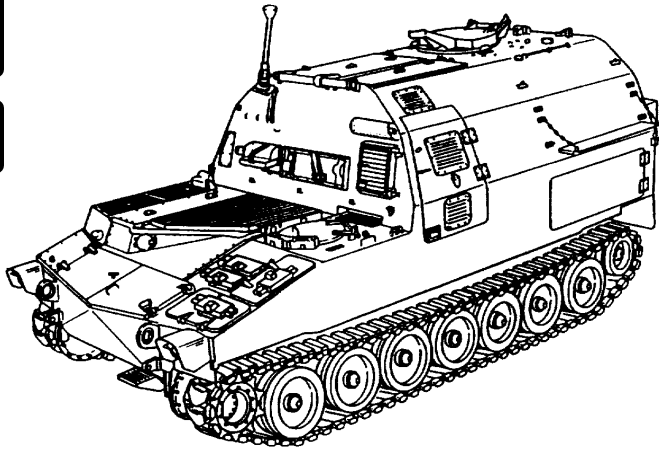


TECHNICAL MANUAL



**UNIT MAINTENANCE
 MANUAL
 FOR
 CARRIER, AMMUNITION,
 TRACKED
 M92A1
 (NSN 2350-01-352-3021)
 EIC: AE6**

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**HEADQUARTERS, DEPARTMENT OF THE
 ARMY
 OCTOBER 1993**

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CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 6 June 1997

**UNIT MAINTENANCE MANUAL
FOR
CARRIER, AMMUNITION, TRACKED
M992A1
(NSN 2350-01-352-3201)
EIC: AE6**

TM 9-2350-287-20-2, dated 22 October 1993, is changed as follows:

1. Remove old pages and insert new pages as indicated below.
2. New, changed, or deleted material is indicated by a vertical bar in the margin of the page or by a deletion notice.
3. Added pages or changed page numbers are indicated by a vertical bar by the page number.

<i>Remove Pages</i>	<i>Insert Pages</i>
i and ii	i and ii
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File this change sheet in front of the publication, for reference purposes.

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By Order of the Secretary of the Army:

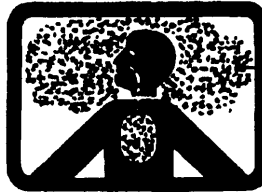
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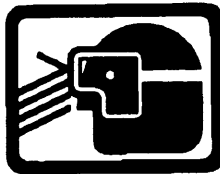
WARNING**CARBON MONOXIDE HAZARD****CARBON MONOXIDE (EXHAUST GAS) CAN KILL YOU**

- **Carbon monoxide is a colorless, odorless, DEADLY POISONOUS gas and when breathed deprives body of oxygen and causes SUFFOCATION. Breathing air with carbon monoxide produces headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Permanent BRAIN DAMAGE or DEATH can result from serious exposure.**
- **The following precautions MUST be followed to ensure personnel are safe whenever personnel heater, main engine, or auxiliary engine is operated for any purpose.**
 - **DO NOT operate personnel heater or engine of vehicle in enclosed area without adequate ventilation.**
 - **DO NOT idle engine for long periods without ventilator blower operating. If tactical situation permits, open hatches.**
 - **DO NOT drive any vehicle with inspection plates, cover plates, or engine compartment doors removed unless necessary for maintenance purposes.**
 - **NEVER sleep in a vehicle when the heater is operating or the engine is idling.**
 - **BE ALERT at all times during vehicle operation for exhaust odors and exposure symptoms. If either are present IMMEDIATELY EVACUATE AND VENTILATE the area. Treatment for affected treatment shall be: expose to fresh air; keep warm; DO NOT PERMIT PHYSICAL EXERCISE; if necessary, give artificial respiration as described in FM 21-11 and get medical attention.**
 - **BE AWARE: neither the gas particulate filter unit nor field protection mask for nuclear-biological- heroidal protection will protect you from carbon monoxide poisoning.**

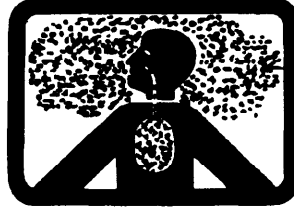
**THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING
IS GOOD VENTILATION**

WARNING

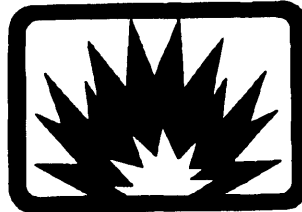
BATTERY HAZARDS



- Lead-acid batteries can explode. Do not smoke, have open flames, or make sparks around a battery, especially if the caps are off. If a battery is gassing, it can explode and cause injury to personnel.
- Ventilate when charging or using battery in an enclosed space.
- Wear safety goggles and acid-proof gloves when battery cover must be removed or when adding electrolyte.
- Avoid contact between battery electrolyte and skin, eyes, or clothing. If electrolyte spills, take immediate action to stop burning effects:
 - External. Immediately flush with cold running water to remove all acid.
 - Eyes. Flush with cold water for at least 15 minutes. Seek immediate medical attention.
 - Internal. Drink large amounts of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Seek immediate medical attention.
 - Clothing or Vehicle. Wash at once with cold water. Neutralize with baking soda or household ammonia solution.
- Wear safety glasses or goggles when checking batteries. Always check electrolyte level with engine stopped. Do not smoke or use exposed flame when checking battery; explosive gases are present and severe injury to personnel can result.
- Remove or disconnect batteries or turn off master battery disconnect switch prior to performing maintenance in immediate battery area or working on electrical system. Such disconnections prevent electrical shock to personnel or equipment.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent damage to clothing.
- Remove all jewelry, such as rings, identification tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

WARNING**CHEMICAL AGENT RESISTANT COATING (CARC) HAZARD**

Unusable chemical agent resistant coating (CARC) mixtures are considered hazardous waste and will require disposal in accordance with Federal, state, DOD, DA, and local installation hazardous waste regulations. Consult the installation environmental office for proper disposal guidance. Mixed CARC is extremely flammable. Use only in well-ventilated areas. Keep away from open flames, sparks, and other ignition sources.

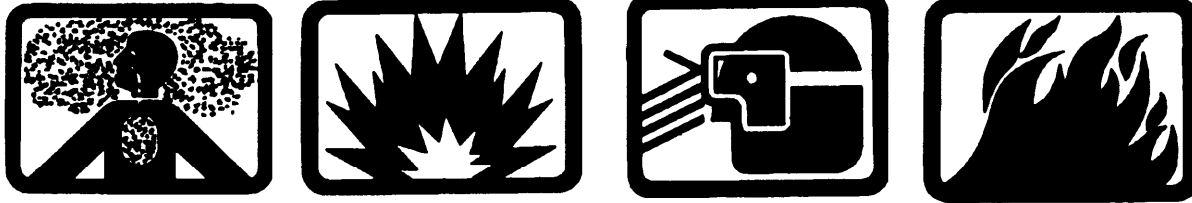
WARNING**FUEL HANDLING HAZARDS**

Ž Fuel is very flammable and can explode easily. To avoid serious injury or death:

- Keep fuel away from open flame or any spark (ignition source).
- Keep at least a B-C fire extinguisher within easy reach when working with fuel or on a fuel system.
- Do not work on fuel system when engine is hot; fuel can be ignited by a hot engine.
- Clean fuel tank to purge any flammable liquid or vapors before welding, grinding, or using any heat-producing device near the fuel tank.
- Post signs that read “NO SMOKING WITHIN 50 FEET” when working with open fuel, fuel lines, or fuel tanks.

WARNING

SOLVENT P-D-680 HAZARDS



- Drycleaning solvent (P-D680) is TOXIC and flammable. Wear protective goggles and gloves; use only in well-ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II it is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- if personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. if solvent contacts skin or clothes, flush with cold water. if solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

WARNING

**NUCLEAR, BIOLOGICAL, OR CHEMICAL (NBC) EXPOSURE AND
VEHICLE AIR FILTERS HAZARDS**



- NBC-contaminated air filters must be banded and disposed of only by authorized and trained personnel. The unit commander or senior officer in charge of maintenance personnel must ensure that prescribed protective clothing (FM 3-4) is used and that prescribed safety measures and decontamination procedures (FM 3-5) are followed. The local unit SOP is responsible for final disposal of contaminated air filters. Failure to comply may cause severe injury to personnel.
- The NBC protection filters use a type of carbon that contains Chromium VI. This is a known carcinogen if inhaled or swallowed. Damaged or unusable filters are classified as hazardous waste.
 - Do not throw away damaged or unusable filters as trash.
 - Turn in damaged or unusable filters to your Hazardous Waste Management Office or Defense Reutilization and Marketing Office (DRMO).

NUCLEAR, BIOLOGICAL, OR CHEMICAL (NBC) EXPOSURE AND VEHICLE AIR FILTERS HAZARDS (continued)

- Filters are completely safe to handle and use if they are not damaged in such a way that carbon leaks from them. If carbon does leak, use protection such as a dust respirator to cover nose and mouth and put carbon in a container such as self-sealing plastic bag; turn into Hazardous Waste Management Office or DRMO.
- Disposal of hazardous waste is restricted by law. Violation is subject to criminal penalties.

WARNING

AUTOMATIC FIRE EXTINGUISHING SYSTEM (AFES) HAZARDS

Any automatic fire extinguishing system (AFES) component in need of maintenance or repair is prone to accidental discharge. Accidental discharge can lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon at 750 psi (5171 kPa).

WARNING

HEAVY PARTS HAZARDS

- Many parts of the M992A1, such as doors, conveyor sections, and seats, are heavy and require more than one person to lift safely. Have one or two assistants help lift heavy components. Failure to do this can result in severe injury to personnel.
- Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury or death.

WARNING

HOT PARTS HAZARD

Do not work on exhaust system, cooling system, powerpack, suspension, or hydraulic system until components are cool to the touch. The powerpack and the cooling and hydraulic systems contain fluids that can cause severe burns.

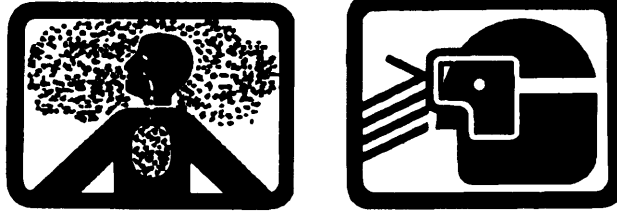
WARNING

HYDRAULIC PRESSURE HAZARD

High-pressure hydraulics (oil under 1500 psi [10,342 kPa] pressure) operate this equipment. Refer to vehicle operator and maintenance manuals for hydraulic oil pressure. Never disconnect any hydraulic line or fitting without first dropping pressure to zero. A high-pressure oil stream can pierce body and cause severe injury to personnel.

WARNING

ADHESIVE HAZARD



Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. Wear protective goggles and use in well-ventilated area. If adhesive gets in eyes, try to keep eyes open; flush eyes with water for 15 minutes and get immediate medical attention.

**UNIT MAINTENANCE MANUAL
FOR
CARRIER, AMMUNITION, TRACKED
M992A1
(NSN 2350-01-352-3201)EIC:AE6**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you 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 directly to Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-IM-OPIT, Warren, MI 48397-5000. 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 786-6323 or Commercial (810) 574-6323
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HOW TO USE THIS MANUAL

SCOPE.

This technical manual contains Unit maintenance procedures for the M992A1 Carrier Ammunition, Tracked. Chapter 1 contains general information; Chapter 2 contains information on general maintenance procedures and describes and illustrates troubleshooting procedures; and Chapters 3 through 22 describe and illustrate maintenance procedures for various systems and components. Ten appendixes and a subject index are also included in this manual.

INDEXING.

Four indexing procedures are used to help you locate information quickly:

- Cover index. Lists chapter titles and important parts of the manual, with corresponding page numbers. Each chapter or part listed is boxed in, with a black outer edge that is in line with the first page of that chapter or part.
- Table of contents. The table of contents follows the Safety Summary. The table of contents lists all chapters numerically, with corresponding page numbers.
- Chapter indexes. Each chapter starts with a numerical listing of all paragraphs in that chapter.
- Alphabetical index. The alphabetically arranged subject index starts on page Index 1.

MAINTENANCE TEXT AND ILLUSTRATIONS (CHAPTERS 3 THROUGH 22).

Each chapter begins with a numerical listing of all paragraphs. The first paragraph in each chapter is titled "General" and describes the system(s) to be covered. General repair and inspection procedures may also be given.

Each paragraph contains the following information, as appropriate:

- The common or special tools and test equipment required to perform the procedures are listed under the heading "Tools/Test Equipment." Common and special tools are listed in Appendix I.
- Materials and mandatory replacement parts that will be discarded during the procedure are listed under the heading "Materials/Parts." A Materials/Parts list does not contain items that maybe replaced if found defective during inspection. Also, the list does not contain the item named in the paragraph title. Materials may be found in Appendix D. Mandatory replacement parts maybe found in Appendix H. Refer to TM 9-2350-287-24P for information on other parts that may have to be replaced.
- If more than one person is required to perform the procedure, the number is specified under the heading "Personnel Required."
- Technical manuals, technical bulletins, field manuals, or other reference material that maybe required to perform the procedure are listed under the heading "References." Note that the titles of all publications and forms referenced in the manual are listed in Appendix A,
- Procedures that must be performed on the vehicle prior to the maintenance procedure are listed under the heading "Equipment Conditions."

TEXT AND ILLUSTRATIONS.

Maintenance procedures are to be performed in the sequence given in the text and illustrations.

Illustrations are numbered clockwise, beginning at the 11 o'clock position. Because an illustration is keyed to the text, parts that are removed sequentially may not have sequential numbers. For example:

1. Remove screw (4), lockwasher (6), washer (7), and bracket (5) from transmission.

IMPORTANT.

Be sure to read the entire paragraph before beginning a maintenance procedure. Also, read the general information in Chapter 1 before beginning a procedure.

Warnings and cautions appear immediately preceding the step to which they pertain. It is important to read and thoroughly understand the warnings and/or cautions before beginning maintenance.

Notes may precede or follow the steps to which they pertain, depending on what makes the most sense. Notes highlight essential operating or maintenance procedures, conditions, or statements.

PROBLEM SOLVING.

The best way for you to fulfill your responsibility for maintaining the equipment covered in this manual is to make maximum use of your maintenance manual. The following three sample problems illustrate ways to use the manual efficiently:

1. How do I replace the roadwheel hub?
 - Look in the subject index for "roadwheel hub replacement" and turn to the appropriate page.
2. An equipment condition for replacing surge tank hoses (para 6-4) is, "Powerpack removed (para 3-2)." How do I find out what page paragraph 3-2 begins on?
 - Look in the chapter index for Chapter 3 until you find paragraph 3-2, Powerpack Replacement; then turn to the appropriate page.
3. The auxiliary power unit (APU) engine won't start. How do I find out what's wrong?
 - Turn to the Quick Guide to Troubleshooting (para 2-18). Find the name of the item that doesn't work (APU).
 - Find the problem (ENGINE CRANKS BUT FAILS TO START) in the listing for APU.
 - Turn to the paragraph in the Troubleshooting Chart (para 2-19) that is referenced-in this case, paragraph 2-19u (1).

PROBLEM SOLVING (continued).

- Follow the troubleshooting steps until you find out what is wrong.
- Follow the instructions given or turn to the paragraph referenced for repair of the damaged component.

REPAIR PARTS AND SPECIAL TOOLS.

For repair parts and special tools used on this vehicle, refer to TM 9-2350-287-24P.

SAFETY SUMMARY

This safety summary contains general safety precautions and hazardous materials warnings that must be understood and applied during maintenance to protect personnel and DOD property. Portions of this summary be repeated elsewhere for emphasis.

WARNING and CAUTION statements appear throughout this manual prior to procedures, practices, or conditions that may endanger personnel (WARNING) or cause equipment and property damage (CAUTION). A warning or caution will apply each time the related step is repeated. Before starting any task, review and understand the warnings and cautions included in the text for that task.

This manual contains procedures which may require using chemicals, solvents, paints, or other commercially available material that may pose a health or safety hazard. Refer to the "Materials/Parts" list at the beginning of a task to see which materials will be used during the task. Obtain material safety data sheets (Occupational Safety and Health Act [OSHA] Form 20 or equivalent) from the manufacturer or supplier of the material to be used. Become completely familiar with the information and manufacturer/supplier procedures, recommendations, warnings, and cautions for the safe use, handling, storage, and disposal of these materials.

Following the "General Safety Precautions" list is a list of "Hazardous Materials Warnings." These warnings are designed to warn personnel of dangers associated with hazardous materials. For each hazardous material used, a material safety data sheet is required to be provided and available for review by personnel. Consult your local safety and health staff concerning questions on hazardous chemicals, personnel protective equipment requirements, and appropriate handling and emergency procedures.

GENERAL SAFETY PRECAUTIONS

- Always use the same fastener part number (or equivalent) when replacing fasteners. Do not risk using a fastener of less quality; do not mix metric and inch (customary) fasteners. Mismatched or incorrect fasteners can result in damage, malfunction, or injury.
- Fuel and oil are slippery and can cause falls. To avoid injury, wipe up spilled fuel or oil with rags.
- Make sure equipment will not move while repairing or inspecting it. For powered equipment, block or chock wheels or tracks and "red tag" the starter. Prevent a "quick fix" from becoming a quick injury.
- When adjustment or service requires a running engine, two personnel will be used, one at the controls and one at the service point. This helps prevent accidental movement of controls.
- When checking connections, do not let tools touch battery box. A direct short, arcing, tool heating to red hot, and battery explosion could result, causing injury or death to personnel.
- Sharp edges can cut hands. Use rags or a brush to lubricate.
- Do not use equipment for other than its intended use, unless authorized by the NICP/commodity command.

GENERAL SAFETY PRECAUTIONS (continued)

- Hearing protection is required for all personnel working in and around this vehicle while engine is running.
- Remove rings, bracelets, wristwatches, and neck chains before working on any vehicle. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit cause severe burns or electrical shock.
- Never crawl under equipment when performing maintenance unless equipment is securely blocked. Equipment may fall and cause serious injury or death to personnel.
- Keep clear of equipment when equipment is being raised or lowered. Equipment may fall and cause serious injury or death to personnel.
- Do not work on any item supported only by lift jacks or hoist. Always use blocks or proper stands to support the item prior to any work. Equipment may fall and cause injury or death to personnel.
- Do not allow heavy components to swing while hanging from lifting device. Equipment may strike personnel and cause injury.
- Exercise extreme caution when working near a cable or chain under tension. A snapped cable or a swinging or shifting load may result in injury or death to personnel.
- When working on a running engine, provide shielding to exposed rotating parts. Tools, clothing, or hands can get caught and cause serious injury to personnel.

HAZARDOUS MATERIALS WARNINGS



- Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. Wear protective goggles and use in a well-ventilated area. If adhesive gets in eyes, try to keep eyes open; flush with water for 15 minutes and get immediate medical attention.
- Adhesive sealant MIL-S-46163 (Loctite) can damage your eyes. Wear safety goggles/glasses when using; avoid contact with eyes. If sealant contacts eyes, flush eyes with water and get immediate medical attention.

HAZARDOUS MATERIALS WARNINGS (continued)

- Chemical agent resistant coating (CARC) paint contains isocyanate (HDI), which is highly irritating to skin and respiratory system. High concentrations of HDI can produce symptoms of itching and reddening of skin, a burning sensation in throat and nose, and watering of the eyes. In extreme concentrations, HDI can cause cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. The following precautions must be taken whenever using CARC paint:
 - ALWAYS use air line respirators when using CARC paint unless air sampling shows exposure to be below standards. Use chemical cartridge respirator if air sampling is below standards.
 - DO NOT let skin or eyes come in contact with CARC paint. Always wear protective equipment (gloves, ventilation mask, safety goggles, etc.).
 - DO NOT use CARC paint without adequate ventilation.
 - NEVER weld or cut CARC-coated materials.
 - DO NOT grind or sand painted equipment without high-efficiency air purifying respirators in use.
 - BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Drycleaning solvent (P-D-880) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using the solvent; the flashpoint for type I is 100°F (38°C) and for type II it is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush with water and get immediate medical attention.

CHAPTER 10 BRAKES MAINTENANCE

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10-2	Service and Parking Brake Linkage Replacement/Adjustment	10-1
10-3	Powerpack Compartment Brake Linkage Replacement/Adjustment	10-6
10-4	Driver's Compartment Brake Assembly Repair	10-10

10-1. GENERAL.

This chapter illustrates and describes the removal, installation and adjustment of the brake system. The following procedures are addressed:

- Service and Parking Brake Linkage Replacement/Adjustment
- Powerpack Compartment Brake Linkage Replacement/Adjustment
- Driver's Compartment Brake Assembly Repair

10-2. SERVICE AND PARKING BRAKE LINKAGE REPLACEMENT/ADJUSTMENT.

This task covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Spring (Item 346, Appendix H)
- Spring (Item 347, Appendix H)
- Spring pin (2) (Item 353, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (Item 27, Appendix H)
- Lockwasher (2) (Item 175, Appendix H)
- Lockwasher (2) (Item 177, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Track blocked (refer to TM 9-2350-287-10).
 - Parking brake released (refer to TM 9-2350-287-1 0).
-

10-2. SERVICE AND PARKING BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

a. REMOVAL

1. Remove screw (1) and lockwasher (2) from bellcrank (3). Discard lockwasher.
2. Remove two screws (5) and lockwashers (6) from angle bracket (7). Discard lockwashers.

NOTE

Support service and parking brake linkage by hand.

3. Pull bellcrank (3) off bracket spindle (4), and remove brake linkage (8) from vehicle.

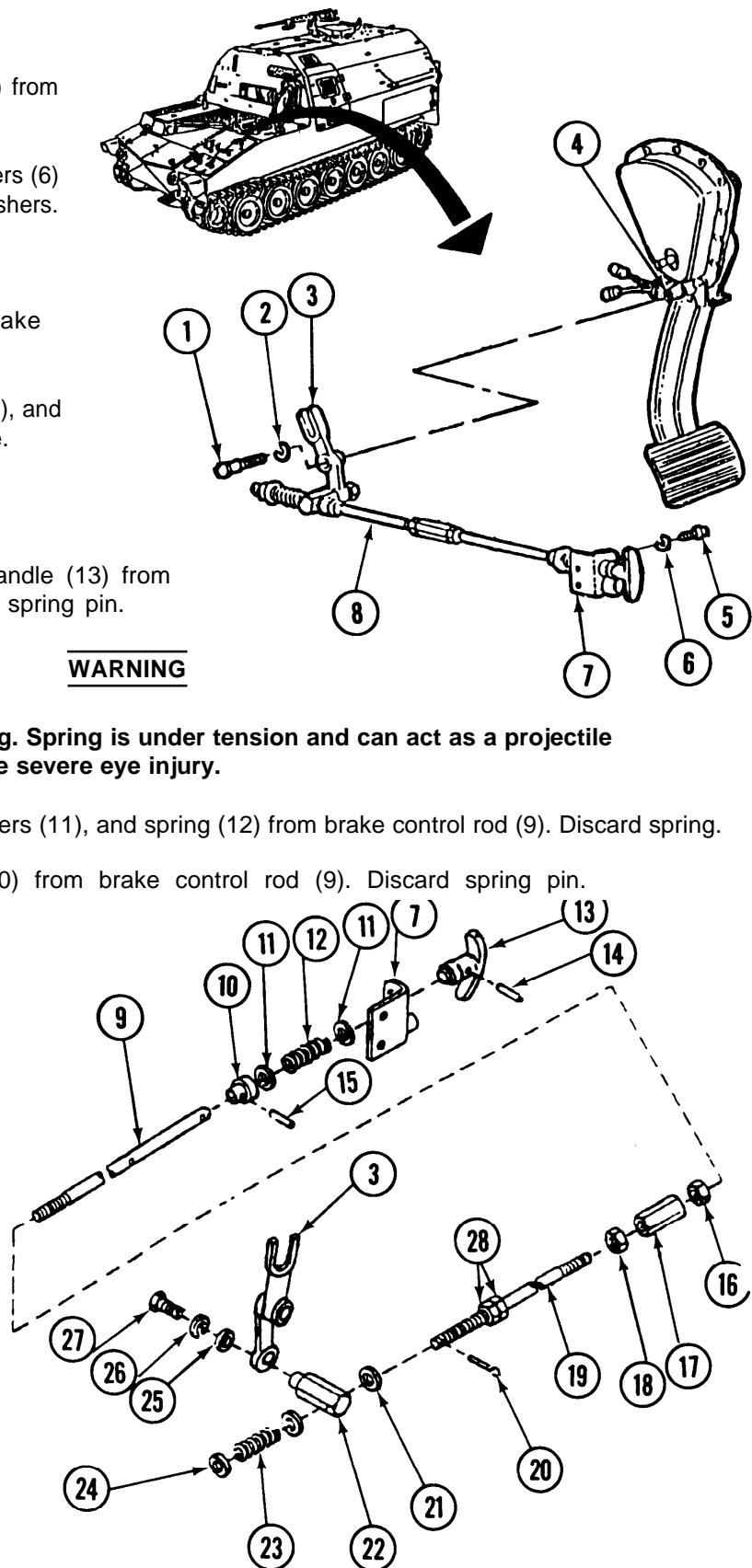
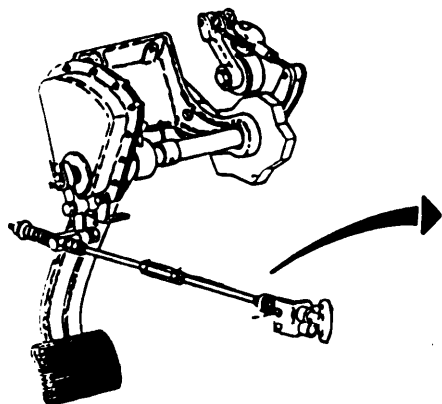
b. DISASSEMBLY

1. Remove spring pin (14) and brake handle (13) from end of brake control rod (9). Discard spring pin.

WARNING

Use care when removing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

2. Remove angle bracket (7), two washers (11), and spring (12) from brake control rod (9). Discard spring.
3. Remove spring pin (15) and collar (10) from brake control rod (9). Discard spring pin.



10-2. SERVICE AND PARKING BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

WARNING

Use care when removing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

4. Remove cotter pin (20), two washers (24), spring (23), rod guide (22), and washer (21) from brake control rod (19). Discard cotter pin and spring.
5. Remove screw (27), lockwasher (26), washer (25), and rod guide (22) from bellcrank (3). Discard lockwasher.
6. Loosen two nuts (16 and 18) and remove two brake control rods (9 and 19) from mechanical post (17).
7. Remove nut (18) and two nuts (28) from brake control rod (19).
8. Remove nut (16) from brake control rod (9).

c. **CLEANING AND INSPECTION**

WARNING

Drycleaning 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.

1. Clean all parts with drycleaning solvent and rag.
2. Inspect all parts for damage. Replace any damaged parts.

d. **ASSEMBLY**

1. Install nut (16) on brake control rod (9).
2. Install two nuts (28) and nut (18) on brake control rod (19).
3. Install two brake control rods (9 and 19) in mechanical post (17), then tighten two nuts (16 and 18).

WARNING

Use care when installing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

4. Install washer (21), rod guide (22), new spring (23), and two washers (24) on end of brake control rod (19), and secure with new cotter pin (21).
5. Install bellcrank (3) on rod guide (22) and secure with screw (27), washer (25), and new lockwasher (26).

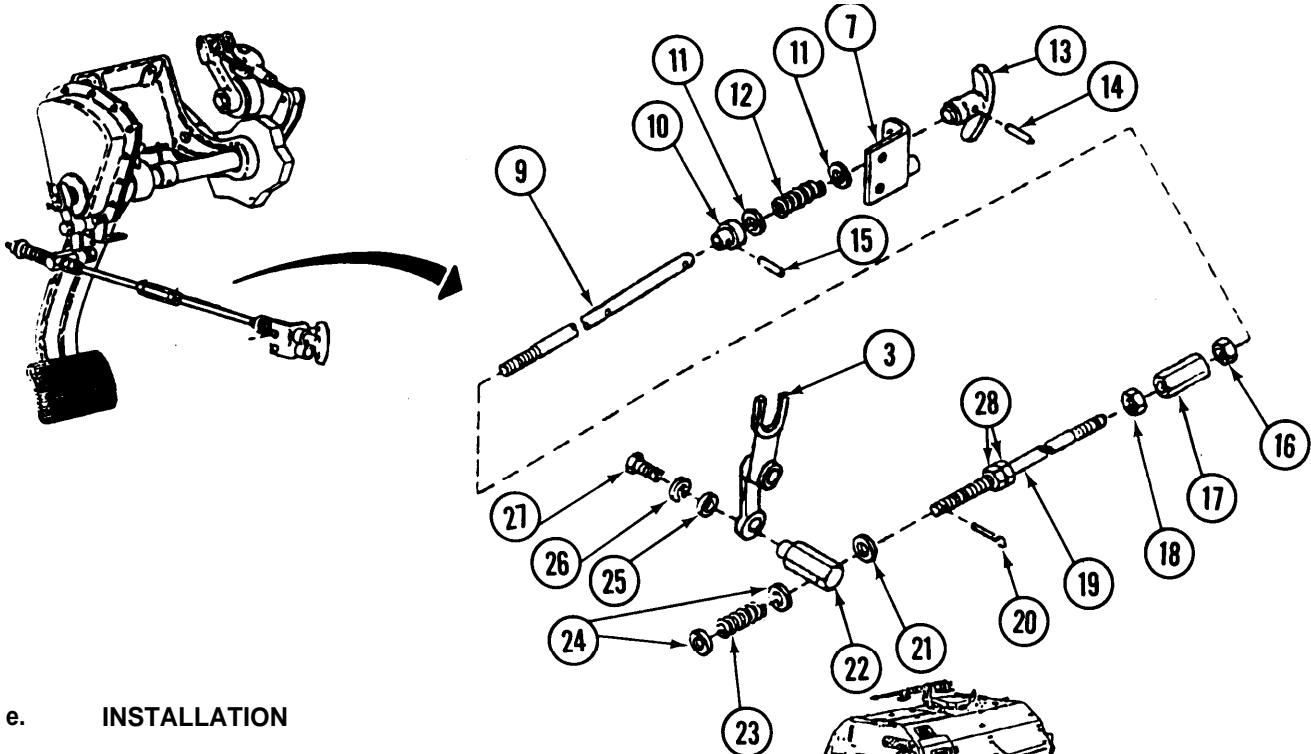
10-2. SERVICE AND PARKING BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

6. Install collar (10) on end of brake control rod (9) and secure with new spring pin (15).

WARNING

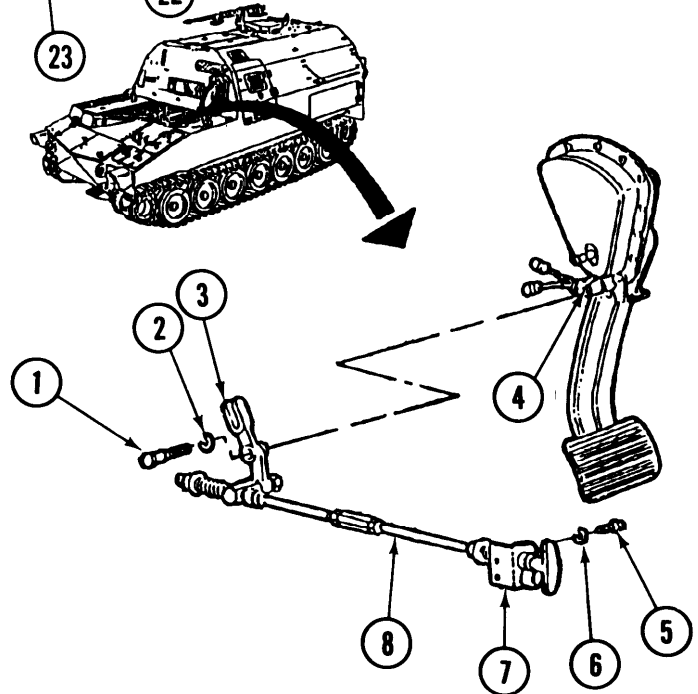
Use care when installing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

7. Install two washers (11), new spring (12), and angle bracket (7) on brake control rod (9).
8. Install brake handle (13) on end of brake control rod (9) and secure with new spring pin (14).



e. INSTALLATION

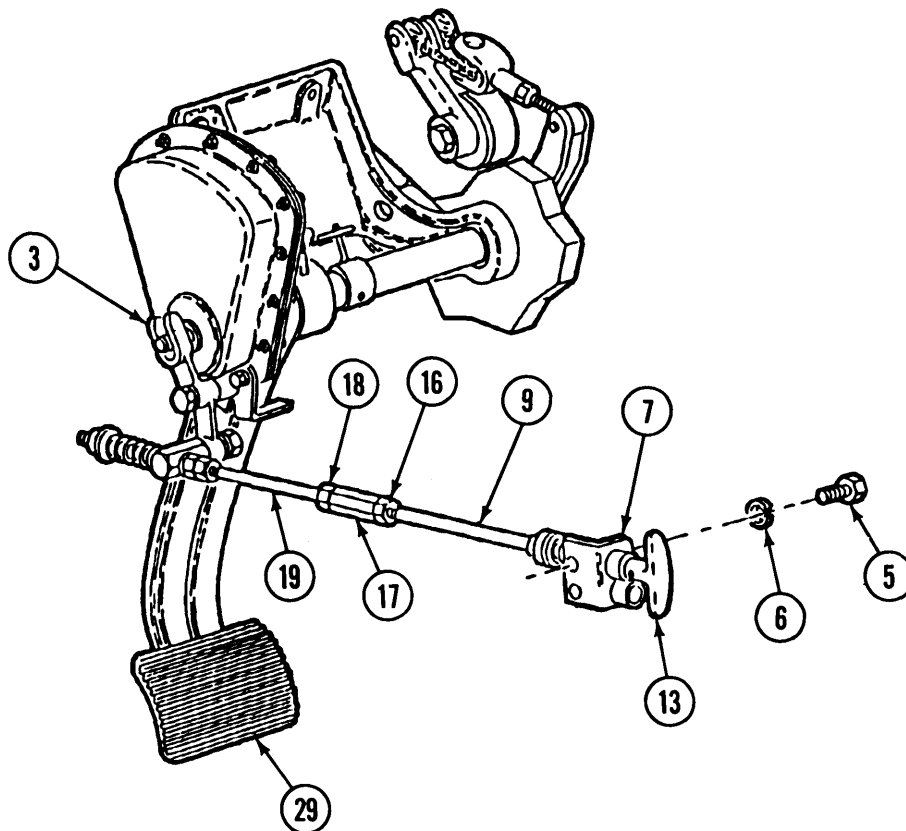
1. Position brake linkage (8) and bellcrank (3) in place on bracket spindle (4).
2. Install two screws (5) and new lockwashers (6) on angle bracket (7).
3. Install screw (1) and new lockwasher (2) to secure bellcrank (3) on bracket spindle (4).
4. Adjust service and parking brake linkage (para 10-2).



10-2. SERVICE AND PARKING BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

f. ADJUSTMENT

1. Remove two screws (5) and lockwashers (6) to loosen angle bracket (7). Discard lockwashers.
2. Loosen two nuts (16 and 18) on brake control rods (9 and 19).
3. Turn mechanical post (17) in either direction until screw holes in angle bracket (7) lineup with mounting holes in bulkhead and no pressure is on bellcrank (3).
4. Install two screws (5) and new lockwashers (6) to secure angle bracket (7) to bulkhead.
5. Tighten two nuts (16 and 18) on brake control rods (9 and 19).
6. Depress service brake pedal (29), and pull brake handle (13) to lock parking brake.
7. Release service brake pedal (29). Brake should stay locked; if it does not, repeat steps 1 through 6.



FOLLOW-ON MAINTENANCE:

- Adjust parking brake light switch (para 7-20).
- Unblock tracks (refer to TM 9-2350-287-10).

10-3. POWERPACK COMPARTMENT BRAKE LINKAGE REPLACEMENT/ADJUSTMENT.

This task covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

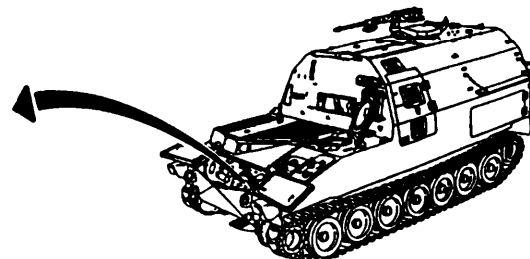
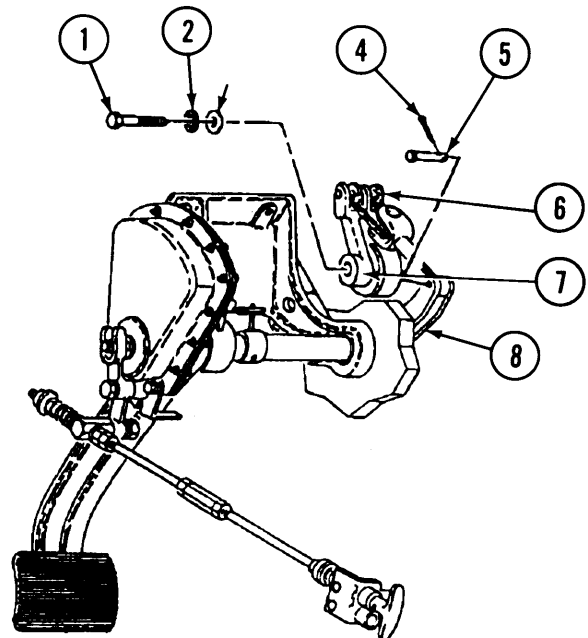
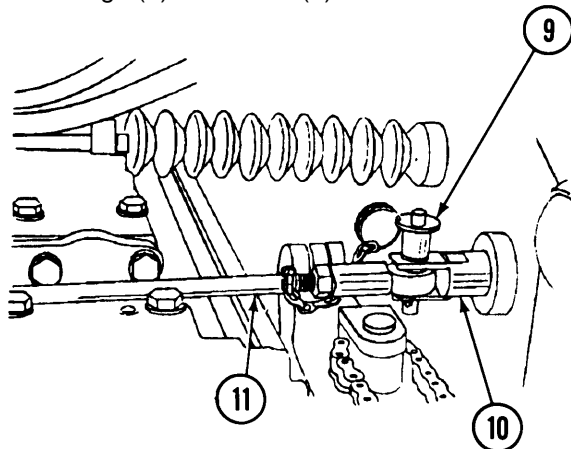
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (4) (Item 17, Appendix H)
- Lockwasher (Item 176, Appendix H)
- Spring pin (2) (Item 367, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Parking brake released (refer to TM 9-2350-287-10).
- Transmission doors opened (refer to TM 9-2350-287-10).
- Track blocked (refer to TM 9-2350-287-10).

a. REMOVAL

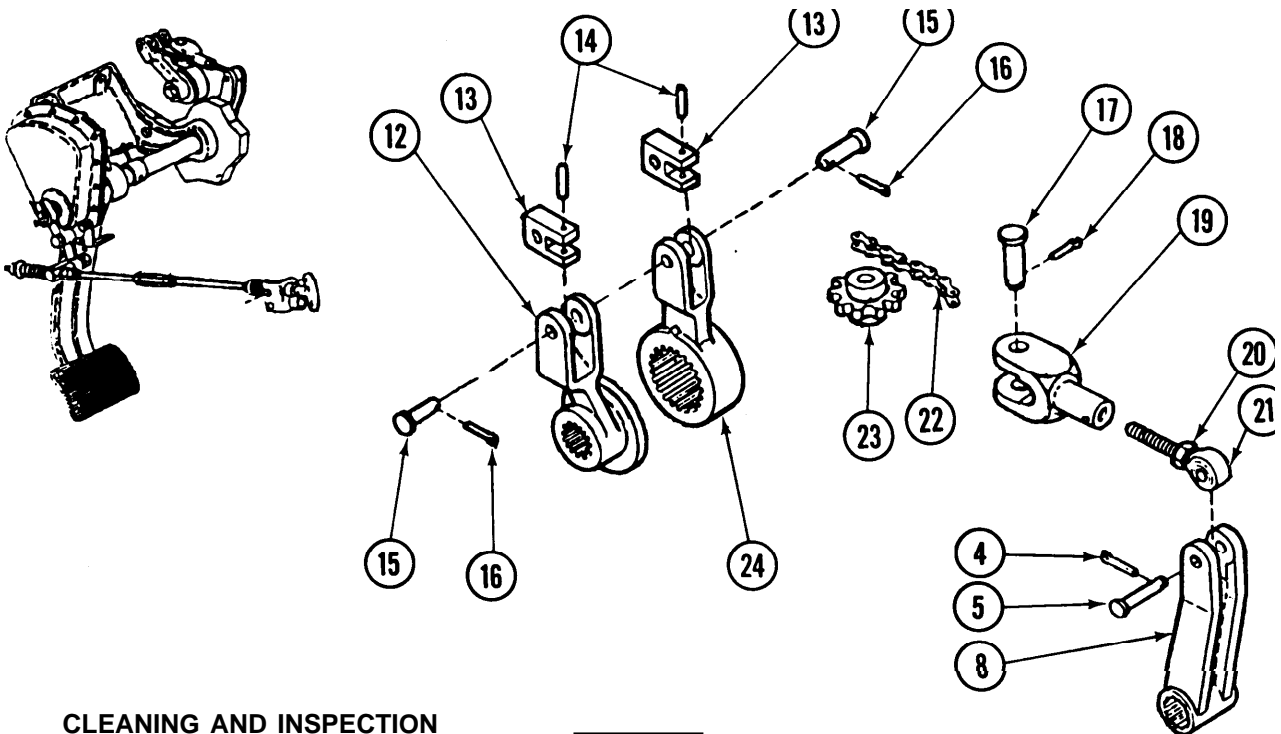
1. Remove quick-release pin (9) and disconnect shift linkage (11) from rod (10).
2. Remove cotter pin (4) and pin (5) from lever (8) and disconnect powerpack compartment brake linkage (6) from lever (8). Discard cotter pin.
3. Remove Screw (1), lockwasher (2), and washer (3) from shaft (7). Discard lockwasher.
4. Remove powerpack compartment brake linkage (6) from shaft (7).



10-3. POWERPACK COMPARTMENT BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

b. DISASSEMBLY

1. Loosen nut (20) on rod end (21). Unscrew and remove rod end (21) from clevis(19).
2. Remove cotter pin (18), pin (17), sprocket (23), and chain (22) from clevis (19). Discard cotter pin.
3. Remove two cotter pins (16), pins (15), and clevises (13) and chain (22) from right brake lever (24) and left brake lever (12). Discard cotter pins.
4. Remove two spring pins (14) from two clevises (13), and separate chain (22) from two clevises (13). Discard spring pins.



c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

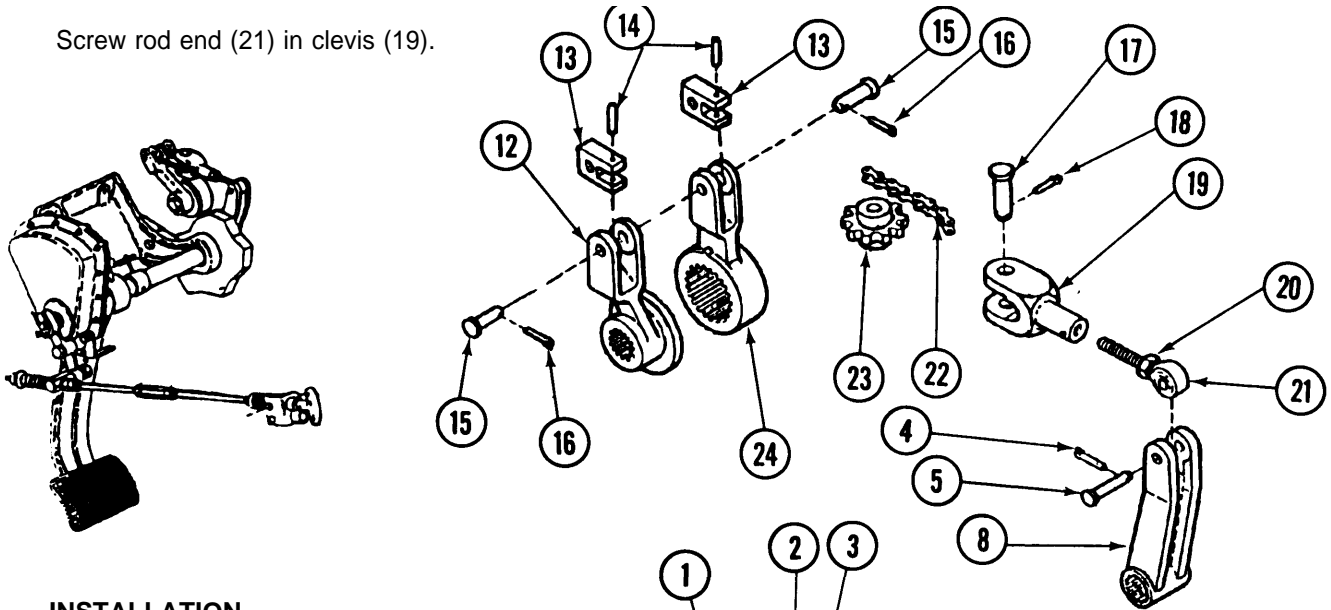
1. Clean all parts with drycleaning solvent and rag.
2. Inspect all parts for damage. Replace any damaged parts.

d. ASSEMBLY

1. Install two clevises (13) on ends of chain (22) with two new spring pins (14).
2. Position chain (22) and two clevises (13) in place on sprocket (23).

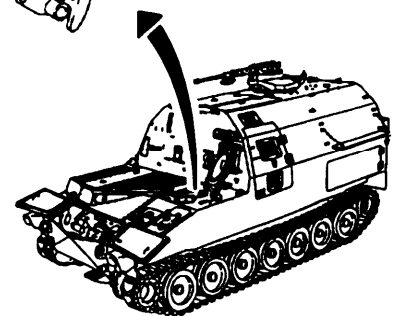
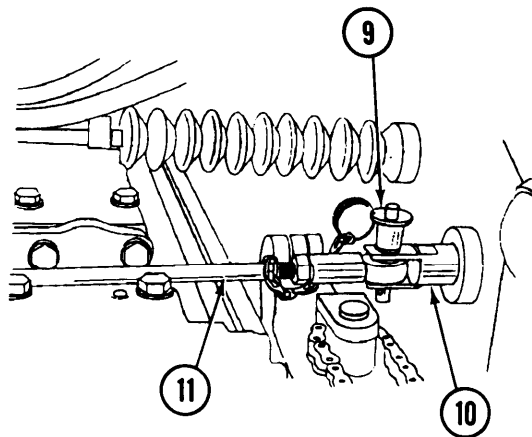
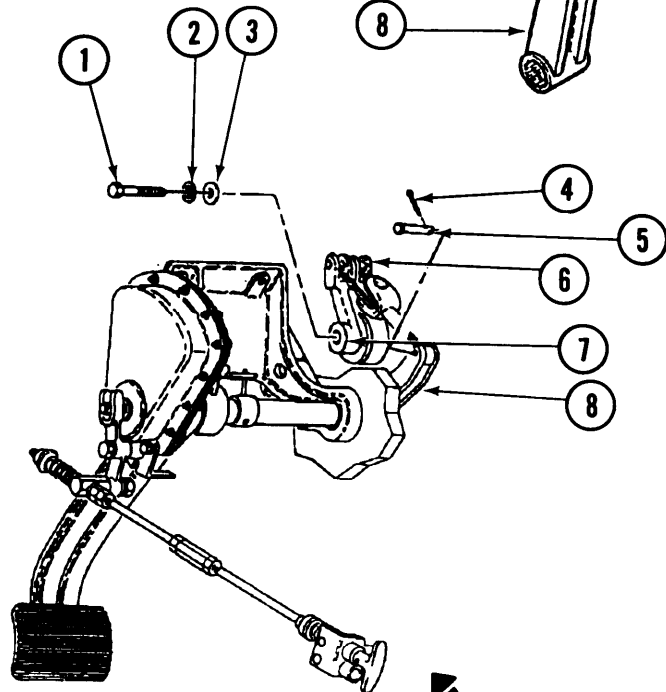
10-3. POWERPACK COMPARTMENT BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

3. Position two clevises (13) in place on left brake lever (12) and right brake lever (24) and secure with two pins (15) and new cotter pins (16).
4. Install sprocket (23) and chain (22) in clevis(19) and secure with pin (17) and new cotter pin (18).
5. Screw rod end (21) in clevis (19).



e. INSTALLATION

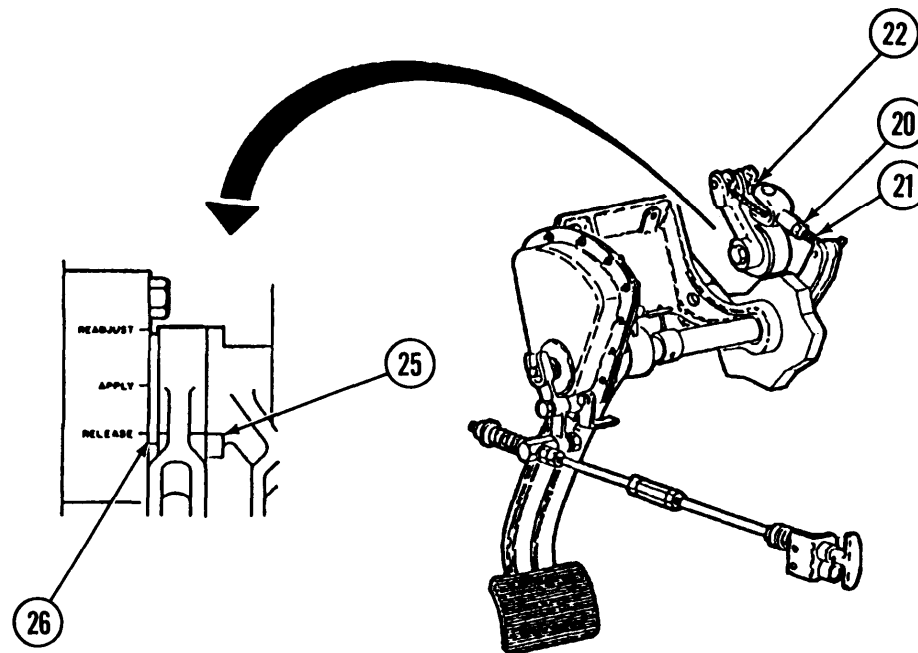
1. Position powerpack compartment brake linkage (6) in place on shaft (7).
2. Install screw (1), new lockwasher (2), and washer (3) in shaft (7).
3. Install rod end (21) in lever (8) and secure with pin (5) and new cotter pin (4).
4. Connect shift linkage (11) to rod (10) and install quick-release pin (9).



10-3. POWERPACK COMPARTMENT BRAKE LINKAGE REPLACEMENT/ADJUSTMENT (continued).

f. ADJUSTMENT

1. With brake pedal fully raised, check for slack in chain (22) and alignment of brake lever index marks (25) with release mark (26). If index marks are aligned, no adjustment is necessary.
2. Remove cotter pin (4) and pin (5) from lever (8). Discard cotter pin.
3. Loosen nut (20) on rod end (21).
4. Rotate rod end (21) until all slack is removed from chain (22), holes in rod end (21) and lever (8) are aligned, and brake lever index marks (25) are at release mark (26).
5. Install pin (5) and new cotter pin (4) on lever (8).
6. Check release marks (26) for alignment with brake lever index marks (25).
7. Tighten nut (20) against rod end (21).



FOLLOW-ON MAINTENANCE:

- Close transmission doors (refer to TM 9-2350-287-10).
- Adjust stoplight switch (para 7-20).

10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR.

This task covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Snapping pliers (Item 53, Appendix I)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Boot (Item 5, Appendix H)
- Cotter pin (2) (Item 17, Appendix H)
- Cotter pin (Item 24, Appendix H)
- Gasket (Item 95, Appendix H)
- Lockwasher (4) (Item 175, Appendix H)
- Lockwasher (4) (Item 177, Appendix H)
- Lockwire (Item 202, Appendix H)
- Retaining ring (Item 244, Appendix H)

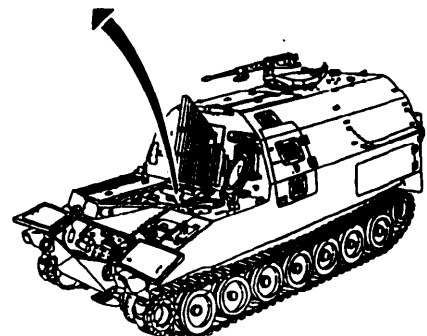
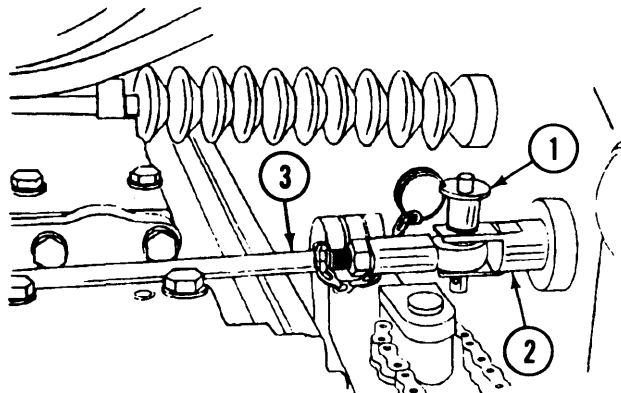
- Seal (Item 269, Appendix H)
- Seal (Item 293, Appendix H)
- Self-locking nut (10) (Item 312, Appendix H)
- Self-locking nut (3) (Item 315, Appendix H)
- Self-locking nut (Item 330, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Track blocked (refer to TM 9-2350-287-10).
- Left and right transmission access doors opened (refer to TM 9-2350-287-10).
- Parking brake light switch and bracket removed (para 7-20).
- Center driver's periscope removed (refer to TM 9-2350-287-10).

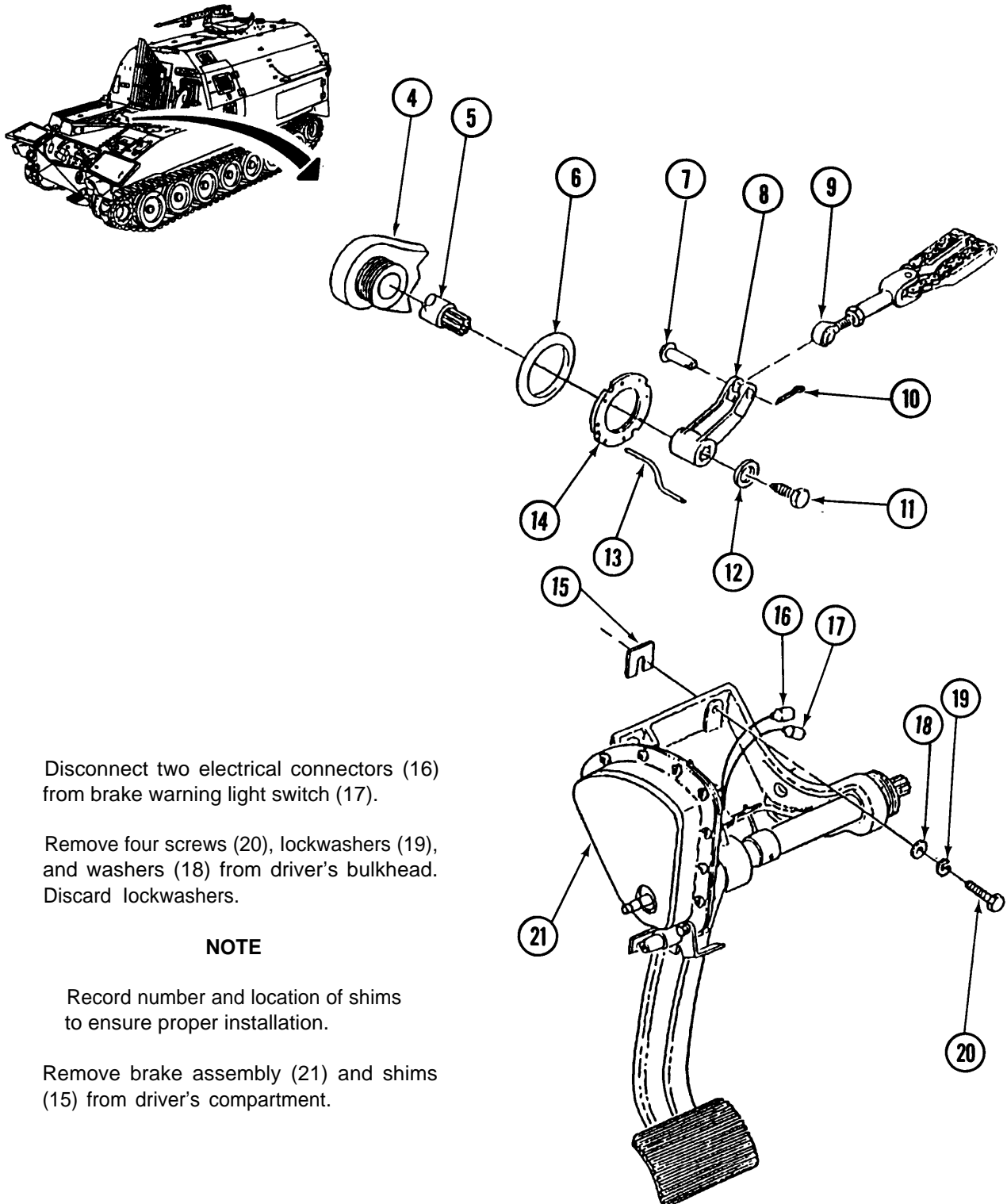
a. REMOVAL

1. Remove quick-release pin (1) and disconnect shift linkage (3) from rod (2).
2. Remove cotter pin (10), straight pin (7), and lever (8) from rod end bearing (9). Discard cotter pin.
3. Remove screw (1), washer (12), and lever (8) from shaft (5).



10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

4. Remove lockwire (13) from retainer plate (14). Discard lockwire.
5. Unscrew retainer plate(14) from end of support (4), and remove seal (6) from end of support (4). Discard seal.



6. Disconnect two electrical connectors (16) from brake warning light switch (17).
7. Remove four screws (20), lockwashers (19), and washers (18) from driver's bulkhead. Discard lockwashers.

NOTE

Record number and location of shims to ensure proper installation.

Remove brake assembly (21) and shims (15) from driver's compartment.

10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

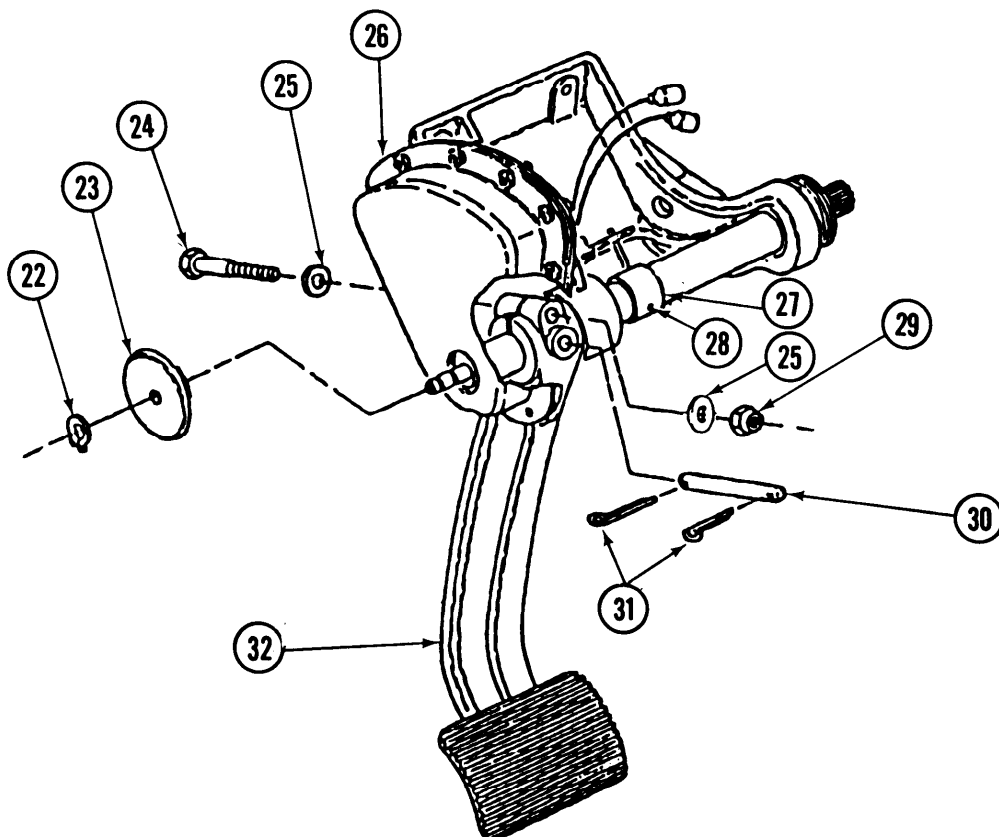
b. DISASSEMBLY

1. Remove two cotter pins (31) and pin (30) from brake pedal (32). Discard cotter pins.
2. Remove screw (24), self-locking nut (29), and two washers (25) from brake pedal (32). Discard self-locking nut.
3. Loosen two setscrews (28) in actuator (27).

WARNING

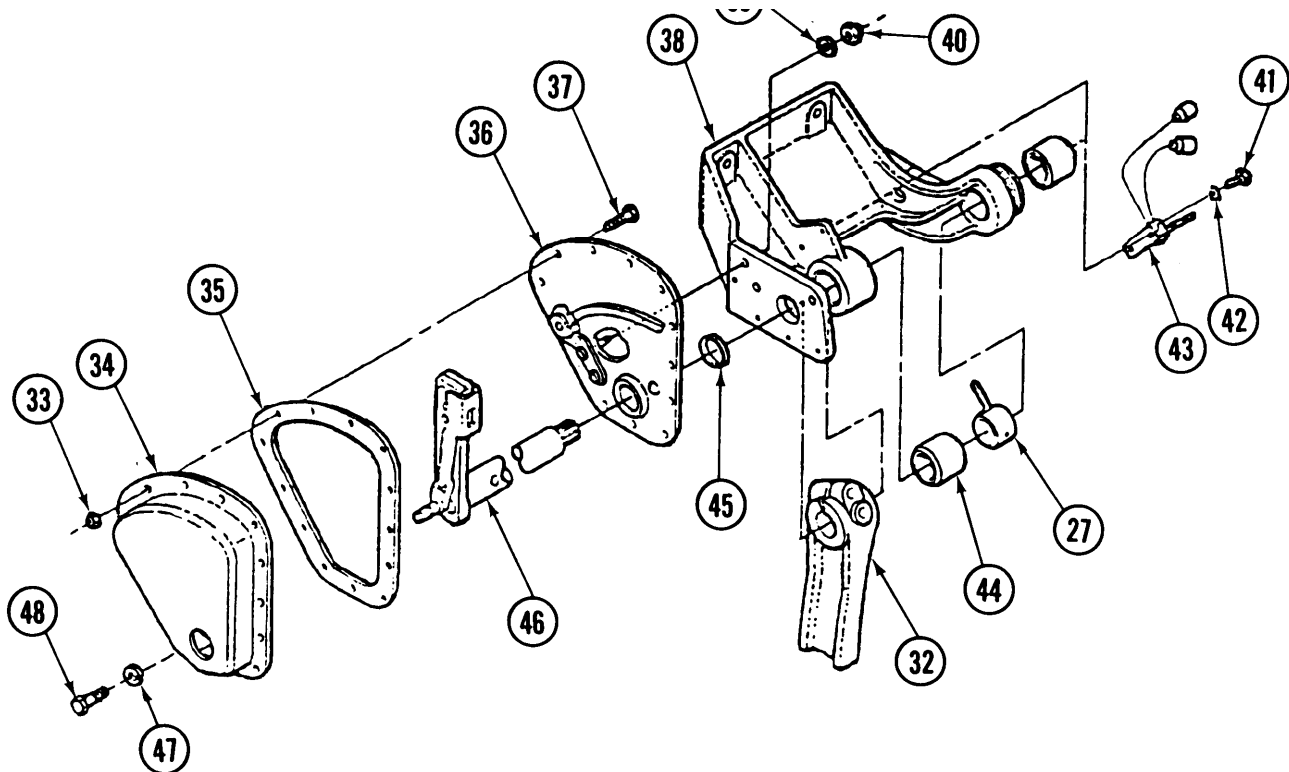
Use care when removing retaining rings. Retaining rings are under spring tension and can act as projectiles when released and cause severe eye injury.

4. Remove retaining ring (22) and boot (23) from parking brake latch assembly (26). Discard retaining ring and boot.



10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

5. Remove three self-locking nuts (40) and washers (39) from support bracket (38). Discard self-locking nuts.
6. Remove two screws (48) and lockwashers (47) from parking brake latch (46). Discard lockwashers.
7. With chisel, separate top of brake pedal (32) at split and remove latch (46) from support bracket (38), actuator (27), and brake pedal (32).
8. Remove two screws (41) and lockwashers (42) and stoplight switch (43) from support bracket (38). Discard lockwashers.



9. Remove 10 screws (37) and self-locking nuts (33) and cover (34) from latch (46). Remove gasket (35) from bracket (36). Discard self-locking nuts and gasket.
10. Remove seal (45) from latch (46). Discard seal.
11. Remove bracket (36) from latch (46).
12. If damaged, remove two bearings (44) from support bracket (38).

c. CLEANING AND INSPECTION

WARNING

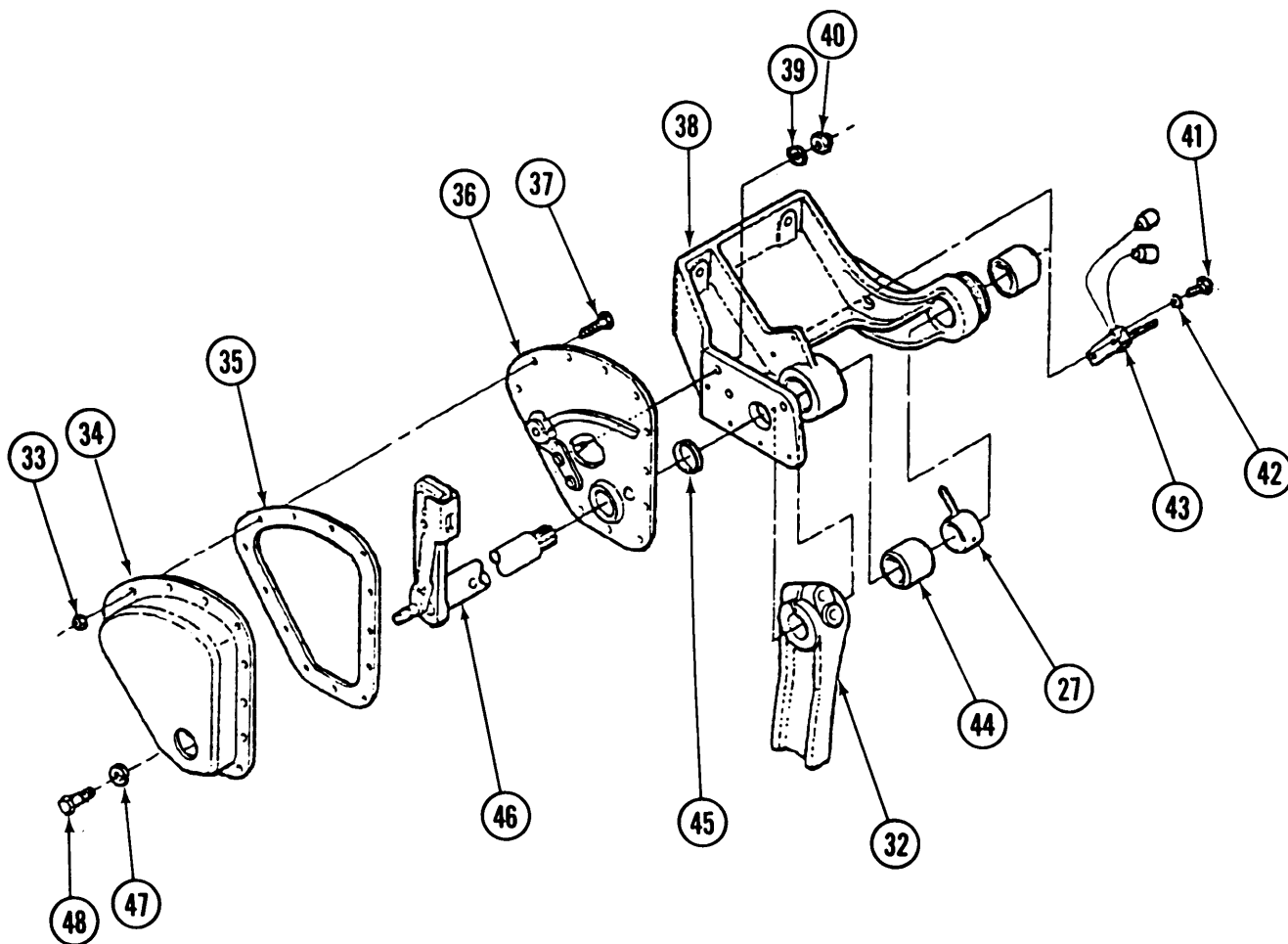
Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

1. Clean all parts with drycleaning solvent and rag.
2. Inspect all parts for damage. Replace any damaged parts.

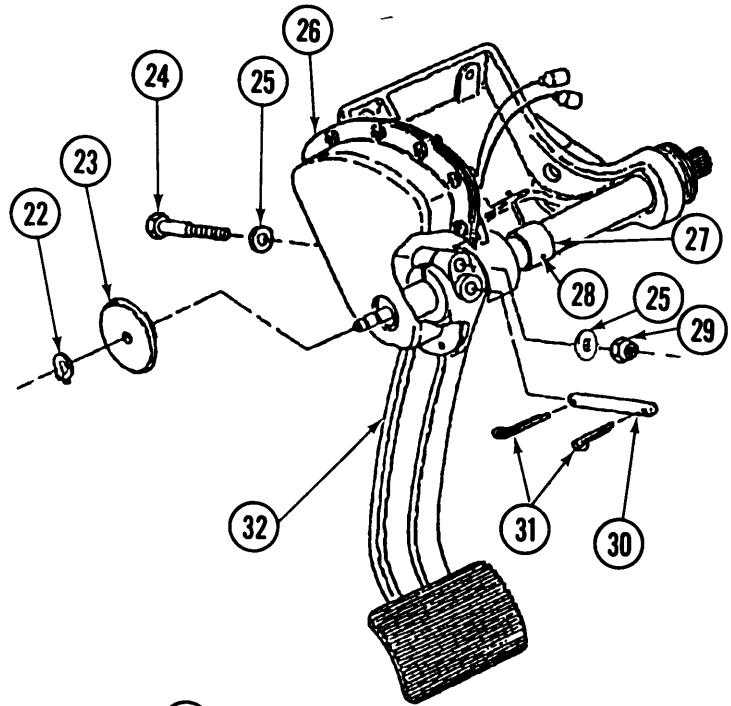
d. ASSEMBLY

1. If removed, install two new bearings (44) on support bracket (38).
2. Install bracket (36) on latch (46).
3. Install new seal (45) on latch (46).
4. Install new gasket (35) and cover (34) on latch (46) with 10 screws (37) and new self-locking nuts (33).
5. With chisel, separate top of brake pedal (32) at split and install latch (46) on support bracket (38), actuator, and brake pedal (32).
6. Install stoplight switch (43) on support bracket (38) with two screws (41) and new lockwashers (42).
7. Install two screws (48) and new lockwashers (47) in latch (46).
8. Install three new self-locking nuts (40) and washers (39) to secure latch (46) to support bracket (38).



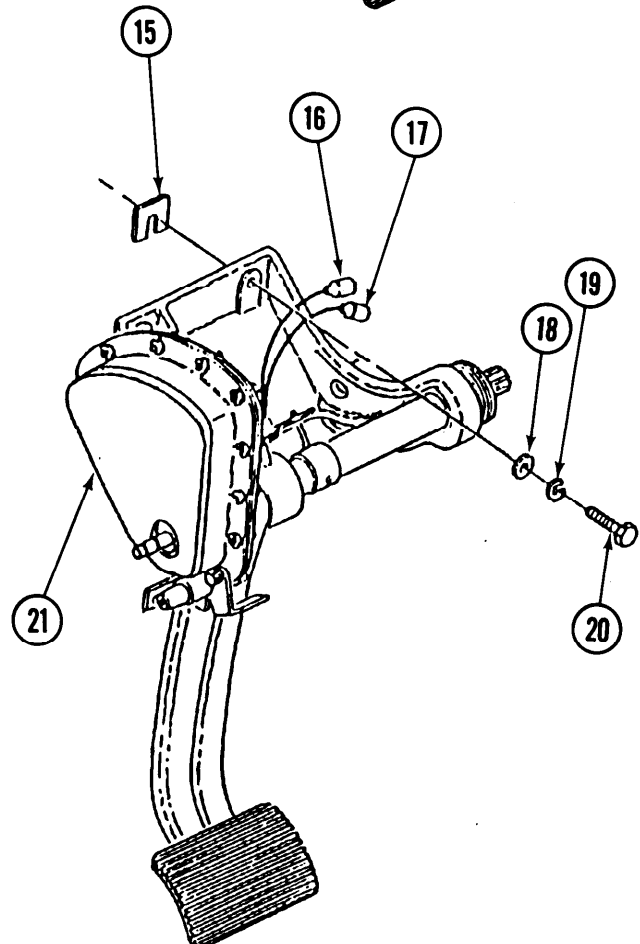
10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

9. Install new boot (23) on parking brake latch assembly (26) with new retaining ring (22).
10. Tighten two setscrews (28) in actuator (27).
11. Install pin (30) in brake pedal (32) and secure with two new cotter pins (31).
12. Install screw (24), two washers (25), and new self-locking nut (29) on brake pedal (32).



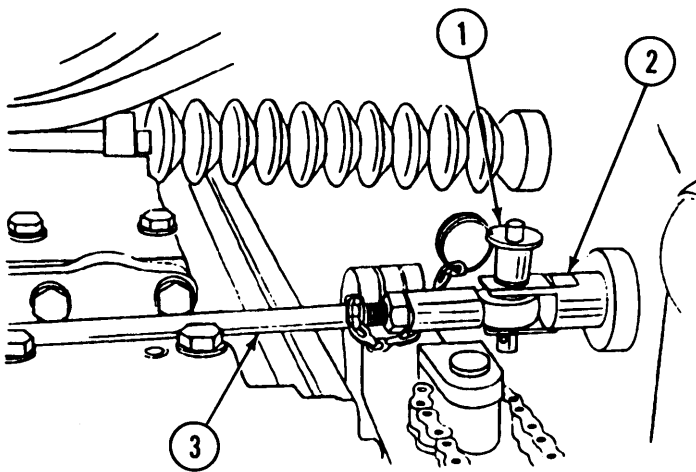
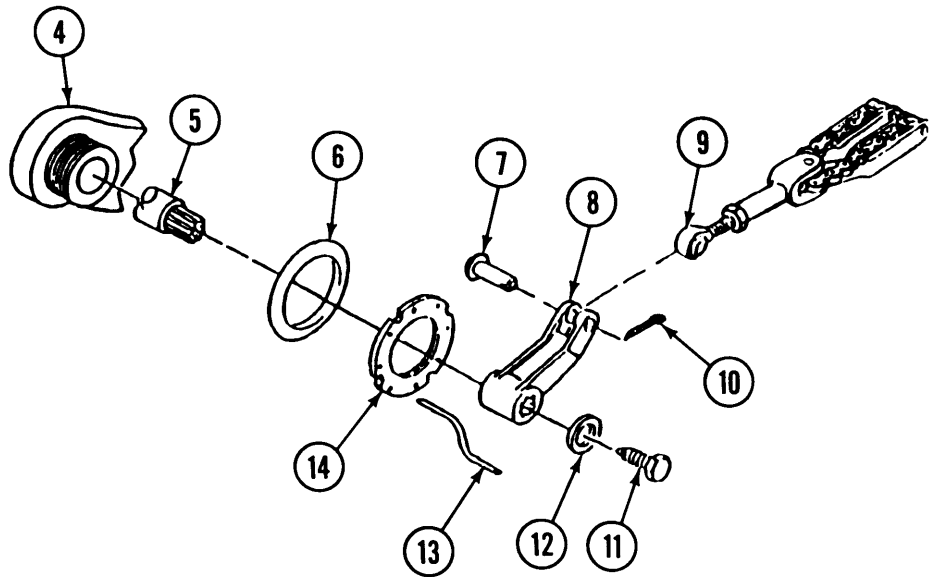
e. INSTALLATION

1. Position brake assembly (21) and required shims (15) in place and secure with four screws (20), new lockwashers (19), and washers (18).
2. Connect two electrical connectors (16) to brake warning light switch (17).



10-4. DRIVER'S COMPARTMENT BRAKE ASSEMBLY REPAIR (continued).

3. Install new seal (6) and retainer plate (14) on end of support (4) in engine compartment.
4. Install new lockwire (13) on retainer plate (14).
5. Install lever (8) on shaft (5) and secure with screw (11) and washer (12).
6. Install straight pin (7) in lever (8) and secure to rod end bearing (9) with new cotter pin (10).
7. Connect shift linkage (3) to rod (2) and install quick-release pin (1).



FOLLOW-ON MAINTENANCE:

- Install parking brake light switch and bracket (para 7-20).
- Close transmission access doors (refer to TM 9-2350-287-10).
- Adjust powerpack compartment brake linkage (para 10-3).
- Install center driver's periscope (refer to TM 9-2350-287-10).

CHAPTER 11 WHEELS AND TRACKS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
11-1	General	11-1
11-2	Torsion Bar Replacement	11-1
11-3	Torsion Bar Anchor Replacement	11-5
11-4	Roadwheel Replacement	11-8
11-5	Roadwheel Hub Replacement	11-11
11-6	Roadwheel Arm Replacement	11-16
11-7	Idler Wheel and Hub Replacement	11-17
11-8	Idler Arm Assembly Replacement	11-20
11-9	Idler Arm Housing Replacement	11-22
11-10	Track Adjuster and Mounting Bracket Replacement	11-23
11-11	Final Drive Sprocket and Hub Replacement	11-25
11-12	Track Pad Replacement	11-27
11-13	Track Shoe Replacement	11-28
11-14	Track Replacement	11-32

11-1. GENERAL.

This chapter describes and illustrates procedures for the removal, disassembly, assembly, installation, checking and adjusting of the M992A1, track and suspension.

11-2. TORSION BAR REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tool/Test Equipment:

- Adapter, torsion bar (Item 67, Appendix I)
- Puller, mechanical (Item 36, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Hydraulic jack (Item 28, Appendix I)
- Torque wrench, 0 to 175 ft-lb (Item 69, Appendix I)
- Wrench socket (Item 75, Appendix I)

Materials/Parts:

- Grease (Item 33, Appendix D)
- Rag (Item 56, Appendix D)
- Lockwire (Item 200, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Roadwheel removed (para 11-4).

a. REMOVAL

1. Remove bolt (2) from roadwheel arm (1).
2. Insert plug wrench (5) in retainer (4) and turn counterclockwise.

WARNING

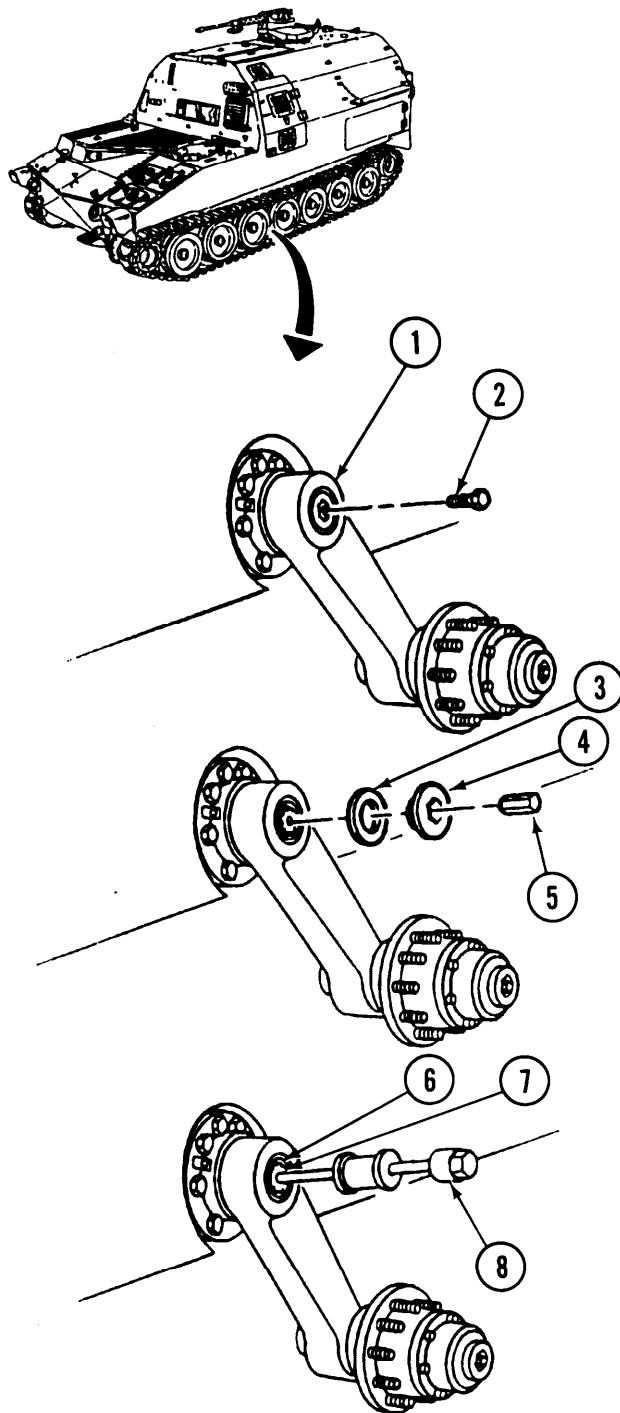
Make sure all personnel keep hands away from roadwheel arm and track. Failure to comply with this warning may result in serious injury to personnel.

3. Place hydraulic jack under roadwheel hub end of roadwheel arm (1).
4. Remove retainer (4) and gasket (3) from end of torsion bar (6). Discard gasket.
5. Install mechanical puller adapter (7) and slide hammer-type puller (8) on torsion bar (6).

NOTE








If torsion bar is broken and other end of torsion bar cannot be reached for removal, it may be necessary to remove torsion bar anchors of corresponding torsion bar (para 11 -3).

6. Remove torsion bar (6) through roadwheel arm (1).



11-2. TORSION BAR REPLACEMENT (continued).

TORSION BAR, ANCHOR AND ROAD WHEEL ARM HUB ASSEMBLY IDENTIFICATION TABLE (LEFT)

VEHICLE POSITION	TORSION BAR PART NUMBER	IDENTIFYING ARROW (PRESET)	ANCHOR PART NO.	LOCATION OF BLIND SPLINE IN ANCHOR	ROAD WHEEL ARM AND HUB ASSEMBLY PART NO.
1 FRONT	10898191-1		10921192-1	12 O'CLOCK	10925061-1
2 INTERMEDIATE	10898191-1		10921192-1	12 O'CLOCK	10925059
3 INTERMEDIATE	10898193		10921192-1	12 O'CLOCK	10925059
4 INTERMEDIATE	10898193		10921192-1	12 O'CLOCK	10925059
6 INTERMEDIATE	10898193		10921192-1	12 O'CLOCK	10925059
6 INTERMEDIATE	10898193-1		10921192-1	12 O'CLOCK	10925059
7 REAR	10898191-2		10921192-2	12 O'CLOCK	10925061-2

TORSION BAR, ANCHOR, AND ROAD WHEEL ARM HUB ASSEMBLY IDENTIFICATION TABLE (RIGHT)







VEHICLE POSITION	TORSION BAR PART NUMBER	IDENTIFYING ARROW (PRESET)	ANCHOR PART NO.	LOCATION OF BLIND SPLINE IN ANCHOR	ROAD WHEEL ARM AND HUB ASSEMBLY PART NO.
1 FRONT	10898191-2		10921192-2	12 O'CLOCK	10925061-2
2 INTERMEDIATE	10898191-2		10921192-2	12 O'CLOCK	10925059
3 INTERMEDIATE	10898194		10921192-2	12 O'CLOCK	10925059
4 INTERMEDIATE	10898194		10921192-2	12 O'CLOCK	10925059
5 INTERMEDIATE	10898194		10921192-2	12 O'CLOCK	10925059
6 INTERMEDIATE	10898194-1		10921192-2	12 O'CLOCK	10925059
7 REAR	10898191-1		10921192-1	12 O'CLOCK	10925059-1

TABLE 11-1

b. INSTALLATION

1. Identify torsion bar data (see Table 11-1).
2. Coat each torsion bar (6) spline end with grease.

11-2. TORSION BAR REPLACEMENT (continued).

WARNING

Roadwheel arm weighs over 100 pounds. To avoid serious injury, be careful when positioning roadwheel arm to install torsion bar.

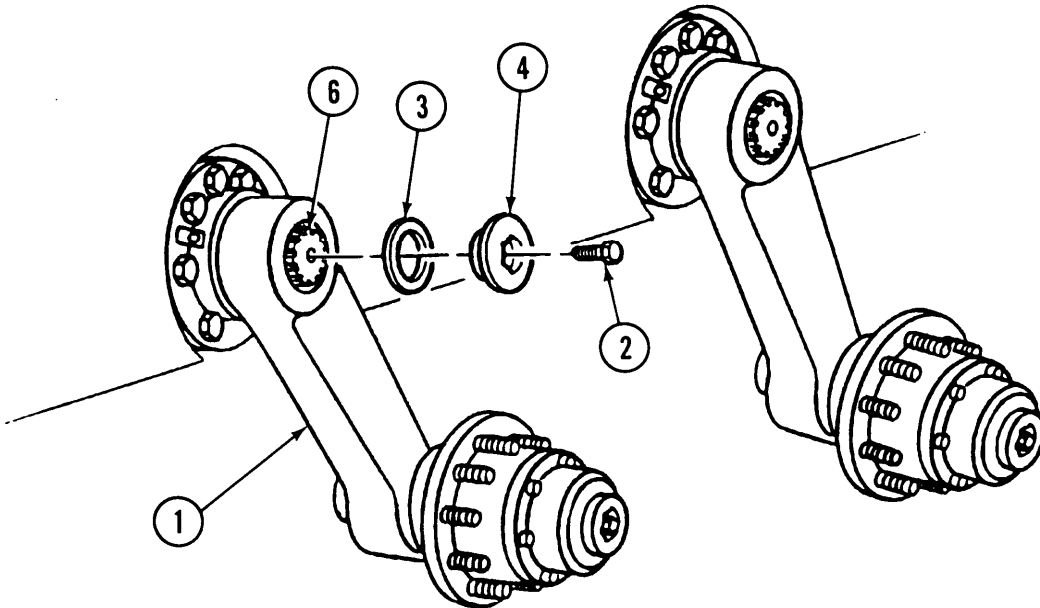
CAUTION

To avoid damage to torsion bar, never pound it with a hammer. Torsion bar should slide in by hand.

NOTE

- While installing torsion bars hold roadwheel arm at 4 o'clock position on vehicle left side, 8 o'clock position on right side.
- Make sure that blind splines on both ends align with blind splines on anchor and roadwheel arm.

3. With the aid of an assistant, install torsion bar (6) through roadwheel arm (1).
4. Install new gasket (3) and retainer (4) on roadwheel arm (1).
5. Install bolt (2) in roadwheel arm (1). Torque to 90 ft-lb(122 N•m).



6. Place hydraulic jack under roadwheel hub end of roadwheel arm (1). Raise jack and install lifter on roadwheel arm (1).

FOLLOW-ON MAINTENANCE:

- Install roadwheel (para 11-4).

11-3. TORSION BAR ANCHOR REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I) (bar anchor positions 4 and 5 only) (para 16-2).

- Torsion bar removed (para 11-2).
- Powerpack removed (torsion bar anchor positions 1 and 2 only) (para 3-2).
- Heating and ventilating duct removed (torsion bar anchor positions 4 and 5 only) (para 15-82).

Materials/Parts:

- Sealer (Item 57, Appendix D)
- Lockwasher (4) (Item 196, Appendix H)
- Lockwire (as required) (Item 200, Appendix H)

Equipment Conditions:

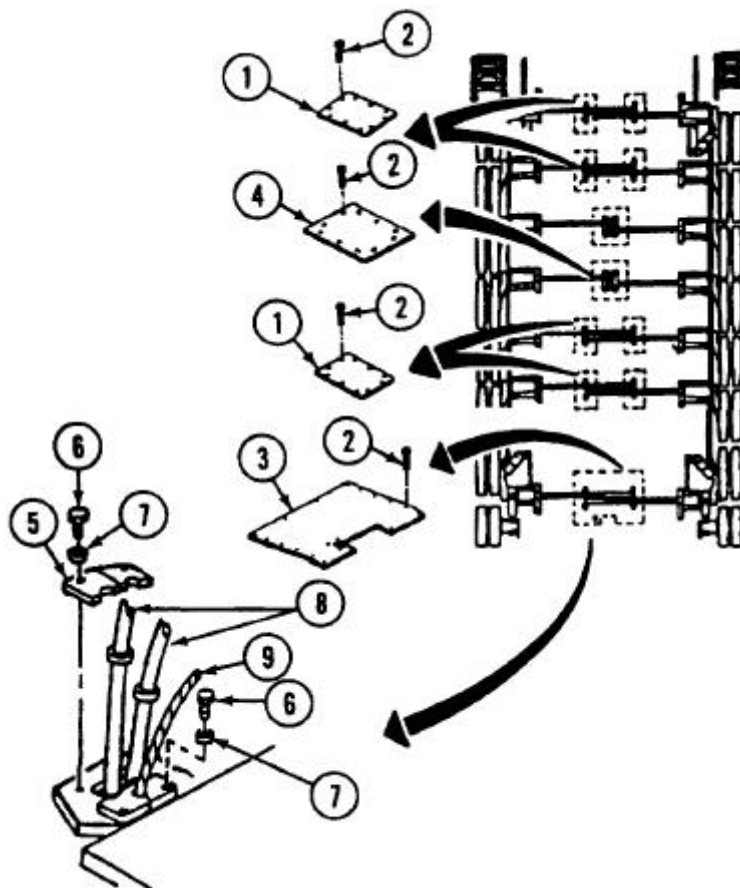
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

- To remove torsion bar anchors at positions 1, 2, 4, 5, and 6, perform steps 1, 5, and 6.
- To remove torsion bar anchors at position 7, perform steps 2 through 6.

1. Remove 10 screws (2) and cover plate (1 or 4) from hull floor.
2. Remove four screws (6) and lockwashers (7), two plates (5), and electrical lead (9) from cover plate (3). Discard lockwashers.
3. Move two hydraulic hoses (8) to one side.
4. Remove 16 screws (2) and cover plate (3) from crew compartment floor.



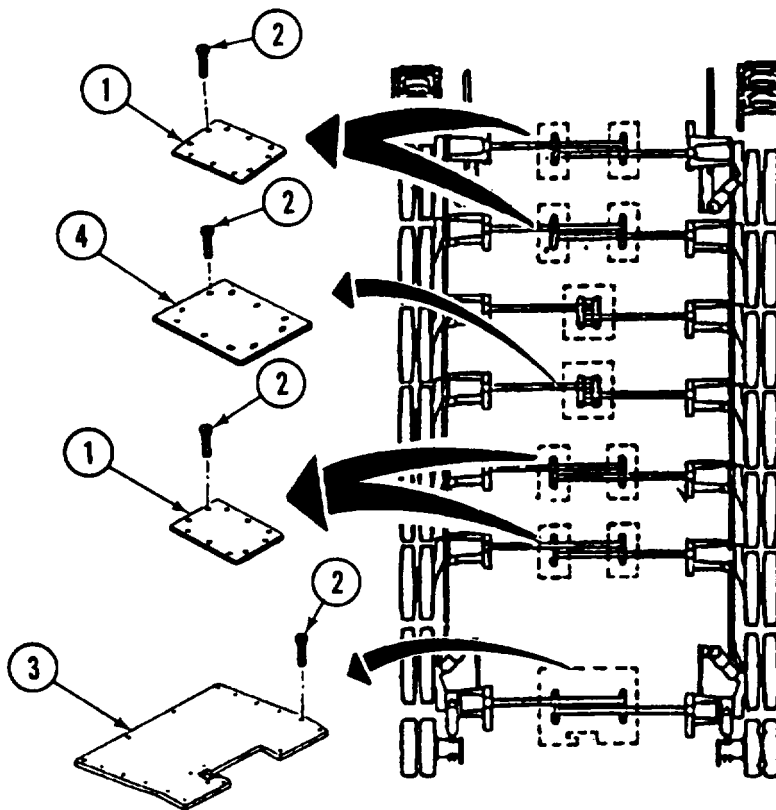
11-3. TORSION BAR ANCHOR REPLACEMENT (continued).

5. Remove lockwire (10) from two screws (11). Discard lockwire.
6. Remove two screws (11), four washers (12), and torsion bar anchor (13) from hull.

b. INSTALLATION**NOTE**

- To install torsion bar anchors at positions 1, 2, 4, 5, and 6, perform steps 1 through 5.
- To install torsion bar anchors at position 7, perform steps 1 through 4, 6, and 7.

1. Position torsion bar anchor (13) in place on torsion bar anchor cavity in hull and secure with two screws (11) and four washers (12).
2. Torque two screws (11) between 275 and 300 ft-lb (373 and 407 N•m).
3. Secure two screws (11) to each other with new lockwire (10).

**WARNING**

Sealers can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open flame and use in a well-ventilated area. If sealer gets on skin or clothing, wash immediately with soap and water.

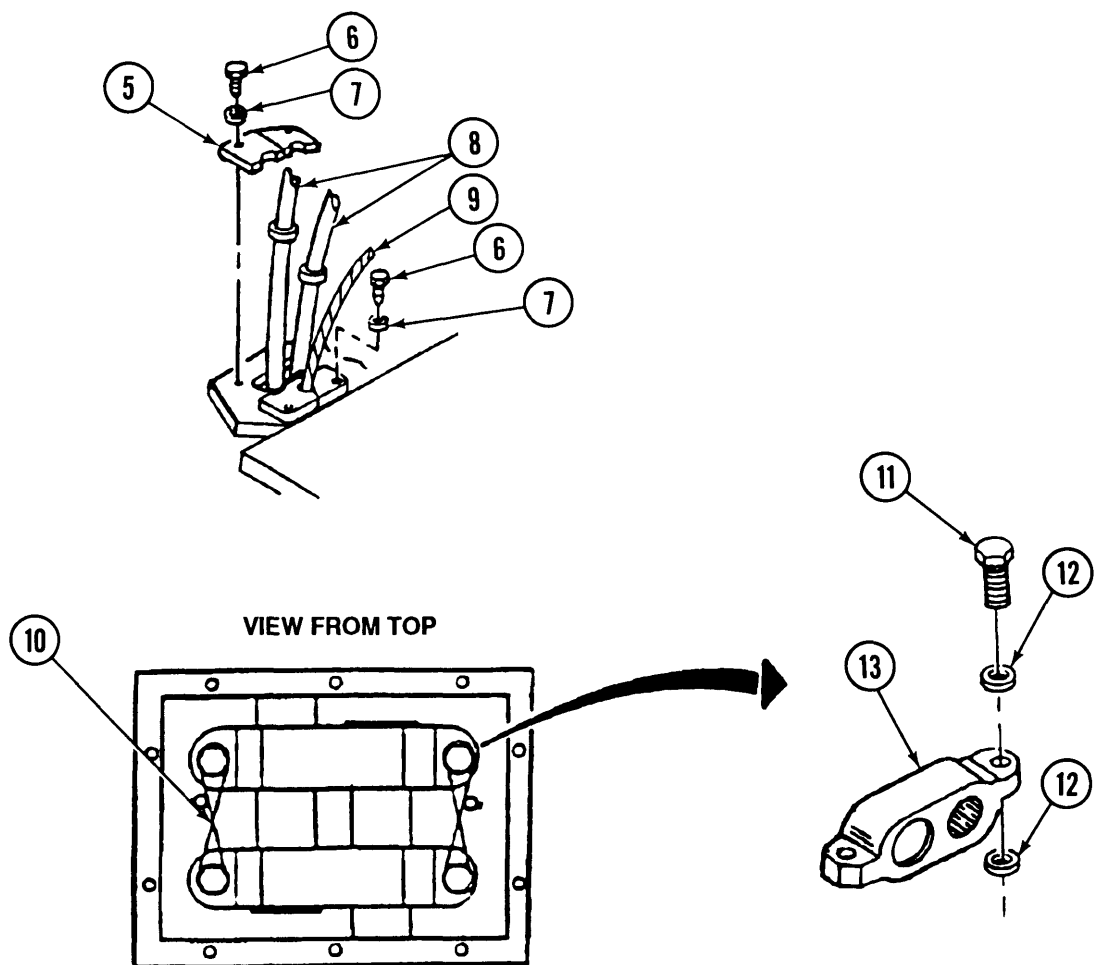
11-3. TORSION BAR ANCHOR REPLACEMENT (continued).

4. Apply sealer around entire edge of cover plate (1,3, or 4).
5. Install cover plate (1 or 4) on hull floor with 10 screws (2).
6. Install cover plate (3) on crew compartment floor with 16 screws (2).

NOTE

Make sure conveyor hydraulic hoses are routed between two plates when installing.

7. Position two hydraulic hoses (8) between two plates (5) on cover plate (3). Secure two plates (5) and electrical lead (9) with four screws (6) and new lockwashers (7).



FOLLOW-ON MAINTENANCE:

- Install powerpack (torsion bar anchor positions 1 and 2) (para 3-2).
- Install heating and ventilation duct (torsion bar anchor positions 4 and 5) (para 16-2).
- Install projectile rack assembly base (torsion bar positions 4 and 5) (para 15-82).
- Install torsion bar (para 11-2).

11-4. ROADWHEEL REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tool/Test Equipment:

- Hydraulic jack (Item 28, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Roadwheel lifter (Item 49, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

- Rag (Item 56, Appendix D)
- Self-locking nut (10) (Item 310, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Track disconnected (para 11-14).

Materials/Parts:

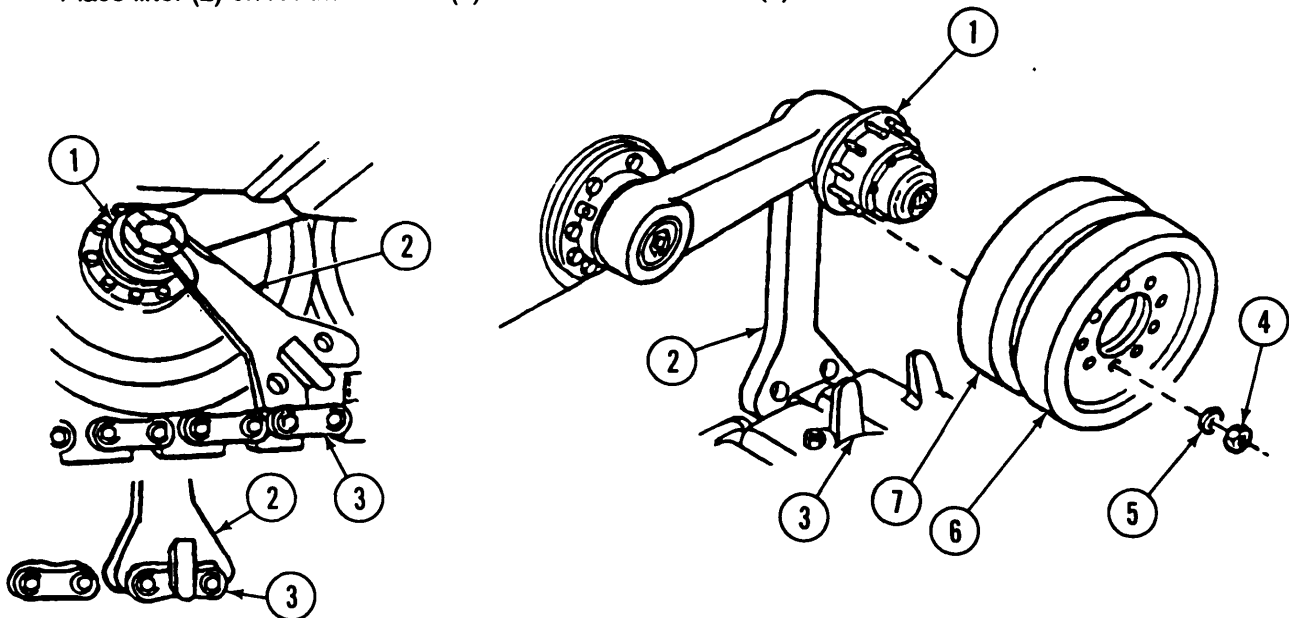
- Grease (Item 33, Appendix D)

a. REMOVAL

NOTE

- To remove roadwheels at positions 2 through 6, perform steps 1 through 6.
- To remove roadwheels at positions 1 and 7, perform steps 7 through 12.

1. Using crowbar, pull track away from top of outer roadwheel (6).
2. Loosen, but do not remove, 10 self-locking nuts (4) on outer roadwheel (6).
3. Place lifter (2) on roadwheel hub (1) and inner side of track (3).



11-4. ROADWHEEL REPLACEMENT (continued).**WARNING**

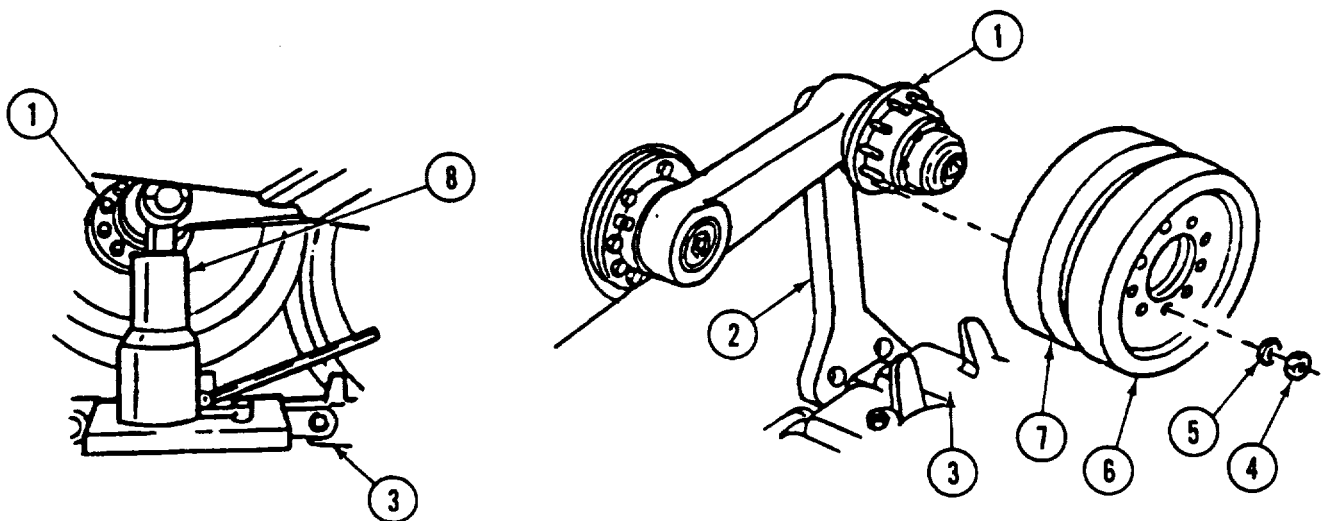
When driving vehicle on or off lifters, clear the area. Lifters may fly out from under the vehicle and cause serious injury to personnel.

4. Drive vehicle slowly forward only far enough to lift outer roadwheel (6) off track (3).

WARNING

Block vehicle to prevent it from moving. Failure to comply with this warning may result in serious injury or death to personnel.

5. Remove 10 self-locking nuts (4) and washers (5) from outer roadwheel (6). Discard self-locking nuts.
6. Tap inner roadwheel (7) lightly with hammer, and remove outer and inner roadwheels (6 and 7) from roadwheel hub (1).



7. Pull track (3) away from top of outer and inner roadwheels (6 and 7).
8. Loosen, but do not remove, 10 self-locking nuts (4) on outer roadwheel (6).

WARNING

Use extreme caution when using hydraulic jack. Carelessness can result in injury to personnel or damage to equipment.

9. Place hydraulic jack (8) with base on track (3) and head under roadwheel hub (1).
10. Raise jack until outer and inner roadwheels (6 and 7) clear track (3).
11. Remove 10 self-locking nuts (4) and washers (5) from outer roadwheel (6). Discard self-locking nuts.
12. Tap inner roadwheel (7) lightly with hammer, and remove outer and inner roadwheels (6 and 7) from roadwheel hub (1).

11-4. ROADWHEEL REPLACEMENT (continued).**b. INSTALLATION****NOTE**

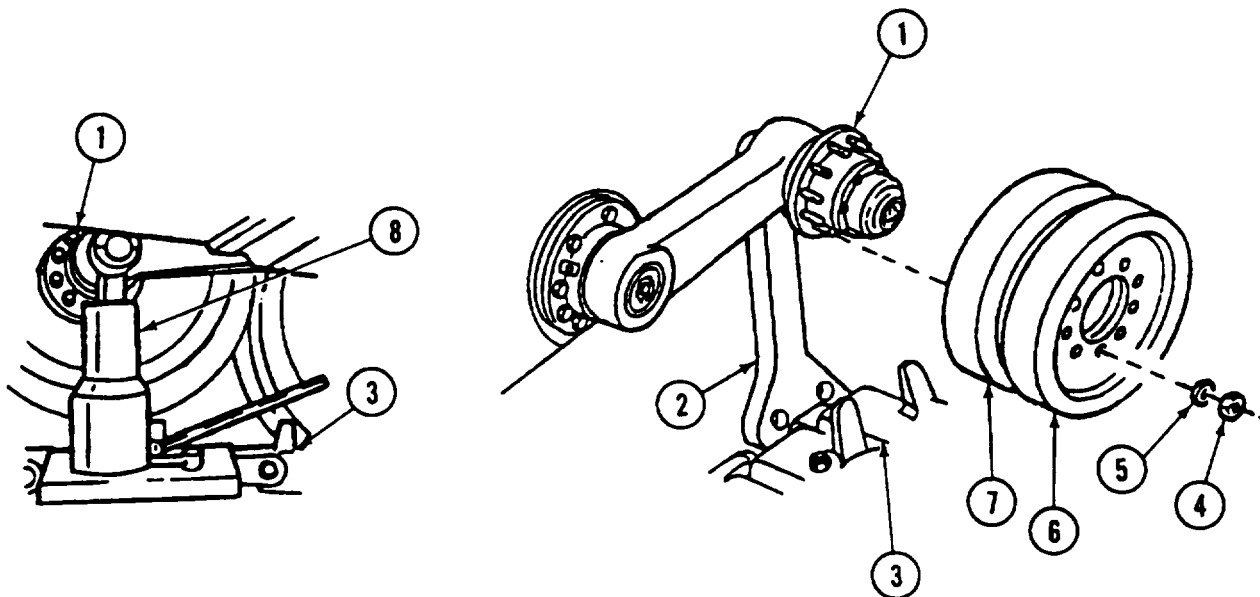
- To install roadwheels at positions 2 through 6, perform steps 1 through 5.
- To install roadwheels at positions 1 and 7, perform steps 5 and 6.
- Lubricate all threads with grease.

1. Install inner and outer roadwheels (7 and 6) on roadwheel hub (1) with 10 washers (5) and new self-locking nuts (4).

WARNING

When driving vehicle on or off lifters, clear the area. Lifters may fly from under the vehicle and cause serious injury to personnel.

2. With the aid of an assistant, torque 10 self-locking nuts (4) to 215 ft-lb (292 N•m).
3. Slowly drive off lifter (2).
4. Torque 10 self-locking nuts (4) to 215 ft-lb (292 N•m).
5. Install inner and outer roadwheels (7 and 6) on roadwheel hub (1) with 10 washers (5) and new self-locking nuts (4). Torque nuts to 215 ft-lb (292 N•m).
6. Lower hydraulic jack (8) and remove from track (3).

**FOLLOW-ON MAINTENANCE:**

- Connect track (para 11-13).

11-5. ROADWHEEL HUB REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Bearing cup replacer (inner) (Item 7, Appendix I)
- Bearing cup replacer (outer) (Item 8, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Manual control handle (Item 34, Appendix I)
- Torque wrench, 0-175 ft-lb (Item 69, Appendix I)

- Cotter pin (Item 15, Appendix H)
- Preformed packing (Item 230, Appendix H)
- Seal (Item 298, Appendix H)

References:

- TM 9-214

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Grease (item 33, Appendix D)
- Rag (item 56, Appendix D)

Equipment Conditions:

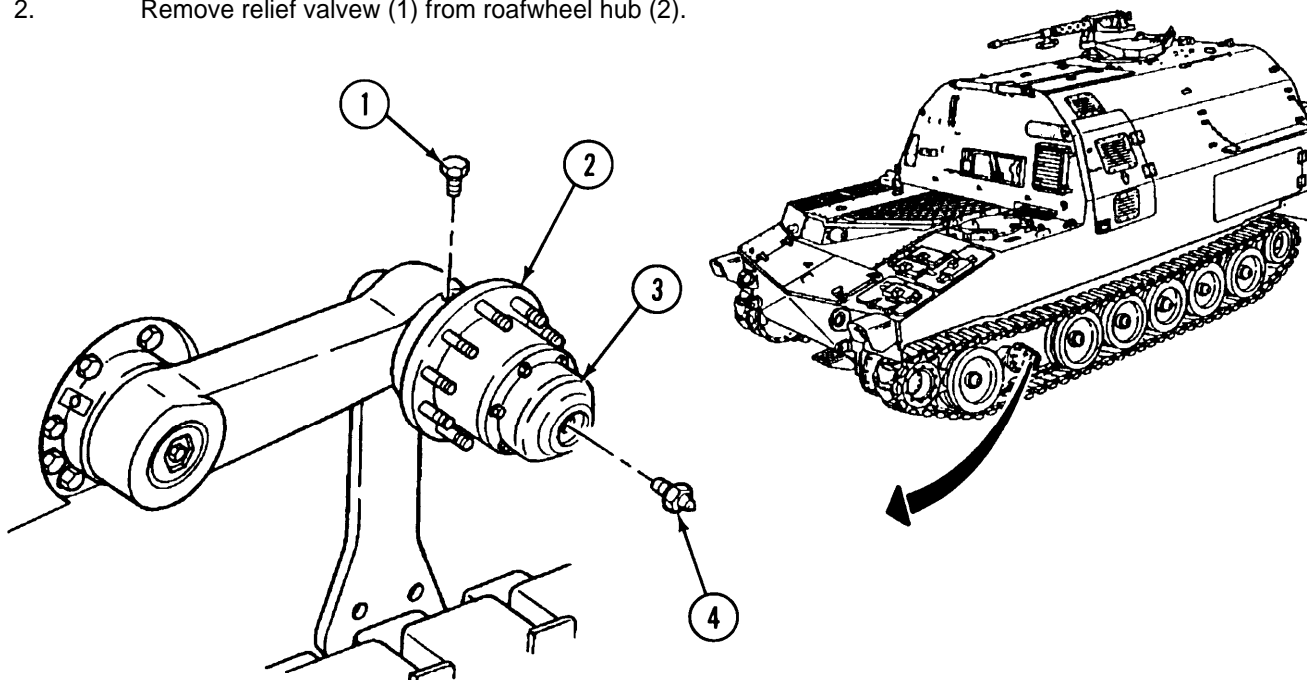
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Roadwheels removed (para 11-4).

a. REMOVAL

NOTE

This procedure applies to roadwheel arms 1 through 7. Position 2 is shown.

1. Remove grease fitting (4) from cap (3).
2. Remove relief valvew (1) from roofwheel hub (2).

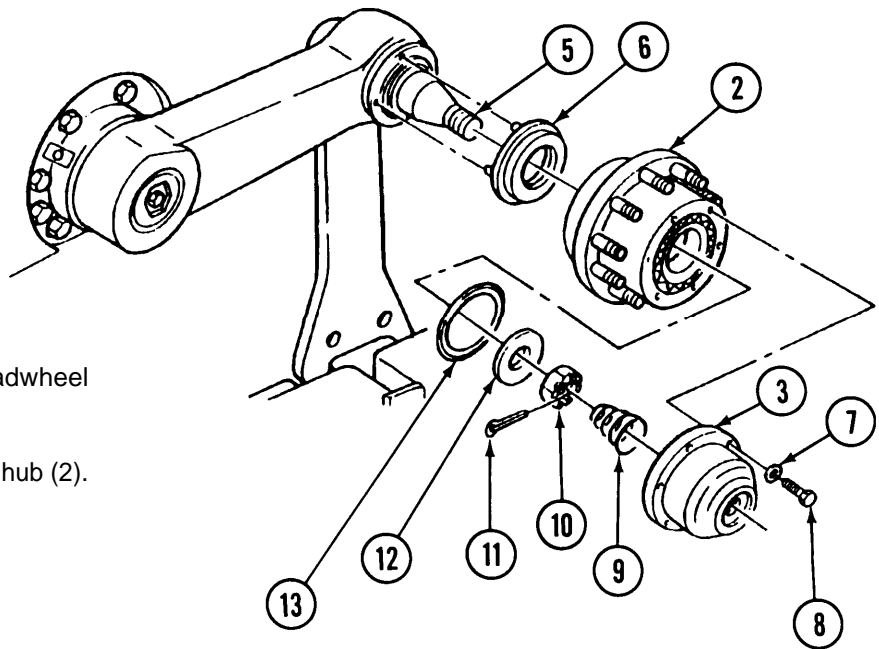


11-5. ROADWHEEL HUB REPLACEMENT (continued).

3. Remove six screws (8) and washers (7) and cap (3) from roadwheel hub (2).
4. Remove static spring (9) and preformed packing (13) from cap (3). Discard performed packing.
5. Remove cotter pin (11), nut (10), and washer (12) from roadwheel hub (2). Discard cotter pin.

WARNING

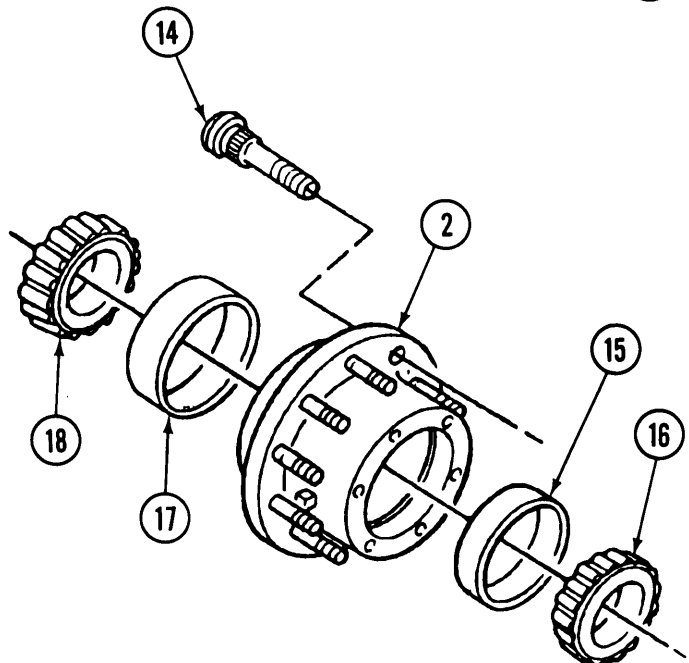
Roadwheel hub is heavy. Use two hands and remove carefully to prevent possible injury.



6. Slide roadwheel hub (2) off roadwheel arm spindle (5).
7. Remove seal (6) from roadwheel hub (2). Discard seal.

b. DISASSEMBLY

1. Remove two bearing cones (16 and 18) from roadwheel hub (2).
2. Remove two bearing cups (15 and 17) from roadwheel hub (2).
3. If damaged, remove 10 studs (14) from roadwheel hub (2).



c. CLEANING AND INSPECTION

1. Clean and inspect bearing cones in accordance with TM 9-214. Replace if damaged.

11-5. ROADWHEEL HUB REPLACEMENT (continued).

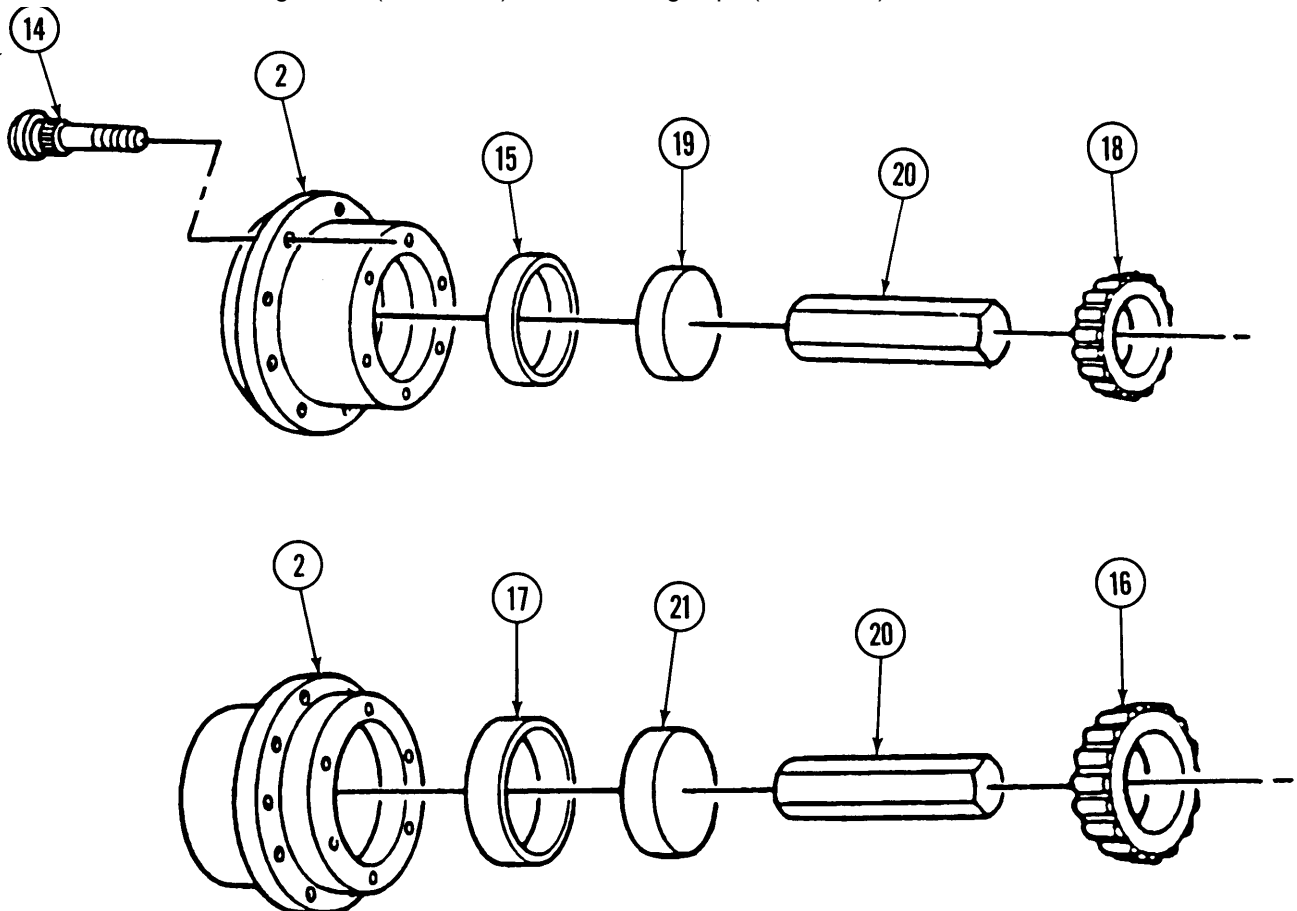
WARNING

Drycleaning 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.

2. Clean all other metal parts with drycleaning solvent.
3. Inspect all parts for cracks, bends, breaks, or unusual wear, Replace any defective parts.

d. ASSEMBLY

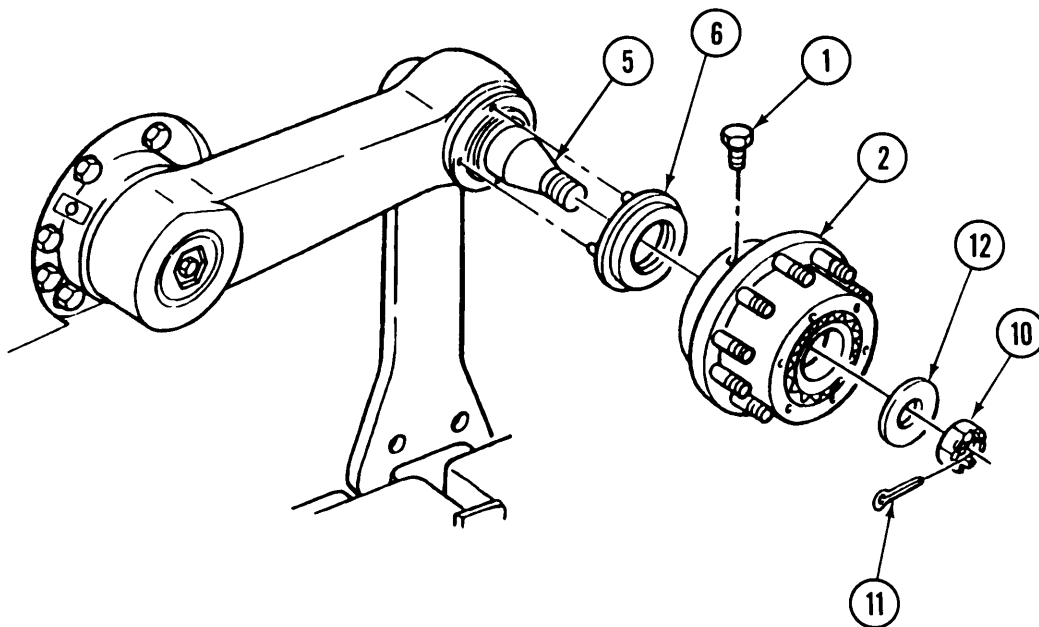
1. If removed, install 10 studs (14) in roadwheel hub (2).
2. Install inner bearing cup (15) in roadwheel hub (2), using inner bearing cup replacer (19) and manual control handle (20).
3. Install outer bearing cup (17) in roadwheel hub (2), using outer bearing cup replacer (21) and manual control handle (20).
4. Install two bearing cones (16 and 18) in two bearing cups (15 and 17).



11-5. ROADWHEEL HUB REPLACEMENT (continued).

e. **INSTALLATION**

1. Install relief valve (1) in roadwheel hub (2).
2. Install new seal (6) in roadwheel hub (2).
3. Install roadwheel hub (2), washer (12), and nut (10) on roadwheel arm spindle (5).
4. Torque nut (10) to 100 ft-lb (136 N•m). Loosen nut (10) one full turn.
5. Torque nut (10) to 30 ft-lb (41 N•m) while rotating roadwheel hub (2).
6. Aline hole in nut (10) with hole in roadwheel arm spindle (5). If necessary, loosen nut (10) until holes are alined.



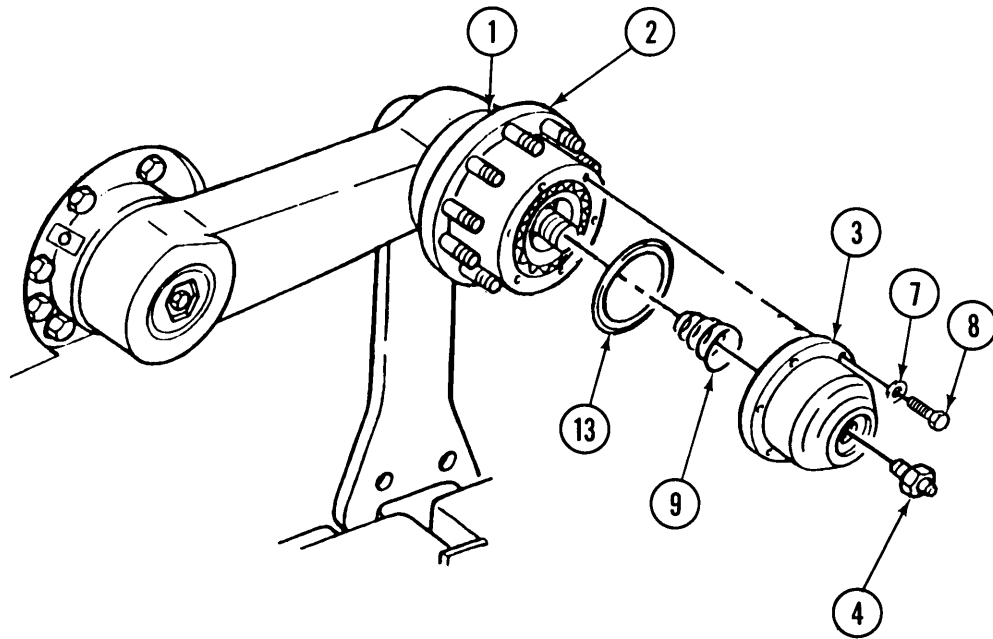
NOTE

After alinement of holes and insertion of cotter pin, hub must rotate freely by hand.

7. Install new cotter pin (11) through nut (10) and roadwheel arm spindle (5).

11-5. ROADWHEEL HUB REPLACEMENT (continued).

8. Install new packing (13) and static spring (9) in cap (3). Install cap (3) on roadwheel hub (2) with six screws (8) and washers (7). Torque screws to 12 ft-lb (16 N•m).
9. Install grease fitting (4) in cap (3).
10. Fill cap (3) with grease until grease flows from relief valve (1).

**FOLLOW-ON MAINTENANCE:**

- Install roadwheel (para 11-4).

11-6. ROADWHEEL ARM REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

Materials/Parts:

- Bolt (8) (Item 4, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Roadwheel hub removed (para 11-5).
- Torsion bar removed (para 11-2).
- Shock absorber removed (numbers 1 and 7 roadwheel arms only) (para 14-2).

a. REMOVAL

1. Remove eight bolts (1) from roadwheel arm (2). Discard bolts.

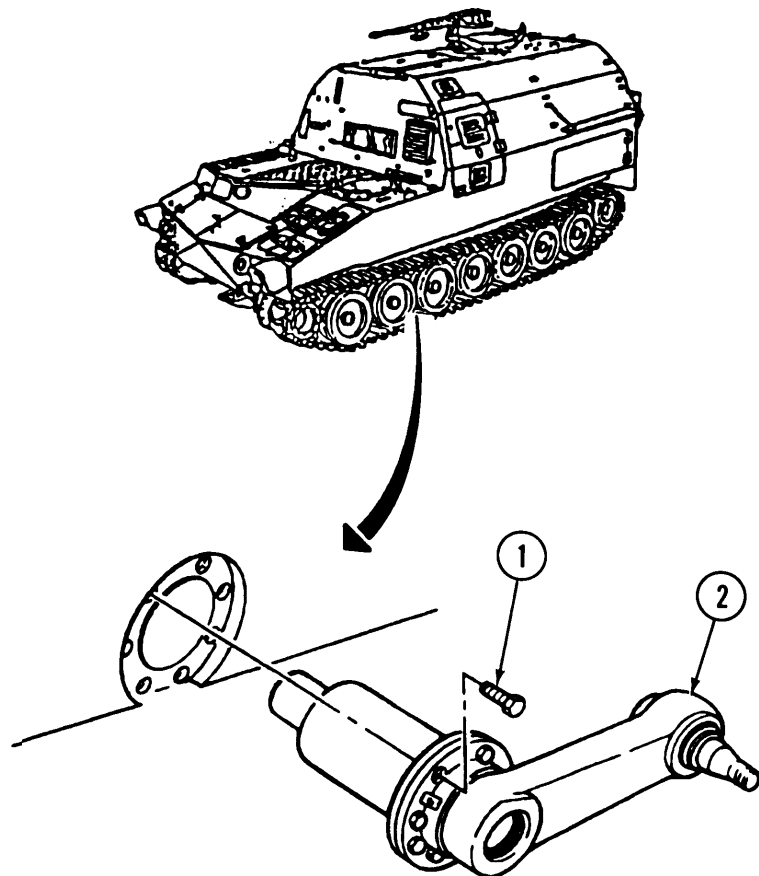
WARNING

Roadwheel arm assembly weighs over 100 pounds. To prevent serious injury, use two persons to remove.

2. With the aid of an assistant, lift off roadwheel arm assembly (2) and remove from vehicle.

b. INSTALLATION

With the aid of an assistant, position roadwheel arm assembly (2) on vehicle and secure with eight new bolts (1). Torque between 170 and 180 ft-lb (230 and 244 N•m).



FOLLOW-ON MAINTENANCE:

- Install shock absorber (numbers 1 and 7 roadwheel arms only) (para 14-2).
- Install torsion bar (para 11-2).
- Install roadwheel hub (para 11-5).

11-7. IDLER WHEEL AND HUB REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0 to 175 ft-lb (Item 69, Appendix I)
- Torque wrench, 0 to 600 ft-lb (Item 70, Appendix I)

Materials/Parts:

- Grease (Item 33, Appendix D)

- Rag (Item 56, Appendix D)
- Cotter pin (Item 40, Appendix H)
- Self-locking nut (10) (Item 310, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Track removed (para 11-14).

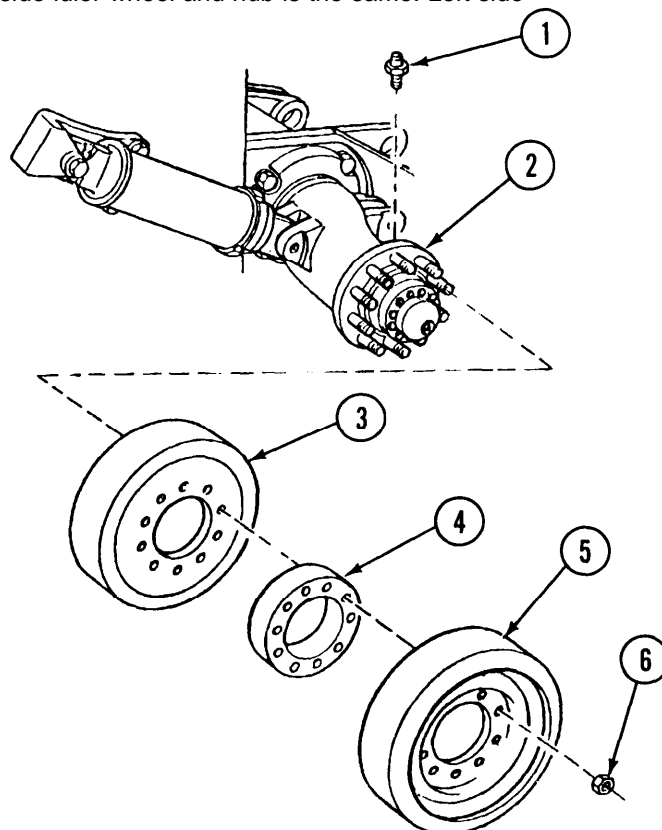
a. REMOVAL

1. Remove 10 self-locking nuts (6) from outer idler wheel (5). Discard self-locking nuts.

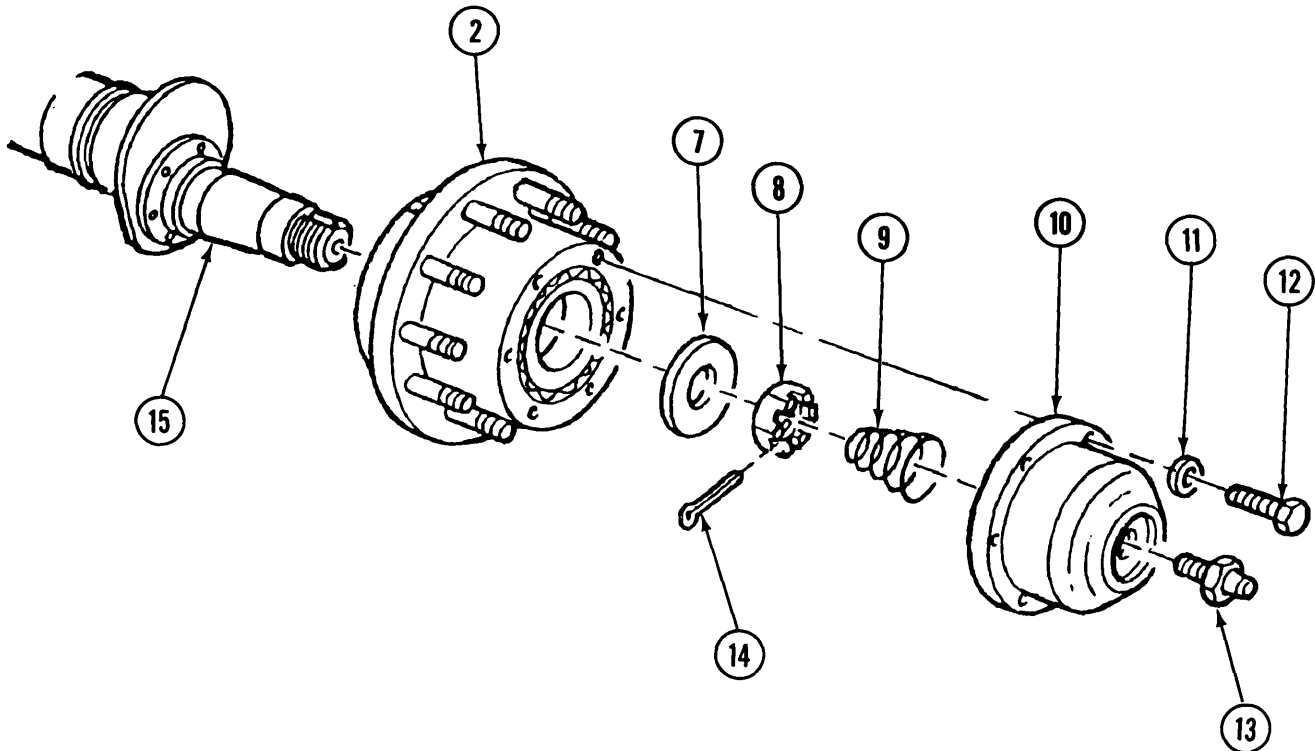
NOTES

Replacement of the left-side and right-side idler wheel and hub is the same. Left side is shown here.

2. Remove outer idler wheel (5), spacer (4), and inner idler wheel (3) from idler wheel hub (2).
3. Remove relief valve (1) from idler wheel hub (2).
4. Remove grease fitting (13) from cap (10).



11-7. IDLER WHEEL AND HUB REPLACEMENT (continued).



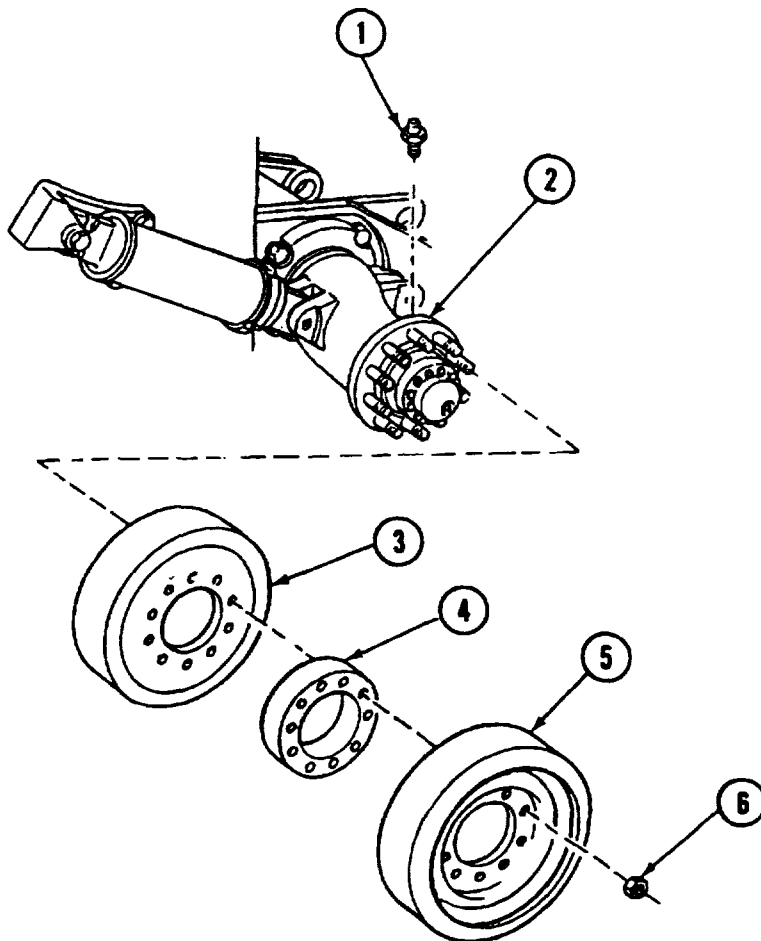
5. Remove six screws (12) and washers (11) and cap (10) from idler wheel hub (2).
6. Remove static spring (9), cotter pin (14), nut (8), washer (7), and idler wheel hub (2) from idler arm assembly (15). Discard cotter pin.

b. INSTALLATION

1. Install idler wheel hub (2), washer (7), and nut (8) on idler arm assembly (15).
2. Torque nut (8) to 100 ft-lb (136 N•m), then loosen nut (8) one full turn.
3. Torque nut (8) to 30 ft-lb (41 N•m) while rotating idler wheel hub (2).
4. Align holes in nut (8) with holes in idler arm assembly (15), and install new cotter pin (14).
5. Install static spring (9) and cap (10) on idler wheel hub (2) with six washers (11) and screws (12). Torque to 12 ft-lb (16 N•m).
6. Install grease fitting (13) in cap (10).
7. Fill cap (10) with grease.

11-7. IDLER WHEEL AND HUB REPLACEMENT (continued).

8. Install inner idler wheel (3), spacer (4), and outer idler wheel (5) on idler wheel hub (2).
9. Lubricate all threads with grease. Install 10 new self-locking nuts (6) on outer idler wheel (5). Torque nuts to 215 ft-lb (292 N•m).



10. Static-test idler arm assembly (15) and idler wheel hub (2). Idler arm assembly (15) must hold 50 ± 5 psi (345 ± 34 kPa) under static air pressure for one minute.
11. Install relief valve (1) on idler wheel hub (2).
12. Fill idler wheel hub (2) with grease until air-free fluid flows from relief valve (1).

FOLLOW-ON MAINTENANCE:

- Install track (para 11-14).

Change 1 11-19

11-8. IDLER ARM ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0-175 ft-lb (Item 69, Appendix I)

Materials/Parts:

- Gasket (Item 53, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Track removed (para 11-14).
 - Idler wheel and hub removed (para 11-7).
 - Track adjuster disconnected (para 11-10).
-

NOTE

Replacement of left-side and right-side idler arm assemblies is the same. Left side is shown.

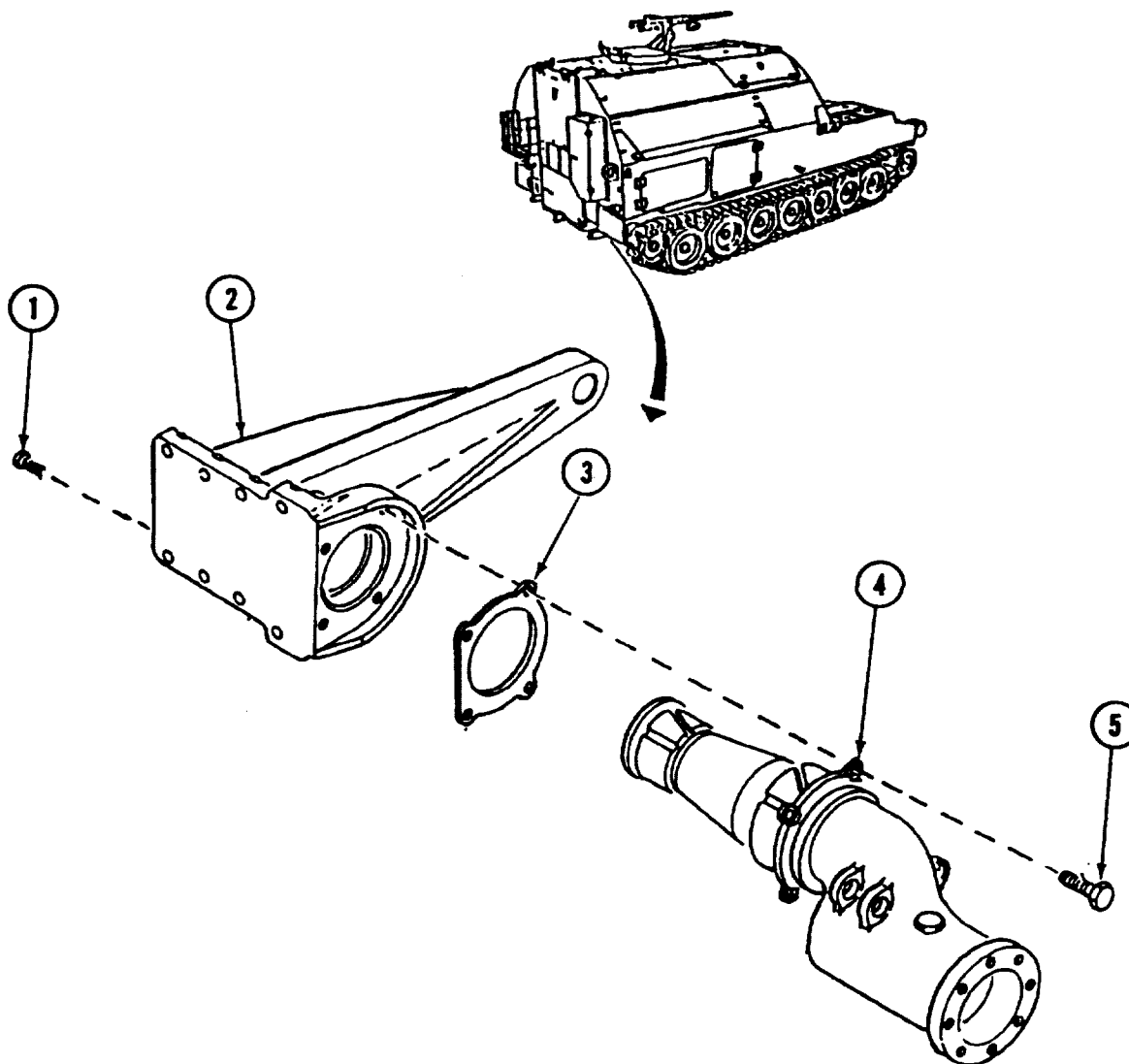
a. REMOVAL

1. Remove plug (1) from idler arm housing (2).
2. Remove four screws (5) from idler arm assembly (4).
3. Remove idler arm assembly (4) and gasket (3) from idler arm housing (2). Discard gasket.

b. INSTALLATION

1. Install new gasket (3) and idler arm assembly (4) on idler arm housing (2).
2. Install four screws (5) in idler arm assembly (4) and torque to 110 ft-lb (149 N•m).
3. Install plug (1) in idler arm housing (2).

Change 1 11-20

11-8. IDLER ARM ASSEMBLY REPLACEMENT (continued).**FOLLOW-ON MAINTENANCE:**

- Connect track adjuster (para 11-10).
- Install idler wheel and hub (para 11-7).
- Install track (para 11-14).

11-9. IDLER ARM HOUSING REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Idler arm assembly removed (para 11-8).

a. REMOVAL

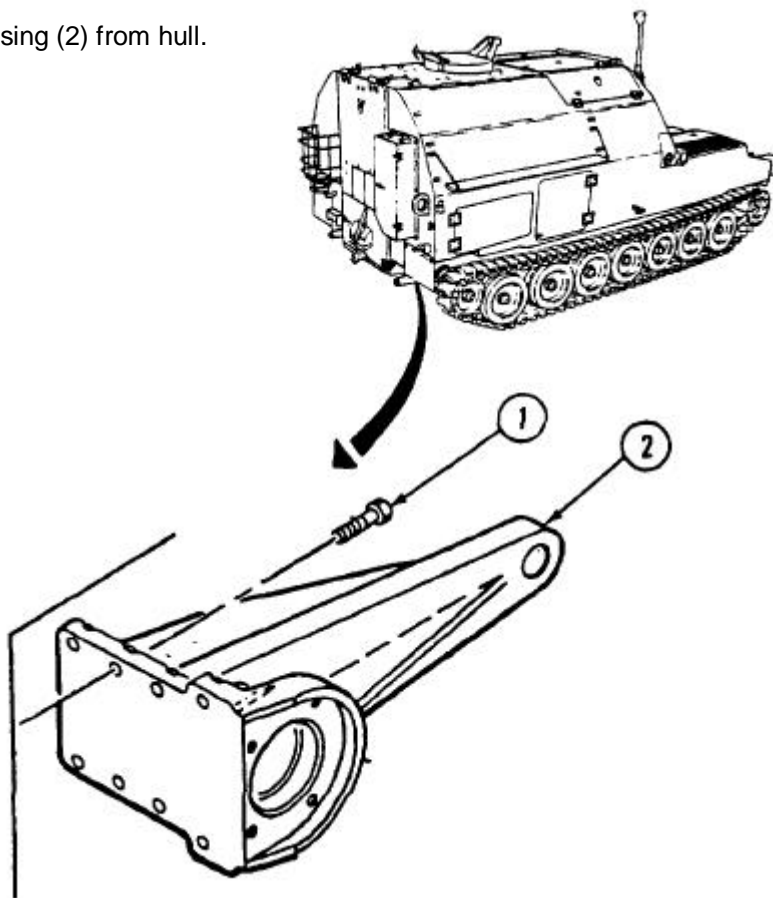
NOTE

Replacement of left-side and right-side idler arm housings is the same. Left side is shown.

Remove eight screws (1) and idler arm housing (2) from hull.

b. INSTALLATION

Install idler arm housing (2) on hull with eight screws (1). Torque screws to 385 ft-lb (522 N•m).



FOLLOW-ON MAINTENANCE:

- Install idler arm assembly (para 11-8).

11-10. TRACK ADJUSTER AND MOUNTING BRACKET REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Puller, mechanical (Item 38, Appendix B)
- Crowbar (Item 12, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench extension, 16-inch (Item 56, Appendix I)
- Socket wrench socket, 1 1/8-inch (Item 60, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

- Grease (Item 33, Appendix D)
- Rag (Item 56, Appendix D)
- Tape, antiseizing (Item 70, Appendix D)
- Washer (Item 76, Appendix D)
- Cotter pin (2) (Item 33, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Track removed (para 11-14).

Materials/Parts:

- Capscrew (Item 12, Appendix D)

a. REMOVAL

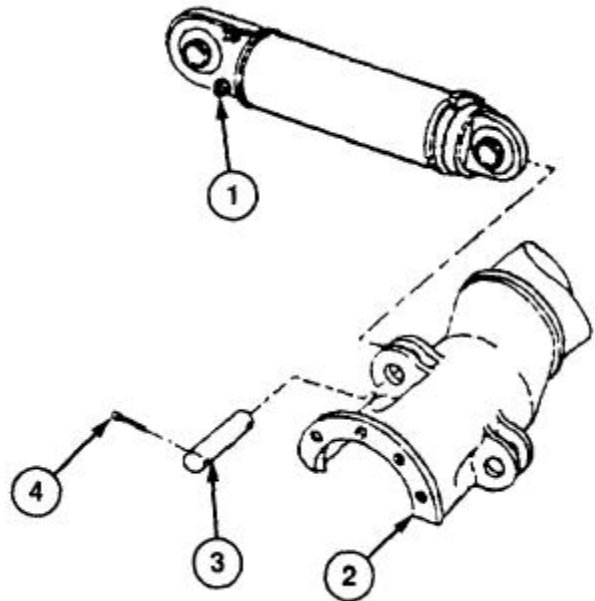
WARNING

Lubricant is under high pressure. Loosen bleed plug slowly to avoid injury.

NOTE

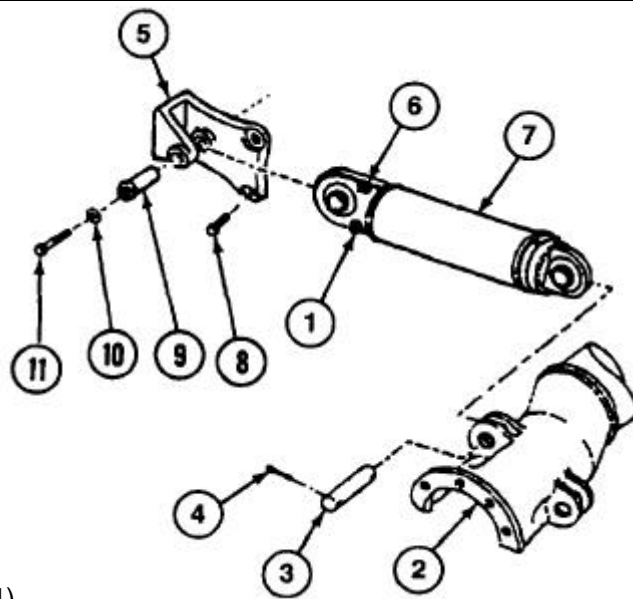
- Replacement is the same for left and right track adjusters and mounting brackets. Left adjuster is shown in illustration.
- If removing bleed plug or lubrication fitting only, go to step 7.

1. Loosen bleed plug (1).
2. Remove two cotter pins (4) and pin (3) from idler arm assembly (2). Discard cotter pins.



11-10. TRACK ADJUSTER AND MOUNTING BRACKET REPLACEMENT (continued).

3. Remove screw (11) and washer (10) from mounting bracket (5).
4. Install new capscrew and washer in pivot pin (9).
5. Using mechanical puller, remove capscrew, washer, pivot pin (9), and track adjuster (7) from mounting bracket (5). Remove capscrew and washer from pivot pin (9).
6. Remove two screws (8) and mounting bracket (5) from hull.
7. Remove bleed plug (1) and lubrication fitting (6) from track adjuster (7).



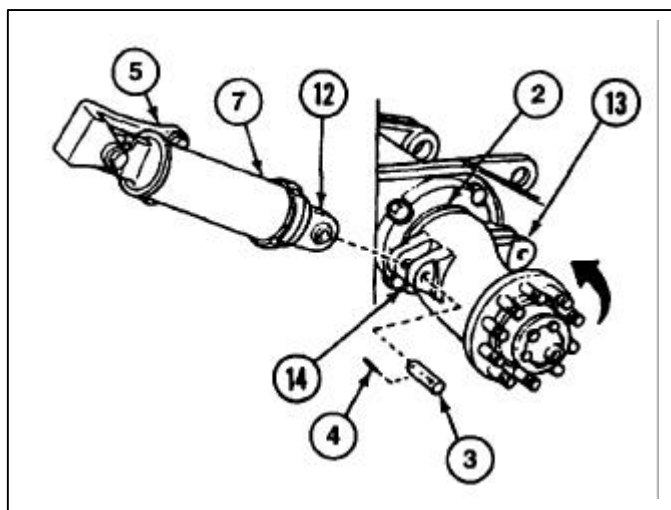
b. INSTALLATION

1. Apply antiseizing tape to threaded portion of bleed plug (1).
2. Install bleed plug (1) and lubrication fitting (6) on track adjuster (7).
3. Add grease to track adjuster (7) through lubrication fitting (6) until piston (12) is extended 1/2 to 1 inch.
4. Install mounting bracket (5) on hull with two screws (8), and torque screws between 360 and 420 ft-lb (488 and 570 N•m).

NOTE

An assistant is needed to hold track adjuster in place during installation of pins.

5. Position track adjuster (7) in mounting bracket (5) and idler arm assembly (2).
6. Install pivot pin (9) in mounting bracket (5).
7. Install pin (3) in lug hole (13) in idler arm assembly (2). Rotate idler arm assembly (2) counterclockwise with pry bar to align track adjuster (7) with lug hole (14).
8. Remove pin (3) from lug hole (13).
9. Install pin (3) and two new cotter pins (4) in idler arm assembly (2).
10. Install screw (11) and washer (10) in pivot pin (9). Torque screw between 300 and 350 ft-lb (407 and 475 N•m).



FOLLOW-ON MAINTENANCE:

- Install track (para 11-14).

11-11. FINAL DRIVE SPROCKET AND HUB REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix I)
- Socket extension, 8-inch, 3/4-inch drive (Item 55, Appendix I)
- Socket wrench, 1-inch, 3/4-inch drive (Item 58, Appendix I)
- Torque wrench, 0-175 ft-lb (Item 69, Appendix I)
- Torque wrench, 0-600 ft-lb, 3/4-inch drive (Item 70, Appendix I)

Materials/Parts:

- Self-locking screw (8) (Item 301, Appendix H)
- Self-locking nut (20) (Item 327, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Track disconnected (para 11-14).

a. REMOVAL

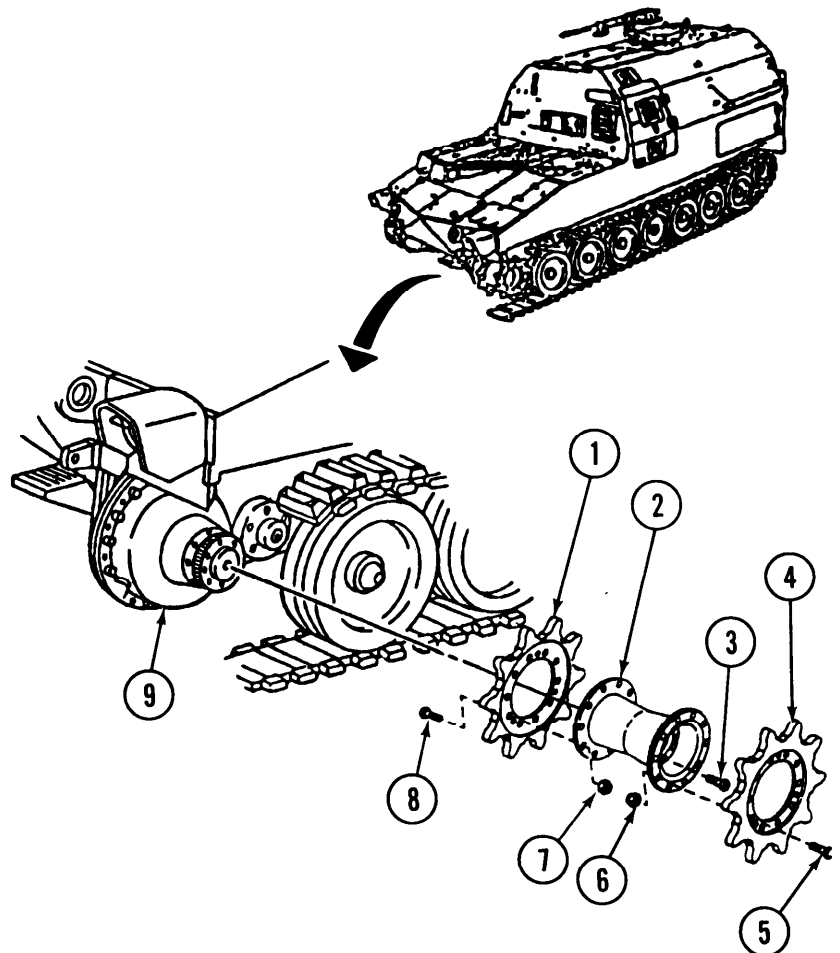
WARNING

Hub is very heavy. To prevent injury, at least two people are needed when removing hub.

NOTE

Hub with inner and outer sprockets attached may be removed as an assembly by removing eight screws.

1. Remove 10 self-locking nuts (6) and screws (5) and outer sprocket (4) from hub (2). Discard self-locking nuts.
2. Remove eight self-locking screws (3) from hub (2). Insert two self-locking screws (3) in hub pilot holes. Tighten to pull hub (2) and inner sprocket (1) away from drive assembly (9). Discard six self-locking screws.



11-11. FINAL DRIVE SPROCKET AND HUB REPLACEMENT (continued).

3. Remove 10 self-locking nuts (7) and screws (8) and inner sprocket (1) from hub (2). Remove two self-locking screws (3) from hub pilot holes. Discard self-locking nuts and self-locking screws.

b. INSTALLATION

1. Install inner sprocket (1) on hub (2) with 10 screws (8) and new self-locking nuts (7). Torque to 90 ft-lb (122 N•m).

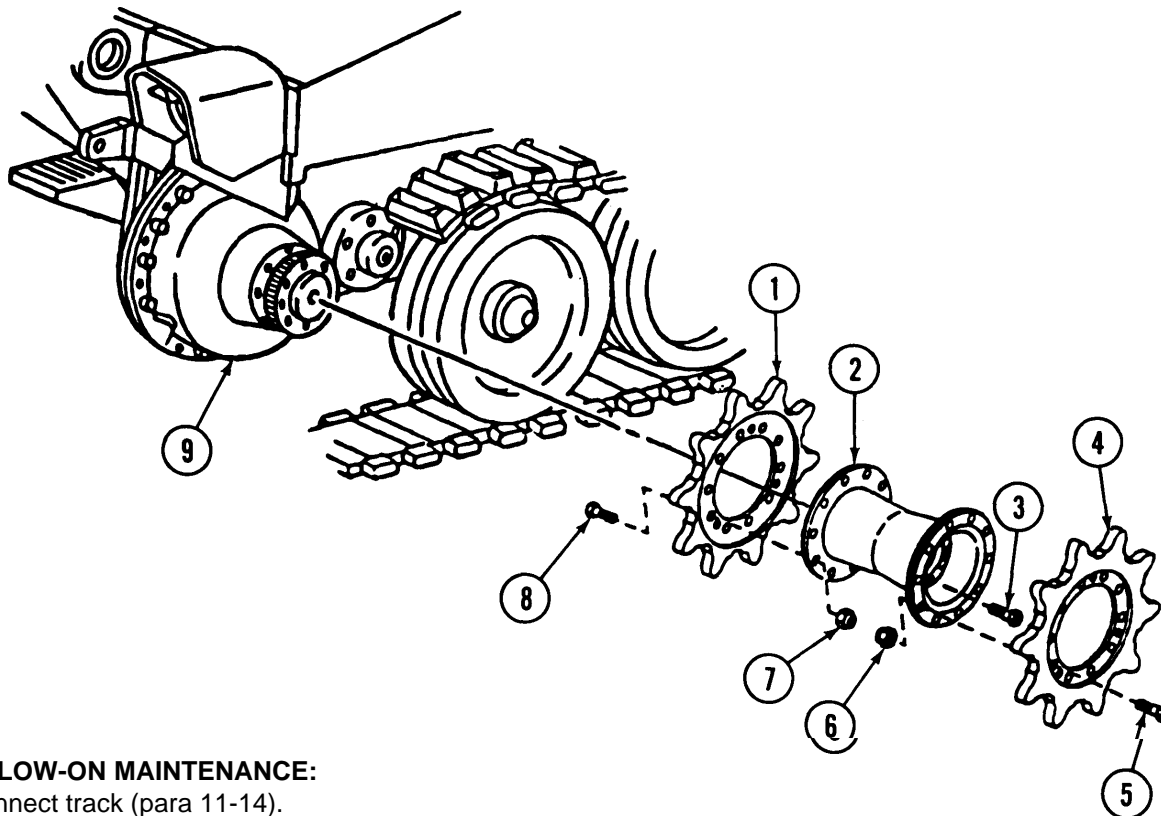
WARNING

Hub is very heavy. To prevent injury, at least two people are needed when installing hub.

NOTE

Hub with inner and outer sprockets attached may be installed as an assembly by securing with eight screws.

2. Install hub (2) on drive assembly (9) with eight new self-locking screws (3). Torque screws between 450 and 475 ft-lb (610 and 644 N•m).
3. Install outer sprocket (4) with 10 screws (5) and new self-locking nuts (6) on hub (2). Torque nuts to 90 ft-lb (122 N•m).



FOLLOW-ON MAINTENANCE:

- Connect track (para 11-14).

11-12. TRACK PAD REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0-175 ft-lb (Item 69, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Rag (Item 56, Appendix D)
- Track shoe kit (Item 377, Appendix H)

a. REMOVAL

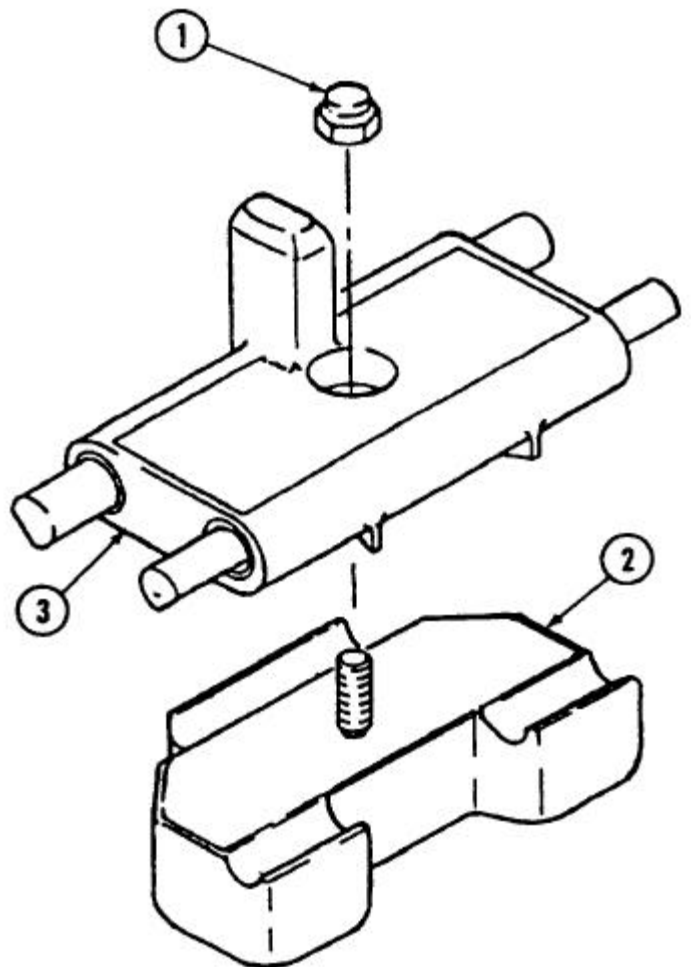
Remove self-locking nut (1) and track pad (2) from track shoe (3). Discard self-locking nut and track pad.

NOTE

When installing track shoe pads, avoid creating a "hill and valley" profile. Isolated high points will wear quickly. Adjacent pads should be the same height. Do not install pads in an irregular profile; shuffle pads to maintain a smooth profile.

b. INSTALLATION

1. Remove dirt and debris from track shoe (3).
2. Install new track pad (2) on track shoe (3) with new self-locking nut (1). Torque between 110 and 150 ft-lb (149 and 203 N•m).

**FOLLOW-ON MAINTENANCE:**

- None

11-13. TRACK SHOE REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- Crowbar (Item 12, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench socket, 1 1/8-inch, 3/4-inch drive (Item 60, Appendix I)
- Socket wrench handle, 3/4-inch drive (Item 61, Appendix I)
- Socket wrench socket, 1 1/2-inch, 3/4-inch drive (Item 62, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)
- Track connecting fixture (2) (Item 71, Appendix I)

- Track end connector puller (2) (Item 72, Appendix I)

Materials/Parts:

- Track end connector kit (Item 376, Appendix H)

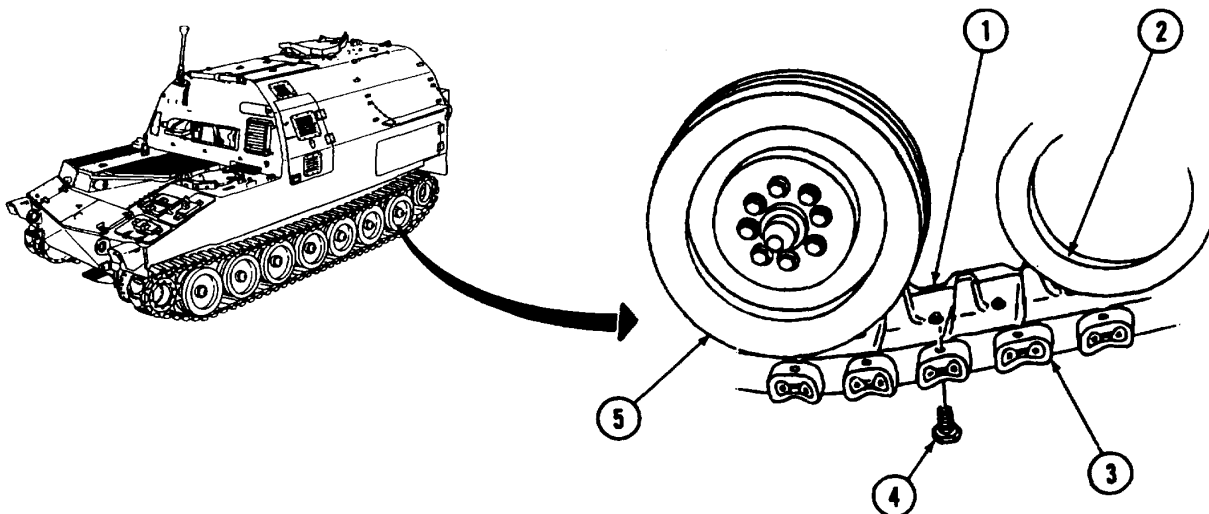
Personnel Required: Two**Equipment Conditions:**

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL**NOTE**

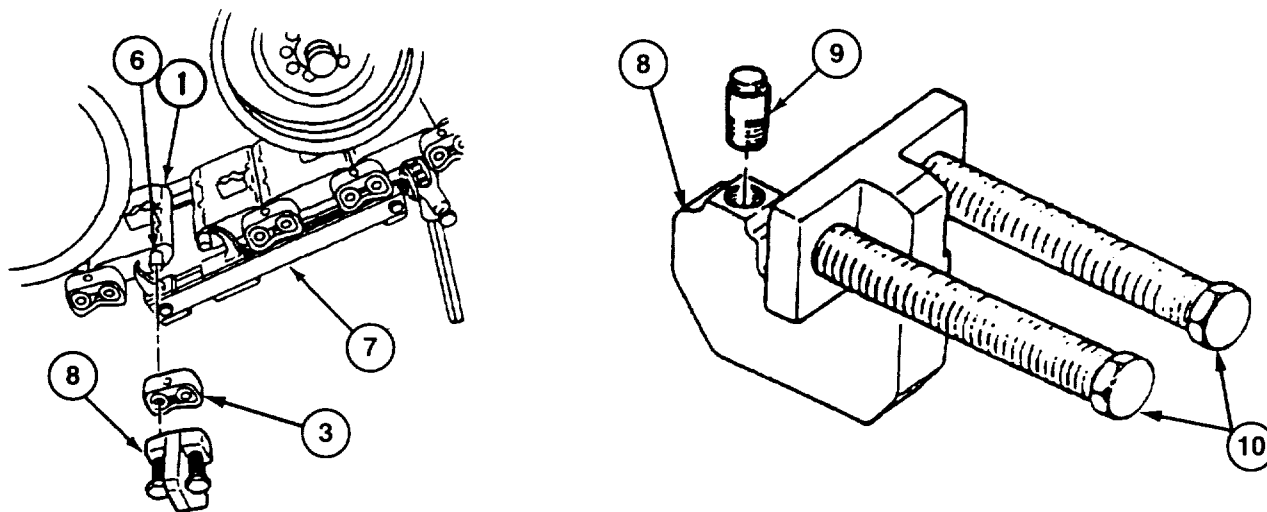
Locking hardware is designed for one-time use only. All self-locking fasteners must be replaced upon removal.

1. Move vehicle so track shoe (1) to be removed is midway between roadwheel (5) and idler wheel (2).
2. Shut off vehicle engine (refer to TM 9-2350-287-10), and block track with chock blocks. Do not set parking brake.
3. Decrease track tension (refer to TM 9-2350-287-10).
4. Remove four bolts (4) from four end connectors (3) on track shoe (1). Discard bolts.



11-13. TRACK SHOE REPLACEMENT (continued).

5. Install end connector puller (8) through bolt hole in end connector (3). End connector puller (8) must rest flat on end connector (3), and straight pin (9) must engage bolt hole on both sides of end connector (3) so bolts (10) of end connector puller (8) engage two track link pins (6). Tighten or loosen straight pin (9) until end connector puller (8) is properly adjusted.

**CAUTION**

- Tighten bolts on end connector puller evenly, so end connector is pulled evenly off track link pins. Failure to do this can lead to damage to puller and track link pins.
- When tapping end connector puller with hammer, strike bolts squarely to avoid mushrooming the heads of bolts and damaging puller.

NOTE

To help loosen end connectors, tap bolts of end connector puller with hammer while moving or removing end connectors.

6. Using end connector puller (8), tighten two bolts (10) and move two end connectors (3) about one inch away from track shoe (1). If bolts (10) on end connector puller (8) bind, tap end connector puller (8) with hammer.
7. Install track connecting fixture (7) on two track link pins (6).
8. Using end connector puller (8), tighten two bolts (10) and remove two end connectors (3) from four track link pins (6). If end connectors (3) become cocked during removal, remove end connector puller (8) and tap end connector (3) with hammer until end connector (3) is straight on track link pins (6). Reinstall end connector puller (8), and continue to remove two end connectors (3).
9. Repeat steps 5 through 8 on two end connectors (3) on inside of track.

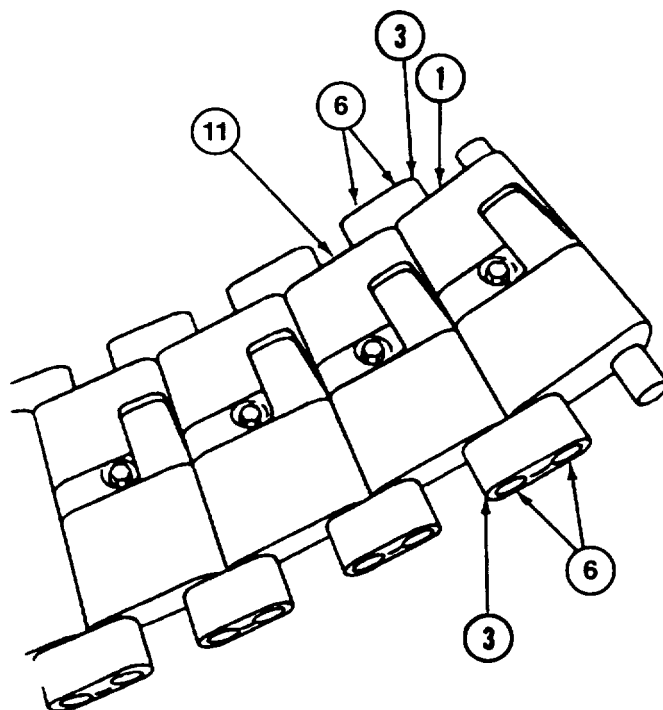
WARNING

Release tension on track connecting fixtures evenly. Track is under tension and can move suddenly, causing severe injury to personnel.

10. Remove two track connecting fixtures (7) and track shoe (1) from ends of track.

11-13. TRACK SHOE REPLACEMENT (continued).

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**b. INSTALLATION**

1. Install end connector (3) on track link pin (6) on track end (11).
2. Position new track shoe (1) on track end (11).
3. Lift end of track shoe (1) until track link pin (6) will fit into end connector (3). Tap end connector (3) with hammer until it seats flush with track link pin (6).
4. Install end connector (3) on two track link pins (6) on opposite side of track end (11) and track shoe (1). Tap end connector (3) with hammer until it seats flush with track link pin (6).

Change 1 11-30

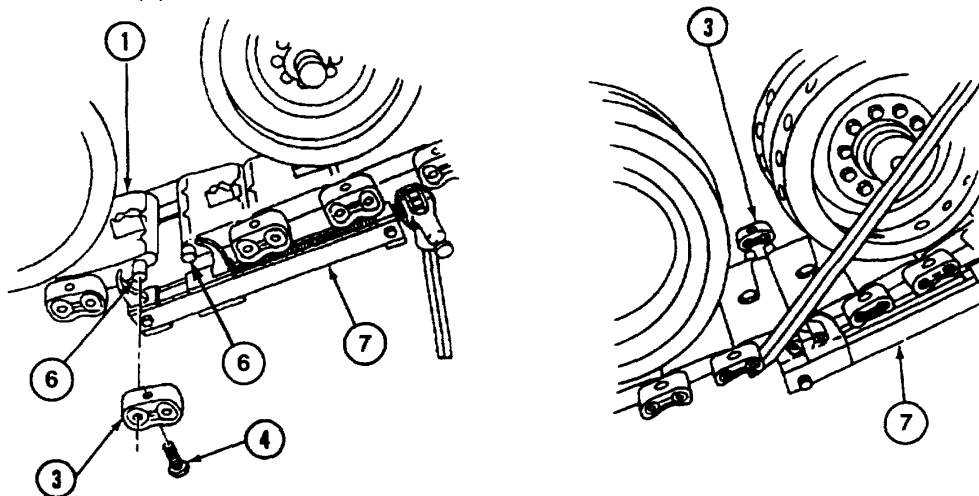
11-13. TRACK SHOE REPLACEMENT (continued).**WARNING**

Track is very heavy. To avoid injury, keep hands and feet from beneath track while it is being lifted.

