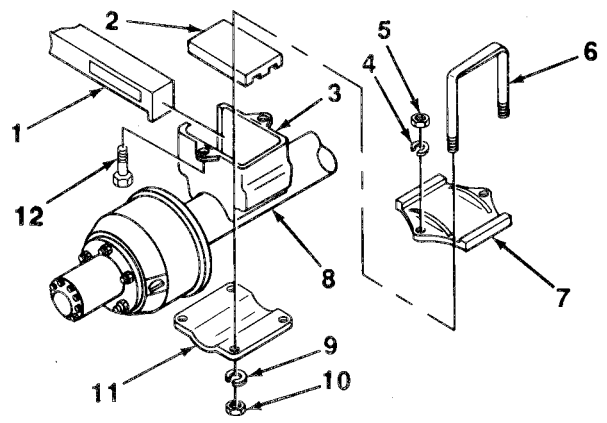
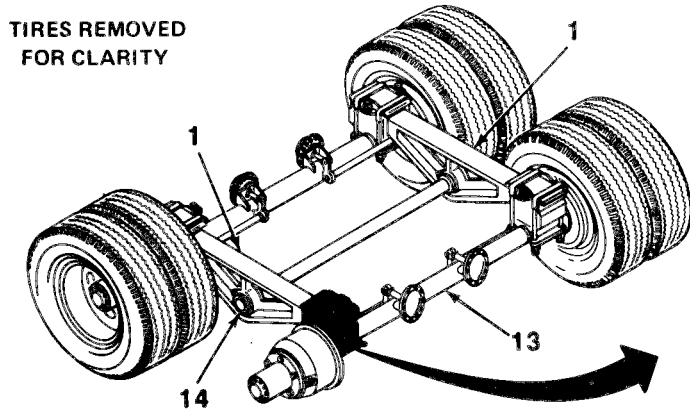
**Tools/Test Equipment:**

- Drift, brass
- Hammer, ball-peen
- Hammer, sledge
- Handle, socket wrench, 18 in., 3/4 in. drive
- Hoist, with lifting sling
- Pipe, 1 in. ID, 30 in.
- Press, arbor
- Socket, 15/16 in., 3/4 in. drive
- Socket, 1 in., 3/4 in. drive
- Socket, 1 1/4 in., 3/4 in. drive
- Trestle, motor vehicle maintenance, 10 ton (four required)
- Wrench, open-end, 7/16 in.
- Wrench, open-end, 15/16 in.
- Wrench, pipe

|                | LOCATION  | ITEM   | ACTION<br>REMARKS   |
|----------------|---|--|---|
| <b>REMOVAL</b> |   |  |   |
| 1.             | Tandem axle assembly (13)                           | Two walking beams (1)                                | a. Attach and secure lifting sling.<br>b. Using hoist, lift sling until slack is out of cables.   |
| 2.             | Four access covers (7 and 11)                       | Eight U-bolts (6), 16 lockwashers (9), and nuts (10) | Using 1 1/4 in. socket, handle, and pipe, unscrew and take off.   |
| 3.             | Two axles (8)                                       | Four access covers (11)                              | Remove.   |
| 4.             | Four access covers (7) and shackle box brackets (3) | Eight bolts (12), lockwashers (4), and nuts (5)      | Using 15/16 in. socket, handle, and 15/16 in. wrench, unscrew and take off.   |
| 5.             | Four shackle box brackets (3)                       | Four access covers (7) and top linings (2)           | Remove.   |
| 6.             | Tandem axle assembly (13)                           | Two walking beams (1)                                | a. Using hoist, lift walking beams (1) off tandem axle assembly (13), move out of way, and set down on four jackstands.<br>b. Take off lifting sling.<br>c. Attach sling to trunnion axle (14). |

5-12. TRUNNION AXLE AND WALKING BEAMS (Con't)

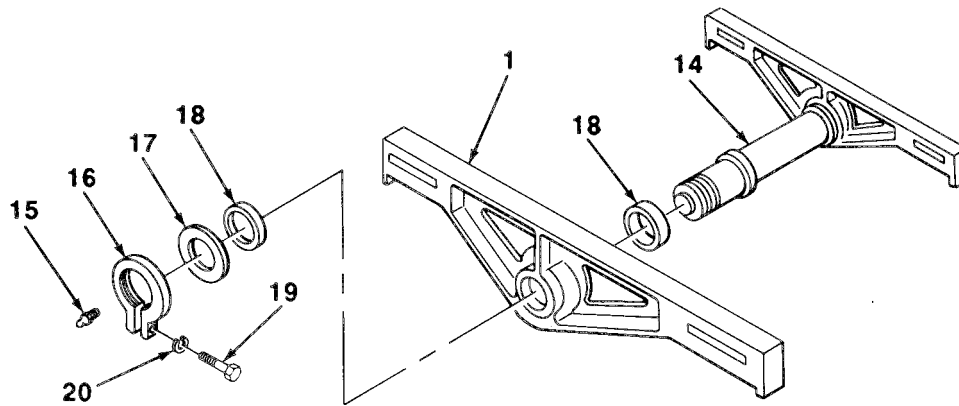
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



**NOTE**

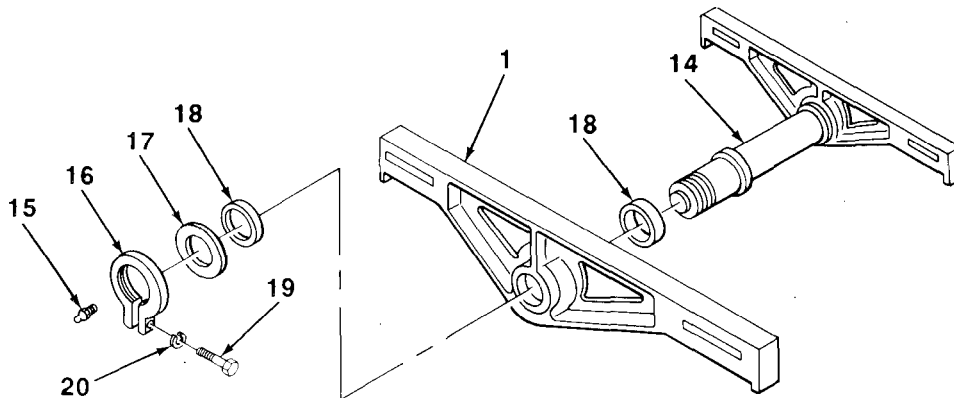
Steps 7 through 10 cover removal of one walking beam; procedure is same for other walking beam.

|     |                                   |                                |  |
|-----|-----------------------------------|--------------------------------|--|
| 7.  | Trunnion axle (14) and clamp (16) | Screw (19) and lockwasher (20) | Using 1 in. socket and handle, unscrew and takeoff.  |
| 8.  | Trunnion axle (14)                | Clamp (16) and washer (17)     | Using pipe wrench, unscrew and take off.   |
| 9.  |                                   | Lubrication fitting (15)       | Using $\frac{7}{16}$ in. wrench, unscrew and take off.   |
| 10. |                                   | Walking beam (1)               | With help from assistant, pull off.<br><b>You may have to tap walking beam (1) with hammer to free walking beam.</b> |
| 11. | Walking beam (1)                  | Two sleeve bushings (18)       | Using arbor press, press out.  |



5-12. TRUNNION AXLE AND WALKING BEAMS (Con't)

|              | LOCATION           | ITEM                           | ACTION   | REMARKS |
|--------------|--------------------|--------------------------------|--|---------|
| INSTALLATION |                    |                                |  |         |
| 12.          | Walking beam (1)   | Two sleeve bushings (18)       | Using arbor press, press in.   |         |
| 13.          | Trunnion axle (14) | Walking beam (1)               | a. With help of an assistant, slide walking beam (1) onto trunnion axle (14).<br>b. Put two jackstands under walking beam (1). |         |
| 14.          |                    | Washer (17) and clamp (16)     | Screw on and tighten using pipe wrench.  |         |
| 15.          | Clamp (16)         | Lockwasher (20) and screw (19) | Screw in and tighten using 1 in. socket and handle.  |         |
| 16.          | Trunnion axle (14) | Lubrication fitting (15)       | Screw in and tighten using $\frac{7}{16}$ in. wrench.  |         |

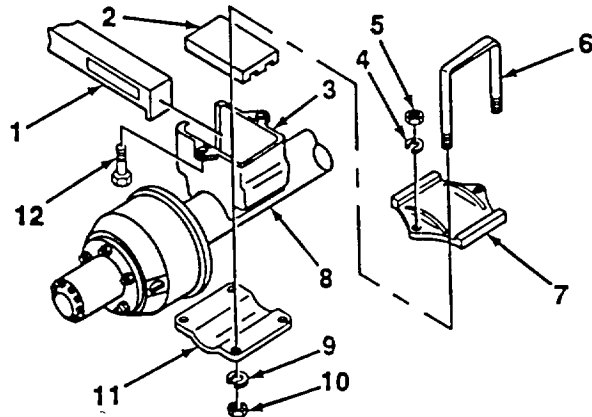
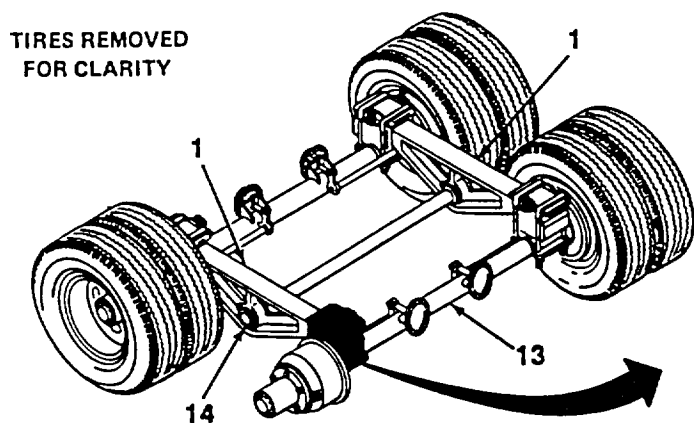


|     |                               |   |   |  |
|-----|-------------------------------|---|---|--|
| 17. | Tandem axle assembly (13)     | Two walking beams (1)                           | a. Attach lifting sling to walking beams (1).<br>b. Move into position over tandem axle assembly (13).  |  |
| 18. | Four shackle box brackets (3) | Two walking beams (1)                           | Using hoist, lower into shackle box brackets (3).<br><b>Lip of each walking beam (1) should seat and lock into slot in shackle box bracket (3).</b> |  |
| 19. |                               | Four top linings (2) and four access covers (7) | Put on.   |  |
| 20. | Four access covers (7)        | Eight bolts (12), lockwashers (4), and nuts (5) | Screw on and tighten using $1\frac{5}{16}$ in. wrench, $1\frac{5}{16}$ in. socket, and handle.  |  |
| 21. | Two axles (8)                 | Four access covers (11)                         | Put in position   |  |

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5-12. TRUNNION AXLE AND WALKING BEAMS (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



|     |                               |  |   |
|-----|-------------------------------|--|---|
| 22. | Four access covers (7 and 11) | Eight U-bolts (6), 16 lockwashers (9), and nuts (10) | Screw on and tighten using 1 1/4 In. socket and handle. |
| 23. | Tandem axle assembly (13)     | Two walking beams (1)                                | Take off lifting sling.                                 |

**FOLLOW-ON MAINTENANCE:**

- Install tandem axle assembly (para 5-10).
- Lubricate tandem axle assembly (para 3-2).

**TASK ENDS HERE**



**Section IV. BRAKESHOE MAINTENANCE**

**[Paragraph 5-13 Deleted]**

[Paragraph 5-13 Deleted]

[Paragraph 5-13 Deleted]

[Paragraph 5-13 Deleted]

**Section V. DRUM AND TIRE MAINTENANCE**

|           | <i>Page</i> |             | <i>Page</i> |
|-----------|-------------|-------------|-------------|
| Drum..... | 5-17        | Tires ..... | 5-19        |

**5-14. DRUM**

---

*This Task Covers:*

- a. Cleaning
  - b. Inspection and Repair
- 

Initial Setup:

**Equipment Conditions:**

- Drum removed (para 4-33).

**Tools/Test Equipment:**

- Micrometer, inside, with extensions

**Materials/Parts:**

- Abrasive cloth (Item 2, Appendix E)
- Dry cleaning solvent (Item 13, Appendix E)
- Rags (Item 11, Appendix E)

5-14. DRUM (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

CLEANING

**WARNING**

- DO NOT handle brakeshoes, brakedrums, or other brake components unless area has been properly cleaned. There may be asbestos dust on these components which can be dangerous if you touch it or breathe it. Wear an approved filter mask and gloves. Never use compressed air or a dry brush to clean brake components. Dust may be removed using an Industrial-type vacuum cleaner. Clean dust or mud away from brake components with water and a wet, soft brush or cloth. Failure to follow this warning may result in serious illness or death to personnel.
- Dry cleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

Drum (1)

- a. Clean in dry cleaning solvent.
- b. Allow to dry.

**Do not use compressed air.**

INSPECTION AND REPAIR

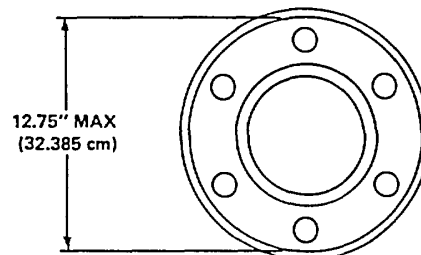
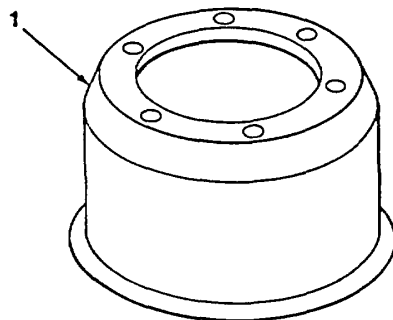
**NOTE**

For more information on how to inspect and repair parts, refer to Chapter 5, Section II, General Maintenance Instructions.

2.

Drum (1)

- a. Check stud holes for wear, cracks, and any other damage.



5-14. DRUM (Con't)

| LOCATION   | ITEM     | ACTION  | REMARKS  |
|------------|----------|---|--|
| 2. (Con't) |          | b. Check for heat discoloration, scoring, warping, and cracks on braking surface.<br><b>Cracked drums must be replaced.</b> |  |
|            |          |   | <b>NOTE</b>  |
|            |          |   | <ul style="list-style-type: none"> <li>- Slight scoring can be rubbed out by polishing with abrasive cloth. Heavy scoring and out-of-round conditions must be corrected by turning the drum on a refinishing lathe.</li> <li>- When one drum on one axle is refinished, the other drum on that axle must be turned to the same specification.</li> </ul> |
| 3.         | Drum (1) | a. Using micrometer, check runout of braking surface.   | <b>Runout must not be greater than 0.01 in. (0.254 mm).</b>  |
|            |          | b. Refinish braking surface on lathe if runout exceeds tolerance.   | <b>Replace drum if inside diameter of braking surfaces is greater than 12.75 in. (32.385 cm).</b>  |
|            |          |   | <b>FOLLOW-ON MAINTENANCE:</b>  |
|            |          |   | <ul style="list-style-type: none"> <li>- Install drum (paras 4-33).</li> <li>- Adjust brakes (para 4-22).</li> </ul>   |

TASK ENDS HERE

5-15. TIRES

Repair semitrailer tires In accordance with Instructions in TM 9-2610-200-24.

Section VI. BODY MAINTENANCE

|                            |             |  |             |
|----------------------------|-------------|--|-------------|
|                            | <i>Page</i> |  | <i>Page</i> |
| Deck and Loading Ramp..... | 5-20        | Frames Reinforcement Installation..... | 5-22        |

**5-16. DECK AND LOADING RAMP**

*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:*

**Tools/Test Equipment:**

- Hammer, hand, carpenter's
- Pliers, slip-joint, straight-nose
- Wrench, open-end, 3/4 in.

**Personnel Required:** Two

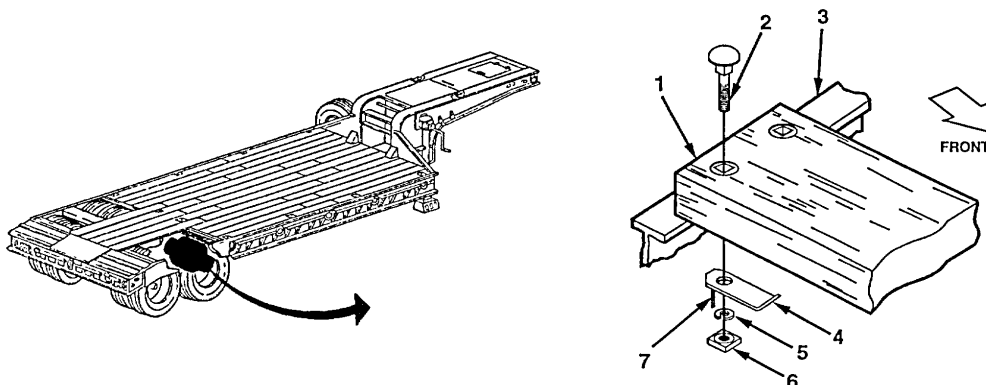
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

**NOTE**

**This procedure covers replacement of one deck board on deck and loading ramp. The procedure is similar for all deck boards.**

**REMOVAL**

- |    |  |  |   |
|----|--|--|---|
| 1. | Deck board (1) and frame crossmember (3) | Bolt (2), bridge clip (4), lockwasher (5), and nut (6) | <p>a. Using pliers, bend tab (7) up.</p> <p>b. Using 3/4 in. wrench, unscrew nut (6) and remove.</p> <p>c. Take off lockwasher (5) and bridge clip (4).</p> <p>d. Using hammer, tap up on bolt (2) and take out.</p> <p>e. Perform steps a through d as many times as necessary to remove all hardware to free deck board (1) from frame.</p> |
| 2. | Frame crossmember (3)                    | Deck board (1)   | Lift off.   |



**5-16. DECK AND LOADING RAMP (Con't)**

|    | LOCATION                                 | ITEM   | ACTION   | REMARKS |
|----|--|--|--|---------|
| 3. | Frame crossmember (3)                    | Deck board (1)   | <ol style="list-style-type: none"> <li>a. Using the old deck board (1) as a template, cut the new deck board to proper length. Drill and countersink bolt holes.</li> <li>b. Place in position.</li> </ol>   |         |
| 4. | Deck board (1) and frame crossmember (3) | Bolt (2), bridge clip (4), lockwasher (5), and nut (6) | <ol style="list-style-type: none"> <li>a. Screw in and tighten using 3/4 in. wrench. Make sure lip of bridge clip (4) is under frame crossmember (3).</li> <li>b. Using pliers, bend tab (7) down so nut (6) cannot move.</li> <li>c. Perform steps a and b as many times as necessary to install all hardware.</li> </ol> |         |

**TASK ENDS HERE**



**5-17. FRAME REINFORCEMENT INSTALLATION**

*This Task Covers:*

Installation

*Initial Setup:*

**Materials/Parts:**

- Steel, Class B, Grade 2, Spec MIL-5-13281, Optional Material SAE950

**Personnel Required:** Two

**Tools/Test Equipment:**

- Shop Equipment, Automotive Maintenance and Repair: Organizational Maintenance Common No. 2 Less Power

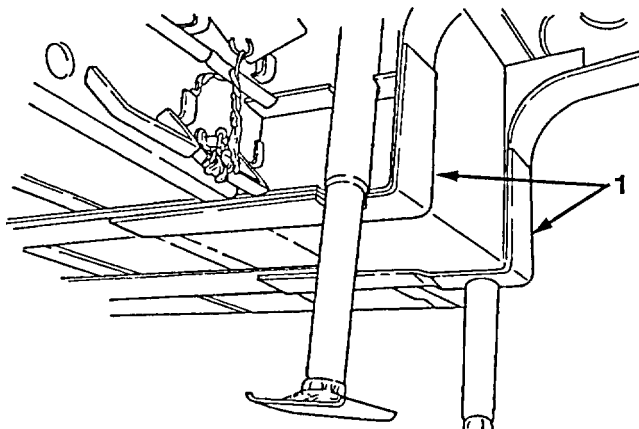
| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|

INSTALLATION

**NOTE**

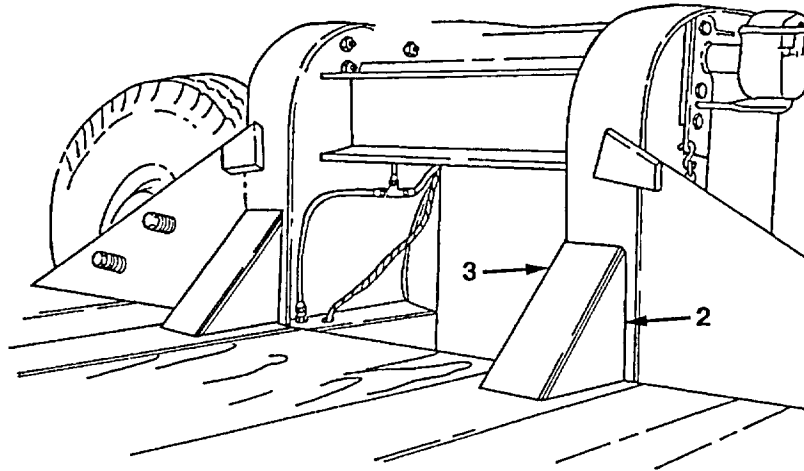
- These procedures are not mandatory although highly recommended should your semitrailer need reinforcing.
- Use a series of drawings-"Kit, Reinforcement Frame, Pedestal, and Gooseneck" Available, TACOM part number 11625411.
- Fabrication details of frame reinforcements are in Appendix G, Illustrated List of Manufactured Items.
- All welding will be done in accordance with instructions in TM 9-237.
- Make sure surfaces are free of paint and foreign matter.

- |    |           |   |
|----|-----------|---|
| 1. | Gooseneck | Position and weld gooseneck reinforcement plates (1). |
|----|-----------|---|



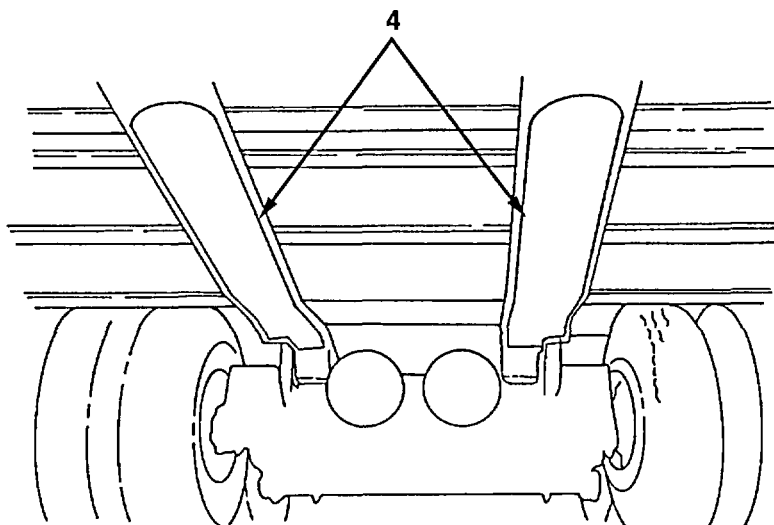
5-17. FRAME REINFORCEMENT INSTALLATION (Con't)

| LOCATION | ITEM      | ACTION  | REMARKS |
|----------|-----------|---|---------|
| 2.       | Gooseneck | Position and weld gooseneck upper gussets (2) and cover plates (3). |         |



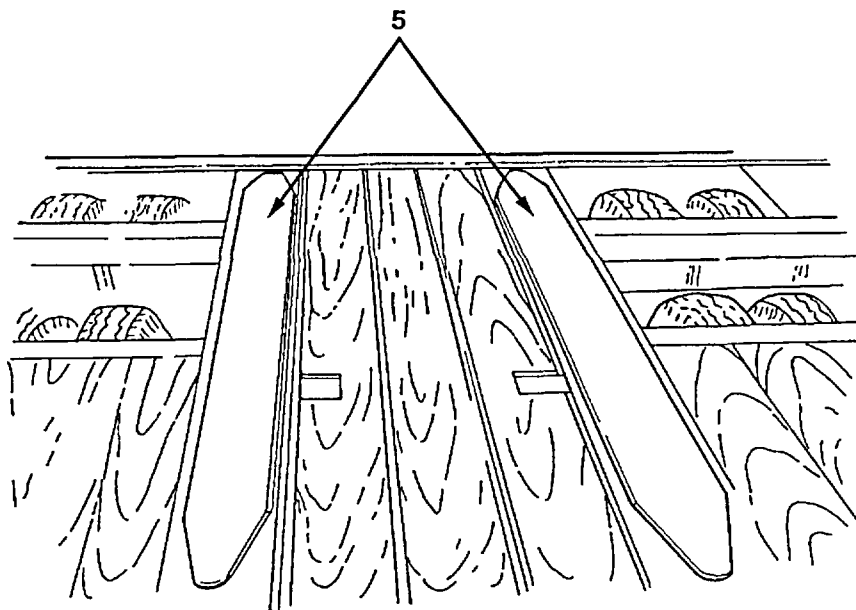
5-17. FRAME REINFORCEMENT INSTALLATION (Con't)

| LOCATION | ITEM | ACTION | REMARKS |
|----------|------|--------|---------|
|----------|------|--------|---------|



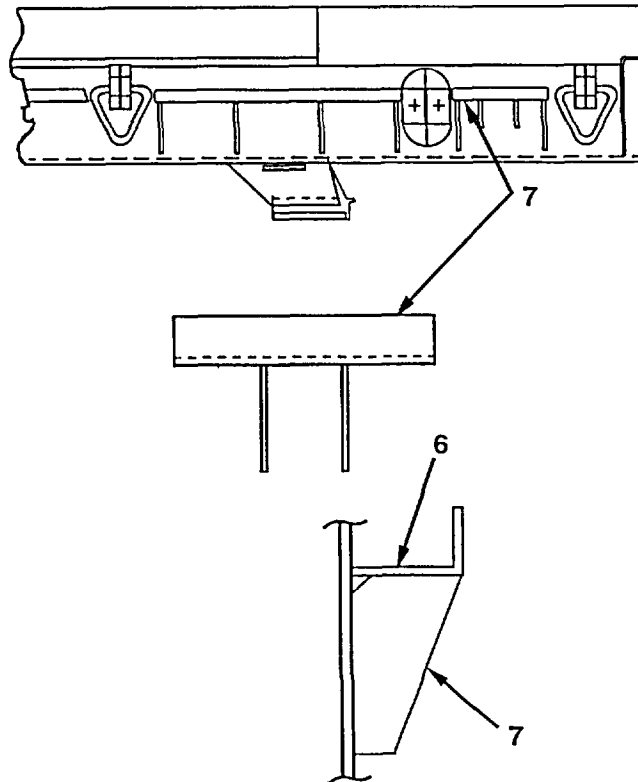
3. Main Frame Rails

Position and weld main frame rail lower reinforcement plates (4). Weld main frame rail upper buildup plates (5).



5-17. FRAME REINFORCEMENT INSTALLATION (Con't)

| LOCATION                          | ITEM | ACTION   | REMARKS  |
|-----------------------------------|------|--|--|
| 4. Ramp Outer Rear Clip Angle (6) |      | Weld two support angles (7) on each side of semitrailer. | <b>Use continuous 3/16 weld fillet on both sides of support angle.</b> |



TASK ENDS HERE

## APPENDIX A

### REFERENCES

#### A-1. SCOPE

This appendix lists indexes and general references, field manuals, technical bulletins, and technical manuals required for use with this manual.

#### A-2. PUBLICATION INDEXES AND GENERAL REFERENCES

Indexes should be consulted frequently for latest changes or revisions to references given in this appendix and for new information relating to materiel covered in this publication.

##### a. Military Publication Indexes.

Consolidated Index of Army Publications and Blank Forms . . . . . DA Pam 25-30

##### b. General References.

Operational Terms and Symbols . . . . . FM 101-5-1

#### A-3. FORMS

Refer to DA Pam 738-750, *The Army Maintenance Management System (TAMMS)*, for instructions on the use of maintenance forms pertaining to this materiel.

#### A-4. OTHER PUBLICATIONS

The following publications contain information pertinent to the major item materiel and associated equipment.

##### a. Camouflage.

Camouflage . . . . . FM 5-20

Color, Marking, and Camouflage Painting of Military Vehicles,  
Construction Equipment, and Materials Handling Equipment . . . . . TB 43-0209

Painting Instructions for Army Materiel . . . . . TM 43-0139

##### b. Decontamination.

NBC Decontamination . . . . . FM 3-5

##### c. General.

Basic Cold Weather Manual . . . . . FM 31-70

Deepwater Fording of Ordnance Materiel . . . . . TM 9-238

Army Motor Transport Units and Operations . . . . . FM 55-30

Equipment Improvement Report and Maintenance Digest  
(U.S. Army Tank-Automotive Command) Tank-Automotive Equipment . . . . . TB 43-0001-39 Series

First Aid for Soldiers . . . . . FM 21-11

Manual for the Wheeled Vehicle Driver . . . . . FM 21-305

Northern Operations . . . . . FM 31-71

Operation and Maintenance of Ordnance Materiel in Cold Weather (0°F to -65°F) . . . . . FM 9-207

Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use . . . . . TM 750-244-6

Railcar Loading Procedures . . . . . TM 55-601

**A-4. OTHER PUBLICATIONS (Con't)**

Railway Operating and Safety Rules ..... TM 55-200  
Storage and Materials Handling .....TM 743-200-1

d. **Maintenance and Repair.**

Description, Use, Bonding Techniques, and Properties of Adhesives ..... TB ORD 1032  
Inspection, Care, and Maintenance of Antifriction Bearings ..... TM 9-214  
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance  
Materiel and Related Items Including Chemicals ..... TM 9-247  
Operator's Manual for Welding Theory and Application .....TM 9-237  
Organizational, Direct Support and General Support Maintenance Care,  
Maintenance, and Repair of Pneumatic Tires and Inner Tubes .....TM 9-2610-200-24  
Tactical Wheeled Vehicles: Repair of Frames .....TB 9-2300-247-40

## APPENDIX B

### MAINTENANCE ALLOCATION CHART

#### Section I. INTRODUCTION

##### B-1. GENERAL

a. This section provides a general explanation of all maintenance and repair functions authorized at the 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 (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

##### 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. **Aline.** 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.

h. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized MAC and is shown as the third position 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.

**B-2. MAINTENANCE FUNCTIONS (Con't)**

j. **Overhaul.** That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of 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 accordance with original manufacturing standards. Rebuild is the highest degree of materiel 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 THE MAC, 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 "00."

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. For a detailed explanation of these functions, refer to paragraph B-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 . . . . . Unit (Operator or Crew)*  
*0 . . . . . Unit Maintenance*  
*F . . . . . Direct Support Maintenance*  
*H . . . . . General Support Maintenance*  
*D . . . . . Depot 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 TOOLS AND TEST EQUIPMENT REQUIREMENTS, SECTION III**

a. **Column 1, Tool or Test Equipment 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 level 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/NATO Stock Number.** The National or NATO 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.** The code recorded in Column 6, Section II.

b. **Column 2, Remarks.** This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

**Section II. MAINTENANCE ALLOCATION CHART**

| (1)<br>Group Number | (2)<br>Component/Assembly           | (3)<br>Maintenance Function | (4)<br>Maintenance Level |     |     |    |       | (5)<br>Tools and Equipment | (6)<br>Remarks |
|---------------------|-------------------------------------|-----------------------------|--------------------------|-----|-----|----|-------|----------------------------|----------------|
|                     |                                     |                             | Unit                     |     | DS  | GS | Depot |                            |                |
|                     |                                     |                             | C                        | O   | F   | H  | D     |                            |                |
| <b>06</b>           | <b>ELECTRICAL SYSTEM</b>            |                             |                          |     |     |    |       |                            |                |
| 0609                | Lights                              |                             |                          |     |     |    |       |                            |                |
|                     | Lamps and Lamp Unit                 | Replace                     |                          | 0.3 |     |    |       |                            |                |
| 0613                | Hull or Chassis Wiring Harness      | Replace                     |                          | 2.0 |     |    |       |                            |                |
|                     |                                     | Repair                      |                          | 1.0 |     |    |       |                            |                |
|                     | Coupling, Trailer Electric          | Replace                     |                          | 1.0 |     |    |       |                            |                |
| <b>11</b>           | <b>REAR AXLE</b>                    |                             |                          |     |     |    |       | A                          |                |
| 1100                | Rear Axle Assembly                  |                             |                          |     |     |    |       |                            |                |
|                     | Tandem Axle                         | Replace                     |                          |     | 6.0 |    |       |                            |                |
|                     | Shackle Box                         | Replace                     |                          |     | 1.0 |    |       |                            |                |
| 1108                | Walking Beams, Stub Axles and Parts |                             |                          |     |     |    |       |                            |                |
|                     | Walking Beam                        | Replace                     |                          |     | 6.0 |    |       |                            |                |
| <b>12</b>           | <b>BRAKES</b>                       |                             |                          |     |     |    |       | A                          |                |
| 1202                | Service Brakes                      | Inspect                     |                          | 0.5 |     |    |       |                            |                |
|                     |                                     | Adjust                      |                          | 1.0 |     |    |       |                            |                |
|                     |                                     | Replace                     |                          | 4.0 |     |    |       |                            |                |
|                     | Brakeshoe Assembly                  | Replace                     |                          | 4.0 |     |    |       |                            |                |
|                     |                                     | Repair                      |                          |     | 2.0 |    |       |                            |                |
| 1206                | Mechanical Brake System             |                             |                          |     |     |    |       |                            |                |
|                     | Slack Adjuster                      | Replace                     |                          | 0.3 |     |    |       |                            |                |
| 1208                | Airbrake System                     |                             |                          |     |     |    |       |                            |                |
|                     | Coupling, Air                       | Replace                     |                          | 0.5 |     |    |       |                            |                |
|                     |                                     | Repair                      |                          | 0.1 |     |    |       |                            |                |
|                     | Lines and Fittings                  | Test                        |                          | 0.3 |     |    |       |                            |                |
|                     |                                     | Replace                     |                          | 2.0 |     |    |       |                            |                |
|                     |                                     | Repair                      |                          | 1.0 |     |    |       |                            |                |

Section II. MAINTENANCE ALLOCATION CHART (Con't)

| (1)<br>Group<br>Number | (2)<br>Component/Assembly              | (3)<br>Maintenance<br>Function | (4)<br>Maintenance Level |   |    |    |            | (5)<br>Tools and<br>Equipment | (6)<br>Remarks |
|------------------------|--|--------------------------------|--------------------------|---|----|----|------------|-------------------------------|----------------|
|                        |  |                                | Unit                     |   | DS | GS | Depot      |                               |                |
|                        |  |                                | C                        | O | F  | H  | D          |                               |                |
| 1208                   | <i>Airbrake System (Con't)</i>         |                                |                          |   |    |    |            |                               |                |
|                        | Chamber, Airbrake                      | Adjust                         | 0.3                      |   |    |    |            |                               |                |
|                        |  | Replace                        | 1.0                      |   |    |    |            |                               |                |
|                        | Valves                                 | Replace                        | 2.0                      |   |    |    |            |                               |                |
|                        | Reservoir, Air                         | Replace                        | 2.5                      |   |    |    |            |                               |                |
|                        | Draincock                              | Replace                        | 0.3                      |   |    |    |            |                               |                |
| <b>13</b>              | <b>WHEELS</b>                          |                                |                          |   |    |    |            |                               |                |
| 1311                   | <i>Wheel Assembly</i>                  |                                |                          |   |    |    |            |                               |                |
|                        | Hub                                    | Inspect                        | 0.5                      |   |    |    | 1, 2, 3    | A                             |                |
|                        |  | Replace                        | 1.5                      |   |    |    | 4, 5, 6, 7 |                               |                |
|                        |  | Repair                         | 1.5                      |   |    |    |            |                               |                |
|                        | Drum                                   | Inspect                        | 0.5                      |   |    |    |            |                               |                |
|                        |  | Replace                        | 1.5                      |   |    |    |            |                               |                |
|                        |  | Repair                         | 1.5                      |   |    |    |            |                               |                |
|                        | Bearing and Seal                       | Inspect                        | 0.5                      |   |    |    |            |                               |                |
|                        |  | Adjust                         | 0.3                      |   |    |    |            |                               |                |
|                        |  | Replace                        | 1.5                      |   |    |    |            |                               |                |
|                        | Wheel                                  | Replace                        | 0.5                      |   |    |    |            |                               |                |
| 1313                   | <i>Tires and Tubes</i>                 |                                |                          |   |    |    |            |                               |                |
|                        | Tires                                  | Service                        | 0.5                      |   |    |    |            |                               |                |
|                        |  | Replace                        | 0.5                      |   |    |    |            |                               |                |
|                        |  | Repair                         | 0.5                      |   |    |    |            |                               |                |
|                        | Tubes                                  | Replace                        | 0.5                      |   |    |    |            |                               |                |
|                        |  | Repair                         | 0.5                      |   |    |    |            |                               |                |
| <b>15</b>              | <b>FRAME AND TOWING ATTACHMENTS</b>    |                                |                          |   |    |    |            |                               |                |
| 1501                   | <i>Frame Assembly</i>                  | Repair                         | 8.0                      |   |    |    |            |                               |                |
| 1504                   | <i>Spare Wheel Carrier</i>             | Replace                        | 0.3                      |   |    |    |            |                               |                |
| 1506                   | <i>Fifth Wheel</i>                     |                                |                          |   |    |    |            |                               |                |
|                        | Kingpin                                | Service                        | 0.2                      |   |    |    |            |                               |                |
|                        |  | Replace                        | 0.3                      |   |    |    |            |                               |                |
|                        | Retainer                               | Replace                        | 0.3                      |   |    |    |            |                               |                |
| 1507                   | <i>Landing Gear and Leveling Jacks</i> | Replace                        | 3.0                      |   |    |    |            |                               |                |
|                        |  | Repair                         | 4.0                      |   |    |    |            |                               |                |

**Section II. MAINTENANCE ALLOCATION CHART (Con't)**

| (1)<br>Group Number | (2)<br>Component/Assembly                      | (3)<br>Maintenance Function | (4)<br>Maintenance Level |     |     |    |       | (5)<br>Tools and Equipment | (6)<br>Remark |
|---------------------|--|-----------------------------|--------------------------|-----|-----|----|-------|----------------------------|---------------|
|                     |  |                             | Unit                     |     | DS  | GS | Depot |                            |               |
|                     |  |                             | C                        | O   | F   | H  | D     |                            |               |
| 1507                | <i>Landing Gear and Leveling Jacks (Con't)</i> |                             |                          |     |     |    |       |                            |               |
|                     | Gearbox  | Replace                     |                          | 1.3 |     |    |       |                            |               |
|                     |  | Repair                      |                          | 2.0 |     |    |       |                            |               |
| <b>18</b>           | <b>BODY</b>                                    |                             |                          |     |     |    |       |                            |               |
| 1810                | <i>Cargo Body</i>                              |                             |                          |     |     |    |       |                            |               |
|                     | Deck   | Repair                      |                          |     | 8.0 |    |       | A                          |               |
| <b>22</b>           | <b>ACCESSORY ITEMS</b>                         |                             |                          |     |     |    |       |                            |               |
| 2202                | <i>Accessory Items</i>                         |                             |                          |     |     |    |       |                            |               |
|                     | Reflectors                                     | Replace                     |                          | 0.3 |     |    | 1,2,3 |                            |               |
| 2210                | <i>Data Plates and Instruction Holders</i>     |                             |                          |     |     |    |       |                            |               |
|                     | Plates, Vehicle Data                           | Replace                     |                          | 0.3 |     |    |       |                            |               |

| (1)<br>TOOL OR TEST<br>EQUIPMENT<br>REFERENCE<br>CODE | (2)<br>MAINTENANCE<br>LEVEL | (3)<br>NOMENCLATURE<br>COMMON TOOLS:  | (4)<br>NATIONAL/NATO<br>STOCK NUMBER | (5)<br>TOOL<br>NUMBER |
|---|-----------------------------|---|--------------------------------------|-----------------------|
| 1   | O                           | TOOL KIT, GENERAL MECHANIC'S<br>AUTOMOTIVE  | 5180-00-177-7033                     | W33004                |
| 2   | O                           | SHOP EQUIPMENT, AUTOMOTIVE<br>MAINTENANCE AND REPAIR:<br>ORGANIZATIONAL MAINTENANCE<br>COMMON NO. 1, LESS POWER | 4910-00-754-0654                     | W32593                |
| 3   | O                           | SHOP EQUIPMENT, AUTOMOTIVE<br>MAINTENANCE AND REPAIR:<br>ORGANIZATIONAL MAINTENANCE<br>COMMON NO. 2, LESS POWER | 4910-00-754-0650                     | W32730                |
| 4   | F                           | SHOP EQUIPMENT, AUTOMOTIVE<br>MAINTENANCE AND REPAIR:<br>FIELD MAINTENANCE<br>SUPPLEMENTAL NO. 1                | 4910-00-754-0706                     | T25619                |
| 5   | F                           | TOOL KIT, WELDER'S<br><br>SPECIAL TOOLS:  | 5 80-00-754-0661                     | W58075                |
| 6   | C                           | WRENCH, SOCKET  | 5 20-00-316-9217                     |                       |
| 7   | O                           | SOCKET, SOCKET WRENCH   | 5 20-00-261-2821                     |                       |

## Section IV. REMARKS

| (1)<br>REFERENCE CODE | (2)<br>REMARKS |
|-----------------------|----------------|
|-----------------------|----------------|

|   |  |
|---|--|
| A | DIRECT SUPPORT (F) MAINTENANCE INCLUDES REPLACEMENT OF REPAIRABLE ASSEMBLIES,<br>REPAIR OS COMPONENTS OF ASSEMBLIES CONSIDERED UNECONOMICAL TO EVACUATE<br>FURTHER; PERFORMS ADJUSTMENTS OF SYSTEMS FOR WHICH UNIT MAINTENANCE<br>DOES NOT POSSESS SKILLS OR TEST EQUIPMENT. |
|---|--|

## APPENDIX C COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

### Section I. INTRODUCTION

#### C-1. SCOPE

This appendix lists Components of End item and Basic Issue items for the M172A1 Lowbed Semitrailer to help you inventory items required for safe and efficient operation.

#### C-2. GENERAL

The Components of End Item and Basic Issue items Lists are divided Into the following sections:

a. **Section II. Components of End Item (COEI).** The listing is for Informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end Item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. **Section III. Basic Issue Items (BII).** These are the minimum essential items required to place the semitrailer in operation, operate it, and perform emergency repairs. Although shipped separately packaged, BII must be with the semitrailer during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

#### C-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. **Column 1, Illustration Number (Illus No.).** This column indicates the number of the Illustration In which the item is shown.

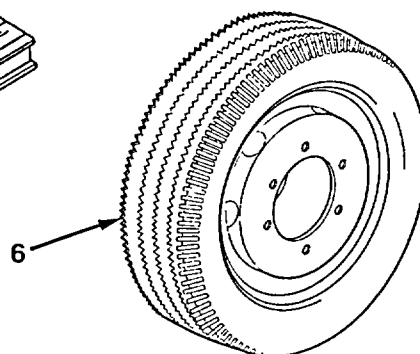
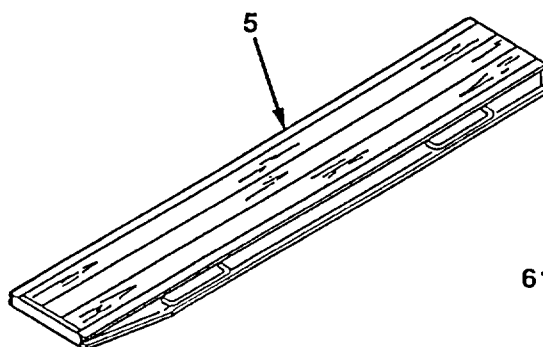
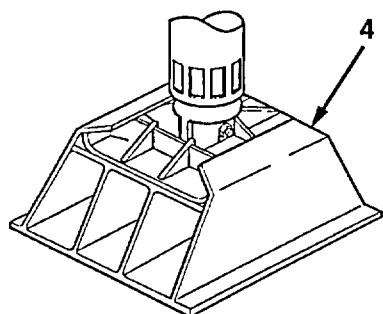
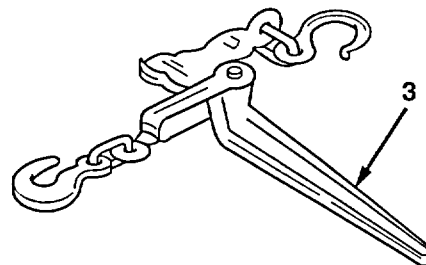
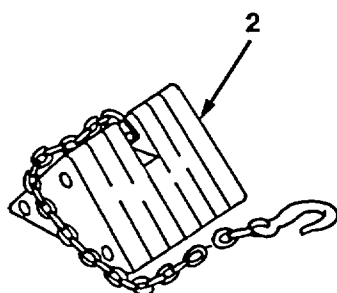
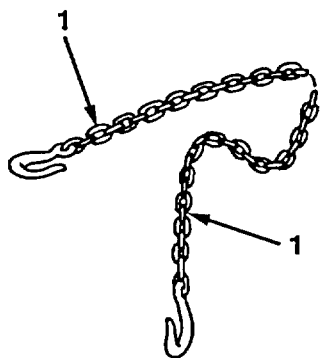
b. **Column 2, National Stock Number.** Indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.

c. **Column 3, Description.** Indicates the Federal item name and, If required, a minimal description to identify and locate the item. The last line for each item Indicates the Commercial and Government Entity (CAGE) Code, in parentheses, followed by the part number.

d. **Column 4, Unit of Measure (U/M).** Indicates the measure used in performing the actual operation/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).

e. **Column 5, Quantity Required (Qty Reqd).** Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM

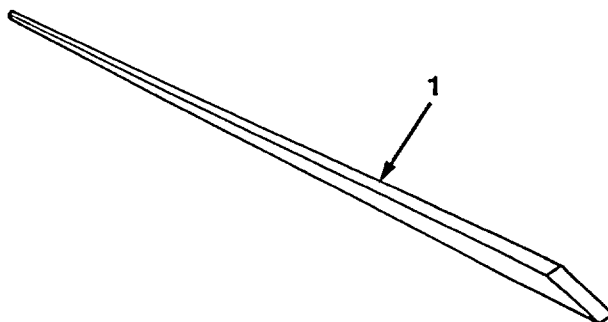


| (1)<br>Illus<br>No. | (2)<br>National Stock<br>Number | (3)<br>Description<br>CAGE and Part Number   | (4)<br>U/M | (5)<br>Qty<br>Reqd |
|---------------------|---------------------------------|--|------------|--------------------|
| 1                   | 4010-00-803-8858                | Chain Assembly, Single Leg<br>(81328) RRC271 | ea         | 4                  |
| 2                   | 2540-00-678-3469                | Chock, Wheel-Track<br>(19207) 8343584        | ea         | 4                  |
| 3                   | 3990-01-213-1746                | Binder, Load<br>(27404) R-45                 | ea         | 4                  |
| 4                   | 2590-00-678-4099                | Pad Assembly, Shoe<br>(19207) 8336638        | ea         | 2                  |
| 5                   | 3990-00-353-6354                | Ramp, Loading, Vehicle<br>(19207) 8379503    | ea         | 2                  |

**Section II. COMPONENTS OF END ITEM (Con't)**

| (1)<br>Illus<br>No. | (2)<br>National Stock<br>Number | (3)<br>Description<br>CAGE and Part Number | (4)<br>U/M | (5)<br>Qty<br>Reqd |
|---------------------|---------------------------------|--|------------|--------------------|
| 6                   |                                 | Wheel and Tire Assembly (Radial)           |            |                    |
|                     | 2610-00-052-7969                | Inner Tube, Pneumatic                      | ea         | 1                  |
|                     | 2610-01-325-1934                | Tire, Pneumatic                            | ea         | 1                  |
|                     | 2530-01-125-4084                | Wheel, Pneumatic Tire                      | ea         | 1                  |
|                     | 2610-01-254-5392                | Flap, Inner Tube, Pneumatic                | ea         | 1                  |

**Section III. BASIC ISSUE ITEMS**



| (1)<br>Illus<br>No. | (2)<br>National Stock<br>Number | (3)<br>Description<br>CAGE and Part Number | (4)<br>U/M | (5)<br>Qty<br>Reqd |
|---------------------|---------------------------------|--|------------|--------------------|
| 1                   | 5120-00-224-1390                | Crowbar<br>(80064) 1833244                 | ea         | 1                  |

## APPENDIX D

### Additional AUTHORIZATION LIST

#### Section I. INTRODUCTION

**D-1. SCOPE**

a. This appendix lists additional items you are authorized for the support of the M172A1 Lowbed Semitrailer.

b. This list identifies items that do not have to accompany the M172A1 Lowbed Semitrailer and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

**D-2. EXPLANATION OF LISTING**

National Stock Numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name.

#### Section II. ADDITIONAL AUTHORIZATION LIST

| (1)<br><b>National<br/>Stock Number</b> | (2)<br><b>Description<br/>CAGE and Part Number</b>  | (3)<br><b>U/M</b> | (4)<br><b>Qty<br/>Auth</b> |
|---|---|-------------------|----------------------------|
| 2540-00-201-8757                        | Plate , Wheel Cover<br>(19207) 8336539  | ea                | 4                          |
|   | <b>NOTE</b>   |                   |                            |
|   | <b>Manufacturing Instructions for Wrench, Lugnut,<br/>Altered can be found in Appendix G.</b> |                   |                            |
|   | Wrench, Lugnut, Altered   | ea                | 1                          |



## APPENDIX E

### EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

#### Section I. INTRODUCTION

##### E-1. SCOPE

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M172A1 Lowbed Semitrailer. 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 initial setup narrative instructions to identify the material.

b. **Column 2, Level.** This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew  
O - Unit 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., qt). 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/DURABLE SUPPLIES AND MATERIALS LIST

| (1)         | (2)   | (3)                   | (4)   | (5) |
|-------------|-------|-----------------------|---|-----|
| ITEM NUMBER | LEVEL | NATIONAL STOCK NUMBER | DESCRIPTION   | U/M |
| 1           | C     |                       | BRUSH,ACID SWABBING<br>(81348) 11B-643                    |     |
|             |       | 7920-00-514-2417      | BOX OF 144  | EA  |
| 2           | O     |                       | CLOTH,ABRASIVE<br>(81348)P-C-458                          |     |
|             |       | 5350-00-22 1-0872     | 50 SHEET PACKAGE  | SH  |
| 3           | O     |                       | COMPOUND,INSULATING ELECTRICAL<br>(04347) PC28STD         |     |
|             |       | 5970-00-005-3340      | AEROSOL CAN   | OZ  |
| 4           | O     |                       | DETERGENT, GENERAL PURPOSE<br>(81349)MIL-D-16791          |     |
|             |       | 7930-00-282-9699      | 1 GALLON CAN  | GL  |
| 5           | C     |                       | GREASE,AUTOMOTIVE AND<br>ARTILLERY<br>(81349) MIL-G-10924 |     |
|             |       | 9150-00-935-1017      | 14 OUNCE CAN  | OZ  |
|             |       | 9150-00-190-0904      | 1.75 POUND CAN  | LB  |
|             |       | 9150-00-190-0905      | 6.5 POUND CAN   | LB  |
| 6           | C     |                       | OIL, LUBRICATING, OE/HDO10<br>(81349)MIL-L-2104           |     |
|             |       | 9150-00-189-6727      | 1 QUART CAN   | QT  |
|             |       | 9150-00-186-6668      | 5 GALLON CAN  | GL  |
|             |       | 9150-00-191-2772      | 55 GALLON DRUM  | GL  |
| 7           | C     |                       | OIL, LUBRICATING,OE/HDO 30<br>(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  |
| 8           | C     |                       | OIL, LUBRICATING,OEA<br>(81349)MIL-L-46167                |     |
|             |       | 9150-00-402-4478      | 1 QUART CAN   | QT  |
|             |       | 9150-00-402-2372      | 5 GALLON CAN  | GL  |
|             |       | 9150-00-491-7197      | 55 GALLON DRUM  | GL  |

## SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (CON'T)

| (1)            | (2)   | (3)                      | (4)  | (5) |
|----------------|-------|--------------------------|--|-----|
| ITEM<br>NUMBER | LEVEL | NATIONAL<br>STOCK NUMBER | DESCRIPTION  | U/M |
| 9              | C     |                          | OIL,LUBRICATING, PRESERVATIVE<br>PL-M<br>(81349)MIL-L-3150 |     |
|                |       | 9150-00-231-2361         | 1 QUART CAN  | QT  |
|                |       | 9150-00-231-2356         | 5 GALLON CAN   | GL  |
|                |       | 9150-00-231-2357         | 55 GALLON DRUM   | GL  |
| 10             | C     |                          | OIL,LUBRICATING, PRESERVATIVE<br>PL-S<br>(81348) VV-L-800  |     |
|                |       | 9150-00-231-6689         | 1 QUART CAN  | QT  |
|                |       | 9150-00-231-9062         | 5 GALLON CAN   | GL  |
|                |       | 9150-00-281-2060         | 55 GALLON DRUM   | GL  |
| 11             | C     |                          | RAG,WIPING<br>(58536) A-A531                               |     |
|                |       | 7920-00-205-1711         | 50 POUND BALE  | LB  |
| 12             | O     |                          | SOLDER,LEAD<br>(81348) QQ-S-571                            |     |
|                |       | 3439-00-003-8601         | 1 POUND SPOOL  | LB  |
| 13             | C     |                          | SOLVENT, DRY CLEANING, TYPE II<br>(81348)P-D-680           |     |
|                |       | 6850-00-664-5685         | 1 QUART CAN  | QT  |
|                |       | 6850-00-281-1985         | 1 GALLON CAN   | GL  |
|                |       | 6850-00-285-8011         | 55 GALLON DRUM   | GL  |
| 14             | O     |                          | TAG,MARKER<br>(81349)MIL-T-12755                           |     |
|                |       | 9905-00-537-8954         | BOX OF 50  | EA  |
| 15             | O     |                          | TAPE,ANTISEIZE<br>1/4IN.WIDE<br>(81349)MIL-T-27730         |     |
|                |       | 8030-00-889-3534         | 260 IN.ROLL  | IN  |

## APPENDIX F

### REPAIR PARTS AND SPECIAL TOOLS LISTS

#### Section I. INTRODUCTION

**F-1. SCOPE**

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of unit, direct support, and general support maintenance of the M172A1 Lowbed Semitrailer. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

**F-2. GENERAL**

In addition to Section I, Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. **Section II. Repair Parts List.** A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in item name sequence. Repair parts kits are listed separately in their own functional group within Section II. Repair parts for reparable special tools are also listed in this section. Items listed are shown on the associated illustration(s)/figure(s).

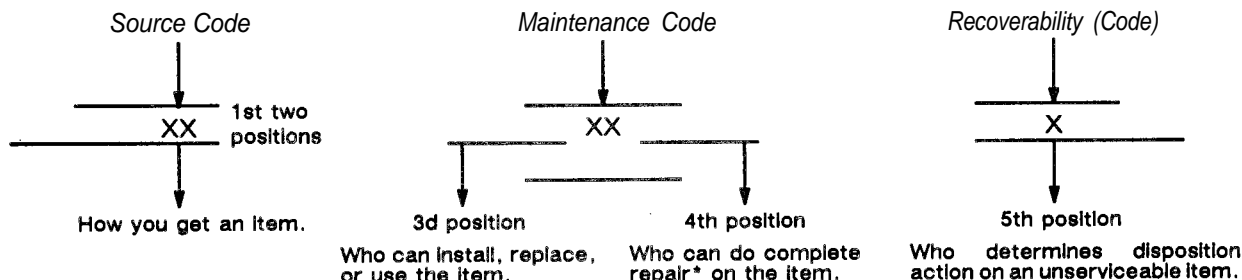
b. **Section III. Special Tools List.** A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL [as indicated by Basis of Issue (BOI) information in the *DESCRIPTION AND USABLE ON CODE* column] for the performance of maintenance.

c. **Section IV. National Stock Number and Part Number Index.** A list, in National Item identification Number (NIIN) sequence, of all part numbers appearing in the listing, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration/figure and item number appearance. The figure and item number index lists figure and item numbers in alphanumeric sequence and cross-references NSN, CAGE, and part numbers.

**F-3. EXPLANATION OF COLUMNS (SECTIONS II AND III)**

a. **ITEM NO. [Column (1)].** Indicates the number used to identify items called out in the illustration.

b. **SMR CODE [Column(2)].** The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



\* **Complete Repair:** Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

**F-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't)**

(1) Source Code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

| <u>Code</u>   | <u>Application/Explanation</u>  |
|---|---|
| PA<br>PB<br>PC**<br>PD<br>PE<br>PF<br>PG  | Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code.<br><br><p style="text-align: center;">** Items coded PC are subject to deterioration.</p> <p>.....</p>  |
| KD<br>KF<br>KB  | Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.<br><br><p>.....</p>   |
| MO - Made at UM/AVUM Level<br>MF - Made at DS/AVUM Level<br>MH - Made at GS Level<br>MD - Made at Depot                     | Items with these codes are not to be requested/requisitioned individually. They must be made from bulk materiel which is identified by the part number in the <i>DESCRIPTION AND USABLE ON CODE (UOC)</i> column and listed in the bulk materiel group of the repair parts list in this RPSTL. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.<br><br><p>.....</p> |
| AO - Assembled by UM/AVUM Level<br>AF - Assembled by DS/AVUM Level<br>AH - Assembled by GS Level<br>AD - Assembled at Depot | Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3d position code of the SMR code authorizes you to replace the item, but the source code indicates that the item is assembled at a higher level, order the item from the higher level of maintenance.<br><br><p>.....</p>   |

**NOTE**

**Cannibalization or controlled exchange, when authorized, maybe used as a source of supply for items with the above source codes, except for those source coded "XA."**

XA - DO NOT requisition an "XA"-coded item. Order its next higher assembly.

XB - If an "XB" item is not available from salvage, order it using the CAGE and part number given.

**F-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't)**

- XC - Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
- XD - Item is not stocked. Order an "XD"-coded item through normal supply channels using the CAGE and part number given, if no NSN is available.

(2) Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

- (a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following levels of maintenance.

| <u>Code</u> | <u>Application/Explanation</u>  |
|-------------|---|
| C           | - Crew or operator maintenance done within unit maintenance or aviation unit maintenance. |
| O           | - Unit maintenance or aviation unit can remove, replace, and use the item.                |
| F           | - Direct support or aviation intermediate level can remove, replace, and use the item.    |
| H           | - General support level can remove, replace, and use the item.                            |
| L           | - Specialized repair activity can remove, replace, and use the item.                      |
| D           | - Depot level can remove, replace, and use the item.                                      |

**NOTE**

**Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.**

- (b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (i.e., perform all authorized "Repair" functions). This position will contain one of the following maintenance codes:

| <u>Code</u> | <u>Application/Explanation</u>  |
|-------------|---|
| O           | - Unit maintenance or aviation unit is the lowest level that can do complete repair of the item.  |
| F           | - Direct support or aviation intermediate is the lowest level than can do complete repair of the item.  |
| H           | - General support is the lowest level that can do complete repair of the item.  |
| L           | - Specialized repair activity is the lowest level that can do complete repair of the item.  |
| D           | - Depot is the lowest level that can do complete repair of the item.  |
| Z           | - Nonreparable. No repair is authorized.  |
| B           | - No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level. |

**F-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't)**

(3) Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR code as follows:

| <u>Code</u> | <u>Application/Explanation</u>   |
|-------------|--|
| Z           | - Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3d position of the SMR code.   |
| O           | - Reparable item. When uneconomically reparable, condemn and dispose of the item at unit maintenance or aviation unit level.   |
| F           | - Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate level.   |
| H           | - Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level.   |
| D           | - Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item not authorized below depot level.  |
| L           | - Repairable item. Condemnation and disposal of item not authorized below specialized repair activity (SRA).   |
| A           | - Item requires special handling or condemnation procedures because of specific reasons (e. g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions. |

c. **CAGEC [Column (3)]**. The Commercial and Government Entity (CAGE) Code (C) is a 5-digit alphanumeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

**NOTE**

**When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered.**

d. **PART NUMBER [Column (4)]**. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

e. **DESCRIPTION AND USABLE ON CODE (UOC) [Column (5)]**. This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Physical security classification. Not Applicable.

(3) Items that are included in kits and sets are listed below the name of the kit or set on Figure KIT.

(4) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(5) Part numbers for bulk materials are referenced in this column in the line item entry for the item to be manufactured/fabricated.

(6) When the item is not used with all serial numbers of the same model, the effective serial numbers are shown on the last line(s) of the description (before UOC).

**F-3. EXPLANATION OF COLUMNS (SECTIONS II AND III) (Con't)**

(7) The usable on code, when applicable. (See paragraph F-5, Special Information)

(8) In the Special Tools List section, the Basis of Issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the Basis of Issue, the total authorization is increased proportionately.

(9) The statement "END OF FIGURE" appears just below the last item description in Column 5 for a given figure in both Section II and Section III.

f. **QTY [Column (6)].** The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

**F-4. EXPLANATION OF COLUMNS (SECTION IV)****a. National Stock Number (NSN) Index.**

(1) **STOCK NUMBER Column.** This column lists the NSN by National Item Identification Number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN (i.e., NSN  
5305-01-674-1467 ). When using this column to locate an item, ignore the first 4 digits of the NSN. However,

er, the complete NSN should be used when ordering items by stock number.

(2) **FIG. Column.** This column lists the number of the figure where the item is identified/located. The figures are in numerical order in Section II and Section III.

(3) **ITEM Column.** The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. **Part Number Index.** Part numbers in this index are listed by part number in ascending alphanumeric sequence (i.e., vertical arrangement of letter and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

(1) **CAGEC Column.** The Commercial and Government Entity (CAGE) Code(C) is a 5-digit alphanumeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(2) **PART NUMBER Column.** Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

(3) **STOCK NUMBER Column.** This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGE columns to the left.

(4) **FIG. Column.** This column lists the number of the figure where the item is identified/located in Section II and Section III.

(5) **ITEM Column.** The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

**c. Figure And Item Number Index.**

(1) **FIG. Column.** This column lists the number of the figure where the item is identified/located in Sections II and III.

(2) **ITEM Column.** The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) **STOCK NUMBER Column.** This column lists the NSN for the item.



**F-4. EXPLANATIONS OF CLOUMNS (SECTION IV) (Con't)**

(4) CAGE Column. The Commercial and Government Entity (CAGE) is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(5) PART NUMBER Column. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity, which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements to identify an item or range of items.

**F-5. SPECIAL INFORMATION**

a. Usable On Code. The usable on code appears in the lower left corner of the Description column heading. Usable on codes are shown as "UOC: . . . . . ." in the Description column (justified left) on the first line applicable item description/nomenclature. Uncoded items are applicable to all models. Not Applicable.

b. Fabrication Instructions. Bulk materiels required to manufacture items are listed in the Bulk Materiel Functional Group of this RPSTL. Part numbers for bulk materiels are also referenced in the DESCRIPTION column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in Appendix G of this manual.

c. Assembly Instructions. Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in *Chapters 4 and 5*. Items that makeup the assembly are listed immediately following the assembly item entry or reference is made to an applicable figure.

d. Kits. Line item entries for repair parts kits appear in group 9401 in Section II. Not Applicable.

e. Index Numbers. Items which have the word BULK in the FIG. column will have an index number shown in the item column. This index number is a cross-reference between the National Stock Number/Part Number Index and the bulk materiel list in Section II.

**F-6. HOW TO LOCATE REPAIR PARTS**

a. When National Stock Number or Part Number is Not Known:

(1) First. Using the Table of Contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the assembly group or subassembly group to which the item belongs.

(3) Third. Identify the item on the figure and use the Figure and Item Number Index to find the NSN.

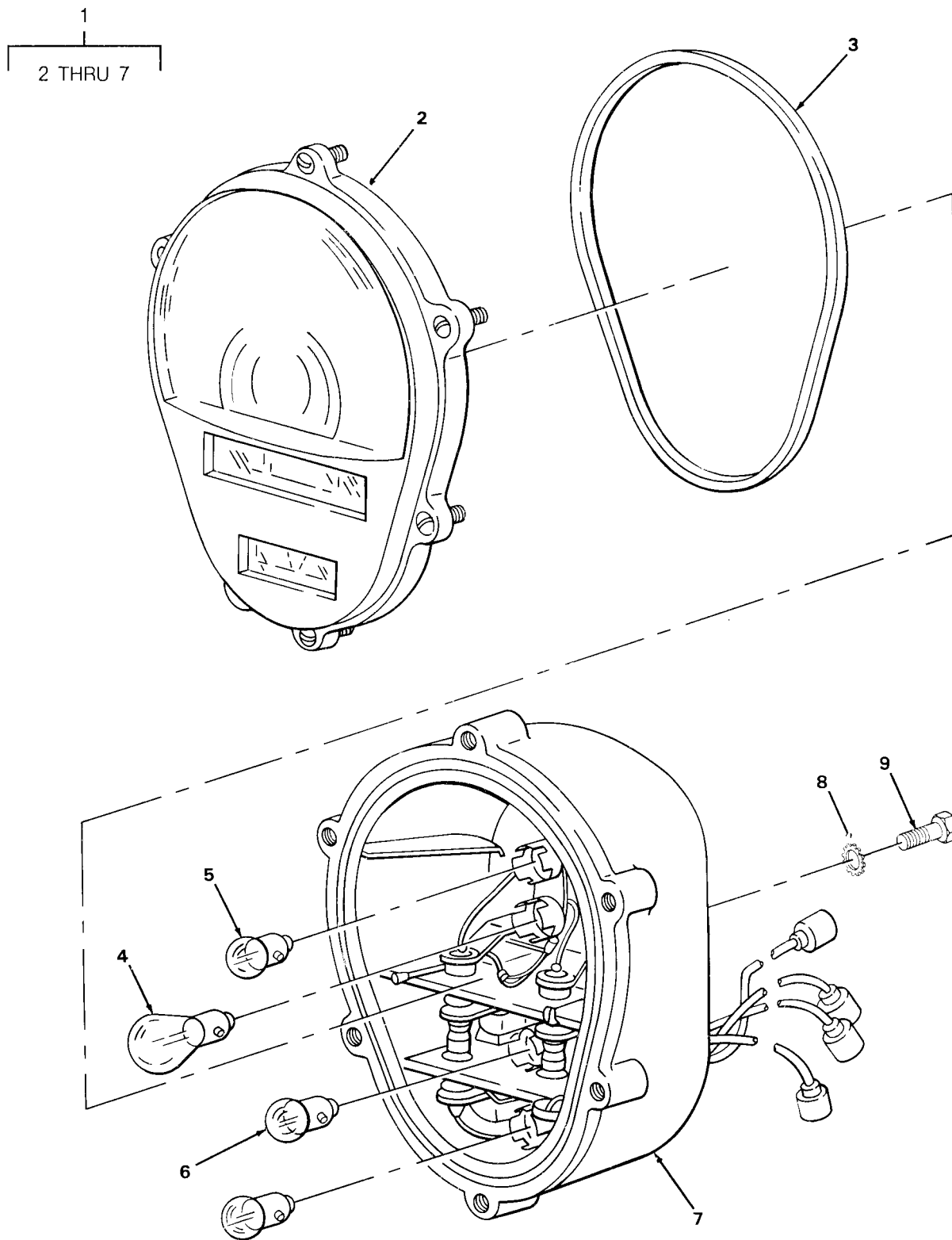
b. When National Stock Number or Part Number is Known:

(1) First. Using the National Stock Number or Part Number Index, find the pertinent National Stock Number or Part Number. The NSN Index is in National Item identification Number (NIIN) sequence [see paragraph F-4.a(1)]. The part numbers in the Part Number Index are listed in ascending alphanumeric sequence (see paragraph F-4. b). Both indexes cross-reference you to the illustration/figure and item number of the item you are looking for.

(2) Second. Turn to the figure and item number, verify that the item is the one you're looking for, then locate the item number the repair parts list for the figure.

**F-7. ABBREVIATIONS**

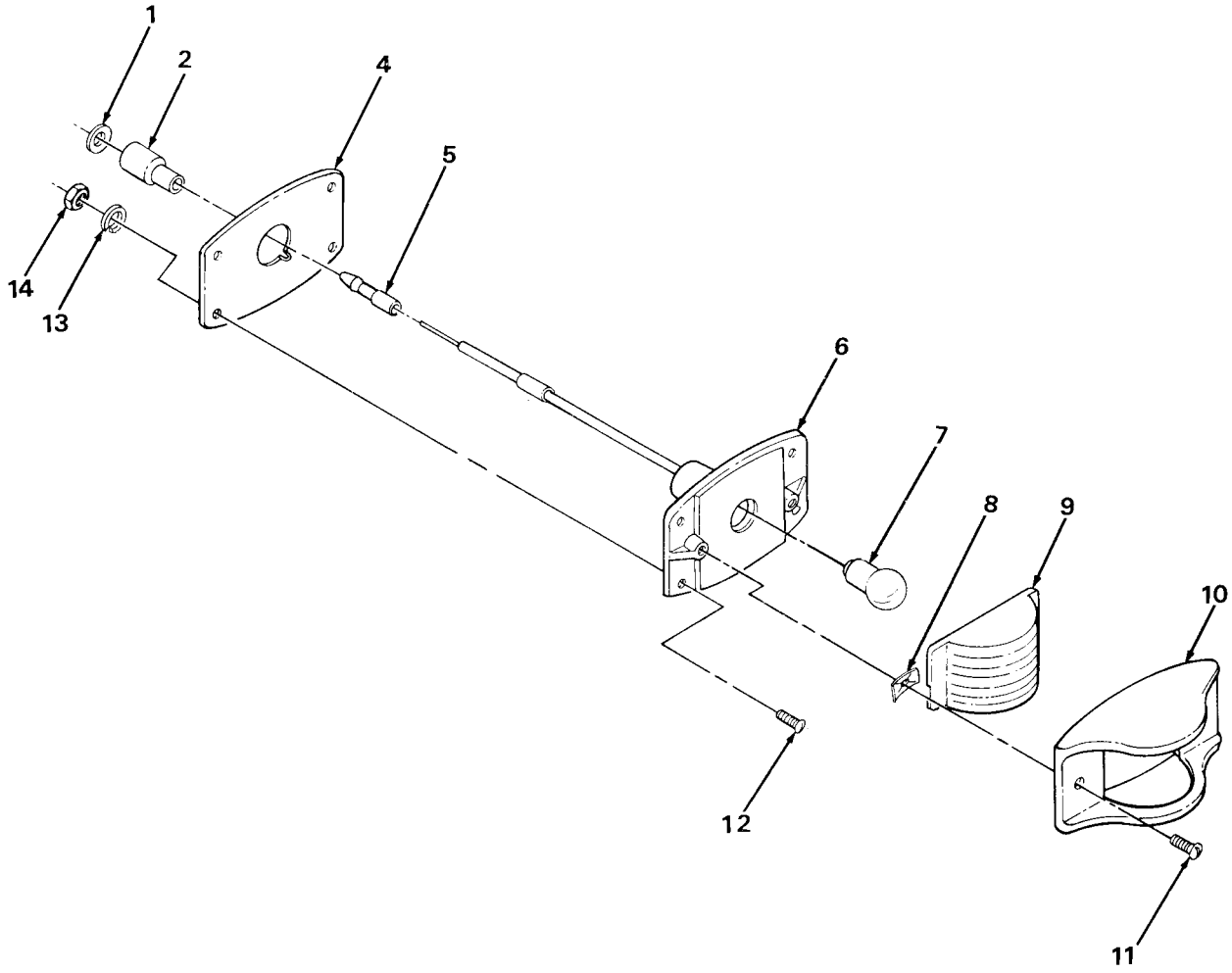
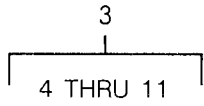
For standard abbreviations see MIL-STD-12D, *Military Standard Abbreviations for Use on Drawings, Specifications, Standards, and in Technical Documents*.



TA505755

FIGURE 1. COMPOSITE MARKER LIGHT.

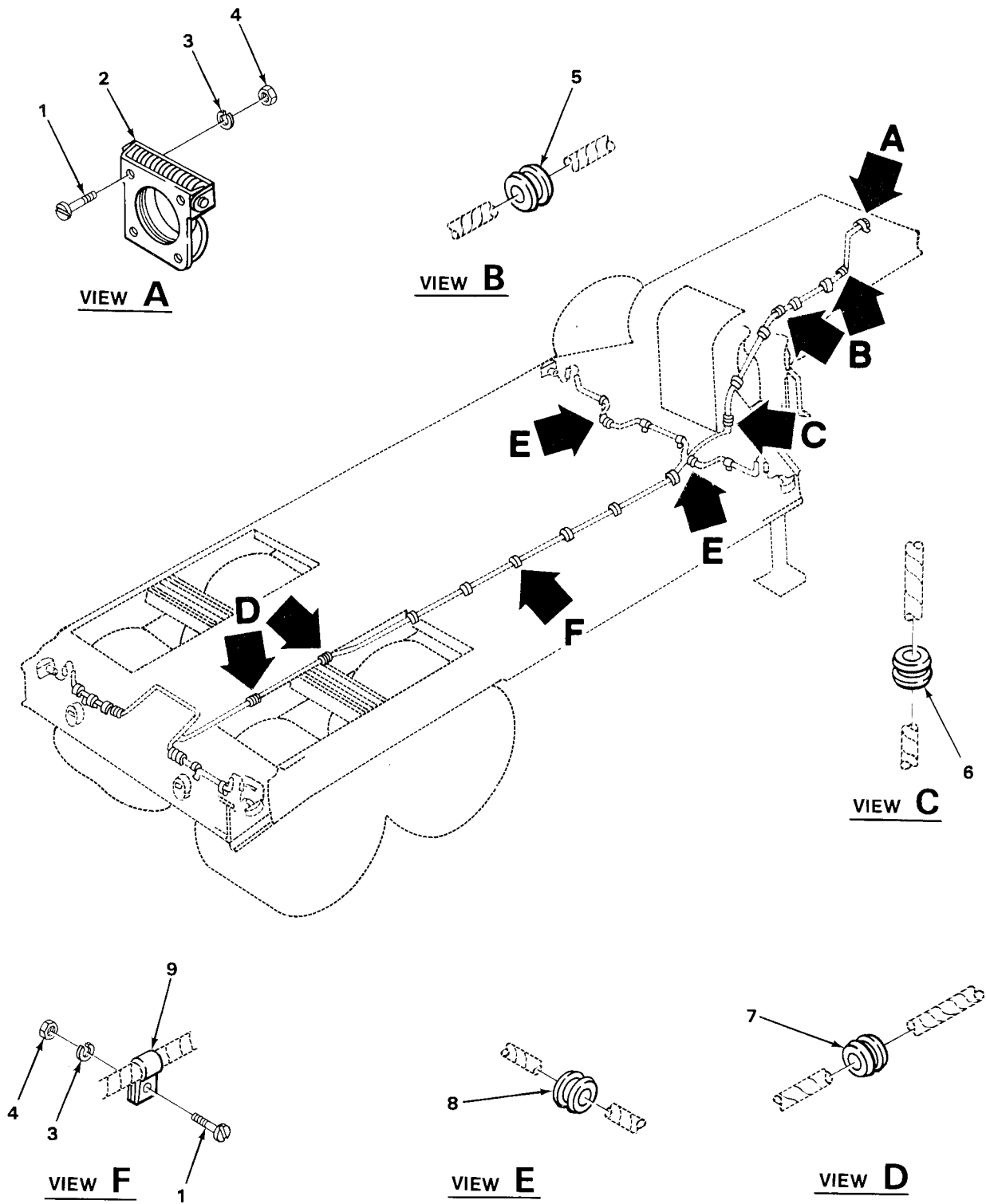
| SECTION II                    |       |       |              | TM9-2330-211-14&P                     |     |
|-------------------------------|-------|-------|--------------|---------------------------------------|-----|
| (1)                           | (2)   | (3)   | (4)          | (5)                                   | (6) |
| ITEM                          | SMR   |       | PART         |                                       |     |
| NO                            | CODE  | CAGEC | NUMBER       | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
| GROUP O6 ELECTRICAL SYSTEM    |       |       |              |                                       |     |
| GROUP 0609 LIGHTS             |       |       |              |                                       |     |
| FIG. 1 COMPOSITE MARKER LIGHT |       |       |              |                                       |     |
| 1                             | PFOOO | 96906 | MS52125-2    | STOP LIGHT-TAILLIGHT                  | 2   |
| 2                             | PAOZZ | 19207 | 11639535     | .LENS, LIGHT                          | 1   |
| 3                             | PAOZZ | 19207 | 11639519-2   | .PACKING, PREFORMED                   | 1   |
| 4                             | PAOZZ | 96906 | MS35478-1683 | .LAMP, INCANDESCENT                   | 1   |
| 5                             | PAOZZ | 96906 | MS15570-623  | .LAMP, INCANDESCENT                   | 1   |
| 6                             | PAOZZ | 96906 | MS15570-1251 | .LAMP, INCANDESCENT                   | 2   |
| 7                             | PAOZZ | 19207 | 11639520     | .BODY ASSEMBLY                        | 1   |
| 8                             | PAOZZ | 96906 | MS35335-35   | WASHER, LOCK                          | 2   |
| 9                             | PAOZZ | 96906 | MS18154-58   | SCREW, CAP, HEXAGON H                 | 2   |
| END OF FIGURE                 |       |       |              |                                       |     |



TA505756

FIGURE 2. CLEARANCE LIGHTS.