NOTE

An assistant is needed to lift track end.

5. Using crowbar, lift end track shoe (1) until it is close enough to other end of track so that two track connecting fixtures (7) can be installed.
6. Install two track connecting fixtures (7) on two track link pins (6) and tighten until one end connector (3) will fit over outside track link pins (6). Tap end connector (3) with hammer until end connector (3) is about one inch away from track shoe (1).

**NOTE**

Track can be maneuvered by lifting with crowbar or pushing against inside of track to bow it out.

7. Maneuver track until end connector (3) can be installed over two inside track link pins (6). Tap end connector (3) with hammer until end connector (3) is about one inch away from track shoe.
8. Remove two track connecting fixtures (7) from track.
9. Tap two end connectors (3) with hammer to seat end connectors (3) flush with track link pins (6).
10. Install four new bolts (4) in four end connectors (3). With end connectors (3) at 12 o'clock position over idler wheel, torque bolts (4) between 380 and 420 ft-lb (515 and 569 N•m) wet.
11. Mark the end connectors (3).
12. Drive vehicle for a short distance at a speed not to exceed 10 miles per hour, alternating right and left steers.
13. Stop vehicle and visually inspect the four end connectors (3) of replaced track shoe. Reposition any end connectors that have shifted.
14. Torque four bolts (4).

FOLLOW-ON MAINTENANCE:

- Adjust track tension (refer to TM 9-2350-287-10).

11-14. TRACK REPLACEMENT.*This Task Covers:*

- a. Removal
- b. Installation

*Initial Setup:***Tools/Test Equipment:**

- Crowbar (Item 12, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench socket, 1 1/8-inch, 3/4-inch drive (Item 60, Appendix I)
- Socket wrench handle, 3/4-inch drive (Item 61, Appendix I)
- Socket wrench socket, 1 1/2-inch, 3/4-inch drive (Item 62, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

- Track connecting fixture (2) (Item 71, Appendix I)
- Track end connector puller (2) (Item 72, Appendix I)

Materials/Parts:

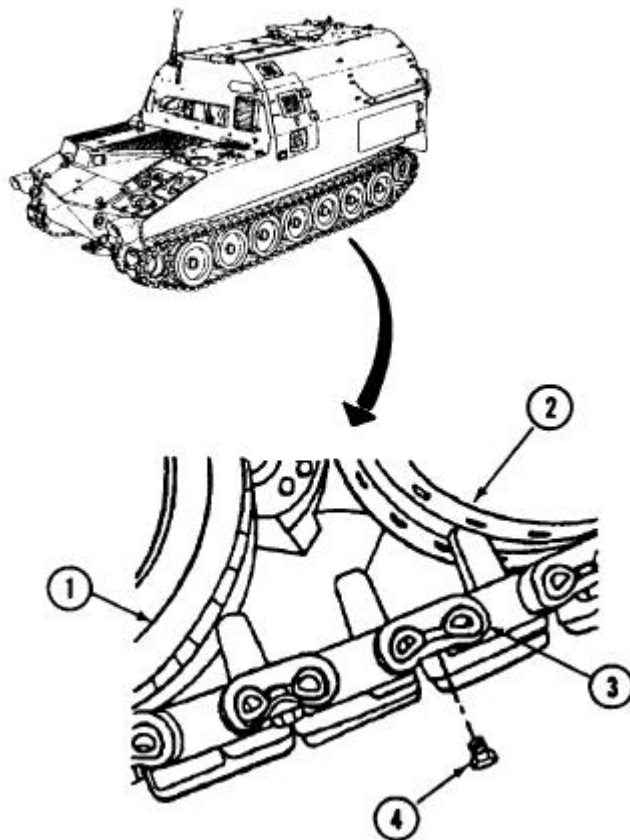
- Track end connector kit (Item 376, Appendix H)

Personnel Required: Two**Equipment Conditions:**

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

1. Position track disconnection point midway between No. 7 roadwheel (1) and idler wheel (2).
2. Shut off vehicle engine (refer to TM 92350-287-10), and block track with chock blocks. Do not set parking brake.
3. Decrease track tension (refer to TM 92350-287-10).
4. Remove two bolts (4) from opposite end connectors (3). Discard bolts.



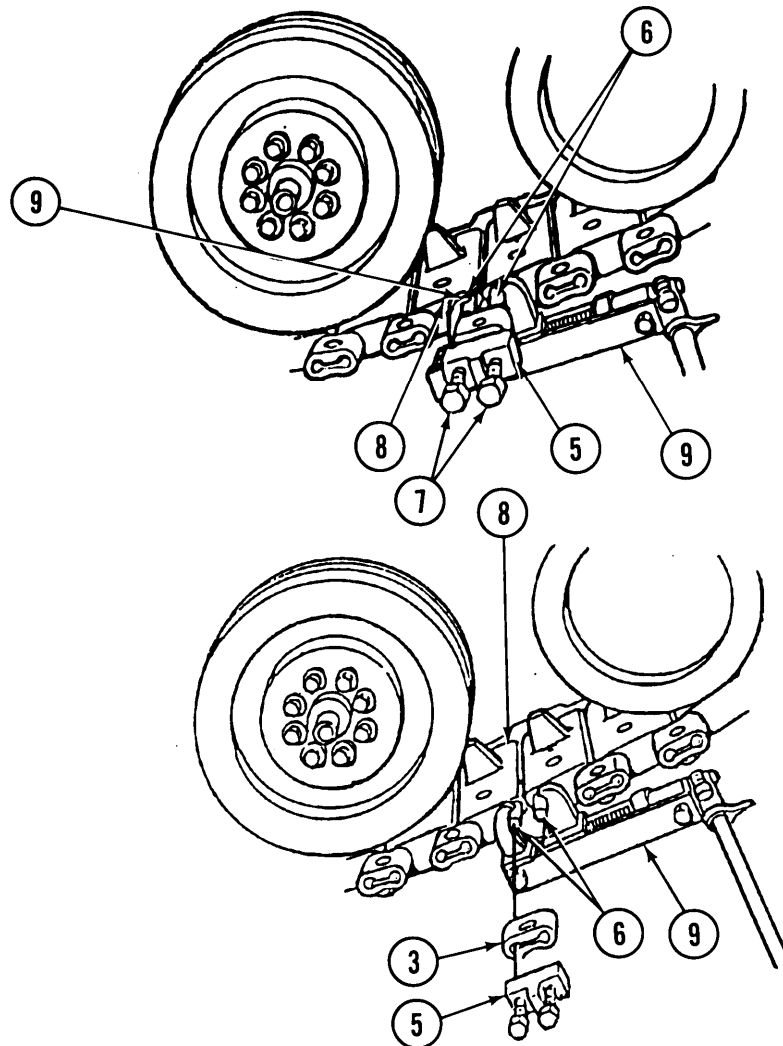
11-14. TRACK REPLACEMENT (continued).

5. Install end connector puller (5) on end connector (3).
6. Tighten two screws (7) against ends of two track link pins (6) until end connector (3) moves outward approximately 1 inch (25.4 mm).
7. Install two track connecting fixtures (9) to two track link pins (6) on opposite sides of track (8).
8. Remove end connector (3) and end connector puller (5) with two screws (7) from opposite sides of track (8).

WARNING

Before removing track connecting fixtures, support weight of track with crowbar to lower track to ground.

9. Remove two track connecting fixtures (9) from four track link pins (6).
10. With assistant, lower track (8) to ground.

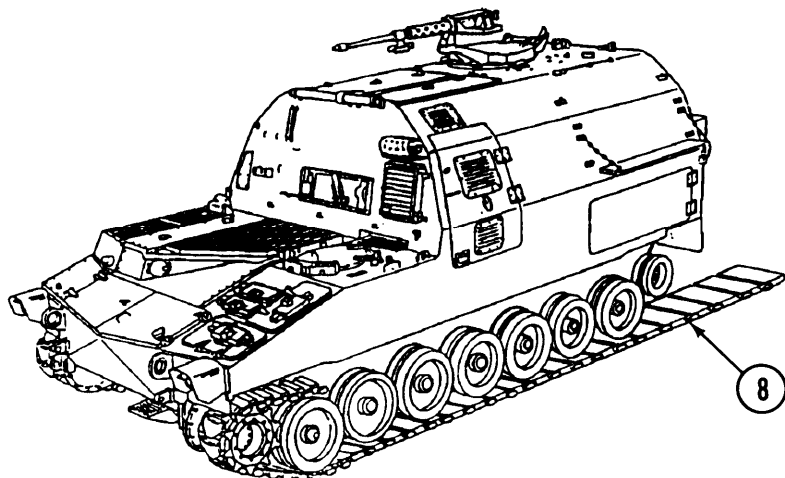


11-14. TRACK REPLACEMENT (continued).

CAUTION

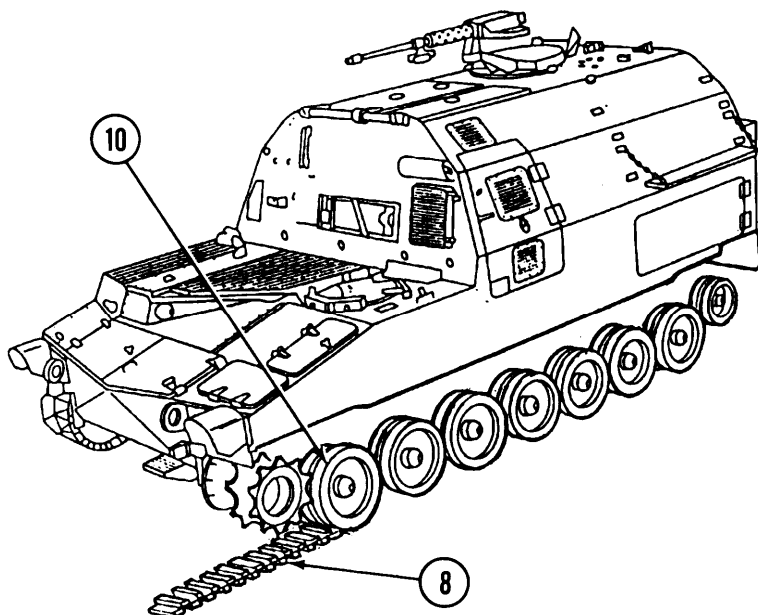
Use extreme care when moving vehicle on only one track. Drive slowly, moving short distances only.

11. Remove chock blocks and drive forward slowly until track (8) is detached from vehicle.



b. INSTALLATION

1. Lay out track (8) in front of vehicle in a straight line, touching first roadwheel (10).



11-14. TRACK REPLACEMENT (continued).

CAUTION

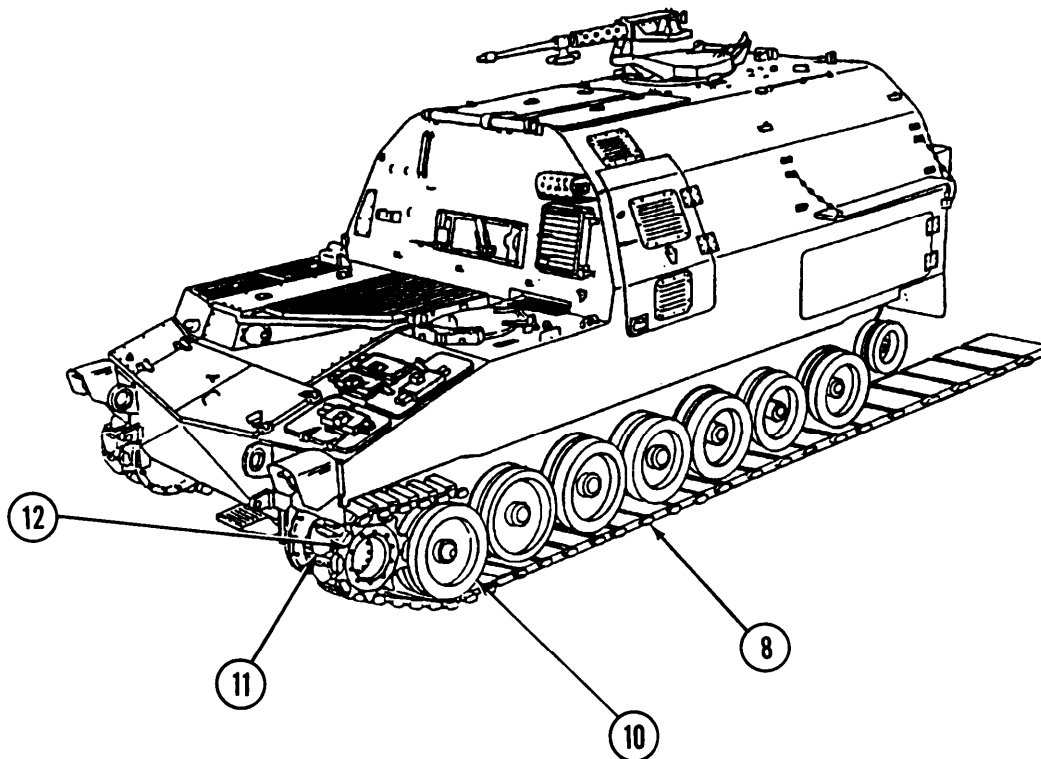
Use extreme care when moving vehicle on only one track. Drive slowly, moving short distances only.

2. Start engine (refer to TM 9-2350-287-10) and drive slowly onto track (8) until 11 track shoes (11) extend past centerline of first roadwheel (10).
3. Stop engine (refer to TM 9-2350-287-10) and block opposite track with chock blocks.

CAUTION

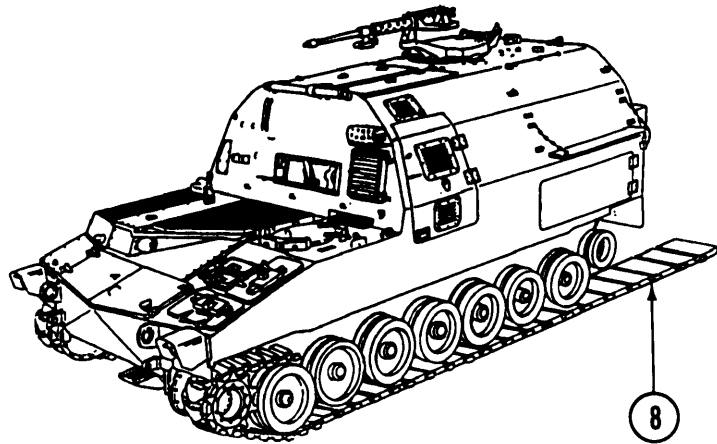
With crowbar, raise end of track to prevent it from getting caught between roadwheels.

4. Lift track (8), with crowbar over drive sprocket (12), to top of first roadwheel (10).

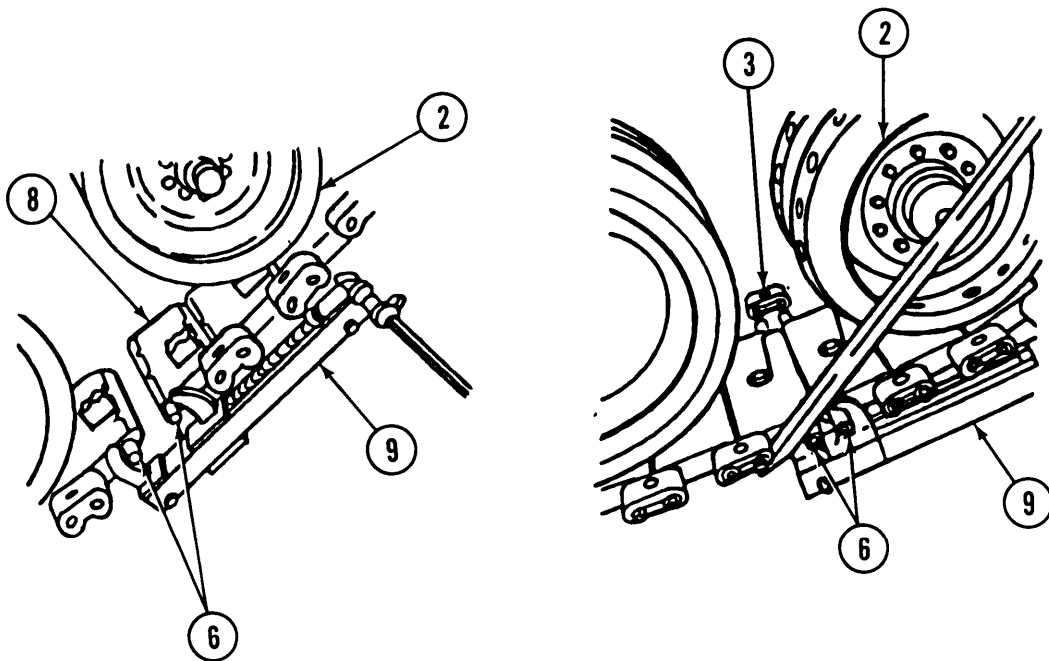


11-14. TRACK REPLACEMENT (continued).

5. Start engine (refer to TM 9-2350-287-10) and remove chock blocks from track.
6. Shift transmission lever into first gear and drive vehicle backward, steering in direction of removed track (8).
7. Stop when track (8) can be laid on idler wheel (2).
8. Drive vehicle backward slowly, steering toward opposite track (8).

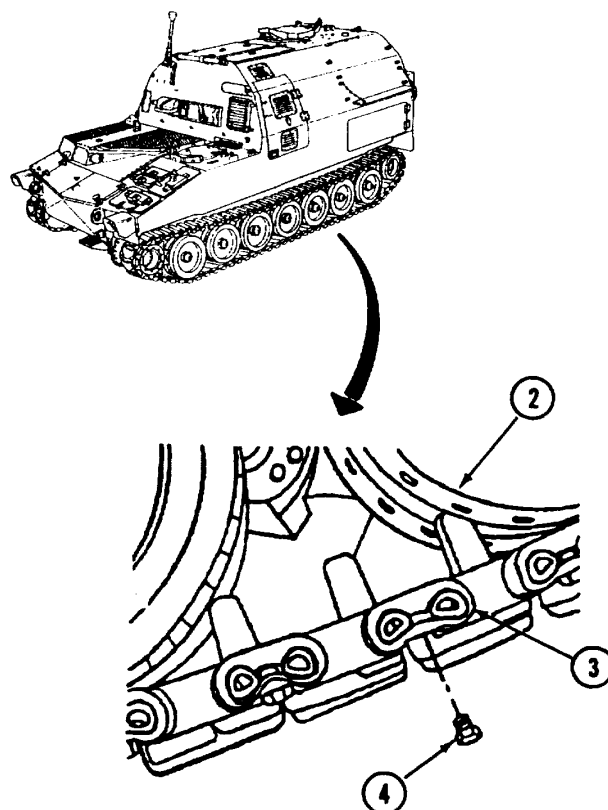


9. Stop vehicle when two track connecting fixtures (9) can be connected to two track link pins (6) on opposite sides of track (8).
10. Apply parking brakes.
11. Install two track connecting fixtures (9) over four track link pins (6).



11-14. TRACK REPLACEMENT (continued).

12. Tighten two track connecting fixtures (9) until four track link pins (6) are close enough for two end connectors (3) to be installed.
13. Install two end connectors (3) on four track link pins (6). Tap lightly with hammer until end connectors (3) are one inch away from track shoe.
14. Remove two track connecting fixtures (9) from four track link pins (6).
15. Tap two end connectors (3) lightly with hammer to seat connectors (3) flush with track link pins (6).
16. Drive forward until two end connectors (3) are at 12 o'clock position over idler wheel (2).
17. Install two new bolts (4) in two end connectors (3).
18. Torque bolts between 380 and 420 ft-lb (515 and 570 N•m).
19. Mark the end connectors (3).
20. Drive vehicle for a short distance at a speed not to exceed 10 miles per hour, alternating right and left steers.
21. Stop vehicle and visually inspect the four end connectors (3) of replaced track shoe. Reposition any end connectors that have shifted.
22. Torque four bolts (4).

**FOLLOW-ON MAINTENANCE:**

- Adjust track tension (refer to TM 9-2350-287-10).

CHAPTER 12 STEERING CONTROL LINKAGE MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
12-1	General	12-1
12-2	Steering Control Linkage Replacement	12-1

12-1. GENERAL.

This chapter illustrates and describes maintenance instructions for the steering control linkage.

12-2. STEERING CONTROL LINKAGE REPLACEMENT.

This task covers:

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

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Ž Safety wire (Item 257, Appendix H)

- Spring pin (Item 361, Appendix H)
- Spring pin (Item 362, Appendix H)
- Spring pin (Item 369, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Lubricant (Item 38, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (3) (Item 17, Appendix H)
- Lockpin (2) (Item 116, Appendix H)
- Lockwasher (2) (Item 175, Appendix H)
- Lockwasher (11) (Item 177, Appendix H)
- Lockwasher (3) (Item 196, Appendix H)
- Retaining ring (Item 246, Appendix H)
- Retaining ring (Item 247, Appendix H)
- Retaining ring (2) (Item 249, Appendix H)

References: TM 9-214

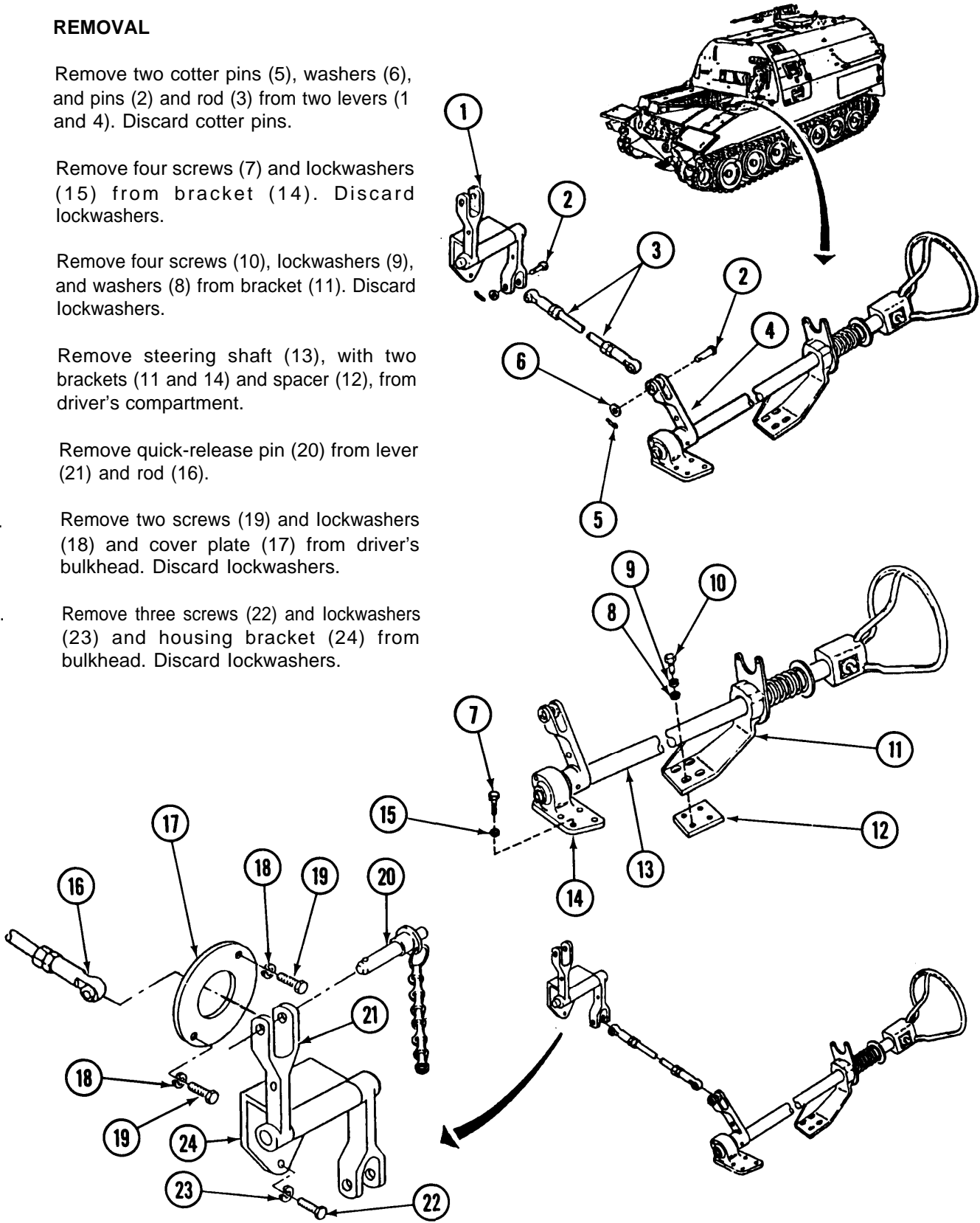
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).
- Transmission access doors opened (refer to TM 9-2350-287-10).
- Ž Master warning light removed (para 7-35).

12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

a. REMOVAL

1. Remove two cotter pins (5), washers (6), and pins (2) and rod (3) from two levers (1 and 4). Discard cotter pins.
2. Remove four screws (7) and lockwashers (15) from bracket (14). Discard lockwashers.
3. Remove four screws (10), lockwashers (9), and washers (8) from bracket (11). Discard lockwashers.
4. Remove steering shaft (13), with two brackets (11 and 14) and spacer (12), from driver's compartment.
5. Remove quick-release pin (20) from lever (21) and rod (16).
6. Remove two screws (19) and lockwashers (18) and cover plate (17) from driver's bulkhead. Discard lockwashers.
7. Remove three screws (22) and lockwashers (23) and housing bracket (24) from bulkhead. Discard lockwashers.



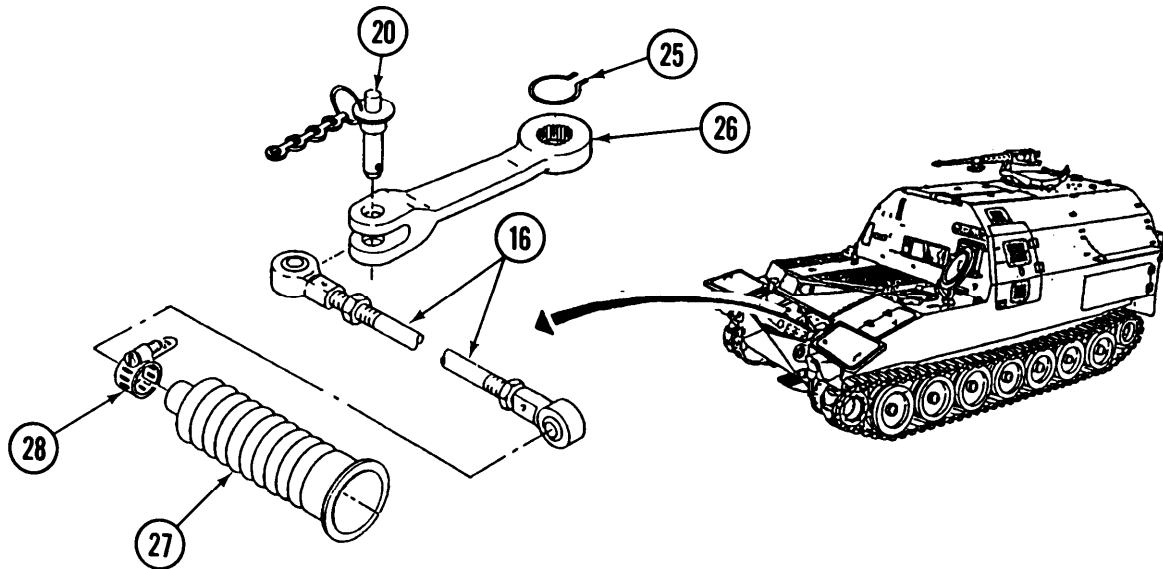
12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

8. Remove quick-release pin (20) from steering control lever (26).
9. Remove rod (16), with dust boot (27) and clamp (28), from steering control lever (26).

NOTE

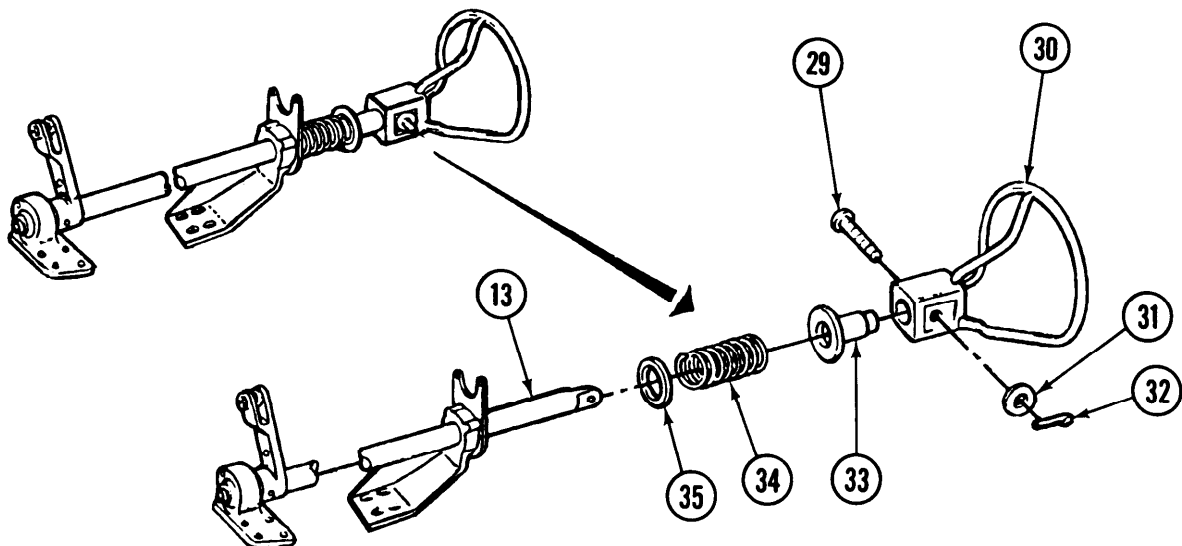
Perform step 10 only if steering control lever is damaged or requires replacement.

10. Remove retaining ring (25) and steering control lever (26) from transmission shaft. Discard retaining ring.



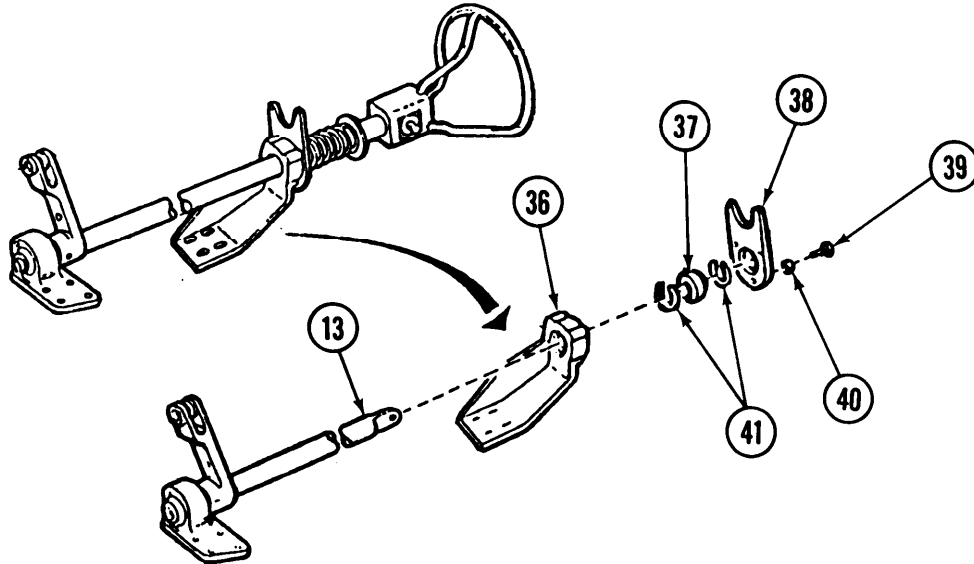
b. DISASSEMBLY

1. Remove cotter pin (32), washer (31), pin (29), and steering wheel (30) from front shaft (13). Discard cotter pin.
2. Remove sleeve (33), spring (34), and washer (35) from shaft (13).

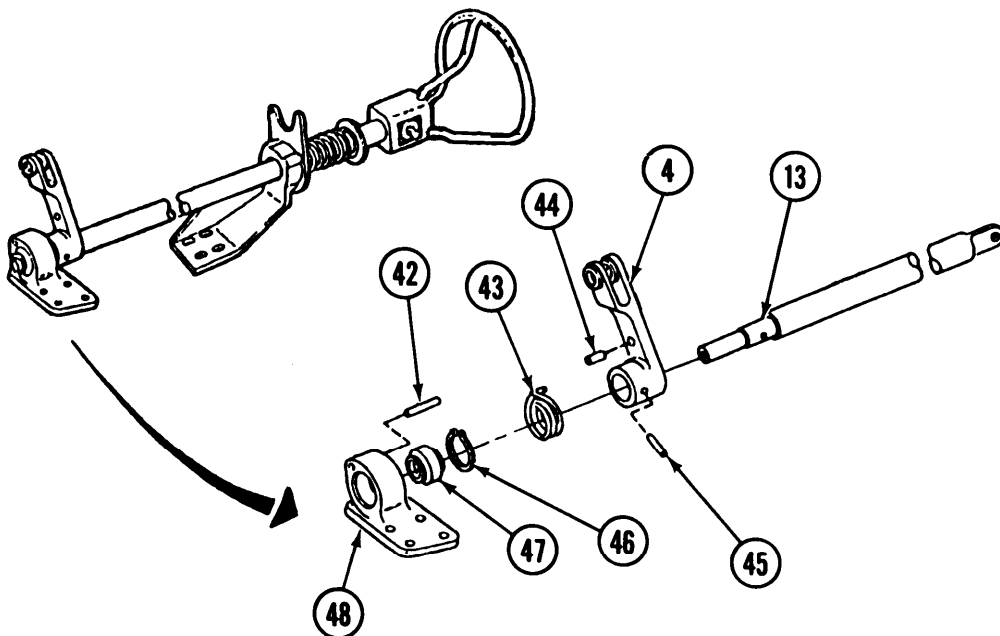


12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

3. Remove three screws (39) and lockwashers (40) and master warning light bracket (38) from bracket (36). Discard lockwashers.
4. Remove two retaining rings (41), bearing (37), and bracket (36) from shaft (13). Discard retaining rings.



5. Remove bracket (48) from shaft (13).
6. Remove spring pin (42), retaining ring (46), and bearing (47) from bracket (48). Discard spring pin and retaining ring.

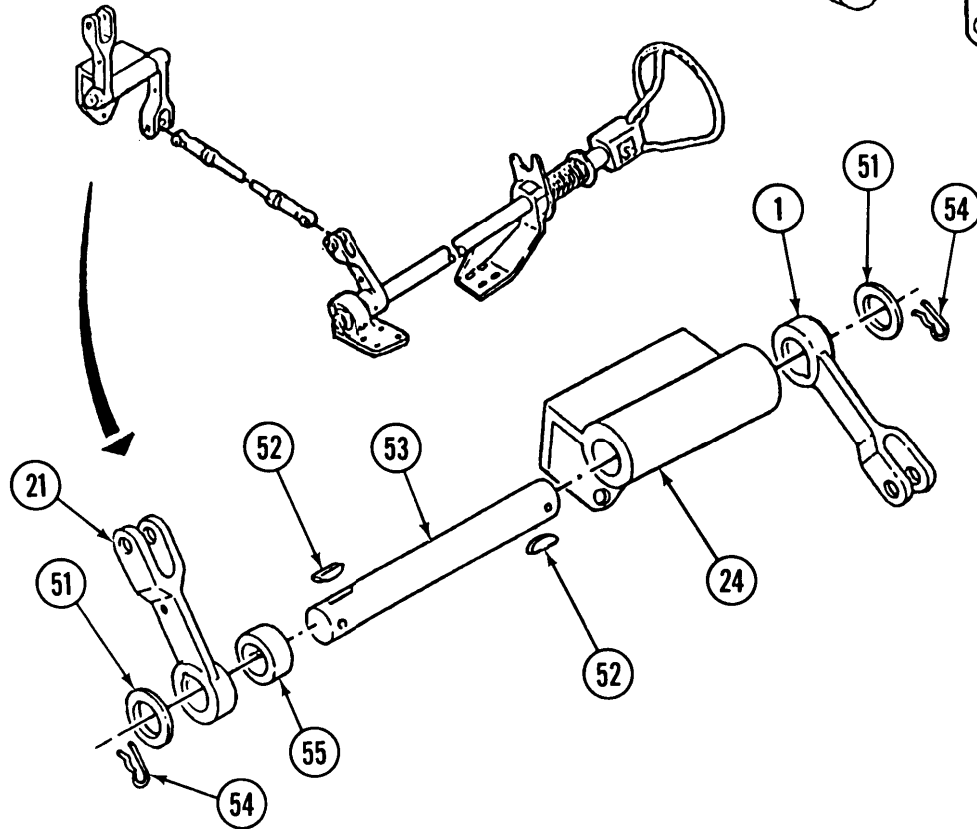
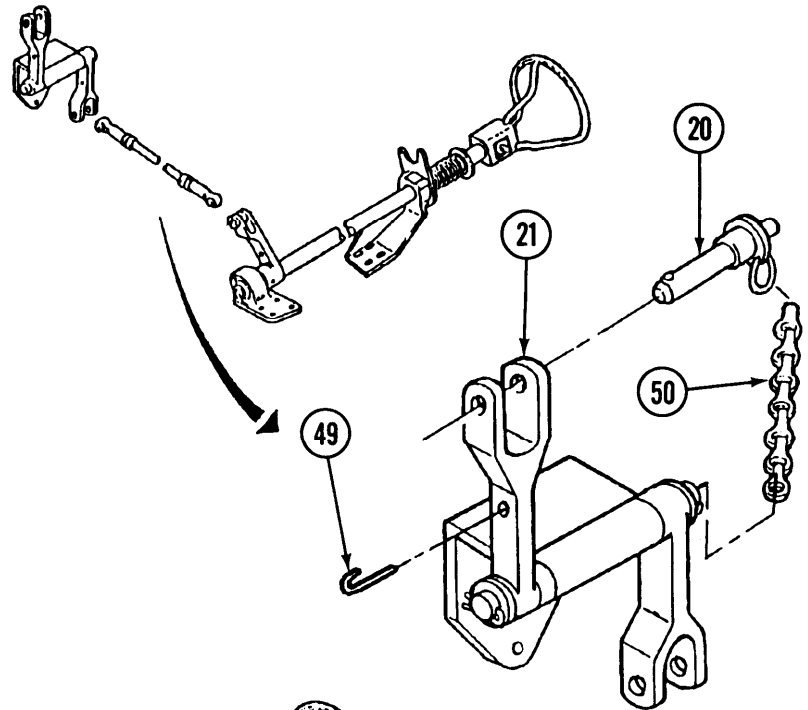


12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

WARNING

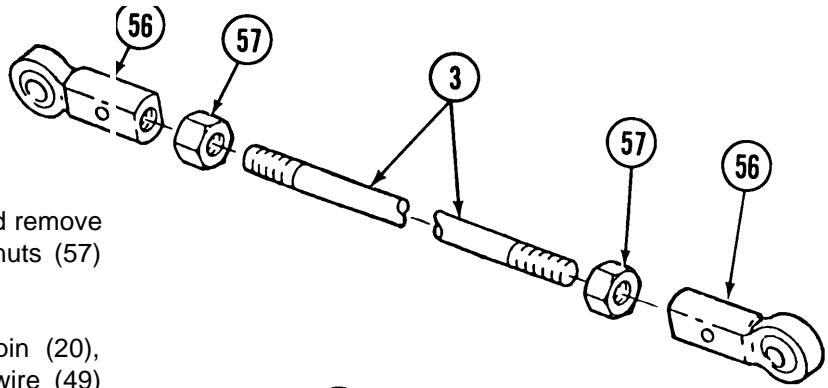
Spring located within steering shaft assembly is under tension and may snap out of position when spring pin is removed. To avoid injury to personnel, use care during removal.

7. Remove spring pin (45) from lever (4). Discard spring pin.
8. Remove spring pin (44), spring (43), and lever (4) from shaft (13). Discard spring pin.
9. Remove quick-release pin (20), chain (50), and safety wire (49) from lever (21). Discard safety wire.
10. Remove two lockpins (54), washers (51), and levers (1 and 21) from shaft (53). Discard lockpins.
11. Remove two Woodruff keys (52), spacer (55), and shaft (53) from housing bracket (24).



12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

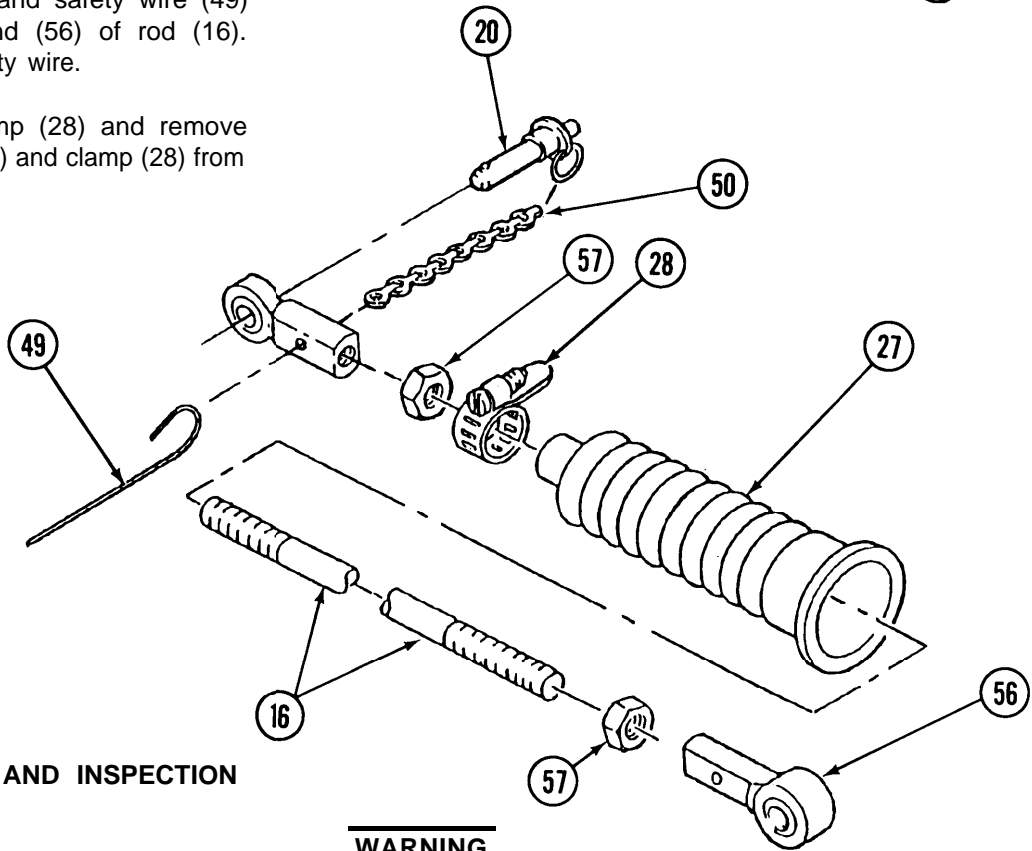
- 12. Loosen two nuts (57) and remove rod ends (56) and nuts (57) from rod (3).



- 13. Loosen two nuts (57) and remove two rod ends (56) and nuts (57) from rod (16).

- 14. Remove quick-release pin (20), chain (50), and safety wire (49) from rod end (56) of rod (16). Discard safety wire.

- 15. Loosen clamp (28) and remove dust boot (27) and clamp (28) from rod (16).



c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

CAUTION

Do not clean rubber or plastic parts with drycleaning solvent. Damage to rubber or plastic parts may result.

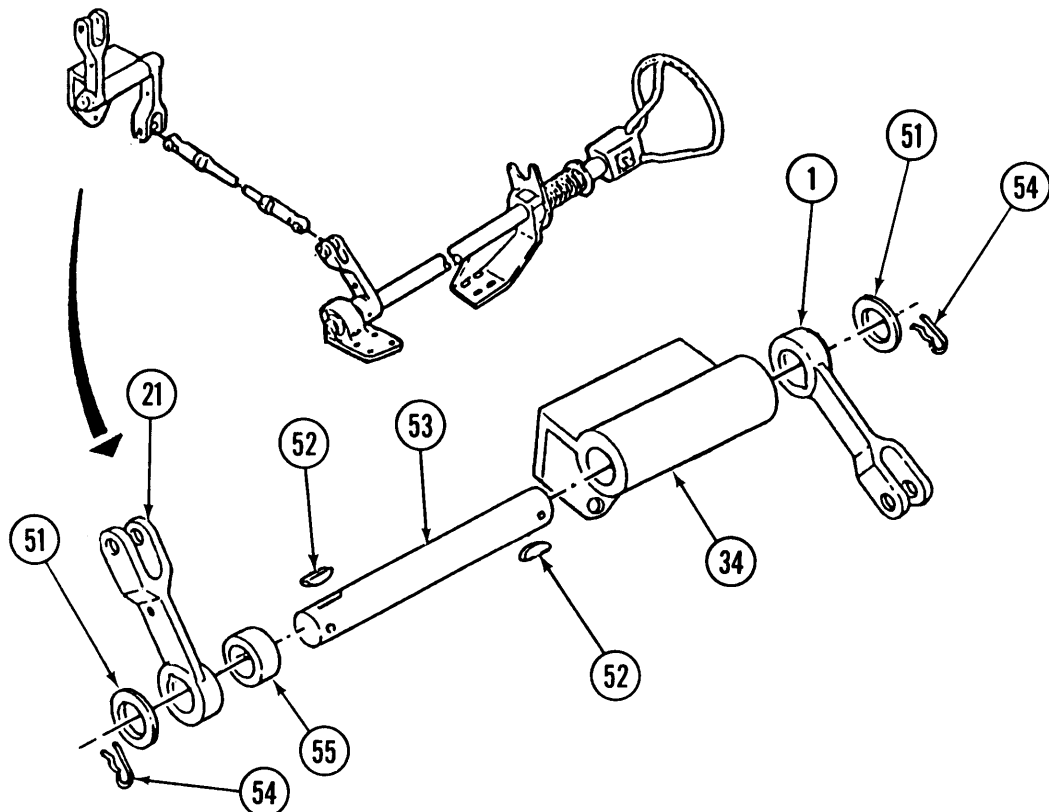
- 1. For cleaning of threaded rod ends, refer to TM9-214.

12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

2. Clean all remaining metal parts with drycleaning solvent and clean, dry rags.
3. Inspect all parts for damage or excessive wear. Replace any damaged or worn parts.

d. ASSEMBLY

1. Slide dust boot (27) and clamp (28) onto rod (16). Do not tighten clamp until final adjustment of steering controls.
2. Slide quick-release pin (20), chain (50), and new safety wire (49) onto rod end (56) of rod (16).
3. Install two nuts (57) and rod ends (56) on rod (16). Do not tighten nuts (57) until final adjustment.
4. Adjust rod (16) and rod ends (56) so that center-to-center distance between rod ends (56) is $16\frac{3}{4}$ inches.
5. Install two nuts (57) and rod ends (56) on rod (3). Do not tighten nuts (57) until final adjustment.
6. Adjust rod (3) so that center-to-center distance between rod ends (56) is $8\frac{11}{16}$ inches.
7. Apply lubricant to friction surfaces of housing bracket (24).
8. Install shaft (53), spacer (55), and two Woodruff keys (52) in housing bracket (24).
9. Install two levers (1 and 21), washers (51), and new lockpins (54) on shaft (53).

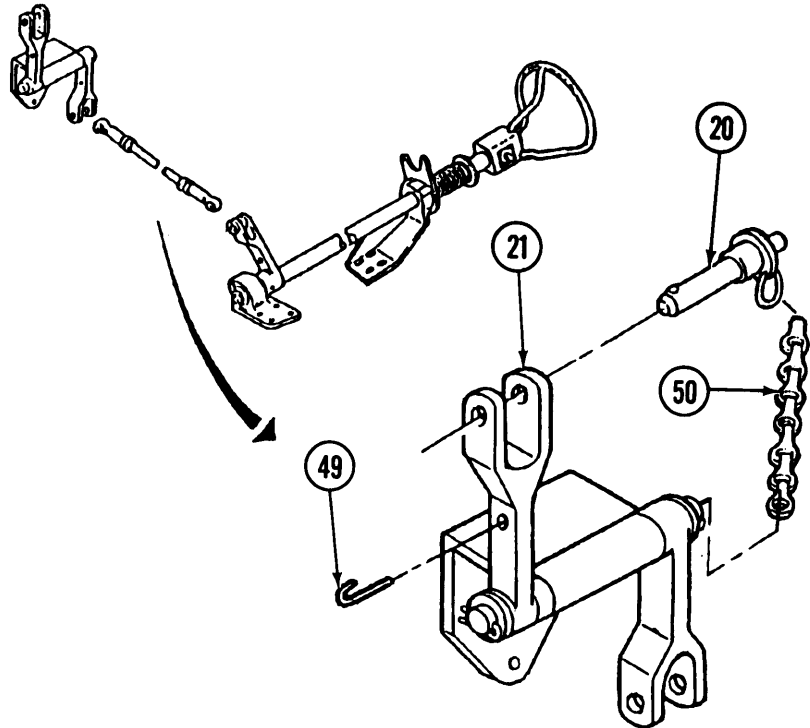


12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

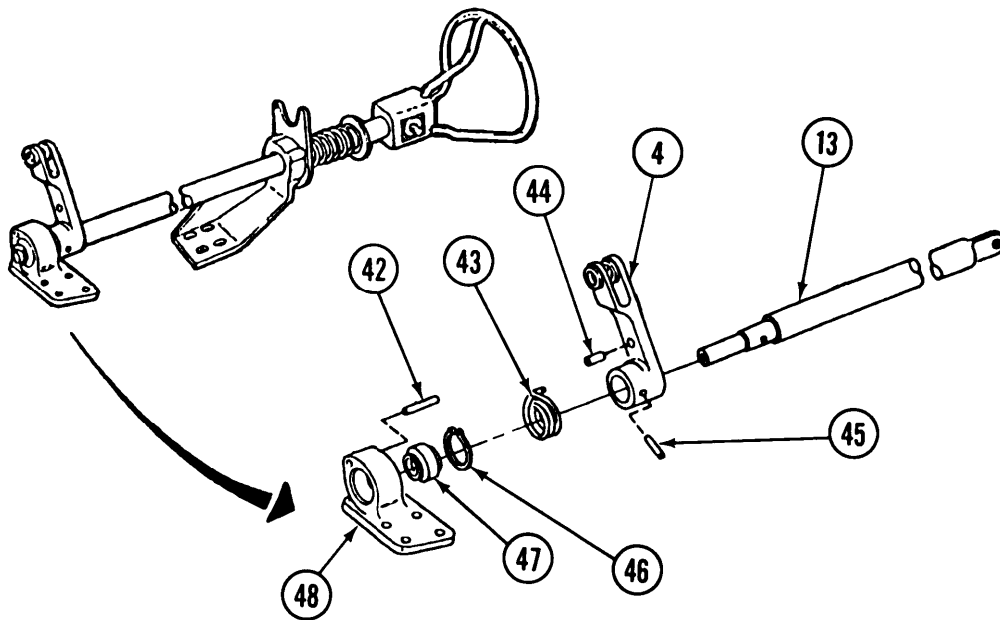
10. Secure quick-release pin (20) and chain (50) to lever (21) with safety wire (49).

WARNING

Spring located "within steering shaft assembly is under tension and may snap out of position when spring pin is installed. To avoid injury to personnel, use care during installation.

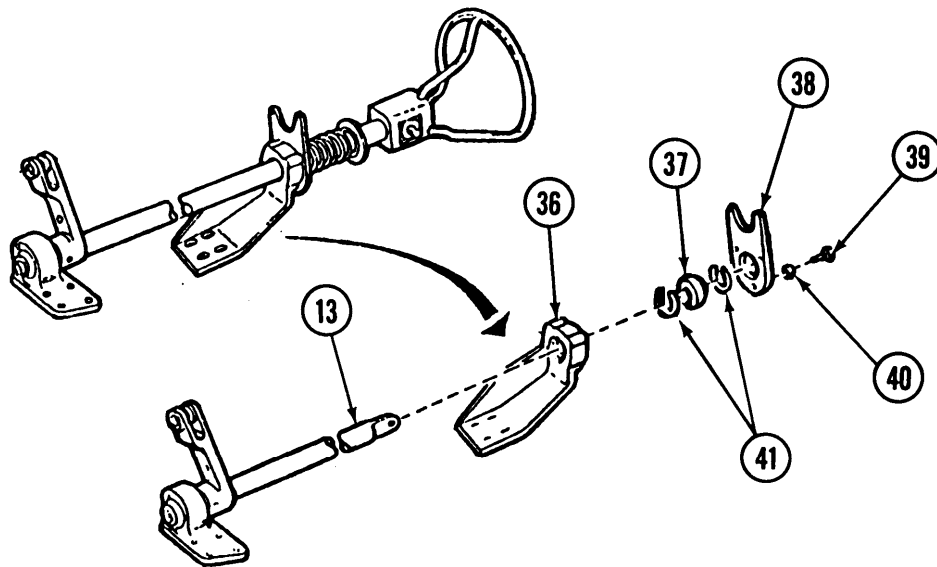


11. Install new spring pin (44) and spring (43) on lever (4).
12. Install lever (4) and new spring pin (45) on shaft (13).
13. Install bearing (47), new retaining ring (46), and new spring pin (42) on bracket (48).
14. Install shaft (13) on bracket (48).

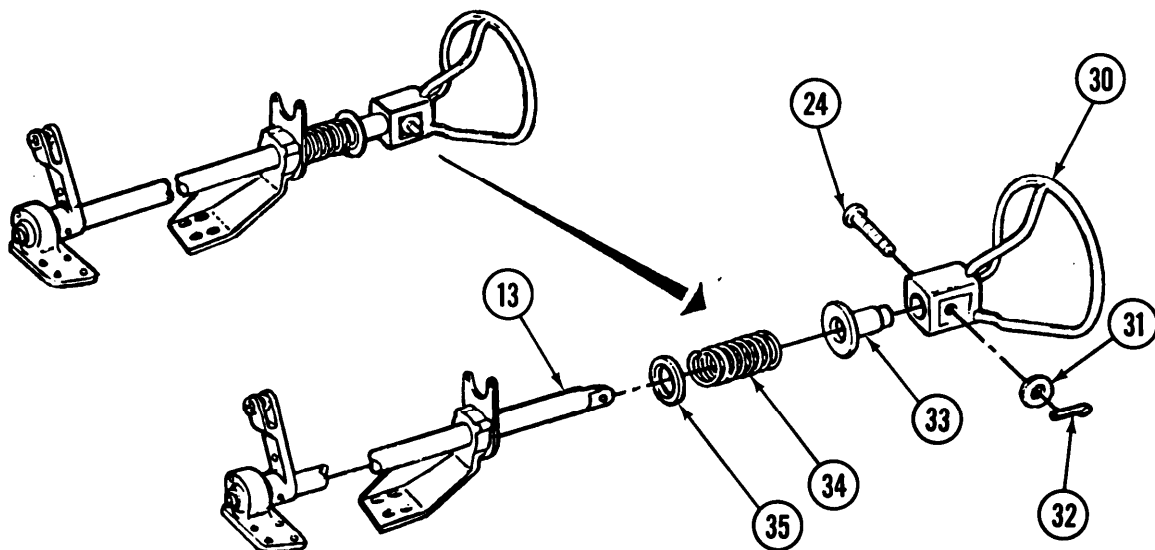


15. Install bracket (36) on shaft (13) with bearing (37) and two new retaining rings (41).
16. Install master warning light bracket (38) on bracket (36) with three screws (39) and new lockwashers (40).

12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).



17. Install washer (35), spring (34), and sleeve (33) on shaft (13).
18. Install steering wheel (30) on shaft (13) with pin (29), washer (31), and new cotter pin (32).



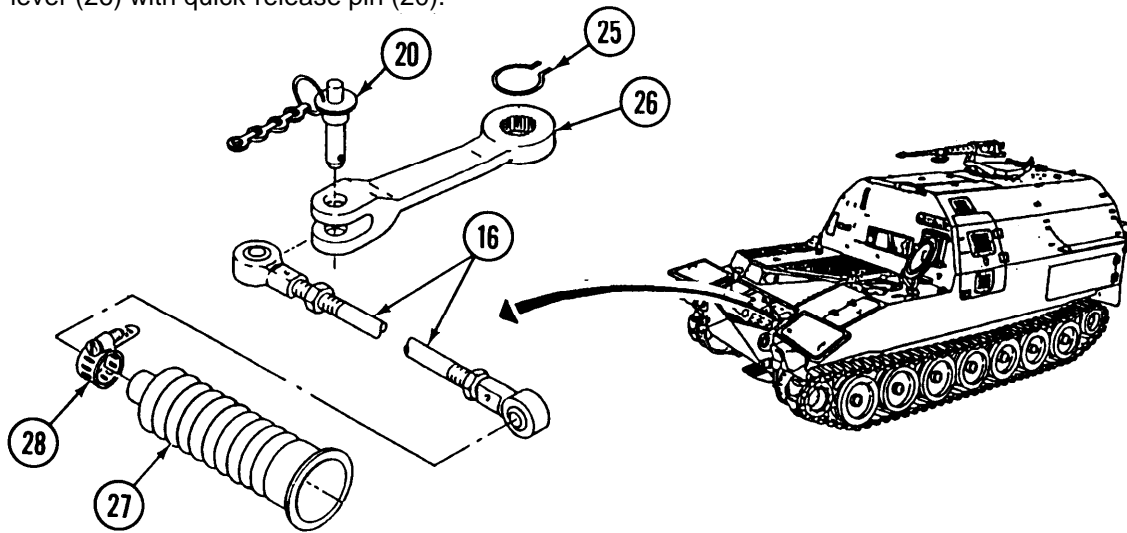
12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

e. INSTALLATION

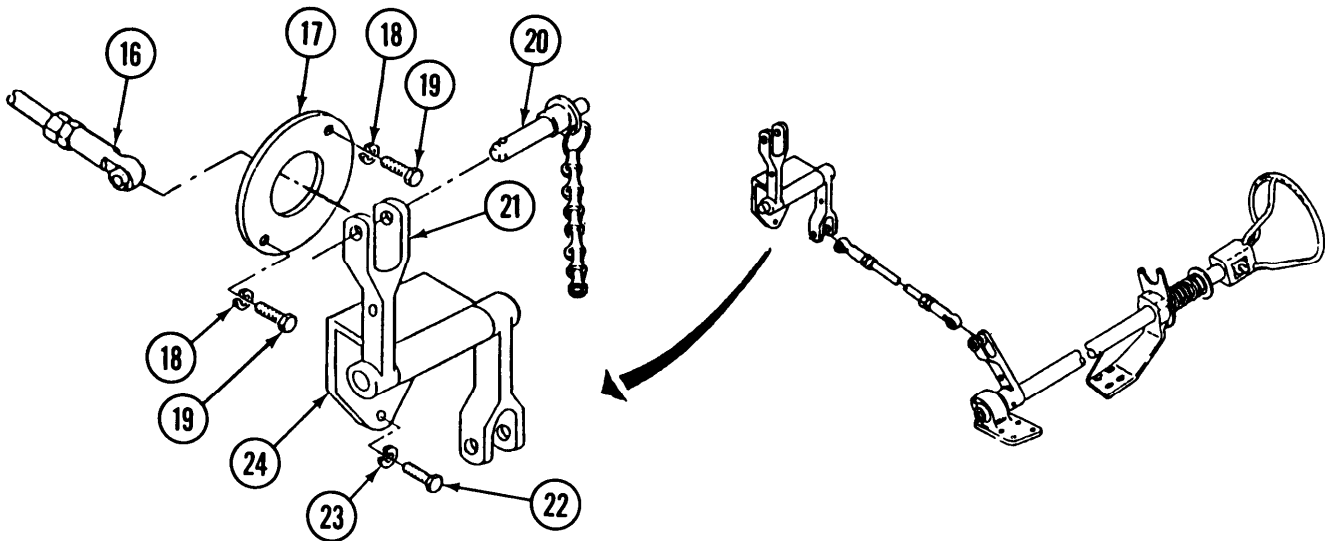
NOTE

- After installation is complete, final-tighten all mounting bracket screws at the same time.
- All washers and cotter pins used in the installation of rod ends may be installed after final adjustment of steering controls.

1. If removed, install steering control lever (26) on transmission shaft with new retaining ring (25).
2. install rod (16), including dust boot (27) and clamp (28), through bulkhead and secure to steering control lever (26) with quick-release pin (20).

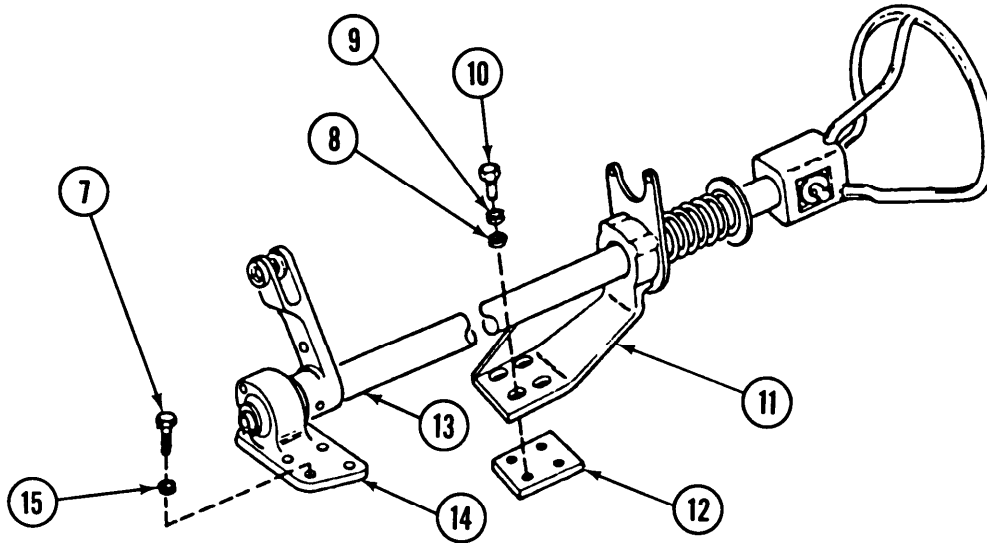


3. Install housing bracket (24) on bulkhead with three screws (22) and new lockwashers (23).
4. Install cover plate (17) on driver's bulkhead with two screws (19) and new lockwashers (18).
5. Connect rod (16) to lever (21) with quick-release pin (20).

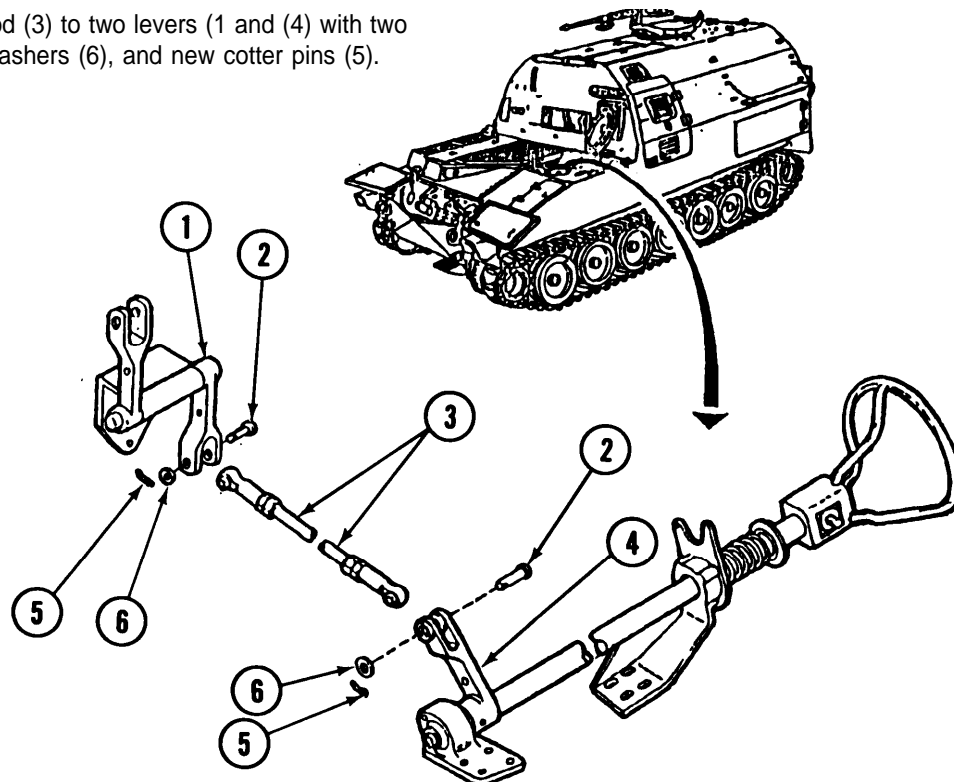


12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

6. Position steering shaft (13) in driver's compartment with two brackets (11 and 14) and spacer (12).
7. Install bracket (11) and spacer (12) in driver's compartment with four screws (10), new lockwashers (9), and washers (8).
8. Install bracket (14) in driver's compartment with four screws (7) and new lockwashers (15). Tighten all screws at this time.



9. Connect rod (3) to two levers (1 and 4) with two pins (2), washers (6), and new cotter pins (5).



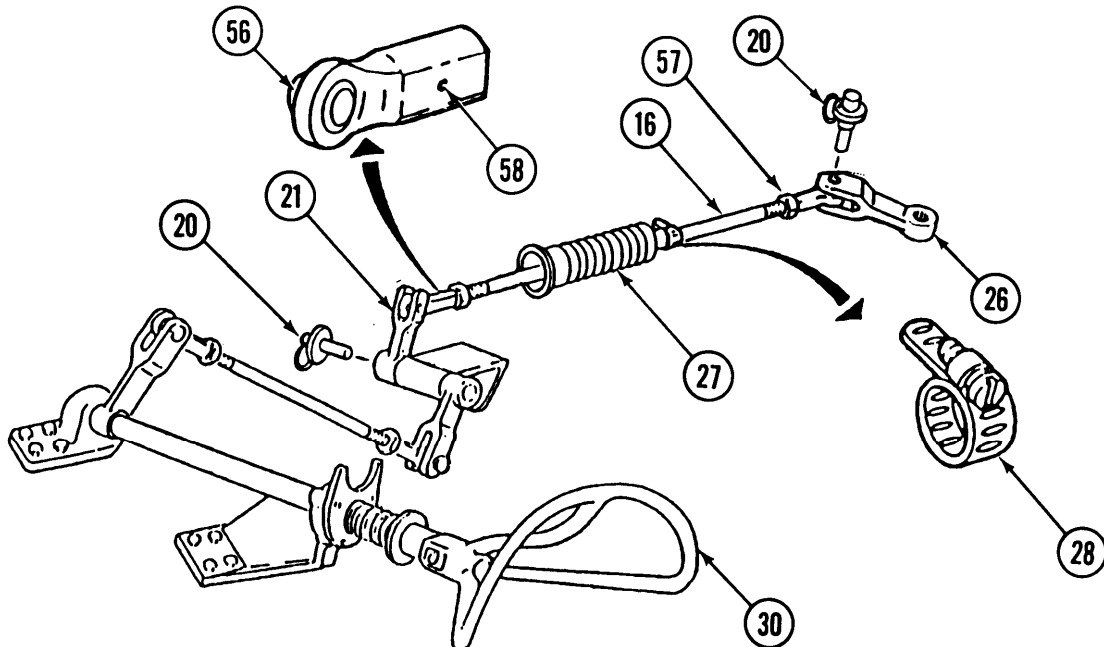
12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

f. ADJUSTMENT

NOTE

- All adjustments to steering linkage must end with transmission steering control lever in neutral position (pointer on steering shaft aimed at center position marker on transmission).
- Steering wheel must return to neutral position (center spoke vertical).
- Removable pins should insert easily through rod ends after adjustments are complete.

1. Turn steering wheel (30) full left and hold, Check for contact between rod (16) and bottom of passage hole in bulkhead (hole where rubber dust boot is installed). If there is contact, go to step 2. If no contact, go to step 7.
2. Remove two quick-release pins (20) from lever (21) and steering control lever (26). Loosen clamp (28) on rod (16).
3. Loosen two nuts (57) on rod (16). Adjust both rod ends (56), and lengthen rod (16) as required to stop contact between rod (16) and bottom of passage hole.
4. Tighten two nuts (57), and insert small wire into each witness hole (58) on rod end (56) to check whether witness holes are closed after adjustment is complete.
5. Install rod (16) and two quick-release pins (20) on lever (21) and steering control lever (26).
6. With steering wheel (30) in neutral position (center spoke vertical), tighten clamp (28) while dust boot (27) is not stretched or compressed. Tightened clamp should be approximately 5 1/2 inches from bulkhead.
7. Turn steering wheel (30) full right and hold. Check for contact between rod (16) and bottom of passage hole. If there is contact, go to step 8. If no contact, go to step 10.



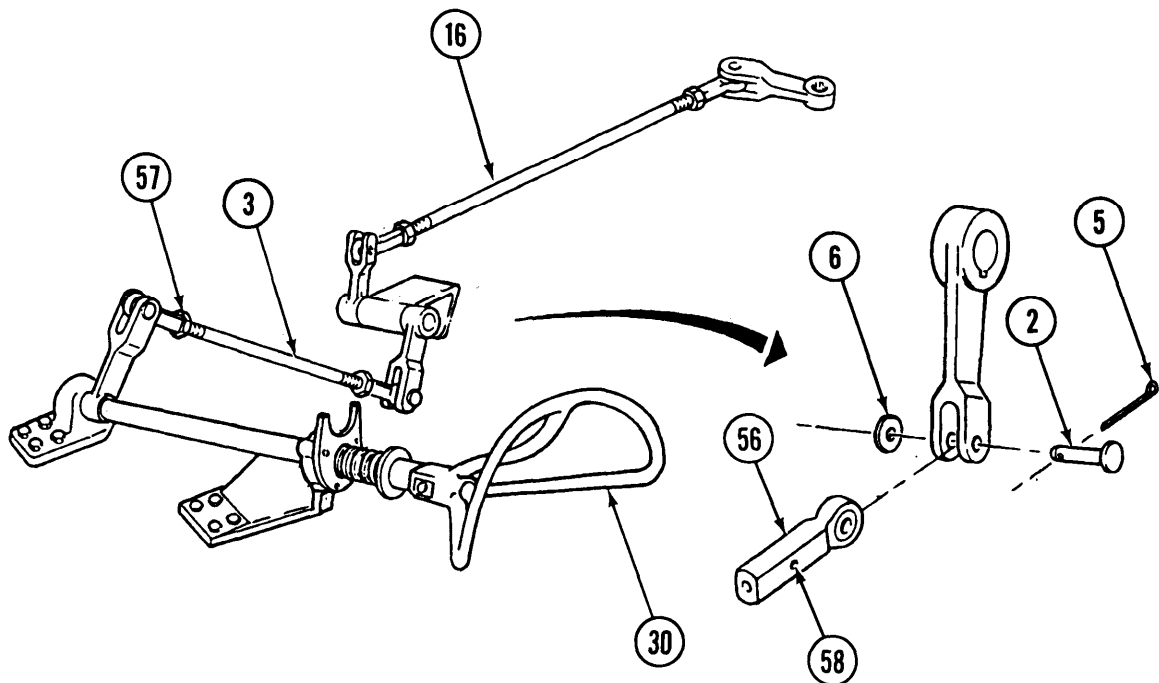
12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

8. Remove two quick-release pins (20) from lever (21) and steering control lever (26). Loosen clamp (28) on rod (16).
9. Loosen two nuts (57) on rod (16). Adjust both rod ends (56) and shorten rod (16) as required to stop contact between rod (16) and bottom of passage hole, Return to step 4.

NOTE

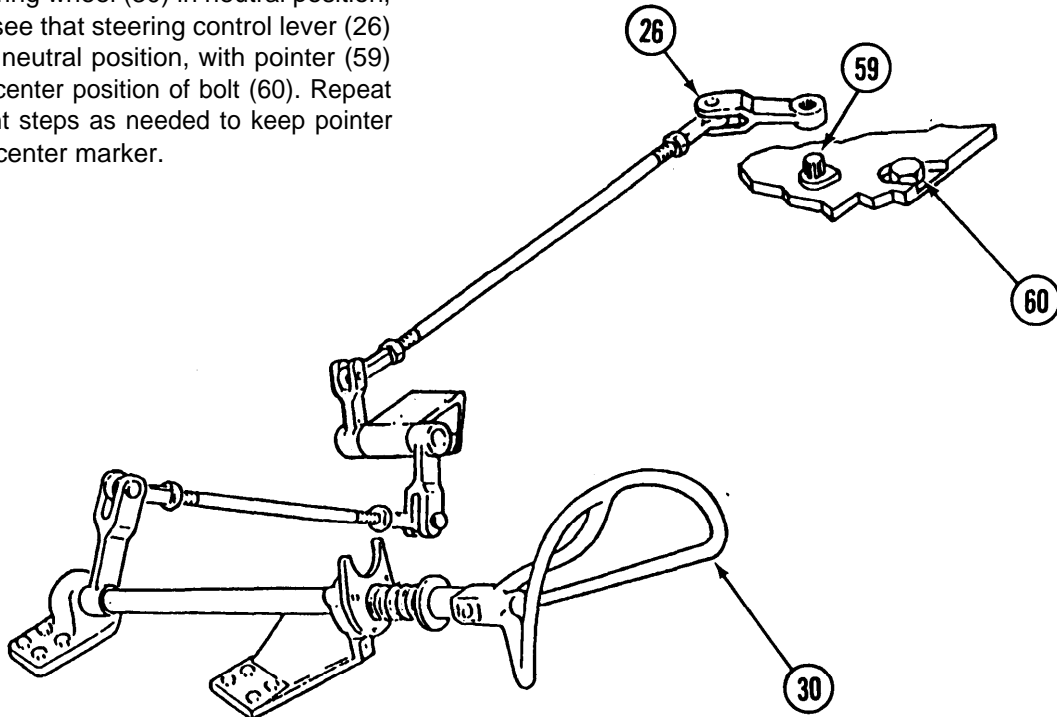
When adjusting steering control rod, if the first rod is lengthened, the second must be shortened. If the first is shortened, the second must be lengthened. This must be done to maintain correct neutral position of steering wheel (center spoke vertical).

10. If length of rod (16) has been altered, remove cotter pin (5), washer (6), and pin (2) from lever (1). Discard cotter pin. If no alteration in length was made, go to step 14.
11. Loosen two nuts (57) and adjust both rod ends (56) and length of rod (3) as required to correct steering wheel (30) position.
12. Install rod (3) in lever (1) with pin (2). Check steering wheel (30); center spoke should be vertical. Repeat step 10 if necessary.
13. If adjustments are accurate, install washer (6) and new cotter pin (5) in lever (1). Tighten two nuts (57) and check both witness holes (58).



12-2. STEERING CONTROL LINKAGE REPLACEMENT (continued).

14. With steering wheel (30) in neutral position, check to see that steering control lever (26) is also in neutral position, with pointer (59) aimed at center position of bolt (60). Repeat adjustment steps as needed to keep pointer aimed at center marker.



FOLLOW-ON MAINTENANCE:

- Install master warning light on steering shaft (para 7-35).
- Close transmission access doors (refer to TM 9-2350-287-10).
- Close driver's hatch cover (refer to TM 9-2350-287-10).

**CHAPTER 13
FRAME, TOWING ATTACHMENTS, DRAWBARS, AND
ARTICULATION SYSTEMS MAINTENANCE**

Paragraph Number	Paragraph Title	Page Number
13-1	General	13-1
13-2	Towing Pintle Repair	13-1
13-3	Tow Cable Hooks Replacement	13-6
13-4	Towing Eye Bushing Replacement	13-7

13-1. GENERAL.

This chapter describes and illustrates maintenance procedures for the towing pintle, tow cable hooks, and towing eye bushing.

13-2. TOWING PINTLE REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Automotive adjustable wrench (Item 4, Appendix I) • General mechanic's tool kit (Item 24, Appendix I) • Retaining ring pliers (Item 47, Appendix I) | <ul style="list-style-type: none"> • Rag (Item 56, Appendix D) • Sealing compound (Item 58, Appendix D) • Cotter pin (Item 39, Appendix H) • Lockwasher (4) (Item 168, Appendix H) • Retaining ring (4) (Item 245, Appendix H) |
|---|---|

Materials/Parts:

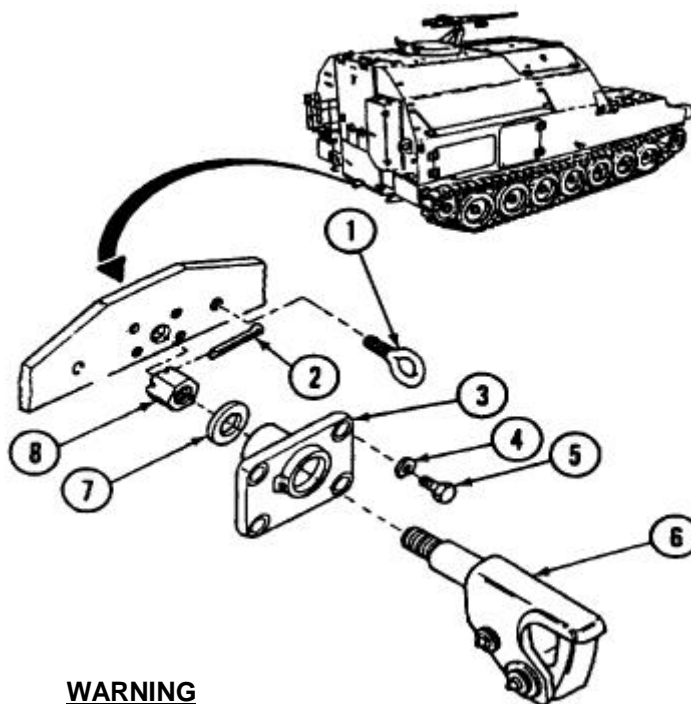
- Drycleaning solvent (Item 28, Appendix D)
- Grease (Item 32, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

13-2. TOWING PINTLE REPAIR (continued).**a. REMOVAL**

1. Remove two eyebolts (1) from rear of vehicle.
2. Remove four screws (5) and lockwashers (4) and bracket (3) from rear of vehicle. Discard lockwashers.
3. Remove cotter pin (2) from slotted nut (8). Discard cotter pin.
4. Remove slotted nut (8), bearing (7), and towing pintle body (6) from bracket (3).

**b. DISASSEMBLY****WARNING**

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

1. Remove two retaining rings (12) from pin (13). Discard retaining rings.

WARNING

Jaw will drop out of pintle body when pin is removed. Support jaw when removing pin or injury to personnel could occur.

2. Remove pin (13) and jaw (15) from pintle body (6).
3. Remove fitting (14) from pin (13).

WARNING

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

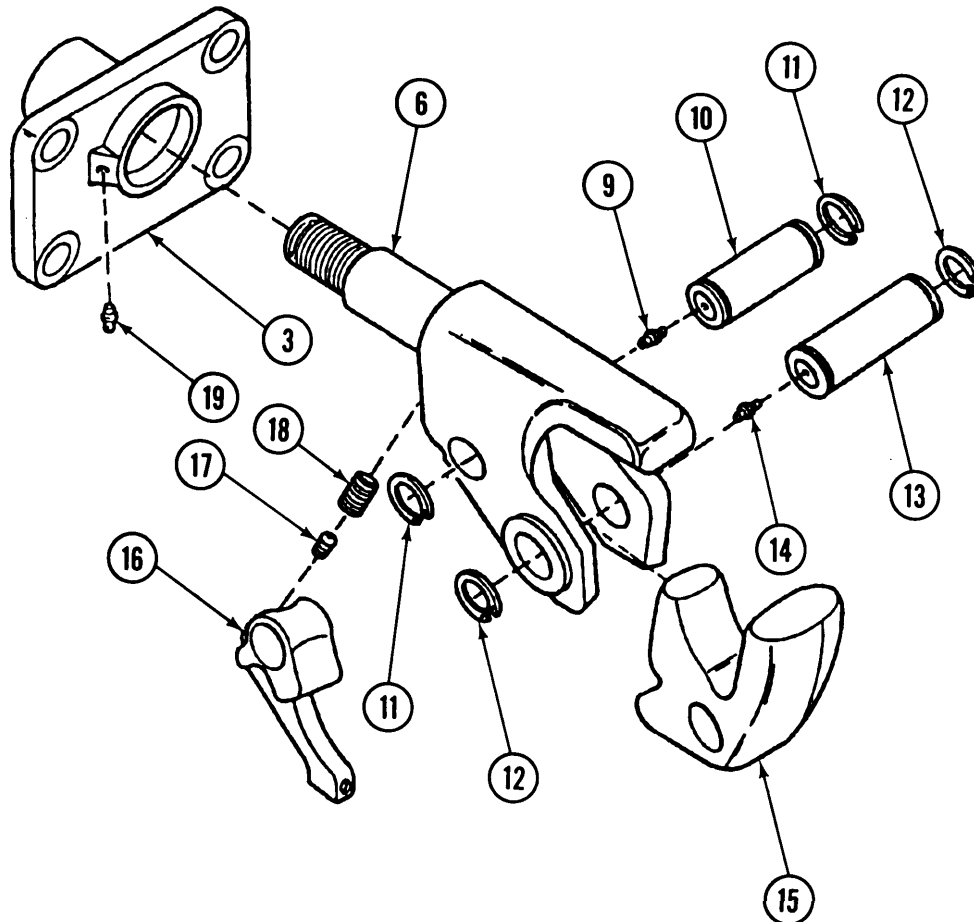
4. Remove two retaining rings (11) from pin (10). Discard retaining rings.

NOTE

Spring will drop out of pintle body when latch is removed.

13-2. TOWING PINTLE REPAIR (continued).

5. Remove pin (10), latch (16), and spring (18) from pintle body (6).



6. Remove pin (17) from latch (16).
7. Remove fitting (9) from pin (10).
8. Remove fitting (19) from bracket (3).

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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 use near open flame or excessive heat.

1. Clean all parts with drycleaning solvent and rag. Allow parts to air-dry.
2. Measure spring (18). If spring is less than 3 inches (7.6 cm) long, replace it.
3. Clean grease holes in two pins (10 and 13) and bracket (3).

13-2. TOWING PINTLE REPAIR (continued).

d. ASSEMBLY

1. Install fitting (19) in bracket (3).
2. Install fitting (9) in pin (10).
3. Install pin (17) on latch (16).
4. Install spring (18) and latch (16) on pintle body (6) with pin (10).

WARNING

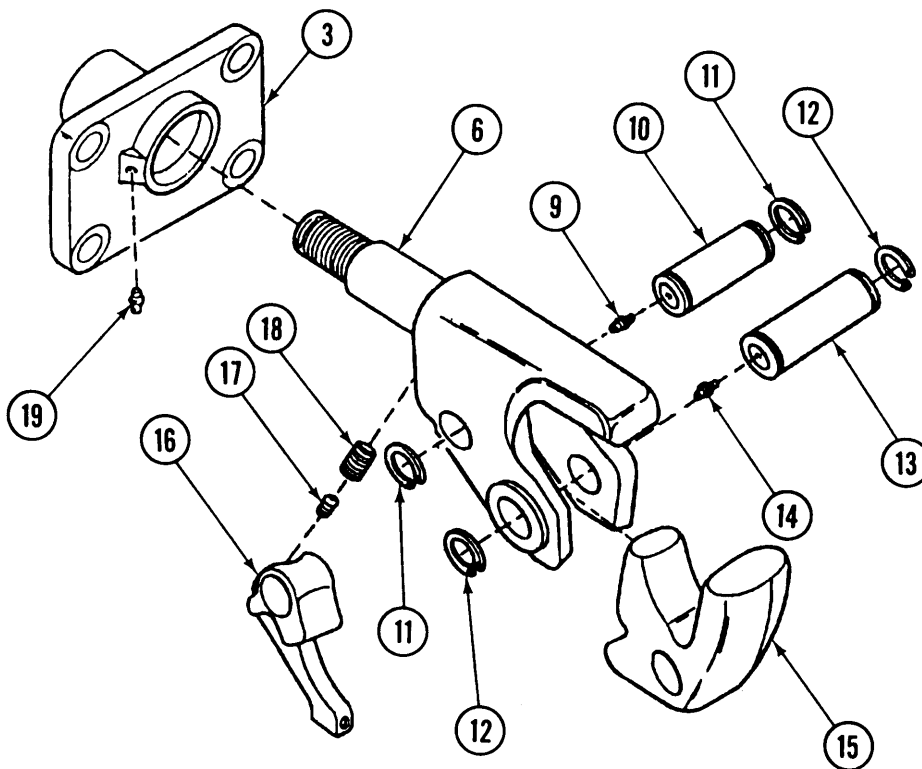
Use care when installing retaining rings. Retaining rings are under spring tension and can act as projectiles when released and could cause severe eye injury.

5. Install two new retaining rings (11) on pin (10).
6. Install fitting (14) in pin (13).
7. Install jaw (15) on pintle body (6) with pin (13).

WARNING

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

8. Install two new retaining rings (12) on pin (13).



13-2. TOWING PINTLE REPAIR (continued).

e. INSTALLATION

1. Coat threads and shaft of pintle body (6) with grease.
2. Install pintle body (6) on bracket (3).

CAUTION

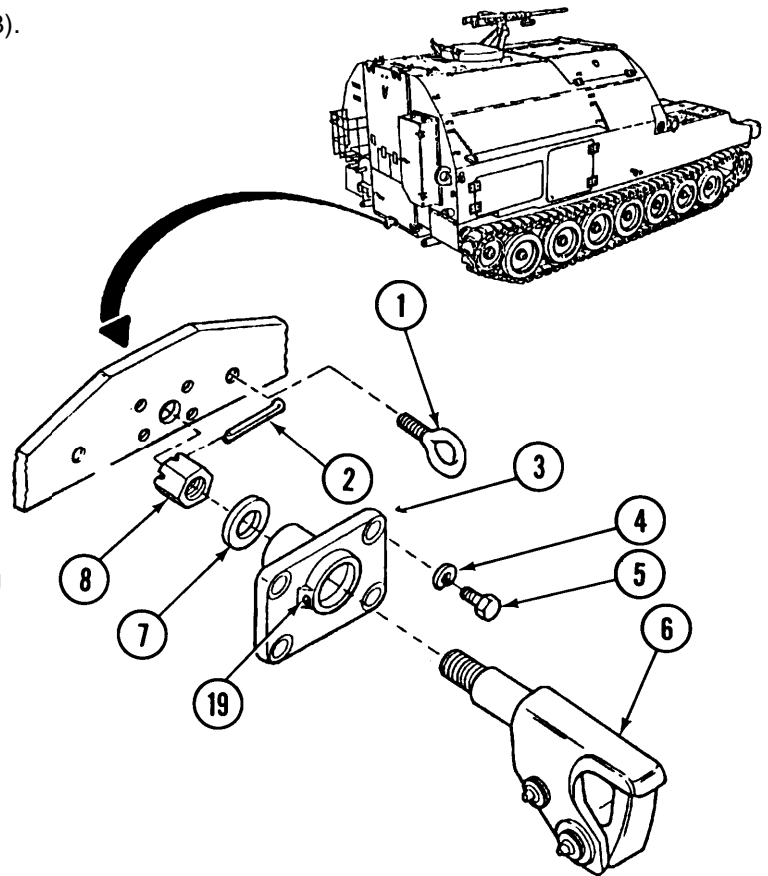
Do not overtighten slotted nut. Pintle body must rotate freely in bracket. Failure to heed this caution may result in damage to pintle body or bracket.

3. Install bearing (7) and slotted nut (8) on pintle body (6). Tighten slotted nut (8) only enough to take up any space between bearing (7) and bracket (3).
4. Back off slotted nut (8) until hole in shaft of pintle body (6) aligns with slots on slotted nut (8).
5. Install new cotter pin (2) in slotted nut (8).
6. Install bracket (3) on rear of vehicle with four screw (5) and new lockwashers (4).
7. Apply grease at fitting (19) to fill bracket (3).

WARNING

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

8. Coat threads on two eyebolts (1) with sealing compound.
9. Install two eyebolts (1) in rear of vehicle.



FOLLOW-ON MAINTENANCE:

- None

13-3. TOW CABLE HOOKS REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

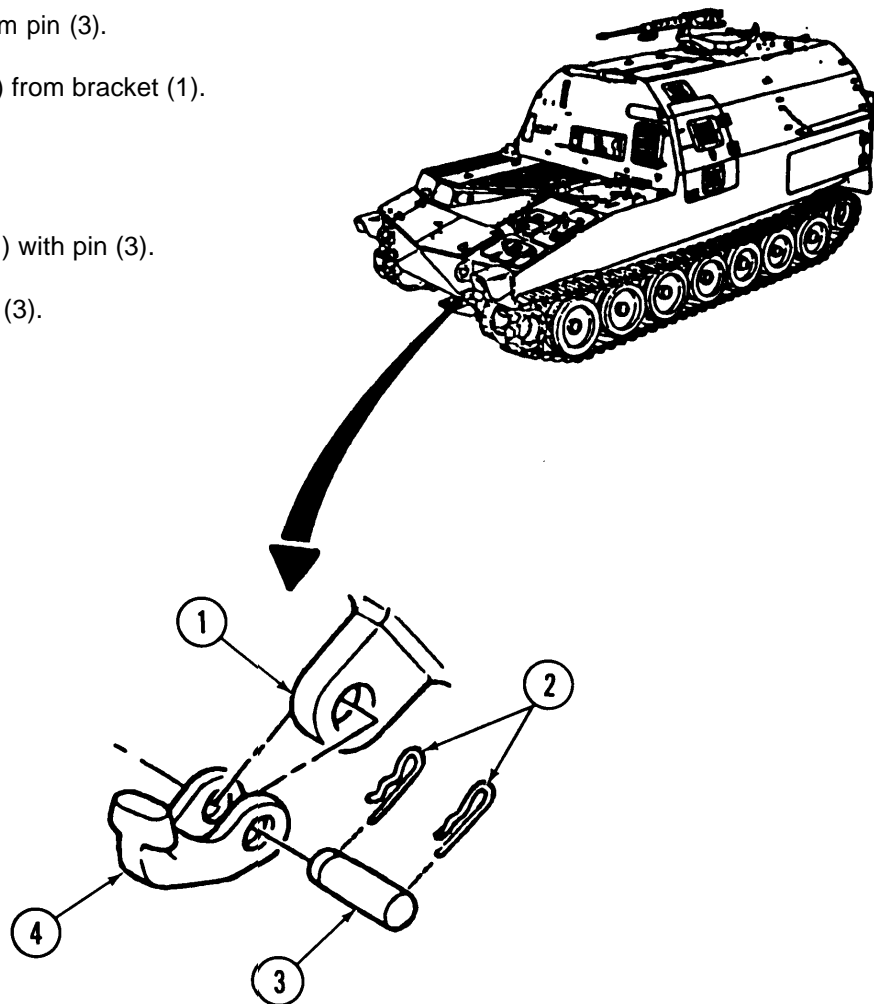
NOTE

Both tow cable hooks are replaced the same way.

1. Remove two lockpins (2) from pin (3).
2. Remove pin (3) and hook (4) from bracket (1).

b. INSTALLATION

1. Install hook (4) on bracket (1) with pin (3).
2. Install two lockpins (2) in pin (3).



FOLLOW-ON MAINTENANCE:

- None

13-4. TOWING EYE BUSHING REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Tow cable hook removed (para 13-3).

NOTE

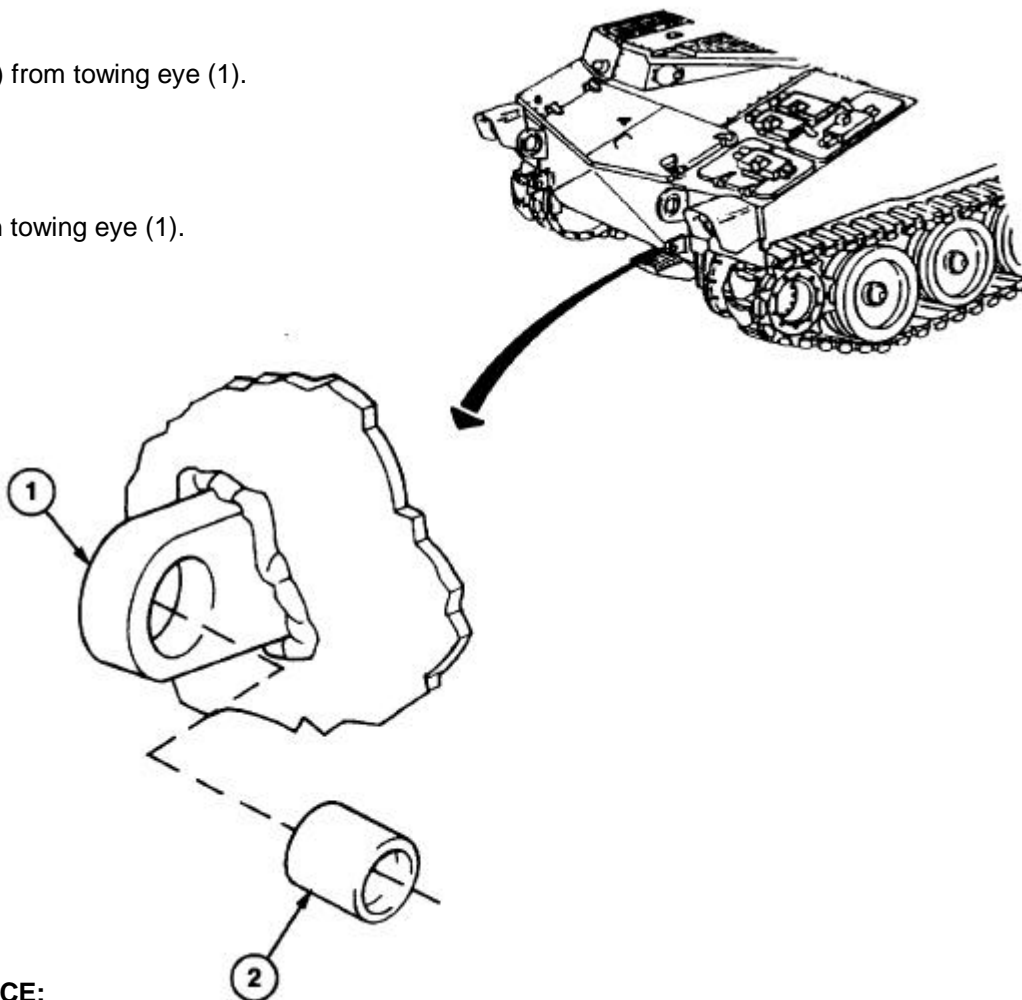
There is one towing eye bushing in each of two towing eyes. Both bushings are replaced the same way.

a. REMOVAL

Remove bushing (2) from towing eye (1).

b. INSTALLATION

Install bushing (2) in towing eye (1).



FOLLOW-ON MAINTENANCE:

- Install tow cable hook (para 13-3).

CHAPTER 14 SPRINGS AND SHOCK ABSORBERS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
14-1	General	14-1
14-2	Shock Absorber and Suspension Bracket Replacement	14-1
14-3	Shock Absorber Bearing Replacement	14-4

14-1. GENERAL

This chapter describes the removal and installation procedures for shock absorber and suspension bracket and shock absorber bearing.

14-2. SHOCK ABSORBER AND SUSPENSION BRACKET REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (item 24, Appendix I)
- Mechanical puller (item 36, Appendix I)
- Socket wrench socket, 1 1/8-inch, 3/4-inch drive (item 60, Appendix I)
- Torque wrench, 0-175 ft-lb (item 69, Appendix I)
- Torque wrench, 0-600 ft-lb (Item 70, Appendix I)

Materials/Parts:

- Cotter pin (2) (item 26, Appendix H)
- Seal (2) (item 271, Appendix H)

Equipment Conditions:

- Vehicle parked and blocked on level ground (refer to TM 9-2350-287-10).
 - Roadwheel removed (para 11-4).
 - Powerpack removed (right front only) (para 3-2).
-

14-2. SHOCK ABSORBER AND SUSPENSION BRACKET REPLACEMENT (continued).

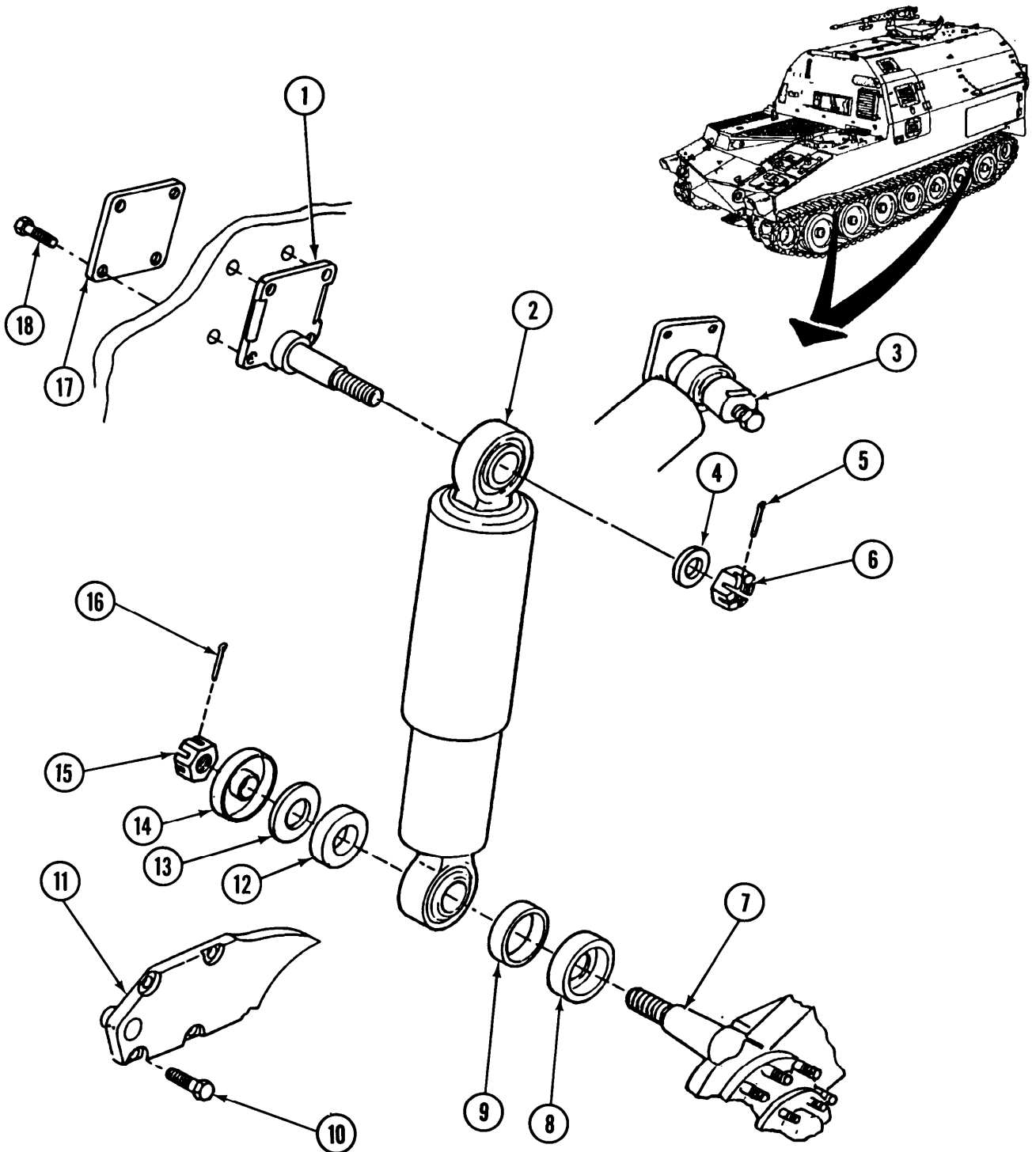
a. REMOVAL

1. Remove cotter pin (5), nut (6), and washer (4) from shock absorber bracket (1). Discard cotter pin.
2. Install shock absorber puller (3) on threaded end of bracket (1).
3. With wrench, turn screw head on puller (3) to pull shock absorber (2) from arm spindle on bracket (1).
4. Remove cotter pin (16), nut, (15), retainer (14), washer (13), and seal (12) from lower spindle mount (7). Discard cotter pin and seal.
5. Remove shock absorber (2), seal (9), and retainer (8) from lower spindle mount (7). Use puller (3) if necessary. Discard seal.
6. Remove four screws (18), plate (17), and bracket (1) from hull.
7. Remove four screws (10) and suspension bracket (11) from hull.

b. INSTALLATION

1. Install suspension bracket (11) on hull with four screws (10). Torque screws between 300 and 350 ft-lb (407 and 475 N•m).
2. Install bracket (1) on hull with four screws (18) and plate (17). Torque screws to 90ft-lb (122 N•m).
3. Install retainer (8), new seal (9), shock absorber (2), new seal (12), washer (13), and retainer (14) on lower spindle mount (7) with nut (15). Torque nut to 100 ft-lb (136 N•m) and install new cotter pin (16).
4. Install shock absorber (2) on bracket (1) with washer (4) and nut (6). Torque nut to 100 ft-lb (136 N•m) and install new cotter pin (5) on bracket (1).

14-2. SHOCK ABSORBER AND SUSPENSION BRACKET REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install powerpack (right front only) (para 3-2).
- Install roadwheel (para 11-4).

14-3. SHOCK ABSORBER BEARING REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- Bearing replacer (Item 9, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked and blocked on level ground (TM 9-2350-287-10).
- Shock absorber removed (para 14-2).

Materials/Parts:

- Bearing (Item 2, Appendix H)

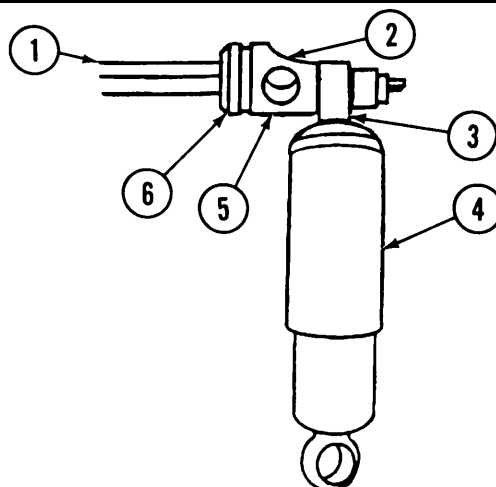
a. REMOVAL

1. Install shock absorber bearing replacer (1) in eye (3) of shock absorber (4) with opening (2) of bearing replacer (1) at top.

NOTE

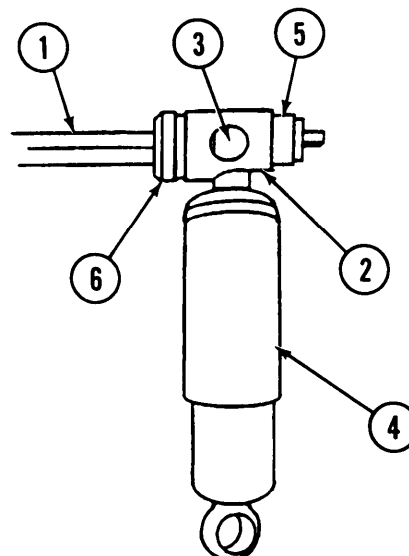
Bearing is pulled into collar of bearing replacer.

2. Turn nut (6) clockwise to remove bearing (5) from shock absorber (4). Discard bearing.



b. INSTALLATION

1. Remove stake marks and burrs from eye (3) of shock absorber (4).
2. Insert new bearing (5) by hand into eye (3) of shock absorber (4) with opening (2) of bearing replacer (1) at bottom.
3. Insert shock absorber bearing replacer (1) through bearing (5).
4. Turn nut (6) clockwise to insert bearing (5).



FOLLOW-ON MAINTENANCE:

- Install shock absorber (para 14-2).

CHAPTER 15

BODY, CAB, HOOD, AND HULL MAINTENANCE

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**CHAPTER 15
BODY, CAB, HOOD, AND HULL MAINTENANCE (continued)**

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15-1. GENERAL.

This chapter describes and illustrates maintenance procedures for the body, cab, hood, and hull components.

Change 1 15-3

15-2. AIR INTAKE GRILLE REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (Item 164, Appendix H)
- Self-locking nut (2) (Item 327, Appendix H)

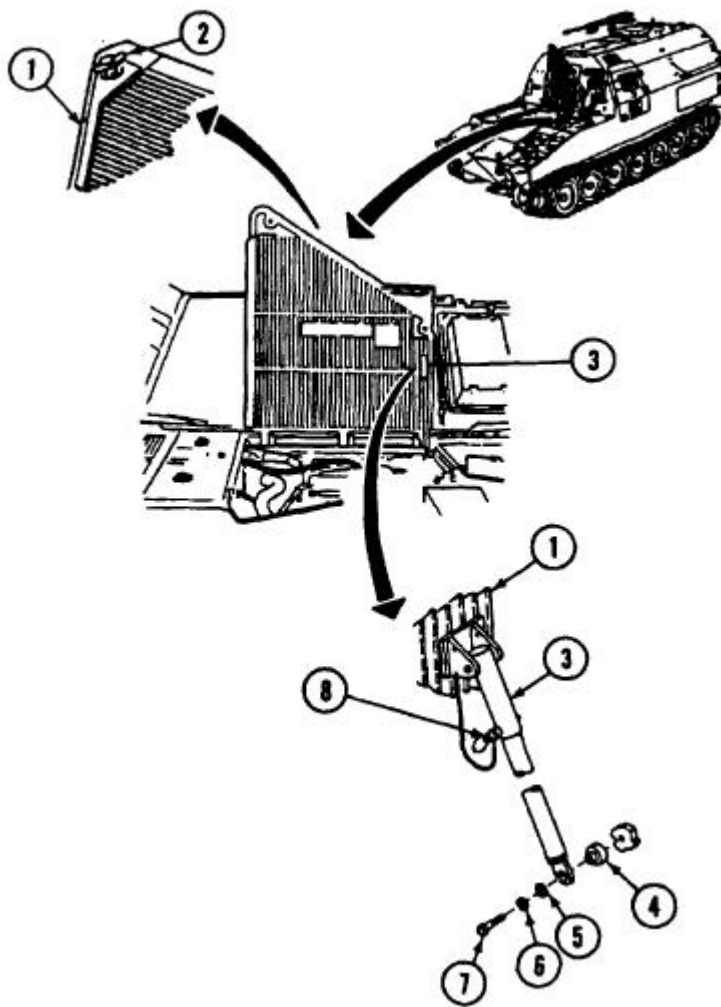
Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Air intake grille opened and secured (refer to TM 9-2350-287-10).

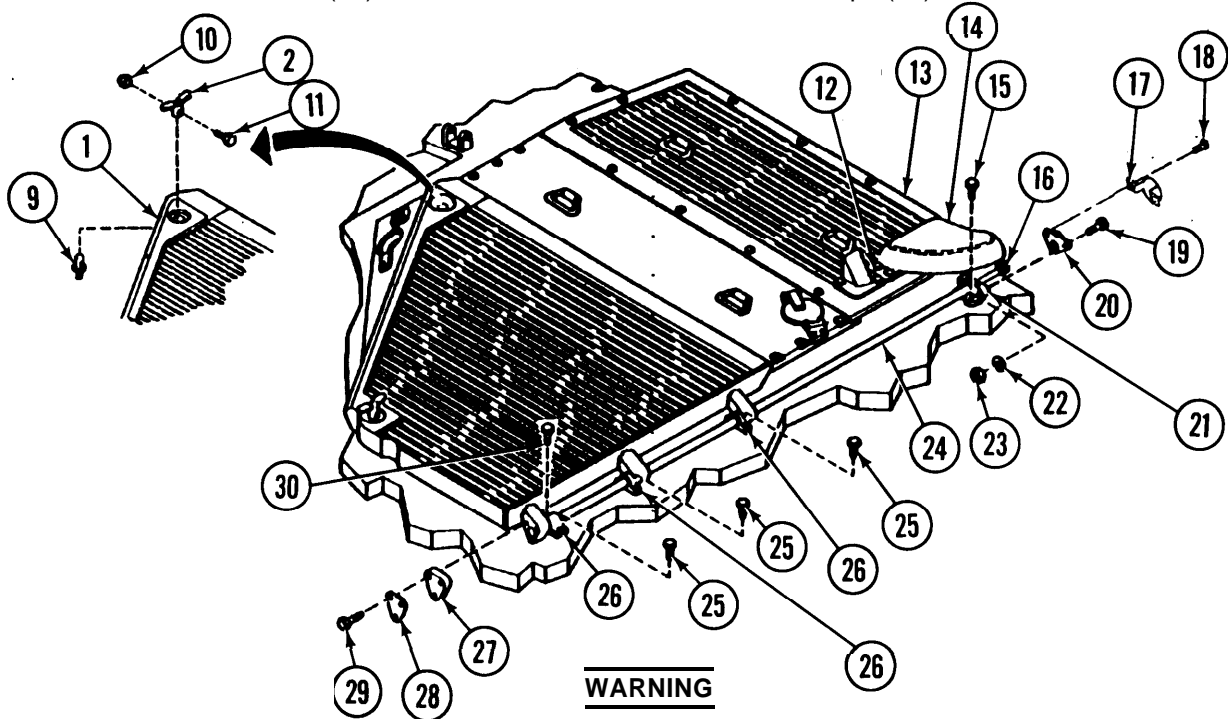
a. REMOVAL

1. Install sling on handles (2) on intake grille (1). Attach sling to hoist, and take up slack.
2. Remove screw (7), lockwasher (6), washer (5), intake grille support (3), and bearing (4) from hull. Discard lockwasher.
3. Remove quick-release pin (8) from intake grille support (3).
4. Remove four screws (12) and exhaust deflector (14) from exhaust deck (13).
5. Remove two screws (18) and shield (17) from anchor (20).
6. Remove two screws (19), washers (22), and self-locking nuts (23) and anchor (20) from right end cap (21).
7. Using hoist, close intake grille (1).
8. Remove torsion bar (16) from vehicle through right end cap (21).



15-2. AIR INTAKE GRILLE REPLACEMENT (continued)

9. Remove four screws (15) from right end cap (21).
10. Remove four screws (25) from rear of three torsion bar tube clamps (26).
11. Using hoist, open intake grille (1).
12. Remove four screws (30) from front of three torsion bar tube clamps (26),



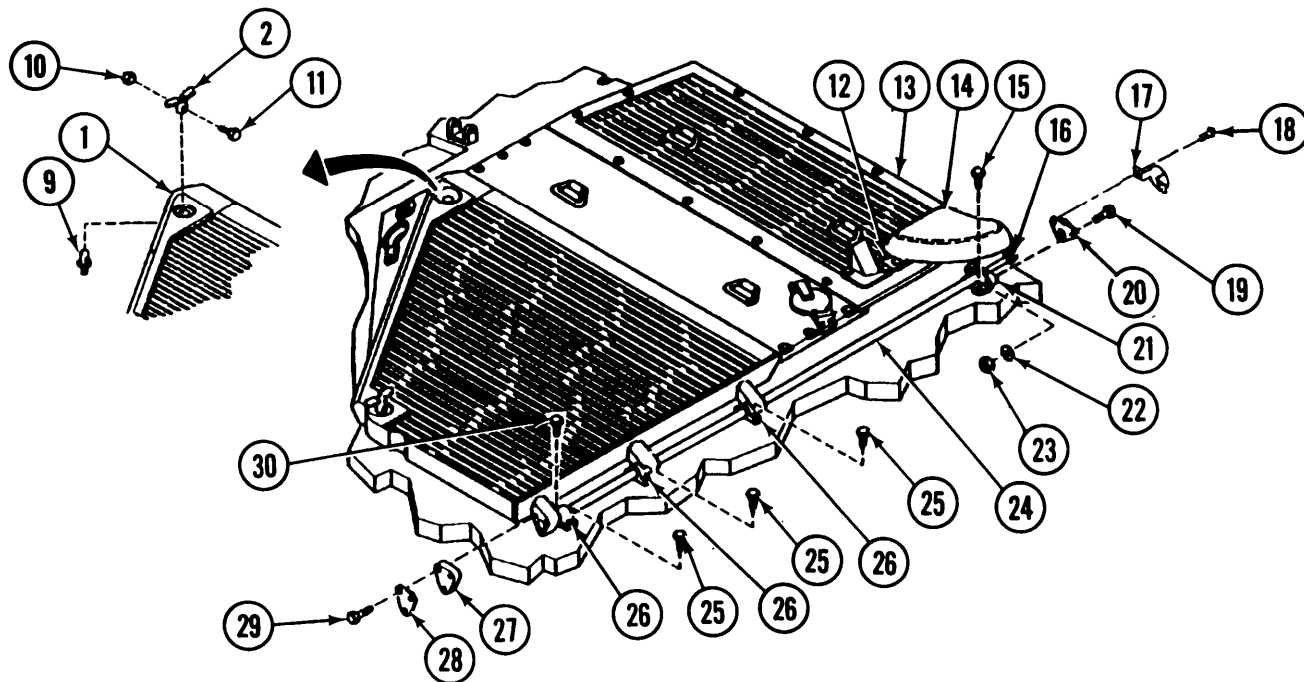
Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

13. Lift intake grille (1) off vehicle and place on hard, level surface. Remove sling from handles (2).
14. Remove three screws (29), shield (28), and adapter (27) from intake grille (1).
15. Remove tube (24) and three tube clamps (26) from intake grille (1).
16. Remove two screws (11), self-locking nuts (10), handles (2), and studs (9) from air intake grille (1). Discard self-locking nuts.

b. INSTALLATION

1. Install two studs (9) and handles (2) on intake grille (1).
2. Secure two handles (2) on two studs (9) with two new self-locking nuts (10) and two screws (11).
3. Attach sling to handles (2) on intake grille (1) and take up slack.
4. Install three tube clamps (26) and tube (24) on intake grille (1).

15-2. AIR INTAKE GRILLE REPLACEMENT (continued)



5. Install adapter (27) and shield (28) on intake grille (1) with three screws (29).

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

NOTE

An assistant is needed to help position intake grille on vehicle.

6. Install air intake grille (1) on vehicle, aligning holes in three tube clamps (26) with holes in vehicle.
7. Install four screws (30) in three tube clamps (26).
8. Using hoist, close intake grille (1).
9. Install four screws (25) in rear of three tube clamps (26).
10. Install right end cap (21) on hull with four screws (15).
11. Using hoist, open intake grille (1) until it is perpendicular to front deck of vehicle.

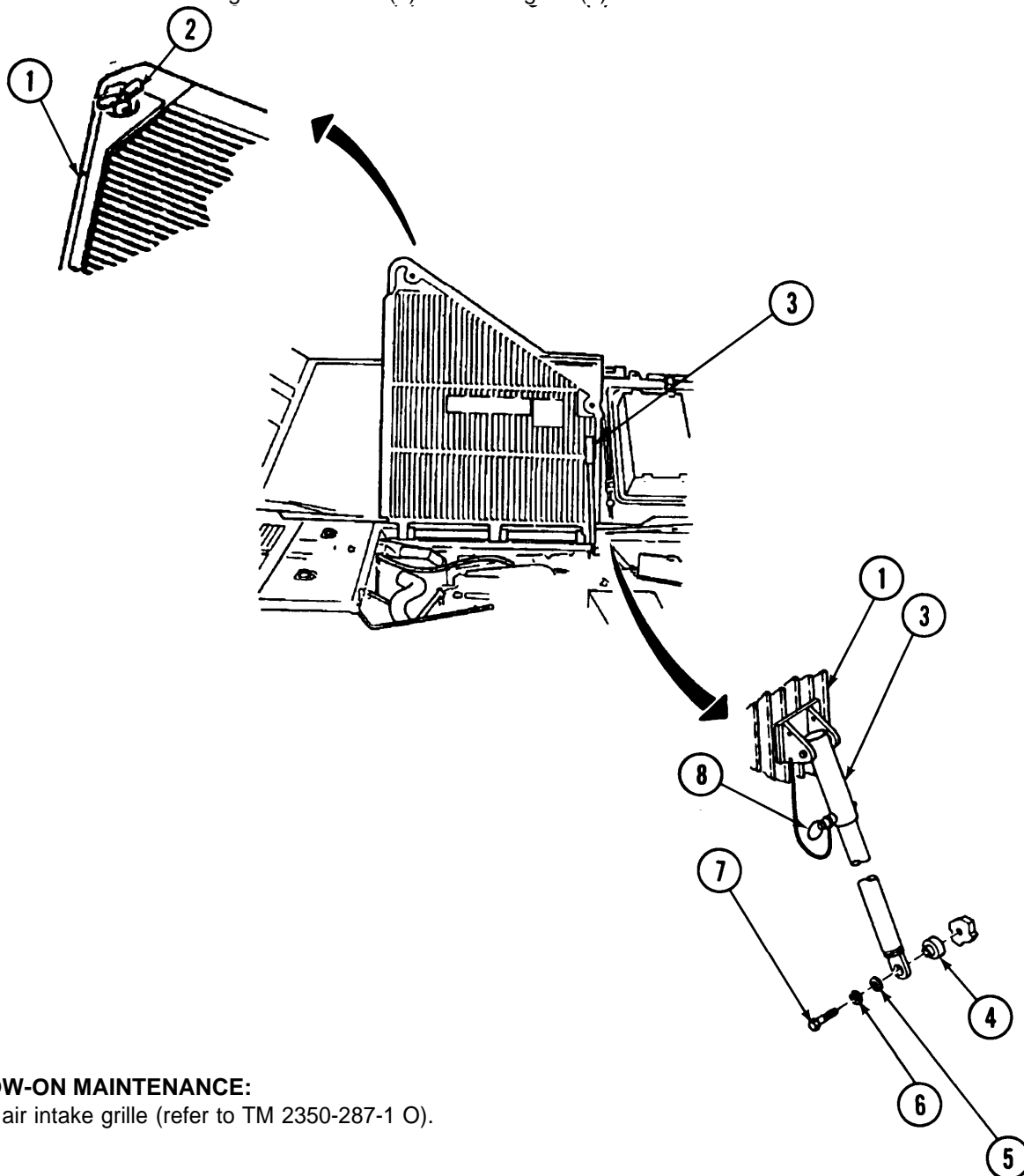
NOTE

Intake grille may have to be maneuvered past perpendicular position to install torsion bar.

12. Install torsion bar (16) on vehicle through right end cap (21).
13. Install anchor (20) on right end cap (21) with two screws (19), washers (22) and new self-locking nuts (23).

15-2. AIR INTAKE GRILLE REPLACEMENT (continued).

14. Install shield (17) on anchor (20) with two screws (1 8).
15. Install exhaust deflector (14) on exhaust deck (13) with four screws (12).
16. Install intake grille support (3) and bearing (4) on hull with washer (5), new lockwasher (6), and screw (7).
17. Install quick-release pin (8) in support (3) to secure intake grille (1) in upright position.
18. Remove hoist and sling from handles (2) on intake grille (1).



FOLLOW-ON MAINTENANCE:

- Close air intake grille (refer to TM 2350-287-1 O).

15-3. AIR INTAKE GRILLE SUPPORT REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- LockWasher (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Air intake grille opened and secured (refer to TM 9-2350-287-10).
-

a. REMOVAL

WARNING

When air intake grille support is removed, there is nothing keeping air intake grille from accidentally slamming closed. Securely chain air intake grille to top middle door torsion bar. Failure to follow this warning can result in severe injury to personnel.

1. Using suitable chain, secure air intake grille (1) to top middle door torsion bar housing (2) with chain.
2. Remove quick-release pin (12), S-hook (11), and chain (10) from sleeve (4) and bracket (3) on intake grille (1).
3. Remove chain (10) from pin (1 2).

NOTE

Sleeve mount and sleeve cannot be removed from intake grille.

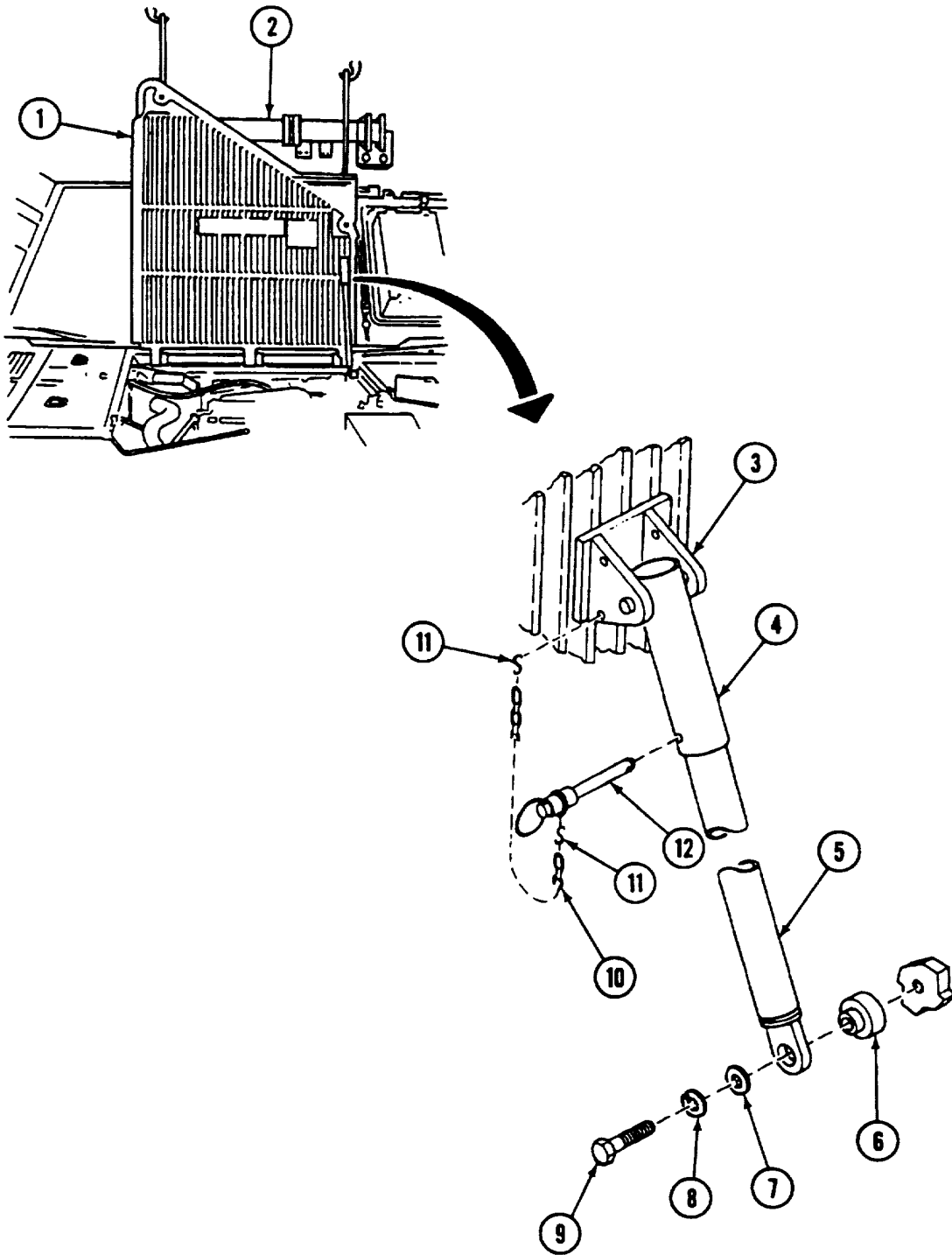
4. Remove screw (9), lockwasher (8), washer (7), support (5), and bearing (6) from hull. Discard lockwasher.
5. Remove support (5) from sleeve (4).

b. INSTALLATION

1. Install support (5) in sleeve (4).
2. Install bearing (6) and support (5) on hull with washer (7), new lockwasher (8), and screw (9).
3. Install chain (10) on pin (12).
4. Install chain (10), S-hook(11), and quick-release pin (12) on bracket (3) on air intake grille (1).
5. Install quick-release pin (12) through sleeve (4) and support (5).

15-3. AIR INTAKE GRILLE SUPPORT REPLACEMENT (continued).

6. Remove chain from intake grille (1) and top middle door torsion bar housing (2).



FOLLOW-ON MAINTENANCE:

- Close air intake grille (refer to TM 9-2350-287-10).

15-4. AIR INTAKE GRILLE SUPPORT BRACKET REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

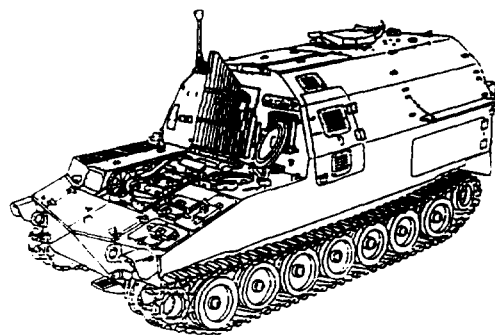
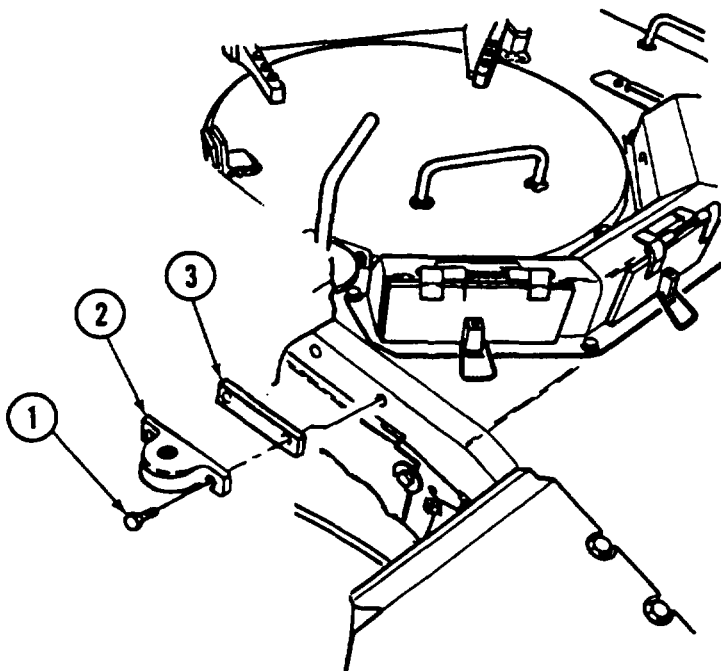
- Air intake grille opened and secured (refer to TM 9-2350-287-10).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

Remove two screws (1), air intake grille support bracket (2), and shims (3) from hull.



15-4. AIR INTAKE GRILLE SUPPORT BRACKET REPLACEMENT (continued).

b. INSTALLATION**NOTE**

- If replacing support bracket, shimming may be necessary.
- If all five shims are required, use screw part number MS90727-1 12. If three shims are required, use screw part number MS90727-111. If one or two shims are required, use screw part number MS90727-110.

1. Install shims (3), if removed, and support bracket (2) on vehicle hull with two screws (1). Do not tighten screws.
2. Close air intake grille (refer to TM 9-2350-287-10) and lineup handle on grille with support bracket (2) by moving support bracket (2) forward or rearward.

NOTE

If handle and air intake support bracket do not line up, shimming will be necessary.

3. Open air intake grille (refer to TM 9-2350-287-10) and remove two screws (1) and support bracket (2).
4. Install required number of shims (3) and support bracket (2) on vehicle hull with two screws (1). Do not tighten screws.
5. Close air intake grille (refer to TM 9-2350-287-10) and line up support bracket (2) with handle on grille by moving support bracket (2) forward or rearward.
6. Tighten two screws (1).

FOLLOW-ON MAINTENANCE:

- Close air intake grille (refer to TM 9-2350-287-10).

15-5. AIR INTAKE GRILLE ADJUSTABLE SUPPORT ASSEMBLY REPLACEMENT.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- Automotive wrench (Item 4, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

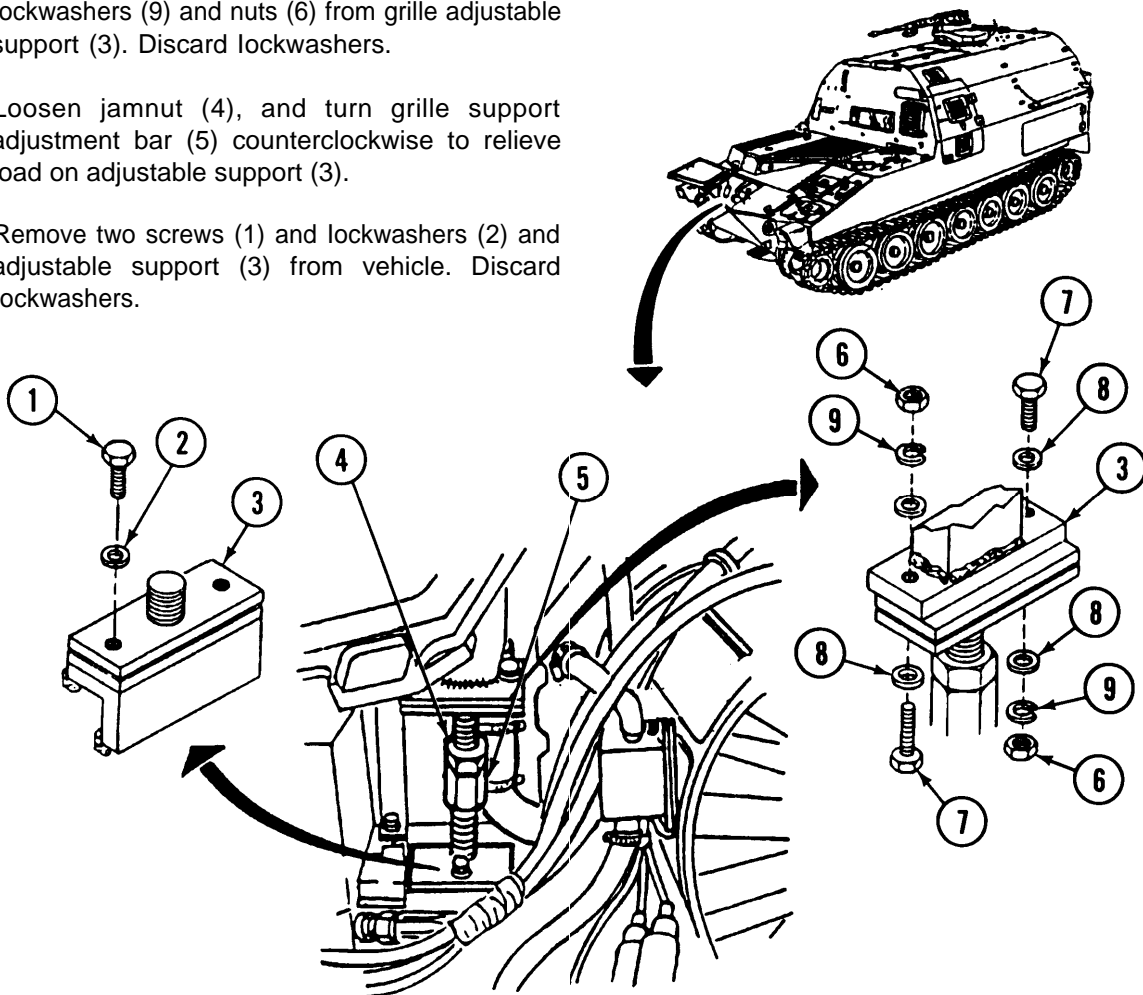
- Right transmission access door opened and secured (refer to TM 9-2350-287-10).

Materials/Parts:

- LockWasher (4) (Item 166, Appendix H)
- Spring pin (4) (Item 350, Appendix H)

a. REMOVAL

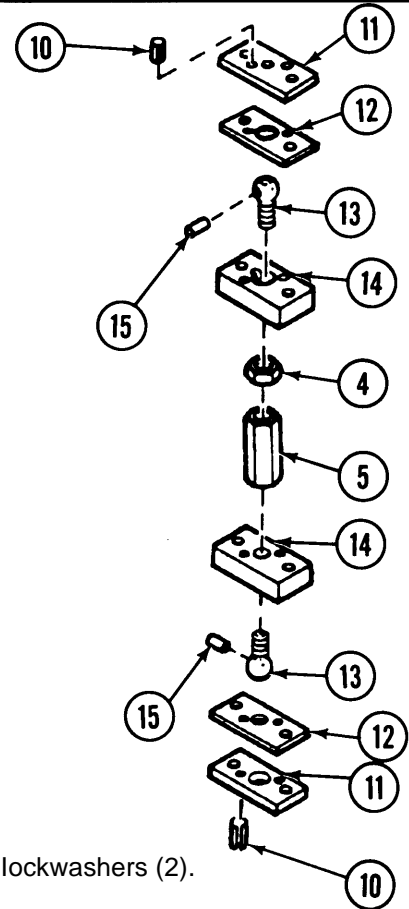
1. Remove two screws (7), four washers (8), and two lockwashers (9) and nuts (6) from grille adjustable support (3). Discard lockwashers.
2. Loosen jamnut (4), and turn grille support adjustment bar (5) counterclockwise to relieve load on adjustable support (3).
3. Remove two screws (1) and lockwashers (2) and adjustable support (3) from vehicle. Discard lockwashers.



15-5. AIR INTAKE GRILLE ADJUSTABLE SUPPORT ASSEMBLY REPLACEMENT (continued).

b. DISASSEMBLY

1. Unscrew jamnut (4) and adjustment bar (5) until they disengage from two adjustable screws (1 3). Remove jamnut (4) and adjustment bar (5) from two adjustable screws (13).
2. Drive out four spring pins (10) from two plates (11), shims (12), and plates (14). Discard spring pins.
3. Remove two plates (11) and shims (12) from two plates (14).
4. Remove two pins (15) and adjustable screws (13) from two plates (14).

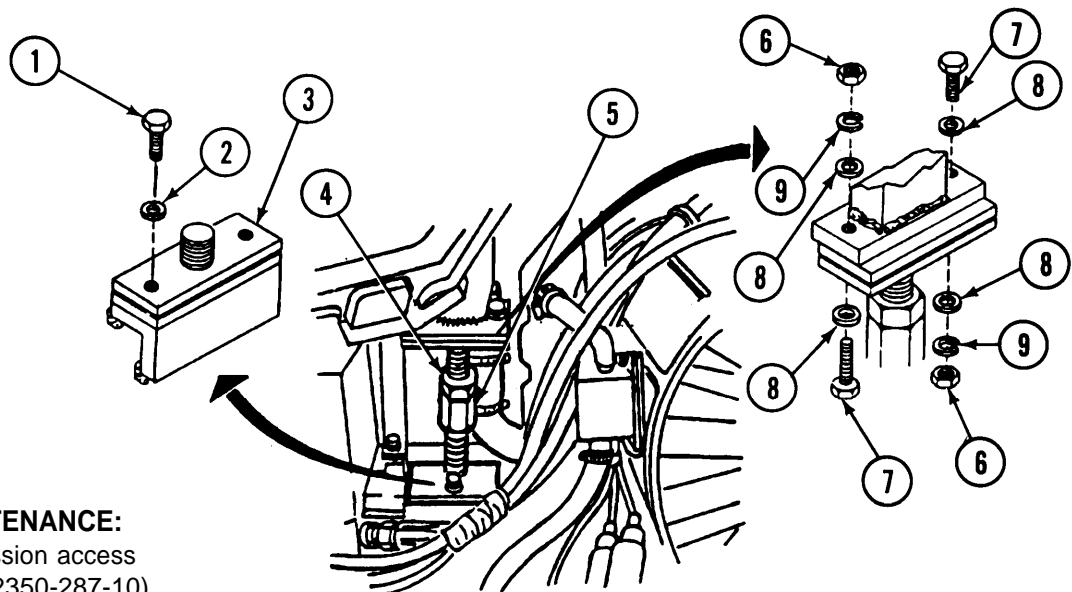


c. ASSEMBLY

1. Install two adjustable screws (13) on two plates (14) with two pins (15).
2. Install two shims (12) and plates (11) on two plates (14) with four spring pins (10).
3. Install two adjustable screws (13) on jamnut (4) and adjustment bar (5).

d. INSTALLATION

1. Secure adjustable support (3) in vehicle with two screws (1) and new lockwashers (2).
2. Turn jamnut (4) and adjustment bar (5) until adjustable support (3) is firmly seated against grille. Tighten jamnut (4) against adjustment bar (5).
3. Secure adjustable support (3) to grille with two nuts (6), four washers (8), two new lockwashers (9), and two screws (7).



FOLLOW-ON MAINTENANCE:

- Close right transmission access door (refer to TM 9-2350-287-10).

15-6. FAN ACCESS DOOR REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Suitable chain

Equipment Conditions:

- Air intake grille opened and secured (refer to TM 9-2350-287-10).
- Exhaust deck removed (para 15-8).
- Engine compartment fire-sensing element disconnected (para 21-9).

Personnel Required: Two

a. REMOVAL

1. Remove six screws (1) and washers (2) from fan access door (4).

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

2. Attach suitable chain to two handles (3) and hoist, and lift door (4) from vehicle.

CAUTION

When setting fan access door on work surface, keep weight off engine fire-sensing element Element can be damaged.

3. Place door (4) on a suitable work surface, and remove hoist and chain from door (4).

b. INSTALLATION

1. Attach chain to hoist and two handles (3), and take up slack.

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

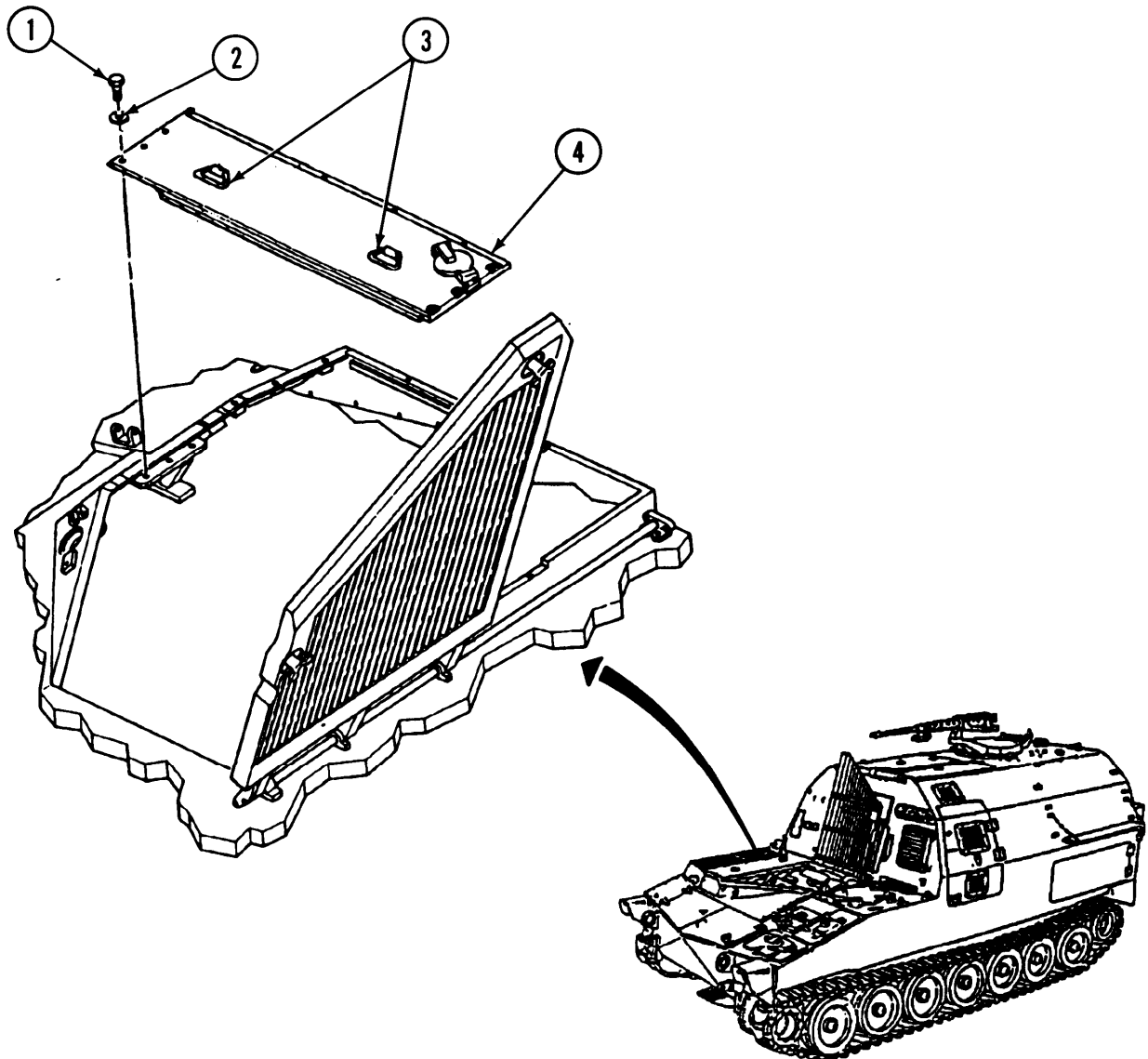
NOTE

An assistant is needed to help align holes in fan access door with holes in vehicles.

2. Position door (4) on vehicle, aligning holes in door (4) with holes in vehicles.

15-6. FAN ACCESS DOOR REPLACEMENT (continued).

3. Secure door (4) to vehicle with six screws (1) and washers (2).
4. Remove chain and hoist from door (4).

**FOLLOW-ON MAINTENANCE:**

- Connect engine compartment fire-sensing element (para 21-9).
- Install exhaust deck (para 15-8).
- Close air intake grille (refer to TM 9-2350-287-10).

15-7. RADIATOR CAP ACCESS COVER REPLACEMENT.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Straight pin (Item 218, Appendix H)

a. REMOVAL

1. Remove quick-release pin (8) from radiator cap access cover (3).
2. Remove two screws (4) and access cover (3), with hinge latch (5) attached, from fan access door (7).

b. DISASSEMBLY

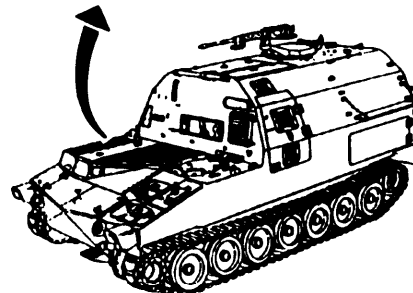
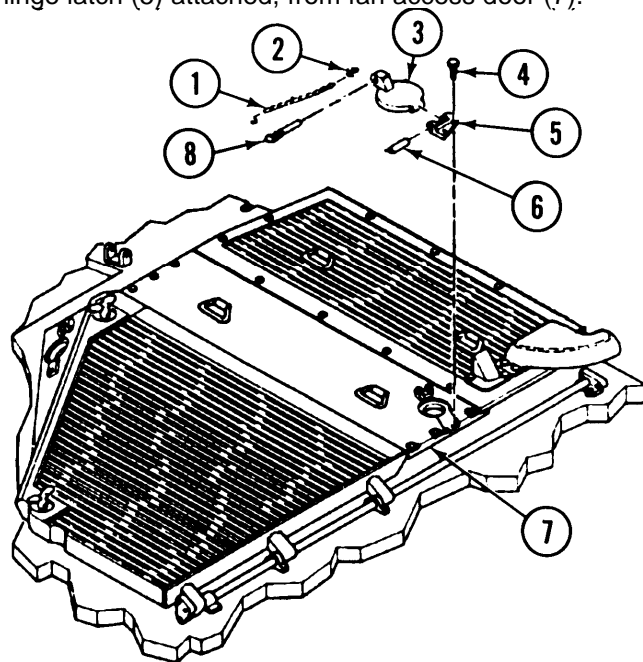
1. Remove pin (6) and access cover (3) from hinge latch (5). Discard pin.
2. Remove S-hook (2), chain (1), and quick-release pin (8) from access cover (3).
3. Remove chain (1) from pin (8).

c. ASSEMBLY

1. Install chain (1) on pin (8).
2. Install chain (1) and quick-release pin (8) on access cover (3) with S-hook (2).
3. Install access cover (3) on hinge latch (5) with new pin (6).

d. INSTALLATION

1. Install access cover (3), with hinge latch (5) attached, on fan access door (7) with two screws (4).
2. Install quick-release pin (8) on access cover (3).



FOLLOW-ON MAINTENANCE:

- None

15-8. EXHAUST DECK REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix I)
- Multiple leg sling (Item 37, Appendix B)
- Air intake grille opened and scoured (refer to TM 9-2350-287-10).
- Exhaust deflectors removed (para 15-9).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

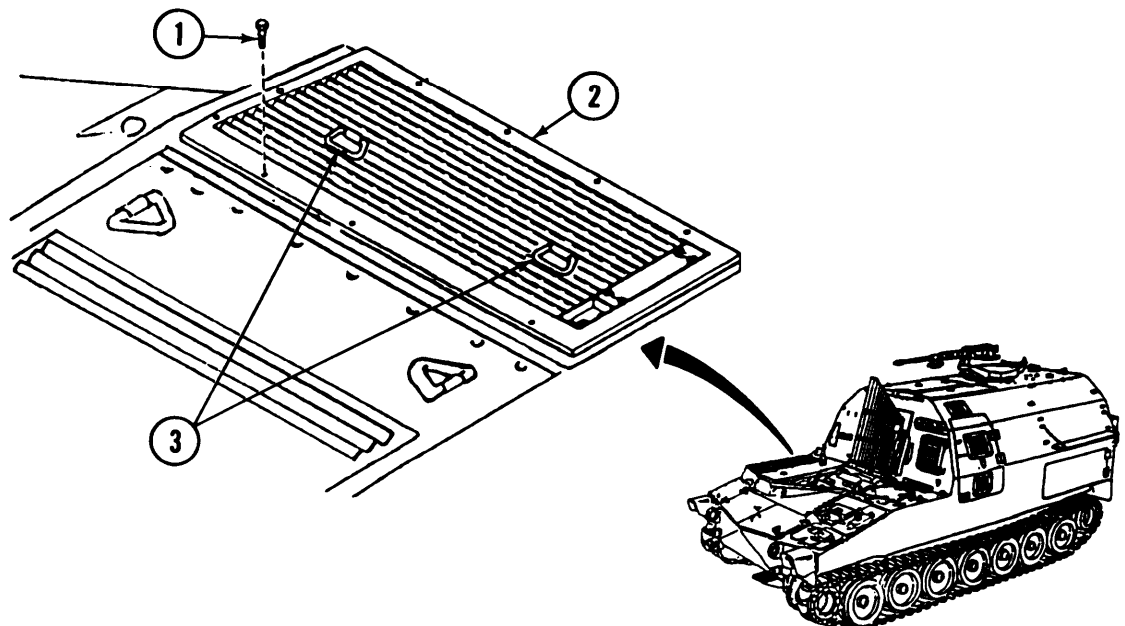
a. REMOVAL

1. Remove 14 screws (1) from exhaust deck (2).
2. Attach endless sling to two lifting handles (3) and hoist, and take up slack.

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

3. Remove exhaust deck (2) from vehicle, and place on suitable work surface. Remove hoist and sling from two lifting handles (3).



15-8. EXHAUST DECK REPLACEMENT (continued).

b. INSTALLATION

1. Install chain on two lifting handles (3) and hoist.

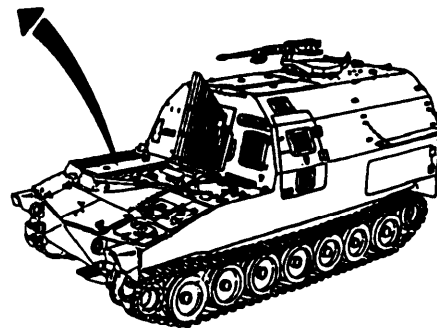
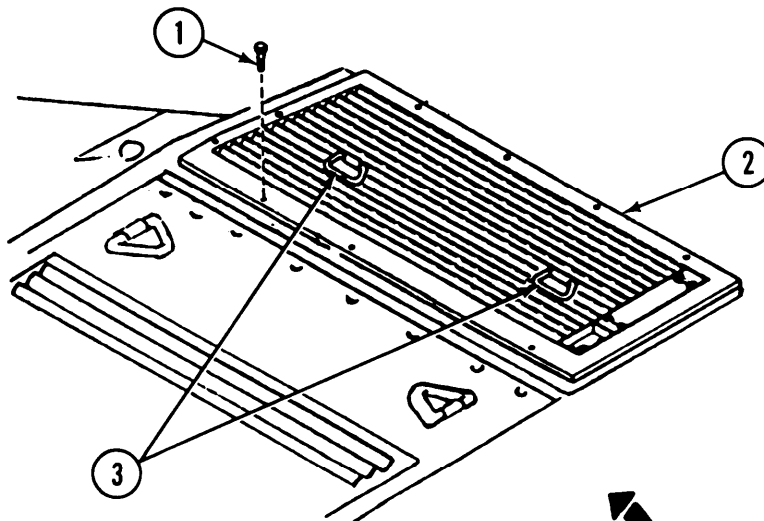
WARNING

Personnel must stand clear during lifting-operations. A swinging or shift load can cause injury.

NOTE

An assistant is needed to help align holes in exhaust deck with holes in vehicle.

2. Position exhaust deck (2) on vehicle, aligning holes in exhaust deck (2) with holes in vehicle. Remove chain from hoist and two lifting handles (3).
3. Secure exhaust deck (2) on vehicle with 14 screws (1). Remove hoist and chain from two lifting handles (3).



FOLLOW-ON TASKS:

- Install exhaust deflectors (para 15-9).
- Close air intake grille (refer to TM 9-2350-287-10).

15-9. EXHAUST DEFLECTORS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment

- General mechanic's tool kit (Item 24, Appendix I)

- Preformed packing (Item 237, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Preformed packing (Item 236, Appendix H)

a. REMOVAL

1. Remove four screws (2), engine exhaust deflector (3), packing (4), and seal support (5) from exhaust opening on exhaust deck (6). Discard packing.
2. Remove two screws (1) and washers (10), personnel heater exhaust deflector (9), preformed packing (8), and spring washer (7) from exhaust opening on exhaust deck (6). Discard preformed packing.

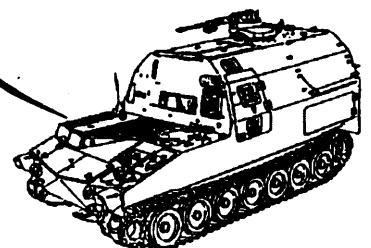
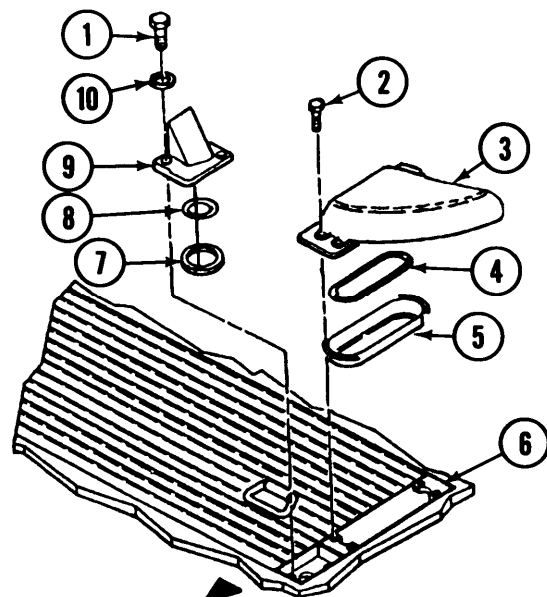
b. INSTALLATION

1. Position new preformed packing (8) and spring washer (7) over exhaust opening in exhaust deck (6).

NOTE

Make sure opening in exhaust deflector points outboard.

2. Secure personnel heater exhaust deflector (9) on exhaust deck (6) with two washers and screws (1).
3. Install seal support (5) and new packing (4) in exhaust opening on exhaust deck (6).
4. Secure engine exhaust deflector (3) to exhaust deck (6) with four screws (2).



FOLLOW-ON MAINTENANCE:

- None

15-10. ENGINE DIPSTICK ACCESS DOOR REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix I)

Equipment Conditions:

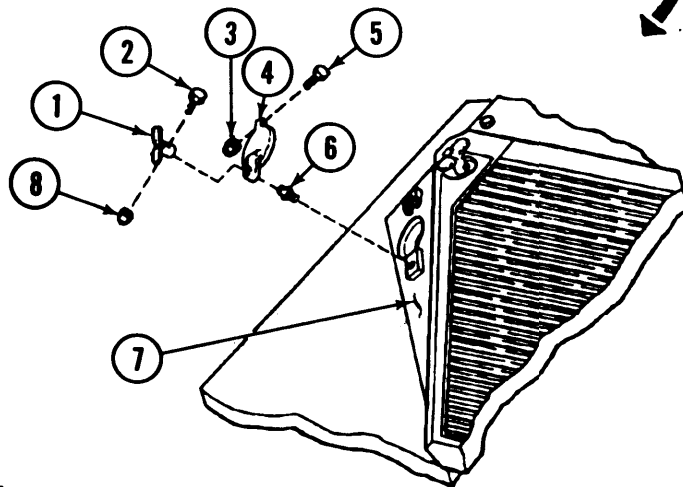
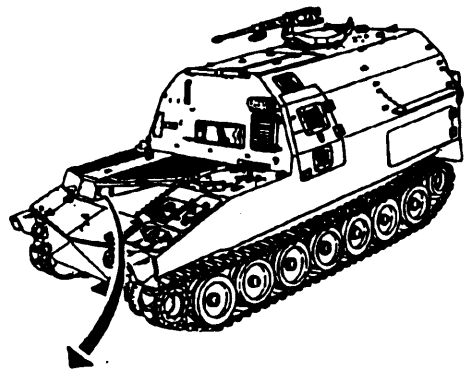
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Self-locking nut (2) (Item 328, Appendix H)
-

a. REMOVAL

1. Turn handle (1) on engine dipstick access door (4) counter-clockwise until access door (4) is free to open.
2. Remove screw (5), self-locking nut (3), and access door (4) from front slope plate (7). Discard self-locking nut.
3. Remove self-locking nut (8), screw (2), handle (1), and stud (6) from access door (4). Discard self-locking nut.



b. INSTALLATION

1. Install handle (1) and stud (6) on access door (4) with screw (2) and new self-locking nut (8).
2. install access door (4) on front slope plate (7) with screw (5) and new self-locking nut (3).
3. Turn handle (1) until access door (4) is securely closed.

FOLLOW-ON MAINTENANCE:

- None

15-11. FRONT AND SIDE HULL SLOPE PLATES REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment

- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Self-locking nut (2) (Item 304, Appendix H)

Personnel Required: Three

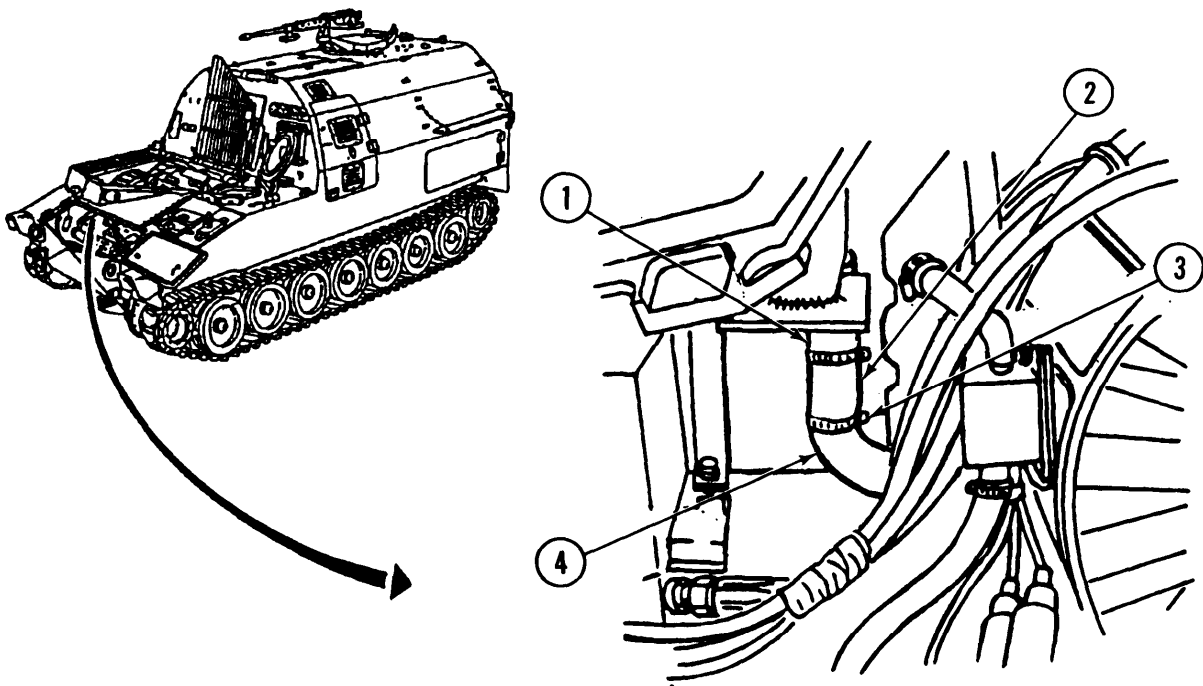
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

- Left transmission access door opened (refer to TM 9-2350-287-10).
- Right transmission access door removed (para 15-12).
- Air intake grille opened and secured (refer to TM 9-2350-287-10).
- Fan access door removed (para 15-6).
- Air intake grille adjustable support assembly removed (para 15-5).

a. REMOVAL

1. Loosen two clamps (3) on hose (2).
2. Push hose (2) on bilge pump outlet (1) to free it from discharge pipe (4).



15-11. FRONT AND SIDE HULL SLOPE PLATES REPLACEMENT (continued).

3. Remove two screws (5), washers (7), and self-locking nuts (9) and transmission door bracket (6) from front hull slope plate (8) and hull. Discard self-locking nuts.
4. Remove seven screws (11) and washers (10) from front hull slope plate (8).
5. Remove three screws (13) and washers (12) from front hull slope plate (8) and side hull slope plate (16).
6. Loop sling around front hull slope plate (8). Attach sling to hoist, and take up slack.

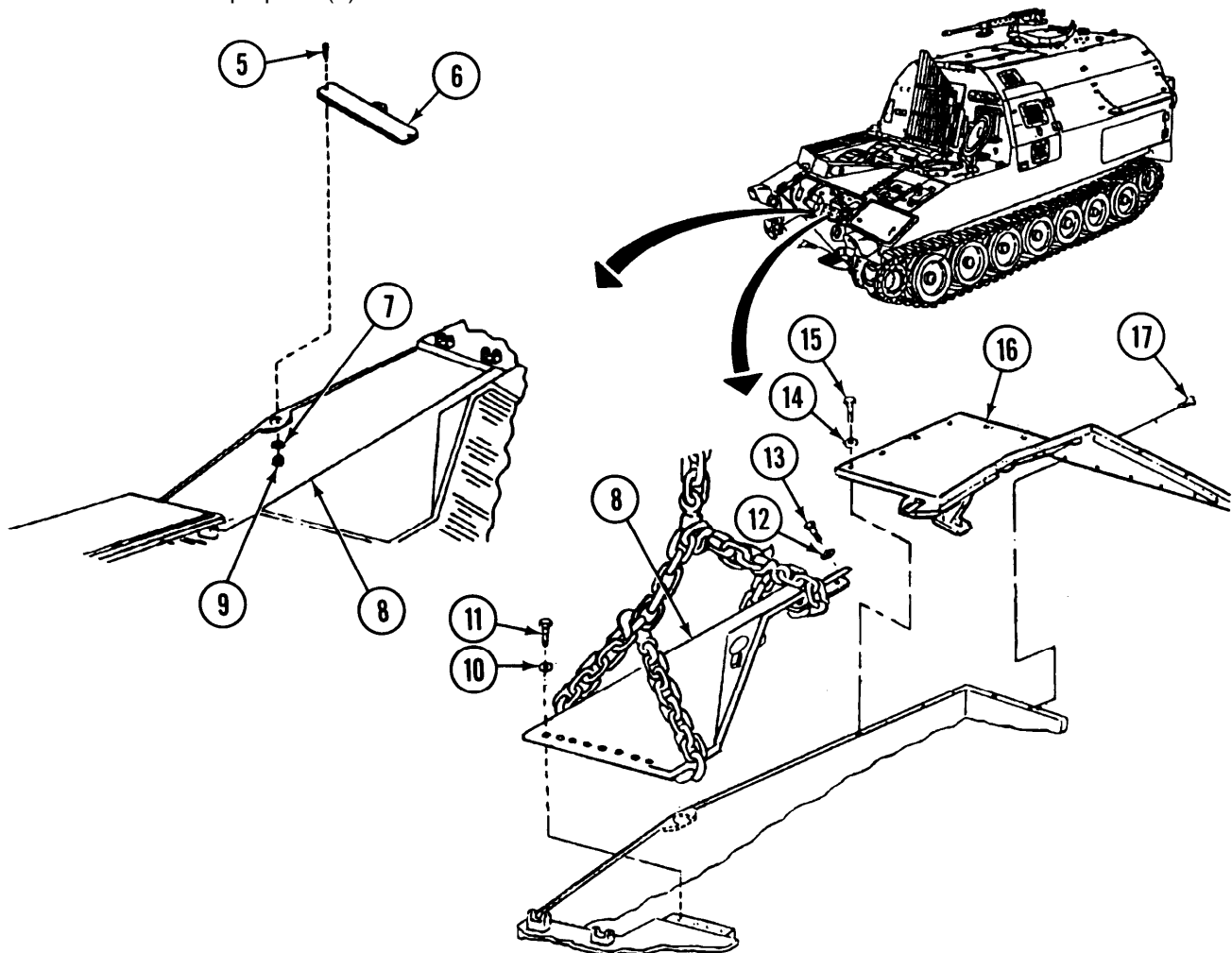
WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

CAUTION

When setting front hull slope plate on work surface, keep weight off engine compartment fire-sensing element. Element can be damaged.

7. Lift front hull slope plate (8) from vehicle, and place on suitable work surface. Remove sling and hoist from front hull slope plate (8).



15-11. FRONT AND SIDE HULL SLOPE PLATES REPLACEMENT (continued).

8. Remove seven screws (15) and washers (14) from sick hull slope plate (16).
9. Remove six screws (17) from side hull slope plate (16).

WARNING

Side hull plate is very heavy. At least three persons are required to lift it from vehicle. Failure to follow this warning can result in injury to personnel.

10. With at least two assistants, lift side hull slope plate (16) from vehicle.

b. INSTALLATION

WARNING

Side hull slope plate is very heavy. At least three persons are required to install it on vehicle. Failure to follow this warning can result in injury to personnel.

1. With at least two assistants, lift side hull slope plate (16) into position on vehicle.
2. Aline holes in side hull slope plate (16) with holes in hull.

NOTE

Do not tighten screws until both plates have been installed. Some maneuvering of plates may be necessary, to make sure all decks and plates fit properly.

3. Install six screws (17) in side hull slope plate (16).
4. Install seven screws (15) and washers (14) on side hull slope plate (16).
5. Loop sling around front hull slope plate (8). Attach sling to hoist, and take up slack.

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

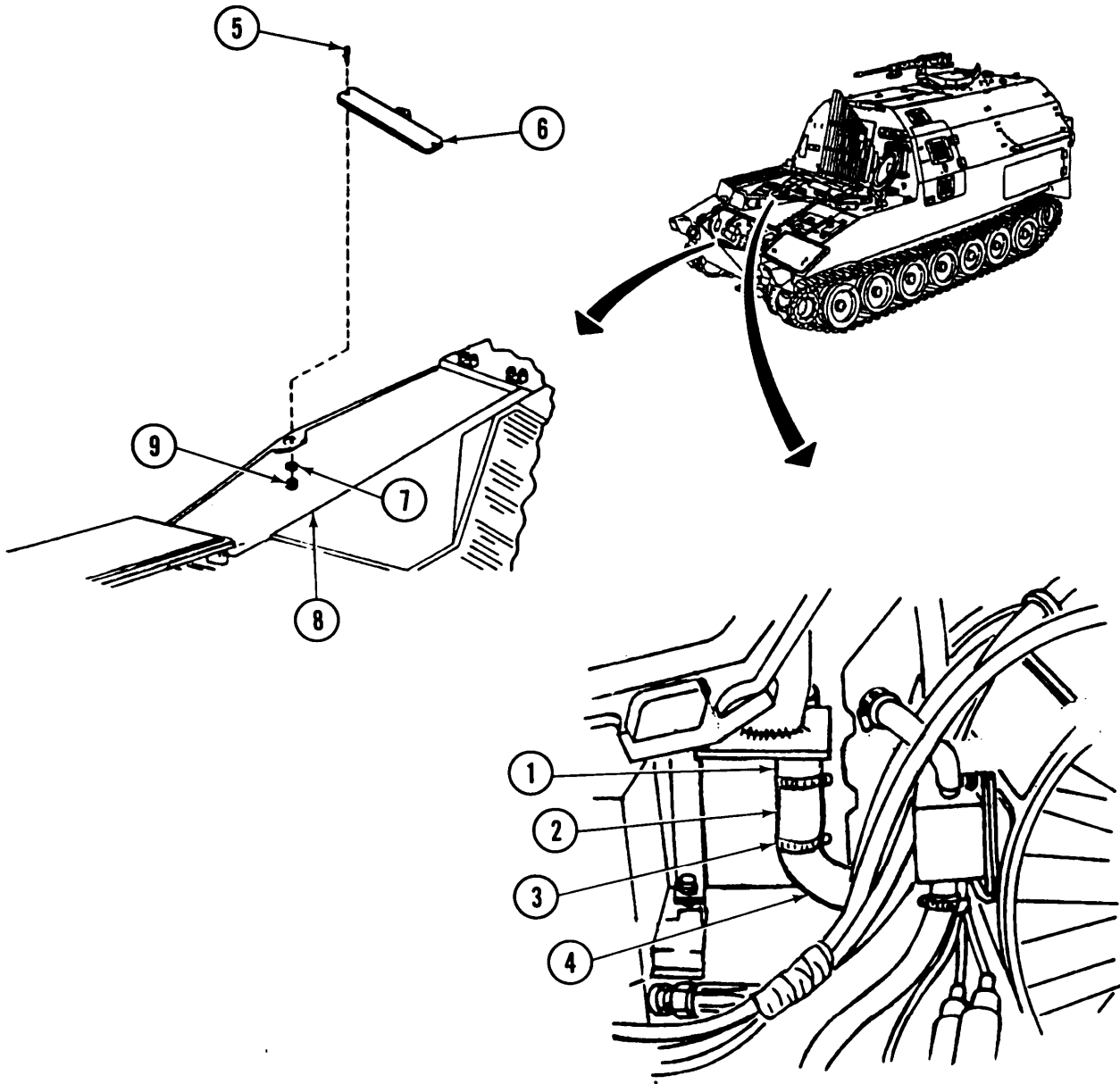
NOTE

Two assistants are required to help aline holes in front hull slope plate.

6. Lift front hull slope plate (8) onto vehicle. Aline holes in front hull slope plate (8) with holes in hull and holes in side hull slope plate (16).
7. install three washers (12) and screws (13) in front hull slope plate (8) and side hull slope plate (16).
8. Install seven washers (10) and screws (11) in front hull slope plate (8).

15-11. FRONT AND SIDE HULL SLOPE PLATES REPLACEMENT (continued).

9. Install transmission door bracket (6) on hull and front hull slope plate (8) with two washers (7), new self-locking nuts (9), and screws (5).
10. Push hose (2) from bilge pump outlet (1) onto discharge pipe (4), and secure hose (2) with two clamps (3).



FOLLOW-ON MAINTENANCE:

- Install air-intake grille adjustable support assembly (para 15-5).
- Install fan access door (para 15-6).
- Close air intake grille (refer to TM 9-2350-287-10).
- Install right transmission access door (para 15-12).
- Close left transmission access door (refer to TM 9-2350-287-10).

15-12. TRANSMISSION ACCESS DOORS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Self-locking nut (2) (Item 327, Appendix H)
- Self-locking nut (Item 328, Appendix H)

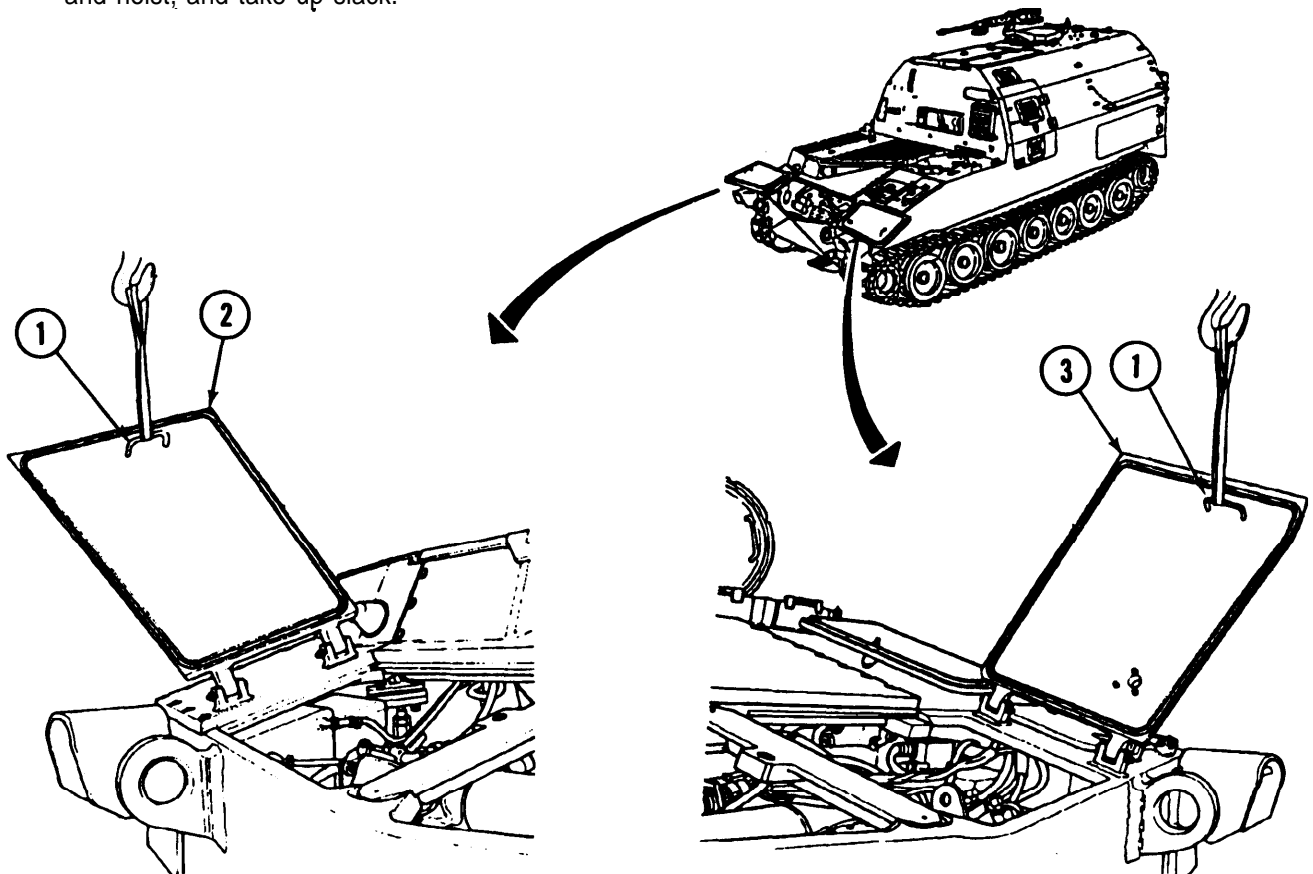
Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Transmission access doors opened (refer to TM 9-2350-287-10).

a. REMOVAL

1. Attach endless sling to handle (1) of right transmission access door (2) or left transmission access door (3) and hoist, and take up slack.



15-12. TRANSMISSION ACCESS DOORS REPLACEMENT (continued).