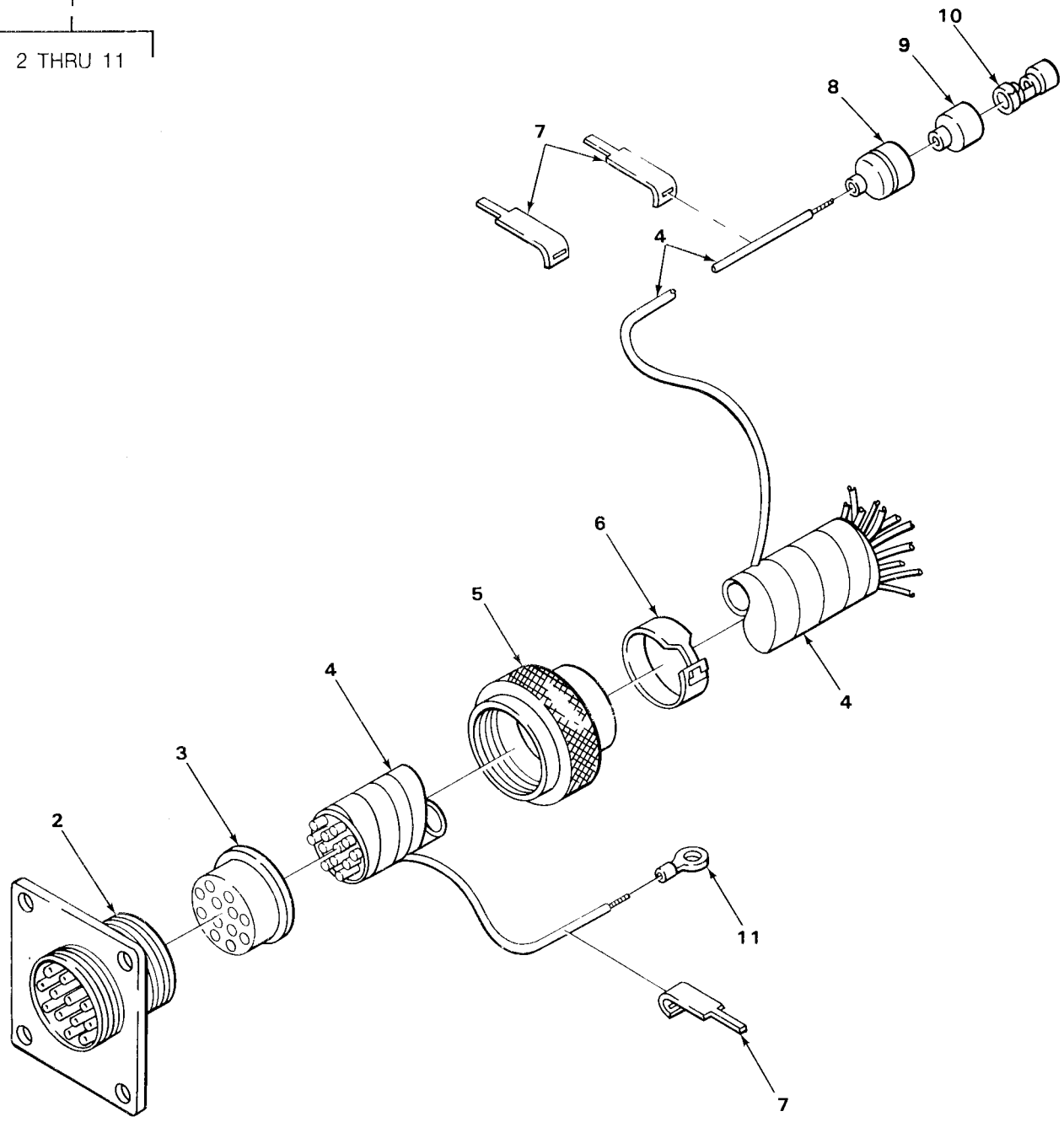
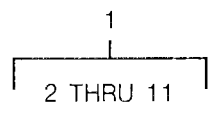
| SECTION II              |       | TM9-2330-211-14&P |              |  |     |
|-------------------------|-------|-------------------|--------------|--|-----|
| (1)                     | (2)   | (3)               | (4)          | (5)  | (6) |
| ITEM                    | SMR   |                   | PART         |  |     |
| NO                      | CODE  | CAGEC             | NUMBER       | DESCRIPTION AND USABLE ON CODES (UOC)                        | QTY |
| GROUP 0609 LIGHTS       |       |                   |              |  |     |
| FIG. 2 CLEARANCE LIGHTS |       |                   |              |  |     |
| 1                       | PAOZZ | 19207             | 8338567      | WASHER, SLOTTED BR, 0.152 IN HOLE<br>DIA, 0.437 CD 0.032 THK | 6   |
| 2                       | PAOZZ | 19207             | 8338568      | CONNECTOR, PLUG, ELEC  | 1   |
| 3                       | PFOOO | 96906             | MS35423-2    | LIGHT, MARKER, CLEARA RED                                    | 4   |
| 3                       | PAOOO | 96906             | MS35423-1    | LIGHT, MARKER, CLEARA AMBER                                  | 2   |
| 4                       | PAOZZ | 73331             | 5939841      | . GASKET   | 1   |
| 5                       | PAOZZ | 96906             | MS27148-2    | . PIN, CONTACT   | 1   |
| 6                       | PAOZZ | 73331             | 5939831      | . PLATE, MOUNTING, LAMP                                      | 1   |
| 7                       | PAOZZ | 96906             | MS15570-1251 | . LAMP, INCANDESCENT   | 1   |
| 8                       | PAOZZ | 78553             | 01059-014-1  | . NUT, PUSH-ON   | 2   |
| 9                       | PAOZZ | 96906             | MS35421-1    | . LENS, LIGHT AMBER  | 1   |
| 9                       | PAOZZ | 96906             | MS35421-2    | . LENS, LIGHT RED  | 1   |
| 10                      | PAOZZ | 73331             | 5939830      | . RETAINER, LENS   | 1   |
| 11                      | PAOZZ | 96906             | MS35190-289  | . SCREW, MACHINE   | 12  |
| 12                      | PAOZZ | 96906             | MS35206-265  | SCREW, MACHINE   | 4   |
| 13                      | PAOZZ | 96906             | MS35338-43   | WASHER, LOCK   | 4   |
| 14                      | PAOZZ | 96906             | MS35649-202  | NUT, PLAIN, HEXAGON  | 4   |
| END OF FIGURE           |       |                   |              |  |     |



TA505757

FIGURE 3. WIRING HARNESS.

| SECTION II |       |       |             | TM9-2330-211-14&P                         |     |
|------------|-------|-------|-------------|---|-----|
| (1)        | (2)   | (3)   | (4)         | (5)                                       | (6) |
| ITEM       | SMR   |       | PART        |   |     |
| NO         | CODE  | CAGEC | NUMBER      | DESCRIPTION AND USABLE ON CODES (UOC)     | QTY |
|            |       |       |             | GROUP 0613 HULL OR CHASSIS WIRING HARNESS |     |
|            |       |       |             | FIG. 3 WIRING HARNESS                     |     |
| 1          | PAOZZ | 96906 | MS35206-281 | SCREW,MACHINE                             | 24  |
| 2          | PAOZZ | 19207 | 7731428     | COVER,ELECTRICAL CO                       | 1   |
| 3          | PAOZZ | 15235 | KL5296      | WASHER,LOCK                               | 24  |
| 4          | PAOZZ | 96906 | MS51967-2   | NUT,PLAIN,HEXAGON                         | 24  |
| 5          | PAOZZ | 94135 | MS35489-106 | GROMMET,NONMETALLIC                       | 3   |
| 6          | PAOZZ | 19207 | 8742791     | GROMMET,NONMETALLIC                       | 3   |
| 7          | PAOZZ | 96906 | MS35489-77  | GROMMET,NONMETALLIC                       | 3   |
| 8          | PAOZZ | 19207 | 8742790     | GROMMET,NONMETALLIC                       | 6   |
| 9          | PAOZZ | 19207 | 8742391     | CLIP ASSEMBLY                             | 20  |
|            |       |       |             | END OF FIGURE                             |     |

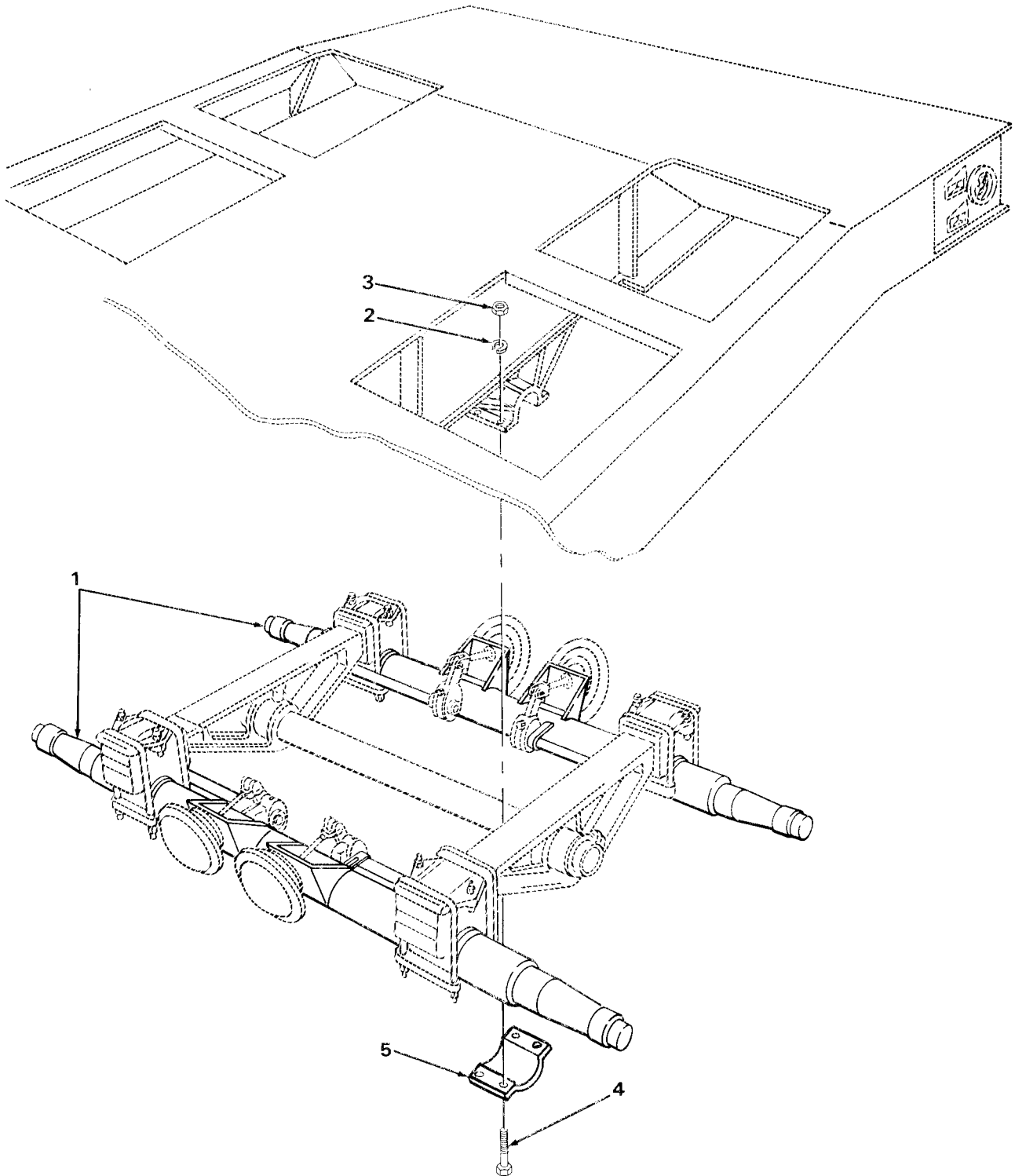


TA505758

FIGURE 4. CABLE ASSEMBLY.



| SECTION II |       |       |            | TM9-2330-211-14&P                         |     |     |
|------------|-------|-------|------------|---|-----|-----|
| (1)        | (2)   | (3)   | (4)        | (5)                                       | (6) |     |
| ITEM       | SMR   |       | PART       |   |     |     |
| NO         | CODE  | CAGEC | NUMBER     | DESCRIPTION AND USABLE ON CODES (UOC)     |     | QTY |
|            |       |       |            | GROUP 0613 HULL OR CHASSIS WIRING HARNESS |     |     |
|            |       |       |            | FIG. 4 CABLE ASSEMBLY                     |     |     |
| 1          | PAOZZ | 19207 | 8742779    | CABLE ASSEMBLY, SPEC                      |     | 1   |
| 2          | PAOZZ | 96906 | MS75021-1  | .CONNECTOR, RECEPTACL                     |     | 1   |
| 3          | PAOZZ | 19207 | 7722333    | .BUSHING, RUBBER                          |     | 1   |
| 4          | PAOZZ | 81349 | M13486-1-7 | .WIRE, ELECTRICAL                         |     | 1   |
| 5          | PAOZZ | 72869 | 7723309    | .NUT, PLAIN, KNURLED                      |     | 1   |
| 6          | PFOZZ | 96906 | MS39020-2  | .BAND, MARKER                             |     | 1   |
| 7          | PFOZZ | 96906 | MS39020-1  | .BAND, MARKER                             |     | 28  |
| 8          | PAOZZ | 19207 | 8338561    | .SHELL, ELECTRICAL CO                     |     | 12  |
| 9          | PADZZ | 19207 | 8338562    | .INSULATOR, BUSHING                       |     | 12  |
| 10         | PAOZZ | 19207 | 8338564    | .TERMINAL ASSEMBLY                        |     | 12  |
|            |       |       |            | O(INTERCHANGABLE WITH P/N 7982997)        |     |     |
| 10         | PAOZZ | 19207 | 7982997    | .TERMINAL, SOLDERED F                     |     | 12  |
|            |       |       |            | O(INTERCHANGEABLE WITH P/N 8338564)       |     |     |
| 11         | PAOZZ | 21450 | 506209     | .TERMINAL, LUG                            |     | 1   |
|            |       |       |            | END OF FIGURE                             |     |     |



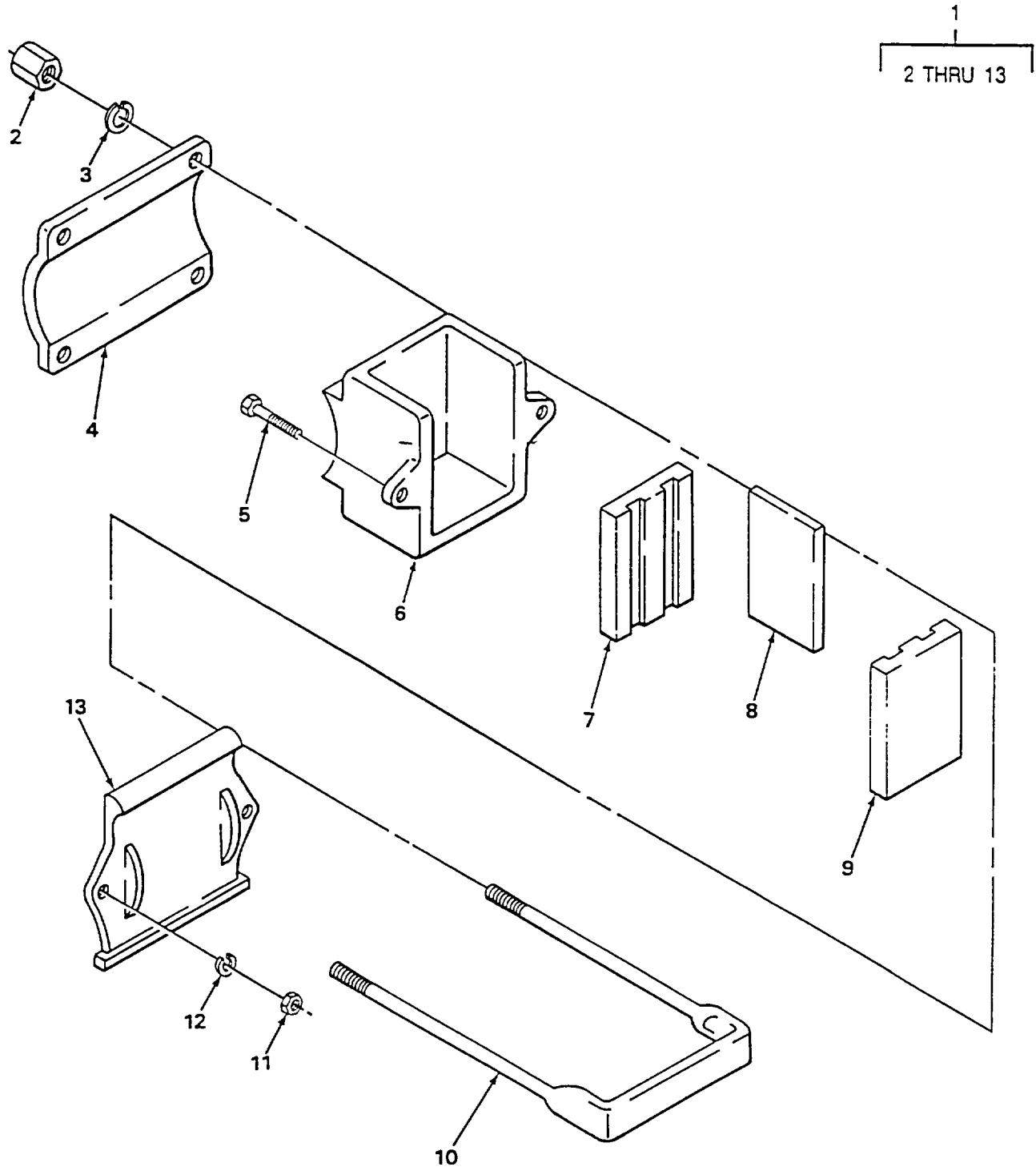
TA505759

FIGURE 5. TANDEM AXLE.

SECTION II

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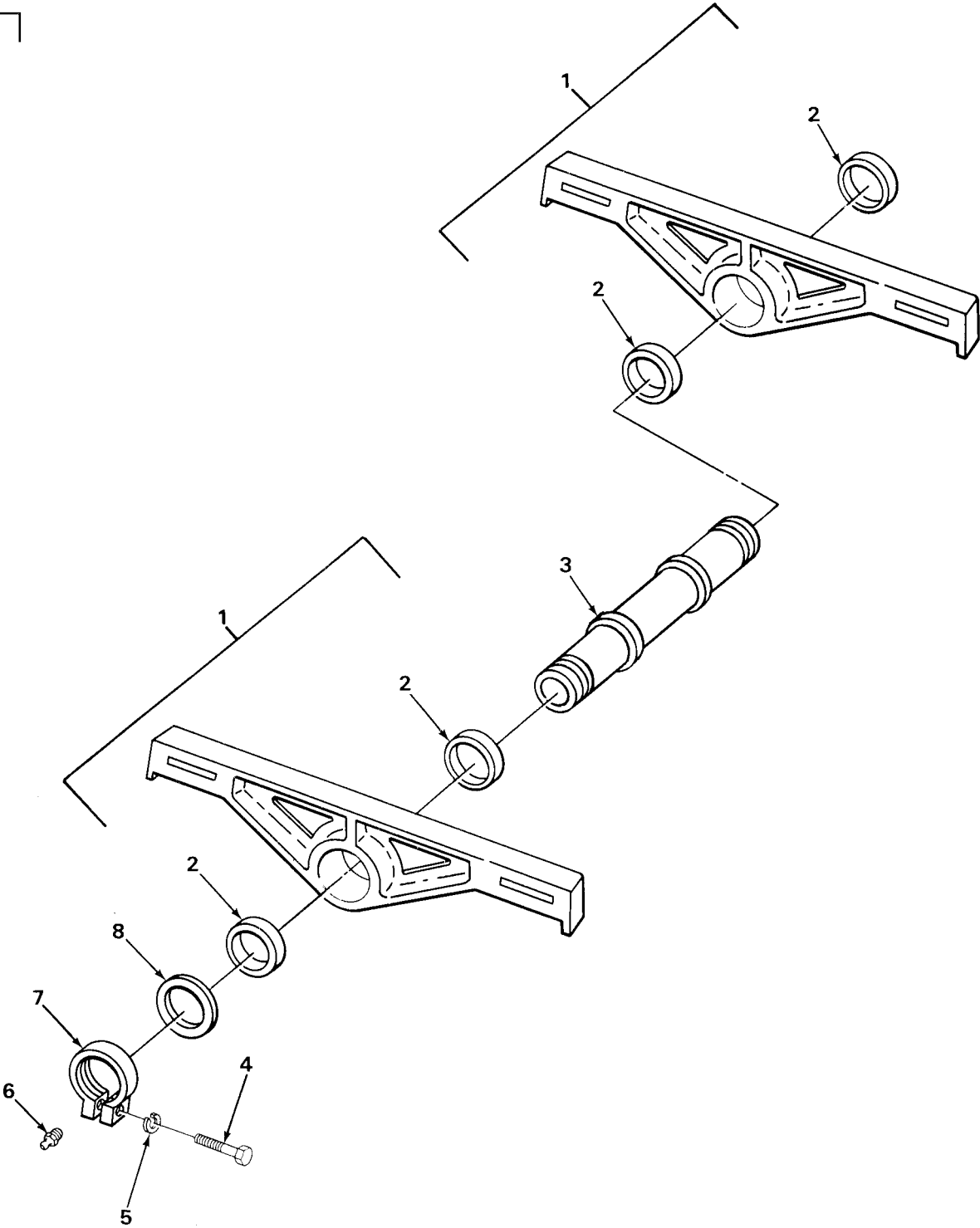
| (1)<br>ITEM<br>NO | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|-------------------|--------------------|--------------|-----------------------|--|------------|
|                   |                    |              |                       | GROUP 11 REAR AXLE                           |            |
|                   |                    |              |                       | GROUP 1100 REAR AXLE ASSEMBLY                |            |
|                   |                    |              |                       | FIG. 5 TANDEM AXLE                           |            |
| 1                 | PAFZZ              | 19207        | 8336982               | AXLE, VEHICULAR, NOND.....                   | 2          |
| 2                 | PAFZZ              | 96906        | MS35338-50            | WASHER LOCK .....                            | 8          |
| 3                 | PAFZZ              | 96906        | MS35690-1024          | NUT, PLAIN, HEXAGON .....                    | 8          |
| * 4               | PAFZZ              | 80204        | B1821BH063F225N       | SCREW, CAP, HEXAGON H .....                  | 8          |
| 5                 | PAFZZ              | 81336        | 8170-10-5             | HOUSING, BEARING, UNIT .....                 | 4          |
|                   |                    |              |                       | END OF FIGURE                                |            |



TA505760

FIGURE 6. SHACKLE BOX.

| SECTION II |       |       | TM9-2330-211-14&P |                                       |     |
|------------|-------|-------|-------------------|---------------------------------------|-----|
| (1)        | (2)   | (3)   | (4)               | (5)                                   | (6) |
| ITEM       | SMR   |       | PART              |                                       |     |
| NO         | CODE  | CAGEC | NUMBER            | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
|            |       |       |                   | GROUP 1100 REAR AXLE ASSEMBLY         |     |
|            |       |       |                   | FIG. 6 SHACKLE BOX                    |     |
|            | XDFFF | 19207 | 8336799           | BOX ASSEMBLY, SHACKLE                 | 4   |
|            | PAFZZ | 19207 | 8379659           | .NUT,PLAIN,HEXAGON                    | 4   |
| 3          | PAFZZ | 96906 | MS35338-51        | .WASHER,LOCK                          | 4   |
| 4          | PAFZZ | 19207 | 8379822           | .COVER,ACCESS                         | 1   |
| 5          | PFFZZ | 96906 | MS90727-166       | .SCREW,CAP,HEXAGON H                  | 2   |
| 6          | PAFZZ | 19207 | 8379820           | .BRACKET,MOUNTING                     | 1   |
| 7          | PAFZZ | 19207 | 8379656           | .LINGIN,WALKING BEAM                  | 1   |
| 8          | PAFZZ | 19207 | 8379658           | .RUBBER STRIP                         | 1   |
| 9          | PAFZZ | 81336 | 8167-1-5          | .NONMETALLIC SPECIAL LINING           | 1   |
| 10         | PAFZZ | 19207 | 8379660           | .BOLT,U                               | 2   |
| 11         | PAFZZ | 96906 | MS51968-20        | .NUT,PLAIN,HEXAGON                    | 2   |
| 12         | PAFZZ | 96906 | MS35338-50        | .WASHER, LOCK                         | 2   |
| 13         | PAFZZ | 19207 | 8379821           | .COVER,ACCESS                         | 1   |
|            |       |       |                   | END OF FIGURE                         |     |



TA505761

FIGURE 7. WALKING BEAM.

SECTION II

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C02

| (1)<br>ITEM<br>NO                                 | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|---|--------------------|--------------|-----------------------|--|------------|
| GROUP 1108 WALKING BEAMS, STUB<br>AXLES AND PARTS |                    |              |                       |  |            |
| FIG. 7 WALKING BEAM                               |                    |              |                       |  |            |
| * 1   | PAFFF              | 19207        | 11597645              | FRAME SECTION, STRUC.....                    | 2          |
| 2   | PAFZZ              | 19207        | 11597646              | .BUSHING, AXLE .....                         | 4          |
| 3   | PBFZZ              | 19207        | 8336792               | AXLE, TRUNNION.....                          | 1          |
| 4   | PFFZZ              | 96906        | MS90727-167           | SCREW, CAP, HEXAGON.....                     | 2          |
| 5   | PAFZZ              | 96906        | MS35338-50            | WASHER LOCK .....                            | 2          |
| 6   | PAFZZ              | 96906        | MS15003-1             | FITTING, LUBRICATION.....                    | 2          |
| 7   | PAFZZ              | 19207        | 8379662               | CLAMP, LOOP .....                            | 2          |
| 8   | PAFZZ              | 19207        | 8379689               | WASHER, FLAT.....                            | 2          |

END OF FIGURE

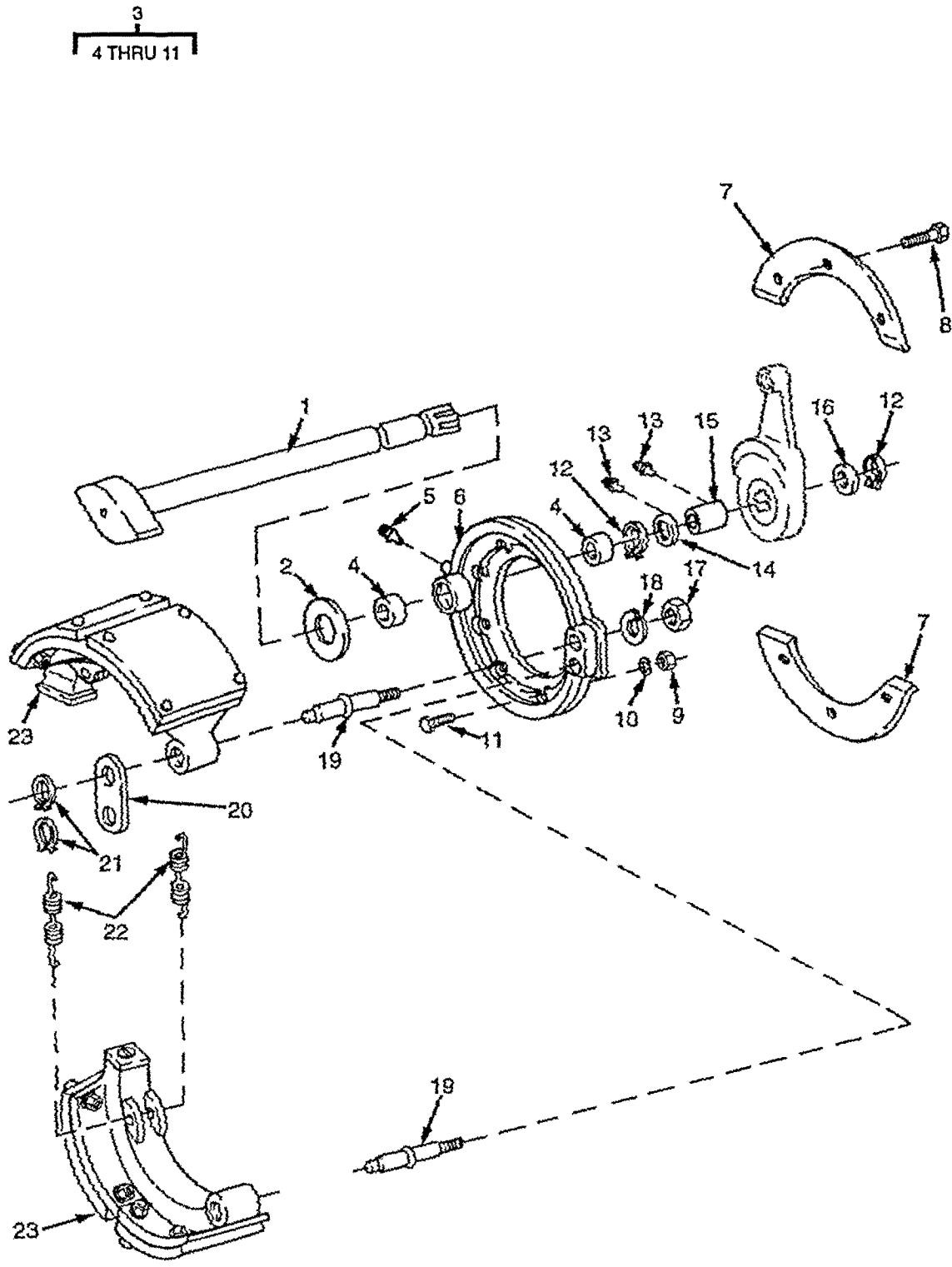


FIGURE 8. BRAKE MECHANISM



## SECTION II

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C02

| (1)<br>ITEM<br>NO         | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC)                 | (6)<br>QTY |
|---------------------------|--------------------|--------------|-----------------------|--|------------|
| GROUP 12 BRAKES           |                    |              |                       |  |            |
| GROUP 1202 SERVICE BRAKES |                    |              |                       |  |            |
| FIG. 8 BRAKE MECHANISM    |                    |              |                       |  |            |
| 1                         | PAOZZ              | 19207        | 8687050               | CAMSHAFT, ACTUATING, CURBSIDE .....<br>REAR/STREETSIDE FRONT | 2          |
| 1                         | PAOZZ              | 19207        | 8687051               | CAMSHAFT STREETSIDE REAR/CURBSIDE .....<br>FRONT             | 2          |
| 2                         | PAOZZ              | 19207        | 8687034               | WASHER, BRAKE CAM SP.....                                    | 4          |
| 3                         | PAOOO              | 19207        | 8687057               | PLATE, BACKING, BRAKE W/BEARING, .....<br>ASSEMBLY           | 4          |
| 4                         | PAOZZ              | 19207        | 11625220              | .BEARING, SLEEVE.....  | 2          |
| 5                         | PAOZZ              | 96906        | MS15001-1             | .FITTING, LUBRICATION.....                                   | 1          |
| 6                         | PAOZZ              | 19207        | 8687058               | .SPIDER, UTILITY BRAKE W/O BEARINGS .....                    | 1          |
| 7                         | PAOZZ              | 19207        | 8687041               | .SHIELD, DUST, BRAKE.....                                    | 1          |
| 8                         | PAOZZ              | 96906        | MS24629-56            | .SCREW, TAPPING, THREA.....                                  | 8          |
| 9                         | PFOZZ              | 96906        | MS51968-14            | .NUT, PLAIN, HEXAGON.....                                    | 8          |
| 10                        | PFOZZ              | 96906        | MS35333-44            | .WASHER, LOCK .....  | 8          |
| 11                        | PAOZZ              | 96906        | MS90726-113           | .SCREW, CAP, HEXAGON H.....                                  | 8          |
| 12                        | PAOZZ              | 96906        | MS16624-1150          | RING, RETAINER.....  | 4          |
| 13                        | PAOZZ              | 96906        | MS15001-1             | FITTING, LUBRICATION.....                                    | 4          |
| 14                        | PAOZZ              | 19207        | 5168890               | WASHER, FLAT.....  | 4          |
| 15                        | PAOZZ              | 78550        | UB1179                | BUSHING, SLEEVE.....   | 4          |
| 16                        | PAOZZ              | 19207        | 7088740               | WASHER, KEY .....  | 4          |
| 17                        | PAOZZ              | 96906        | MS35691-61            | NUT, PLAIN, HEXAGON.....                                     | 8          |
| 18                        | PAOZZ              | 96906        | MS35338-51            | WASHER, LOCK .....   | 8          |
| 19                        | PAFZZ              | 19207        | 8687040               | PIN .....  | 8          |
| 20                        | PAFZZ              | 56697        | UB-2208               | CONNECTING LINK, RIG .....                                   | 4          |
| 21                        | PAOZZ              | 56697        | UB2206                | RING, RETAINING.....   | 8          |
| 22                        | PAOZZ              | 56697        | UB2205                | SPRING, HELICAL, EXTE .....                                  | 8          |
| * 23                      | PAOZZ              | 56697        | UB2232                | BRAKE SHOE .....   | 8          |

END OF FIGURE

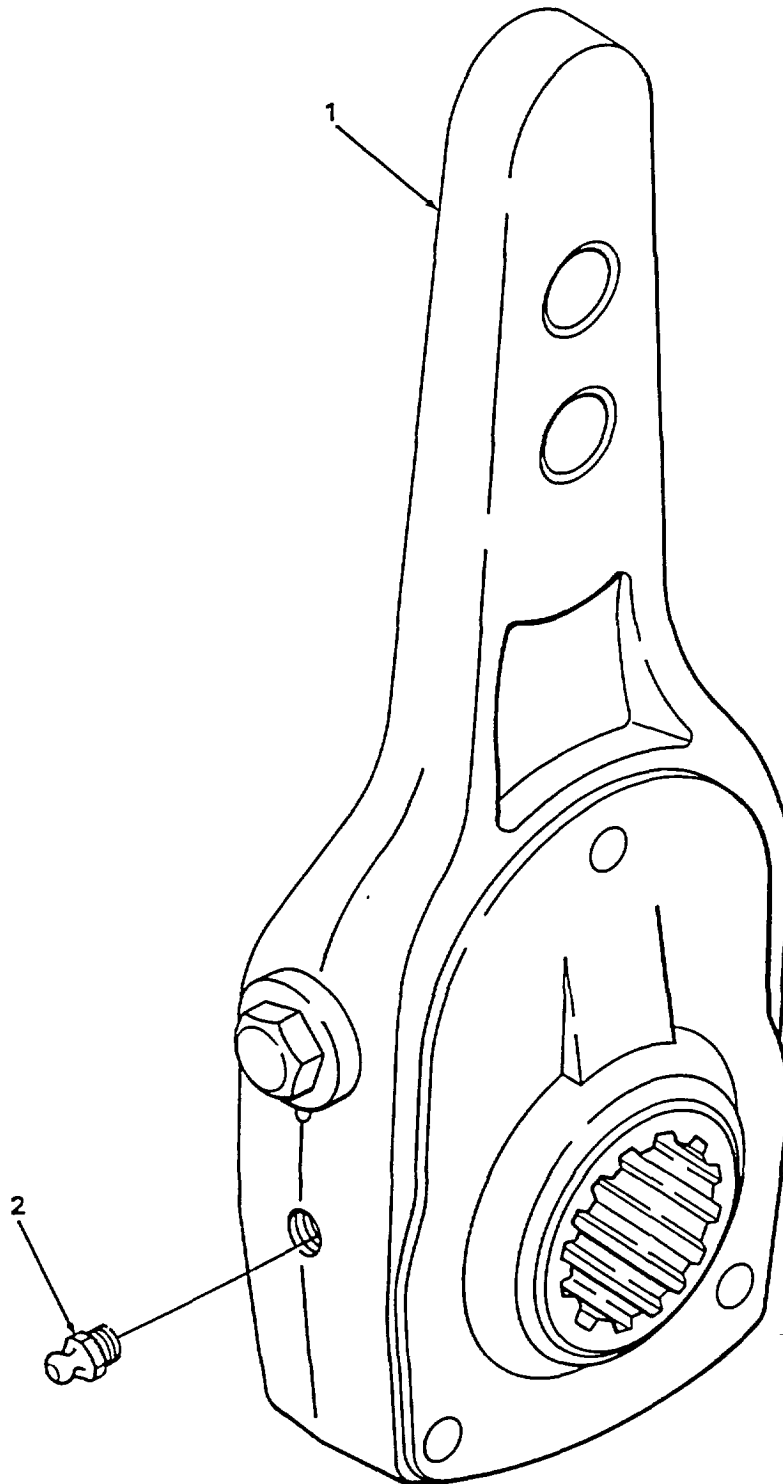
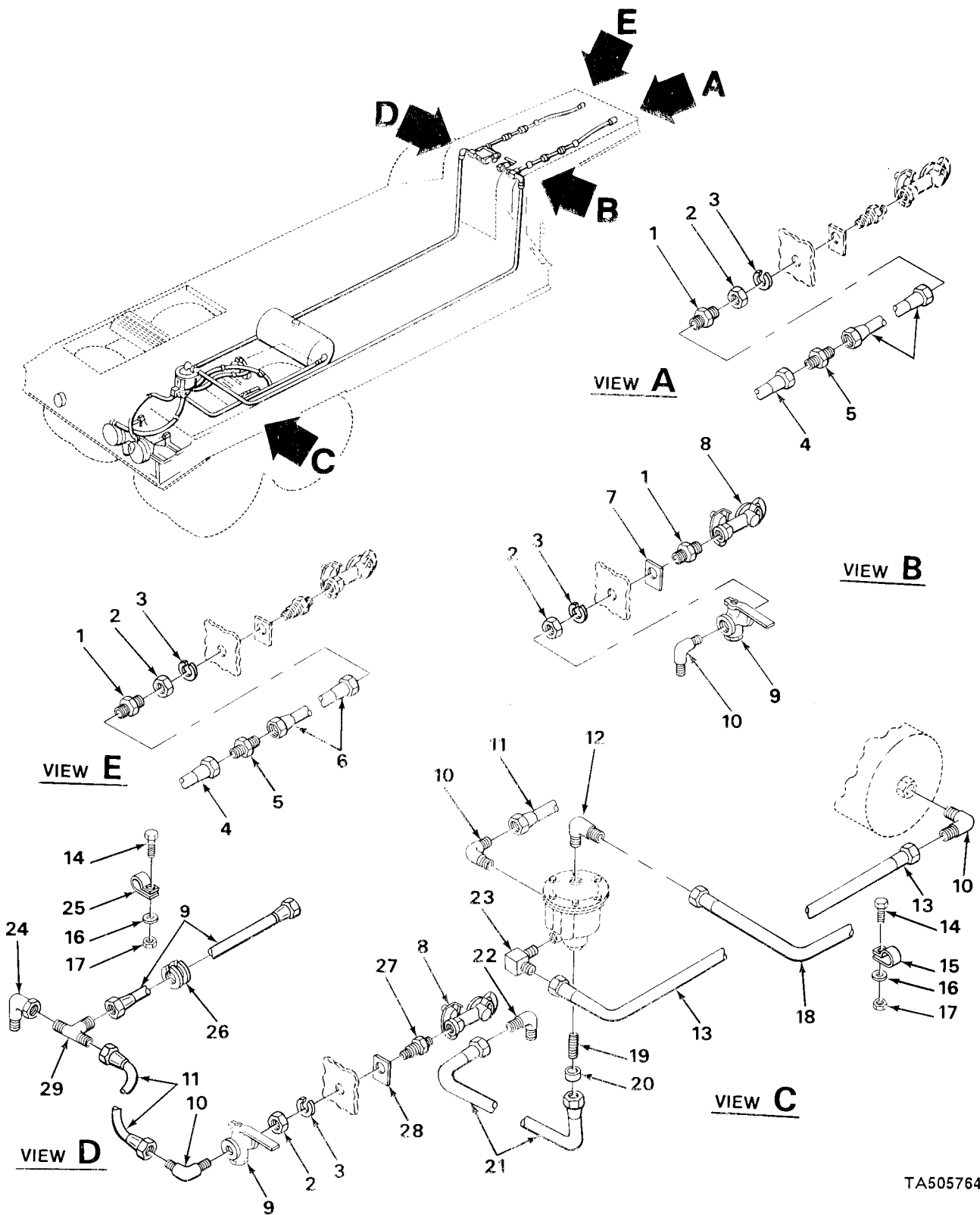


FIGURE 9. SLACK ADJUSTER.

| SECTION II |       |       |           | TM9-2330-211-14&P                     |  |     |
|------------|-------|-------|-----------|---------------------------------------|--|-----|
| (1)        | (2)   | (3)   | (4)       | (5)                                   |  | (6) |
| ITEM       | SMR   |       | PART      | DESCRIPTION AND USABLE ON CODES (UOC) |  | QTY |
| NO         | CODE  | CAGEC | NUMBER    |                                       |  |     |
|            |       |       |           | GROUP 1206 MECHANICAL BRAKE SYSTEM    |  |     |
|            |       |       |           | FIG. 9 SLACK ADJUSTER                 |  |     |
| 1          | PAOZZ | 19207 | 8336779   | ADJUSTER, SLACK, BRAK                 |  | 4   |
| 2          | PAOZZ | 96906 | MS15003-1 | FITTING, LUBRICATION                  |  | 4   |
|            |       |       |           | END OF FIGURE                         |  |     |



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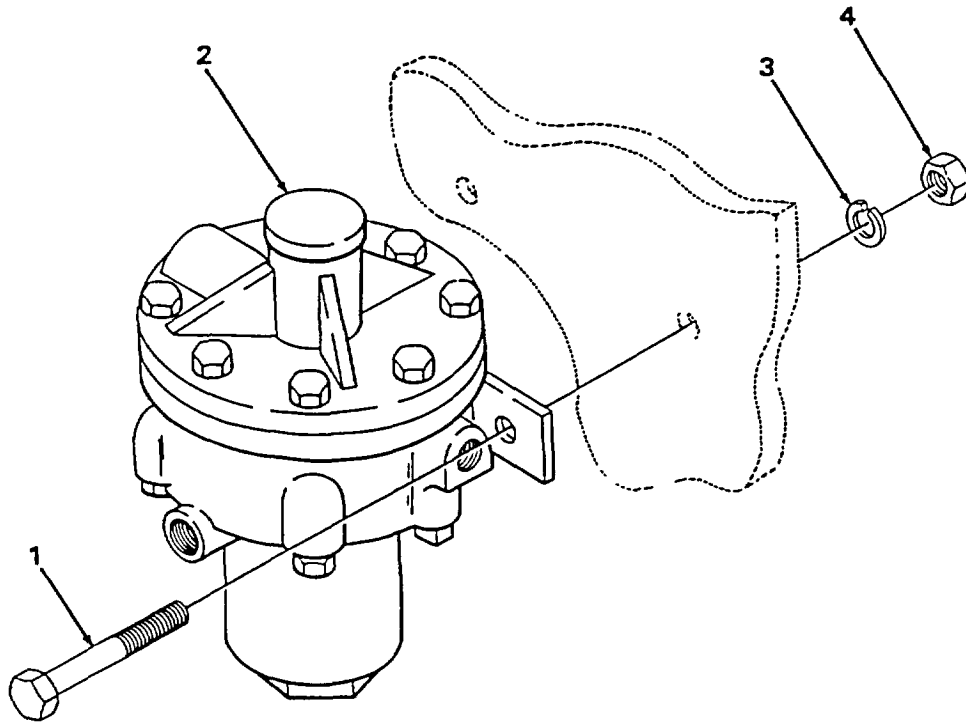
FIGURE 10. AIRBRAKE LINES.