2. Remove two self-locking nuts (8), washers (7), and screws (10) from access door (2 or 3) and hull. Discard self-locking nuts.

WARNING

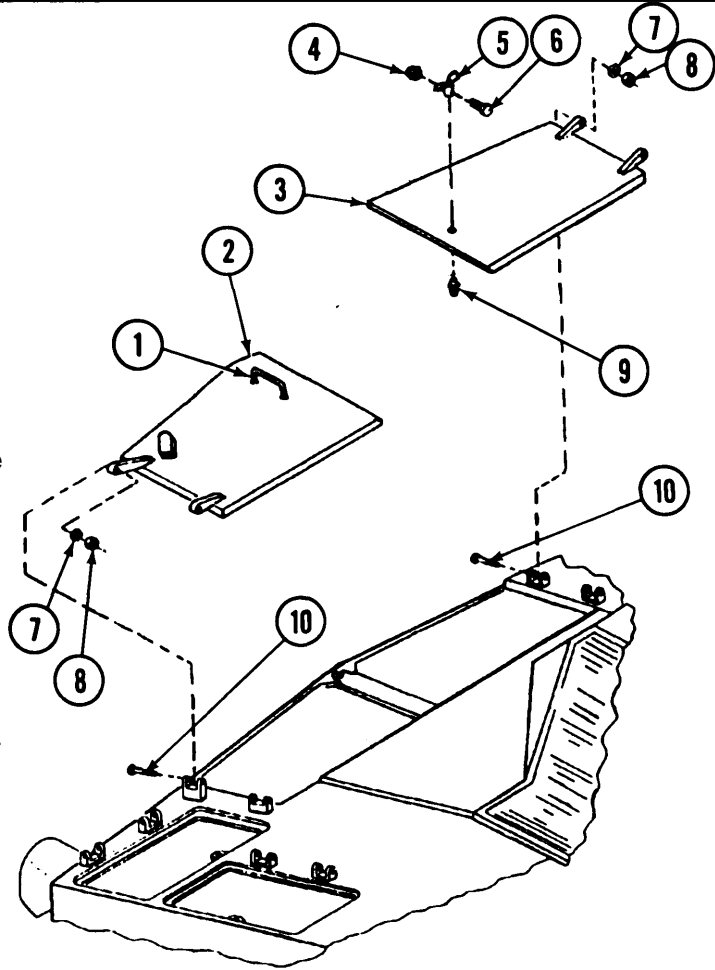
Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury to personnel.

3. Lift access door (2 or 3) from vehicle and place on suitable work surface. Remove chain and hoist.

NOTE

Step 4 is for the right access door only.

4. Remove screw (6), self-locking nut (4), handle (5), and stud (9) from access door (3). Discard self-locking nut.



b. INSTALLATION

NOTE

Step 1 is for the right access door only.

1. Install stud (9) and handle (5) on access door (3) with new self-locking nut (4) and screw (6).
2. Install endless sling on handle (1) on access cover (2 or 3) and hoist, and take up slack.

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause injury.

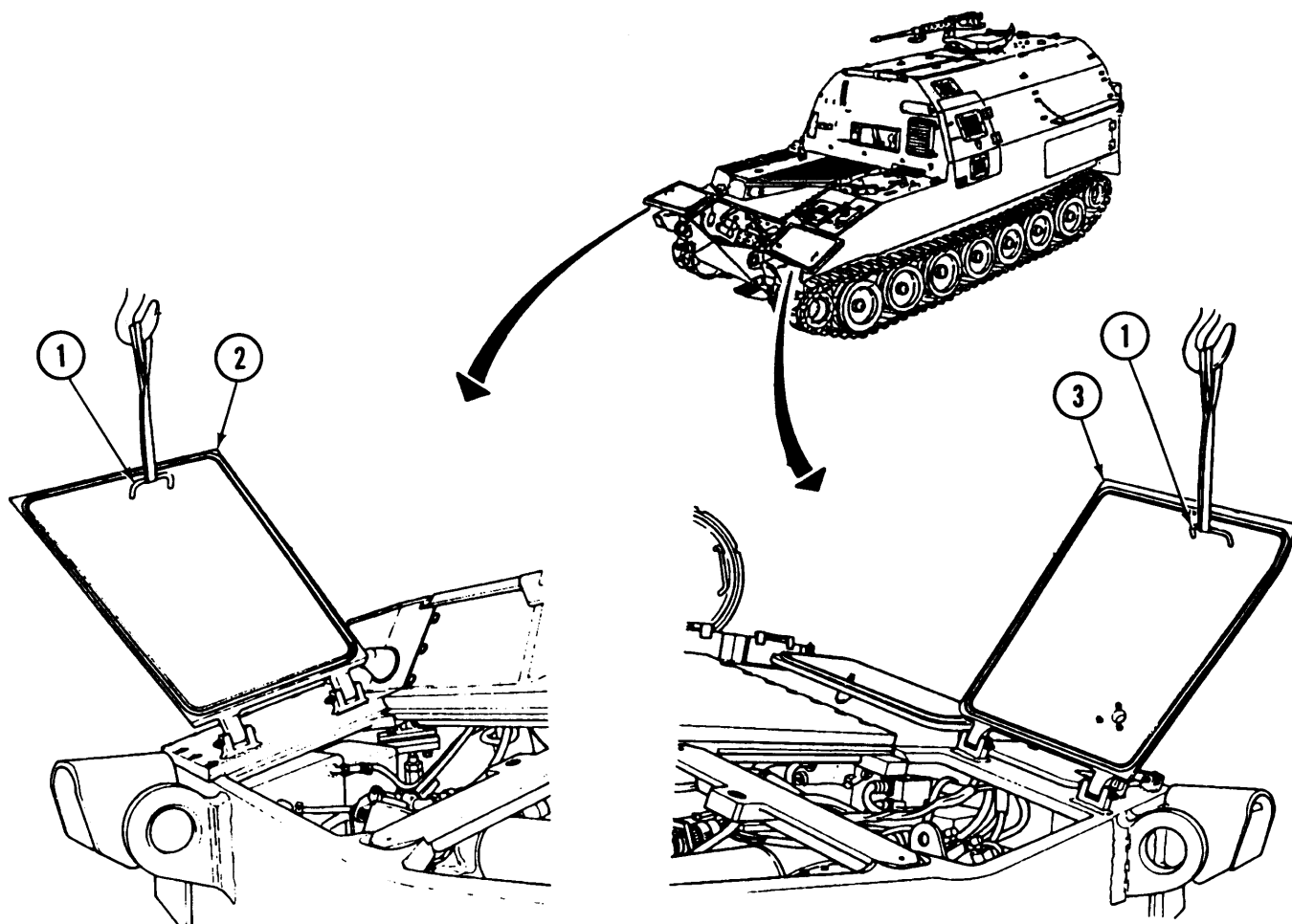
NOTE

An assistant is needed to properly position access door on vehicle.

3. Lift access door (2 or 3) into position on vehicle.
4. Secure access door (2 or 3) to vehicle with two screws (10), washers (7), and new self-locking nuts (8).

15-12. TRANSMISSION ACCESS DOORS REPLACEMENT (continued).

5. Remove sling from handle (1) on access door (2 or 3) and hoist.

**FOLLOW-ON MAINTENANCE:**

- Close transmission access doors (refer to TM 9-2350-287-10).

15-13. TRANSMISSION ACCESS DOORS AND BATTERY ACCESS DOORS SEAL REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Seal (for right transmission access door) (Item 262, Appendix H)

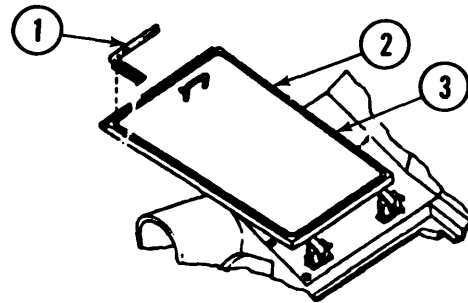
- Seal (for left transmission access door) (Item 263, Appendix H)
- Seal (for battery access doors) (Item 266, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Appropriate access door opened (refer to TM 9-2350-287-10).

a. REMOVAL

1. Scrape seal (1) from channel (2) on access door (3). Discard seal (1).



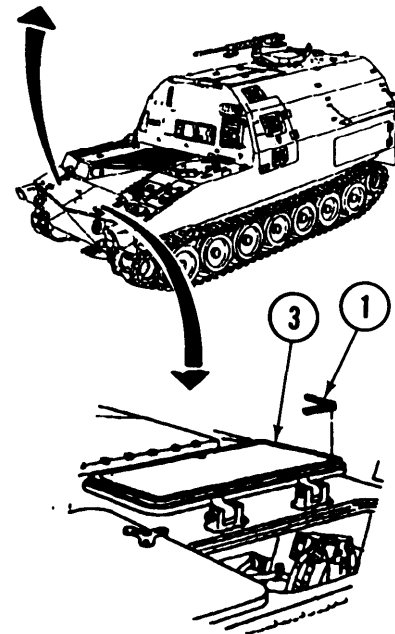
WARNING

Drycleaning 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 use near open flame or excessive heat.

2. Clean channel (2) with drycleaning solvent to remove all adhesive and seal residue. Wipe dry with clean rags.

b. INSTALLATION

1. Apply adhesive to bottom of channel (2) and new seal (1). Allow to dry until tacky.
2. Install seal (1) at middle of hinge end of door (3).
3. Press seal (1) into channel (2) around door (3) until ends of seal (1) meet. Trim ends if necessary to make a smooth, tight joint.



FOLLOW-ON MAINTENANCE:

- Close appropriate access door (refer to TM 9-2350-287-10).

15-14. BATTERY ACCESS DOORS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Self-locking nut (2) (Item 328, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Self-locking nut (4) (Item 327, Appendix H)

a. REMOVAL

1. Loosen handle (6) on each of two battery access doors (1).
2. Remove four screws (4), washers (3), and self-locking nuts (2) from four hinges (5) and each of two access doors (1). Discard self-locking nuts.
3. Remove two access doors (1) from vehicle.

NOTE

Perform step 4 only if handles are damaged.

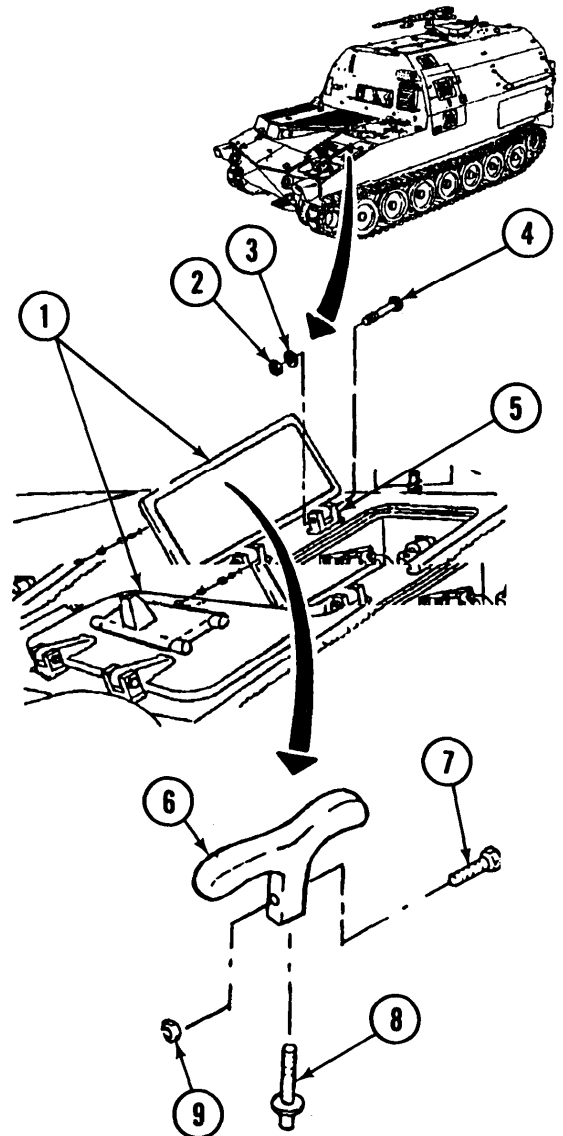
4. Remove screw (7), self-locking nut (9), handle (6), and stud (8) from each of two access doors (1). Discard self-locking nuts.

b. INSTALLATION

NOTE

Perform step 1 only if handles were removed.

1. Install stud (8) and handle (6) on each of two access doors (1) with screw (7) and new self-locking nut (9).
2. Install two access doors (1) on vehicle.
3. Secure two access doors (1) on four hinges (5) with four screws (4), washers (3), and new self-locking nuts (2).
4. Tighten handle (6) on each of two access doors (1).



FOLLOW-ON MAINTENANCE:

- None

15-15. VENTILATION DOOR ASSEMBLY AND DRAIN HOSE REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

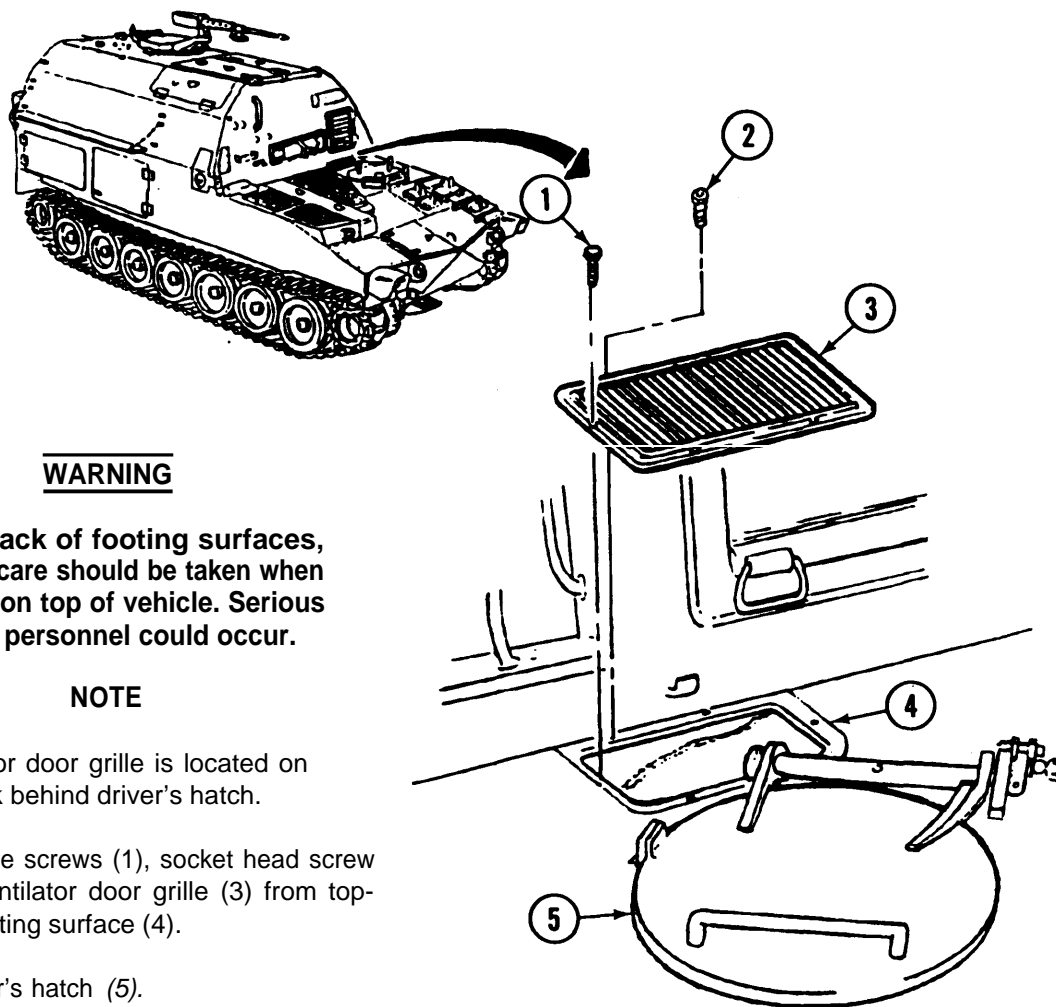
- Cotter pin (Item 10, Appendix H)
- Preformed packing (Item 233, Appendix H)
- Spring pin (Item 354, Appendix H)

Material/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).



REMOVAL

WARNING

Due to lack of footing surfaces, extreme care should be taken when working on top of vehicle. Serious injury to personnel could occur.

NOTE

Ventilator door grille is located on top deck behind driver's hatch.

1. Remove five screws (1), socket head screw (2) and ventilator door grille (3) from top-deck mounting surface (4).
2. Open driver's hatch (5).

15-15. VENTILATION DOOR ASSEMBLY AND DRAIN HOSE REPLACEMENT (continued).

3. Remove cotter pin (20) and washer (19) from ventilation door (21) and pin (23). Discard cotter pin.
4. Remove pin (23) and arm (11) from mounting lugs (22) on door (21). Remove door (21).

WARNING

Handle assembly is spring loaded. To avoid injury to personnel, extreme care should be taken when removing spring pin.

5. Remove spring pin (16) from handle (15). Discard spring pin.
6. Raise handle (15) to relieve tension on spring (18) and hinge pin (12). Remove handle (15) from hinge pin (12), spring (18), spring retainer (17), and pin (6).
7. Remove retainer nut (14) and packing (13) from hinge pin (12). Discard packing.
8. Remove hinge pin (12) and arm (11) from hinge lugs (7).
9. Remove seal (24) from door (21). Discard seal.
10. Loosen two clamps (9) and remove hose (10) from tube (8).

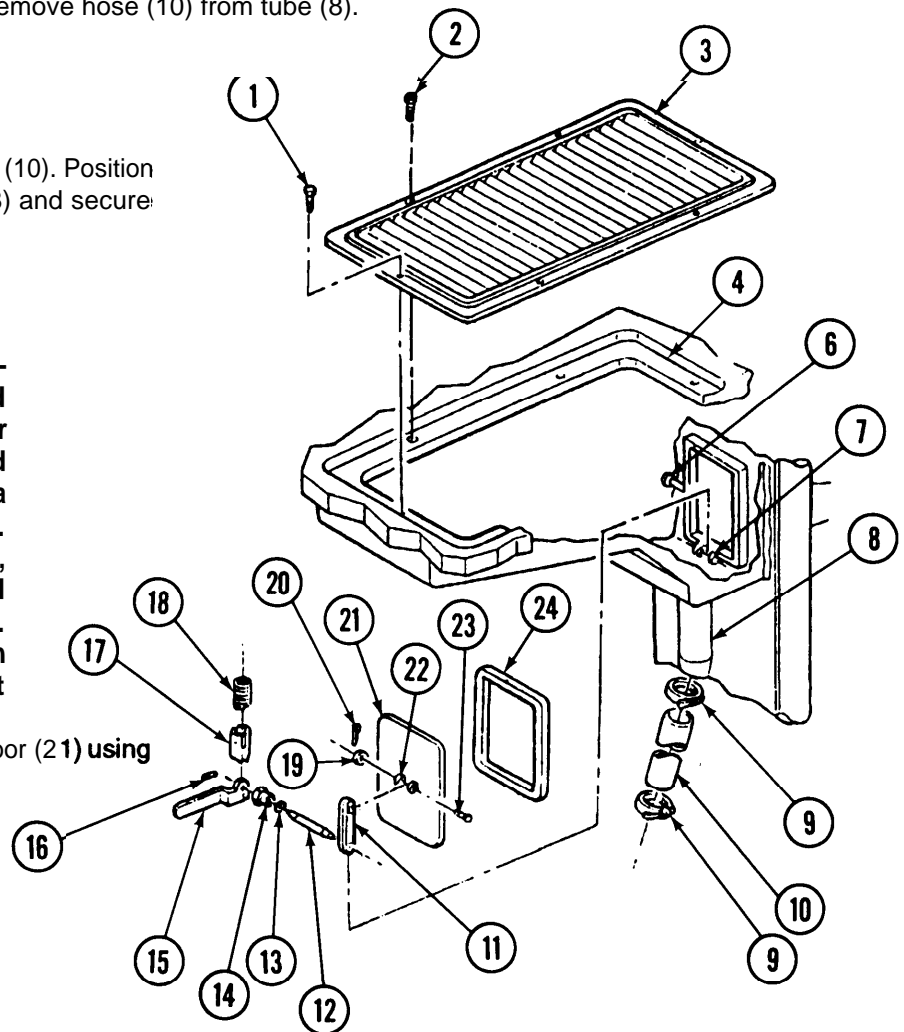
b. INSTALLATION

1. Install two clamps (9) on hose (10). Position hose (10) in place on tube (8) and secure with two clamps (9).

WARNING

Drycleaning 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

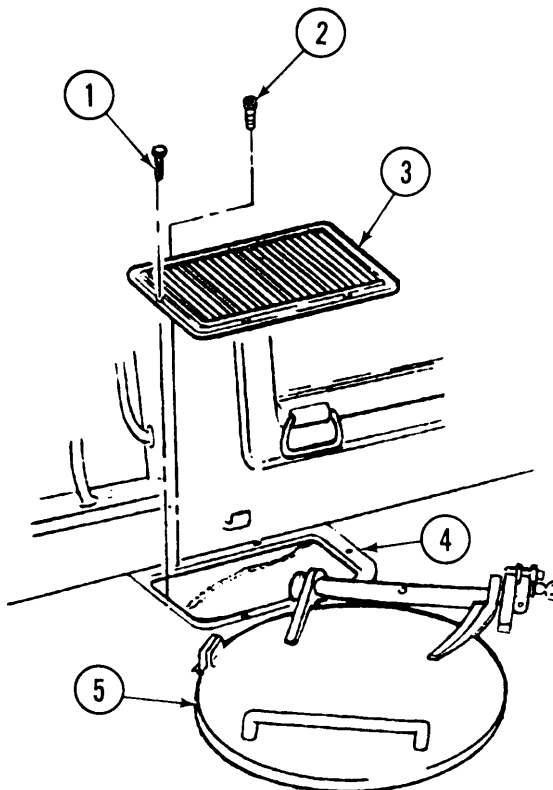
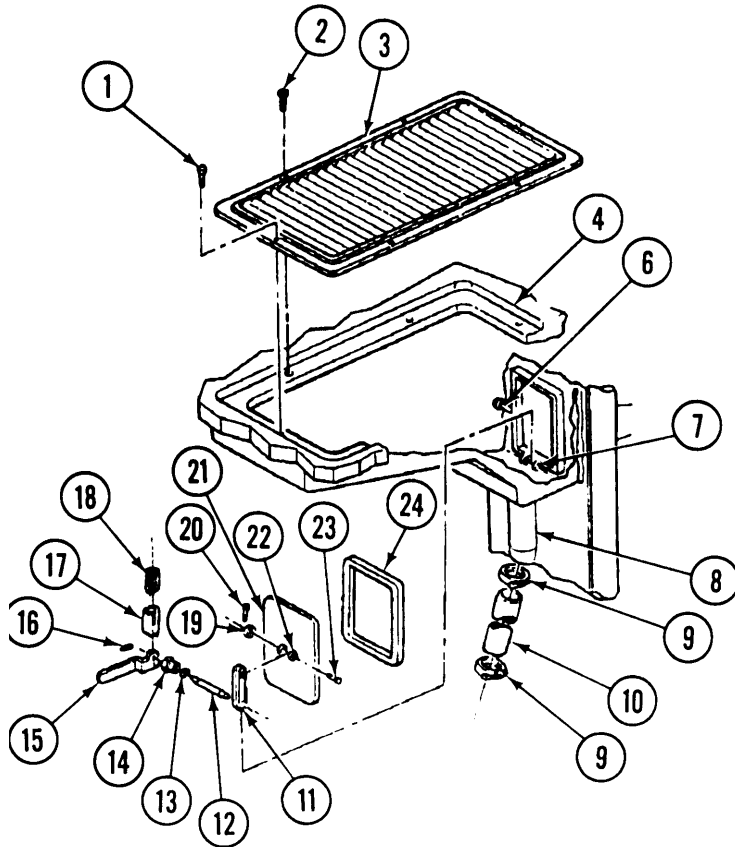
2. Clean seal contact areas of door (21) using drycleaning solvent.



15-15. VENTILATION DOOR ASSEMBLY AND DRAIN HOSE REPLACEMENT (continued).

WARNING

Sealant is toxic. Prolonged breathing of vapors from organic solvents is dangerous. Rubber gloves should be used. Wash hands thoroughly with soap and water before eating, drinking, or smoking.



3. Apply a thin layer of rubber adhesive to seal contact areas of door (21).
4. Install new seal (24) on door (21).
5. Install arm (11) between hinge lugs (7) and secure with hinge pin (12).
6. Install new packing (13) in retainer nut (14). Install retainer nut (14) on hinge pin (12).
7. Close driver's hatch (5).
8. Aline holes in mountings lugs (22) on door (21) with holes in arm (11) and secure with pin (23), washer (19), and new cotter pin (20).
9. Position handle (15) on hinge pin (12) and aline hole in handle (15) with hole in hinge pin (12). Secure handle (15) to hinge pin (12) with new spring pin (16).
10. Install spring (18) in spring retainer (17). Install spring (18) and spring retainer (17) on handle (15) with pin (6) in slots of spring retainer (17).
11. Position ventilator door grille (3) in place on top-deck mounting surface (4) and secure with socket head screw (2) and five screws (1).

FOLLOW-ON MAINTENANCE:

- None

15-16. ENGINE COMPARTMENT ACCESS COVER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Gasket (Item 72, Appendix H)
- Lockwasher (12) (Item 164, Appendix H)

Equipment Conditions:

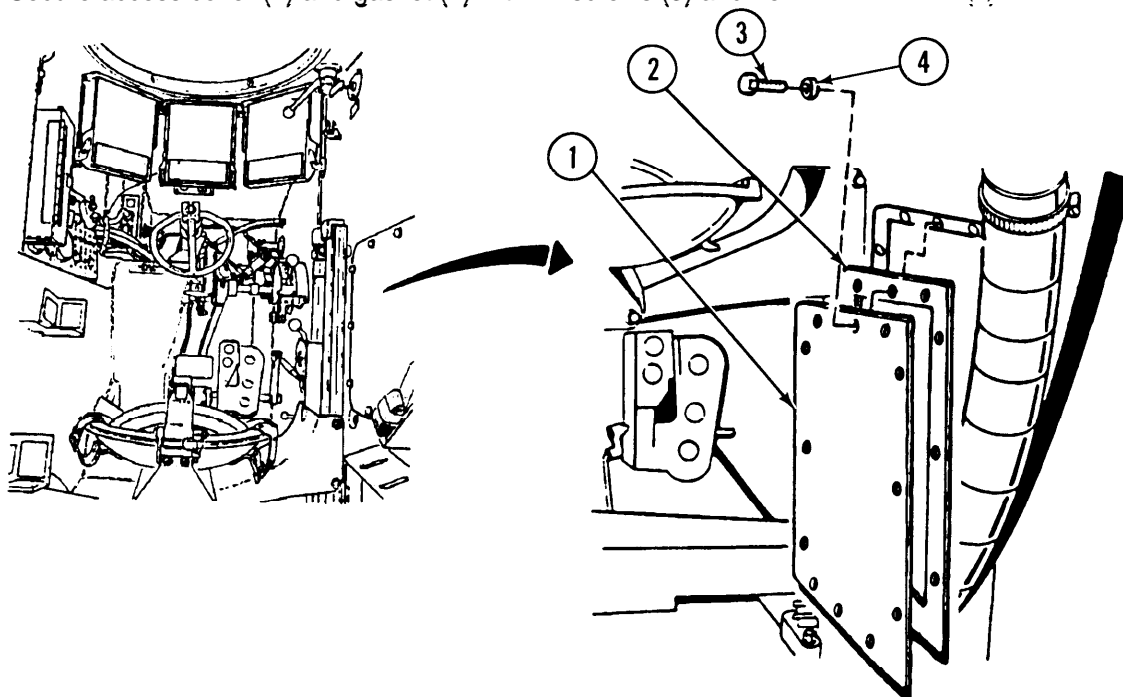
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch cover open and secured (refer to TM 9-2350-287-10).

a. REMOVAL

Remove 12 screws (3) and lockwashers (4), engine compartment access cover (2), and gasket (1) from driver's compartment bulkhead. Discard gasket and lockwashers.

b. INSTALLATION

1. Position new gasket (1) and access cover (2) in place on driver's compartment bulkhead.
2. Secure access cover (2) and gasket (1) with 12 screws (3) and new lockwashers (4).



FOLLOW-ON MAINTENANCE:

- Close driver's hatch cover (refer to TM 9-2350-287-10).

15-17. TOP LEFT DOOR REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Endless sling (item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- LockWasher (10) (Item 164, Appendix H)
- LockWasher (11) (Item 196, Appendix H)
- Seal (Item 282, Appendix H)
- Seal (2) (Item 283, Appendix H)

- Self-locking nut (item 323, Appendix H)
- Spring pin (2) (item 352, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Top middle door opened and secured (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Attach sling to lifting lug (6) and hoist.
2. Remove screw (18), two washers (15), and self-locking nut (14) from hold-open bar (16). Allow hold-open bar (16) to hang free from support (17). Discard self-locking nut.

NOTE

For proper installation, record number and thickness of shims.

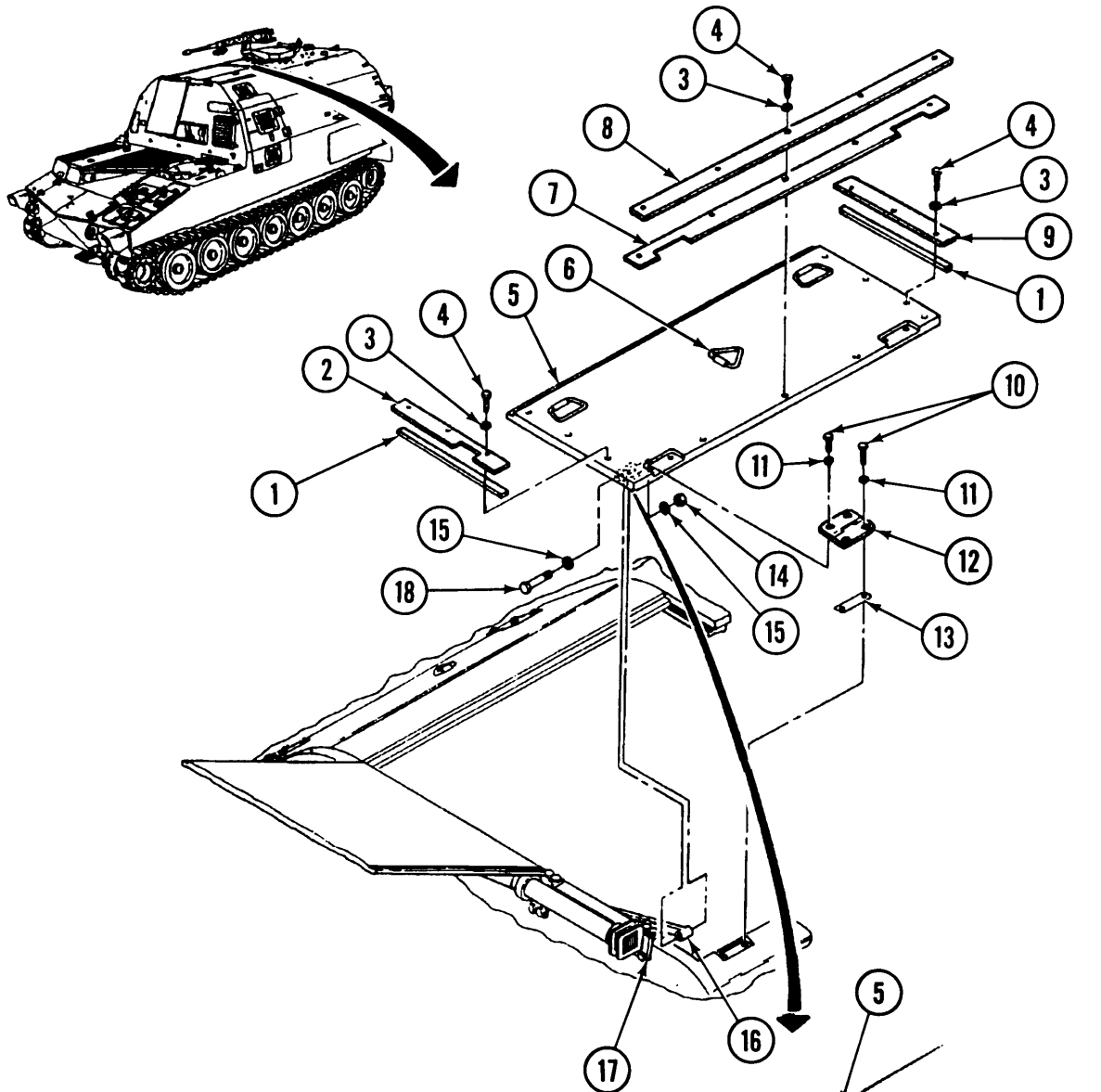
3. Remove eight screws (10) and lockwashers (11), two hinges (12), and shims (13) from vehicle. Discard lockwashers.

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load may cause severe injury.

4. Using hoist, lift top left door (5) from vehicle and place on hard level surface.
5. Remove six screws (4) and lockwashers (3) and two seal retainers (2 and 9) and seals (1) from top left door (5). Discard lockwashers and seals.
6. Remove five screws (4) and lockwashers (3) and seal retainer (8) and seal (7) from top left door (5). Discard lockwashers and seal.

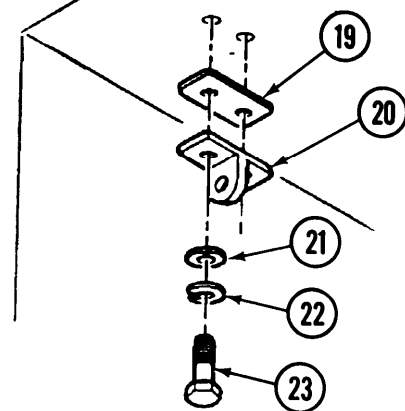
15-17. TOP LEFT DOOR REPLACEMENT (continued).



7. Remove two screws (23), lockwashers (22), and washers (21), and bracket (20) and spacer (19) from top left door (5). Discard lockwashers.

b. INSTALLATION

1. Install spacer (19) and bracket (20) on top left door (5) with two screws (23), new lockwashers (22), and washers (21).



15-17. TOP LEFT DOOR REPLACEMENT (continued).

2. Install new seal (7) and seal retainer (8) on top left door (5) with five screws (4) and new lockwashers (3).
3. Install two new seals (1) and seal retainers (2 and 9) on top left door (5) with six screws (4) and new lockwashers (3).
4. Position shims (13) on mounting surface of hull.

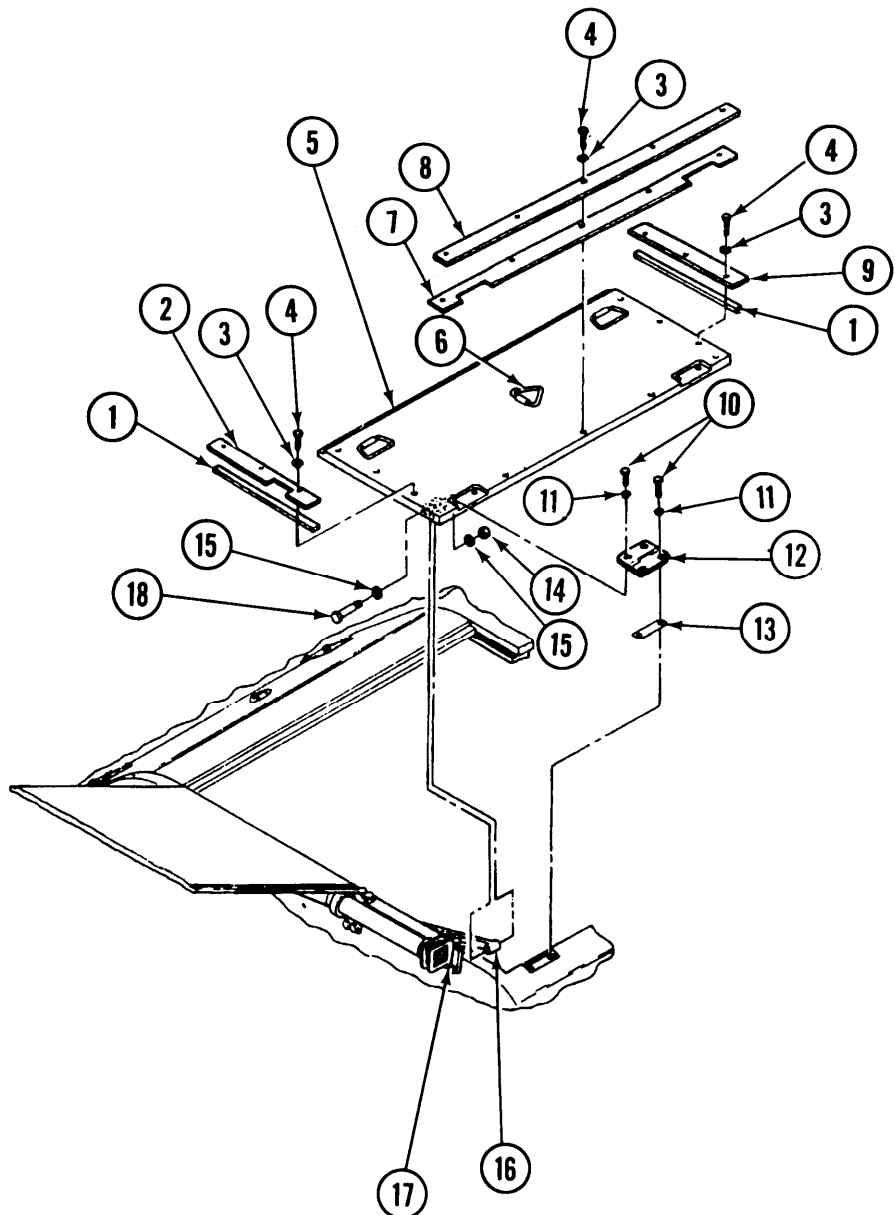
WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load may cause severe injury.

NOTE

An assistant is needed to help align hinges with shims and mounting surfaces of hull.

5. Using hoist, lift top left door (5) into position on hull. With assistant, align holes in two hinges (12) with holes in shims (13) and hull.
6. Secure shims (13) and two hinges (12) to hull and top left door (5) with eight new lockwashers (11) and four screws (10).
7. Allow top left door (5) to close. If door does not appear to be straight or binds when closing, loosen four screws (10) and maneuver top left door (5) until it opens and closes without binding. Remove chain from lifting lug (6).
8. Install hold-open bar (16) on top left door (5) with screw (18), two washers (15), and new self-locking nut (14).



FOLLOW-ON-MAINTENANCE:

- Close top middle door (refer to TM 9-2350-287-10).

15-18. TOP RIGHT DOOR REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix 1)
- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- LockWasher (10) (Item 164, Appendix H)
- Self-locking nut (Item 323, Appendix H)

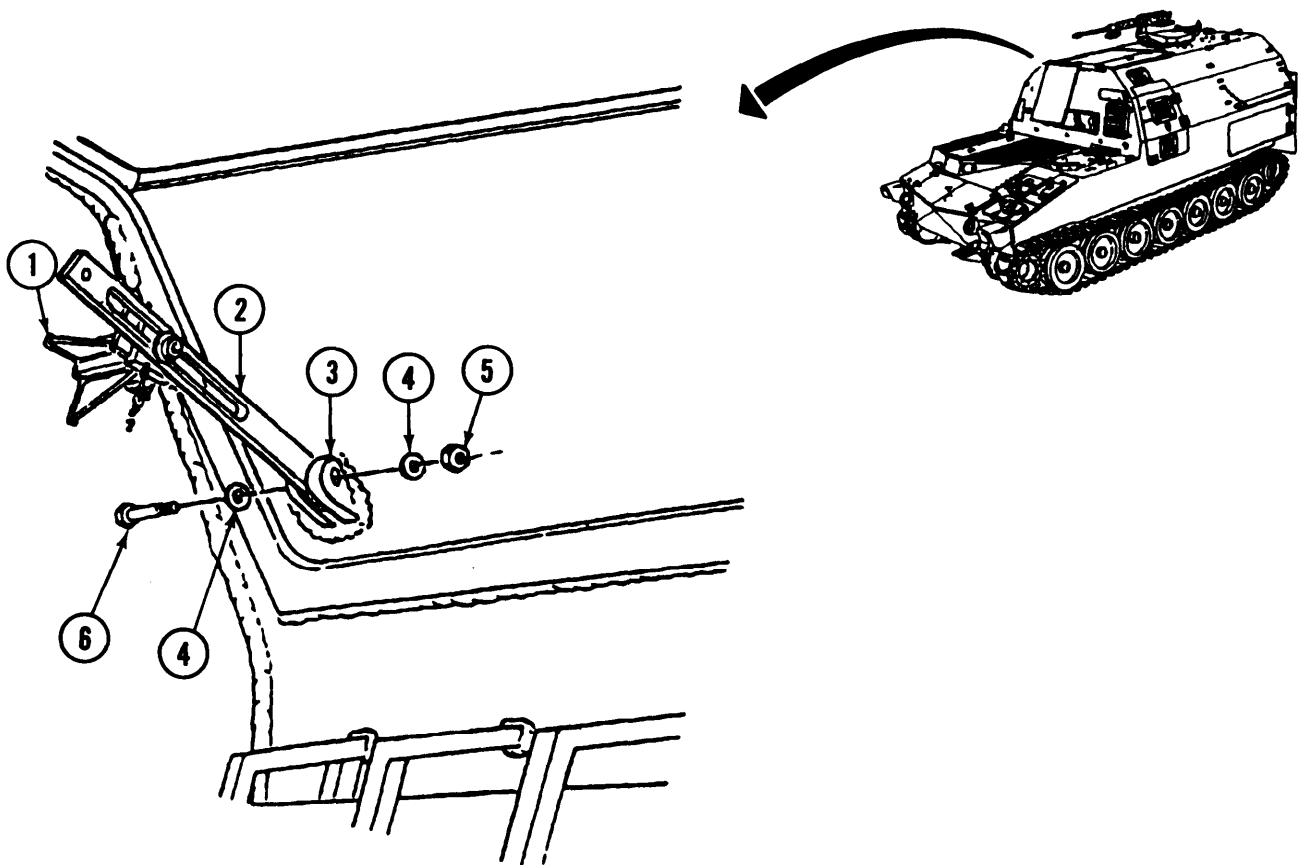
Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Top middle door opened (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove screw (6), self-locking nut (5), two washers (4), and bar (2) from bracket (3). Allow bar (2) to hang from support (1). Discard self-locking nut.



15-18. TOP RIGHT DOOR REPLACEMENT (continued).

- 2. Attach chain and hoist to lifting lug (18) on top right door (17). Open top right door (17) (refer to TM 9-2350-287-10), and hold open with hoist.

WARNING

Be careful when removing hinge screws. Door may shift or swing quickly when last screw is removed. Keep body clear of door. Failure to heed this warning may result in severe injury to personnel.

NOTE

An assistant is needed to help remove screws from hinges.

- 3. Remove four nuts (20), lockwashers (19), washers (14), and screws (16) from two hinges (13) on top right door (17). Discard lockwashers.

WARNING

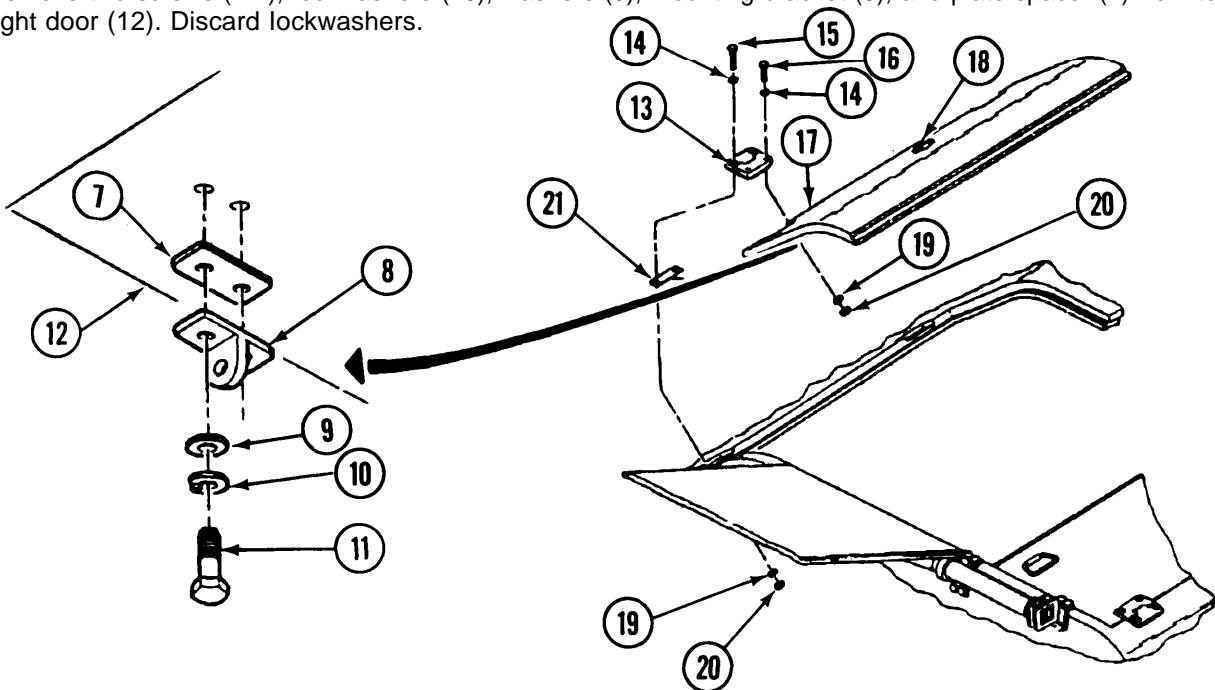
Personnel must stand clear during lifting operations. A swinging or shifting load may cause severe injury.

- 4. Remove top right door (17) from vehicle. Place top right door (17) on hard, level surface.

NOTE

For proper installation, record number and thickness of shims.

- 5. Remove four nuts (20), lockwashers (19), washers (14), and screws (15), two hinges (13), and shims (21) from vehicle.
- 6. Remove two screws (11), lockwashers (10), washers (9), mounting bracket (8), and plate spacer (7) from top right door (12). Discard lockwashers.



15-18. TOP RIGHT DOOR REPLACEMENT (continued).

b. INSTALLATION

1. Install mounting bracket (8) and plate spacer (7) on top right door (12) with two screws (11), washers (9), and new lockwashers (10).
2. Install shims (21) and two hinges (13) on vehicle with four screws (1 5), washers (1 4), new lockwashers (19), and nuts (20).

WARNING

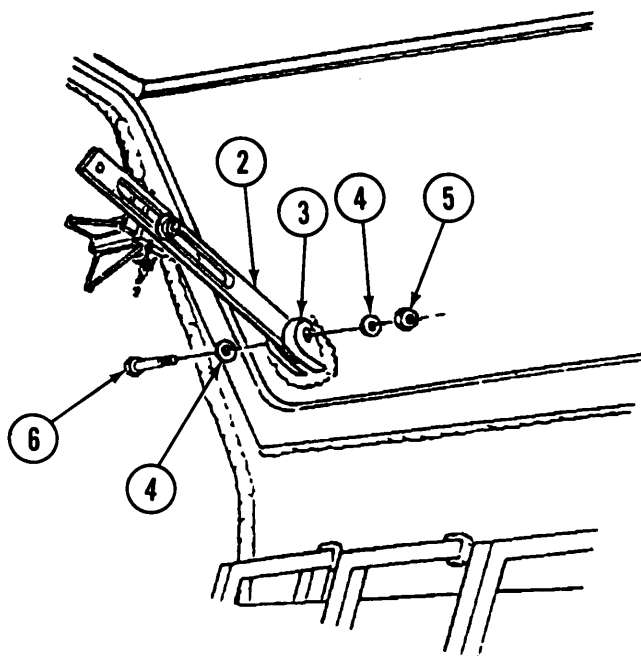
Personnel must stand clear during lifting operations. A swinging or shifting load may cause severe injury.

3. Using hoist and chain, lift top right door (17) into position on vehicle.

NOTE

An assistant is needed to help maneuver door and install screws in hinges.

4. Maneuver top right door (17) so holes in top right door (17) and two hinges (13) aline.
5. Install top right door (17) on two hinges (13) with four screws (16) washers (14), new lockwashers (19), and nuts (20).
6. Using hoist, close top right door (17) (refer to TM 9-2350-287-10). Remove chain from lifting lug (18) and hoist.
7. Install bar (2) on bracket (3) with screw (6), new self-locking nut (5), and two washers (4).

**FOLLOW-ON MAINTENANCE:**

- Close top middle door (refer to TM 9-2350-287-1 0).

15-19. TOP DOOR INNER SEALS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Seal (Item 275, Appendix H)

- Shim (Item 340, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Top left, right, and middle doors opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Remove top door inner seal (1) and shim (2) from channel (3). Discard shim and seal.

WARNING

Drycleaning 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 use near open flame or excessive heat.

2. Clean adhesive residue from channel (3) with drycleaning solvent and rags.

b. INSTALLATION

WARNING

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

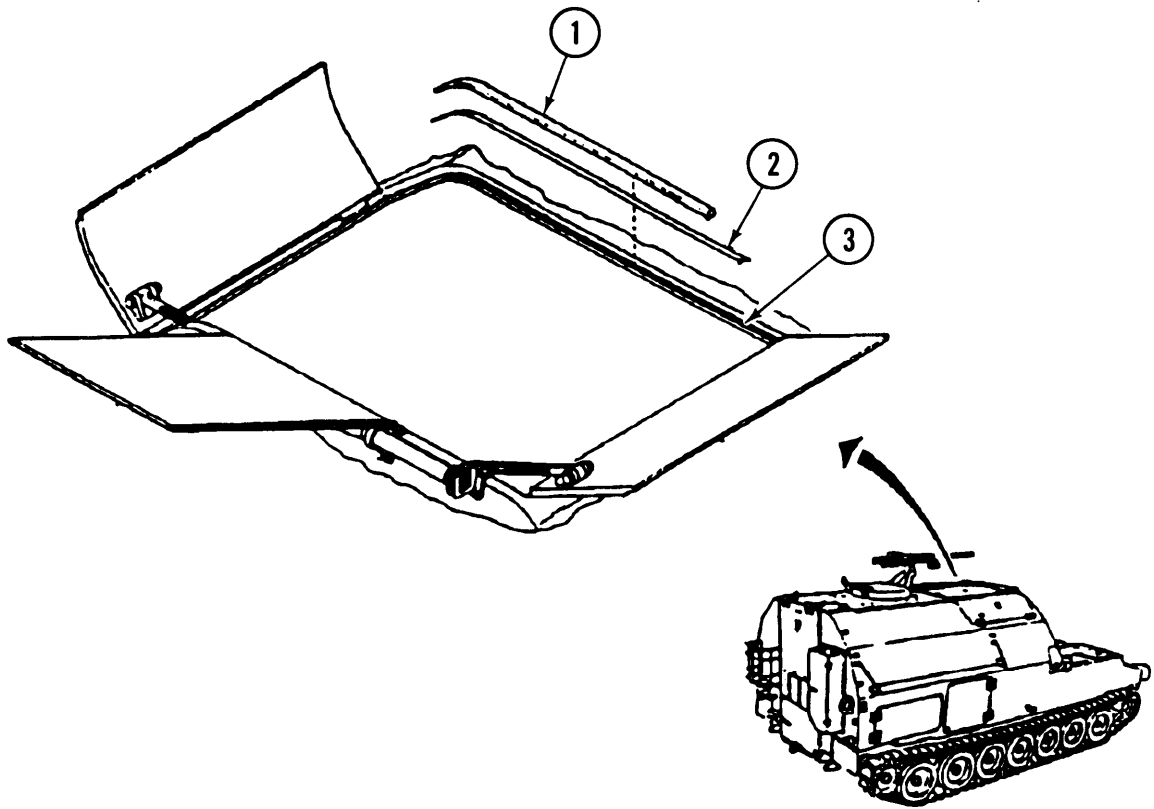
1. Apply adhesive to mounting surfaces of channel (3), new shim (2) and new seal (1). Allow adhesive to dry until tacky.

NOTE

For best results, do not stretch or bunch shim or seal during installation.

2. Install inner seal (1) and shim (2) on channel (3).

15-19. TOP DOOR INNER SEALS REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Close top left, right, and middle doors (refer to TM 9-2350-287-10).

15-20. TOP LEFT DOOR HOLD-OPEN ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- LockWasher (Item 196, Appendix H)
- Self-locking nut (Item 323, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Top middle door opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Remove quick-release pin (6) from bar (9).
2. Remove screw (4), lockwasher (3), and S-hook (2), with chain (5) and quick-release pin (6) attached, from support (1). Discard lockwasher.
3. Remove screw (7), washer (8), and bar (9) from support (1).
4. Remove screw (11), self-locking nut (13), two washers (10), and bar (9) from bracket (12). Discard self-locking nut.

NOTE

Perform step 5 only if replacing quick-release pin and chain or S-hook.

5. Unbend S-hook (2), and remove S-hook (2) from chain (5) and quick-release pin (6).

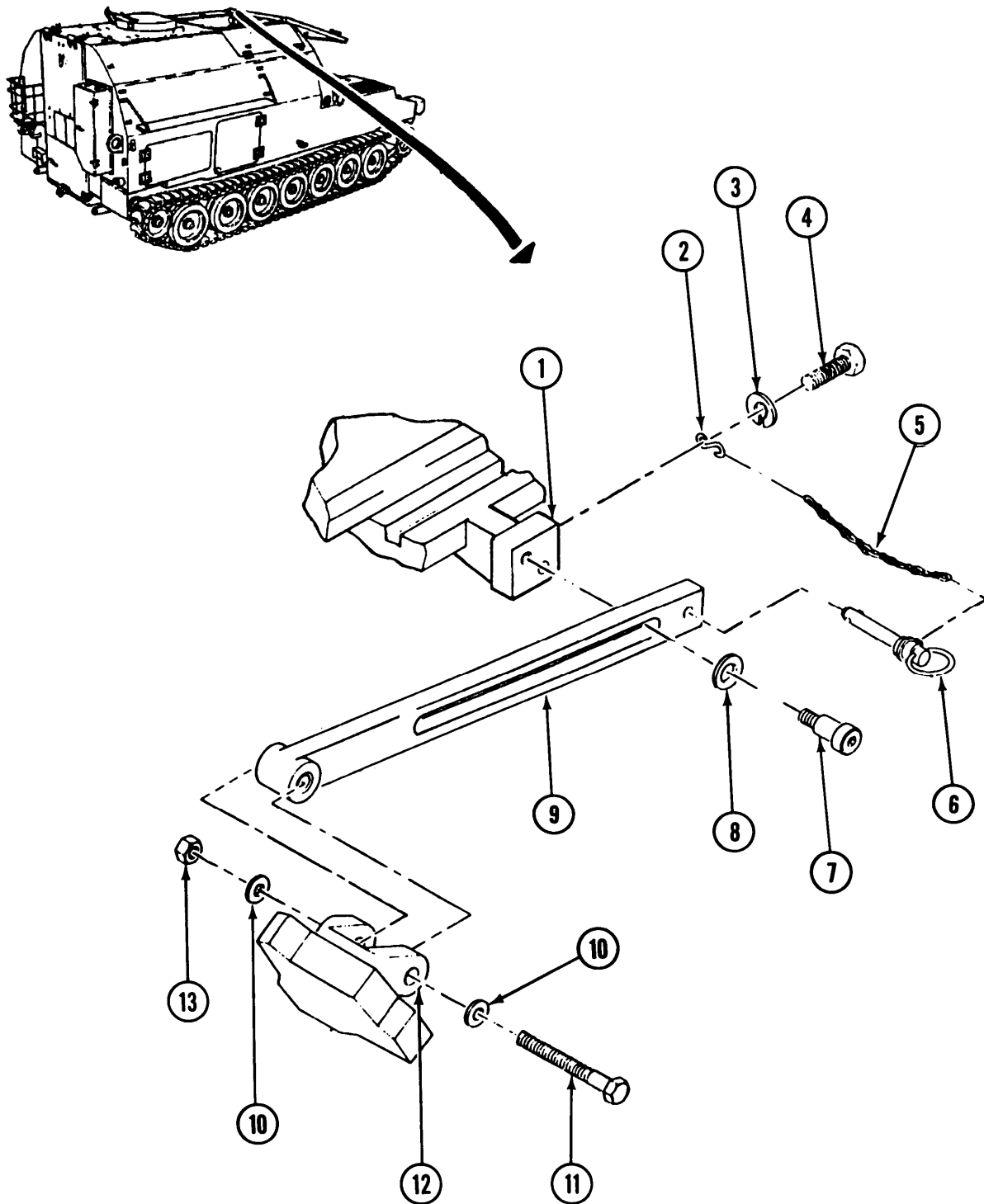
b. INSTALLATION

NOTE

Perform step 1 only if quick-release pin and chain or S-hook was replaced.

1. Install S-hook (2) on chain (5) and quick-release pin (6). Bend S-hook (2) to secure to chain (5).
2. Install bar (9) on bracket (12) with screw (11), two washers (10), and new self-locking nut (13).
3. Install bar (9) on support (1) with screw (7) and washer (8).
4. Install S-hook (2), with chain (5) and quick-release pin (6) attached, on support (1) with screw (4) and new lockwasher (3).
5. Install quick-release pin (6) in bar (9).

15-20. TOP LEFT DOOR HOLD-OPEN ASSEMBLY REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Close top middle door (refer to TM 9-2350-287-10).

15-21. TOP RIGHT DOOR HOLD-OPEN ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

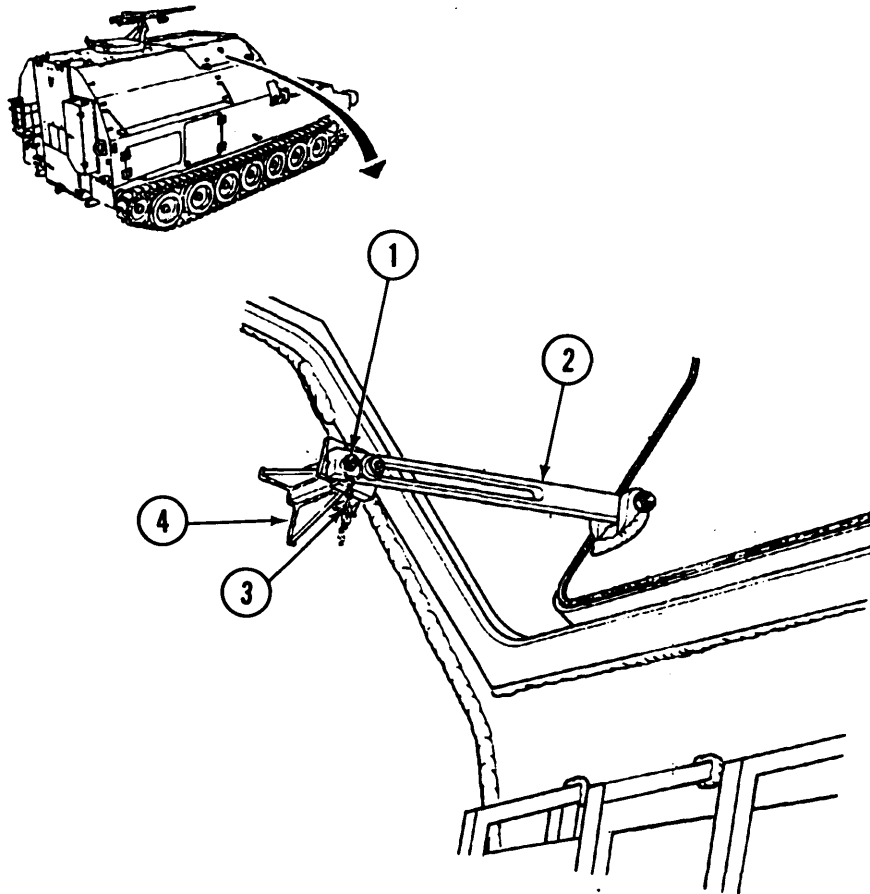
- Self-locking nut (Item 323, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Top middle door opened (refer to TM 9-2350-287-10).
-

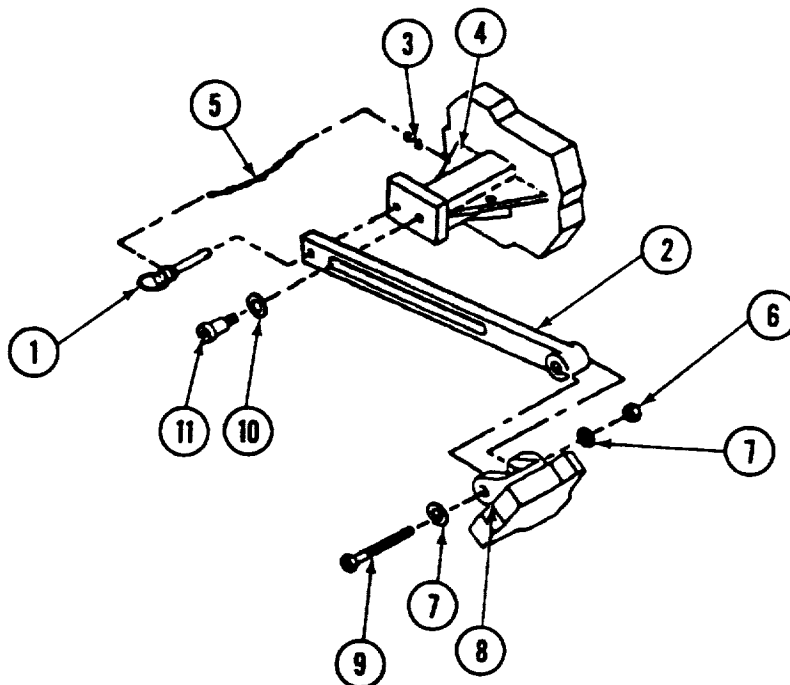
a. REMOVAL

1. Remove quick-release pin (1) from bar (2).
2. Remove two S-hooks (3) from vehicle-mounted bracket (4) and quick-release pin (1).



15-21. TOP RIGHT DOOR HOLD-OPEN ASSEMBLY REPLACEMENT (continued).

3. Remove chain (5) from quick-release pin (1).
4. Remove shoulder screw (11), washer (10), and bar (2) from vehicle-mounted bracket (4).
5. Remove screw (9), self-locking nut (6), two washers (7), and bar (2) from door-mounted bracket (8). Discard self-locking nut.

**b. INSTALLATION**

1. Install bar (2) on door-mounted bracket (8) with screw (9), two washers (7), and new self-locking nut (6).
2. Install bar (2) on vehicle-mounted bracket (4) with washer (10) and shoulder screw (11).
3. Install chain (5) on quick-release pin (1) and vehicle-mounted bracket (4) with two S-hooks (3).
4. Install quick-release pin (1) in bar (2).

FOLLOW-ON MAINTENANCE:

- Close top middle door (refer to TM 9-2350-287-10).

15-22. TOP MIDDLE DOOR REPAIR

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

- Seal (2) (Item 273, Appendix H)
- Seal (4) (Item 281, Appendix H)
- Seal (2) (Item 284, Appendix H)
- Seal (2) (Item 285, Appendix H)
- Self-locking nut (2) (Item 327, Appendix H)
- Self-locking nut (2) (Item 328, Appendix H)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Dry-cleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Lockwasher (18) (Item 162, Appendix H)
- Lockwasher (24) (Item 164, Appendix H)
- Lockwasher (3) (Item 165, Appendix H)
- Lockwasher (2) (Item 168, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Top middle door latches released (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Remove two screws (27), lockwashers (26), and washers (25) and spacer plate (24) from hull. Discard lockwashers.

WARNING

Top middle door is very heavy. Two persons are required to open or close the door. Failure to follow this warning can result in injury to personnel.

2. With an assistant, open top middle door (9) until it is perpendicular to vehicle.
3. Attach endless sling to lifting lug (10) and five-ton hoist, and take up slack.
4. Remove four screws (17), lockwashers (18), and washers (19) from anchor (20) and vehicle. Remove anchor (20) and shield (16) from hinge (15). Discard lockwashers.
5. Remove 12 leaf springs (8) from hinge (15).

WARNING

With leaf springs removed, top middle door is no longer spring-balanced. Door can close suddenly, causing severe injury to personnel.

6. Using hoist and sling, close top middle door (9).

15-22. TOP MIDDLE DOOR REPAIR (continued).

NOTE

For proper installation, retain any shims from between hinge and hull.

7. Remove three screws (23), washers (21), and lockwashers (22) from hinge (15) and vehicle. Remove hinge (15) and shield (7) from two hinge arms (6). Discard lockwashers.

NOTE

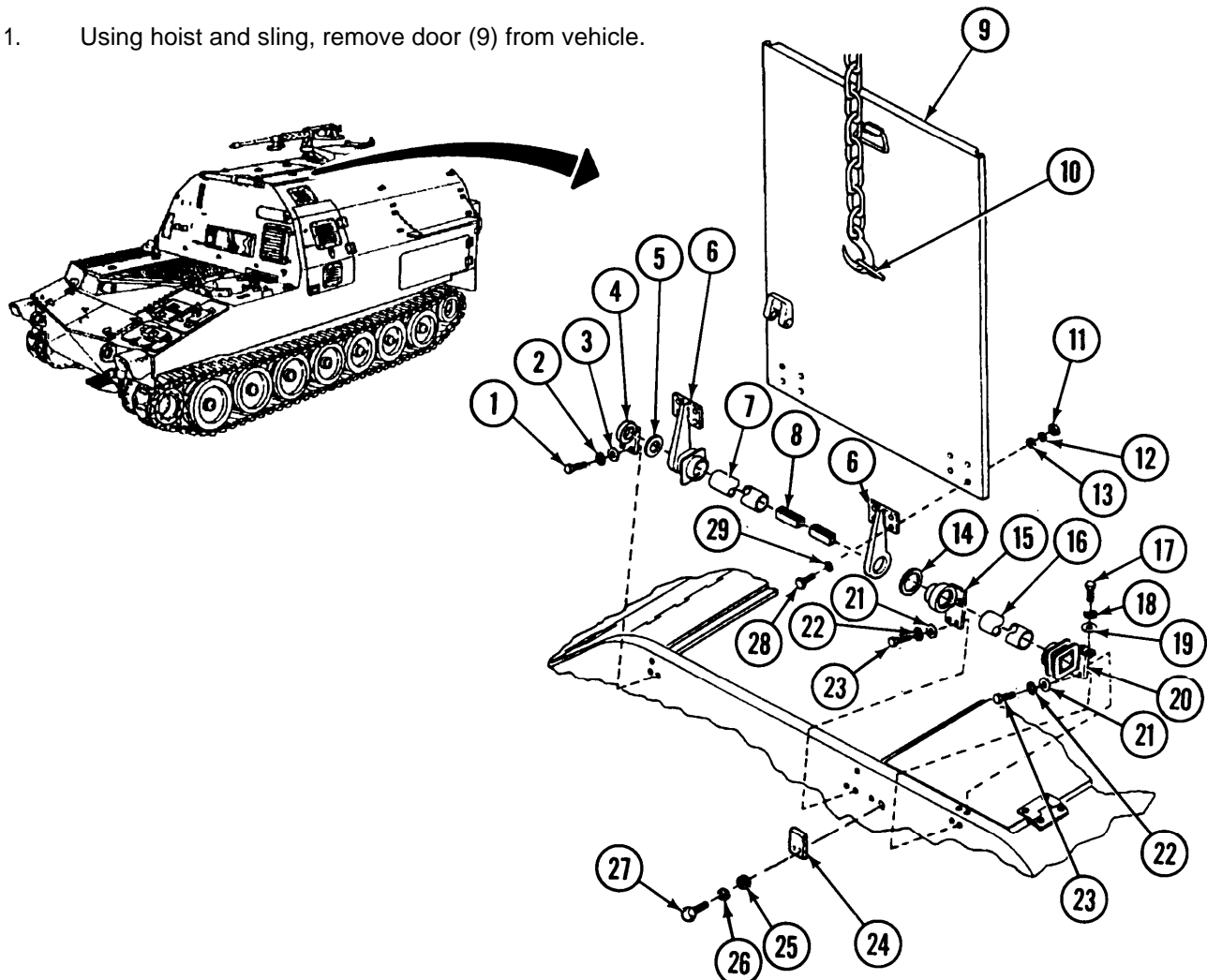
Only remove bearings if they are damaged.

8. Remove bearing (14) from hinge (15).
9. Remove three screws (1), washers (3), lockwashers (2), and hinge (4) from vehicle. Discard lockwashers.
10. Remove bearing (5) from hinge (4).

WARNING

Personnel should stand clear during lifting operations. A swinging or shifting load can cause severe injury to personnel.

11. Using hoist and sling, remove door (9) from vehicle.



15-22. TOP MIDDLE DOOR REPAIR (continued).

12. Remove eight screws (28), 16 washers (13), eight lockwashers (12), nuts (11), and two hinge arms (6) from door (9). Discard lockwashers.
13. Remove sling and hoist from lifting lug (10).

b. DISASSEMBLY

1. Remove 10 screws (54) and lockwashers (51) and two seal retainers (53 and 56) and two outer seals (55) from door (9). Discard lockwashers and seals.
2. Remove eight screws (52) and lockwashers (51) and two seal retainers (50) and seals (49) from door (9). Discard lockwashers and seals.
3. Remove two seals (29 and 28) from door (9). Discard seals.
4. Remove self-locking nut (48), washer (47), screw (44), and door latch (43) from each of two brackets (45). Discard self-locking nuts.

NOTE

For proper installation, note number of washers removed with handle.

5. Remove self-locking nut (34) and screw (36), handle (35), lockwasher (41), three washers (42), and pin (46) from each of two door latches (43). Discard lockwashers and self-locking nuts.
6. Remove three screws (37), lockwashers (38), and washers (39) and bracket (40) from top middle door (9). Discard lockwashers.
7. Remove four screws (32), lockwashers (31), and washers (30) and bracket (33) from top middle door (9).

c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D480 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 use near open flame or excessive heat.

1. Clean all metal parts with drycleaning solvent and wipe with clean rags.
2. Remove all adhesive residue from channels in top middle door.
3. Inspect all parts for cracks, bends, stripped threads, or other damage. Replace unserviceable parts.

d. ASSEMBLY

1. Install bracket (33) on top middle door (9) with four washers (30), new lockwashers (31), and screws (32).

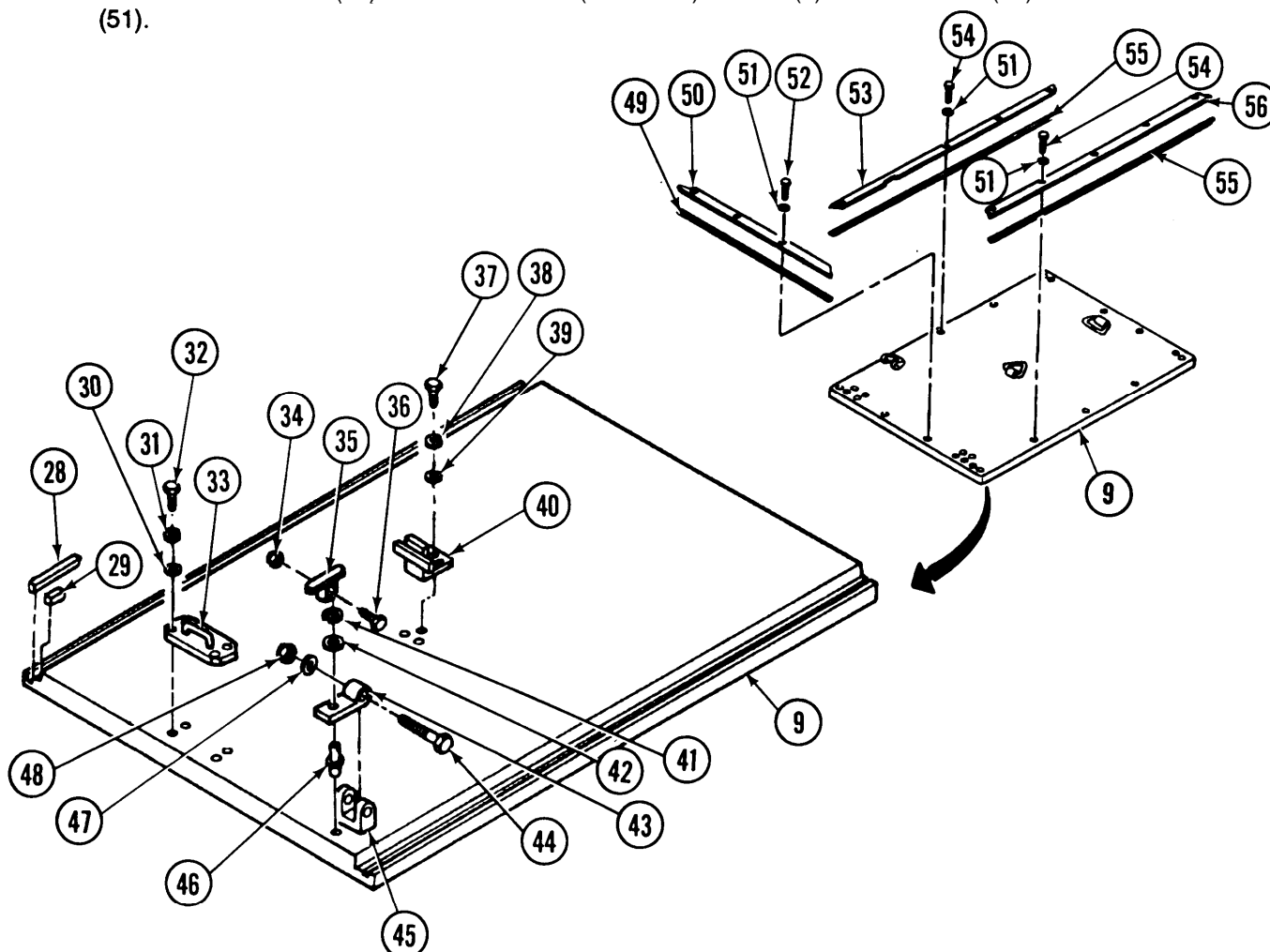
15-22. TOP MIDDLE DOOR REPAIR (continued).

2. Install bracket (40) on door (9) with three washers (39), new lockwashers (38), and screws (37).
3. Install pin (46), three washers (42), new lockwasher (41), and handle (35) on each of two latches (43) with screw (36) and new self-locking nut (34).
4. Install door latch (43) in each of two brackets (45) with screw (44), washer (47), and new self-locking nut (48).

WARNING

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

5. Apply adhesive to two seals (29 and 28). Allow to dry until tacky.
6. Install two new seals (29 and 28) on door (9).
7. Install two seals (49) and seal retainers (50) on door (9) with eight screws (52) and new lockwashers (51).
8. Install two outer seals (55) and seal retainers (53 and 56) on door (9) with 10 screws (54) and new lockwashers (51).



15-22. TOP MIDDLE DOOR REPAIR (continued).

e. INSTALLATION

1. Install two hinge arms (6) on door (9) with eight screws (28), 16 washers (13), and eight new lockwashers (12) and nuts (11).
2. Attach endless sling and hoist to lifting lug (10), and take up slack.
3. Install bearing (5) in hinge (4).

WARNING

Personnel should stand clear during lifting operations. A swinging or shifting load can cause severe injury to personnel.

NOTE

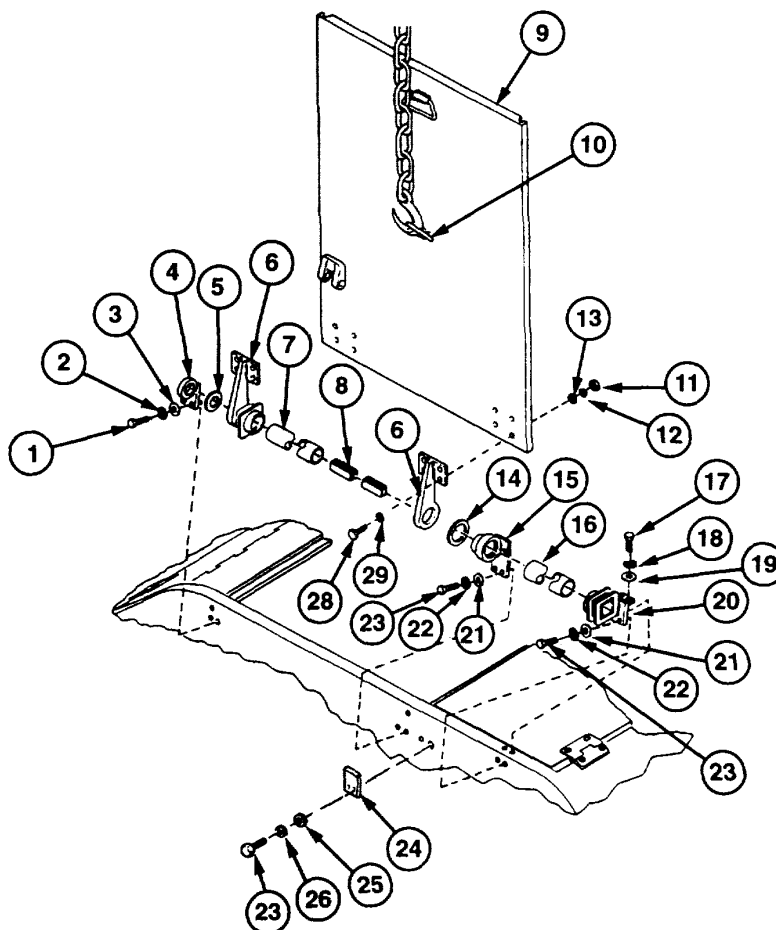
- An assistant is needed to help position door properly on vehicle.
 - Do not tighten screws on hinges until hinge arms are secured to hinges.
4. Install hinge (4) on vehicle with three screws (1), washers (3), and new lockwashers (2).
 5. Install two hinge arms (6) and shield (7) on hinge (4).
 6. Install bearing (14) on hinge (15).
 7. Install hinge (15) on each of two hinge arms (6) and vehicle with three new lockwashers (22), washers (21), and three screws (23).
 8. Using hoist and sling, position door (9) over opening until it is perpendicular to vehicle.

NOTE

Doors may have to be maneuvered past perpendicular to install leaf springs.

9. Install 12 leaf springs (8) in hinge (15).
10. Install shield (16) on hinge (15).
11. Position anchor (20) over end of 12 leaf springs (8), and install anchor (20) on vehicle with four new lockwashers (18), washers (19), and four screws (17).
12. Using hoist and sling, allow door (9) to close. Remove sling and hoist from lifting lug (10).
13. Install spacer plate (24) on hull with two washers (25), new lockwashers (26), and screws (27).

15-22. TOP MIDDLE DOOR REPAIR (continued).



f. ADJUSTMENT

1. Secure top middle door latches (refer to TM 9-2350-287-10).
2. Note position of seal retainer (56) and lockwasher (41) on door (9).

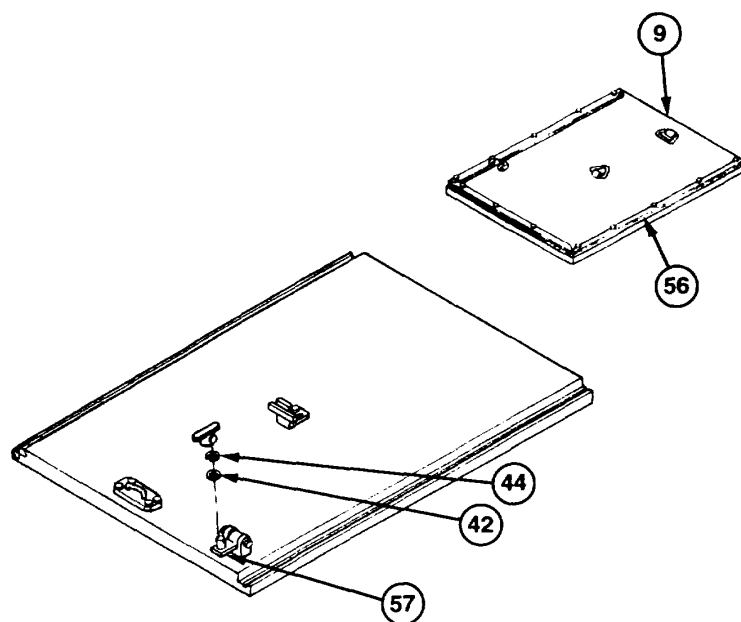
NOTE

- Latch is properly adjusted when seal molding touches door and lockwasher is compressed.
- Refer to disassembly step 5 to remove or add washers.

3. Add or remove up to two washers (42) to properly adjust latch (57).

FOLLOW-ON MAINTENANCE:

- None



15-22. TOP MIDDLE DOOR REPAIR)*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Lockwasher (Item 196, Appendix H)
- Self-locking nut (Item 323, Appendix H)

a. REMOVAL

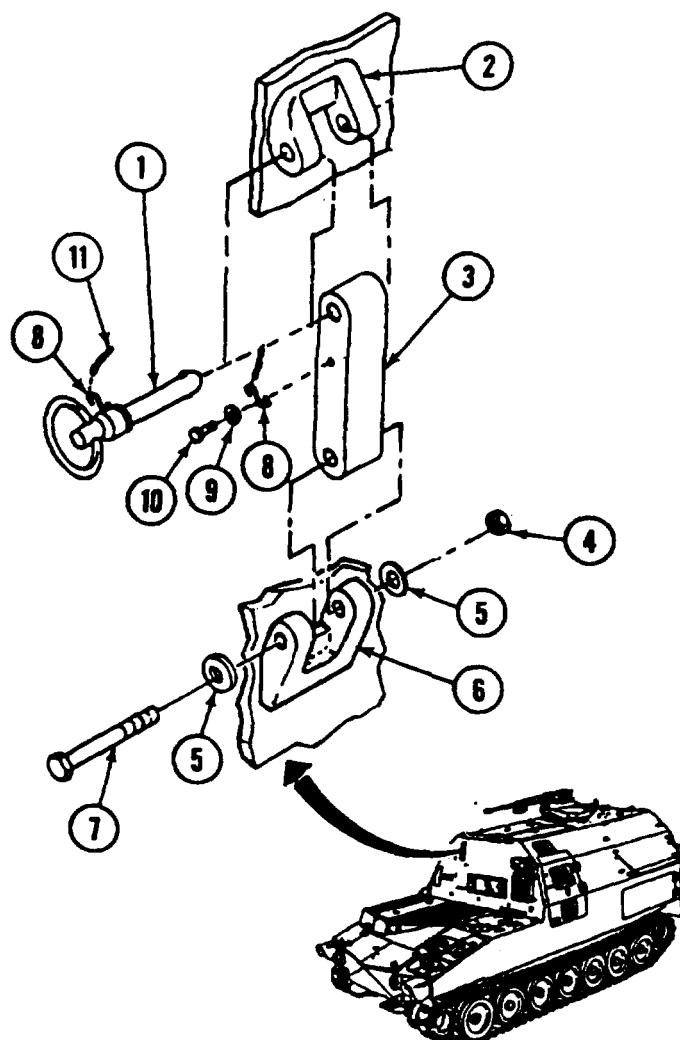
1. Remove quick-release pin (1) and bar (3) from upper bracket (2).
2. Remove self-locking nut (4), two washers (5), screw (7), and bar (3) from lower bracket (6).
3. Remove screw (10), lockwasher (9), and chain (11), with two S-hooks (8) and quick-release pin (1) attached, from bar (3). Discard lockwasher.
4. Remove two S-hooks (8) and quick-release pin (1) from chain (11).

b. INSTALLATION

1. Install two S-hooks (8) and quick-release pin (1) on chain (11).
2. Install chain (11), with two S-hooks (8) and quick-release pin (1) attached, on bar (3) with new lockwasher (9) and screw (10).
3. Install bar (3) on lower bracket (6) with screw (7), two washers (5), and new self-locking nut (4).
4. Install bar (3) in upper bracket (2) with quick-release pin (1).

FOLLOW-ON MAINTENANCE:

- None



15-24. CANISTER DOORS REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Crowbar (Item 12, Appendix I)
- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

- LockWasher (8) (Item 143, Appendix H)
- LockWasher (10) (Item 184, Appendix H)
- Pad (Item 212, Appendix H)
- Pad (Item 213, Appendix H)

Personnel Required: Two

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Sealing compound (Item 58, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Canister door opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

NOTE

- Right and left canister doors are replaced the same way.
- Canister door does not have to be removed to replace latch and pad.

15-24. CANISTER DOORS REPAIR (continued).

1. Remove two screws (16), lockwashers (17), and striker (18) from canister door (1). Discard lockwashers.
2. Attach endless sling to hoist and lifting lug (19).

WARNING

- Door weighs about 150 pounds. Be careful when removing door.
- Personnel should stand clear during lifting operations. A swinging or shifting load may cause severe injury.

NOTE

An assistant is needed to stabilize door while screws are removed.

3. While assistant supports canister door (1), remove six screws (13), nuts (11), lockwashers (10), and washers (9), plate spacer (8), and canister door (1) from vehicle. Discard lockwashers.
4. Using hoist and sling, rest canister door (1) on level surface, and remove sling from lifting lug (19).

b. DISASSEMBLY

1. Remove four screws (3), lockwashers (4), and washers (5), latch (6), and plate spacer (7) from canister door (1). Discard lockwashers.
2. Remove six screws (14) and lockwashers (15) and two hinges (12) from canister door (1). Discard lockwashers.
3. Remove pad (2) from canister door (1). Discard pad.

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

1. Clean all metal parts with drycleaning solvent. Remove all adhesive residue from canister door (1). Allow to air dry.
2. Inspect all parts for cracks, warps, or other damage. Replace unserviceable parts.

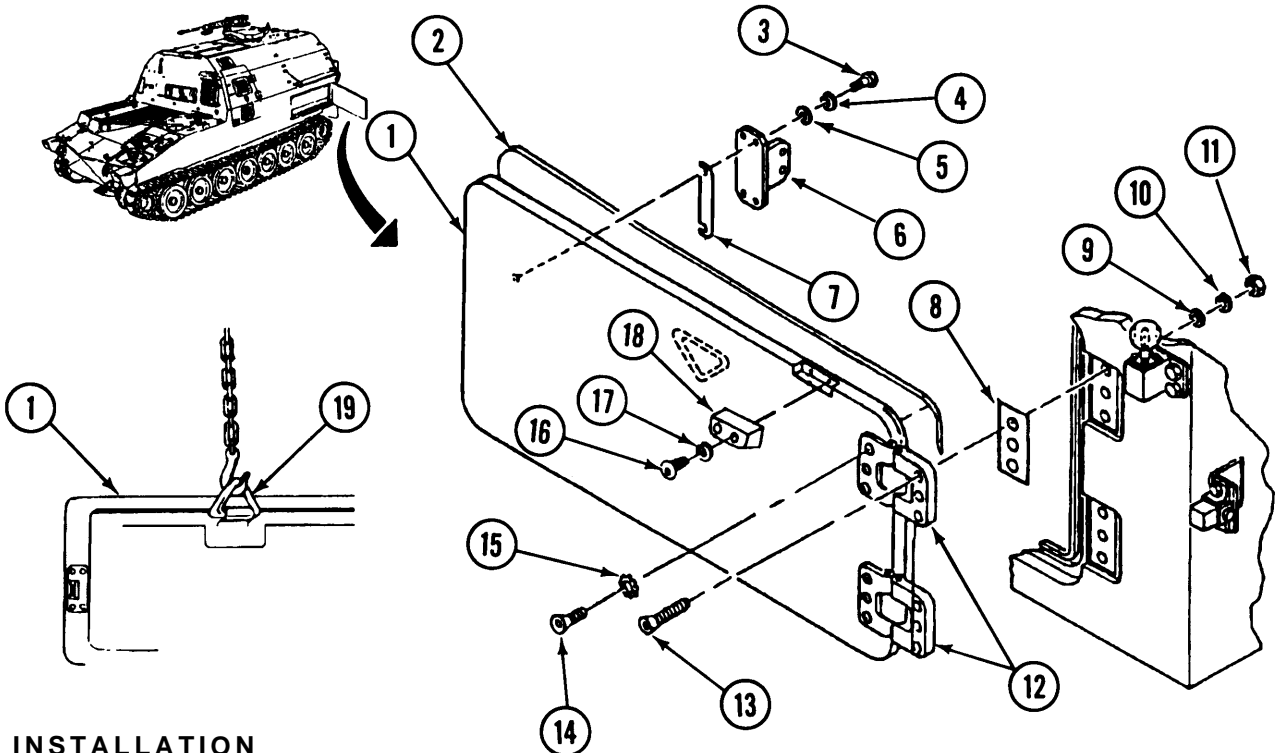
d. ASSEMBLY

WARNING

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

15-24. CANISTER DOORS REPAIR (continued).

1. Apply adhesive to mounting surface of new pad (2) and canister door(l). Allow to dry until tacky, then install pad (2) on canister door (1).
2. Apply sealing compound to screws (14).
3. Install two hinges (12) on canister door (1) with six screws (14) and new lockwashers (15).
4. Install plate spacer (7) and latch (6) on canister door (1) with four screws (3), new lockwashers (4), and washers (5).



e. INSTALLATION

1. Attach sling to hoist and lifting lug (1 9).

WARNING

- Door weighs about 150 pounds. Be careful when installing door.
- Personnel should stand clear during lifting operations. A swinging or shifting load may cause severe injury.

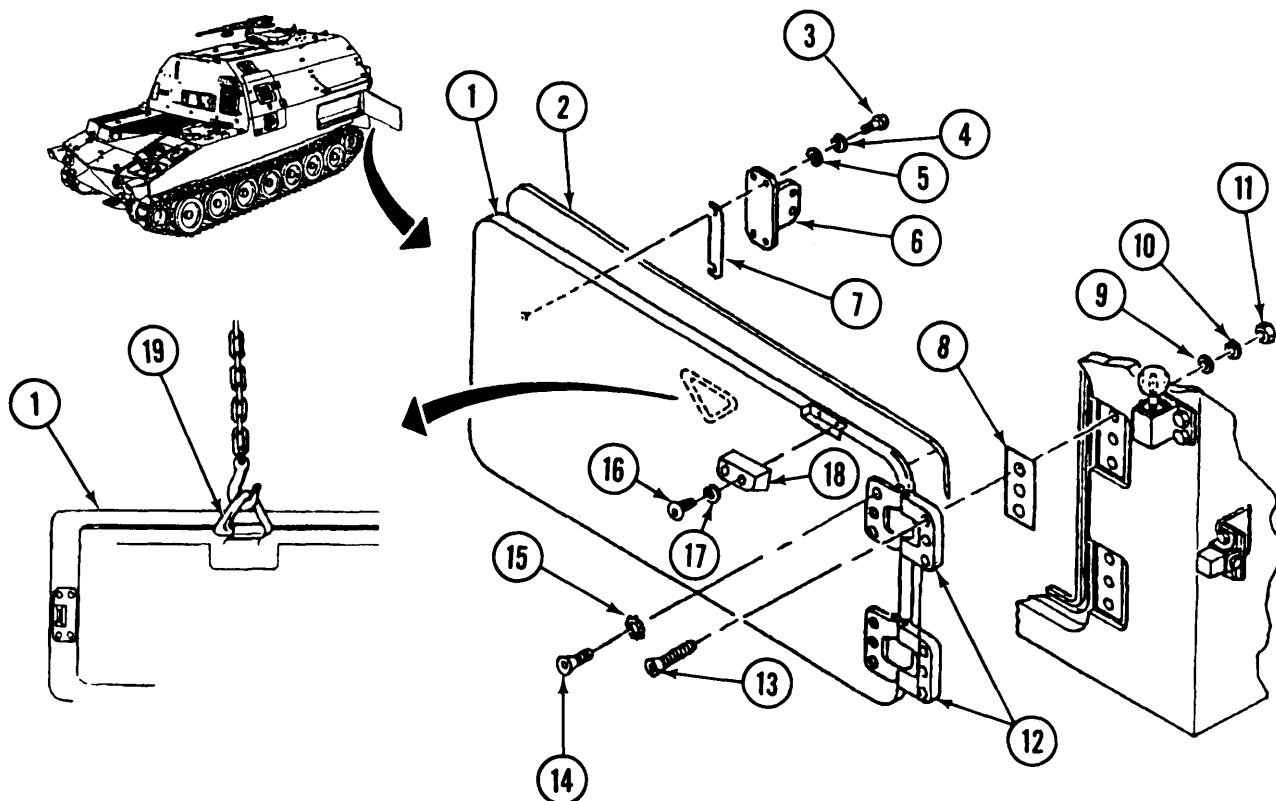
NOTE

An assistant is needed to stabilize and position canister door.

2. Using hoist and sling, lift canister door (1) into position on hull.
3. Apply sealing compound to screws (13).

15-24. CANISTER DOORS REPAIR (continued).

4. While assistant stabilizes canister door (1), install plate spacer (8) and canister door (1) on hull with six screws (13), nuts (11), new lockwashers (10), and washers (9).
5. Remove sling from lifting lug (19) and hoist.
6. Close canister door (1). If canister door (1) is mounted straight and closes easily, go to step 8, If canister door (1) binds or is mounted crooked, go to step 7.
7. While assistant supports door with crowbar, loosen six screws (13) and nuts (11). Reposition canister door (1) until it is straight and does not bind; then tighten six screws (13) and nuts (11).
8. Close and latch canister door (1) (refer to TM 9-2350-287-10). If canister door (1) does not latch, go to step 9. If door latches properly, open canister door (1) and go to step 10.
9. Open canister door (1). Loosen four screws (3) and reposition latch (6) as necessary until canister door (1) latches properly.
100. Apply sealing compound to screws (16), and install striker (18) on canister door (1) with two screws (16) and two new lockwashers (17). Position striker (18) on canister door (1) so striker (18) will properly hold canister door (1) in full open position.



FOLLOW-ON MAINTENANCE:

- Close canister door (refer to TM 9-2350-287-10).

15-25. LEFT CANISTER DOOR LATCH ASSEMBLY REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Lockwasher (4) (Item 164, Appendix H)

- Lockwasher (6) (Item 196, Appendix H)

Equipment Conditions:

- vehicle parked on level ground (refer to TM 9-2350-287-10).
- Left canister door opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

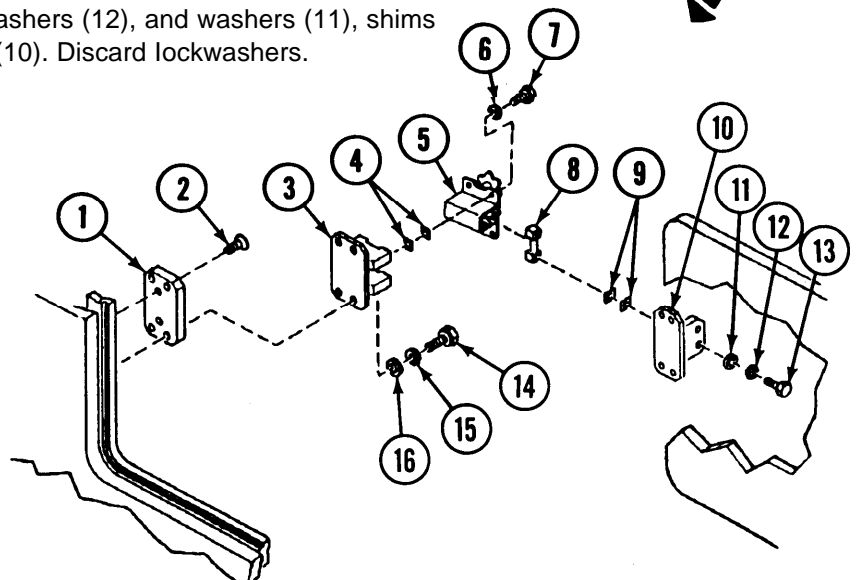
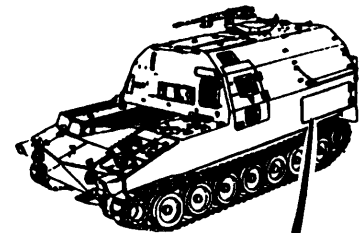
1. Remove four screws (14), lockwashers (15), and washers (16) and plate (3) from plate (1). Discard lockwashers.
2. Remove two screws (2) and plate (1) from hull.

b. DISASSEMBLY

NOTE

For proper assembly, record the number and thickness of shims.

1. Remove four screws (7) and lockwashers (6), left canister door latch assembly (5), and shims (4) from plate (3). Discard lockwashers.
2. Remove two screws (13), lockwashers (12), and washers (11), shims (9), and striker (8) from bracket (10). Discard lockwashers.



15-25. LEFT CANISTER DOOR LATCH ASSEMBLY REPLACEMENT (continued).

c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-80 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

1. Clean all parts with drycleaning solvent. Allow to air-dry.
2. Inspect parts for cracks, bends, or other damage. Replace unserviceable parts.

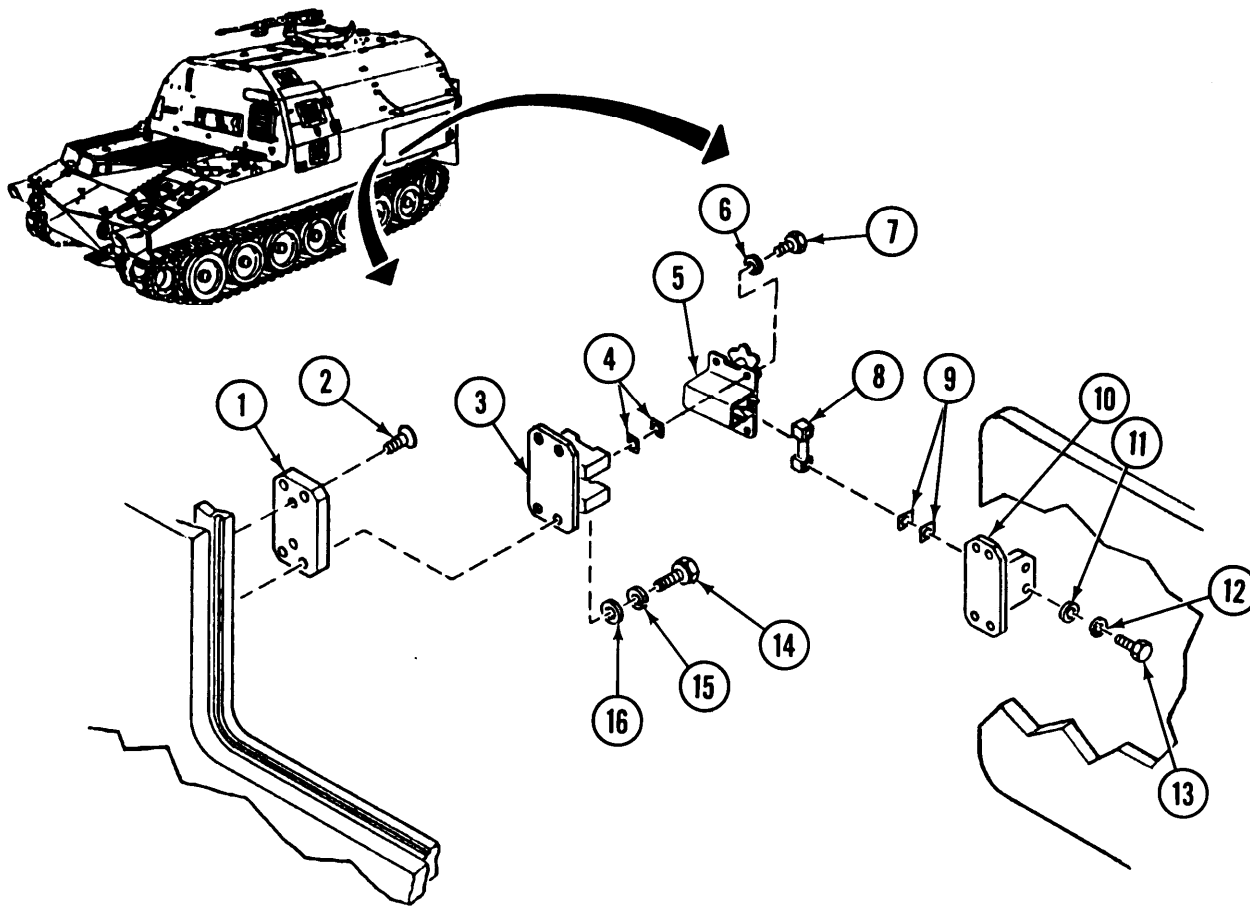
d. ASSEMBLY

1. Install shims (9) and striker (8) on bracket (10) with two screws (13), new lockwashers (12), and washers (11).
2. Install shims (4) and latch assembly (5) on plate (3) with four screws (7) and new lockwashers (6).

e. INSTALLATION

1. Install plate (1) on hull with two screws (2).
2. Install plate (3) on plate (1) with four screws (14), new lockwashers (15), and washers (16).
3. Close left canister door (refer to TM 9-2350-287-10). If striker (8) contacts and locks properly in latch assembly (5), door is properly adjusted. If striker (8) does not properly contact latch assembly (5), go to step 4.
4. Remove two screws (13), lockwashers (12), and washers (11), shims (9), and striker (8) from bracket (10). Remove or install shims (9) as necessary to achieve positive lock of striker (8) in latch assembly (5); then install shims (9) and striker (8) on bracket (10) with two screws (13), lockwashers (12), and washers (11).

15-25. LEFT CANISTER DOOR LATCH ASSEMBLY REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Close left canister door (refer to TM 9-2350-287-10).

15-26. RIGHT CANISTER DOOR AND PERSONNEL SIDE DOOR LATCH ASSEMBLY REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Lockwasher (4) (Item 164, Appendix H)
- Lockwasher (12) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-1 O).
 - Personnel side door opened and secured (refer to TM 9-2350-287-10).
 - Right canister door opened and secured (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Remove four screws (10), lockwashers (9), and washers (8) and plate (5) from plate (7). Discard lockwashers.
2. Remove three screws (6) and plate (7) from hull.

b. DISASSEMBLY

NOTE

For proper assembly, record the number and thickness of shims.

1. Remove eight screws (1) and lockwashers (2), two latch assemblies (3), and shims (4) from plate (5). Discard lockwashers.
2. Remove four screws (16), lockwashers (15), and washers (14), shims (1 2), and two strikers (11) from two brackets (13). Discard lockwashers.

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

1. Clean all parts with drycleaning solvent. Allow to air-dry.

15-26. RIGHT CANISTER DOOR AND PERSONNEL SIDE DOOR LATCH ASSEMBLY REPLACEMENT (continued).

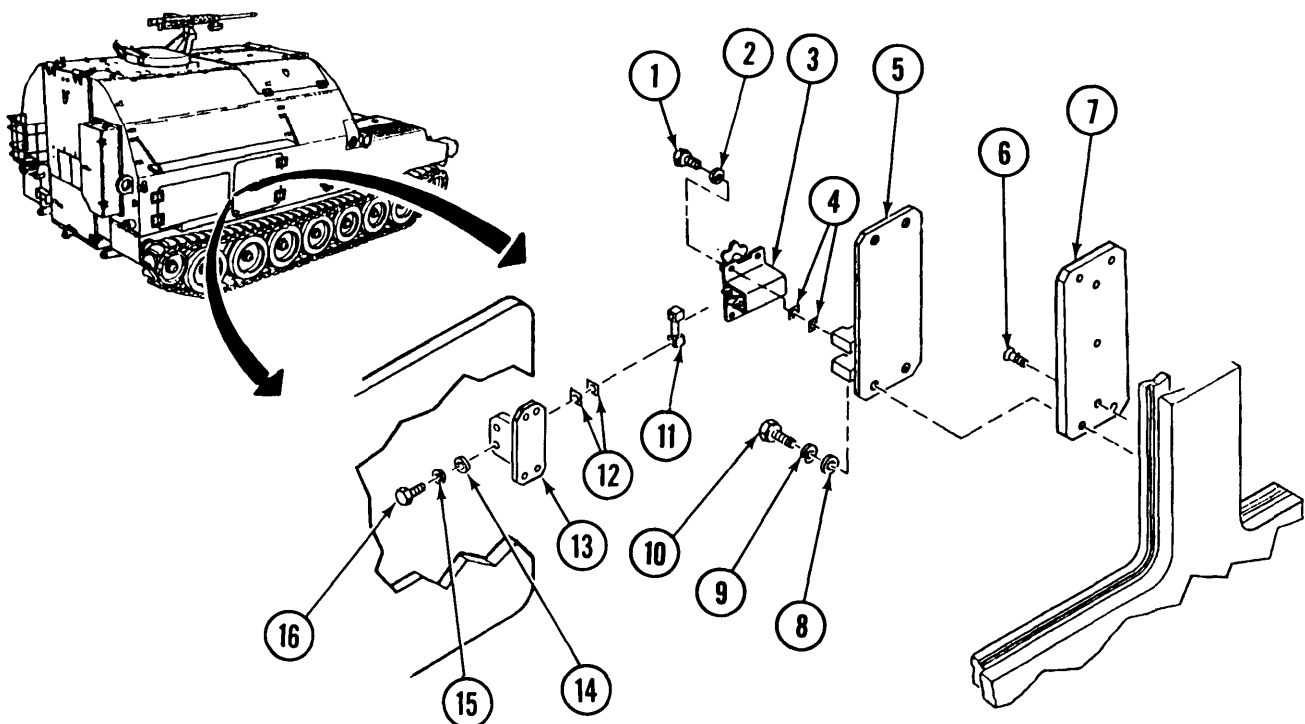
2. Inspect all parts for cracks, bends, or other damage. Replace any unserviceable parts.

d. ASSEMBLY

1. Install shims (12) and two strikers (11) on two brackets (13) with four screws (16), new lockwashers (15), and washers (14).
2. Install shims (4) and two latch assemblies (3) on plate (5) with eight screws (1) and new lockwashers (2).

e. INSTALLATION

1. Install plate (7) on hull with three screws (6).
2. Install plate (5) on plate (7) with four screws (10), new lockwashers (9), and washers (8).
3. Close right canister door and personnel side door (refer to TM 9-2350-287-10). If two strikers (11) properly contact two latch assemblies (3), door is properly adjusted. If two strikers (11) do not properly contact latch assemblies (3), go to step 4.
4. open right canister door and side personnel door (refer to TM 9-2350-287-10). Remove four screws (16), lockwashers (15), and washers (14), shims (12), and two strikers (11) from two brackets (13). Add or remove shims (12) as necessary; then install two strikers (11) and shims (12) on two brackets (13) with four screws (16), lockwashers (15), and washers (14).



- Close right canister door (refer to TM 9-2350-287-10).
- Close personnel side door (refer to TM 9-2350-287-10).

15-27. PERSONNEL SIDE DOOR REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Lockwasher (6) (Item 143, Appendix H)
- Lockwasher (10) (Item 164, Appendix H)
- Lockwasher (2) (Item 166, Appendix H)

Personnel Required: Three

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Personnel side door opened and secured (refer to TM 9-2350-287-10).
-

a. REMOVAL

WARNING

Personnel side door is very heavy. At least two persons should support door while screws are removed. Failure to follow this warning may result in severe injury to personnel.

NOTE

For proper installation, record number and thickness of shims.

While two assistants support personnel side door (9), remove six screws (6), nuts (1), lockwashers (2), and washers (3), personnel side door (9), and shims (4) from hull. Discard lockwashers.

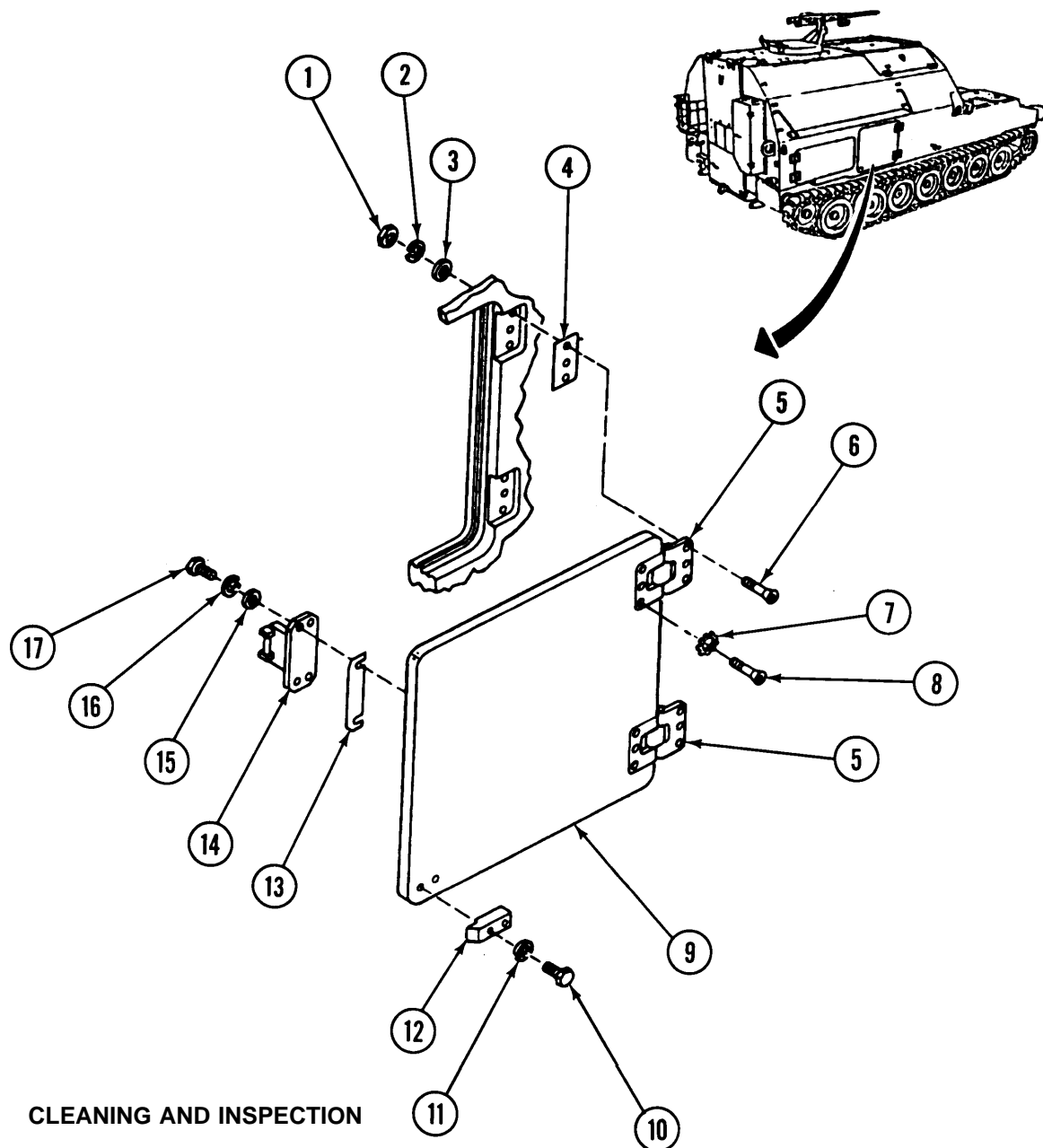
b. DISASSEMBLY

NOTE

For proper installation, record number and thickness of shims.

1. Remove four screws (17), lockwashers (1 6), and washers (1 5), bracket (14), and shims (13) from personnel side door (9). Discard lockwashers.
2. Remove two screws (10) and lockwashers (11) and striker (12) from personnel side door (9). Discard lockwashers.
3. Remove six screws (8) and lockwashers (7) and two hinges (5) from personnel side door (9). Discard lockwashers.

15-27. PERSONNEL SIDE DOOR REPLACEMENT (continued).



c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent P-D-80 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.

1. Clean all parts with drycleaning solvent. Allow parts to air-dry.
2. Inspect parts for cracks, bends, warps, or other damage. Replace unserviceable parts.

15-27. PERSONNEL SIDE DOOR REPLACEMENT (continued).

d. ASSEMBLY

1. Install two hinges (5) on personnel side door (9) with six screws (8) and new lockwashers (7).
2. Install striker (12) on personnel side door (9) with two screws (10) and new lockwashers (11).
3. Install bracket (14) and shims (13) on personnel side door (9) with four screws (17), new lockwashers (16), and washers (15).

e. INSTALLATION

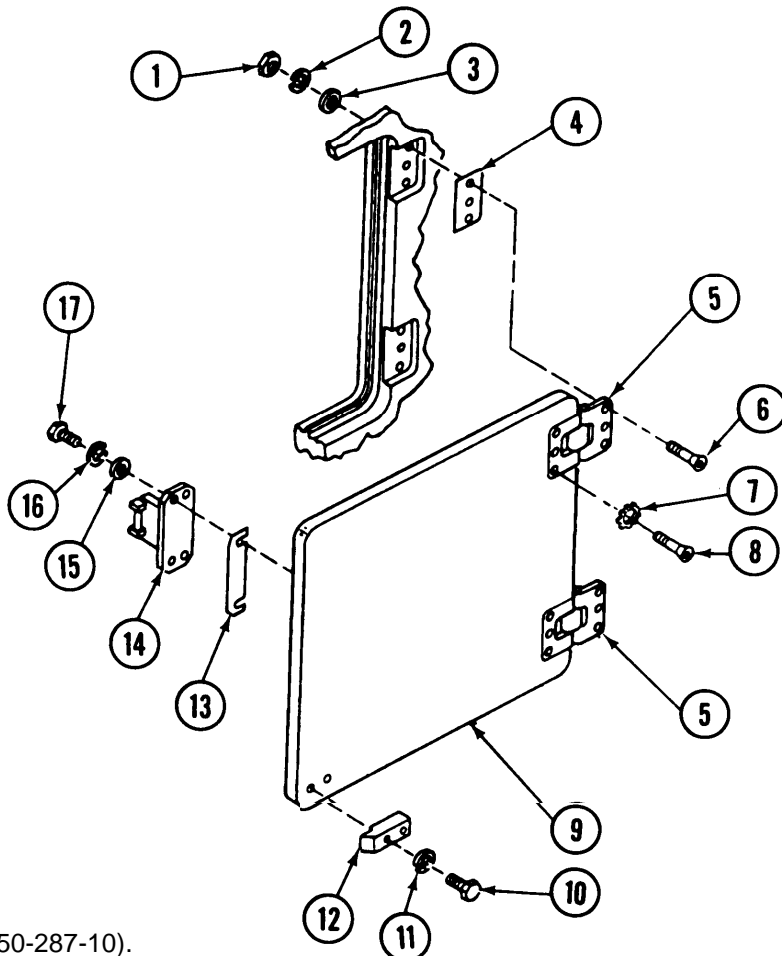
WARNING

Personnel side door is very heavy. At least two persons are required to support door during installation. Failure to follow this warning may result in severe injury to personnel.

NOTE

Two assistants are required to support personnel side door during installation.

1. While two persons support personnel side door (9), install shims (4) and personnel side door (9) on hull with six screws (6), washers (3), new lockwashers (2), and nuts (1).
2. Close personnel side door (9) (refer to TM 9-2350-287-10). If door does not close or binds while closing, loosen six nuts (1) and screws (6). Have two assistants raise or lower personnel side door (9) as necessary until personnel side door (9) closes without binding; then tighten six nuts (1).
3. Open and secure personnel side door (9) (refer to TM 9-2350-287-10). If striker (12) does not hold personnel side door (9) open, loosen two screws (10) and move striker (12) until it properly holds open personnel side door (9); then tighten two screws (10).



FOLLOW-ON MAINTENANCE:

- Close personnel side door (refer to TM 9-2350-287-10).

15-28. PERSONNEL SIDE DOOR AND COMMANDER'S STATION HANDLES REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

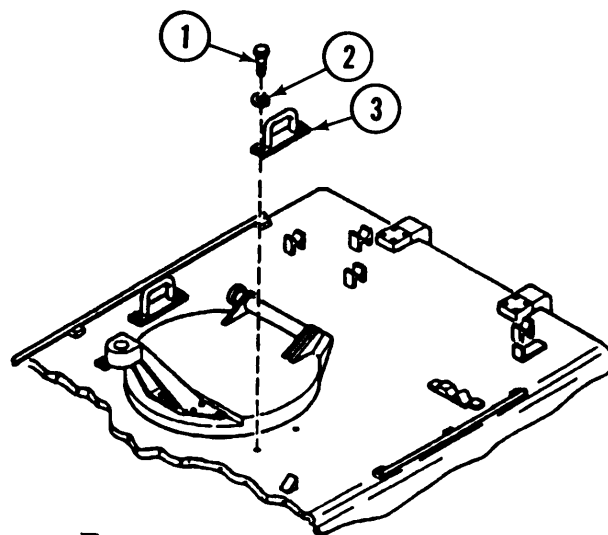
- Lockwasher (2) (Item 164, Appendix H)

a. REMOVAL

NOTE

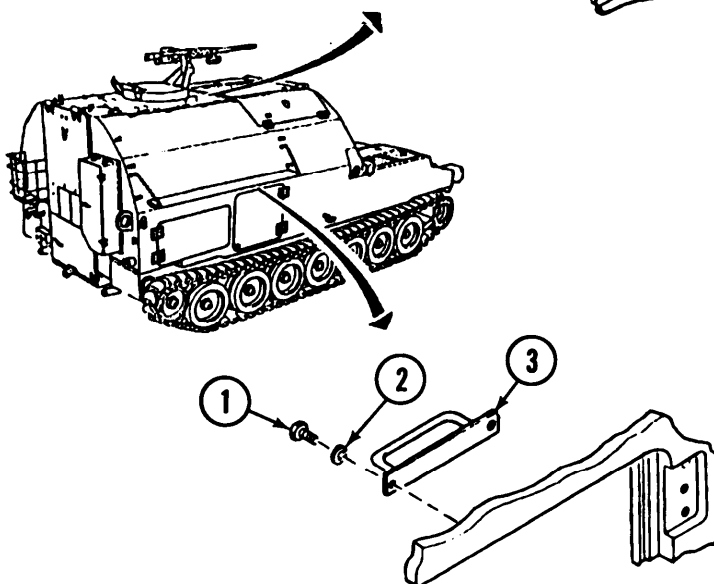
Personnel side door handle and commander's station handle are replaced the same way.

Remove two screws (1) and lockwashers (2) and handle (3) from hull. Discard lockwashers.



b. INSTALLATION

Install handle (3) on hull with two screws (1) and new lockwashers (2).



FOLLOW-ON MAINTENANCE:

. None

15-29. CANISTER DOORS AND PERSONNEL SIDE DOOR LATCHES AND BUMPER ASSEMBLIES REPAIR.

This Task Covers:

- | | |
|----------------------------|-----------------|
| a. Removal | b. Installation |
| c. Cleaning and Inspection | d. Assembly |
| e. Installation | |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix i)

- Lockwasher (12) (item 160, Appendix H)
- Lockwasher (18) (Item 164, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Cotter pin (3) (Item 18, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

- Left and right canister and personnel side door latches and bumper assemblies are replaced the same way.
- For proper installation of personnel side door hold-open latch and bumper assembly, record number and thickness of shims.

1. Remove four screws (15) and lockwashers (14), latch assembly (16), and shims (17) from hull. Discard lockwashers.
2. Remove two screws (6) and lockwashers (5), bumper assembly (2), and shims (18) from hull. Discard lockwashers

b. DISASSEMBLY

1. Remove cotter pin (3), straight pin (1), and bumper (4) from bumper assembly (2). Discard cotter pin.
2. Hold pin (12), and remove ball (7) from pin (12).
3. Remove four screws (8) and lockwashers (9) and plate (1 O) from latch assembly (16). Discard lockwashers.
4. Remove spring (11), pin (12), and grease fitting (13) from latch assembly (16).

15-29. CANISTER DOORS AND PERSONNEL SIDE DOOR LATCHES AND BUMPER ASSEMBLIES REPAIR (continued).

c. CLEANING AND INSPECTION

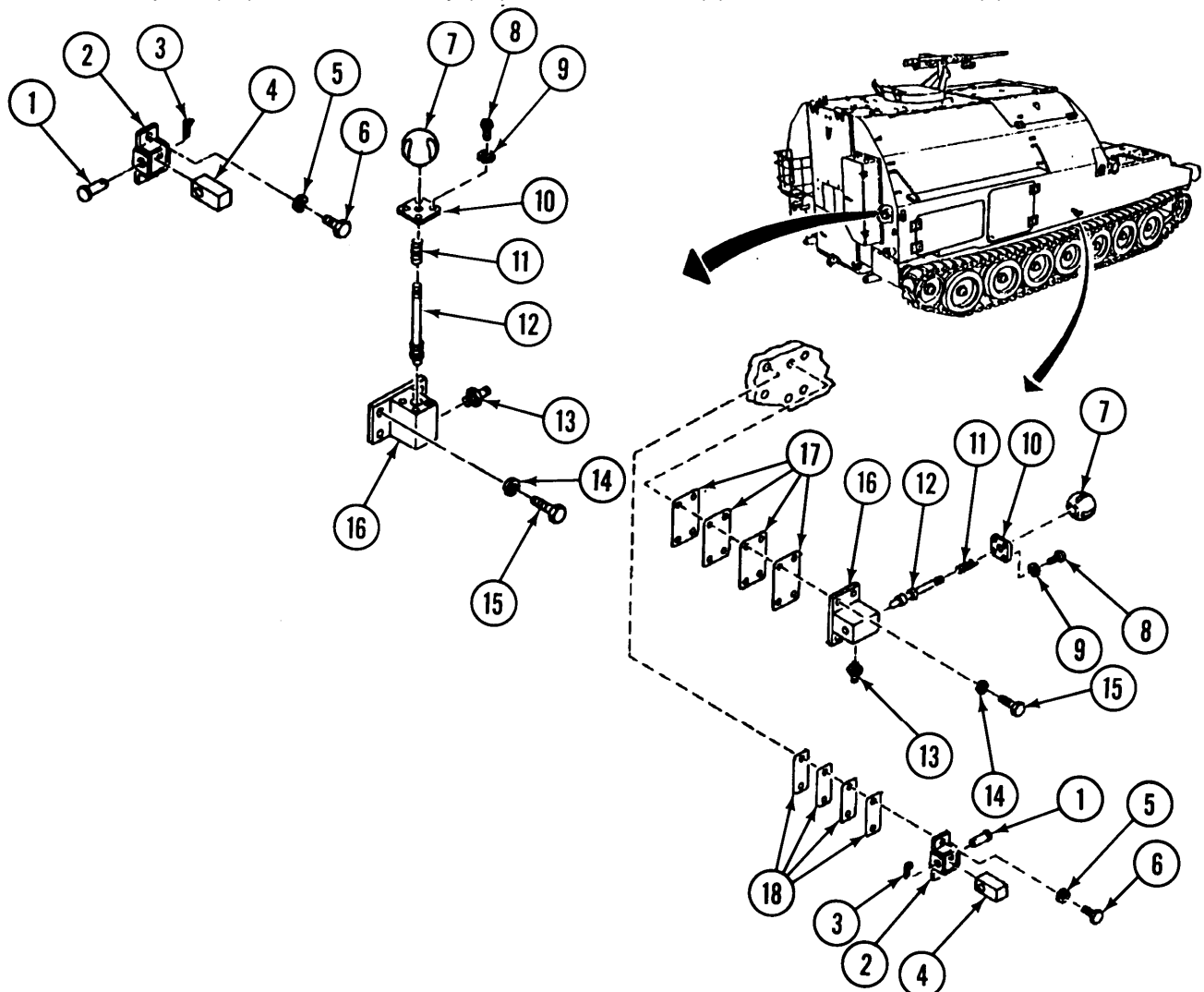
WARNING

Drycleaning 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.

1. Clean all parts with drycleaning solvent. Make sure lubrication holes in latch assembly (16) are clean and free of debris.
2. Inspect all parts for cracks, bends, or other damage. Replace unserviceable parts.

d. ASSEMBLY

1. Install pin (12), spring (1), and grease fitting (13) in latch assembly (16).
2. Install plate (10) on latch assembly (16) with four screws (8) and new lockwashers (9).



15-29. CANISTER DOORS AND PERSONNEL SIDE DOOR LATCHES AND BUMPER ASSEMBLIES REPAIR (continued).

3. Hold pin (12), and install ball (7) on pin (12).
4. Install bumper (4) in bumper assembly (2) with straight pin (1) and new cotter pin (3).

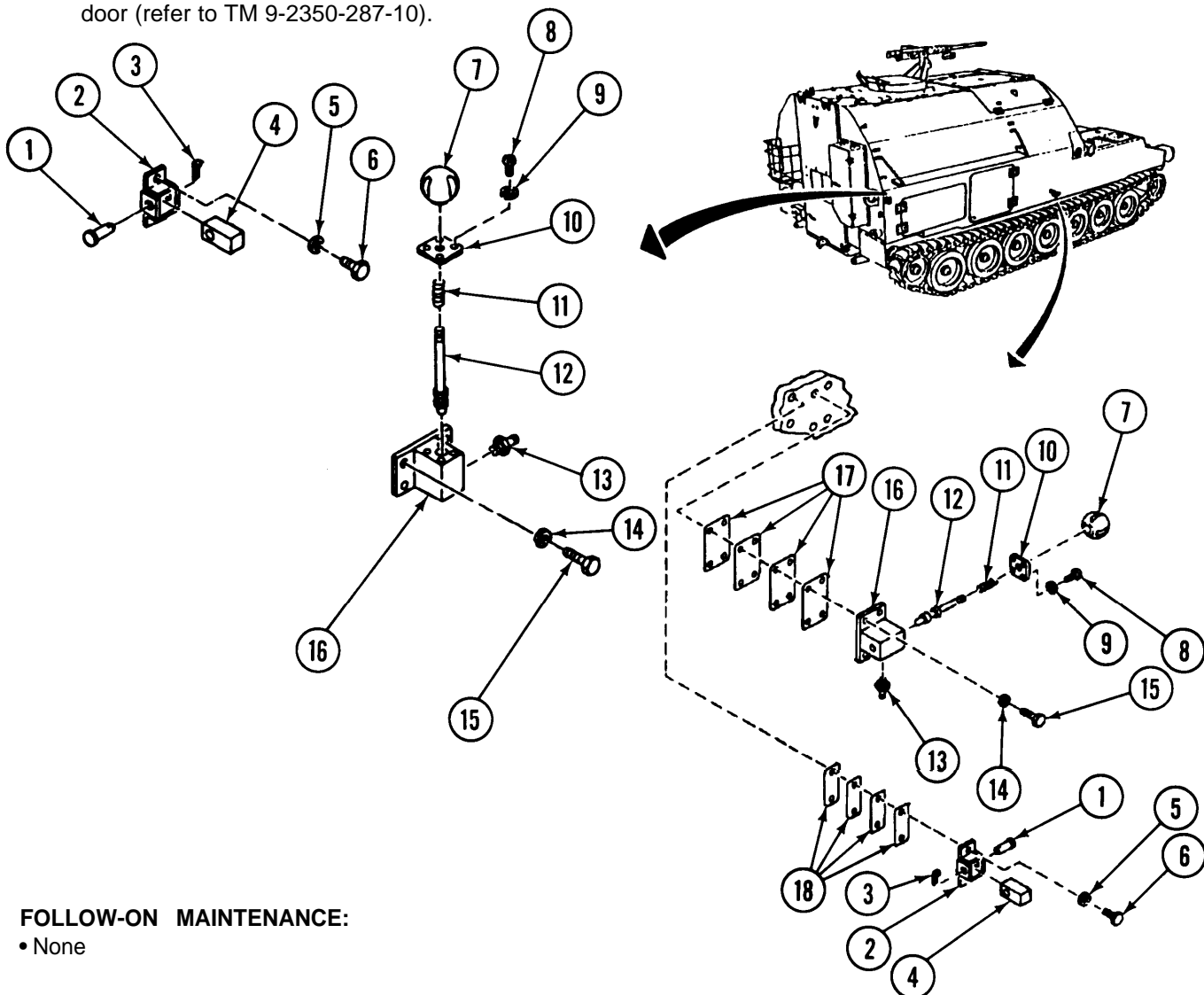
e. INSTALLATION

1. Install shims (18) and bumper assembly (2) on hull with two screws (6) and new lockwashers (5).
2. Install shims (17) and latch assembly (16) on hull with four screws (15) and new lockwashers (14).

NOTE

Step 3 applies to personnel side door only.

3. Open personnel side door (refer to TM 9-2350-287-10). Make sure that bumper assembly (2) allows door to latch securely in latch assembly (16). Add or remove shims (17 or 18) as necessary. Close personnel side door (refer to TM 9-2350-287-10).



FOLLOW-ON MAINTENANCE:

- None

15-30. CANISTER AND PERSONNEL SIDE DOORWAY SEALS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Seal (left door) (Item 274, Appendix H)

- Seal (right door) (Item 274, Appendix H)
- Seal (personnel door) (Item 277, Appendix H)
- Shim (right door) (Item 338, Appendix H)
- Shim (left door) (Item 339, Appendix H)
- Shim (personnel door) (Item 341, Appendix H)

Equipment Conditions:

- Canister or personnel side door opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

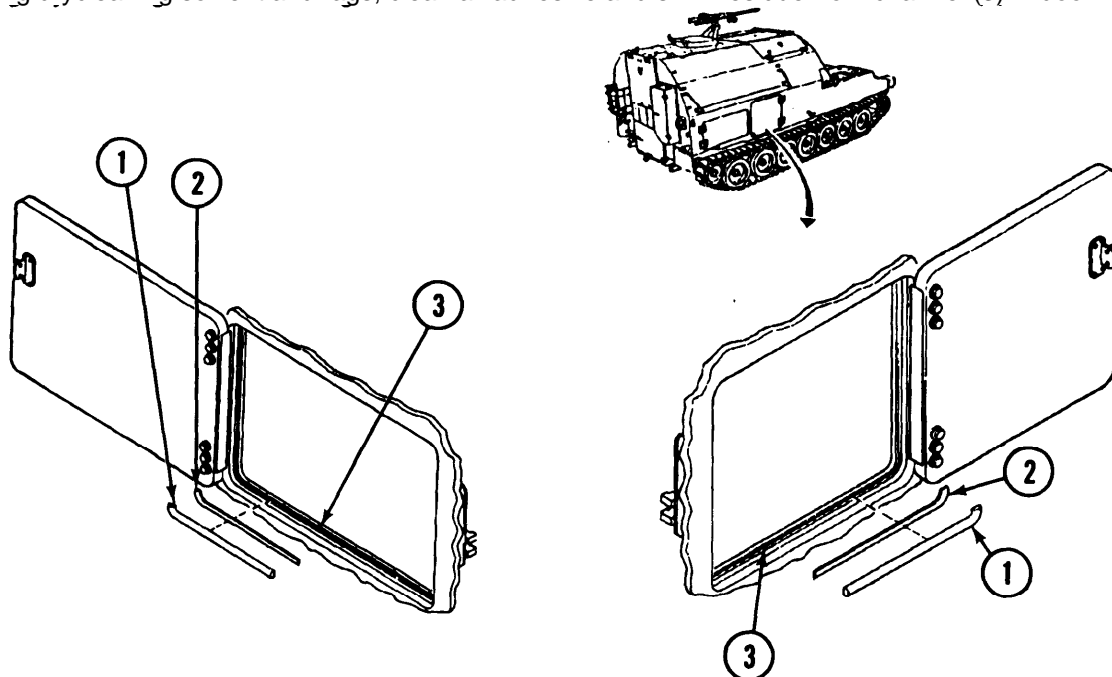
Seals in two canister doorways and personnel side doorway are replaced the same way.

1. Pry up and remove old seal (2) and rubber shim (1) from channel (3) in door frame. Discard seal and shim.

WARNING

Drycleaning 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.

2. Using drycleaning solvent and rags, clean all adhesive and shim residue from channel (3) in door frame.



15-30. CANISTER AND PERSONNEL SIDE DOORWAY SEALS REPLACEMENT (continued).

b. INSTALLATION

WARNING

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

1. Apply adhesive to mounting surfaces of channel (3), new shim (1), and new seal (2). Allow adhesive to dry until tacky.

NOTE

For best results, do not stretch or bunch shim or seal during installation.

2. Press shim (1) into channel (3), working from one end of shim (1) at bottom center of doorframe. Work around door frame until ends of shim (1) meet. If necessary, trim ends of shim (1) to obtain smooth fit.

WARNING

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

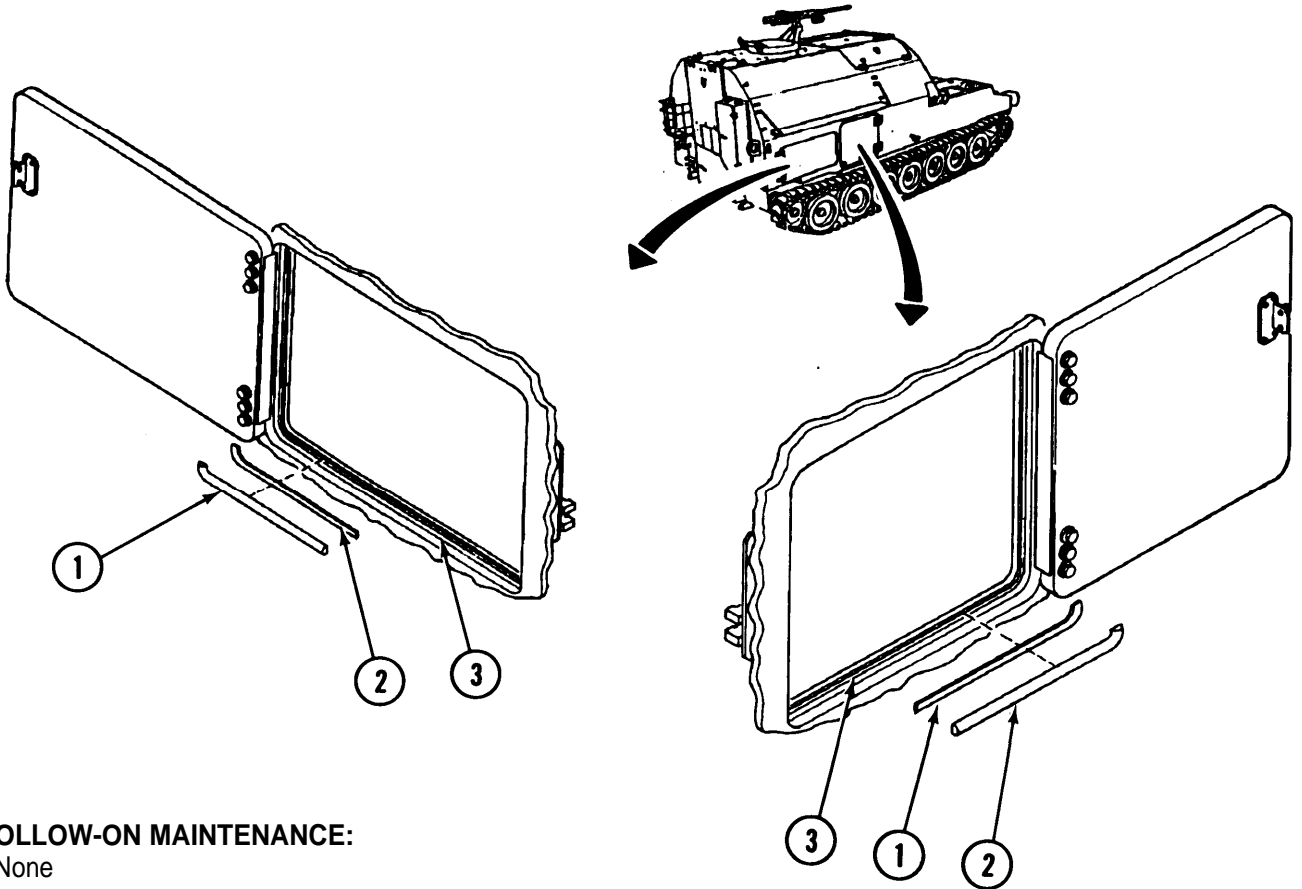
3. Apply adhesive to front face of shim (1), and allow adhesive to dry until tacky.
4. Install seal (2) on shim (1), with rounded side of seal (2) facing out. Start at bottom center of door frame and work around door frame until seal (2) is installed.
5. Press seal (2) into firm contact with shim (1). Start at top center of seal (2) and work down both sides at once.

WARNING

Drycleaning solvent P-D-880 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

6. Wipe seal (2) with drycleaning solvent and rag to remove any adhesive from rounded edge of seal (2).
7. Close canister door or personnel side door (refer to TM 9-2350-287-10). Allow adhesive on shim and seal (1 and 2) to cure for 30 minutes with door closed.

15-30. CANISTER AND PERSONNEL SIDE DOORWAY SEALS REPLACEMENT
 (continued).



FOLLOW-ON MAINTENANCE:
 • None

15-31. UPPER REAR DOOR REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Endless sling (item 20, Appendix i)
- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (item 24, Appendix 1)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Lockwasher (16) (Item 164, Appendix H)
- Lockwasher (8) (Item 166, Appendix H)
- Lockwasher (8) (Item 196, Appendix H)

- Self-locking nut (4) (Item 332, Append H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Lower rear door opened and secured (refer to TM 9-2350-287-10).
- Upper rear door small doors opened and secured (refer to TM 9-235-287-10).

a. REMOVAL

NOTE

Upper rear door does not have to be removed to replace upper rear door small door latches, strikes, or bumper assemblies.

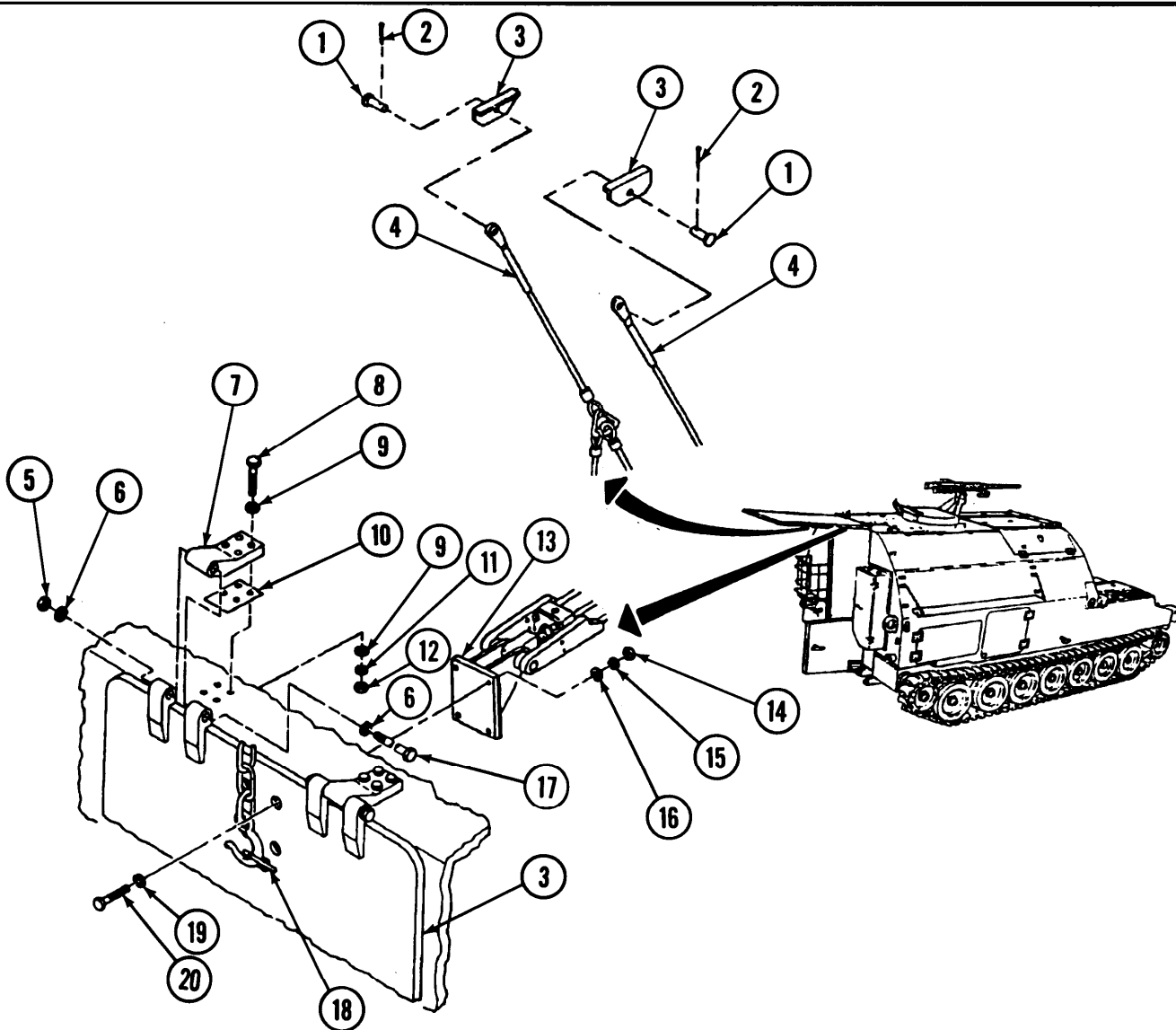
1. Remove two lockpins (2), straight pins (1), and conveyor slings (4) from upper rear door (3).

WARNING

Remove slack from the sling only to keep upper rear door from dropping when hinge screws are removed. Failure to heed this warning may result in injury to personnel.

2. Attach hoist and suitable sling to upper rear door lifting lug (18). Remove any slack from sling.
3. Using restraint straps from canister storage racks, strap upper rear door actuator (13) to ceiling of vehicle.
4. Remove four screws (20), nuts (14), lockwashers (15), washers (1 6), and washers(19) from upper rear door (3) and upper rear door actuator (13). Discard lockwashers.
5. Remove screw (17), two washers (6), and nut (5) from each of two hinges (7).

15-31. UPPER REAR DOOR REPLACEMENT (continued).



WARNING

Stand clear during lifting operations. Upper rear door weighs approximately 300 pounds and can cause severe injury to personnel.

NOTE

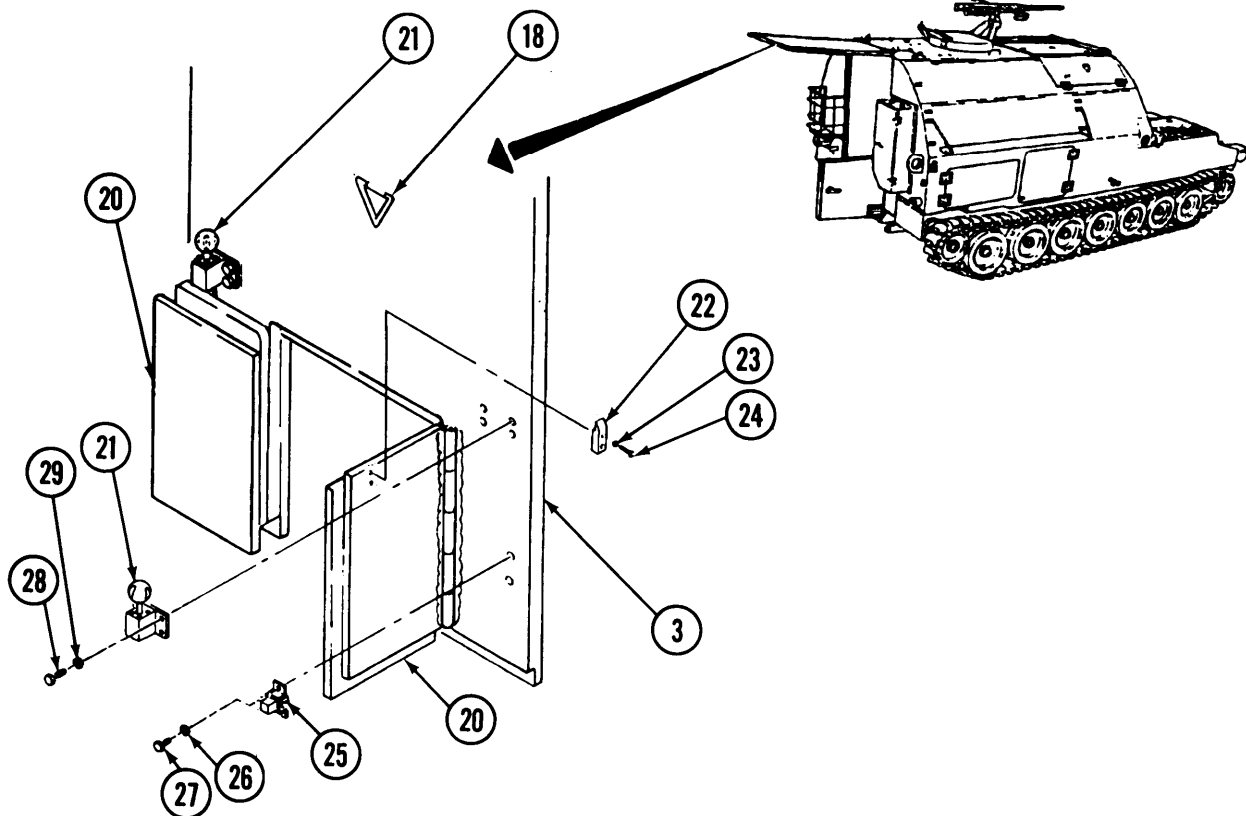
An assistant is needed to position upper rear door on a level surface.

6. Remove upper rear door (3) from vehicle and place on level surface with two upper rear door small doors (21) facing up. Remove hoist and sling from upper rear door lifting lug (18).
7. Remove four screws (8), eight washers (9), and four lockwashers (11) and nuts (12) from each of two hinges (7).
8. Remove two hinges (7) and spacers (10) from vehicle hull.

15-31. UPPER REAR DOOR REPLACEMENT (continued).

b. DISASSEMBLY

1. Release two upper rear door small doors (20) from two latch assemblies (21), and close two upper rear door small doors (20).
2. Remove four screws (24) and lockwashers (23) and two strikers (22) from two upper rear door small doors (20). Discard lockwashers.
3. Remove eight screws (28) and lockwashers (29) and two latch assemblies (21) from upper rear door (3). Discard lockwashers.



4. Remove four screws (27) and lockwashers (26) and two bumper assemblies (25) from upper rear door (3).
5. Attach sling and hoist to upper rear door lifting lug (18), and remove slack.

WARNING

Stand clear during lifting operations. Upper rear door weighs approximately 300 pounds and can cause severe injury to personnel.

NOTE

An assistant is needed to guide upper rear door.

6. Turn over upper rear door (3). Do not disconnect hoist and sling from upper rear door lifting lug (18).

15-31. UPPER REAR DOOR REPLACEMENT (continued).

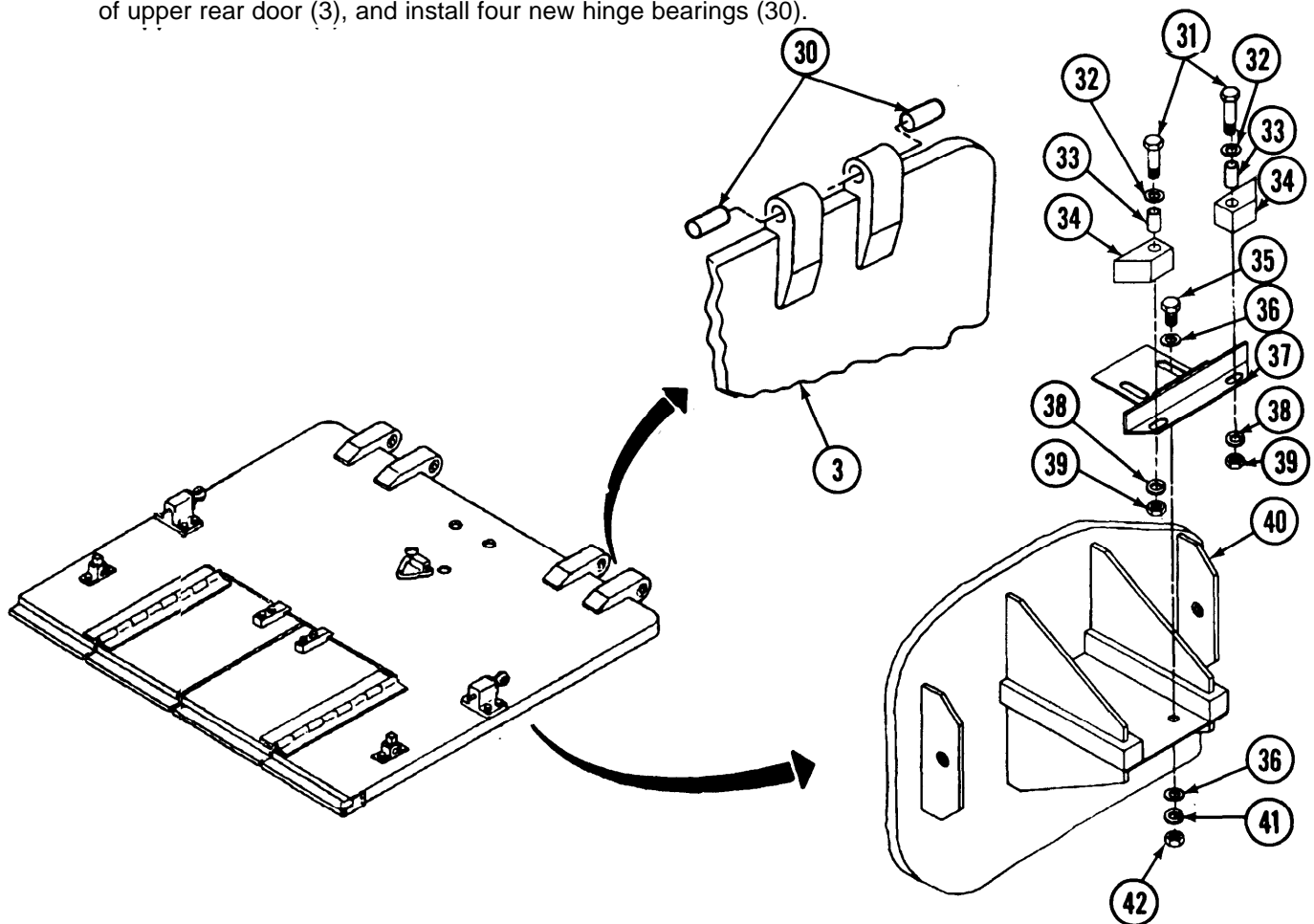
7. Remove two screws (35), self-locking nuts (42), and lockwashers (41), four washers (36), and bracket (37) from upper rear door bracket (40). Discard lockwashers and self-locking nuts.
8. Remove two screws (31), self-locking nuts (39), lockwashers (38), washers (32), bushings (33), and bumpers (34) from bracket (37). Discard lockwashers and self-locking nuts.

c. CLEANING AND INSPECTION

WARNING

Drycleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothing, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

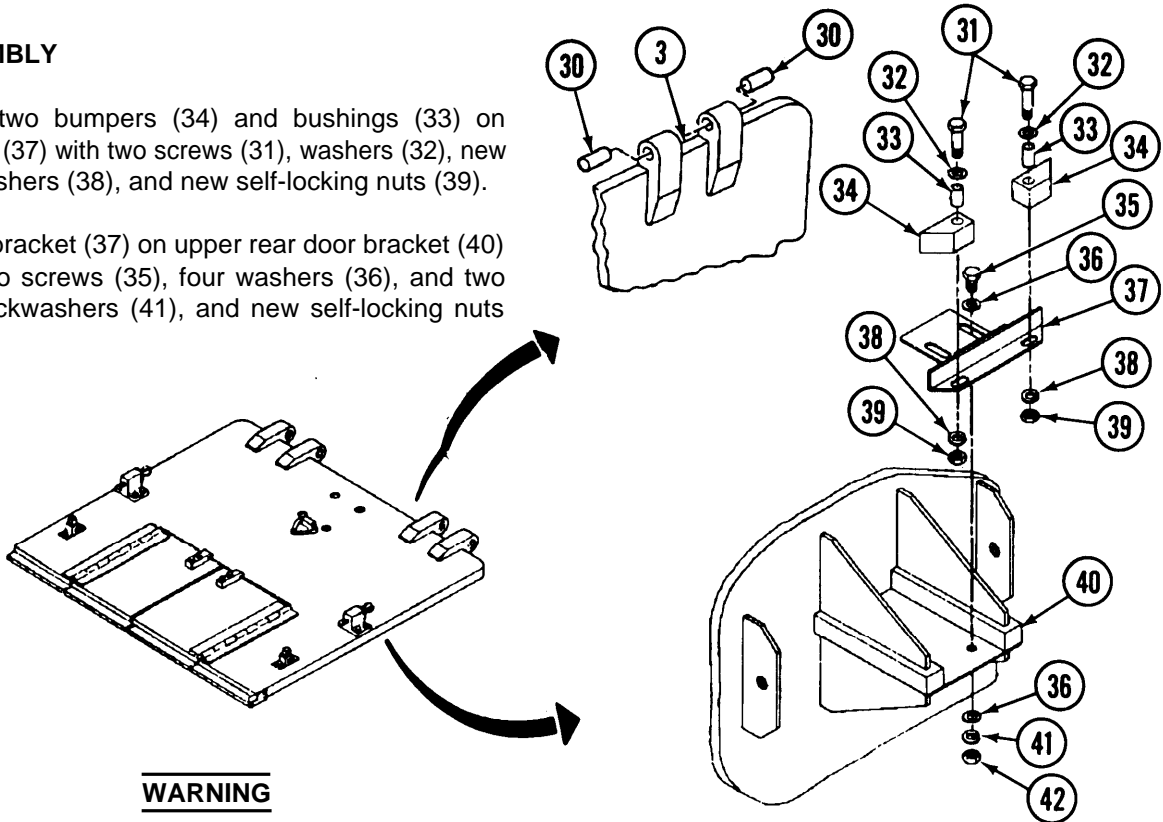
1. Clean all metal parts with drycleaning solvent. Allow to air-dry.
2. inspect all parts for cracks, wear, or other damage. Replace unserviceable parts.
3. Inspect four hinge bearings (30). If damaged, use hammer and punch to drive four hinge bearings (30) out of upper rear door (3), and install four new hinge bearings (30).



15-31. UPPER REAR DOOR REPLACEMENT (continued).

d. ASSEMBLY

1. Install two bumpers (34) and bushings (33) on bracket (37) with two screws (31), washers (32), new lockwashers (38), and new self-locking nuts (39).
2. Install bracket (37) on upper rear door bracket (40) with two screws (35), four washers (36), and two new lockwashers (41), and new self-locking nuts (42).



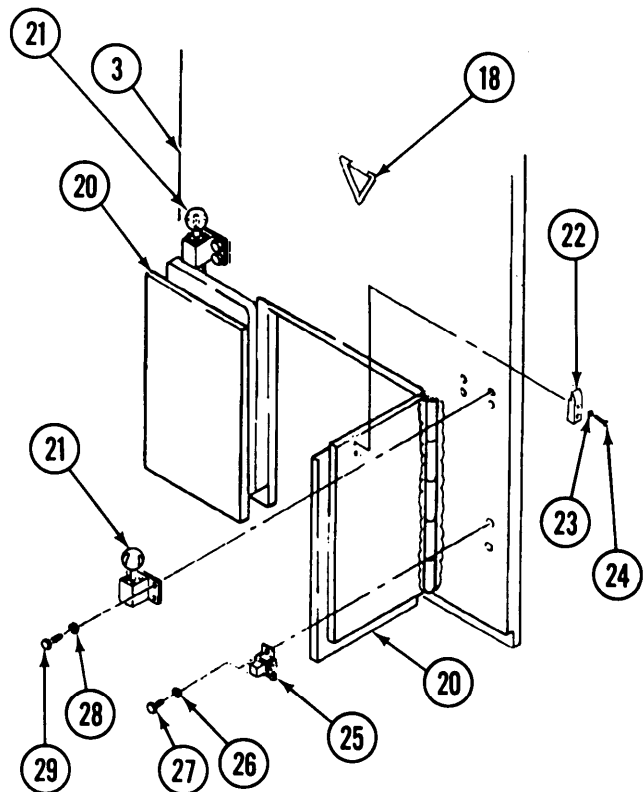
WARNING

Stand clear during lifting operations. Upper rear door weighs approximately 300 pounds and can cause severe injury to personnel.

NOTE

An assistant is needed to guide upper rear door.

3. Using sling and hoist, turn over upper rear door (3). Remove sling from upper rear door lifting lug (18).
4. Install two bumper assemblies (25) on upper rear door (3) with four screws (27) and new lockwashers (26).
5. Install two latch assemblies (21) on upper rear door (3) with eight screws (28) and new lockwashers (29).
6. Install two strikers (22) on two upper rear door small doors (20) with four screws (24) and new lockwashers (23).
7. Open two upper rear door small doors (20) until two strikers (22) are secured by two latch assemblies (21).



15-31. UPPER REAR DOOR REPLACEMENT (continued).

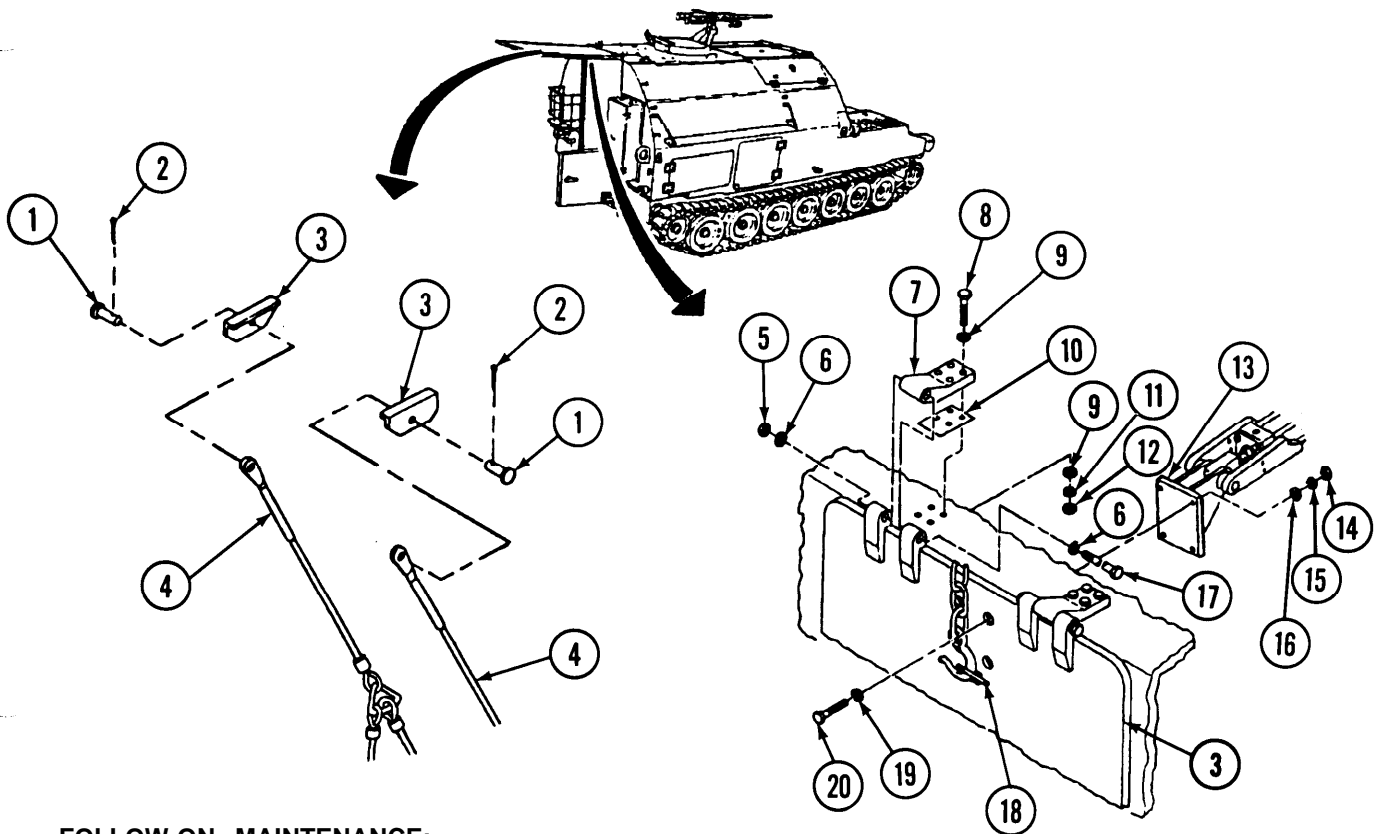
e. INSTALLATION

1. Install two spacers (10) and hinges (7) on vehicle hull with four nuts (12) and lockwashers (11), eight washers (9), and four screws (8) for each hinge (7).

WARNING

Stand clear during lifting operations. Upper rear door weighs approximately 300 pounds and can cause severe injury to personnel.

2. Attach hoist and sling to upper rear door lifting lug (18). Using hoist, lift upper rear door (3) into position on vehicle.
3. Install upper rear door (3) on each of two hinges (7) with screw (17), two washers (6), and nut (5).
4. Install upper rear door (3) on upper rear door actuator (13) with four screws (20), washers (16), washers (19), nuts (14), and new lockwashers (15).
5. Remove sling and hoist from upper rear door lifting lug (18).
6. Remove canister storage rack restraint straps from upper rear door actuator (13).
7. Install two conveyor slings (4) on upper rear door (3) with two straight pins (1) and lockpins (2).



FOLLOW-ON MAINTENANCE:

- Close upper rear door small doors (refer to TM 9-2350-287-10).
- Close lower rear door (refer to TM 9-2350-287-10).

15-32. UPPER REAR DOOR SEALS REPLACEMENT.

This Task Covers:

- a. Removal
 - b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)

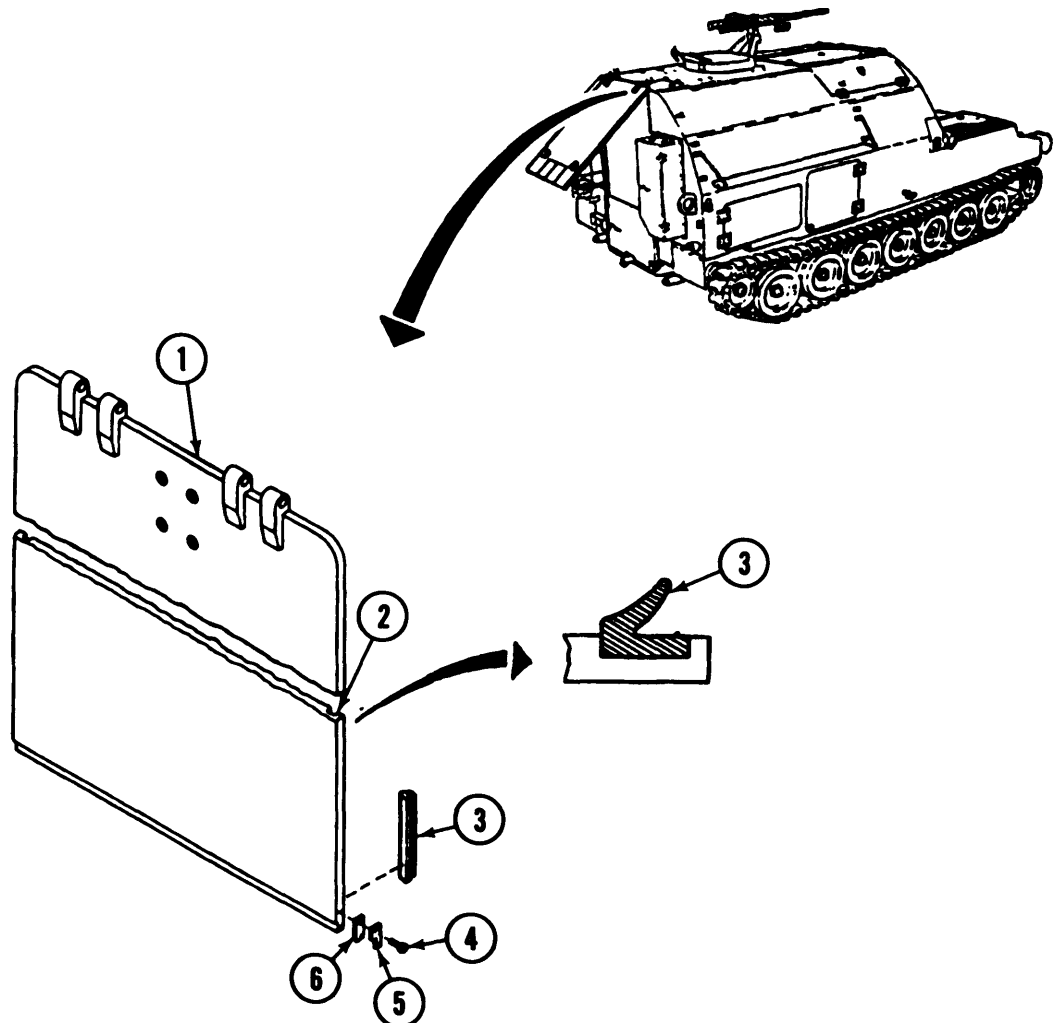
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Upper rear door opened 45 degrees from closed position (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Remove three screws (4), retainer (5), and seal (6) from upper rear door (1).
2. Scrape seal (3) from channel (2) in upper rear door (1).



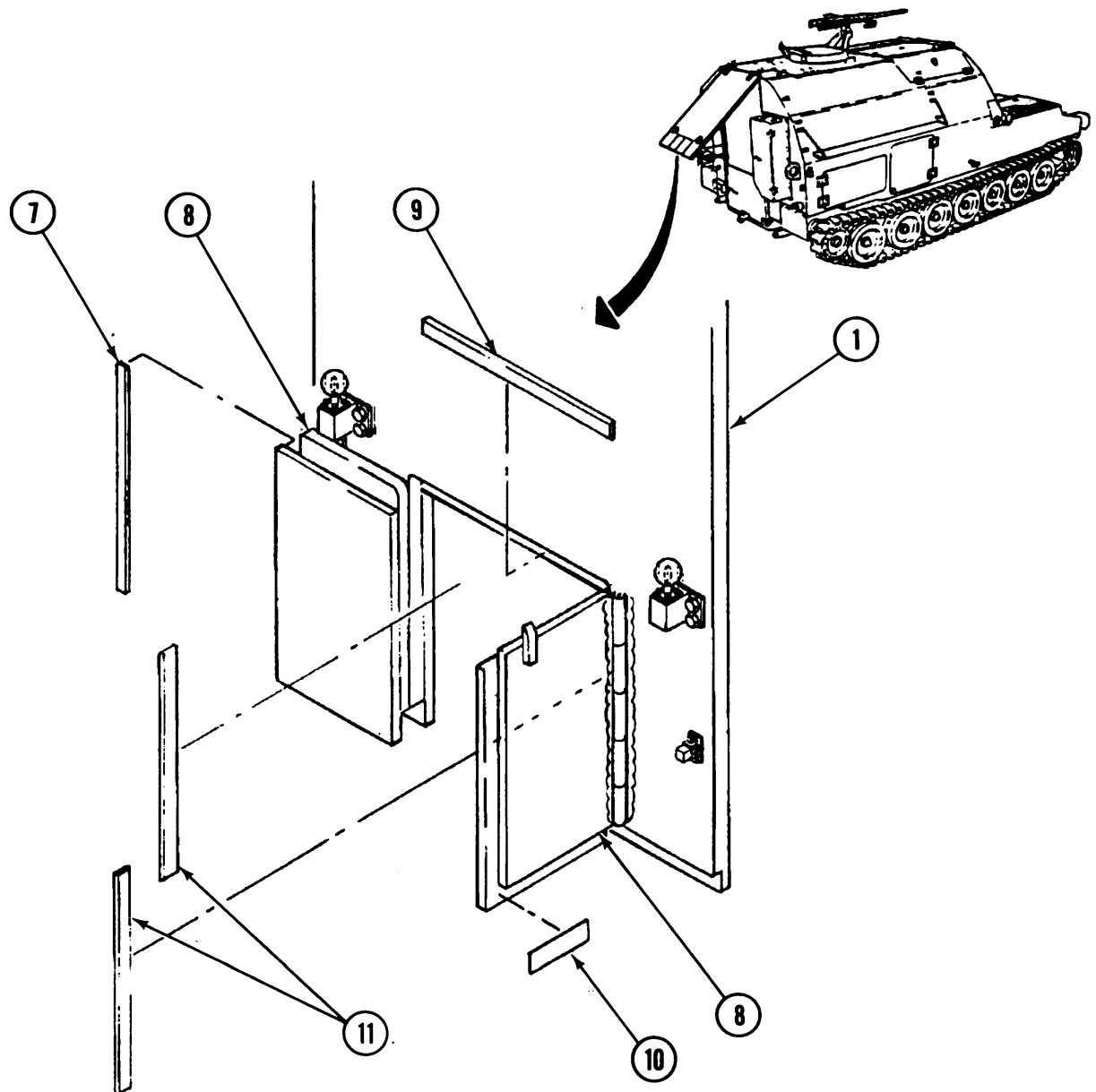
15-32. UPPER REAR DOOR SEALS REPLACEMENT (continued).

3. Scrape two seals (7 and 10) from two upper rear door small doors (8).
4. Remove seal (9) and two seals (11) from upper rear door (1).

WARNING

Drycleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothing, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

5. Use drycleaning solvent and rags to thoroughly remove all seal particles and adhesive residue from seal-mounting surfaces on upper rear door (1) and two upper rear door small doors (8).



15-32. UPPER REAR DOOR SEALS REPLACEMENT (continued).

b. INSTALLATION

CAUTION

Adhesive coating should not exceed 1/4 inch (6 mm). Excessive amount of adhesive will cause seal lip to adhere to seal channel outer wall, destroying seal's effectiveness.

WARNING

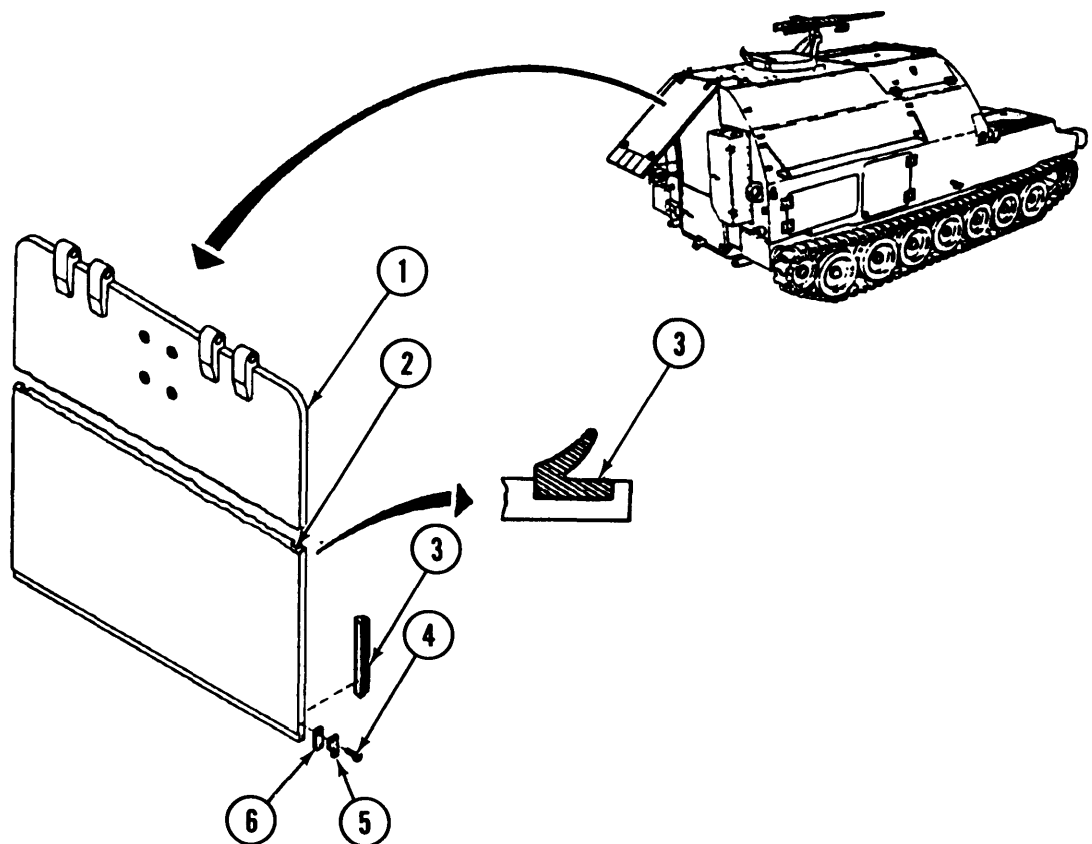
Sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If sealing compound gets on skin or clothing, wash immediately with soap and water.

1. Apply thin coating of adhesive to seal (3) and channel (2) in upper rear door (1). Allow adhesive to dry until tacky.

NOTE

To obtain maximum sealing results, do not stretch or bunch seals during installation.

2. Install seal (3) in channel (2) of upper rear door (1), with upper lip of seal (3) facing edge of upper rear door (1).
3. Install seal (6) and retainer (5) on upper rear door (1) with three screws (4).



15-32. UPPER REAR DOOR SEALS REPLACEMENT (continued).

WARNING

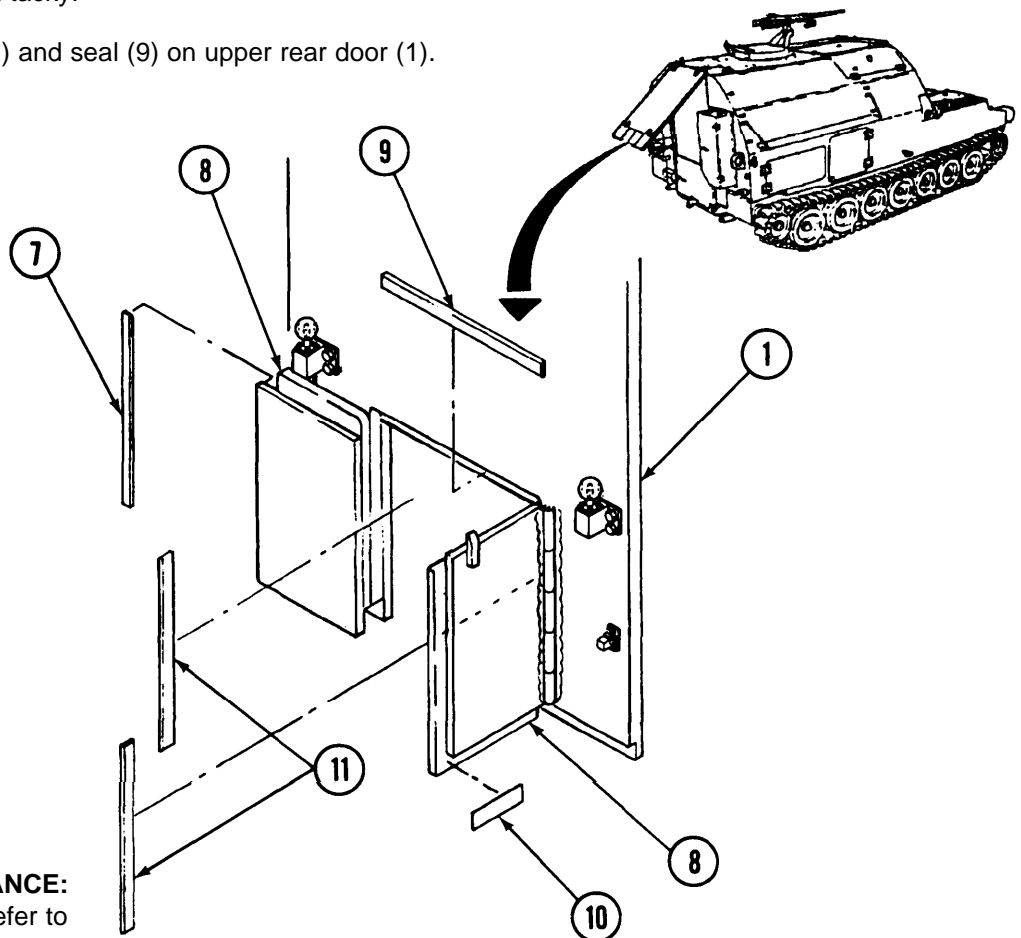
Sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If sealing compound gets on skin or clothing, wash immediately with soap and water.

4. Apply thin coating of adhesive to mounting surfaces of two seals (7 and 10) and upper rear door small doors (8). Allow adhesive to dry until tacky,
5. Install two seals (7 and 10) on upper rear door small doors (8).

WARNING

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

6. Apply thin coating of adhesive to mounting surfaces of two seals (11), seal (9), and upper rear door (1). Allow adhesive to dry until tacky.
7. Install two seals (11) and seal (9) on upper rear door (1).



FOLLOW-ON MAINTENANCE:
 • Close upper rear door (refer to TM 9-2350-287-10).

15-33. LOWER REAR DOOR REPLACEMENT.

This Task Covers

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Self-locking nut (2) (Item 332, Appendix H)

Personnel Required: Three

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Components removed from lower rear door stowage locations (refer to TM 9-2350-287-10).
 - Decontamination apparatus bracket removed (para 15-36).
-

a. REMOVAL

1. Open lower rear door (1) approximately 45 degrees.

WARNING

Lower rear door is very heavy. At least two persons must support door while it is being removed. Failure to heed this warning may result in severe injury to personnel.

2. With two assistants holding door (1), remove screw (2), washer (6), two bearing washers (3), and self-locking nut (5) from each of two door hinges (4). Discard self-locking nuts.
3. Lift lower rear door (1) away from two door hinges (4).

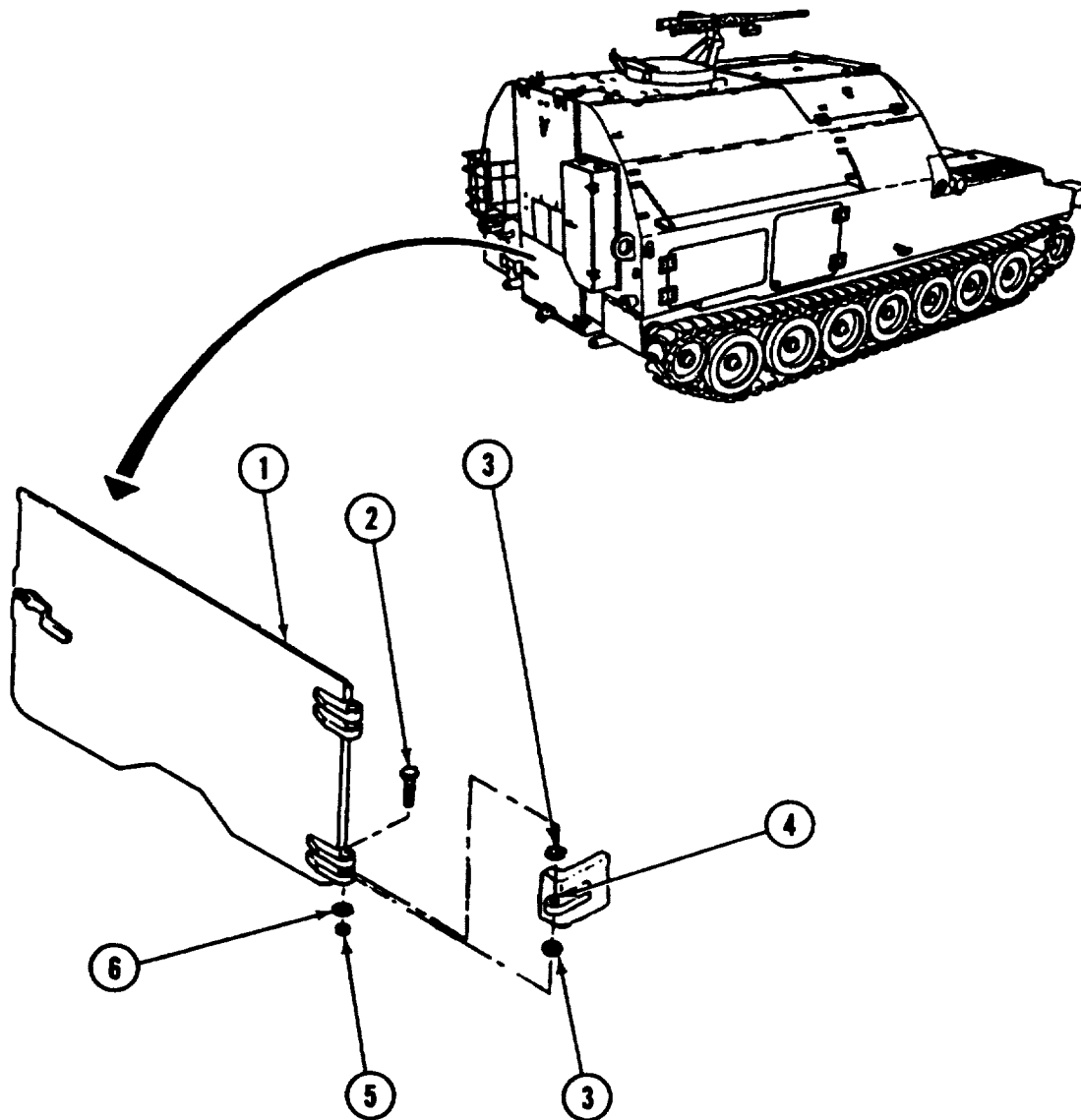
b. INSTALLATION

WARNING

Lower rear door is very heavy. At least two-persons are required to support lower rear door while it is being installed. Failure to heed this warning may result in severe injury to personnel.

1. With two assistants, position lower rear door (1) on two door hinges (4).
2. With two assistants supporting lower rear door (1), install screw (2), washer (6), two bearing washers (3), and self-locking nut (5) in each of two door hinges (4).
3. Close and latch lower rear door (1) (refer to TM 9-2350-287-10).

15-33. LOWER REAR DOOR REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Stow components in lower rear door stowage locations (refer to TM 9-2350-287-10).
- Install decontamination apparatus bracket (para 15-36).

15-34. LOWER REAR DOOR REPAIR.*This Task Covers:*

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

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

- Sealing compound (Item 58, Appendix D)
- Cotter pin (Item 24, Appendix H)
- Lockwasher (2) (Item 196, Appendix H)

Materials/Parts:

- Adhesive, sealant, silicon RTV (Item 6, Appendix D)
- Adhesive, rubber (Item 5, Appendix D)
- Dry-cleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Lower rear door opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove cotter pin (8) and slotted nut (9) from outer door handle (16). Discard cotter pin.
2. Remove inner door handle (6) and washer (7) from outer door handle (16).
3. Remove outer door handle (16) and sleeve bearing (17) from lower rear door (15).
4. Remove upper and bottom seals (5 and 10) from lower rear door (15).

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 clothing, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

5. Clean channels in lower rear door (15) with dry-cleaning solvent and rags to remove any seal or adhesive residue.
6. Scrape sealant from lower rear door (15), and clean residue away with dry-cleaning solvent and rags.
7. Remove two screws (4) and lockwashers (3), lower rear door handle striker (2), and shims (1) from hull. Discard lockwashers.

b. DISASSEMBLY

1. Unscrew knob (11) from plunger housing (12).
2. Loosen ball plunger (13), and remove plunger (14) from plunger housing (12).

15-34. LOWER REAR DOOR REPAIR (continued).

e. INSTALLATION

1. Install required number of shims (1) and handle striker (2) on hull with two new lockwashers (3) and screws (4).

WARNING

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

CAUTION

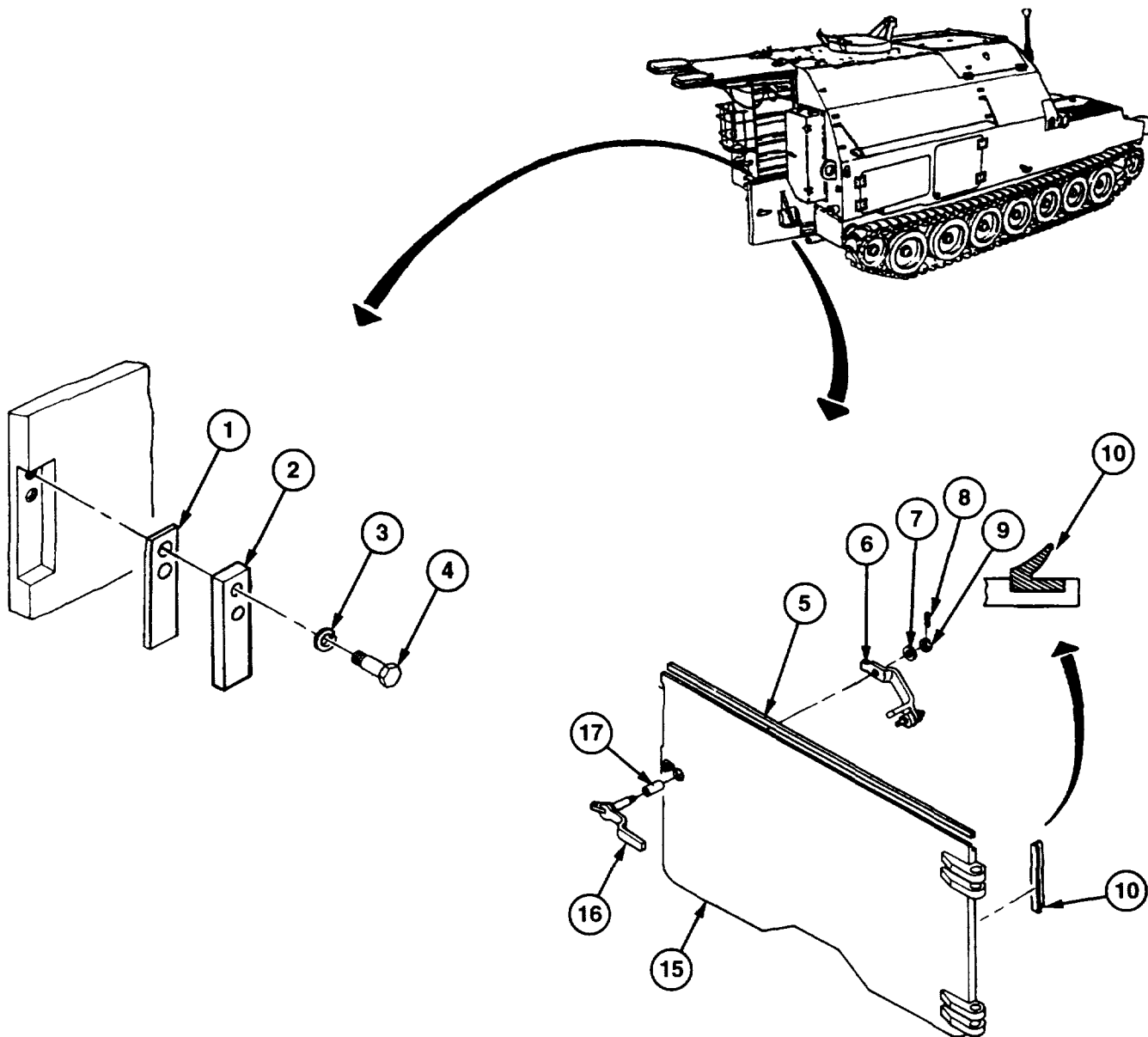
Adhesive coating should not exceed 1/4 inch (6 mm). Excessive amounts of adhesive will cause seal lip to adhere to seal channel outer wall, destroying seal's effectiveness.

NOTE

- **To seal correctly, upper lip of bottom seal must face lower rear door edge.**
- **To obtain maximum sealing results, avoid stretching or bunching new seals during installation.**

2. Apply thin coating of adhesive to mounting surfaces of upper and bottom seals (5 and 10) and channels in lower rear door (15). Allow adhesive to dry until tacky.
3. Install bottom seal (10) in channel in lower rear door (15), with lip of seal facing edge of door.
4. Install outer door handle (16) and sleeve bearing (17) on lower rear door (15).
5. Install washer (7) and inner door handle (6) on outer door handle (16).
6. Install slotted nut (9) on outer door handle (16).
7. Tighten slotted nut (9) until outer door handle (16) can be turned freely, with no excess movement in or out.
8. Loosen slotted nut (9) until slots in slotted nut (13) align with hole in outer door handle (16).
9. Install new cotter pin (8) through slotted nut (9) and outer door handle (16).
10. Apply a bead of adhesive 1/2 inch high and 1/2 inch wide connecting upper seal (5) to bottom seal (10). Allow adhesive to cure for one hour with lower rear door (15) open; then close upper rear door (refer to TM 9-2350-293-10) and door (15) for about 24 hours until adhesive hardens.

15-34. LOWER REAR DOOR REPAIR (continued).



FOLLOW-ON MAINTENANCE:

- None

15-35. LOWER REAR DOOR HOLD-OPEN LATCH REPLACEMENT.*This Task Covers:*

- a. Removal
- b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Spring pin (2) (Item 363, Appendix H)

a. REMOVAL

1. Drive out spring pin (3) from bracket (1), and remove rubber bumper (4) from bracket (1). Discard spring pin.

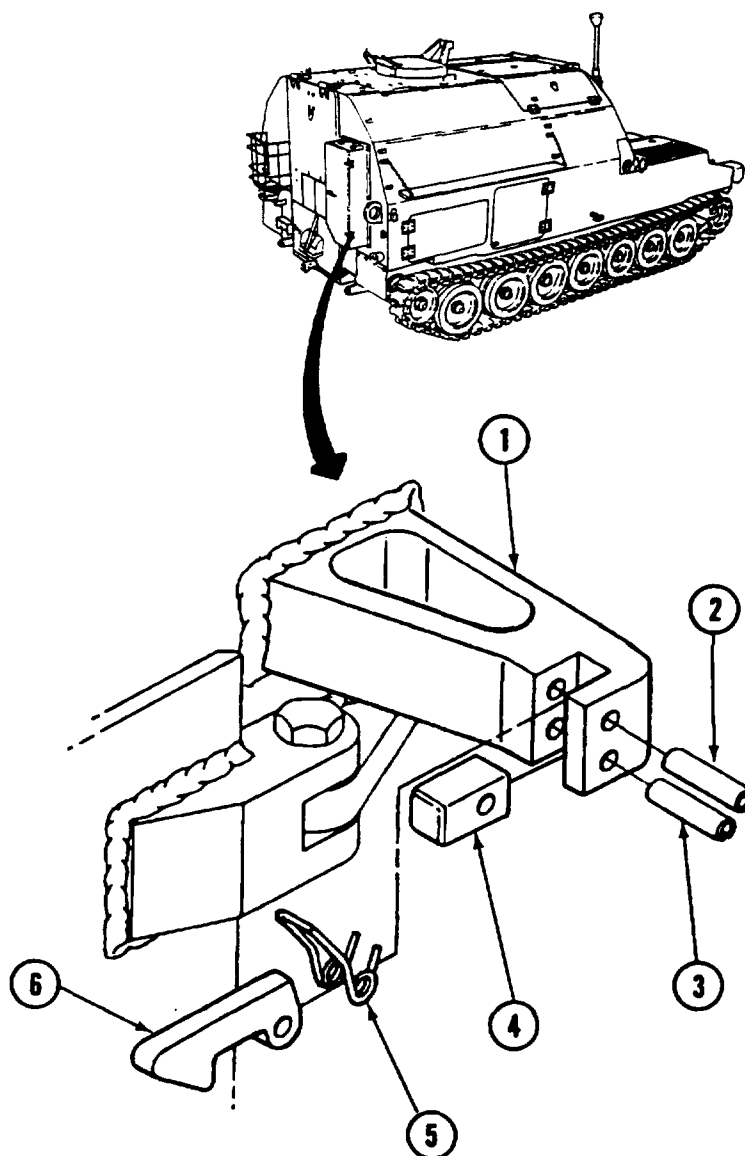
WARNING

Catch striker spring is under tension and may snap out when spring pin is removed. To avoid injury, use care during removal.

2. Drive out spring pin (2) from bracket (1), and remove catch striker (6) and spring (5) from bracket (1). Discard spring pin.

b. INSTALLATION

1. Install spring (5) and catch striker (6) in bracket (5) with new spring pin (2).
2. Install rubber bumper (4) in bracket (1) with new spring pin (3).

**FOLLOW-ON MAINTENANCE:**

- None

15-36. DECONTAMINATION APPARATUS BRACKET REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

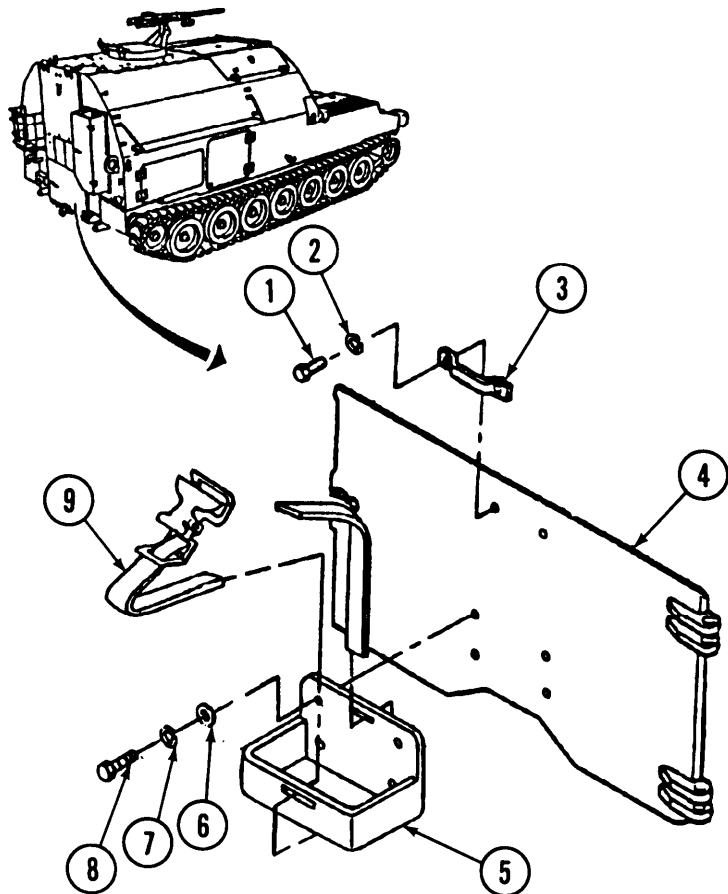
- Lockwasher (2) (Item 160, Appendix H)
- Lockwasher (4) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Decontamination apparatus removed from bracket (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove strap (9) from bracket (5) and loop (3).
2. Remove two screws (1) and lockwashers (2) and loop (3) from lower rear door (4). Discard lock washers.
3. Remove four screws (8), lock washers (7), and washers (6) and bracket (5) from lower rear door (4). Discard lockwashers,



b. INSTALLATION

1. Install bracket (5) on lower rear door (4) with four screws (8), new lockwashers (7), and washers (6).
2. Install loop (3) on lower rear door (4) with two screws (1) and new lockwashers (2).
3. Install strap (9) in bracket (5) and loop (3).

FOLLOW-ON TASKS:

- Install decontamination apparatus in bracket (refer to TM 9-2350-287-10).

15-37. APU COMPARTMENT LOUVERED FRONT DOOR REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's toolkit (Item 24, Appendix 1)

- Lockwasher (4) (Item 196, Appendix H)

Personnel Required: Two

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Grease (Item 32, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (Item 17, Appendix H)
- Cotter pin (2) (Item 23, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU compartment louvered front door opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

NOTE

An assistant is needed when removing or installing APU compartment louvered front door.

1. While assistant supports APU compartment louvered front door (22), remove cotter pin(11), headed pin (10), and washer (21) from each of two hull-mounted brackets (20) and louvered front door (22). Discard cotter pins.
2. Remove louvered front door (22) and two bronze bearing washers (19) from two hull-mounted brackets (20).
3. Remove bottom panel (18) and left panel (17) from fasteners on APU compartment wall.
4. Remove two screws (14), lockwashers (15), washers (16), and angle (13) from APU compartment wall. Discard lockwashers.

NOTE

For proper installation, record the number and thickness of shims.

5. Remove two screws (4), lockwashers (3), striker (2), and shims (1) from inside APU compartment. Discard lockwashers.

b. DISASSEMBLY

1. Remove spring (9) and spring hook (8) from latch (5).
2. Remove cotter pin (24), slotted nut (7), washer (6), latch (5), and handle (23) from louvered front door (22). Discard cotter pin.

15-37. APU COMPARTMENT LOUVERED FRONT DOOR REPAIR (continued).

c. CLEANING AND INSPECTION

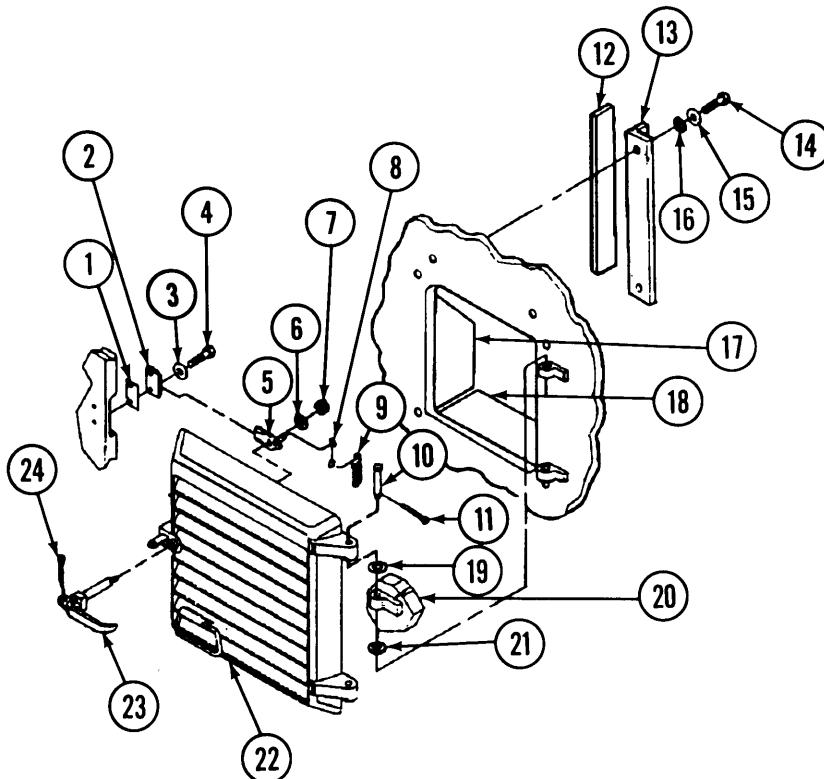
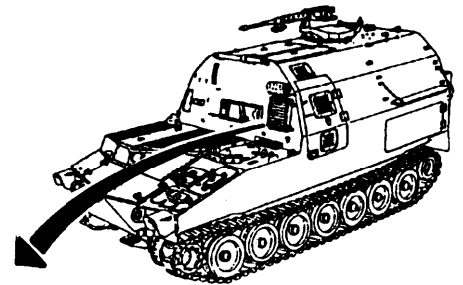
WARNING

Drycleaning 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 use near open flame or excessive heat.

1. Clean all metal parts with drycleaning solvent, and dry with rags.
2. Inspect all parts for excessive wear, cracks, and distortions. Replace any damaged parts.

d. ASSEMBLY

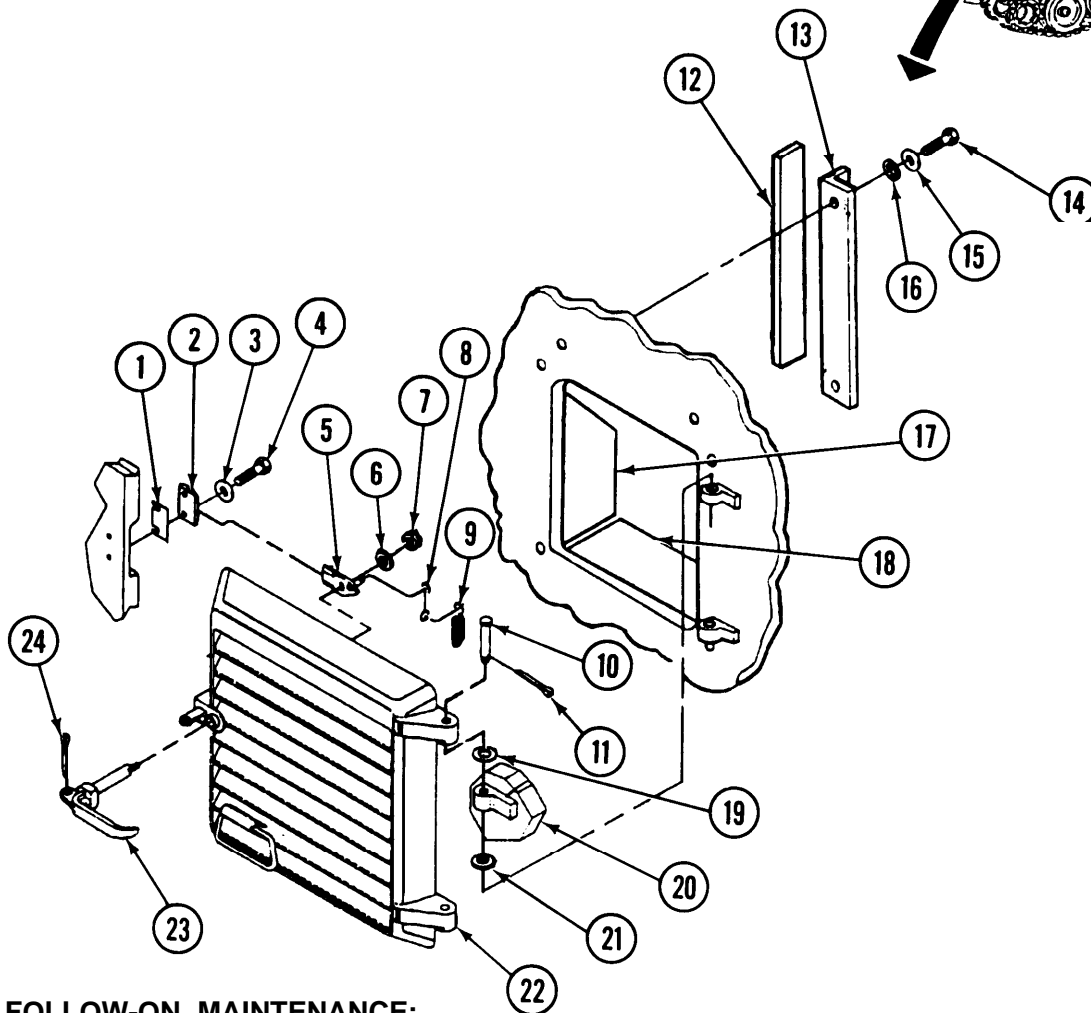
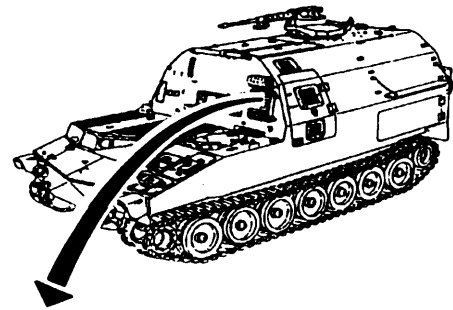
1. Install handle (23) and latch (5) on louvered front door (22) with spring hook (8), spring (9), washer (6), and slotted nut (7).
2. Tighten slotted nut (7) until all play is removed from handle (23), but handle (23) turns freely.
3. Aline hole in handle (23) and slot in slotted nut (7), and install new cotter pin (24) in slotted nut (7) and handle (23).
4. Install spring hook (8) and spring (9) on latch (5).



15-37. APU COMPARTMENT LOUVERED FRONT DOOR REPAIR (continued).

e. INSTALLATION

1. Install shims (1) and striker (2) inside APU compartment with two new lockwashers (3) and two screws (4).
2. Install angle (13) on APU compartment wall with two screws (14), new lockwashers(15), and washers (1 6).
3. Install left panel (17) and bottom panel (18) on fasteners on APU compartment wall.
4. With assistant, install two bronze bearing washers (19) and louvered front door (22) on two hull-mounted brackets (20).
5. Apply grease to each of two headed pins (10).
6. Install headed pin (10), washers (21), and new cotter pin (11) in each of two hull-mounted brackets (20).



FOLLOW-ON MAINTENANCE:

- Close APU compartment louvered front door (refer to TM 9-2350-287-10).

15-38. APU COMPARTMENT SIDE DOOR AND HINGE ASSEMBLY REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix 1)
- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

- Cotter pin (Item 17, Appendix H)
- Lockwasher (16) (Item 164, Appendix H)
- Lockwasher (16) (Item 166, Appendix H)
- Lockwasher (2) (Item 196, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-1 O).

a. REMOVAL

1. Attach sling to lifting lug (6) on APU compartment side door (1) and to hoist, and take up slack.

WARNING

Keep sling taut while removing screws from hinges, or door may drop suddenly, causing injury to personnel.

2. Remove six screws (4) and lockwashers (3) from two hinge assemblies (5) and vehicle. Discard lockwashers.
3. Turn APU door handle (7) to open door (1).

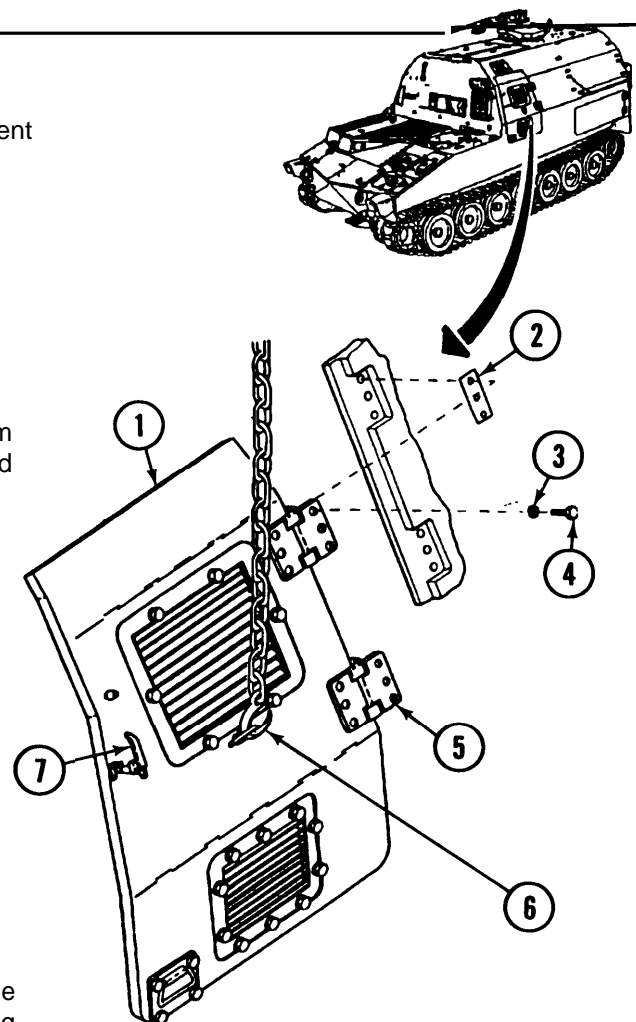
WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause severe injury.

NOTE

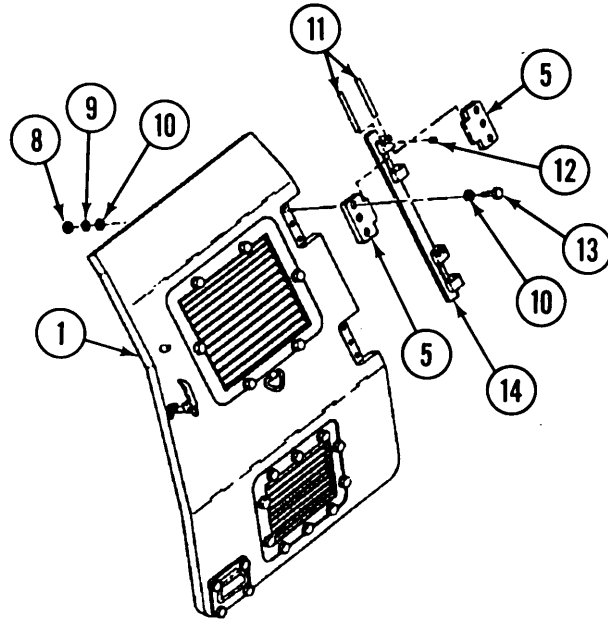
For proper installation, note number and position of shims.

4. Remove door (1) and shims (2), if any, from vehicle and place on hard, level surface. Remove sling from lifting lug (6) and hoist.



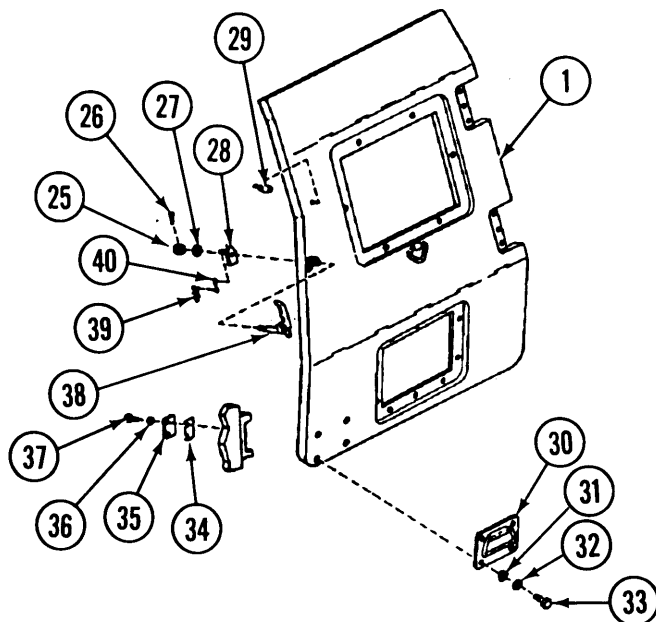
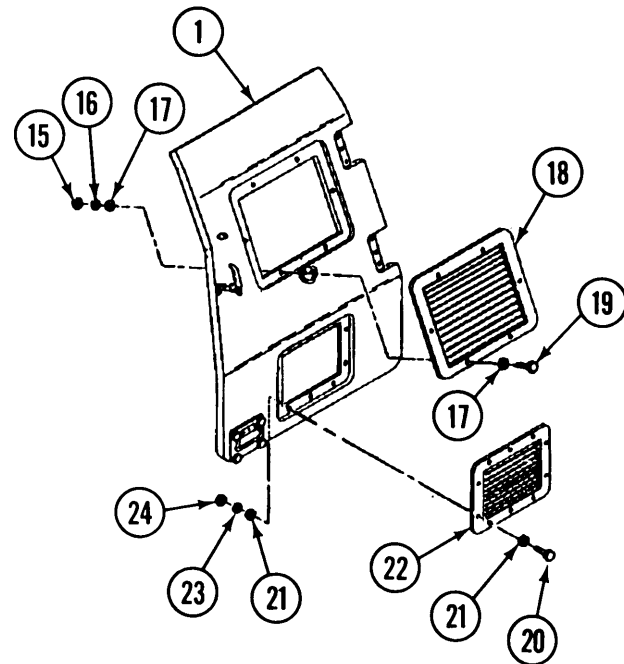
15-38. APU COMPARTMENT SIDE DOOR AND HINGE ASSEMBLY REPAIR (continued).

5. Remove six screws (13), 12 washers (10), and six lockwashers (9) and nuts (8) from two hinge halves (5). Discard lockwashers.
6. Remove bar (14), with four hinge halves (5) attached, from APU side compartment door (1).



b. DISASSEMBLY

1. Remove four spring pins (12) from bar (14).
2. Drive out four hinge pins (11) from bar (14), and remove four hinge halves (5) from bar (14).
3. Remove six screws (19), 12 washers (17), six lockwashers (16) and nuts (15), and upper louver (18) from APU compartment side door (1). Discard lockwashers.
4. Remove 10 screws (20), 20 washers (21), 10 lockwashers (23) and nuts (24), and lower louver (22) from APU compartment side door (1). Discard lockwashers.
5. Remove spring (39) and spring hook (40) from latch (28).
6. Remove cotter pin (25), slotted nut (26), washer (27), latch (28), and pull handle (38) from APU compartment side door (1). Discard cotter pin.



15-38. APU COMPARTMENT SIDE DOOR AND HINGE ASSEMBLY REPAIR (continued).

NOTE

For proper installation, record number and thickness of shims.

7. Remove two screws (37) and lockwashers (36), striker (35), and shims (34) from inside of APU compartment. Discard lockwashers.
8. Remove four screws (33), lockwashers (32), and washers (31) and pull handle (30) from door (1). Discard lockwashers.
9. Remove bumper (29) from door (1).

c. CLEANING AND INSPECTION**WARNING**

Drycleaning 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 use near open flame or excessive heat.

1. Clean all parts with drycleaning solvent. Wipe dry with clean rags.
2. Inspect all parts for cracks, bends, or distortions. Replace any damaged part.

d. ASSEMBLY

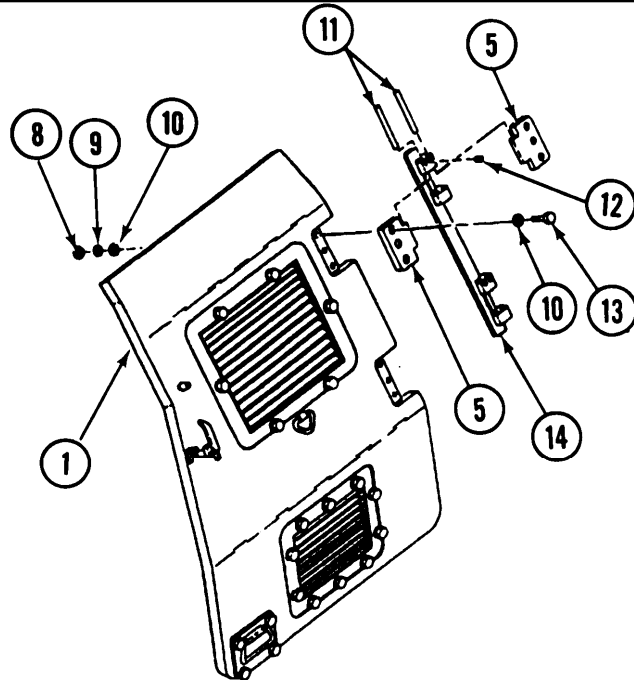
1. Install bumper (29) on door (1).
2. Install pull handle (30) on door (1) with four washers (31), new lockwashers (32), and screws (33).
3. Apply zinc chromate paste to mating surfaces of shims (34), striker (8), and inside of APU compartment.
4. Install shims (34) and striker (35) on inside of APU compartment with two new lockwashers (36) and two screws (37).
5. Install pull handle (38) and latch (28) on door (1) with washer (27) and slotted nut (26).
6. Tighten slotted nut (26) until there is no play in pull handle (38), but handle (38) turns freely.
7. Aline hole in pull handle (38) with slot in slotted nut (26), and install new cotter pin (25).
8. Install spring hook (40) and spring (39) in latch (28).
9. Install lower louver (22) on APU compartment side door (1) with 10 nuts (24), 10 new lockwashers (23), 20 washers (21), and 10 screws (20).
10. Install upper louver (18) on APU compartment side door (1) with six nuts (15), six new lockwashers(16), 12 washers (17), and six screws (19).

15-38. APU COMPARTMENT SIDE DOOR AND HINGE ASSEMBLY REPAIR (continued).

11. Install four hinge halves (5) on bar (14) with four hinge pins (11).
12. Secure four hinge pins (11) with four spring pins (12).

e. INSTALLATION

1. Install bar (14) with four hinge halves (5) attached on APU side compartment door (1).
2. Install six nuts (8), 12 washers (10), six new lockwashers (9), and six screws (13) on two hinge halves (5).
3. Install sling on lifting lug (6) and hoist, and take up slack.



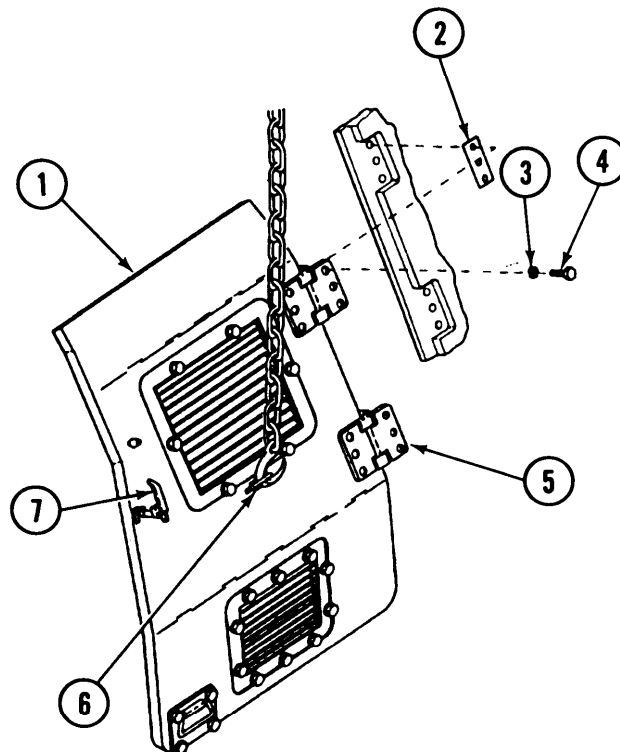
WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause severe injury.

NOTE

An assistant is needed to properly position APU compartment side door.

4. Using hoist, lift door (1) into position on vehicle.
5. Turn APU door handle (7) to close door (1).
6. Install two hinge assemblies (5) and shims (2), if any, on vehicle with six new lockwashers (3) and screws (4).
7. Remove sling from lifting lug (6) and hoist.
8. Turn APU door handle, and open door (1). If door (1) binds, proceed to step 9. If door (1) opens without binding, door (1) is properly adjusted.
9. Loosen six screws (4) on two hinge assemblies (5). With an assistant, position door (1) until it opens and closes without binding. Tighten six screws (4).



FOLLOW-ON MAINTENANCE:

- None

15-39. APU COMPARTMENT ACCESS PLATE AND CAP ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal
- b. Cleaning and Inspection
- c. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Adhesive, rubber (item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Gasket (Item 79, Appendix H)

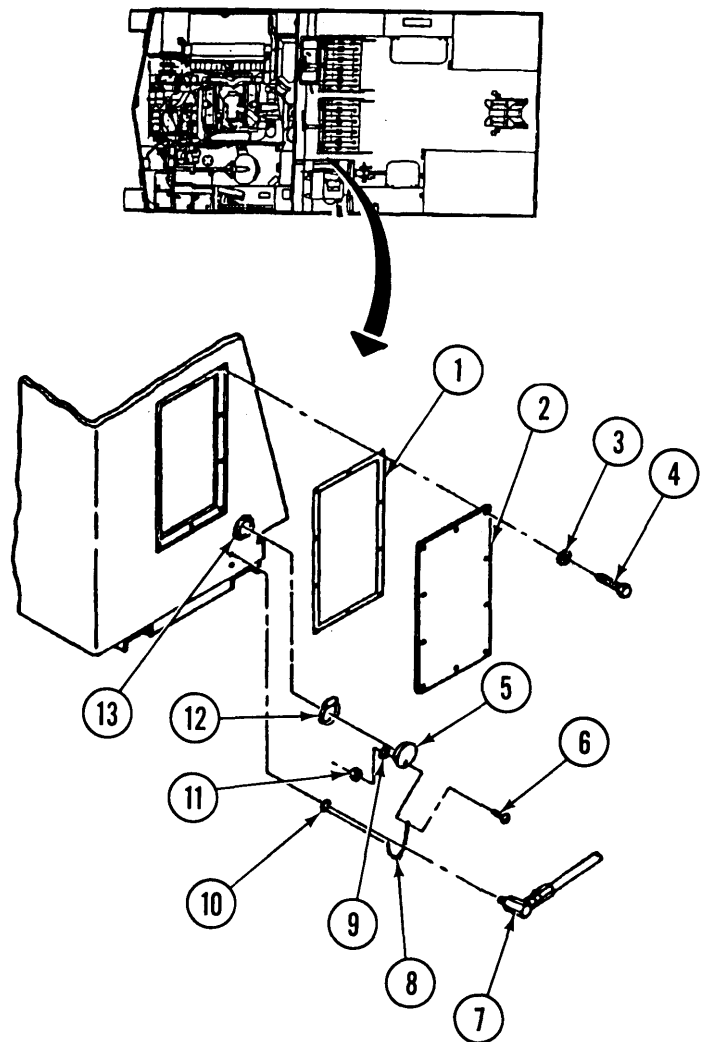
- Lockwasher (Item 121, Appendix H)
- Lockwasher (10) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Left projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove 10 screws (4) and lockwashers (3), and APU compartment access plate (2) with gasket (1) from APU compartment. Discard lockwashers and gasket.
2. Loosen hoseclamp (12) on cap assembly (5).
3. Pull off cap assembly (5) from connector (13) on bulkhead.
4. Remove hose clamp (12) from cap assembly (5).
5. Remove screw (6), lockwasher (9), and nut (11) and chain (8) from cap assembly (5). Discard lock washer.
6. Twist off and remove chain (8) from ring (10).
7. Remove ring (10) from fitting (7) by twisting off.



15-39. APU COMPARTMENT ACCESS PLATE AND CAP ASSEMBLY REPLACEMENT (continued).

b. CLEANING AND INSPECTION

1. Scrape gasket (1) from access plate (2).

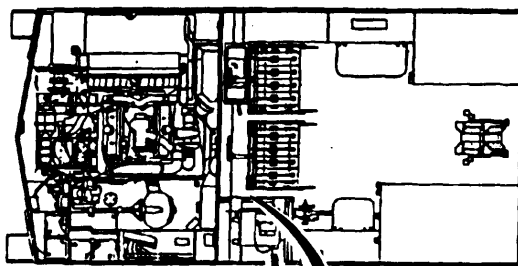
WARNING

Drycleaning solvent PD-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.

2. Thoroughly clean all adhesive residue from access plate surface with drycleaning solvent. Allow to air-dry.

c. INSTALLATION

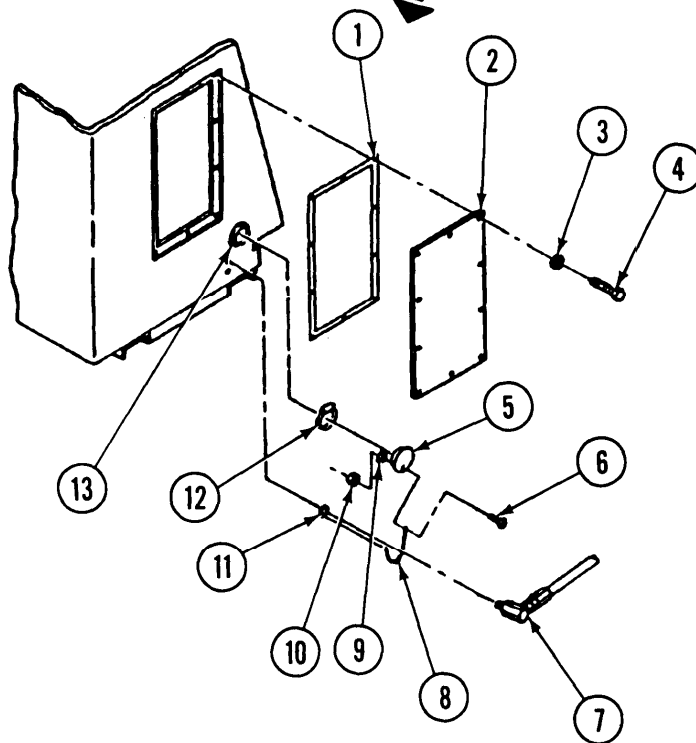
1. Install ring (9) to fitting (7) by twisting and connect ring (10) to one end of chain (8).
2. Secure cap assembly (5) to chain (8) with screw (6), new lockwasher (9), and nut (11).
3. Position hose clamp (12) on cap assembly (5).
4. Press cap assembly (5) on connector (13) on bulkhead.
5. Tighten hose clamp (12) on cap assembly (5).



WARNING

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

6. Add thin coating of rubber adhesive to new gasket (1). Allow adhesive to dry until tacky.
7. install new gasket (1) against mounting surface of APU access plate (2). Apply pressure to all surfaces of gasket (1).
8. Install access plate (2) with new gasket (1) on APU compartment with 10 screws (4) and new lockwashers (3).



FOLLOW-ON MAINTENANCE:

- Move left projectile rack assembly to front of vehicle (refer to TM 9-2350-287-10).

15-40. APU COMPARTMENT SOUNDPROOF PANELS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Panel (Item 214, Appendix H)
- Panel (Item 215, Appendix H)
- Panel (Item 216, Appendix H)
- Panel (Item 217, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-1 O).
- APU compartment side door opened (refer to TM 9-2350-287-10).

N O T E

Equipment conditions depend on which soundproof panel is being replaced.

- APU removed (for all soundproof panels except door soundproof panel) (para 18-2).
- APU fuel return hose removed (for side and rear soundproof panels) (para 18-11).
- APU inlet fuel hose remove (for side and rear soundproof panels) (para 18-11).
- APU hydraulic pump inlet and outlet fittings removed (for rear soundproof panel) (para 17-35).
- APU hydraulic pressure switch assembly removed (for rear soundproof panel) (para 18-19).
- APU primary and secondary fuel filters removed (for rear soundproof panel) (para 18-11).
- APU compartment access plate removed (for access plate soundproof panel) (para 15-39).

a. REMOVAL

NOTE

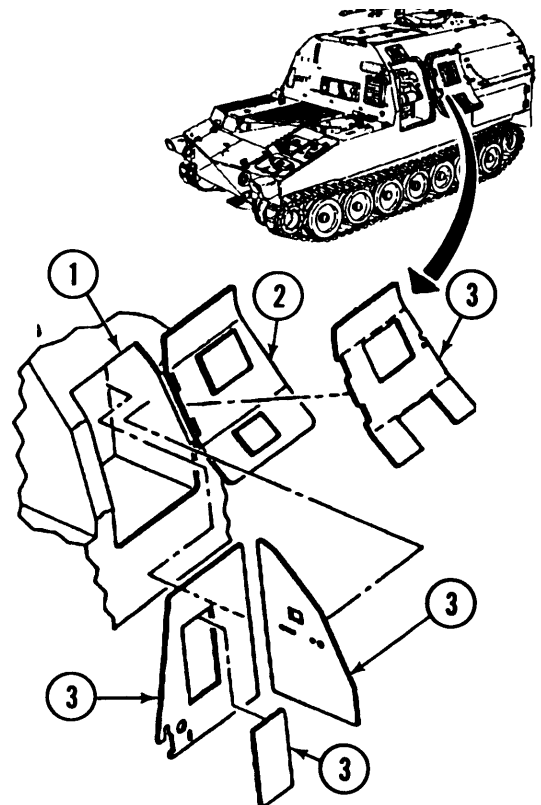
All soundproof panels are replaced the same way.

1. Pull and scrape soundproof panel (3) from APU compartment (1) or APU compartment side door (2).

WARNING

Drycleaning 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.

2. Thoroughly clean all soundproof panel and adhesive residue from surface of APU compartment (1) or APU compartment side door (2) with drycleaning solvent and clean rags. Allow APU compartment to air-dry.

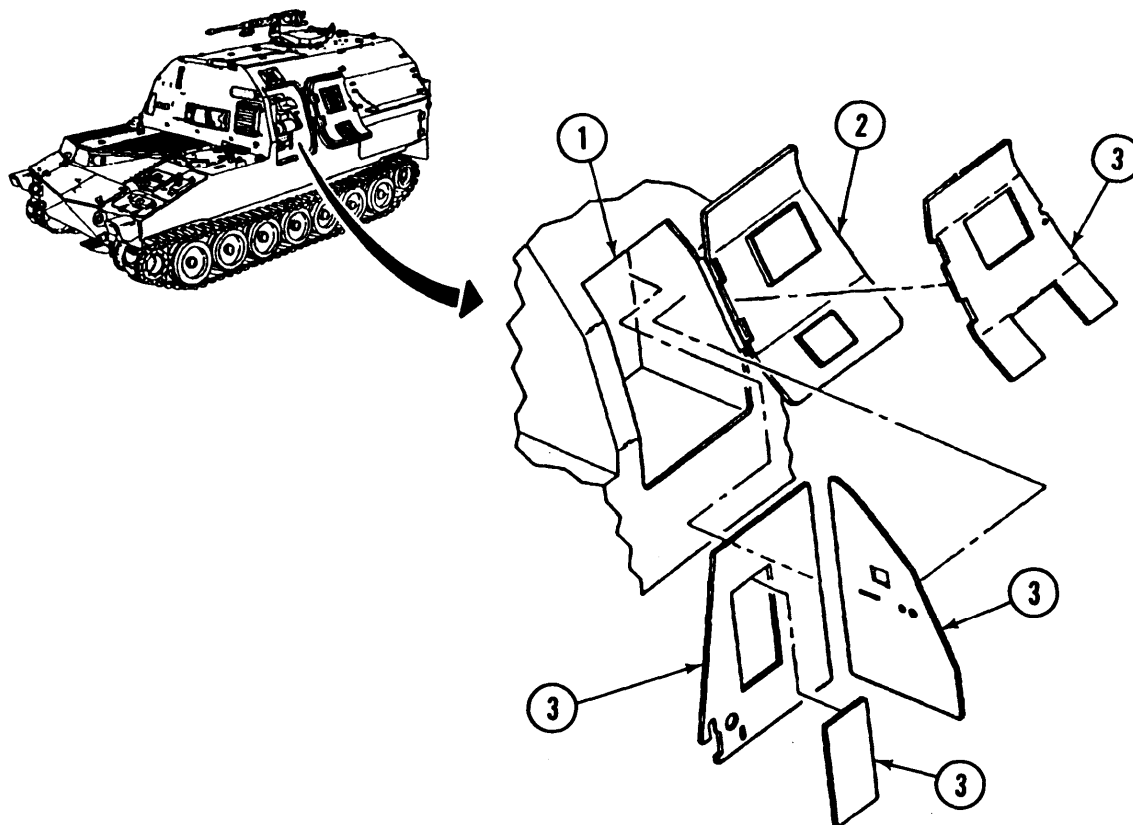


15-40. APU COMPARTMENT SOUNDPROOF PANELS REPLACEMENT (continued).

b. INSTALLATION**WARNING**

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

1. Apply thin coating of rubber adhesive to smooth, non-matted side of soundproof panel (3) to APU compartment or APU compartment side door. Allow adhesive to dry until tacky.
2. Place soundproof panel (3) against mounting surface in APU compartment (1) or APU compartment side door (2). Apply pressure to all outside surfaces of sound proof panel (3).

**FOLLOW-ON MAINTENANCE:**

- Install APU compartment access plate (for access plate soundproof panel) (para 15-39).
- Install APU primary and secondary fuel filters (for rear soundproof panel) (para 18-11).
- Install APU hydraulic pressure switch assembly (for rear soundproof panel) (para 18-19).
- Install APU hydraulic pump inlet and outlet fittings (for rear soundproof panel) (para 17-35).
- Install APU fuel inlet hose (for side and rear soundproof panels) (para 18-11).
- Install APU fuel return hose (for side and rear soundproof panels) (para 18-11).
- Install APU (for all soundproof panels except door soundproof panel) (para 18-2).
- Close APU compartment side door (refer to TM 9-2350-287-10).

15-41. APU COMPARTMENT LOUVERED GRILLE REPLACEMENT.*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:***Tool/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix 1)

- Lockwasher (1 O) (Item 166, Appendix H)

Material/Parts:

- Gasket (Item 81, Appendix H)

Equipment Conditions:

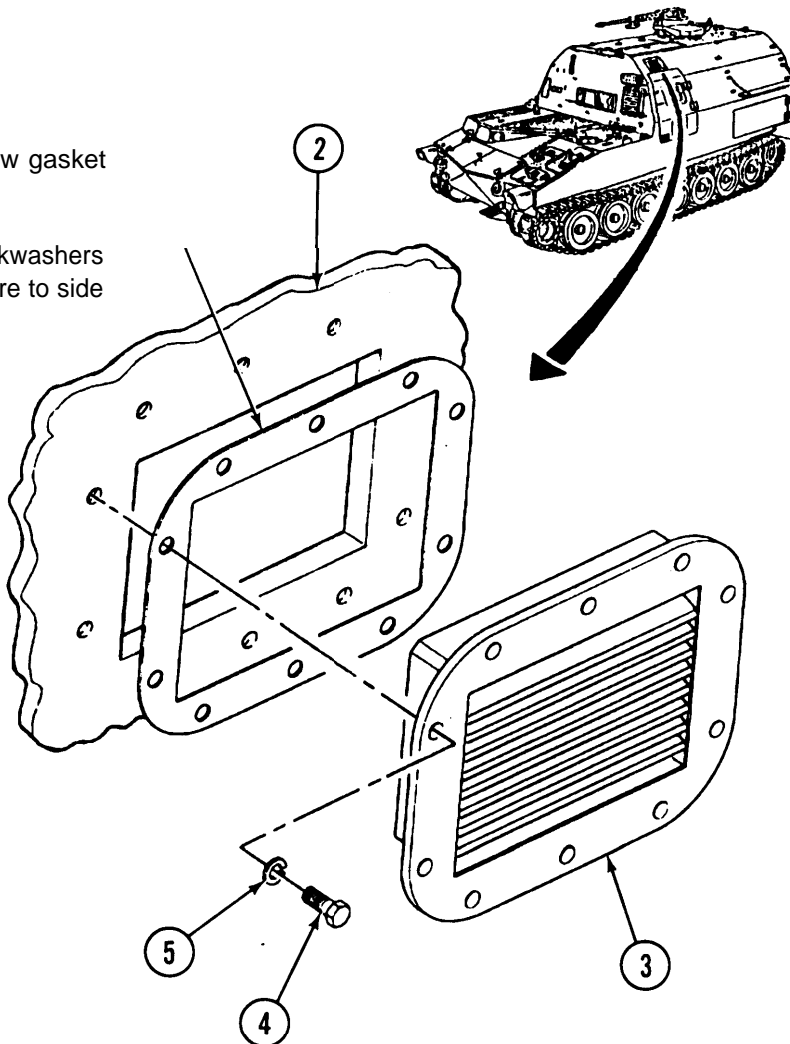
- Vehicle parked on level ground (refer to TM 9-2350-287-1 O).

a. REMOVAL

1. Remove 10 screws (4) and lockwashers (5) from APU compartment louvered grille (3) and side of vehicle hull (2). Discard lockwashers.
2. Remove louvered grille (3) and gasket (1) from side of vehicle hull (2). Discard gasket.

b. INSTALLATION

1. Install louvered grille (3) and new gasket (1) on side of vehicle hull (2).
2. Install 10 screws (4) and new lockwashers (5) on louvered grille (3) and secure to side of vehicle hull (2).

**FOLLOW-ON MAINTENANCE:**

- None

15-42. FUEL FILL DOOR REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

- Lockwasher (Item 167, Appendix H)

Materials/Parts:

- Drycleaning solvent (item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Lockwasher (1 O) (Item 161, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Fuel fill door opened (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove nut (8), lockwasher (7), two washers (5), and screw (4) from hull-mounted bracket (6) and fuel fill door (17). Discard lockwasher.
2. Remove fuel fill door (17) and four bronze bearing washers (12) from hull-mounted bracket (6).

NOTE

For proper installation, record the position and number of washers removed with strike.

3. Remove two screws (1), striker (2), and washers (3) from hull.

b. DISASSEMBLY

1. Remove four screws (15) and lockwashers (16) and pull handle (14) from fuel fill door (17). Discard lockwashers.
2. Remove four screws (13), lockwashers (10), and nuts (9) from rim lock (11) and fuel fill door (17). Discard lockwashers.
3. Remove two screws (21) and lockwashers (20), rim lock (11), and two spacer plates (18 and 19) and fuel fill door (17). Discard lockwashers.

15-42. FUEL FILL DOOR REPLACEMENT (continued).

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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 use near open flame or excessive heat.

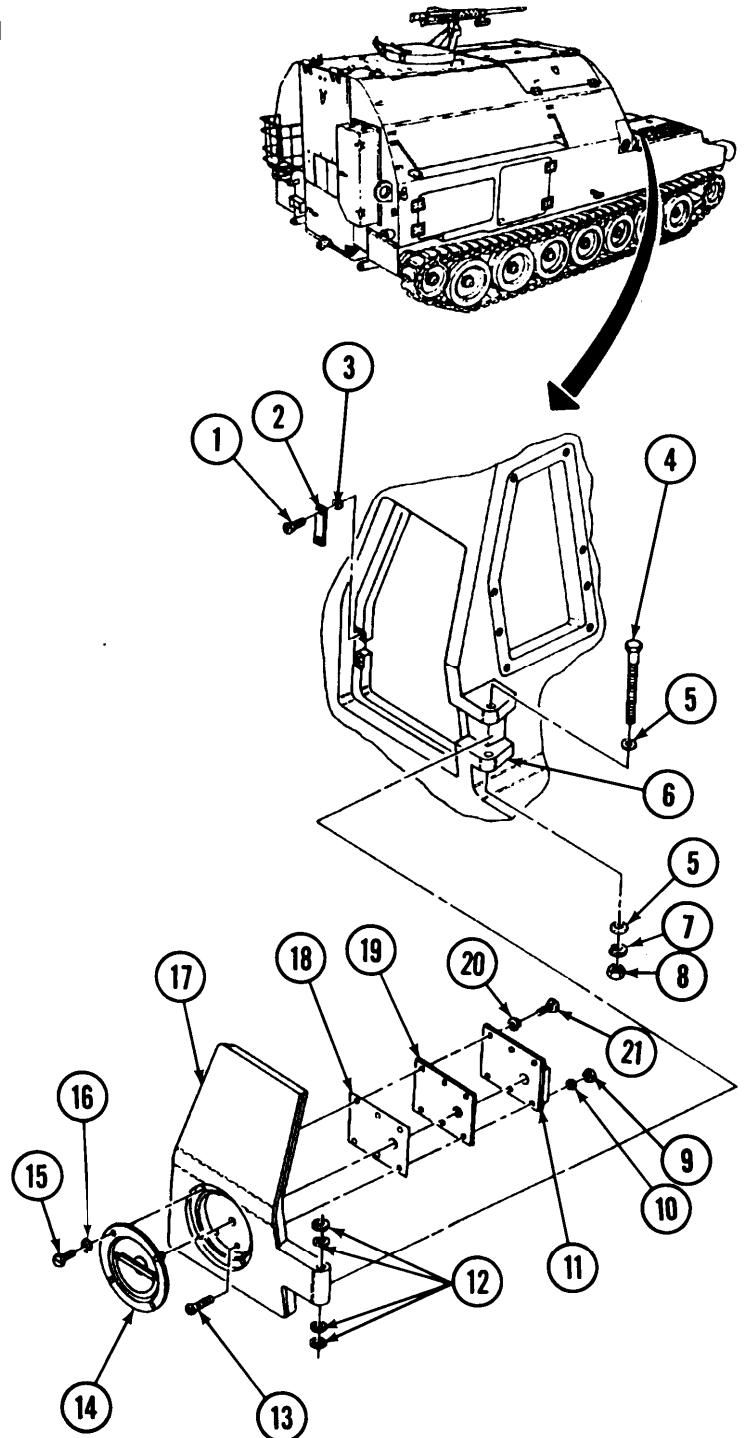
1. Clean all parts with drycleaning solvent, and wipe dry with rags.
2. Inspect all parts for excessive wear, cracks, or distortions. Replace damaged parts.

d. ASSEMBLY

1. Install two spacer plates (18 and 19) and rim lock (11) on fuel fill door (17) with two new lockwashers (20) and two screws (21).
2. Install four nuts (9), new lockwashers (10), and four screws (13) on rim lock (11) and fuel fill door (17).
3. Install pull handle (14) on fuel fill door (17) with four new lockwashers (16) and four screws (15).

e. INSTALLATION

1. Install washers (3) and striker (2) on hull with two screws (1).
2. Install fuel fill door (17) and four bronze bearings (12) on hull-mounted bracket (6) with nut (8), two washers (5), new lockwasher (7), and screw (4).



FOLLOW-ON MAINTENANCE:

- Close fuel fill door (refer to TM 9-2350-287-10).

15-43. AFES FIRE EXTINGUISHER BOX ASSEMBLY REPAIR.

This Task Covers:

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

Initial Setup:

Tool/Test Equipment:

- Endless sling (Item 20, Appendix 1)
- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

- Cotter pin (Item 37, Appendix H)
- Lockwasher(13) (Item 166, Appendix H)
- Self-locking nut (4) (Item 330, Appendix H)

Personnel Required: Two

Materials/Parts:

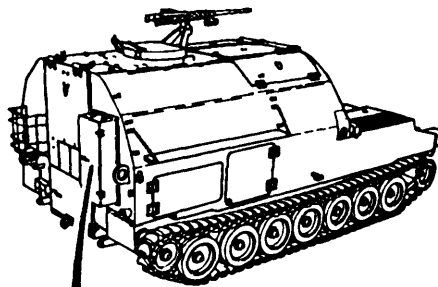
- Adhesive, rubber (Item 5, Appendix D)
- Adhesive, sealant (Item 6, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Crew AFES cylinder bottles removed (para 21-5).

a. REMOVAL

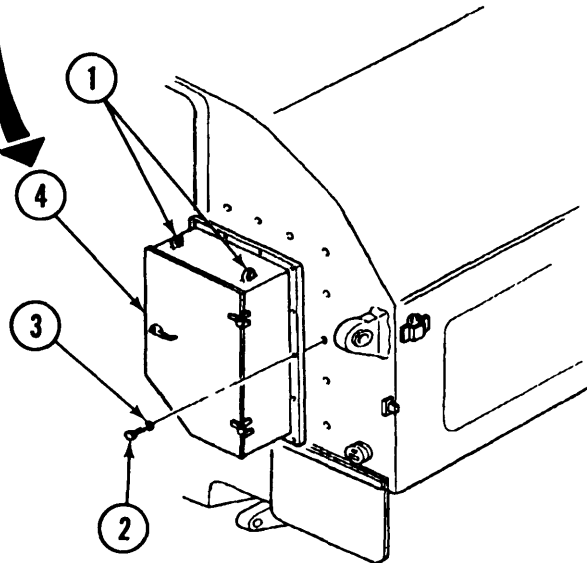
1. Attach sling to two lifting eyes (1).
2. Attach sling to hoist and take up slack.



WARNING

AFES fire extinguisher box assembly is heavy. To prevent injury, make sure box assembly is supported when screws are removed.

3. Remove 13 screws (2) and lockwashers (3) from AFES fire extinguisher box assembly (4) and rear wall of vehicle hull. Discard lockwashers.
4. With the help of assistant, lower lifting device and place AFES fire extinguisher box assembly (4) on clean work surface.
5. Remove sling and hoist from two lifting eyes (1).



15-43. AFES FIRE EXTINGUISHER BOX ASSEMBLY REPAIR (continued).

b. DISASSEMBLY

1. Open AFES fire extinguisher box assembly door (9).
2. Remove cotter pin (5) from nut (6). Discard cotter pin.
3. Remove nut (6), washer (7), latch plate (8), and door handle (10) from AFES fire extinguisher box assembly door (9).
4. Close AFES fire extinguisher box assembly door (9).
5. Remove four self-locking nuts (11) and washers (12) from upper and lower hinge pins (14). Discard self-locking nuts.

CAUTION

When removing hinge pins, tap them only slightly to avoid damaging their threads.

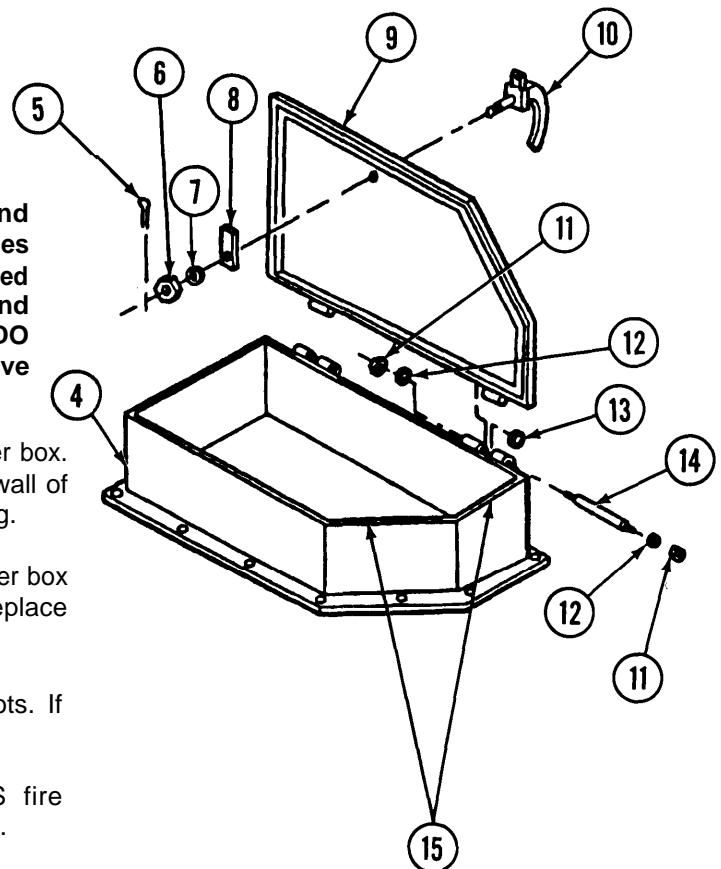
6. Remove two hinge pins (14) and washers (13) from AFES fire extinguisher box assembly (4) and door (9).
7. With assistant, remove AFES fire extinguisher box assembly door (9) from AFES fire extinguisher box assembly (4).

c. CLEANING AND inspection

WARNING

Drycleaning 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

1. Clean all metal parts of AFES fire extinguisher box assembly (4), mounting surfaces, and rear wall of vehicle hull with drycleaning solvent and rag.
2. Inspect all metal parts of AFES fire extinguisher box assembly (4) cracks bends, and breaks. Replace any damaged parts.
3. inspect seal (15) for rips, tears, or flat spots. If damaged, do steps 4 through 7.
4. Remove damaged seal (15) from AFES fire extinguisher box assembly (4). Discard seal.
5. Clean dirt and adhesive from seal mounting surface on AFES fire extinguisher box assembly (4) with drycleaning solvent and rag.



15-43. AFES FIRE EXTINGUISHER BOX ASSEMBLY REPAIR (continued).

WARNING

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

6. Apply thin coat of adhesive to mounting surfaces of new seal (15) and AFES fire extinguisher box assembly (4). Allow adhesive to dry for five minutes or until tacky.
7. Position seal (15) in place on AFES fire extinguisher box assembly (4) and allow adhesive to cure for 30 minutes.

d. ASSEMBLY

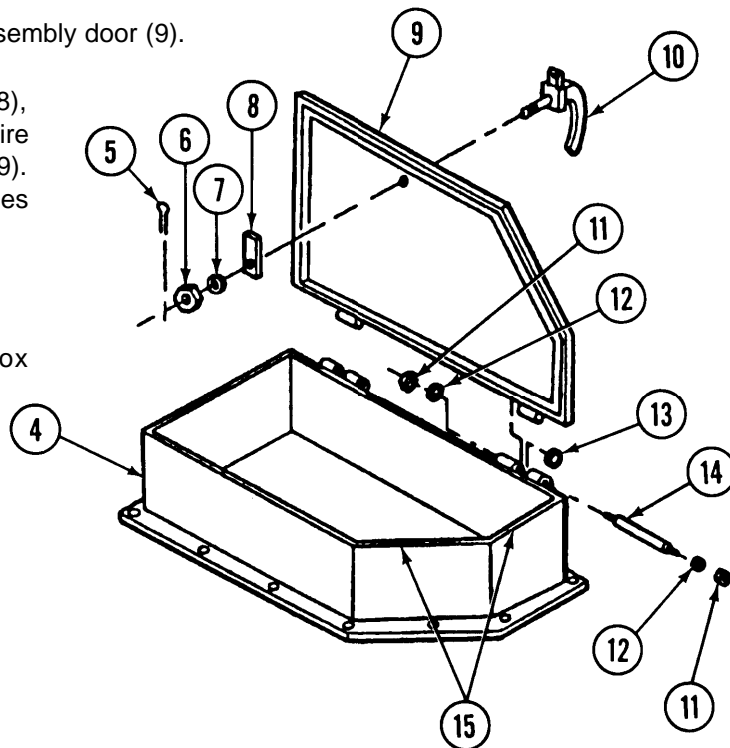
1. With aid of assistant, position AFES fire extinguisher box assembly door (9) in place on AFES fire extinguisher box assembly (4).

CAUTION

When installing hinge pins, tap them only lightly to avoid damaging their threads.

2. Install two hinge pins (14) and washers (12) to bottom part of door hinge in AFES fire extinguisher box assembly (4) and door (9).
3. Install four new self-locking nuts (11) and washers (12) on upper and lower hinge pins (14).
4. Open AFES fire extinguisher box assembly door (9).

5. Install door handle (10), latch plate (8), washer (7), and nut (6) on AFES fire extinguisher box assembly door (9). Tighten nut (6) until latch plate touches strike.
6. Install new cotter pin (5) in nut (6).
7. Close AFES fire extinguisher box assembly door (9).



15-43. AFES FIRE EXTINGUISHER BOX ASSEMBLY REPAIR (continued).

e. INSTALLATION

1. Attach sling to two lifting eyes (1).
2. Attach sling to hoist and take up slack.

WARNING

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

3. Apply sealant adhesive to mounting surfaces of AFES fire extinguisher box assembly (4) and rear wall of vehicle hull.

WARNING

AFES fire extinguisher box assembly is heavy. To prevent injury, make sure box assembly is properly supported when lifted.

4. With the help of assistant, raise and position AFES fire extinguisher box assembly (4) in place on rear wall of vehicle hull.
5. Install 13 screws (2) and new lockwashers (3) in AFES fire extinguisher box assembly (4) and rear wall of vehicle hull.
6. Remove sling and hoist from two lifting eyes (1).

FOLLOW-ON MAINTENANCE:

- Ž Install crew AFES cylinder bottles (para 21-5).

15-44. DRIVER'S PORTABLE INSTRUMENT PANEL MOUNTING BRACKET REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

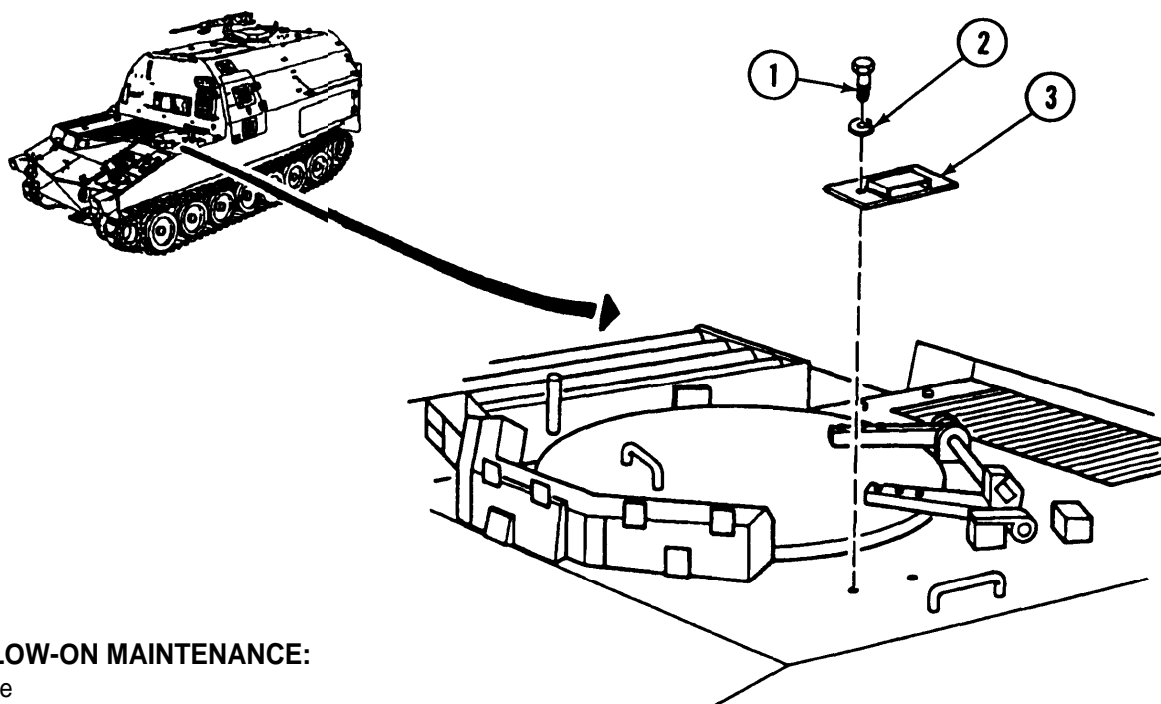
- Lockwasher (2) (Item 175, Appendix H)
-

a. REMOVAL

1. Remove two screws (1) and lockwashers (2) from driver's portable instrument panel mounting bracket (3) and vehicle deck. Discard lockwashers.
2. Remove mounting bracket (3) from vehicle deck.

b. INSTALLATION

1. Position mounting bracket (3) on vehicle deck.
2. Install two screws (1) and new lockwashers (2) in mounting bracket (3) and vehicle deck.



FOLLOW-ON MAINTENANCE:

- None

15-45. COMMANDER'S CUPOLA PERISCOPE HOOKS AND GASKET REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix I)

- Cotter pin (Item 16, Appendix H)
- Gasket (item 71, Appendix H)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Commander's periscope removed (refer to TM 9-2350-287-10).
-

NOTE

The commander's cupola has two periscope hooks, which are replaced the same way. Replacement of only one is shown.

a. REMOVAL

1. Pull down on commander's cupola periscope hook (3) and remove cotter pin (1) from periscope hook (3) through opening in side of housing (2). Discard cotter pin.
2. Remove periscope hook (3) from bottom of housing (2).

WARNING

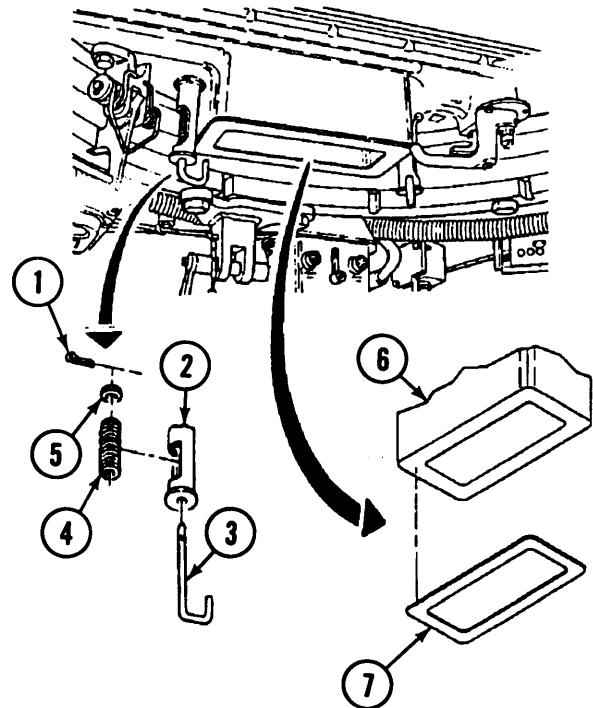
Use care when removing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

3. Remove washer (5) and spring (4) from opening in side of housing (2).
4. Remove gasket (7) from cupola body mounting surface (6). Discard gasket.

WARNING

Drycleaning 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.

5. Clean dirt and adhesive from cupola body mounting surface (6) with drycleaning solvent and rags.



**15-45. COMMANDER'S CUPOLA PERISCOPE HOOKS AND GASKET REPLACEMENT
(continued).**

b. INSTALLATION

WARNING

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

1. Apply thin coat of adhesive to cupola body mounting surface (6) and one side of new gasket (7). Allow adhesive to dry for five minutes or until tacky.
2. Install gasket (7) in place on cupola body mounting surface (6) and allow to cure for 30 minutes.

WARNING

Drycleaning 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.

3. Remove excess adhesive from face of gasket (7) and cupola body mounting surface (6) with drycleaning solvent and rags.
4. Install spring (4) and washer (5) in side opening of housing (2).
5. Install periscope hook (3) in bottom of housing (2) and up through spring (4) and washer (5).

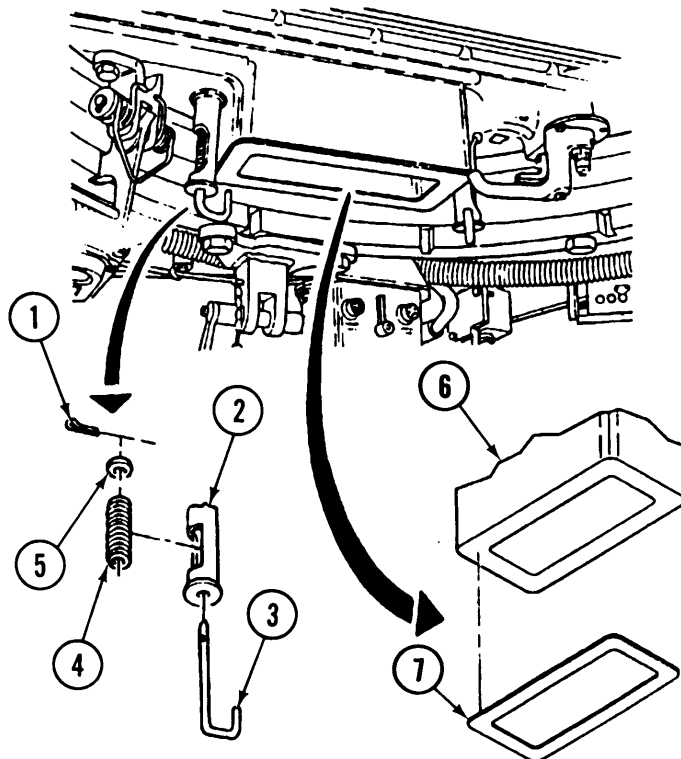
WARNING

Use care when installing spring. Spring is under tension and can act as a projectile when released and could cause severe eye injury.

6. Compress washer (5) and spring (4) on periscope hook (3) through side opening of housing (2), and install new cotter pin (1).

FOLLOW-ON MAINTENANCE:

- Install commander's periscope (refer to TM 9-2350-287-10).



15-46. COMMANDER'S CUPOLA BODY REPAIR.

This Task Covers:

- | | |
|-----------------|----------------------------|
| a. Removal | b. Cleaning and Inspection |
| c. Installation | d. Adjustment |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Cotter pin (Item 24, Appendix H)
- Gasket (Item 71, Appendix H)
- Seal (Item 261, Appendix H)
- Spring tension washer (Item 370, Appendix H)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (2) (Item 16, Appendix H)
- Cotter pin (2) (Item 17, Appendix H)
- Cotter pin (2) (Item 18, Appendix H)

Equipment Conditions:

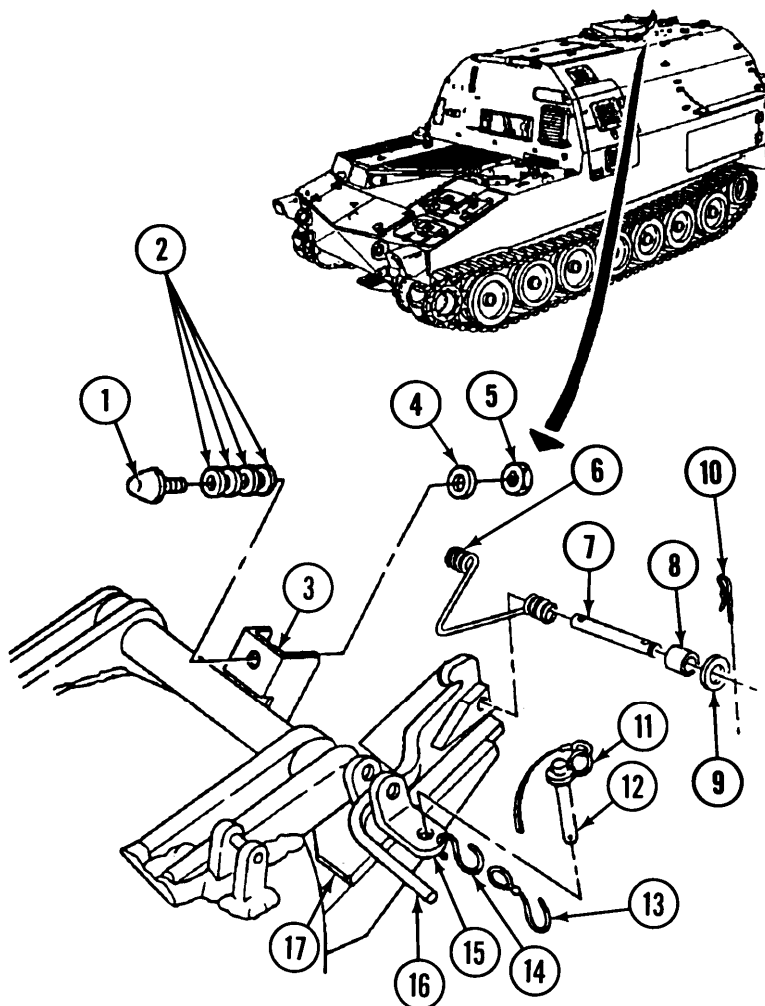
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Commanders access door removed (para 15-47).
- Machine gun support assembly removed (para 15-50).

a. REMOVAL

NOTE

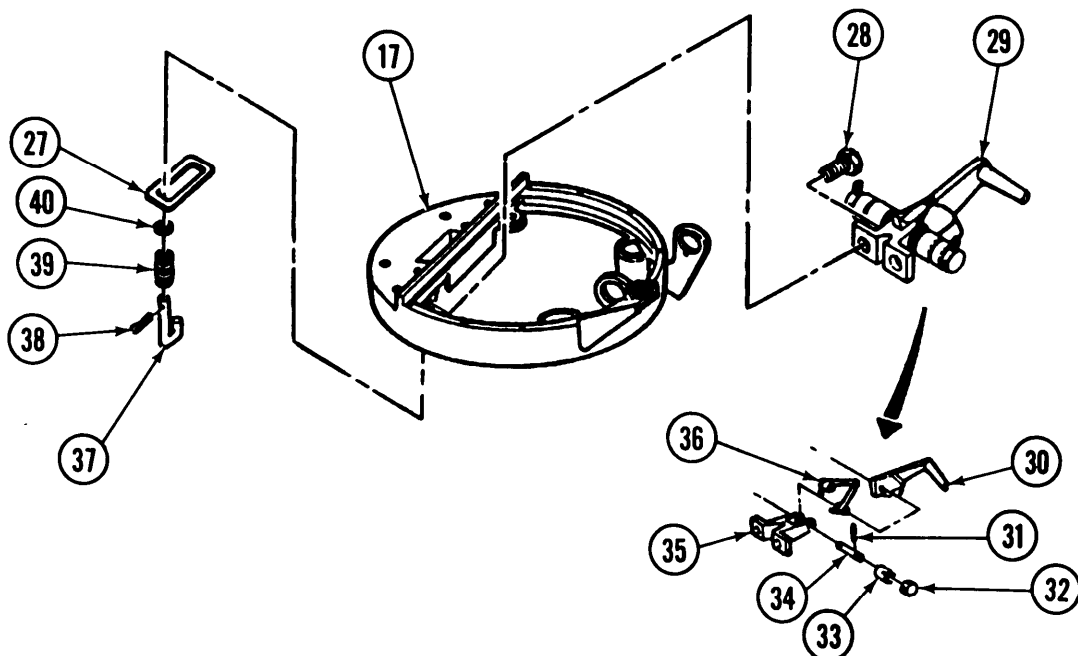
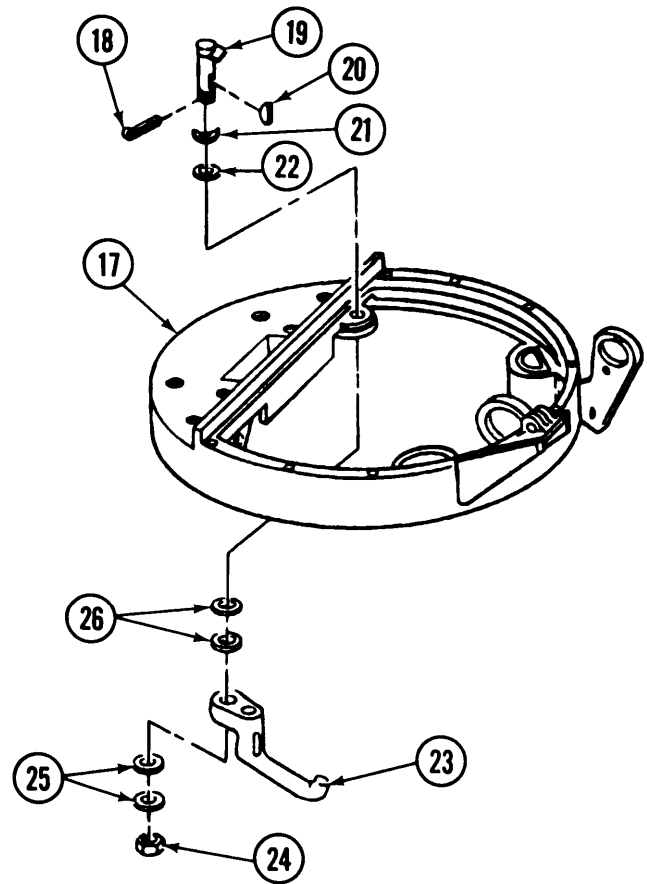
Quantity of washers will vary according to adjustment setting.

1. Remove nut (5), washer (4), rubber bumper (1), and washers (2) from bumper bracket (3).
 2. Remove quick-disconnect pin (12) from bracket (15).
 3. Remove connecting link (11) and separate quick-disconnect pin (12) from chain (13).
 4. Bend apart S-hook (14) and separate chain (13) from bracket (15).
 5. Remove two cotter pins (10) from latch pin (7). Discard cotter pins.
- Remove two washers (9), latch pin (7), latch spring (6), two spacers (8), and latch (16) from commander's cupola body (17) and bracket (15).



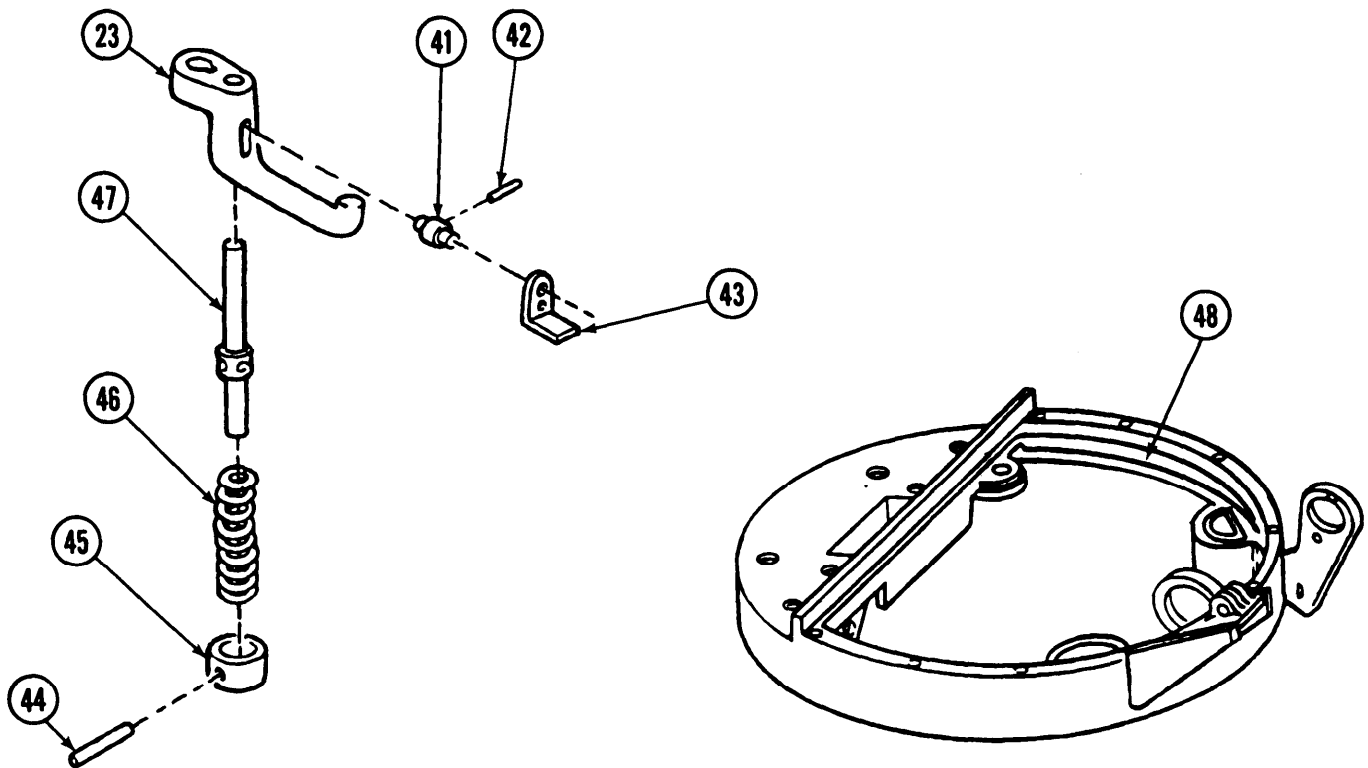
15-46. COMMANDER'S CUPOLA BODY REPAIR (continued).

7. Remove cotter pin (18) from locking cam (19). Discard cotter pin.
8. Remove castle nut (24), shim(s) (25), latch handle (23), and shim(s) (26) from body (17).
9. Remove locking cam (19), cam key (20), shim(s) (22), and spring tension washer (21) from body (17). Discard spring tension washer.
10. Remove two bolts (28) and locking latch assembly (29) from body (17).
11. Remove two cotter pins (31), spring (36), pin (34), spacer (33), washer (32), and latch (30) from bracket (35). Discard cotter pins.
12. Remove two cotter pins (38) from two periscope hooks (37). Discard cotter pins.
13. Remove two washers (40), springs (39), and periscope hooks (37) from body (17).
14. Remove gasket (27) from body (17). Discard gasket.



15-46. COMMANDER'S CUPOLA BODY REPAIR (continued).

15. Remove pin (42) and release lever (43) from latch handle (23).
16. Unscrew and remove pin (41) from latch handle (23).
17. Remove pin (44), retainer (45), spring (46), and guide (47) from latch handle (23),
18. Remove hatch door seal (48) from seal channel in door frame. Discard hatch door seal,

**b. CLEANING AND INSPECTION****WARNING**

Drycleaning 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 flames or excessive heat.

1. Using drycleaning solvent, clean gasket seat in cupola body and seal channel.
2. Inspect all parts for damage or wear. Replace if necessary.

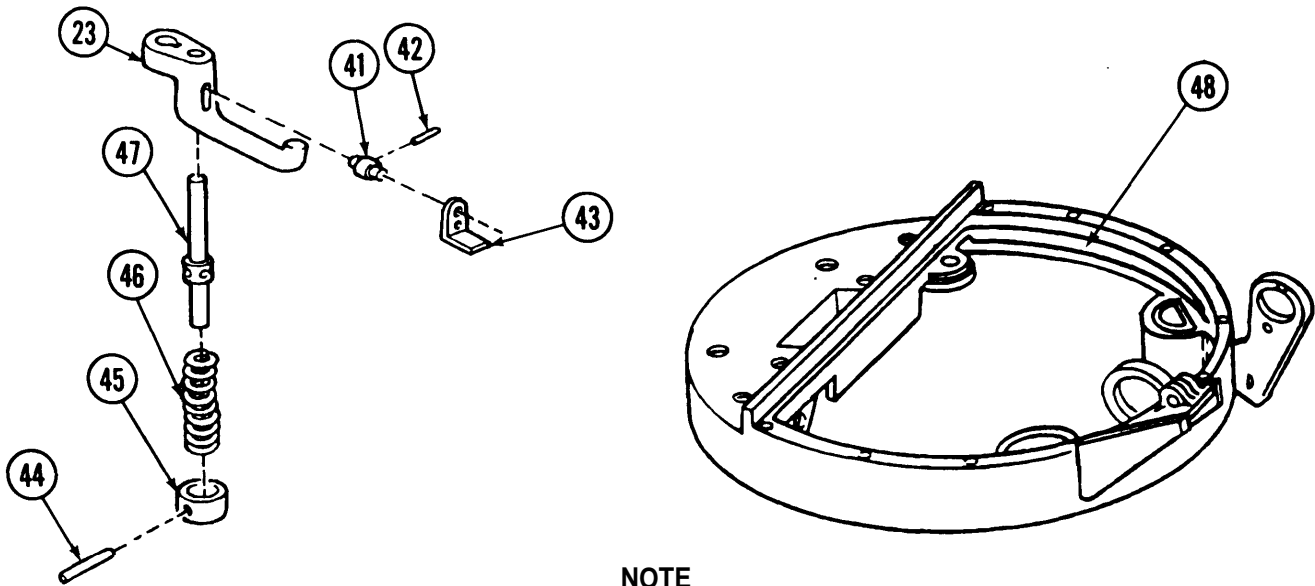
15-46. COMMANDER'S CUPOLA BODY REPAIR (continued).

c. INSTALLATION

WARNING

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

1. Apply thin coat of adhesive to seal channel in door frame and to mating surfaces of new hatch door seal (48). Allow adhesive to dry for five minutes or until tacky.



NOTE

Hatch door seal is difficult to reposition once it is placed in seal channel. Avoid stretching or bunching hatch door seal.

2. Aline hatch door seal (48) with seal channel in door frame. Press hatch door seal (48) firmly in seal channel. Allow adhesive to cure for 30 minutes.

WARNING

Drycleaning 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.

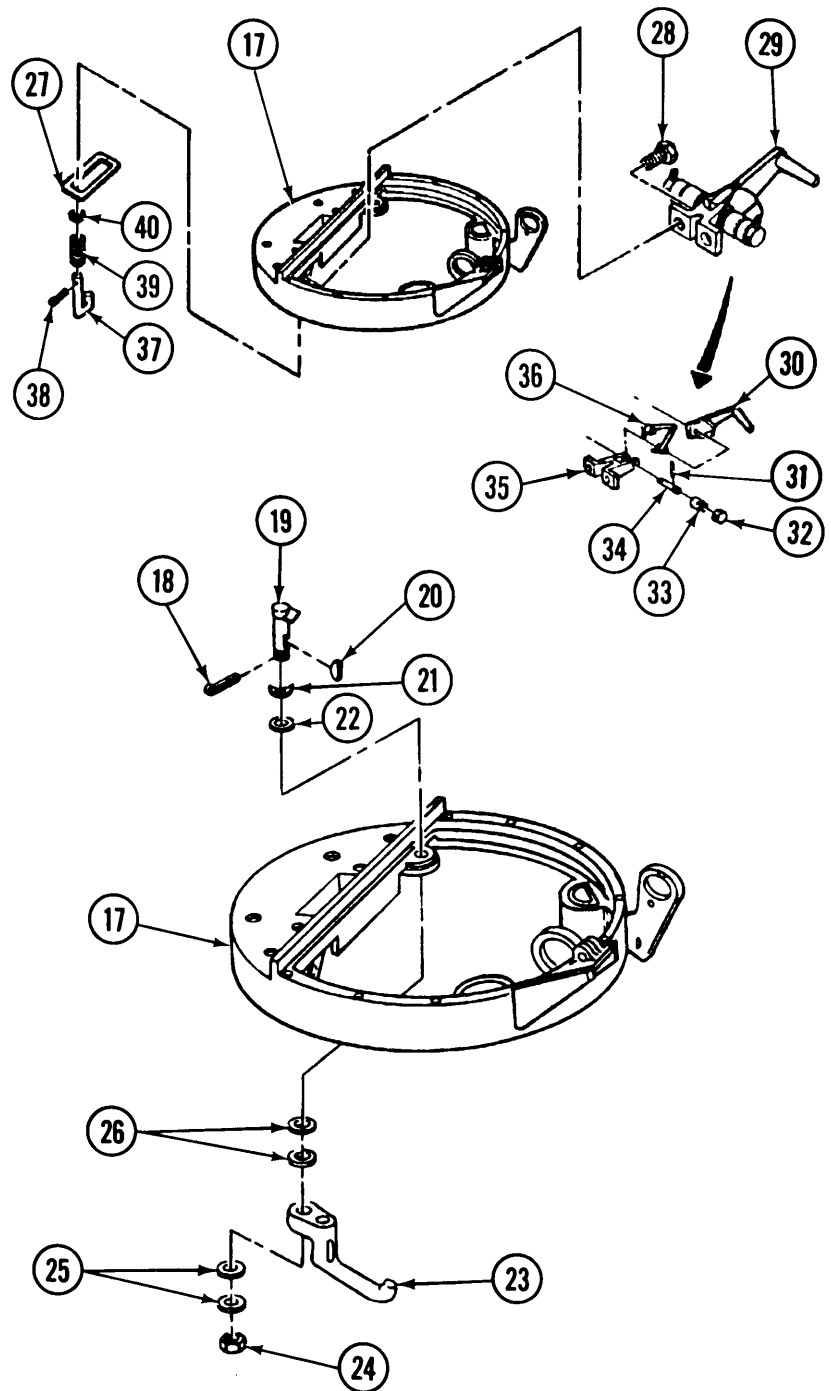
3. Clean excess adhesive from door frame with drycleaning solvent and rags.
4. Install guide (47), spring (46), retainer (45), and pin (44) on latch handle (23).
5. Screw pin (41) into latch handle (23).
6. Install release lever (43) and pin (42) in latch handle (23).

15-46. COMMANDER'S CUPOLA BODY REPAIR (continued).

WARNING

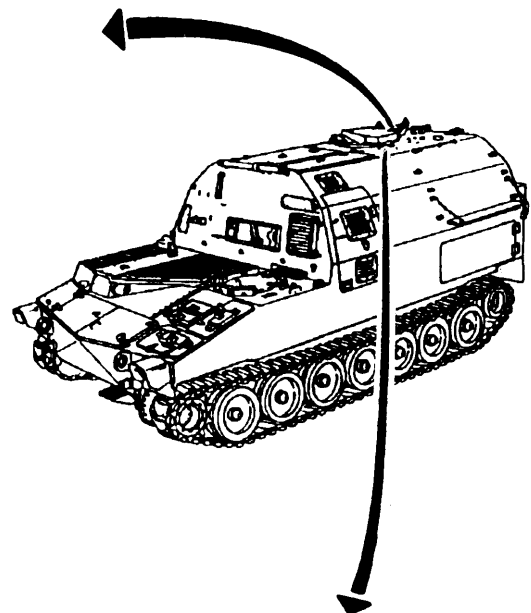
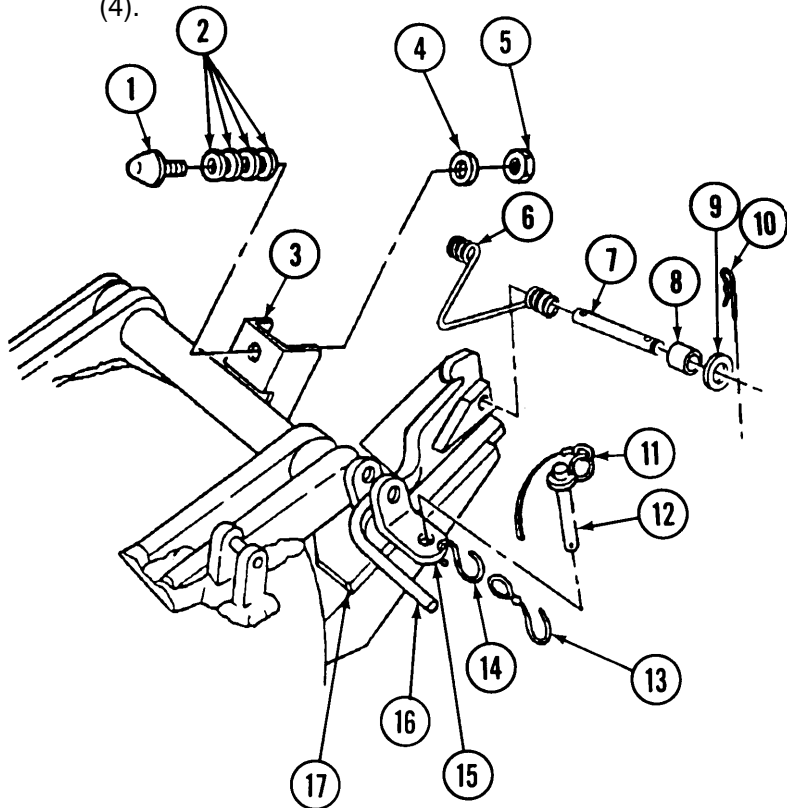
Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. To avoid injury or death wear protective goggles, keep away from open fire, and use in a well-ventilated area. If adhesive gets in your eyes, try to keep them open, flush them with water for 15 minutes, and get medical attention.

7. Apply adhesive to new gasket (27), and install gasket (27) in body (17).
8. Install two periscope hooks (37), washers (40), and springs (39) in body (17).
9. Install two new cotter pins (38) on two periscope hooks (37).
10. Install latch (30), washer (32), spacer (33), pin (34), spring (36), and two new cotter pins (31) on bracket (35).
11. Install two bolts (28) and locking latch assembly (29) on body (17).
12. Install locking cam (19), cam key (20), shim(s) (22), and new spring tension washer (21) on body (17).
13. Install castle nut (24), shim(s) (25), latch handle (23), and shim(s) (26) on body (17).
14. Install new cotter pin (18) on locking cam (19).



15-46. COMMANDER'S CUPOLA BODY REPAIR (continued).

- 15.. Install latch (16), latch spring (6), latch pin (7), and two spacers (8) and washers (9) on body (17).
16. Secure latch spring (6) on latch pin (7) with two cotter pins (10).
17. Join chain (13) to bracket (15) with S-hook (14). Bend S-hook (14) closed.
18. Join quick-disconnect pin (12) to chain (13) with connecting link (11).
19. Install quick-disconnect pin (12) in bracket (15).
20. Install rubber bumper (1) and required number of washers (2) on bumper bracket (3) with nut (5) and washer (4).

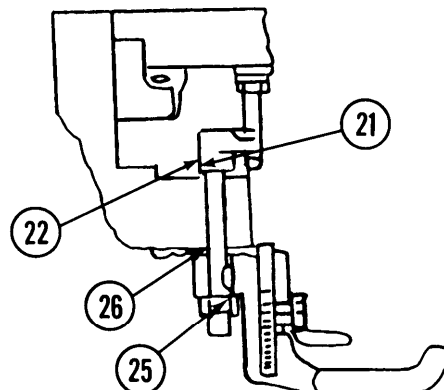


d. ADJUSTMENT

Install shims (22, 25, and 26) as required to provide spring tension washer (21) with depression of about 1/32 inch in unlocked position.

FOLLOW-ON MAINTENANCE:

- Install machine gun support assembly (para 15-50).
- Install commander's access door (para 5-47).



15-47. COMMANDER'S ACCESS DOOR REPAIR.*This Task Covers:*

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

*Initial Setup:***Tools/Test Equipment:**

Ž General mechanic's tool kit
(Item 24, Appendix I)

Ž Lockwasher (2) (Item 126, Appendix H)
 Ž Lockwasher (2) (Item 163, Appendix H)
 Ž Spring pin (Item 351, Appendix H)

Materials/Parts:

Ž Adhesive, rubber (Item 5, Appendix D)
 Ž Drycleaning solvent (Item 28,
Appendix D)
 Ž Grease (Item 32, Appendix D)
 Ž Rag (Item 56, Appendix D)

Personnel Required: Two**Equipment Conditions:**

Ž Vehicle parked on level ground (refer to
TM 9-2350-287-10).

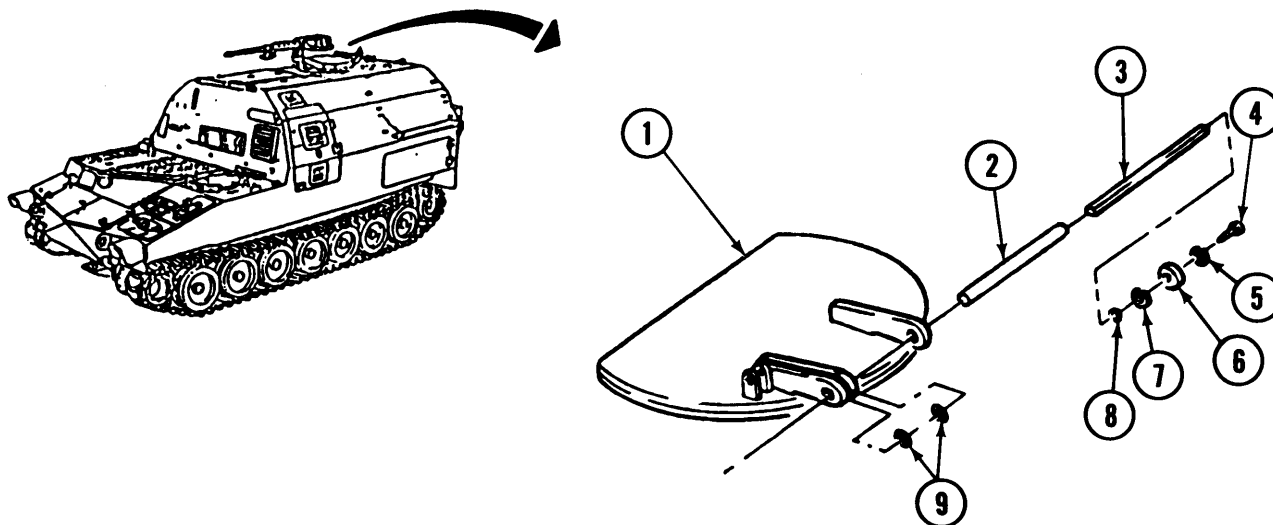
a. REMOVAL

1. Unlatch access door (1) and hold in upright position to release tension on flat springs (3).
2. Remove two screws (4) and lockwashers (5) from access door (1). Discard lockwashers.

NOTE

Prior to removal, record location, quantity, and position of spacer plates, spacers, flat springs, and washers.

3. Remove guy anchor (6), spacer plate(s) (7), and spacer(s) (8) from access door (1).
4. Remove 12 flat springs (3), tube (2), and washer(s) (9) from access door (1).



15-47. COMMANDER'S ACCESS DOOR REPAIR (continued).

5. Remove spring pin (11) from pin (10), and remove pin (10) from access door (1). Discard spring pin.

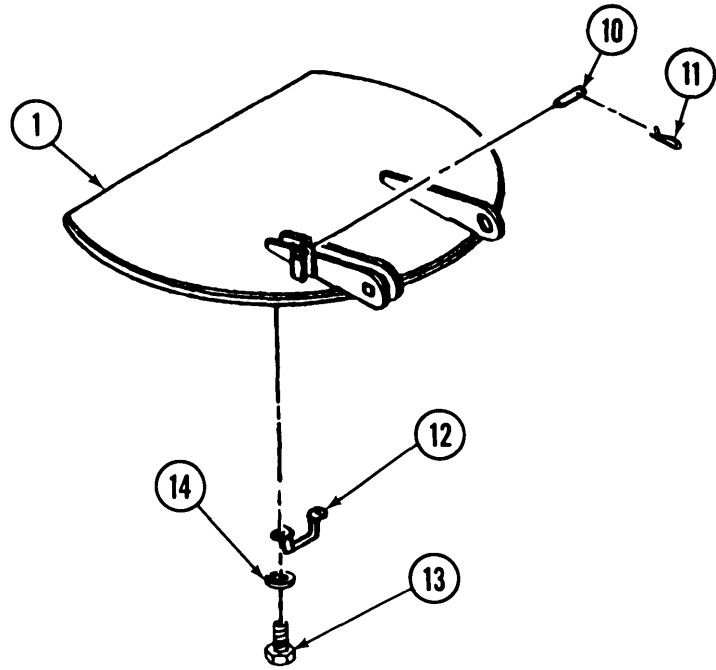
6. Remove access door (1) from vehicle.

b. DISASSEMBLY

Remove two screws (13) and lockwashers (14) and handle (12) from access door (1). Discard lockwashers.

c. CLEANING AND INSPECTION

1. Remove dirt and adhesive from seal seat.



WARNING

Drycleaning 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 flames or excessive heat.

2. Clean all parts with drycleaning solvent.

3. Inspect parts for cracks, bends, or breaks. Replace damaged parts.

d. ASSEMBLY

Install two new lockwashers (14), two screws (13), and handle (12) on access door (1).

e. INSTALLATION

1. Install pin (10) on access door (1) and install new spring pin (11) in pin (10).

2. Coat 12 flat springs (3) with grease.

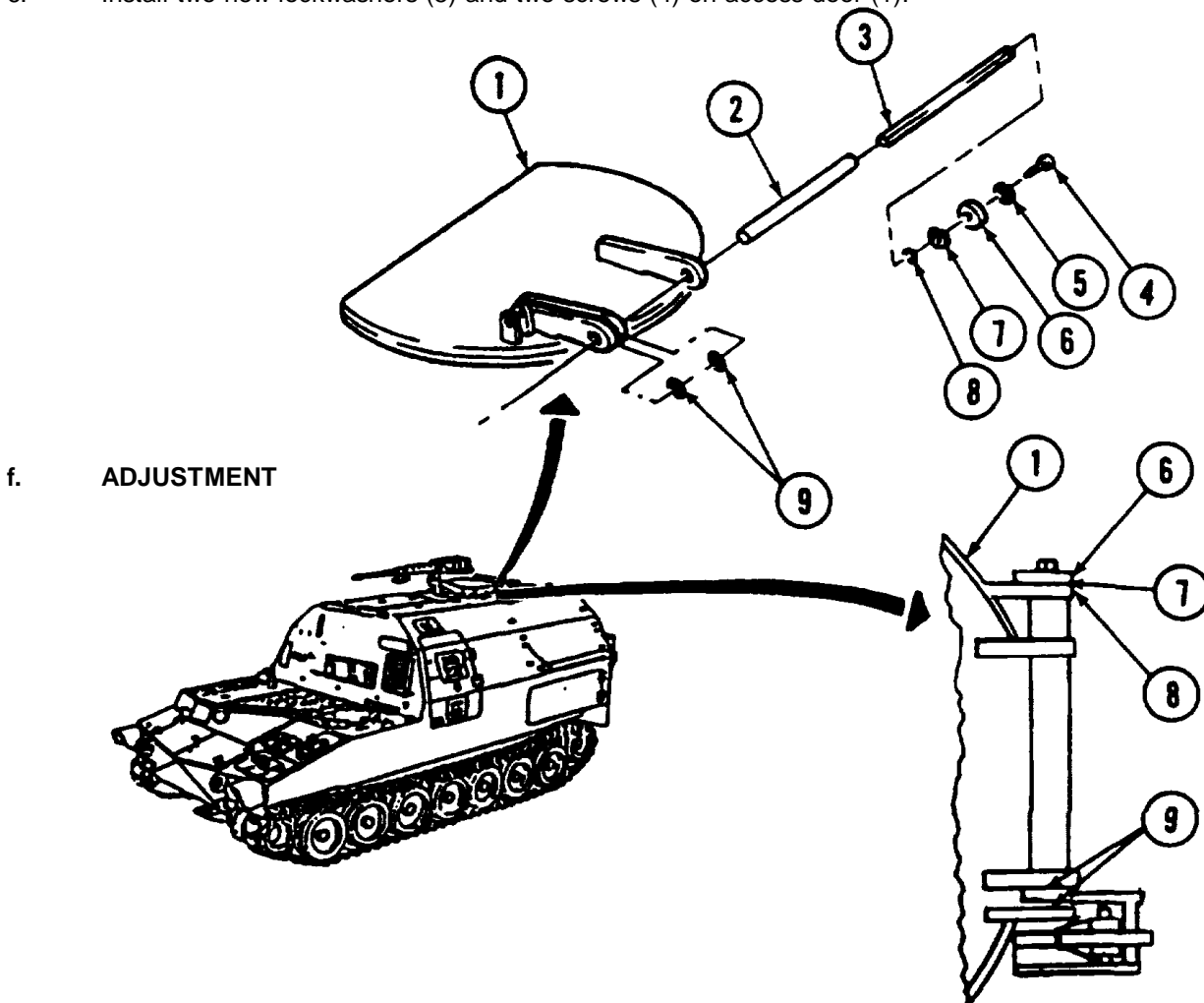
3. With the aid of an assistant, position and hold access cover (1) on vehicle in open position, so 12 flat springs (3) can be installed.

15-47. COMMANDER'S ACCESS DOOR REPAIR (continued).

NOTE

Prior to installation, record location, quantity, and position of spacer plates, spacers, flat springs, and washer.

4. Install tube (2) and washer(s) (9) on access door (1).
5. Install 12 flat springs (3), guy anchor (6), spacer plate(s) (7), and spacer(s) (8) on tube (2).
6. Install two new lockwashers (5) and two screws (4) on access door (1).



f. ADJUSTMENT

1. Install spacer plates (7) as required to provide 0.016 +0.062-inch clearance between spring ends and guy anchor (6).
2. Install spacers (8) as required to provide 0.005 ±0.020-inch clearance between tube end and cover hinge.
3. Install washers (9) as required to center access cover (1) in cupola body to within ±3/64 inch.

FOLLOW-ON MAINTENANCE:

- None

15-48. COMMANDER'S CUPOLA RACE RING REPAIR

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Endless sling (Item 20, Appendix I)
- Eyebolt (2) (Item 21, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (12) (Item 187, Appendix H)
- Self-locking bolt (10) (Item 302, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Commander's seat forward support bracket removed (para 15-63).
- Machine gun support assembly removed (para 15-50).
- Commander's access door removed (para 15-47).

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Grease (Item 32, Appendix D)

a. REMOVAL

WARNING

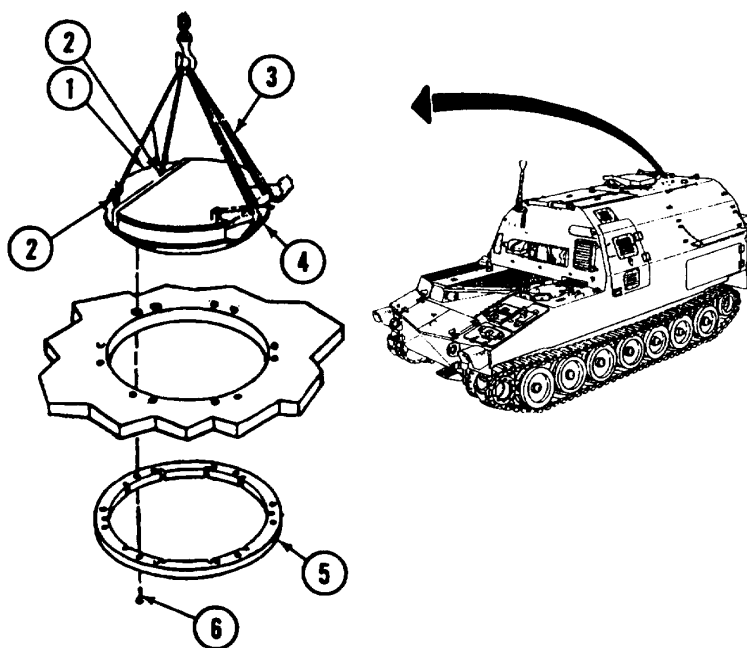
Have an assistant hold locking in place as screws are removed. A falling locking can cause injury to personnel.

1. Remove 10 self-locking bolts (6), locking (5), and commander's cupola (1) from top of vehicle. Discard self-locking bolts.
2. Install two eyebolts in machine gun support assembly screw holes (2).

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause severe injury or death.

3. Attach suitable sling (3) to two eyebolts and hinge tube cover (4).
4. Attach hoist device to sling (3).
5. Remove commander's cupola (1) from vehicle.



15-48. COMMANDER'S CUPOLA RACE RING REPAIR (continued).**b. DISASSEMBLY****NOTE**

Note slot on inside of each ring. Slots are in line when rings are assembled.

1. Turn over cupola body and ring assembly (7).
2. Remove 12 screws(15) and bearing shield(16) from body and ring assembly (7).
3. Remove 12 screws (14) and lower race ring(13) from body and ring assembly (7).
4. Remove 128 light-colored ball bearings (11) and 128 dark-colored ball bearings (12) from lower race ring (13).
5. Remove upper race ring (10) from body and ring assembly (7).
6. Remove 12 screws (17) and lockwashers (18) and outer race ring (9) from body and ring assembly (7). Discard lockwashers.

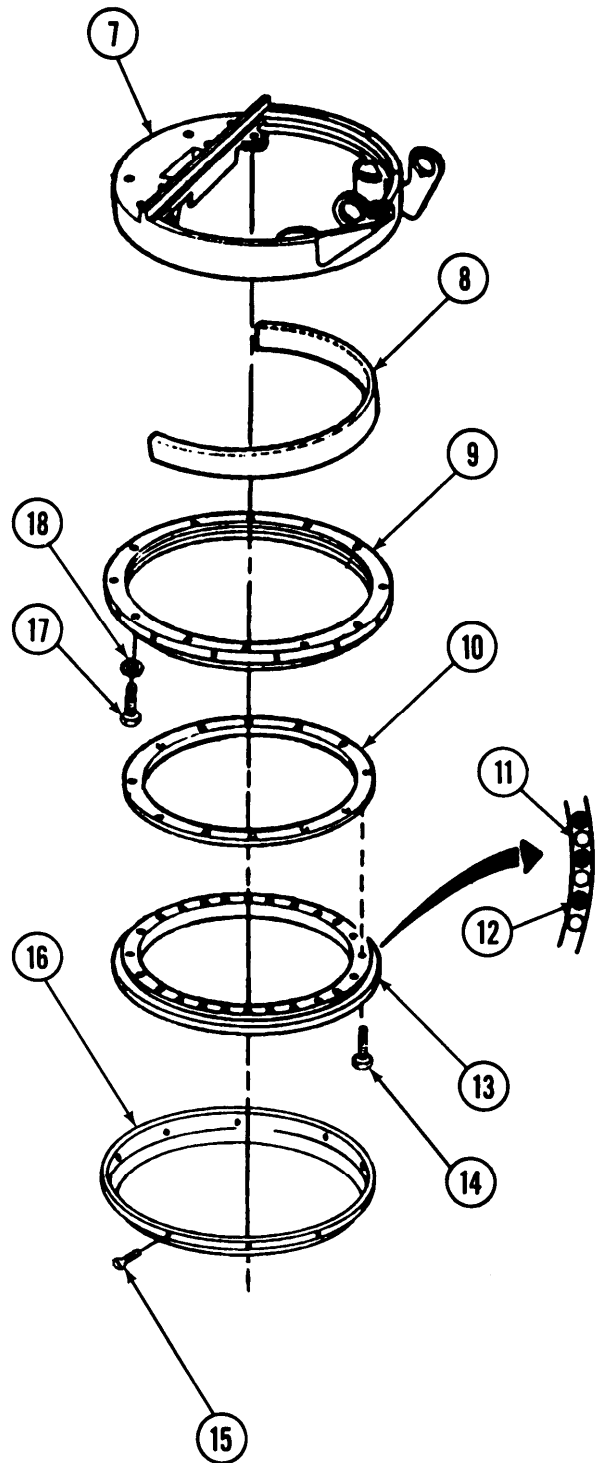
c. CLEANING AND INSPECTION

1. Clean all parts of race ring assembly.

CAUTION

Ball bearings must be replaced as a set.

2. Inspect 128 light-colored ball bearings (11), and replace entire set if scored or damaged.
3. Inspect 128 dark-colored ball bearings (12), and replace entire set if scored or damaged.



15-48. COMMANDER'S CUPOLA RACE RING REPAIR (continued).

4. Inspect three race rings (9, 10, and 13) and bearing shield (16). Replace if cracked or distorted.
5. Inspect threads in three race rings (9, 10, and 13) and bearing shield (16), and in body and ring assembly (7). Retap threads if damaged.
6. Inspect cushioning pad (8). Replace if torn or missing.

d. ASSEMBLY

WARNING

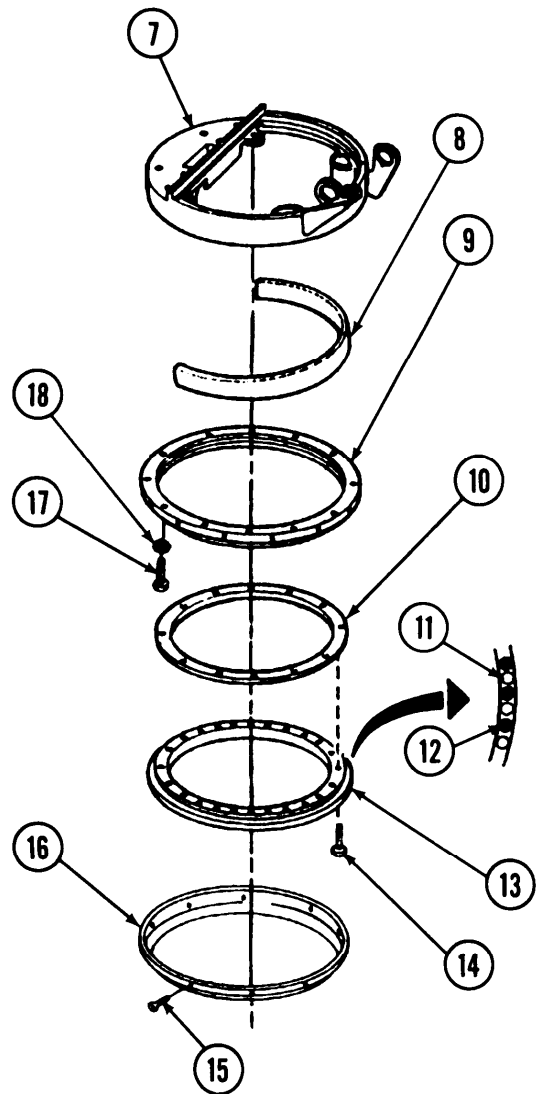
Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. To avoid injury or death wear protective goggles, keep away from open fire, and use in a well-ventilated area. If adhesive gets in your eyes, try to keep them open, flush them with water for 15 minutes, and get medical attention.

1. If removed, apply adhesive to cushioning pad (8) and install cushioning pad (8) on body and ring assembly (7).
2. Apply adhesive to mating surface of outer race ring (9) and body and ring assembly (7).

NOTE

Slot on inside of each ring must be in line when rings are assembled.

3. Install outer race ring (9) on body and ring assembly (7) with 12 new lockwashers (18) and screws (17).
4. Install upper race ring (10) on body and ring assembly (7).
5. Apply grease to ledge on upper race ring (10).
6. Install 128 light-colored ball bearings (11) and 128 dark-colored ball bearings (12) in alternating order on lower race ring (13).
7. Install lower race ring (13) and 12 screws (14) on body and ring assembly (7).
8. Install bearing shield (16) and 12 screws (15) on body and ring assembly (7).
9. Turn over body and ring assembly (7).



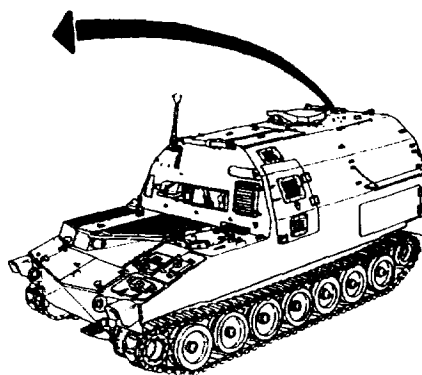
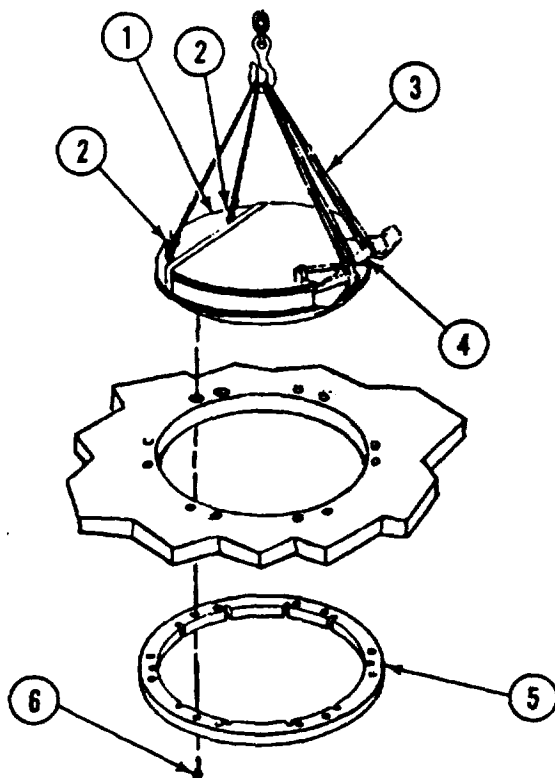
15-48. COMMANDER'S CUPOLA RACE RING REPAIR (continued).**e. INSTALLATION**

1. Install two eyebolts in machine gun support assembly screw holes (2).
2. Attach sling (3) to two eyebolts and hinge tube cover (4).
3. Attach suitable lifting device to sling (3).

WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause severe injury or death.

4. Lift commander's cupola (1) into position on top of vehicle. Align mounting holes.
5. Have assistant help position lockring (5) on vehicle ceiling. Align mounting holes. Install 10 self-locking bolts (6) to secure lockring (5) to ceiling and commander's cupola (1) to top of vehicle.
6. Remove lifting device, sling (3), and two eyebolts from commander's cupola (1).

**FOLLOW-ON MAINTENANCE:**

- Install machine gun support assembly (para 15-50).
- Install commander's access door (para 15-47).
- Install commander's seat forward support bracket (para 15-63).

15-49. COMMANDER'S CUPOLA LOCKRING SAFETY HANDLE REPLACEMENT

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Self-locking bolt (2) (Item 302, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Lower rear door opened and secured (refer to TM 9-2350-287-10).
- Upper rear door opened and secured (refer to TM 9-2350-287-10).

NOTE

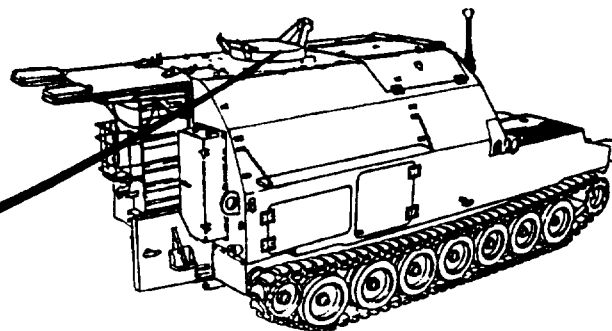
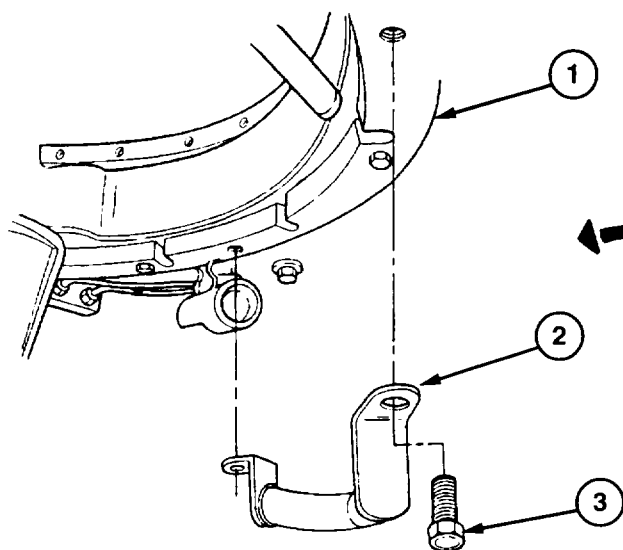
The commander's cupola has two locking safety handles. Only one is shown, but they are replaced the same way.

a. REMOVAL

Remove two self-locking bolts (3) and safety handle (2) from locking (1). Discard self-locking bolts.

b. INSTALLATION

Install two new self-locking bolts (3) and safety handle (2) on locking (1).

**FOLLOW-ON MAINTENANCE:**

- Close upper rear door (refer to TM 9-2350-287-10).
- Close lower rear door (refer to TM 9-2350-287-10).

15-50. MACHINE GUN SUPPORT ASSEMBLY REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Ž General mechanic's tool kit (Item 24, Appendix I)

- Ž Spring pin (Item 352, Appendix H)
- Ž Spring pin (2) (Item 353, Appendix H)

Personnel Required: Two

Materials/Parts:

- Ž Drycleaning solvent (Item 28, Appendix D)
- Ž Rag (Item 58, Appendix D)
- Ž Cotter pin (Item 18, Appendix H)
- Ž Cotter pin (2) (Item 30, Appendix H)

Equipment Conditions:

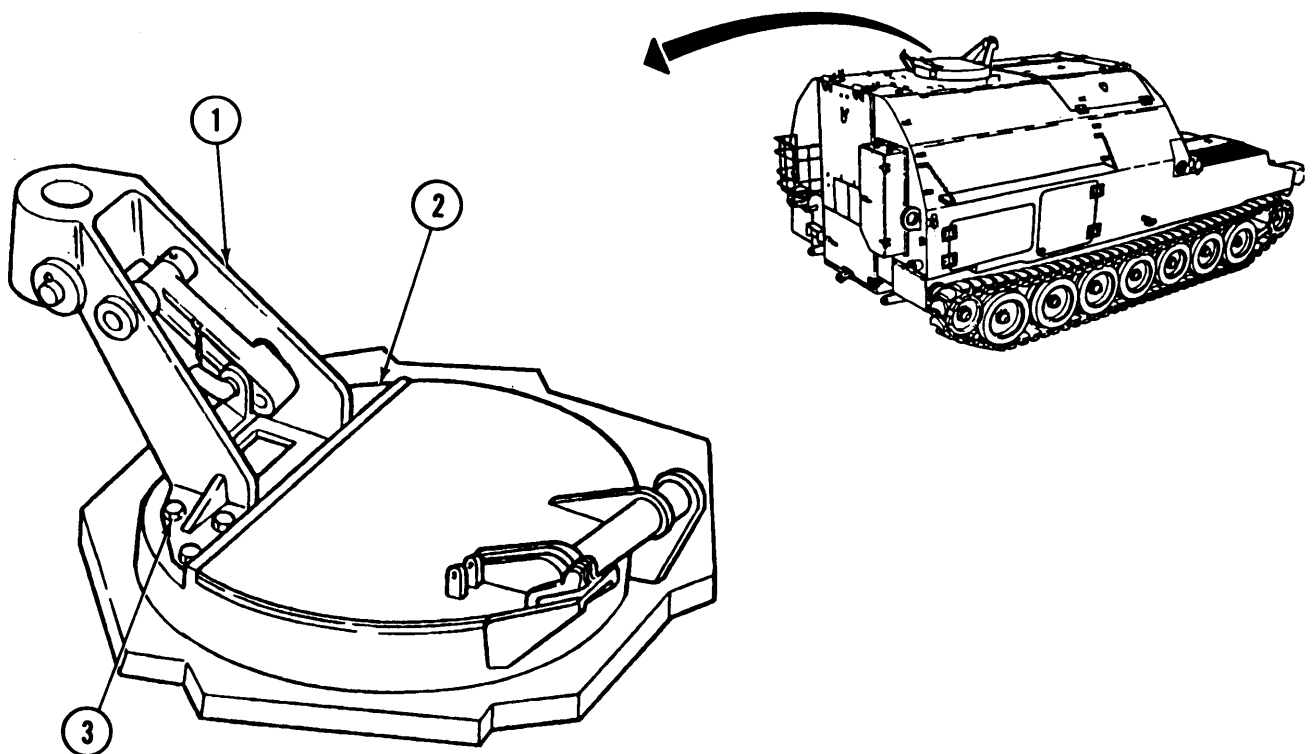
- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

An assistant is needed when removing support assembly.

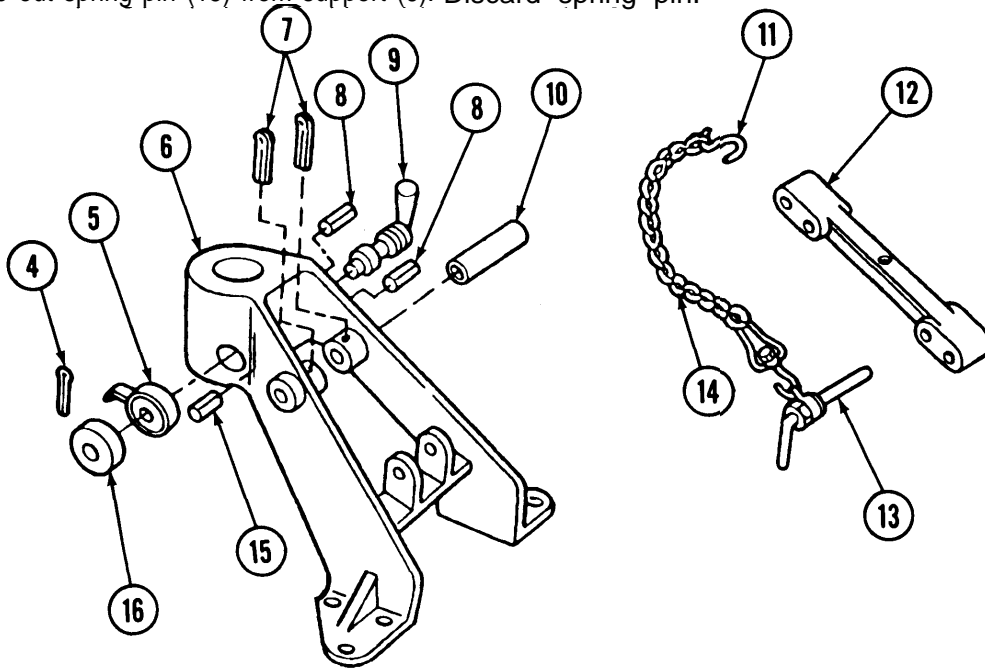
Remove six screws (3) and machine gun support assembly (1) from commander's cupola (2).



15-50. MACHINE GUN SUPPORT ASSEMBLY REPAIR (continued).

b. DISASSEMBLY

1. Remove two cotter pins (7) from straight pin (10). Discard cotter pins.
2. Drive out straight pin (10) from support (6).
3. Remove quick-release pin (13) and connecting link (12), with chain (14) attached, from support (6).
4. Remove two S-hooks (11), chain (14), and quick-release pin (13) from connecting link (12).
5. Remove cotter pin (4), cover (16), spring (5), and lock (9) from support (6). Discard cotter pin.
6. Drive out two spring pins (8) from support (6). Discard spring pins.
7. Drive out spring pin (15) from support (6). Discard spring pin.



c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

1. Clean all hardware with drycleaning solvent and rag. Allow to air dry.
2. Inspect all parts for cracks and other damage. Replace unserviceable parts.

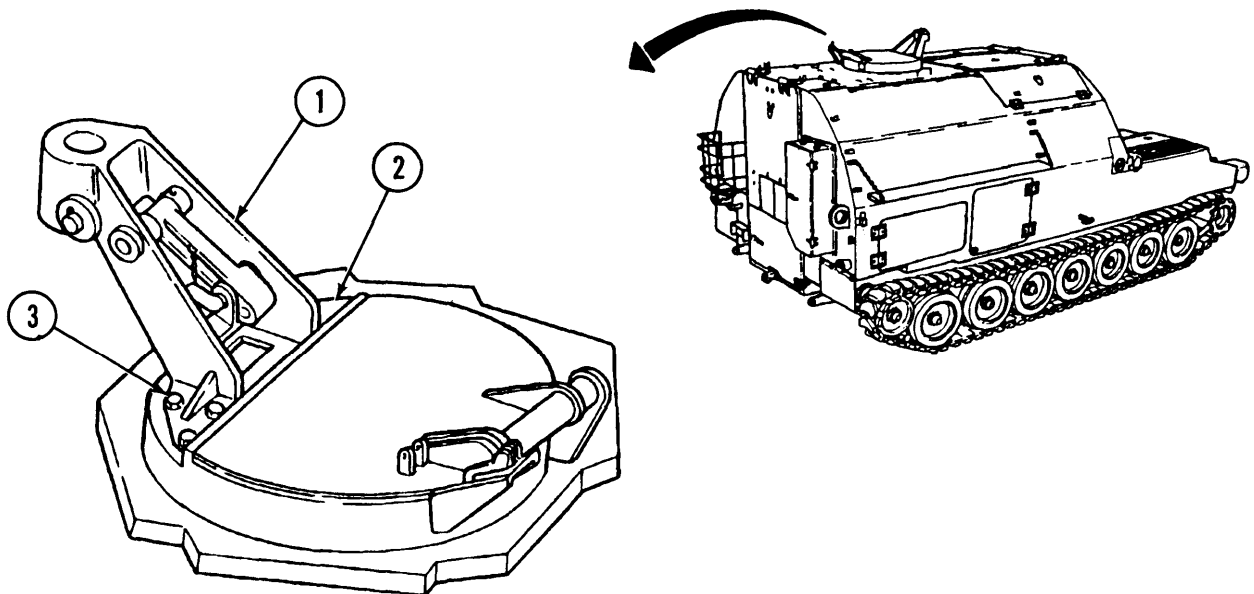
15-50. MACHINE GUN SUPPORT ASSEMBLY REPAIR (continued).

d. ASSEMBLY

1. Install new spring pin (15) in support (6).
2. Install two new spring pins (8) in support (6).
3. Install lock (9) on right side of support (6). Position spring pin (15) to engage slotted end of lock (9). Anchor spring (5) on spring pin (15).
4. Check travel of lock (9). Spring (5) should cause lock (9) to partially close hole in support (6). One-finger pressure should rotate lock (9) to open hole in support (6); but if lock does not rotate easily, remove spring (5) from spring pin (15) and lock (9). Back off spring (5) one full turn, then install spring (5) on lock (9) and spring pin (15).
5. Install cover (16) on spring (5) with new cotter pin (4).
6. Install two S-hooks (11), chain (14), and quick-release pin (13) on connecting link (12).
7. Install connecting link (12) on support (6) with straight pin (1 O).
8. Install two new cotter pins (7) in straight pin (1 O).

e. INSTALLATION

With the aid of an assistant, install support assembly (1) on commander's cupola (2) with six screws (3).

**FOLLOW-ON MAINTENANCE:**

Ž None

15-51. FRONT FENDER REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

Ž General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

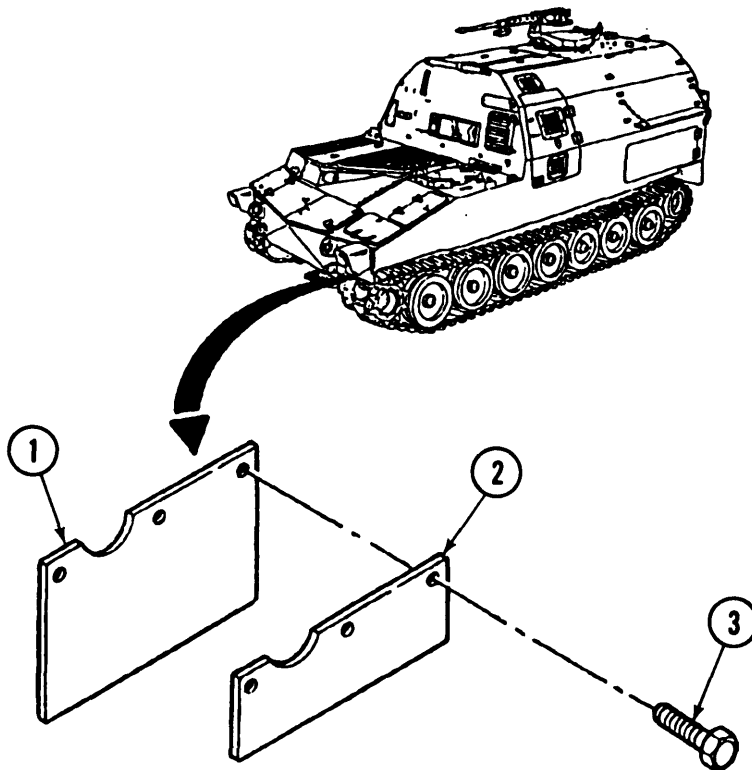
NOTE

Left and right front fenders are replaced the same way.

Remove three screws (3), fender retainer (2), and front fender (1) from vehicle.

b. INSTALLATION

Install front fender (1) and fender retainer (2) on vehicle with three screws (3).



FOLLOW-ON MAINTENANCE:

Ž None

15-52. REAR TRACK SPLASH-GUARD REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

Ž General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

Ž Lockwasher (4) (Item 164, Appendix H)

a. REMOVAL

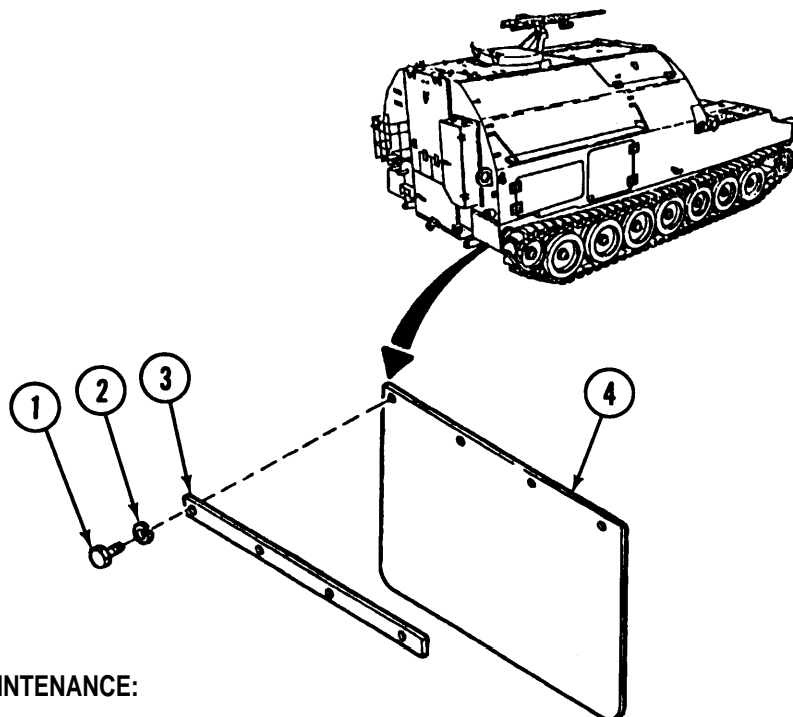
NOTE

Left and right rear track splash guards are replaced the same way.

Remove four screws (1) and lockwashers (2), retainer (3), and rear track splash guard (4) from vehicle. Discard lockwashers.

b. INSTALLATION

Install rear track splash guard (4) and retainer (3) on vehicle with four screws (1) and new lockwashers (2).



FOLLOW-ON MAINTENANCE:

Ž None

15-53. DRIVER'S HATCH COVER REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Ž General mechanic's tool kit (Item 24, Appendix I)
- Ž Plier wrench (Item 42, Appendix I)

Ž Lockwire (as required) (Item 201, Appendix H)

Personnel Required: Two

Materials/Parts:

- Ž Lockwasher (2) (Item 154, Appendix H)
- Ž Lockwasher (2) (Item 164, Appendix H)

Equipment Conditions:

Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).

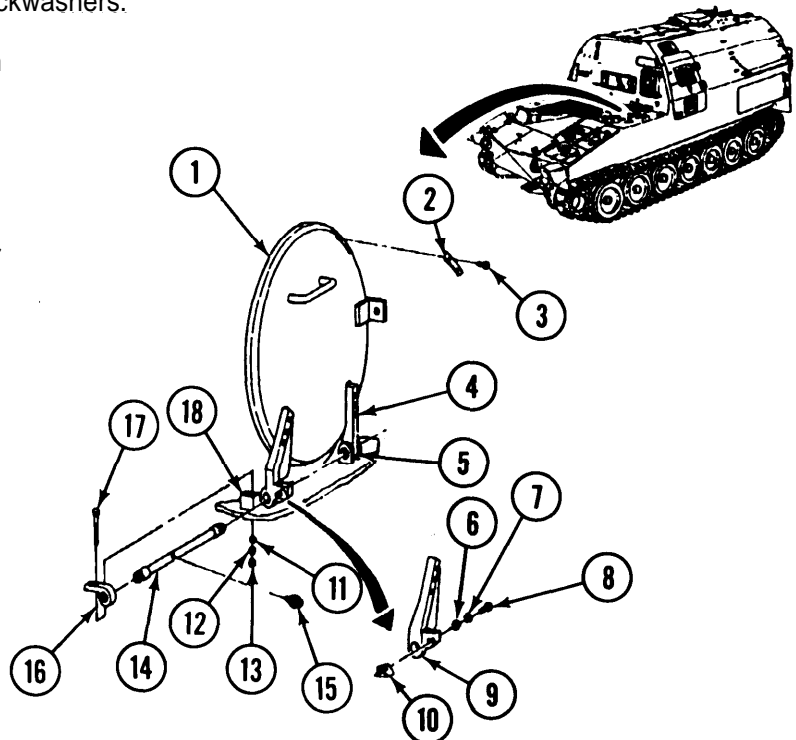
a. REMOVAL

1. Remove two screws (3) and wear plate (2) from driver's hatch cover (1).
2. Remove two screws (7), lockwashers (8), and washers (6) and striker (10) from outer hatch cover arm (9). Discard lockwashers.
3. Raise hatch cover (1) to a vertical neutral position (approximately 90 degrees), and have assistant hold in place.
4. Remove two screws (17), washers(11), lockwashers (12), and nuts (13) from torsion bar anchor (16) and vehicle-mounted block (18). Discard lockwashers.
5. Remove torsion bar anchor (16) from torsion bar hinge (14).
6. Remove grease fitting (15) from torsion bar hinge (14).
7. Drive torsion bar hinge (14) out of outer and inner hatch cover arms (9 and 4) and vehicle-mounted bracket (5).

WARNING

Driver's hatch cover is heavy. Two persons are required when removing driver's hatch cover.

8. With the aid of an assistant, remove hatch cover (1) and attached outer and inner hatch cover arms (9 and 4) from vehicle.



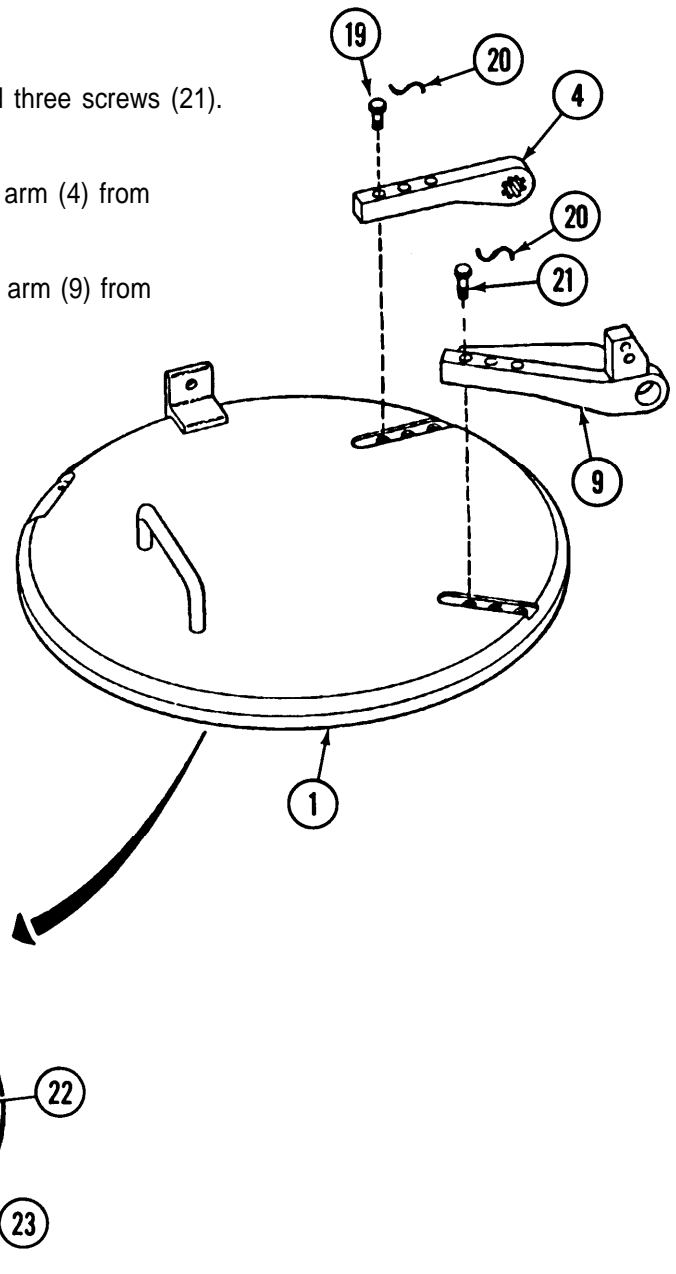
15-53. DRIVER'S HATCH COVER REPLACEMENT (continued).

b. DISASSEMBLY

1. Remove lockwire (20) from three screws (19) and three screws (21). Discard lockwire.
2. Remove three screws (19) and inner hatch cover arm (4) from hatch cover (1).
3. Remove three screws (21) and outer hatch cover arm (9) from hatch cover (1).

c. CLEANING AND INSPECTION

1. Clean all metal parts with soap and water.
2. Inspect all metal parts for cracks, bends, and breaks. Replace any damaged or defective parts.
3. Inspect hatch cover seal (23) and pad (22) for tears. If damaged, replace hatch cover seal and/or pad (para 15-54).



d. ASSEMBLY

1. Position outer hatch cover arm (9) in place on hatch cover (1) and secure with three screws (21).
2. Position inner hatch cover arm (4) in place on hatch cover (1) and secure with three screws (19).
3. With wire twister pliers, install new lockwire (20) in three screws (19) and three screws (21).

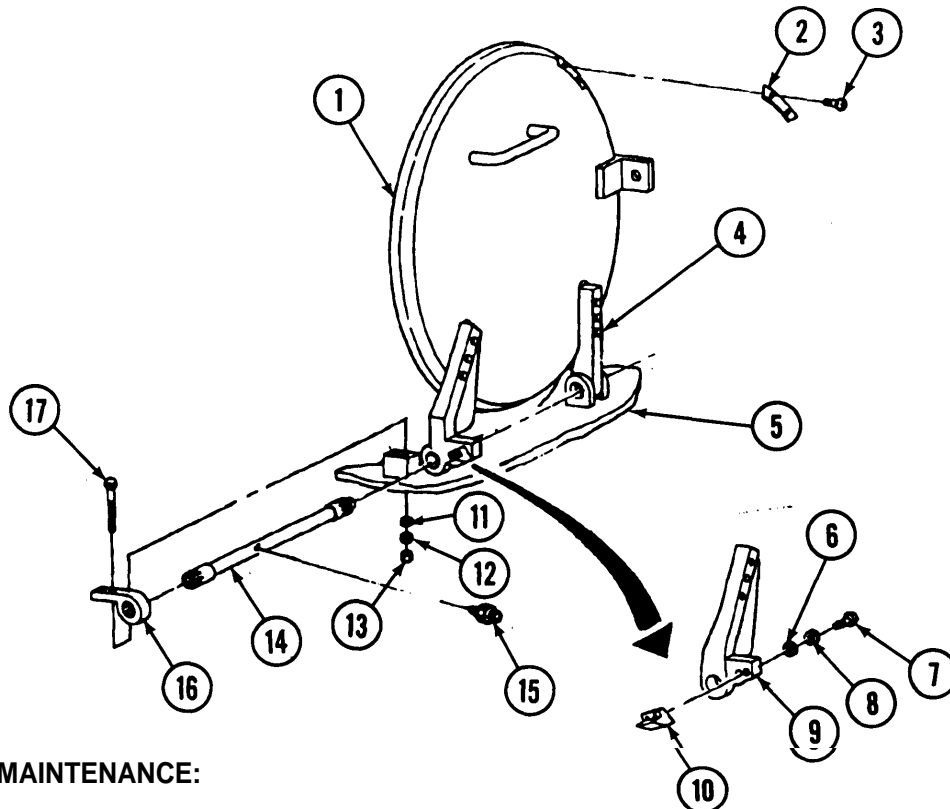
15-53. DRIVER'S HATCH COVER REPLACEMENT (continued).

e. INSTALLATION

WARNING

Driver's hatch cover is heavy. Two persons are required when installing driver's hatch cover.

1. With the aid of an assistant, position hatch cover (1) in place on vehicle. Raise hatch cover (1) to a vertical position with splined hole in inner hatch cover arm (4) aligned with holes in vehicle-mounted bracket (5), and have assistant hold in place.
2. Install torsion bar hinge (14) through outer hatch cover arm (9) with grease fitting hole parallel to hatch cover (1). Aline splined end of torsion bar hinge (14) with splined hole in inner hatch cover arm (4). Tap torsion bar hinge (14) into inner hatch cover arm (4).
3. Install grease fitting (15) on torsion bar hinge (14).
4. Aline torsion bar anchor (16) with splined outer end of torsion bar hinge (14). Keep mounting surface of torsion bar anchor (16) parallel to mounting surface of vehicle-mounted block (18), and tap torsion bar anchor (16) onto torsion bar hinge (14).
5. Secure torsion bar anchor (16) to vehicle-mounted block (18) with two screws (17), washers (11), new lockwashers (12), and nuts (13).
6. Install striker (10) on outer hatch cover arm (9) with two screws (7), new lockwashers (8), and washers (6).
7. Close driver's hatch cover (1). Install wear plate (2) on hatch cover (1) with two screws (3).



FOLLOW-ON MAINTENANCE:
 ŽNone

15-54. DRIVER'S HATCH COVER SEAL AND PAD REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Ž Pad (Item 210, Appendix H)
- Ž Seal (Item 272, Appendix H)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Ž Rag (Item 56, Appendix D) (as required)

Equipment Conditions:

- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Ž Driver's hatch cover open and secured (refer to TM 9-2350-287-10).
-

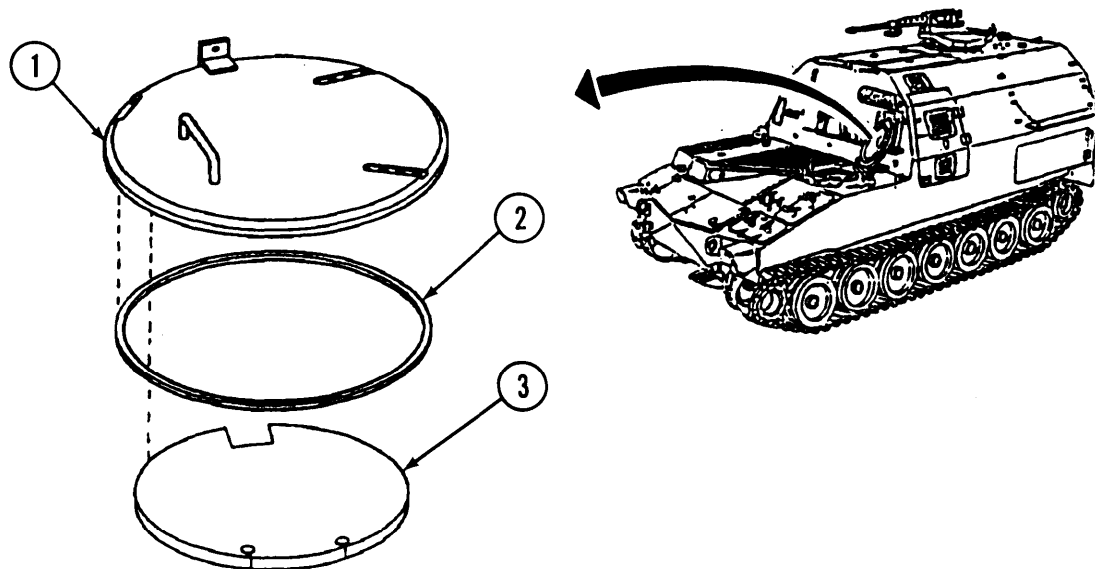
a. REMOVAL

1. Remove seal (2) from driver's hatch cover (1). Discard seal.
2. Remove pad (3) from driver's hatch cover (1). Discard pad.

WARNING

Drycleaning 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.

3. Clean adhesive from channel and underside of driver's hatch cover (1) with drycleaning solvent and rag, then dry thoroughly.



15-54. DRIVER-S HATCH COVER SEAL AND PAD REPLACEMENT (continued).

b. INSTALLATION

1. Apply thin coat of adhesive in channel on underside of driver's hatch cover (1) and mounting surface of new seal (2). Allow adhesive to dry until tacky.

CAUTION

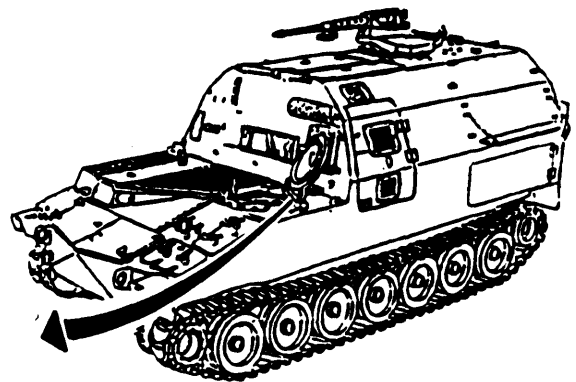
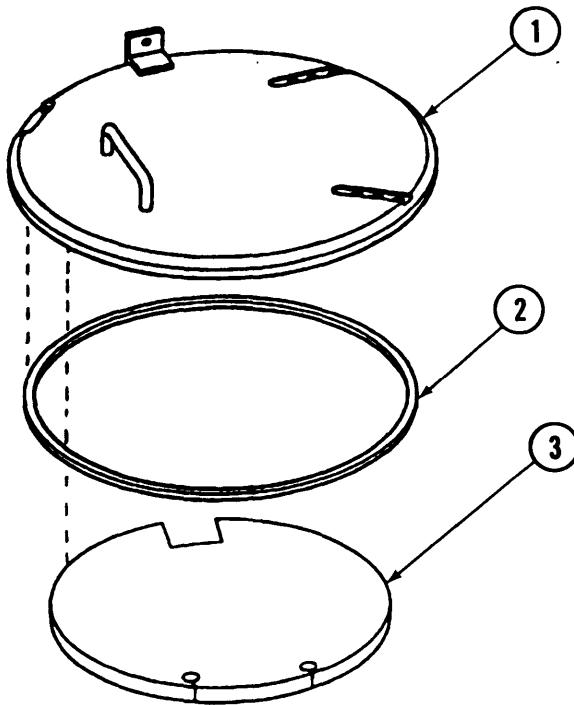
When installing seal, avoid stretching or bunching seal. Stretching or bunching seal may cause driver's hatch cover to leak.

2. Install seal (2) in channel of driver's hatch cover (1).

WARNING

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

3. Apply thin coat of adhesive to underside of driver's hatch cover (1) and mounting surface of new pad (3). Allow adhesive to dry until tacky.
4. Position pad (3) in place on underside of driver's hatch cover (1).



FOLLOW-ON MAINTENANCE:

- Close driver's hatch cover (refer to TM 9-2350-287-10).

15-55. DRIVER'S HATCH COVER LATCH ASSEMBLY REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- Ž General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Ž Drycleaning solvent (Item 28, Appendix D)
- Ž Grease (Item 32, Appendix D)
- Ž Rag (Item 56, Appendix D) (as required)
- Ž Sealing compound (Item 58, Appendix D)
- Ž Lockwasher (4) (Item 154, Appendix H)
- Ž Lockwasher (2) (Item 160, Appendix H)

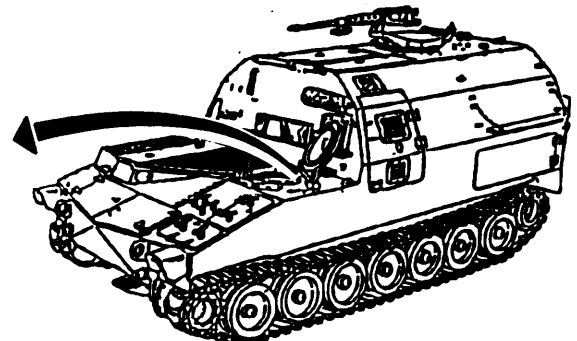
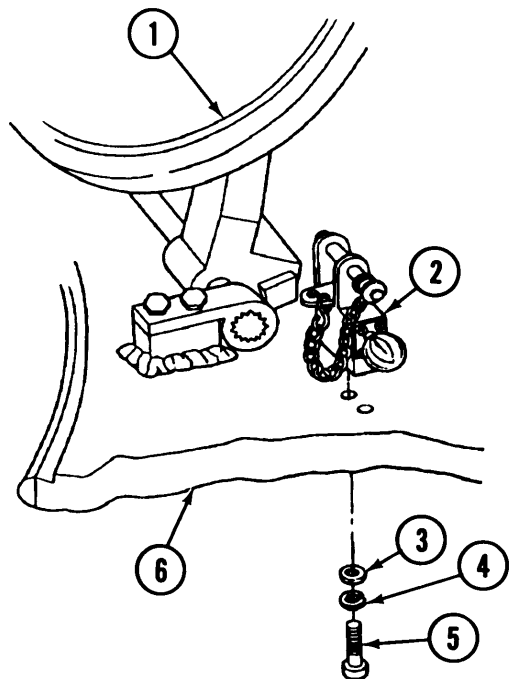
Personnel Required: Two

Equipment Conditions:

- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Ž Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

1. While assistant holds driver's hatch cover (1) in vertical position, remove two screws (5), lockwashers (4), and washers (3) and latch assembly (2) from vehicle deck (6). Discard lockwashers.
2. Lower driver's hatch cover (1).



15-55. DRIVER'S HATCH COVER LATCH ASSEMBLY REPAIR (continued).

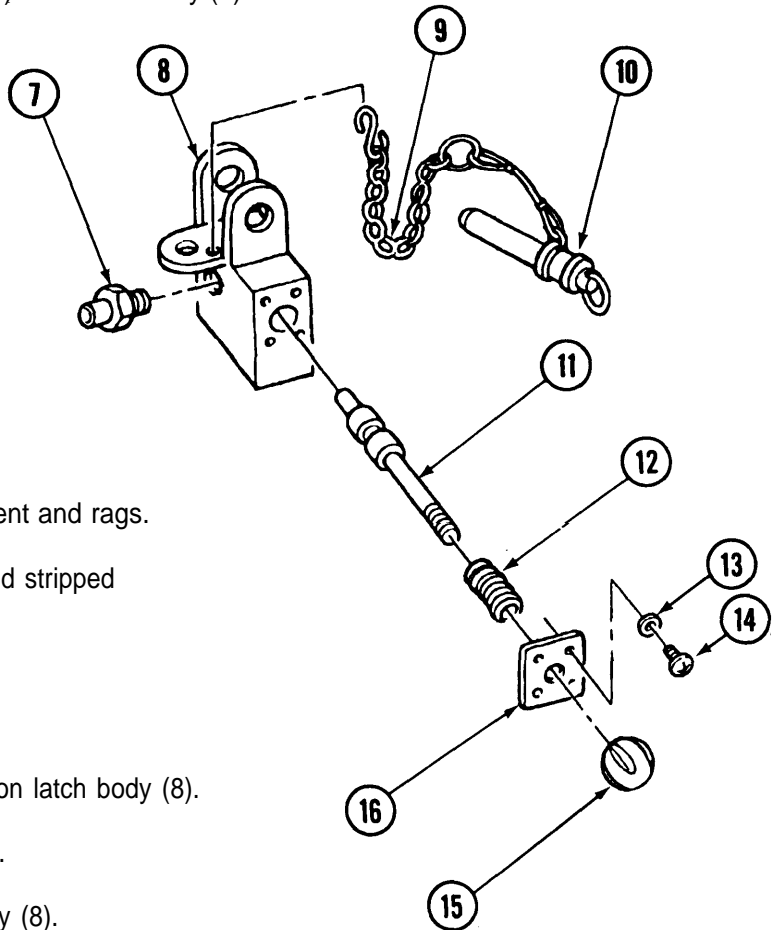
b. DISASSEMBLY

1. Unscrew knob (15) from pin (11).
2. Remove four screws (14) and lockwashers (13), cover (16), spring (12), and pin (11) from latch body (8). Discard lockwashers.
3. Remove lubrication fitting (7) from latch body (8).
4. Remove quick-release pin (10) and chain (9) from latch body (8).

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.



1. Clean all metal parts with drycleaning solvent and rags.
2. Inspect all metal parts for cracks, bends, and stripped threads. Replace any damaged parts.

d. ASSEMBLY

1. Install quick-release pin (10) and chain (9) on latch body (8).
2. Install lubrication fitting (7) in latch body (8).
3. Install pin (11) and spring (12) on latch body (8).