## SECTION II

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C02

| (1)<br>ITEM<br>NO          | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|----------------------------|--------------------|--------------|-----------------------|--|------------|
| GROUP 1208 AIRBRAKE SYSTEM |                    |              |                       |  |            |
| FIG. 10 AIRBRAKE LINES     |                    |              |                       |  |            |
| 1                          | PAOZZ              | 40342        | 8330281               | NIPPLE, PIPE .....                           | 4          |
| 2                          | PAOZZ              | 30612        | 24569D                | NUT, PLAIN, HEXAGON.....                     | 4          |
| 3                          | PAOZZ              | 96906        | MS35333-49            | WASHER, LOCK .....                           | 4          |
| 4                          | PAOZZ              | 19207        | 11597647              | TUBE, BENT, METALLIC .....                   | 4          |
| 5                          | PAOZZ              | 96906        | MS51814-5             | NIPPLE, TUBE .....                           | 8          |
| 6                          | PAOZZ              | 19207        | 8336706               | TUBE, BENT, METALLIC .....                   | 4          |
| 7                          | PAOZZ              | 96906        | MS53007-1             | PLATE, IDENTIFICATIO SERVICE .....           | 1          |
| 8                          | PAOZZ              | 96906        | MS35746-1             | COUPLING HALF, QUICK.....                    | 2          |
| 9                          | PAOZZ              | 06853        | 285172                | VALVE, BALL.....                             | 2          |
| 10                         | PAOZZ              | 96906        | MS39182-5             | ELBOW, PIPE TO TUBE.....                     | 2          |
| 11                         | MOOZZ              | 19207        | 8388858               | TUBE MAKE FROM P/N 305087-0116.....          | 1          |
| 12                         | PAOZZ              | 81343        | 6-4 120202BA          | ELBOW, PIPE TO TUBE.....                     | 1          |
| 13                         | MOOZZ              | 19207        | 8388856               | TUBE MAKE FROM P/N 8689210.....              | 1          |
| 14                         | PAOZZ              | 96906        | MS90727-8             | SCREW, CAP, HEXAGON H.....                   | 10         |
| 15                         | PAOZZ              | 96906        | MS21333-38            | CLAMP, LOOP .....                            | 1          |
| 16                         | PAOZZ              | 15235        | KL5296                | WASHER, LOCK .....                           | 1          |
| 17                         | PFOZZ              | 96906        | MS51968-2             | NUT, PLAIN, HEXAGON.....                     | 1          |
| 18                         | MOOZZ              | 19207        | 8388857               | TUBE MAKE FROM P/N 30587-0116.....           | 1          |
| 19                         | PAOZZ              | 40342        | N13128                | CONNECTOR, MULTIPLIER.....                   | 4          |
| 20                         | PFOZZ              | 96906        | MS35489-110           | GROMMET, NONMETALLIC.....                    | 4          |
| 21                         | PAOZZ              | 40342        | N13463D               | HOSE ASSEMBLY, NONME .....                   | 4          |
| * 22                       | PAOZZ              | 81343        | 6-4 120203BA          | ELBOW, PIPE .....                            | 2          |
| 23                         | PAOZZ              | 89222        | 330-20223265          | ELBOW, PIPE TO TUBE.....                     | 2          |
| * 24                       | PAOZZ              | 96906        | MS39230-2             | ELBOW, PIPE TO TUBE.....                     | 4          |
| 25                         | PAOZZ              | 96906        | MS21333-36            | CLAMP, LOOP .....                            | 4          |
| 26                         | PAOZZ              | 94135        | MS35489-106           | GROMMET, NONMETALLIC.....                    | 6          |
| 27                         | PAOZZ              | 96906        | MS51819-7             | ADAPTER, STRAIGHT, PI.....                   | 1          |
| 28                         | PAOZZ              | 96906        | MS53007-2             | PLATE, IDENTIFICATIO IDENTIFICATION .....    | 1          |
|                            |                    |              |                       | EMERGENCY                                    |            |
| 29                         | PAOZZ              | 96906        | MS39191-2             | TEE, PIPE TO TUBE.....                       | 2          |

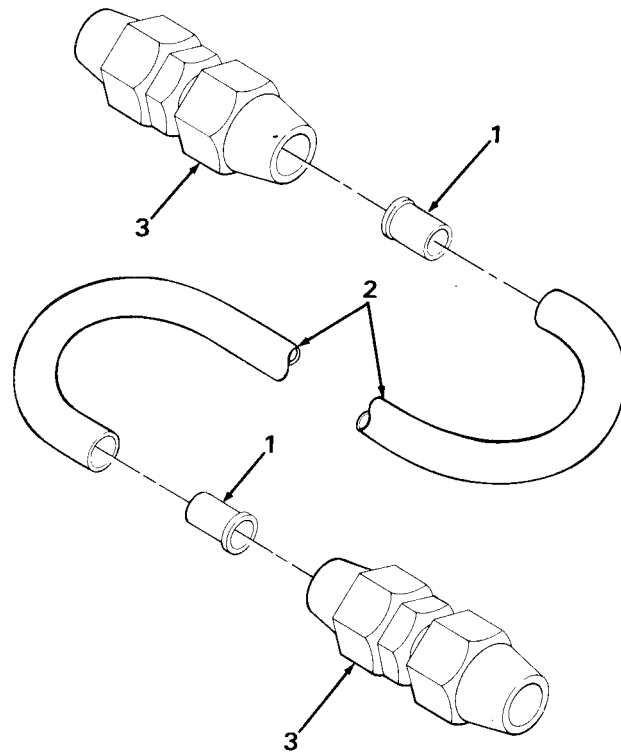
END OF FIGURE



TA505765

FIGURE 11. EMERGENCY RELAY VALVE.

| SECTION II                    |       |       |            | TM9-2330-211-14&P |                                       |     |
|-------------------------------|-------|-------|------------|-------------------|---------------------------------------|-----|
| (1)                           | (2)   | (3)   | (4)        | (5)               |                                       | (6) |
| ITEM                          | SMR   |       | PART       |                   | DESCRIPTION AND USABLE ON CODES (UOC) |     |
| NO                            | CODE  | CAGEC | NUMBER     |                   |                                       | QTY |
| GROUP 1208 AIRBRAKESYSTEM     |       |       |            |                   |                                       |     |
| FIG. 11 EMERGENCY RELAY VALVE |       |       |            |                   |                                       |     |
| 1                             | PAOZZ | 96906 | MS90726-62 |                   | SCREW,CAP,HEXAGON H                   | 2   |
| 2                             | PAOZZ | 96906 | MS53004-2  |                   | PARTS KIT,RELAY VAL                   | 1   |
| 3                             | PAOZZ | 96906 | MS35338-46 |                   | WASHER,LOCK                           | 2   |
| 4                             | PAOZZ | 96906 | MS51968-8  |                   | NUT,PLAIN,HEXAGON                     | 2   |
| END OF FIGURE                 |       |       |            |                   |                                       |     |

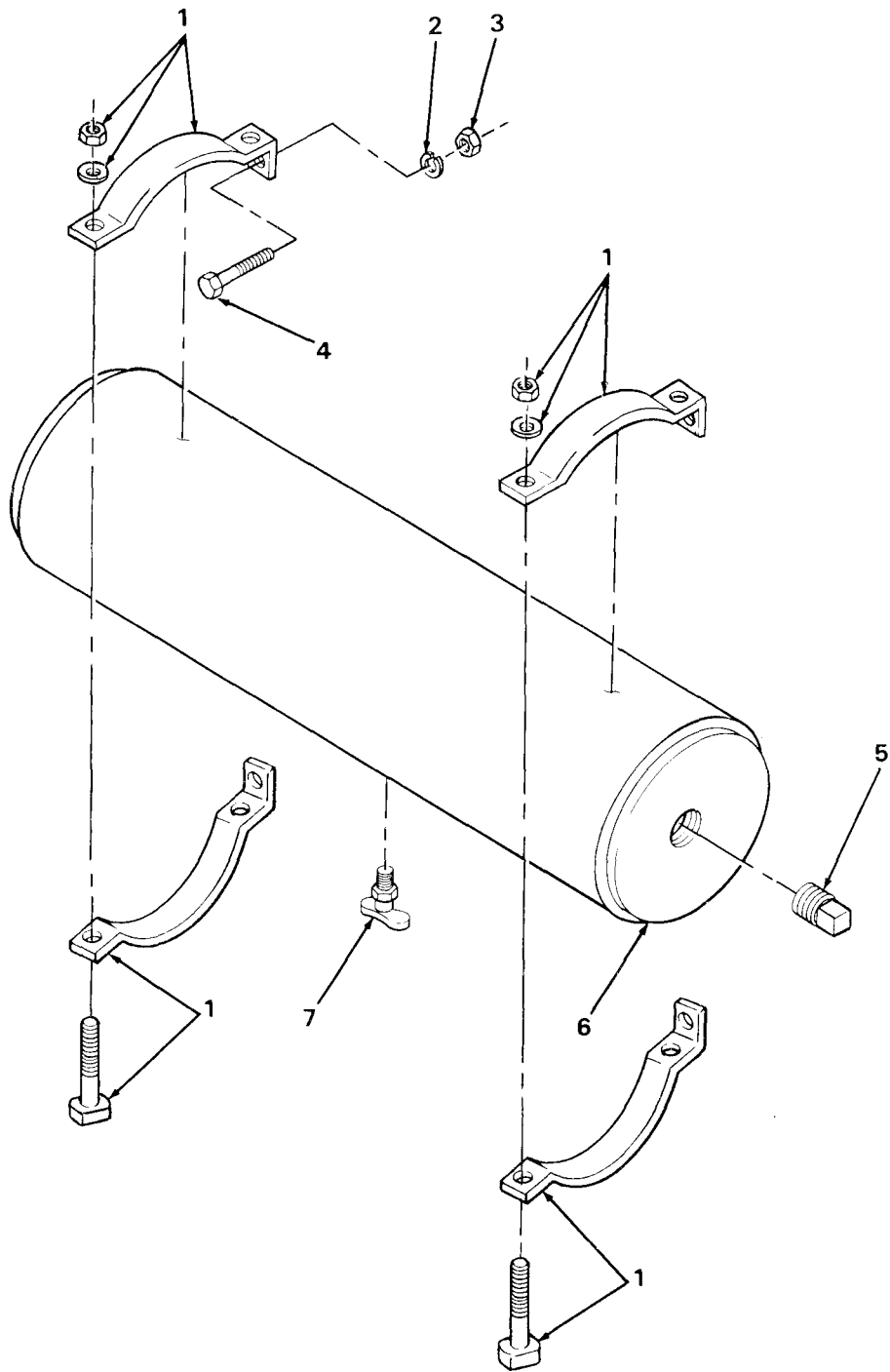


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FIGURE 12. AIR FILTER LINE.



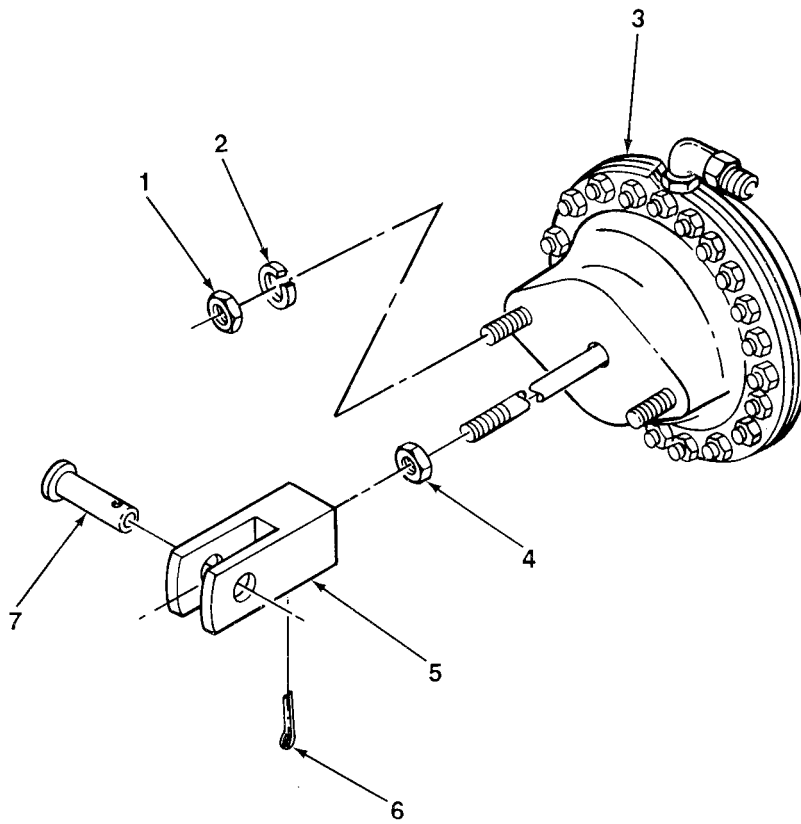
| SECTION II |       |       |            | TM9-2330-211-14&P                     |     |
|------------|-------|-------|------------|---------------------------------------|-----|
| (1)        | (2)   | (3)   | (4)        | (5)                                   | (6) |
| ITEM       | SMR   |       | PART       | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
| NO         | CODE  | CAGEC | NUMBER     |                                       |     |
|            |       |       |            | GROUP 1208 AIRBRAKE SYSTEM            |     |
|            |       |       |            | FIG. 12 AIR FILTER LINE               |     |
| 1          | XDOZZ | 19207 | CPR10232-1 | INSERT                                | 2   |
| 2          | MOOZZ | 19207 | 0144915    | HOSE MAKE FROM P/N246115              | 1   |
| 3          | PAOZZ | 14397 | MS39187-2  | NIPPLE,TUBE                           | 2   |
|            |       |       |            | END OF FIGURE                         |     |



TA505767

FIGURE 13. AIR RESERVOIR.

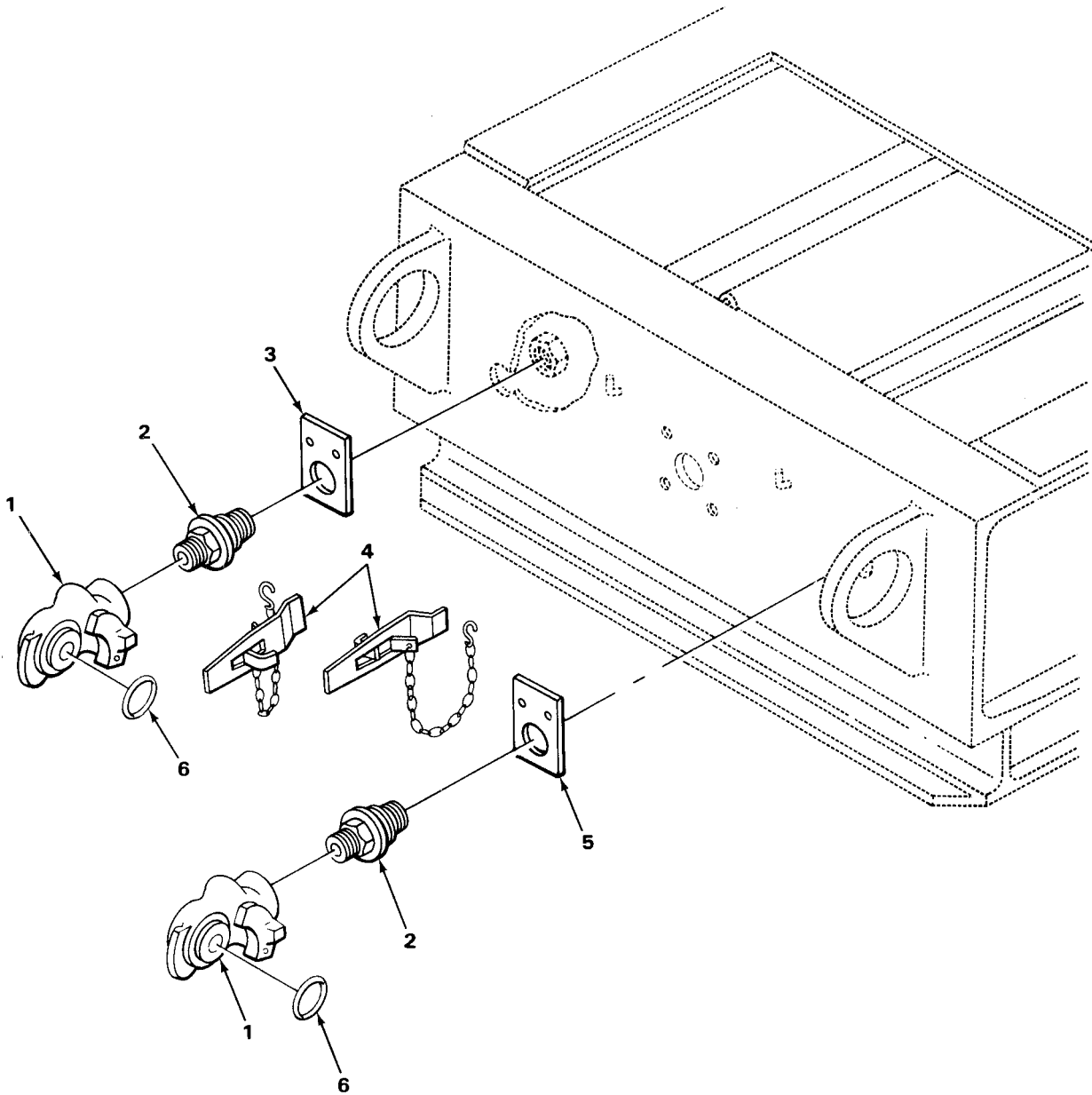
| SECTION II |       |       |            | TM9-2330-211-14&P                     |  |     |
|------------|-------|-------|------------|---------------------------------------|--|-----|
| (1)        | (2)   | (3)   | (4)        | (5)                                   |  | (6) |
| ITEM       | SMR   |       | PART       |                                       |  |     |
| NO         | CODE  | CAGEC | NUMBER     | DESCRIPTION AND USABLE ON CODES (UOC) |  | QTY |
|            |       |       |            | GROUP 1208 AIRBRAKE SYSTEM            |  |     |
|            |       |       |            | FIG. 13 AIR RESERVOIR                 |  |     |
| 1          | PAOZZ | 19207 | 8336722    | STRAP,RETAINING                       |  | 2   |
| 2          | PAOZZ | 12603 | 23E06      | WASHER,LOCK                           |  | 4   |
| 3          | PAOZZ | 96906 | MS51968-8  | NUT,PLAIN,HEXAGON                     |  | 4   |
| 4          | PAOZZ | 96906 | MS90726-61 | SCREW,CAP,HEXAGON                     |  | 4   |
| 5          | PAOZZ | 29510 | 20972R1    | PLUG,PIPE                             |  | 1   |
| 6          | PAOZZ | 19207 | 8336707    | TANK,PRESSURE                         |  | 1   |
| 7          | PAOZZ | 96906 | MS35782-5  | COCK,DRAIN                            |  | 1   |
|            |       |       |            | END OF FIGURE                         |  |     |



TA505768

FIGURE 14. AIRBRAKE CHAMBER.

| SECTION II                 |       |       | TM9-2330-211-14&P |                                       |     |
|----------------------------|-------|-------|-------------------|---------------------------------------|-----|
| (1)                        | (2)   | (3)   | (4)               | (5)                                   | (6) |
| ITEM                       | SMR   |       | PART              |                                       |     |
| NO                         | CODE  | CAGEC | NUMBER            | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
| GROUP 1208 AIRBRAKE SYSTEM |       |       |                   |                                       |     |
| FIG. 14 AIRBRAKE CHAMBER   |       |       |                   |                                       |     |
| 1                          | PAOZZ | 96906 | MS35690-1024      | NUT, PLAIN, HEXAGON                   | 8   |
| 2                          | PAOZZ | 96906 | MS35340-50        | WASHER, LOCK                          | 8   |
| 3                          | PAOZZ | 19207 | 8336712           | CHAMBER, AIR BRAKE                    | 4   |
| 4                          | PAOZZ | 96906 | MS51968-20        | .NUT, PLAIN, HEXAGON                  | 1   |
| 5                          | PAOZZ | 40342 | N11257            | .CLEVIS, ROD END                      | 1   |
| 6                          | PAOZZ | 96906 | MS24665-353       | .PIN, COTTER                          | 1   |
| 7                          | PAOZZ | 19207 | 583553            | .PIN, STRAIGHT, HEADLE                | 1   |
| END OF FIGURE              |       |       |                   |                                       |     |



TA505769

FIGURE 15. AIRBRAKE COUPLINGS.

SECTION II

TM 9-2330-211-14&P  
C02

| (1)<br>ITEM<br>NO          | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|----------------------------|--------------------|--------------|-----------------------|--|------------|
| GROUP 1208 AIRBRAKE SYSTEM |                    |              |                       |  |            |
| FIG. 15 AIRBRAKE COUPLINGS |                    |              |                       |  |            |
| 1                          | PAOZZ              | 96906        | MS35746-1             | COUPLING HALF, QUICK.....                    | 2          |
| 2                          | PAOZZ              | 40342        | 8330281               | NIPPLE, PIPE .....                           | 2          |
| 3                          | PAOZZ              | 96906        | MS53007-1             | PLATE, IDENTIFICATIO SERVICE .....           | 1          |
| 4                          | PAOZZ              | 16662        | AD2583                | DUMMY COUPLING, AUTO W/CHAIN.....            | 4          |
| 5                          | PAOZZ              | 96906        | MS53007-2             | PLATE, IDENTIFICATIO EMERGENCY .....         | 1          |
| 6                          | PAOZZ              | 96906        | MS35748-1             | PACKING, PREFORMED.....                      | 2          |

END OF FIGURE

10  
11 THRU 16

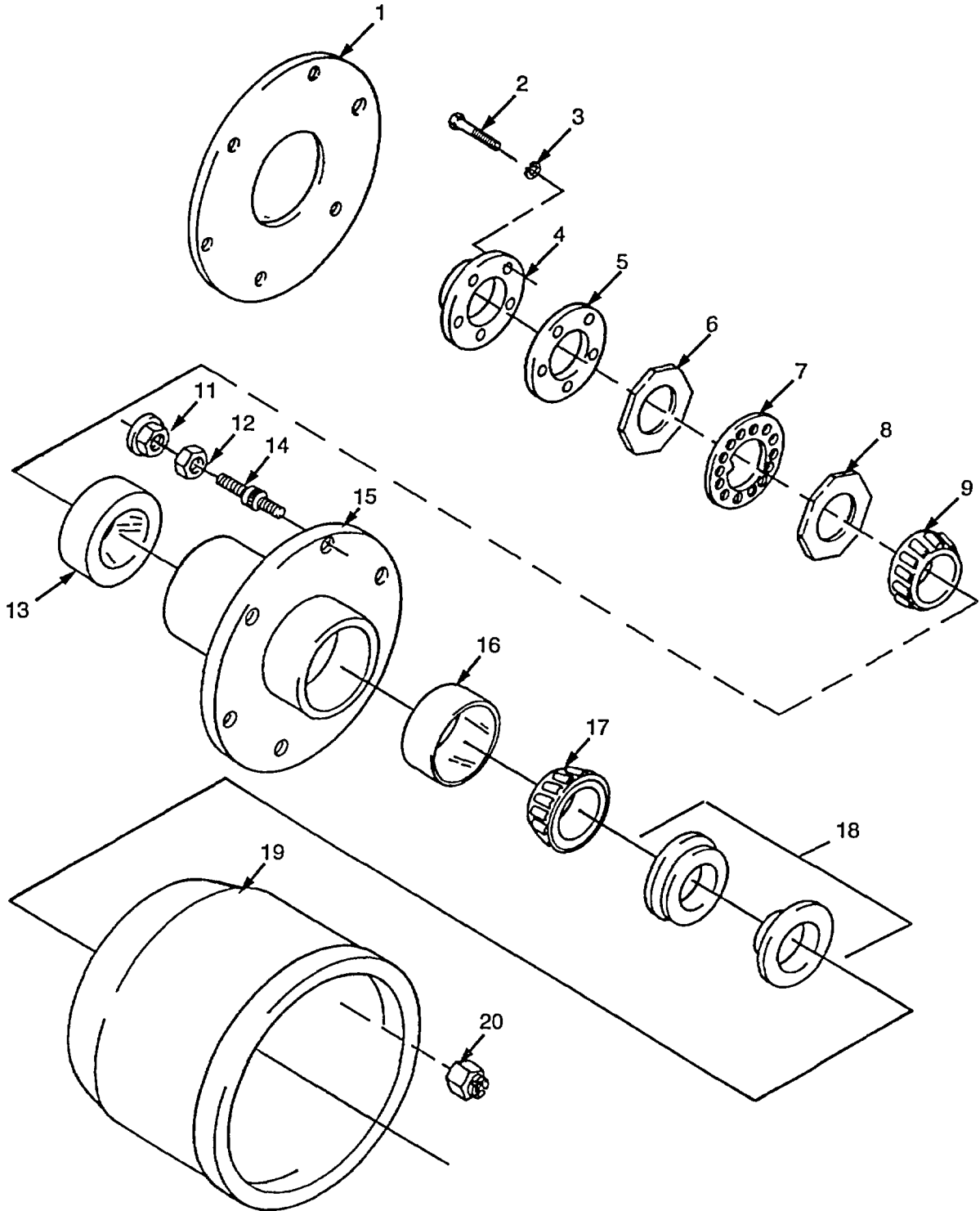


FIGURE 16. HUB AND DRUM

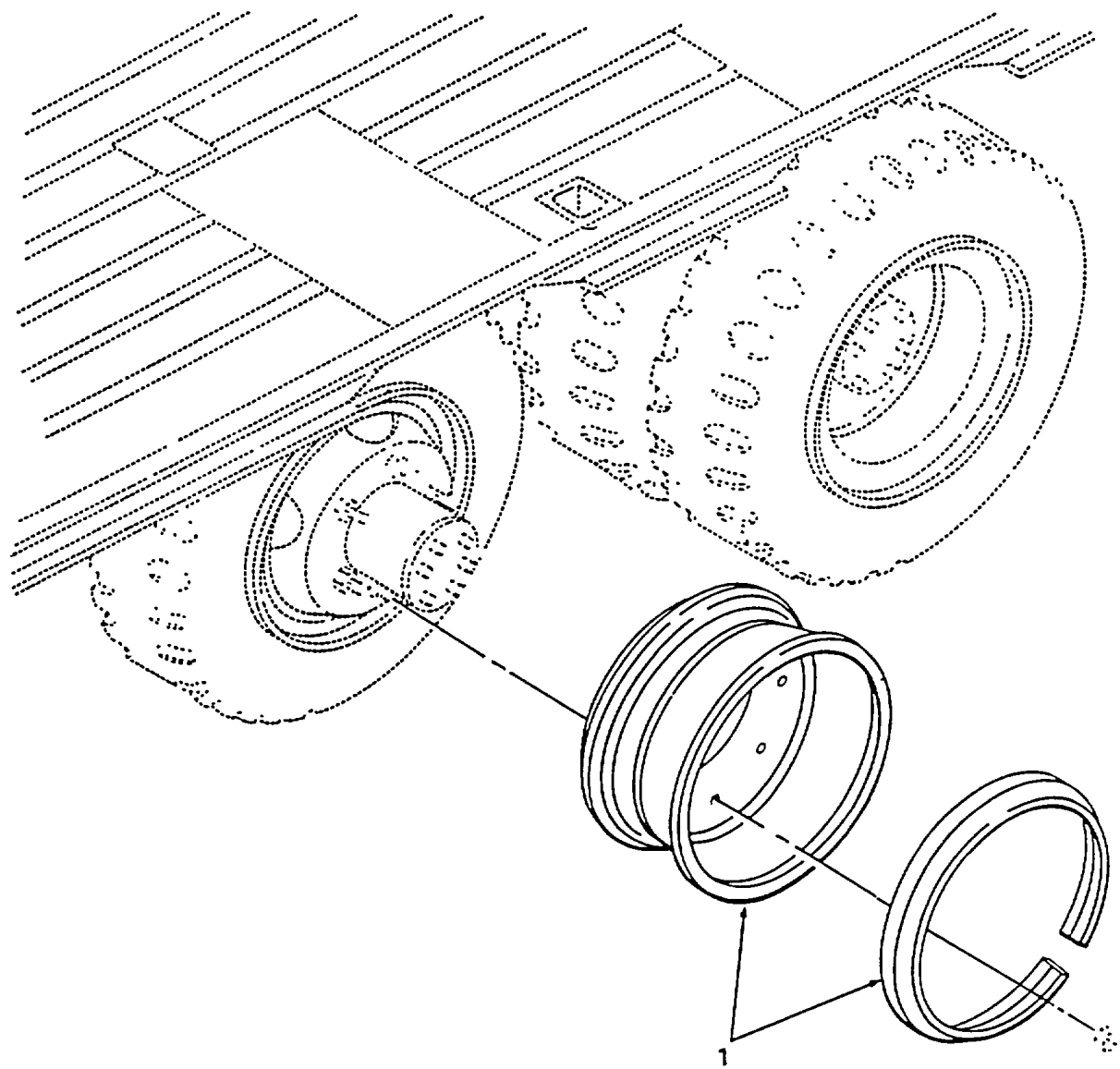


## SECTION II

TM 9-2330-211-14&P  
C02

| (1)<br>ITEM<br>NO | (2)<br>SMR<br>CODE | (3)<br>PART<br>CAGEC | (4)<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|-------------------|--------------------|----------------------|---------------|--|------------|
|                   |                    |                      |               | GROUP 13 WHEELS                              |            |
|                   |                    |                      |               | GROUP 1311 WHEEL ASSEMBLY                    |            |
|                   |                    |                      |               | FIG. 16 HUB AND DRUM                         |            |
| 1                 | PAOZZ              | 19207                | 10929888      | SPACER, PLATE .....                          | 1          |
| 2                 | PAOZZ              | 96906                | MS90728-4     | SCREW, CAP, HEXAGON H .....                  | 12         |
| 3                 | PAOZZ              | 15235                | KL5296        | WASHER, LOCK .....                           | 12         |
| 4                 | PAOZZ              | 78500                | 3262Q95       | COVER, ACCESS .....                          | 1          |
| 5                 | PAOZZ              | 19207                | 11597656      | GASKET .....                                 | 2          |
| 6                 | PAOZZ              | 19207                | 7088737       | NUT, PLAIN, OCTAGON .....                    | 2          |
| 7                 | PAOZZ              | 19207                | 7088739       | WASHER, KEY .....                            | 2          |
| 8                 | PAOZZ              | 19207                | 7088738       | NUT, PLAIN, OCTAGON .....                    | 2          |
| *                 | PAOZZ              | 08162                | 643           | CONE AND ROLLER, TA .....                    | 2          |
| 10                | PAOOO              | 19207                | 10944309-1    | HUB, BODY LEFT HAND .....                    | 1          |
| 10                | PAOOO              | 19207                | 10944309-2    | HUB, ASSEMBLY RIGHT HAND .....               | 1          |
| 11                | PAOZZ              | 19207                | 8712220       | .NUT, PLAIN, EXTENDED RIGHT HAND .....       | 6          |
| 11                | PAOZZ              | 09386                | 69913         | .NUT, PLAIN, EXTENDED LEFT HAND .....        | 6          |
| 12                | PAOZZ              | 09386                | 89327         | .NUT, PLAIN, SINGLE BA RIGHT HAND .....      | 6          |
| 12                | PAOZZ              | 09386                | 89328         | .NUT, PLAIN, SINGLE BA LEFT HAND .....       | 6          |
| *                 | PAOZZ              | 04741                | 4FA0142       | .CUP, TAPERED ROLLER INNER.....              | 2          |
| *                 | PAOZZ              | 19207                | 8738089-2     | .STUD, LOCKED IN SHOULDERED, LEFT.....       | 6          |
|                   |                    |                      |               | HAND   |            |
| *                 | PAOZZ              | 19207                | 8738089-1     | .STUD, LOCKED IN SHOULDERED, RIGHT.....      | 6          |
|                   |                    |                      |               | HAND   |            |
| 15                | PAOZZ              | 09386                | 68732D        | .HUB, WHEEL, VEHICULAR .....                 | 1          |
| *                 | PAOZZ              | 00447                | 426528        | .CUP, TAPERED ROLLER, OUTER.....             | 2          |
| *                 | PAOZZ              | 00447                | 5P1321        | CONE AND ROLLERS, TA.....                    | 2          |
| *                 | PAOZZ              | 26151                | 372-7091      | SEAL AXLE .....                              | 2          |
| 19                | PAOZZ              | 78500                | 3219C1251     | DRUM.....                                    | 1          |
| 20                | PAOZZ              | 96906                | MS35692-62    | NUT, PLAIN, SLOTTED, H.....                  | 6          |

END OF FIGURE



TA505771

FIGURE 17. WHEELS.

SECTION II

TM 9-2330-211-14&P

| (1)<br>ITEM<br>NO | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|-------------------|--------------------|--------------|-----------------------|--|------------|
|                   |                    |              |                       | GROUP 1311 WHEEL ASSEMBLY                    |            |
|                   |                    |              |                       | FIG. 17 WHEELS                               |            |
| 1                 | PAOZZ              | 19207        | 11669686              | WHEEL, PNEUMATIC TIR W/RING .....            | 8          |
|                   |                    |              |                       | END OF FIGURE                                |            |

2  
3 THRU 5

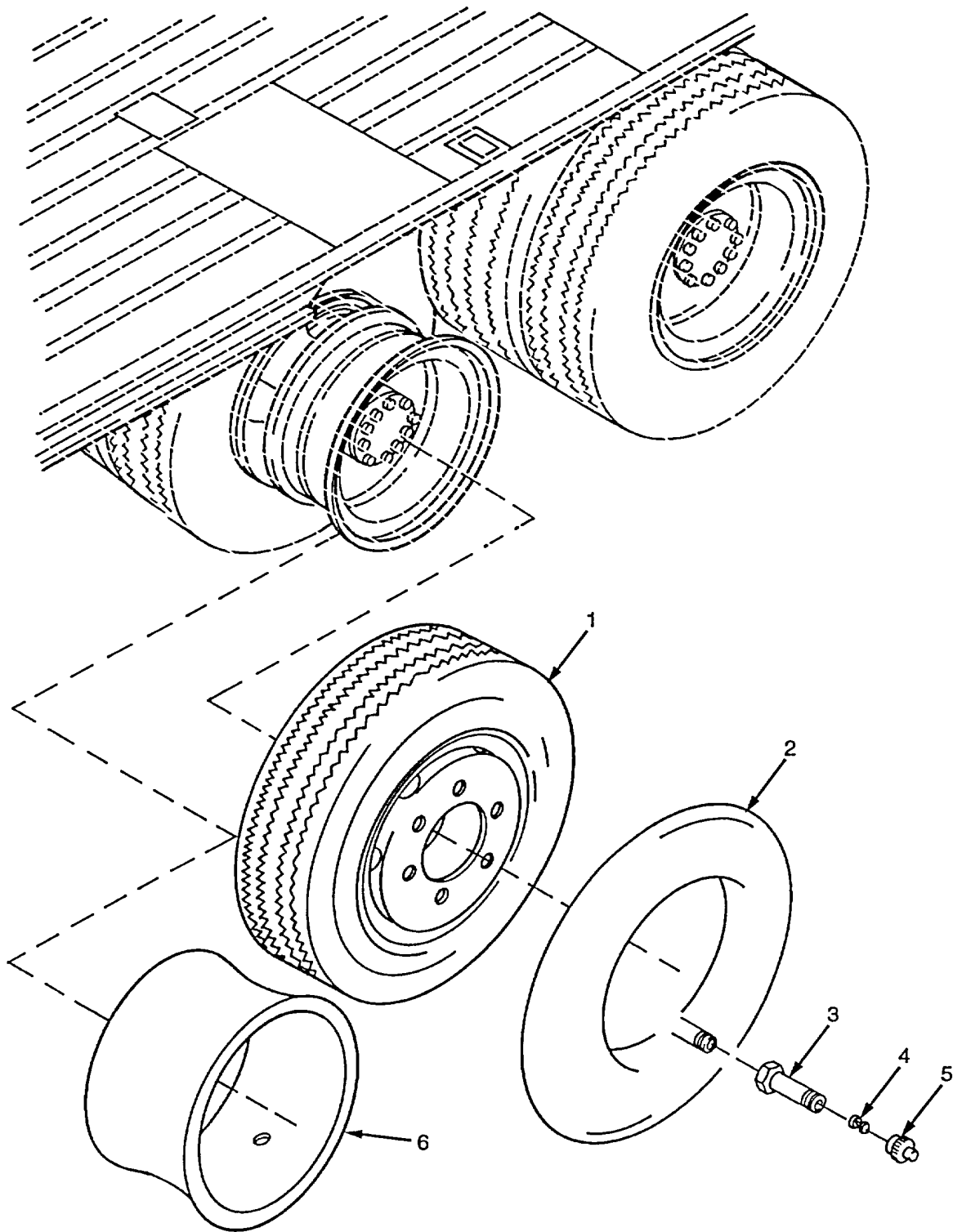


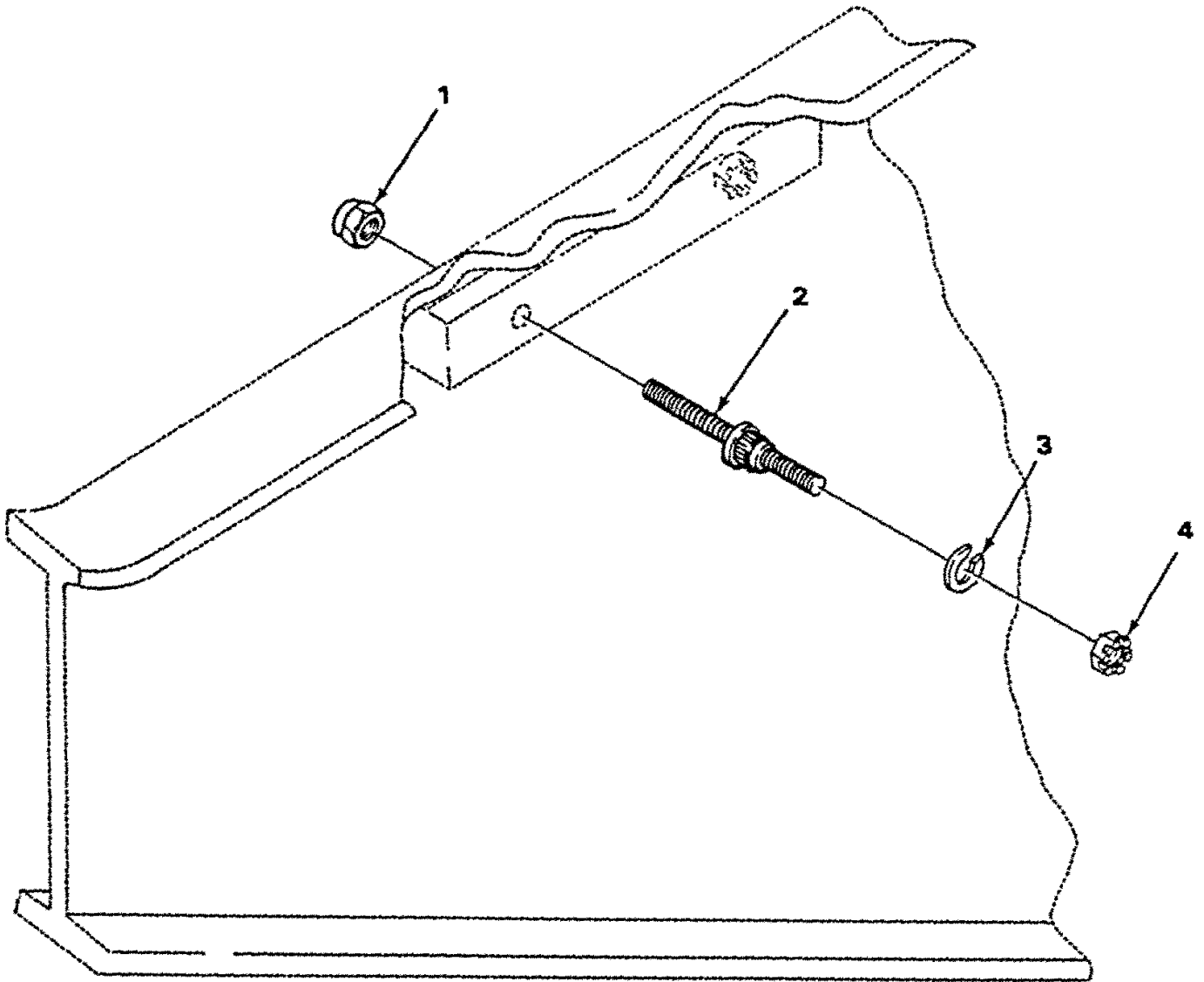
FIGURE 18. TIRES

SECTION II

TM 9-2330-211-14&P  
C02

| (1)<br>ITEM<br>NO          | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER                 | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|----------------------------|--------------------|--------------|---------------------------------------|--|------------|
| GROUP 1313 TIRES AND TUBES |                    |              |                                       |  |            |
| FIG. 18 TIRES              |                    |              |                                       |  |            |
| 1                          | PAOFH              | 81348        | GP2STYLXYRBCLR/ TIRE, PNEUMATIC ..... | T/10.00R15/J/LTR                             | 8          |
| 2                          | PFOZZ              | 96906        | FEDSTD308B                            | INNER TUBE, PNEUMATI .....                   | 8          |
| 3                          | PAOZZ              | 19207        | 8379685                               | .VALVE EXTENSION, TIR .....                  | 1          |
| 4                          | PAOZZ              | 17875        | 100AA                                 | .VALVE CORE .....                            | 1          |
| 5                          | PAOZZ              | 53477        | 880MB                                 | .CAP, PNEUMATIC VALVE .....                  | 1          |
| * 6                        | PAOZZ              | 80540        | 15-7.5                                | FLAP, INNER, TUBE, PNUEMATIC .....           | 8          |

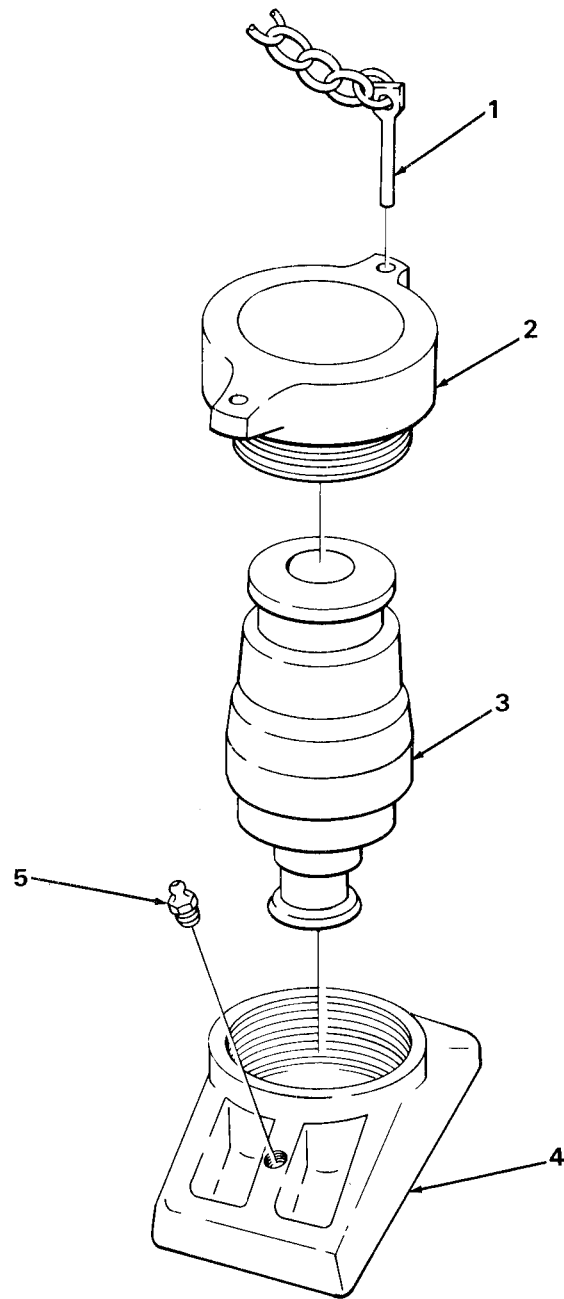
END OF FIGURE



TA505773

FIGURE 19. SPARE WHEEL CARRIER.

| SECTION II |       | TM9-2330-211-14&P |            |                                       |     |
|------------|-------|-------------------|------------|---------------------------------------|-----|
| (1)        | (2)   | (3)               | (4)        | (5)                                   | (6) |
| ITEM       | SMR   |                   | PART       | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
| NO         | CODE  | CAGEC             | NUMBER     |                                       |     |
|            |       |                   |            | GROUP 15 FRAME AND TOWING ATTACHMENTS |     |
|            |       |                   |            | GROUP 1504 SPARE WHEEL CARRIER        |     |
|            |       |                   |            | FIG. 19 SPARE WHEEL CARRIER           |     |
| 1          | PAOZZ | 96906             | MS51983-2  | NUT,PLAIN,SINGLE BA                   | 2   |
| 2          | PAOZZ | 21450             | 537867     | STUD,SHOULDED                         | 2   |
| 3          | PAOZZ | 96906             | MS35338-51 | WASHER,LOCK                           | 2   |
| 4          | PAOZZ | 24617             | 451031     | NUT,SELF-LOCKING,HE                   | 2   |
|            |       |                   |            | END OF FIGURE                         |     |



TA505774

FIGURE 20. KINGPIN.



SECTION II

TM 9-2330-211-14&P

| (1)<br>ITEM<br>NO | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|-------------------|--------------------|--------------|-----------------------|--|------------|
|                   |                    |              |                       | GROUP 1506 FIFTH WHEEL                       |            |
|                   |                    |              |                       | FIG. 20 KINGPIN                              |            |
| 1                 | PAOZZ              | 19207        | 8379676               | CHAIN ASSEMBLY, SING .....                   | 1          |
| 2                 | PAOZZ              | 96906        | MS53040-1             | RETAINER.....                                | 1          |
| 3                 | PAOZZ              | 19207        | 8379674               | KINGPIN, FIFTH WHEEL .....                   | 1          |
| 4                 | PAOZZ              | 19207        | 8379620               | SOCKET, KING PIN, FIF .....                  | 1          |
| 5                 | PAOZZ              | 96906        | MS15003-1             | FITTING, LUBRICATION .....                   | 1          |

END OF FIGURE

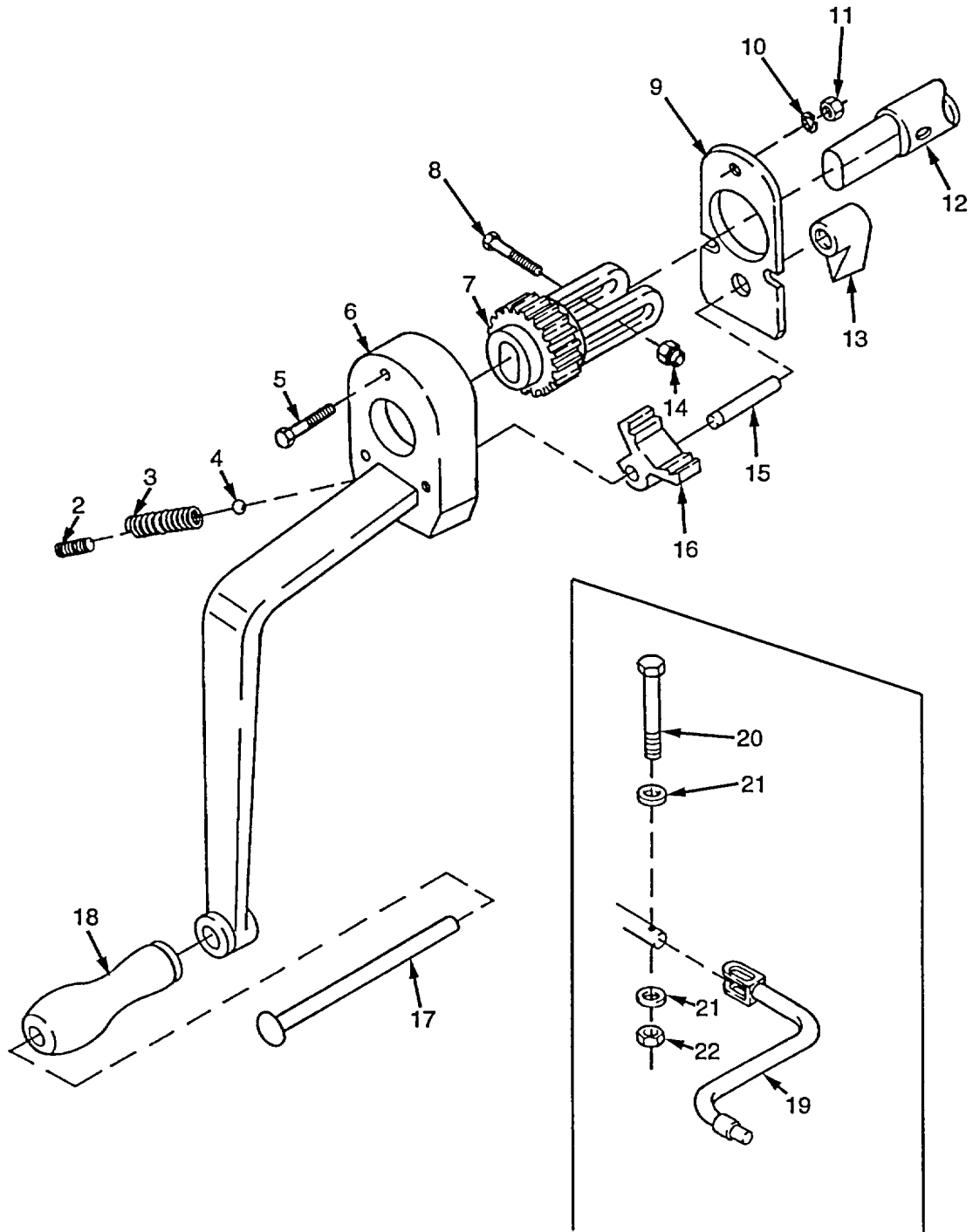
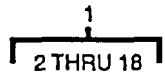


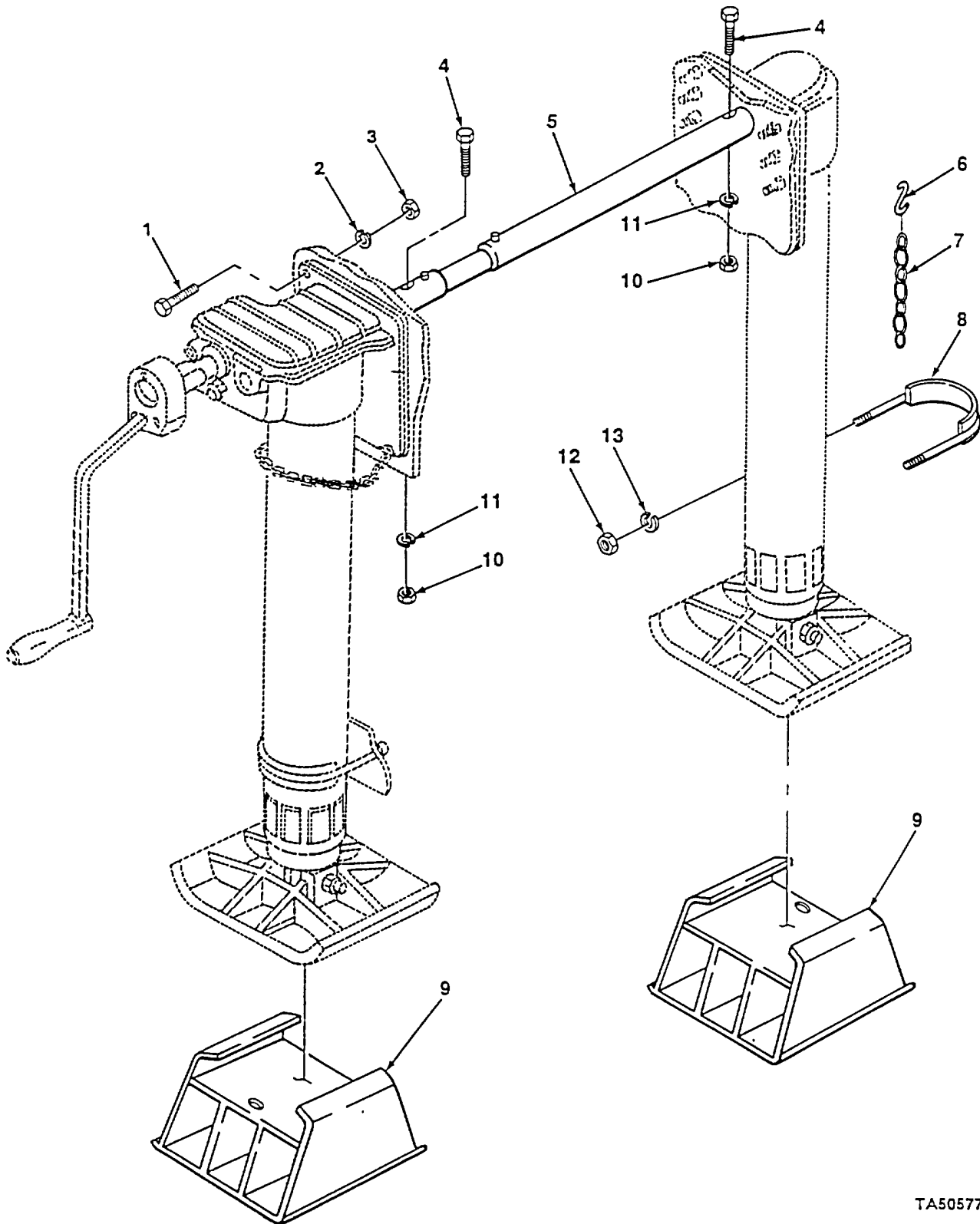
FIGURE 21. LANDING GEAR HANDCRANK

SECTION II

TM 9-2330-211-14&P  
C02

| (1)<br>ITEM<br>NO                          | (2)<br>SMR<br>CODE | (3)<br>CAGEC | (4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|--|--------------------|--------------|-----------------------|--|------------|
| GROUP 1507 LANDING GEAR AND LEVELING JACKS |                    |              |                       |  |            |
| FIG. 21 LANDING GEAR HANDCRANK             |                    |              |                       |  |            |
| 1  | PAOOO              | 80837        | J3279                 | CRANK ASSEMBLY, PARK OPTIONAL .....          | 1          |
| 2  | PAOZZ              | 21450        | 501586                | .PLUG, EXPANSION .....                       | 1          |
| 3  | PAOZZ              | 19207        | 8379626               | .SPRING, HELICAL, COMP.....                  | 1          |
| 4  | PAOZZ              | 88663        | 2A605                 | .BALL, BEARING .....                         | 1          |
| 5  | PFOZZ              | 96906        | MS90725-14            | .SCREW, CAP, HEXAGON, H .....                | 1          |
| 6  | PAOZZ              | 80837        | J3280                 | .CRANK, HAND .....                           | 1          |
| 7  | PAOZZ              | 19207        | 8376604               | .RATCHET, CRANK, FRAME .....                 | 1          |
| 8  | XDOZZ              | 18816        | 122194                | .BOLT, MACHINE .....                         | 1          |
| 9  | XDOZZ              | 19207        | 8376606               | .PLATE, COVER .....                          | 1          |
| 10   | PAOZZ              | 15235        | KL5296                | .WASHER, LOCK .....                          | 1          |
| 11   | PAOZZ              | 96906        | MS51967-2             | .NUT, PLAIN, HEXAGON .....                   | 1          |
| 12   | XDOZZ              | 21450        | 586174                | .PIN .....                                   | 1          |
| 13   | PAOZZ              | 80837        | J3284-2               | .LEVER, MANUAL CONTRO .....                  | 1          |
| 14   | PAOZZ              | 96906        | MS51943-35            | .NUT, SELF-LOCKING, HE .....                 | 1          |
| 15   | XDOZZ              | 83328        | 586023                | .PIN, ROLL .....                             | 1          |
| 16   | PAOZZ              | 80837        | J3282                 | .PAWL .....                                  | 1          |
| 17   | XDOZZ              | 19207        | H101-0217282          | .RIVET, SOLID .....                          | 1          |
| 18   | PAOZZ              | 80837        | TA653                 | .HANDLE, CRANK .....                         | 1          |
| *  | 19                 | PAOZZ        | 99411                 | CRANK HAND OPTIONAL .....                    | 1          |
| *  | 20                 | PAOZZ        | 99411                 | SCREW, CAP, HEXAGON H USE WITH PN: .....     | 1          |
|  |                    |              |                       | LG0083-03.....                               |            |
| *  | 21                 | PAOZZ        | 99411                 | WASHER, FLAT USE WITH PN: LG0083-3.....      | 2          |
| *  | 22                 | PAOZZ        | 99411                 | NUT SELF-LOCKING, HE USE WITH PN: .....      | 1          |
|  |                    |              |                       | LG0083-3.....                                |            |

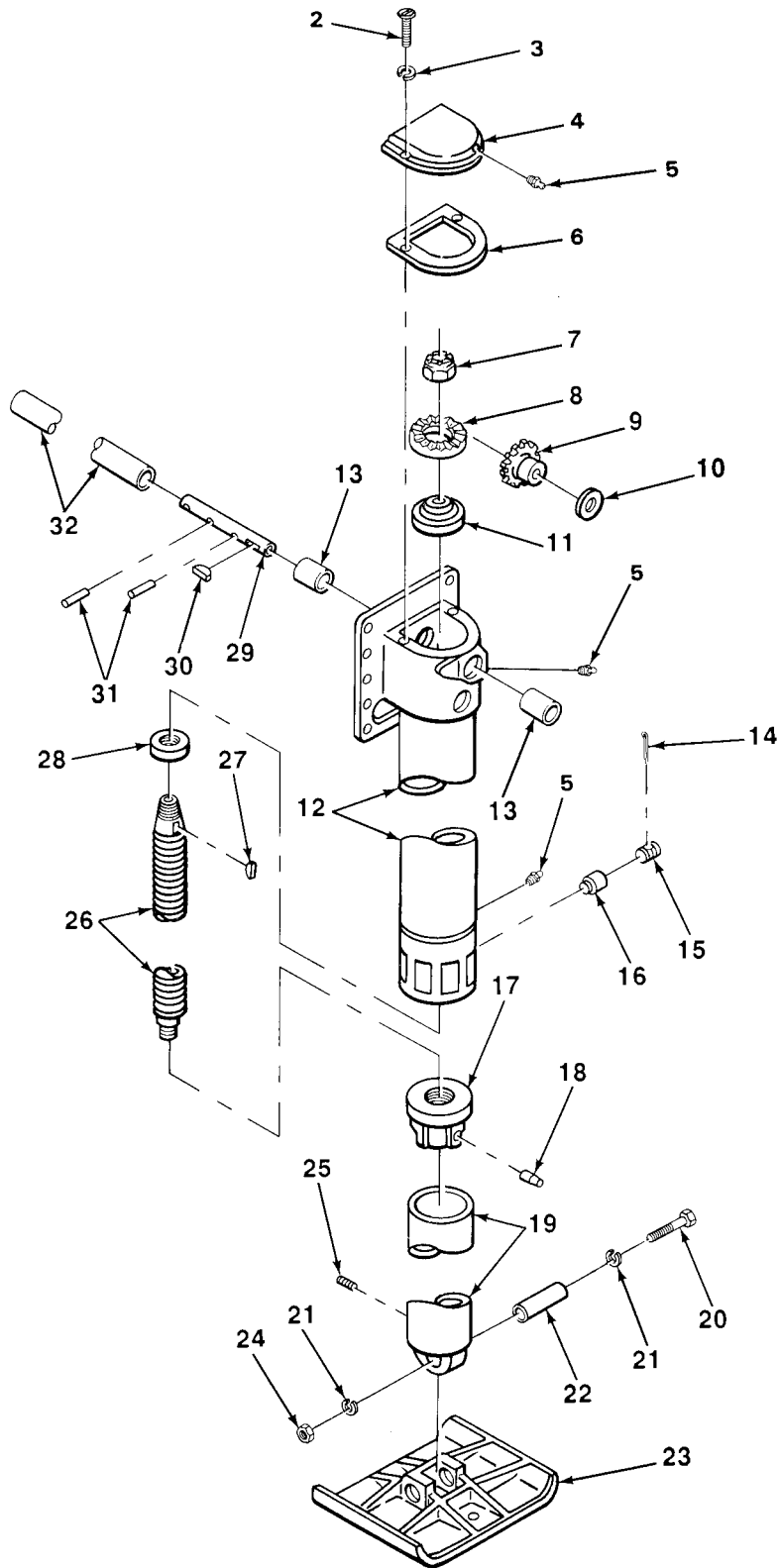
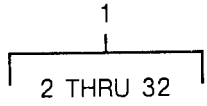
END OF FIGURE



TA505776

FIGURE 22. LANDING GEAR ATTACHING PARTS.

| SECTION II<br>(1)<br>ITEM<br>NO | (2)<br>SMR<br>CODE | (3)<br>CAGEC | TM9-2330-211-14&P<br>(4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|---------------------------------|--------------------|--------------|--|--|------------|
|                                 |                    |              |  | GROUP 1507 LANDING GEAR AND LEVELING JACKS   |            |
|                                 |                    |              |  | FIG. 22 LANDING GEAR ATTACHING PARTS         |            |
| 1                               | PAOZZ              | 96906        | MS90728-164                                | SCREW,CAP,HEXAGON H                          | 15         |
| 2                               | PAOZZ              | 81348        | FFW84                                      | WASHER,LOCK                                  | 15         |
| 3                               | PAOZZ              | 96906        | MS35691-49                                 | NUT,PLAIN,HEXAGON                            | 15         |
| 4                               | PAOZZ              | 96906        | MS90725-65                                 | SCREW,CAP,HEXAGON                            | 2          |
| 5                               | PAOZZ              | 19207        | 8336571                                    | SHAFT,SHOULDERED                             | 1          |
| 6                               | PAOZZ              | 18876        | 506886                                     | HOOK,CHAIN,S                                 | 2          |
| 7                               | XDOZZ              | 21450        | 42C15120-215                               | CHAIN MAKE FROM P/N 7979367                  | 2          |
| 8                               | PAOZZ              | 19207        | 8730460                                    | BOLT,U                                       | 2          |
| 9                               | PAOZZ              | 19207        | 8336638                                    | PAD ASSY SHOE JACK                           | 2          |
| 10                              | PAOZZ              | 96906        | MS35692-605                                | NUT(1),PLAIN,SLOTTE                          | 2          |
| 11                              | PAOZZ              | 96906        | MS27185-15                                 | WASHER,FLAT                                  | 2          |
| 12                              | PFOZZ              | 96906        | MS51968-17                                 | NUT,PLAIN,HEXAGON                            | 4          |
| 13                              | PAOZZ              | 96906        | MS35338-49                                 | WASHER,LOCK                                  | 4          |
|                                 |                    |              |  | END OF FIGURE                                |            |



TA505777

FIGURE 23. LEFT LANDING GEAR.

| SECTION II<br>(1)<br>ITEM<br>NO            | (2)<br>SMR<br>CODE | (3)<br>CAGEC | TM9-2330-211-14&P<br>(4)<br>PART<br>NUMBER | (5)<br>DESCRIPTION AND USABLE ON CODES (UOC) | (6)<br>QTY |
|--|--------------------|--------------|--|--|------------|
| GROUP 1507 LANDING GEAR AND LEVELING JACKS |                    |              |  |  |            |
| FIG. 23 LEFT LANDING GEAR                  |                    |              |  |  |            |
| 1  | PAOOO              | 19207        | 8700957                                    | SUPPORT, RETRACTABLE                         | 1          |
| 2  | PAOZZ              | 96906        | MS35206-281                                | .SCREW, MACHINE                              | 2          |
| 3  | PAOZZ              | 15235        | KL5296                                     | .WASHER, LOCK                                | 2          |
| 4  | PAOZZ              | 19207        | 7974886                                    | .COVER, BEVEL GEAR                           | 1          |
| 5  | PAOZZ              | 96906        | MS15003-1                                  | .FITTING, LUBRICATION                        | 1          |
| 6  | PAOZZ              | 19207        | 7014983                                    | .GASKET                                      | 1          |
| 7  | PAOZZ              | 80205        | NAS1022A17                                 | .NUT, SELF-LOCKING, HE                       | 1          |
| 8  | PAOZZ              | 19207        | 8379855                                    | .GEAR, BEVEL                                 | 1          |
| 9  | PAOZZ              | 19207        | 7014980                                    | .GEAR, BEVEL                                 | 1          |
| 10   | PAOZZ              | 66640        | 27D252                                     | .WASHER, FLAT                                | 1          |
| 11   | PAOZZ              | 66821        | K12528                                     | .BEARING, ROLLER, TAPE                       | 1          |
| 12   | XAOZZ              | 19207        | 8701079                                    | .LEG ASSY                                    | 1          |
| 13   | PAOZZ              | 19207        | 7014995                                    | .BEARING, SLEEVE                             | 1          |
| 14   | PAOZZ              | 96906        | MS24665-464                                | .PIN, COTTER                                 | 1          |
| 15   | PAOZZ              | 80837        | J1206A                                     | .PLUG, MACHINE THREAD                        | 1          |
| 16   | PAOZZ              | 80837        | J-1276                                     | .GIB, LEVELING                               | 1          |
| 17   | PAOZZ              | 80837        | J3265                                      | .NUT, SLEEVE                                 | 1          |
| 18   | PAOZZ              | 19207        | 8376596                                    | .PIN, SHOULDER, HEADLE                       | 1          |
| 19   | PAOZZ              | 80837        | J3269-11                                   | .LEG ASSEMBLY                                | 1          |
| 20   | PAOZZ              | 96906        | MS90728-125                                | .SCREW, CAP, HEXAGON H                       | 1          |
| 21   | PAOZZ              | 29215        | JD1492                                     | .WASHER, FLAT                                | 2          |
| 22   | PAOZZ              | 19207        | 7365938                                    | .PIN, LANDING GEAR WH                        | 1          |
| 23   | PAOZZ              | 80837        | J1386                                      | .SHOE, JACK SUPPORT                          | 1          |
| 24   | PAOZZ              | 96906        | MS35692-33                                 | .NUT, PLAIN, SLOTTED, H                      | 1          |
| 25   | PAOZZ              | 24617        | 444687                                     | .PLUG, PIPE                                  | 1          |
| 26   | PAOZZ              | 80837        | J673-6                                     | .SCREW                                       | 1          |
| 27   | PAOZZ              | 80837        | J3237                                      | .KEY, MACHINE                                | 1          |
| 28   | PAOZZ              | 96906        | MS17169-12                                 | .BEARING, ROLLER, THRU                       | 2          |
| 29   | PAOZZ              | 19207        | 8376584                                    | .SHAFT, BEVEL GEAR                           | 1          |
| 30   | PAOZZ              | 96906        | MS35756-15                                 | .KEY, WOODRUFF                               | 1          |
| 31   | PAOZZ              | 96906        | MS35671-55                                 | .PIN, GROOVED, HEADLES                       | 2          |
| 32   | PAOZZ              | 19207        | 7367721                                    | .SHAFT                                       | 1          |

END OF FIGURE

1  
2 THRU 39

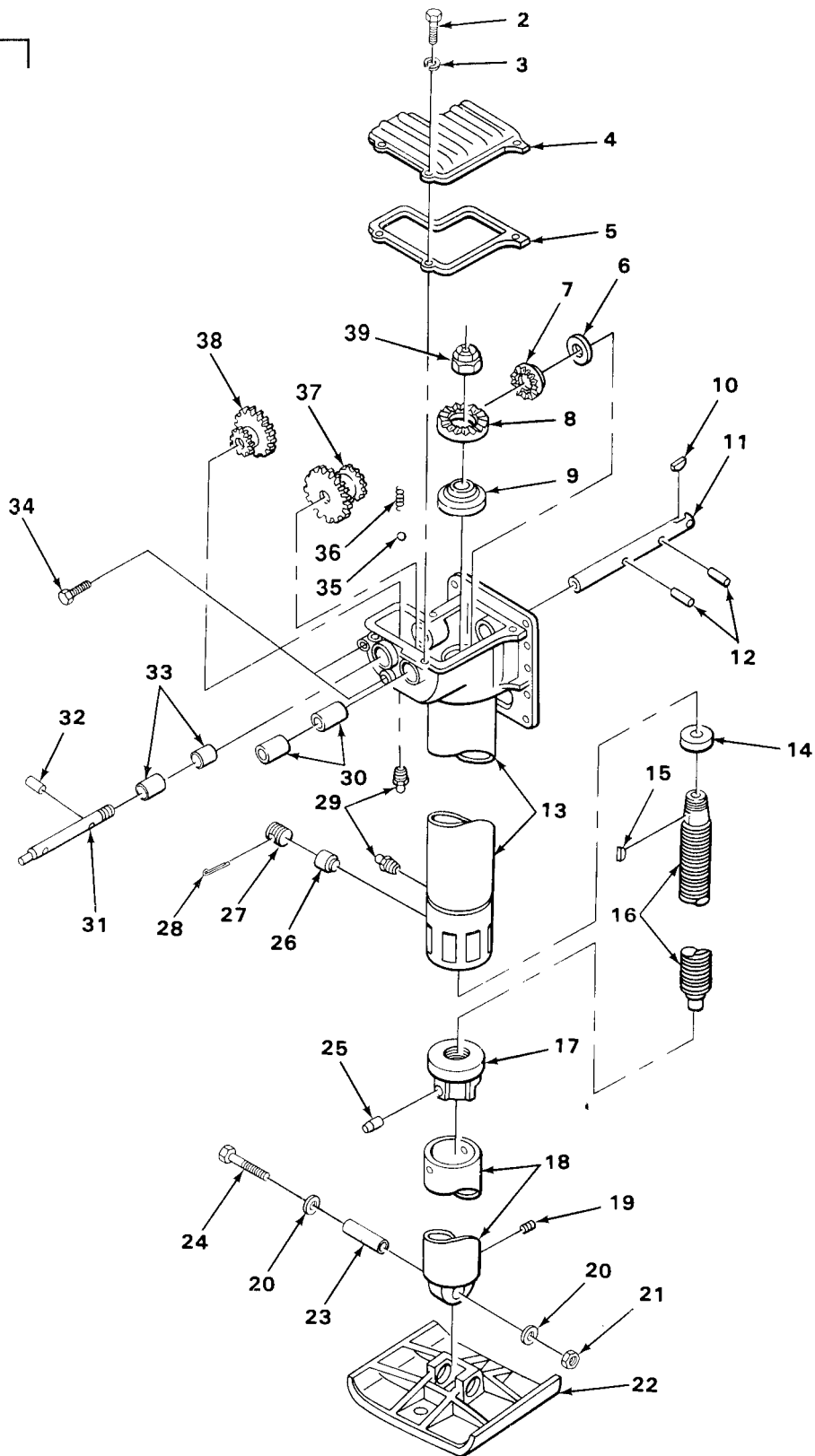
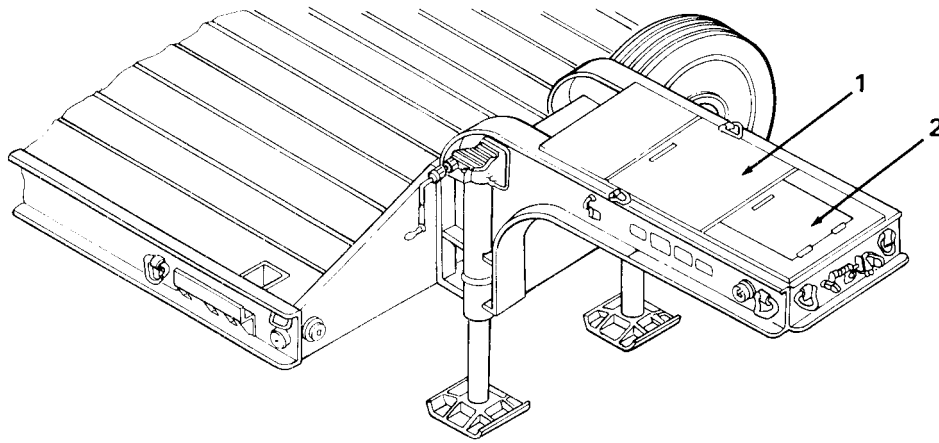


FIGURE 24. RIGHT LANDING GEAR.



| SECTION II<br>(1)                          | ITEM<br>(2) | (3)   | TM9-2330-211-14&P<br>(4) | (5)                                   | (6) |
|--|-------------|-------|--------------------------|---------------------------------------|-----|
| NO   | CODE        | CAGEC | NUMBER                   | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
| GROUP 1507 LANDING GEAR AND LEVELING JACKS |             |       |                          |                                       |     |
| FIG. 24 RIGHT LANDING GEAR                 |             |       |                          |                                       |     |
| 1  | PAOOO       | 19207 | 8700958                  | LEG, SEMITRAILER RET                  | 1   |
| 2  | PAOZZ       | 96906 | MS35206-281              | .SCREW, MACHINE                       | 4   |
| 3  | PAOZZ       | 15235 | KL5296                   | .WASHER, LOCK                         | 4   |
| 4  | PAOZZ       | 19207 | 7974887                  | .COVER, ACCESS                        | 1   |
| 5  | PAOZZ       | 80837 | J3203G                   | .GASKET "STATE NO SUBSTITUTIONS"      | 1   |
| 6  | PAOZZ       | 66640 | 27D252                   | .WASHER, FLAT                         | 1   |
| 7  | PAOZZ       | 19207 | 7014980                  | .GEAR, BEVEL                          | 1   |
| 8  | PAOZZ       | 19207 | 8379855                  | .GEAR, BEVEL                          | 1   |
| 9  | PAOZZ       | 80837 | 1102A3-4                 | .BEARING, ROLLER, TAPE                | 1   |
| 10   | PAOZZ       | 96906 | MS35756-15               | .KEY, WOODRUFF                        | 1   |
| 11   | PAOZZ       | 80837 | J3207-1                  | .SHAFT, STRAIGHT                      | 1   |
| 12   | PAOZZ       | 61038 | M21872                   | .PIN, GROOVED, HEADLES                | 2   |
| 13   | PAOZZ       | 19207 | 8376598                  | .LEG ASSEMBLY, UPPER,                 | 1   |
| 14   | PAOZZ       | 96906 | MS17169-12               | .BEARING, ROLLER, THRU                | 1   |
| 15   | PAOZZ       | 80837 | J3237                    | .KEY, MACHINE                         | 1   |
| 16   | PAOZZ       | 80837 | J673-6                   | .SCREW                                | 1   |
| 17   | PAOZZ       | 80837 | J3265                    | .NUT, SLEEVE                          | 1   |
| 18   | PAOZZ       | 80837 | J3269-11                 | .LEG ASSEMBLY                         | 1   |
| 19   | PAOZZ       | 81348 | WW-P-471AASBCA           | .PLUG, PIPE                           | 1   |
| 20   | PAOZZ       | 96906 | MS27183-19               | .WASHER, FLAT                         | 2   |
| 21   | PAOZZ       | 96906 | MS51943-39               | .NUT, SELF-LOCKING, HE                | 1   |
| 22   | PAOZZ       | 80837 | J1386                    | .SHOE, JACK SUPPORT                   | 1   |
| 23   | PAOZZ       | 19207 | 7365938                  | .PIN, LANDING GEAR WW                 | 1   |
| 24   | PAOZZ       | 96906 | MS90728-125              | .SCREW, CAP, HEXAGON H                | 1   |
| 25   | PAOZZ       | 19207 | 8376596                  | .PIN, SHOULDER, HEADLE                | 1   |
| 26   | PAOZZ       | 80837 | J-1276                   | .GIB, LEVELING                        | 1   |
| 27   | PAOZZ       | 80837 | J1206A                   | .PLUG, MACHINE THREAD                 | 1   |
| 28   | PAOZZ       | 96906 | MS24665-464              | .PIN, COTTER                          | 1   |
| 29   | PAOZZ       | 96906 | MS15003-1                | .FITTING, LUBRICATION                 | 2   |
| 30   | PAOZZ       | 19207 | 7014995                  | .BEARING, SLEEVE                      | 2   |
| 31   | PAOZZ       | 80837 | J3208-1                  | .SHAFT, CRANK                         | 1   |
| 32   | PAOZZ       | 96906 | MS35671-64               | .PIN, GROOVED, HEADLES                | 2   |
| 33   | PAOZZ       | 04632 | J1116                    | .BEARING, SLEEVE                      | 2   |
| 34   | PAOZZ       | 96906 | MS90726-104              | .SCREW, CAP, HEXAGON                  | 2   |
| 35   | PAOZZ       | 96906 | MS19059-2419             | .BALL, BEARING                        | 1   |
| 36   | PAOZZ       | 80837 | J3205                    | .SPRING, HELICAL, COMP                | 1   |
| 37   | PAOZZ       | 19207 | 8376610                  | .GEAR CLUSTER                         | 1   |
| 38   | PAOZZ       | 19207 | 8376611                  | .GEAR CLUSTER                         | 1   |
| 39   | PAOZZ       | 80205 | NAS1022A17               | .NUT, SELF-LOCKING, HE                | 1   |

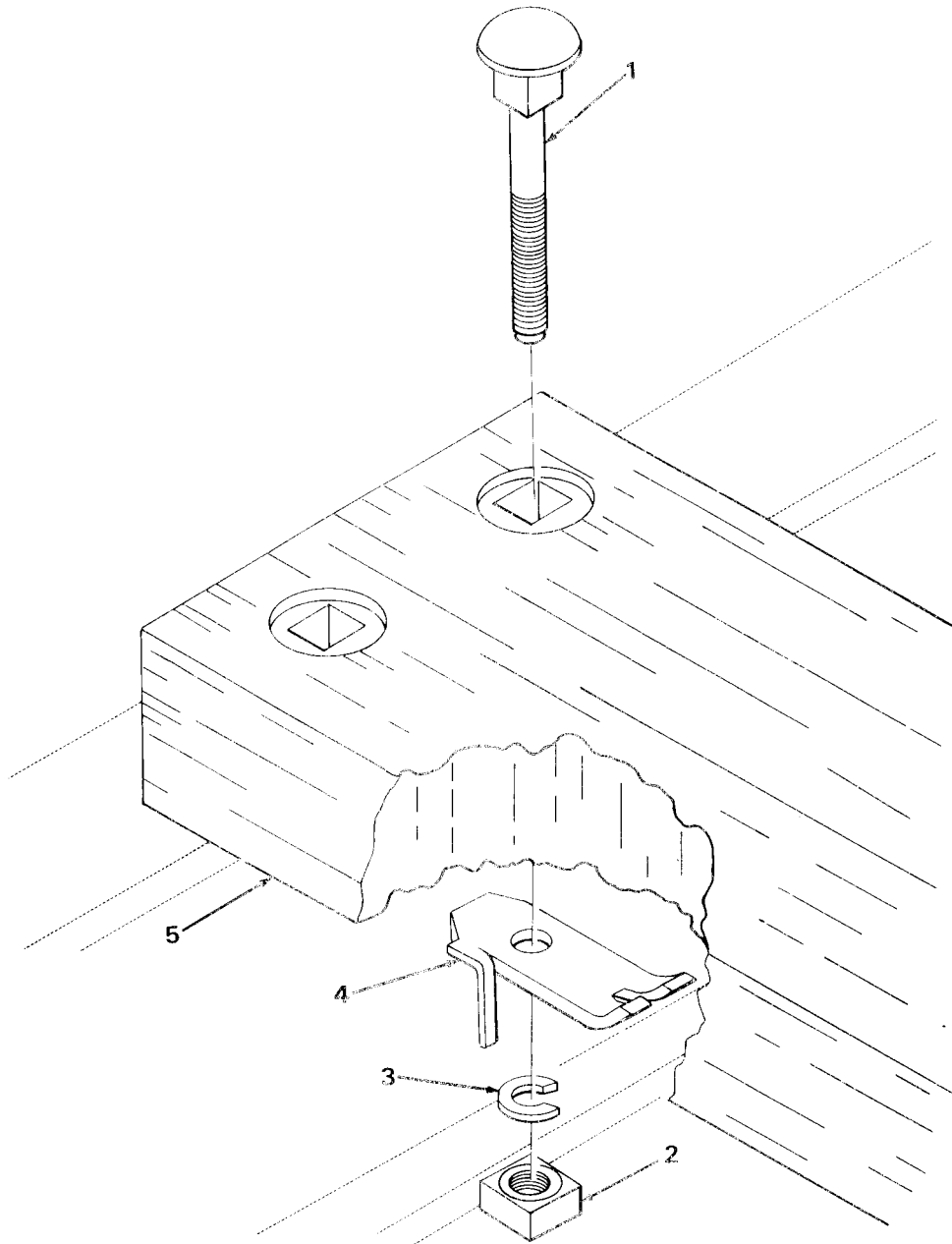
END OF FIGURE



TA505779

FIGURE 25. STOWAGE.