WARNING

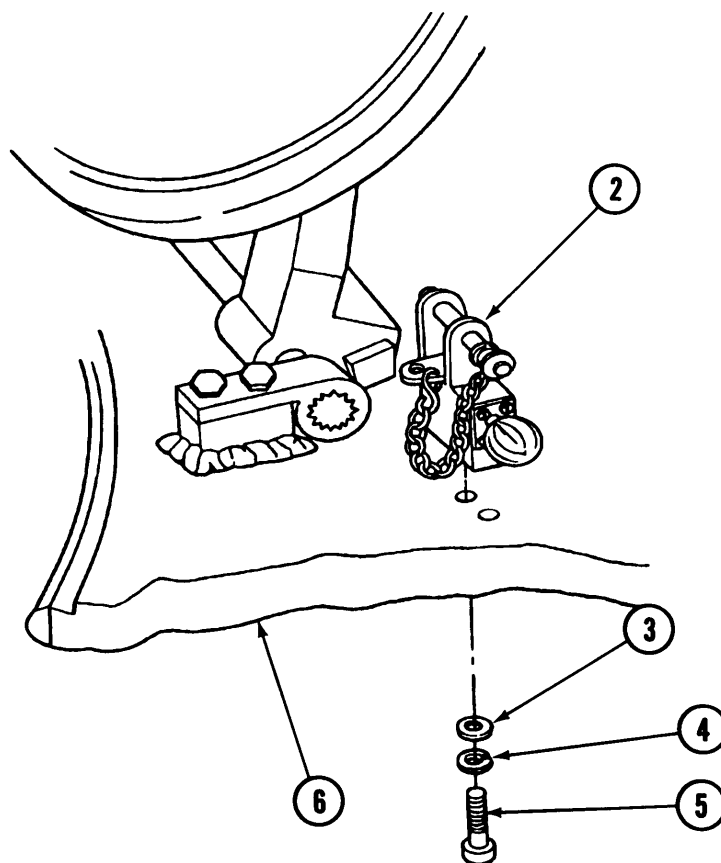
Sealing compound can burn easily, can give off harmful vapors, and is harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If sealing compound gets on skin or clothing, wash immediately with soap and water.

4. Apply sealing compound to threads of four screws (14). Install four screws (14) and new lockwashers (13) and cover (16) on pin (11) and latch body (8).
5. Screw knob (15) on pin (11).

15-55. DRIVER'S HATCH COVER LATCH ASSEMBLY REPAIR (continued).

e. INSTALLATION

1. While assistant holds driver's hatch cover (1) open, position latch assembly (2) on vehicle deck (6) and secure with two screws (5), new lockwashers (4), and washers (3).
2. Lower driver's hatch cover (1).
3. Lubricate latch assembly (refer to Appendix G).

**FOLLOW-ON MAINTENANCE:**

Ž Close driver's hatch cover (refer to TM 9-2350-287-10).

15-56. DRIVER'S HATCH SECURITY LATCH ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

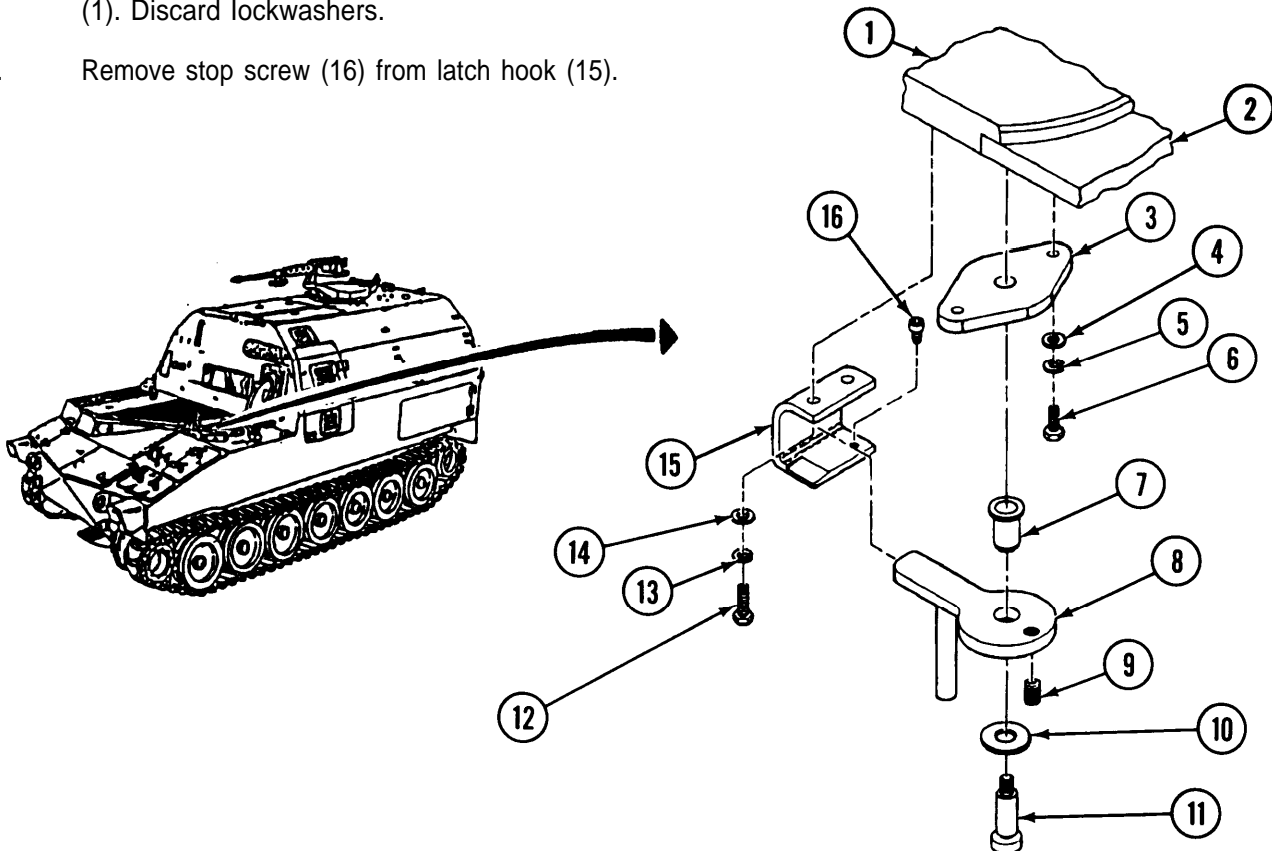
- Ž Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).

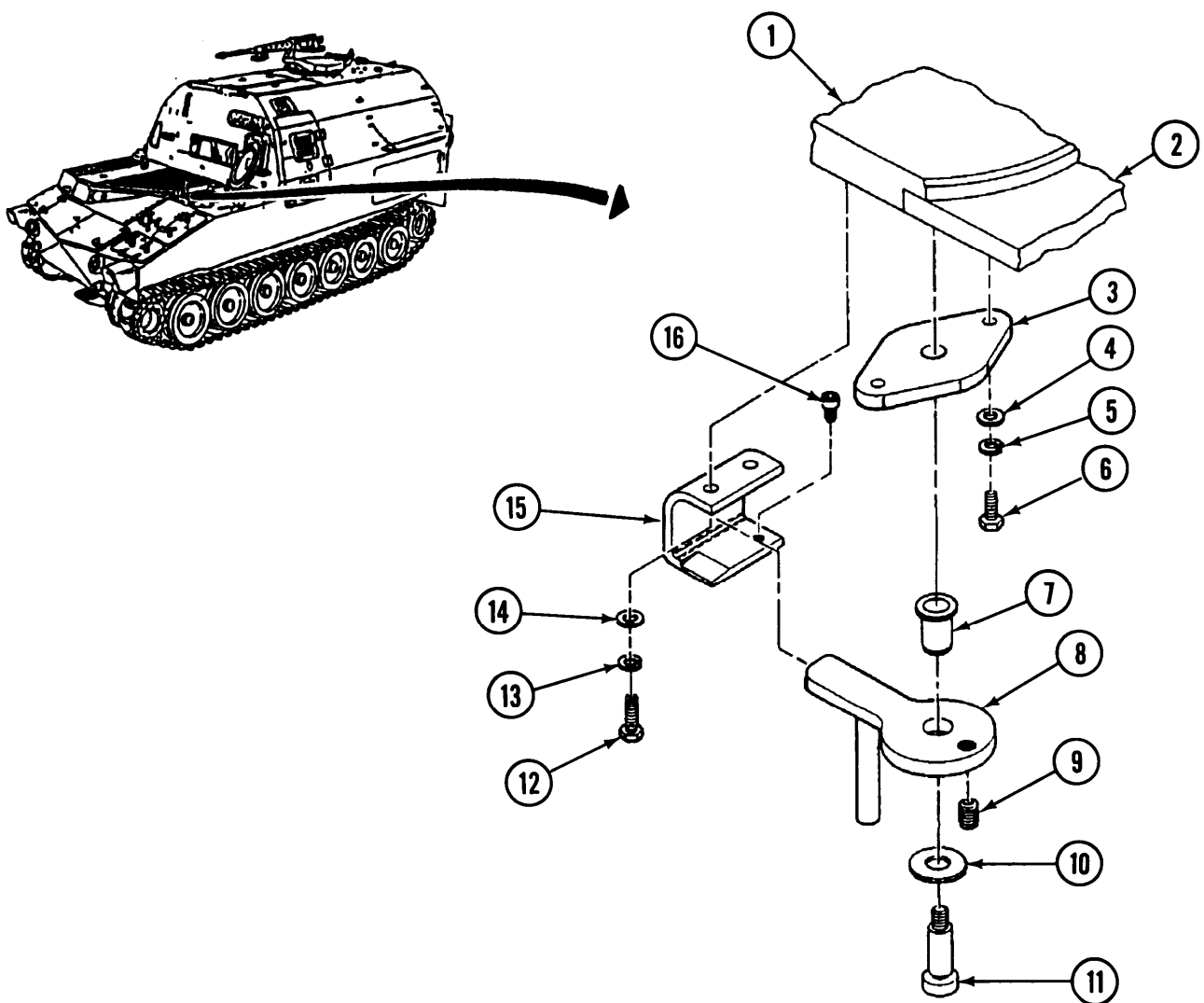
a. REMOVAL

1. Remove ball plunger (9) from security latch (8).
2. Remove screw (11), latch (8), sleeve bearing (7), and washer bearing (10) from mounting plate (3).
3. Remove two screws (6), lockwashers (5), and washers (4) and mounting plate (3) from inside hull (2). Discard lockwashers.
4. Remove two screws (12), lockwashers (13), and washers (14) and latch hook (15) from driver's hatch cover (1). Discard lockwashers.
5. Remove stop screw (16) from latch hook (15).



15-56. DRIVER'S HATCH SECURITY LATCH ASSEMBLY REPLACEMENT (continued).**b. INSTALLATION**

1. Install stop screw (16) in latch hook (15).
2. Install latch hook (15) on driver's hatch cover (1) with two screws (12), new lockwashers (13), and washers (14).
3. Install mounting plate (3) on inside hull (2) with two screws (6), new lockwashers (5), and washers (4).
4. Install latch (8), washer bearing (10), and sleeve bearing (7) on mounting plate (3) with screw (11).
5. Install ball plunger (9) in latch (8). Turn ball plunger (9) clockwise 1/8 turn after ball plunger (9) makes contact with hull (2).

**FOLLOW-ON MAINTENANCE:**

- Close driver's hatch cover (refer to TM 9-2350-287-10).

15-57. DRIVER'S HATCH COVER CAM LOCK REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Ž Cotter pin (Item 26, Appendix H)

Equipment Conditions:

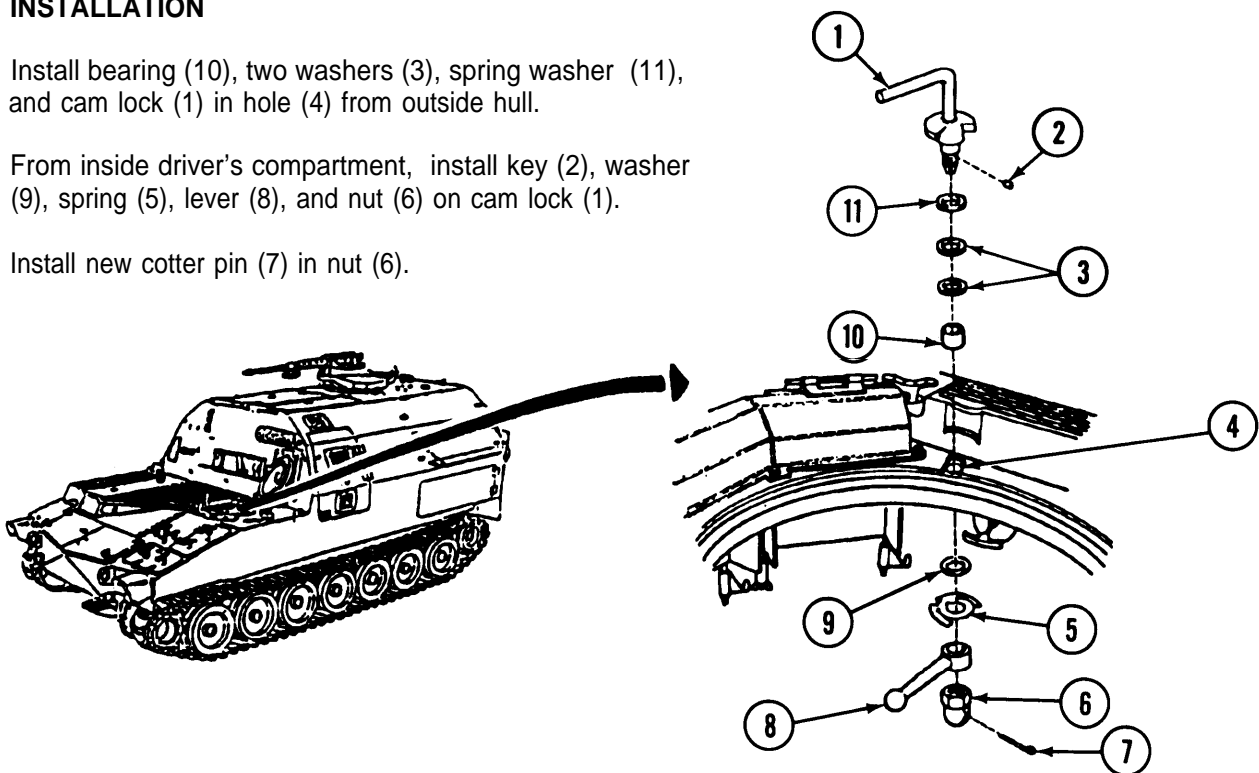
- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove cotter pin (7) from nut (6). Discard cotter pin.
2. Remove nut (6), lever (8), spring (5), washer (9), and key (2) from cam lock (1) inside driver's compartment.
3. Remove bearing (10), two washers (3), spring washer (11), and cam lock (1) from outside hull.

b. INSTALLATION

1. Install bearing (10), two washers (3), spring washer (11), and cam lock (1) in hole (4) from outside hull.
2. From inside driver's compartment, install key (2), washer (9), spring (5), lever (8), and nut (6) on cam lock (1).
3. Install new cotter pin (7) in nut (6).



FOLLOW-ON MAINTENANCE:

- Ž Close driver's hatch cover (refer to TM 9-2350-287-10).

15-58. DRIVER'S HATCH SEAL REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)

- Seal (Item 260, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).
-

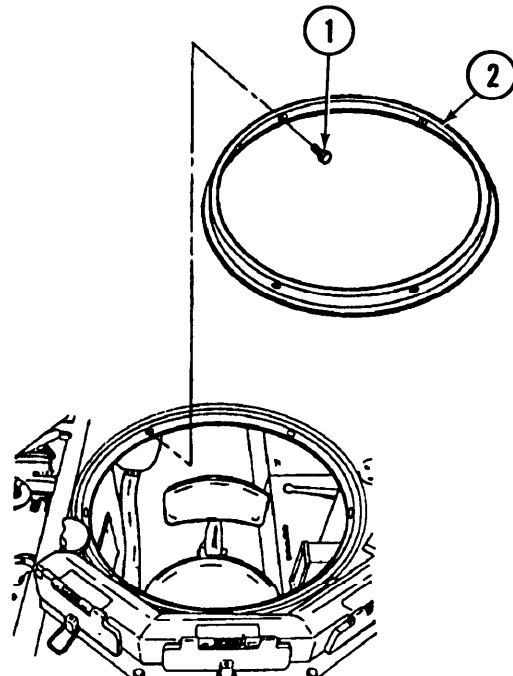
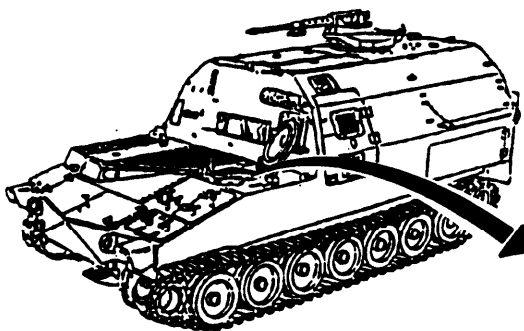
a. REMOVAL

1. Remove six screws (1) from driver's hatch seal (2) and hatchway opening in hull.
2. Remove hatch seal (2) from hatchway opening in hull. Discard seal.

WARNING

Drycleaning 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.

3. Clean adhesive from hatch seal mounting surface around hatchway opening in hull with drycleaning solvent and rags; then dry area thoroughly.



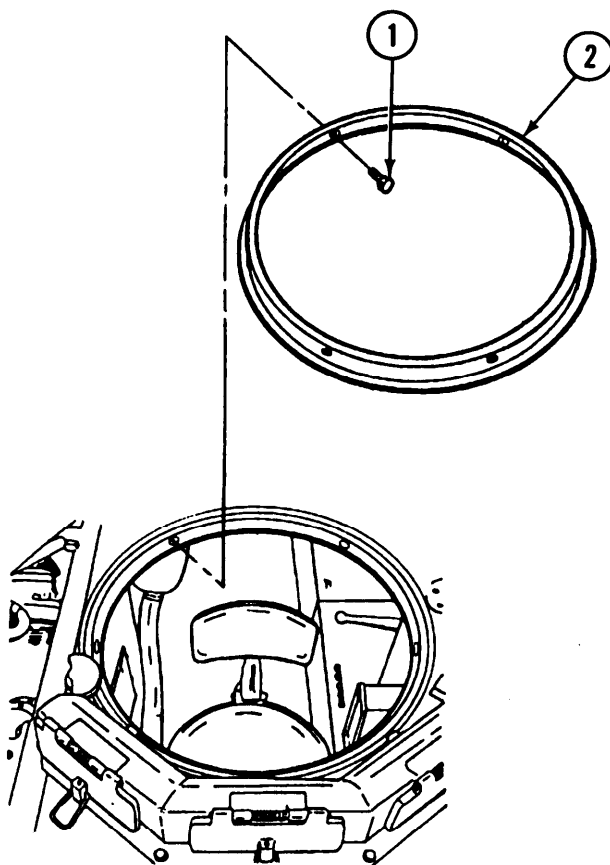
15-58. DRIVER'S HATCH SEAL REPLACEMENT (continued).

b. INSTALLATION

WARNING

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

1. Apply thin coat of adhesive to hatch seal mounting surface around hatchway opening of hull and mounting surface of new hatch seal (2). Allow adhesive to dry until tacky.
2. Aline holes in hatch seal (2) with threaded holes around hatchway opening in hull.
3. Position hatch seal (2) in place around hatchway opening.
4. Install six screws (1) in hatch seal (2) and hatchway opening in hull.



FOLLOW-ON MAINTENANCE:

- Close driver's hatch cover (refer to TM 9-2350-287-10).

15-59. M45 PERISCOPE COVER, DOORS, AND SLEEVE ASSEMBLY REPAIR.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

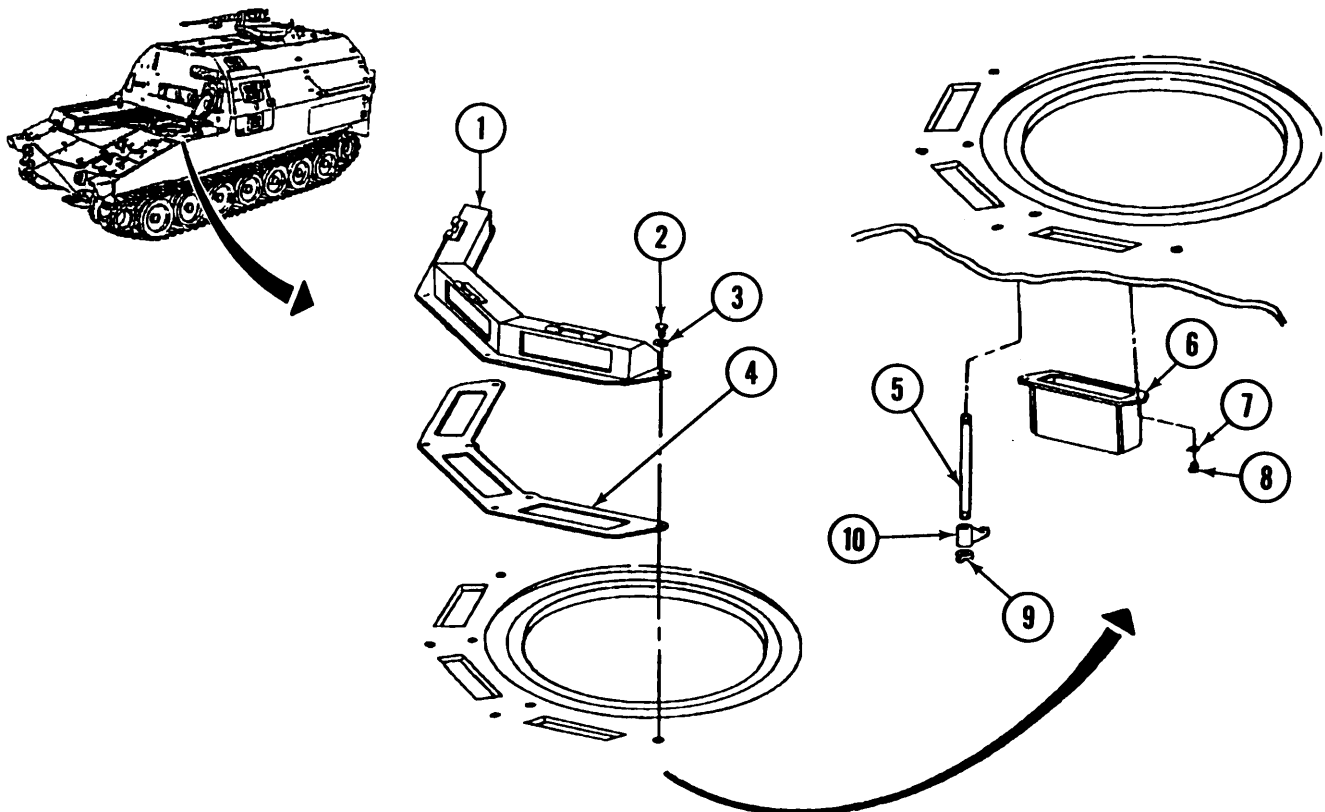
- Gasket (Item 59, Appendix H)
- Gasket (3) (Item 73, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).

a. REMOVAL

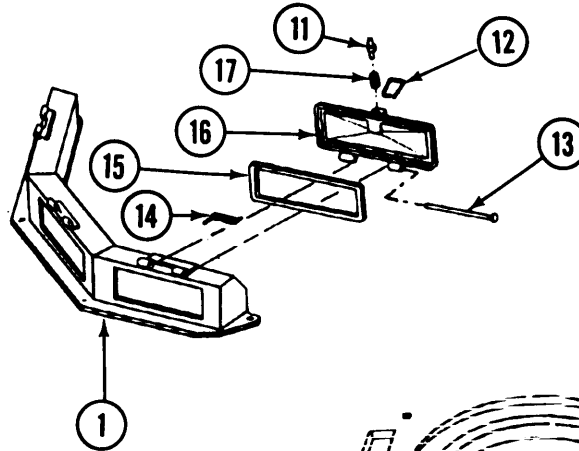
1. Remove six screws (2) and washers (3), M45 periscope cover (1), and gasket (4) from outside hull. Discard gasket.
2. Remove six wing nuts (9), supports (10), and rods (5) from hull inside driver's compartment.
3. Remove six screws (8) and washers (7) and three periscope sleeves (6) from hull inside driver's compartment.



15-59. M45 PERISCOPE COVER, DOORS, AND SLEEVE ASSEMBLY REPAIR (continued).

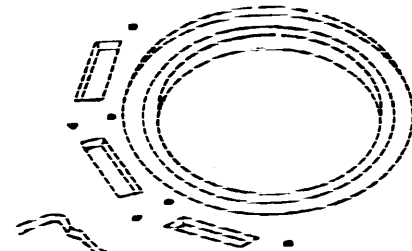
b. DISASSEMBLY

1. Remove three pins (13), springs (14), and doors (16) from cover (1).
2. Remove three rings (12), pins (11), and springs (17) from three doors (16).
3. Remove three gaskets (15) from three doors (16). Discard gaskets.



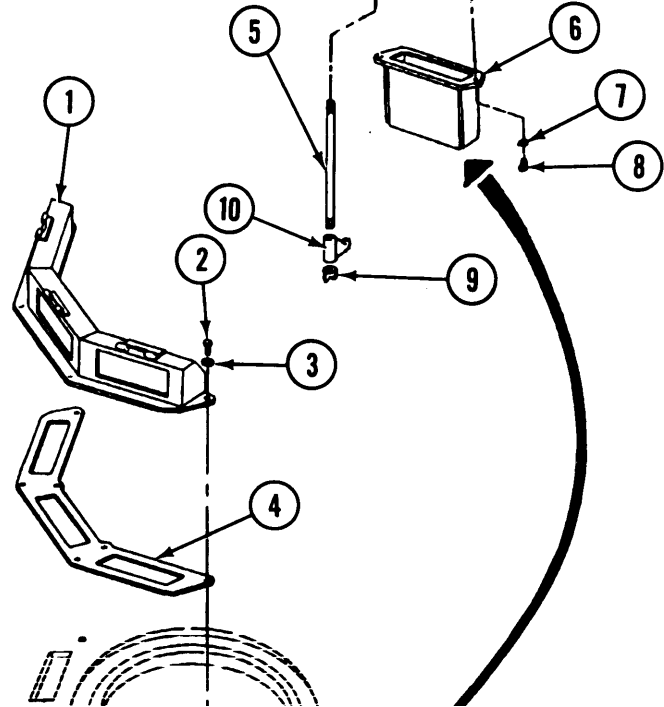
c. ASSEMBLY

1. Install three new gaskets (15) on three doors (16).
2. Install three springs (17), pins (11), and rings (12) on three doors (16).
3. Install three doors (16) and springs (14) in place on cover (1) and secure with three pins (13). Crimp ends of three pins (13).



d. INSTALLATION

1. Install three periscope sleeves (6) on hull inside driver's compartment, and secure with six screws (8) and washers (7).
2. Install six rods (5), supports (10), and wing nuts (9) in hull from inside driver's compartment. Crimp last three threads of each of six rods (5).
3. Install new gasket (4) and cover (1) on outside of hull with six screws (2) and washers (3).



FOLLOW-ON MAINTENANCE:

- Close driver's hatch cover (refer to TM 9-2350-287-10).

15-60. DRAIN PLUGS AND COVERS REPLACEMENT.

This Task Covers:

- | | |
|---|--|
| a. Engine Coolant and Fuel Drain Plug Removal | b. Engine Coolant and Fuel Drain Plug Installation |
| c. Engine Oil Drain Plug Removal | d. Engine Oil Drain Plug Installation |
| e. Transmission Oil Drain Plug Removal | f. Transmission Oil Drain Plug Installation |
| g. Hull Floor Drain Access Cover Removal | h. Hull Floor Drain Access Cover Installation |
-

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Gasket (2) (Item 57, Appendix H)
- Gasket (2) (Item 61, Appendix H)

- Gasket (Item 65, Appendix H)
- Preformed packing (Item 231, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

WARNING

Hot engine can burn you. To avoid injury, allow engine to cool before removing engine coolant drain plug, engine oil drain plug, or transmission oil drain plug.

a. ENGINE COOLANT AND FUEL DRAIN PLUG REMOVAL

1. Remove three screws (7) and washers (6), large cover (5), and gasket (4) from underside of vehicle hull (1). Discard gasket.
2. Position drain pan under hull opening to catch fluids.

NOTE

To remove engine coolant drain plug, do step 3. To remove fuel drain plug, do step 4.

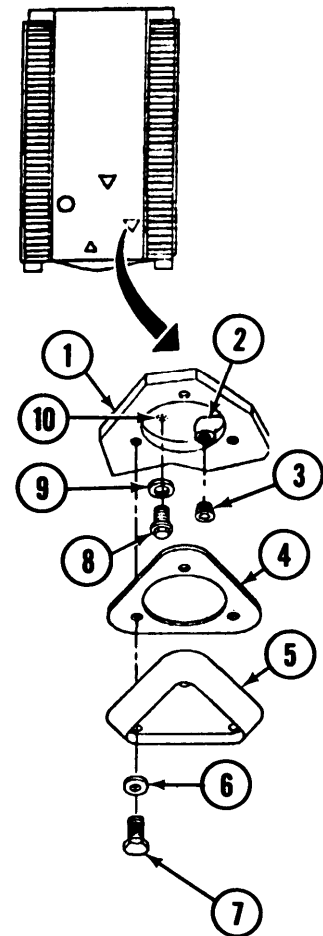
3. Remove engine coolant drain plug (8) and gasket (9) from reservoir (10). Allow engine coolant to drain. Discard gasket.
4. Remove fuel drain plug (3) from elbow (2) and allow fuel to drain.

b. ENGINE COOLANT AND FUEL DRAIN PLUG INSTALLATION

NOTE

If engine coolant drain plug was removed, do steps 1 and 3.
If fuel drain plug was removed, do steps 1 and 2.

1. Install engine coolant drain plug (8) and new gasket (9) on reservoir.
2. Install fuel drain plug (3) on elbow (2).
3. Install new gasket (4) and large cover (5) on underside of vehicle hull (1) with three screws (7) and washers (6).



15-60. DRAIN PLUGS AND COVERS REPLACEMENT (continued).

c. ENGINE OIL DRAIN PLUG REMOVAL

1. Remove three screws (21) and washers (20), small cover (19), and gasket (18) from underside of vehicle hull (1). Discard gasket.
2. Position drain pan under engine oil drain plug (17) to catch fluid.
3. Remove engine oil drain plug (17) and gasket (16) from engine (15). Allow engine oil to drain. Discard gasket.

d. ENGINE OIL DRAIN PLUG INSTALLATION

1. Install engine oil drain plug (17) and new gasket (16) on engine (15).
2. Install new gasket (18) and small cover (19) on underside of vehicle hull (1) with three screws (21) and washers (20).

e. TRANSMISSION OIL DRAIN PLUG REMOVAL

1. Remove three screws (22) and washers (23), small cover (24), and gasket (25) from underside of vehicle hull (1). Discard gasket.
2. Position drain pan under transmission oil drain plug (26) to catch fluid.
3. Remove transmission oil drain plug (26) from transmission (27) and allow transmission oil to drain.

f. TRANSMISSION OIL DRAIN PLUG INSTALLATION

1. Install transmission oil drain plug (26) on transmission (27).
2. Install new gasket (25) and small cover (24) on bottom of vehicle hull (1) with three screws (22) and washers (23).

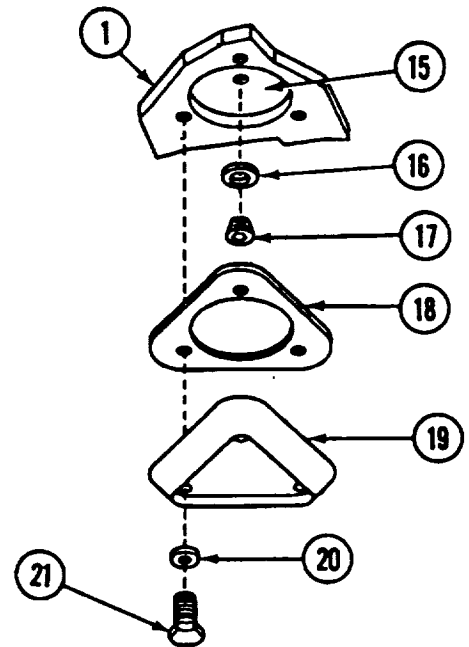
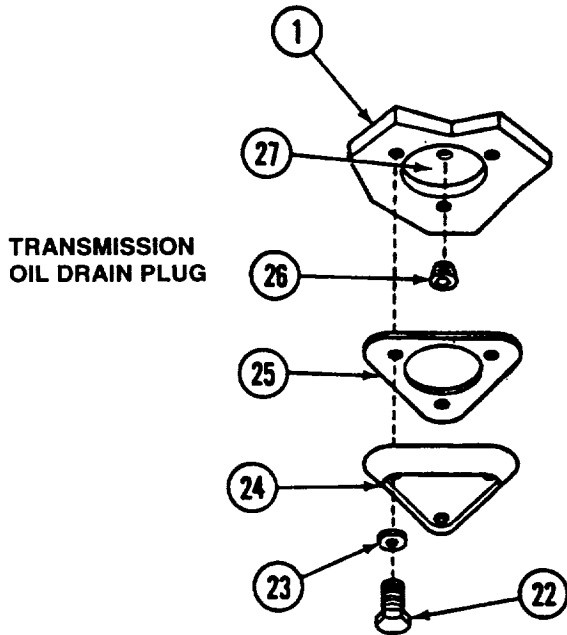
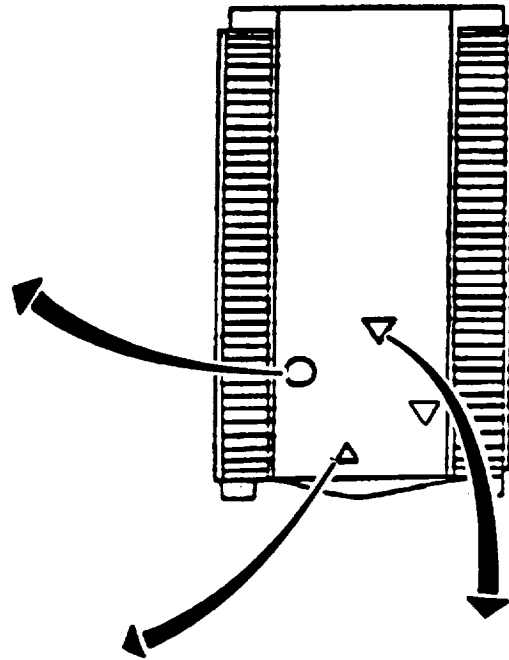
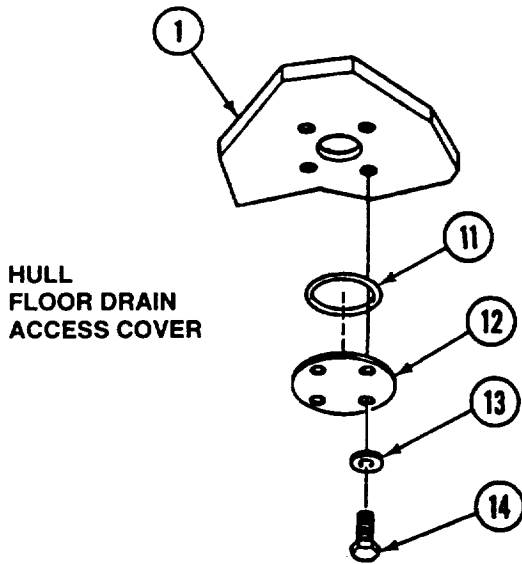
g. HULL FLOOR DRAIN ACCESS COVER REMOVAL

1. Remove four screws (14) and washers (13) from hull floor drain access cover (12).
2. Remove hull floor drain access cover (12) and preformed packing (11) from underside of vehicle hull (1) directly below steering wheel. Discard preformed packing.

h. HULL FLOOR DRAIN ACCESS COVER INSTALLATION

1. Position hull floor drain access cover (12) and new preformed packing (11) in place on bottom of vehicle hull (1) directly below steering wheel.
2. Install four screws (14) and washers (13) to secure hull floor drain access cover (12) to vehicle hull (1).

15-60. DRAIN PLUGS AND COVERS REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Refill drained fluids as necessary.

15-61. CREW COMPARTMENT DRAIN PLUGS REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Dry-cleaning solvent (Item 28, Appendix D)

- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove fatigue mat from vehicle floor.
2. Remove crew compartment drain plug (4) from mounting hole (3).
3. Remove 15 drain plugs (2) from bottom of vehicle (1).

b. INSTALLATION

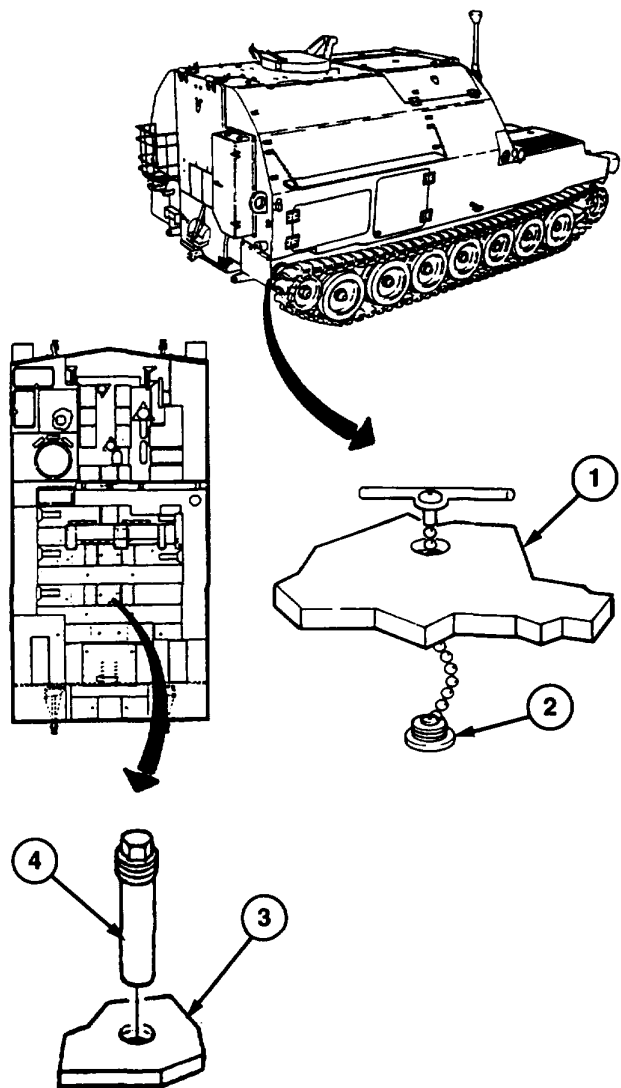
WARNING

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.

1. Clean mounting holes for drain plugs with dry-cleaning solvent.
2. Install 15 drain plugs (2) in bottom of vehicle (1).
3. Install drain plug (4) in mounting hole (3).
4. Install fatigue mat on vehicle floor.

FOLLOW-ON MAINTENANCE:

- None



15-62. DRIVER'S SEAT REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Self-locking nut (Item 331, Appendix H)
- Self-locking nut (Item 333, Appendix H)
- Self-locking nut (4) (Item 334, Appendix H)
- Self-locking nut (4) (Item 385, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Sealing compound (Item 58, Appendix D)
- Cotter pin (Item 10, Appendix H)
- Cotter pin (Item 22, Appendix H)
- Self-locking nut (Item 328, Appendix H)
- Self-locking nut (2) (Item 330, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Driver's hatch opened and secured (refer to TM 9-2350-287-10).

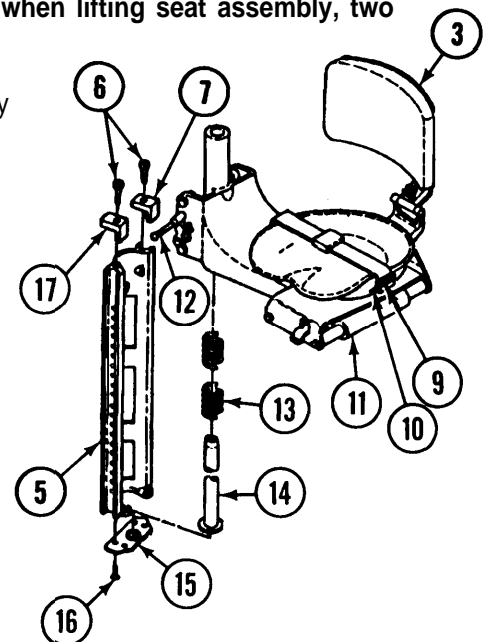
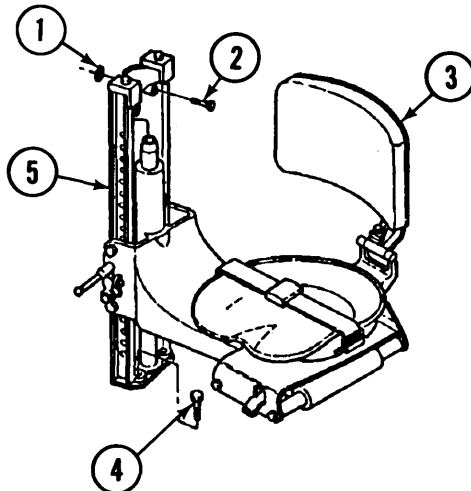
a. REMOVAL

1. Remove two screws (6) and driver's seat stops (7 and 17) from vertical support (5).

WARNING

- Driver's seat assembly is spring loaded. To prevent injury, **DO NOT** raise adjusting lever without holding seat.
- Driver's seat assembly is heavy. To prevent injury when lifting seat assembly, two persons are required.

2. Raise adjusting lever (12) and remove driver's seat assembly (3) and driver's seat support (11) from vertical support (5).

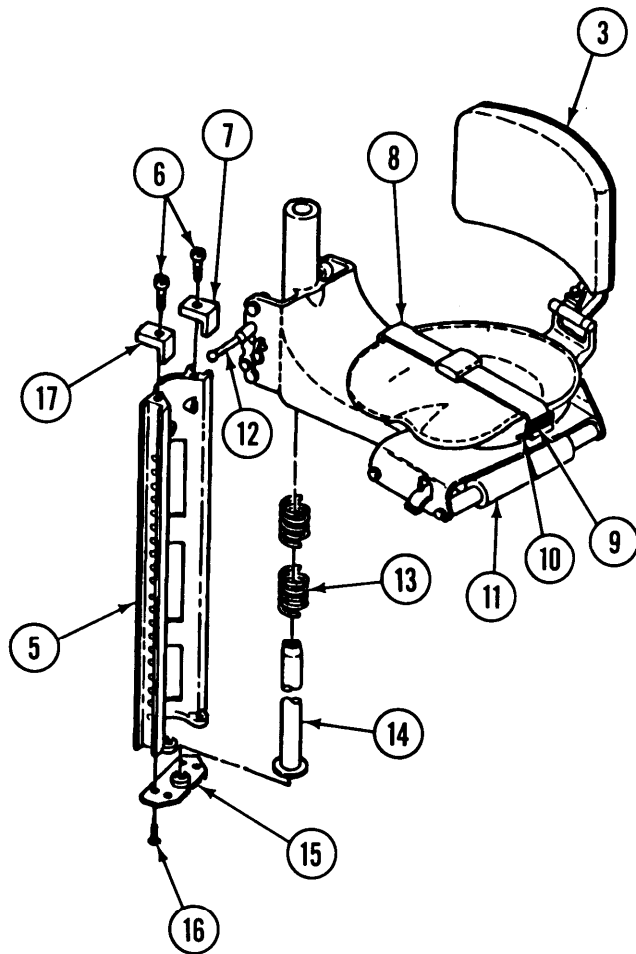
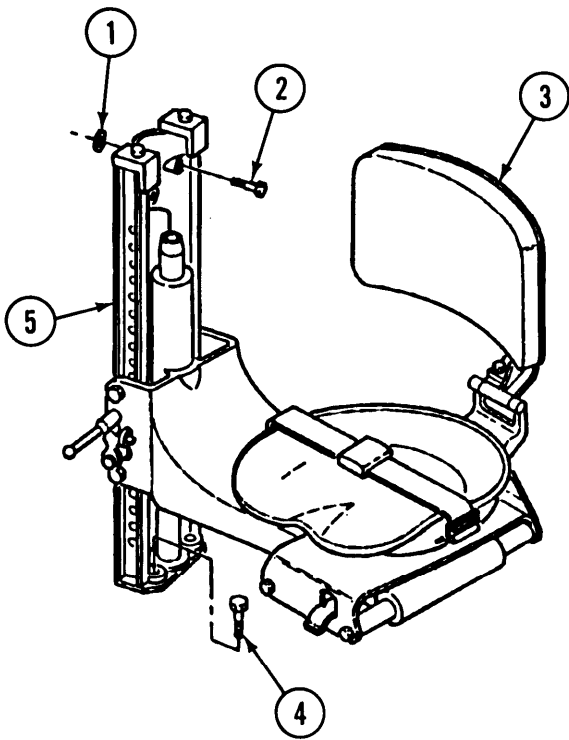


15-62. DRIVER'S SEAT REPAIR (continued).

3. Remove spring (13) from driver's seat vertical guide (14).
4. Remove two screws (2) and washers (1) from top of driver's seat vertical support (5).
5. Remove two screws (4) and vertical support (5) from vehicle.

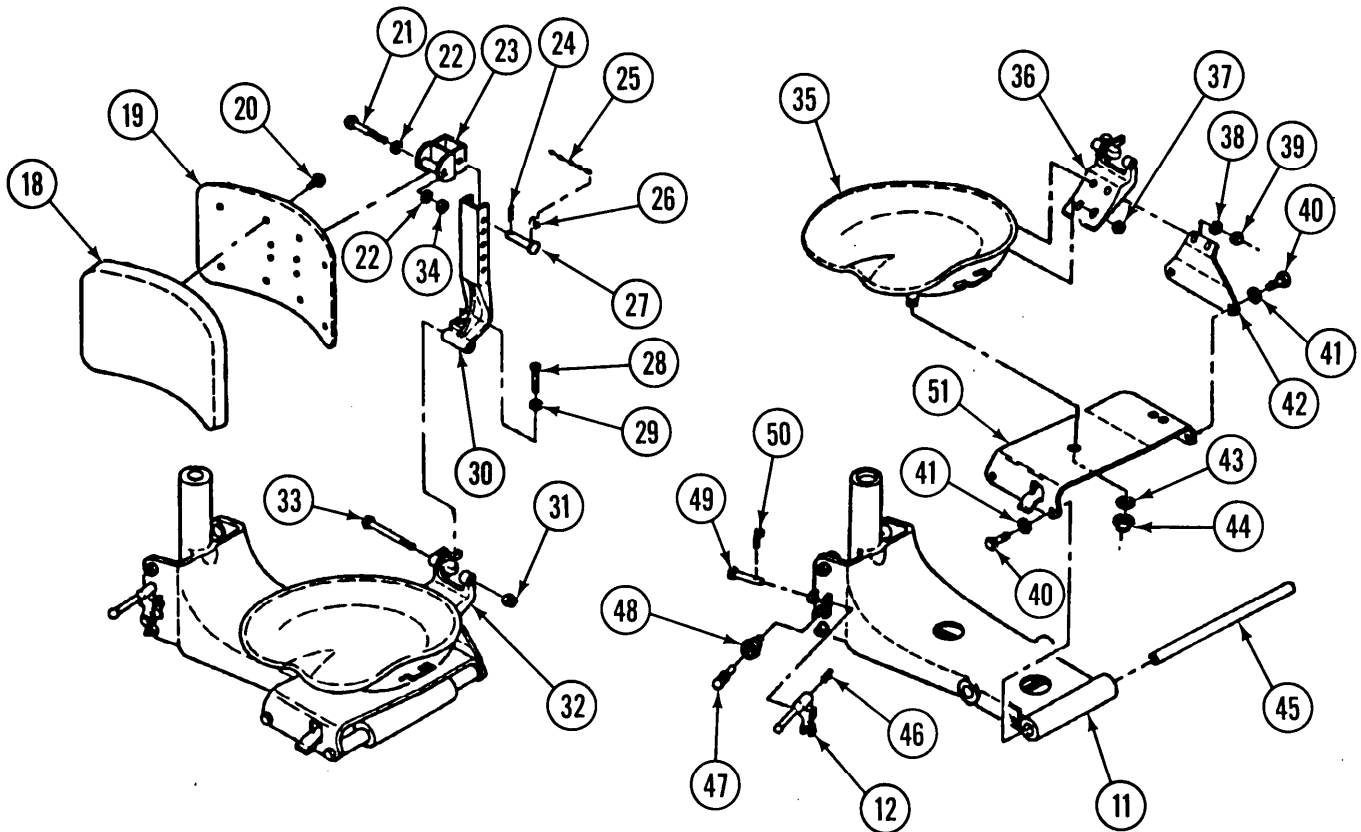
b. DISASSEMBLY

1. Remove left and right belt slides (9), and pull ends of safety belt (8) through seat handle (10).
2. Remove two screws (16), driver's seat support base (15), and vertical guide (14) from bottom of vertical support (5).



15-62. DRIVER'S SEAT REPAIR (continued).

3. Remove lockpin (24), headed pin (27), S-hook (26), chain (25), and bracket (23) from backrest support (30).
4. Remove self-locking nut (34), screw (21), two washers (22), and bracket (23) from backrest (19). Discard self-locking nut.
5. Remove eight screws (20) and backrest cushion (18) from backrest (19).
6. Remove self-locking nut (31), screw (33), and backrest support (30) from seat back bracket (32). Discard self-locking nut.
7. Remove adjusting screw (28) and nut (29) from backrest support (30).
8. Remove four screws (40) and washers (41), two shafts (45), and lower support bracket (51) from seat support (11).
9. Remove cotter pin (50), headed pin (49), spring (46), and lift adjusting lever (12) from seat support (11). Discard cotter pin.
10. Remove plunger (47) and latch sleeve (48) from seat support (11).
11. Remove two self-locking nuts (39), washers (38), and self-locking nuts (37), seat back bracket (36), and rear bracket (42) from driver's seat (35). Discard self-locking nuts.
12. Remove self-locking nut (44) and washer (43) from driver's seat (35). Remove driver's seat (35) from lower support bracket (51). Discard self-locking nut.



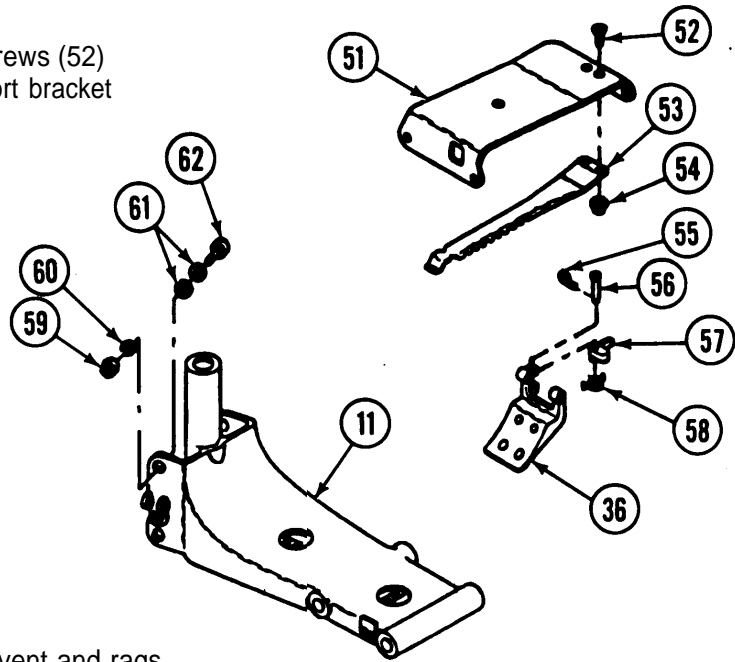
15-62. DRIVER'S SEAT REPAIR (continued).

13. Remove four self-locking nuts (59), washers (60), and cam followers (62) and shims (61) from seat support (11). Discard self-locking nuts and shims.
14. Remove cotter pin (55), straight headed pin (56), pawl (57), and spring (58) from seat back bracket (36). Discard cotter pin.
15. Remove two self-locking nuts (54) and screws (52) and adjusting lever (53) from lower support bracket (51). Discard self-locking nuts.

c. CLEANING AND INSPECTION

WARNING

Drycleaning 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



1. Clean all metal parts with drycleaning solvent and rags.
2. Inspect all metal parts for cracks, bends, or breaks. Replace any damaged parts.
3. Inspect driver's seat pad and backrest cushion for rips or tears. Replace if damaged.
4. Inspect safety belt for frayed or torn webbing or damaged clasp. Replace any damaged parts.

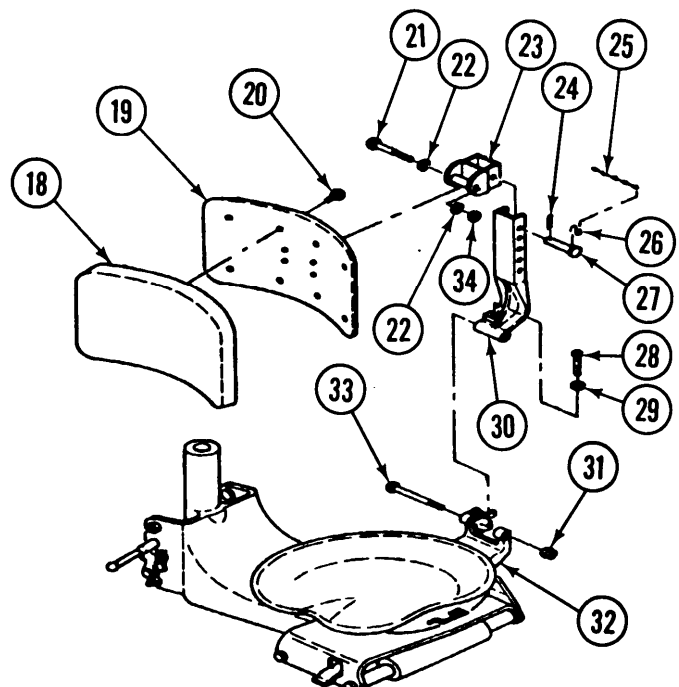
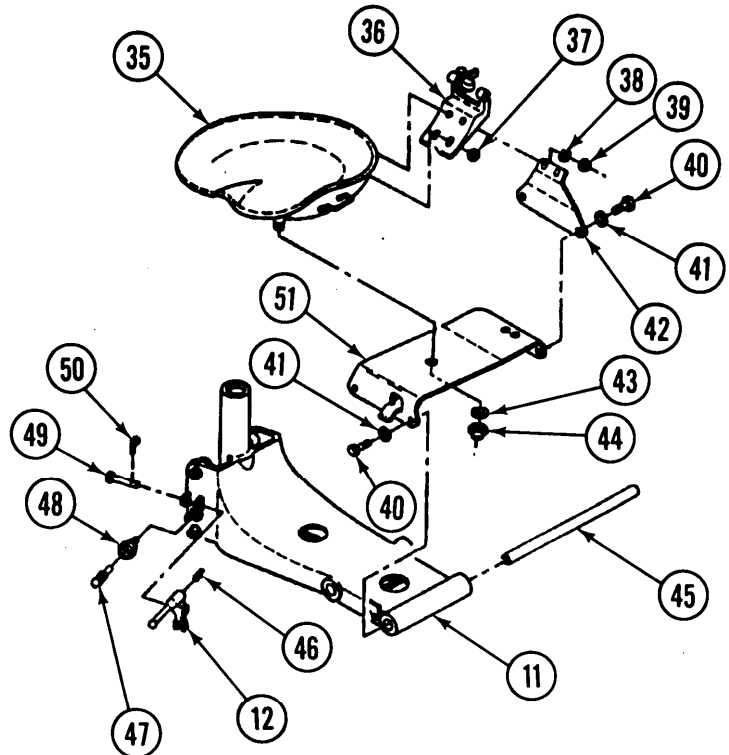
d. ASSEMBLY

1. Position adjusting lever (53) in place under lower support bracket (51) and secure with two screws (52) and new self-locking nuts (54).
2. Install pawl (57) and spring (58) on seat back bracket (36) with straight headed pin (56) and new cotter pin (55).
3. Install four cam followers (62), new shims (61), and four washers (60) and new self-locking nuts (59) in seat support (11).
4. Position driver's seat (35) in place on lower support bracket (51) and secure with washer (43) and new self-locking nut (44).
5. Position seat back bracket (36) and rear bracket (42) in place on driver's seat (35) and secure with two washers (36), new self-locking nuts (39), and new self-locking nuts (37).

15-62. DRIVER'S SEAT REPAIR (continued).**WARNING**

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

6. Lightly coat threads of latch sleeve (48) with sealing compound. Install latch sleeve (48) and plunger (47) in seat support (11).
7. Install lift adjusting lever (12) and spring (46) in seat support (11) and secure with headed pin (49) and new cotter pin (50).
8. Install two shafts (45) and lower support bracket (51) in place on seat support (11).
9. Install four screws (40) and washers (41) and two shafts (45) in seat support (11).
10. Install nut (29) and adjusting screw (28) in backrest support (30).
11. Install backrest support (30) on seat back bracket (32) with screw (33) and new self-locking nut (31).
12. Install backrest cushion (18) on backrest (19) with eight screws (20).
13. Install backrest (19) on bracket (23) with screw (21), two washers (22), and new self-locking nut (34).
14. Install S-hook (26) and chain (25) on headed pin (27). Install headed pin (27) in bracket (23) and backrest support (30) and secure with new lockpin (24).



15-62. DRIVER'S SEAT REPAIR (continued).

15. Lightly coat threads of two screws (16) with sealing compound. Position vertical guide (14) on driver's seat support base (15). Position driver's seat support base (15) on bottom of vertical support (5) and secure with two screws (16).

WARNING

Do not trim ends of safety belt. If safety belt has insufficient length when installed, belt could slip instead of holding. Failure to comply with this warning could cause injury to personnel.

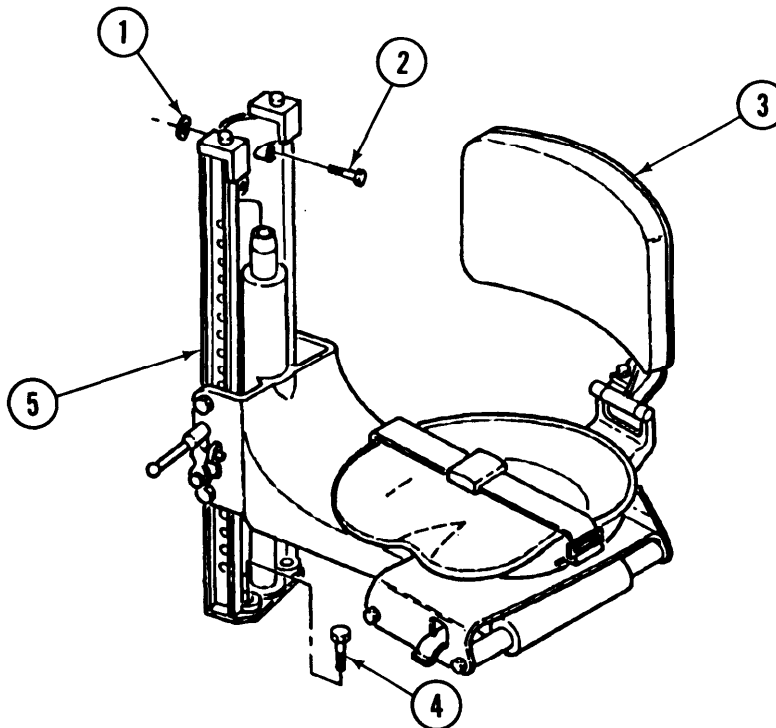
16. Thread ends of safety belt (8) through left and right belt slides (9) and seat handle (10), then secure in slides (9).

e. INSTALLATION

WARNING

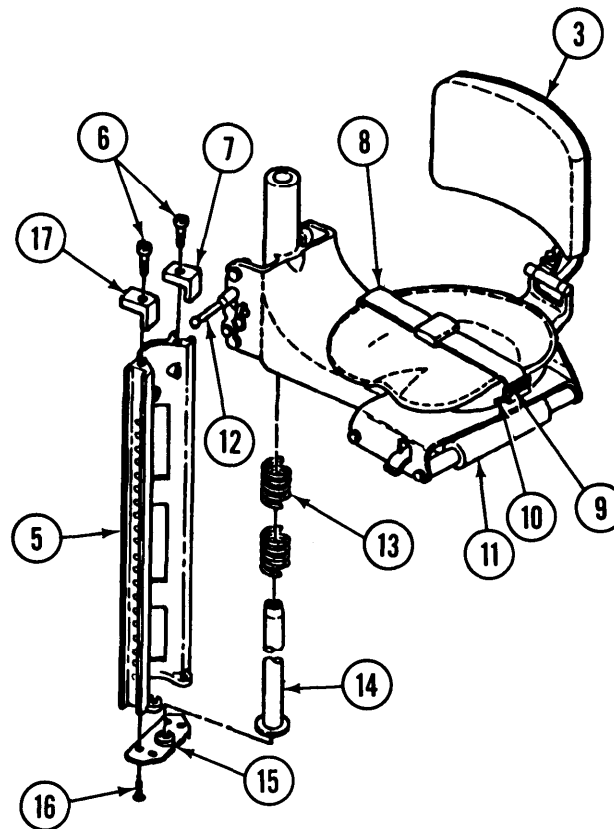
Sealing compound can burn easily, can give off harmful vapors, and is harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If sealing compound gets on skin or clothing, wash immediately with soap and water.

1. Lightly coat threads of two screws (2) and screws (4) with sealing compound.



2. With assistant, position vertical support (5) place in vehicle.
3. Secure vertical support (5) with two screws (2), washers (1), and screws (4).

15-62. DRIVER'S SEAT REPAIR (continued).



4. Install spring (13) on driver's seat vertical guide (14).
5. With assistant, install driver's seat assembly (3) and seat support (11) on vertical support (5).

WARNING

Driver's seat assembly is spring loaded. Remain in driver's seat whenever a change in position is required. Failure to do so may result in injury to personnel.

6. Install two driver's seat stops (7 and 17) on vertical support (5) with two screws (6).
7. Check for travel and firm locking with adjusting lever in various positions (12). Correct travel binding or looseness by removing or installing shims (subpara b, step 13).

FOLLOW-ON MAINTENANCE:

- close driver's hatch (refer to TM 9-2350-287-10).

15-63. COMMANDER'S SEAT REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Self-locking nut (Item 323, Appendix H)
- Washer (2) (Item 379, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Grease (Item 32, Appendix D)
- Lockwasher (8) (Item 162, Appendix H)
- Lockwasher (6) (Item 166, Appendix H)
- Self-locking bolt (2) (Item 302, Appendix H)
- Self-locking nut (2) (Item 314, Appendix H)

Personnel Required: Three

Equipment Conditions:

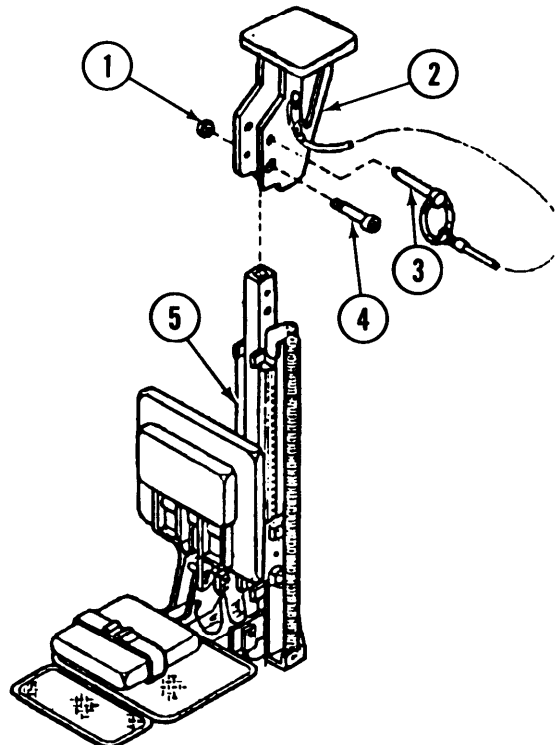
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Commanders seat deployed (refer to TM 9-2350-287-10).

a. REMOVAL

WARNING

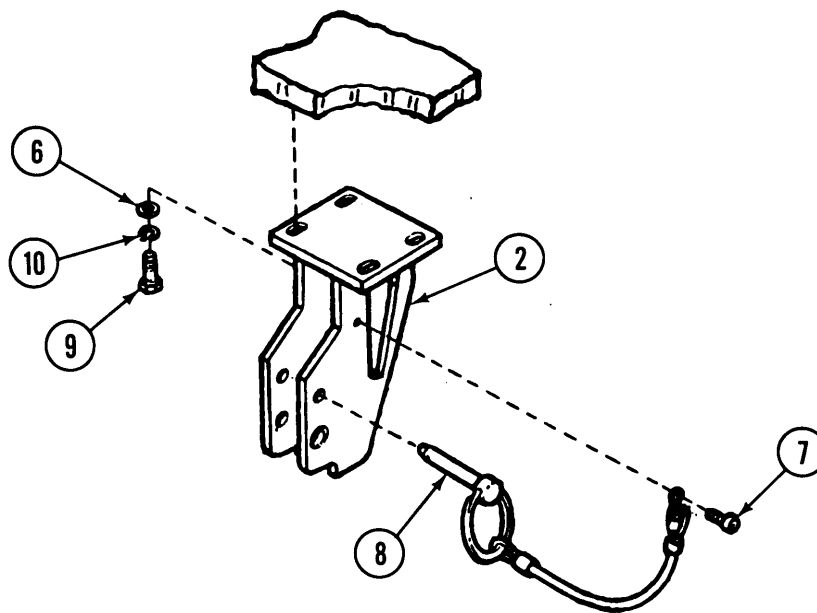
The commander's seat is heavy. To prevent injury, three persons are required to remove seat assembly from vehicle ceiling.

1. Remove quick-release pin (3) from rear support bracket (2).
2. Support seat assembly (5) and remove capscrew (4) and self-locking nut (1) from rear support bracket (2). Discard self-locking nut.
3. With the aid of an assistant, remove seat assembly (5) from rear support bracket (2) and remove from vehicle.

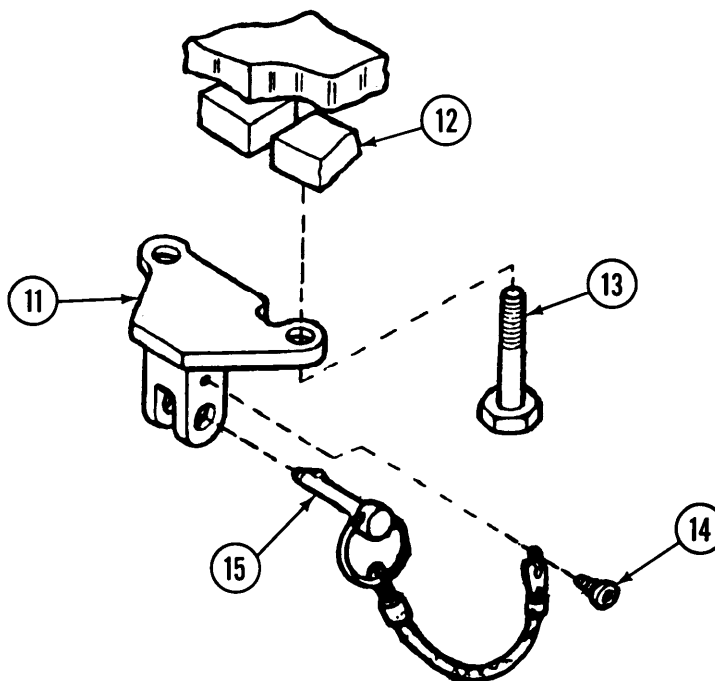


15-63. COMMANDER'S SEAT REPAIR (continued).

4. Remove screw (7) and quick-release pin (8) from rear support bracket (2).
5. Remove four screws (9) with four lockwashers (10) and washers (6) and rear support bracket (2) from vehicle ceiling.



6. Remove screw (14) and quick-release pin (15) from forward support bracket (11).
7. Remove two self-locking bolts (13) and forward support bracket (11) from commander's cupola ring (12). Discard self-locking bolts.



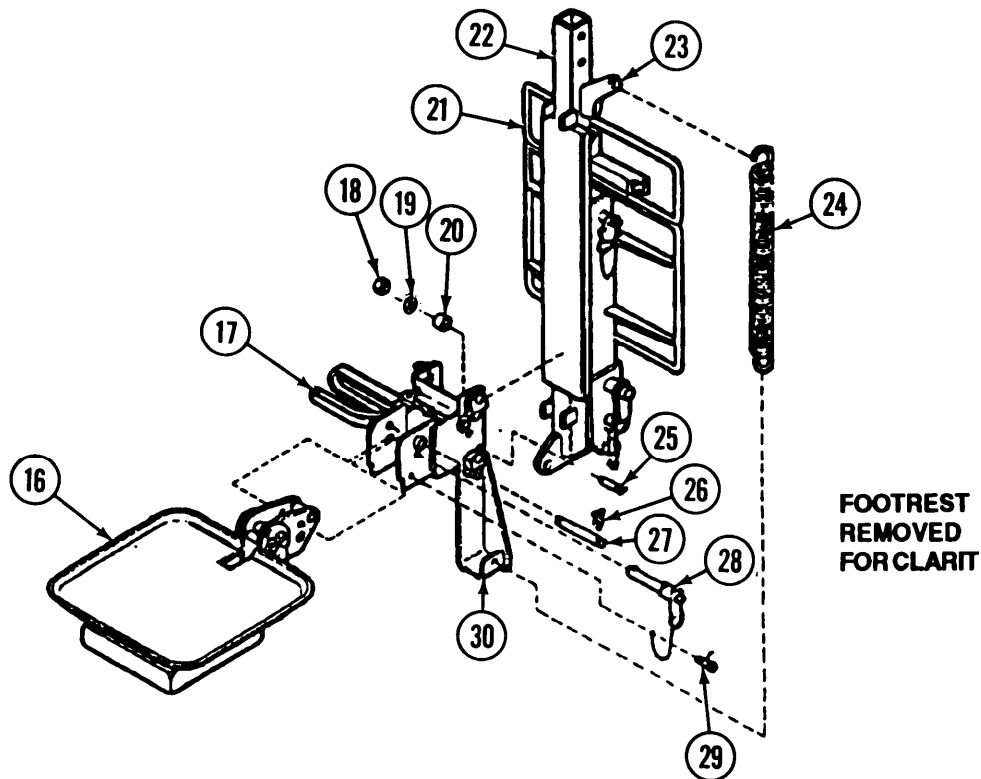
15-63. COMMANDER'S SEAT REPAIR (continued).

b. DISASSEMBLY

WARNING

Spring is under tension. To prevent injury to personnel, use care during removal.

1. Place seat assembly (21) on suitable work surface with spring (24) parallel to surface. Press locking handle (17) and release spring tendon.
2. Remove spring (24) from post bracket (23) and manual control lever (30).
3. Remove four shoulder screws (25), washers (19), nuts (18), and bearings (20) from manual control lever (30).



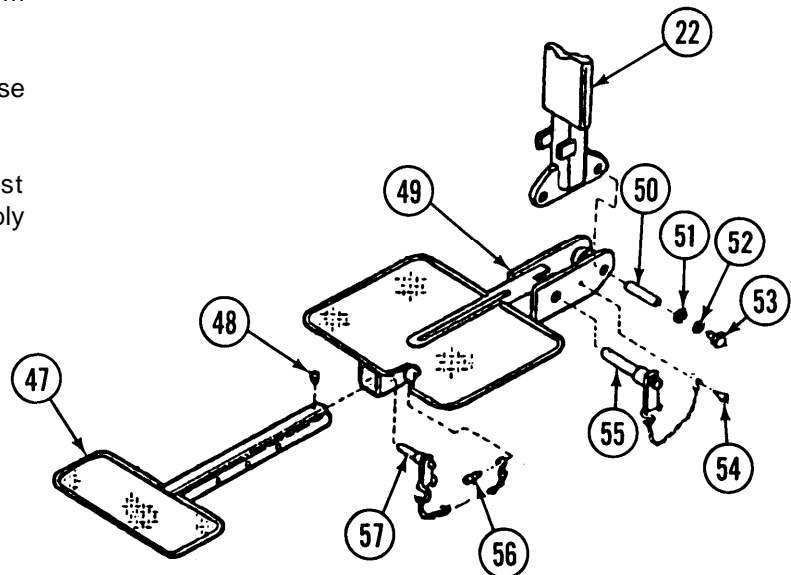
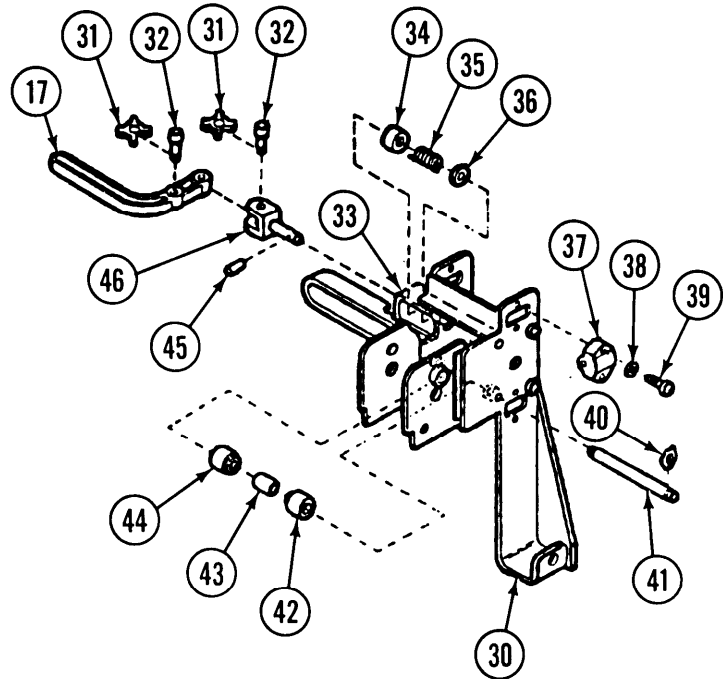
WARNING

Seat and manual control lever weigh 70 pounds. To prevent injury, have assistant support seat and manual control lever.

4. Press locking handle (17) and remove manual control lever (30) and seat (16) from post (22).
5. Remove screw (29) and quick-release pin (28) from manual control lever (30).
6. Remove two washers (26) and shaft (27) from manual control lever (30). Separate manual control lever (30) and seat (16). Discard washers.

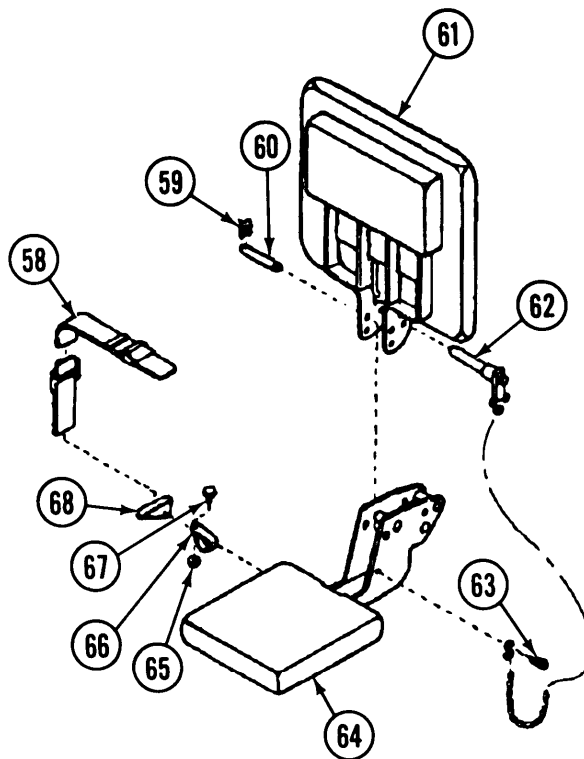
15-63. COMMANDER'S SEAT REPAIR (continued).

7. Remove four washers (40) from two shafts (41) on front of manual control lever (30). Slide both shafts (41) out of manual control lever (30). Remove four bearings (42 and 44) and two spacers (43) from manual control lever (30).
8. Remove eight screws (39) and lockwashers (38) and four roller assemblies (37) from manual control lever (30). Discard lockwashers.
9. Remove two washers (31) and headed pins (32) and locking handle (17) from pin assembly (46).
10. Drive out grooved pin (45) and remove pin assembly (46), washer (36), spring (35), and sleeve (34) from pin housing (33).
11. Remove screw (54) and quick-release pin (55) from footrest assembly (49).
12. Remove two screws (53), lockwashers (52), and washers (51) and pin (50) from footrest assembly (49). Discard lockwashers.
13. Remove footrest assembly (49) from post (22).
14. Remove screw (56) and quick-release pin (57) from footrest assembly (49).
15. Remove screw (48) and footrest extension (47) from footrest assembly (49).



15-63. COMMANDER'S SEAT REPAIR (continued).

16. Remove screw (63) and quick-release pin (62) from backrest (61) and seat (64).
17. Remove two washers (59) and shaft (60), and separate backrest (61) from seat (64).
18. Remove two self-locking nuts (65), screws (67), and clamps (66) from seat (64). Discard self-locking nuts.
19. Remove belt (58) and two attachment plates (68) from seat (64).



c. CLEANING AND INSPECTION

WARNING

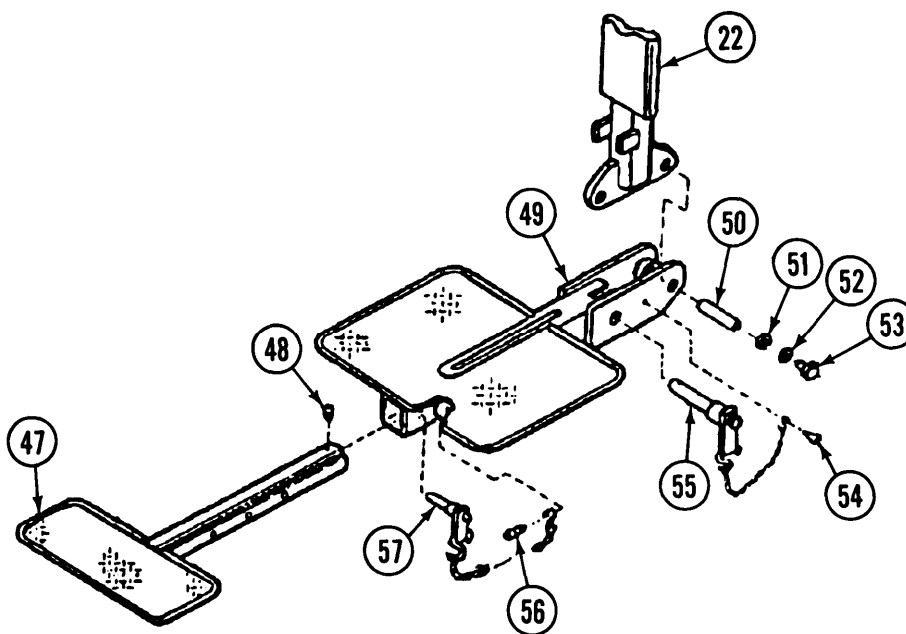
Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat.

1. Clean all parts with drycleaning solvent.
2. Inspect all parts for cracks, bends, breaks, or tears. Replace any damaged parts.

15-63. COMMANDER'S SEAT REPAIR (continued).

d. ASSEMBLY

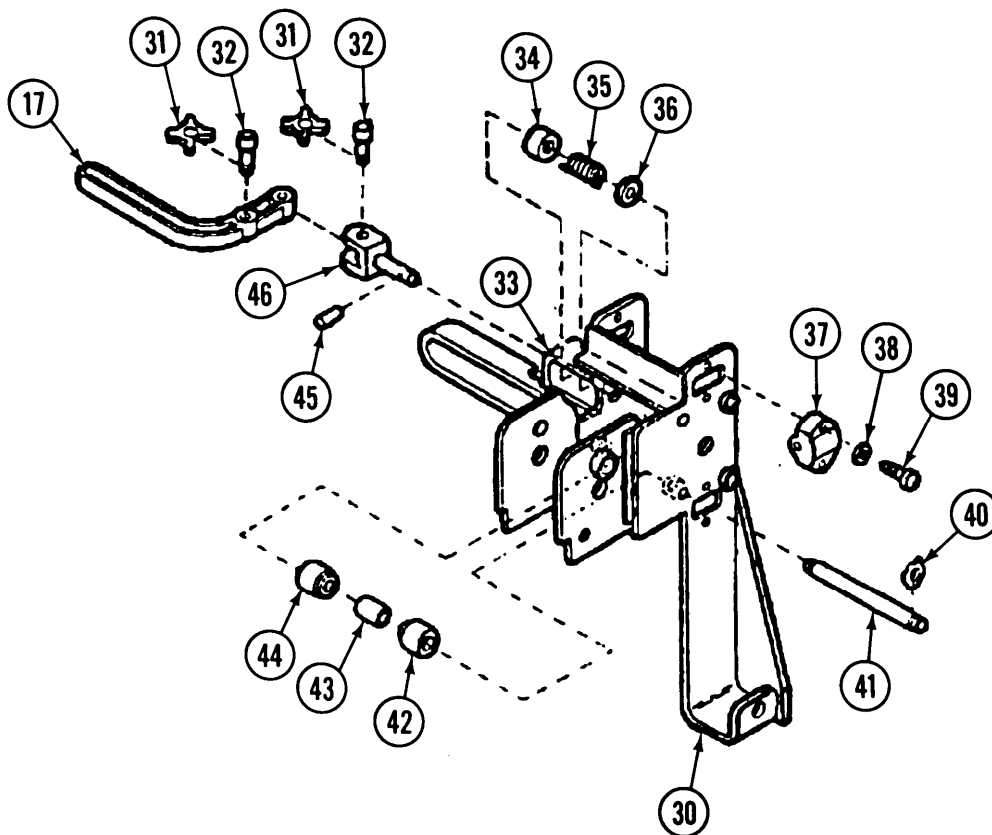
1. Install two clamps (66), attachment plates (68), screws (67), and new self-locking nuts (65) on seat (64).
2. Install belt (58) on two attachment plates (68).
3. Lightly coat pivot point of backrest (61) and seat (64) with grease.
4. Secure backrest (61) to seat (64) with shaft (60) and two washers (59).
5. Install screw (63) and quick-release pin (62) in seat (64) and backrest (61).
6. Lightly coat footrest extension (47) with grease.
7. Insert footrest extension (47) in footrest assembly (49) and install screw (48).
8. Insert quick-release pin (55) and install screw (54) on footrest assembly (49).



9. Lightly coat pivot points of footrest assembly (49) with grease.
10. Install footrest assembly (49) on post (22) with pin (50) and two screws (53), new lockwashers (52), and washers (51).
11. Insert quick-release pin (57) and screw (56) on footrest assembly (49).

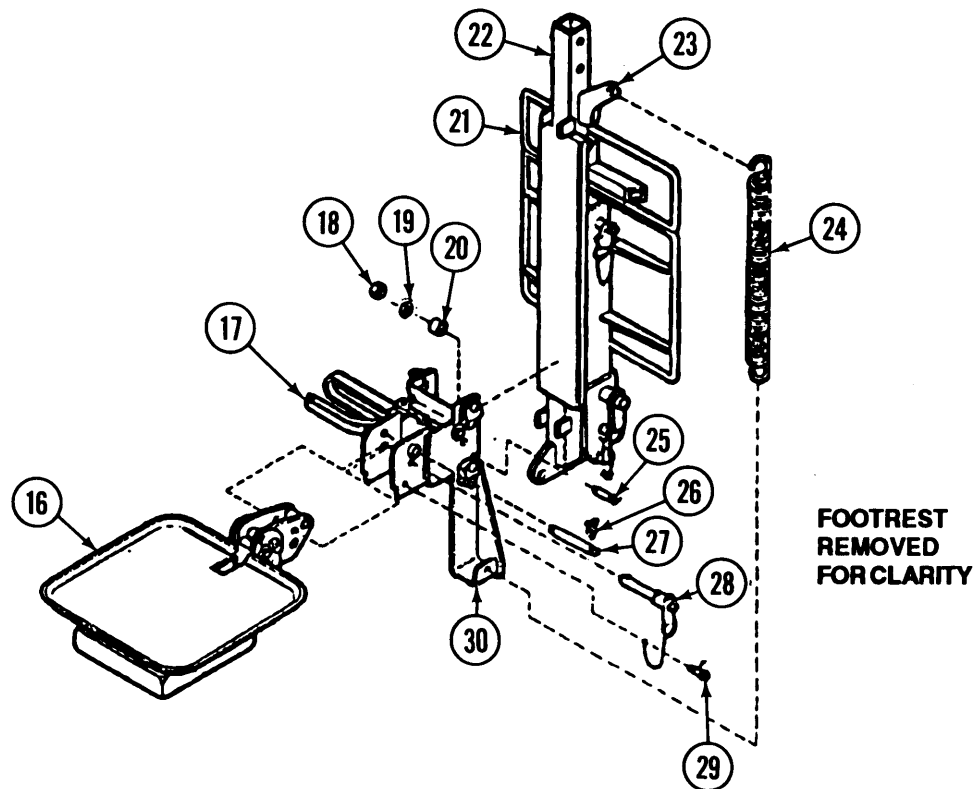
15-63. COMMANDER'S SEAT REPAIR (continued).

12. Insert pin assembly (46) in hole in pin housing (33).
13. Place sleeve (34), spring (35), and washer (36) in pin housing (33). Install pin assembly (46) and secure with grooved pin (45).
14. Lightly coat locking handle (17) with grease.
15. Install locking handle (17) on pin assembly (46) with two headed pins (32) and new washers (31).
16. Lightly coat four roller assemblies (37) with grease.
17. Install four roller assemblies (37) on manual control lever (30) with two screws (39) and new lockwashers (38) each.
18. Install four bearings (42 and 44) on manual control lever (30), separated by two spacers (43), on two shafts (41).
19. Secure two shafts (41) in manual control lever (30) with four washers (40).



15-63. COMMANDER'S SEAT REPAIR (continued).

20. Lightly coat pivot points of seat (16) with grease.
21. Install seat (16) on manual control lever (30) with shaft (27) and two new washers (26).
22. Install quick-release pin (28) and chain on manual control lever (30) with screw (29). Insert quick-release pin (28) on manual control lever (30).

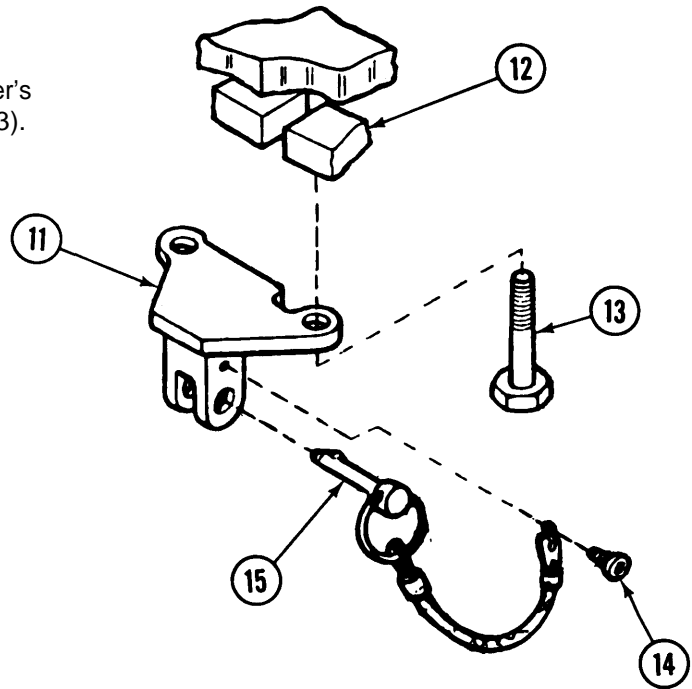


23. Lightly coat post (22) with grease.
24. Press locking handle (17). Install manual control lever (30) and seat (16) on post (22). Release locking handle (17).
25. Install four shoulder screws (25), washers (19), bearings (20), and nuts (18) on manual control lever (30).
26. Move seat (16) and manual control lever (30) to highest position on post (22). Install spring (24) on manual control lever (30) and post bracket (23).

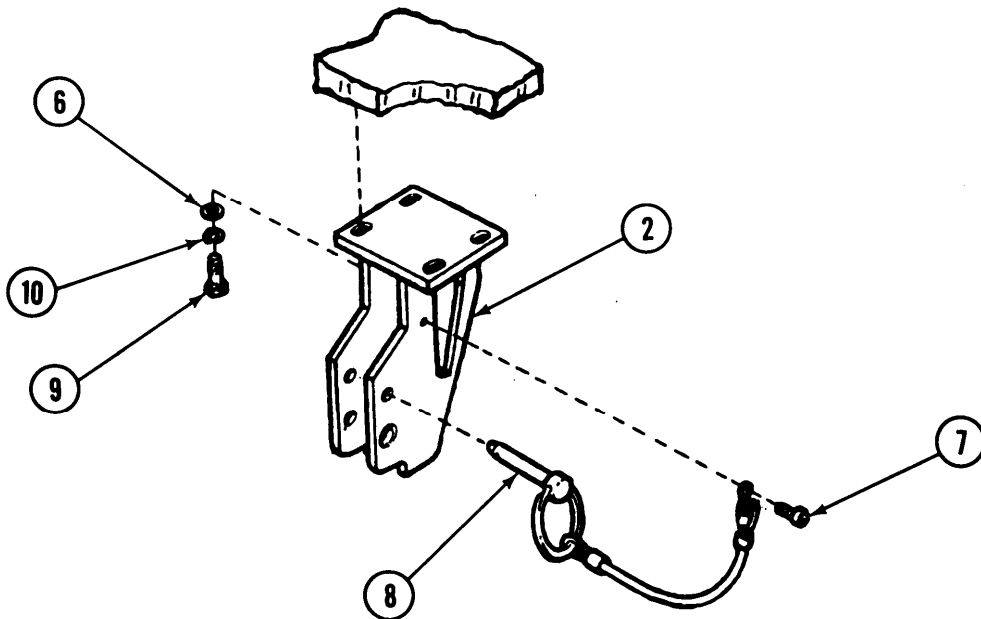
15-63. COMMANDER'S SEAT REPAIR (continued).

e. INSTALLATION

1. Install forward support bracket (11) on commander's cupola ring (12) with two new self-locking bolts (13).
2. Install quick-release pin (15) and screw (14).



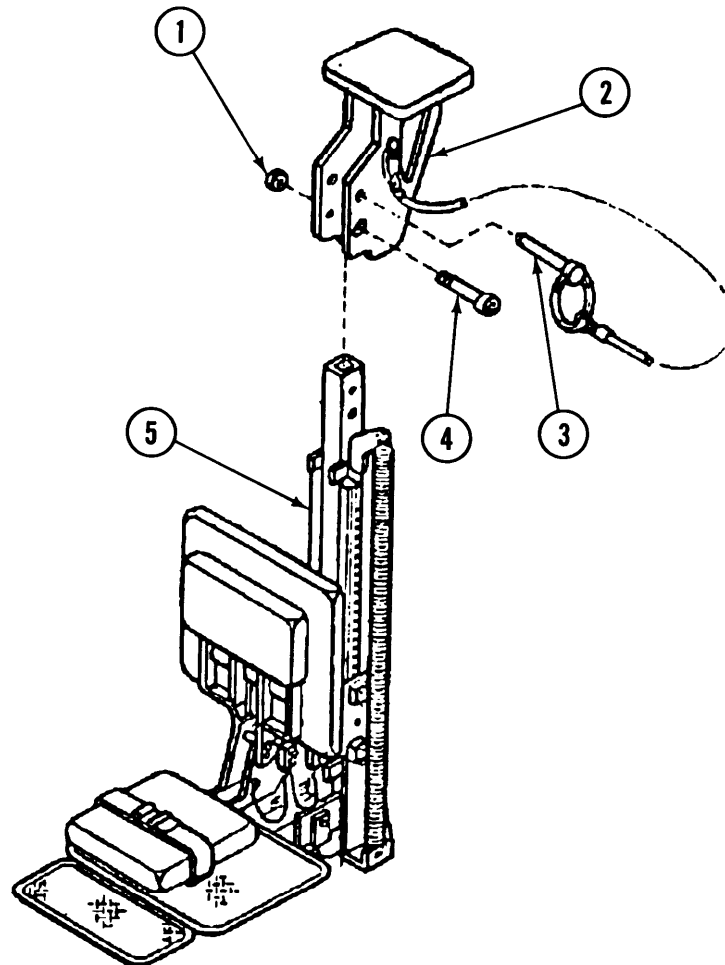
3. Install rear support bracket (2) on vehicle ceiling with four screws (9), new lockwashers (10), and washers (6).
4. Install quick-release pin (8) and screw (7).



15-63. COMMANDER'S SEAT REPAIR (continued).

WARNING

The commander's seat is heavy. Three persons are required to install seat assembly on vehicle ceiling. Failure to follow this warning may result in injury to personnel.



5. With the aid of an assistant, support seat assembly (5) and insert in rear support bracket (2). Secure seat assembly (5) with capscrew (4) and new self-locking nut (1).
6. Install quick-release pin (3) in rear support bracket (2).

FOLLOW-ON MAINTENANCE:

- None

15-64. RIGHT-SIDE CREW SEAT REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

- Lockwasher (16) (Item 136, Appendix H)
- Self-locking nut (2) (Item 307, Appendix H)

Materials/Parts:

- Drycleaning solvent (item 28, Appendix D)
- Grease (Item 32, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (8) (Item 18, Appendix H)

Personnel Required: Two

Equipment Conditions:

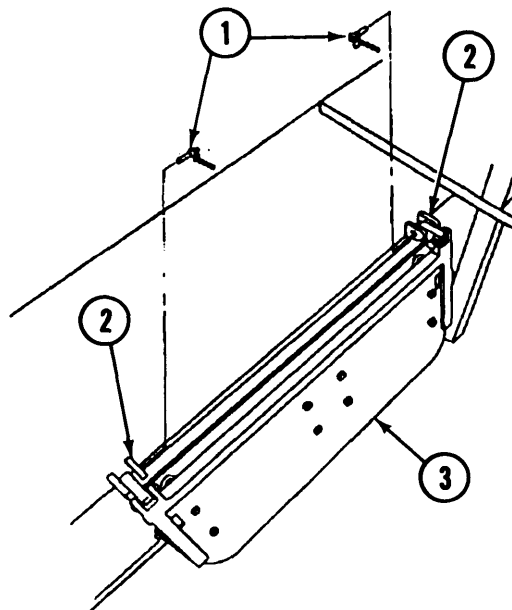
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. **REMOVAL**

WARNING

Seats are heavy. Support seat before removing quick-release pins. Hinged seats, backrests, and support brackets may swing down, causing injury to personnel.

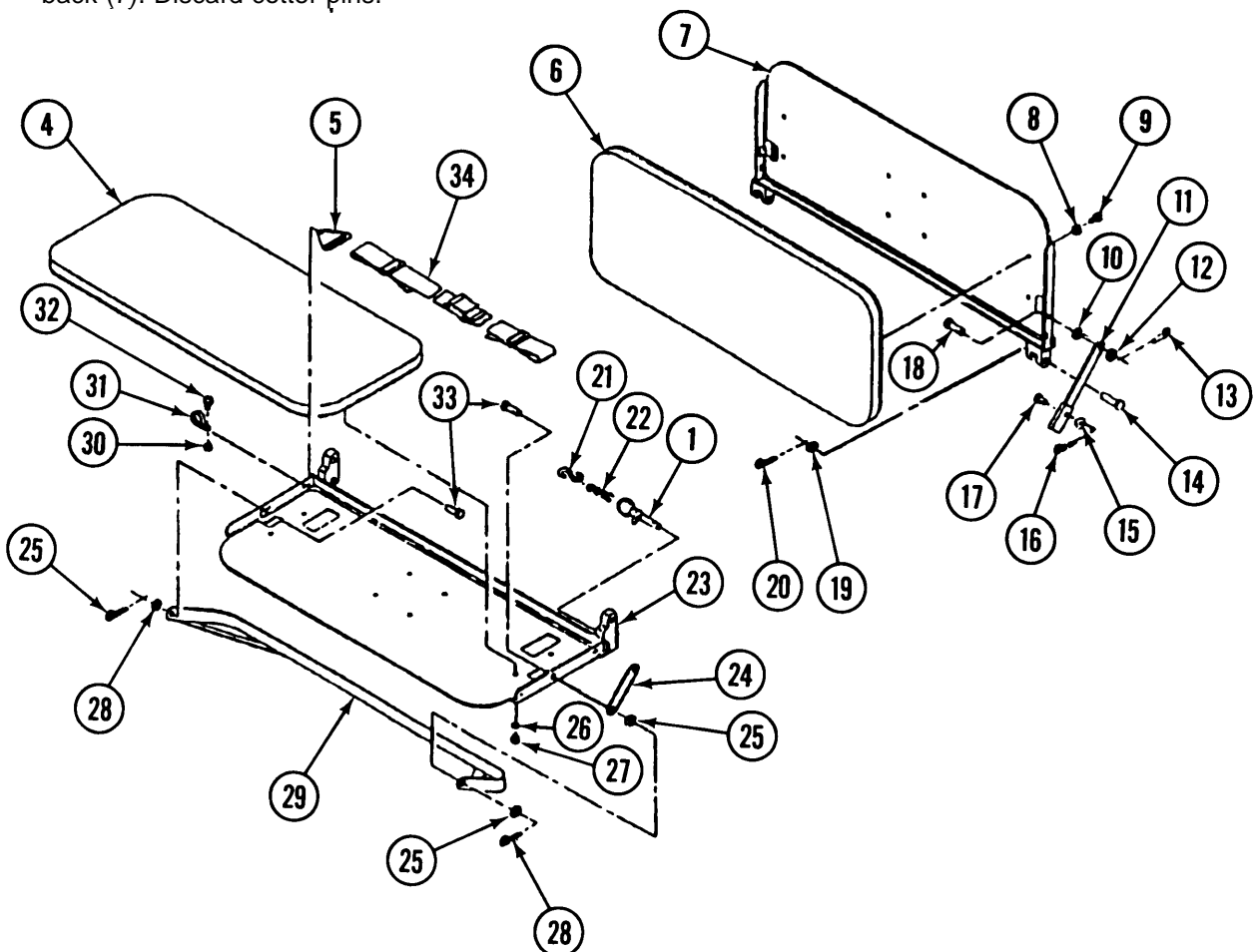
1. With the aid of an assistant, remove two quick-release pins (1) securing right-side crew seat (3) to two vehicle brackets (2).
2. Remove crew seat (3) from two vehicle brackets (2) and place on clean, flat surface.



15-64. RIGHT-SIDE CREW SEAT REPAIR (continued).

b. DISASSEMBLY

1. Detach ends of safety belt (34) from slotted end of each of two seatbelt plates (5).
2. Remove two capscrews (32), self-locking nuts (30), clamps (31) and seatbelt plates (5) from right-side seat (23). Discard self-locking nuts.
3. Remove eight capscrews (9) and lockwashers (8) and seat back cushion (6) from seat back (7). Discard lockwashers.
4. Remove eight capscrews (27) and lockwashers (26) and seat cushion (4) from seat (23). Discard lockwashers.
5. Remove two cotter pins (16), headed pins (17), and washers (15) from each of two levers (1 1), and separate two links (24) from two levers (11). Discard cotter pins.
6. Remove two cotter pins (20), headed pins (14), and washers (19) from seat back (7), and separate seat back (7) from seat (23). Discard cotter pins.
7. Remove two cotter pins (28) and headed pins (33), three washers (25), double-angle bracket (29), and two links (24) from seat (23). Discard cotter pins.
8. Remove two cotter pins (13) and headed pins (18), four washers (10 and 12), and two levers (11) from seat back (7). Discard cotter pins.



15-64. RIGHT-SIDE CREW SEAT REPAIR (continued).

9. Remove two S-hooks (21), chains (22), and quick-release pins (1) from backside of seat back (7).
10. Remove two chains (22) and S-hooks (21) from two quick-release pins (1).

c. CLEANING AND INSPECTION

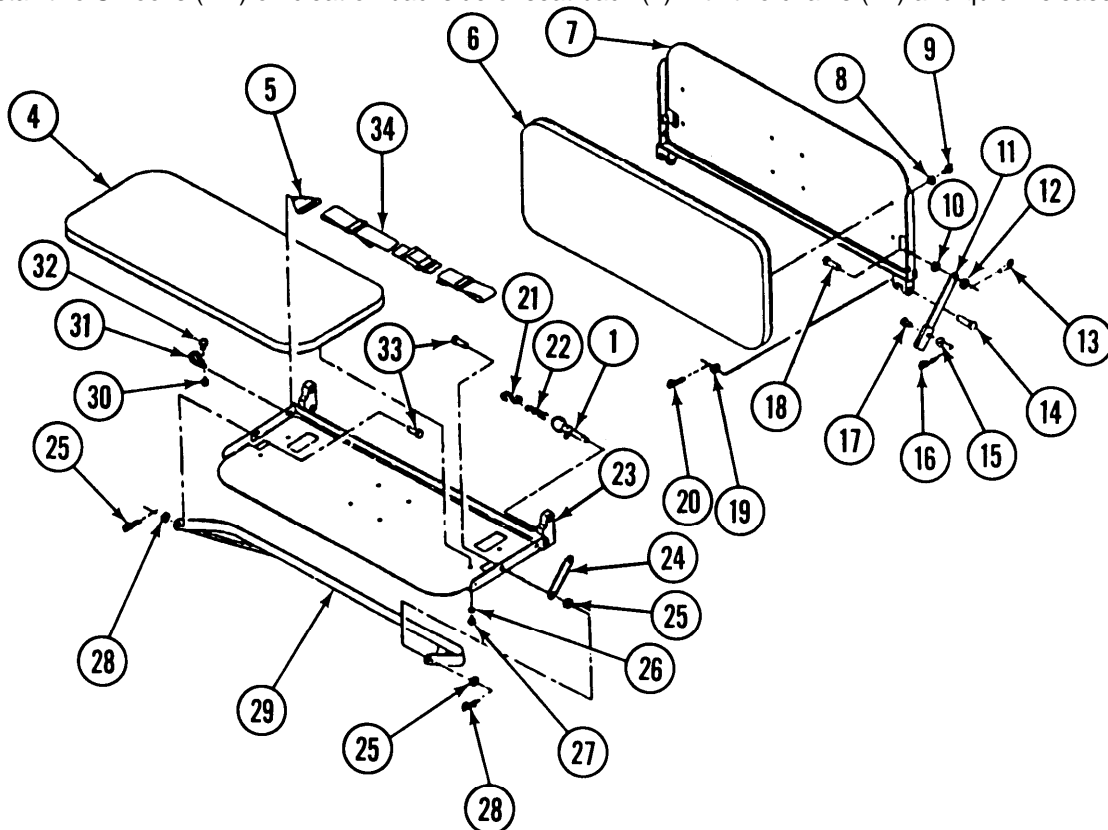
WARNING

Drycleaning solvent P-D480 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

1. Clean all metal parts with drycleaning solvent and rags.
2. Inspect all metal parts for cracks, bends, breaks, and corrosion. Replace any damaged parts.
3. Inspect seat back cushion and seat cushion for tears and punctures. Replace if damaged.
4. Inspect safety belt for frayed or tom webbing or damaged clasp. Replace if damaged.

d. ASSEMBLY

1. Install two chains (22) and S-hooks (21) on two quick-release pins (1).
2. Install two S-hooks (21) on cleat on backside of seat back (7) with two chains (22) and quick-release pins (1).



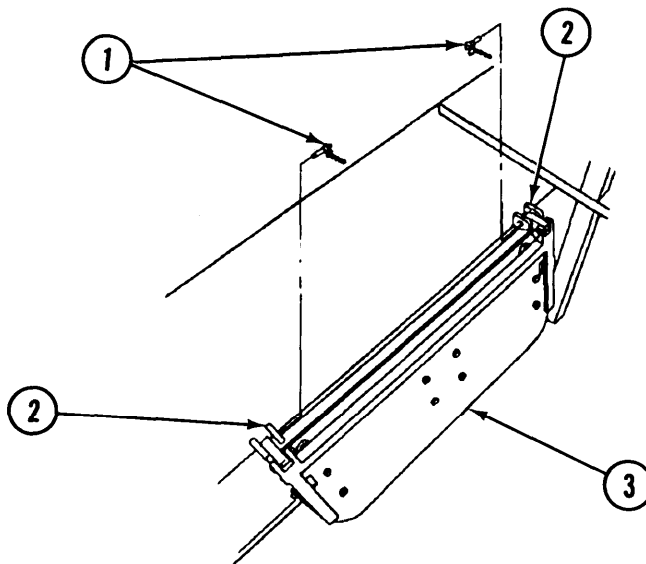
15-64. RIGHT-SIDE CREW SEAT REPAIR (continued).

3. Lightly coat two levers (11) with grease. Install two levers (11) on seat back (7) with two headed pins (1 8), four washers (10 and 12), and two new cotter pins (1 3).
4. Lightly coat two links (24) with grease. Install double angle bracket (29) and two links (24) on seat (23) with two headed pins (33), three washers (25), and two new cotter pins (28).
5. Lightly coat pivot points of seat back (7) and seat (23) with grease. Install seat back (7) on seat (23) with two headed pins (14), washers (19), and new cotter pins (20).
6. Install two links (24) on two levers (11) with two headed pins (1 7), washers (1 5), and new cotter pins (1 6).
7. Install seat cushion (4) on seat (23) with eight new lockwashers (26) and eight capscrews (27).
8. Install seat back cushion (6) on seat back (7) with eight new lockwashers (8) and eight capscrews (9).
9. String ends of safety belt (34) through slotted ends of two seatbelt plates (5) and secure.
10. Secure two seatbelt plates (5) to seat (23) with two clamps (31), capscrews (32), and self-locking nuts (30).

e. INSTALLATION**WARNING**

Seats are heavy; support seat before installing quick-release pins. Hinged seats, backrests, and support brackets may swing down, causing injury to personnel.

1. With the aid of an assistant, install crew seat (3) on two vehicle brackets (2).
2. Position crew seat (3) on two vehicle brackets (2) and secure with two quick-release pins (1).

**FOLLOW - ON MAINTENANCE:**

- None

15-65. LEFT-SIDE CREW SEAT REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

- Cotter pin (8) (Item 18, Appendix H)
- Lockwasher (8) (Item 136, Appendix H)
- Retaining ring (2) (Item 248, Appendix H)
- Self-locking nut (2) (Item 307, Appendix H)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Grease (Item 32, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

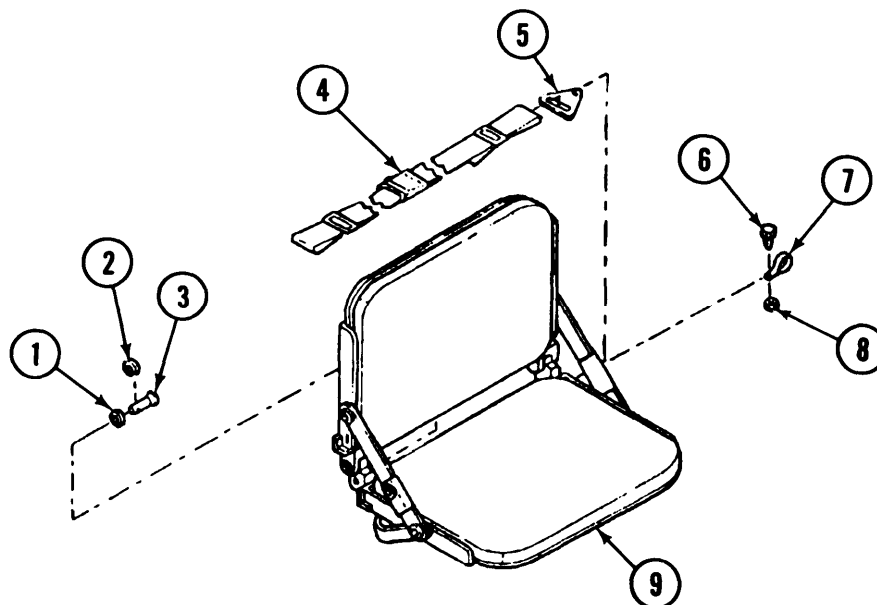
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove two retaining rings (2), grooved pins (3), and washers (1) from left-side crew seat (9). Discard retaining rings.
2. Remove crew seat (9) from vehicle.

b. DISASSEMBLY

1. Unbuckle ends of safety belt (4) from slotted ends of two safety belt plates (5). Remove safety belt (4).
2. Remove two capscrews (6), self-locking nuts (8), and clamps (7) from two safety belt plates (5) and crew seat (9). Remove two safety belt plates (5) and discard self-locking nuts.

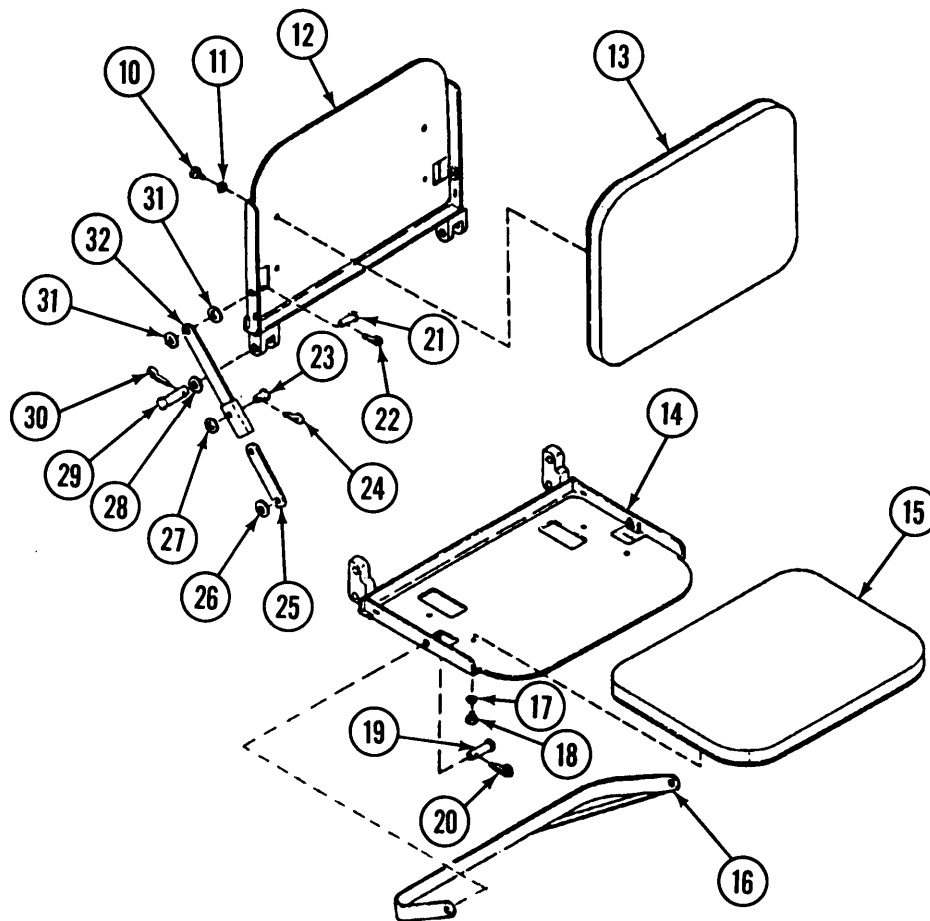


15-65. LEFT-SIDE CREW SEAT REPAIR (continued).

3. Remove four capscrews (18) and lockwashers (17) and seat cushion (15) from seat (14). Discard lockwashers.
4. Remove four capscrews (10) and lockwashers (11) and seat back cushion (13) from seat back (12). Discard lockwashers.
5. Remove two cotter pins (24), washers (27), and straight pins (23) from two levers (32) and links (25). Discard cotter pins.
6. Remove two cotter pins (30), washers (28), and straight pins (29) and seat back (12) from seat (14). Discard cotter pins.

NOTE

Tag left and right levers to ensure proper assembly.



7. Remove two cotter pins (22), four washers (31), and two straight pins (21) and levers (32) from seat back (12). Discard cotter pins.
8. Remove two cotter pins (20), washers (26), straight pins (19), and links (25) and double angle bracket (16) from seat (14). Discard cotter pins.

15-65. LEFT-SIDE CREW SEAT REPAIR (continued).

c. CLEANING AND INSPECTION

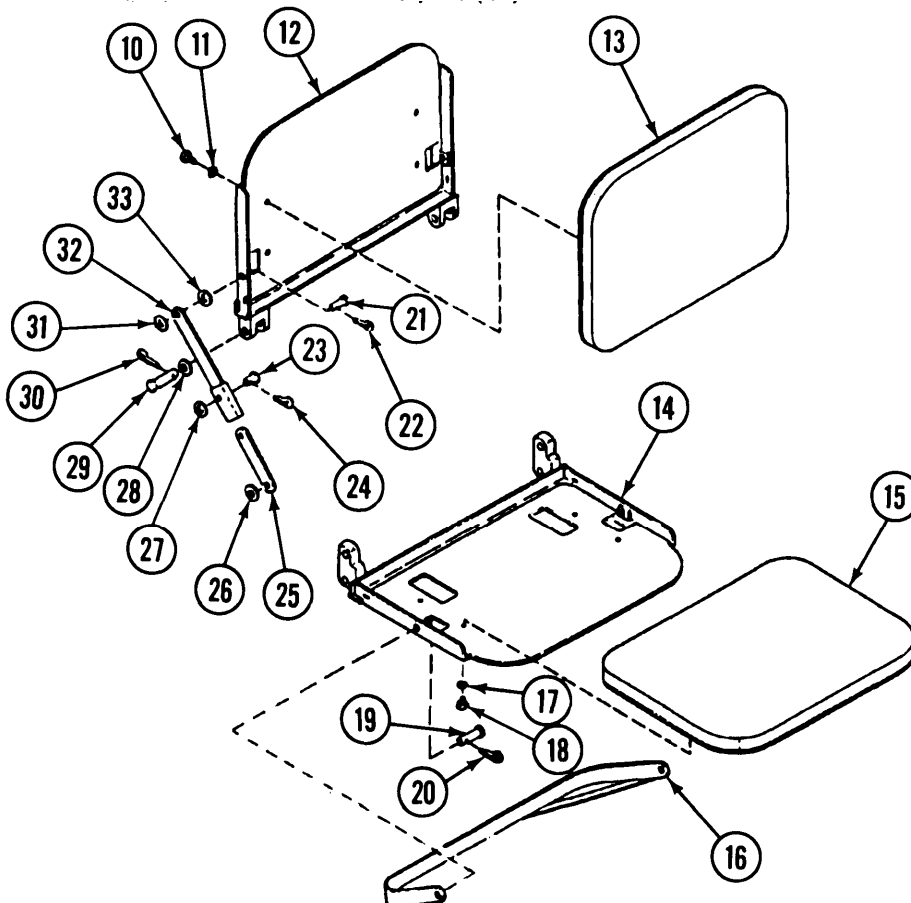
WARNING

Drycleaning solvent P-D480 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

1. Clean all metal parts with drycleaning solvent and rags.
2. Inspect all metal parts for cracks, bends, breaks, and corrosion. Replace any damaged parts.
3. Inspect backrest cushion and seat cushion for tears and punctures. Replace if damaged.
4. Inspect safety belt for frayed or torn webbing or damaged clasp. Replace if damaged.

d. ASSEMBLY

1. Lightly coat two links (25) with grease. Install double angle bracket (16) and two links (25) on seat (14) with two straight pins (19), washers (26), and new cotter pins (20).
2. Lightly coat two levers (32) with grease. Install two levers (32) on seat back (12) with two straight pins (21) four washers (31), and two new cotter pins (22).

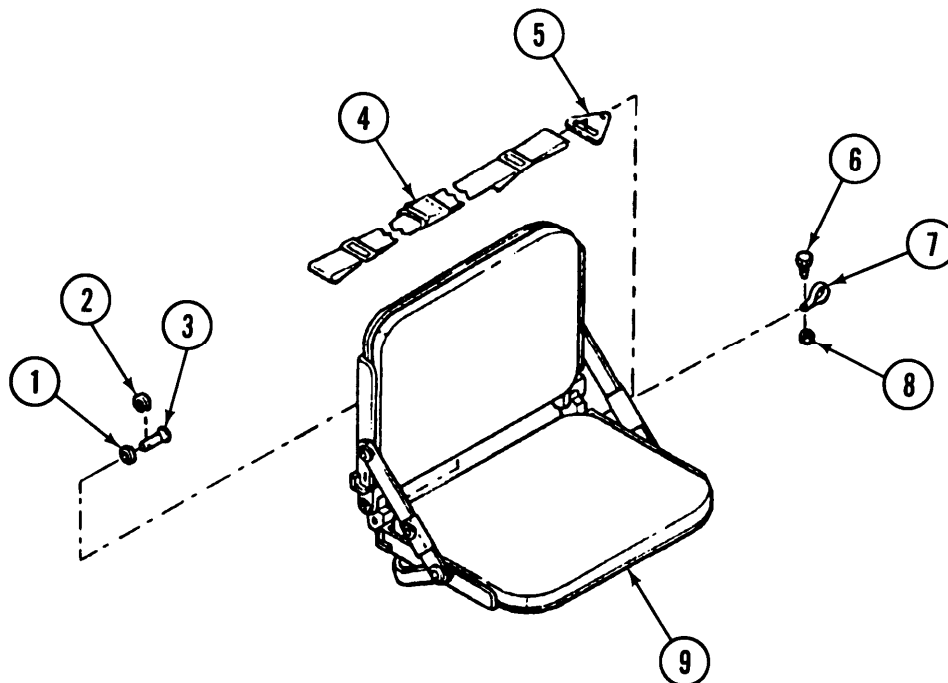


15-65. LEFT-SIDE CREW SEAT REPAIR (continued)

3. Position seat back (12) on seat (14) and secure with two straight pins (29), washers (28), and new cotter pins (30).
4. Install two levers (32) on two links (25) with two straight pins (23), washers (27), and new cotter pins (24).
5. Position seat cushion (15) on seat (14) and secure with four capscrews (18) and new lockwashers (17).
6. Position seat back cushion (13) on seat back (12) and secure with four capscrews (10) and new lockwashers (11).
7. Install two safety belt plates (5) on crew seat (9) with two clamps (7), capscrews (6), and new self-locking nuts (8).
8. Thread ends of safety belt (4) through slotted ends of two safety belt plates (5) and secure.

e. INSTALLATION

1. Position crew seat (9) into mounting brackets in vehicle with two grooved pins (3).
2. Install two washers (1) and new retaining rings (2) on two grooved pins (3).



FOLLOW-ON MAINTENANCE:

- None

15-66. STOWAGE BASKET REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Lockwasher (16) (Item 196, Appendix H)

Personnel Required: Two

Equipment Conditions:

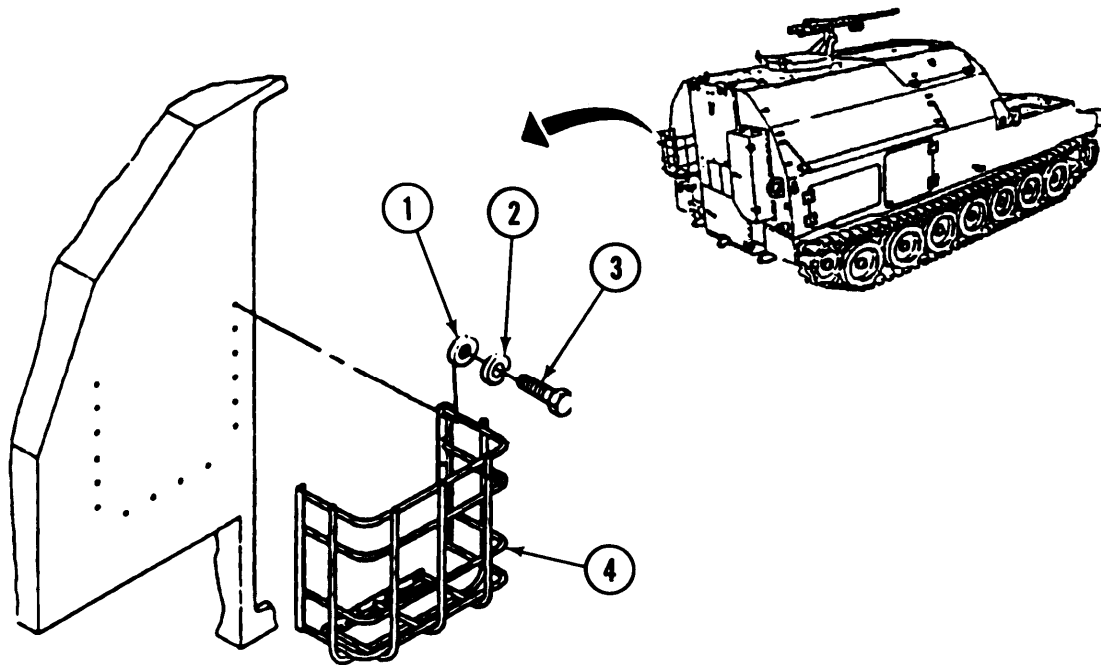
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

With the aid of an assistant, remove 16 screws (3), washers (1), lockwashers (2), and stowage basket (4) from rear of vehicle. Discard lockwashers.

b. INSTALLATION

With the aid of an assistant, install stowage basket (4) on rear of vehicle with 16 screws (3), new lockwashers (2), and washers (1).



FOLLOW-ON MAINTENANCE:

- None

15-67. PIONEER KIT, TOWING CABLE STRAPS, WATER CAN STRAPS, AND TRACK CONNECTING FIXTURE STRAPS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup::

Tools/Test Equipment:

- General mechanic's tool kit (item 24, Appendix 1)

Material/Parts:

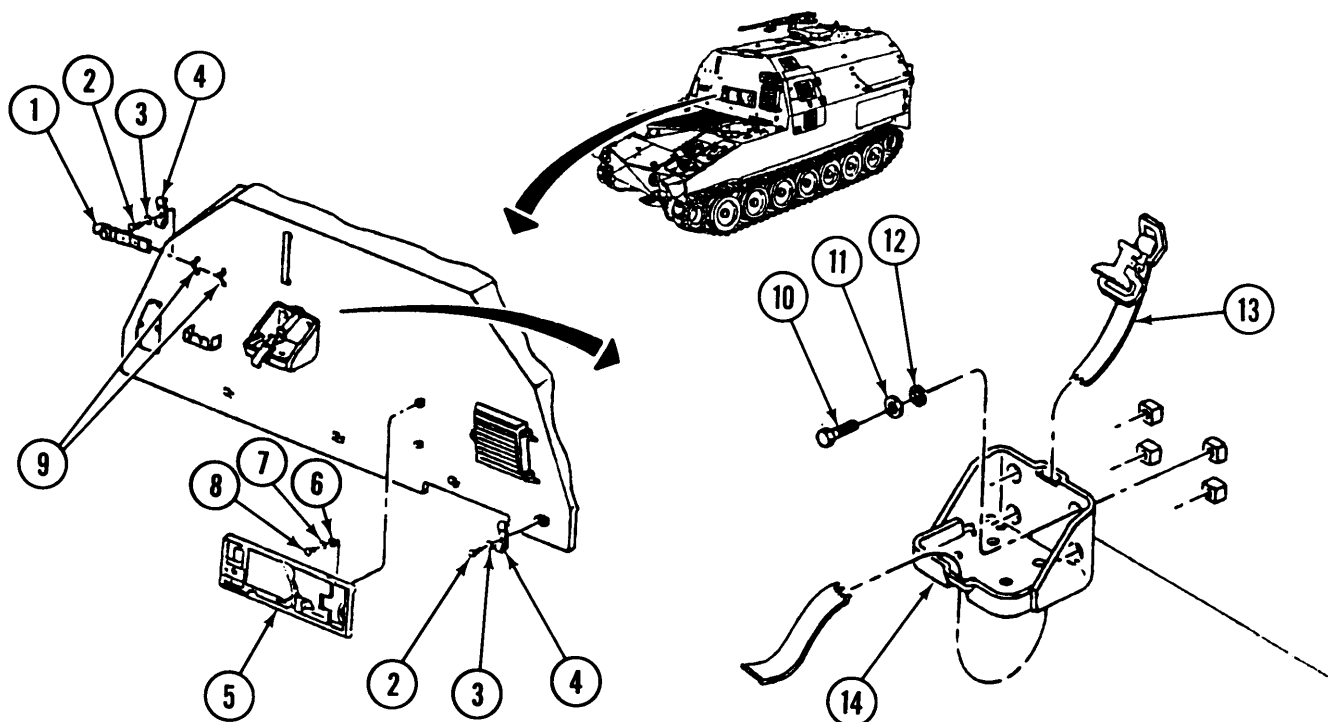
- Lockwasher (8) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Components removed from stowage locations (refer to TM 9-2350-287-10).

a. REMOVAL

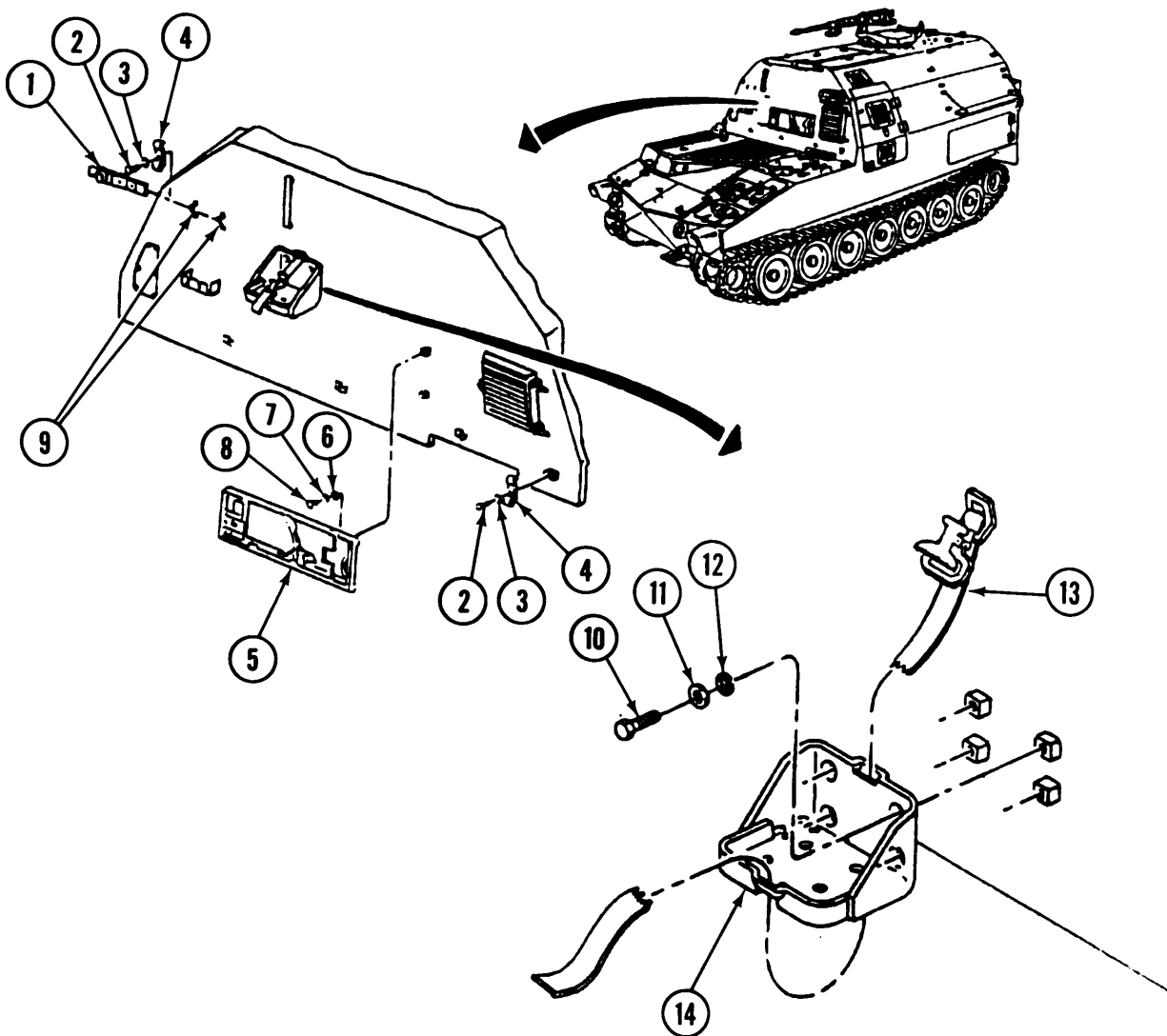
1. Remove four screws (8), lockwashers (7), and washers (6) and pioneer kit (5) from hull. Discard lockwashers.
2. Remove two screws (2), washers (3), and towing cable straps (4) from hull.
3. Grasp buckle ends of water can strap (13) and pull through bracket (14).
4. Remove four screws (10), lockwashers (11), and washers (12) and bracket (14) from hull. Discard lockwashers.
5. Grasp buckle end of track connecting figure strap (1) and pull through two vehicle-mounted fasteners (9).



15-67. PIONEER KIT, TOWING CABLE STRAPS, WATER CAN STRAPS, AND TRACK CONNECTING FIXTURE STRAPS REPLACEMENT (continued).

b. INSTALLATION

1. Install track connecting fixture strap (1) through two vehicle-mounted fasteners (9).
2. Mall bracket (14) on hull with four screws (10), new lockwashers(11), and washers (12).
3. Install water can strap (13) through bracket (14).
4. Install two towing cable straps (4) on hull with two screws (2) and washers (3).
5. Install pioneer kit (5) on hull with four screws (8), new lockwashers (7), and washers (6).



FOLLOW-ON MAINTENANCE:

- Stow components in stowage locations (refer to TM 9-235-287-10).

15-68. CROWBAR STOP, BARREL STRAPS, AND RACK HOIST STRAPS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

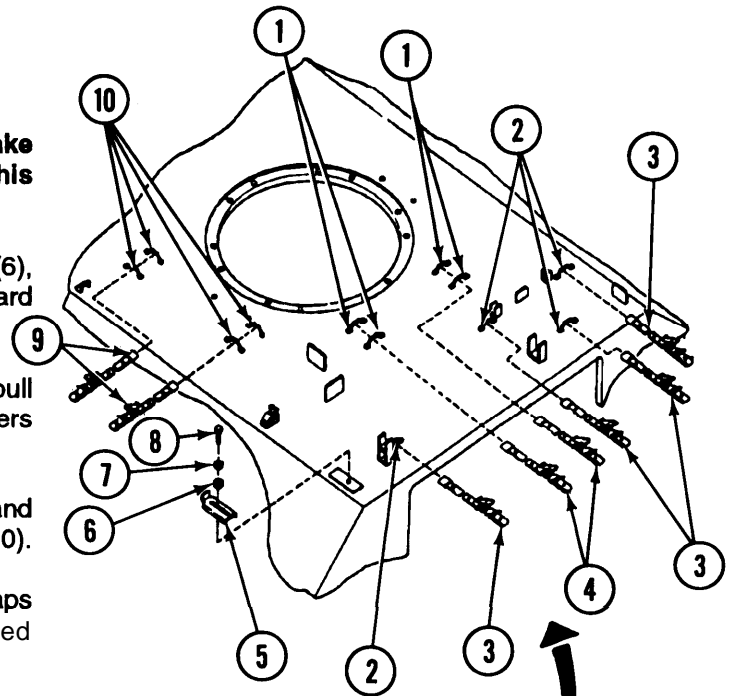
- Lockwasher (Item 177, Appendix H)

a. REMOVAL

WARNING

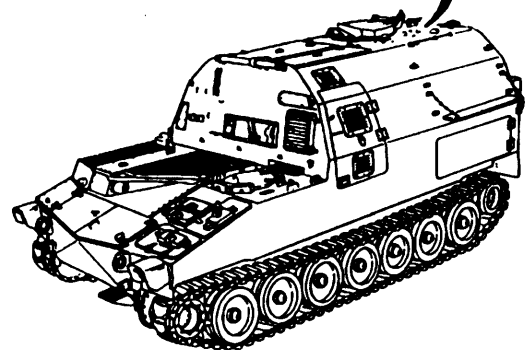
Be careful working on top of vehicle. Make sure of your footing. Failure to heed this warning may result in severe injury.

1. Remove screw (8), lockwasher (7), washer (6), and crowbar stop (5) from top of vehicle. Discard lockwasher.
2. Grasp end of each of two barrel straps (4) and pull through four vehicle-mounted strap fasteners (1).
3. Grasp end of each of two rack hoist straps (9) and pull through four vehicle-mounted fasteners (10).
4. Grasp end of each of four shovel and pick straps (3) and pull through four vehicle-mounted fasteners (2).



b. INSTALLATION

1. Install each of four shovel and pick straps (3) through four vehicle-mounted fasteners (2).
2. Install each of two rack hoist straps (9) through four vehicle-mounted fasteners (10).
3. Install each of two barrel straps (4) through four vehicle-mounted fasteners (1).
4. Install crowbar stop (5) on top of vehicle with screw (8), new lockwasher (7), and washer (6).



FOLLOW-ON MAINTENANCE:

- None

15-69. LEFT DUFFLE BAG STOWAGE REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tool/Test Equipment:

- Electric disk sander (Item 15, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Cotter pin (3) (item 18, Appendix H)

- Lockwasher (22) (Item 177, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Unhook and remove net (1) from eight left-side duffle bag stowage eyelets (5) and two bar assemblies (4 and 6).
2. Fold up shelf assembly (9) to relieve tension of two support chains (14).
3. Remove 16 screws (15) and lockwashers (16) and right duffle bag stowage eyelets (5) from hull. Discard lockwashers.
4. With the aid of an assistant, remove three cotter pins (11) and pins (10) and shelf assembly (9) from bar assembly (6). Discard cotter pins.
5. Remove three screws (2) and lockwashers (3) and bar assembly (4) from hull. Discard lockwashers.
6. Remove three screws (8) and lockwashers (7) and bar assembly (6) from hull. Discard lockwashers.

NOTE

Perform steps 7 and 8 only if support chains are damaged.

7. Grind peened end of each of four connecting link pins (13).
8. Remove four connecting link pins (13) and connecting links (12) and two support chains (14) from two duffle bag stowage eyelets (5) and shelf assembly (9).

b. INSTALLATION

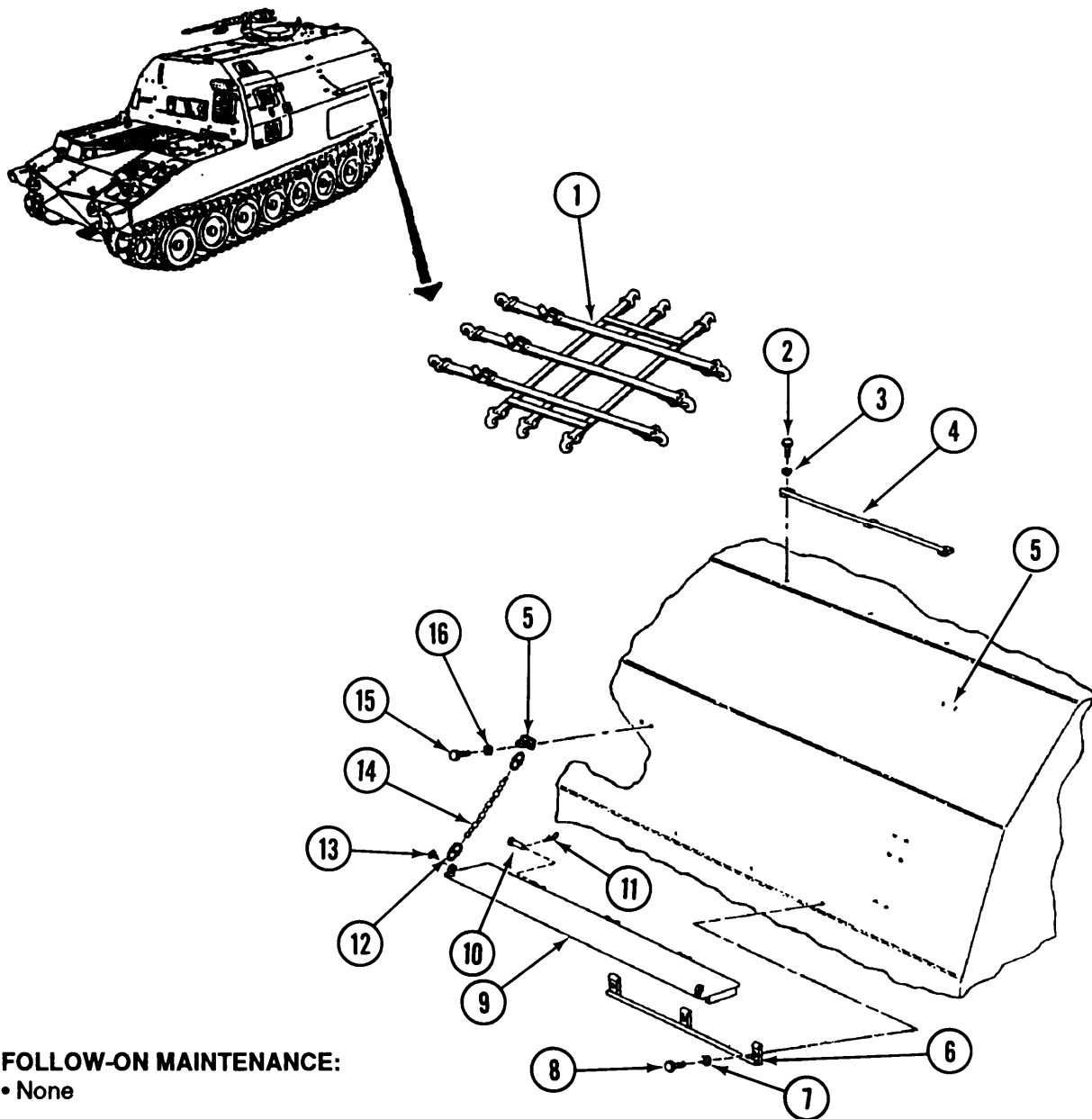
NOTE

Perform steps 1 and 2 only if support chains were removed.

1. Install two support chains (14) on two duffle bag stowage eyelets (5) and shelf assembly (9) with four connecting link pins (13) and connecting links (12).

15-69. LEFT DUFFLE BAG STOWAGE REPLACEMENT (continued).

2. Peen ends of each of four connecting link pins (13).
3. Install bar assembly (6) on hull with three screws (8) and new lockwashers (7).
4. Install bar assembly (4) on hull with three screws (2) and new lockwashers (3).
5. With the aid of an assistant, install shelf assembly (9) on bar assembly (6) with three pins (10) and new cotter pins (11).
6. Fold up shelf assembly (9). Install eight duffle bag stowage eyelets (5) with 16 screws (15) and new lockwashers (16).
7. Install net (1) and hook onto eight duffle bag stowage eyelets (5) and two bar assemblies (4 and 6).



FOLLOW-ON MAINTENANCE:
 • None

15-70. RIGHT DUFFLE BAG STOWAGE REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- Electric disk sander (Item 15, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Cotter pin (4) (Item 18, Appendix H)

- Lockwasher (24) (Item 177, Appendix H)

Personnel Required: Two

Equipment Conditions:

- vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Unhook and remove net (4) from eight right-side duffle bag stowage eyelets (5) and two bar assemblies (1 and 14).
2. Fold up shelf assembly (13) to relieve tension on two support chains (1 O).
3. Remove 16 screws (7) and lockwashers (6) and eight duffle bag stowage eyelets (5) from vehicle. Discard lockwashers.
4. With the aid of an assistant, remove four cotter pins (12) and pins (11) and shelf assembly (13) from bar assembly (14). Discard cotter pins.
5. Remove four screws (3) and lockwashers (2) and bar assembly (1) from hull. Discard lockwashers.
6. Remove four screws (15) and lockwashers (16) and bar assembly (14) from hull. Discard lockwashers.

NOTE

Perform steps 7 and 8 only if support chains are damaged.

7. Grind one peened end of each of four connecting link pins (8).
8. Remove four connecting link pins (8) and two connecting links (9) and support chains (10) from two duffle bag stowage eyelets (5) and shelf assembly (13).

b. INSTALLATION

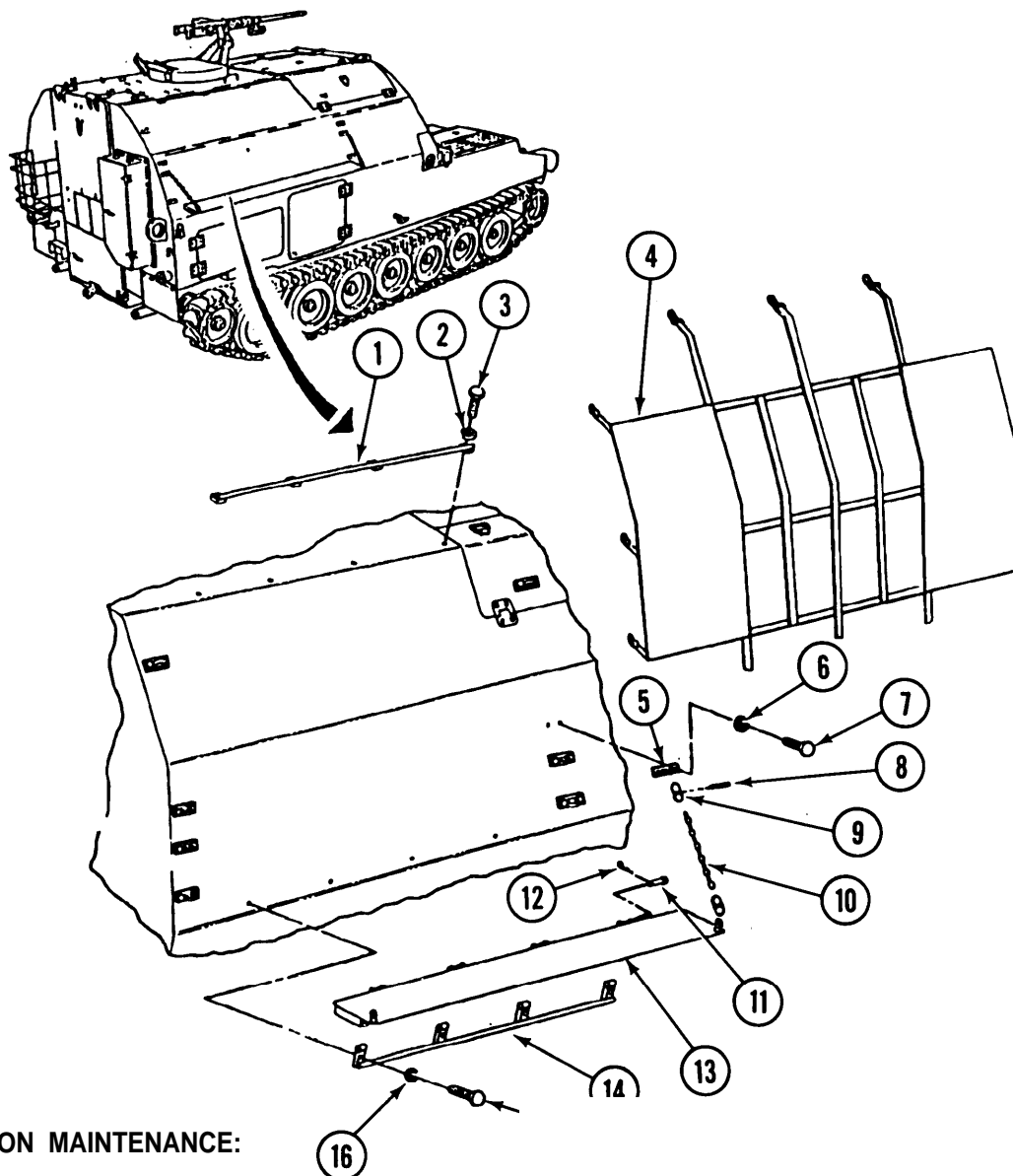
NOTE

Perform steps 1 and 2 only if two support chains were removed.

1. Install two support chains (10) and connecting links (9) and four connecting link pins (8) on shelf assembly (13) and two duffle bag stowage eyelets (5).

15-70. RIGHT DUFFLE BAG STOWAGE REPLACEMENT (continued).

2. Peen ends of four connecting link pins (8).
3. Install bar assembly (14) on hull with four screws (15) and new lockwashers (16).
4. Install bar assembly (1) on hull with four screws (3) and new lockwashers (2).
5. With the aid of an assistant, install shelf assembly (13) on bar assembly (14) with four pins (11) and new cotter pins (12).
6. Fold up shelf assembly (13). Install eight duffle bag stowage eyelets (5) on hull with 16 screws (7) and new lockwashers (6).
7. Install net (4) and hook onto eight duffle bag stowage eyelets (5) and two bar assemblies (1 and 14).

**FOLLOW-ON MAINTENANCE:**

- None

15-71. M45 PERISCOPE STORAGE BOX REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

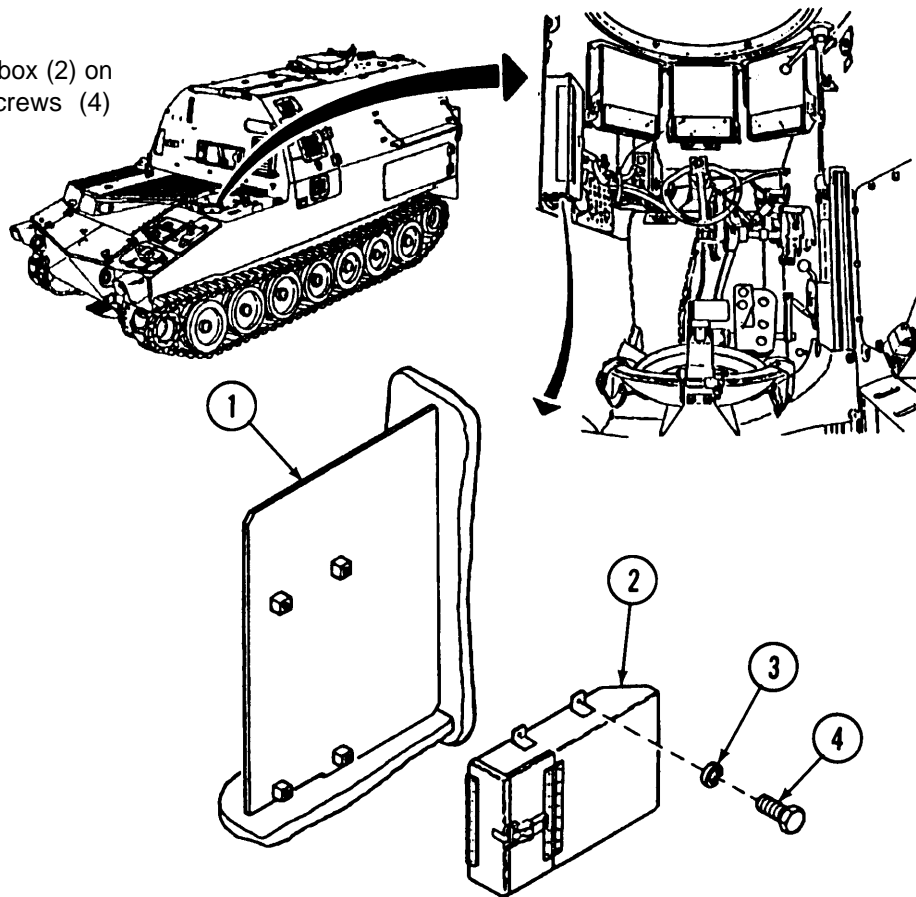
- Lockwasher (4) (Item 196, Appendix H)
-

a. REMOVAL

Remove four screws (4) and lockwashers (3) and periscope storage box (2) from bracket (1). Discard lockwashers.

b. INSTALLATION

Install periscope storage box (2) on bracket (1) with four screws (4) new lockwashers (3).



FOLLOW-ON MAINTENANCE:

- None

15-72. COMMANDER'S STATION, DRIVER'S COMPARTMENT BULKHEAD, AND LOWER REAR DOOR FLASHLIGHT HOLDERS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Lockwasher (6) (Item 196, Appendix H)

a. REMOVAL

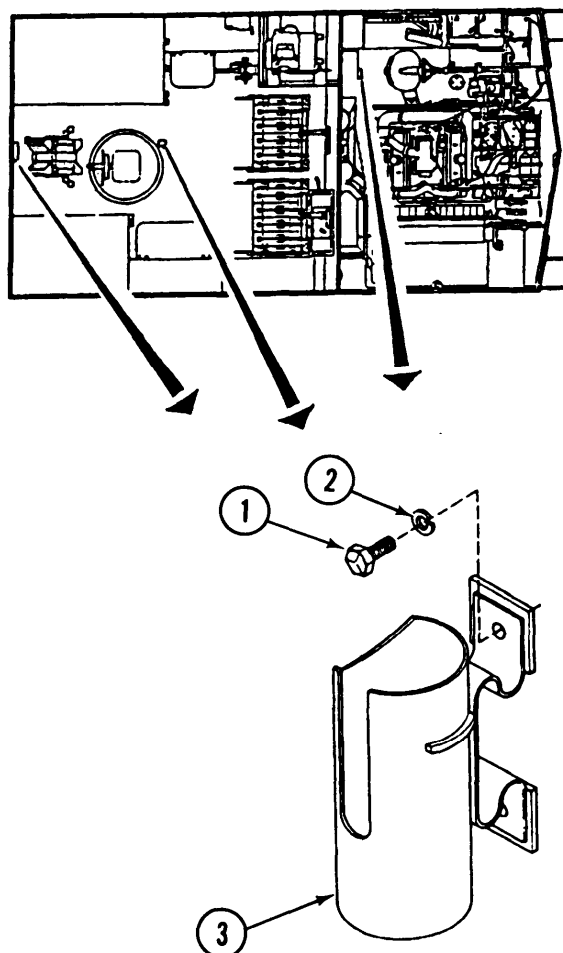
NOTE

All three flashlight brackets are replaced the same way.

Remove two screws (1) and lockwashers (2) and flashlight bracket (3). Discard lockwashers.

b. INSTALLATION

Install flashlight bracket (3) with two screws (1) and new lockwashers (2).



FOLLOW-ON MAINTENANCE:

- None

15-73. LEFT AND RIGHT STOWAGE NETS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Lockwasher (34) (Item 124, Appendix H)
-

a. REMOVAL

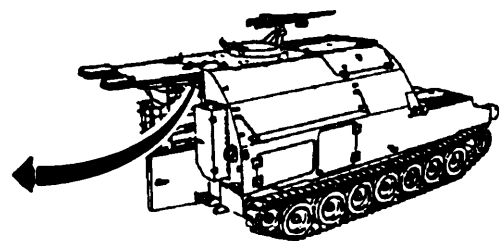
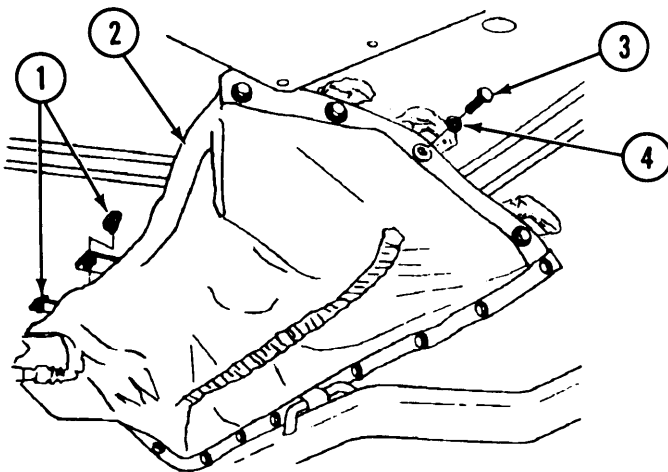
NOTE

Left and right storage nets are removed and installed the same way. Left side is shown.

1. Remove 17 screws (3) and lockwashers (4) from stowage net (2). Discard lockwashers.
2. Turn two stud fasteners (1) on stowage net (2) one-quarter turn, and remove stowage net (2) from two stud fasteners (1).

b. INSTALLATION

1. Install stowage net (2) on two stud fasteners (1), and turn each stud fastener (1) one quarter turn.
2. Secure stowage net (2) to ceiling with 17 screws (3) and new lockwashers (4).



FOLLOW-ON MAINTENANCE:

- None

15-74. RIFLE STORAGE CLIPS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Adhesive, rubber (Item 4, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)

- Lockwasher (3) (Item 124, Appendix H)

Equipment Conditions:

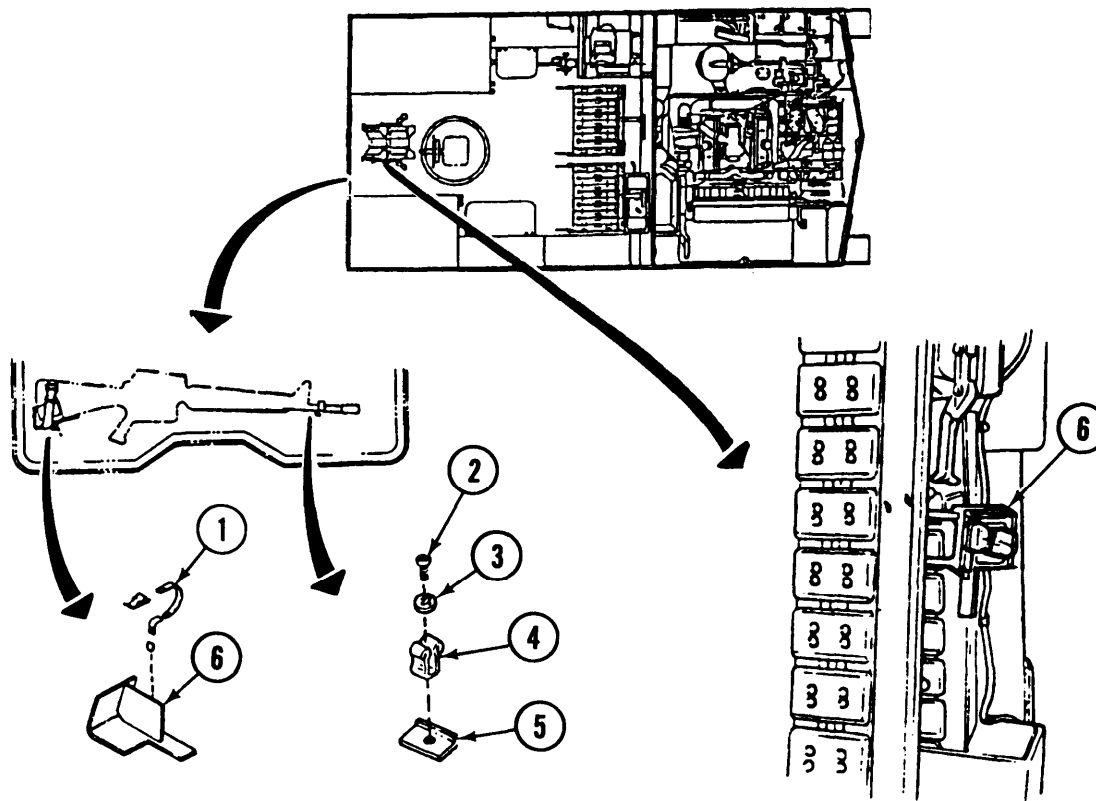
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Components removed from stowage locations (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

All three rifle storage straps and clips are removed the same way.

1. Unbuckle and remove each of three rifle storage straps (1) from each of three rifle storage brackets (6).
2. Remove each of three screws (2), lockwashers (3), and rifle storage clips (4) from each of three brackets (5). Discard lockwashers.

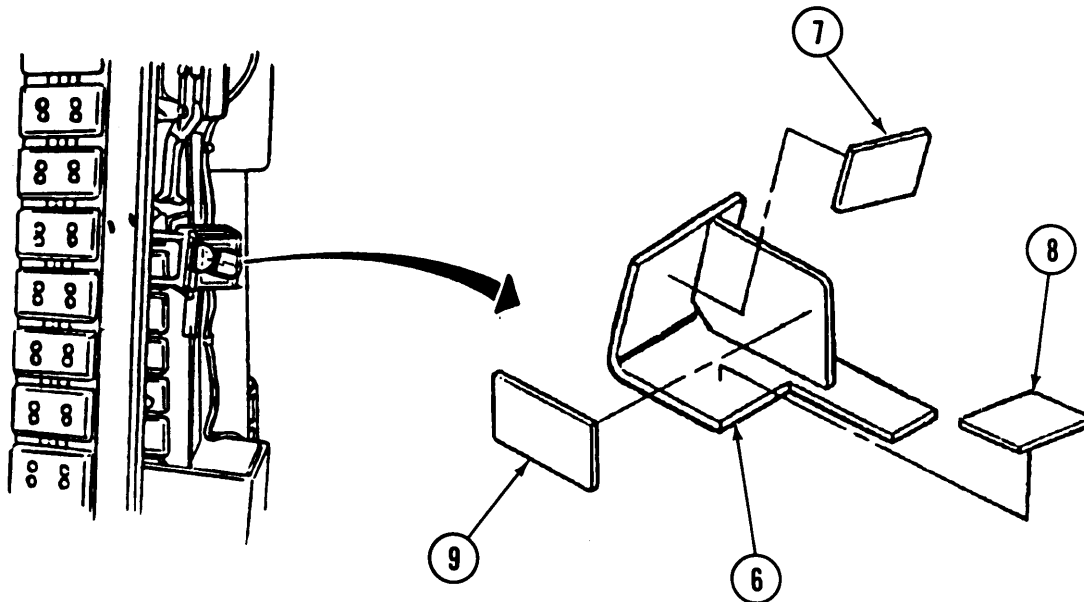


15-74. RIFLE STOWAGE CLIPS REPLACEMENT (continued).

NOTE

- All rubber pads are replaced the same way.
- Remove rubber pads only if damaged.

3. If damaged, remove three rubber pads (7, 8, and 9) from each of three rifle stowage brackets (6).



b. INSTALLATION

WARNING

Drycleaning solvent P-D680 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 use near open flame or excessive heat.

NOTE

- Perform steps 1 through 3 only if rubber pads were removed.
 - Rubber pads are installed the same way on all brackets.
1. Clean three rifle stowage brackets (6) with drycleaning solvent to remove any rubber pad adhesive residue. Allow brackets to air-dry.

15-74. RIFLE STORAGE CLIPS REPLACEMENT (continued).

WARNING

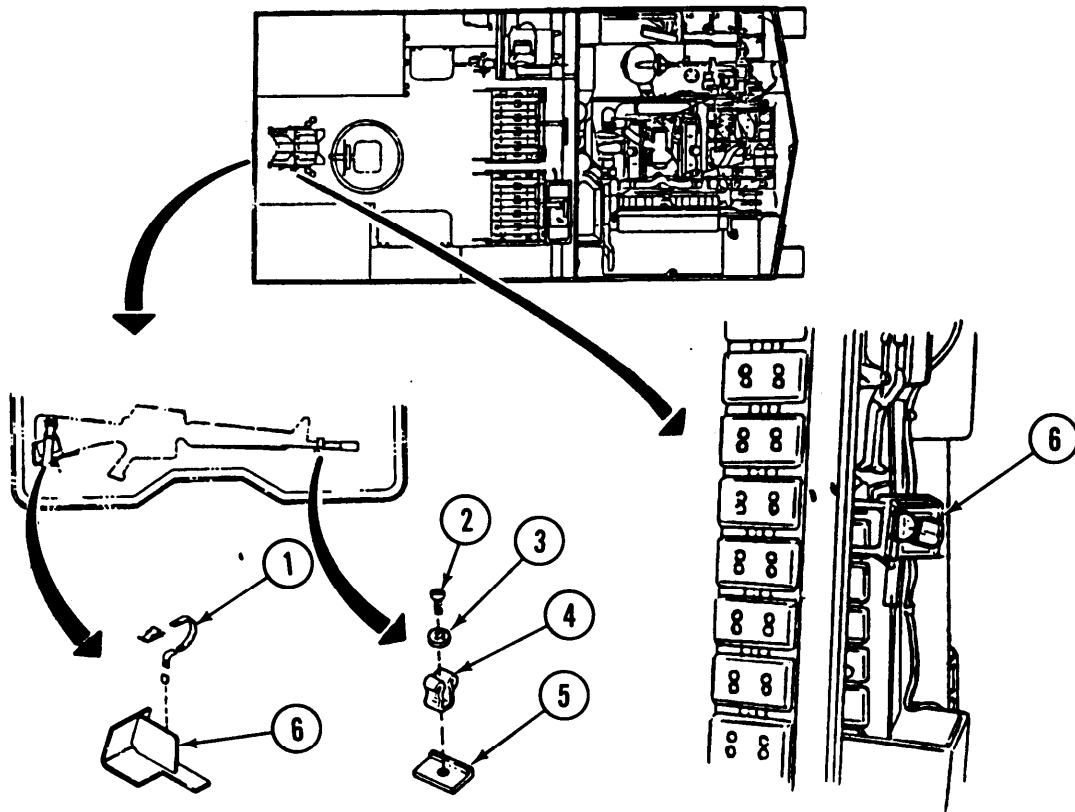
Adhesives can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive gets on skin or clothing, wash immediately with soap and water.

2. Apply thin coat of rubber adhesive to areas on each of three rifle storage brackets (6) requiring rubber pads (7, 8, and 9). Allow adhesive to dry until tacky.
3. Install three rubber pads (7, 8, and 9) on each of three rifle storage brackets (6).

NOTE

All three rifle storage clips and straps are installed the same way.

4. Install three rifle storage clips (4) on three brackets (5) with three screws (2) and new lockwashers (3).
5. Install and buckle each of three rifle storage straps (1) in three rifle storage brackets (6).

**FOLLOW-ON MAINTENANCE:**

- Stow components in storage locations (refer to TM 9-2350-287-10).

15-75. LOWER REAR DOOR PORTABLE FIRE EXTINGUISHER AND BRACKET REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- LockWasher (4) (Item 124, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Upper and lower rear doors opened (refer to TM 9-2350-287-10).

a. REMOVAL

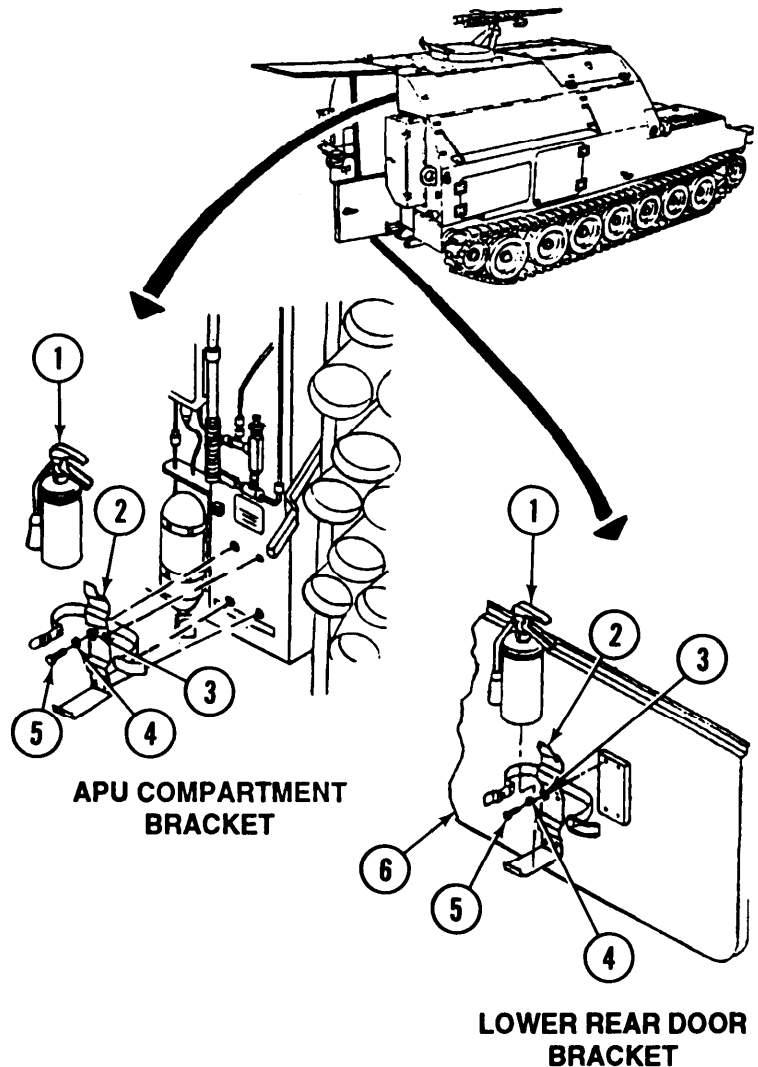
NOTE

Both portable fire extinguisher brackets are replaced the same way.

1. Unstrap and remove portable fire extinguisher (1) from bracket (2).
2. Remove four screws (5), lockwashers (4), washers (3) and bracket (2) from lower rear door (6) or APU compartment wall. Discard lockwashers.

b. INSTALLATION

1. Install bracket (2) on lower rear door (6) or APU compartment wall with four screws (5), washers (3) and new lockwashers (4).
2. Install and strap portable fire extinguisher (1) in bracket (2).



FOLLOW-ON MAINTENANCE:

- Close upper and lower rear doors (refer to TM 9-2350-287-10).

15-76. COMMANDER'S BINOCULAR SECURING STRAP REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- Blind hand riveter (item 10, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Rivet (2) (item 250, Appendix H)

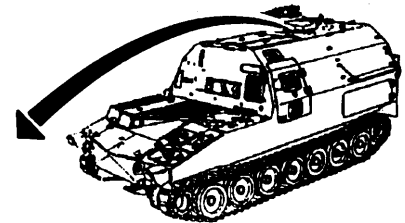
- Washer (4) (Item 378, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Binoculars removed from stowage bracket (refer to TM 9-2350-287-10).

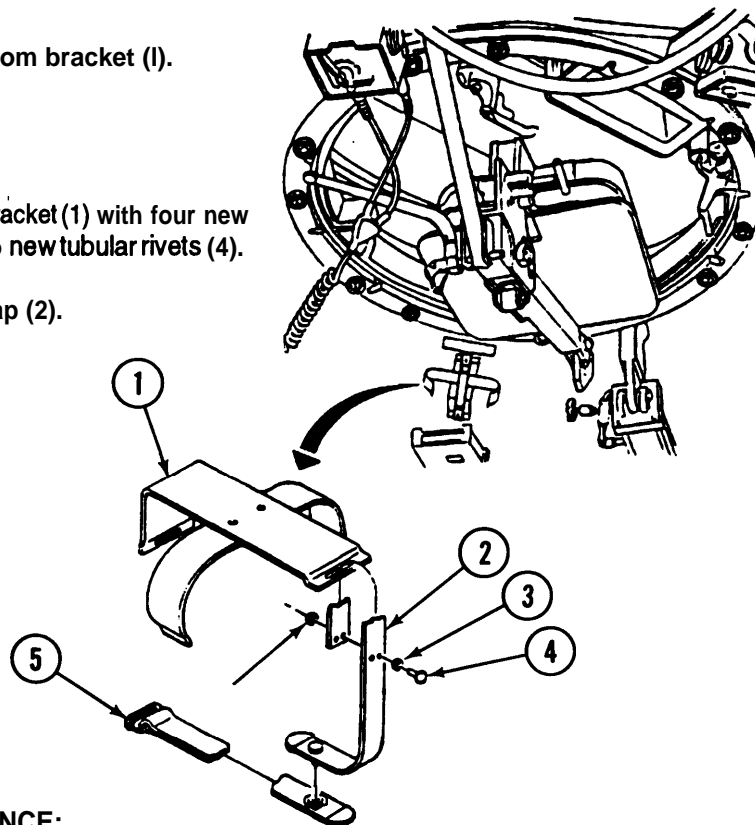
a. **REMOVAL**

1. Separate webbing strap (5) from strap (2).
2. Remove two tubular rivets (4), four washers (3), and commander's binocular securing strap (2) from stowage bracket (1). Discard rivets and washers.
3. Remove strap (5) from bracket (1).



b. **INSTALLATION**

1. install strap (2) on bracket (1) with four new washers (3) and two new tubular rivets (4).
2. Join strap (5) to strap (2).



FOLLOW-ON MAINTENANCE:

- Install binoculars in stowage bracket (refer to TM 9-2350-287-10).

15-78. FUSES STOWAGE STRAPS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Equipment Conditions:

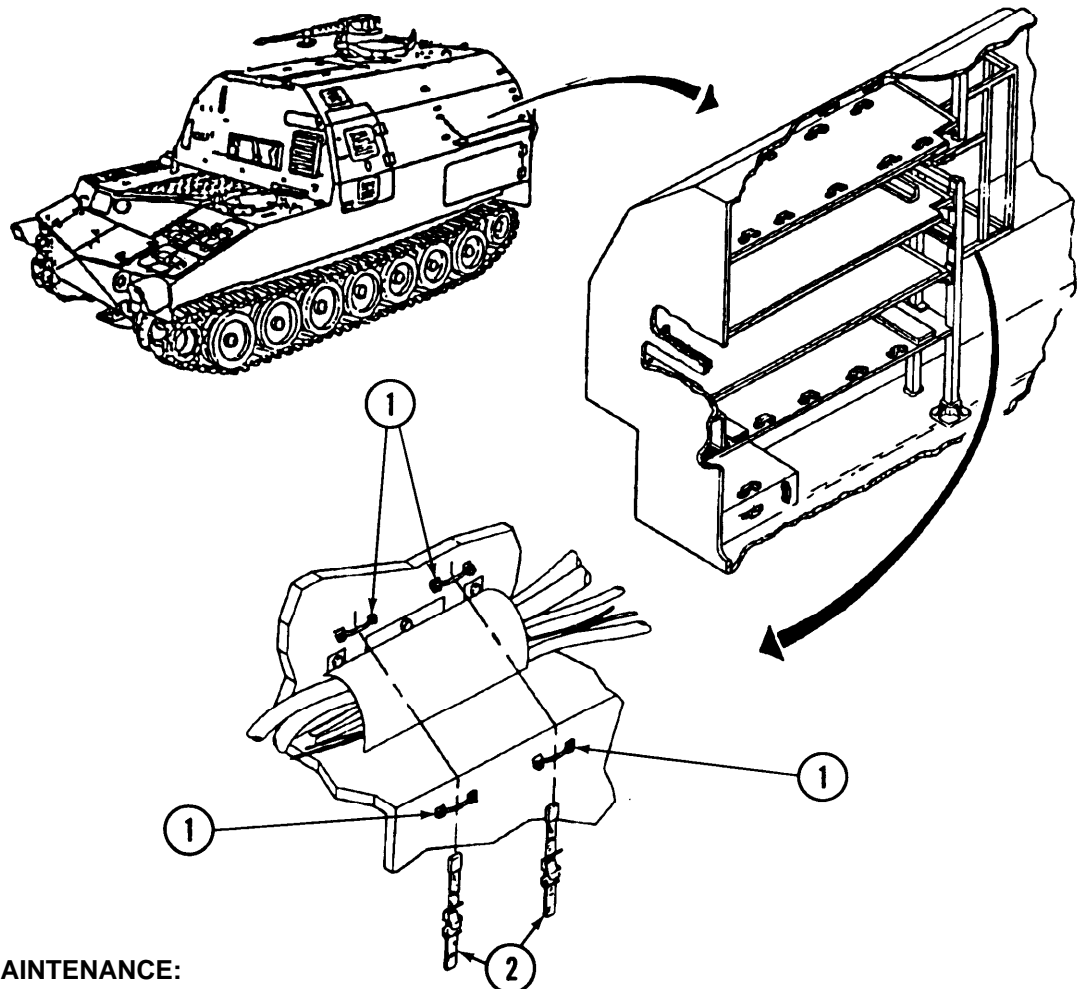
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

Unbuckle and remove two fuses stowage straps (2) from four vehicle-mounted fasteners (1).

b. INSTALLATION

Install and buckle two straps (2) through four vehicle-mounted fasteners (1).



FOLLOW-ON MAINTENANCE:

- None

15-79. DRIVER'S STOWAGE BOX REPAIR.

This Task Covers:

- a. Disassembly b. Assembly
-

Initial Setup:

Tool/Test Equipment:

- Blind hand riveter (Item 10, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)
- Electric drill (Item 43, Appendix 1)
- Twist drill, 3/16-inch (Item 73, Appendix I)

- Rivet (2) (Item 252, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Rivet (4) (Item 251, Appendix H)
-

a. DISASSEMBLY

WARNING

Chip guarding and personal protective equipment (goggles/shield, gloves, etc.), must be worn when driving out rivets. Failure to follow this warning may result in injury to personnel.