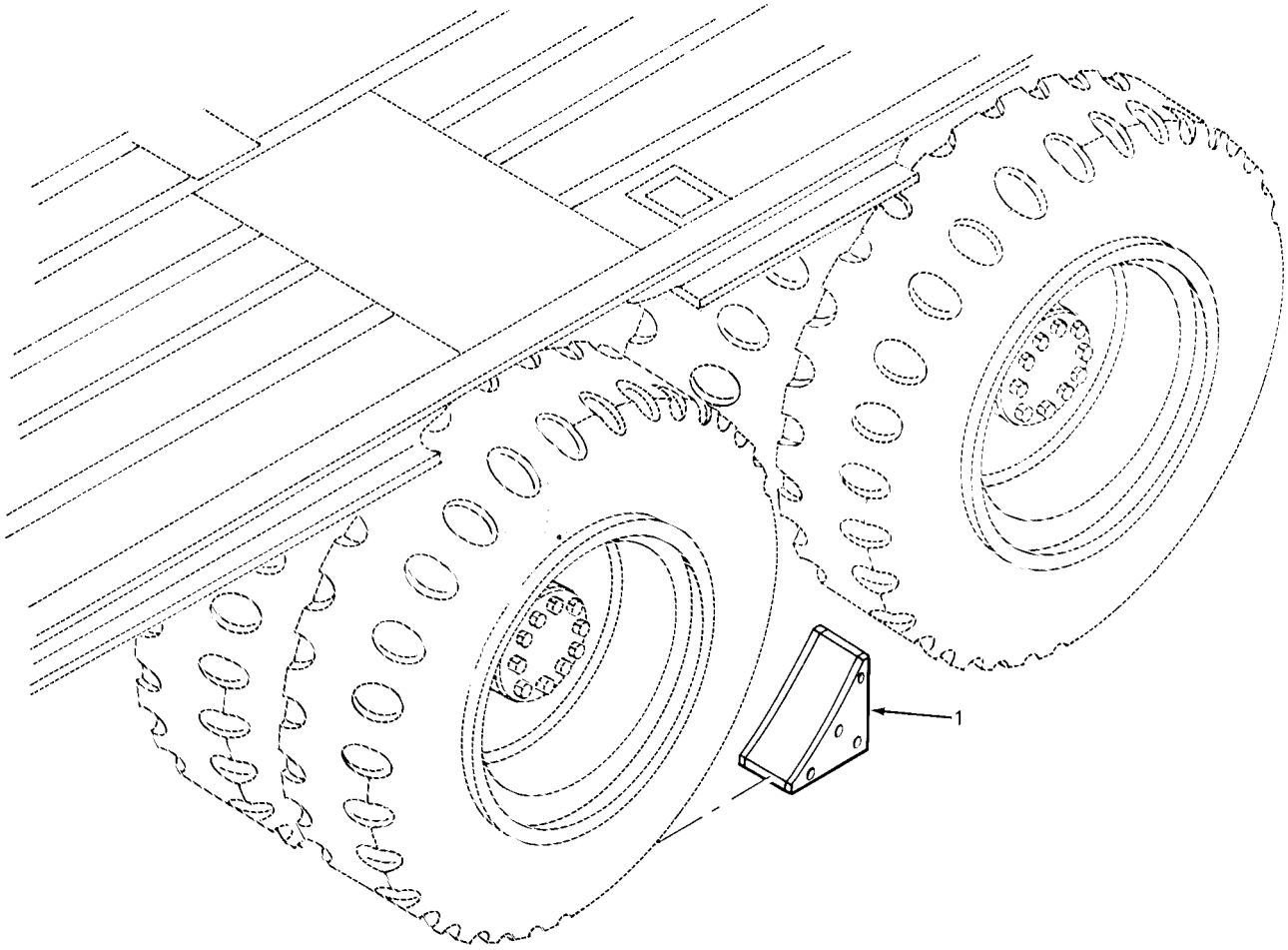
| SECTION II |       |       |         | TM9-2330-211-14&P  |     |
|------------|-------|-------|---------|--|-----|
| (1)        | (2)   | (3)   | (4)     | (5)  | (6) |
| ITEM       | SMR   |       | PART    |  |     |
| NO         | CODE  | CAGEC | NUMBER  | DESCRIPTION AND USABLE ON CODES (UOC)  | QTY |
|            |       |       |         | GROUP 18 BODY  |     |
|            |       |       |         | GROUP 1808 STOWAGERACKS,BOXES,<br>STRAPS, CARRYING CASES, CABLE REELS,<br>HOSE REELS, ETC. |     |
|            |       |       |         | FIG. 25 STOWAGE  |     |
| 1          | XBFZZ | 19207 | 8336567 | DOOR ASSY  | 1   |
| 2          | XBFZZ | 19207 | 8742593 | PLATE ASSY   | 1   |
|            |       |       |         | END OF FIGURE  |     |



TA505780

FIGURE 26. DECKING HARDWARE.

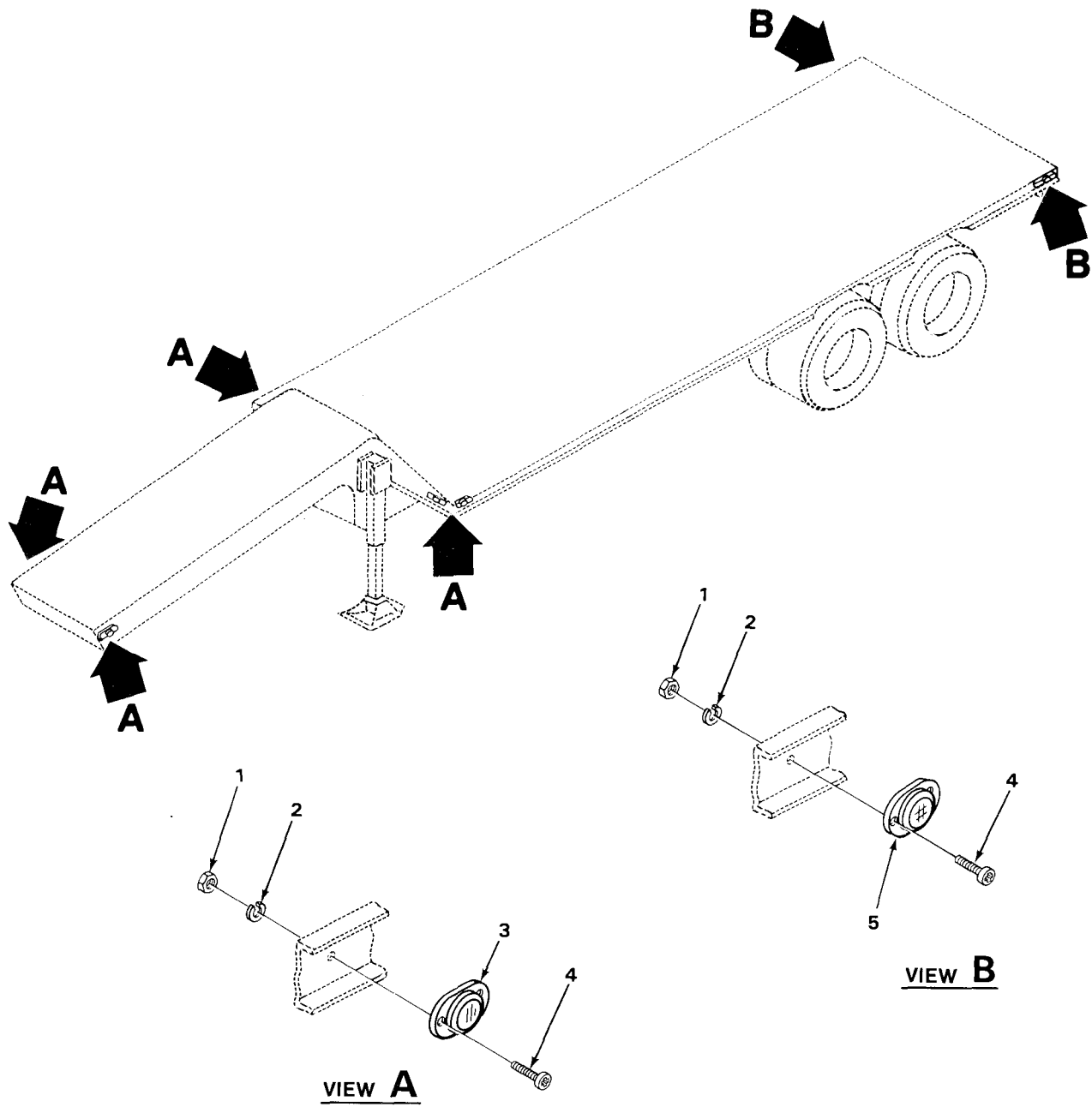
| SECTION II |       |       |            | TM9-2330-211-14&P                                     |  |     |
|------------|-------|-------|------------|---|--|-----|
| (1)        | (2)   | (3)   | (4)        | (5)   |  | (6) |
| ITEM       | SMR   |       | PART       |   |  |     |
| NO         | CODE  | CAGEC | NUMBER     | DESCRIPTION AND USABLE ON CODES (UOC)                 |  | QTY |
|            |       |       |            | GROUP 1810 CARGO BODY: (DUMP, STAKE,<br>AND PLATFORM) |  |     |
|            |       |       |            | FIG. 26. DECKING HARDWARE                             |  |     |
| 1          | PAFZZ | 96906 | MS35754-40 | BOLT, SQUARE NECK                                     |  | 212 |
| 2          | PAFZZ | 96906 | MS27040-14 | NUT, PLAIN, SQUARE                                    |  | 212 |
| 3          | PAFZZ | 96906 | MS35338-48 | WASHER, LOCK  |  | 16  |
| 4          | PAFZZ | 82465 | 60507      | CLIP, BRIDGE FLOOR                                    |  | 196 |
| 5          | MFFZZ | 19207 | 2744994-1  | HARDWOOD MAKE FROM LUMBER P/N 15608                   |  | V   |
|            |       |       |            | END OF FIGURE   |  |     |



TA505781

FIGURE 27. WHEEL CHOCKS.

| SECTION II |       |       |         | TM9-2330-211-14&P                         |     |
|------------|-------|-------|---------|---|-----|
| (1)        | (2)   | (3)   | (4)     | (5)                                       | (6) |
| ITEM       | SMR   |       | PART    | DESCRIPTION AND USABLE ON CODES (UOC)     | QTY |
| NO         | CODE  | CAGEC | NUMBER  |   |     |
|            |       |       |         | GROUP 22 BODY AND CHASSIS ACCESSORY ITEMS |     |
|            |       |       |         | GROUP 2202 ACCESSORY ITEMS                |     |
|            |       |       |         | FIG. 27 WHEEL CHOCKS                      |     |
| 1          | PAOZZ | 19207 | 8343584 | CHOCK,WHEEL TRACK                         | 2   |
|            |       |       |         | END OF FIGURE                             |     |



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FIGURE 28. REFLECTORS.



| SECTION II                 |       |       |             | TM9-2330-211-14&P                     |  |     |
|----------------------------|-------|-------|-------------|---------------------------------------|--|-----|
| (1)                        | (2)   | (3)   | (4)         | (5)                                   |  | (6) |
| ITEM                       | SMR   |       | PART        |                                       |  |     |
| NO                         | CODE  | CAGEC | NUMBER      | DESCRIPTION AND USABLE ON CODES (UOC) |  | QTY |
| GROUP 2202 ACCESSORY ITEMS |       |       |             |                                       |  |     |
| FIG. 28 REFLECTORS         |       |       |             |                                       |  |     |
| 1                          | PAOZZ | 96906 | MS51967-2   | NUT, PLAIN, HEXAGON                   |  | 20  |
| 2                          | PAOZZ | 15235 | KL5296      | WASHER, LOCK                          |  | 20  |
| 3                          | PAOZZ | 96906 | MS35387-2   | REFLECTOR, INDICATIN AMBER            |  | 6   |
| 4                          | PAOZZ | 96906 | MS35206-281 | SCREW, MACHINE                        |  | 20  |
| 5                          | PAOZZ | 96906 | MS35387-1   | REFLECTOR , INDICATIN RED             |  | 4   |
| END OF FIGURE              |       |       |             |                                       |  |     |

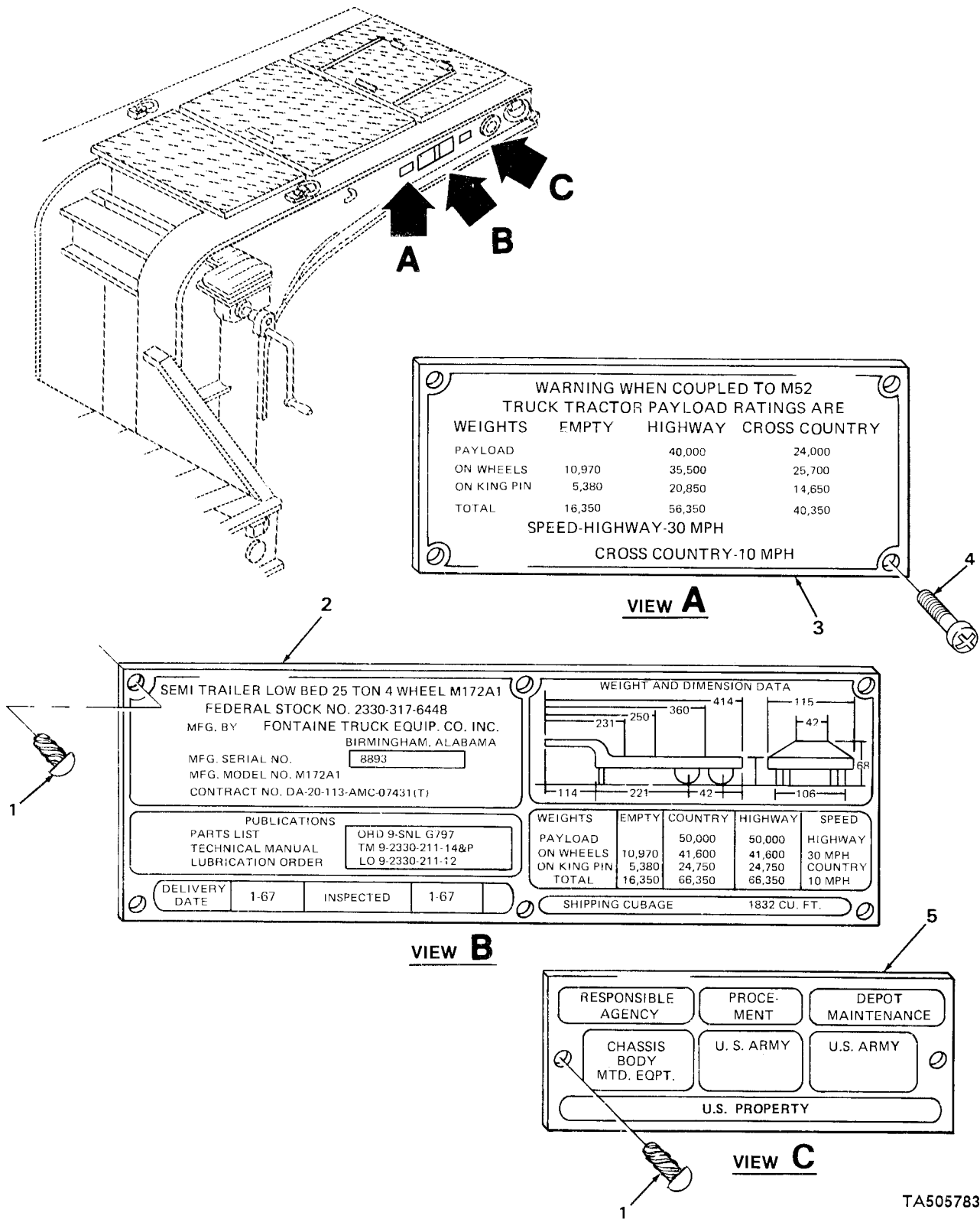
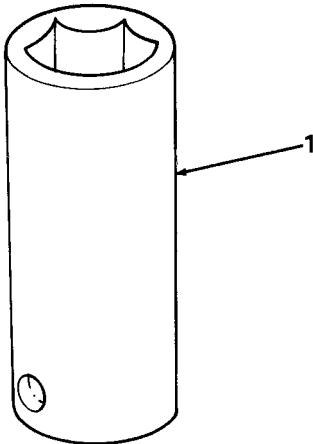


FIGURE 29. DATA PLATES.

| SECTION II |       |       |            | TM9-2330-211-14&P                              |  |     |
|------------|-------|-------|------------|--|--|-----|
| (1)        | (2)   | (3)   | (4)        | (5)  |  | (6) |
| ITEM       | SMR   |       | PART       |  |  |     |
| NO         | CODE  | CAGEC | NUMBER     | DESCRIPTION AND USABLE ON CODES (UOC)          |  | QTY |
|            |       |       |            | GROUP 2210 DATA PLATES AND INSTRUCTION HOLDERS |  |     |
|            |       |       |            | FIG. 29 DATA PLATES                            |  |     |
| 1          | PAOZZ | 96906 | MS21318-57 | SCREW,DRIVE                                    |  | 8   |
| 2          | PAOZZ | 19207 | 8336801    | PLATE IDENTIFICATIO                            |  | 1   |
| 3          | PAOZZ | 19207 | 8683503    | PLATE, INSTRUCTION                             |  | 1   |
| 4          | PAOZZ | 96906 | MS24629-45 | SCREW, TAPPING, THREA                          |  | 4   |
| 5          | PAOZZ | 19207 | 7979373    | PLATE, IDENTIFICATIO                           |  | 1   |
|            |       |       |            | END OF FIGURE                                  |  |     |

| SECTION II |       | TM9-2330-211-14&P |             |   |     |
|------------|-------|-------------------|-------------|---|-----|
| (1)        | (2)   | (3)               | (4)         | (5)                                     | (6) |
| ITEM       | SMR   |                   | PART        |   |     |
| NO         | CODE  | CAGEC             | NUMBER      | DESCRIPTION AND USABLE ON CODES (UOC)   | QTY |
|            |       |                   |             | GROUP 95 GENERAL USE STANDARDIZED PARTS |     |
|            |       |                   |             | GROUP 9501 BULKMATERIEL                 |     |
|            |       |                   |             | FIG. BULK                               |     |
| 1          | PAOZZ | 06853             | 246115      | HOSE, NONMETALLIC                       | V   |
| 2          | PAOZZ | 19207             | 7979367     | LINK, CHAIN, END                        | V   |
| 3          | PAFZZ | 80049             | 15608       | LUMBER, HARDWOOD                        | V   |
| 4          | PAOZZ | 95535             | 55229       | TUBE, METALLIC                          | V   |
| 5          | PAOZZ | 17590             | 305087-0116 | TUBE, METALLIC                          | V   |
|            |       |                   |             | END OF FIGURE                           |     |

BULK-1



TA505784

FIGURE 30. SPECIAL TOOLS

| SECTION III |       |       |        | TM9-2330-211-14&P                     |     |
|-------------|-------|-------|--------|---------------------------------------|-----|
| (1)         | (2)   | (3)   | (4)    | (5)                                   | (6) |
| ITEM        | SMR   |       | PART   |                                       |     |
| NO          | CODE  | CAGEC | NUMBER | DESCRIPTION AND USABLE ON CODES (UOC) | QTY |
|             |       |       |        | GROUP 26 TOOLS AND TEST EQUIPMENT     |     |
|             |       |       |        | GROUP 2604 SPECIAL TOOLS              |     |
|             |       |       |        | FIG. 30 SPECIAL TOOLS                 |     |
| 1           | PEOZZ | 03914 | 13-348 | SOCKET, SOCKET WRENC                  | 2   |
|             |       |       |        | END OF FIGURE                         |     |

## CROSS-REFERENCE INDEXES

## NATIONAL STOCK NUMBER INDEX

| STOCK NUMBER     | FIG. | ITEM | STOCK NUMBER     | FIG. | ITEM |
|------------------|------|------|------------------|------|------|
| 5310-00-004-3099 | 26   | 2    | 5310-00-078-7025 | 16   | 12   |
| 5310-00-010-3030 | 5    | 3    | 5310-00-078-7026 | 16   | 12   |
| 5310-00-010-3030 | 14   | 1    | 2530-00-089-8289 | 8    | 3    |
| 5315-00-014-2521 | 24   | 12   | 5330-00-090-2128 | 15   | 6    |
| 5315-00-014-2543 | 24   | 32   | 5365-00-090-5426 | 4    | 3    |
| 4730-00-018-9566 | 23   | 25   | 3110-00-100-0333 | 16   | 13   |
| 4730-00-018-9566 | 24   | 19   | 3110-00-100-0337 | 16   | 16   |
| 6240-00-019-0877 | 1    | 6    | 3110-00-100-0663 | 16   | 9    |
| 6240-00-019-0877 | 2    | 7    | 3110-00-100-0683 | 16   | 17   |
| 6240-00-019-3093 | 1    | 5    | 3110-00-100-6004 | 23   | 11   |
| 2530-00-021-2366 | 11   | 2    | 3110-00-100-6004 | 24   | 9    |
| 5306-00-021-8156 | 26   | 1    | 3110-00-100-6164 | 24   | 35   |
| 5310-00-021-9760 | 10   | 2    | 5305-00-115-9526 | 1    | 9    |
| 3040-00-030-6942 | 23   | 29   | 2510-00-116-9223 | 7    | 1    |
| 2590-00-030-6943 | 23   | 23   | 3110-00-117-0759 | 23   | 28   |
| 2590-00-030-6943 | 24   | 22   | 3110-00-117-0759 | 24   | 14   |
| 2590-00-040-2855 | 23   | 19   | 2530-00-156-9142 | 16   | 10   |
| 2590-00-040-2855 | 24   | 18   | 5340-00-157-0724 | 13   | 1    |
| 2530-00-040-2856 | 21   | 1    | 5310-00-167-0680 | 22   | 13   |
| 5340-00-040-2857 | 21   | 6    | 4010-00-171-9736 | BULK | 2    |
| 3040-00-040-2858 | 21   | 16   | 5340-00-177-8101 | 6    | 6    |
| 4010-00-040-2869 | 20   | 1    | 5365-00-177-9262 | 16   | 1    |
| 5310-00-044-6230 | 23   | 21   | 3110-00-185-6305 | 21   | 4    |
| 6240-00-044-6914 | 1    | 4    | 4730-00-187-4202 | 13   | 5    |
| 5310-00-045-1031 | 19   | 4    | 5315-00-187-9396 | 23   | 14   |
| 5310-00-045-3296 | 2    | 13   | 5315-00-187-9396 | 24   | 28   |
| 5310-00-045-5001 | 14   | 2    | 5310-00-194-1483 | 8    | 10   |
| 2640-00-050-1229 | 18   | 4    | 5360-00-200-5414 | 21   | 3    |
| 5315-00-050-1586 | 21   | 2    | 9905-00-202-3639 | 28   | 3    |
| 4730-00-050-4203 | 8    | 5    | 5325-00-202-4005 | 10   | 20   |
| 4730-00-050-4203 | 8    | 13   | 4710-00-203-3172 | BULK | 5    |
| 4730-00-050-4208 | 7    | 6    | 2530-00-204-3214 | 16   | 19   |
| 4730-00-050-4208 | 9    | 2    | 9905-00-205-2795 | 28   | 5    |
| 4730-00-050-4208 | 20   | 5    | 5310-00-208-7127 | 6    | 2    |
| 4730-00-050-4208 | 23   | 5    | 5310-00-220-6848 | 23   | 10   |
| 4730-00-050-4208 | 24   | 29   | 5310-00-220-6848 | 24   | 6    |
| 5940-00-050-6209 | 4    | 11   | 5305-00-225-3844 | 16   | 2    |
| 5305-00-052-6920 | 8    | 8    | 2530-00-247-3276 | 8    | 7    |
| 2610-00-052-7969 | 18   | 2    | 4730-00-253-4412 | 10   | 24   |
| 5315-00-058-3553 | 14   | 7    | 5305-00-253-5631 | 29   | 1    |
| 5315-00-060-5074 | 23   | 31   | 5120-00-261-2821 | 30   | 1    |
| 5305-00-068-0515 | 10   | 14   | 5310-00-262-5479 | 8    | 16   |
| 5305-00-071-2081 | 23   | 20   | 5305-00-269-2804 | 13   | 4    |
| 5305-00-071-2081 | 24   | 24   | 5305-00-269-3215 | 22   | 4    |
| 5305-00-071-2237 | 21   | 5    | 5305-00-269-3238 | 11   | 1    |
| 5307-00-075-7185 | 16   | 14   | 2530-00-270-3878 | 15   | 4    |
| 5307-00-075-7186 | 16   | 14   | 4030-00-270-5435 | 22   | 6    |
| 5510-00-275-2544 | BULK | 3    | 5365-00-427-2209 | 8    | 21   |
| 5325-00-276-6056 | 3    | 5    | 3040-00-427-2211 | 8    | 20   |
| 5325-00-276-6056 | 10   | 26   | 3040-00-445-5360 | 24   | 11   |
| 4730-00-278-3213 | 12   | 3    | 2510-00-455-5759 | 20   | 4    |
| 4730-00-278-3832 | 10   | 22   | 5330-00-462-0907 | 1    | 3    |
| 9905-00-282-7489 | 29   | 5    | 5310-00-488-3889 | 24   | 21   |

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| STOCK NUMBER     | FIG. | ITEM | STOCK NUMBER     | FIG. | ITEM |
|------------------|------|------|------------------|------|------|
| 5340-00-286-2494 | 10   | 25   | 2530-00-496-2578 | 21   | 18   |
| 4730-00-289-0155 | 10   | 10   | 2590-00-510-8829 | 23   | 16   |
| 4730-00-289-0155 | 10   | 12   | 2590-00-510-8829 | 24   | 26   |
| 4730-00-289-0155 | 10   | 23   | 5340-00-512-2071 | 16   | 4    |
| 5325-00-290-3777 | 3    | 7    | 5330-00-513-9933 | 24   | 5    |
| 6220-00-299-7425 | 2    | 9    | 5315-00-515-0495 | 23   | 27   |
| 6220-00-299-7426 | 2    | 9    | 5315-00-515-0495 | 24   | 15   |
| 5315-00-316-1063 | 23   | 18   | 4720-00-540-1729 | 10   | 21   |
| 5315-00-316-1063 | 24   | 25   | 5325-00-543-3725 | 3    | 8    |
| 2510-00-318-1203 | 20   | 3    | 3120-00-544-1535 | 24   | 33   |
| 2530-00-318-1234 | 14   | 3    | 2530-00-562-0484 | 6    | 7    |
| 5340-00-318-6649 | 26   | 4    | 5330-00-562-0485 | 6    | 8    |
| 3020-00-319-6011 | 23   | 8    | 3020-00-562-0487 | 24   | 37   |
| 3020-00-319-6011 | 24   | 8    | 3020-00-562-0488 | 24   | 38   |
| 5340-00-321-6481 | 7    | 7    | 9390-00-567-3239 | 6    | - 9  |
| 2510-00-321-6482 | 20   | 2    | 5935-00-569-4715 | 2    | 2    |
| 4710-00-324-4311 | 10   | 4    | 6220-00-577-3434 | 2    | 3    |
| 4710-00-324-4312 | 10   | 6    | 5310-00-582-5965 | 3    | 3    |
| 2530-00-328-5438 | 8    | 6    | 5310-00-582-5965 | 10   | 16   |
| 3120-00-331-2640 | 8    | 4    | 5310-00-582-5965 | 16   | 3    |
| 5306-00-333-0473 | 22   | 8    | 5310-00-582-5965 | 21   | 10   |
| 4730-00-334-5550 | 10   | 5    | 5310-00-582-5965 | 23   | 3    |
| 4730-00-335-4728 | 10   | 1    | 5310-00-582-5965 | 24   | 3    |
| 4730-00-335-4728 | 15   | 2    | 5310-00-582-5965 | 28   | 2    |
| 5305-00-335-4761 | 23   | 26   | 5310-00-582-6714 | 10   | 3    |
| 5305-00-335-4761 | 24   | 16   | 5310-00-584-5272 | 26   | 3    |
| 5306-00-337-9672 | 6    | 10   | 5310-00-584-7888 | 6    | 3    |
| 2640-00-338-2705 | 18   | 3    | 5310-00-584-7888 | 8    | 18   |
| 5330-00-353-0959 | 2    | 4    | 5310-00-584-7888 | 19   | 3    |
| 4730-00-353-2036 | 10   | 19   | 5310-00-586-1767 | 23   | 17   |
| 2530-00-353-2210 | 8    | 1    | 5310-00-586-1767 | 24   | 17   |
| 2530-00-353-2211 | 8    | 1    | 5310-00-594-8038 | 19   | 1    |
| 6250-00-371-4018 | 2    | 6    | 4730-00-595-0083 | 10   | 8    |
| 2530-00-372-4100 | 9    | 1    | 4730-00-595-0083 | 15   | 1    |
| 2530-00-374-1771 | 16   | 15   | 5310-00-596-8169 | 2    | 8    |
| 3130-00-374-7856 | 5    | 5    | 5315-00-616-5530 | 23   | 30   |
| 5310-00-393-6685 | 4    | 5    | 5315-00-616-5530 | 24   | 10   |
| 5940-00-399-6676 | 4    | 10   | 5310-00-616-6857 | 23   | 7    |
| 4820-00-420-5499 | 10   | 9    | 5310-00-616-6857 | 24   | 39   |
| 4710-00-424-2694 | BULK | 4    | 5310-00-627-6128 | 1    | 8    |
| 5360-00-427-2208 | 8    | 22   | 5310-00-637-9541 | 11   | 3    |
| 5310-00-637-9541 | 13   | 2    | 5310-00-761-6882 | 28   | 1    |
| 5340-00-657-9792 | 3    | 9    | 5310-00-763-8905 | 6    | 11   |
| 2590-00-678-4099 | 22   | 9    | 5310-00-763-8905 | 14   | 4    |
| 9905-00-678-6126 | 29   | 2    | 5310-00-763-8911 | 22   | 12   |
| 5315-00-678-6127 | 8    | 19   | 5310-00-768-0319 | 10   | 17   |
| 3120-00-678-6132 | 8    | 15   | 5935-00-773-1428 | 3    | 2    |
| 2530-00-678-6133 | 8    | 23   | 3040-00-773-9380 | 22   | 5    |
| 5340-00-678-6192 | 14   | 5    | 9905-00-777-3070 | 29   | 3    |
| 5365-00-678-6872 | 23   | 15   | 5310-00-797-4501 | 7    | 8    |
| 5365-00-678-6872 | 24   | 27   | 1015-00-798-2997 | 4    | 10   |
| 5995-00-679-1425 | 4    | 1    | 5365-00-803-7299 | 8    | 12   |
| 2530-00-679-5657 | 5    | 1    | 5340-00-808-3897 | 6    | 4    |



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| STOCK NUMBER                | FIG. | ITEM | STOCK NUMBER     | FIG. | ITEM |
| 5360-00-679-5658            | 24   | 36   | 5310-00-809-3079 | 24   | 20   |
| 5310-00-682-5757            | 22   | 10   | 5340-00-809-5127 | 10   | 15   |
| 5325-00-685-0746            | 3    | 6    | 4730-00-813-7811 | 10   | 29   |
| 5340-00-689-3373            | 6    | 13   | 5310-00-820-6653 | 5    | 2    |
| 5340-00-689-6180            | 23   | 4    | 5310-00-820-6653 | 6    | 12   |
| 3040-00-693-0974            | 24   | 31   | 5310-00-820-6653 | 7    | 5    |
| 3020-00-693-0990            | 21   | 7    | 5310-00-820-6653 | 22   | 2    |
| 2590-00-693-0994            | 23   | 1    | 4730-00-833-0508 | 10   | 27   |
| 2590-00-693-0995            | 24   | 1    | 5935-00-833-8561 | 4    | 8    |
| 5310-00-701-4891            | 8    | 14   | 5970-00-833-8562 | 4    | 9    |
| 3020-00-701-4980            | 23   | 9    | 5310-00-833-8567 | 2    | 1    |
| 3020-00-701-4980            | 24   | 7    | 5315-00-839-5822 | 14   | 6    |
| 5330-00-701-4983            | 23   | 6    | 5310-00-841-2041 | 23   | 24   |
| 3120-00-701-4995            | 23   | 13   | 9905-00-841-4445 | 4    | 6    |
| 3120-00-701-4995            | 24   | 30   | 5310-00-842-1190 | 8    | 17   |
| 6145-00-705-6678            | 4    | 4    | 5307-00-843-4249 | 19   | 2    |
| 5310-00-708-8737            | 16   | 6    | 5935-00-846-3883 | 4    | 2    |
| 5310-00-708-8738            | 16   | 8    | 5310-00-847-2733 | 16   | 11   |
| 5310-00-708-8739            | 16   | 7    | 4820-00-849-1220 | 13   | 7    |
| 3040-00-710-1754            | 21   | 13   | 5310-00-850-6993 | 16   | 20   |
| 5305-00-716-8194            | 24   | 34   | 5310-00-851-2677 | 22   | 3    |
| 5305-00-724-7222            | 22   | 1    | 5305-00-855-0958 | 29   | 4    |
| 5305-00-725-4183            | 8    | 11   | 5310-00-861-9125 | 16   | 11   |
| 6220-00-726-1916            | 2    | 3    | 5340-00-893-4100 | 24   | 4    |
| 5305-00-726-2552            | 5    | 4    | 2530-00-912-4356 | 16   | 10   |
| 5305-00-726-2553            | 6    | 5    | 5310-00-927-3236 | 8    | 2    |
| 5305-00-726-2554            | 7    | 4    | 2530-00-933-4194 | 7    | 3    |
| 5310-00-732-0559            | 11   | 4    | 5365-00-933-4195 | 7    | 2    |
| 5310-00-732-0559            | 13   | 3    | 5330-00-933-4196 | 16   | 5    |
| 5310-00-732-0560            | 8    | 9    | 5310-00-934-9758 | 2    | 14   |
| 3040-00-736-7721            | 23   | 32   | 5310-00-935-9021 | 21   | 14   |
| 9905-00-752-4649            | 4    | 7    | 5305-00-958-5246 | 2    | 11   |
| 6220-00-752-6516            | 2    | 10   | 5305-00-984-6212 | 2    | 12   |
| 5310-00-761-6882            | 3    | 4    | 5305-00-988-1725 | 3    | 1    |
| 5310-00-761-6882            | 21   | 11   | 5305-00-988-1725 | 23   | 2    |
| 5305-00-988-1725            | 24   | 2    | 2530-01-125-4084 | 17   | 1    |
| 5305-00-988-1725            | 28   | 4    | 5310-01-174-0431 | 21   | 21   |
| 9905-00-999-7369            | 10   | 28   | 5310-01-175-0484 | 21   | 22   |
| 9905-00-999-7369            | 15   | 5    | 5340-01-175-0564 | 21   | 19   |
| 9905-00-999-7370            | 10   | 7    | 5305-01-175-0568 | 21   | 20   |
| 9905-00-999-7370            | 15   | 3    | 2610-01-254-5392 | 18   | 6    |
| 4720-01-014-4915            | BULK | 1    | 2610-01-325-1934 | 18   | 1    |
| 2530-01-054-4384            | 13   | 6    | 6220-01-359-2870 | 1    | 2    |
| 4730-01-079-8821            | 12   | 1    | 6220-01-372-3883 | 1    | 1    |
| 2590-01-091-7620            | 23   | 22   | 5999-01-408-5205 | 2    | 5    |
| 2590-01-091-7620            | 24   | 23   | 5330-01-417-5137 | 16   | 18   |