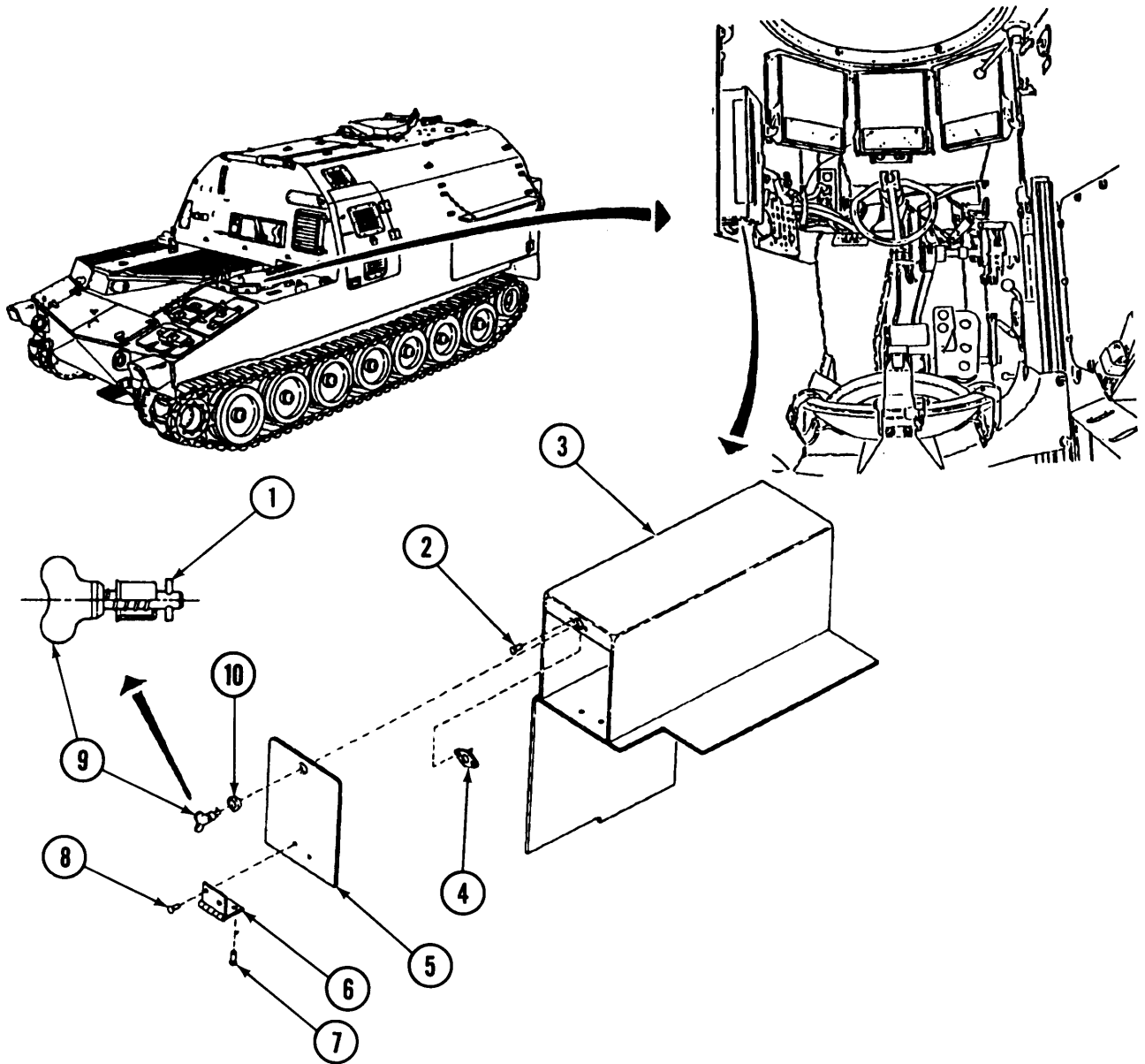
1. Drill out two rivets (7) from hinge (6) and remove hinge (6), with door (5) attached, from driver's stowage box (3).
2. Drill out two rivets (2) from turnlock receptacle (4), and remove turnlock receptacle (4) from stowage box (3). Discard rivets.
3. Drill out two rivets (8) from hinge (6), and remove hinge (6) from door (5). Discard rivets.
4. Drive cross pin (1) from stud assembly (9).
5. Remove stud assembly (9) from turnlock eyelet (10).
6. Install cross pin (1) in stud assembly (9).
7. Drive turnlock eyelet (10) from door (5).

b. ASSEMBLY

1. Install turnlock eyelet (10) in door (5).
2. Drive cross pin (1) from stud assembly (9).
3. Install stud assembly (9) through turnlock eyelet (10).

15-79. DRIVER'S STOWAGE BOX REPAIR (continued).

4. Install cross pin (1) through stud assembly (9).
5. Install hinge (6) on door (5) with two new rivets (8).
6. Install turnlock receptacle (4) on stowage box (3) with two new rivets (2).
7. Install hinge (6), with door (5) attached, on stowage box (3) with two new rivets (7).



FOLLOW-ON MAINTENANCE:

- None

15-80. NBC STOWAGE BOX REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Lockwasher (4) (Item 164, Appendix H)

Equipment Conditions:

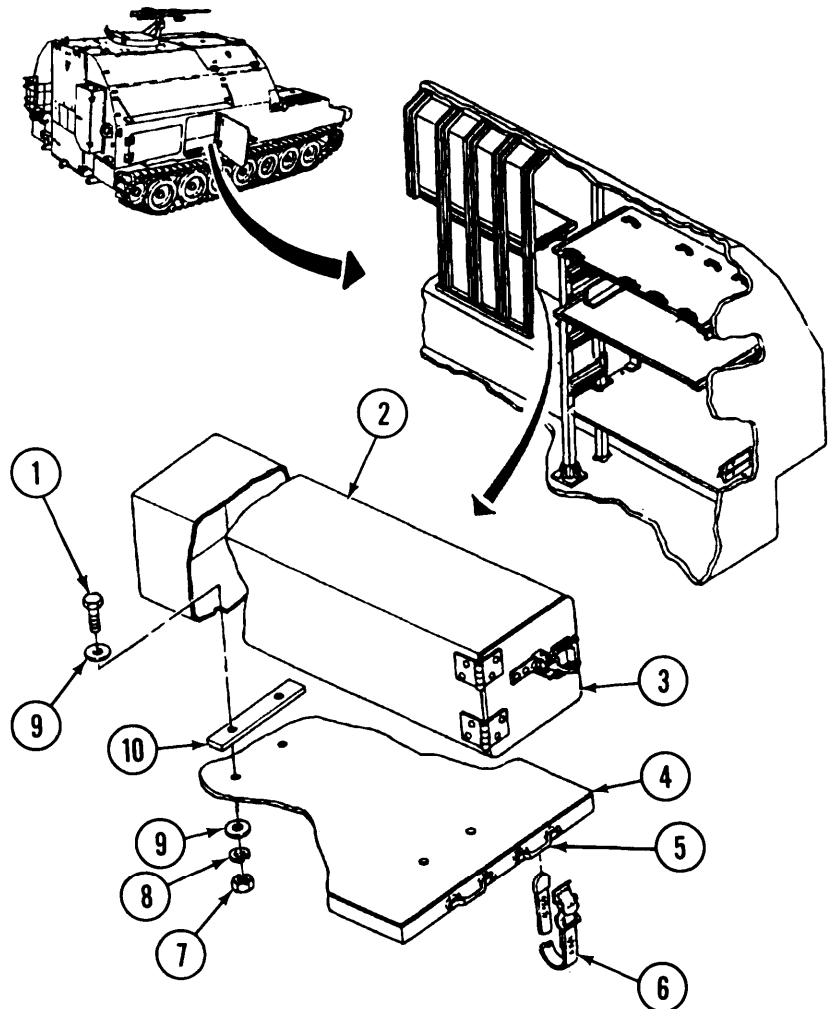
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Personnel side door secured in open position (refer to TM 9-2350-287-10).

a. REMOVAL

1. Unbuckle and remove restraint strap (6) from vehicle-mounted fastener (5).
2. Open NBC stowage box door (3).
3. Remove four screws (1), eight washers (9), four lockashers (8) and nuts (7), two spacers (10), and NBC stowage box (2) from right front canister shelf (4). Discard lockwashers.

b. INSTALLATION

1. Install NBC stowage box (2) and two spacers (10) on right front canister shelf (4) with four screws (1), eight washers (9), four new lockwashers (8), and four nuts (7).
2. Close NBC stowage box door (3).
3. Install and buckle restraint strap (6) through vehicle-mounted fastener (5).



FOLLOW-ON MAINTENANCE:

- Close personnel side door (refer to TM 9-2350-287-10).

15-81. Projectile RACK STOWAGE BOX GUARD PLATE ASSEMBLY REPLACEMENT.

This Task Cover:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

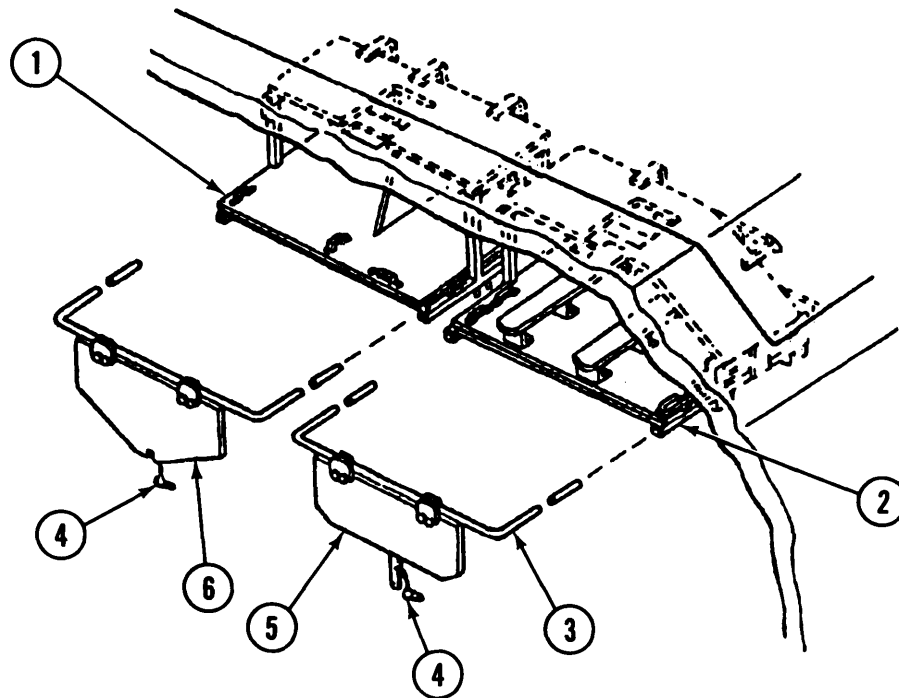
- Self-locking nut (8) (item 317, Appendix H)
- Self-locking nut (Item 320, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Stowage boxes empty (refer to TM 9-2350-287-10).

a. REMOVAL

1. Pull two quick-release pins (4) from each of two guard plates (5 and 6) and fold down guard plates (5 and 6).
2. Grasp pivot bars (3) and pull straight out, to remove guard plates (5 and 6) from two projectile rack stowage boxes (1 and 2).



15-81. PROJECTILE RACK STOWAGE BOX GUARD PLATE ASSEMBLY REPLACEMENT (continued).

b. DISASSEMBLY

1. Remove eight self-locking nuts (9), 16 washers (10), four plates (11) and supports (1-4), eight screws (16), and two guard plates (5 and 6) from two pivot bars (3). Discard self-locking nuts.
2. Remove two screws (19) and S-hooks (21) from bar (22) and guard plate (6).
3. Remove chain (20) from each of two quick-release pins (4).
4. Remove self-locking nut (12), washer (13), two washers (17), bar (22), and screw (18) from guard plate (5). Discard self-locking nut.
5. Remove two straps (8) and two straps (7) from two stowage boxes (1 and 2).

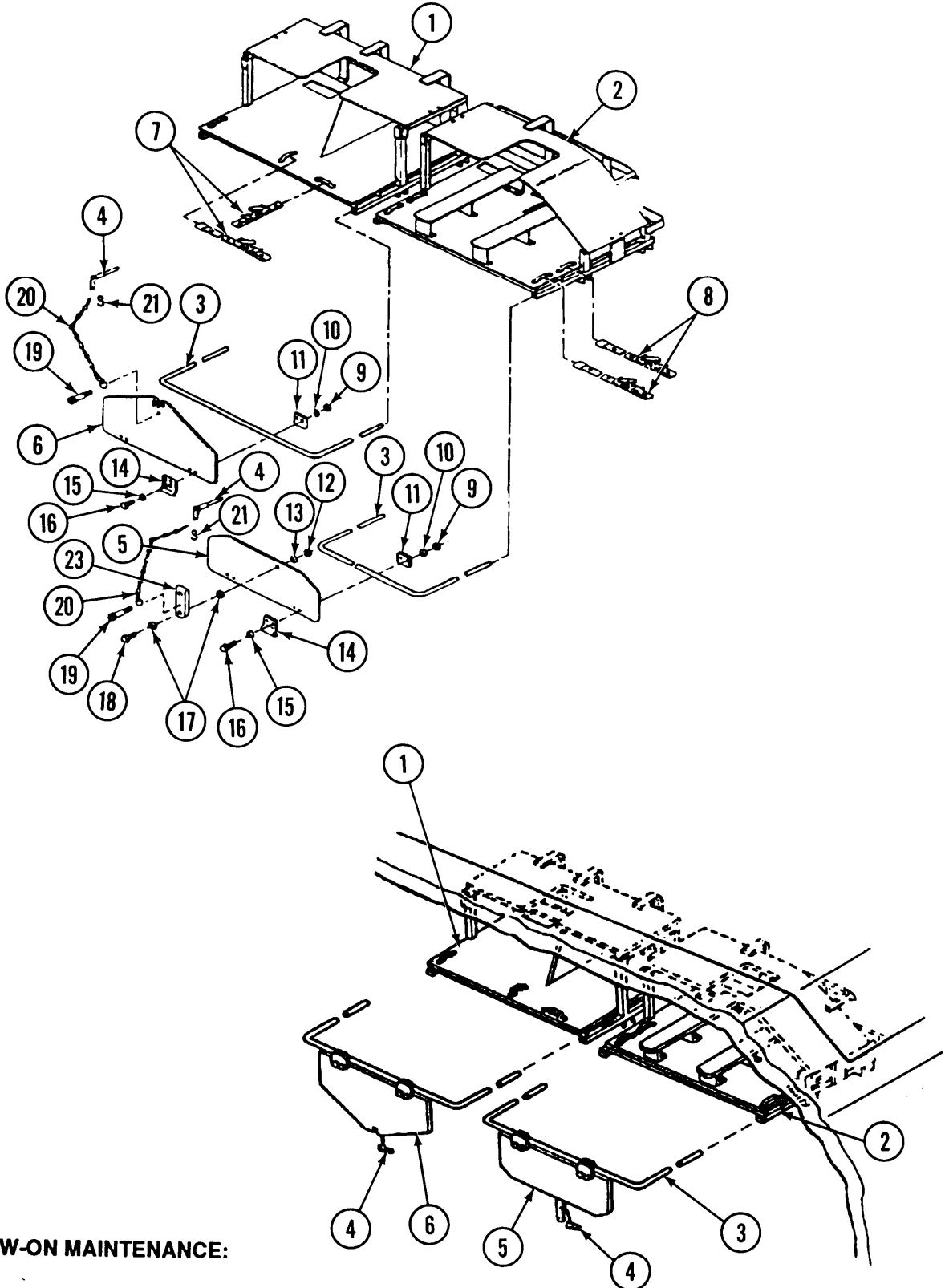
c. ASSEMBLY

1. Install two straps (8) and two straps (7) on two stowage boxes (1 and 2).
2. Install screw (18), bar (22), two washers (17), washer (13), and new self-locking nut (12) on guard plate (5).
3. Install chain (20) on each of two quick-release pins (4).
4. Install two S-hooks (21) on guard plate (6) and on bar (22) with two screws (19).
5. Install two guard plates (5 and 6) on two pivot bars (3) using eight screws (16), four supports (14) and plates (11), 16 washers (10), and eight new self-locking nuts (9).

d. INSTALLATION

1. Grasp each of two pivot bars (3) and push straight in to install two guard plates (5 and 6) on two stowage boxes (1 and 2).
2. Fold up two guard plates (5 and 6) and secure with two quick-release pins (4) on two brackets (3).
3. If holes on plates (5 or 6) and brackets (3) do not line up, add or remove shims (2) on brackets (3) until holes are aligned and pins (4) fit freely.

**15-81. PROJECTILE RACK STORAGE BOX GUARD PLATE ASSEMBLY REPLACEMENT
(continued).**



FOLLOW-ON MAINTENANCE:
• None

15-82. PROJECTILE RACK BASE, SUPPORTS, AND VEHICLE WALL-MOUNTED RESTRAINTS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Lockwasher (6) (Item 164, Appendix H)
- Lockwasher (31) Item 166, Appendix H)
- Lockwasher (16) Item 168, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Heating and ventilation duct removed (para 16-2).

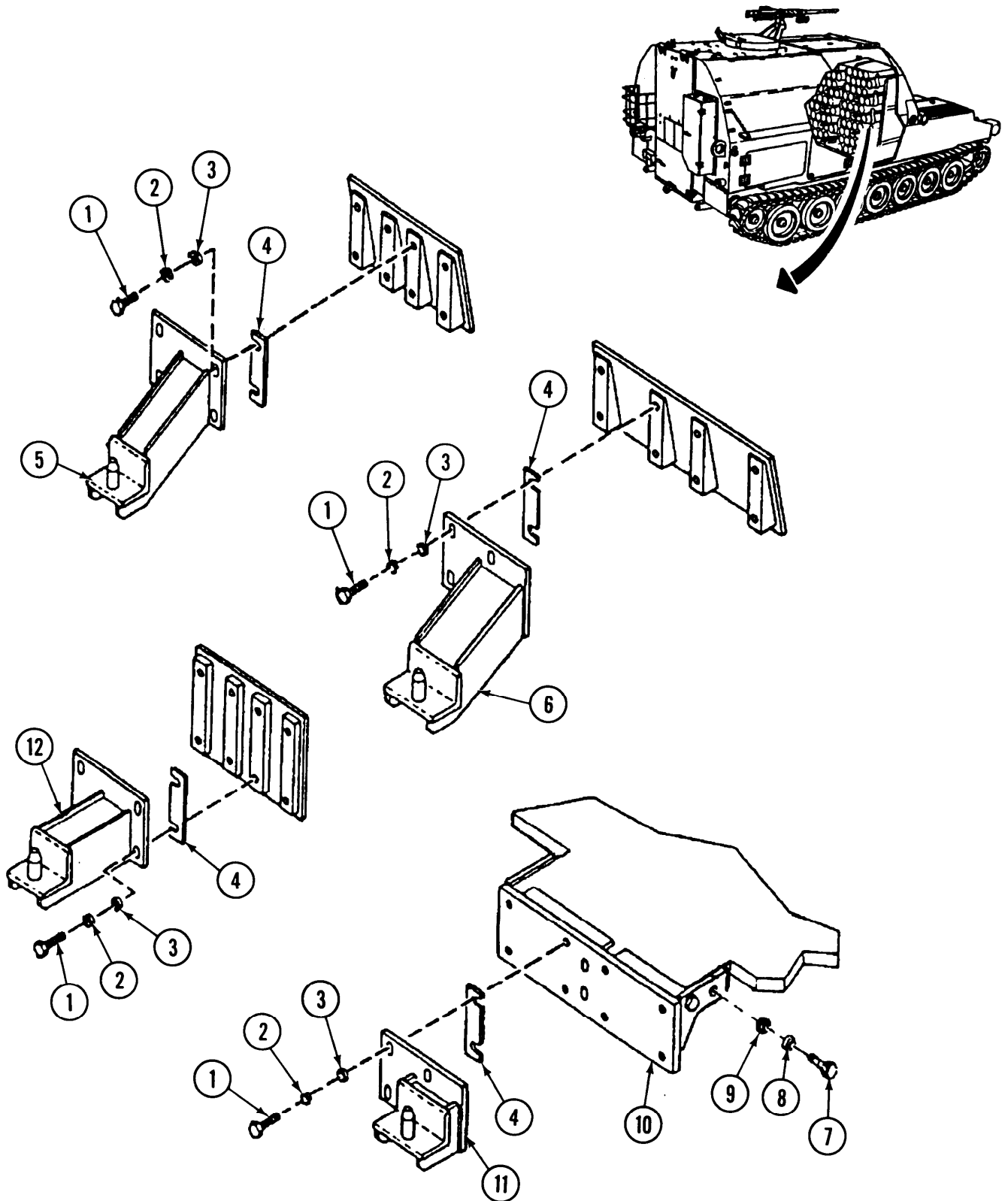
Personnel Required: Two

a. REMOVAL

NOTE

- Projectile rack assembly restraints and supports are adjustable. For correct installation of projectile rack assemblies, scribe marks on vehicle wall before removing restraints and supports.
 - For correct installation of projectile rack assembly restraints, record the number, thickness, and location of shims.
 - An assistant is needed to hold projectile rack assembly restraints and supports when they are removed or installed.
1. Remove 16 screws (1), lockwashers (2), and washers (3), shims (4), and four rear rack restraints (5,6,11 and 12) from vehicle wall. Discard lockwashers.
 2. Remove four screws (7), lockwashers (8), and washers (9) and bracket (10) from forward bulkhead, Discard lockwashers.

15-82. PROJECTILE RACK BASE, SUPPORTS, AND VEHICLE WALL-MOUNTED RESTRAINTS REPLACEMENT (continued).



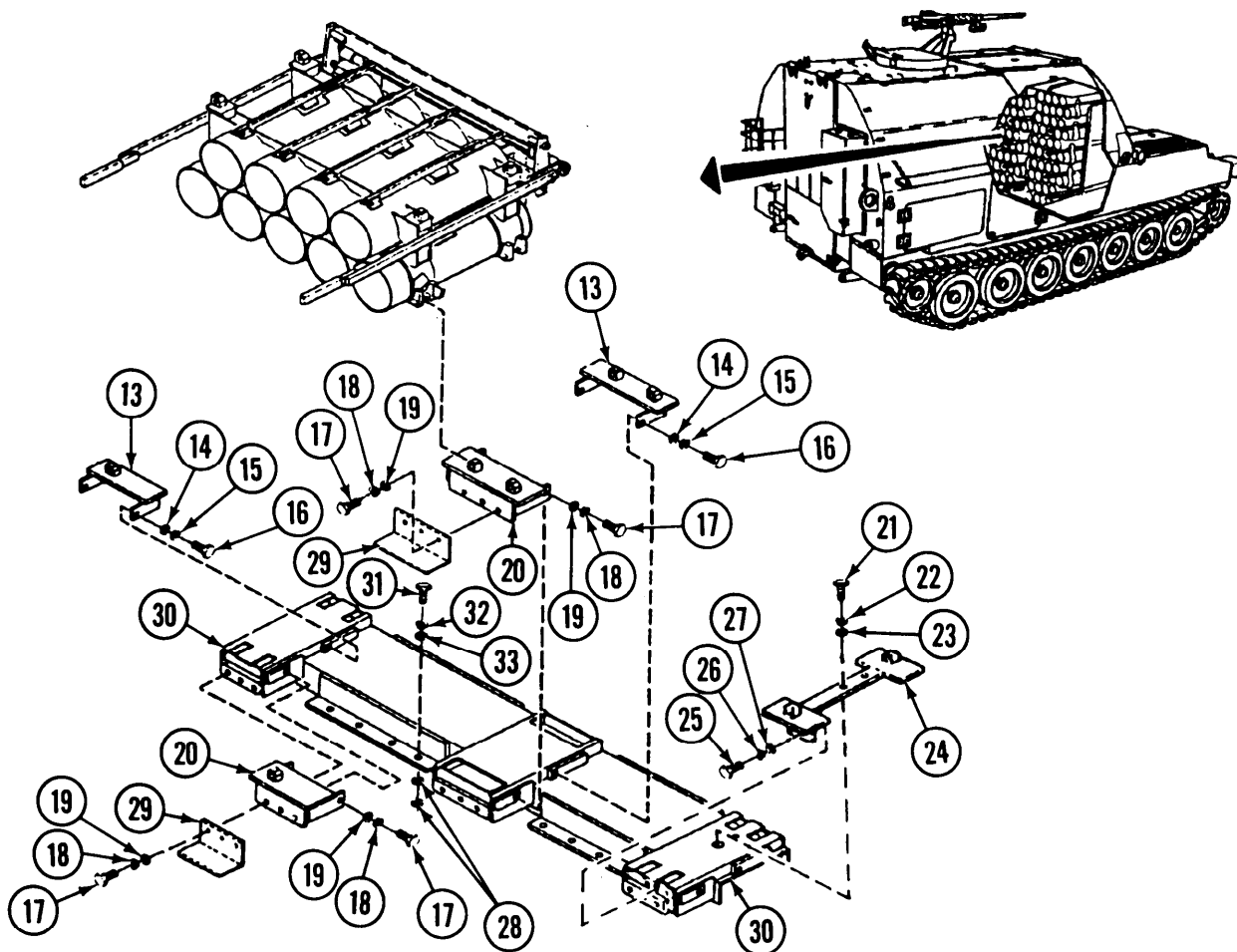
15-82. PROJECTILE RACK BASE, SUPPORTS, AND VEHICLE WALL-MOUNTED RESTRAINTS REPLACEMENT (continued).

3. Remove 10 screws (17), lockwashers (18), and washers (19), right and left front base supports (20), and two angles (29) from vehicle floor. Discard lockwashers.
4. Remove four screws (16), lockwashers (15), and washers (14) and right and left rear base supports (13) from vehicle floor. Discard lockwashers.
5. Remove two screws (21), lockwashers (22) and washers (23) from mounting bracket (24). Discard lockwashers.
6. Remove screw (25), lockwasher (26), washer (27) and mounting bracket (24) from rack base (30). Discard lockwasher.

NOTE

For correct installation of rack base, record the number, thickness, and location of washers used to shim rack base.

7. Remove 16 screws (31), lockwashers (32), washers (33), washer shims (28), and rack base (30) from vehicle floor. Discard lockwashers.



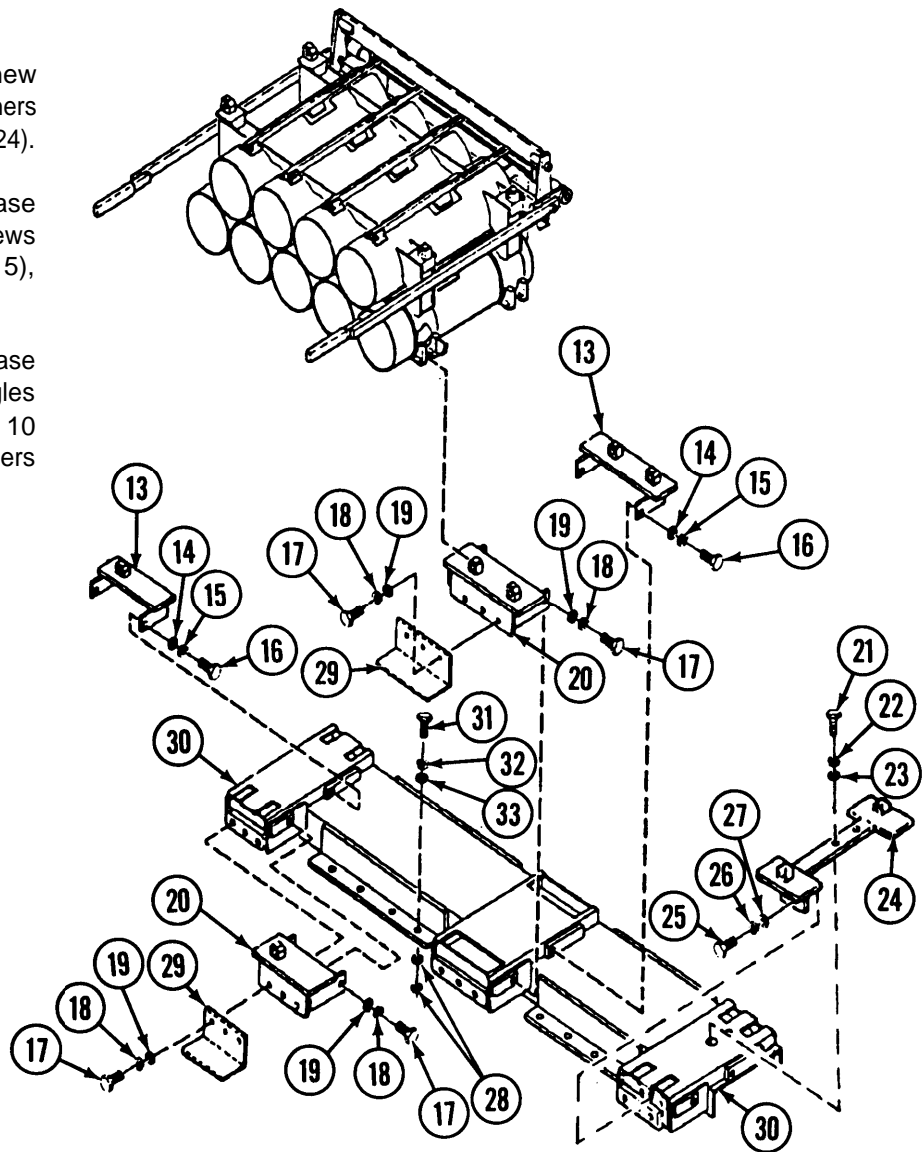
15-82. PROJECTILE RACK BASE, SUPPORTS, AND VEHICLE WALL-MOUNTED RESTRAINTS REPLACEMENT (continued).

a. INSTALLATION

NOTE

- For correct positioning at installation, aline restraints and supports with scribe marks.
- Ensure that shims are installed in proper number and location.

1. Install mounting bracket (24) on rack base (30) with screw (25), new lockwasher (26) and washer (27).
2. Install rack base (30) on vehicle floor with 16 screws (31), new lockwashers (32), washers (33), and washer shims (28).
3. Install two screws (21), new lockwashers (22) and washers (23) on mounting bracket (24).
4. Install right and left rear base supports (13) with four screws (16), new lockwashers (15), and washers (14).
5. Install right and left front base supports (20) and two angles (29) on vehicle floor with 10 screws (17), new lockwashers (18), and washers (19).



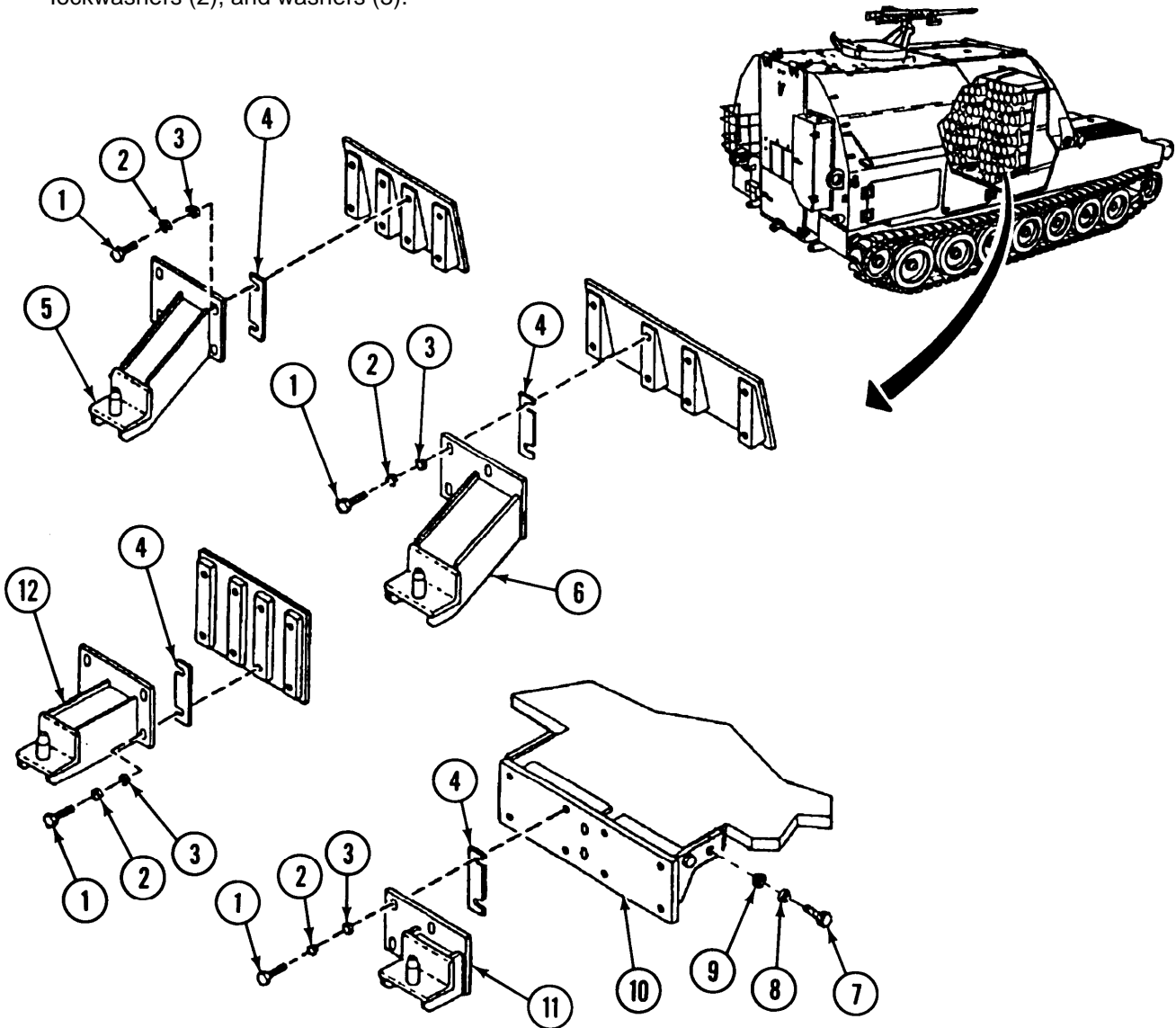
15-82. PROJECTILE RACK BASE, SUPPORTS, AND VEHICLE WALL-MOUNTED RESTRAINTS REPLACEMENT (continued).

6. Install bracket (10) on foward bulkhead with four screws (7), new lockwashers (8), and washer (9).

Note

Install correct number of shims between each restraint and vehicle-well mounting area.

7. Install four rear rack restraints (5, 6, 11, and 12) and shims (4) on vehicle wall with 16 screws (1), new lockwashers (2), and washers (3).



FOLLOW-ON MAINTENANCE:

- Install heating and ventilation duct (para 16-2).
- Move projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

15-83. PROJECTILE RACK REPLACEMENT.

This Task Covers:

- a. Removal
c. Assembly

- b. Disassembly
d. Installation
-

Initial Setup:

Tools/Test Equipment:

- Five-ton hoist (Item 23, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Lockwasher (2) (Item 164, Appendix H)
- Lockwasher (12) (item 196, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Top doors opened (refer to TM 9-2350-287-10).
- Right projectile rack stowage box guard plate assembly removed (para 15-81).

a. REMOVAL

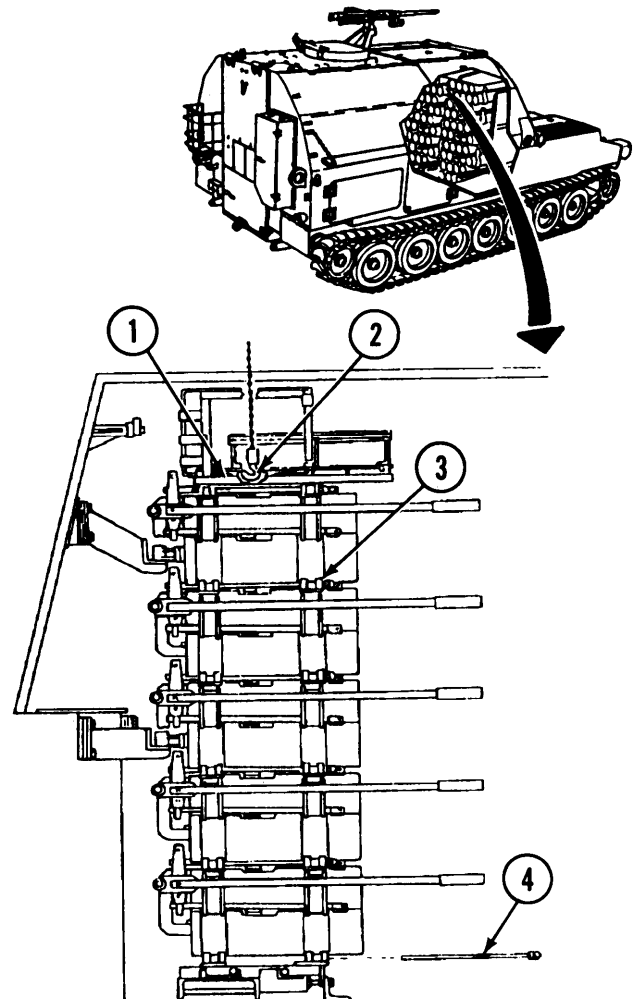
WARNING

Projectile rack sections must be empty before attempting to move either projectile rack assembly. Dropped projectiles may explode, causing injury or death to personnel.

NOTE

- To ease removal, projectile rack stowage boxes must be empty before attempting to move either rack assembly.
- An assistant is needed for removing and installing stowage boxes.

1. Place hook (2) of five-ton hoist on bar (1) of projectile rack assembly (3).
2. Remove two rods (4) from bottom of rack assembly (3).

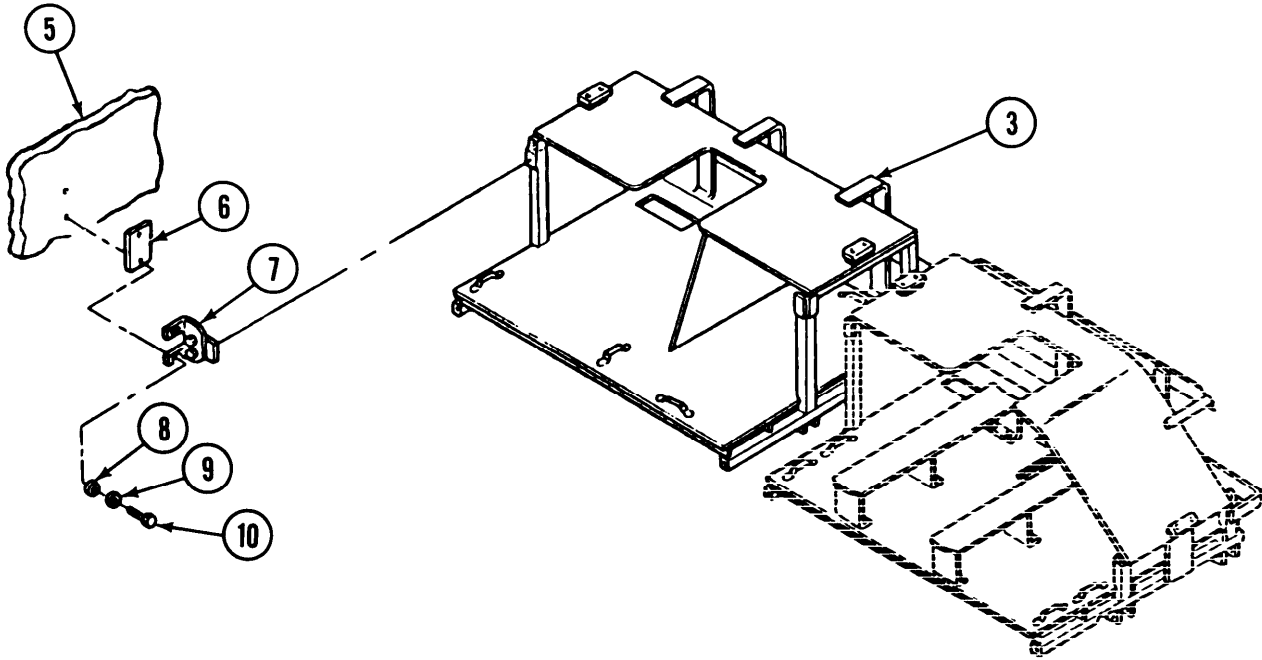


15-83. PROJECTILE RACK REPLACEMENT (continued).

NOTE

Step 3 applies only to left rack assembly.

3. Remove two screws (10), lockwashers (9), washers (8), bracket (7), and spacer (6) retaining left rack assembly (3) to outside auxiliary power unit (APU) compartment wall (5). Discard lockwashers.



WARNING

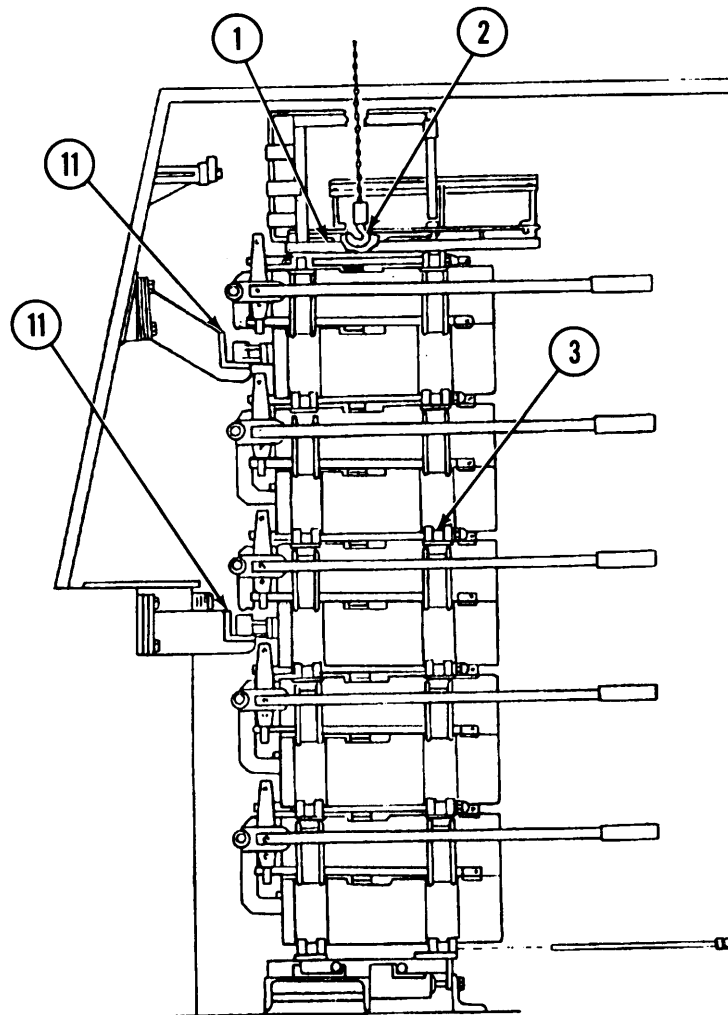
To avoid personal injury, stand clear of rack assembly during removal from vehicle.

CAUTION

To avoid damage to equipment, place bottom two handles of each rack assembly in up position before setting rack assembly on flat surface.

15-83. PROJECTILE RACK REPLACEMENT (continued).

4. Lift rack assembly (3) from vehicle, maneuvering rack assembly (3) to clear rear rack restraints (11) behind third and fifth projectile rack sections from bottom of rack assembly (3). Place rack assembly on floor in suitable work area.
5. Remove hook (2) from bar (1).



15-83. PROJECTILE RACK REPLACEMENT (continued).

b. DISASSEMBLY

NOTE

Each rack assembly consists of five projectile rack sections. To completely disassemble or assemble a rack assembly, repeat the procedure five times.

1. Remove two rods (15) from projectile rack section (14).

NOTE

Step 2 applies to top rack section only.

2. Remove projectile rack storage box (12) from top of rack section (14).
3. Remove 12 nuts (18), washers (16), lock-washers (17), and screws (20) and two trays (19 and 21) from right projectile rack canister storage box (12). Discard lockwashers.

NOTE

Note order of rack section removal. To ensure that rear rack restraints will engage properly, make sure rack sections are stacked in same order as removed.

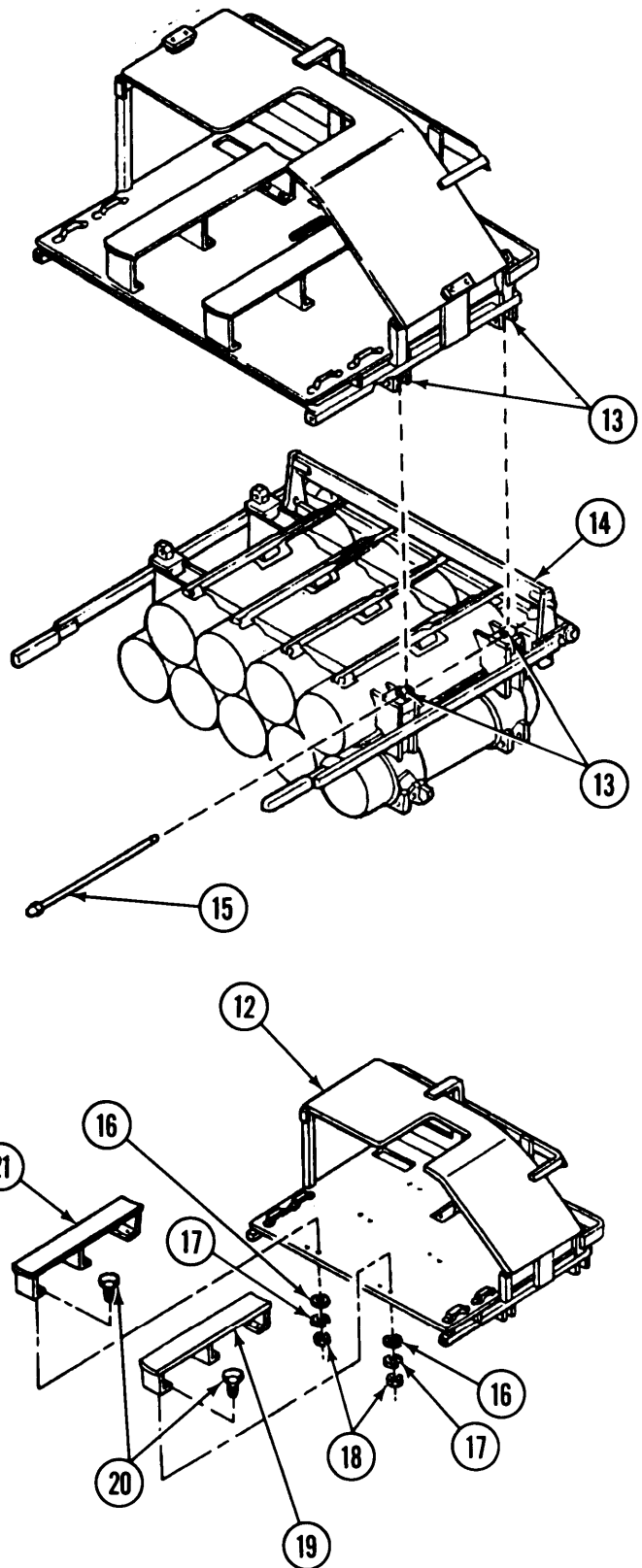
4. Remove two rods (15) from rack section (14).

c. ASSEMBLY

NOTE

Make sure rack restraint is on back of third and fifth racks from bottom.

1. Stack rack sections (14), making sure interlocking blocks (13) engage properly.
2. Install two rods (15) in each rack section (14).



15-83. PROJECTILE RACK REPLACEMENT (continued).

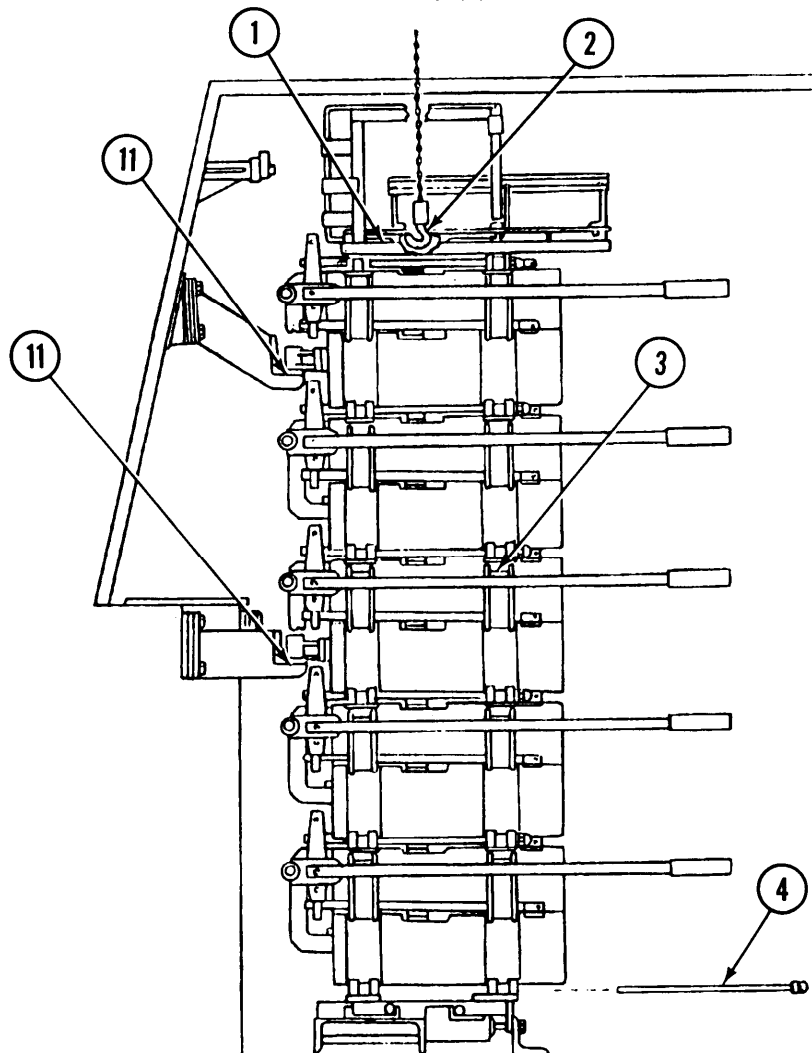
3. Install two trays (19 and 21) in stowage box (12) using 12 screws (20), washers (16), new lockwashers(17), and nuts (18).
4. Install stowage box (12) on top of rack section (1 4), and join interlocking blocks (13) with two rods (15).

d. INSTALLATION

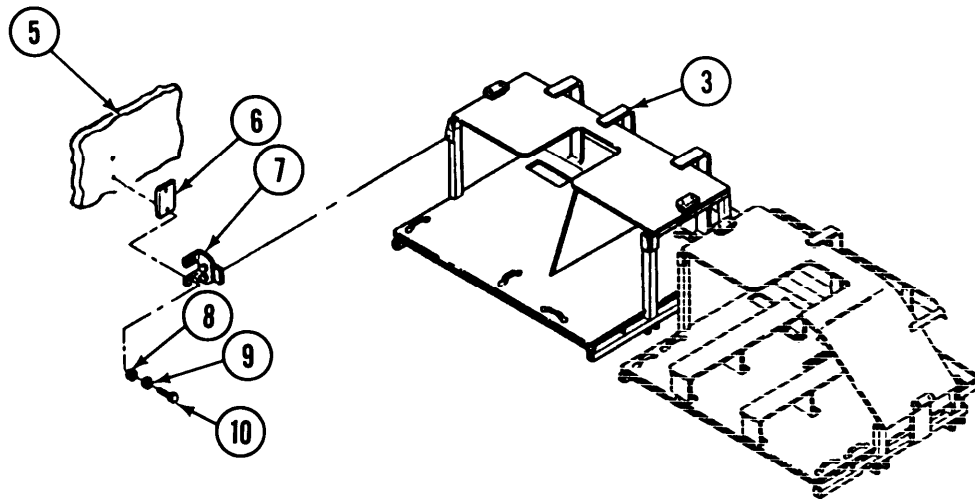
WARNING

To avoid personal injury, stand clear of rack assemblies during installation in vehicle.

1. Install hook (2) on bar (1) of rack assembly (3), and use hoist to lift rack assembly (3) into vehicle.
2. Maneuver rack assembly (3) so that third and fifth rack sections from bottom mount on rear rack restraints(11).
3. Install two rods (4) in bottom of rack assembly (3).



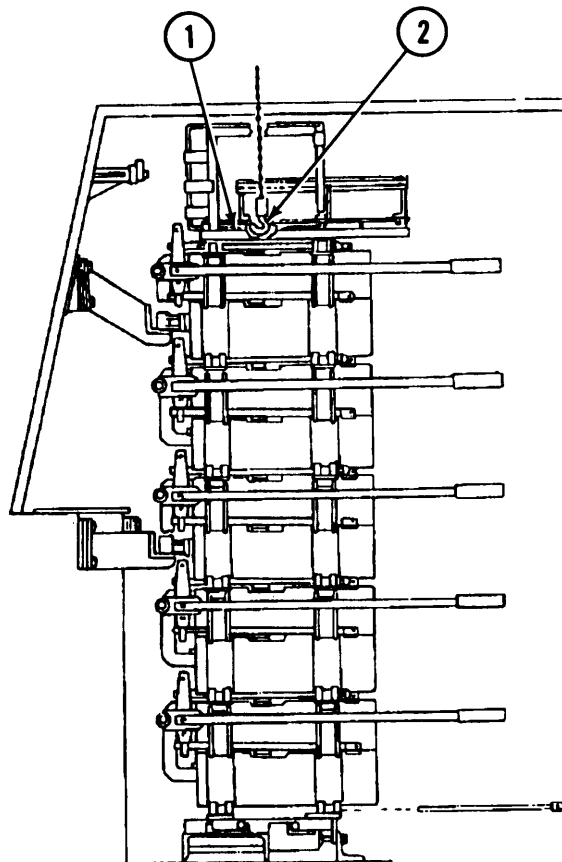
15-83. PROJECTILE RACK REPLACEMENT (continued).



NOTE

Step 4 applies only to left projectile rack.

4. Install bracket (7) and spacer (6) to outside APU compartment wall (5) with two screws (10), new lockwashers (9), and washers (8).
5. Adjust bracket (7) to provide snug fit on rack assembly (3).
6. Remove hook (2) from bar (1).



FOLLOW-ON MAINTENANCE:

- Close top doors (refer to TM 9-2350-287-10).
- Install right projectile rack stowage box guard plate assembly (para 15-81).

15-84. PROJECTILE RACK ASSEMBLY BRACES REPLACEMENT.

This Task Covers

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechaniss tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (8) (Item 164, Appendix H)

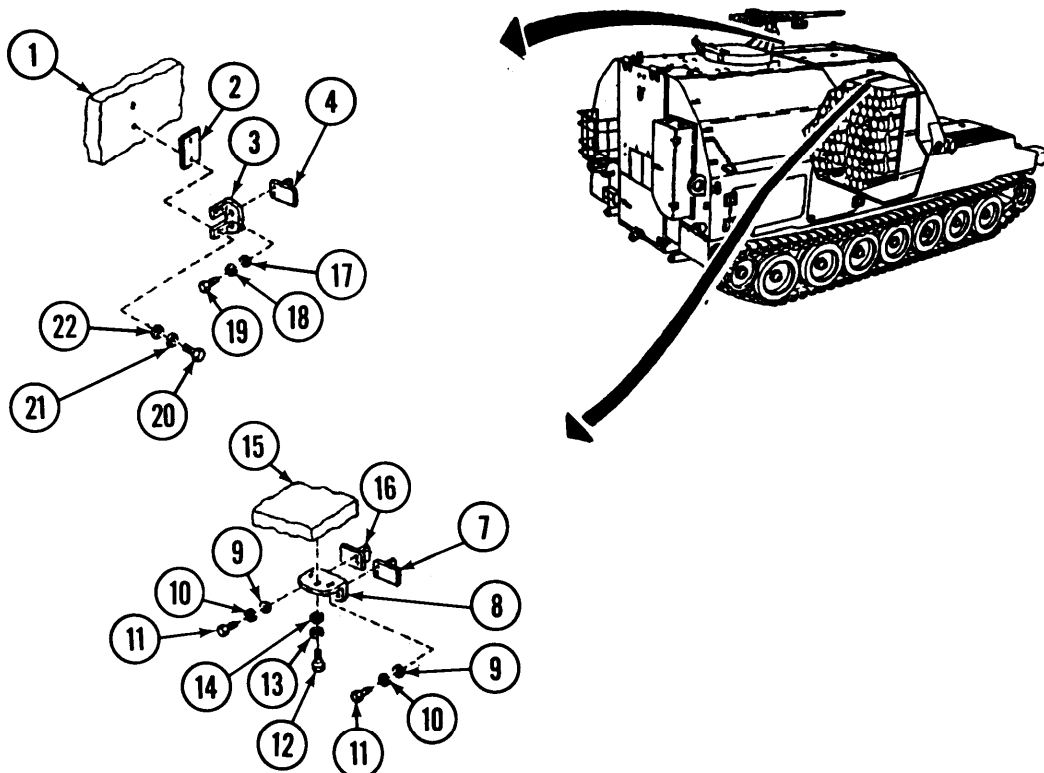
- Lockwasher (3) (Item 166, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

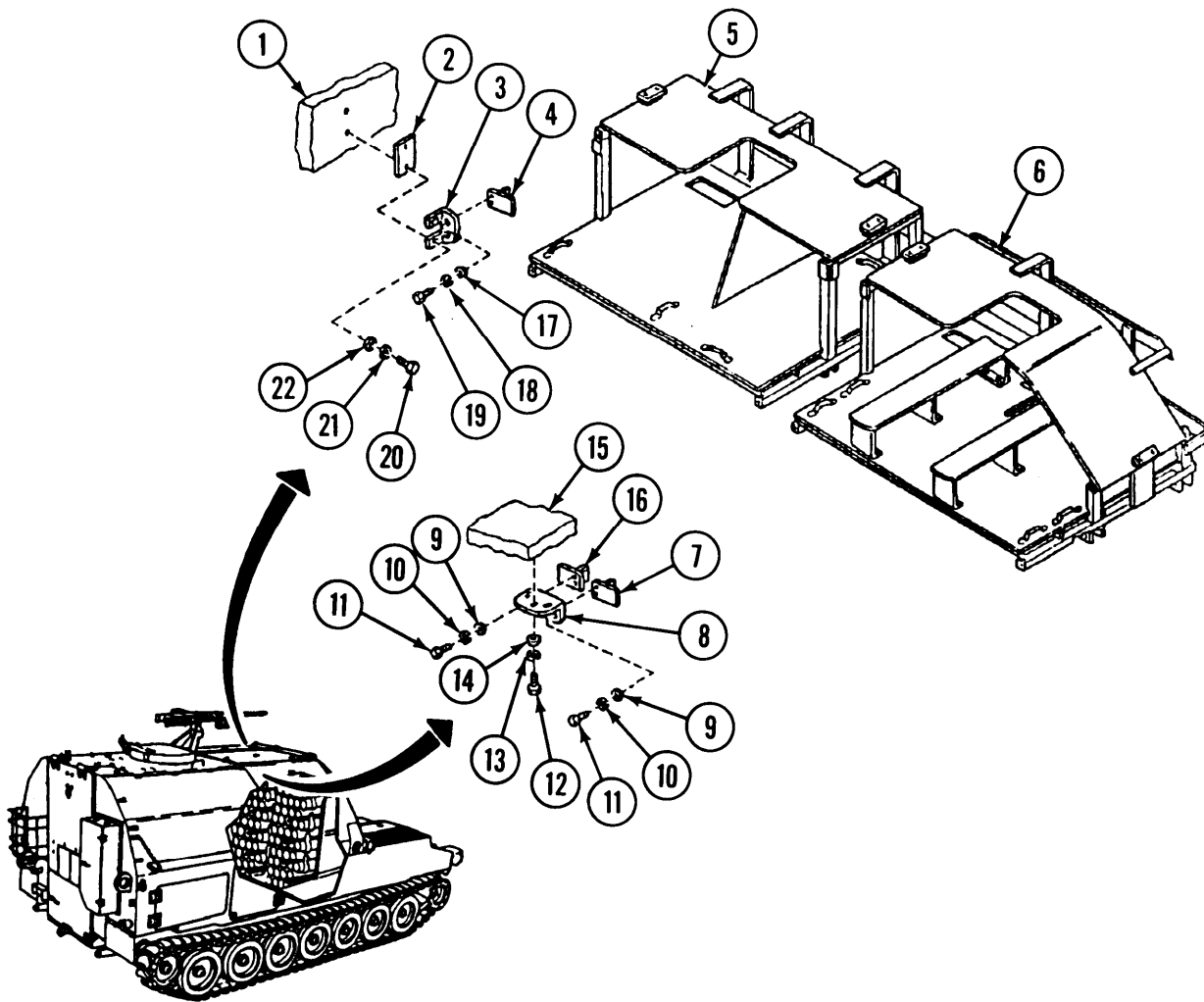
1. Remove two screws (20), lockwashers (21), and washers (22), angle(3), and spacer (2) from outside auxiliary power unit (APU) compartment wall (1). Discard lockwashers.
2. Remove two screws (19), lockwashers (18), and washers (17) and brace (4) from angle (3). Discard lockwashers.
3. Remove three screws (12), lockwashers (13), and washers (14) and angle (8) from middle top door (15). Discard lockwashers.
4. Remove four screws (11), lockwashers (10), and washers (9) and two braces (7 and 16) from angle (8). Discard lockwashers.



15-84. PROJECTILE RACK ASSEMBLY BRACES REPLACEMENT (continued).

b. INSTALLATION

1. Install two braces (7 and 16) on angle (8) with four screws (11), new lockwashers (10), and washers (9).
2. Install angle (8) on middle top door (15) with three screws (12), new lockwashers (13), and washers (14).
3. Adjust two brackets (7 and 16) and angle (8) on middle top door (15) to provide snug fit on projectile rack assemblies (5 and 6).
4. Install brace (4) on angle (3) with two screws (19), new lockwashers (18), and washers (17).
5. Install angle (3) and spacer (2) on outside APU compartment wall (1) with two screws (20), new lockwashers (21), and washers (22).
6. Adjust brace (4) to provide snug fit on projectile rack assemblies (5 and 6).



FOLLOW-ON MAINTENANCE:

- None

15-85. PROJECTILE RACK REMOVAL AID REPAIR.

This Task Covers:

- | | |
|----------------|----------------------------|
| a. Disassembly | b. Cleaning and Inspection |
| c. Assembly | |
-

Initial Setup:

Tools/Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- LockWasher (9) (Item 166, Appendix H)

Materials/Parts:

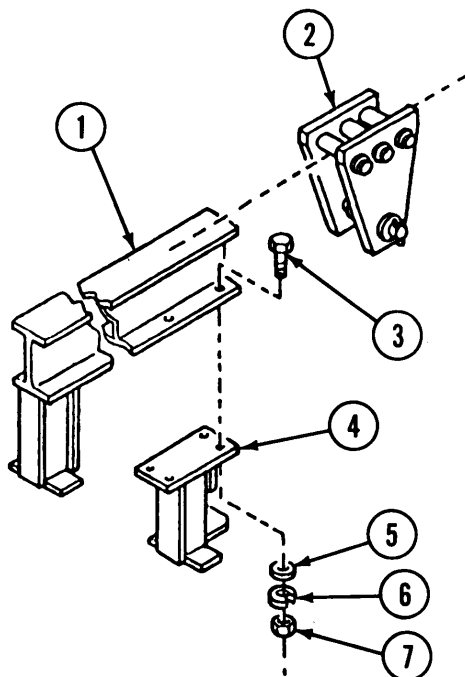
- Adhesive, rubber (Item 5, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (2) (Item 25, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Projectile rack removal aid removed (refer to TM 9-2350-287-10).
-

a. DISASSEMBLY

1. Remove four nuts (7), lockwashers (6), washers (5), and screws (3) releasing extension (4) from beam (1). Discard lockwashers.
2. Slide trolley assembly (2) from end of beam (1).



15-85. PROJECTILE RACK REMOVAL AID REPAIR (continued)

3. Remove screw (15), two washers (10), lockwasher (9), nut (8), and spacer (13) from two plates (11 and 14). Discard lockwasher.
4. Remove two cotter pins (19) and washers (20) from shaft (21), and separate two plates (11 and 14). Discard cotter pins.
5. Remove four nuts (16) and lockwashers (17), eight washers (18), and four cam followers (22) from two plates (11 and 14). Discard lockwashers.

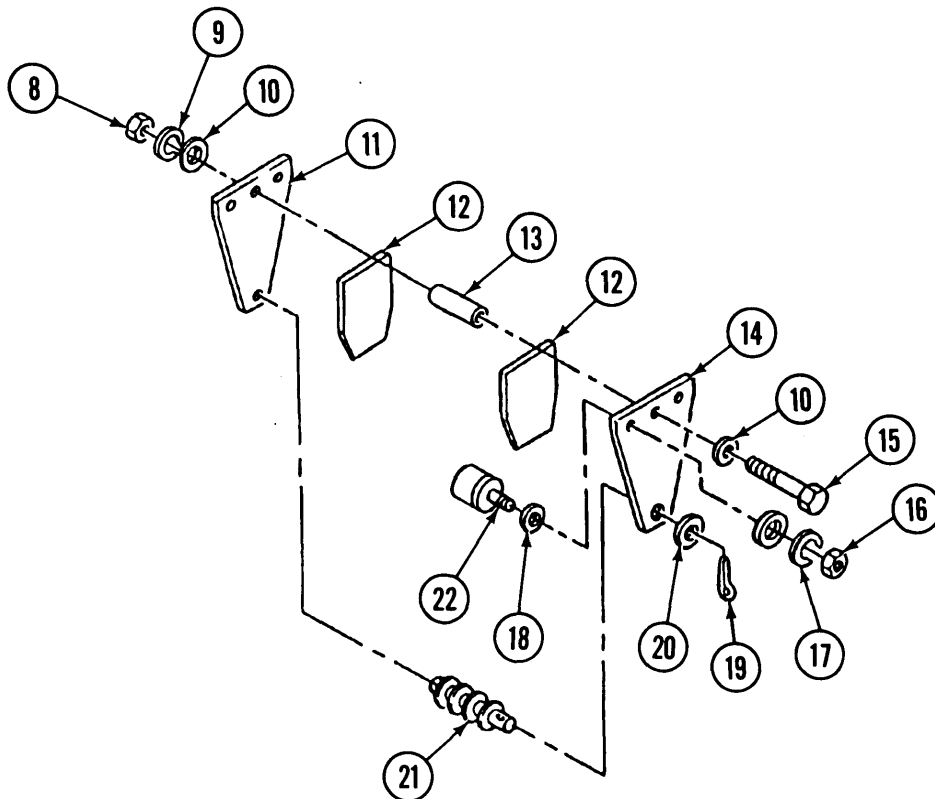
b. CLEANING AND INSPECTION

1. Inspect for cracks, bends, or damage. Replace defective parts.

WARNING

Drycleaning 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.

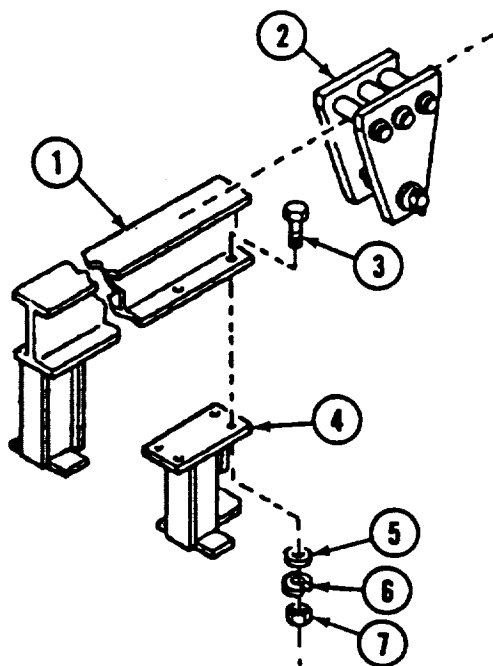
2. Clean and inspect four cam followers (22) with drycleaning solvent and rag.
3. Inspect two nylon wear strips (12) for cracks, tears, and gouges. If damaged, remove from plate(11 or 14).
4. Clean adhesive residue from plate (11 or 14) with drycleaning solvent. Allow parts to dry.



15-85. PROJECTILE RACK REMOVAL AID REPAIR (continued).**c. ASSEMBLY****WARNING**

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

1. If nylon wear strips (12) were removed, apply rubber adhesive to rough side of new wear strip (12) and mating surface on plate (11 or 14). Allow to dry until tacky. Install wear strips (12) on plate (11 or 14).
2. Install four cam followers (22) on two plates (11 and 14) with eight washers (18), four new lockwashers (17), and four nuts (16).
3. Install shaft (21) between two plates (11 and 14) with two washers (20) and new cotter pins (19).
4. Connect plate (14), spacer (13), and plate (11) with screw (15), two washers (10), new lockwasher (9), and nut (8).
5. Slide trolley assembly (2) onto beam (1).
6. Install extension (4) on beam (1) with four screws (3), washers (5), new lockwashers (6), and nuts (7).

**FOLLOW-ON MAINTENANCE:**

- Stow projectile rack removal aid in vehicle (refer to TM 9-2350-287-10).

15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 5, Appendix D)
- Lockwasher (2) (Item 163, Appendix H)
- Lockwasher (23) (Item 164, Appendix H)
- Lockwasher (96) (Item 196, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Left canister restraints removed (para 15-90).
- Air outlet orifice connector removed (para 22-4).
- Mounted water ration heater (MWRH) bracket removed (para 15-94).

a. REMOVAL

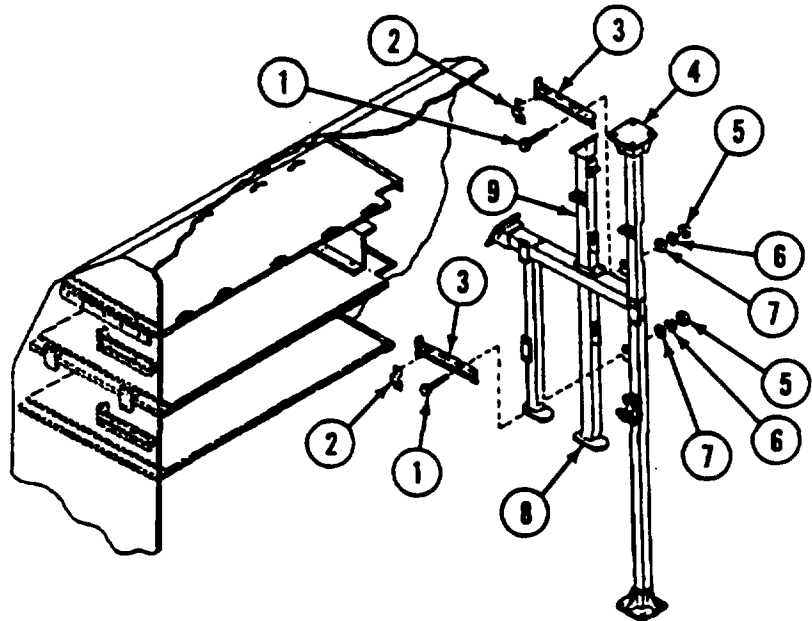
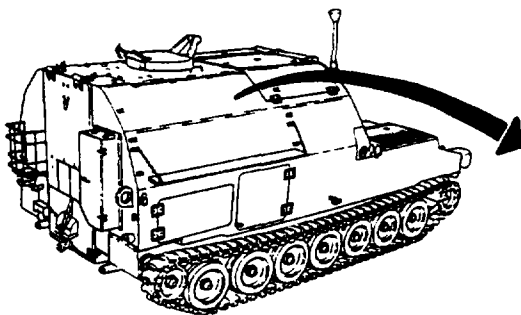
WARNING

Before performing any maintenance, make sure propellant charges and any powder pellets are removed from work area. Failure to do so may result in death or injury to personnel.

NOTE

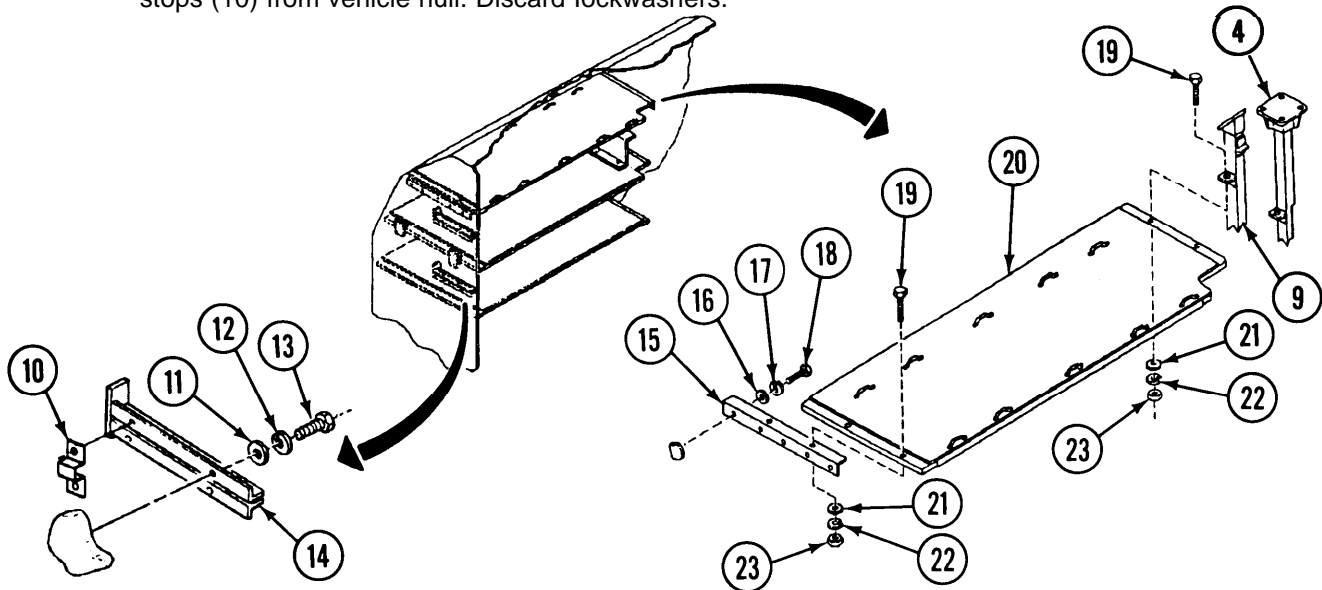
An assistant is needed when removing and installing shelves.

1. Remove eight screws (1), nuts (5), lockwashers (6), and washers (7) and two drawer slide tracks (3) and slide stops (2) from front, middle, and top posts (4, 8, and 9).

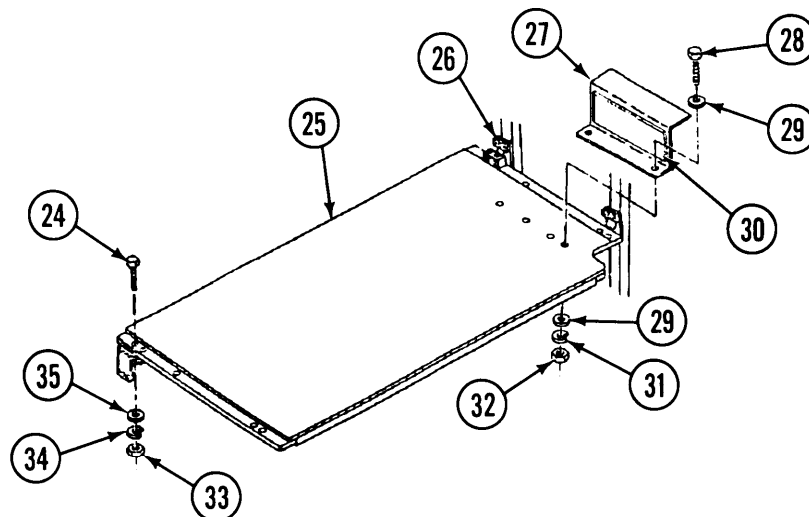


15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued)

2. Remove eight screws (13), lockwashers (12), and washers (11) and two drawer slide tracks (14) and slide stops (10) from vehicle hull. Discard lockwashers.



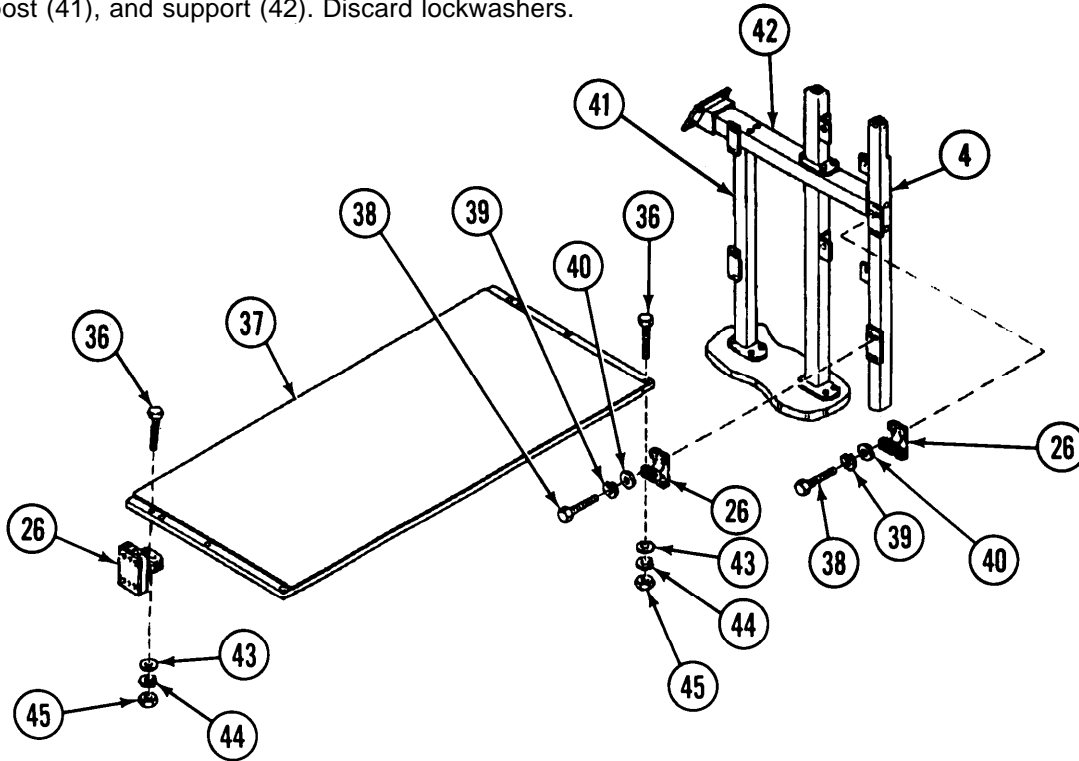
3. Remove four screws (19), nuts (23), lockwashers (22), and washers (21) and top shelf (20) from angle (15) and front and top posts (4 and 9). Discard lockwashers.
4. Remove five screws (18), lockwashers (17), and washers (16) and angle (15) from hull. Discard lockwashers.



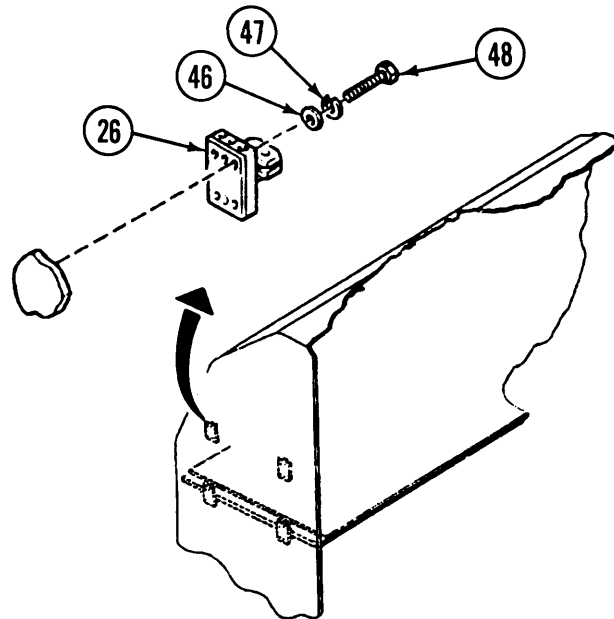
5. Remove two screws (28), nuts (32), lockwashers (31), and four washers (29) an angle (27) from second shelf (25). Discard lockwashers.
6. Inspect rubber pad (30) on angle (27). Replace if damaged.
7. Remove eight screws (24), nuts (33), lockwashers (34), and washers (35) and second shelf (25) from four isolators (26). Discard lockwashers.

15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

8. Remove eight screws (36), nuts (45), lockwashers (44), and washers (43) and third shelf (37) from four isolators (26). Discard lockwashers,
9. Remove 16 screws (38), lockwashers (39), and washers (40) and four isolators (26) from front post (4), rear post (41), and support (42). Discard lockwashers.



10. Remove 16 screws (48), lockwashers (47), and washers (46) and four isolators (26) from hull. Discard lockwashers.



15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

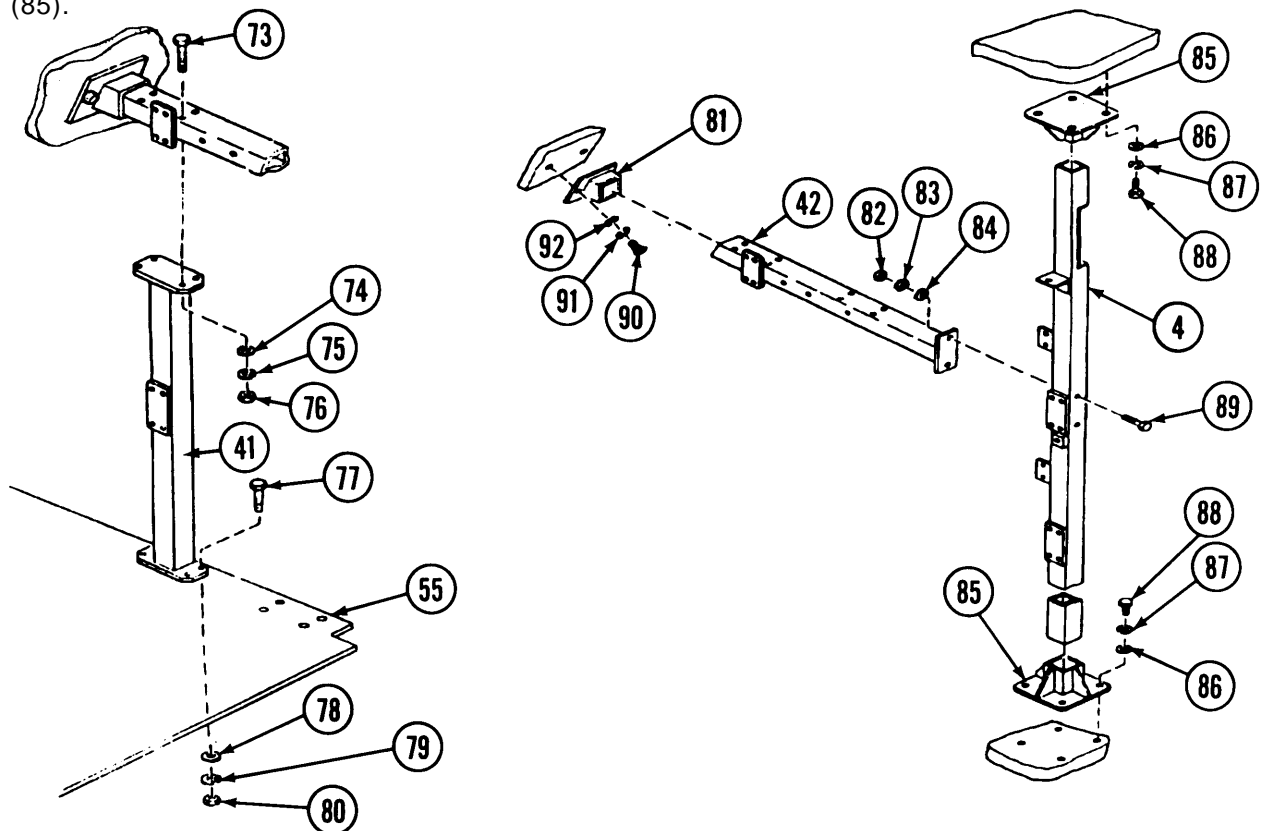
19. Remove four screws (77), nuts (80), lockwashers (79), and washers (78) from bottom of rear post (41) and fourth shelf (55). Discard lockwashers.
20. Remove four screws (73), nuts (76), lockwashers (75), and washers (74) at top of rear post (41), and remove rear post (41) from support (42). Discard lockwashers.
21. Remove two screws (89), nuts (82), lockwashers (83), and washers (84) and support (42) from front post (4) and bracket (81). Discard lockwashers.
22. Remove two screws (90), lockwashers (91), and washers (92) and bracket (81) from hull. Discard lockwashers.
23. Remove eight screws (88), lockwashers (87), and washers (86), two brackets (85), and front post (4) from hull. Discard lockwashers.

b. INSTALLATION

NOTE

An assistant is needed for installing shelves.

1. Install two brackets (85) on front post (4).
2. Install front post (4) to hull with eight screws (88), new lockwashers (87), and washers (86) in two brackets (85).



15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

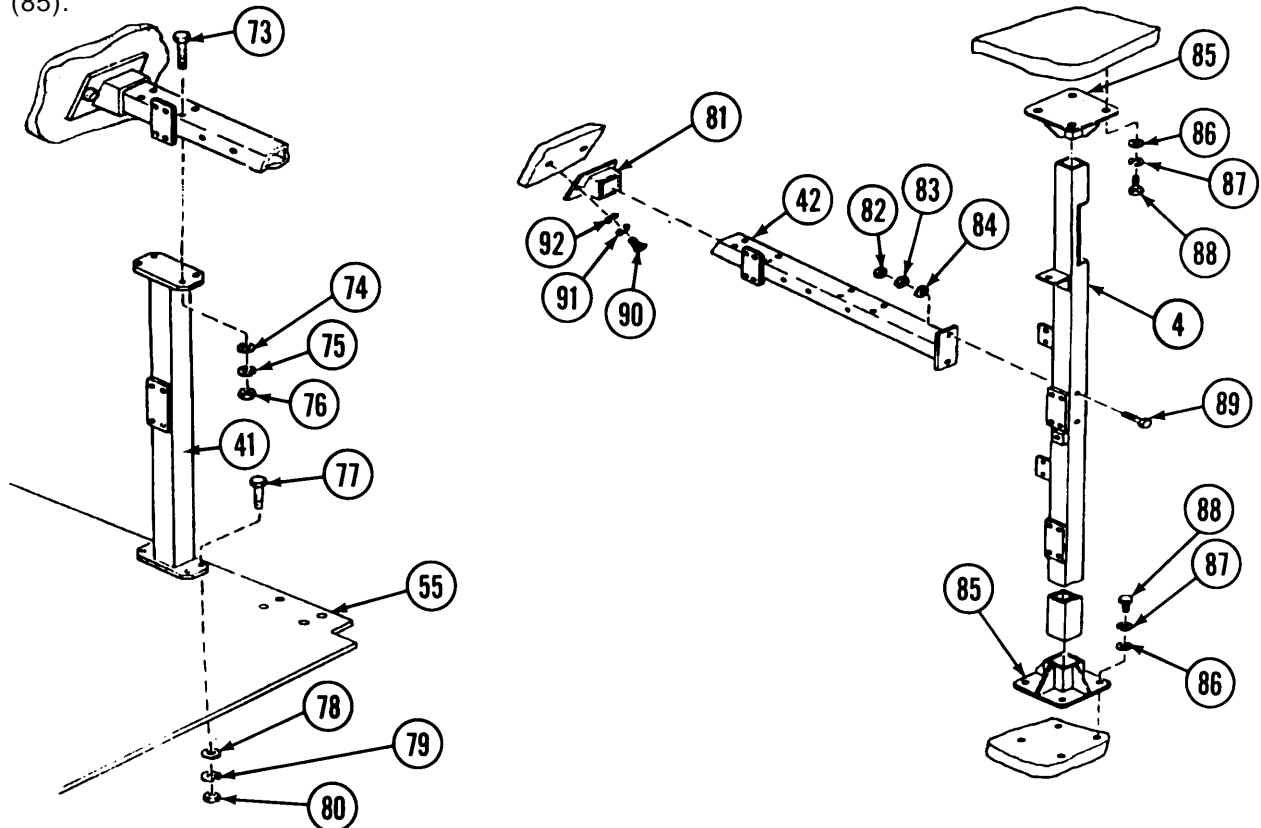
19. Remove four screws (77), nuts (80), lockwashers (79), and washers (78) from bottom of rear post (41) and fourth shelf (55). Discard lockwashers.
20. Remove four screws (73), nuts (76), lockwashers (75), and washers (74) at top of rear post (41), and remove rear post (41) from support (42). Discard lockwashers.
21. Remove two screws (89), nuts (82), lockwashers (83), and washers (84) and support (42) from front post (4) and bracket (81). Discard lockwashers.
22. Remove two screws (90), lockwashers (91), and washers (92) and bracket (81) from hull. Discard lockwashers.
23. Remove eight screws (88), lockwashers (87), and washers (86), two brackets (85), and front post (4) from hull. Discard lockwashers.

b. INSTALLATION

NOTE

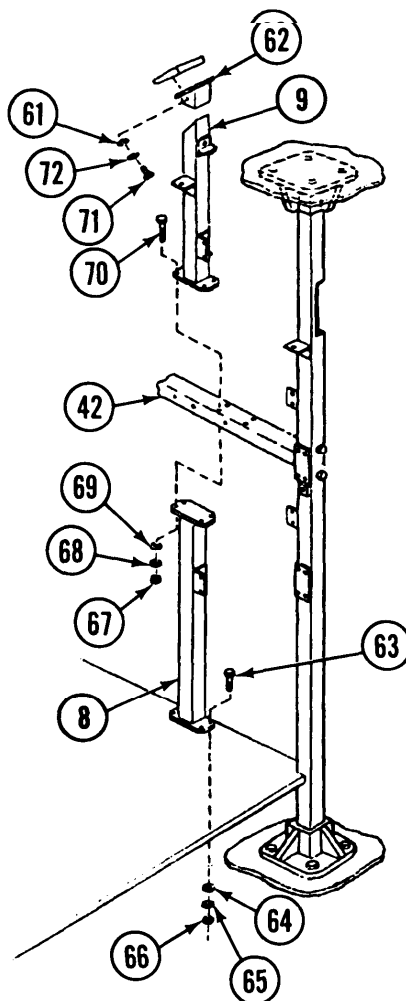
An assistant is needed for installing shelves.

1. Install two brackets (85) on front post (4).
2. Install front post (4) to hull with eight screws (88), new lockwashers (87), and washers (86) in two brackets (85).



15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

3. Install bracket (81) on support (42).
4. Install two screws (90), new lockwashers (91), and washers (92) and bracket (81) on hull.
5. Install support (42) on front post (4) with two screws (89), washers (84), new lockwashers (83), and nuts (82).
6. Install rear post (41) on support (42) with four screws (73), washers (74), new lockwashers (75), and nuts (76).
7. Install rear post (41) on fourth shelf (55) with four screws (77), washers (78), new lockwashers (79), and nuts (80).
8. Install bracket (62) on top post (9).
9. Install top post (9) and bracket (62) to ceiling with two screws (71), new lockwashers (72), and washers (61).
10. Install middle post (8) on fourth shelf (55) with four screws (63), washers (64), new lockwashers (65), and nuts (66).
11. Secure middle and top posts (8 and 9) to support (42) with four screws (70), washers (69), new lockwashers (68), and nuts (67).



15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

12. Install two wear strips (49) on wear two strip assemblies (54) with 20 screws (50).
13. Install two wear strip assemblies (54) on fourth shelf (55) with eight screws (51), new lockwashers (52), and washers (53).

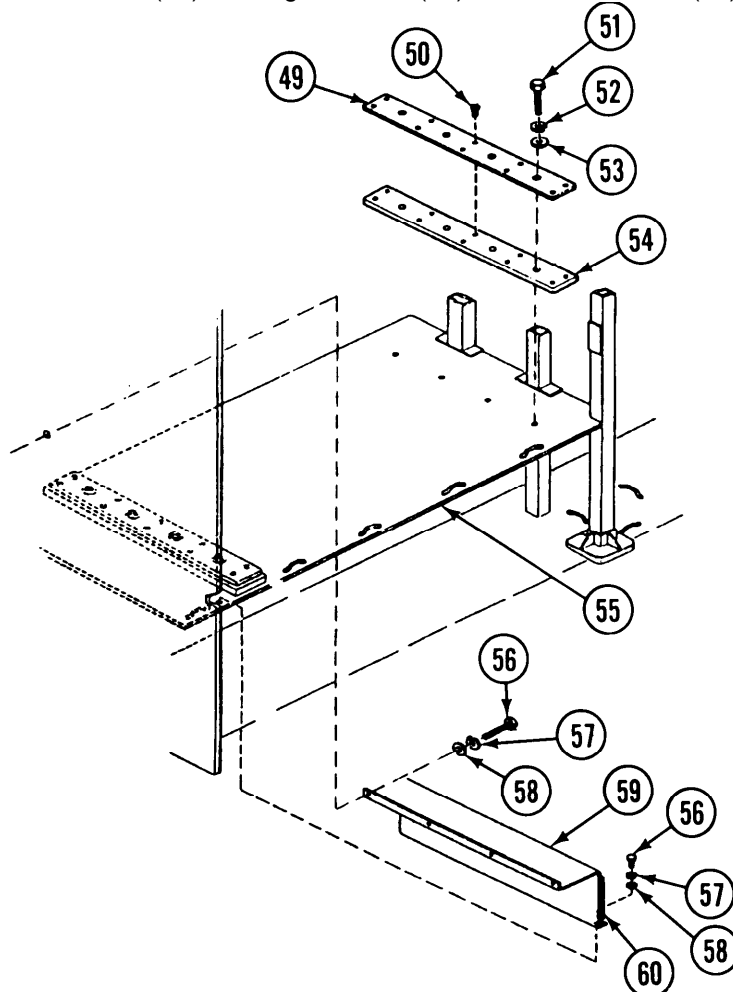
WARNING

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

NOTE

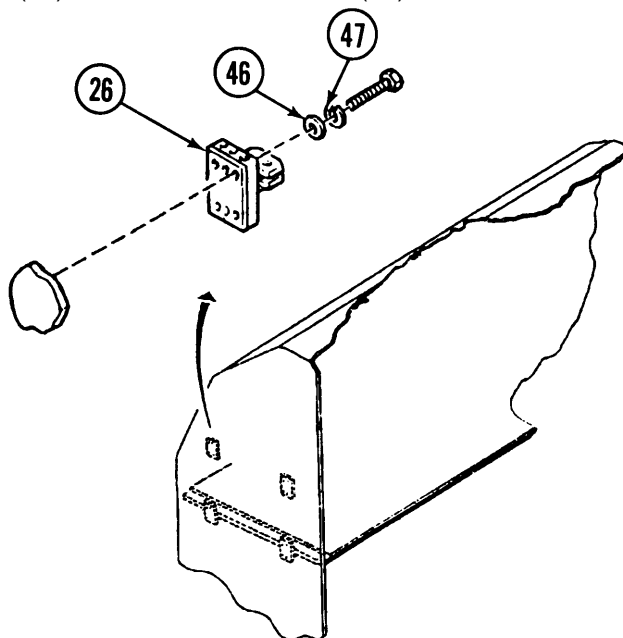
Perform step 14 only if robber pad was removed.

14. Apply rubber adhesive to rubber pad (60), and install rubber pad (60) on guard (59).
15. Install guard (59) on fourth shelf (55) with eight screws (56), new lockwashers (57), and washers (58).



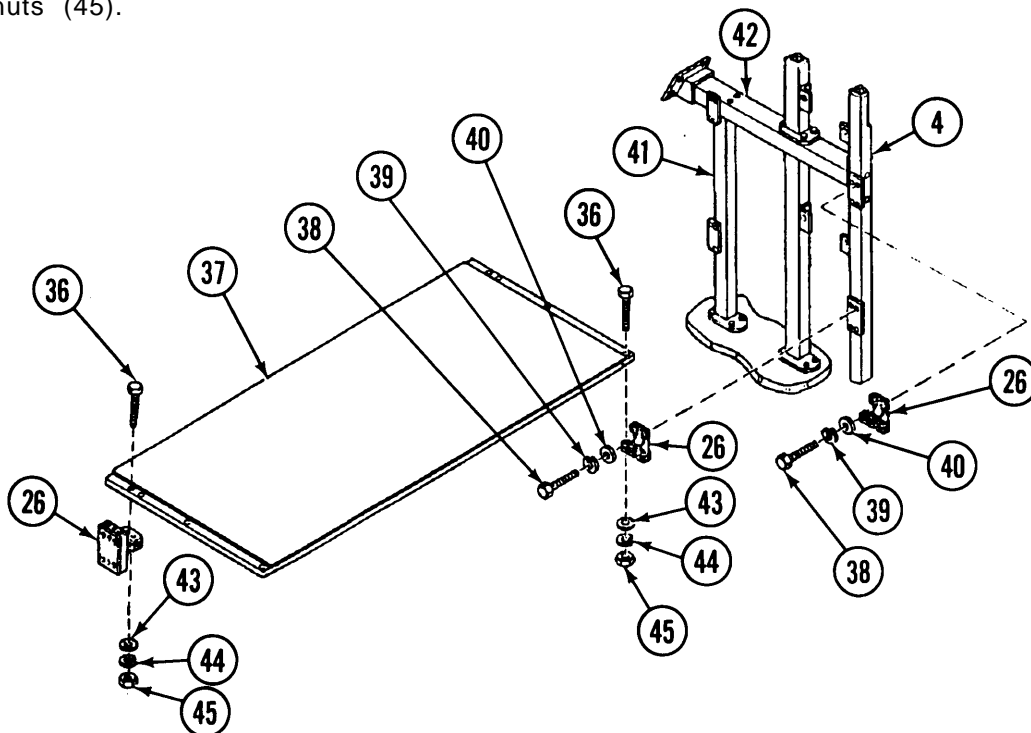
15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

16. Install four isolators (26) on hull with 16 screws (48), new lockwashers (47), and washers (46).



17. Install four isolators (26) on front post (4), support (42) and rear post (41) with 16 screws (38), new lockwashers (39), and washers (40).

18. Install third shelf (37) on four isolators (26) with eight screws (36), washers (43), new lockwashers (44), and nuts (45).



15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

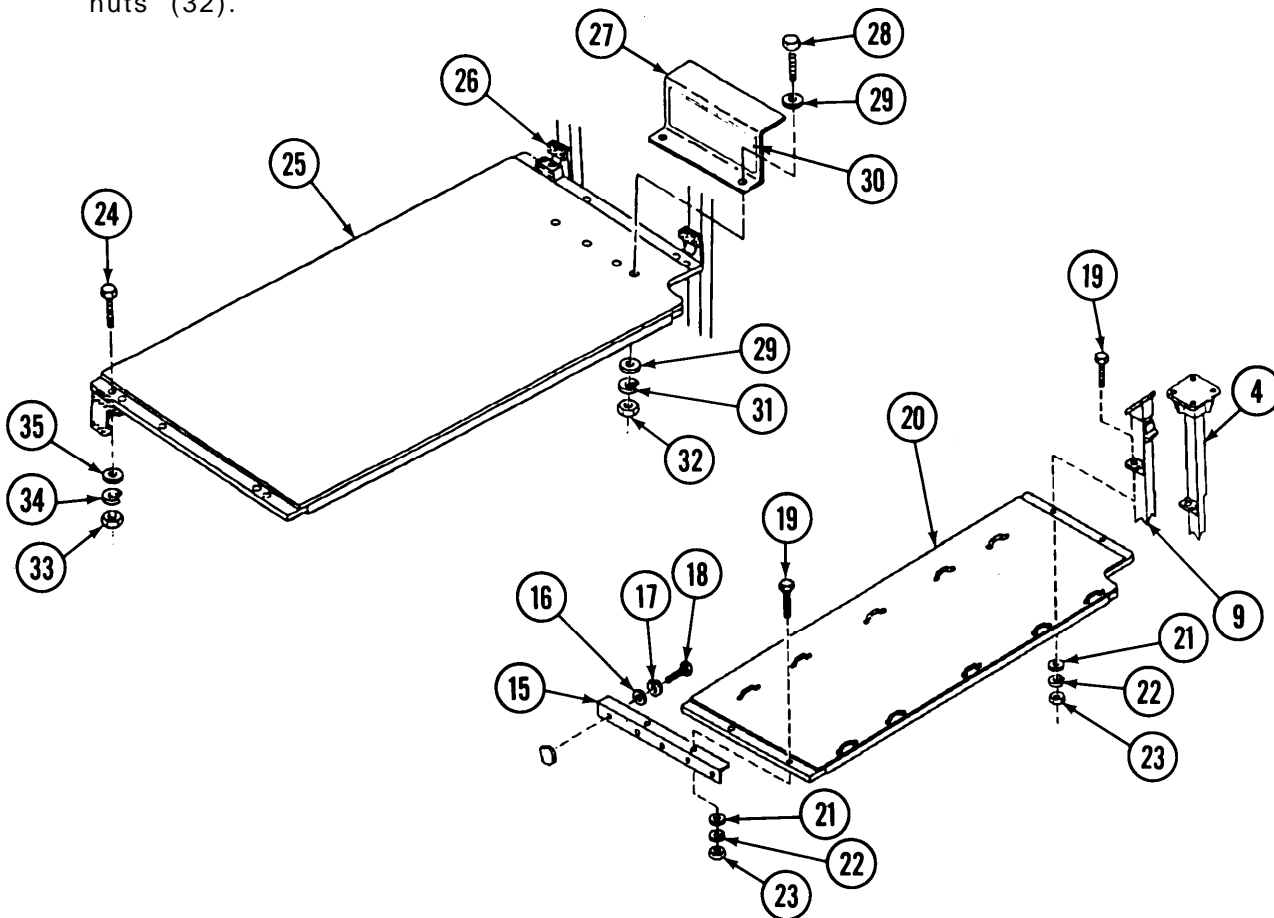
WARNING

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

NOTE

Perform step 19 only if rubber pad was removed.

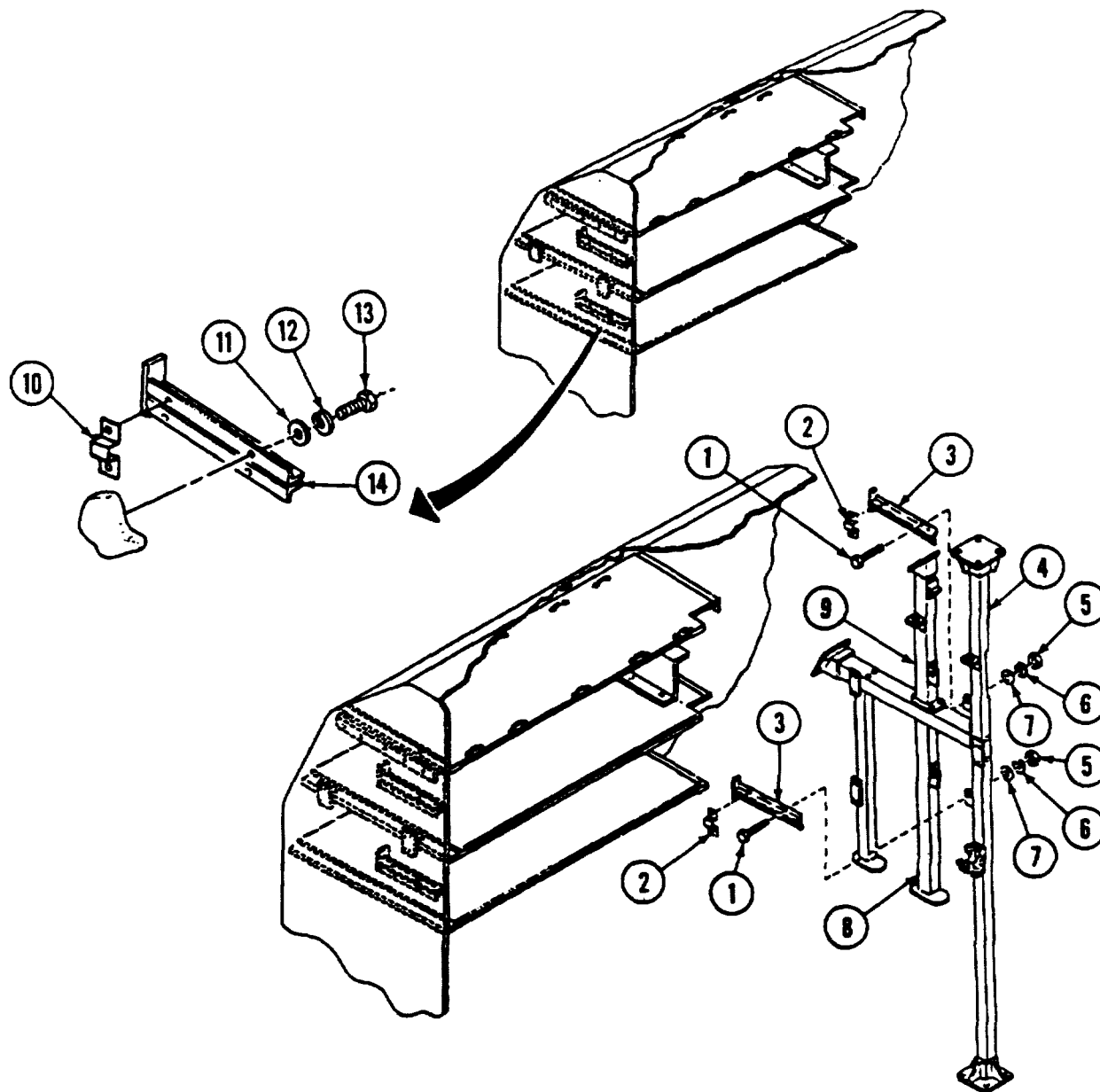
19. Apply rubber adhesive to rubber pad (30), and install rubber pad (30) on angle (27).
20. Install second shelf (25) on four isolators (26) with eight screws (24), washers (35), two new lockwashers (34), and nuts (33).
21. Install angle (27) on second shelf (25) with two screws (28), four washers (29), new lockwashers (31), and nuts (32).



22. Install angle (15) on hull with five screws (18), new lockwashers (17), and washers (16).
23. Install top shelf (20) on angle(15) and front and top posts (4 and 9) with four screws (19), washers (21), new lockwashers (22), and nuts (23).

15-86. LEFT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

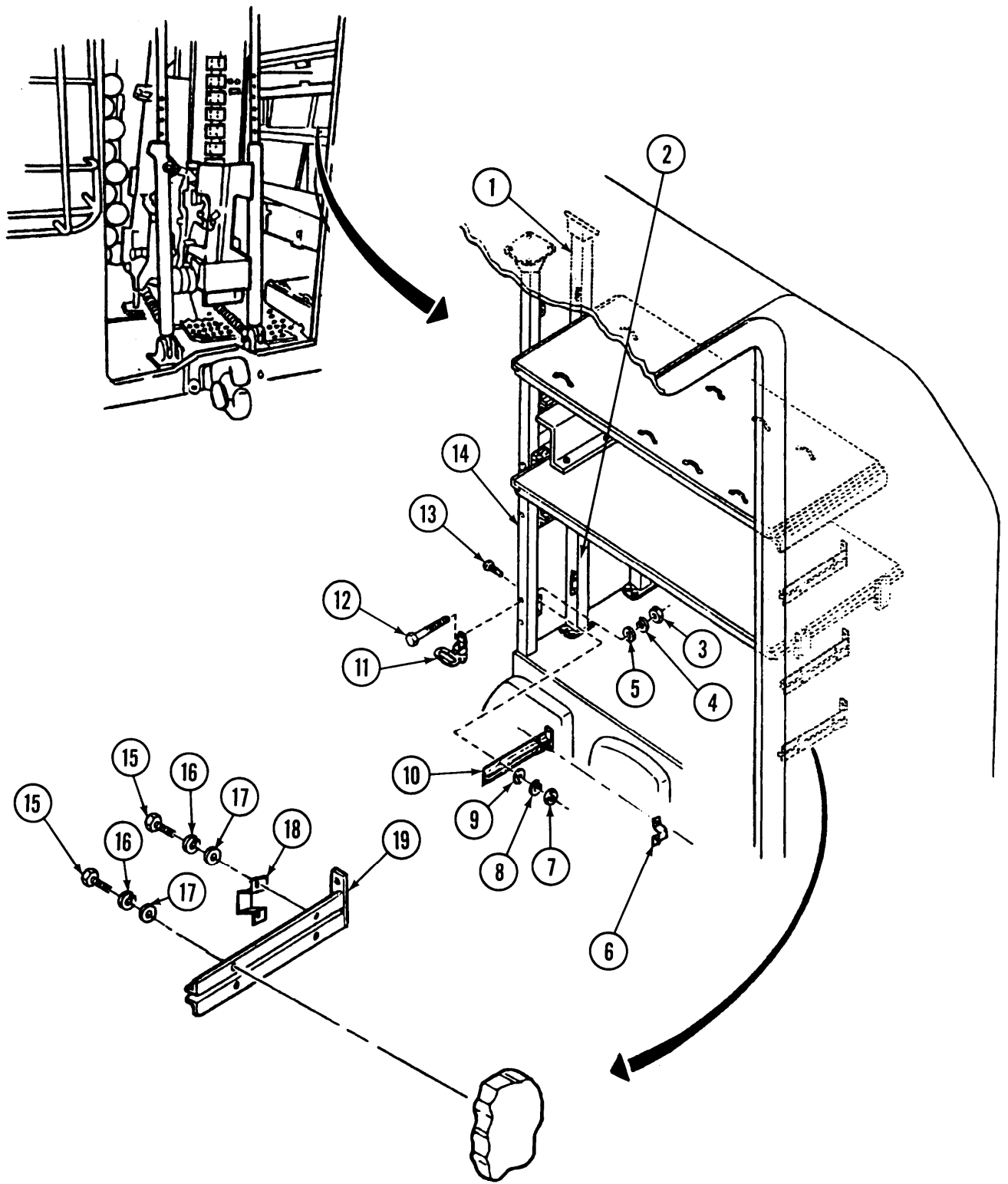
24. Install two drawer slide tracks (14) and slide stops (10) on hull with eight screws (13), new lockwashers (12), and washers (11).
25. Install two drawer slide tracks (3) and slide stops (2) on front, middle, and top posts (4, 8, and 9) with eight screws (1), washers (7), new lockwashers (6), and nuts (5).



FOLLOW-ON TASKS:

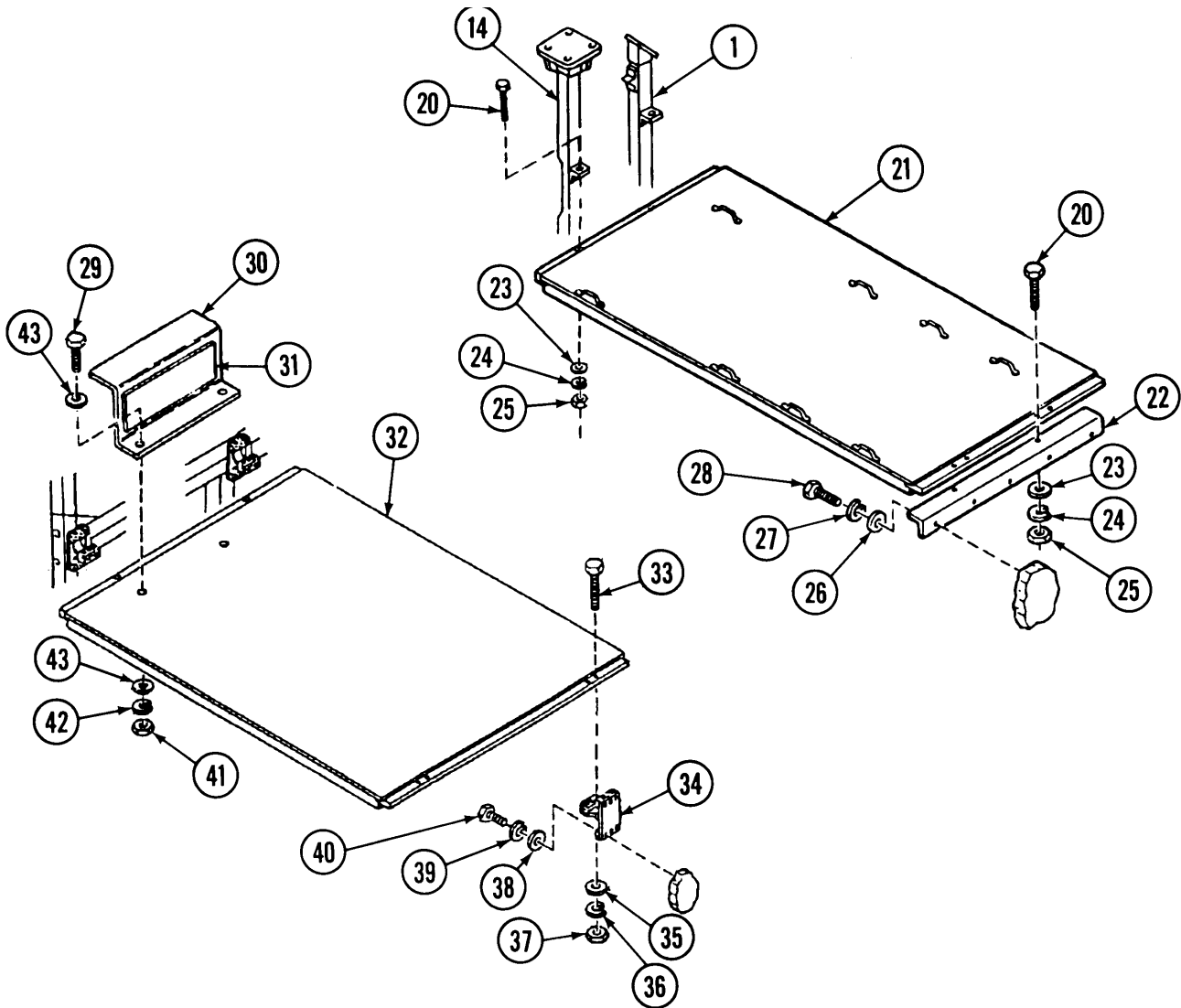
- Install left canister restraints (para 15-90).
- Install air outlet orifice connector (para 22-4).
- Install mounted water ration heater (MWRH) bracket (para 15-94).

15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS
REPLACEMENT (continued).



15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

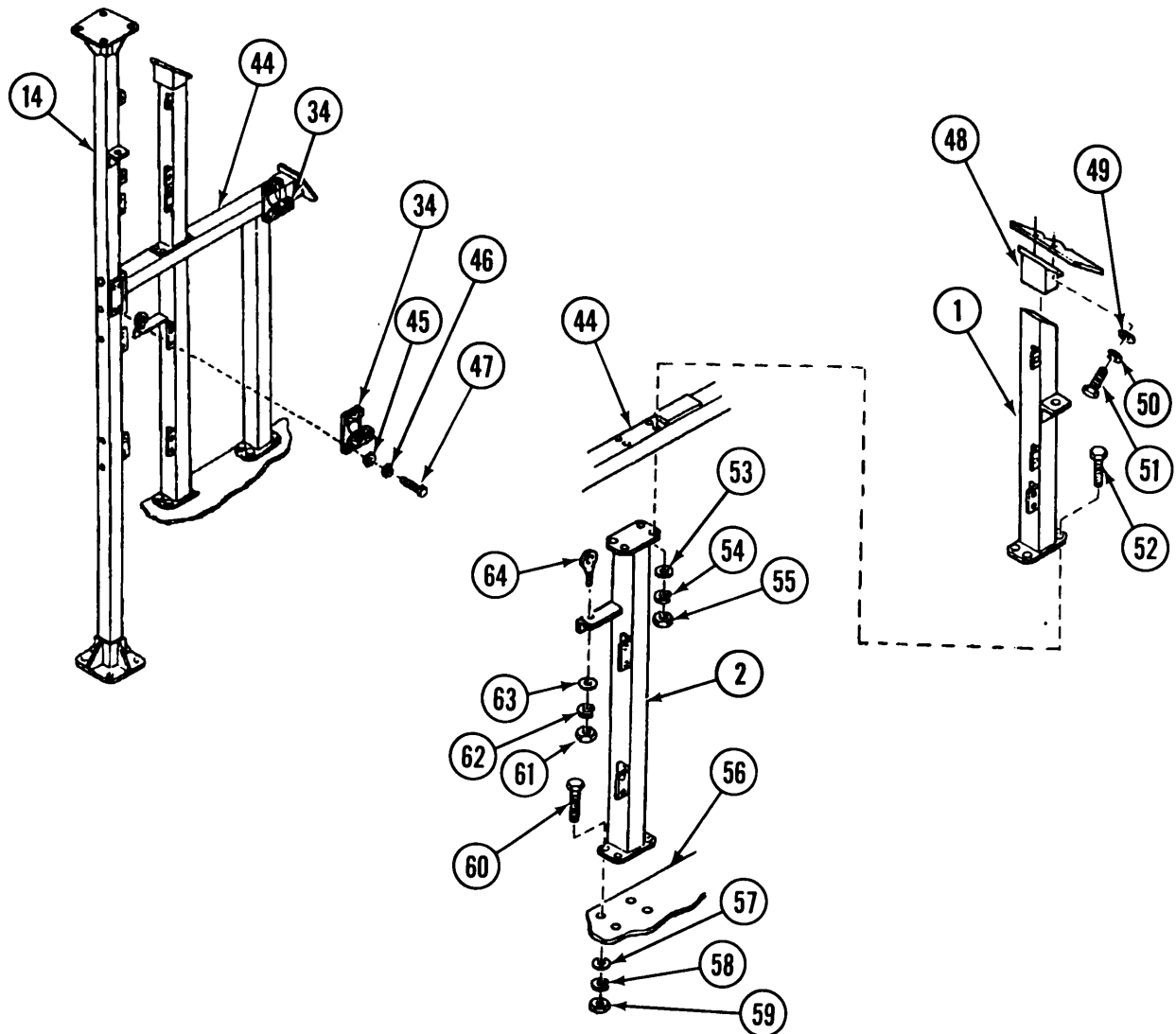
4. Remove four screws (20), nuts (25), lockwashers (24), and washers (23) and top shelf (21) from angle (22) and top and front posts (1 and 14). Discard lockwashers.
5. Remove five screws (28), lockwashers (27), and washers (26) and angle (22) from rear of vehicle hull. Discard lockwashers.



6. Remove two screws (29), nuts (41), and lockwashers (42), four washers (43), and angle (30) from middle shelf (32). Discard lockwashers.
7. Inspect rubber pad (31) on angle (30). Replace if damaged.
8. Remove eight screws (33), nuts (37), lockwashers (36), and washers (35) and middle shelf (32) from four isolators (34). Discard lockwashers.
9. Remove eight screws (40), lockwashers (39), and washers (38) and two isolators (34) from rear of vehicle hull. Discard lockwashers.

15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

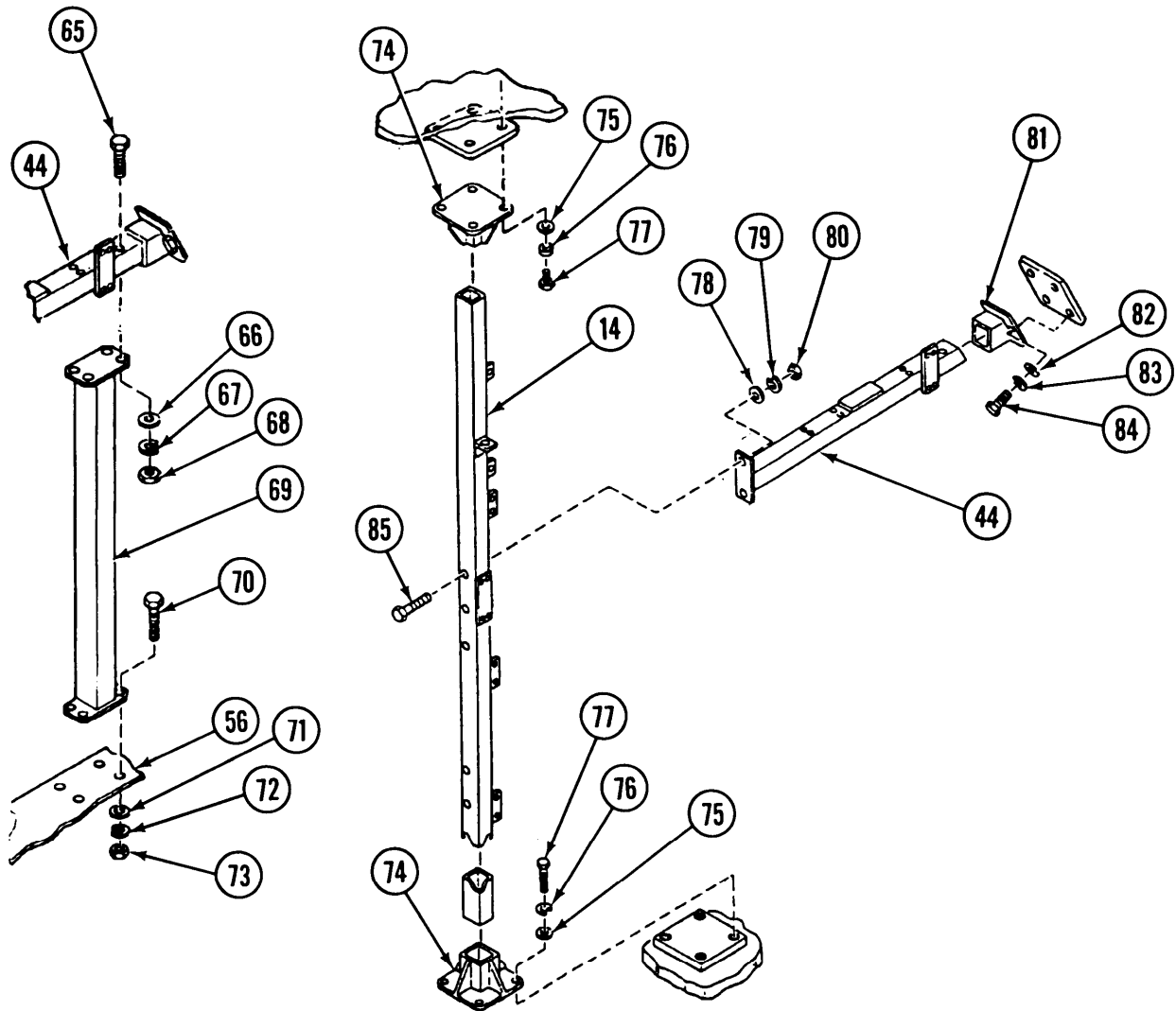
10. Remove eight screws (47), lockwashers (46), and washers (45) and two isolators (34) from front post (14) and support (44). Discard lockwashers.



11. Remove four screws (60), nuts (59), lockwashers (58), and washers (57) from bottom of middle post (2) and bottom shelf (56).
12. Remove four screws (52), nuts (55), lockwashers (54), and washers (53) and middle post (2) from support (44) and bottom shelf (56). Discard lockwashers.
13. Remove hook screw (64), nut (61), lockwasher (62), and washer (63) from middle post (2). Discard lockwasher.
14. Remove two screws (51), lockwashers (50), and washers (49) and bracket (48) from rear of vehicle hull. Discard lockwashers.

15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

15. Remove four screws (70), nuts (73), lockwashers (72), and washers (71) from rear post (69) and bottom shelf (56). Discard lockwashers.
16. Remove four screws (65), nuts (68), lockwashers (67), and washers (66) and rear post (69) from support (44) and bottom shelf (56). Discard lockwashers.



17. Remove two screws (85), nuts (80), lockwashers (79), and washers (78) from support (44) and front post (14). Discard lockwashers.
18. Remove two screws (84), lockwashers (83), and washers (82), support (44), and bracket (81) from rear of vehicle hull. Discard lockwashers.

**15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS
REPLACEMENT (continued).**

19. Remove bracket (81) from support (44).
20. Remove eight screws (77), lockwashers (76), and washers (75), two brackets (74), and front post (14) from vehicle hull. Discard lockwashers.
21. Remove two brackets (74) from front post (14).

b. INSTALLATION**NOTE**

An assistant is needed for installing shelves.

1. Install two brackets (74) on front post (14).
2. Install front post (14) and two brackets (74) on vehicle hull with eight screws (77), new lockwashers (76), and washers (75).
3. Install bracket (81) on support (44).
4. Install support (44) and bracket (81) on vehicle hull with two screws (84), new lockwashers (83), and washers (82).
5. Install support (44) on front post (14) with two screws (85), washers (78), new lockwashers (79), and nuts (80).

NOTE

Do not tighten screws until after rear post has been secured to bottom shelf.

6. Install rear post (69) on support (44) with four screws (65), washers (66), new lockwashers (67), and nuts (68).
7. Secure rear post (69) to bottom shelf (56) with four screws (70), washers (71), new lockwashers (72), and nuts (73). Tighten screws (65).

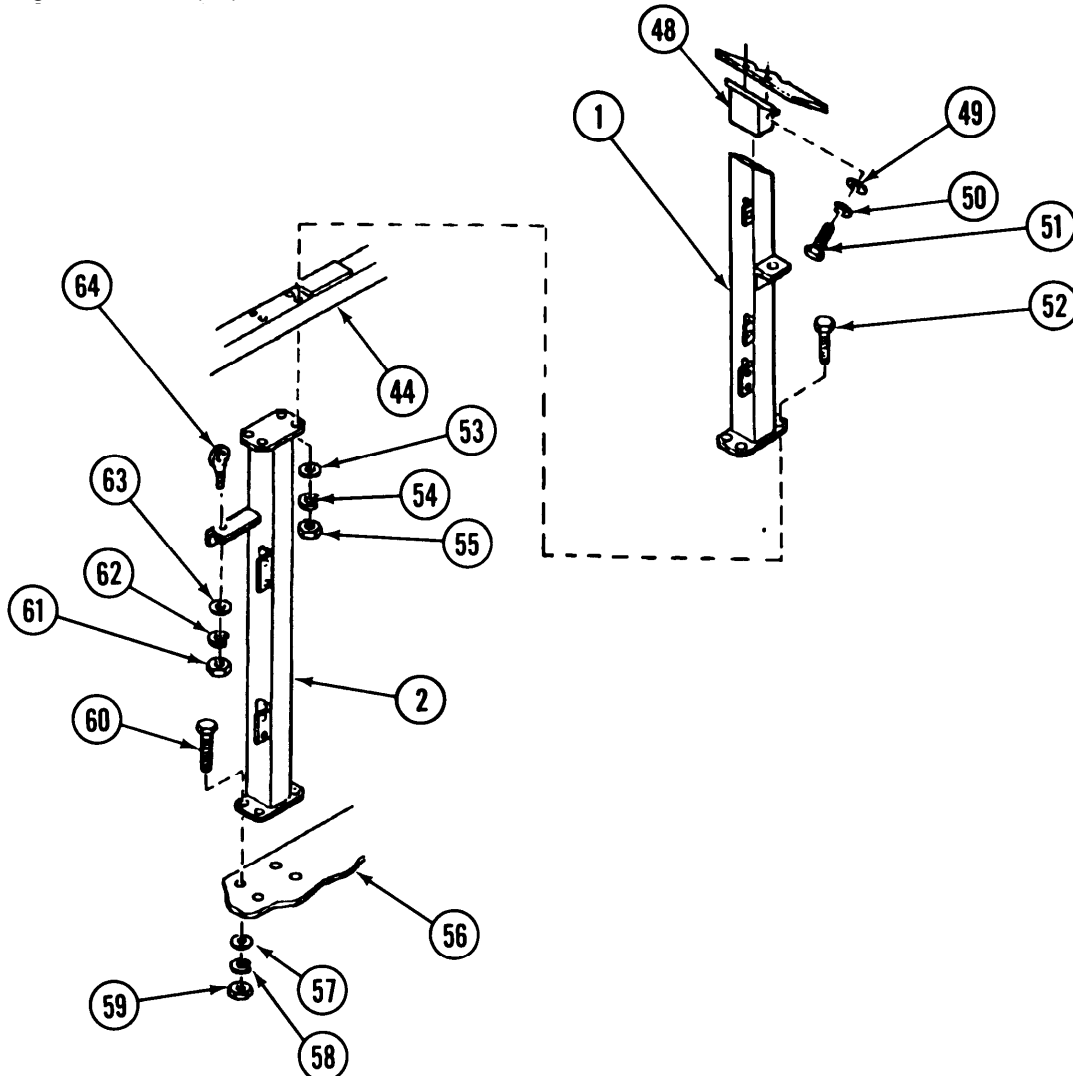
15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

8. Install bracket (48) on top post (1).
9. Install bracket (48) and top post (1) on vehicle hull with two screws (51), new lockwashers (50), and washers (49).
10. Install hook screw (64) to middle post (2) with washer (63), new lockwasher (62), and nut (61).

NOTE

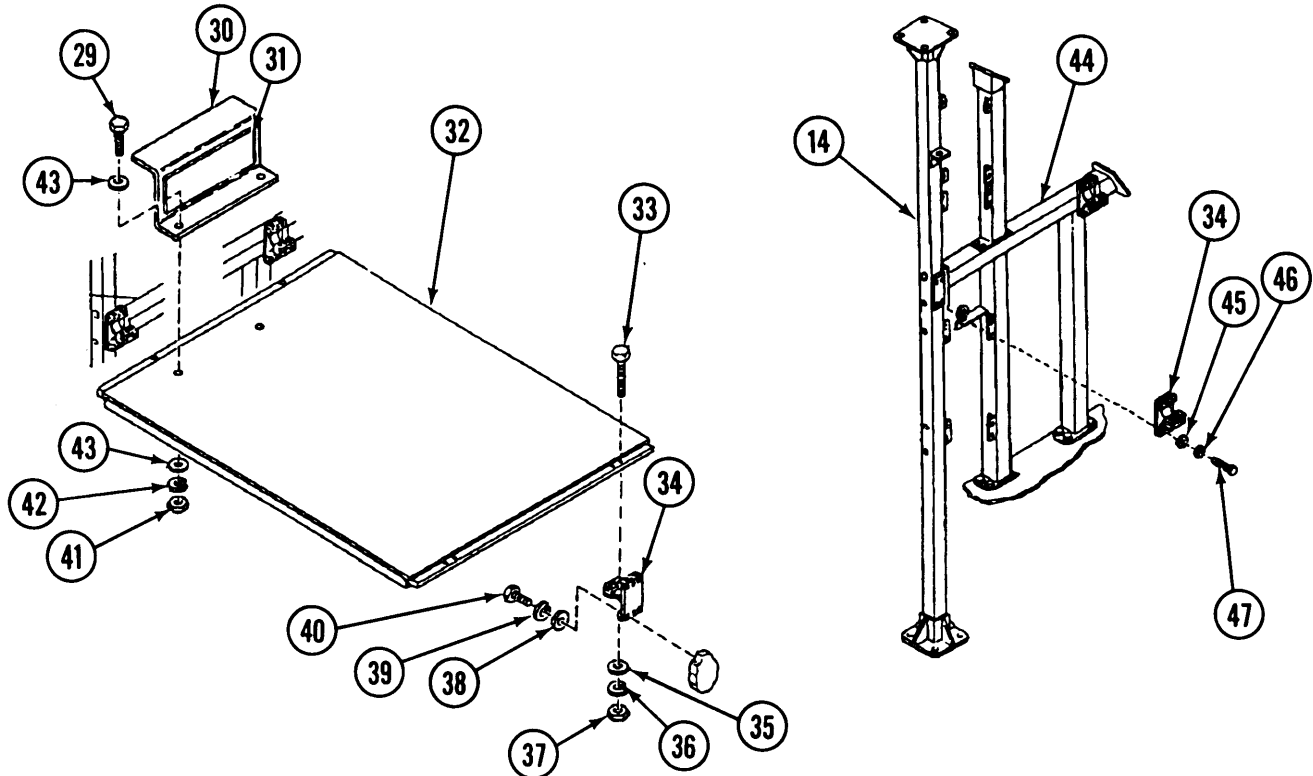
Do not tighten screws until after middle post is secured to support.

11. Install middle post (2) to bottom shelf (56) with four screws (60), washers (57), new lockwashers (58), and nuts (59).
12. Secure middle post (2) to support (44) with four screws (52), washers (53), new lockwashers (54), and nuts (55). Tighten screws (60).



15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

13. Install two isolators (34) on front post (14) and support (44) with eight screws (47), new lockwashers (46), and washers (45).



14. Install two isolators (34) on vehicle hull with eight screws (40), new lockwashers (39), and washers (38).
15. Install middle shelf (32) on four isolators (34) with eight screws (33), washers (35), new lockwashers (36), and nuts (37).
16. Install angle (30) on middle shelf (32) with two screws (29), new lockwashers (42), and nuts (41) and four washers (43).

WARNING

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

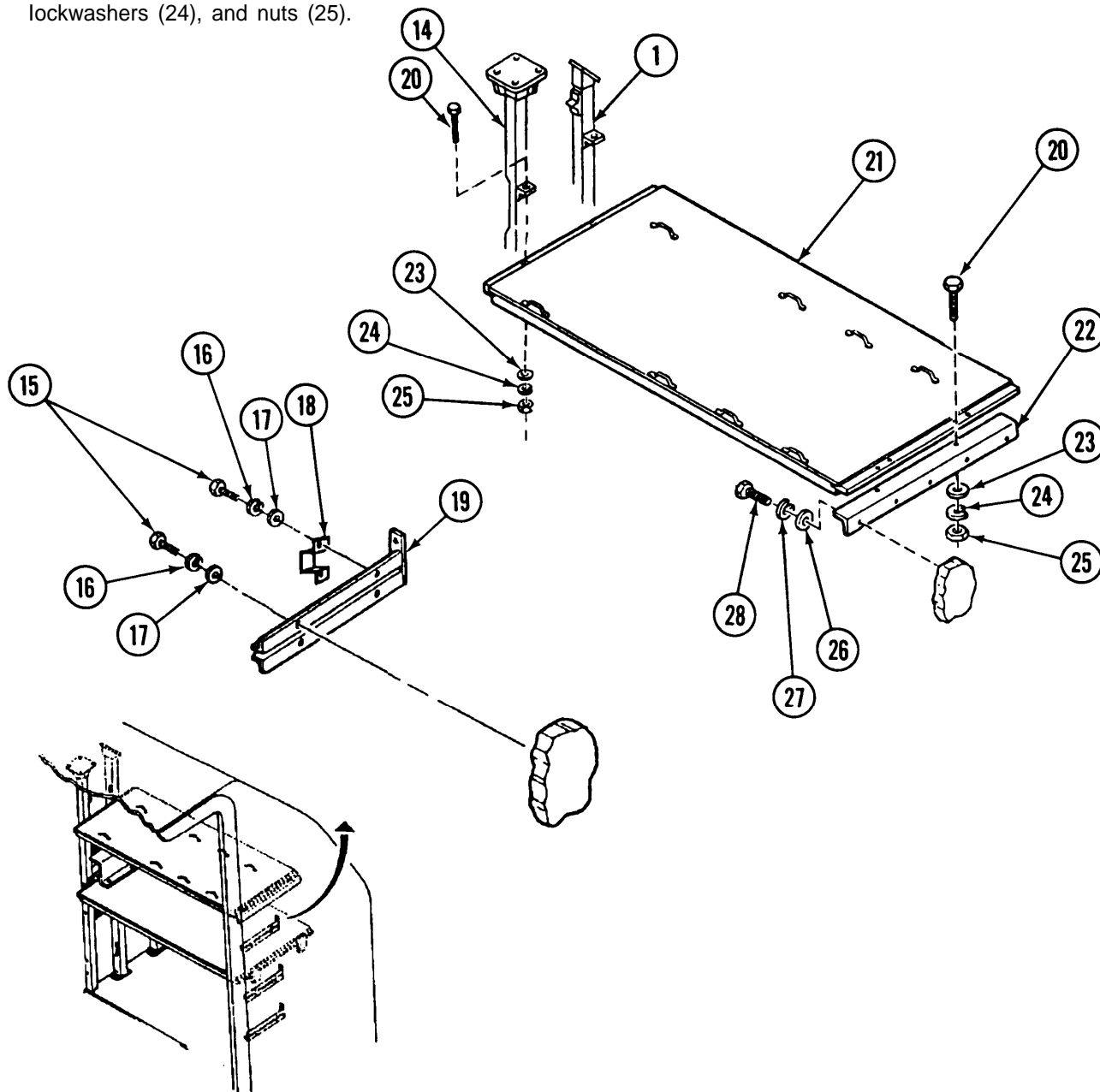
NOTE

Perform step 17 only if rubber pad was removed.

17. Add rubber adhesive to rubber pad (31) and install rubber pad (31) on angle (30).

15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

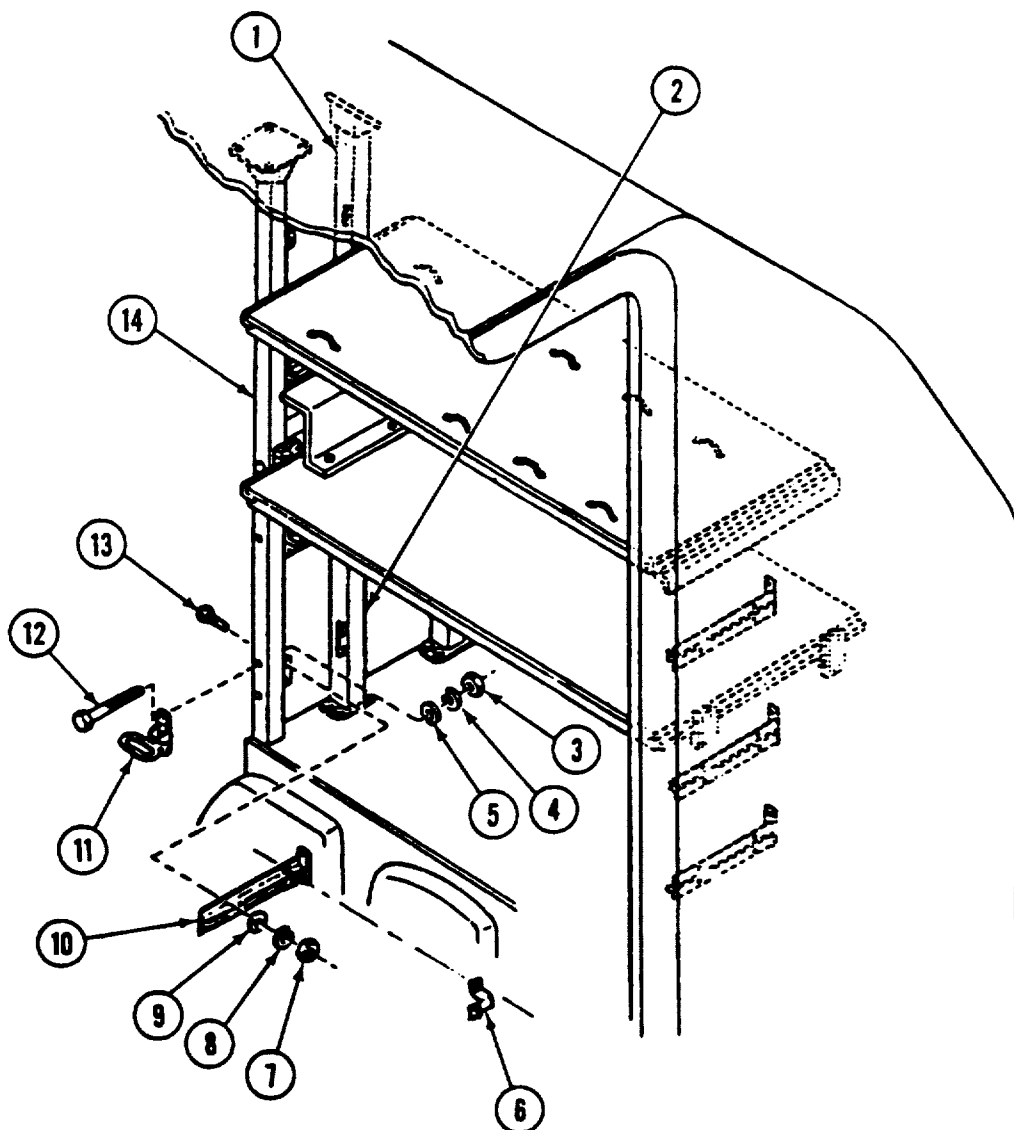
18. Install angle (22) on rear of vehicle hull with five screws (28), new lockwashers (27), and washers (26).
19. Install top shelf (21) on angle (22) and top and front posts (1 and 14) with four screws (20), washers (23), new lockwashers (24), and nuts (25).



20. Install three drawer slide tracks (19) and slide stops (18) on rear of vehicle hull with 12 screws (15), new lockwashers (16), and washers (17).

15-87. RIGHT REAR CANISTER COMPARTMENT SHELVES AND SUPPORTS REPLACEMENT (continued).

21. Install three drawer slide tracks (10) and slide stops (6) on top, middle, and front posts (1, 2, and 14) with 12 screws (13), washers (9), new lockwashers (8), and nuts (7).
22. Install two folding steps (11) on front post (14) with four screws (12), washers (5), new lockwashers (4), and nuts (3).

**FOLLOW-ON MAINTENANCE:**

- Install AFES cylinder bottle No. 2 bracket (para 21-7).
- Install air outlet orifice connector (para 22-4).
- Install right canister restraints (para 15-91).
- Install M43 detector mounting bracket (para 22-6).
- Install GPS mounting bracket assembly (para 20.1-5).

15-88. LEFT FRONT CANISTER COMPARTMENT SHELF ASSEMBLY REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (8) (Item 164, Appendix H)

Equipment Conditions:

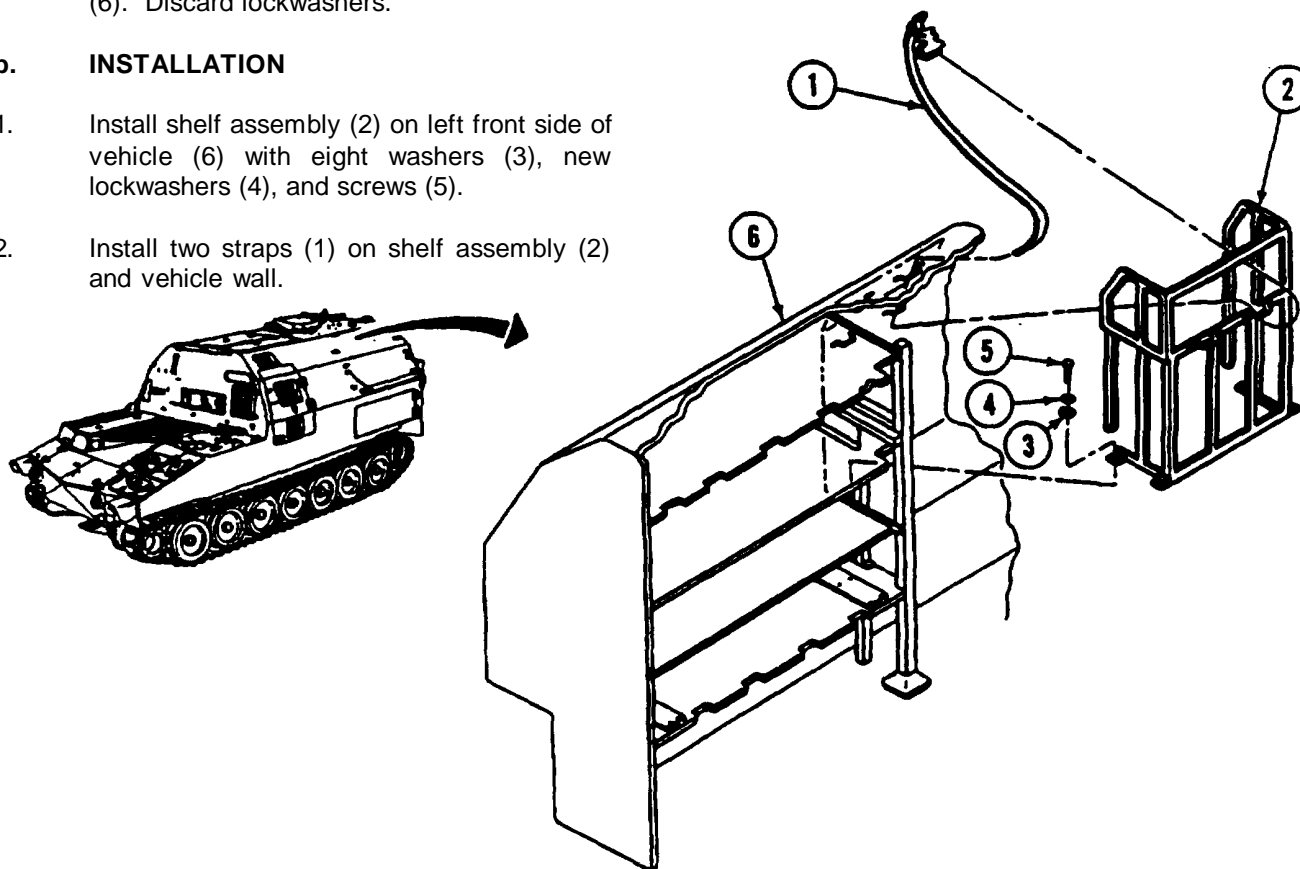
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Crew AFES deactivated (para 21-3).
- No. 3 crew AFES bottle pin installed (para 21-5).

a. REMOVAL

1. Remove two straps (1) from shelf assembly (2) and vehicle wall.
2. Remove eight screws (5), lockwashers (4), and washers (3) and shelf assembly (2) from left front side of vehicle (6). Discard lockwashers.

b. INSTALLATION

1. Install shelf assembly (2) on left front side of vehicle (6) with eight washers (3), new lockwashers (4), and screws (5).
2. Install two straps (1) on shelf assembly (2) and vehicle wall.

**FOLLOW-ON MAINTENANCE:**

- Activate crew AFES (para 21-3).

15-89. RIGHT FRONT CANISTER COMPARTMENT SHELF ASSEMBLY REPLACEMENT

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

- Lockwasher (10) (Item 164, Appendix H)

a. REMOVAL

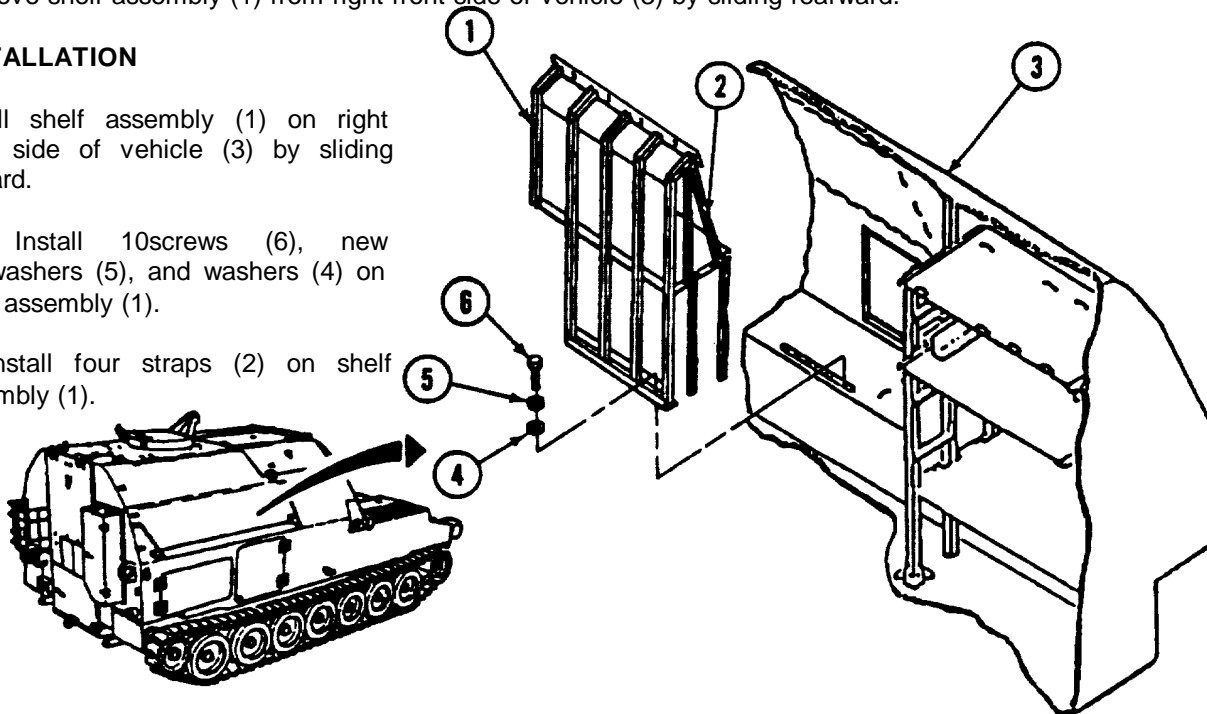
NOTE

Make certain all right projectile rack assembly locking handles are in the locked position.

1. Remove four straps (2) from shelf assembly (1).
2. Remove 10 screws (6), lockwashers (5), and washers (4) from shelf assembly (1). Discard lockwashers.
3. Remove shelf assembly (1) from right front side of vehicle (3) by sliding rearward.

b. INSTALLATION

1. Install shelf assembly (1) on right front side of vehicle (3) by sliding forward.
2. Install 10 screws (6), new lockwashers (5), and washers (4) on shelf assembly (1).
3. Install four straps (2) on shelf assembly (1).



FOLLOW-ON MAINTENANCE:

- None

15-90. LEFT CANISTER RESTRAINTS REPAIR.

This Task Covers:

- | | |
|-----------------|----------------|
| a. Removal | b. Disassembly |
| c. Inspection | d. Assembly |
| e. Installation | |

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (4) (Item 165, Appendix H)
- Lockwasher (16) (Item 196, Appendix H)

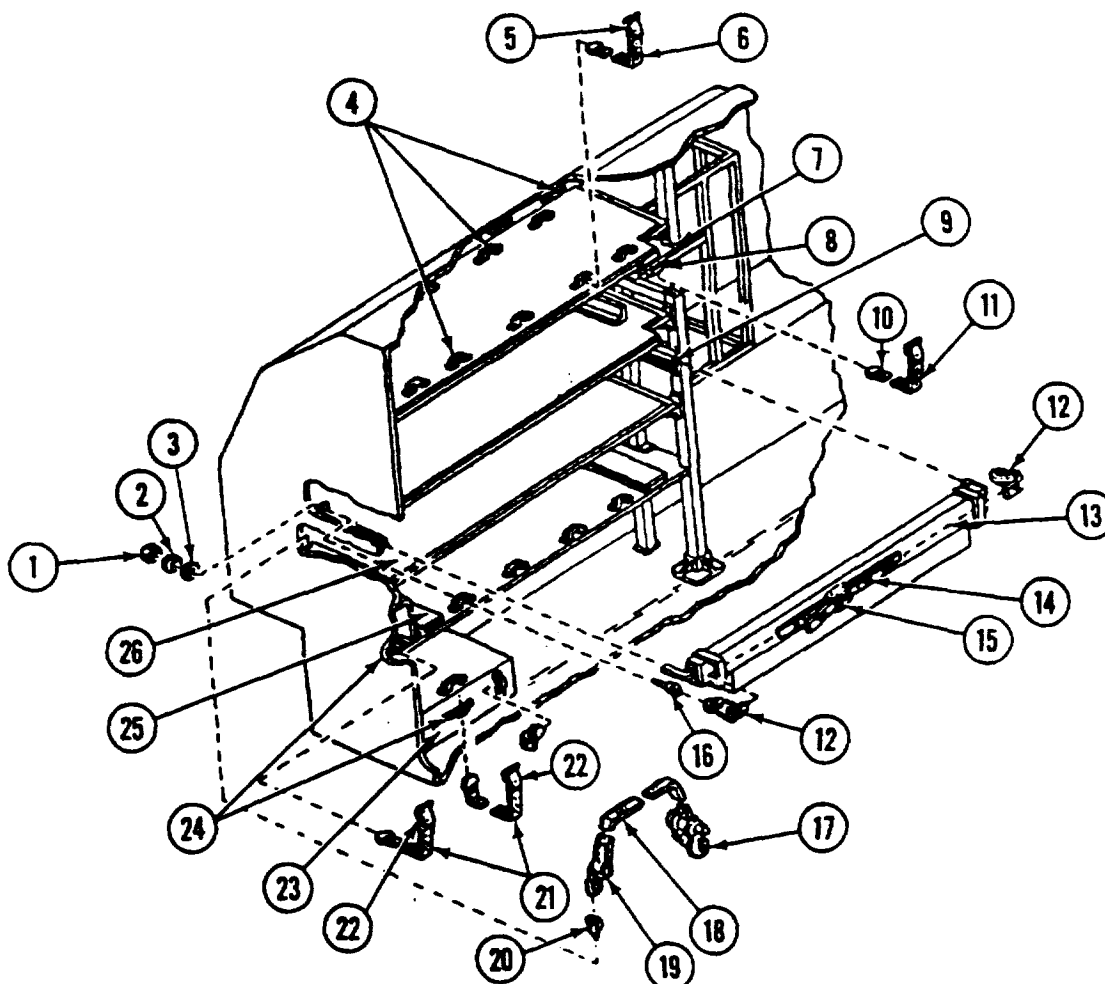
Equipment Conditions:

- Sealing compound (Item 58, Appendix D)
 - Lockwasher (8) (Item 144, Appendix H)
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

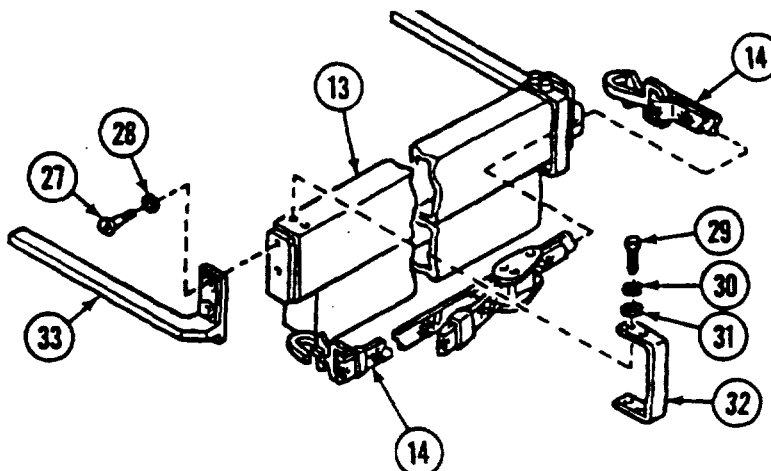
1. Release spring-action buckle (5) from clip end of each of five straps (6). Grasp each buckle (5) and pull each strap (6) through upper rack and vehicle-mounted fasteners (4).
2. Release each of seven spring-action buckles (22) from clip end of each of seven straps (21). Grasp each buckle (22) and pull each strap (21) through fasteners (24) on shelf (25) and stowage box (23).
3. Release each of two spring-action buckles (11) from clip end of each of two straps (10). Grasp each buckle (11) and pull each strap (10) through fasteners (8) on left canister compartment shelf assembly (7).
4. Push release plate of each of two buckles (15) to loosen two restraint straps (14), and unhook each of four snaphooks (12) from four eyebolts (16).
5. Remove two restraint bar assemblies (13), with two attached restraint straps (14), from four bar slide tracks (9).
6. Remove nut (1), lockwasher (2), washer (3), and eyebolt (16) from each of four bar slide tracks (9). Discard lockwashers.
7. Release two ratchet buckle assemblies (17) to release tension of two strap assemblies (18).
8. Unhook two ratchet buckle assemblies (17) and two snaphooks (19) from four strap studs (20).
9. Remove two strap assemblies (18) from shelf (25).
10. Remove four strap studs (20) from shelf (26).

15-90. LEFT CANISTER RESTRAINTS REPAIR (continued).



b. DISASSEMBLY

1. Remove eight screws (29), lockwashers (30), and washers (31), two fasteners (32), and restraint strap (14) from each of two restraint bar assemblies (13). Discard lockwashers.
2. Remove four screws (27) and lockwashers (28) and two slides (33) from each of two restraint bar assemblies (13). Discard lockwashers.



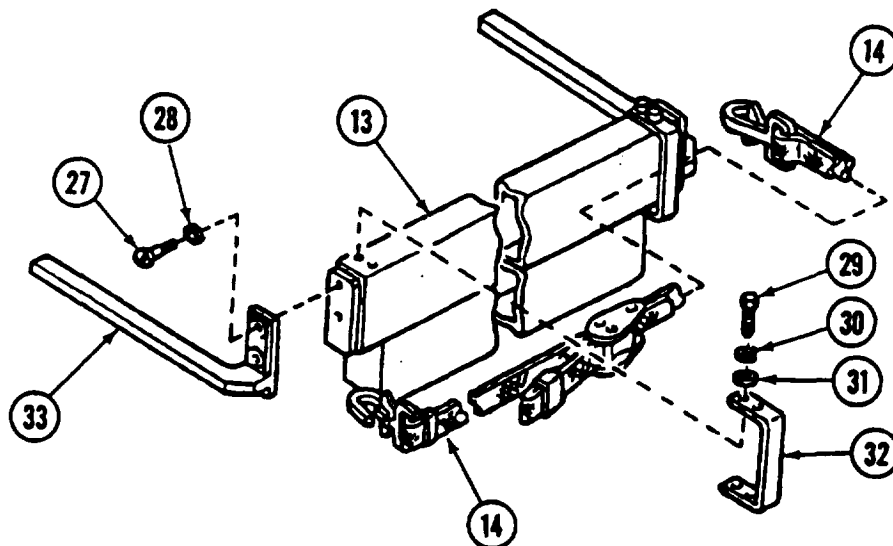
15-90. LEFT CANISTER RESTRAINTS REPAIR (continued).**c. INSPECTION**

Inspect all parts for cracks, bends, breaks, rips, or tears. Replace any damaged parts.

d. ASSEMBLY**WARNING**

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

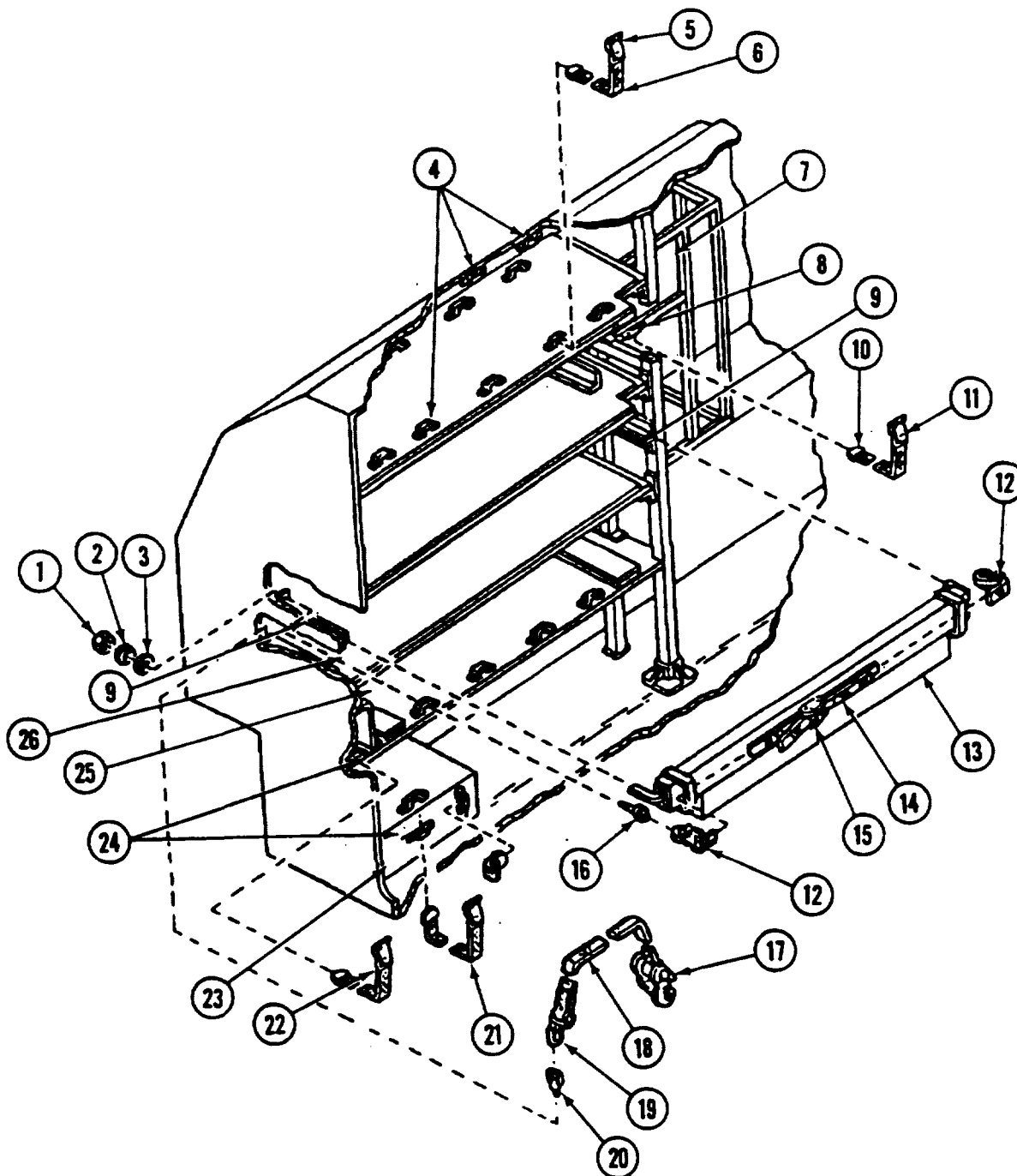
1. Apply sealing compound to threads of four screws (27) and install with four new lockwashers (28) and two slides (33) on each of two restraint bar assemblies (13).
2. Install eight screws (29), washers (31), and new lockwashers (30), restraint strap (14), and two fasteners (32) on each of two restraint bar assemblies (13).

**e. INSTALLATION**

1. Install four strap studs (20) on shelf (26).
2. Position two strap assemblies (18) on shelf (25).
3. Hook two ratchet buckle assemblies (17) and snaphooks (19) on four strap studs (20).
4. Tighten two strap assemblies (18) to secure two ratchet buckle assemblies (17).
5. Install eyebolt (16) on each of four bar slide tracks (9) with washer (3), new lockwasher (2), and nut (1).
6. Install two restraint bar assemblies (13), with two attached restraint straps (14), on four bar slide tracks (9).
7. Hook four snaphooks (12) onto four eyebolts (16), and tighten two restraint straps (14) by pulling end of restraint strap (14).
8. Insert clip end of each of two straps (10) through fasteners (8) on left canister compartment shelf assembly (7), and secure each of two spring-action buckles (11).

15-90. LEFT CANISTER RESTRAINTS REPAIR (continued).

9. Insert clip end of each of seven straps (21) through fasteners (24) on shelf (25) and stowage box (23), and secure seven spring-action buckles (22).
10. Insert clip end of each of five straps (6) through upper rack and vehicle-mounted fasteners (4), and secure five spring-action buckles (5).



FOLLOW-ON MAINTENANCE:

- None

15-91. RIGHT CANISTER RESTRAINTS REPAIR.

This Task Covers:

- a. Removal
- b. Disassembly
- c. Inspection
- d. Assembly
- e. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (6) (Item 165, Appendix H)
- Lockwasher (24) (Item 196, Appendix H)

Materials/ Parts:

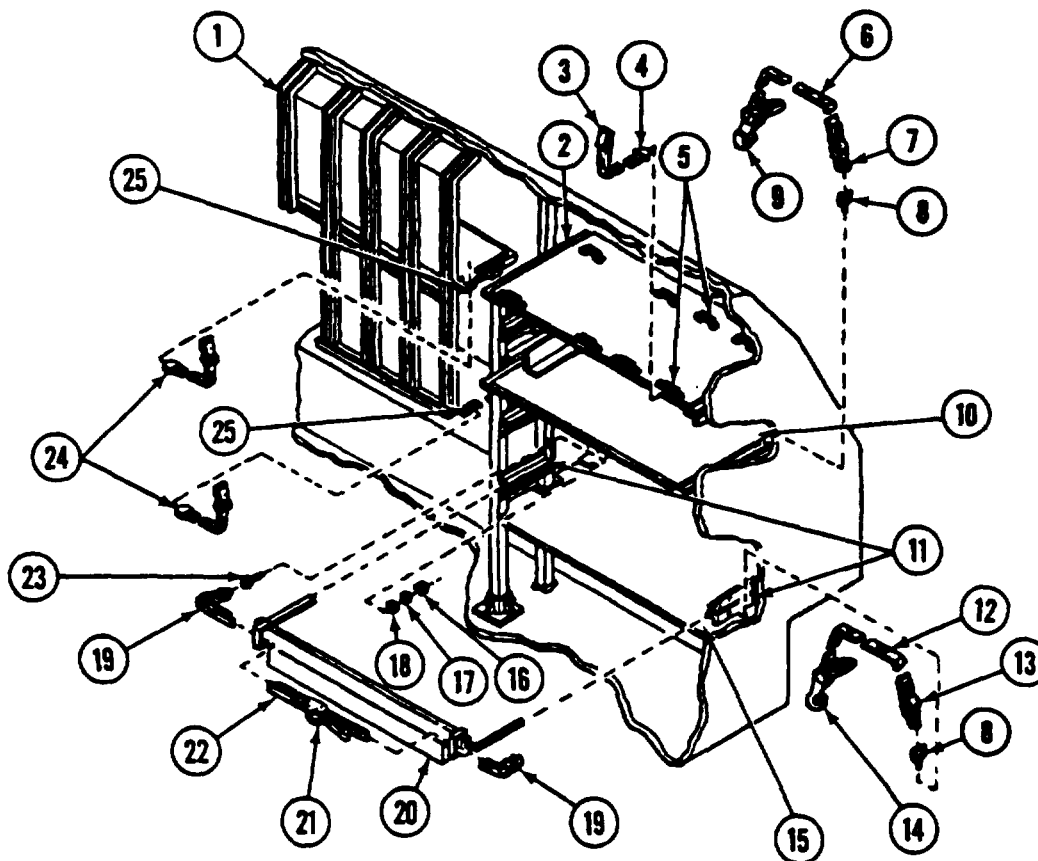
- Sealing compound (Item 58, Appendix D)
- Lockwasher (12) (Item 144, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

1. Release each of four spring-action buckles (3) from clip end of each of four straps (4). Grasp each buckle (3) and pull each strap (4) through fasteners (5) on vehicle and shelf (2).



15-91. RIGHT CANISTER RESTRAINTS REPAIR (continued).

2. Push release plate of each of three buckles (21) to loosen three restraint straps (22), and unhook six snap-hooks (19) from six eyebolts (23).
3. Remove three restraint bar assemblies (20), with three attached restraint straps (22), from six bar slide tracks (11).
4. Remove six nuts (16), lockwashers (17), washers (18), and eyebolts (23) from six bar slide tracks (11). Discard lockwashers.
5. Release two ratchet buckle assemblies (14) and ratchet buckle assembly (9) to release tension on two strap assemblies (12) and strap assembly (6).
6. Unhook ratchet buckle assembly (9), two ratchet buckle assemblies (14), snaphook (7), and two snaphooks (13) from six strap studs (8).
7. Remove strap assembly (6) and two strap assemblies (12) from two shelves (10 and 15).
8. Remove six strap studs (8) from two shelves (10 and 15).
9. Unbuckle and remove four strap assemblies (24) from fasteners (25) on right front canister compartment (1).

b. DISASSEMBLY

1. Remove fourscrews (26) and lockwashers (27) and two slides (32) from each of three restraint bar assemblies (20). Discard lockwashers.
2. Remove eight screws (28), lockwashers (29), and washers (30), two fasteners (31), and restraint strap (22) from each of three restraint bar assemblies (20). Discard lockwashers.

c. INSPECTION

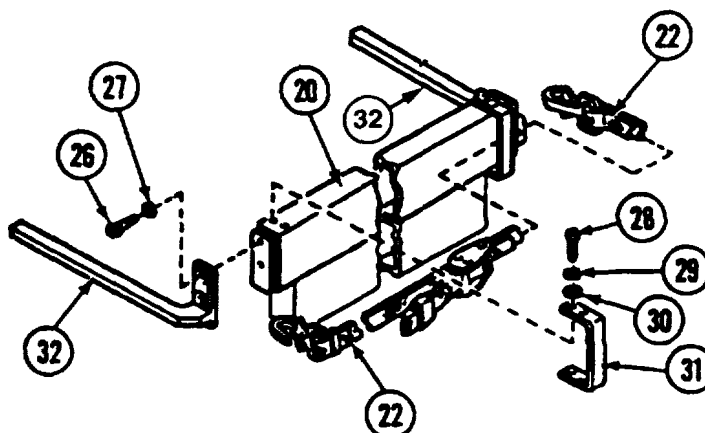
Inspect all parts for cracks, bends, breaks, rips, or tears. Replace any damaged parts.

d. ASSEMBLY

WARNING

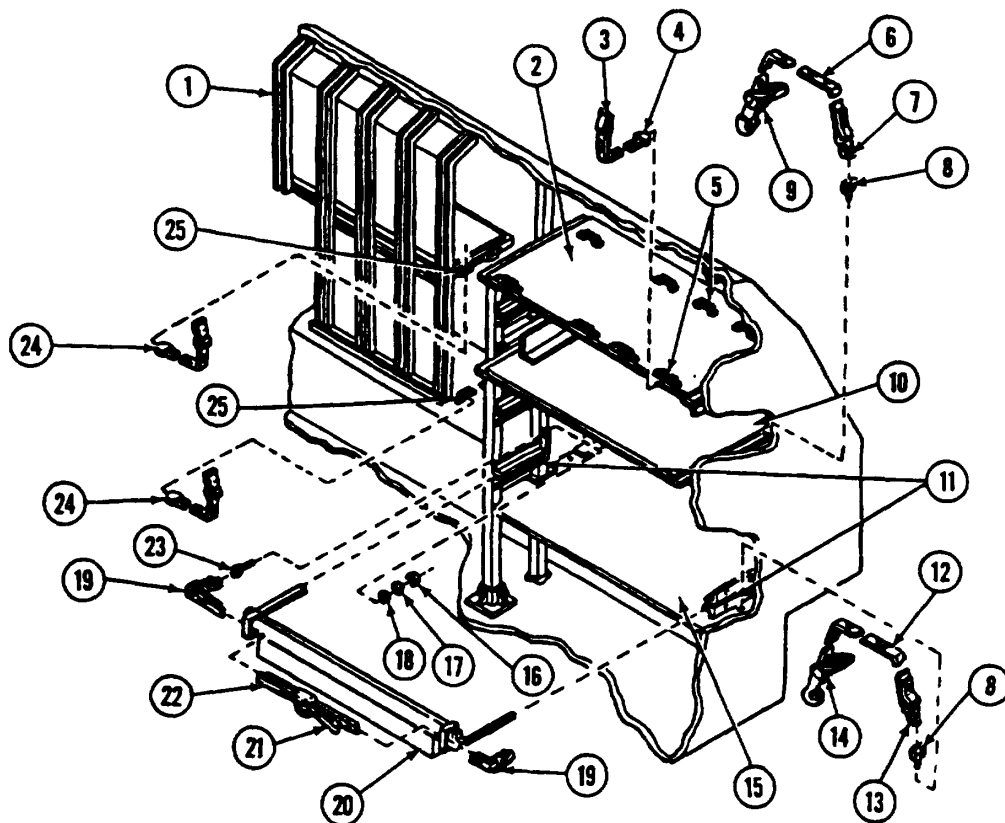
Sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep sealing compound away from open fire and use in a well-ventilated area. If sealing compound gets on clothing, wash immediately with soap and water.

1. Apply sealing compound to threads of eight screws (28) and install with eight new lockwashers (29) and washers (30), restraint strap (22), and two fasteners (31) on each of three restraint bar assemblies (20).
2. Install four screws (26) and new lockwashers (27) and two slides (32) on each of three restraint bar assemblies (20).



15-91. RIGHT CANISTER RESTRAINTS REPAIR (continued).**e. INSTALLATION**

1. Install and buckle four strap assemblies (24) through fasteners (25) on right front canister compartment (1).
2. Install six strap studs (8) on two shelves (10 and 15).
3. Hook snaphook (7), two snaphooks (13), ratchet buckle assembly (9), and two ratchet buckle assemblies (14) to six strap studs (8) on two shelves (10 and 15).
4. Tighten ratchet buckle assembly (9) and two ratchet buckle assemblies (14) to secure strap assembly (6) and two strap assemblies (12).
5. Install six eyebolts (23) on six bar slide tracks (11) with six nuts (16), new lockwashers (17), and washers (18).
6. Install three restraint bar assemblies (20), with three attached restraint straps (22), on six bar slide tracks (11).
7. Hook six snaphooks (19) to six eyebolts (23).
8. Tighten three restraint straps (22) by pulling end of each restraint strap (22).
9. Insert clip end of each of four straps (4) through fasteners (5) on vehicle and shelf (2), and secure four spring-action buckles (3).