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|-------|--------------------------------------|-------------------|------------------|------|------|
|       |                                      |                   | STOCK NUMBER     |      |      |
| 16662 | AD2583                               |                   | 2530-00-270-3878 | 15   | 4    |
| 80204 | B1821BH050C450N                      |                   | 5305-00-071-2081 | 23   | 20   |
|       |                                      |                   | 5305-00-071-2081 | 24   | 24   |
| 80204 | B1821BH063C200N                      |                   | 5305-00-724-7222 | 22   | 1    |
| 80204 | B1821BH063F225N                      |                   | 5305-00-726-2552 | 5    | 4    |
| 19207 | CPR102321-1                          |                   | 4730-01-079-8821 | 12   | 1    |
| 78553 | C1059-014-1                          |                   | 5310-00-596-8169 | 2    | 8    |
| 96906 | FEDSTD308B                           |                   | 2610-00-052-7969 | 18   | 2    |
| 81348 | GP2STYLXTYRBCLR/<br>T/10.00R15/J/LTR |                   | 2610-01-325-1934 | 18   | 1    |
| 19207 | H101-0217282                         |                   |                  | 21   | 17   |
| 80837 | J-1166                               |                   | 3120-00-544-1535 | 24   | 33   |
| 80837 | J-1276                               |                   | 2590-00-510-8829 | 23   | 16   |
|       |                                      |                   | 2590-00-510-8829 | 24   | 26   |
| 29215 | JD1492                               |                   | 5310-00-044-6230 | 23   | 21   |
| 80837 | J1206A                               |                   | 5365-00-678-6872 | 23   | 15   |
|       |                                      |                   | 5365-00-678-6872 | 24   | 27   |
| 80837 | J1386                                |                   | 2590-00-030-6943 | 23   | 23   |
|       |                                      |                   | 2590-00-030-6943 | 24   | 22   |
| 80837 | J3203G                               |                   | 5330-00-513-9933 | 24   | 5    |
| 80837 | J3205                                |                   | 5360-00-679-5658 | 24   | 36   |
| 80837 | J3207-1                              |                   | 3040-00-445-5360 | 24   | 11   |
| 80837 | J3208-1                              |                   | 3040-00-693-0974 | 24   | 31   |
| 80837 | J3237                                |                   | 5315-00-515-0495 | 23   | 27   |
|       |                                      |                   | 5315-00-515-0495 | 24   | 15   |
| 80837 | J3265                                |                   | 5310-00-586-1767 | 23   | 17   |
|       |                                      |                   | 5310-00-586-1767 | 24   | 17   |
| 80837 | J3269-11                             |                   | 2590-00-040-2855 | 23   | 19   |
|       |                                      |                   | 2590-00-040-2855 | 24   | 18   |
| 80837 | J3279                                |                   | 2530-00-040-2856 | 21   | 1    |
| 80837 | J3280                                |                   | 5340-00-040-2857 | 21   | 6    |
| 80837 | J3282                                |                   | 3040-00-040-2858 | 21   | 16   |
| 80837 | J3284-2                              |                   | 3040-00-710-1754 | 21   | 13   |
| 80837 | J673-6                               |                   | 5305-00-335-4761 | 23   | 26   |
|       |                                      |                   | 5305-00-335-4761 | 24   | 16   |
| 15235 | KL5296                               |                   | 5310-00-582-5965 | 3    | 3    |
|       |                                      |                   | 5310-00-582-5965 | 10   | 16   |
|       |                                      |                   | 5310-00-582-5965 | 16   | 3    |
|       |                                      |                   | 5310-00-582-5965 | 21   | 10   |
|       |                                      |                   | 5310-00-582-5965 | 23   | 3    |
|       |                                      |                   | 5310-00-582-5965 | 24   | 3    |
|       |                                      |                   | 5310-00-582-5965 | 28   | 2    |
| 66821 | K12528                               |                   | 3110-00-100-6004 | 23   | 11   |
| 99411 | LG0083-03                            |                   | 5340-01-175-0564 | 21   | 19   |
| 96906 | MS15001-1                            |                   | 4730-00-050-4203 | 8    | 5    |
|       |                                      |                   | 4730-00-050-4203 | 8    | 13   |
| 96906 | MS15003-1                            |                   | 4730-00-050-4208 | 7    | 6    |
|       |                                      |                   | 4730-00-050-4208 | 9    | 2    |
|       |                                      |                   | 4730-00-050-4208 | 20   | 5    |
|       |                                      |                   | 4730-00-050-4208 | 23   | 5    |
|       |                                      |                   | 4730-00-050-4208 | 24   | 29   |
| 96906 | MS15570-1251                         |                   | 6240-00-019-0877 | 1    | 6    |

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|       |              |                   | STOCK NUMBER     |      |      |
|       |              |                   | 6240-00-019-0877 | 2    | 7    |
| 96906 | MS15570-623  |                   | 6240-00-019-3093 | 1    | 5    |
| 96906 | MS16624-1150 |                   | 5365-00-803-7299 | 8    | 12   |
| 96906 | MS17169-12   |                   | 3110-00-117-0759 | 23   | 28   |
|       |              |                   | 3110-00-117-0759 | 24   | 14   |
| 96906 | MS19059-2419 |                   | 3110-00-100-6164 | 24   | 35   |
| 96906 | MS21318-57   |                   | 5305-00-253-5631 | 29   | 1    |
| 96906 | MS21333-36   |                   | 5340-00-286-2494 | 10   | 25   |
| 96906 | MS21333-38   |                   | 5340-00-809-5127 | 10   | 15   |
| 96906 | MS24629-45   |                   | 5305-00-855-0958 | 29   | 4    |
| 96906 | MS24629-56   |                   | 5305-00-052-6920 | 8    | 8    |
| 96906 | MS24665-353  |                   | 5315-00-839-5822 | 14   | 6    |
| 96906 | MS24665-464  |                   | 5315-00-187-9396 | 23   | 14   |
|       |              |                   | 5315-00-187-9396 | 24   | 28   |
| 96906 | MS27148-2    |                   | 5999-01-408-5205 | 2    | 5    |
| 96906 | MS27183-19   |                   | 5310-00-809-3079 | 24   | 20   |
| 96906 | MS27185-15   |                   |                  | 22   | 11   |
| 96906 | MS35190-289  |                   | 5305-00-958-5246 | 2    | 11   |
| 96906 | MS35206-265  |                   | 5305-00-984-6212 | 2    | 12   |
| 96906 | MS35206-281  |                   | 5305-00-988-1725 | 3    | 1    |
|       |              |                   | 5305-00-988-1725 | 23   | 2    |
|       |              |                   | 5305-00-988-1725 | 24   | 2    |
|       |              |                   | 5305-00-988-1725 | 28   | 4    |
| 96906 | MS35333-44   |                   | 5310-00-194-1483 | 8    | 10   |
| 96906 | MS35333-49   |                   | 5310-00-582-6714 | 10   | 3    |
| 96906 | MS35335-35   |                   | 5310-00-627-6128 | 1    | 8    |
| 96906 | MS35338-43   |                   | 5310-00-045-3296 | 2    | 13   |
| 96906 | MS35338-46   |                   | 5310-00-637-9541 | 11   | 3    |
| 96906 | MS35338-48   |                   | 5310-00-584-5272 | 26   | 3    |
| 96906 | MS35338-49   |                   | 5310-00-167-0680 | 22   | 13   |
| 96906 | MS35338-50   |                   | 5310-00-820-6653 | 5    | 2    |
|       |              |                   | 5310-00-820-6653 | 6    | 12   |
|       |              |                   | 5310-00-820-6653 | 7    | 5    |
| 96906 | MS35338-51   |                   | 5310-00-584-7888 | 6    | 3    |
|       |              |                   | 5310-00-584-7888 | 8    | 18   |
|       |              |                   | 5310-00-584-7888 | 19   | 3    |
| 96906 | MS35340-50   |                   | 5310-00-045-5001 | 14   | 2    |
| 96906 | MS35387-1    |                   | 9905-00-205-2795 | 28   | 5    |
| 96906 | MS35387-2    |                   | 9905-00-202-3639 | 28   | 3    |
| 96906 | MS35421-1    |                   | 6220-00-299-7425 | 2    | 9    |
| 96906 | MS35421-2    |                   | 6220-00-299-7426 | 2    | 9    |
| 96906 | MS35423-1    |                   | 6220-00-577-3434 | 2    | 3    |
| 96906 | MS35423-2    |                   | 6220-00-726-1916 | 2    | 3    |
| 96906 | MS35478-1683 |                   | 6240-00-044-6914 | 1    | 4    |
| 94135 | MS35489-106  |                   | 5325-00-276-6056 | 3    | 5    |
|       |              |                   | 5325-00-276-6056 | 10   | 26   |
| 96906 | MS35489-110  |                   | 5325-00-202-4005 | 10   | 20   |
| 96906 | MS35489-77   |                   | 5325-00-290-3777 | 3    | 7    |
| 96906 | MS35649-202  |                   | 5310-00-934-9758 | 2    | 14   |
| 96906 | MS35671-55   |                   | 5315-00-060-5074 | 23   | 31   |
| 96906 | MS35671-64   |                   | 5315-00-014-2543 | 24   | 32   |
| 96906 | MS35690-1024 |                   | 5310-00-010-3030 | 5    | 3    |

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|       |             |                   | STOCK NUMBER     |      |      |
|       |             |                   | 5310-00-010-3030 | 14   | 1    |
| 96906 | MS35691-49  |                   | 5310-00-851-2677 | 22   | 3    |
| 96906 | MS35691-61  |                   | 5310-00-842-1190 | 8    | 17   |
| 96906 | MS35692-33  |                   | 5310-00-841-2041 | 23   | 24   |
| 96906 | MS35692-605 |                   | 5310-00-682-5757 | 22   | 10   |
| 96906 | MS35692-62  |                   | 5310-00-850-6993 | 16   | 20   |
| 96906 | MS35746-1   |                   | 4730-00-595-0083 | 10   | 8    |
|       |             |                   | 4730-00-595-0083 | 15   | 1    |
| 96906 | MS35748-1   |                   | 5330-00-090-2128 | 15   | 6    |
| 96906 | MS35754-40  |                   | 5306-00-021-8156 | 26   | 1    |
| 96906 | MS35756-15  |                   | 5315-00-616-5530 | 23   | 30   |
|       |             |                   | 5315-00-616-5530 | 24   | 10   |
| 96906 | MS35782-5   |                   | 4820-00-849-1220 | 13   | 7    |
| 96906 | MS39020-1   |                   | 9905-00-752-4649 | 4    | 7    |
| 96906 | MS39182-5   |                   | 4730-00-289-0155 | 10   | 10   |
| 96906 | MS39191-2   |                   | 4730-00-813-7811 | 10   | 29   |
| 96906 | MS39230-2   |                   | 4730-00-253-4412 | 10   | 24   |
| 96906 | MS51814-5   |                   | 4730-00-334-5550 | 10   | 5    |
| 96906 | MS51819-7   |                   | 4730-00-833-0508 | 10   | 27   |
| 96906 | MS51943-35  |                   | 5310-00-935-9021 | 21   | 14   |
| 96906 | MS51943-39  |                   | 5310-00-488-3889 | 24   | 21   |
| 96906 | MS51967-2   |                   | 5310-00-761-6882 | 3    | 4    |
|       |             |                   | 5310-00-761-6882 | 21   | 11   |
|       |             |                   | 5310-00-761-6882 | 28   | 1    |
| 96906 | MS51968-14  |                   | 5310-00-732-0560 | 8    | 9    |
| 96906 | MS51968-17  |                   | 5310-00-763-8911 | 22   | 12   |
| 96906 | MS51968-2   |                   | 5310-00-768-0319 | 10   | 17   |
| 96906 | MS51968-20  |                   | 5310-00-763-8905 | 6    | 11   |
|       |             |                   | 5310-00-763-8905 | 14   | 4    |
| 96906 | MS51968-8   |                   | 5310-00-732-0559 | 11   | 4    |
|       |             |                   | 5310-00-732-0559 | 13   | 3    |
| 96906 | MS51983-2   |                   | 5310-00-594-8038 | 19   | 1    |
| 96906 | MS53004-2   |                   | 2530-00-021-2366 | 11   | 2    |
| 96906 | MS53007-1   |                   | 9905-00-999-7370 | 10   | 7    |
|       |             |                   | 9905-00-999-7370 | 15   | 3    |
| 96906 | MS53007-2   |                   | 9905-00-999-7369 | 10   | 28   |
|       |             |                   | 9905-00-999-7369 | 15   | 5    |
| 96906 | MS53040-1   |                   | 2510-00-321-6482 | 20   | 2    |
| 96906 | MS75021-1   |                   | 5935-00-846-3883 | 4    | 2    |
| 96906 | MS90725-14  |                   | 5305-00-071-2237 | 21   | 5    |
| 96906 | MS90725-58  |                   | 5305-00-115-9526 | 1    | 9    |
| 96906 | MS90725-65  |                   | 5305-00-269-3215 | 22   | 4    |
| 96906 | MS90726-104 |                   | 5305-00-716-8194 | 24   | 34   |
| 96906 | MS90726-113 |                   | 5305-00-725-4183 | 8    | 11   |
| 96906 | MS90726-61  |                   | 5305-00-269-2804 | 13   | 4    |
| 96906 | MS90727-166 |                   | 5305-00-726-2553 | 6    | 5    |
| 96906 | MS90727-167 |                   | 5305-00-726-2554 | 7    | 4    |
| 96906 | MS90727-62  |                   | 5305-00-269-3238 | 11   | 1    |
| 96906 | MS90727-8   |                   | 5305-00-068-0515 | 10   | 14   |
| 96906 | MS90728-4   |                   | 5305-00-225-3844 | 16   | 2    |
| 81349 | M13486-1-7  |                   | 6145-00-705-6678 | 4    | 4    |
| 61038 | M21872      |                   | 5315-00-014-2521 | 24   | 12   |

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| 81349 | M43436/1-2             |                   | 9905-00-841-4445 | 4    | 6    |
| 80205 | NAS1022A17             |                   | 5310-00-616-6857 | 23   | 7    |
|       |                        |                   | 5310-00-616-6857 | 24   | 39   |
| 40342 | N11257                 |                   | 5340-00-678-6192 | 14   | 5    |
| 40342 | N13128                 |                   | 4730-00-353-2036 | 10   | 19   |
| 40342 | N13463D                |                   | 4720-00-540-1729 | 10   | 21   |
| 99411 | PP0012-22              |                   | 5310-01-175-0484 | 21   | 22   |
| 99411 | PP0016-03              |                   | 5310-01-174-0431 | 21   | 21   |
| 99411 | PP0050-36              |                   | 5305-01-175-0568 | 21   | 20   |
| 80837 | TA653                  |                   | 2530-00-496-2578 | 21   | 18   |
| 56697 | UB-2208                |                   | 3040-00-427-2211 | 8    | 20   |
| 78550 | UB1179                 |                   | 3120-00-678-6132 | 8    | 15   |
| 56697 | UB2205                 |                   | 5360-00-427-2208 | 8    | 22   |
| 56697 | UB2206                 |                   | 5365-00-427-2209 | 8    | 21   |
| 56697 | UB2232                 |                   | 2530-00-678-6133 | 8    | 23   |
| 81348 | WW-P-471AASBCC         |                   | 4730-00-187-4202 | 13   | 5    |
| 81348 | WW-P-471ACABCA         |                   | 4730-00-018-9566 | 24   | 19   |
| 19207 | 0144915                |                   |                  | 12   | 2    |
| 94697 | 091-54603DZ008C2<br>05 |                   | 5310-00-004-3099 | 26   | 2    |
| 17875 | 100AA                  |                   | 2640-00-050-1229 | 18   | 4    |
| 24617 | 103325                 |                   | 5310-00-820-6653 | 22   | 2    |
| 19207 | 10929888               |                   | 5365-00-177-9262 | 16   | 1    |
| 19207 | 10944309-1             |                   | 2530-00-156-9142 | 16   | 10   |
| 19207 | 10944309-2             |                   | 2530-00-912-4356 | 16   | 10   |
| 80837 | 1102A3-4               |                   | 3110-00-100-6004 | 24   | 9    |
| 19207 | 11597645               |                   | 2510-00-116-9223 | 7    | 1    |
| 19207 | 11597646               |                   | 5365-00-933-4195 | 7    | 2    |
| 19207 | 11597647               |                   | 4710-00-324-4311 | 10   | 4    |
| 19207 | 11597656               |                   | 5330-00-933-4196 | 16   | 5    |
| 19207 | 11625220               |                   | 3120-00-331-2640 | 8    | 4    |
| 19207 | 11639519-2             |                   | 5330-00-462-0907 | 1    | 3    |
| 19207 | 11669686               |                   | 2530-01-125-4084 | 17   | 1    |
| 18816 | 122194                 |                   |                  | 21   | 8    |
| 19207 | 12375837               |                   | 6220-01-372-3883 | 1    | 1    |
| 19207 | 12375838               |                   |                  | 1    | 7    |
| 19207 | 12375841               |                   | 6220-01-359-2870 | 1    | 2    |
| 03914 | 13-348                 |                   | 5120-00-261-2821 | 30   | 1    |
| 80540 | 15-7.5                 |                   | 2610-01-254-5392 | 18   | 6    |
| 80049 | 15608                  |                   | 5510-00-275-2544 | BULK | 3    |
| 88663 | 2A605                  |                   | 3110-00-185-6305 | 21   | 4    |
| 12603 | 23E06                  |                   | 5310-00-637-9541 | 13   | 2    |
| 30612 | 24569D                 |                   | 5310-00-021-9760 | 10   | 2    |
| 06853 | 246115                 |                   | 4720-01-014-4915 | BULK | 1    |
| 66640 | 27D252                 |                   | 5310-00-220-6848 | 23   | 10   |
|       |                        |                   | 5310-00-220-6848 | 24   | 6    |
| 19207 | 2744994-1              |                   |                  | 26   | 5    |
| 06853 | 285172                 |                   | 4820-00-420-5499 | 10   | 9    |
| 17590 | 305087-0116            |                   | 4710-00-203-3172 | BULK | 5    |
| 78500 | 3219C1251              |                   | 2530-00-204-3214 | 16   | 19   |
| 78500 | 3262Q95                |                   | 5340-00-512-2071 | 16   | 4    |
| 89222 | 330-20223265           |                   | 4730-00-289-0155 | 10   | 23   |

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|       |              |                   | STOCK NUMBER     |      |      |
| 26151 | 372-7091     |                   | 5330-01-417-5137 | 16   | 18   |
| 04741 | 4FA0142      |                   | 3110-00-100-0333 | 16   | 13   |
| 21450 | 42C15120-215 |                   |                  | 22   | 7    |
| 00447 | 426528       |                   | 3110-00-100-0337 | 16   | 16   |
| 73342 | 444687       |                   | 4730-00-018-9566 | 23   | 25   |
| 24617 | 451031       |                   | 5310-00-045-1031 | 19   | 4    |
| 00447 | 5P1321       |                   | 3110-00-100-0683 | 16   | 17   |
| 21450 | 501586       |                   | 5315-00-050-1586 | 21   | 2    |
| 21450 | 506209       |                   | 5940-00-050-6209 | 4    | 11   |
| 18876 | 506886       |                   | 4030-00-270-5435 | 22   | 6    |
| 19207 | 5168890      |                   | 5310-00-701-4891 | 8    | 14   |
| 21450 | 537867       |                   | 5307-00-843-4249 | 19   | 2    |
| 95535 | 55229        |                   | 4710-00-424-2694 | BULK | 4    |
| 19207 | 583553       |                   | 5315-00-058-3553 | 14   | 7    |
| 83328 | 586023       |                   |                  | 21   | 15   |
| 21450 | 586174       |                   |                  | 21   | 12   |
| 73331 | 5939830      |                   | 6220-00-752-6516 | 2    | 10   |
| 73331 | 5939831      |                   | 6250-00-371-4018 | 2    | 6    |
| 73331 | 5939841      |                   | 5330-00-353-0959 | 2    | 4    |
| 81343 | 6-4 120202BA |                   | 4730-00-289-0155 | 10   | 12   |
| 81343 | 6-4 120203BA |                   | 4730-00-278-3832 | 10   | 22   |
| 81343 | 6-6 120101BA |                   | 4730-00-278-3213 | 12   | 3    |
| 82465 | 60507        |                   | 5340-00-318-6649 | 26   | 4    |
| 08162 | 643          |                   | 3110-00-100-0663 | 16   | 9    |
| 09386 | 68732D       |                   | 2530-00-374-1771 | 16   | 15   |
| 09386 | 69913        |                   | 5310-00-861-9125 | 16   | 11   |
| 19207 | 7014980      |                   | 3020-00-701-4980 | 23   | 9    |
|       |              |                   | 3020-00-701-4980 | 24   | 7    |
| 19207 | 7014983      |                   | 5330-00-701-4983 | 23   | 6    |
| 19207 | 7014995      |                   | 3120-00-701-4995 | 23   | 13   |
|       |              |                   | 3120-00-701-4995 | 24   | 30   |
| 19207 | 7088737      |                   | 5310-00-708-8737 | 16   | 6    |
| 19207 | 7088738      |                   | 5310-00-708-8738 | 16   | 8    |
| 19207 | 7088739      |                   | 5310-00-708-8739 | 16   | 7    |
| 19207 | 7088740      |                   | 5310-00-262-5479 | 8    | 16   |
| 19207 | 7365938      |                   | 2590-01-091-7620 | 23   | 22   |
|       |              |                   | 2590-01-091-7620 | 24   | 23   |
| 19207 | 7367721      |                   | 3040-00-736-7721 | 23   | 32   |
| 19207 | 7722333      |                   | 5365-00-090-5426 | 4    | 3    |
| 72869 | 7723309      |                   | 5310-00-393-6685 | 4    | 5    |
| 19207 | 7731428      |                   | 5935-00-773-1428 | 3    | 2    |
| 19207 | 7974886      |                   | 5340-00-689-6180 | 23   | 4    |
| 19207 | 7974887      |                   | 5340-00-893-4100 | 24   | 4    |
| 19207 | 7979367      |                   | 4010-00-171-9736 | BULK | 2    |
| 19207 | 7979373      |                   | 9905-00-282-7489 | 29   | 5    |
| 19207 | 7982997      |                   | 1015-00-798-2997 | 4    | 10   |
| 81336 | 8167-1-5     |                   | 9390-00-567-3239 | 6    | 9    |
| 81336 | 8170-10-5    |                   | 3130-00-374-7856 | 5    | 5    |
| 40342 | 8330281      |                   | 4730-00-335-4728 | 10   | 1    |
|       |              |                   | 4730-00-335-4728 | 15   | 2    |
| 19207 | 8336567      |                   |                  | 25   | 1    |
| 19207 | 8336571      |                   | 3040-00-773-9380 | 22   | 5    |

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|       |             |                   | STOCK NUMBER     |      |      |
| 19207 | 8336638     |                   | 2590-00-678-4099 | 22   | 9    |
| 19207 | 8336706     |                   | 4710-00-324-4312 | 10   | 6    |
| 19207 | 8336707     |                   | 2530-01-054-4384 | 13   | 6    |
| 19207 | 8336712     |                   | 2530-00-318-1234 | 14   | 3    |
| 19207 | 8336722     |                   | 5340-00-157-0724 | 13   | 1    |
| 19207 | 8336779     |                   | 2530-00-372-4100 | 9    | 1    |
| 19207 | 8336792     |                   | 2530-00-933-4194 | 7    | 3    |
| 19207 | 8336799     |                   |                  | 6    | 1    |
| 19207 | 8336801     |                   | 9905-00-678-6126 | 29   | 2    |
| 19207 | 8336982     |                   | 2530-00-679-5657 | 5    | 1    |
| 19207 | 8338561     |                   | 5935-00-833-8561 | 4    | 8    |
| 19207 | 8338562     |                   | 5970-00-833-8562 | 4    | 9    |
| 19207 | 8338564     |                   | 5940-00-399-6676 | 4    | 10   |
| 19207 | 8338567     |                   | 5310-00-833-8567 | 2    | 1    |
| 19207 | 8338568     |                   | 5935-00-569-4715 | 2    | 2    |
| 19207 | 8343584     |                   |                  | 27   | 1    |
| 19207 | 8376584     |                   | 3040-00-030-6942 | 23   | 29   |
| 19207 | 8376596     |                   | 5315-00-316-1063 | 23   | 18   |
|       |             |                   | 5315-00-316-1063 | 24   | 25   |
| 19207 | 8376598     |                   |                  | 24   | 13   |
| 19207 | 8376604     |                   | 3020-00-693-0990 | 21   | 7    |
| 19207 | 8376606     |                   |                  | 21   | 9    |
| 19207 | 8376610     |                   | 3020-00-562-0487 | 24   | 37   |
| 19207 | 8376611     |                   | 3020-00-562-0488 | 24   | 38   |
| 19207 | 8379620     |                   | 2510-00-455-5759 | 20   | 4    |
| 19207 | 8379626     |                   | 5360-00-200-5414 | 21   | 3    |
| 19207 | 8379656     |                   | 2530-00-562-0484 | 6    | 7    |
| 19207 | 8379658     |                   | 5330-00-562-0485 | 6    | 8    |
| 19207 | 8379659     |                   | 5310-00-208-7127 | 6    | 2    |
| 19207 | 8379660     |                   | 5306-00-337-9672 | 6    | 10   |
| 19207 | 8379662     |                   | 5340-00-321-6481 | 7    | 7    |
| 19207 | 8379674     |                   | 2510-00-318-1203 | 20   | 3    |
| 19207 | 8379676     |                   | 4010-00-040-2869 | 20   | 1    |
| 19207 | 8379685     |                   | 2640-00-338-2705 | 18   | 3    |
| 19207 | 8379689     |                   | 5310-00-797-4501 | 7    | 8    |
| 19207 | 8379820     |                   | 5340-00-177-8101 | 6    | 6    |
| 19207 | 8379821     |                   | 5340-00-689-3373 | 6    | 13   |
| 19207 | 8379822     |                   | 5340-00-808-3897 | 6    | 4    |
| 19207 | 8379855     |                   | 3020-00-319-6011 | 23   | 8    |
|       |             |                   | 3020-00-319-6011 | 24   | 8    |
| 19207 | 8388856     |                   |                  | 10   | 13   |
| 19207 | 8388857     |                   |                  | 10   | 18   |
| 19207 | 8388858     |                   |                  | 10   | 11   |
| 19207 | 8683503     |                   | 9905-00-777-3070 | 29   | 3    |
| 19207 | 8687034     |                   | 5310-00-927-3236 | 8    | 2    |
| 19207 | 8687040     |                   | 5315-00-678-6127 | 8    | 19   |
| 19207 | 8687041     |                   | 2530-00-247-3276 | 8    | 7    |
| 19207 | 8687050     |                   | 2530-00-353-2210 | 8    | 1    |
| 19207 | 8687051     |                   | 2530-00-353-2211 | 8    | 1    |
| 19207 | 8687057     |                   | 2530-00-089-8289 | 8    | 3    |
| 19207 | 8687058     |                   | 2530-00-328-5438 | 8    | 6    |
| 19207 | 8700957     |                   | 2590-00-693-0994 | 23   | 1    |

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|       |             |                   | STOCK NUMBER     |      |      |
| 19207 | 8700958     |                   | 2590-00-693-0995 | 24   | 1    |
| 19207 | 8701079     |                   |                  | 23   | 12   |
| 19207 | 8712220     |                   | 5310-00-847-2733 | 16   | 11   |
| 19207 | 8730460     |                   | 5306-00-333-0473 | 22   | 8    |
| 19207 | 8738089-1   |                   | 5307-00-075-7185 | 16   | 14   |
| 19207 | 8738089-2   |                   | 5307-00-075-7186 | 16   | 14   |
| 19207 | 8742391     |                   | 5340-00-657-9792 | 3    | 9    |
| 19207 | 8742593     |                   |                  | 25   | 2    |
| 19207 | 8742779     |                   | 5995-00-679-1425 | 4    | 1    |
| 19207 | 8742790     |                   | 5325-00-543-3725 | 3    | 8    |
| 19207 | 8742791     |                   | 5325-00-685-0746 | 3    | 6    |
| 53477 | 880MB       |                   |                  | 18   | 5    |
| 09386 | 89327       |                   | 5310-00-078-7025 | 16   | 12   |
| 09386 | 89328       |                   | 5310-00-078-7026 | 16   | 12   |



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|      |      | STOCK NUMBER                 | CAGEC |              |
| BULK | 1    | 4720-01-014-4915             | 06853 | 246115       |
| BULK | 2    | 4010-00-171-9736             | 19207 | 7979367      |
| BULK | 3    | 5510-00-275-2544             | 80049 | 15608        |
| BULK | 4    | 4710-00-424-2694             | 95535 | 55229        |
| BULK | 5    | 4710-00-203-3172             | 17590 | 305087-0116  |
| 1    | 1    | 6220-01-372-3883             | 19207 | 12375837     |
| 1    | 2    | 6220-01-359-2870             | 19207 | 12375841     |
| 1    | 3    | 5330-00-462-0907             | 19207 | 11639519-2   |
| 1    | 4    | 6240-00-044-6914             | 96906 | MS35478-1683 |
| 1    | 5    | 6240-00-019-3093             | 96906 | MS15570-623  |
| 1    | 6    | 6240-00-019-0877             | 96906 | MS15570-1251 |
| 1    | 8    | 5310-00-627-6128             | 96906 | MS35335-35   |
| 1    | 9    | 5305-00-115-9526             | 96906 | MS90725-58   |
| 2    | 1    | 5310-00-833-8567             | 19207 | 8338567      |
| 2    | 2    | 5935-00-569-4715             | 19207 | 8338568      |
| 2    | 3    | 6220-00-577-3434             | 96906 | MS35423-1    |
| 2    | 3    | 6220-00-726-1916             | 96906 | MS35423-2    |
| 2    | 4    | 5330-00-353-0959             | 73331 | 5939841      |
| 2    | 5    | 5999-01-408-5205             | 96906 | MS27148-2    |
| 2    | 6    | 6250-00-371-4018             | 73331 | 5939831      |
| 2    | 7    | 6240-00-019-0877             | 96906 | MS15570-1251 |
| 2    | 8    | 5310-00-596-8169             | 78553 | C1059-014-1  |
| 2    | 9    | 6220-00-299-7425             | 96906 | MS35421-1    |
| 2    | 9    | 6220-00-299-7426             | 96906 | MS35421-2    |
| 2    | 10   | 6220-00-752-6516             | 73331 | 5939830      |
| 2    | 11   | 5305-00-958-5246             | 96906 | MS35190-289  |
| 2    | 12   | 5305-00-984-6212             | 96906 | MS35206-265  |
| 2    | 13   | 5310-00-045-3296             | 96906 | MS35338-43   |
| 2    | 14   | 5310-00-934-9758             | 96906 | MS35649-202  |
| 3    | 1    | 5305-00-988-1725             | 96906 | MS35206-281  |
| 3    | 2    | 5935-00-773-1428             | 19207 | 7731428      |
| 3    | 3    | 5310-00-582-5965             | 15235 | KL5296       |
| 3    | 4    | 5310-00-761-6882             | 96906 | MS51967-2    |
| 3    | 5    | 5325-00-276-6056             | 94135 | MS35489-106  |
| 3    | 6    | 5325-00-685-0746             | 19207 | 8742791      |
| 3    | 7    | 5325-00-290-3777             | 96906 | MS35489-77   |
| 3    | 8    | 5325-00-543-3725             | 19207 | 8742790      |
| 3    | 9    | 5340-00-657-9792             | 19207 | 8742391      |
| 4    | 1    | 5995-00-679-1425             | 19207 | 8742779      |
| 4    | 2    | 5935-00-846-3883             | 96906 | MS7502171    |
| 4    | 3    | 5365-00-090-5426             | 19207 | 7722333      |
| 4    | 4    | 6145-00-705-6678             | 81349 | M13486-1-7   |
| 4    | 5    | 5310-00-393-6685             | 72869 | 7723309      |
| 4    | 6    | 9905-00-841-4445             | 81349 | M43436/1-2   |
| 4    | 7    | 9905-00-752-4649             | 96906 | MS39020-1    |
| 4    | 8    | 5935-00-833-8561             | 19207 | 8338561      |
| 4    | 9    | 5970-00-833-8562             | 19207 | 8338562      |
| 4    | 10   | 1015-00-798-2997             | 19207 | 7982997      |
| 4    | 10   | 5940-00-399-6676             | 19207 | 8338564      |
| 4    | 11   | 5940-00-050-6209             | 21450 | 506209       |
| 5    | 1    | 2530-00-679-5657             | 19207 | 8336982      |
| 5    | 2    | 5310-00-820-6653             | 96906 | MS35338-50   |
| 5    | 3    | 5310-00-010-3030             | 96906 | MS35690-1024 |

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| 5    | 4    | 5305-00-726-2552             | 80204 | B1821BH063F225N |
| 5    | 5    | 3130-00-374-7856             | 81336 | 8170-10-5       |
| 6    | 2    | 5310-00-208-7127             | 19207 | 8379659         |
| 6    | 3    | 5310-00-584-7888             | 96906 | MS35338-51      |
| 6    | 4    | 5340-00-808-3897             | 19207 | 8379822         |
| 6    | 5    | 5305-00-726-2553             | 96906 | MS90727-166     |
| 6    | 6    | 5340-00-177-8101             | 19207 | 8379820         |
| 6    | 7    | 2530-00-562-0484             | 19207 | 8379656         |
| 6    | 8    | 5330-00-562-0485             | 19207 | 8379658         |
| 6    | 9    | 9390-00-567-3239             | 81336 | 8167-1-5        |
| 6    | 10   | 5306-00-337-9672             | 19207 | 8379660         |
| 6    | 11   | 5310-00-763-8905             | 96906 | MS51968-20      |
| 6    | 12   | 5310-00-820-6653             | 96906 | MS35338-50      |
| 6    | 13   | 5340-00-689-3373             | 19207 | 8379821         |
| 7    | 1    | 2510-00-116-9223             | 19207 | 11597645        |
| 7    | 2    | 5365-00-933-4195             | 19207 | 11597646        |
| 7    | 3    | 2530-00-933-4194             | 19207 | 8336792         |
| 7    | 4    | 5305-00-726-2554             | 96906 | MS90727-167     |
| 7    | 5    | 5310-00-820-6653             | 96906 | MS35338-50      |
| 7    | 6    | 4730-00-050-4208             | 96906 | MS15003-1       |
| 7    | 7    | 5340-00-321-6481             | 19207 | 8379662         |
| 7    | 8    | 5310-00-797-4501             | 19207 | 8379689         |
| 8    | 1    | 2530-00-353-2210             | 19207 | 8687050         |
| 8    | 1    | 2530-00-353-2211             | 19207 | 8687051         |
| 8    | 2    | 5310-00-927-3236             | 19207 | 8687034         |
| 8    | 3    | 2530-00-089-8289             | 19207 | 8687057         |
| 8    | 4    | 3120-00-331-2640             | 19207 | 11625220        |
| 8    | 5    | 4730-00-050-4203             | 96906 | MS15001-1       |
| 8    | 6    | 2530-00-328-5438             | 19207 | 8687058         |
| 8    | 7    | 2530-00-247-3276             | 19207 | 8687041         |
| 8    | 8    | 5305-00-052-6920             | 96906 | MS24629-56      |
| 8    | 9    | 5310-00-732-0560             | 96906 | MS51968-14      |
| 8    | 10   | 5310-00-194-1483             | 96906 | MS35333-44      |
| 8    | 11   | 5305-00-725-4183             | 96906 | MS90726-113     |
| 8    | 12   | 5365-00-803-7299             | 96906 | MS16624-1150    |
| 8    | 13   | 4730-00-050-4203             | 96906 | MS15001-1       |
| 8    | 14   | 5310-00-701-4891             | 19207 | 5168890         |
| 8    | 15   | 3120-00-678-6132             | 78550 | UB1179          |
| 8    | 16   | 5310-00-262-5479             | 19207 | 7088740         |
| 8    | 17   | 5310-00-842-1190             | 96906 | MS35691-61      |
| 8    | 18   | 5310-00-584-7888             | 96906 | MS35338-51      |
| 8    | 19   | 5315-00-678-6127             | 19207 | 8687040         |
| 8    | 20   | 3040-00-427-2211             | 56697 | UB-2208         |
| 8    | 21   | 5365-00-427-2209             | 56697 | UB2206          |
| 8    | 22   | 5360-00-427-2208             | 56697 | UB2205          |
| 8    | 23   | 2530-00-678-6133             | 56697 | UB2232          |
| 9    | 1    | 2530-00-372-4100             | 19207 | 8336779         |
| 9    | 2    | 4730-00-050-4208             | 96906 | MS15003-1       |
| 10   | 1    | 4730-00-335-4728             | 40342 | 8330281         |
| 10   | 2    | 5310-00-021-9760             | 30612 | 24569D          |
| 10   | 3    | 5310-00-582-6714             | 96906 | MS35333-49      |
| 10   | 4    | 4710-00-324-4311             | 19207 | 11597647        |
| 10   | 5    | 4730-00-334-5550             | 96906 | MS51814-5       |

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| FIG. | ITEM | FIGURE AND ITEM NUMBER INDEX |       | PART NUMBER    |
|------|------|------------------------------|-------|----------------|
|      |      | STOCK NUMBER                 | CAGEC |                |
| 10   | 6    | 4710-00-324-4312             | 19207 | 8336706        |
| 10   | 7    | 9905-00-999-7370             | 96906 | MS53007-1      |
| 10   | 8    | 4730-00-595-0083             | 96906 | MS35746-1      |
| 10   | 9    | 4820-00-420-5499             | 06853 | 285172         |
| 10   | 10   | 4730-00-289-0155             | 96906 | MS39182-5      |
| 10   | 12   | 4730-00-289-0155             | 81343 | 6-4 120202BA   |
| 10   | 14   | 5305-00-068-0515             | 96906 | MS90727-8      |
| 10   | 15   | 5340-00-809-5127             | 96906 | MS21333-38     |
| 10   | 16   | 5310-00-582-5965             | 15235 | KL5296         |
| 10   | 17   | 5310-00-768-0319             | 96906 | MS51968-2      |
| 10   | 19   | 4730-00-353-2036             | 40342 | N13128         |
| 10   | 20   | 5325-00-202-4005             | 96906 | MS35489-110    |
| 10   | 21   | 4720-00-540-1729             | 40342 | N13463D        |
| 10   | 22   | 4730-00-278-3832             | 81343 | 6-4 120203BA   |
| 10   | 23   | 4730-00-289-0155             | 89222 | 330-20223265   |
| 10   | 24   | 4730-00-253-4412             | 96906 | MS39230-2      |
| 10   | 25   | 5340-00-286-2494             | 96906 | MS21333-36     |
| 10   | 26   | 5325-00-276-6056             | 94135 | MS35489-106    |
| 10   | 27   | 4730-00-833-0508             | 96906 | MS51819-7      |
| 10   | 28   | 9905-00-999-7369             | 96906 | MS53007-2      |
| 10   | 29   | 4730-00-813-7811             | 96906 | MS39191-2      |
| 11   | 1    | 5305-00-269-3238             | 96906 | MS90727-62     |
| 11   | 2    | 2530-00-021-2366             | 96906 | MS53004-2      |
| 11   | 3    | 5310-00-637-9541             | 96906 | MS35338-46     |
| 11   | 4    | 5310-00-732-0559             | 96906 | MS51968-8      |
| 12   | 1    | 4730-01-079-8821             | 19207 | CPR102321-1    |
| 12   | 3    | 4730-00-278-3213             | 81343 | 6-6 120101BA   |
| 13   | 1    | 5340-00-157-0724             | 19207 | 8336722        |
| 13   | 2    | 5310-00-637-9541             | 12603 | 23E06          |
| 13   | 3    | 5310-00-732-0559             | 96906 | MS51968-8      |
| 13   | 4    | 5305-00-269-2804             | 96906 | MS90726-61     |
| 13   | 5    | 4730-00-187-4202             | 81348 | WW-P-471AASBCC |
| 13   | 6    | 2530-01-054-4384             | 19207 | 8336707        |
| 13   | 7    | 4820-00-849-1220             | 96906 | MS35782-5      |
| 14   | 1    | 5310-00-010-3030             | 96906 | MS35690-1024   |
| 14   | 2    | 5310-00-045-5001             | 96906 | MS35340-50     |
| 14   | 3    | 2530-00-318-1234             | 19207 | 8336712        |
| 14   | 4    | 5310-00-763-8905             | 96906 | MS51968-20     |
| 14   | 5    | 5340-00-678-6192             | 40342 | N11257         |
| 14   | 6    | 5315-00-839-5822             | 96906 | MS24665-353    |
| 14   | 7    | 5315-00-058-3553             | 19207 | 583553         |
| 15   | 1    | 4730-00-595-0083             | 96906 | MS35746-1      |
| 15   | 2    | 4730-00-335-4728             | 40342 | 8330281        |
| 15   | 3    | 9905-00-999-7370             | 96906 | MS53007-1      |
| 15   | 4    | 2530-00-270-3878             | 16662 | AD2583         |
| 15   | 5    | 9905-00-999-7369             | 96906 | MS53007-2      |
| 15   | 6    | 5330-00-090-2128             | 96906 | MS35748-1      |
| 16   | 1    | 5365-00-177-9262             | 19207 | 10929888       |
| 16   | 2    | 5305-00-225-3844             | 96906 | MS90728-4      |
| 16   | 3    | 5310-00-582-5965             | 15235 | KL5296         |
| 16   | 4    | 5340-00-512-2071             | 78500 | 3262Q95        |
| 16   | 5    | 5330-00-933-4196             | 19207 | 11597656       |
| 16   | 6    | 5310-00-708-8737             | 19207 | 7088737        |