**FOLLOW-ON MAINTENANCE:**

- None

15-92. TELEPHONE HAND REEL REPAIR.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |
-

Initial Setup:

Tools/Test Equipment

- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Cotter pin (Item 20, Appendix H)
- Cotter pin (Item 36, Appendix H)

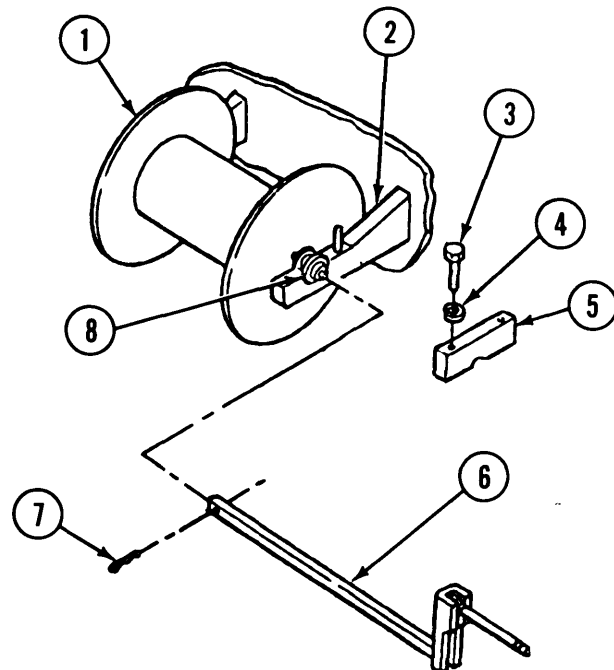
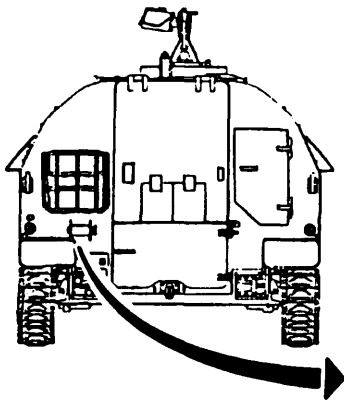
- LockWasher (2) (item 175, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

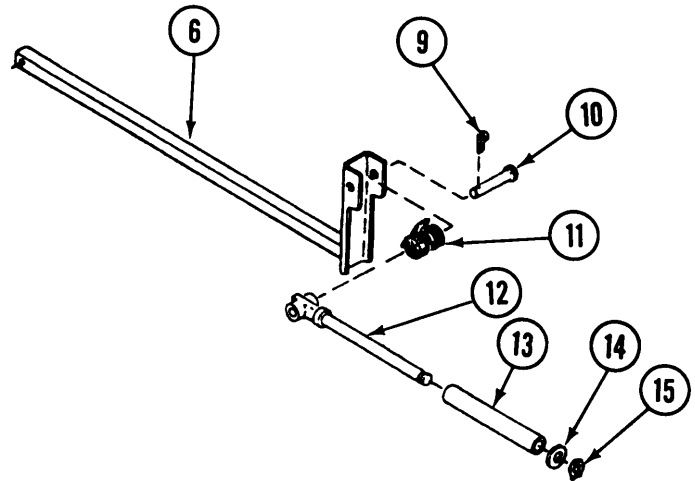
1. Remove cotter pin (7) and hand crank assembly (6) from telephone hand reel assembly (1). Discard cotter pin.
2. Remove two screws (3), lockwashers (4), and clamps (5) from mount (2). Discard lockwashers.
3. Remove reel assembly (1) and bearing assembly (8) from mount (2).



15-92. TELEPHONE HAND REEL REPAIR (continued).

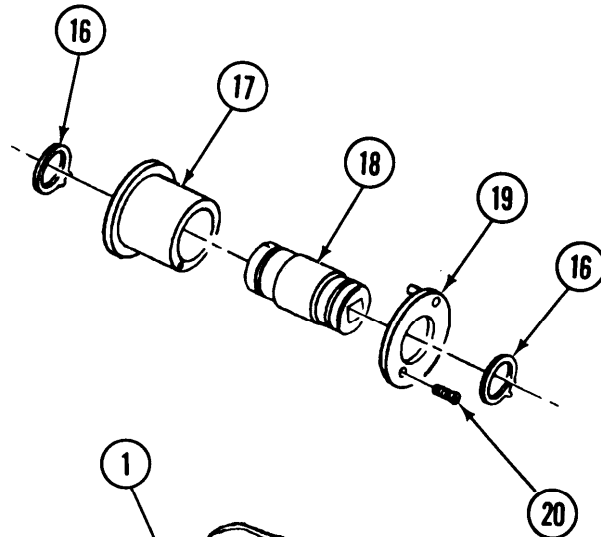
b. DISASSEMBLY

1. Remove retaining ring (15), washer (14), and sleeve (13) from lever (12).
2. Remove cotter pin (9), pin (10), lever (12), and spring (11) from hand crank assembly (6). Discard cotter pin.
3. Remove two retaining rings (16) from bearing (18).
4. Remove screw (20) and plate (19) from housing (17).
5. Separate housing (17) from bearing (18).



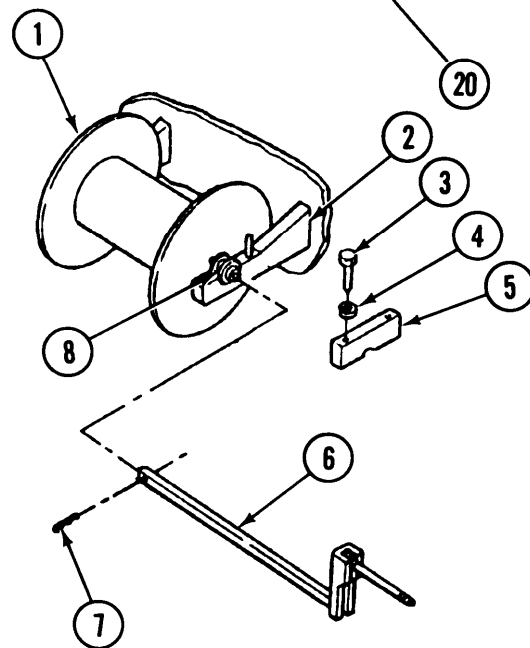
c. ASSEMBLY

1. Install housing (17) on bearing (18).
2. Install plate (19) and screw (20) on housing (17).
3. Install two retaining rings (16) on bearing (18).
4. Install spring (11), lever (12), pin (10), and new cotter pin (9) on hand crank assembly (6).
5. Install sleeve (13), washer (14), and retaining ring (15) on lever (12).



d. INSTALLATION

1. Install reel assembly (1) and bearing assembly (8) on mount (2).
2. Install two clamps (5) on mount (2) with two screws (3) and new lockwashers (4).
3. Install hand crank assembly (6) in reel assembly (1) with new cotter pin (7).



FOLLOW-ON MAINTENANCE:

- None

15-93. SPONSON PAD REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Drycleaning solvent (Item 28, Appendix D)
 Rag (Item 56, Appendix D)

Materials/Parts:

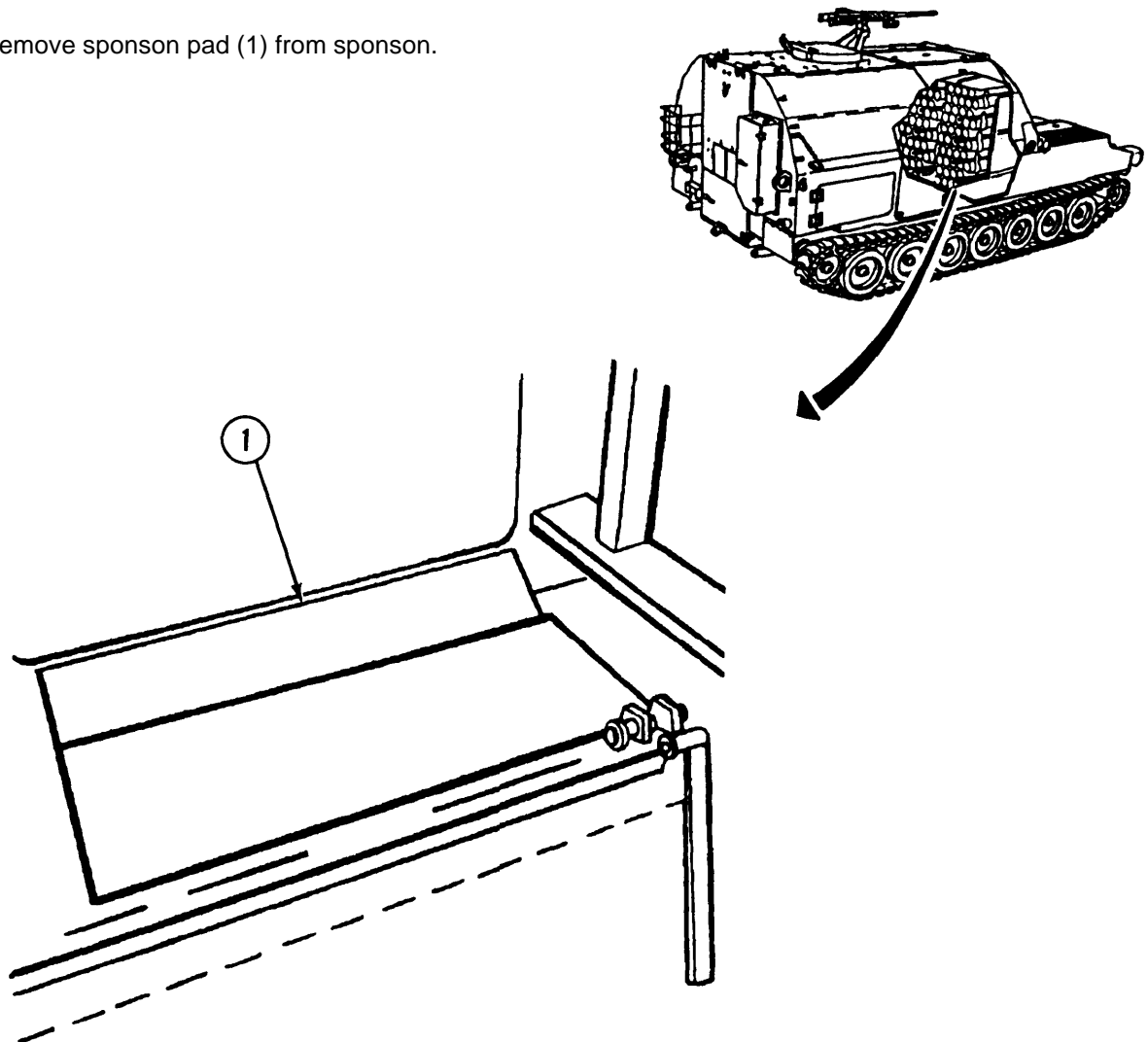
- Adhesive, rubber (Item 4, Appendix (D))

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

Remove sponson pad (1) from sponson.



15-93. SPONSON PAD REPLACEMENT (continued).

b. INSTALLATION

WARNING

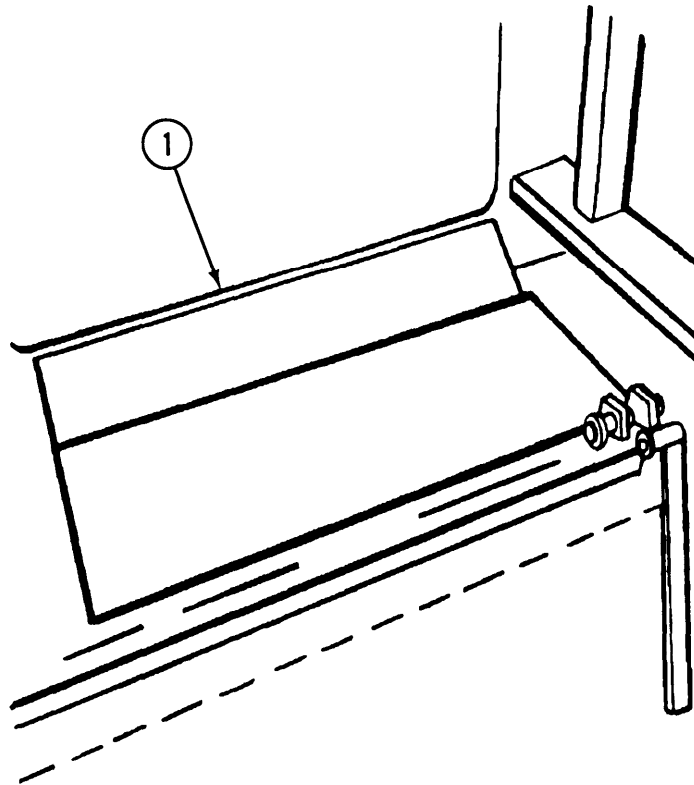
Drycleaning solvent P-D-680 is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT use near open flame or excessive heat,

1. Clean sponson with drycleaning solvent and rags to remove all adhesive and sponson pad residue.

WARNING

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

2. Apply adhesive to mating surfaces of sponson pad (1) and sponson, and allow to dry until tacky.
3. Install sponson pad (1) on sponson.



FOLLOW-ON MAINTENANCE:

- None

15-94. MOUNTED WATER RATION HEATER (MWRH) BRACKET REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, rubber (Item 4, Appendix D)
- Dry-cleaning solvent (Item 28, Appendix D)
- Lockwasher (5) (Item 162, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Mounted water ration heater removed (refer to TM 9-2350-287-10).

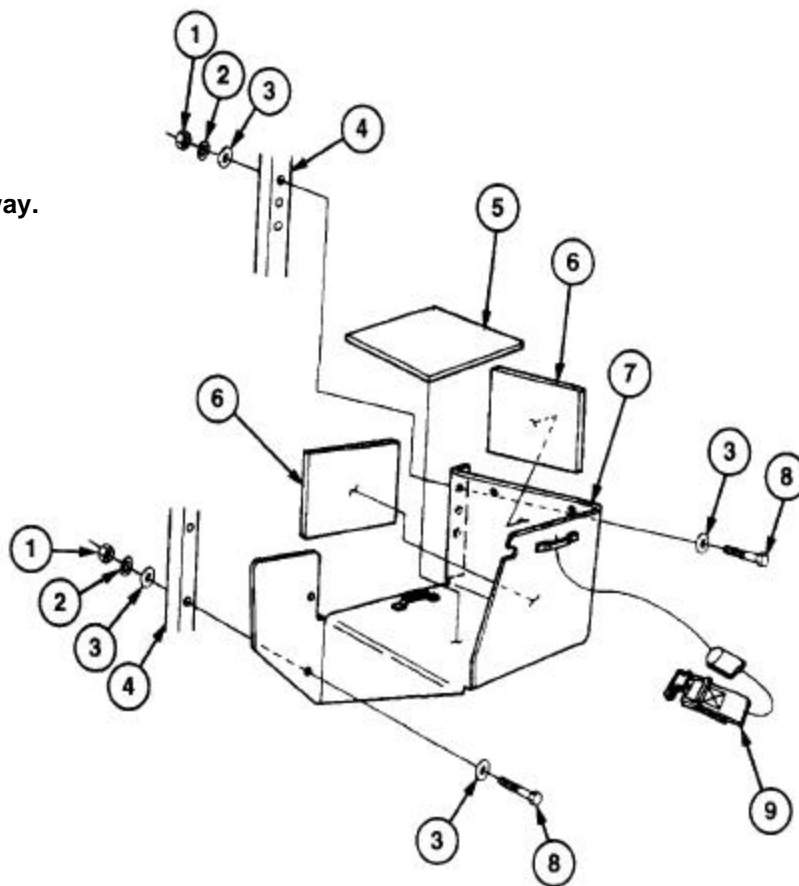
a. REMOVAL

1. Remove five nuts (1), lockwashers (2), and screws (8), 10 washers (3), and MWRH bracket (7) from two canister compartment shelf supports (4). Discard lockwashers.
2. Remove strap (9) from MWRH bracket (7).

NOTE

- Remove rubber pads only if damaged.
- **All rubber pads are replaced the same way.**

3. If damaged, remove rubber pad (5) and two rubber pads (6) from MWRH bracket (7).



15-94. MOUNTED WATER RATION HEATER (MWRH) BRACKET REPLACEMENT (continued).

b. INSTALLATION

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 use near open flame or excessive heat.

NOTE

Perform steps 1 through 3 only if rubber pads were removed.

1. Clean MWRH bracket (7) with dry-cleaning solvent to remove any rubber pad adhesive residue. Allow bracket to air-dry.

WARNING

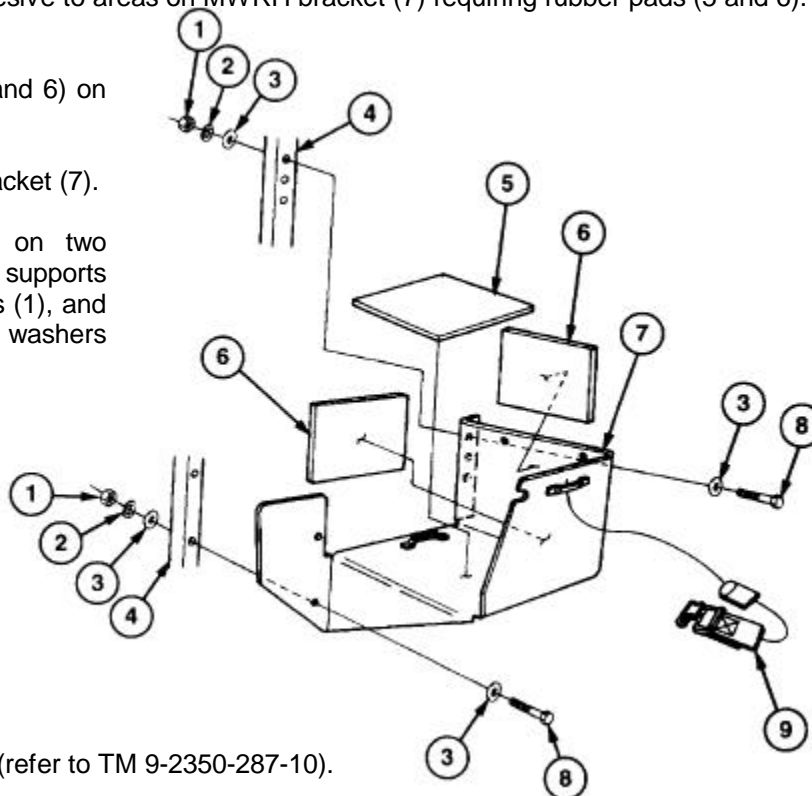
Adhesives can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive gets on skin or clothing, wash immediately with soap and water.

2. Apply thin coat of rubber adhesive to areas on MWRH bracket (7) requiring rubber pads (5 and 6). Allow adhesive to dry until tacky.

3. Install three rubber pads (5 and 6) on MWRH bracket (7).

4. Install strap (9) on MWRH bracket (7).

5. Install MWRH bracket (7) on two canister compartment shelf supports (4) using five screws (8), nuts (1), and new lockwashers (2) and 10 washers (3).



FOLLOW-ON MAINTENANCE:

? Install mounted water ration heater (refer to TM 9-2350-287-10).

CHAPTER 16 BODY, CHASSIS, AND HULL ACCESSORY ITEMS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
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16-3	Bilge Pump and Strainer Replacement	16-4
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16-5	Personnel Heater Outlet Tube, Tee Assembly, and Controls Repair	16-8
16-6	Personnel Heater Duct Repair	16-12
16-7	Personnel Heater Replacement	16-15
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16-9	Personnel Heater Mounting Clamps and Brackets Replacement	16-20
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16-1. GENERAL.

This chapter illustrates and describes the removal, disassembly, cleaning and inspection, assembly, and installation of body, chassis, and hull accessory items, which include the heating and ventilating ducts, bilge pump and strainer, heating and ventilating distribution hoses, personnel heater outlet tube, tee assembly, and controls, personnel heater duct, personnel heater, personnel heater fuel filter and tube, personnel heater mounting clamps and brackets, and the personnel heater exhaust tube.

16-2. HEATING AND VENTILATING DUCTS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- 1 Lockwasher (4) (Item 123, Appendix H)
- 1 Lockwasher (4) (Item 164, Appendix H)
- 1 Lockwasher (2) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Left projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).
- Heating and ventilating distribution hoses removed (para 16-4).

16-2. HEATING AND VENTILATING DUCTS REPLACEMENT (continued).

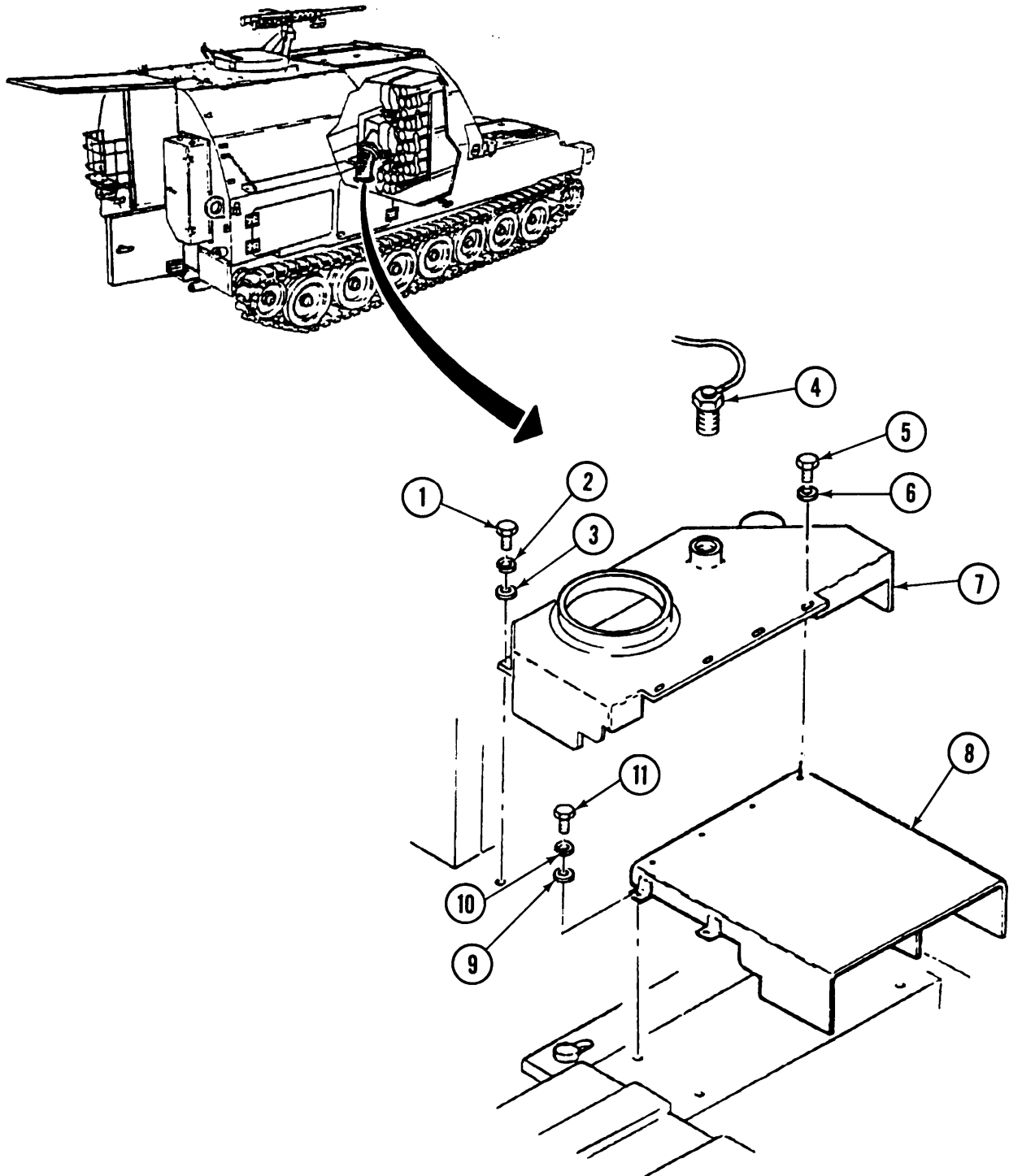
a. REMOVAL

1. Remove antirecoil plug (4) from heating and ventilating duct (7).
2. Remove two screws (1), lockwashers (2), and washers (3) from duct (7) and vehicle floor. Discard lockwashers.
3. Remove four screws (5) and lockwashers (6) from duct (7) and heating and ventilating duct (8). Discard lockwashers.
4. Remove duct (7) from duct (8) and vehicle floor.
5. Remove four screws (11), lockwashers (10), and washers (9) from duct (8) and vehicle floor. Discard lockwashers.
6. Remove duct (8) from vehicle floor.

b. INSTALLATION

1. Position heating and ventilating duct (8) in place on vehicle floor with mounting holes alined.
2. Secure duct (8) to vehicle floor with four screws (11), new lockwashers (10), and washers (9).
3. Position heating and ventilating duct (7) in place on vehicle floor with mounting flange over duct (8).
4. Secure duct (7) to duct (8) with four screws (5) and new lockwashers (6).
5. Secure duct (7) to vehicle floor with two screws (1), new lockwashers (2), and washers (3).
6. Install antirecoil plug (4) on duct (7).

16-2. HEATING AND VENTILATING DUCTS REPLACEMENT (continued).

**FOLLOW-ON MAINTENANCE:**

- Install heating and ventilating distribution hoses (para 16-4).
- Install left projectile rack assembly (refer to TM 9-2350-287-10).

16-3. BILGE PUMP AND STRAINER REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

Automotive adjustable wrench
(Item 4, Appendix I)
General mechanic's tool kit (Item 24,
Appendix I)

- Sealing compound (Item 58, Appendix D)
- LockWasher (4) (Item 192, Appendix H)

Equipment Conditions:

- Powerpack removed (pars 3-2).

Materials/Parts:

Antiseize compound (Item 10,
Appendix D)

a. REMOVAL

1. Remove electrical connector (4) from bilge pump (5).
2. Loosen screw (2) on clamp (3). Remove clamp (3) and hose (1) from elbow (11).

NOTE

To ensure proper installation, record position of bilge pump before removal.

3. Remove three screws (6) and bilge pump (5) from vehicle.
4. Remove elbow (11) from bilge pump (5).
5. Remove four screws (9) and lockwashers (10), strainer (8), and stiffener (7) from bottom of bilge pump (5). Discard lockwashers.

16-3. BILGE PUMP AND STRAINER REPLACEMENT (continued).

b. INSTALLATION

NOTE

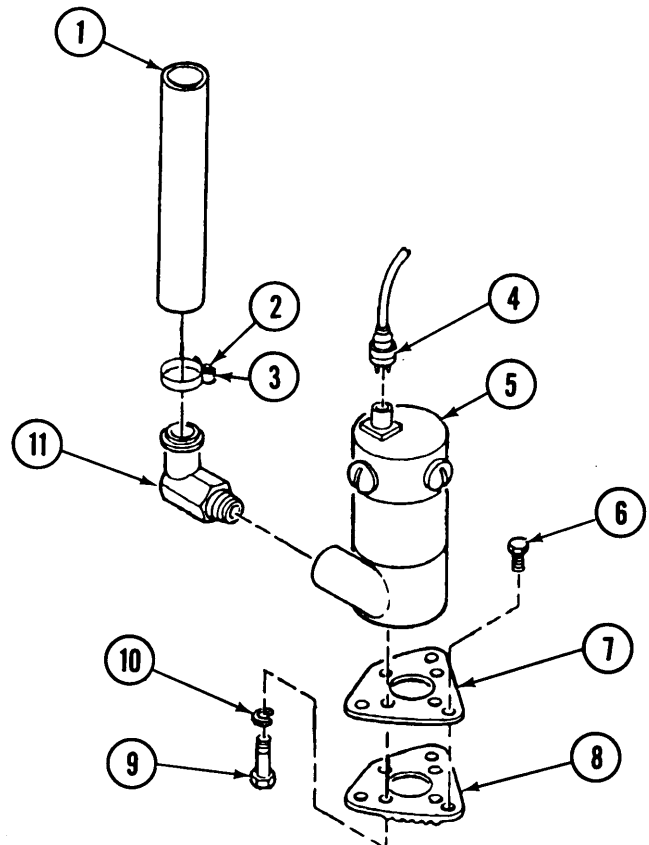
If new bilge pump is to be installed, shipping spacers must be removed from screws.

1. Position stiffener (7) and strainer (8) on bottom of bilge pump (5) and secure with four screws (9) and new lockwashers (10).

WARNING

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

2. Apply light coat of antiseize compound to threads of elbow (11). Install elbow(11) in bilge pump (5).
3. Apply light coat of sealing compound to threads of three screws (6).
4. Position bilge pump (5) in vehicle with three screws (6).
5. Install clamp (3) and hose (1) on elbow (11).
6. Install electrical connector (4) on bilge pump (5).

**FOLLOW-ON MAINTENANCE:**

- Install powerpack (para 3-2).

16-4. HEATING AND VENTILATING DISTRIBUTION HOSES REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Left projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).
- Upper and lower rear doors opened (refer to TM 9-2350-287-10).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

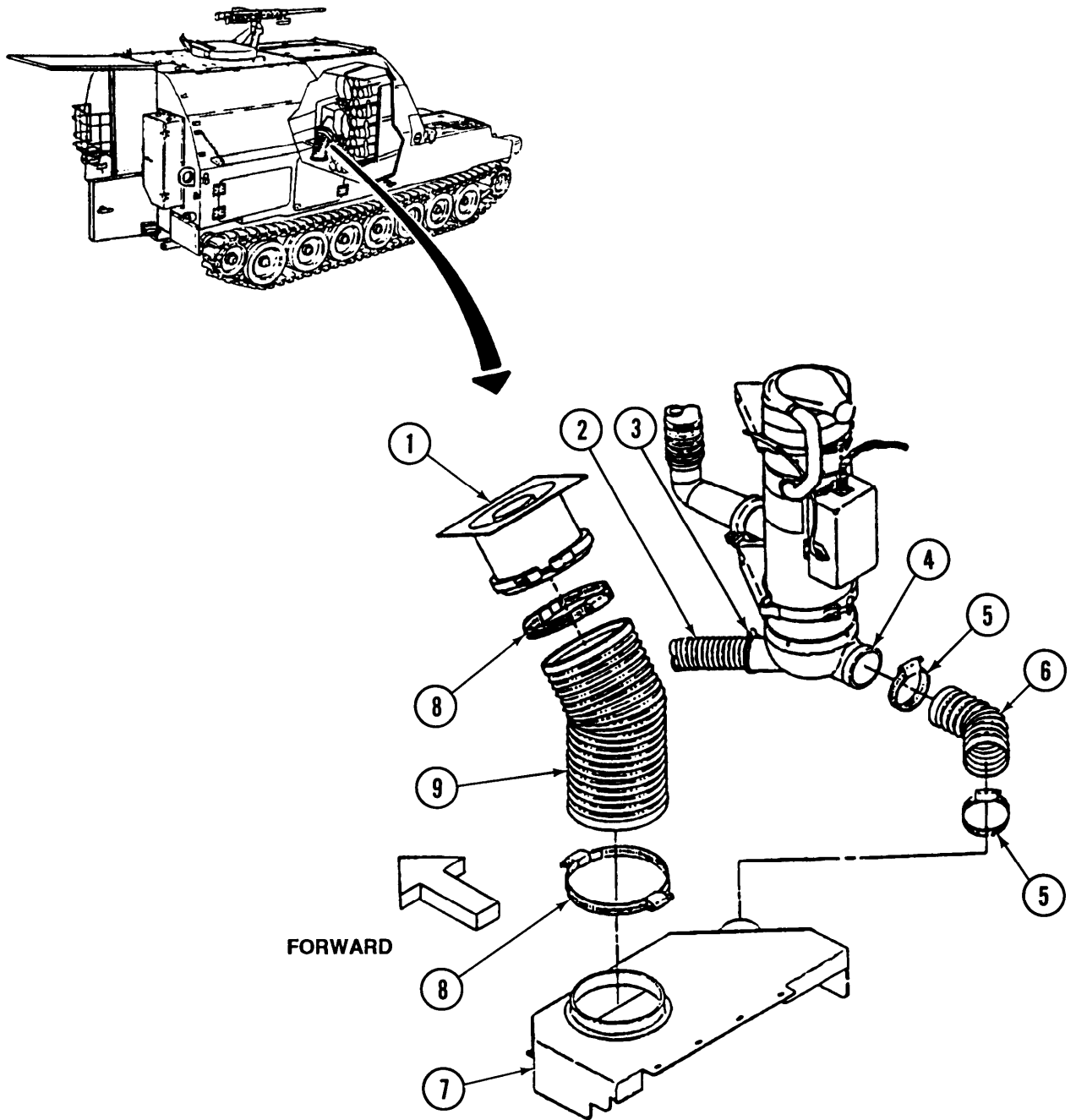
a. REMOVAL

1. Loosen two clamps (5) securing heating and ventilating distribution hose (6) to heater duct (4) and duct (7). Remove hose (6) and two clamps (5).
2. Loosen two clamps (8) securing heating and ventilating distribution hose (9) to fan assembly (1) and duct (7). Remove hose (9) and two clamps (8).
3. Loosen clamp (3) securing hose (2) to heater duct (4). Remove hose (2) and clamp (3).

b. INSTALLATION

1. Position clamp (3) on heating and ventilating distribution hose (2) and install on heater duct (4). Tighten clamp (3) to secure hose (2).
2. Install two clamps (8) on opposite ends of heating and ventilating distribution hose (9).
3. Install one end of heating and ventilating distribution hose (9) on fan assembly (1) and install other end on duct (7). Tighten two clamps (8) to secure hose (9).
4. Install two clamps (5) on opposite ends of heating and ventilating distribution hose (6).
5. Install one end of hose (6) to heater duct (4) and install other end on duct (7). Tighten two clamps (5) to secure hose (6),

16-4. HEATING AND VENTILATING DISTRIBUTION HOSES REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install left projectile rack assembly (refer to TM 9-2350-287-10).
- Close upper and lower rear doors (refer to TM 9-2350-287-10).

16-5. PERSONNEL HEATER OUTLET HOSE, TEE ASSEMBLY, AND CONTROLS REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

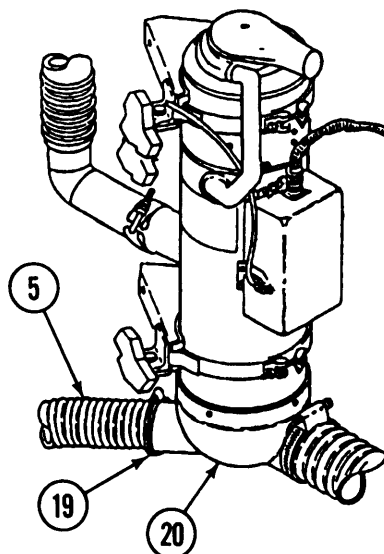
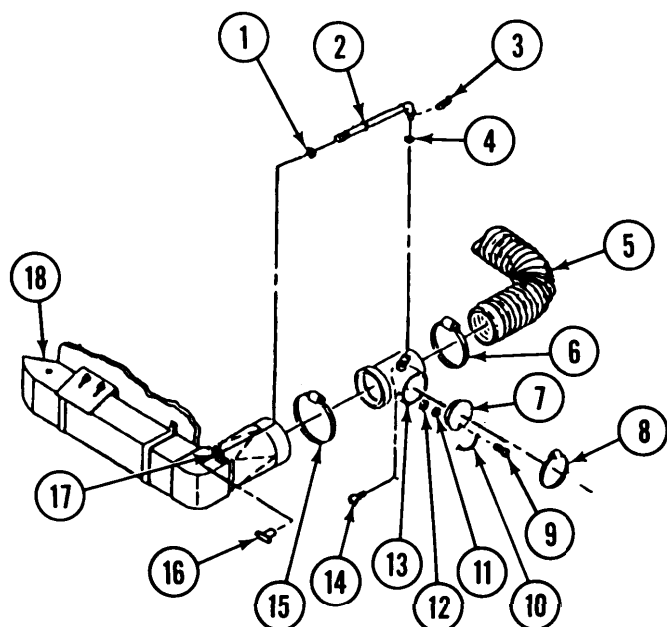
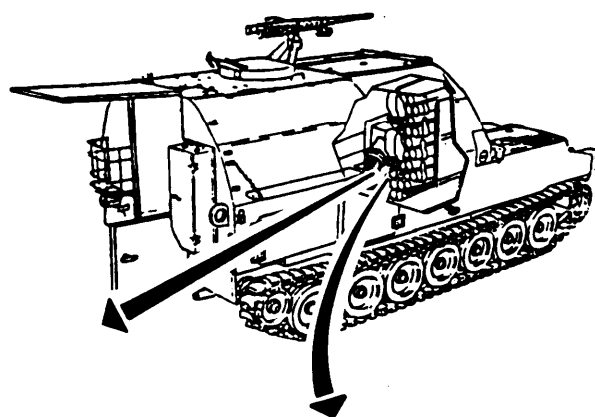
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (Item 10, Appendix H)
- Lockwasher (Item 121, Appendix H)
- LockWasher (2) (Item 158, Appendix H)
- LockWasher (4) (Item 174, Appendix H)

Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Numbers 1 and 2 engine AFES cylinder bottles removed (para 21 -4).
- Numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts removed (para 21-8).
- Heating and ventilating distribution hose removed (para 16-4).

a. REMOVAL

1. Unscrew tee handle (16) from rod (2).
2. Remove grommet (1) from bracket (17).
3. Remove clamp (8) from cap (7) and tee assembly (13).
4. Remove screw (14), chain (10), and cap (7) from tee assembly (13).



16-5. PERSONNEL HEATER OUTLET HOSE, TEE ASSEMBLY, AND CONTROLS REPAIR (continued).

5. Loosen hose clamp (6) and remove hose (5) from tee assembly (13).
6. Loosen hose clamp (15) and remove tee assembly (13) from duct (18).
7. Remove cotter pin (3), washer (4), and rod (2) from tee assembly (13). Discard cotter pin.
8. Remove screw (9), nut (12), lockwasher (11), and chain (10) from cap (7). Discard lockwasher.
9. Loosen hose clamp (19) and remove hose (5) from heater duct (20).

b. DISASSEMBLY

1. Remove two screws (25) and lockwashers (24) and baffle (23) from tee assembly (13). Discard lockwashers.
2. Loosen setscrew (21) and remove arm (22) from shaft (26).
3. Slide shaft (26) out of tee assembly (13).

c. CLEANING AND INSPECTION

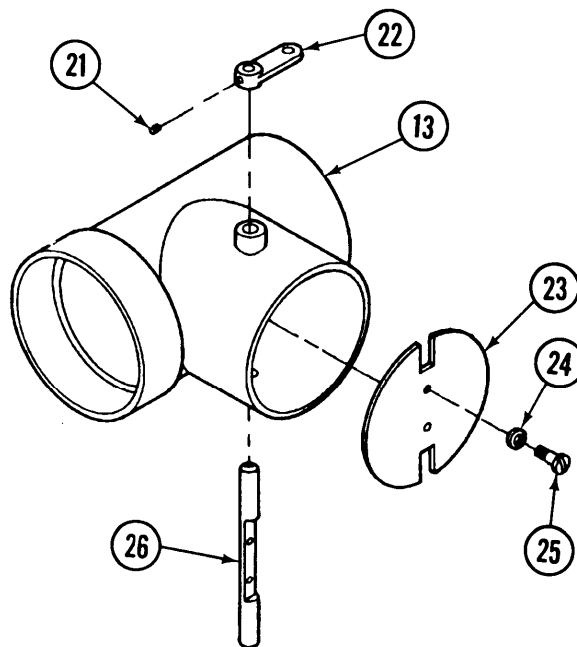
WARNING

Drycleaning 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.

1. Clean all metal parts with drycleaning solvent.
2. Inspect all parts for cracks, bends, or breaks. Replace any damaged parts.

d. ASSEMBLY

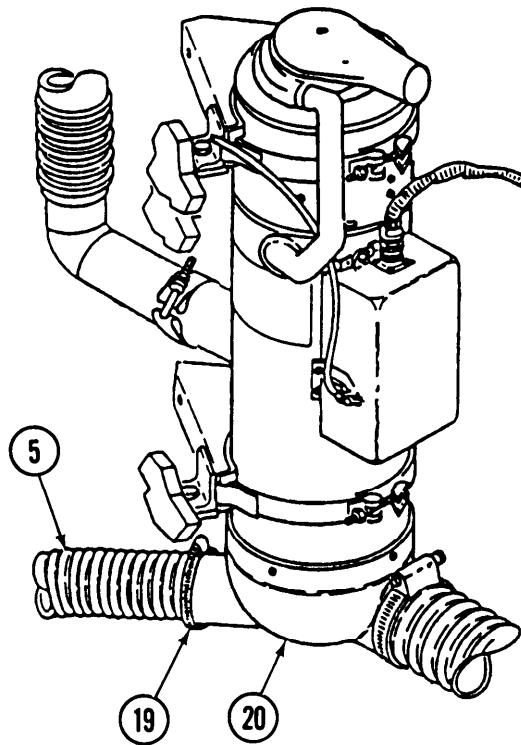
1. Position shaft (26) in place through tee assembly (13).
2. Install arm (22) on shaft (26) and secure with setscrew (21).
3. Position baffle (23) on shaft (26) in tee assembly (13). Secure baffle (23) to shaft (26) with two screws (25) and new lockwashers (24).



16-5. PERSONNEL HEATER OUTLET HOSE, TEE ASSEMBLY, AND CONTROLS REPAIR
(continued).

e. INSTALLATION

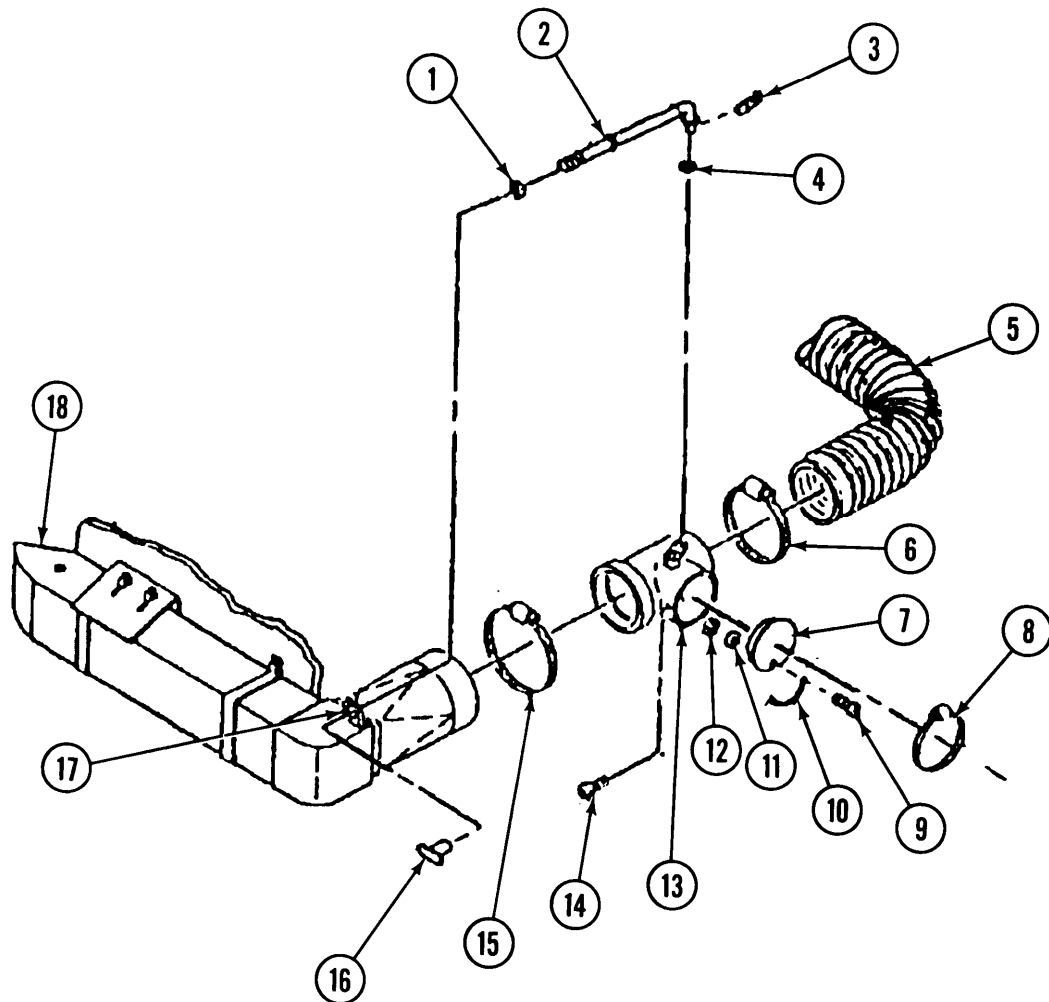
1. Position clamp (19) on heater duct (20). install hose(5) on heater duct (20) and tighten clamp (19).



2. Position chain (10) on cap (7) and secure with screw (9), new lockwasher (11), and nut (1 2).
3. Install grommet (1) in bracket (1 7). Install rod (2) through grommet (1) in bracket (17) and tee assembly (1 3). Secure with washer (4) and cotter pin (3).
4. Position hose clamp (15) on tee assembly (1 3). Install tee assembly(13) on duct (18) and tighten hose clamp (15).
5. Position hose clamp (6) on hose (5). Install hose (5) on tee assembly(13) and tighten hose clamp (6).
6. Position opposite end of chain (10) on tee assembly (13) and secure with screw (14).
7. Install cap (7) on tee assembly (13) and secure with clamp (8).

16-5. PERSONNEL HEATER OUTLET HOSE, TEE ASSEMBLY, AND CONTROLS REPAIR (continued).

8. Install tee handle (16) on rod assembly (2).



FOLLOW-ON MAINTENANCE:

- Install heating and ventilating distribution hose (para 16-4).
- Install numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts (para 21-8).
- Install numbers 1 and 2 engine AFES cylinder bottles (para 2-14).
- Perform operational check of heating and ventilating system (refer to TM 9-2350-287-10).
- Move left and right projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

16-6. PERSONNEL HEATER DUCT REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench set, 3/8-inch drive (Item 57, Appendix I)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Cotter pin (Item 10, Appendix H)

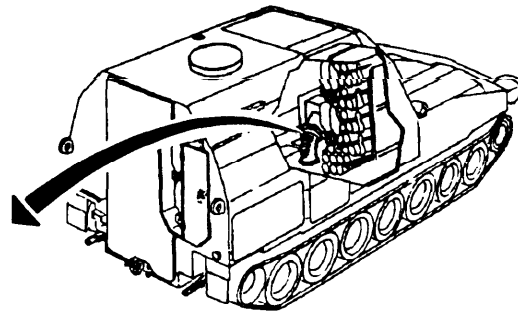
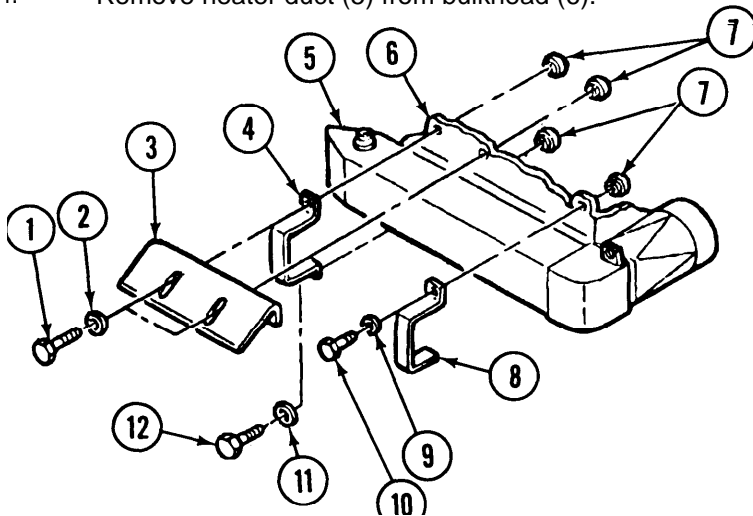
- Spring pin (Item 348, Appendix H)
- Spring pin (2) (Item 349, Appendix H)

Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Personnel heater outlet hose and tee assembly removed (para 16-5).

a. REMOVAL

1. Remove screw (10), washer (9), and bracket (8) from heater duct (5) and splined nut (7) in bulkhead (6).
2. Remove screw (12) and washer (11) from bottom of bracket (4) and splined nut (7) in bulkhead (6).
3. Remove two screws (1) and washers (2), bracket (4), and duct guard (3) from heater duct (5) and two splined nuts (7) in bulkhead (6).
4. Remove heater duct (5) from bulkhead (6).

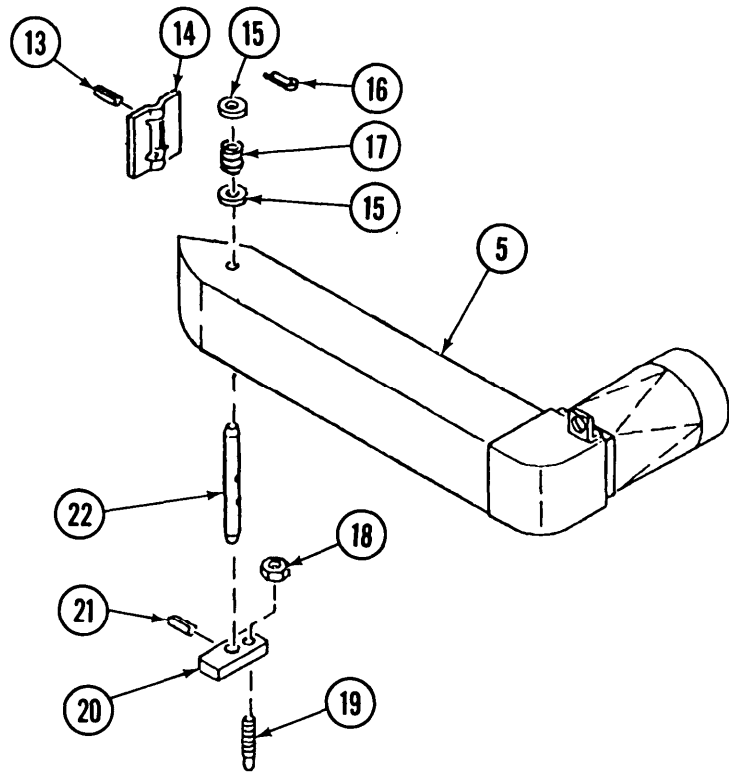


b. DISASSEMBLY

1. Remove two spring pins (13) from gate valve (14) and shaft (22). Discard spring pins.
2. Remove cotter pin (16), two washers (15), and spring (17) from shaft (22). Discard cotter pin.

16-6. PERSONNEL HEATER DUCT REPAIR (continued).

3. Remove shaft (22) and gate valve (14) from heater duct (5).
4. Remove spring pin (21) and valve handle (20) from shaft (22). Discard spring pin.
5. Remove setscrew (19) and nut (18) from handle (20).

**c. CLEANING AND INSPECTION****WARNING**

Drycleaning 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.

1. Clean all parts with drycleaning solvent.
2. Inspect all parts for cracks, breaks, or bends. Replace any damaged parts.

d. ASSEMBLY

1. Install handle (20) on shaft (22) and secure with new spring pin (21).
2. Install setscrew (19) in handle (20), Secure finger-tight with nut (18).
3. Install shaft (22) up through heater duct (5) and gate valve (14).
4. Secure gate valve (14) to shaft (22) with two new spring pins (1 3).
5. Install two washers (15) and spring (17) on top of shaft (22) and secure with new cotter pin (16).
6. Check detent action of gate valve (14) and handle (20). Adjust setscrew (19), then tighten nut (18).

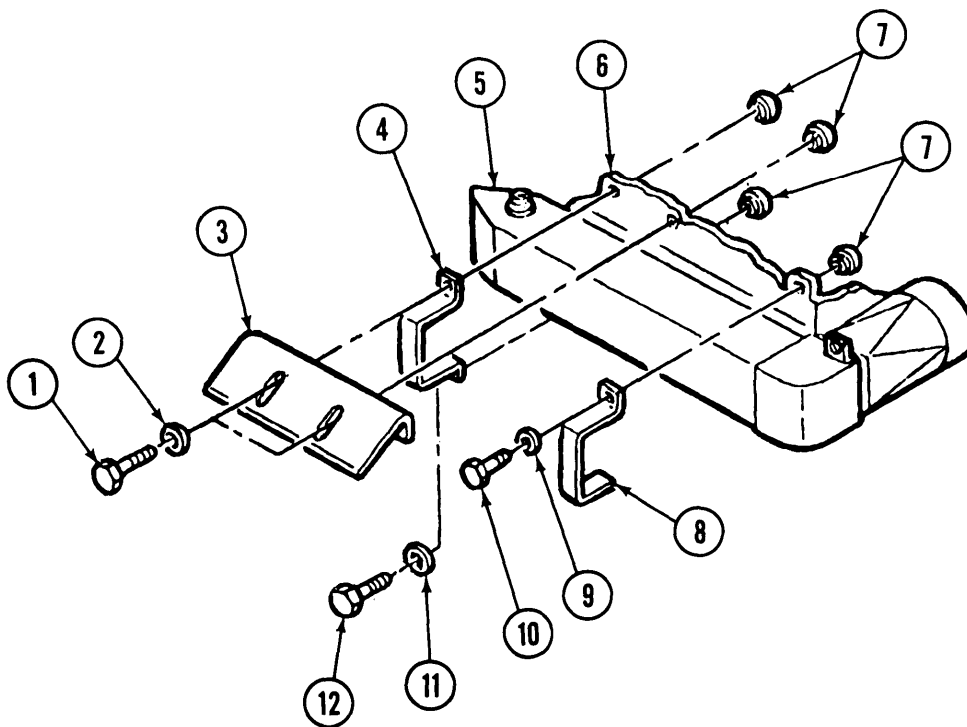
16-6. PERSONNEL HEATER DUCT REPAIR (continued).

e. INSTALLATION

NOTE

Splined nuts are force-fit from engine side of bulkhead. If nuts have fallen out or are damaged, notify Direct Support maintenance.

1. Position heater duct (5), bracket (4), and duct guard (3) against bulkhead (6) with mounting holes alined with two splined nuts (7).
2. Secure heater duct (5), duct guard (3), and bracket (4) to bulkhead (6) with two screws (1) and washers (2).
3. Secure bottom of bracket (4) to bulkhead (6) with screw (12) and washer (11).
4. Position bracket (8) on heater duct (5) and against bulkhead (6) with mounting hole alined with splined nut (7).
5. Secure heater duct (5) and bracket (8) to bulkhead (6) with screw (10) and washer (9).



FOLLOW-ON MAINTENANCE:

- Install personnel heater outlet hose and tee assembly (para 16-5).
- Perform operational check of heating and ventilating system (refer to TM 9-2350-287-10).
- Move left and right projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

16-7. PERSONNEL HEATER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Torque wrench, 0.375-inch single end drive (Item 68, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Lockwasher (4) (Item 194, Appendix H)

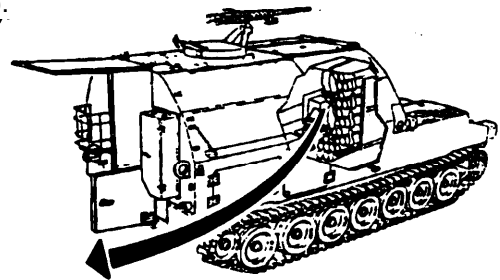
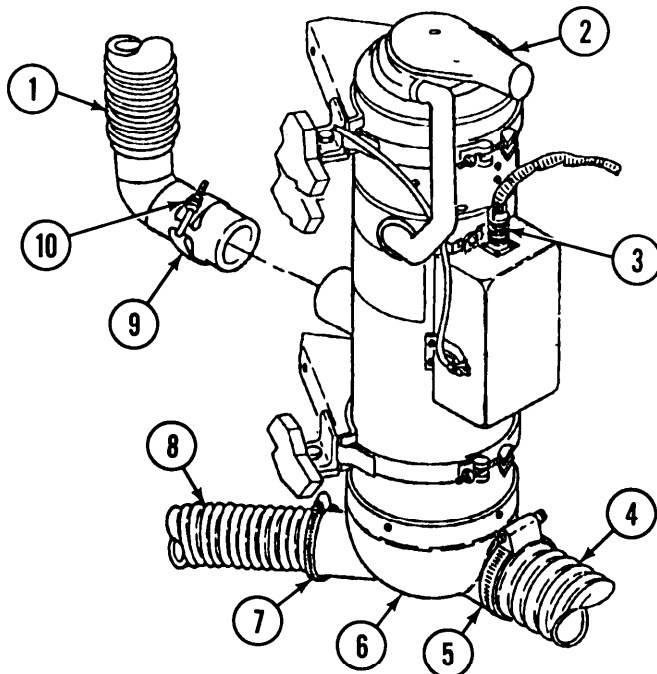
Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Numbers 1 and 2 engine AFES cylinder bottles removed (para 21-4).
- Numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts removed (para 21 -8).

Personnel Required: Two

a. REMOVAL

1. Remove electrical connector (3) from personnel heater (2).
2. Loosen clamp (7) and remove hose (8) from heater duct (6).



3. Loosen clamp (5) and remove hose (4) from heater duct (6).
4. Loosen nut (10) on clamp (9), and remove exhaust tube (1) from personnel heater (2).

16-7. PERSONNEL HEATER REPLACEMENT (continued).

b. INSTALLATION

1. Position sleeve (12), flange (11), and clamp (9) over exhaust tube (1).
2. Install heater duct (6) on personnel heater (2) with four screws (18) and new lockwashers (17).
3. Install personnel heater (2) in vehicle. While assistant holds personnel heater (2) in place, secure with two heater clamps (16).

WARNING

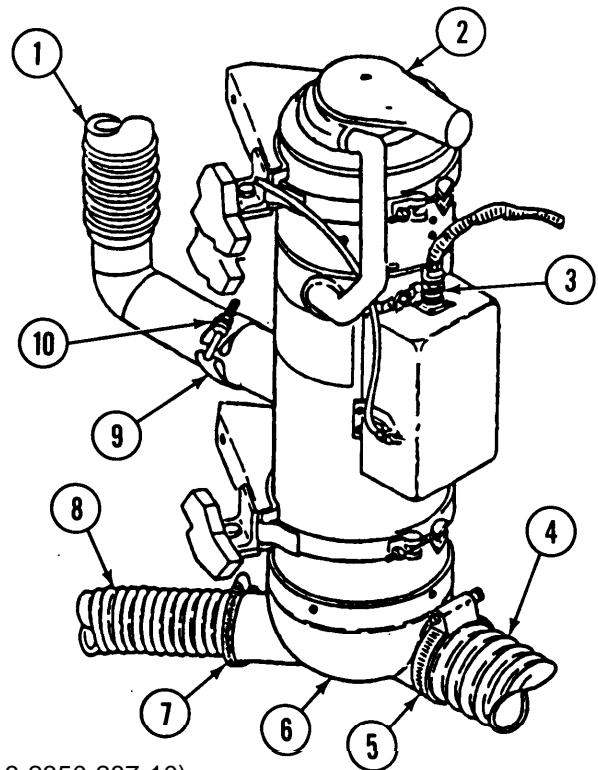
Sealant is toxic. Prolonged breathing of vapors from organic solvents or materials containing organic solvents is dangerous. Rubber gloves should be used. Wash hands thoroughly with soap and water before eating, drinking, or smoking.

4. Apply thin coat of Teflon pipe sealant to threads of nipple (15) and elbow (14).

CAUTION

Use care when installing nipple into heater fuel inlet connection, to avoid damage to equipment.

5. Install nipple (15) in elbow (14). Install nipple (15) and elbow (14) in personnel heater (2). Connect fuel hose (13) to elbow (14).
6. Install exhaust tube (1) on personnel heater (2).
7. Tighten nut (10) on clamp (9) and secure exhaust tube (1) on personnel heater (2). Torque nut (10) between 65 and 75 inch-pounds (7.3 and 8.5 N•m).
8. Install clamp (5) on hose (4). Install hose (4) on heater duct (6) and secure with clamp (5).
9. Loosen clamp (20) on hose (8). Remove hose (8) from tee assembly (19).
10. Install clamp (7) on hose (8). Install hose (8) on heater duct (6) and secure with clamp (7).
11. Install clamp (20) on hose (8). Install hose (8) on tee assembly (19) and secure with clamp (20).
12. Connect electrical connector (3) to personnel heater (2).



FOLLOW-ON MAINTENANCE:

- Perform operational check of personnel heater (refer to TM 9-2350-287-10).
- Allow heating and ventilating system to cool for 10 minutes, then retorque nut (9) on clamp (10) between 65 and 75 in-lb (7.3 and 8.5 N •m).
- Install numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts (para 21-8).
- Install numbers 1 and 2 engine AFES cylinder bottles (para 21-4).
- Move left and right projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

16-8. PERSONNEL HEATER FUEL FILTER AND TUBE REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench set, 3/8-inch drive (Item 57, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Drycleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Filter bowl assembly (Item 42, Appendix H)
- Lockwasher (2) (Item 194, Appendix H)

Equipment Conditions:

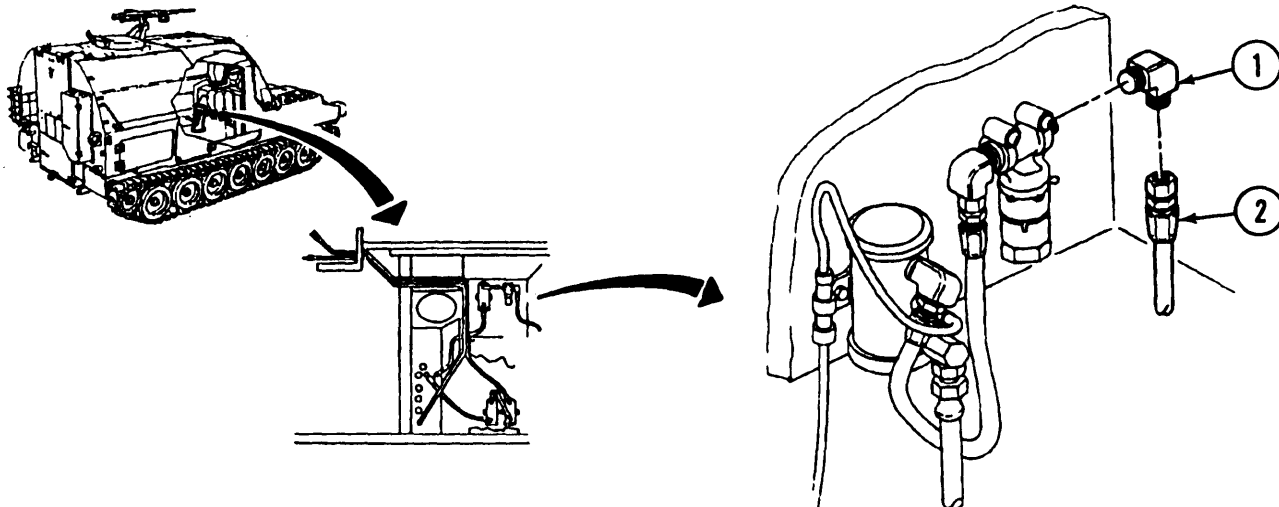
- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Numbers 1 and 2 engine AFES cylinder bottles removed (para 21-4).
- Numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts removed (para 21-8).

a. REMOVAL

WARNING

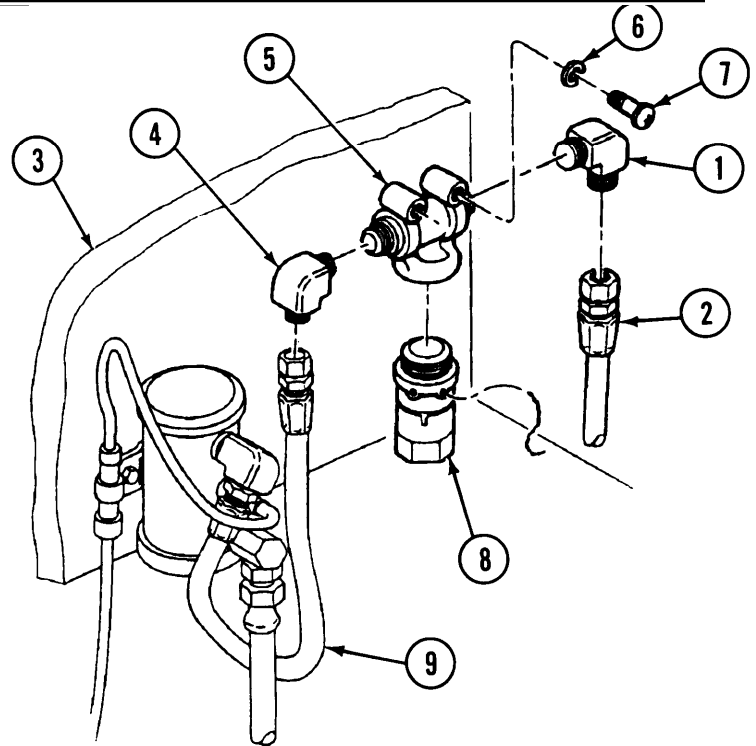
- Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open flame. When working where fuel is present post signs that read "No Smoking Within 50 Feet of Vehicle."
- In the event of fire in the engine or crew compartment be prepared to use the portable fire extinguisher and/or manually operate the automatic fire extinguisher system (AFES).

1. Position drain pan under heater fuel inlet hose (2). Disconnect heater fuel inlet hose (2) at fuel filter elbow (1).



16-8. PERSONNEL HEATER FUEL FILTER AND TUBE REPLACEMENT (continued).

2. Position drainoan under fuel pump filter hose (9). Disconnect fuel pump fiker hose (9) from elbow (4).
3. Remove two screws (7), lockwashers (6), filter head (5), and filter bowl assembly (8) from forward bulkhead (3). Discard lockwashers.
4. Remove filter bowl assembly (8) form filter head (5). Discard filter bowl assembly.
5. Remove two elbows (1 and 4) from filter head (5).

**b. INSTALLATION****WARNING**

- **Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open flame. When working where fuel is present, post signs that read “No Smoking Within 50 Feet of Vehicle.”**
- **In the event of fire in the engine or crew compartment, be prepared to use the portable fire extinguisher and/or manually operate the automatic fire extinguisher system (AFES).**

1. Apply a thin coat of teflon pipe sealant to threads of elbows (1 and 4).
2. Install elbows (1 and 4) in filter head (5).
3. Install new filter bowl assembly (8) in filter head (5).
4. Install filter head (5) and filter bowl assembly (8) on forward bulkhead (3) with two screws (7) and new lockwashers (6).
5. Connect fuel pump filter hose (9) to elbow (4).
6. Connect heater fuel inlet hose (2) to elbow (1).

FOLLOW-ON MAINTENANCE:

- Install numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts (para 21-8).
- Install numbers 1 and 2 engine AFES cylinder bottles (para 21-4).
- Install left and right projectile rack assemblies (refer to TM 9-2350-287-10).

16-9. PERSONNEL HEATER MOUNTING CLAMPS AND BRACKETS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Socket wrench set 3/8-inch drive (Item 57, Appendix I)

Materials/Parts:

- Cotter pin (4) (Item 11, Appendix H)

Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).

- Numbers 1 and 2 engine AFES cylinder bottles removed (para 21 -4).
 - Numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts removed (para 21 -8).
 - Personnel heater removed (para 16-7).
-

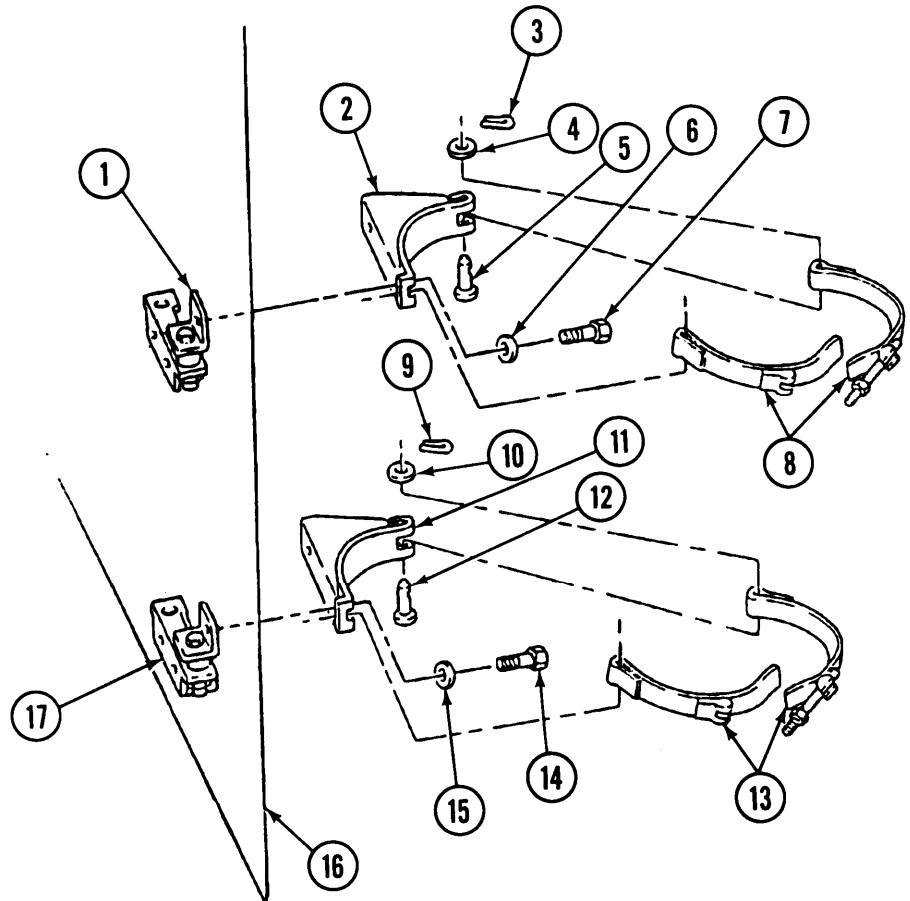
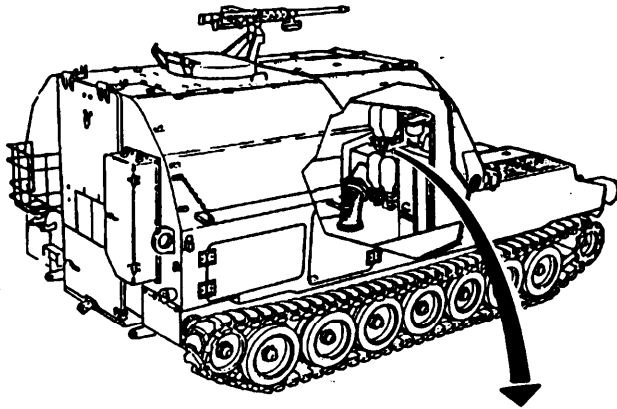
a. REMOVAL

1. Remove two cotter pins (3), washers (4), straight pins (5), and upper clamp halves (8) from upper saddle bracket (2). Discard cotter pins.
2. Remove two cotter pins (9), washers (10), straight pins (12), and lower clamp halves (13) from lower saddle bracket (11). Discard cotter pins.
3. Remove two screws (7) and washers (6) and upper saddle bracket (2) from forward bulkhead (16) and two angles (1).
4. Remove two screws (14) and washers (15) and lowersaddle bracket (11) from forward bulkhead (16) and two angles (17).

b. INSTALLATION

1. Install lower saddle bracket (11) on two angles (17) and against forward bulkhead (16) with two screws (14) and washers (15).
2. Install upper saddle bracket (2) on two angles (1) and against forward bulkhead (16) with two screws (7) and washers (6).
3. Install lower clamp halves (13) in lower saddle bracket (11) with two straight pins (12), washers (10), and new cotter pins (9).
4. Install upper clamp halves (8) in upper saddle bracket (2) with two straight pins (5), washers (4), and new cotter pins (3).

16-9. PERSONNEL HEATER MOUNTING CLAMPS AND BRACKETS REPLACEMENT
(continued).



FOLLOW-ON MAINTENANCE:

- Install personnel heater (para 16-7).
- Install numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts (para 21-8).
- Install numbers 1 and 2 engines AFES cylinder bottles (para 21-4).
- Move left and right projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

16-10. PERSONNEL HEATER EXHAUST TUBE REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I).

Materials/Parts:

- Lockwasher (5) (Item 175, Appendix H)

Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).

- Numbers 1 and 2 engine AFES cylinder bottles removed (para 21-4).
 - Numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts removed (para 21-8).
 - Personnel heater removed (para 16-7).
 - Exhaust deck removed (para 15-8).
 - Fan access door removed (para 15-6).
-

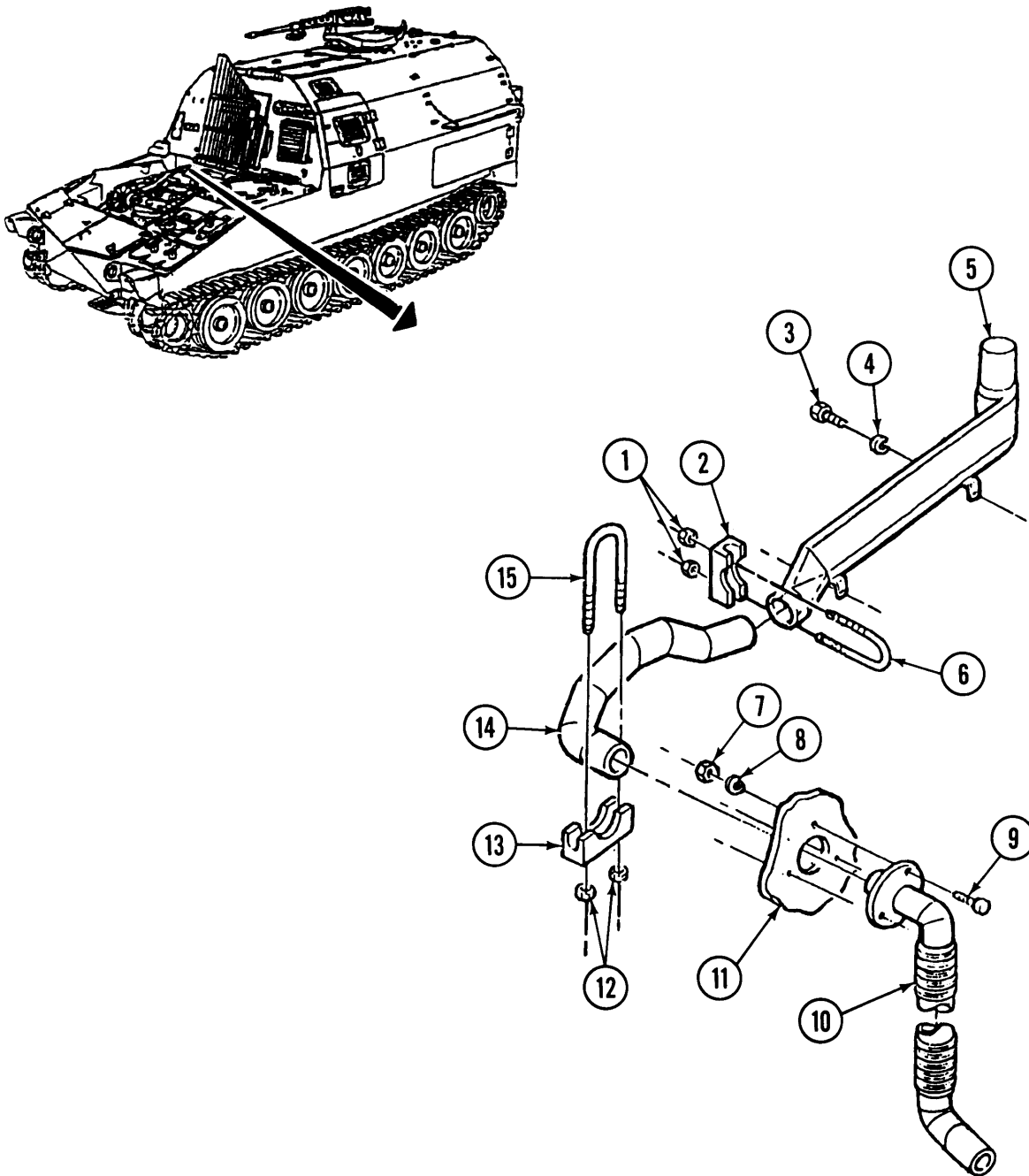
a. REMOVAL

1. Remove two nuts (12), muffler clamp (15), and bracket (13) from exhaust tube (10) and crossover pipe (14).
2. Remove three screws (9), lockwashers (8), and nuts (7) and exhaust tube (10) from vehicle bulkhead (11) inside crew compartment. Discard lockwashers.
3. Remove two nuts (1), muffler clamp (6), bracket (2), and crossover pipe (14) from exhaust outlet tube (5).
4. Remove two screws (3) and lockwashers (4) and exhaust outlet tube (5) from vehicle bulkhead (11). Discard lockwashers.

b. INSTALLATION

1. install exhaust outlet tube (5) on vehicle bulkhead (11) with two screws (3) and new lockwashers (4).
2. Install crossover pipe (14) into exhaust outlet tube (5) and secure with muffler clamp (6), bracket (2), and two nuts (1).
3. Install exhaust tube (10) on vehicle bulkhead (11) with three screws (9), new lockwashers (8), and nuts (7).
4. Position crossover pipe (14) on exhaust tube (10) and secure with muffler clamp (15), bracket (13), and two nuts (12).

16-10. PERSONNEL HEATER EXHAUST TUBE REPLACEMENT.

**FOLLOW-ON MAINTENANCE:**

- Install fan access door (para 15-6).
- Install exhaust deck (para 15-8).
- Install personnel heater (para 16-7).
- Install numbers 1 and 2 engine AFES cylinder bottle bracket straps, brackets, and mounts (para 21-8).
- Install numbers 1 and 2 engine AFES cylinder bottles (para 21-4).
- Move left and right projectile rack assemblies to front of vehicle (refer to TM 9-2350-287-10).

**CHAPTER 17
HYDRAULIC AND FLUID SYSTEMS MAINTENANCE**

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[Paragraph Deleted]		
17-34	Conveyor Hydraulic Hoses and Fittings Replacement	17-120
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[Paragraphs Deleted]

17-1. GENERAL.

This chapter illustrates and describes procedures for the hydraulic and fluid systems, which consist of the conveyor assembly, hydraulic reservoir, hydraulic pump, suction and return lines, selector valve, control panel assembly, upper rear door actuator, and conveyor hydraulic hoses and fittings.

17-2. CONVEYOR SUPPORT SLINGS REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Conveyor deployed (refer to TM 9-2350-287-10).
- Upper rear door lowered to 45-degree position (refer to TM 9-2350-287-10).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

WARNING

Make sure conveyor is supported by blocks or support stands before attempting to remove support slings. Failure to follow this warning may result in death or injury to personnel.

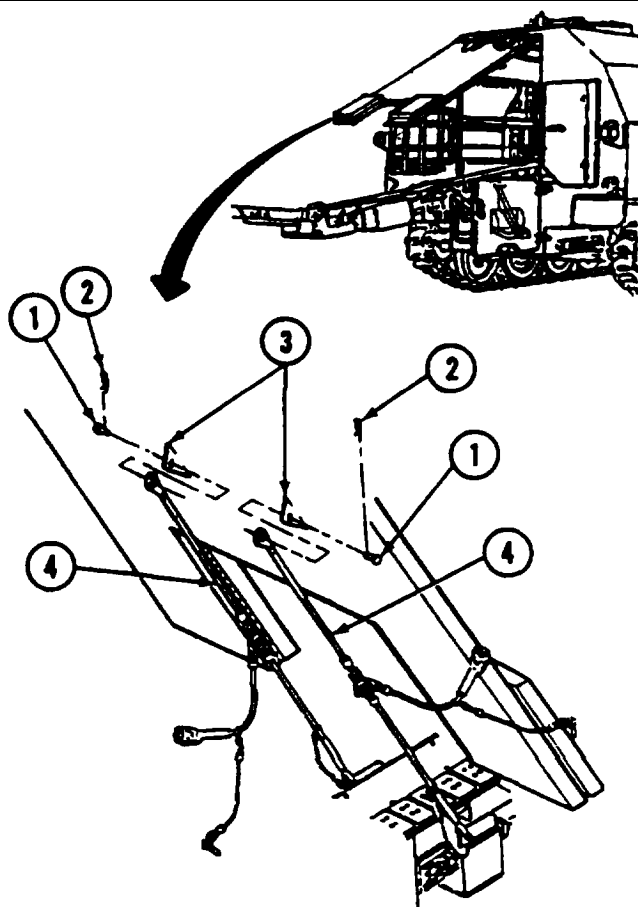
1. Remove locking pin (2) from each of two pins (1).
2. Release upper end of each of two conveyor support sling assemblies (4) by removing pin (1) from each of two door brackets (3).

b. INSTALLATION

1. Install pin (1) in each of two door brackets (3) holding upper end of each of two sling assemblies (4).
2. Install locking pin (2) in each of two pins (1).

FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).
- Close upper rear door (refer to TM 9-2350-287-10).



17-3. CONVEYOR SUPPORT STRAP ASSEMBLY AND CABLE SUPPORT CLIPS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

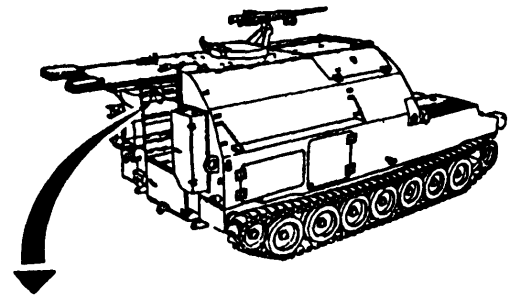
- Cotter pin (Item 38, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Upper rear door opened (refer to TM 9-2350-287-10).

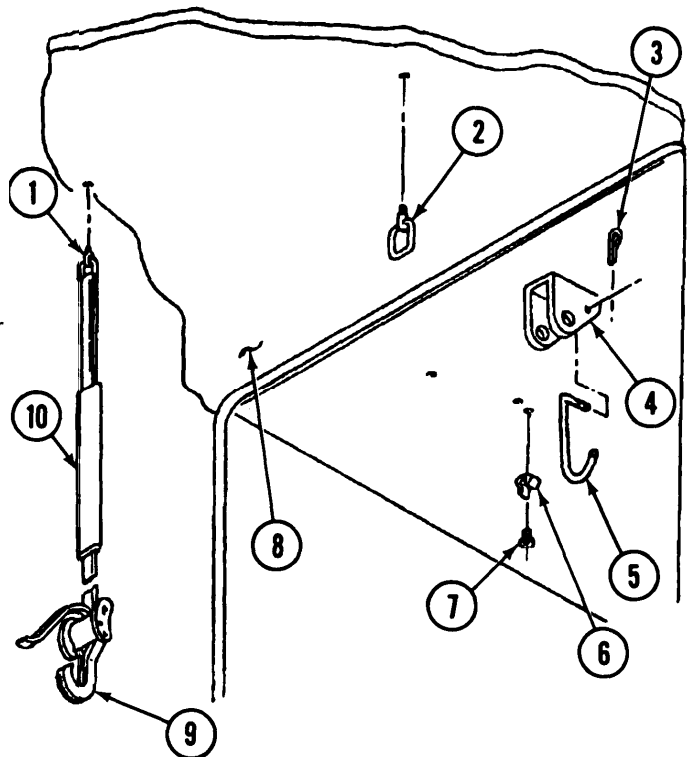
a. REMOVAL

1. Remove hook (9) of strap assembly (10) from strap stud (2).
2. Remove strap stud (2) from ceiling.
3. Remove strap stud (1), with attached strap assembly (10), from ceiling.
4. Remove eight screws (7) and four cable support clips (6) from upper rear door (8).
5. Remove cotter pin (3) and hanger (5) from bracket (4). Discard cotter pin.



b. INSTALLATION

1. Install hanger (5) on bracket (4) with new cotter pin (3).
2. Install four cable support clips (6) on upper rear door (8) with eight screws (7).
3. Install strap stud (1), with attached strap assembly (10), on ceiling.
4. Install strap stud (2) on ceiling.
5. Install hook (9) of strap assembly (10) on strap stud (2).



FOLLOW-ON MAINTENANCE:

- Close upper rear door (refer to TM 9-2350-287-10).

17-4. CONVEYOR SUPPORTS AND CONVEYOR SUPPORT BRACKETS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Conveyor deployed (refer to TM 9-2350-287-10).

Materials/Parts:

- Lockwasher (Item 166, Appendix H)
-

a. REMOVAL

WARNING

Make sure conveyor is supported before removing supports. Sling assemblies alone are insufficient support for working on conveyor. Failure to properly support conveyor may result in conveyor falling, causing serious injury or death to personnel.

NOTE

Left and right conveyor supports and support brackets are replaced the same way.

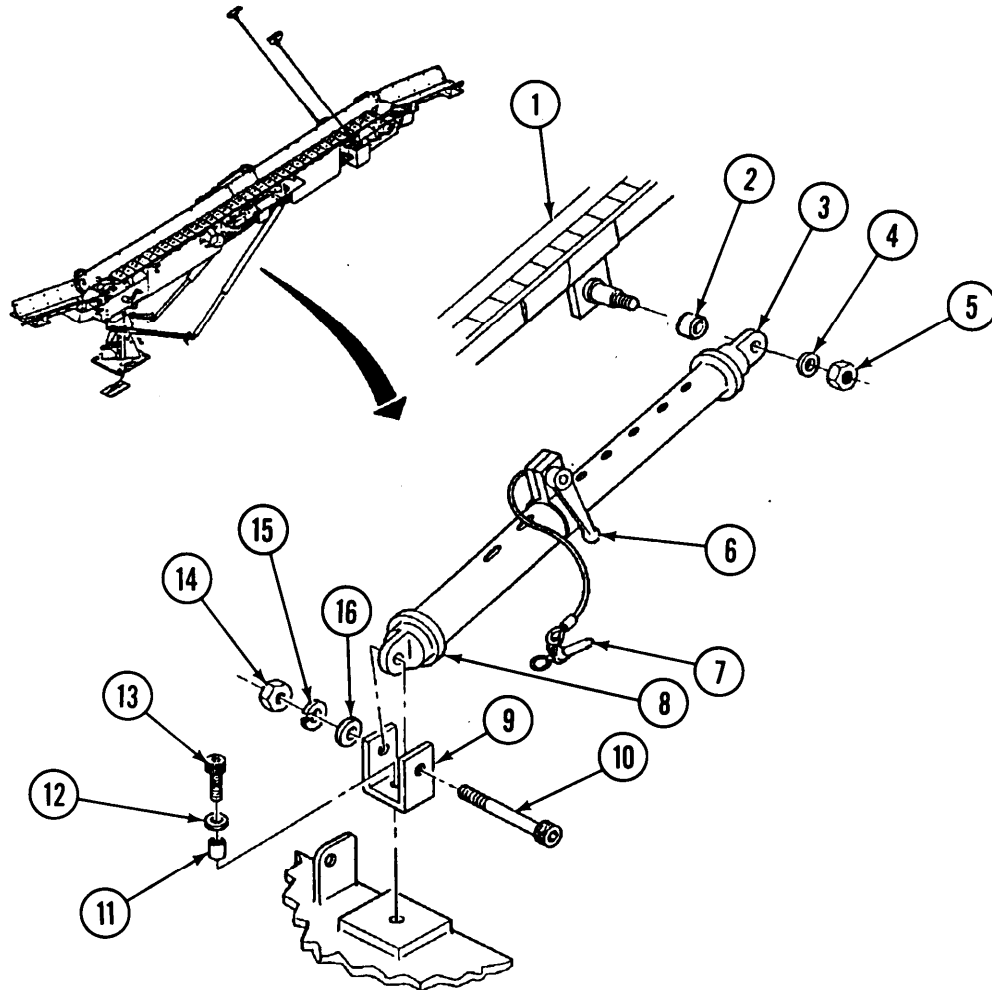
1. Remove nut (5), washer (4), and bushing (2) from upper support (3) on convey or (1).
2. Push upper support (3) free of convey or (1).
3. Loosen friction handle (6) on lower support (8).
4. Remove quick-release pin (7) from upper and lower supports (3 and 8).
5. Remove upper support (3) from lower support (8).
6. Remove nut (14), lockwasher (1 5), washer (1 6), screw (10), and lower support (8) from support bracket (9). Discard lockwasher.
7. Remove screw (13), washer (12), spacer (11), and bracket (9) from vehicle.

b. INSTALLATION

1. Install bracket (9) on vehicle using spacer (11), washer (12), and screw (13).
2. Install lower support (8), screw (10), washer (16), new lockwasher (15), and nut (14) on bracket (9).
3. Install upper support (3) on lower support (8).

17-4. CONVEYOR SUPPORTS AND CONVEYOR SUPPORT BRACKETS REPLACEMENT
(continued).

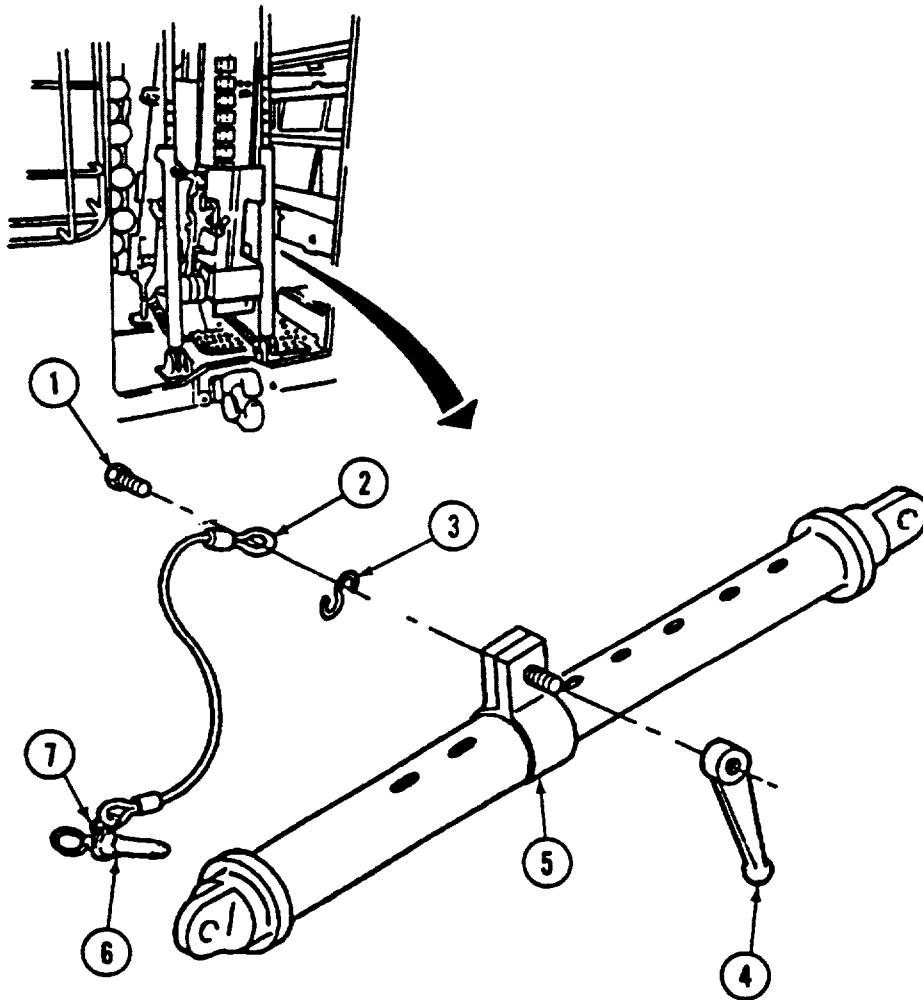
4. Install upper support (3) and bushing (2) on conveyor (1) with washer (4) and nut (5).
5. Install quick-release pin (7) on upper and lower supports (3 and 8).
6. Tighten friction handle (6) on lower support (8).



FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).

17-5. UPPER SUPPORT QUICK-RELEASE PIN AND HANDLE REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- None

17-6. CONVEYOR ASSEMBLY AND SUPPORT STAND REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- Endless sling (Item 20, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cotter pin (2) (Item 28, Appendix H)
- Lockwasher (4) (Item 168, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Hydraulic ball valve closed (refer to TM 9-2350-287-10).
- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
- Conveyor springs removed (para 17-7).
- Conveyor supports removed (para 17-4).
- Conveyor wiring harness removed (para 7-70).

a. REMOVAL

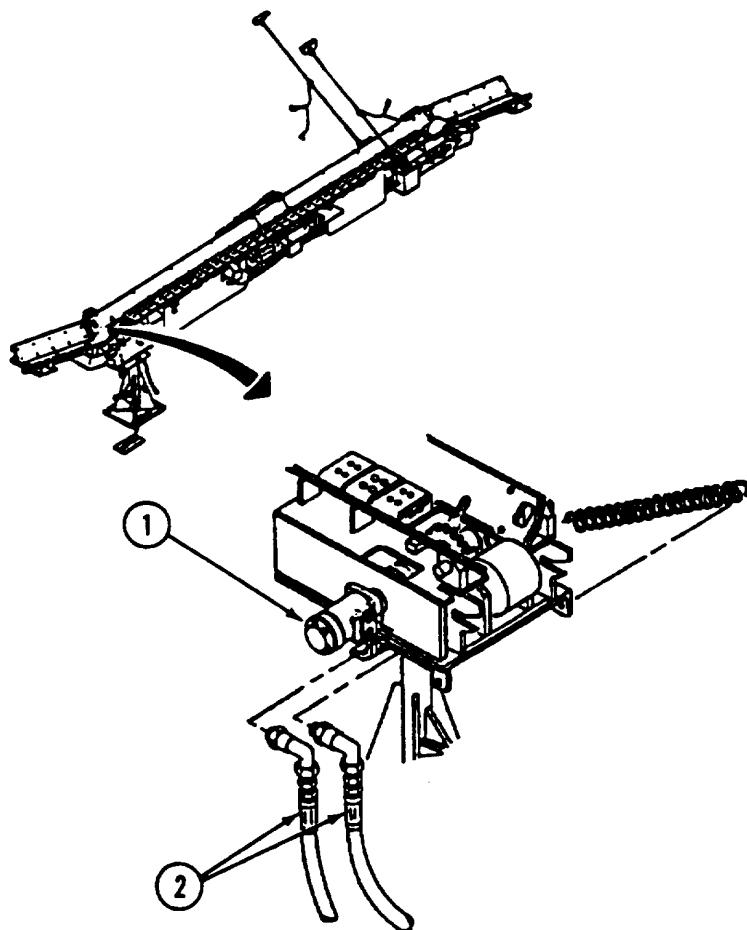
WARNING

- **Make sure conveyor is supported before removal. Conveyor can fall, causing severe injury or death to personnel.**
- **Be careful when deploying conveyor without springs attached. Deploy slowly. Conveyor may move faster than anticipated, causing severe injury to personnel.**

NOTE

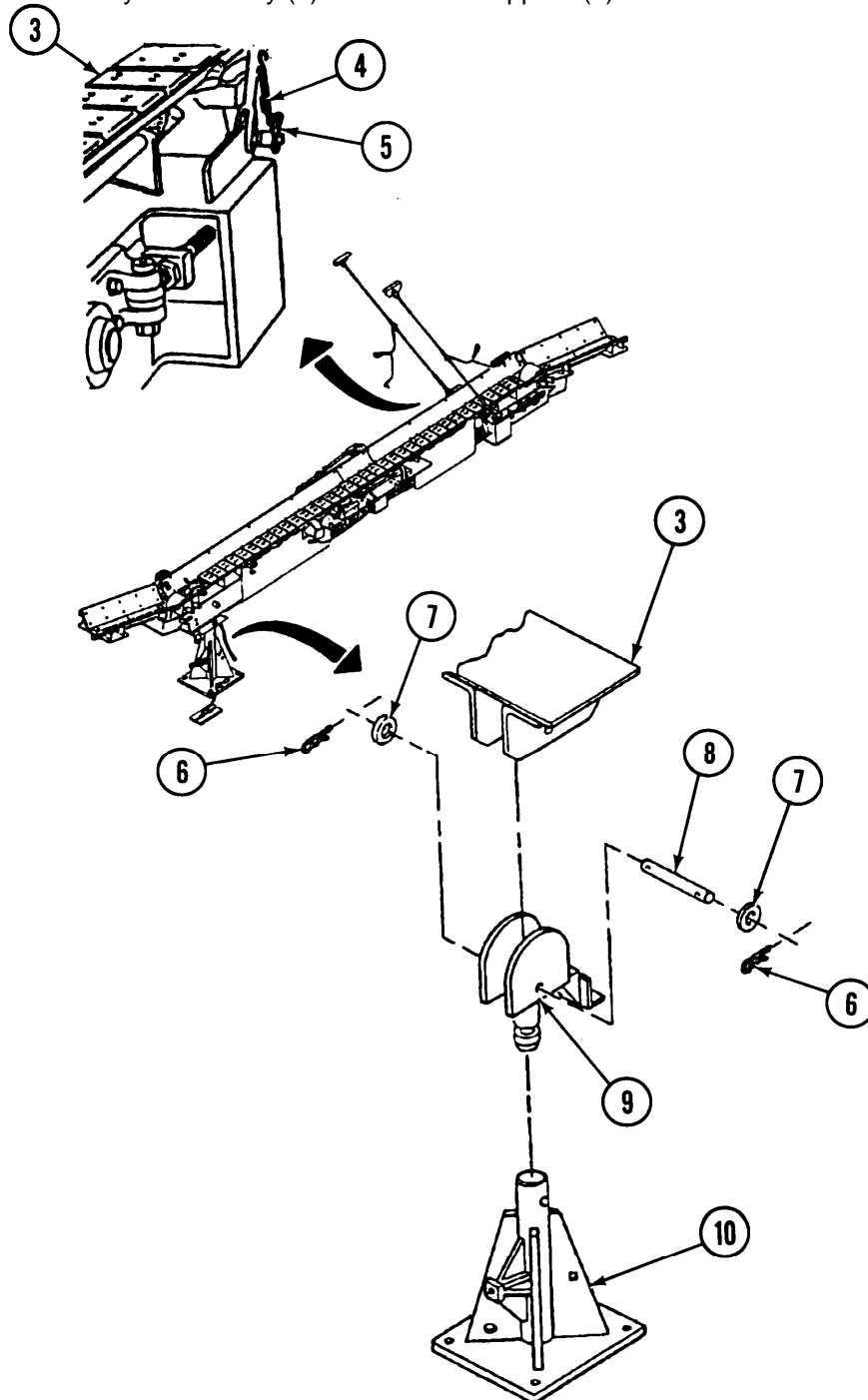
To aid in installation, tag hydraulic hoses when removed.

1. Place drain pan under conveyor motor (1).
2. Disconnect two hydraulic hoses (2) from conveyor motor (1).



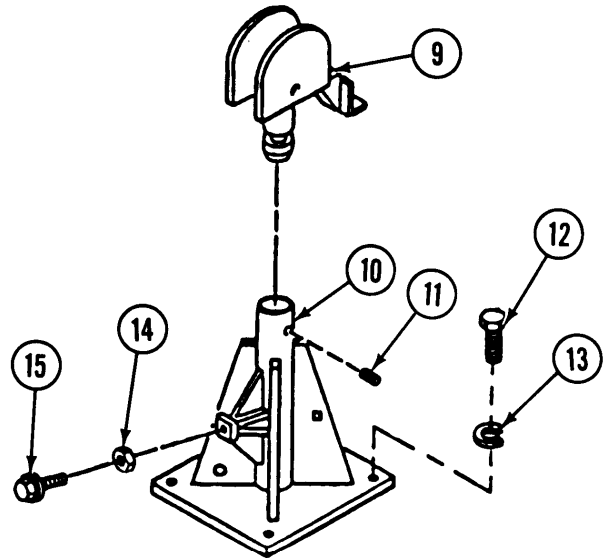
17-6. CONVEYOR ASSEMBLY AND SUPPORT STAND REPLACEMENT (continued).

3. Attach sling to conveyor assembly (3) and hoist.
4. Remove two cotter pins (6) and washers (7) and pin (8) from vertical support (9). Discard cotter pins.
5. Remove two quick disconnect pins (5) from two support slings (4), and disconnect two support slings (4) from conveyor assembly (3).
6. Using hoist, remove conveyor assembly (3) from vertical support (9).



17-6. CONVEYOR ASSEMBLY AND SUPPORT STAND REPLACEMENT (continued).

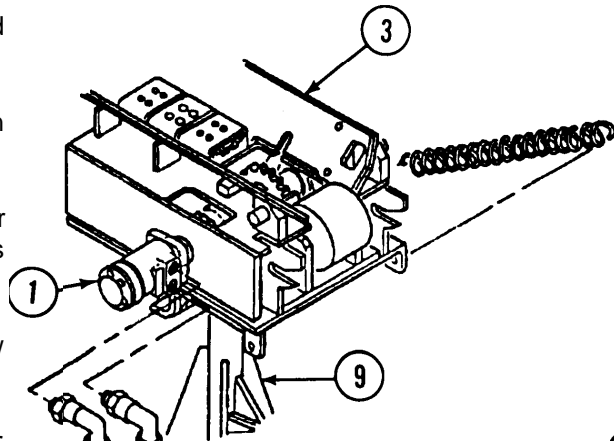
7. Remove four screws (12) and lockwashers (13) and support stand (10) from vehicle floor. Discard lockwashers.
8. Loosen nut (14) and remove support stand stop (15) from support stand (10).
9. Loosen two set screws (11) and remove vertical support (9) from support stand (10).



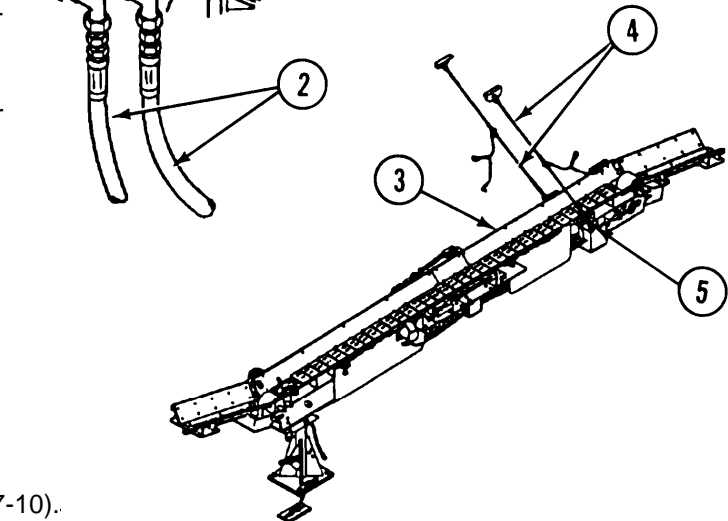
b. INSTALLATION

1. Install vertical support (9) on support stand (10) and secure with two setscrews (11).
2. Install support stand stop (15) on support stand (10) and tighten nut (14).
3. Install support stand (10) on vehicle floor with four new lockwashers (13) and screws (12).

4. Install sling to conveyor assembly (3) and hoist.
5. Using hoist, install conveyor assembly (3) on vertical support (9).



6. Connect two support slings (4) to conveyor assembly (3) with two quick-disconnect pins (5).
7. Install pin (8) and two washers (7) and new cotter pins (6) in vertical support (9).
8. Remove hoist and sling from conveyor assembly (3).
9. Connect two hydraulic hoses (2) to conveyor motor (1).



FOLLOW-ON MAINTENANCE:

- Install conveyor wiring harness (para 7-70).
- Install conveyor supports (para 17-4).
- Install conveyor springs (para 17-7).
- Open hydraulic ball valve (refer to TM 9-2350-287-10).

17-7. CONVEYOR SPRINGS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Lower rear door opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

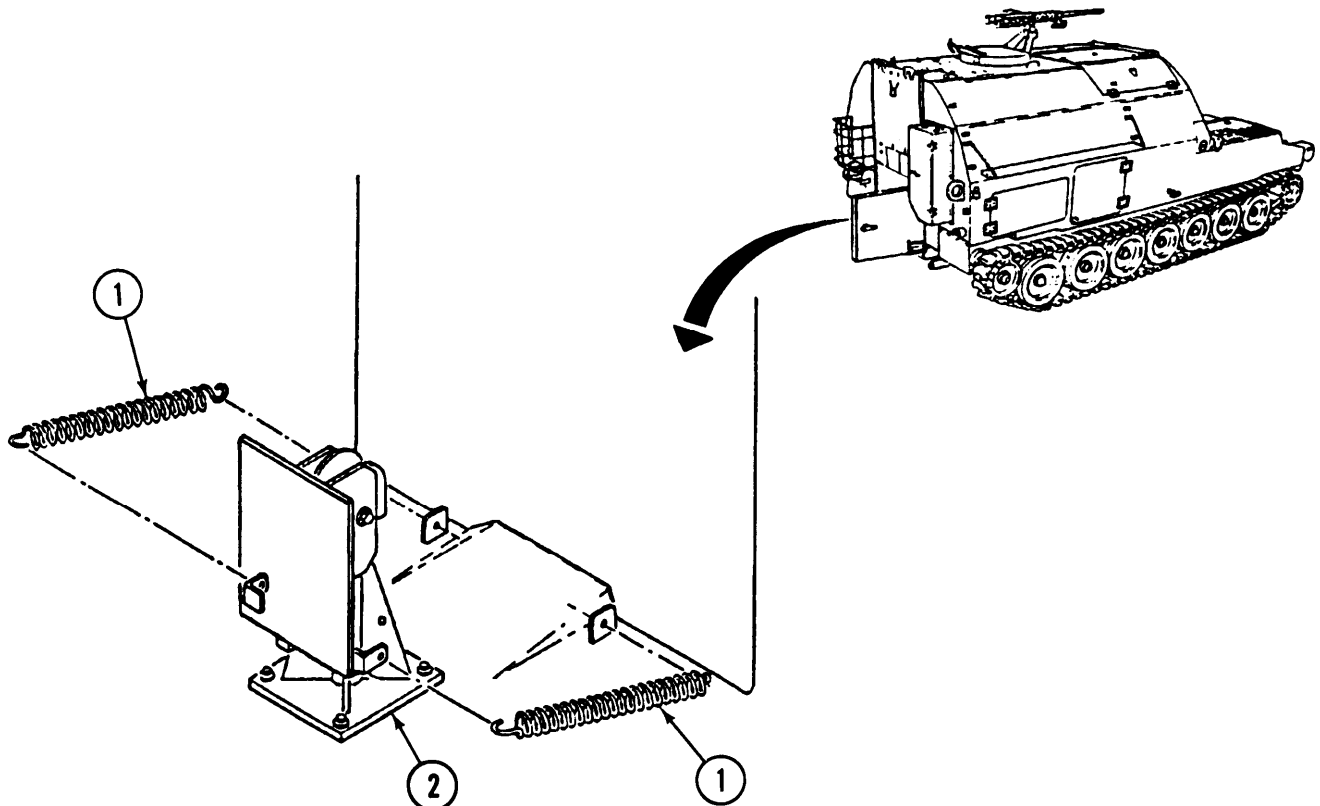
WARNING

When stretching and relieving spring tension, be careful to avoid pinching hands in spring coils. Failure to follow this warning may result in injury to personnel.

NOTE

Left and right conveyor springs are replaced the same way.

1. With the aid of an assistant, remove conveyor spring (1) from conveyor-mounted bracket (2).



17-7. CONVEYOR SPRINGS REPLACEMENT (continued).

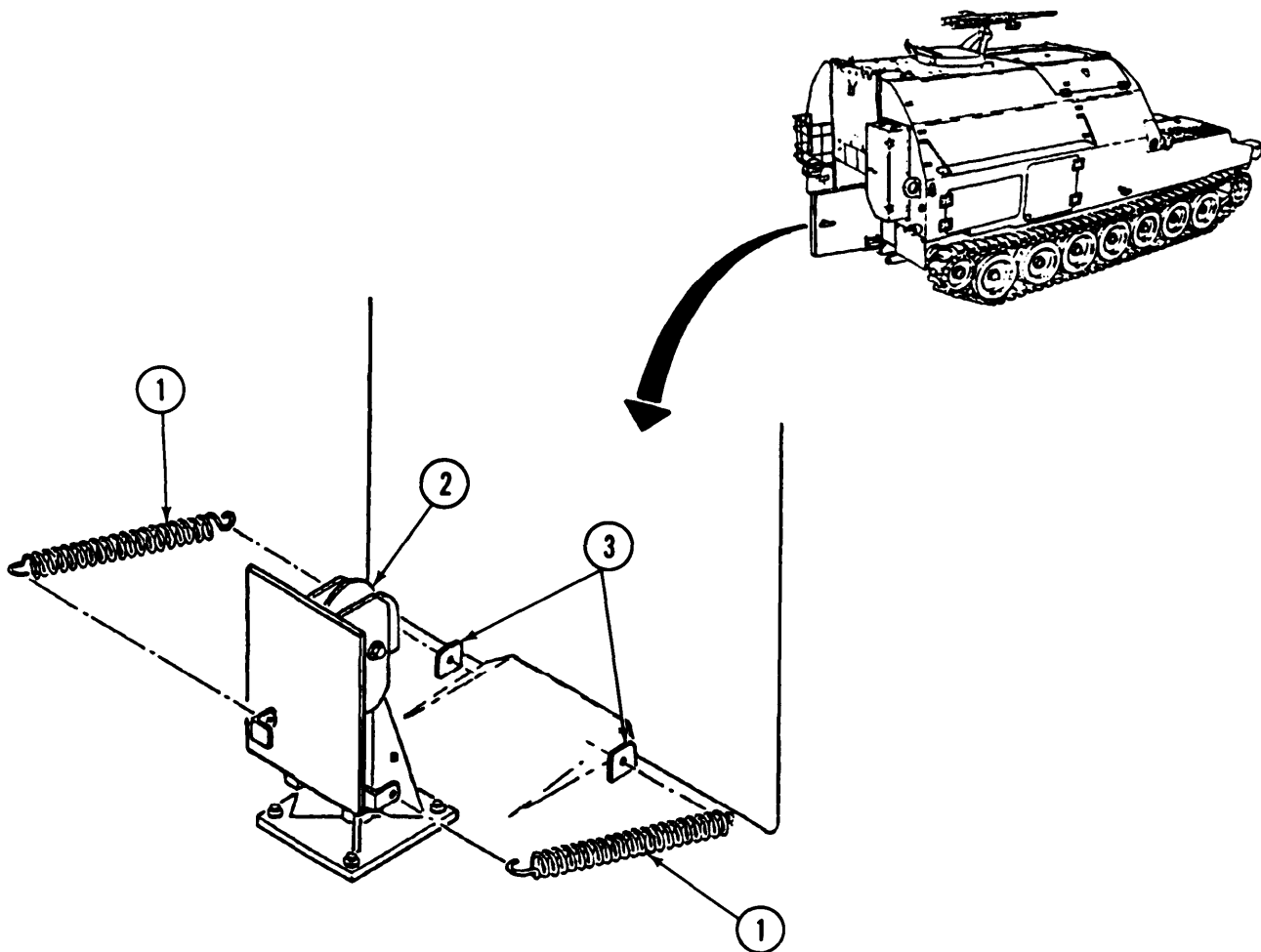
2. Remove conveyor spring (1) from floor-mounted bracket (3).

b. INSTALLATION

WARNING

When stretching and relieving spring tension, be careful to avoid pinching hands in spring coils. Failure to follow this warning may result in injury to personnel.

1. Install conveyor spring (1) on floor-mounted bracket (3).
2. With the aid of an assistant, install conveyor spring (1) on conveyor-mounted bracket (2).



FOLLOW-ON MAINTENANCE:

- Close lower rear door (refer to TM 9-2350-287-10).

17-8. DEAD-END SECTION ASSEMBLY REPAIR.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (2) (Item 160, Appendix H)
- Lockwasher (3) (Item 196, Appendix H)
- Rubber strip (Item 253, Appendix H)

Materials/Parts:

- Adhesive, rubber (Item 4, Appendix D)
- Sealing compound (Item 58, Appendix D)
- Cotter pin (2) (Item 18, Appendix H)
- Cotter pin (4) (Item 29, Appendix H)
- Lockwasher (2) (Item 120, Appendix H)
- Lockwasher (2) (Item 158, Appendix H)

Equipment Conditions:

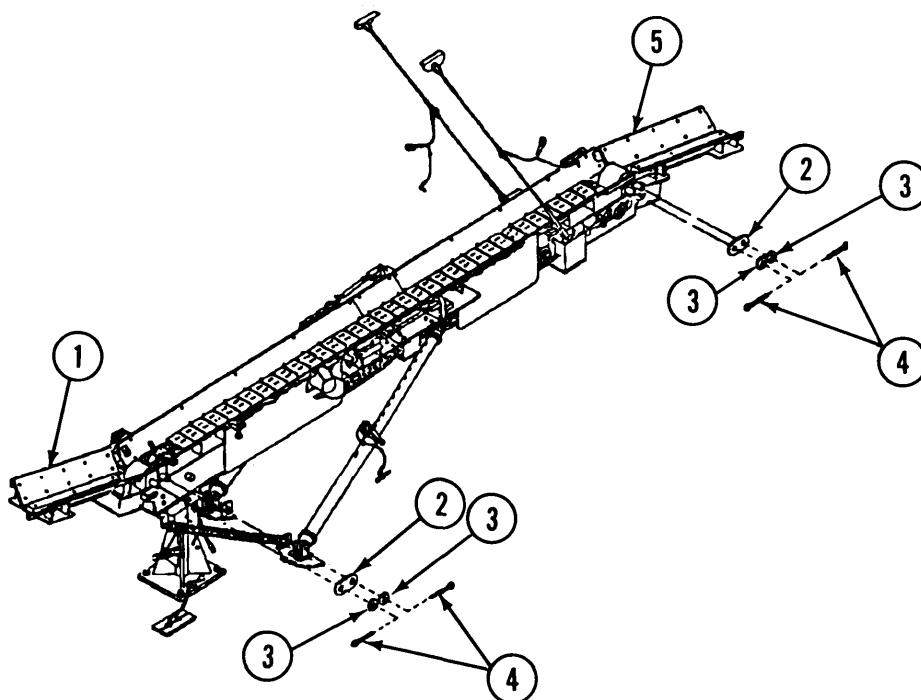
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Conveyor deployed (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

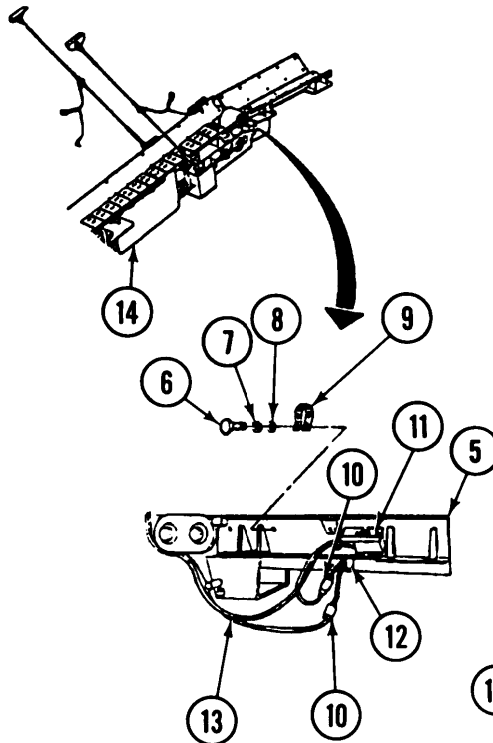
Steps 1,2, and 5 apply to both the forward and the rear dead-end section assemblies of the conveyor. Steps 3 and 4 apply only to the rear dead-end section assembly.

1. Fold up rear dead-end section assembly (5) or forward dead-end section assembly (1).
2. Remove four cotter pins (4) and washers (3) and two connecting links (2) from either dead-end section assembly (1 or 5). Discard cotter pins.



17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

3. Disconnect two ground leads (10) from override safety switch (11) and deadman switch (12) on rear dead-end section assembly (5).
4. Remove three screws (6), lockwashers (7), washers (8), straps (9) and conveyor electrical wiring harness (13) from rear dead-end section assembly (5). Discard lockwashers.
5. Remove either dead-end section assembly (1 or 5) from adjoining conveyor section (14).



b. DISASSEMBLY

NOTE

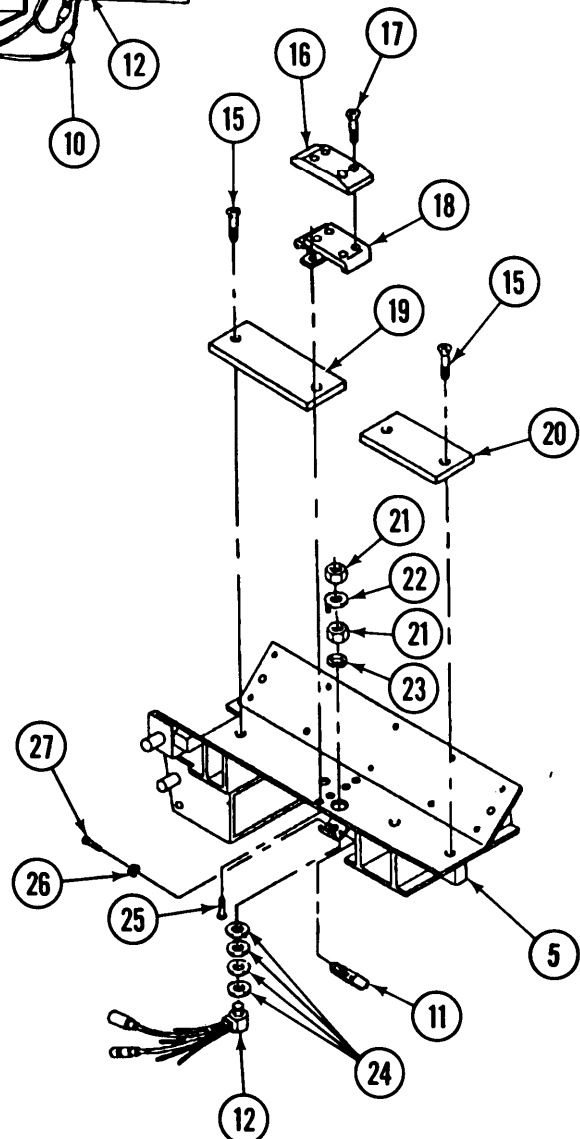
Steps 1 through 5 apply only to rear dead-end section.

1. Remove two screws (27) and lockwashers (26) and override safety switch (11) from rear dead-end section assembly (5). Discard lockwashers.
2. Remove four screws (25) and moving bracket (18) from rear dead-end section assembly (5).

NOTE

Perform step 3 only if wear strip is damaged.

3. Remove four screws (17) from wear strip (16), and remove wear strip (16) from moving bracket (18).
4. Remove two nuts (21), key washer (22), lockwasher (23), four washers (24) and deadman switch (12) from rear dead-end section assembly (5).
5. Remove four screws (15) and two wear strips (19 and 20) from rear dead-end section assembly (5).

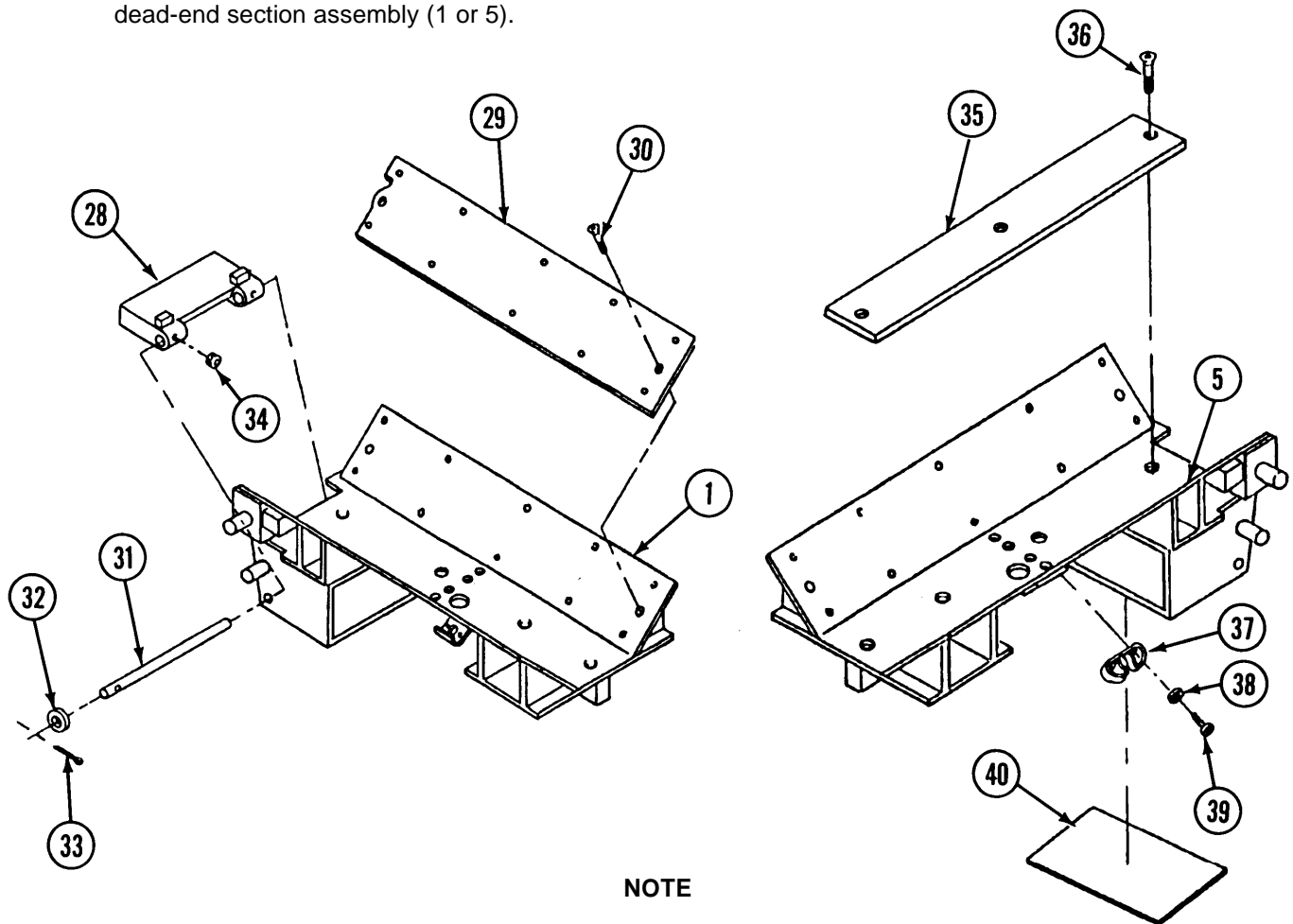


17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

NOTE

Steps 6 through 9 apply to both dead-end section assemblies.

6. Remove two setscrews (34) securing flipper block (28) to support bar (31).
7. Remove two cotter pins (33) and washers (32) from support bar (31), and drive out support bar (31) from either dead-end section assembly (1 or 5). Discard cotter pins.
8. Remove flipper block (28) from either dead-end section assembly (1 or 5).
9. Remove 10 screws (30) from each of two wear strips (29). Pry up and remove two wear strips (29) from either dead-end section assembly (1 or 5).



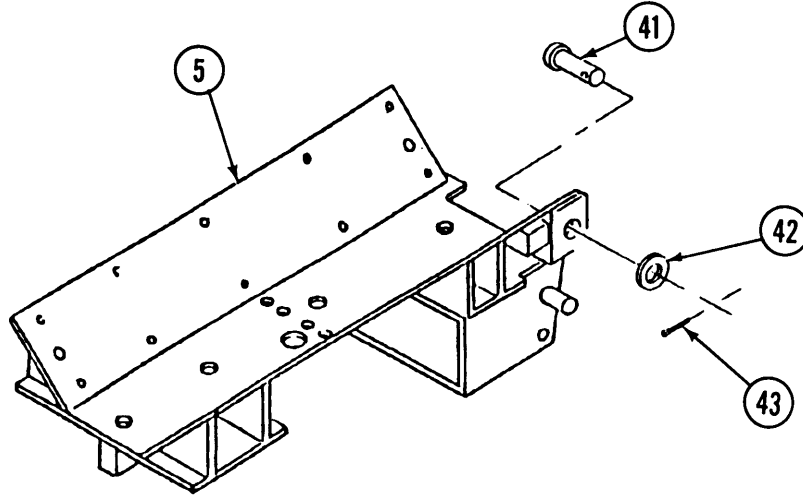
NOTE

Steps 10 through 13 apply only to forward dead-end section assembly.

10. Remove three screws (36) and bottom wear strip (35) from forward dead-end section assembly (5).
11. Pry rubber strip (40) from forward dead-end section assembly (5). Discard rubber strip.
12. Remove two screws (39) and lockwashers (38) and gun clip (37) from forward dead-end section assembly (5). Discard lockwashers.

17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

13. Remove two cotter pins (43), washers (42), and pins (41) from forward dead-end section (5). Discard cotter pins.



c. ASSEMBLY

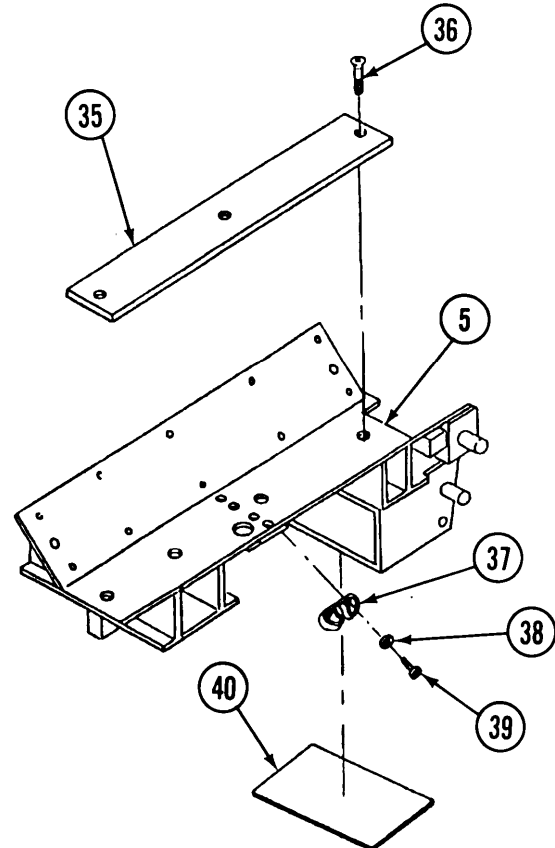
NOTE

Steps 1 through 5 apply only to forward dead-end section assembly.

1. Install two pins (41) in forward dead-end section assembly (5) with two washers (42) and new cotter pins (43).
2. Install gun clip (37) on forward dead-end section assembly (5) with two new lockwashers (38) and two screws (39).

WARNING

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



3. Apply rubber adhesive to rubber strip (40) Allow to dry until tacky.
4. Install rubber strip (40) on forward dead-end section assembly (5).
5. install bottom wear strip (35) on forward dead-end section assembly (5) with three screws (36).

17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

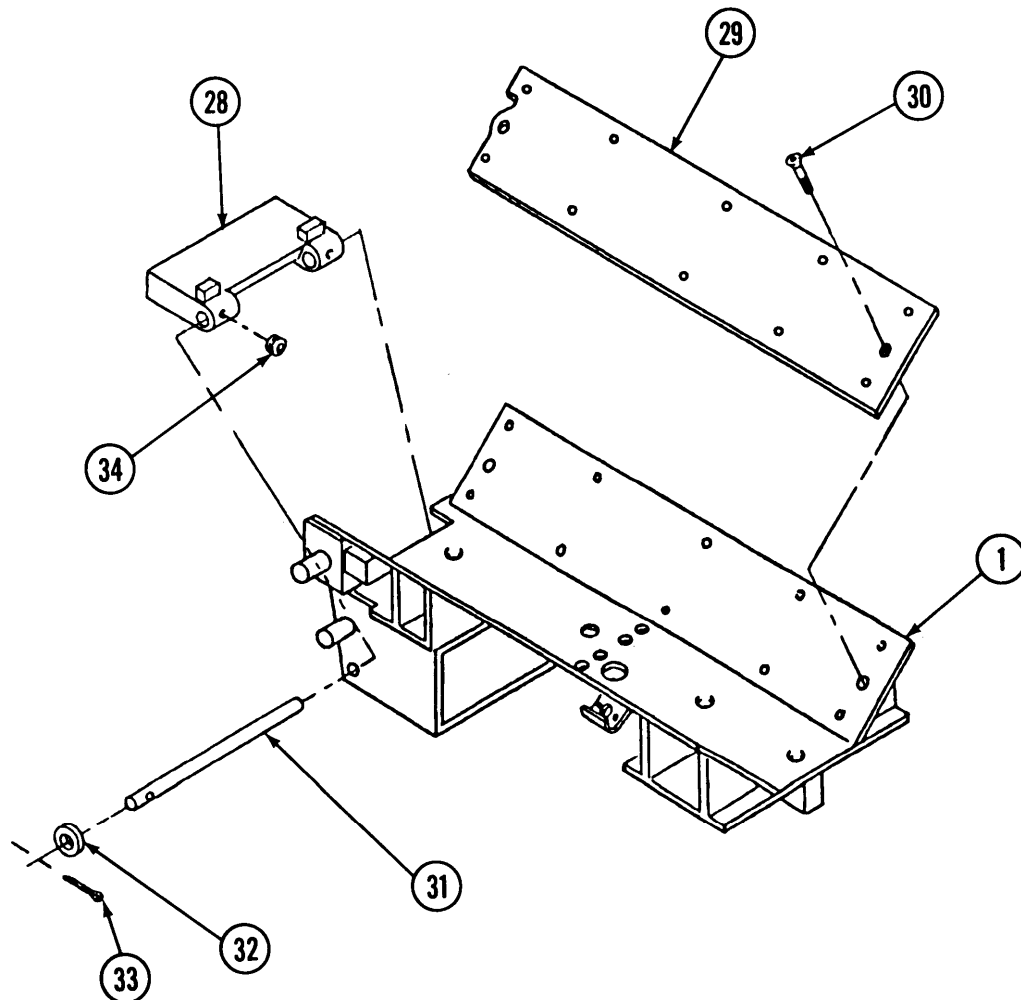
WARNING

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

NOTE

Steps 6 through 10 apply only to both dead-end section assemblies.

6. Apply sealing compound to threads of 20 screws (30).
7. Install two wear strips (29) on either dead-end section assembly (1 or 5) with 20 screws (30).
8. Install flipper block (28) on either dead-end section assembly (1 or 5) with support bar (31).
9. Install two washers (32) and new cotter pins (33) on support bar (31).
10. Secure flipper block (28) to support bar (31) with two setscrews (34).



17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

NOTE

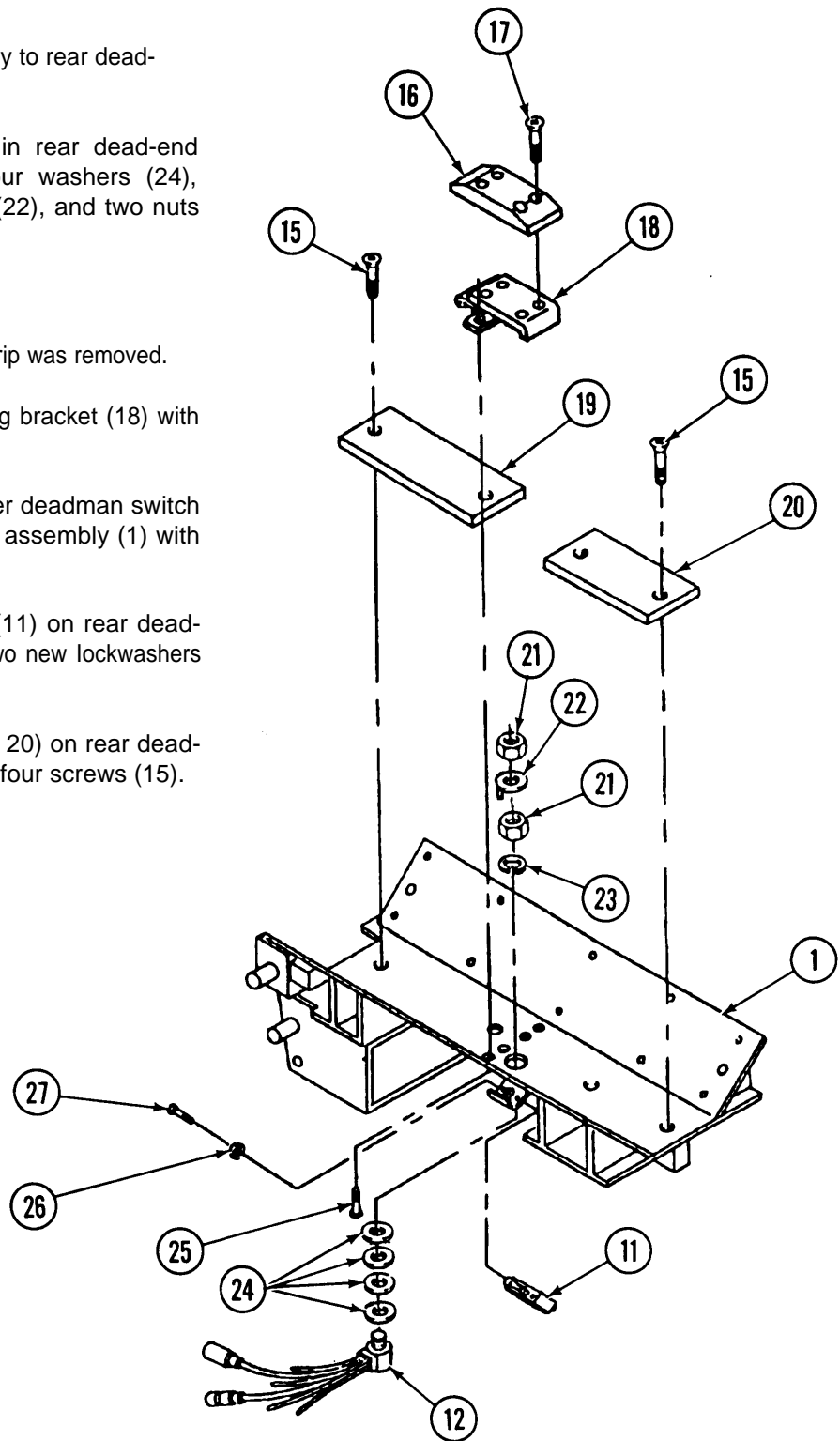
Steps 11 through 15 apply only to rear dead-end section assembly.

11. Install deadman switch (12) in rear dead-end section assembly (1) with four washers (24), lockwasher (23), key washer (22), and two nuts (21).

NOTE

Perform step 12 only if wear strip was removed.

12. Install wear strip (16) on moving bracket (18) with four screws (17).
13. Install moving bracket (18) over deadman switch (12) on rear dead-end section assembly (1) with four screws (25).
14. Install override safety switch (11) on rear dead-end section assembly (1) with two new lockwashers (26) and screws (27).
15. Install two wear strips (19 and 20) on rear dead-end section assembly (1) with four screws (15).



17-8. DEAD-END SECTION ASSEMBLY REPAIR (continued).

d. INSTALLATION

NOTE

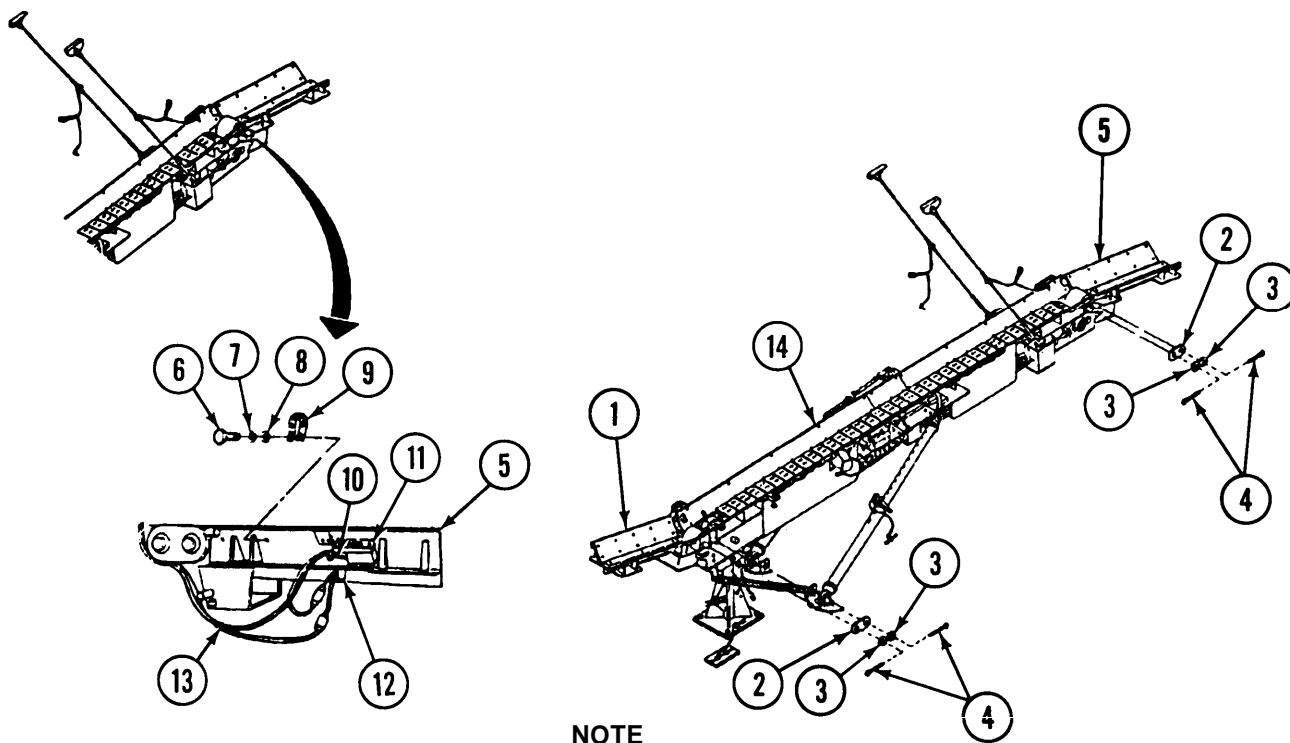
Step 1 applies to both dead-end section assemblies.

1. Position either dead-end section assembly (1 or 5) in alignment with adjoining conveyor section (14).

NOTE

Steps 2 and 3 apply only to rear dead-end section assembly.

2. Route conveyor electrical wiring harness (13) into place on rear dead-end section assembly (5), and secure with three straps (9), washers (8), new lockwashers (7), and screws (6).
3. Connect two ground leads (10) to override safety switch (11) and deadman switch (12).



NOTE

Step 4 applies to both dead-end section assemblies.

4. Install connecting link (2) and two washers (3) and new cotter pins (4) at both ends on rear or forward dead-end section assembly (1 or 5).

FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).

17-9. DRIVE-END SECTION ASSEMBLY REPAIR.

This Task Covers:

- | | |
|---------------------------------------|-----------------------------------|
| <p>a. Removal
c. Installation</p> | <p>b. Cleaning and Inspection</p> |
|---------------------------------------|-----------------------------------|

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Drycleaning solvent (Item 27, Appendix D)
- Sealing compound (Item 58, Appendix D)
- Lockwasher (23) (Item 164, Appendix H)
- Lockwasher (2) (Item 196, Appendix H)

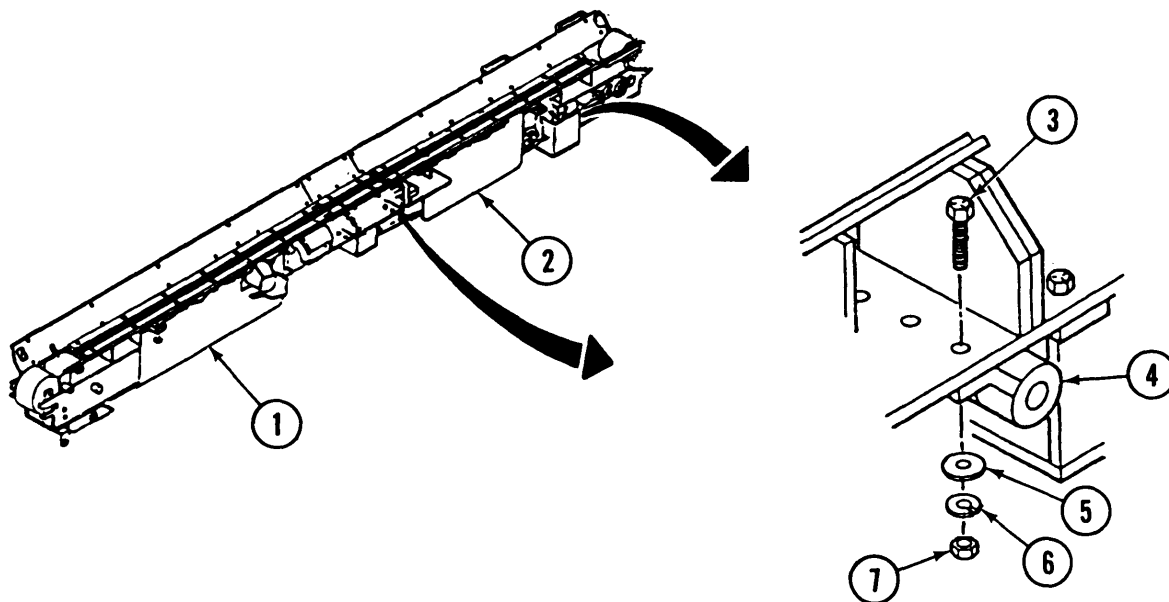
- Conveyor assembly removed (para 17-6).
- Dead-end section removed from drive-end section (para 17-8).
- Conveyor toggle clamp and tube removed (para 17-18).
- Drive-end section coupling sprocket, pillow blocks, and drive sprocket assembly removed (para 17-14).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

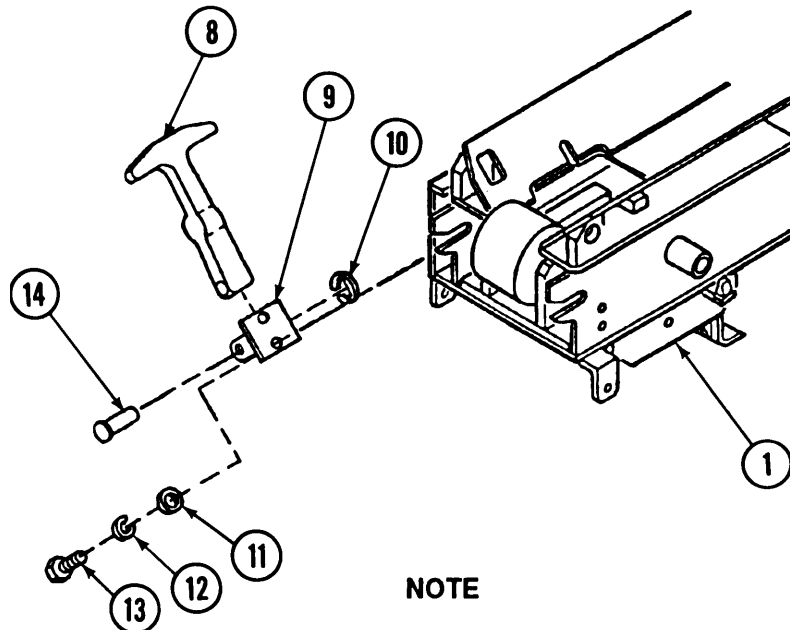
a. REMOVAL

1. Remove three nuts (7), lockwashers (6), washers (5), and screws (3) from each of two hinge assemblies (4). Discard lockwashers.
2. Remove conveyor drive-end section (1) from conveyor center section (2).



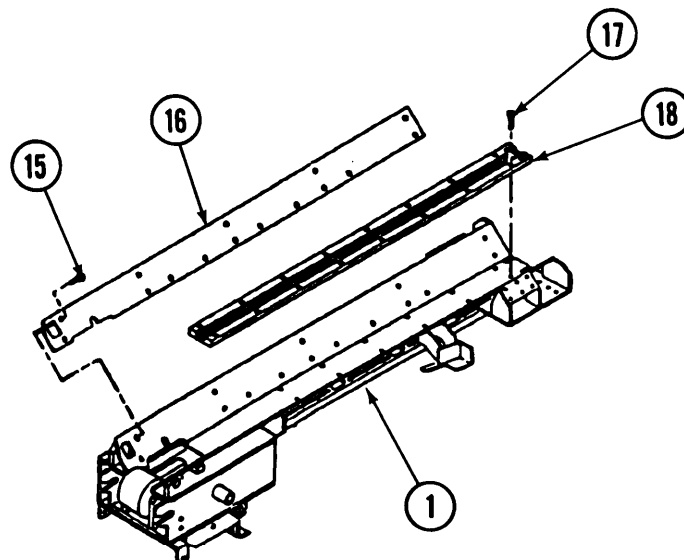
17-9. DRIVE-END SECTION ASSEMBLY REPAIR (continued).

3. Remove clip (10), pin (14), and rubber latch (8) from bracket (9).
4. Remove two screws (13), lockwashers (12), washers (11), and bracket (9) from drive-end section (1). Discard lockwashers.



Do not remove chain from around take-up-end section.

5. Remove 20 screws (15) from two side wearstrips (16). Pry up and remove two side wear strips (16) from drive-end section (1).
6. Remove 16 screws (17) and bottom wear strip (18) from drive-end section (1).



17-9. DRIVE-END SECTION ASSEMBLY REPAIR (continued).

7. Remove two screws (19), chain-return wear strip (20), and spacer (27) from drive-end section (1).
8. Remove 12 screws (24), washers (25), lockwashers (28), and nuts (29), six straps (26), wiring harness (23), and two retaining strips (22) and chain guards (21) from drive-end section (1). Discard lockwashers.

b. CLEANING AND INSPECTION

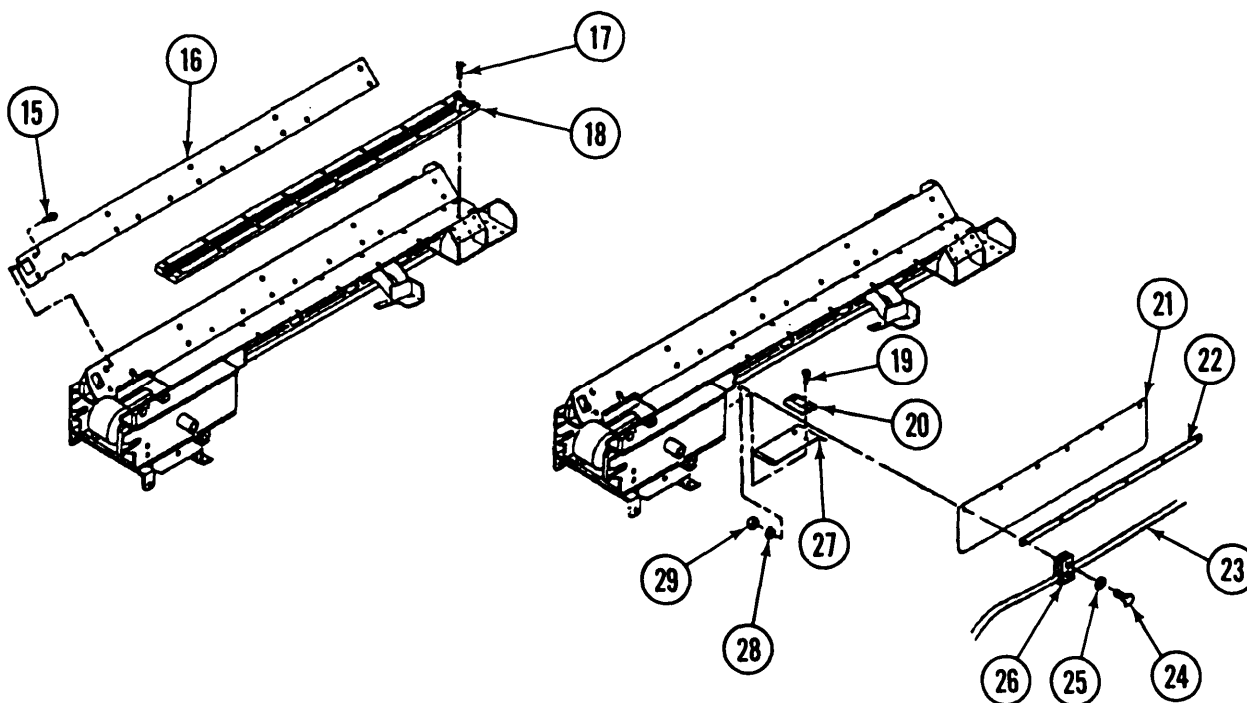
WARNING

Drycleaning 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.

1. Clean all metal parts with drycleaning solvent.
2. Inspect all parts for cracks, rips, or other damage. Replace damaged parts.

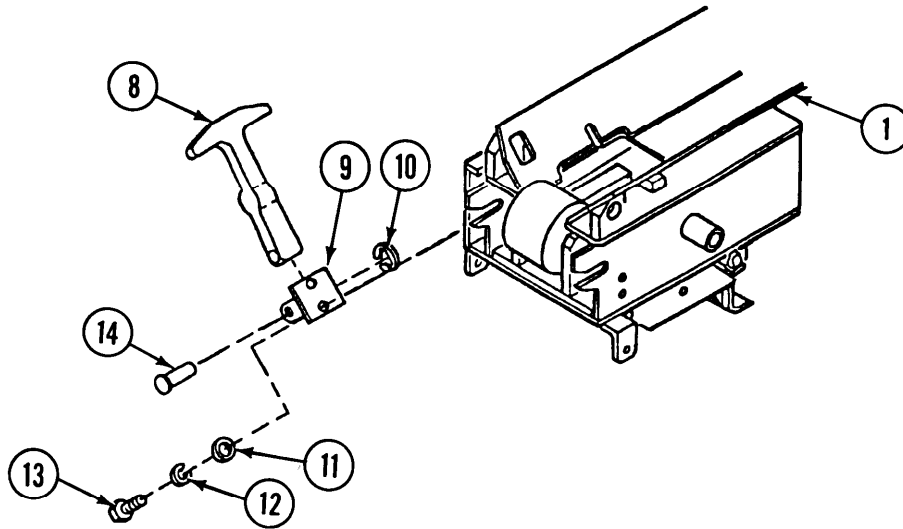
c. INSTALLATION

1. Install two chain guards (21) and retaining strips (22), six straps (26), and wiring harness (23) on drive-end section (1) with 12 screws (24), washers (25), new lockwashers (28), and nuts (29).
2. Install spacer (27) and chain-return wear strip (20) on drive-end section (1) with two screws (19).
3. Install bottom wear strip (18) on drive-end section (1) with 16 screws (17).
4. Apply sealing compound to threads of 20 screws (15).

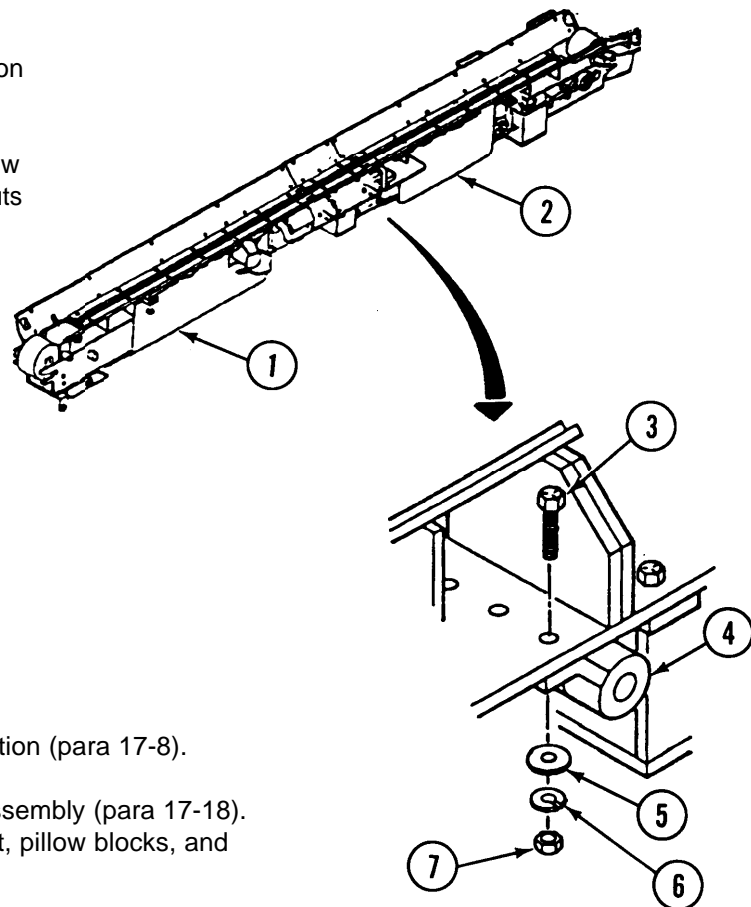


17-9. DRIVE-END SECTION ASSEMBLY REPAIR (continued).

5. Install two side wear strips (16) on drive-end section (1) with 20 screws (15).
6. Install bracket (9) on drive-end section (1) with two screws (13), new lockwashers (12), and washers (11).
7. Install rubber latch (8) on bracket (9) with pin (14) and clip (10).



8. Position conveyor drive-end section (1) on conveyor center section (2).
9. Install three screws (3), new lockwashers (6), washers (5), and nuts (7) on two hinge assemblies (4).



FOLLOW-ON MAINTENANCE:

- Install dead-end section on drive-end section (para 17-8).
- Install conveyor assembly (para 17-6).
- Install conveyor toggle clamp and tube assembly (para 17-18).
- Install drive-end section coupling sprocket, pillow blocks, and drive sprocket assembly (para 17-14).

17-10. ROLLER ASSEMBLY REPAIR.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (8) (Item 196, Appendix H)
- Spring pin (Item 355, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Conveyor deployed (refer to TM 9-2350-287-10).
 - Conveyor dead-end section folded up (refer to TM 9-2350-287-10).
-

a. REMOVAL

NOTE

Roller assembly in conveyor drive-end section and roller assembly in conveyor takeup-end section are replaced the same way.

Remove eight screws (7) and lockwashers (6) and roller bracket (4) from conveyor assembly (5). Discard lockwashers.

b. DISASSEMBLY

NOTE

Repeat steps 1 through 3 to disassemble both convey or drive-end section and takeup-end section roller assemblies.

1. Using driftpin, drive out spring pin (8) from roller shaft (1) and roller bracket (4). Discard spring pins.
2. Remove roller shaft (1) and roller (3) from roller bracket (4).
3. Remove two bearing sleeves (2) from roller (3).

c. ASSEMBLY

NOTE

Repeat steps 1 and 2 to assemble both conveyor drive-end section and takeup-end section roller assemblies.

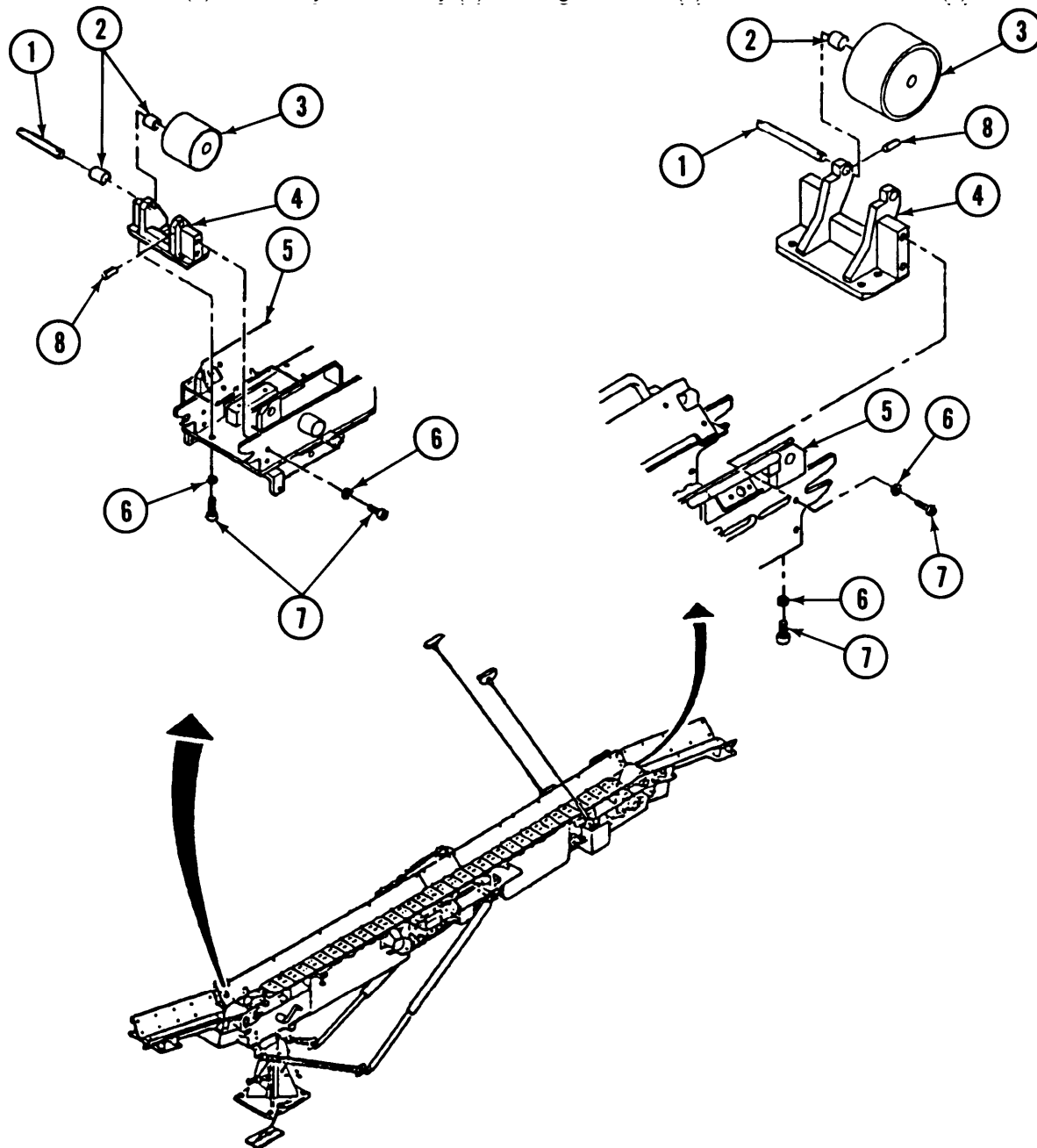
1. Install two bearing sleeves (2) in roller (3).

17-10. ROLLER ASSEMBLY REPAIR (continued).

2. Install roller (3) on roller bracket (4) with roller shaf (1) and two new spring pins (8).

d. INSTALLATION

Install roller bracket (4) on conveyor assembly (5) with eight screws (7) and new lockwashers (6).



FOLLOW-ON MAINTENANCE:

- Fold up conveyor dead-end section (refer to TM 9-2350-287-10).
- Stow conveyor (refer to TM 9-2350-287-10).

17-11. CONVEYOR CENTER SECTION ASSEMBLY REPAIR.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (12) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Conveyor assembly removed (para 17-6).
- Conveyor chain assembly removed (para 17-17).

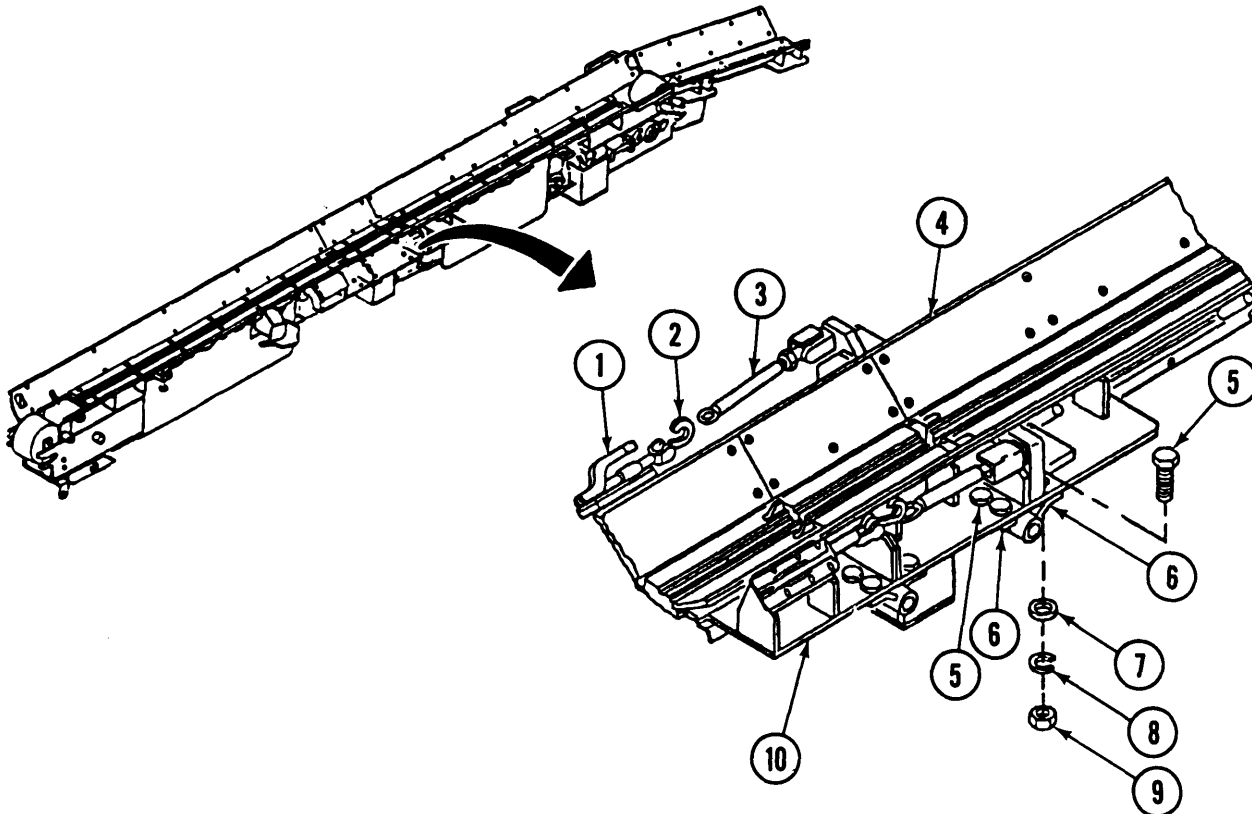
a. REMOVAL

1. Remove 12 nuts (9), lockwashers (8), washers (7), and screws (5) from two hinge halves (6). Discard lockwashers.

WARNING

Be sure to support center section when hardware is removed and toggle clamps are raised. Failure to follow this warning may result in injury to personnel.

2. Raise two toggle clamps (1) to release tension on two tube assemblies (3), and remove two hooks (2) from two tube assemblies (3).

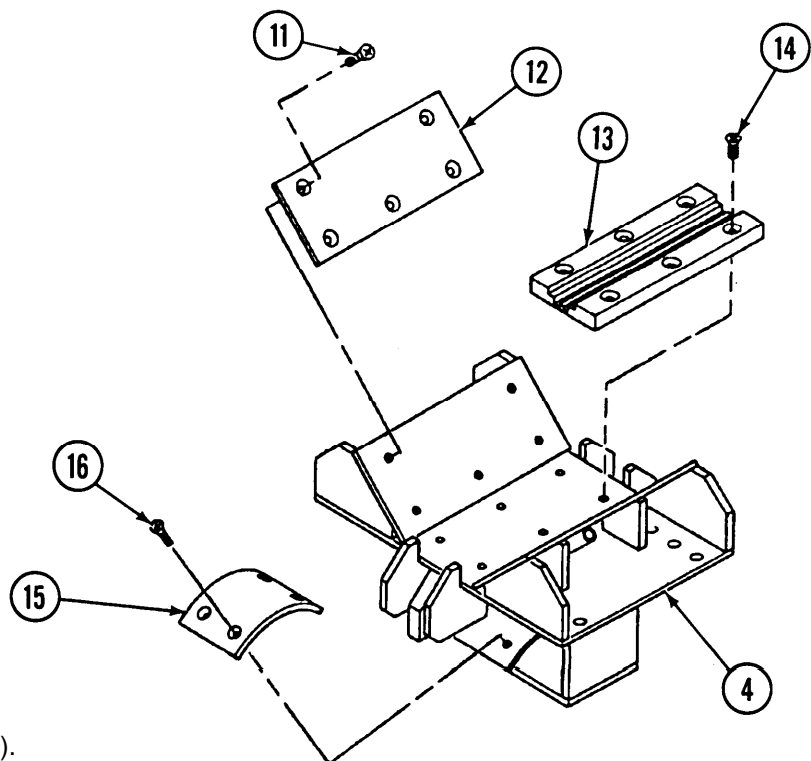


17-11. CONVEYOR CENTER SECTION ASSEMBLY REPLACEMENT (continued).

3. Remove center section (4) from conveyor assembly (10).
4. Remove 10 screws (11) from two side wear strips (12). Pry up and remove two side wear strips (12) from center section (4).
5. Remove four screws (16) and chain-return wear strip (15) from center section (4).
6. Remove six screws (14) and bottom wear strip (13) from center section (4).

b. INSTALLATION

1. Install bottom wear strip (13) on center section (4) with six screws (14).
2. Install chain-return wear strip (15) on center section (4) with four screws (16).
3. Apply sealing compound to threads of 10 screws(11).
4. Install two side wear strips (12) on center section (4) with 10 screws (11).
5. Install center section (4) on conveyor assembly (10) and support with blocks or support stands.
6. Install two hooks (2) through two tube assemblies (3), and lower two toggle clamps (1) to cause tension on tube assemblies (3).
7. Install 12 screws (5), washers (7), new lockwashers (8), and nuts (9) in two hinge halves (6).



FOLLOW-ON MAINTENANCE:

- Install conveyor assembly (para 17-6).
- Install conveyor chain assembly (para 17-17).

17-12. TAKEUP-END SECTION ASSEMBLY REPAIR.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Sealing compound (item 58, Appendix D)
- Lockwasher (6) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

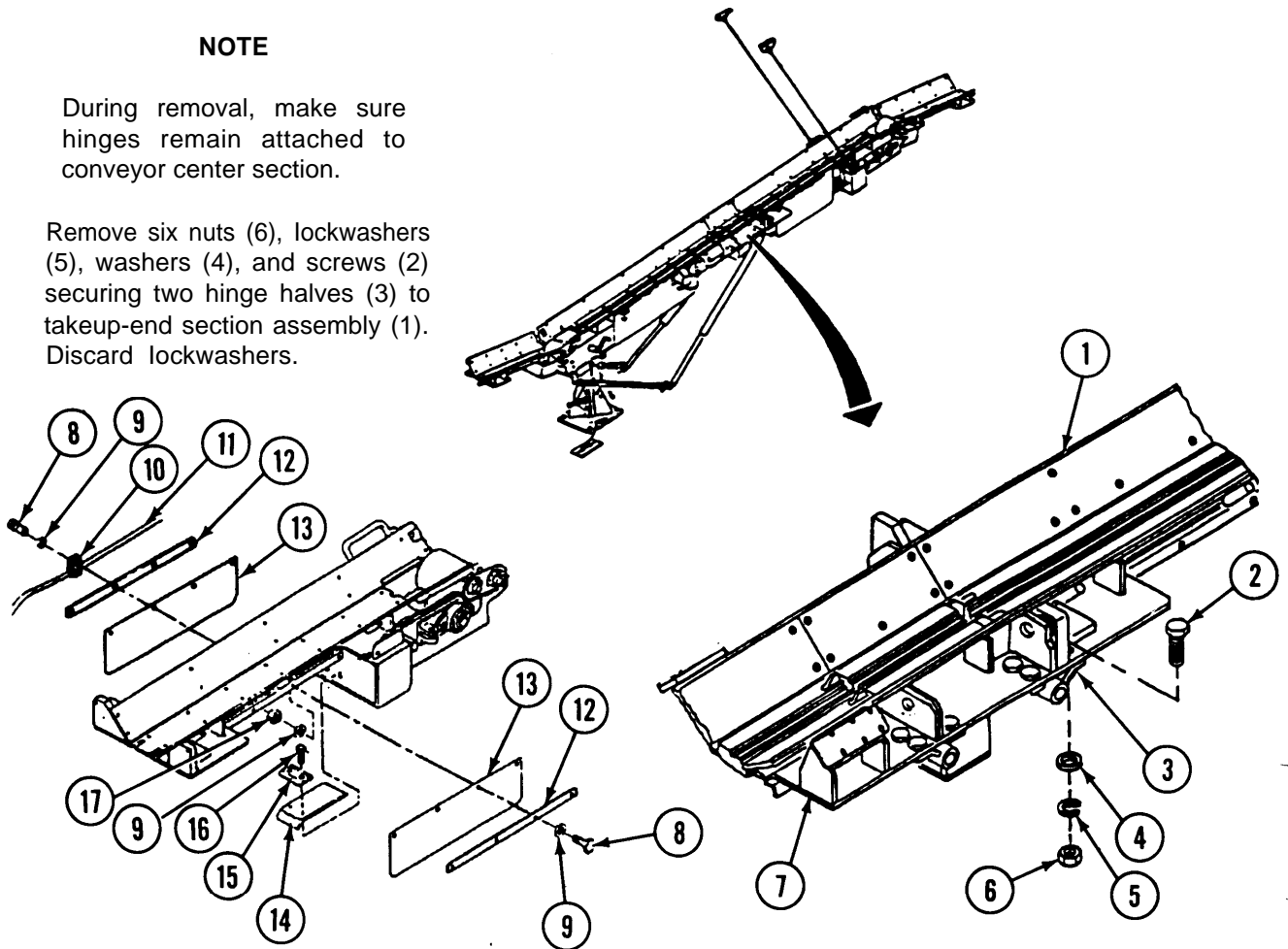
- Conveyor assembly removed para 17-6).
- Rod ends and latch removed (para 17-16).
- Conveyor toggle clamp and tube assembly removed (para 17-18).
- Conveyor rear dead-end section assembly removed (para 17-8).
- Idler sprocket assembly removed (para 17-15).

a. REMOVAL

NOTE

During removal, make sure hinges remain attached to conveyor center section.

1. Remove six nuts (6), lockwashers (5), washers (4), and screws (2) securing two hinge halves (3) to takeup-end section assembly (1). Discard lockwashers.

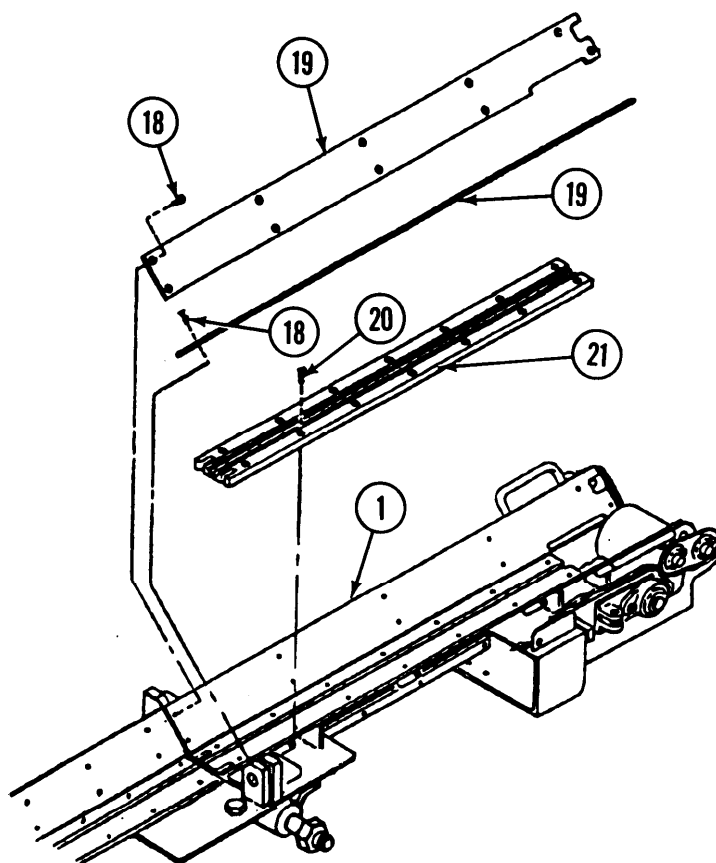


17-12. TAKEUP-END SECTION ASSEMBLY REPAIR (continued).