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| FIG. | ITEM | FIGURE AND ITEM NUMBER INDEX |       | PART NUMBER                          |
|------|------|------------------------------|-------|--------------------------------------|
|      |      | STOCK NUMBER                 | CAGEC |                                      |
| 16   | 7    | 5310-00-708-8739             | 19207 | 7088739                              |
| 16   | 8    | 5310-00-708-8738             | 19207 | 7088738                              |
| 16   | 9    | 3110-00-100-0663             | 08162 | 643                                  |
| 16   | 10   | 2530-00-156-9142             | 19207 | 10944309-1                           |
| 16   | 10   | 2530-00-912-4356             | 19207 | 10944309-2                           |
| 16   | 11   | 5310-00-861-9125             | 09386 | 69913                                |
| 16   | 11   | 5310-00-847-2733             | 19207 | 8712220                              |
| 16   | 12   | 5310-00-078-7025             | 09386 | 89327                                |
| 16   | 12   | 5310-00-078-7026             | 09386 | 89328                                |
| 16   | 13   | 3110-00-100-0333             | 04741 | 4FA0142                              |
| 16   | 14   | 5307-00-075-7185             | 19207 | 8738089-1                            |
| 16   | 14   | 5307-00-075-7186             | 19207 | 8738089-2                            |
| 16   | 15   | 2530-00-374-1771             | 09386 | 68732D                               |
| 16   | 16   | 3110-00-100-0337             | 00447 | 426528                               |
| 16   | 17   | 3110-00-100-0683             | 00447 | 5P1321                               |
| 16   | 18   | 5330-01-417-5137             | 26151 | 372-7091                             |
| 16   | 19   | 2530-00-204-3214             | 78500 | 3219C1251                            |
| 16   | 20   | 5310-00-850-6993             | 96906 | MS35692-62                           |
| 17   | 1    | 2530-01-125-4084             | 19207 | 11669686                             |
| 18   | 1    | 2610-01-325-1934             | 81348 | GP2STYLXTYRBCLR/<br>T/10.00R15/J/LTR |
| 18   | 2    | 2610-00-052-7969             | 96906 | FEDSTD308B                           |
| 18   | 3    | 2640-00-338-2705             | 19207 | 8379685                              |
| 18   | 4    | 2640-00-050-1229             | 17875 | 100AA                                |
| 18   | 6    | 2610-01-254-5392             | 80540 | 15-7.5                               |
| 19   | 1    | 5310-00-594-8038             | 96906 | MS51983-2                            |
| 19   | 2    | 5307-00-843-4249             | 21450 | 537867                               |
| 19   | 3    | 5310-00-584-7888             | 96906 | MS35338-51                           |
| 19   | 4    | 5310-00-045-1031             | 24617 | 451031                               |
| 20   | 1    | 4010-00-040-2869             | 19207 | 8379676                              |
| 20   | 2    | 2510-00-321-6482             | 96906 | MS53040-1                            |
| 20   | 3    | 2510-00-318-1203             | 19207 | 8379674                              |
| 20   | 4    | 2510-00-455-5759             | 19207 | 8379620                              |
| 20   | 5    | 4730-00-050-4208             | 96906 | MS15003-1                            |
| 21   | 1    | 2530-00-040-2856             | 80837 | J3279                                |
| 21   | 2    | 5315-00-050-1586             | 21450 | 501586                               |
| 21   | 3    | 5360-00-200-5414             | 19207 | 8379626                              |
| 21   | 4    | 3110-00-185-6305             | 88663 | 2A605                                |
| 21   | 5    | 5305-00-071-2237             | 96906 | MS90725-14                           |
| 21   | 6    | 5340-00-040-2857             | 80837 | J3280                                |
| 21   | 7    | 3020-00-693-0990             | 19207 | 8376604                              |
| 21   | 10   | 5310-00-582-5965             | 15235 | KL5296                               |
| 21   | 11   | 5310-00-761-6882             | 96906 | MS51967-2                            |
| 21   | 13   | 3040-00-710-1754             | 80837 | J3284-2                              |
| 21   | 14   | 5310-00-935-9021             | 96906 | MS51943-35                           |
| 21   | 16   | 3040-00-040-2858             | 80837 | J3282                                |
| 21   | 18   | 2530-00-496-2578             | 80837 | TA653                                |
| 21   | 19   | 5340-01-175-0564             | 99411 | LG0083-03                            |
| 21   | 20   | 5305-01-175-0568             | 99411 | PP0050-36                            |
| 21   | 21   | 5310-01-174-0431             | 99411 | PP0016-03                            |
| 21   | 22   | 5310-01-175-0484             | 99411 | PP0012-22                            |
| 22   | 1    | 5305-00-724-7222             | 80204 | B1821BH063C200N                      |
| 22   | 2    | 5310-00-820-6653             | 24617 | 103325                               |

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|------|------|------------------------------|-------|-----------------|
|      |      | STOCK NUMBER                 | CAGEC |                 |
| 22   | 3    | 5310-00-851-2677             | 96906 | MS35691-49      |
| 22   | 4    | 5305-00-269-3215             | 96906 | MS90725-65      |
| 22   | 5    | 3040-00-773-9380             | 19207 | 8336571         |
| 22   | 6    | 4030-00-270-5435             | 18876 | 506886          |
| 22   | 8    | 5306-00-333-0473             | 19207 | 8730460         |
| 22   | 9    | 2590-00-678-4099             | 19207 | 8336638         |
| 22   | 10   | 5310-00-682-5757             | 96906 | MS35692-605     |
| 22   | 12   | 5310-00-763-8911             | 96906 | MS51968-17      |
| 22   | 13   | 5310-00-167-0680             | 96906 | MS35338-49      |
| 23   | 1    | 2590-00-693-0994             | 19207 | 8700957         |
| 23   | 2    | 5305-00-988-1725             | 96906 | MS35206-281     |
| 23   | 3    | 5310-00-582-5965             | 15235 | KL5296          |
| 23   | 4    | 5340-00-689-6180             | 19207 | 7974886         |
| 23   | 5    | 4730-00-050-4208             | 96906 | MS15003-1       |
| 23   | 6    | 5330-00-701-4983             | 19207 | 7014983         |
| 23   | 7    | 5310-00-616-6857             | 80205 | NAS1022A17      |
| 23   | 8    | 3020-00-319-6011             | 19207 | 8379855         |
| 23   | 9    | 3020-00-701-4980             | 19207 | 7014980         |
| 23   | 10   | 5310-00-220-6848             | 66640 | 27D252          |
| 23   | 11   | 3110-00-100-6004             | 66821 | K12528          |
| 23   | 13   | 3120-00-701-4995             | 19207 | 7014995         |
| 23   | 14   | 5315-00-187-9396             | 96906 | MS24665-464     |
| 23   | 15   | 5365-00-678-6872             | 80837 | J1206A          |
| 23   | 16   | 2590-00-510-8829             | 80837 | J-1276          |
| 23   | 17   | 5310-00-586-1767             | 80837 | J3265           |
| 23   | 18   | 5315-00-316-1063             | 19207 | 8376596         |
| 23   | 19   | 2590-00-040-2855             | 80837 | J3269-11        |
| 23   | 20   | 5305-00-071-2081             | 80204 | B1821BH050C450N |
| 23   | 21   | 5310-00-044-6230             | 29215 | JD1492          |
| 23   | 22   | 2590-01-091-7620             | 19207 | 7365938         |
| 23   | 23   | 2590-00-030-6943             | 80837 | J1386           |
| 23   | 24   | 5310-00-841-2041             | 96906 | MS35692-33      |
| 23   | 25   | 4730-00-018-9566             | 73342 | 444687          |
| 23   | 26   | 5305-00-335-4761             | 80837 | J673-6          |
| 23   | 27   | 5315-00-515-0495             | 80837 | J3237           |
| 23   | 28   | 3110-00-117-0759             | 96906 | MS17169-12      |
| 23   | 29   | 3040-00-030-6942             | 19207 | 8376584         |
| 23   | 30   | 5315-00-616-5530             | 96906 | MS35756-15      |
| 23   | 31   | 5315-00-060-5074             | 96906 | MS35671-55      |
| 23   | 32   | 3040-00-736-7721             | 19207 | 7367721         |
| 24   | 1    | 2590-00-693-0995             | 19207 | 8700958         |
| 24   | 2    | 5305-00-988-1725             | 96906 | MS35206-281     |
| 24   | 3    | 5310-00-582-5965             | 15235 | KL5296          |
| 24   | 4    | 5340-00-893-4100             | 19207 | 7974887         |
| 24   | 5    | 5330-00-513-9933             | 80837 | J3203G          |
| 24   | 6    | 5310-00-220-6848             | 66640 | 27D252          |
| 24   | 7    | 3020-00-701-4980             | 19207 | 7014980         |
| 24   | 8    | 3020-00-319-6011             | 19207 | 8379855         |
| 24   | 9    | 3110-00-100-6004             | 80837 | 1102A3-4        |
| 24   | 10   | 5315-00-616-5530             | 96906 | MS35756-15      |
| 24   | 11   | 3040-00-445-5360             | 80837 | J3207-1         |
| 24   | 12   | 5315-00-014-2521             | 61038 | M21872          |
| 24   | 14   | 3110-00-117-0759             | 96906 | MS17169-12      |

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|------|------|------------------------------|-------|------------------------|
|      |      | STOCK NUMBER                 | CAGEC |                        |
| 24   | 15   | 5315-00-515-0495             | 80837 | J3237                  |
| 24   | 16   | 5305-00-335-4761             | 80837 | J673-6                 |
| 24   | 17   | 5310-00-586-1767             | 80837 | J3265                  |
| 24   | 18   | 2590-00-040-2855             | 80837 | J3269-11               |
| 24   | 19   | 4730-00-018-9566             | 81348 | WW-P-471ACABCA         |
| 24   | 20   | 5310-00-809-3079             | 96906 | MS27183-19             |
| 24   | 21   | 5310-00-488-3889             | 96906 | MS51943-39             |
| 24   | 22   | 2590-00-030-6943             | 80837 | J1386                  |
| 24   | 23   | 2590-01-091-7620             | 19207 | 7365938                |
| 24   | 24   | 5305-00-071-2081             | 80204 | B1821BH050C450N        |
| 24   | 25   | 5315-00-316-1063             | 19207 | 8376596                |
| 24   | 26   | 2590-00-510-8829             | 80837 | J-1276                 |
| 24   | 27   | 5365-00-678-6872             | 80837 | J1206A                 |
| 24   | 28   | 5315-00-187-9396             | 96906 | MS24665-464            |
| 24   | 29   | 4730-00-050-4208             | 96906 | MS15003-1              |
| 24   | 30   | 3120-00-701-4995             | 19207 | 7014995                |
| 24   | 31   | 3040-00-693-0974             | 80837 | J3208-1                |
| 24   | 32   | 5315-00-014-2543             | 96906 | MS35671-64             |
| 24   | 33   | 3120-00-544-1535             | 80837 | J-1166                 |
| 24   | 34   | 5305-00-716-8194             | 96906 | MS90726-104            |
| 24   | 35   | 3110-00-100-6164             | 96906 | MS19059-2419           |
| 24   | 36   | 5360-00-679-5658             | 80837 | J3205                  |
| 24   | 37   | 3020-00-562-0487             | 19207 | 8376610                |
| 24   | 38   | 3020-00-562-0488             | 19207 | 8376611                |
| 24   | 39   | 5310-00-616-6857             | 80205 | NAS1022A17             |
| 26   | 1    | 5306-00-021-8156             | 96906 | MS35754-40             |
| 26   | 2    | 5310-00-004-3099             | 94697 | 091-54603DZ008C2<br>05 |
| 26   | 3    | 5310-00-584-5272             | 96906 | MS35338-48             |
| 26   | 4    | 5340-00-318-6649             | 82465 | 60507                  |
| 28   | 1    | 5310-00-761-6882             | 96906 | MS51967-2              |
| 28   | 2    | 5310-00-582-5965             | 15235 | KL5296                 |
| 28   | 3    | 9905-00-202-3639             | 96906 | MS35387-2              |
| 28   | 4    | 5305-00-988-1725             | 96906 | MS35206-281            |
| 28   | 5    | 9905-00-205-2795             | 96906 | MS35387-1              |
| 29   | 1    | 5305-00-253-5631             | 96906 | MS21318-57             |
| 29   | 2    | 9905-00-678-6126             | 19207 | 8336801                |
| 29   | 3    | 9905-00-777-3070             | 19207 | 8683503                |
| 29   | 4    | 5305-00-855-0958             | 96906 | MS24629-45             |
| 29   | 5    | 9905-00-282-7489             | 19207 | 7979373                |
| 30   | 1    | 5120-00-261-2821             | 03914 | 13-348                 |

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|-----|------|------------------------------|-------|--------------|
|     |      | STOCK NUMBER                 | CAGEC |              |
| 24  | 33   |                              | 04632 | J1116        |
| 24  | 34   | 5305-00-716-8194             | 96906 | MS90726-104  |
| 24  | 35   | 3110-00-100-6164             | 96906 | MS19059-2419 |
| 24  | 36   | 5360-00-679-5658             | 80837 | J3205        |
| 24  | 37   | 3020-00-562-0487             | 19207 | 8376610      |
| 24  | 38   | 3020-00-562-0488             | 19207 | 8376611      |
| 24  | 39   | 5310-00-616-6857             | 80205 | NAS1022A17   |
| 25  | 1    |                              | 19207 | 8336567      |
| 25  | 2    |                              | 19207 | 8742593      |
| 26  | 1    | 5306-00-021-8156             | 96906 | MS35754-40   |
| 26  | 2    | 5310-00-982-4940             | 96906 | MS27040-14   |
| 26  | 3    | 5310-00-584-5272             | 96906 | MS35338-48   |
| 26  | 4    | 5340-00-318-6649             | 82465 | 60507        |
| 26  | 5    |                              | 19207 | 2744994-1    |
| 27  | 1    |                              | 19207 | 8343584      |
| 28  | 1    | 5310-00-761-6882             | 96906 | MS51967-2    |
| 28  | 2    | 5310-00-582-5965             | 15235 | KL5296       |
| 28  | 3    | 9905-00-202-3639             | 96906 | MS35387-2    |
| 28  | 4    | 5305-00-988-1725             | 96906 | MS35206-281  |
| 28  | 5    | 9905-00-205-2795             | 96906 | MS35387-1    |
| 29  | 1    | 5305-00-253-5631             | 96906 | MS21318-57   |
| 29  | 2    | 9905-00-678-6126             | 19207 | 8336801      |
| 29  | 3    | 9905-00-777-3070             | 19207 | 8683503      |
| 29  | 4    | 5305-00-855-0958             | 96906 | MS24629-45   |
| 29  | 5    | 9905-00-282-7489             | 19207 | 7979373      |
| 30  | 1    | 5120-00-261-2821             | 03914 | 13-348       |

APPENDIX G

ILLUSTRATED LIST OF MANUFACTURED ITEMS

Section I. INTRODUCTION

G-1. SCOPE

- a. This appendix includes complete instructions for making items authorized to be manufactured or fabricated.
- b. Bulk materials needed for manufacture of an item are listed by National Stock Number (NSN), part number, or specification number in the manufacturing instructions.
- c. All dimensions given in Section III, *Manufacturing Instructions*, are in standard units.

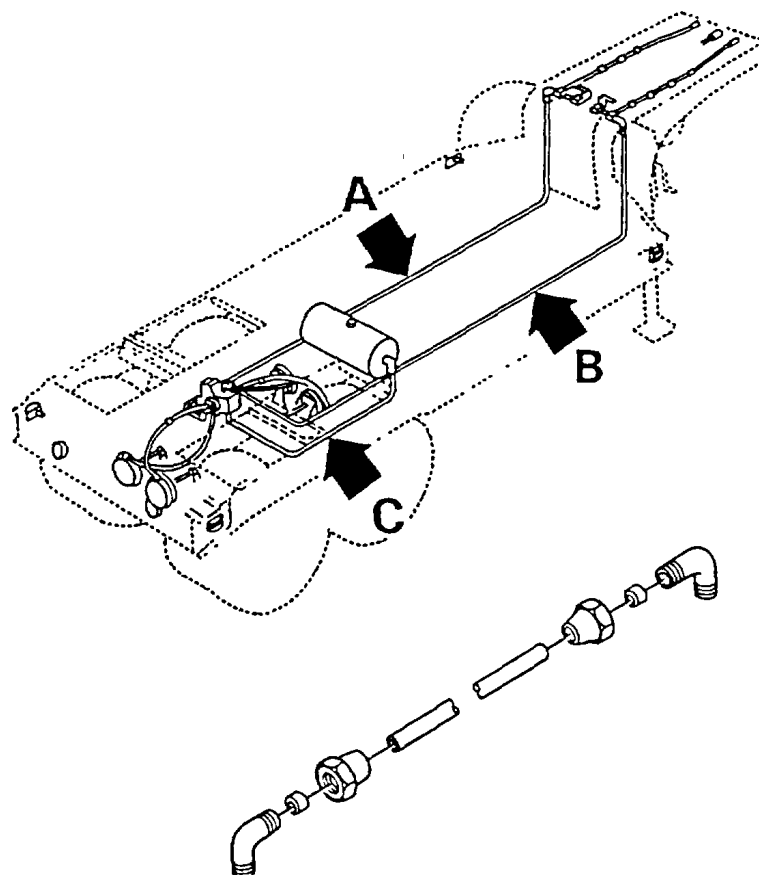
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Section II. MANUFACTURING ILLUSTRATIONS

G-2. TUBE ASSEMBLIES



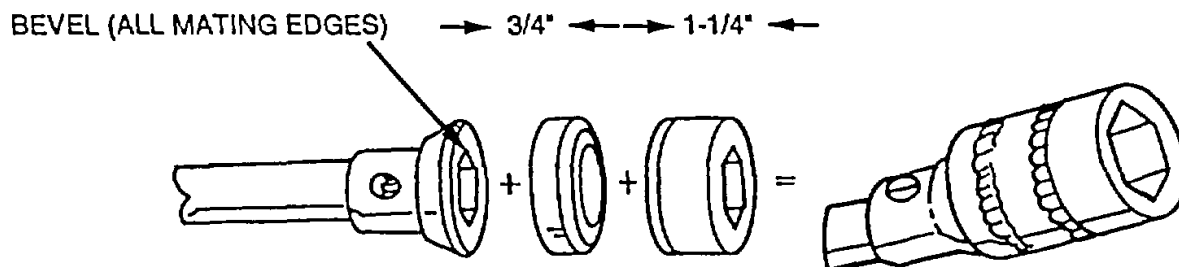
FABRICATE FROM:

- NSN 4710-00-203-3172 - Tube, Metallic  
 Brake Line A            273 In.  
 Brake Line B            291 In.
- NSN 4710-00-277-5529 - Tube, Metallic  
 Brake Line C            34 In.
- NSN 4730-00-289-0155 - Elbow, Pipe To Tube  
 Brake Line A            1 Required
- NSN 4730-00-069-1187 - Elbow, Pipe To Tube  
 Brake Line A            1 Required  
 Brake Line B            2 Required
- NSN 4730-00-289-0051 - Elbow, Pipe To Tube  
 Brake Line C            2 Required
- NSN 4730-00-293-7108 - Sleeve, Compression  
 Brake Line A            2 Required  
 Brake Line B            2 Required
- NSN 4730-00-054-2571 - Sleeve, Compression  
 Brake Line C            2 Required
- NSN 4730-00-278-8825 - Nut, Tube Coupling  
 Brake Line A            2 Required  
 Brake Line B            2 Required
- NSN 4730-00-054-2572 - Nut, Tube Coupling  
 Brake Line C            2 Required

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## Section II. MANUFACTURING ILLUSTRATIONS (Con't)

## G-3. WRENCH, LUGNUT, ALTERED



- a. Cut 1 1/8 in. off hex end of lugnut wrench.
- b. Weld a 3/4 in. piece of tubing to hex piece cut off from lugnut wrench.
- c. Weld remaining end of tubing to lugnut wrench.

## Section III. MANUFACTURING INSTRUCTIONS

## FRAME REPAIR

- a. General. No definite rules are established for repair and reinforcements required on frame members that are bent, cracked, or broken. If damage is extensive, return semitrailer to a higher maintenance level.
- b. Reinforcement of Main Frame Rails and Gooseneck
  1. Use 108 x 1/2-inch alloy steel to fabricate two main frame rail upper buildup plates.
  2. Use 12 x 8 1/2 x 1/2-inch alloy steel to fabricate four gooseneck upper gussets
  3. Use 12 x 5 x 1/2-inch alloy steel to fabricate two gusset cover plates.

## Ramp Outer Rear Clip Angle

## a. Minor Alterations

1. Weld two support angles on each side of semitrailer. Use continuous 3/16-inch weld fillet on both sides of support angle.

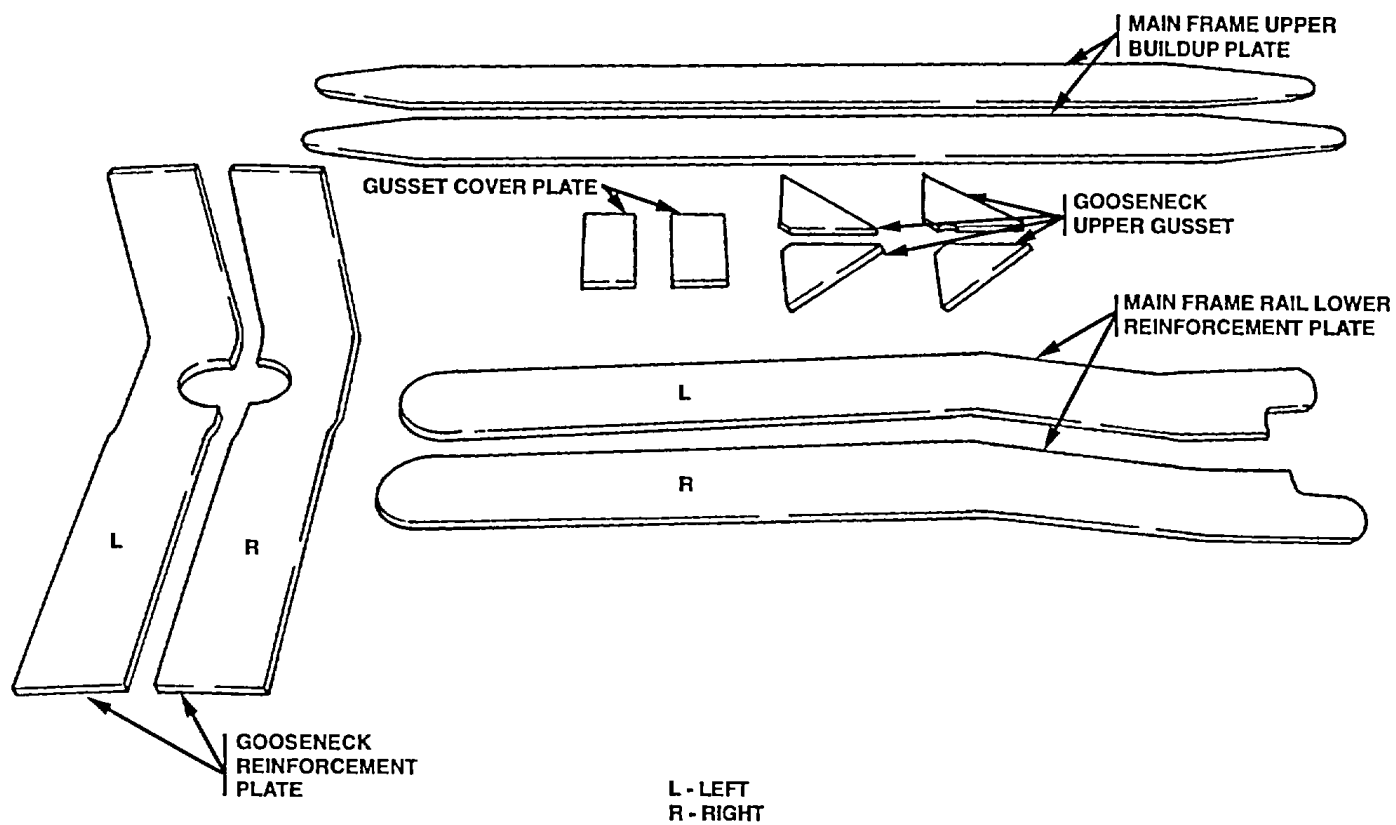


Figure G-1. Main Frame Rail and Gooseneck Reinforcement Parts

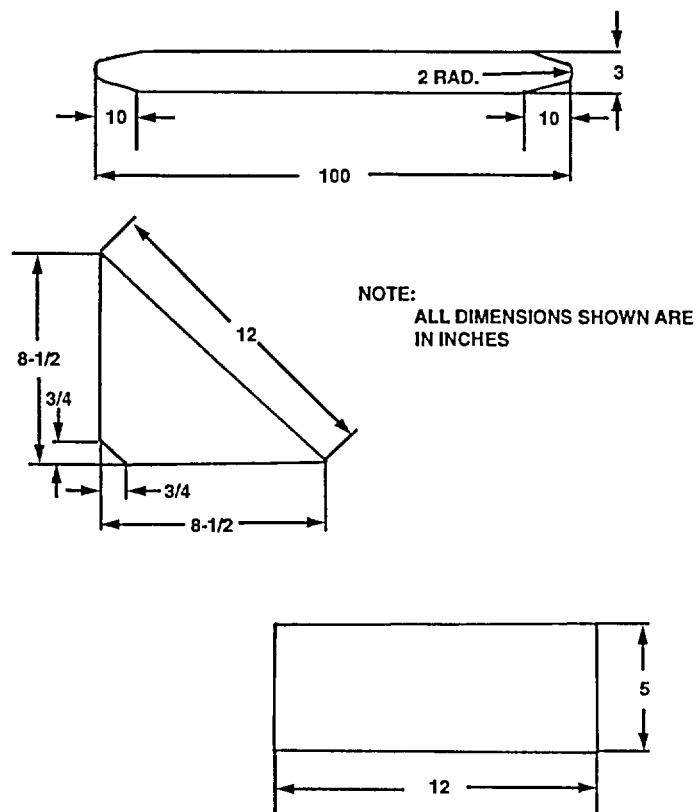


Figure G-2. Main Frame Rail Upper Plates and Gussets

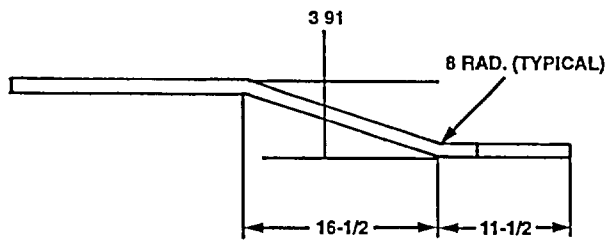
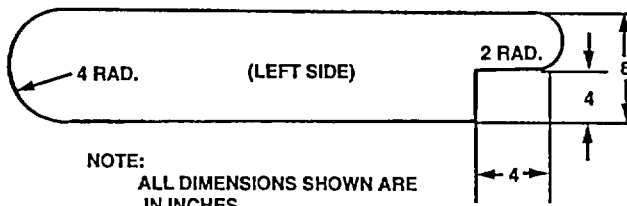
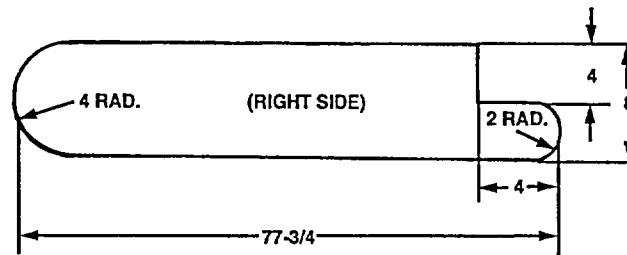


Figure G-3. Main Frame Rail Lower Plates

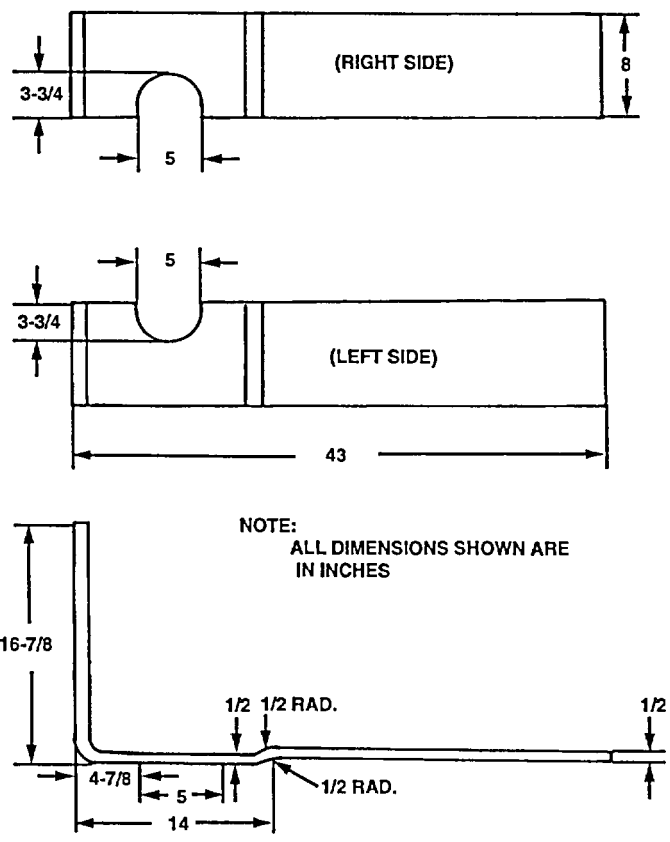


Figure G-4. Gooseneck Reinforcement Plates

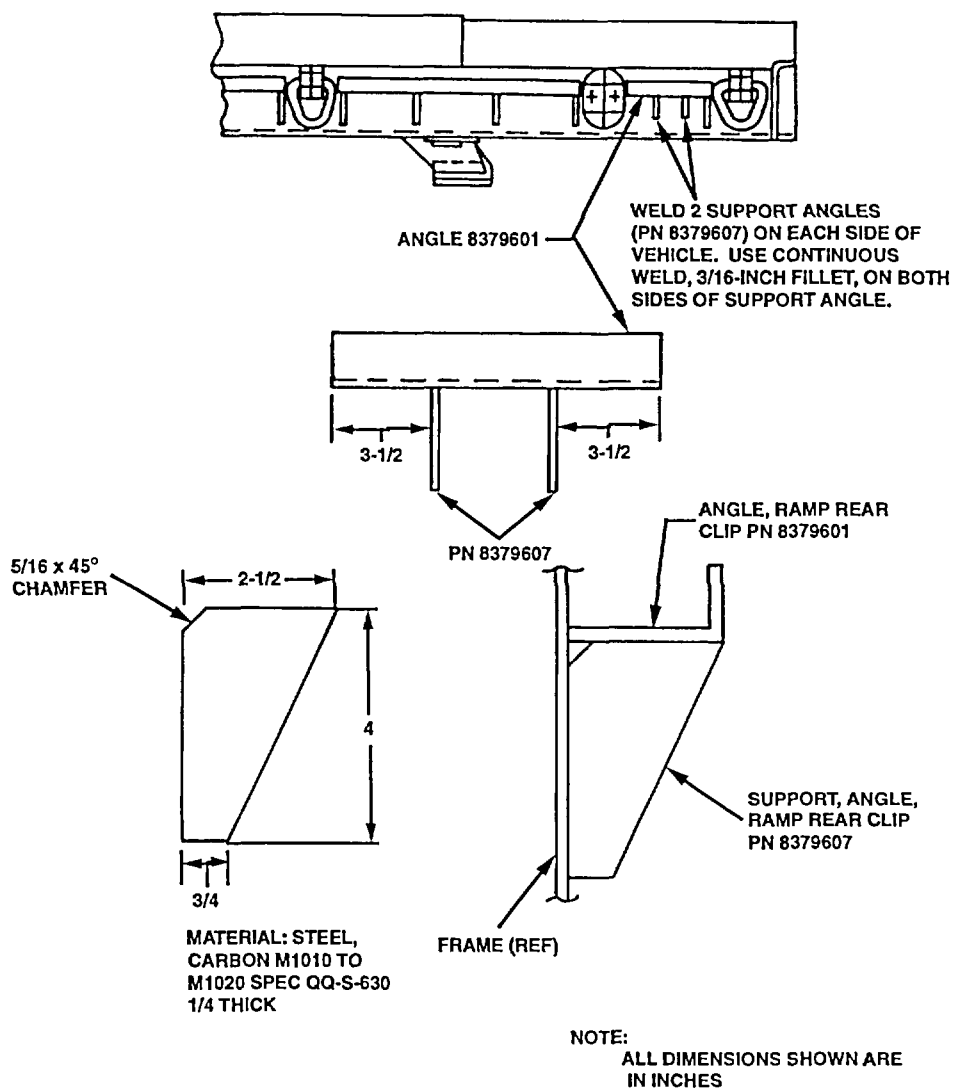


Figure G-5. Ramp Outer Rear Clip Angle

## APPENDIX H

### TORQUE LIMITS

#### H-1. SCOPE

This appendix lists standard torque values, as shown in Table H-1, and provides general information for applying torque. Special torque values and tightening sequences are indicated in the maintenance procedures for applicable components.

#### H-2. GENERAL

a. Always use the torque values listed in Table H-1 when the maintenance procedure does not give a specific torque value.

b. Unless otherwise specified, standard torque tolerance shall be  $\pm 10\%$ .

c. Torque values are based on clean, dry threads. Reduce torque by 10% when engine oil is used as a lubricant. Reduce torque by 20% if new plated capscrews are used.

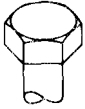

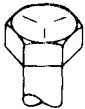

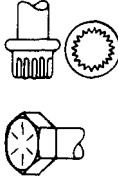
d. Capscrews threaded into aluminum may require reductions in torque of 30% or more of Grade 5 capscrew torque. Capscrew threaded into aluminum must also attain two capscrew diameters of thread engagement.



**CAUTION**

If replacement capscrews are of a higher grade than originally supplied, use torque specifications for the original. This will prevent equipment damage due to overtorquing.

Table H-1. Torque Limits

| Current Usage   | Much Used  | Much Used  | Used at Times   | Used at Times  |
|---|--|--|---|--|
| Quality of Material   | Indeterminate  | Minimum Commercial   | Medium Commercial   | Best Commercial  |
| <b>SAE Grade Number</b><br><br><b>Capscrew Head Markings</b><br><br><b>Manufacturer's marks may vary</b><br><br><b>These are all SAE Grade 5 (3 line)</b> | 1 or 2<br><br><br><br> | 5<br><br> | 6 or 7<br><br> | 8<br><br> |
| Capscrew Body Size<br>Inches - Thread   | Torque<br>lb.-ft. (N·m)  | Torque<br>lb.-ft. (N·m)  | Torque<br>lb.-ft. (N·m)   | Torque<br>lb.-ft. (N·m)  |
| $\frac{1}{4}$ 20<br>28  | 5      (7)<br>6      (8)   | 8      (11)<br>10     (14)   | 10     (14)   | 12     (16)<br>14     (19)   |
| $\frac{5}{16}$ 18<br>24   | 11     (15)<br>13     (18)   | 17     (23)<br>19     (26)   | 19     (26)   | 24     (33)<br>27     (37)   |
| $\frac{3}{8}$ 16<br>24  | 18     (24)<br>20     (27)   | 31     (42)<br>35     (47)   | 34     (46)   | 44     (60)<br>49     (66)   |
| $\frac{7}{16}$ 14<br>20   | 28     (38)<br>30     (41)   | 49     (66)<br>55     (75)   | 55     (75)   | 70     (95)<br>78     (106)  |
| $\frac{1}{2}$ 13<br>20  | 39     (53)<br>41     (56)   | 75     (102)<br>85     (115)   | 85     (115)  | 105    (142)<br>120    (163)   |
| $\frac{9}{16}$ 12<br>18   | 51     (69)<br>55     (75)   | 110    (149)<br>120    (163)   | 120    (163)  | 155    (210)<br>170    (231)   |
| $\frac{5}{8}$ 11<br>18  | 83     (113)<br>95     (129)   | 150    (203)<br>170    (231)   | 167    (226)  | 210    (285)<br>240    (325)   |
| $\frac{3}{4}$ 10<br>16  | 105    (142)<br>115    (156)   | 270    (366)<br>295    (400)   | 280    (380)  | 375    (509)<br>420    (570)   |
| $\frac{7}{8}$ 9<br>14   | 160    (217)<br>175    (237)   | 395    (536)<br>435    (590)   | 440    (597)  | 605    (820)<br>675    (915)   |
| 1      8<br>14  | 235    (319)<br>250    (339)   | 590    (800)<br>660    (895)   | 660    (895)  | 910    (1234)<br>990    (1342)   |

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|---------|------------|-----------|----------|
| 3       |            | 2         |          |
| 109     |            | 51        |          |
| 2-8     |            |           | 2-1      |
| 12      | 1-6a       |           |          |

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.

Preventive Maintenance Checks and Services. Item 7 under "Items to be inspected" should be changed to read as follows: Firing linkage and firing mechanism pawl.

Since there are both 20- and 30- round magazines for this rifle, data on both should be listed.

**SAMPLE**

PRINTED NAME GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

**SAMPLE**

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DEPARTMENT OF THE ARMY

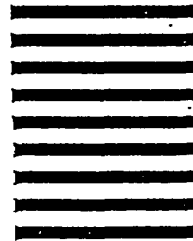


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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



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TM 9-2330-211-14&P

PUBLICATION DATE

PUBLICATION TITLE Operator's, Unit, DS & GS Maintenance Manual (Including RPSTL) for Semitrailer, Lowbed: 25 Ton, 4 Wheel, M172A1

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PAGE NO

PARA-GRAPH

FIGURE NO

TABLE NO

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DA FORM 2028-2  
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PREVIOUS EDITIONS ARE OBSOLETE.

P S --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

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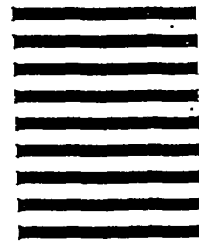
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TEAR ALONG PERFORATED LINE



## 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

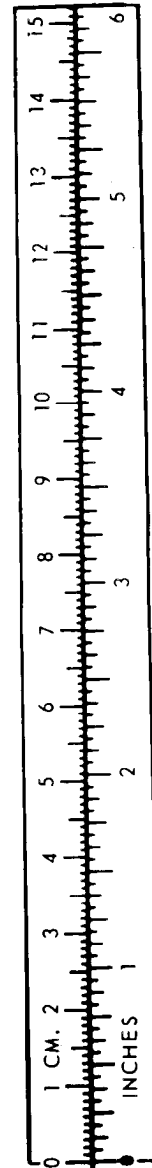
1 Cu Centimeter=1000 Cu Millimeters=0.06 Cu Inches  
 1 Cu Meter=1,000,000 Cu Centimeters=35.31 Cu Feet

### 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

| <u>TO CHANGE</u>                 | <u>TO</u>                        | <u>MULTIPLY BY</u> |
|----------------------------------|----------------------------------|--------------------|
| 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 per Square Inch . . . . . | Kilopascals . . . . .            | 6.895              |
| Miles per Gallon . . . . .       | Kilometers per Liter . . . . .   | 0.425              |
| Miles per Hour . . . . .         | Kilometers per Hour . . . . .    | 1.609              |
|                                  |                                  |                    |
| <u>TO CHANGE</u>                 | <u>TO</u>                        | <u>MULTIPLY BY</u> |
| Centimeters . . . . .            | Inches . . . . .                 | 0.394              |
| Meters . . . . .                 | Feet . . . . .                   | 3.280              |
| Meters . . . . .                 | Yards . . . . .                  | 1.094              |
| Kilometers . . . . .             | Miles . . . . .                  | 0.621              |
| Square Centimeters . . . . .     | Square Inches . . . . .          | 0.155              |
| Square Meters . . . . .          | Square Feet . . . . .            | 10.764             |
| Square Meters . . . . .          | Square Yards . . . . .           | 1.196              |
| Square Kilometers . . . . .      | Square Miles . . . . .           | 0.386              |
| Square 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 Square Inch . . . . . | 0.145              |
| Kilometers per Liter . . . . .   | Miles per Gallon . . . . .       | 2.354              |
| Kilometers per Hour . . . . .    | Miles per Hour . . . . .         | 0.621              |



TAO89991

(FOR REFERENCE ONLY)