2. Remove takeup-end section assembly (1) from conveyor center section (7).
3. Remove eight screws (8) and nuts (17), 16 washers (9), four straps (10), wire assembly (11), and two retaining strips (12) and chain guards (13) from takeup-end section assembly (1).
4. Remove two screws (16), chain-return wear strip (15), and spacer (14) from takeup-end section assembly (1).
5. Remove 20 screws (18) and two side wear strips (19) from takeup-end section assembly (1).
6. Remove 14 screws (20) and bottom wear strip (21) from takeup-end section assembly (1).

b. INSTALLATION

1. Apply sealing compound to threads of 20 screws (18).
2. Install bottom wear strip (21) on takeup-end section assembly (1) with 14 screws (20).
3. Install two side wear strips (19) on takeup-end section assembly (1) with 20 screws (18).
4. Install spacer (14), chain-return wear strip (15), and two screws (16) on takeup-end section assembly (1).
5. Install two chain guards (13) and retaining strips (12) on takeup-end section assembly (1) with eight screws (8), 16 washers (9), four straps (10), wire assembly (11), and eights nuts (17).
6. Install takup-end section assembly (1) on conveyor center section (7).
7. Install six screws (2), washers (4), new lockwashers (5), and nuts (6) to secure two hinge halves (3) to takeup-end section assembly (1).



FOLLOW-ON MAINTENANCE:

- Install idler sprocket assembly (para 17-15).
- Install conveyor toggle clamp and tube assembly (para 17-18).
- Install rod ends and latch (para 17-16).
- Install conveyor rear dead-end section assembly (para 17-8).
- Install conveyor assembly (para 17-6).

17-13. CONVEYOR HINGE ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Conveyor wiring harness removed (para 7-70).
- Conveyor support removed (for conveyor take-up-end section hinges only) (para 17-4).

Materials/Parts:

- Lockwasher (6) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

WARNING

Do not remove more than one conveyor hinge assembly at a time. Conveyor could collapse. Do not operate conveyor with hinge removed. Failure to follow this warning may result in injury to personnel.

a. REMOVAL

NOTE

Perform step 1 for conveyor take-up-end section hinges only.

1. Remove nut (14) and washer (13) from hinge pin (12).
2. Remove six nuts (9), lockwashers (8), washers (7), and screws (4) from conveyor assembly (3). Discard lockwashers.

NOTE

For correct installation, record the number and location of shims.

3. Remove shims (2) and conveyor hinge assembly (1) from conveyor assembly (3).
4. Loosen setscrew (10) in hinge half (11), drive out hinge pin (6 or 12), and separate hinge halves (5 and 11).

b. INSTALLATION

1. Join hinge halves (5 and 11), then drive in hinge-pin (6 or 12) through hinge halves (5 and 11) and tighten setscrew (10) in hinge half (11).

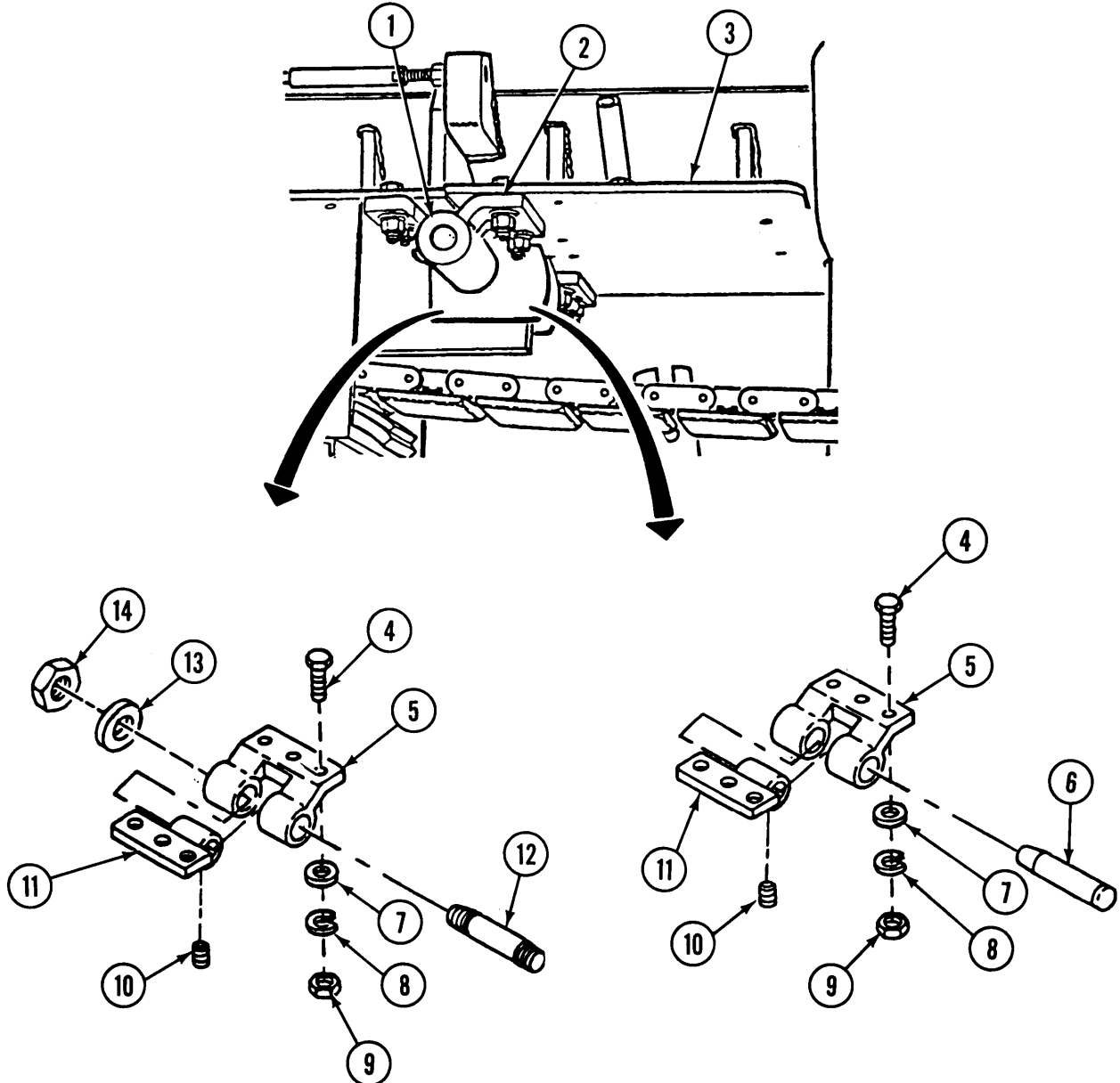
17-13. CONVEYOR HINGE ASSEMBLY REPLACEMENT (continued).

2. Install conveyor hinge assembly (1) and shims (2) on conveyor assembly (3) with six nuts (9), new lockwashers (8), washers (7), and screws (4).

NOTE

Perform step 3 for conveyor takeup-end section hinges only.

3. Install nut (14) and washer (13) on hinge pin (12).



FOLLOW-ON MAINTENANCE:

- Install conveyor wiring harness (para 7-70).
- Install conveyor supports (for conveyor takeup-end section only) (para 17-4).

17-14. DRIVE-END SECTION COUPLING SPROCKET, PILLOW BLOCKS, AND DRIVE SPROCKET ASSEMBLY REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

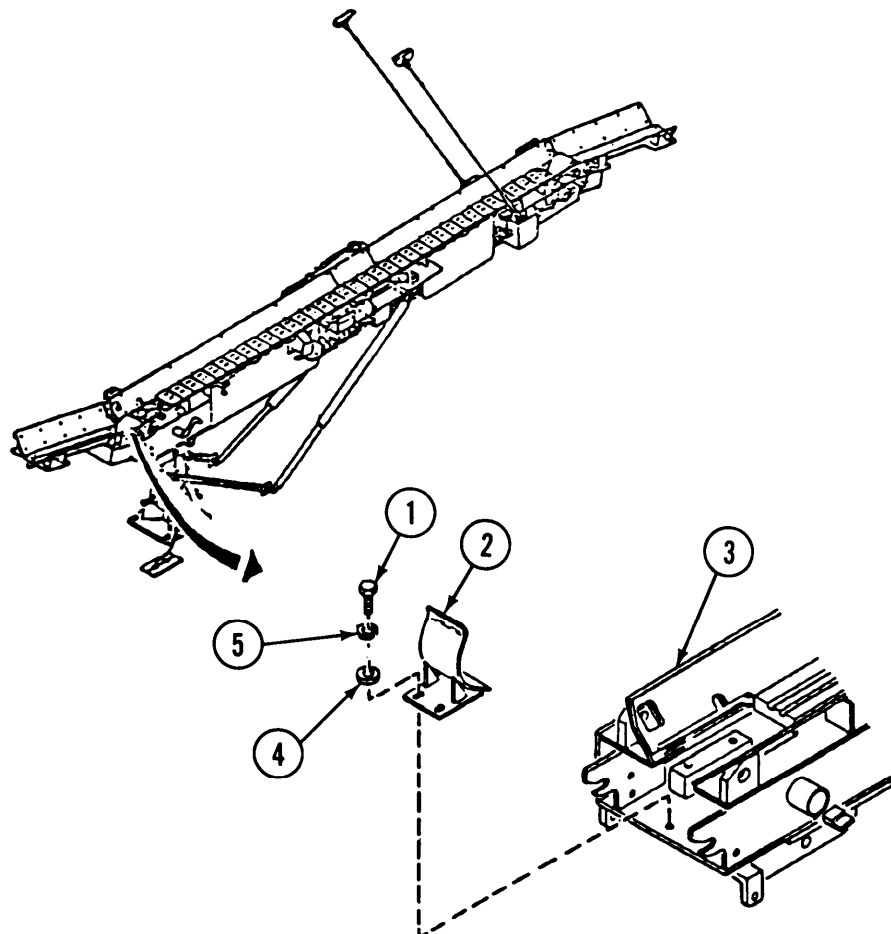
- Lockwasher (2) (Item 163, Appendix H)
- Lockwasher (4) (Item 164, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Roller assembly removed from conveyor drive-end section (para 17-10).
- Hydraulic motor removed from conveyor drive-end section (para 17-19).

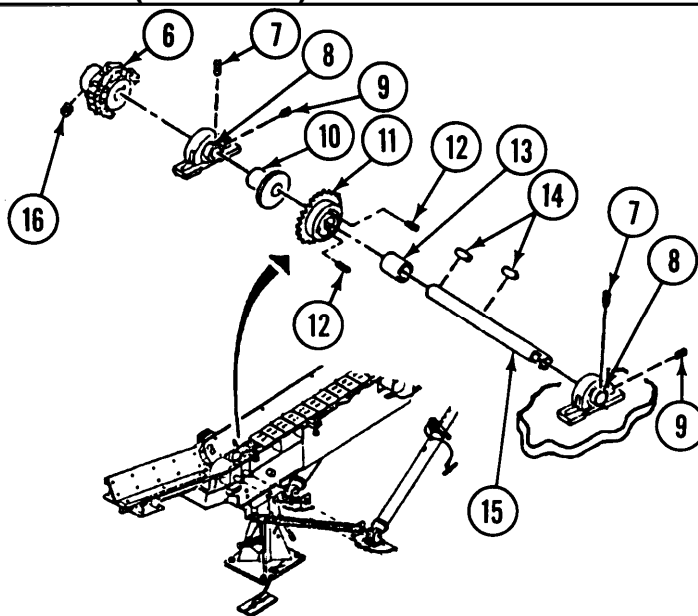
a. REMOVAL

1. Remove two screws (1), washers (4), and lockwashers (5) and chain guard (2) from conveyor drive-end section (3). Discard lockwashers.



17-14. DRIVE-END SECTION COUPLING SPROCKET, PILLOW BLOCKS, AND DRIVE SPROCKET ASSEMBLY REPLACEMENT (continued).

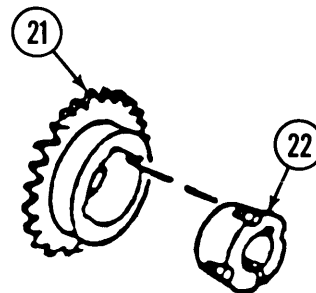
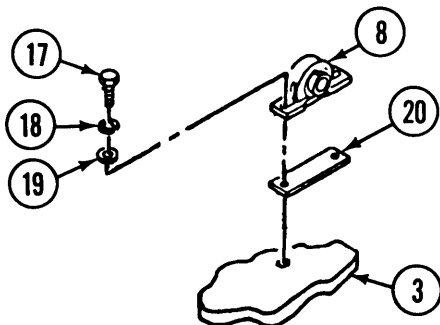
2. Loosen two setscrews (7) and setscrews (9) in two pillow blocks (8) and setscrew (16) in sprocket assembly (6), and remove two setscrews (12) from sprocket assembly (11).
3. Using driftpin, drive shaft (15) from sprocket assembly (6) side through sprocket assembly (6), two pillow blocks (8), spacer (13), sprocket assembly (11), and spacer (10), then remove shaft (15) from conveyor drive-end section (3).
4. Remove sprocket assembly (6), spacer (10), sprocket assembly (11), and spacer (13) from conveyor drive-end section (3).
5. Remove two keys (14) from shaft (15).



NOTE

To ensure proper installation, record the number and thickness of shims.

6. Remove four screws (17), lockwashers (18), and washers (19), two pillow blocks (8), and shims (20) from conveyor drive-end section (3). Discard lockwashers.
7. Remove sprocket (21) from hub (22).



b. INSTALLATION

1. Install sprocket (21) on hub (22).
2. Install two pillow blocks (8) and shims (20) on conveyor drive-end section (3) with four washers (19), new lockwashers (18), and screws (17).
3. Install shaft (15) through one of two pillow blocks (8). While driving in shaft (15), install spacer (13), key (14), sprocket assembly(11), and spacer (10) on shaft (15) between two pillow blocks (8).

17-14. DRIVE-END SECTION COUPLING SPROCKET, PILLOW BLOCKS, AND DRIVE SPROCKET ASSEMBLY REPLACEMENT (continued).

NOTE

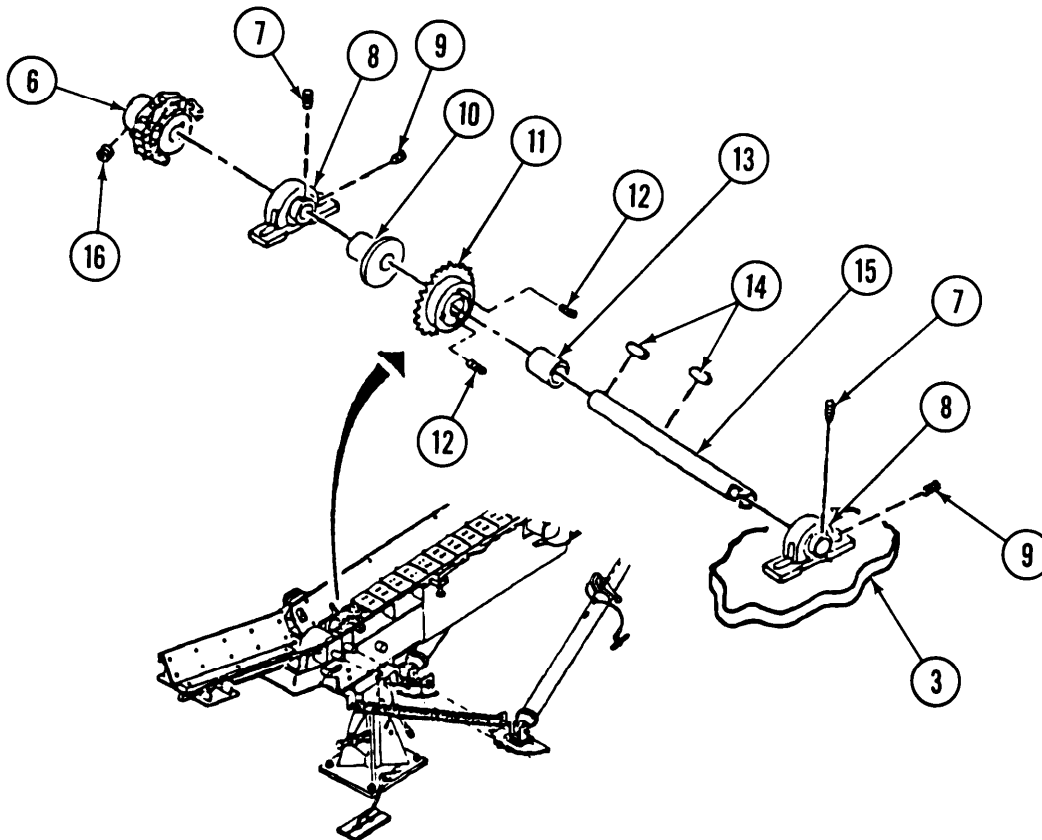
Do not drive shaft completely through second pillow block.

4. Drive shaft (15) partly through second of two pillow blocks (8).
5. Install key (14) in keyway of sprocket assembly (6).
6. Position sprocket assembly (6) to receive shaft (15), and drive shaft (15) through sprocket assembly (6).

NOTE

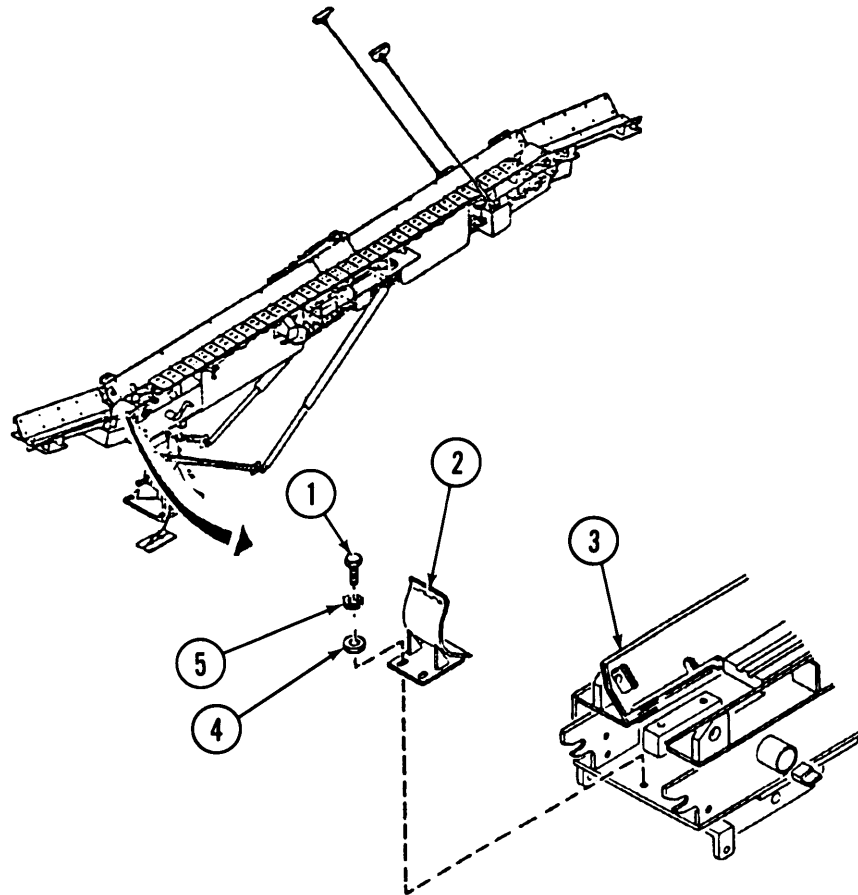
Make sure sprocket (26) is alined with center of conveyor drive-end section (2)

7. Install two setscrews (12). Do not tighten setscrews (12).
8. Tighten two setscrews (7) and setscrews (9) in two pillow blocks (8), setscrew (16) in sprocket assembly (6), and two set screws (12) in sprocket assembly (11).



17-14. DRIVE-END SECTION COUPLING SPROCKET, PILLOW BLOCKS, AND DRIVE SPROCKET ASSEMBLY REPLACEMENT (continued).

9. Install chain guard (2) in conveyor drive-end section (3) with two washers (4), new lockwashers (5), and screws (1).

**FOLLOW-ON MAINTENANCE:**

- Install hydraulic motor in conveyor drive-end section (para 17-19).
- Install roller assembly in conveyor drive-end section (para 17-10).

17-15. IDLER SPROCKET ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

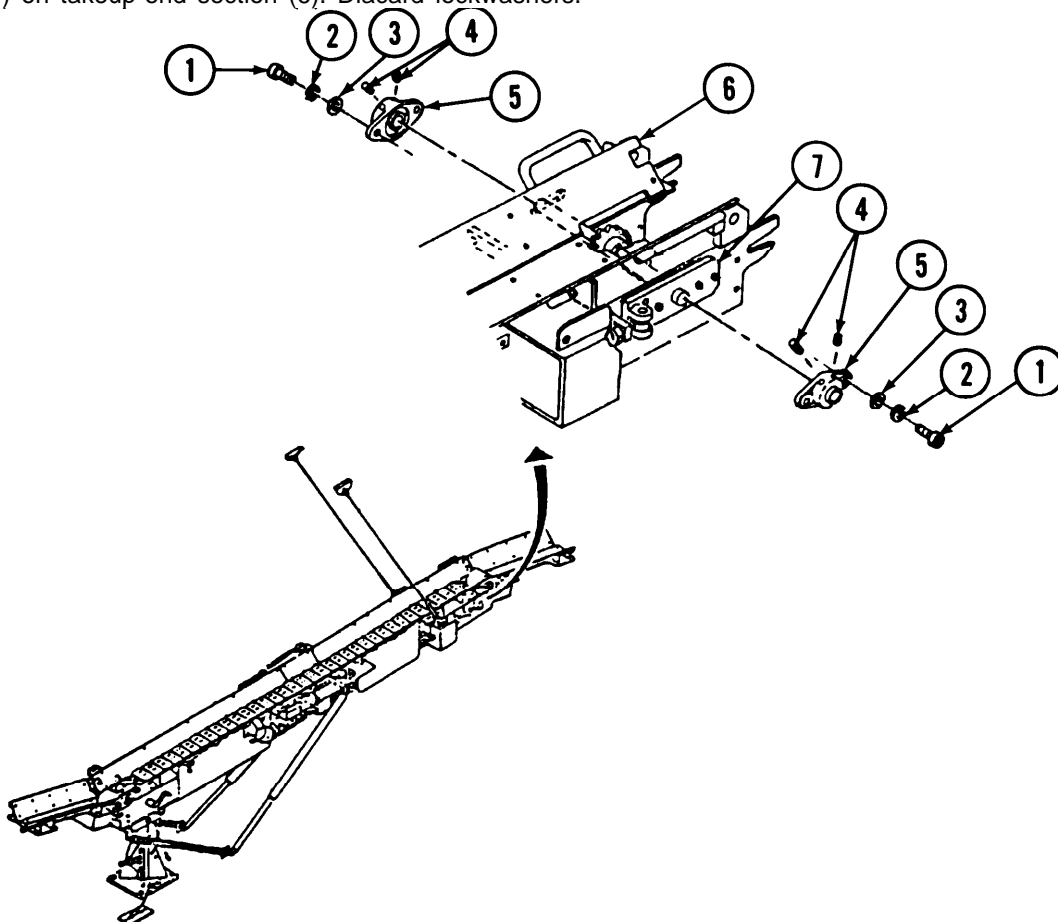
- Lockwasher (6) (Item 164, Appendix H)
- Lockwasher (4) (Item 165, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Conveyor chain assembly removed (para 17-17).
 - Roller assembly removed (para 17-10).
-

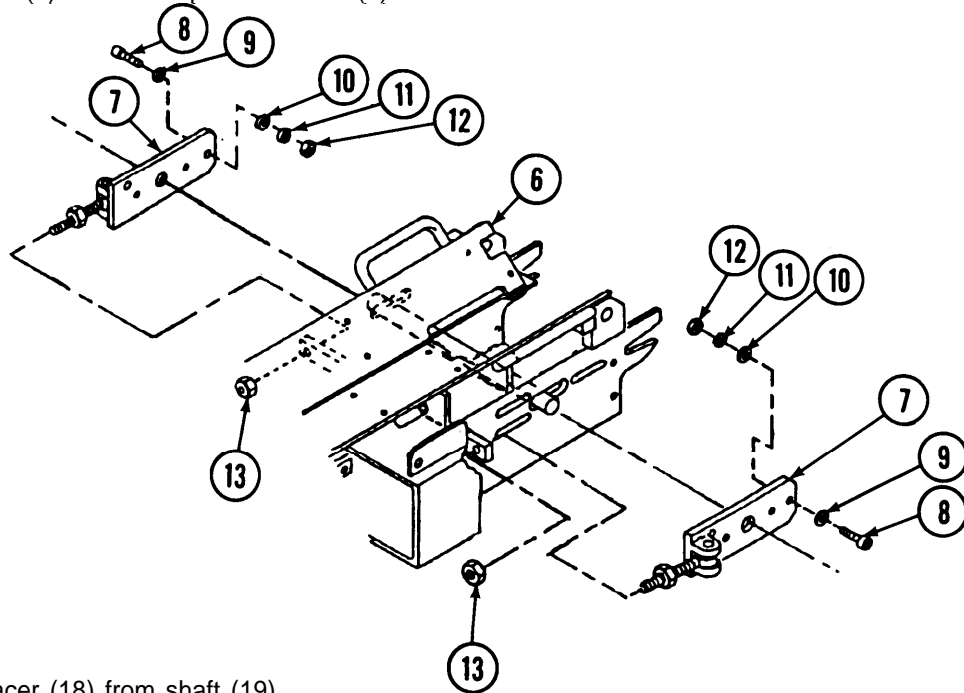
a. REMOVAL

1. Loosen four setscrews (4) on two flanged bearings (5).
2. Remove four screws (1), lockwashers (2), and washers (3) and two flanged bearings (5) from two takeup plates (7) on takeup-end section (6). Discard lockwashers.



17-15. IDLER SPROCKET ASSEMBLY REPLACEMENT (continued).

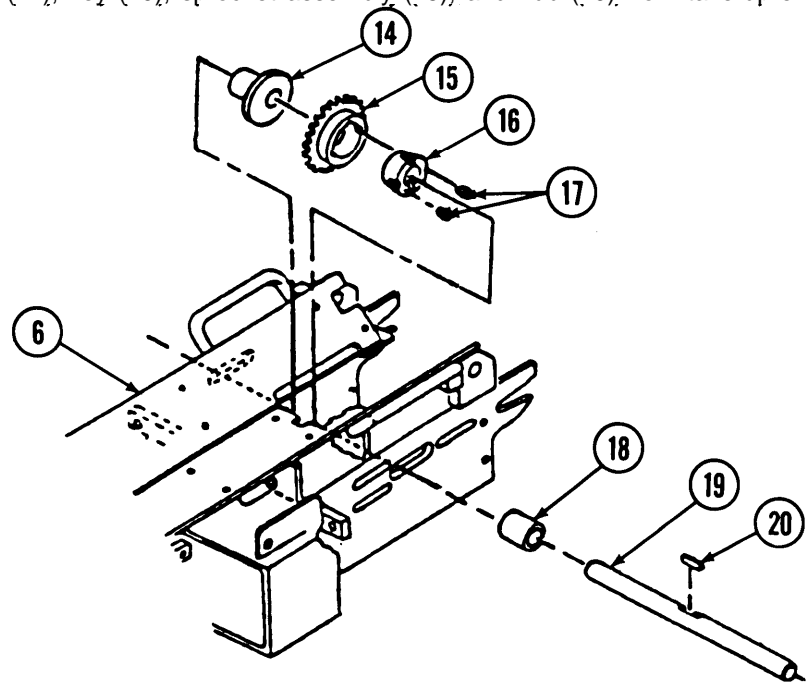
3. Remove six screws (8), nuts (12), lockwashers (11), and washers (9), washers (10) and two nuts (13) and takeup plates (7) from takeup-end section (6). Discard lockwashers.



Remove spacer (18) from shaft (19).

Remove two screws (17) from hub (16) and sprocket assembly (15).

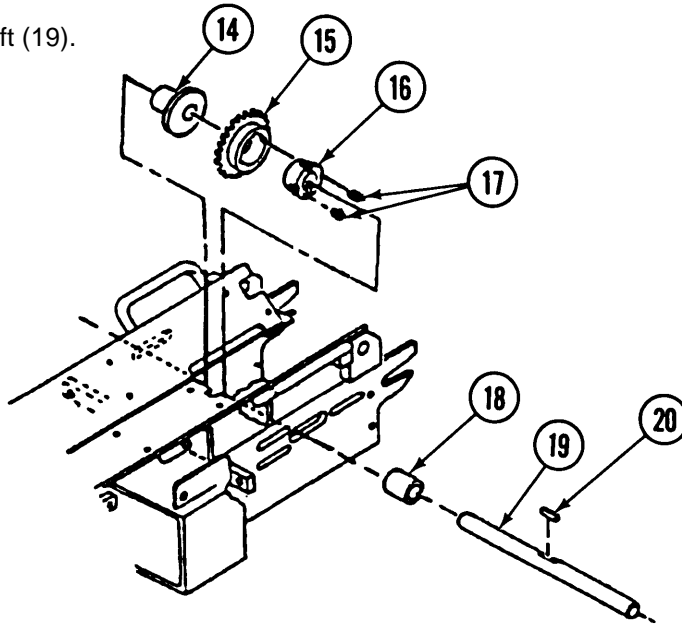
6. Drive shaft (19) out of sprocket assembly (15), spacer (14), hub (16), and takeup-end section (6).
7. Remove spacer (14), key (20), sprocket assembly (15), and hub (16) from take-up-end section (6).



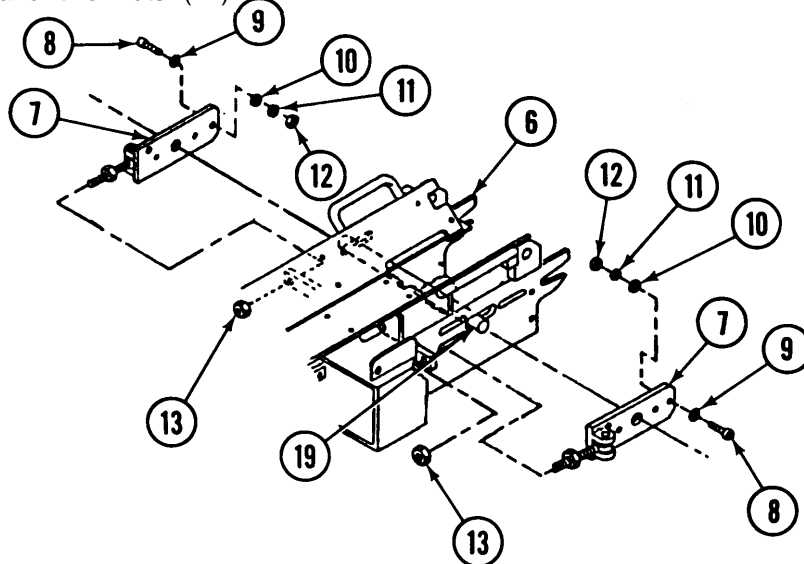
17-15. IDLER SPROCKET ASSEMBLY REPLACEMENT (continued).

b. INSTALLATION

1. Install hub (16) and key (20) on shaft (19).
2. Position sprocket assembly (15) on shaft (19) but do not secure to hub (16). Position spacer (18) on shaft (19).
3. Install shaft (19), with spacer (18) and sprocket assembly (15) installed, on shaft (19) in takeup-end section (6).
4. Install sprocket assembly (15) on hub (16) with two screws (17). Do not tighten screws.
5. Install spacer (14) on shaft (19).

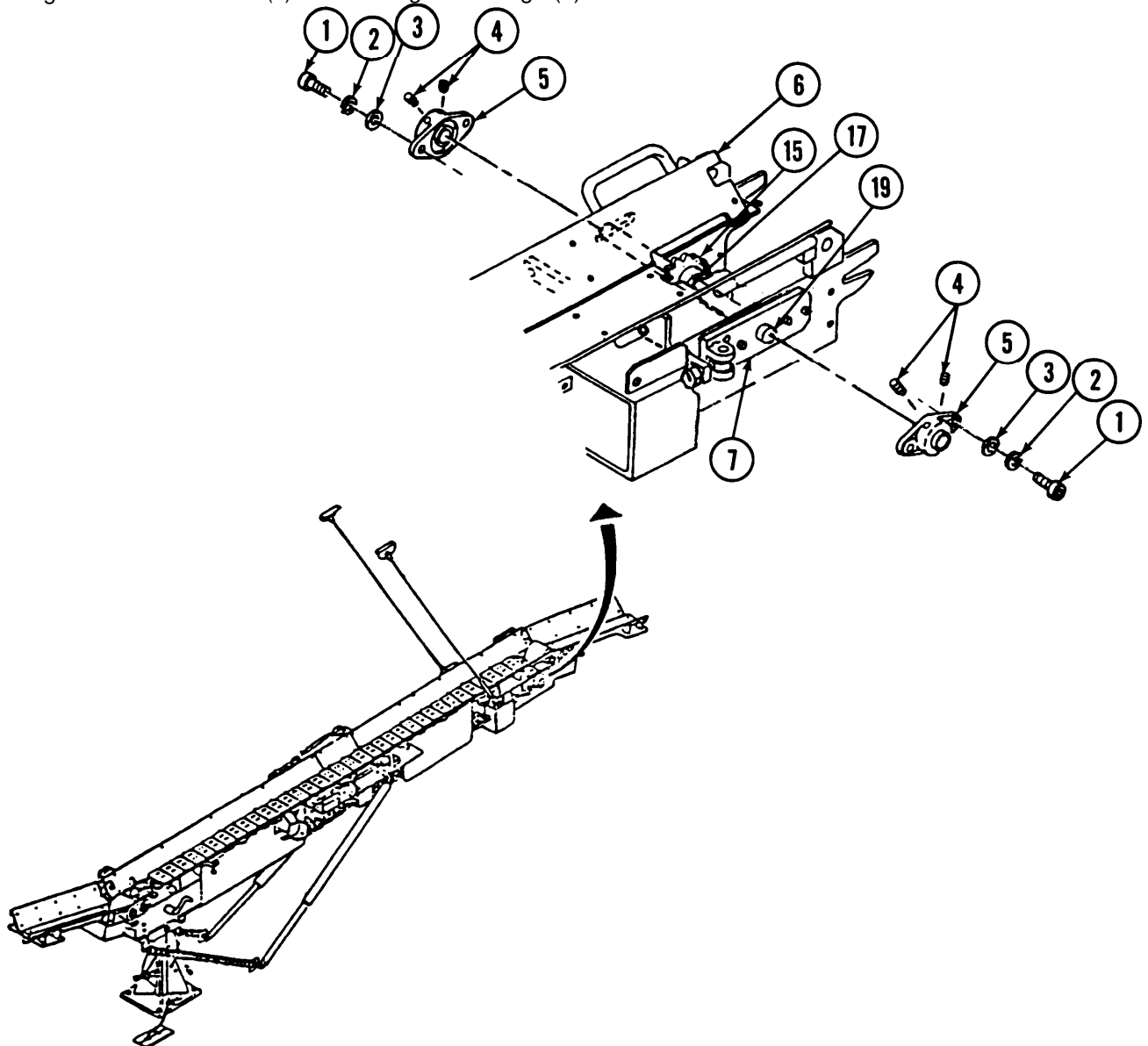


6. Install two takeup plates (7) on takeup-end section (6) with two nuts (13).
7. Insert ends of shaft (19) through two takeup plates (7).
8. Install two takeup plates (7) to takeup-end section (6) with six screws (8), new lockwashers (11), washers (9), washers (10), and two nuts (12).



17-15. IDLER SPROCKET ASSEMBLY REPLACEMENT (continued).

9. Insert ends of shaft (19) through two flanged bearings (5).
10. Install two flanged bearings (5) on two takeup plates (7) with four screws (1), new lockwashers (2), and washers (3).
11. Aline sprocket assembly (15) with center of takeup-end section (6) and tighten two screws (17).
12. Tighten four setscrews (4) on two flanged bearings (5).


FOLLOW-ON MAINTENANCE:

- Install roller assembly (para 17-10).
- Install conveyor chain assembly (para 17-17).

17-16. ROD ENDS AND LATCH REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 164, Appendix H)
- Lockwasher (4) (Item 165, Appendix H)

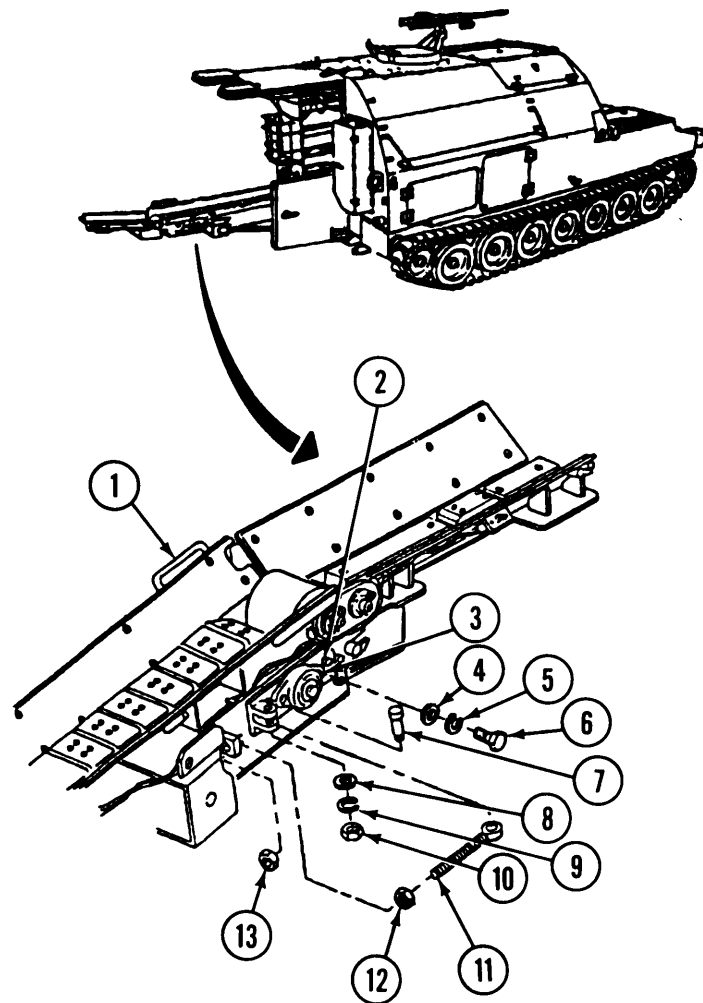
- Lockwasher (2) (Item 196, Appendix H)

Equipment Conditions:

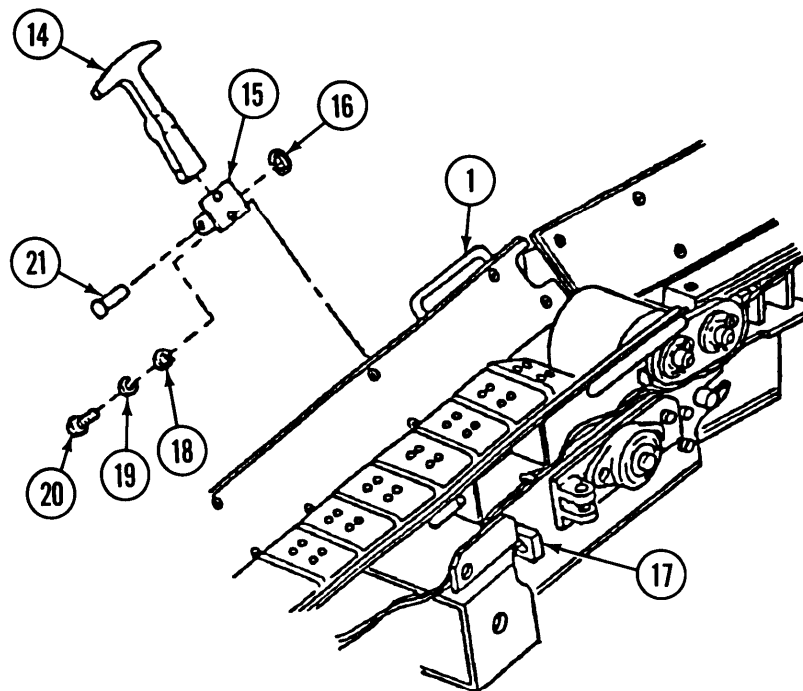
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Conveyor deployed (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove nut (13) from each rod end (11) located on each side of conveyor takeup-end section assembly (1), and back off two nuts (12) on two rod ends (11).
2. Remove four screws (6), lockwashers (5), and washers (4) and two flanged bearings (3) from takeup-end section assembly (1). Discard lockwashers.
3. Remove two nuts (10), lockwashers (9), washers (8), screws (7), and rod ends (11) from two takeup plates (2). Discard lockwashers.
4. Remove two nuts (12) from two rod ends (11).
5. Remove clip (16), pin (21), and rubber latch (14) from bracket (15).
6. Remove two screws (20), lockwashers (19), and washers (18) and bracket (15) from takeup-end section assembly (1). Discard lockwashers.



17-16. ROD ENDS AND LATCH REPLACEMENT (continued).

**b. INSTALLATION**

1. Install bracket (15) on takeup-end section assembly (1) with two screws (20), new lockwashers (19), and washers (18).
2. Install rubber latch (14) on bracket (15) with pin (21) and clip (16).
3. Install two nuts (12) on two rod ends (11). Tighten nuts (12) to end of threads on two rod ends (11).
4. Install two rod ends (11) on two takeup plates (2) with two screws (7), new lockwashers (9), washers (8), and nuts (10).
5. Install two flanged bearings (3) on takeup-end section assembly (1) with four screws (6), new lockwashers (5), and washers (4).
6. Back up nut (12) on each rod end (11) until each nut (12) touches bracket (17) on each side of takeup-end section assembly (1).
7. Install nut (13) on each of two rod ends (11).

FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).

17-17. CONVEYOR CHAIN ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Equipment Conditions:

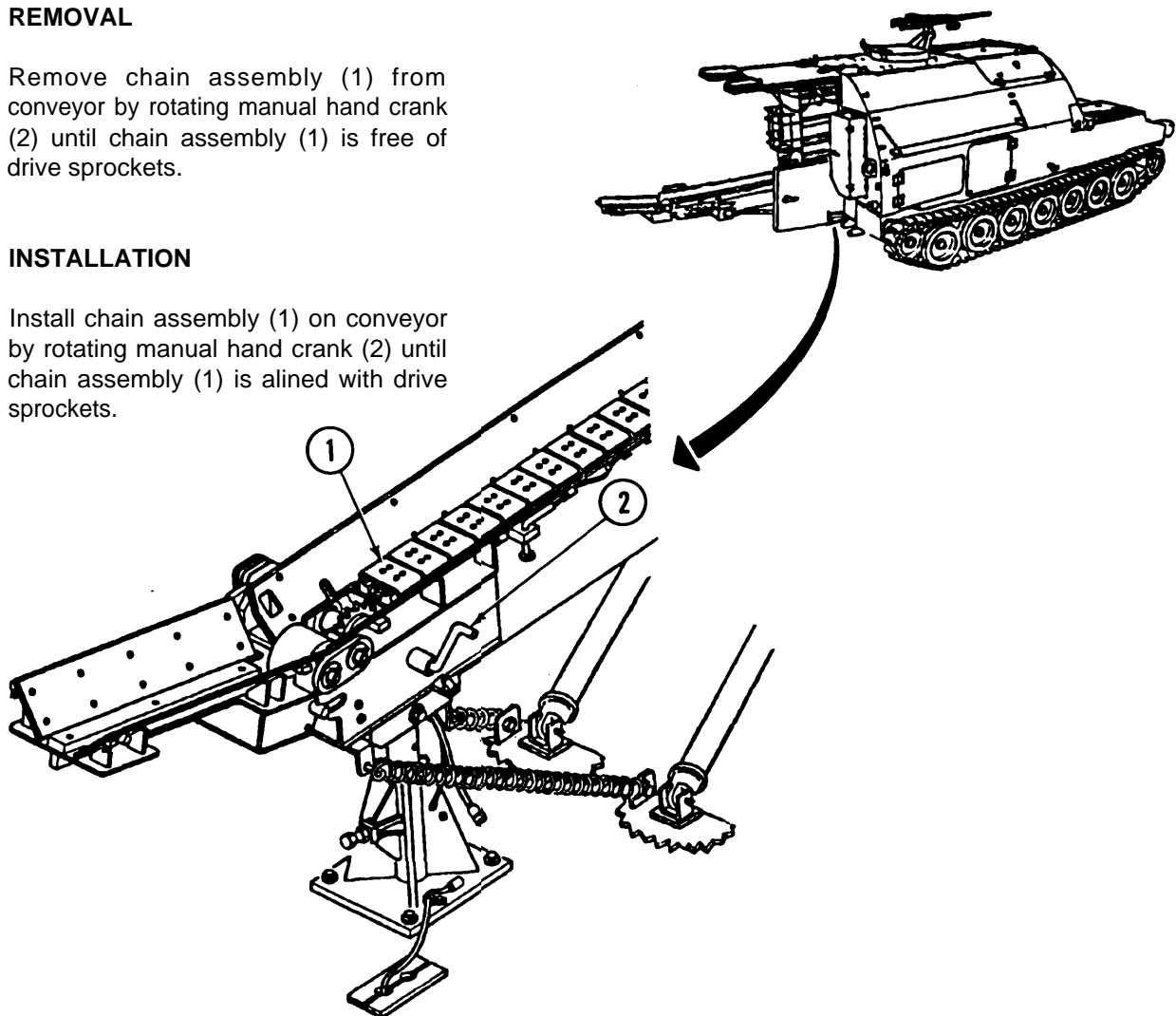
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Conveyor chain tension relieved (refer to TM 9-2350-287-10).
 - Conveyor chain disconnected at master link (refer to TM 9-2350-287-10).
 - Conveyor deployed (refer to TM 9-2350-287-10).
-

a. REMOVAL

Remove chain assembly (1) from conveyor by rotating manual hand crank (2) until chain assembly (1) is free of drive sprockets.

b. INSTALLATION

Install chain assembly (1) on conveyor by rotating manual hand crank (2) until chain assembly (1) is alined with drive sprockets.



FOLLOW-ON MAINTENANCE:

- Connect conveyor chain at master link (refer to TM 9-2350-287-10).
- Adjust conveyor chain tension (refer to TM 9-2350-287-10).
- Stow conveyor (refer to TM 9-2350-287-10).

17-18. CONVEYOR TOGGLE CLAMP AND TUBE ASSEMBLY REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Conveyor deployed (refer to TM 9-2350-287-10).

Materials/Parts:

- Drycleaning solvent (Item 27, Appendix D)
- Lockwasher (2) (Item 164, Appendix H)

a. REMOVAL

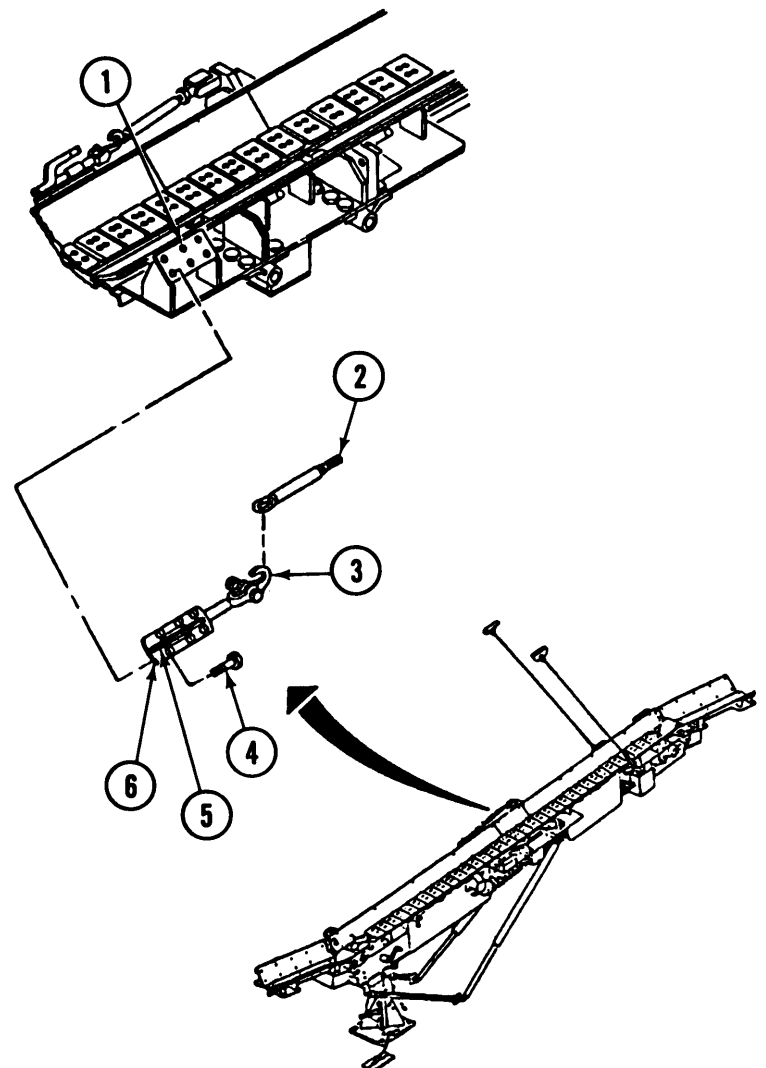
WARNING

Do not attempt to remove or release both toggle clamps at the same time. Conveyor could collapse and cause injury to personnel.

NOTE

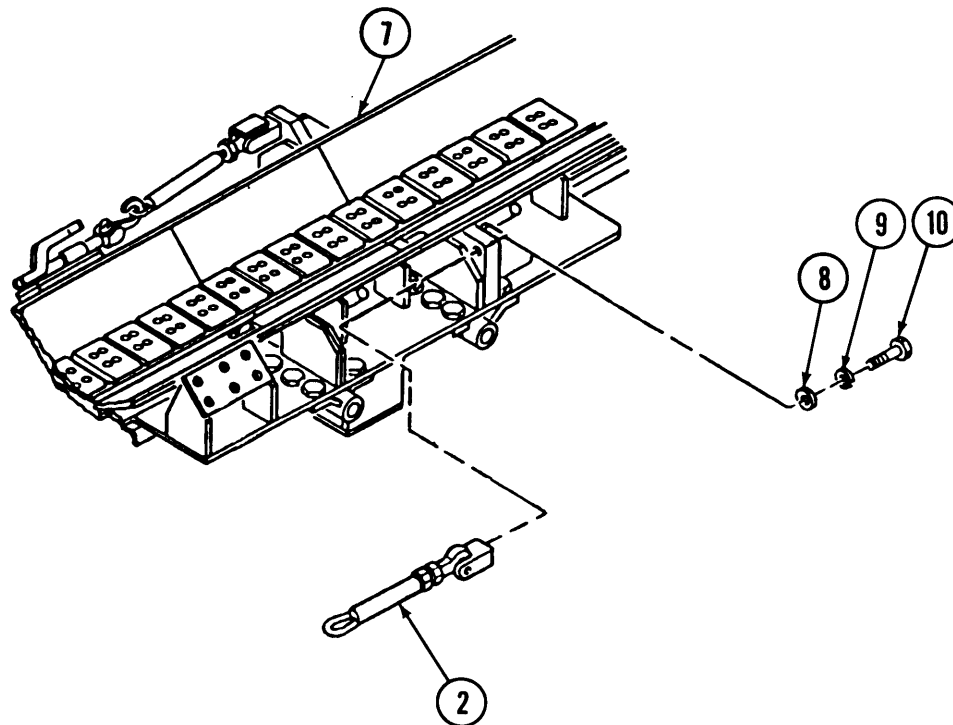
The following procedures apply to left and right toggle clamps and tube assemblies.

1. Raise toggle clamp handle (5) to release tension on tube assembly (2). Remove hook (3) from tube assembly (2).
2. Remove six screws (4) and toggle clamp (6) from conveyor center section (1).



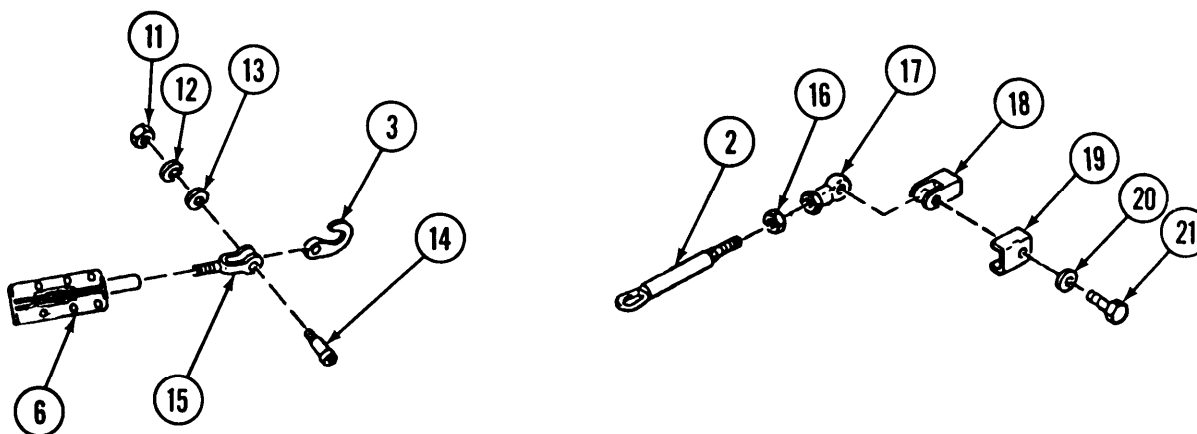
17-18. CONVEYOR TOGGLE CLAMP AND TUBE ASSEMBLY REPAIR (continued).

3. Remove screw (10), lockwasher (9), washer (8), and tube assembly (2) from takeup-end-section assembly (7). Discard lockwasher.



b. DISASSEMBLY

1. Remove screw (14), nut (11), lockwasher (12), washer (13), and hook (3) from clevis (15). Discard lockwasher.
2. Remove clevis (15) from toggle clamp (6).



3. Remove screw (21), washer (20), clevis (18), and brace (19) from rod end (17).
4. Back off jam nut (16), and remove rod end (17) and jam nut (16) from tube assembly (2).

17-18. CONVEYOR TOGGLE CLAMP AND TUBE ASSEMBLY REPAIR (continued).

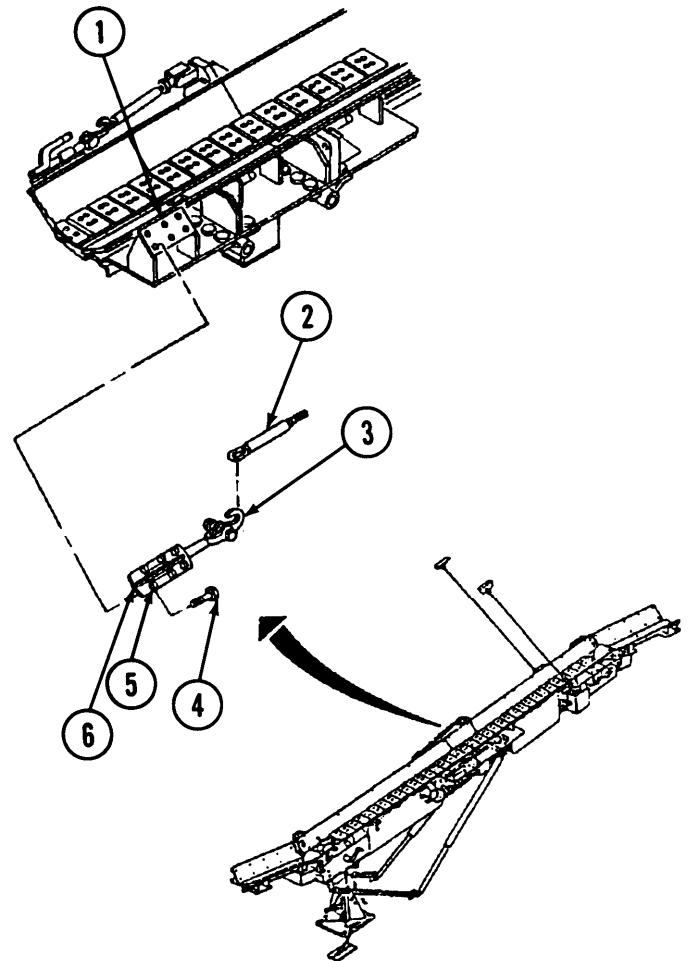
c. CLEANING AND INSPECTION**WARNING**

Drycleaning 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 flames or excessive heat.

1. Clean all metal parts with drycleaning solvent.
2. Inspect all parts for cracks, bends, or breaks. Replace any damage parts.

d. ASSEMBLY

1. Install jam nut (16) on tube assembly (2). Tighten jam nut (16) to ends of threaded portion of tube assembly (2).
2. Install rod end (17) on tube assembly (2).
3. Install brace (19) and clevis (18) on rod end (17) with screw (21) and washer (20).
4. Install clevis (15) on toggle clamp (6).
5. Install hook (3) on clevis (15) with screw (14), new lockwasher (12), washer (13), and nut (11).

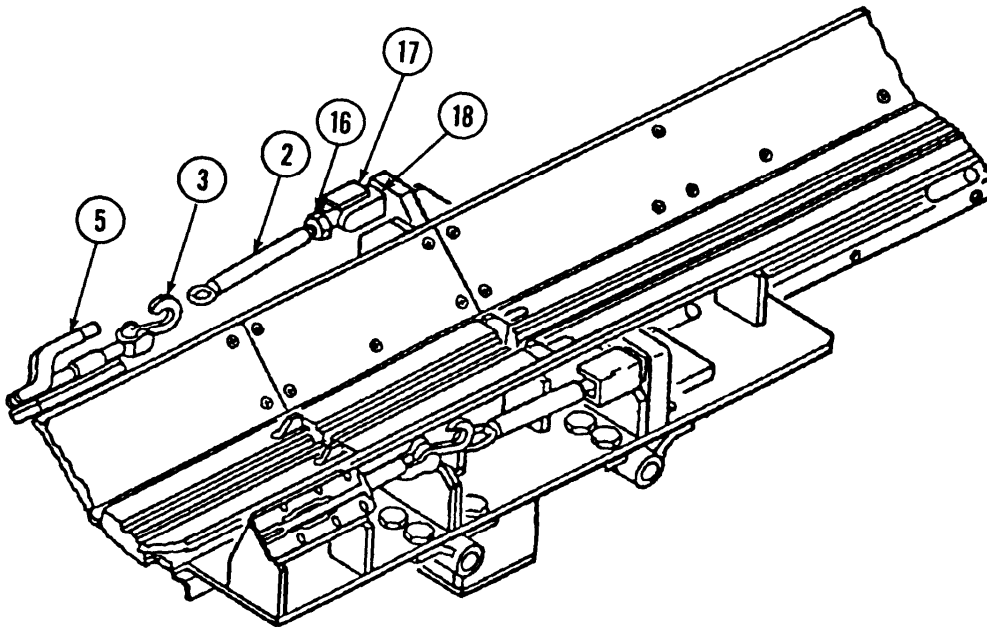
**e. INSTALLATION**

1. Install tube assembly (2), new lockwasher (9), washer (8), and screw (10) on takeup end-section assembly (7).
2. Install toggle clamp (6) and six screws (4) on conveyor center section (1).
3. Install hook (3) in tube assembly (2).
4. Lower toggle clamp handle (5).

17-18. CONVEYOR TOGGLE CLAMP AND TUBE ASSEMBLY REPAIR (continued).

If toggle clamp handle cannot be lowered or does not put sufficient tension on tube assembly, go to step 5. If toggle clamp handle can be lowered and sufficient tension is put on tube assembly, go to step 7.

5. Raise toggle clamp handle (5) and remove hook (3) from tube assembly (2). Tighten or loosen tube assembly (2) in clevis (18) as necessary to lengthen or shorten tube assembly (2).
6. Repeat steps 4 and 5 until sufficient tension on tube assembly (2) is attained.
7. Tighten jam nut (16) against rod end (17).



FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).

17-19. HYDRAULIC MOTOR REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (4) (Item 184, Appendix H)

Equipment Conditions:

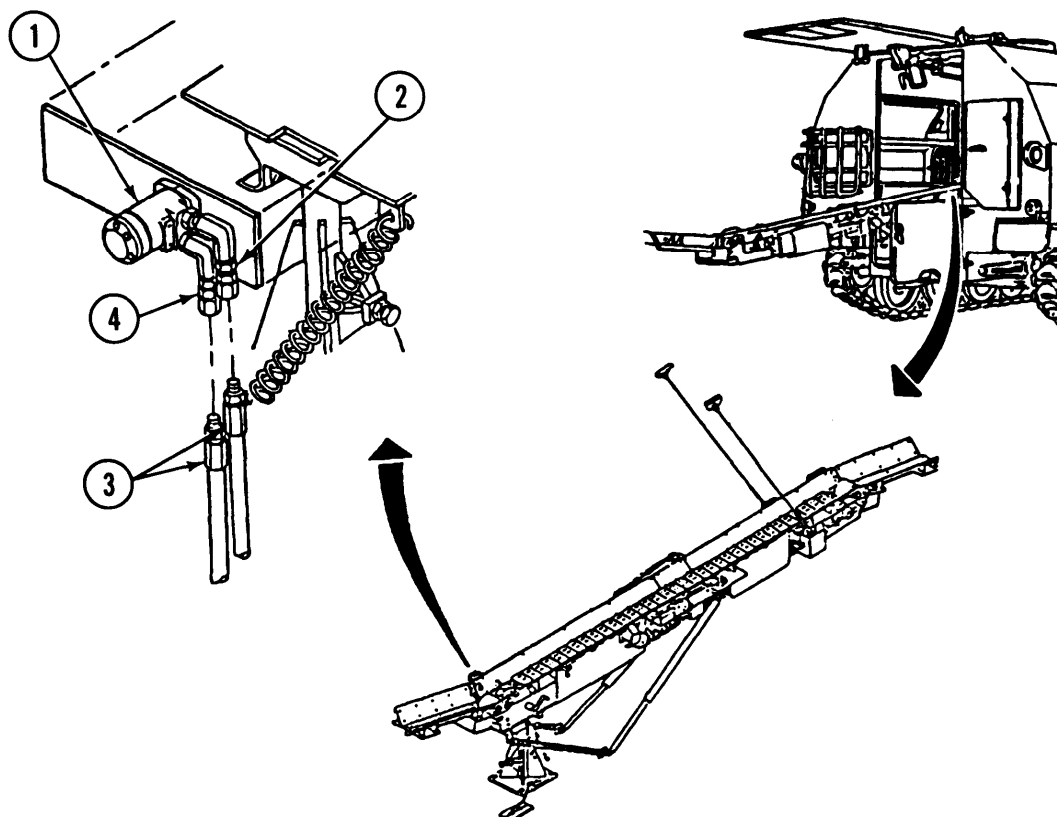
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Conveyor deployed (refer to TM 9-2350-287-10).
 - Hydraulic ball valve closed (refer to TM 9-2350-287-10).
-

a. REMOVAL

NOTE

For correct installation, tag hydraulic hoses when removed.

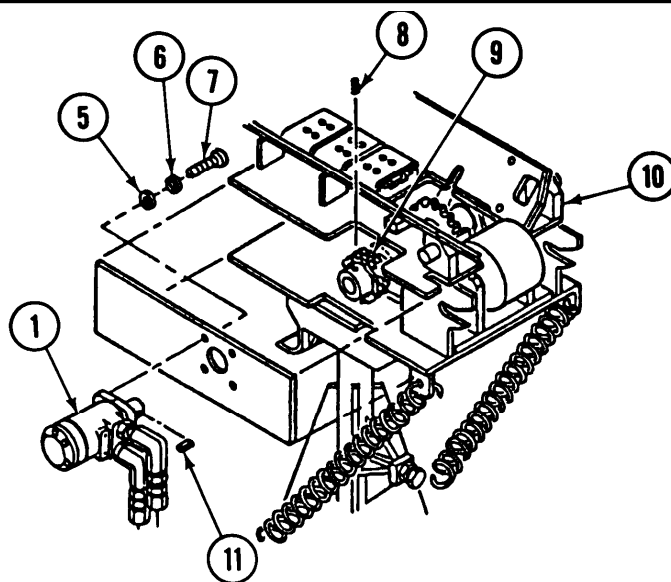
1. Position drain pan under hydraulic motor (1).
2. Disconnect two hydraulic hoses (3) from two adapters (2 and 4) on hydraulic motor (1).



17-19. HYDRAULIC MOTOR REPLACEMENT (continued).

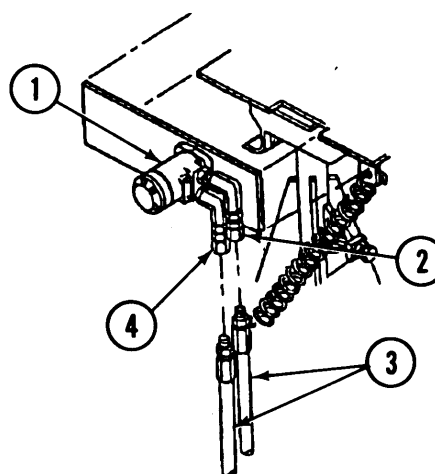
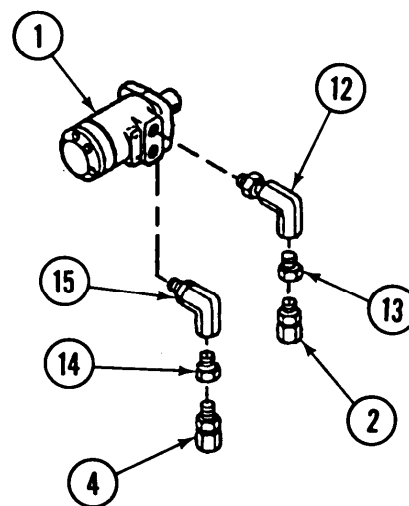
3. Loosen setscrew (8) in coupling sprocket (9).
4. Remove four screws (7), lockwashers (6), and washers (5) and hydraulic motor (1) from conveyor drive-end section (10) and coupling sprocket (9). Discard lockwashers.
5. Remove key (11) from shaft of hydraulic motor (1).

Remove two adapters (2 and 4), reducers (13 and 14), and elbows (12 and 15) from hydraulic motor (1).



b. INSTALLATION

1. Install two elbows (12 and 15), reducers (13 and 14), and adapters (2 and 4) on hydraulic motor (1).
2. Install key (11) in shaft of hydraulic motor (1).
3. Aline key (11) in shaft of hydraulic motor (1) with keyway in coupling sprocket (9).
4. Install hydraulic motor (1) on conveyor drive-end section (10) and coupling sprocket (9) with four washers (5), new lockwashers (6), and screws (7).
5. Tighten setscrew (8) in coupling sprocket (9).
6. Connect two hydraulic hoses (3) to two adapters (2 and 4) on hydraulic motor (1).



FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).
- Open hydraulic ball valve (refer to TM 9-2350-287-10).

17-20. HYDRAULIC RESERVOIR REPAIR.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Drain pan (Item 14, Appendix I)

- Lockwasher (6) (Item 161, Appendix H)
- Lockwasher (18) (Item 164, Appendix H)
- Lockwasher (5) (Item 196, Appendix H)
- Nipple (Item 205, Appendix H)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Dry-cleaning solvent (Item 28, Appendix D)
- Rag (Item 56, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Filter and cap assembly (Item 41, Appendix H)
- Gasket (Item 60, Appendix H)
- Gasket (Item 77, Appendix H)
- Gasket (Item 84, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-297-10).
- Right projectile rack assembly moved to rear (refer to TM 9-2350-287-10).
- APU plenum removed (para 18-17).

a. REMOVAL

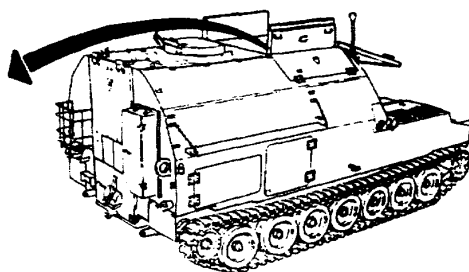
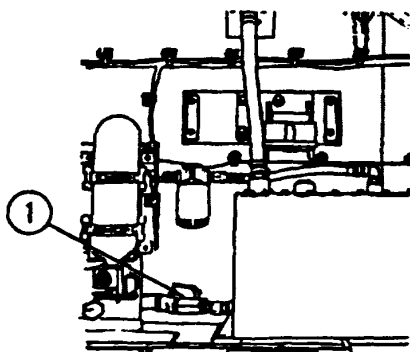
WARNING

To avoid possible injury, make sure all systems are shut down and MASTER switch is set to OFF. Hydraulic fluid may be hot and can cause burns.

CAUTION

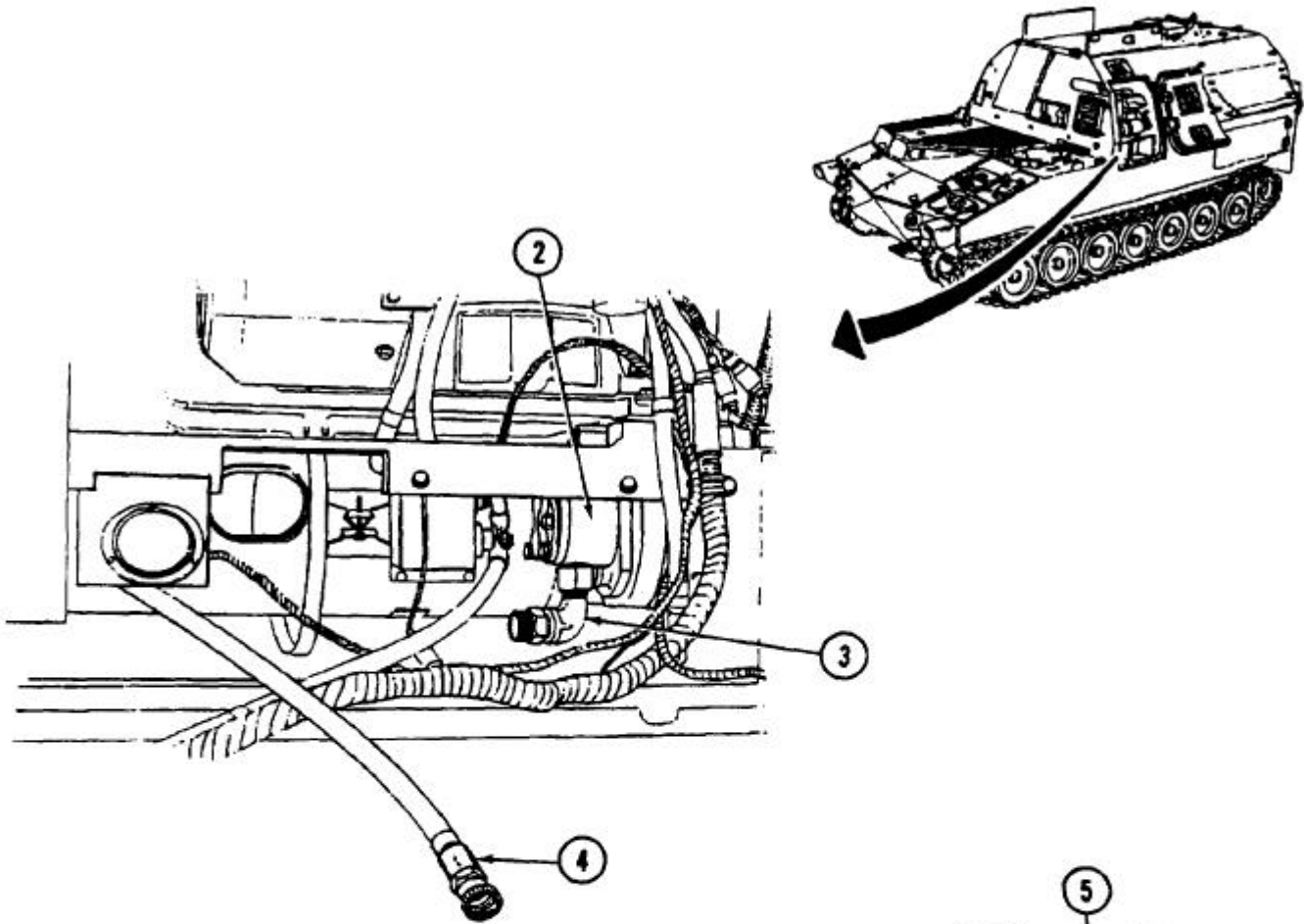
To prevent contamination of hydraulic system, cap hydraulic lines and ports immediately after disconnection.

1. Close ball valve (1).

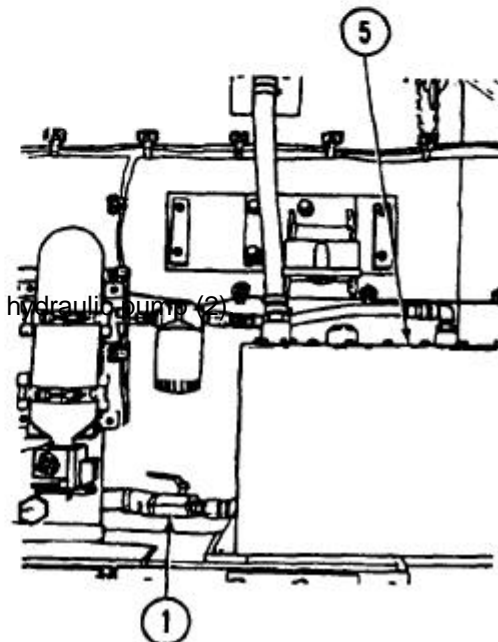


17-20. HYDRAULIC RESERVOIR REPAIR (continued).

2. Disconnect hose assembly (4) from elbow (3) on bottom of APU hydraulic pump (2).
3. Place drain pan under end of hose assembly (4) to catch hydraulic fluid.

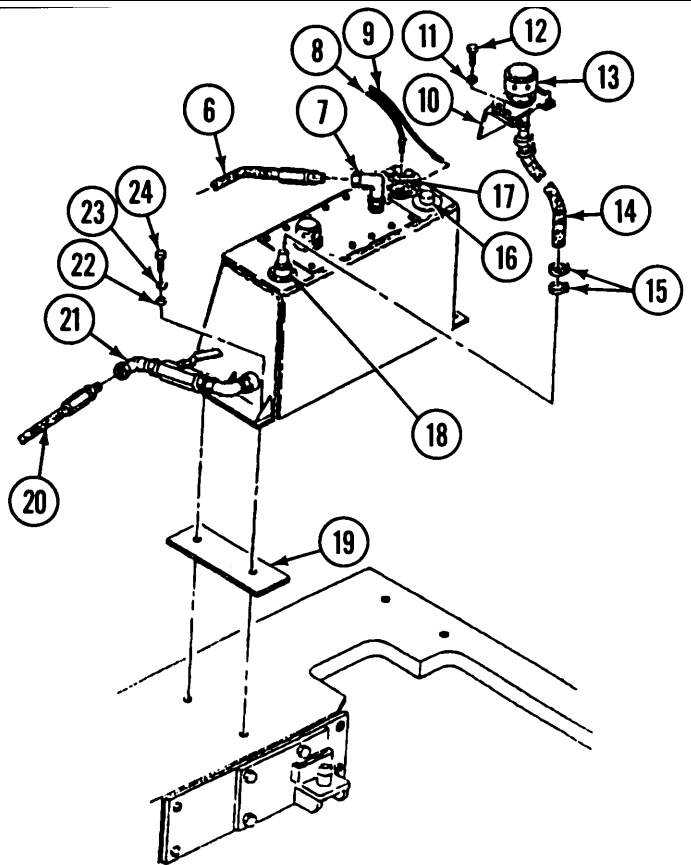


4. Open ball valve (1) and drain hydraulic reservoir (5).
5. Connect hose assembly (4) to elbow (3) on bottom of APU hydraulic pump (2).



17-20. HYDRAULIC RESERVOIR REPAIR (continued).

6. Loosen two clamps (15) on hose (14).
7. Remove two screws (12) and washers (11) from plate (13) and bracket (10). Remove hose (14) and plate (13) from fitting (18) and bracket (10).
8. Disconnect hose assembly (6) from elbow (7).
9. Disconnect electrical connectors CD and 664 (8 and 9) from transmitter (16) and housing assembly (17).
10. Disconnect hose assembly (20) from elbow (21).
11. Remove four screws (24), lockwashers (23), and washers (22) from reservoir (5). Discard lockwashers.
12. With the aid of an assistant, remove reservoir (5) and two mounting plates (19) from vehicle.

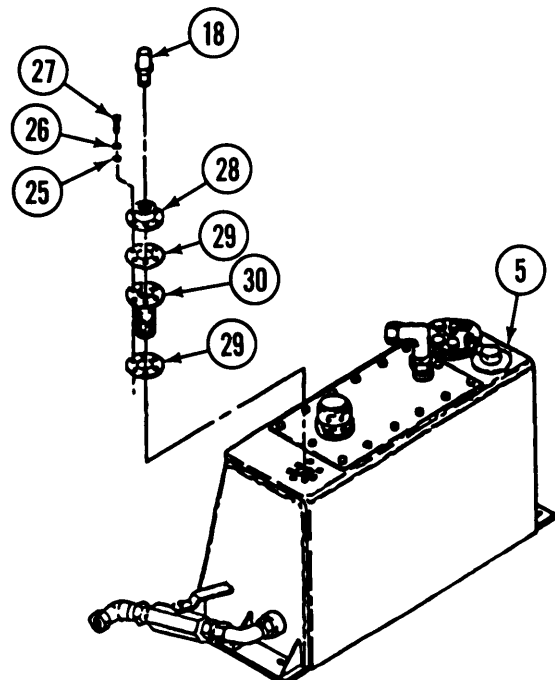


b. DISASSEMBLY

NOTE

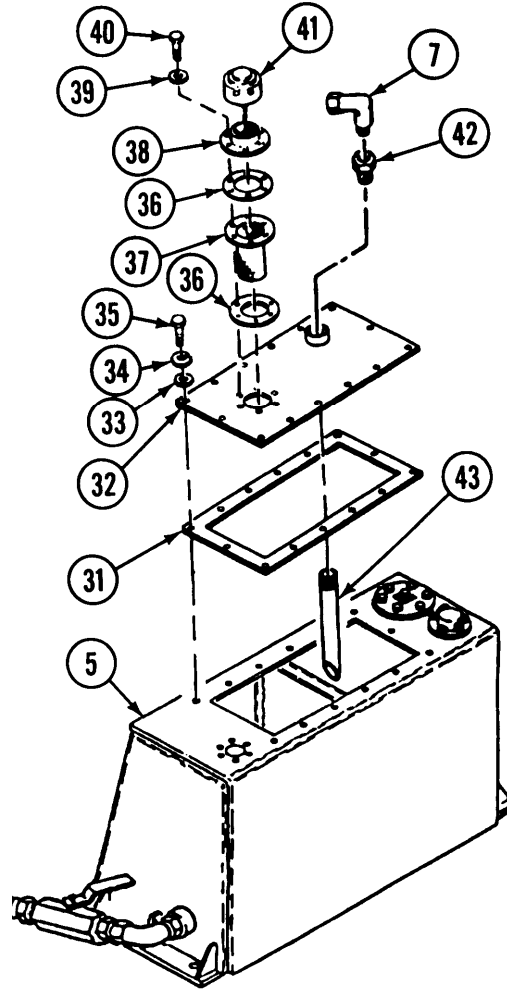
Perform step 1 only if fitting is damaged.

1. Remove fitting (18) from reservoir (5).
2. Remove six screws (27), lockwashers (26), and washers (25), flange (28), two gaskets (29), and strainer (30) from reservoir (5). Discard lockwashers.

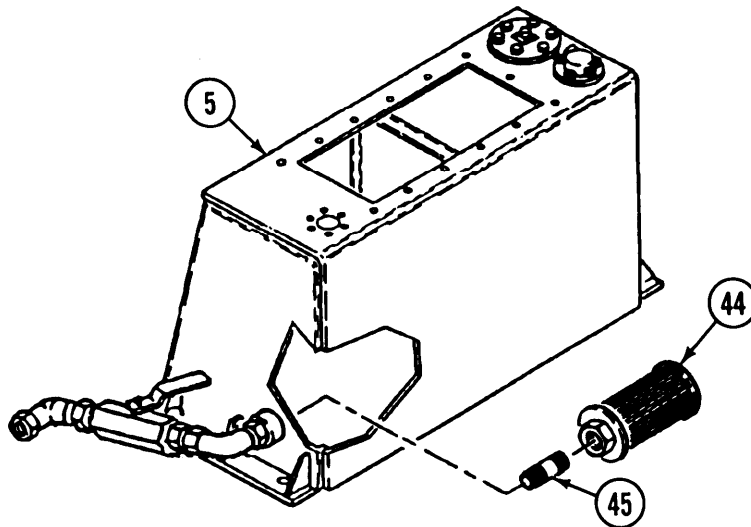


17-20. HYDRAULIC RESERVOIR REPAIR (continued).

3. Remove six screws (40) and washers (39), filter and cap assembly (41), filler flange (38), two gaskets (36), and strainer (37) from access cover (32). Discard filter and cap assembly.
4. Remove 14 screws (35), lockwashers (34), and washers (33), access cover (32), and gasket (31) from top of reservoir (5). Discard lockwashers and gasket.
5. Remove pipe (43) from access cover (32).
6. Remove elbow (7) and pipe bushing (42) from access cover (32).



7. Remove filter (44) from nipple (45).
8. Remove nipple (45) from inside reservoir (5). Discard nipple.



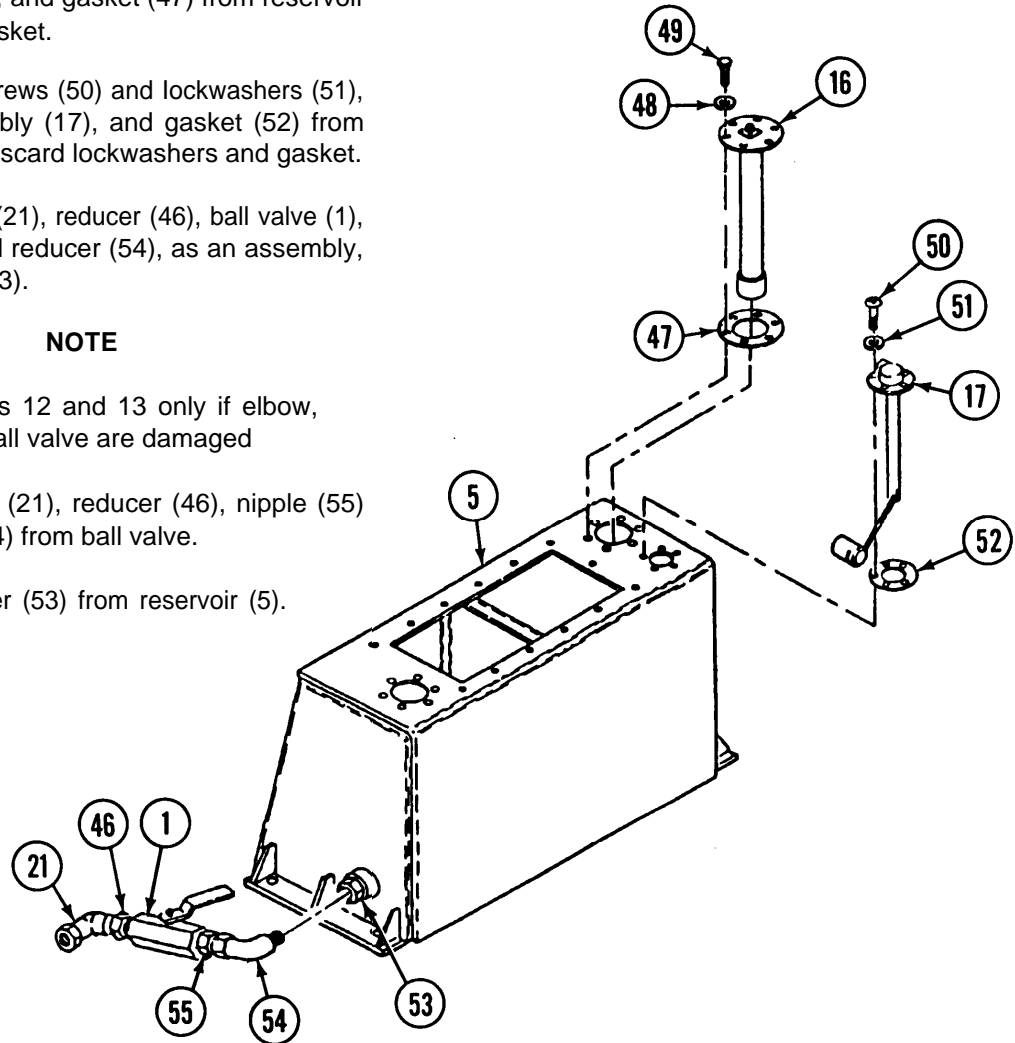
17-20. HYDRAULIC RESERVOIR REPAIR (continued).

9. Remove six screws (49) and washers (48), transmitter (16), and gasket (47) from reservoir (5). Discard gasket.
10. Remove five screws (50) and lockwashers (51), housing assembly (17), and gasket (52) from reservoir (5). Discard lockwashers and gasket.
11. Remove elbow (21), reducer (46), ball valve (1), nipple (55), and reducer (54), as an assembly, from reducer (53).

NOTE

Perform steps 12 and 13 only if elbow, reducer, or ball valve are damaged

12. Remove elbow (21), reducer (46), nipple (55) and reducer (54) from ball valve.
13. Remove reducer (53) from reservoir (5).



c. CLEANING AND INSPECTION

WARNING

Drycleaning 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.

CAUTION

To prevent damage to equipment, do not clean rubber or plastic parts with drycleaning solvent.

1. Clean all metal parts with drycleaning solvent and rag.
2. Inspect all parts for cracks or breaks. Replace any damaged parts.

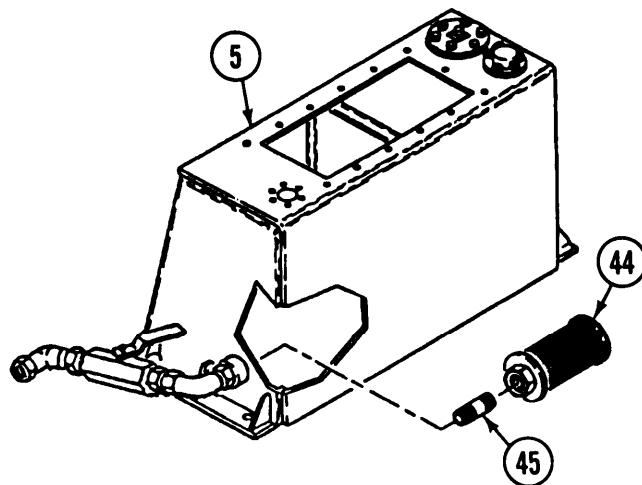
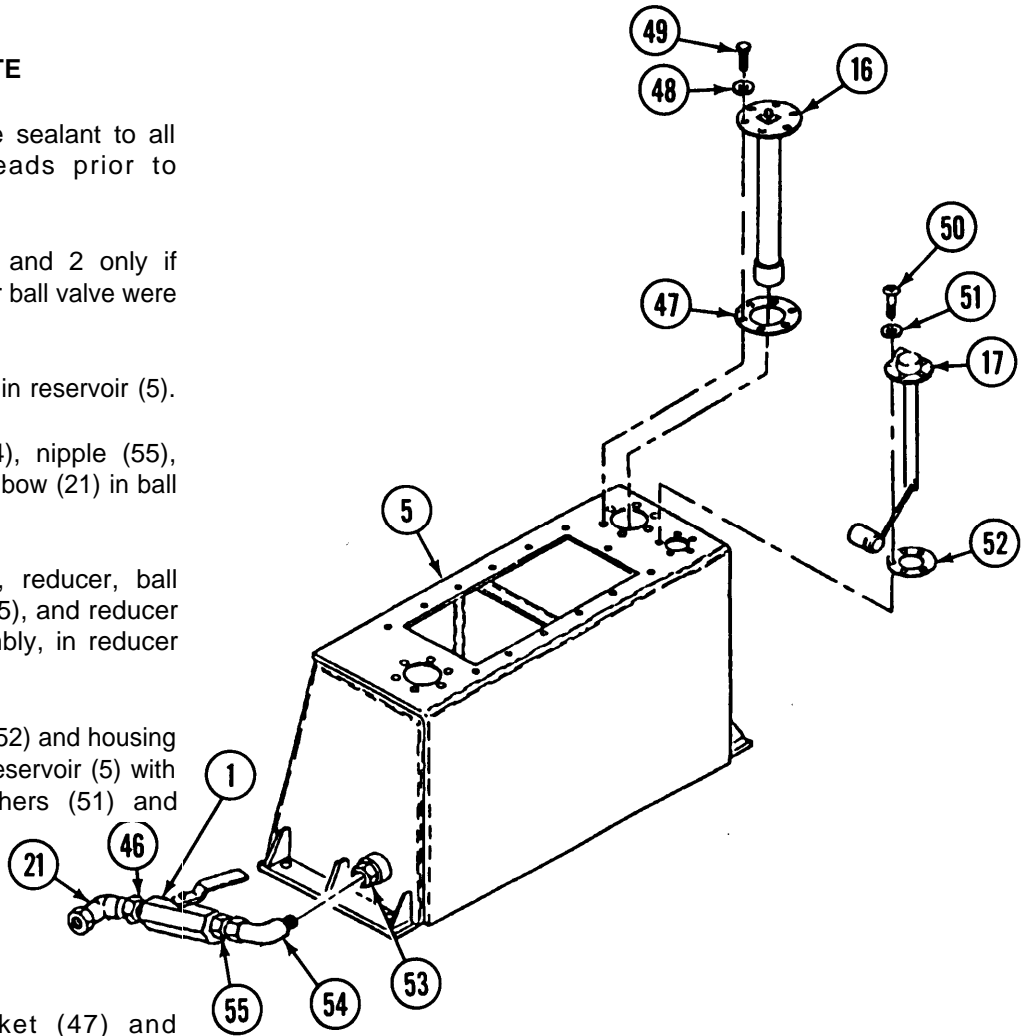
17-20. HYDRAULIC RESERVOIR REPAIR (continued).

d. ASSEMBLY

NOTE

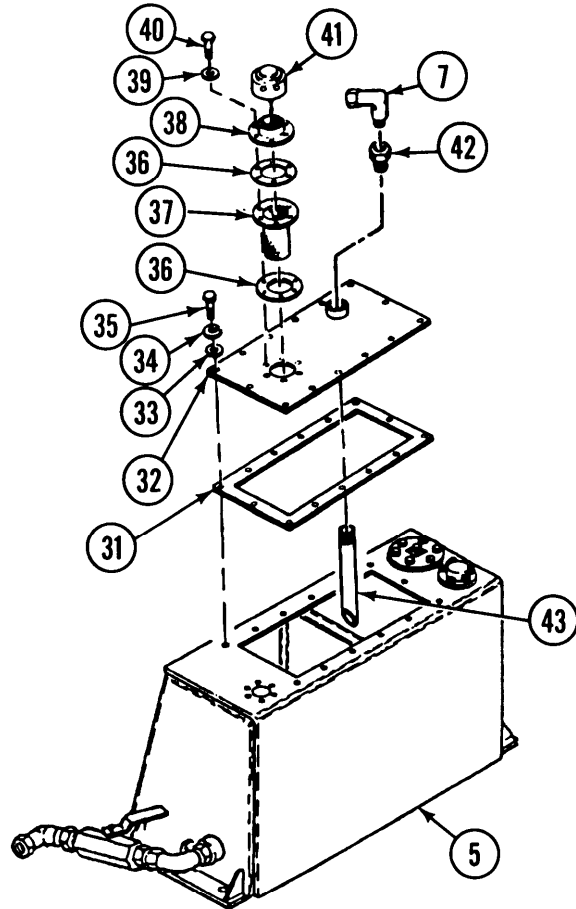
- Apply Teflon pipe sealant to all male pipe threads prior to assembly.
- Perform steps 1 and 2 only if elbow, reducer, or ball valve were damaged.

1. Install reducer (53) in reservoir (5).
2. Install reducer (54), nipple (55), reducer (46), and elbow (21) in ball valve (1).
3. Install elbow (21), reducer, ball valve (1), nipple (55), and reducer (54), as an assembly, in reducer (53).
4. Install new gasket (52) and housing assembly (17) on reservoir (5) with five new lockwashers (51) and screws (50).
5. Install new gasket (47) and transmitter (16) on reservoir (5) with six washers (48) and screws (49).
6. Install new nipple (45) inside reservoir (5).
7. Install fitter (44) on nipple (45).



17-20. HYDRAULIC RESERVOIR REPAIR (continued).

8. Install pipe bushing (42) and elbow (7) in access cover (32).
9. Install pipe (43) in access cover (32).
10. Install new gasket (31) and access cover (32) on reservoir (5) with 14 washers (33), new lockwashers (34), and screws (35).
11. Install strainer (37), two gaskets (36), filler flange (38), and filter and cap assembly (41) on access cover (32) with six washers (39) and screws (40).

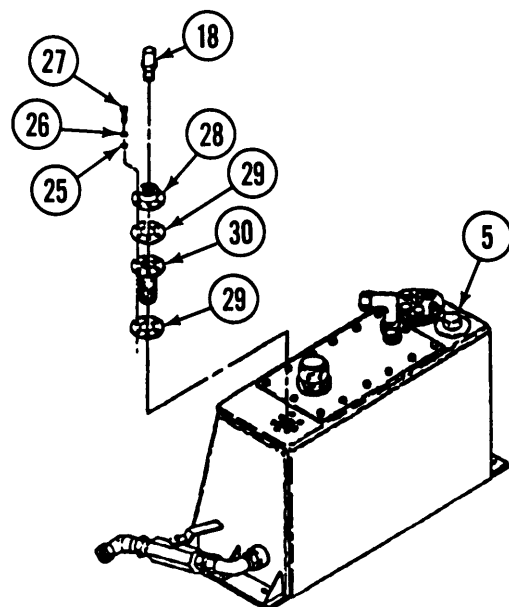


12. Install strainer (30), two gaskets (29), and flange (28) on reservoir (5) with six washers (25), new lockwashers (26), and screws (27).

NOTE

Perform step 12 only if fitting was removed.

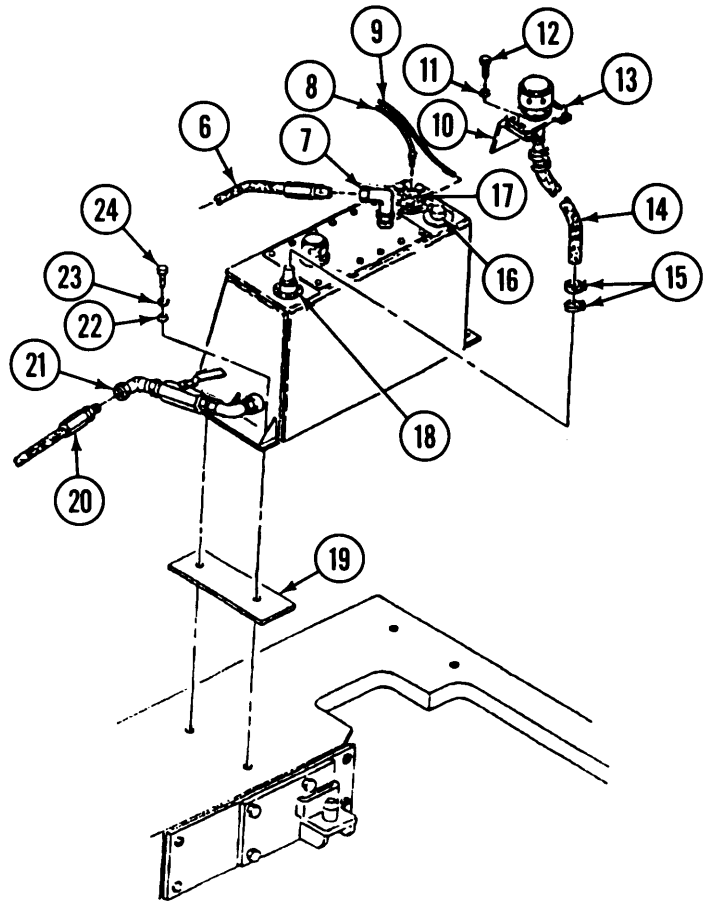
13. Install fitting (18) on resevoir (5).



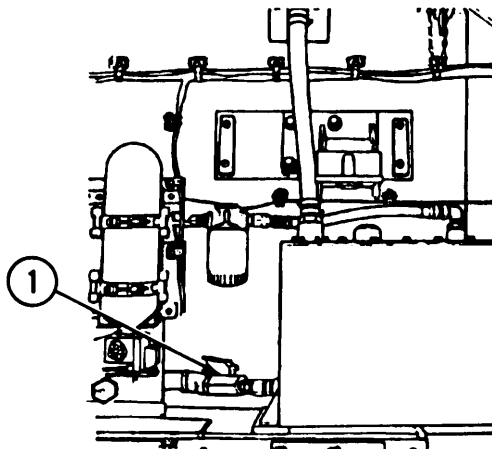
17-20. HYDRAULIC RESERVOIR REPAIR (continued).

e. INSTALLATION

1. With the aid of an assistant, install two mounting plates (19) and hydraulic reservoir (5) in vehicle with four washers (22), new lockwashers (23), and screws (24).
2. Connect hose assembly (20) to elbow (21).
3. Install electrical connectors CD and 664 (8 and 9) on transmitter (16) and housing assembly (17).
4. Connect hose assembly (6) to elbow (7).
5. Position hose (14) and plate (13) in bracket (10) and on fitting (18). Secure plate (13) with two washers (11) and screws (12).
6. Tighten two clamps (15) on hose (14).



7. Open hydraulic ball valve (1).



FOLLOW-ON MAINTENANCE:

- Service hydraulic reservoir (refer to TM 9-2350-287-10).
- Install APU plenum (para 18-17).
- Install right projectile rack assembly (refer to TM 9-2350-287-10).

17-21. APU HYDRAULIC PUMP AND ADAPTER PLATE REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Adhesive, sealant (Item 6, Appendix D)
- Dry cleaning solvent (Item 28, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Lockwasher (4) (Item 125, Appendix H)
- Lockwasher (2) (Item 161, Appendix H)
- Lockwasher (2) (Item 166, Appendix H)
- Preformed packing (Item 227, Appendix H)

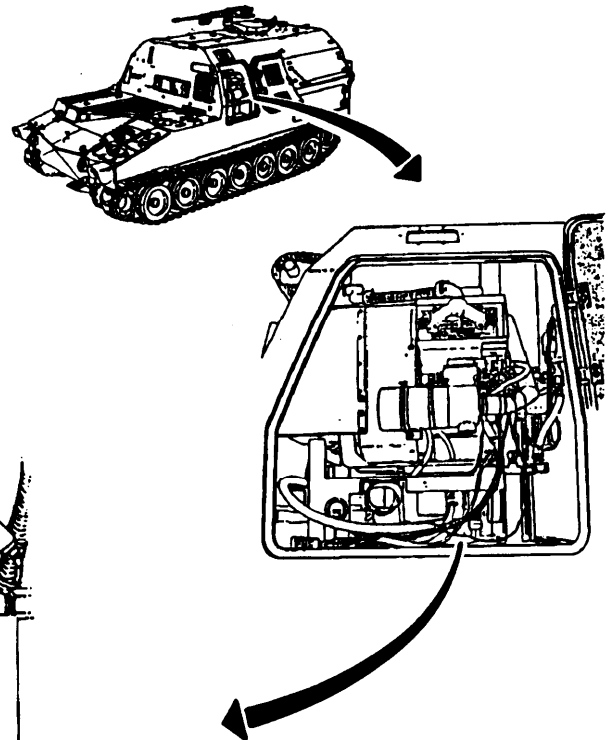
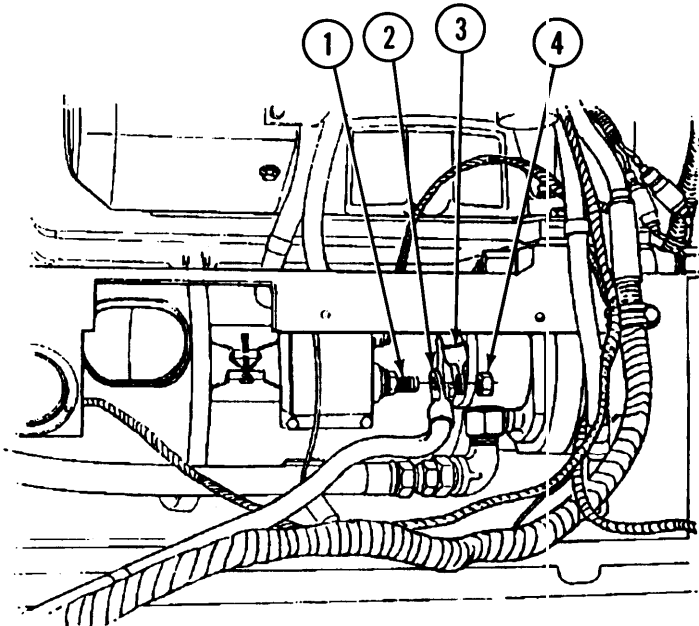
- Preformed packing (Item 386, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-42).
- APU plenum removed (para 18-17).
- Hydraulic ball valve closed (refer to TM 9-2350-287-10).

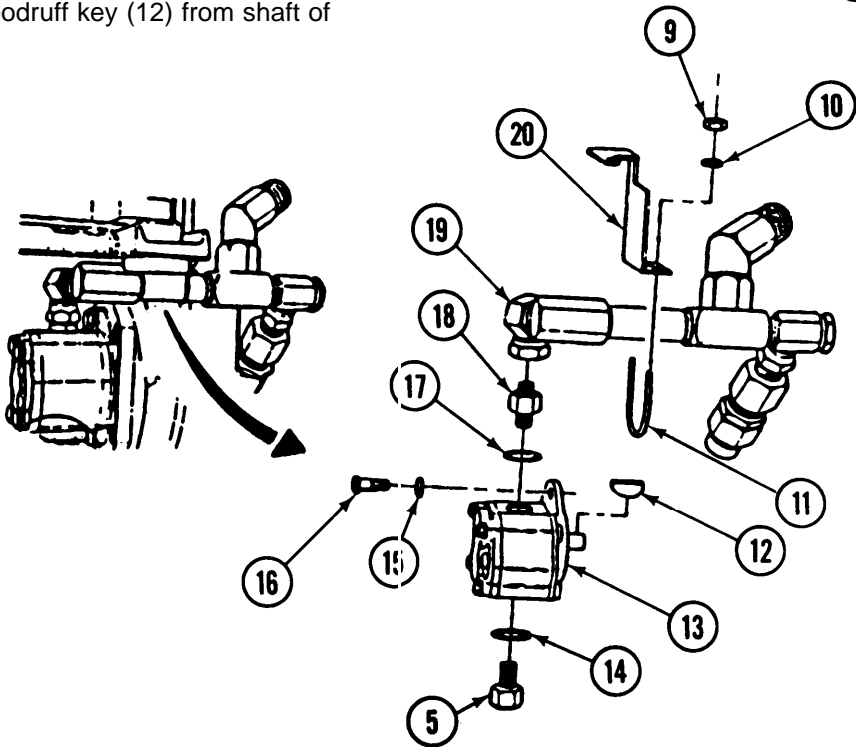
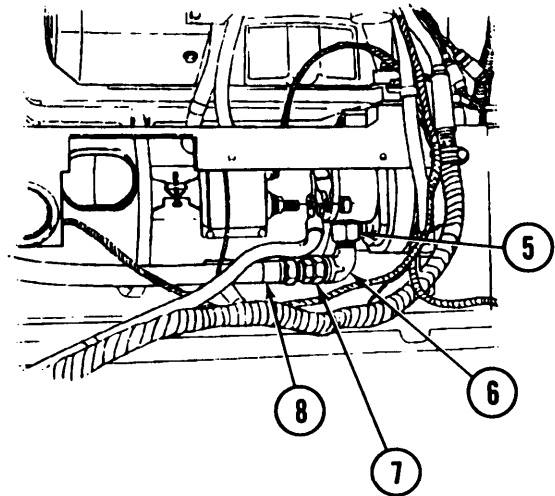
a. REMOVAL

Remove nut (4), electrical lead 61 (3) and electrical lead 66 (2) from terminal (1).



17-21. APU HYDRAULIC PUMP AND ADAPTER PLATE REPLACEMENT (continued).

2. Remove two nuts (9) and lockwashers (10) securing U-bolt (11) to bracket (20). Discard lockwashers.
3. Remove elbow (19) from adapter (18).
4. Remove hose assembly (8), adapter (7), and elbow (6) from adapter (5).
5. Remove two adapters (5 and 18) and packings (14 and 17) from APU hydraulic pump (13). Discard packings.
6. Remove two screws (16) and lockwashers (15) and pump (13) from APU.
7. Remove Woodruff key (12) from shaft of pump (13).



8. Remove four screws (24) and lockwashers (23) from APU hydraulic pump adapter plate (22) and gearcase (21). Discard lockwashers.
9. Install two puller screws (25) in adapter plate (22).
10. Using two puller screws (25), remove adapter plate (22) from gearcase (21).
11. Remove two puller screws (25) from adapter plate (22).

17-21. APU HYDRAULIC PUMP AND ADAPTER PLATE REPLACEMENT (continued).**b. INSTALLATION**

1. Secure adapter plate (22) on gearcase (21) with four new lockwashers (23) and screws (24).
2. Install Woodruff key (12) on shaft of pump (13).
3. Install pump (13) on the APU with two new lockwashers (15) and screws (16).
4. Install two new packings (14 and 17) and adapters (5 and 18) on pump (13).

WARNING

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

5. Apply sealing compound to threads of elbow (6) and adapter (7). Install elbow (6), adapter (7), and hose assembly (8) on adapter (5).
6. Install elbow (19) on adapter (18).
7. Install two new lockwashers (10) and nuts (9) securing U-bolt (11) to bracket (20).

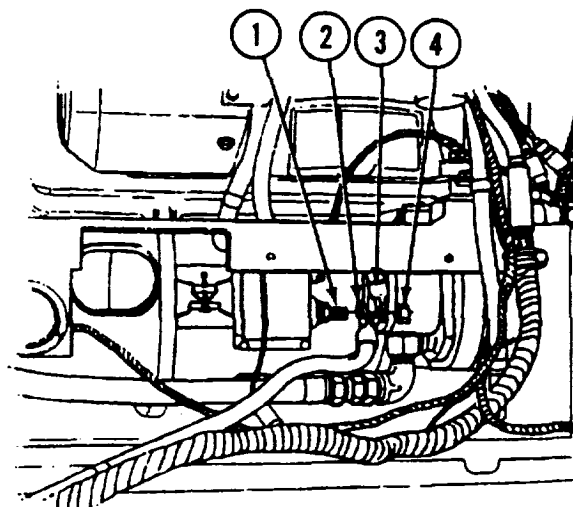
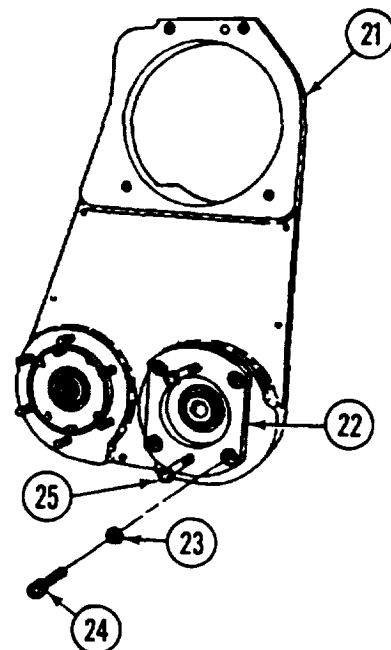
WARNING

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.

8. Remove any traces of old sealant from terminal (1) with dry-cleaning solvent.
9. Install electrical lead 61 (3) and electrical lead 66 (2) on terminal (1) with nut (4).

FOLLOW-ON MAINTENANCE:

- Install APU plenum (para 18-17).
- Connect battery ground cables (refer to TM 9-2350-287-20-1).
- Open hydraulic ball valve (refer to TM 9-2350-287-10).



[Paragraphs 17-22 Through 17-27 Deleted]

17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR.*This Task Covers:*

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

*Initial Setup:***Tools/Test Equipment:**

- Automotive electrical tool kit (Item 5, Appendix I)
- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Dry-cleaning solvent (Item 27, Appendix D)
- Rag (Item 56, Appendix D) (as required)
- Teflon pipe sealant (Item 63, Appendix D)
- Lockwasher (Item 164, Appendix H)

- Lockwasher (Item 166, Appendix H)
- Lockwasher (19) (Item 196, Appendix H)
- Preformed packing (3) (Item 226, Appendix H)
- Preformed packing (4) (Item 232, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
- Mounted water ration heater (MWRH) power cable (12447321) removed (refer to TM 9-2350-287-10).

a. REMOVAL**WARNING**

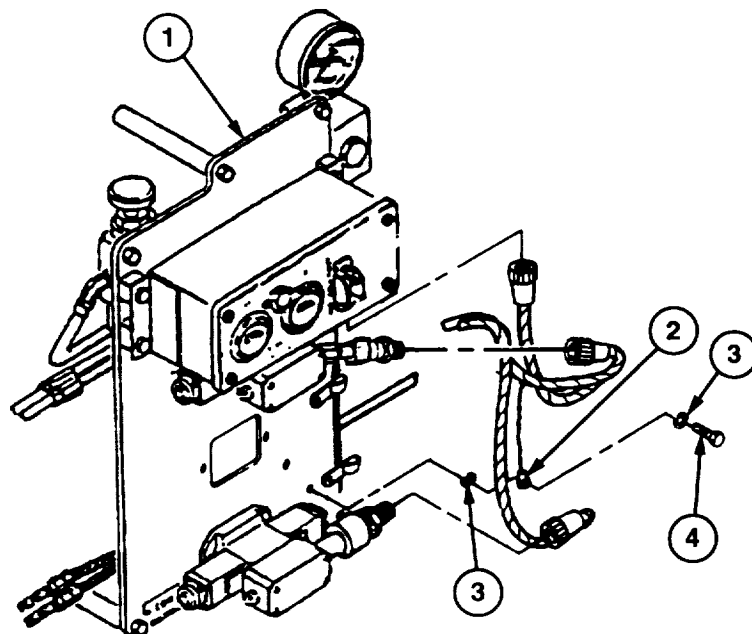
To avoid possible injury, make sure all systems are shut down and **MASTER** switch is set to **OFF**. Hydraulic fluid may be hot and can cause burns.

CAUTION

To prevent contamination of hydraulic system, hydraulic lines and ports should be capped immediately after disconnecting lines.

NOTE

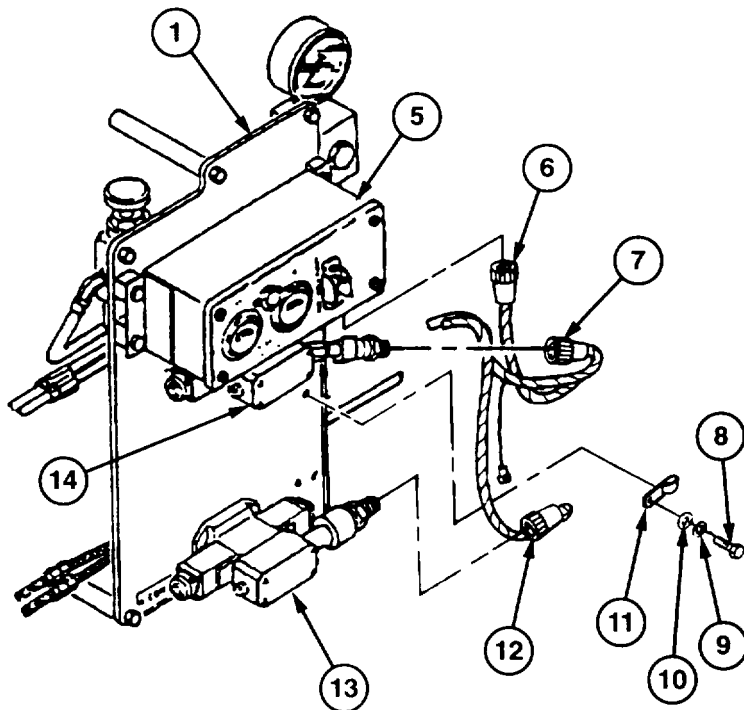
Tag all electrical leads and hydraulic tubes and hoses for identification at installation.



1. Remove screw (4), two lockwashers (3), and ground wire (2) from hydraulic control panel assembly (1). Discard lockwashers.

17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

2. Remove two screws (8), washers (10), lockwashers (9), and straps (11) from hydraulic control panel assembly (1). Discard lockwashers.
3. Remove electrical connector (7) from ballistic shield solenoid valve (14).
4. Disconnect electrical connector (12) from conveyor solenoid valve (13).
5. Disconnect electrical connector (6) from hydraulic gage panel (5).
6. Place drain pan under control valve to catch hydraulic fluid.
7. Disconnect hydraulic fluid inlet line (17) from pressure gage assembly (16).
8. Disconnect hydraulic reservoir return line (18) from tube assembly (19).
9. Disconnect two conveyor hydraulic lines (22) from two tube assemblies (23).
10. Disconnect two ballistic shield hydraulic lines (15) from two hoses (24).
11. Remove three screws (20) and lockwashers (21) and hydraulic control panel assembly (1) from vehicle. Discard lockwashers.

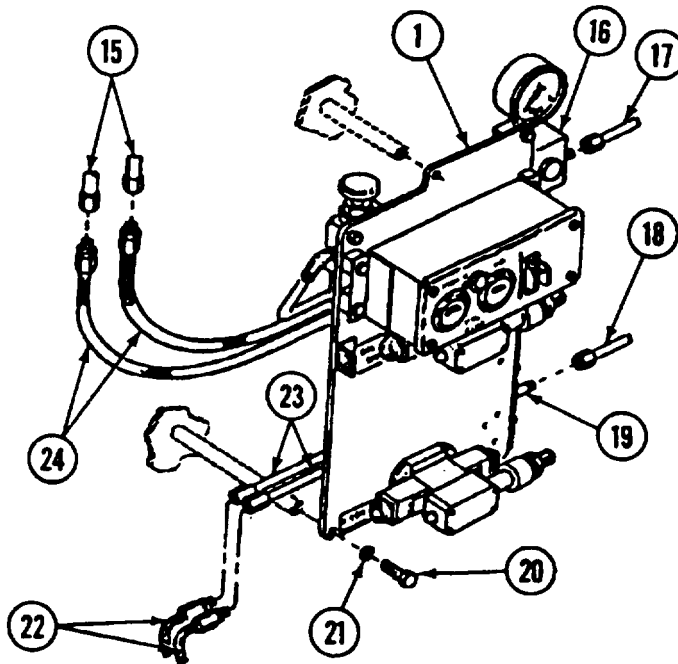


b. DISASSEMBLY

NOTE

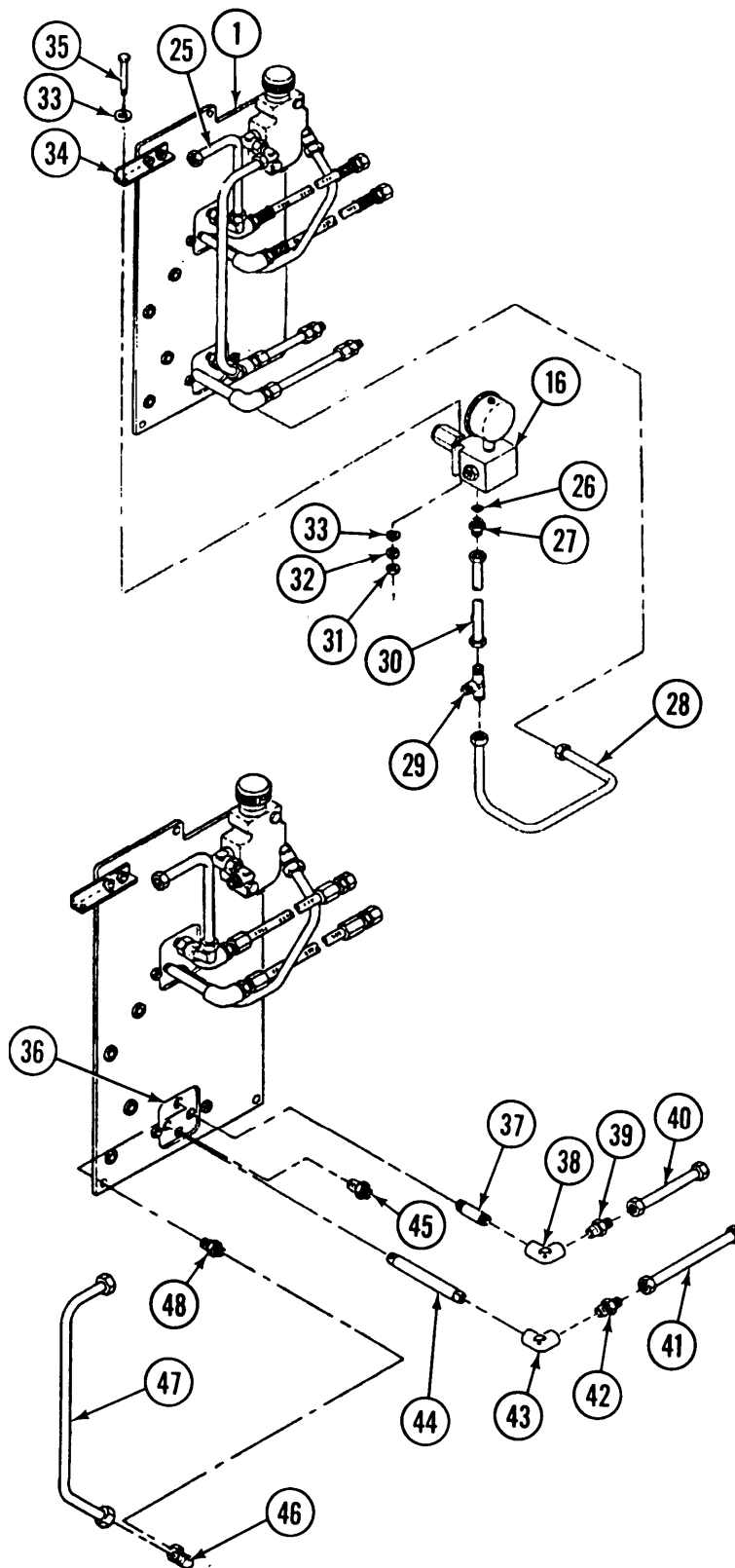
During disassembly, tag all hydraulic components for identification during assembly.

1. Remove tube assembly (28) from tee tube (29) and hydraulic control panel assembly (1).
2. Remove tee tube (29) from tube assembly (30).



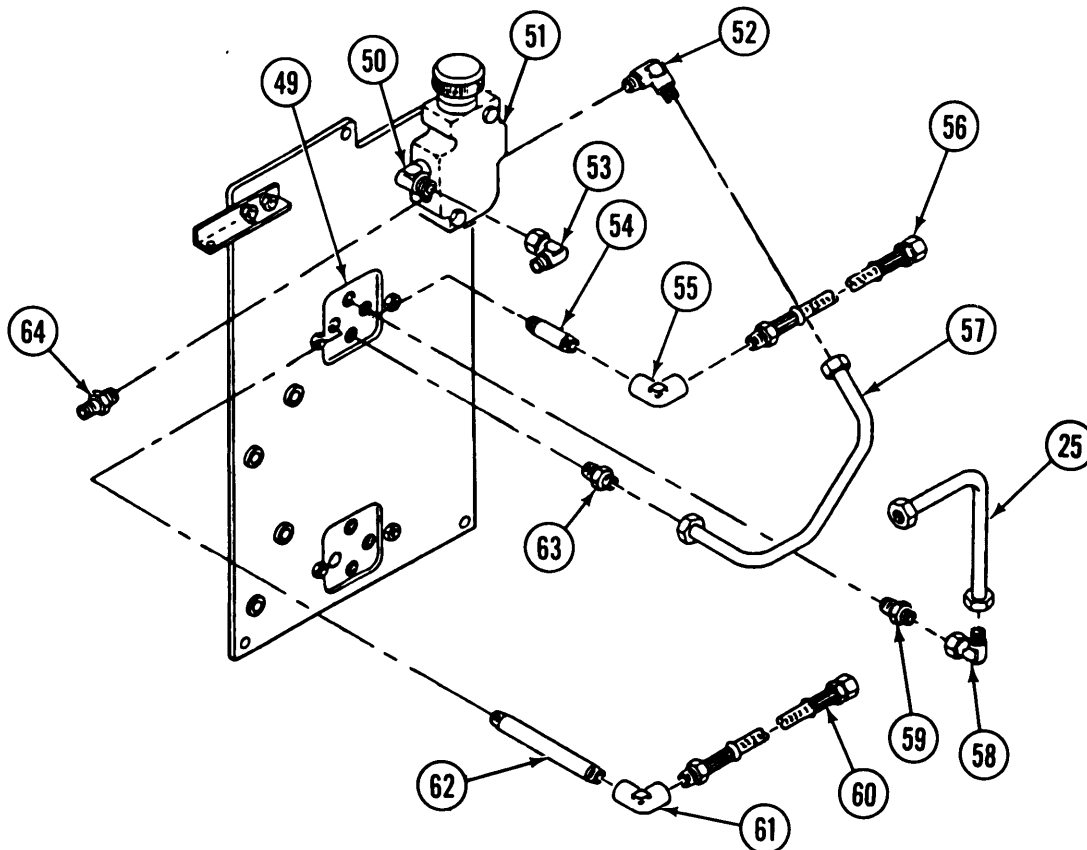
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

3. Remove tube assembly (30) from adapter (27).
4. Remove adapter (27) and packing (26) from pressure gage assembly (16). Discard packing.
5. Loosen connectors of tube (25).
6. Remove two screws (35), nuts (31), lockwashers (32), and washers (33) from pressure gage assembly (16). Discard lockwashers.
7. Remove pressure gage assembly (16) from pressure gage bracket (34).
8. Remove tube assembly (41) from reducer bushing (42).
9. Remove reducer bushing (42) from elbow (43).
10. Remove elbow (43) from nipple (44).
11. Remove nipple (44) from hydraulic subplate (36).
12. Remove tube assembly (47) from elbow (46).
13. Remove elbow (46) from reducer bushing (48).
14. Remove reducer bushing (48) from hydraulic subplate (36).
15. Remove tube assembly (40) from reducer bushing (39).
16. Remove reducer bushing (39) from elbow (38).
17. Remove elbow (38) from nipple (37).
18. Remove nipple (37) from hydraulic subplate (36).
19. Remove reducer bushing (45) from hydraulic subplate (36).



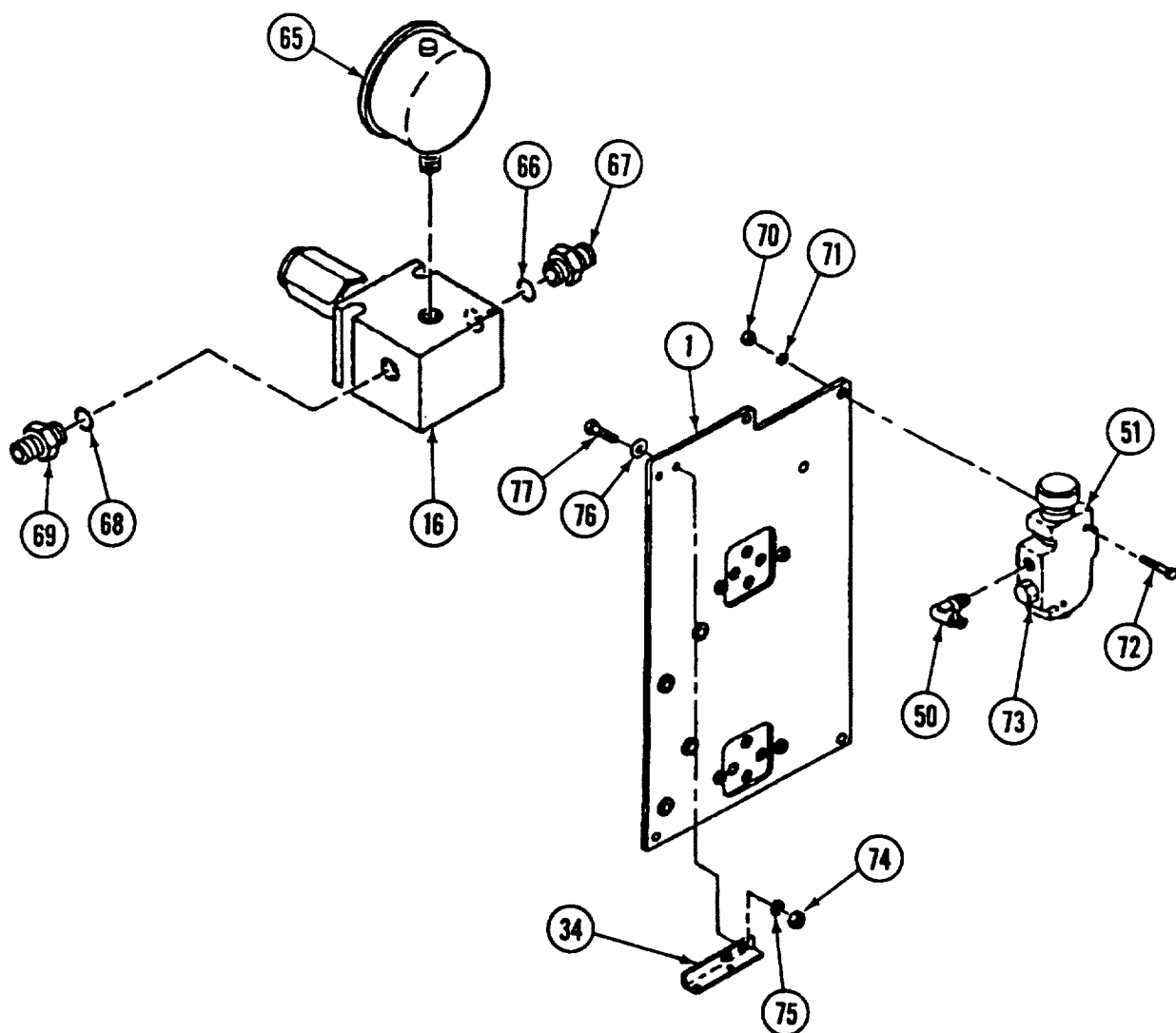
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

20. Remove hose (60) from elbow (61).
21. Remove elbow (61) from nipple (62).
22. Remove nipple (62) from hydraulic subplate (49).
23. Remove tube assembly (57) from reducer bushing (63) and elbow (52).
24. Remove reducer bushing (63) from hydraulic subplate (49).
25. Remove hose (56) from elbow (55).
26. Remove tube (25) from elbow (58).
27. Remove elbow (58) from reducer bushing (59).
28. Remove reducer bushing (59) from hydraulic subplate (49).
29. Remove elbow (55) from nipple (54).
30. Remove nipple (54) from hydraulic subplate (49).
31. Remove adapter (64) and elbow (52) from flow-control valve (51).
32. Remove elbow (53) from elbow (50).



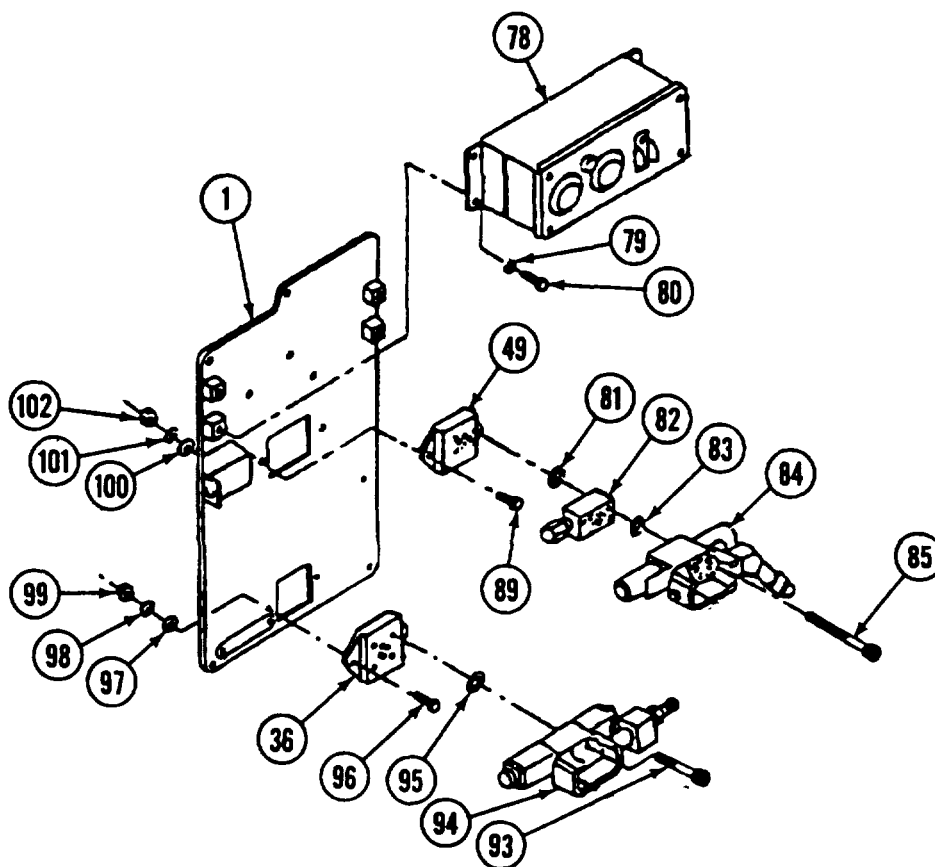
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

33. Remove two adapters (67 and 69) and packings (66 and 68) from pressure gage assembly (16). Discard packings.
34. Remove gage (65) from pressure gage assembly (16).
35. Remove two screws (72), nuts (70), and lockwashers (71) and flow-control valve (51) from hydraulic control panel assembly (1). Discard lockwashers.
36. Remove cap (73) from flow-control valve (51).
37. Remove two screws (77), nuts (74), lockwashers (75), and washers (76) from pressure gage bracket (34), and remove pressure gage bracket (34) from hydraulic control panel assembly (1). Discard lockwashers.
38. Remove elbow (50) from flow-control valve (51).



17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

39. Remove four screws (80) and lockwashers (79) from gage panel assembly (78). Discard lockwashers.
40. Remove gage panel assembly (78) from hydraulic control panel assembly (1).
41. **[Step Deleted]**
42. Remove four screws (93) and conveyor directional control valve (94) from hydraulic subplate (36). Remove and discard two packings (95).
43. Remove two screws (96), washers (97), lockwashers (98), and nuts (99) and hydraulic subplate (36) from hydraulic control panel assembly (1). Discard lockwashers.
44. **[Step Deleted]**
45. Remove four screws (85), ballistic shield directional control valve (84), and subplate relief valve assembly (82) from hydraulic subplate (49). Remove and discard two packings (81 and 83).
46. Remove two screws (89), washers (100), lockwashers (101), and nuts (102) and hydraulic subplate (49) from hydraulic control panel assembly (1). Discard lockwashers.



17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

[Art Deleted]

47. [Step Deleted]

c. **CLEANING AND INSPECTION**

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.

CAUTION

To avoid damage to equipment, do not clean rubber or plastic parts with dry-cleaning solvent.

1. Clean all metal parts with dry-cleaning solvent and rag.
2. Inspect all parts for damage. Replace any damaged parts.

d. **ASSEMBLY**

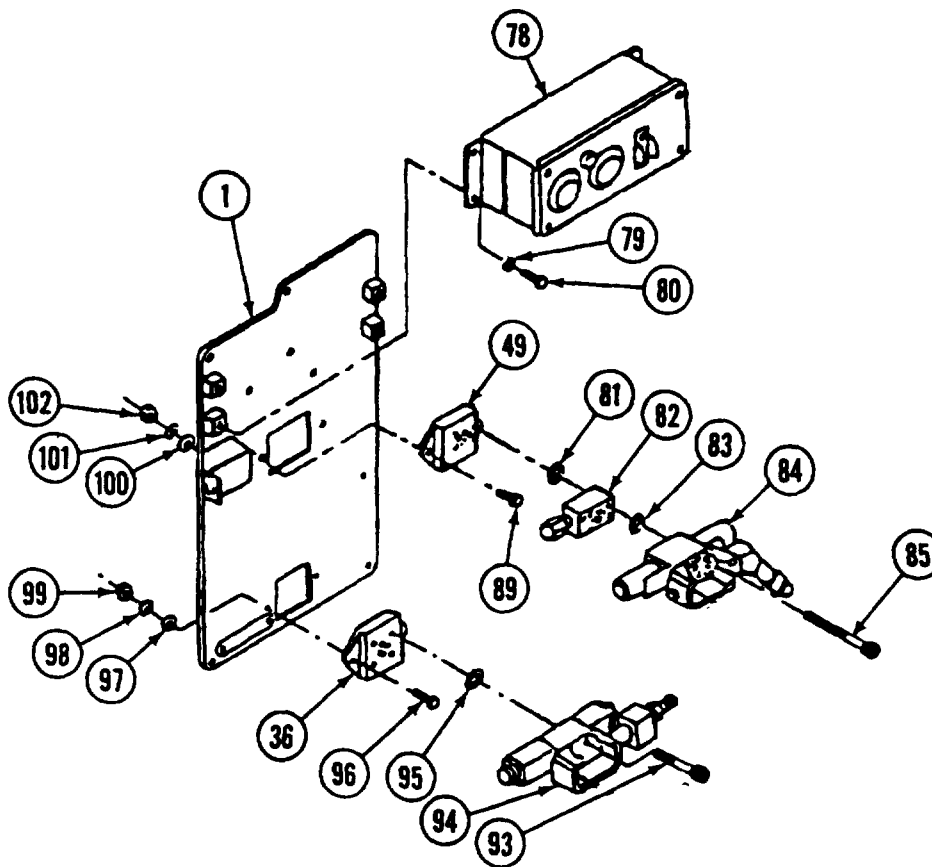
NOTE

Apply Teflon pipe sealant to all male pipe threads prior to assembly.

1. [Step Deleted]

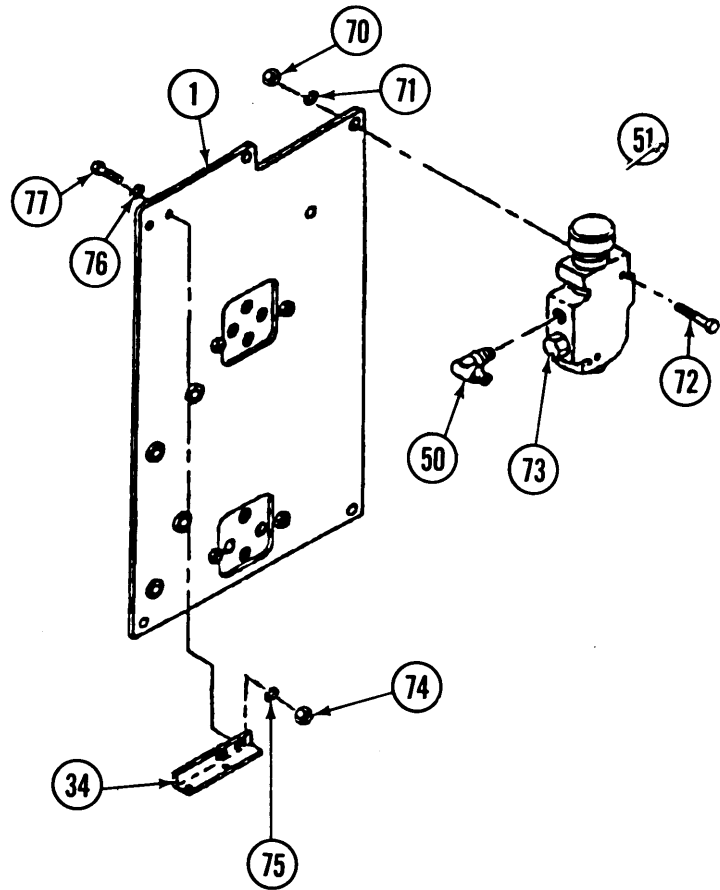
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

2. Install hydraulic subplate (49) and two screws (89), washers (100), new lockwashers (101), and nuts (102) on hydraulic control panel assembly (1).
3. Install ballistic shield directional control valve (84) and subplate relief valve assembly (82) on hydraulic subplate (49).
4. Install two new packings (81 and 83) and four screws (85) on ballistic shield directional control valve (84).
5. **[Step Deleted]**
6. Install hydraulic subplate (36) and two screws (96), washers (97), new lockwashers (98), and nuts (99) on hydraulic control panel assembly (1).
7. Install conveyor directional control valve (94) on hydraulic subplate (36). Install two new packings (95) and four screws (93) on conveyor directional control valve (94).
8. **[Step Deleted]**
9. Install gage panel assembly (78) on hydraulic control panel assembly (1). Install four new lockwashers (79) and screws (80) on gage panel assembly (78).

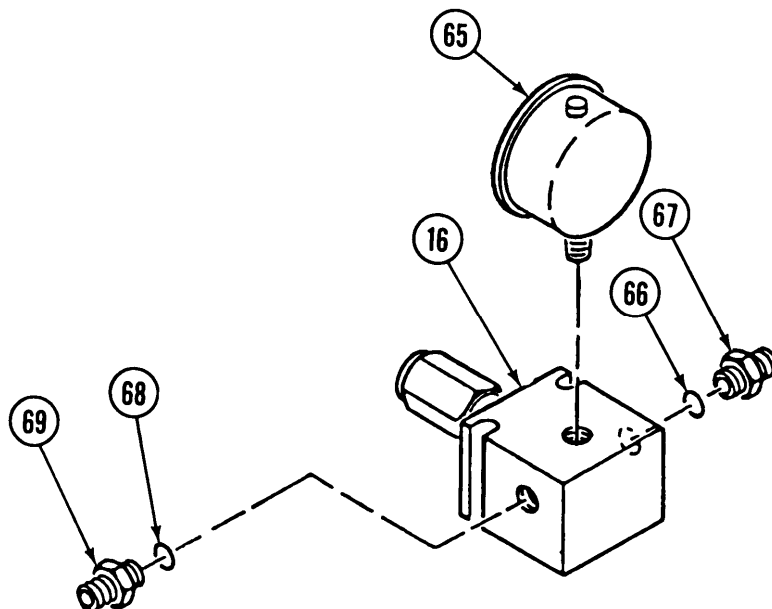


17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

10. Install elbow (50) on flow-control valve (51).
11. Install cap (73) on flow-control valve (51).
12. Install pressure gage bracket (34) and two screws (77), washers (76), new lockwashers (75), and nuts (74) on hydraulic control panel assembly (1).
13. Install flow-control valve (51) and two screws (72), new lockwashers (71), and nuts (70) on hydraulic control panel assembly (1).

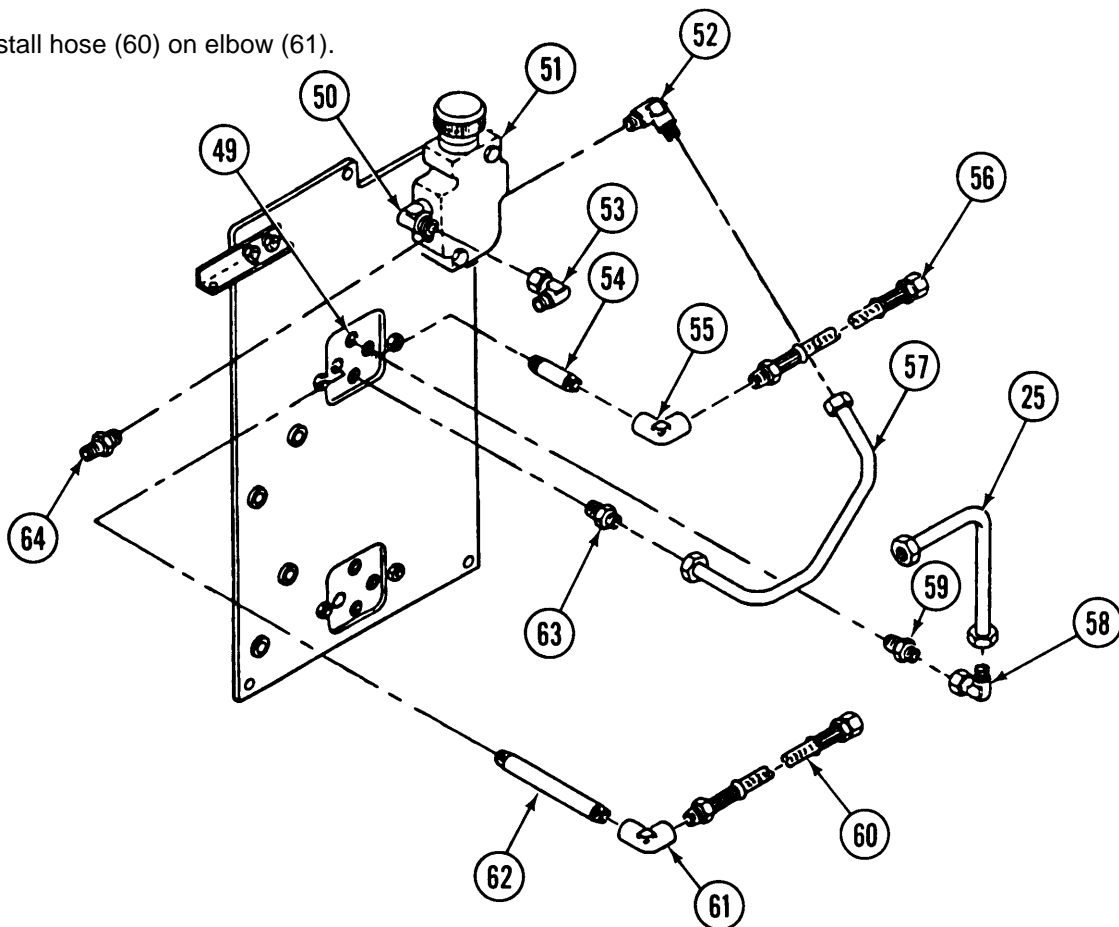


14. Install gage (65) on pressure gage assembly (16).
15. Install two new packings (66 and 68) and two adapters (67 and 69) on pressure gage assembly (16).



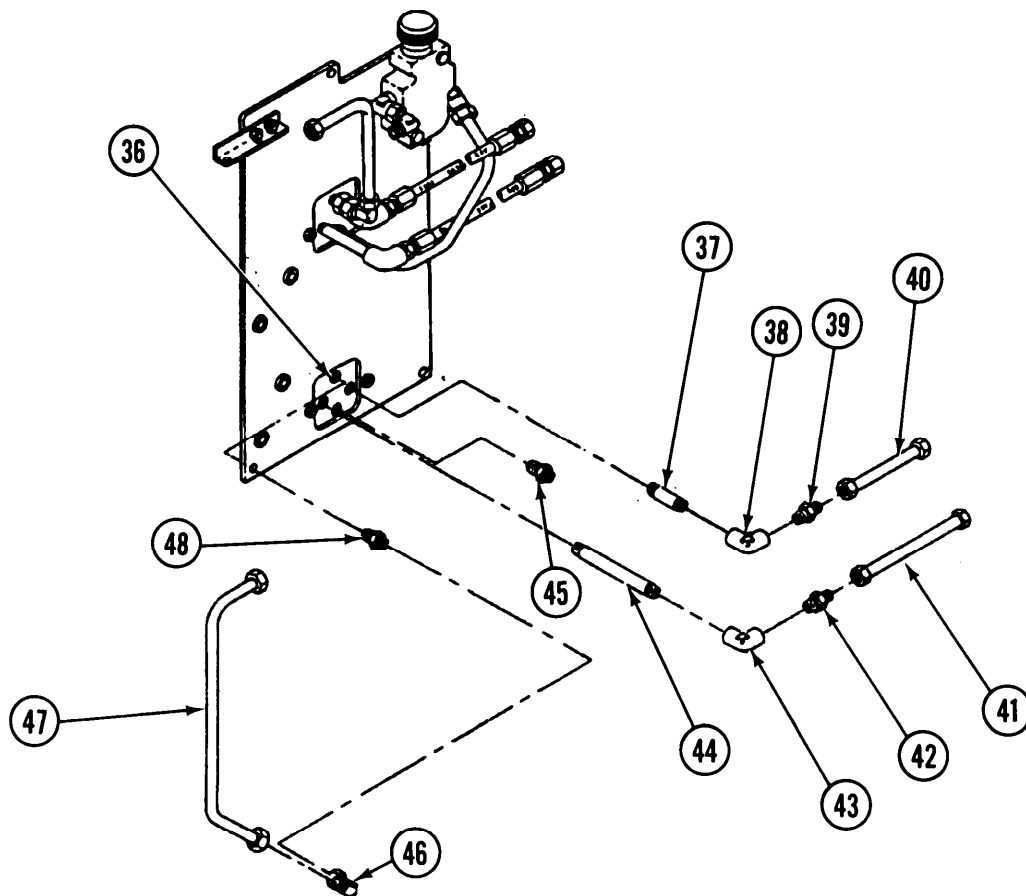
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

16. Install elbow (53) on elbow (50).
17. Install elbow (52) and adapter (64) on flow-control valve (51).
18. Install nipple (54) on hydraulic subplate (49).
19. Install elbow (55) on nipple (54).
20. Install reducer bushing (59) on hydraulic subplate (49).
21. Install elbow (58) on reducer bushing (59).
22. Install tube (25) on elbow (58).
23. Install hose (56) on elbow (55).
24. Install reducer bushing (63) on hydraulic subplate (49).
25. Install tube assembly (57) on reducer bushing (63) and elbow (52).
26. Install nipple (62) on hydraulic subplate (49).
27. Install elbow (61) on nipple (62).
28. Install hose (60) on elbow (61).



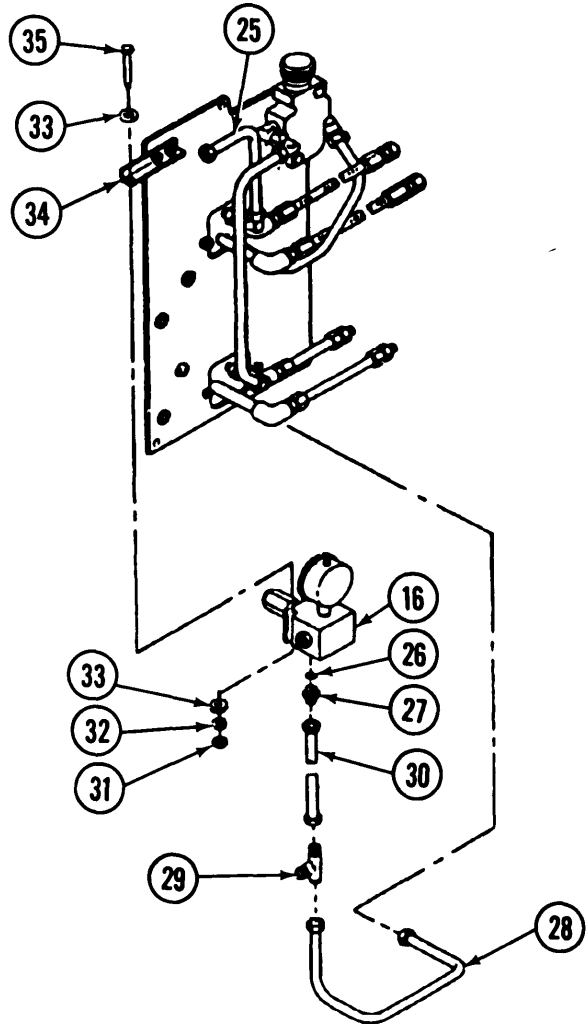
17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

29. Install nipple (37) on hydraulic subplate (36).
30. Install reducer bushing (45) on hydraulic subplate (36).
31. Install elbow (38) on nipple (37).
32. Install reducer bushing (39) on elbow (38).
33. Install tube assembly (40) on reducer bushing (39).
34. Install reducer bushing (48) on hydraulic subplate (36).
35. Install elbow (46) on reducer bushing (48).
36. Install tube assembly (47) on elbow (46).
37. Install nipple (44) on hydraulic subplate (36).
38. Install elbow (43) on nipple (44).
39. Install reducer bushing (42) on elbow (43).
40. Install tube assembly (41) on reducer bushing (42).



17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).

41. Install pressure gage assembly (16) on pressure gage bracket (34).
42. Install two screws (35), four washers (33), and two new lockwashers (32) and nuts (31) on pressure gage assembly (16).
43. Tighten connectors of tube (25).
44. Install new packing (26) and adapter (27) on pressure gage assembly (16).
45. Install tube assembly (30) on adapter (27).
46. Install tee tube (29) on tube assembly (30).
47. Install tube assembly (28) on tee tube (29) and hydraulic control panel assembly (1).



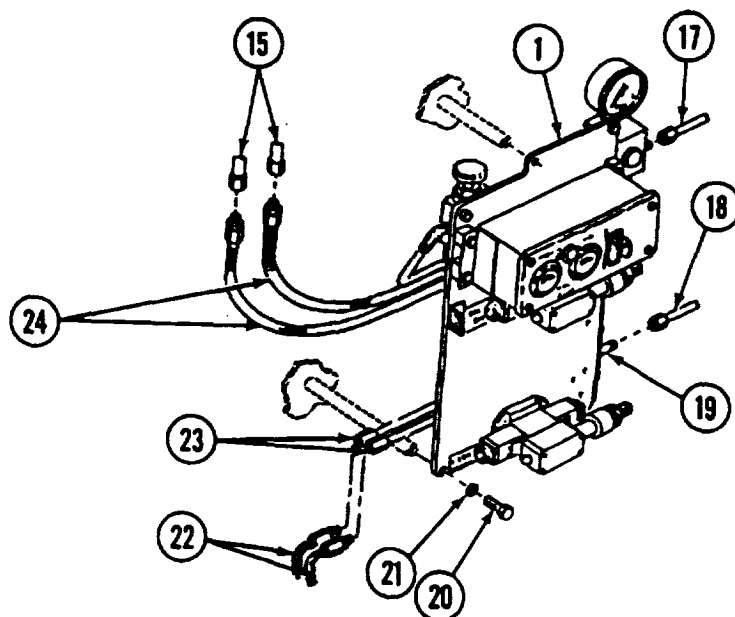
e. INSTALLATION

NOTE

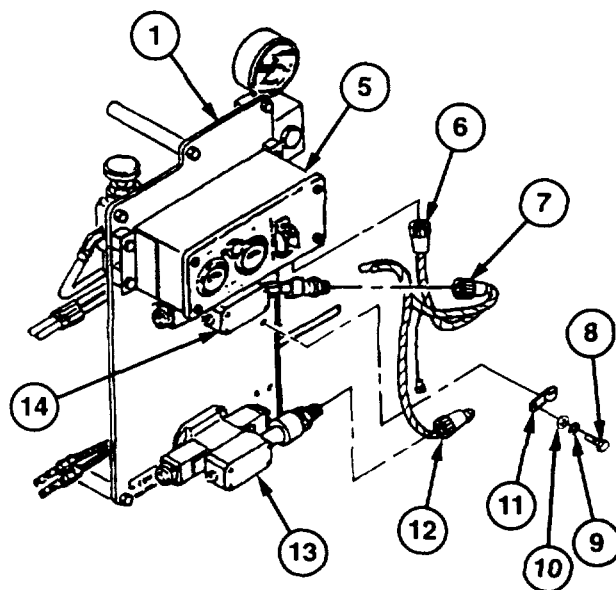
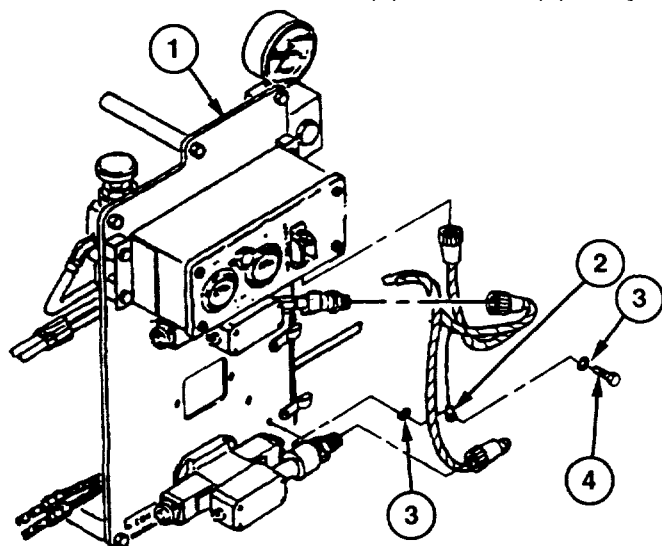
Apply Teflon pipe sealant to all male pipe threads prior to installation.

1. Install hydraulic control panel assembly (1) on vehicle.
2. Install three new backwashers (21) and three screws (20) on hydraulic control panel assembly(1).
3. Connect two ballistic shield hydraulic lines (15) to two hoses (24).
4. Connect two conveyor hydraulic lines (22) to two tube assemblies (23).
5. Connect hydraulic reservoir return line (18) to tube assembly (19).
6. Connect hydraulic fluid inlet line (17) to pressure gage assembly (16).

17-28. HYDRAULIC CONTROL PANEL ASSEMBLY REPAIR (continued).



7. Connect electrical connector (6) to hydraulic gage panel (5).
8. Connect electrical connector (12) to conveyor solenoid valve (13).
9. Connect electrical connector (7) to ballistic shield solenoid valve (14).
10. Install two straps (11), washer (10), new lockwasher (9), and screw (8) on hydraulic control panel assembly (1).
11. Connect ground wire (2) to hydraulic control panel assembly (1).
12. Install two new lockwashers (3) and screw (4) on hydraulic control panel assembly (1).



FOLLOW-ON MAINTENANCE:

- Install mounted water ration heater (MWRH) power cable (12447321) (refer to TM 9-2350-287-20-1).

17-29. UPPER REAR DOOR ACTUATOR MOUNTING BRACKET AND HYDRAULIC ACTUATOR REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)
- Plier wrench (Item 42, Appendix I) to TM 2350-287-10).

Materials/Parts:

- Cotter pin (2) (Item 26, Appendix H)
- Lockwasher (4) (Item 160, Appendix H)
- Lockwasher (4) (Item 161, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Lower rear door opened and secured (refer to TM 9-2350-287-10).
- Conveyor deployed (refer to TM 9-2350-287-10).
- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
- Upper rear door opened and secured (refer to TM 9-2350-287-10).

Personnel Required: Two**a. REMOVAL**

1. Disconnect two hydraulic lines (9) from hydraulic actuator line disconnect bracket (10).
2. Remove handle grip (21.1) from doorstop handle (20).
3. Remove four screws (19), lockwashers (18), and washers (17) and doorstop handle (20) from left and right doorstops (6). Discard lockwashers.

NOTE**Both torque plates are removed the same way.**

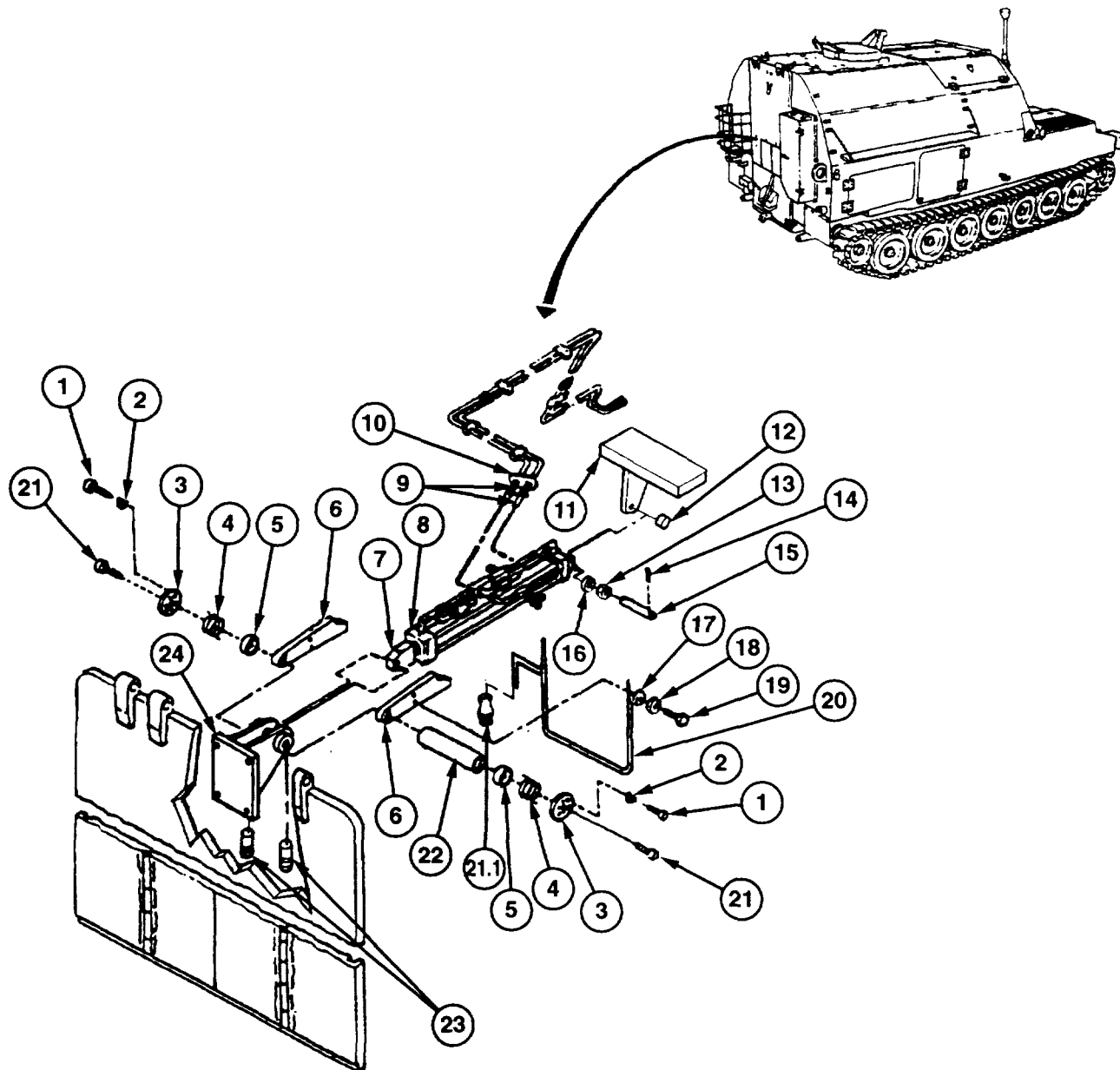
4. With plier wrench, hold torque plate (3) to prevent turning. Remove two screws (1) and lockwashers (2) from torque plate (3). Discard lockwashers.
5. Allow spring (4) to unwind.
6. Remove screw (21), torque plate (3), spring (4), and spacer (5) from end of pivot pin (22).
7. Repeat steps 3, 4, and 5 on other end of pivot pin (22).
8. Remove left and right doorstops (6) from pivot pin (22).

WARNING

Hydraulic actuator will drop when pivot pin is removed from rod eye. Keep hands and fingers clear from between actuator and top of conveyor. An assistant should support actuator while pivot pin is removed. Failure to follow this warning may result in injury to personnel.

9. While assistant supports hydraulic actuator (8), remove two setscrews (23) from upper rear door actuator mounting bracket (24) and drive pivot pin (22) out of mounting bracket (24) and hydraulic actuator rod eye (7).

17-29. UPPER REAR DOOR ACTUATOR MOUNTING BRACKET AND HYDRAULIC ACTUATOR REPLACEMENT
(continued).



- 10. While assistant supports hydraulic actuator (8), remove two cotter pins (14), actuator pin (15), and two washers (16) and spacers (13) from hydraulic actuator (8) and ceiling-mounted support bracket (11). Remove hydraulic actuator (8) from vehicle. Discard cotter pins.
- 11. Remove actuator rod eye (7) from hydraulic actuator (8).

NOTE

Perform step 11 only if bearing is damaged.

- 12. Remove bearing (12) from ceiling-mounted support bracket (11).

17-29. UPPER REAR DOOR ACTUATOR MOUNTING BRACKET AND HYDRAULIC ACTUATOR REPLACEMENT (continued).

b. INSTALLATION**NOTE**

Perform step 1 only if bearing was damaged.

1. Install bearing (12) in ceiling-mounted support bracket (11).
2. Install actuator rod eye (7) on hydraulic actuator (8).
3. With the aid of an assistant, position hydraulic actuator (8) in vehicle with actuator rod eye (7) facing mounting bracket (24). Allow hydraulic actuator (8) to rest on conveyor assembly.
4. While assistant supports hydraulic actuator (8), install two washers (16) and spacers (13) and hydraulic actuator (8) in ceiling-mounted support bracket (11) with actuator pin (15).
5. With the aid of an assistant, install two new cotter pins (14) in actuator pin (15).

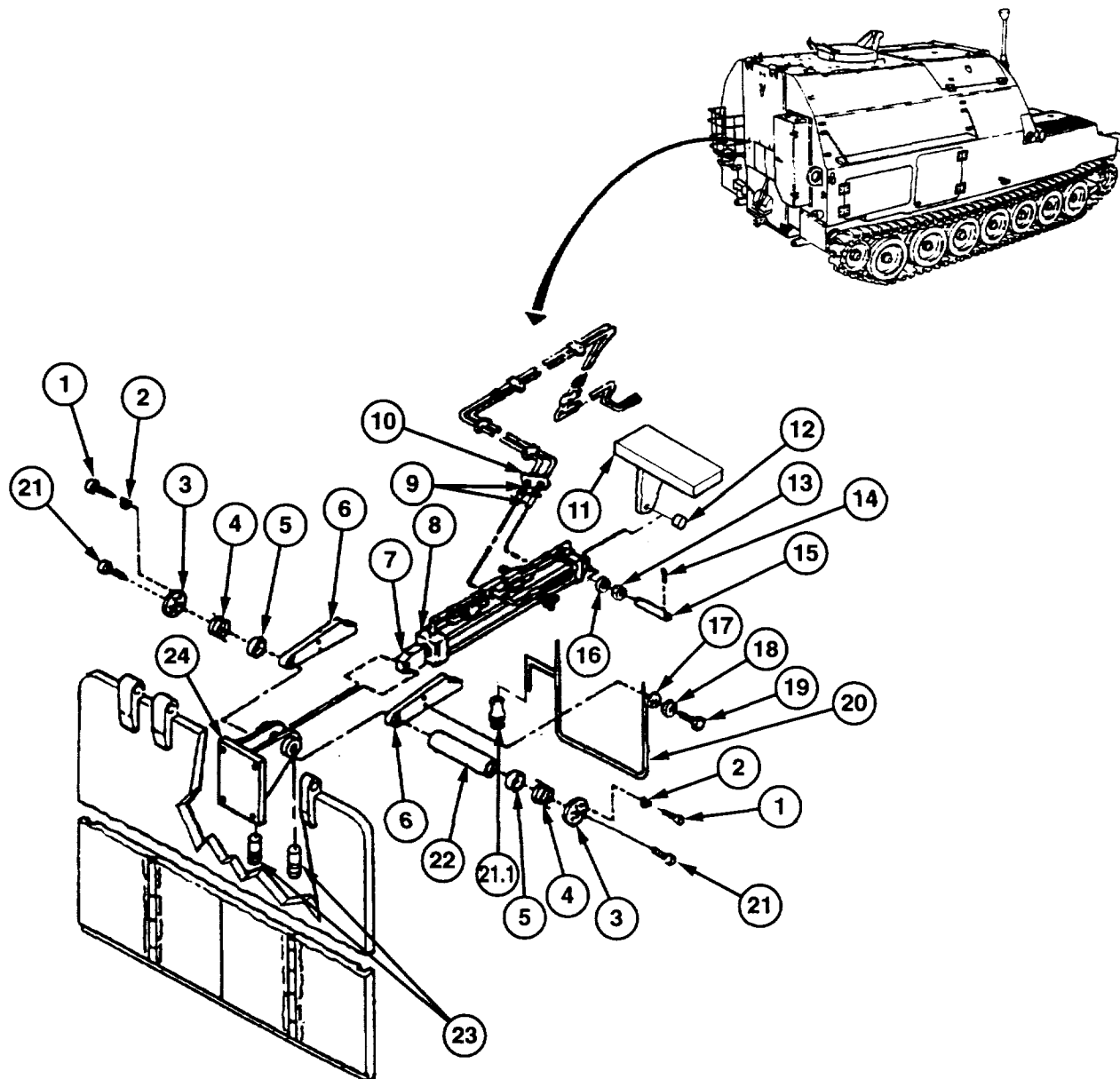
NOTE

Flats on pivot pin must line up with setscrew holes in mounting bracket.

6. While assistant supports hydraulic actuator (8), install hydraulic actuator (8) on mounting bracket (24) with pivot pin (22).
7. Install two setscrews (23) in mounting bracket (24).
8. Install spacer (5) and spring (4) on left end of pivot pin (22).
9. Install left doorstop (6) on left end of pivot pin (22), so one end of spring (4) fits through doorstop (6).
10. Install torque plate (3) on left end of pivot pin (22), and press end of spring (4) into hole in torque plate (3).
11. Install screw (21) on pivot pin (22) and torque plate (3).
12. Using plier wrench, rotate torque plate (3) clockwise one full turn to load spring (4).
13. While holding torque plate (3) and spring (4) in loaded position, install torque plate (3) on pivot pin (22) with two screws (1) and new lockwashers (2).

17-29. UPPER REAR DOOR ACTUATOR MOUNTING BRACKET AND HYDRAULIC ACTUATOR REPLACEMENT (continued).

14. Repeat steps 8 through 13 on right side of pivot pin (22).
15. Install doorstop handle (20) on left and right doorstops (6) with four screws (19), new lockwashers (18), and washers (17).
16. Install handle grip (21.1) on doorstop handle (20).
17. Connect two hydraulic lines (9) to hydraulic actuator line disconnect bracket (10).



FOLLOW-ON MAINTENANCE:

- Stow conveyor (refer to TM 9-2350-287-10).
- Close lower rear door (refer to TM 9-2350-287-10).
- Close upper rear door (refer to TM 9-2350-287-10).

17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)

- Lockwasher (6) (Item 196, Appendix H)

Equipment Conditions:

- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
- Hydraulic actuator removed (para 17-29).
- Left stowage net removed (para 15-73).

a. REMOVAL**WARNING**

To avoid possible injury, make sure all systems are shut down. Hydraulic fluid may be hot and can cause burns.

CAUTION

To prevent contamination of hydraulic system, cap hydraulic lines and ports immediately after disconnecting lines.

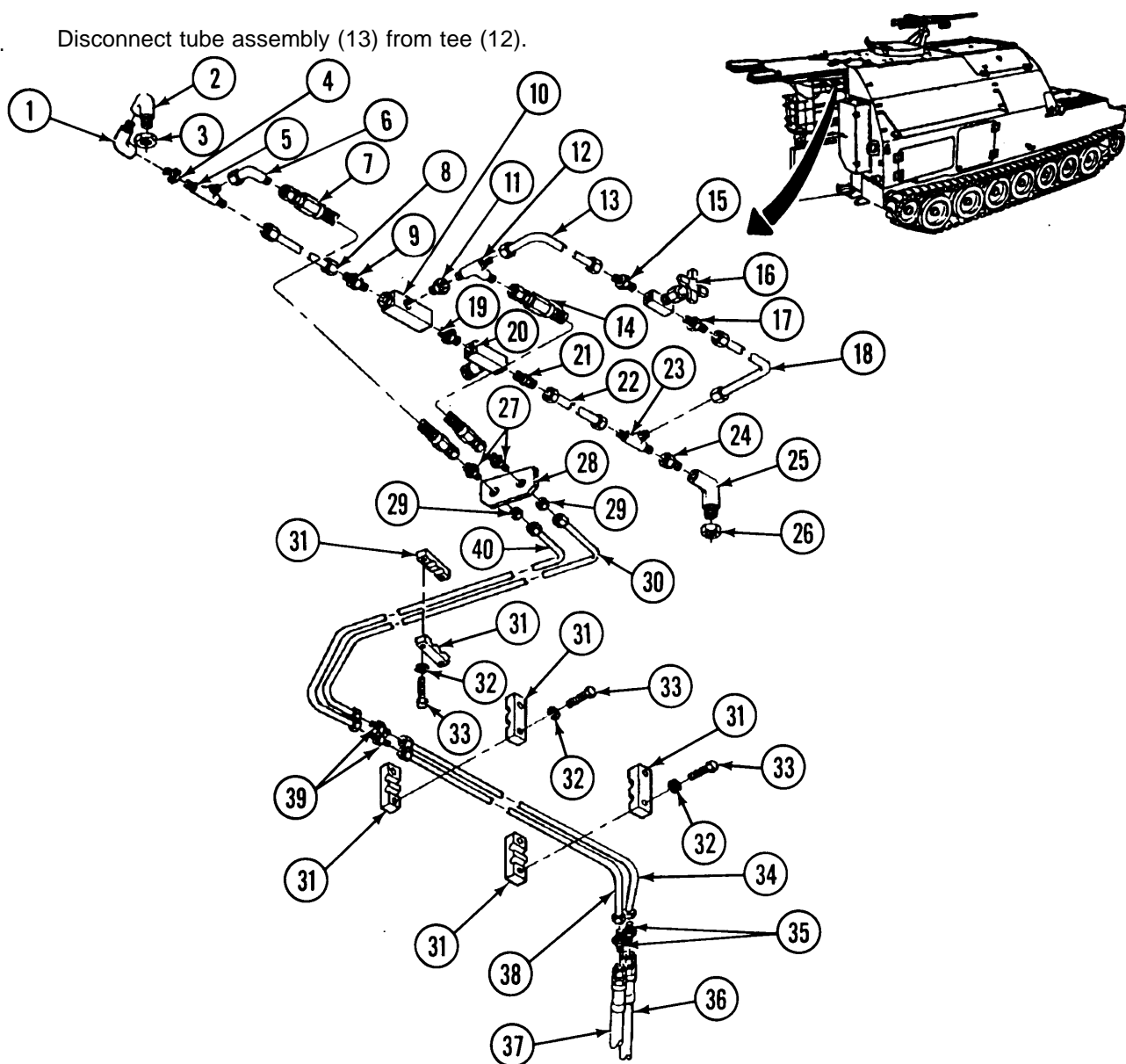
NOTE

Tag position and location of components prior to removal.

1. Remove two screws (33) and lockwashers (32) from each of three clamps (31). Discard lockwashers.
2. Remove three clamps (31) from two tube assemblies (34 and 38) and tube assemblies (30 and 40).
3. Disconnect two hoses (36 and 37) from two tube nipples (35).
4. Remove two nipples (35) from two tube assemblies (34 and 38).
5. Disconnect two tube assemblies (34 and 38) from two tube nipples (39).
6. Remove two tube nipples (39) from two tube assemblies (30 and 40).
7. Disconnect two tube assemblies (30 and 40) from two tube nipples (27).
8. Remove two nuts (29) from two tube nipples (27).
9. Disconnect two hose assemblies (7 and 14) from ceiling bracket (28).

17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS REPLACEMENT (continued).

10. Remove two tube nipples (27) from two hose assemblies (7 and 14).
11. Disconnect hose assembly (7) from elbow (6).
12. Disconnect hose assembly (14) from tee (12).
13. Remove elbow (6) from tee (5).
14. Disconnect tube assembly (18) from adapter (17) and tee (22).
15. Remove adapter (17), valve (16), and adapter (15) from tube assembly (13).
16. Disconnect tube assembly (13) from tee (12).



**17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS
REPLACEMENT (continued).**

17. Loosen tube assembly (8). Loosen locking nut (3), and turn elbow (2) to disconnect tube assembly (8). Disconnect tube assembly (8) from adapter (9).
18. Remove locking nut (3) from elbow (2).
19. Remove elbow (2) from elbow (1).
20. Remove elbow (1) from adapter (4).
21. Remove adapter (4) from tee (5).
22. Remove tee (5) from tube assembly (8).
23. Remove tee (12) from adapter (11).
24. Remove adapter (9) and adapter (11) from pilot check valve (10).
25. Remove pilot check valve (10) from adapter (1 9).
26. Remove adapter (19) from flow-control valve (20).
27. Remove flow-control valve (20) from connector (21).
28. Remove connector (21) from tube assembly (22).
29. Disconnect tube assembly (22) from tee (23).
30. Remove tee (23) from adapter (24).
31. Remove adapter (24) from elbow (25).
32. Remove elbow (25) from nut (26).

b. INSTALLATION

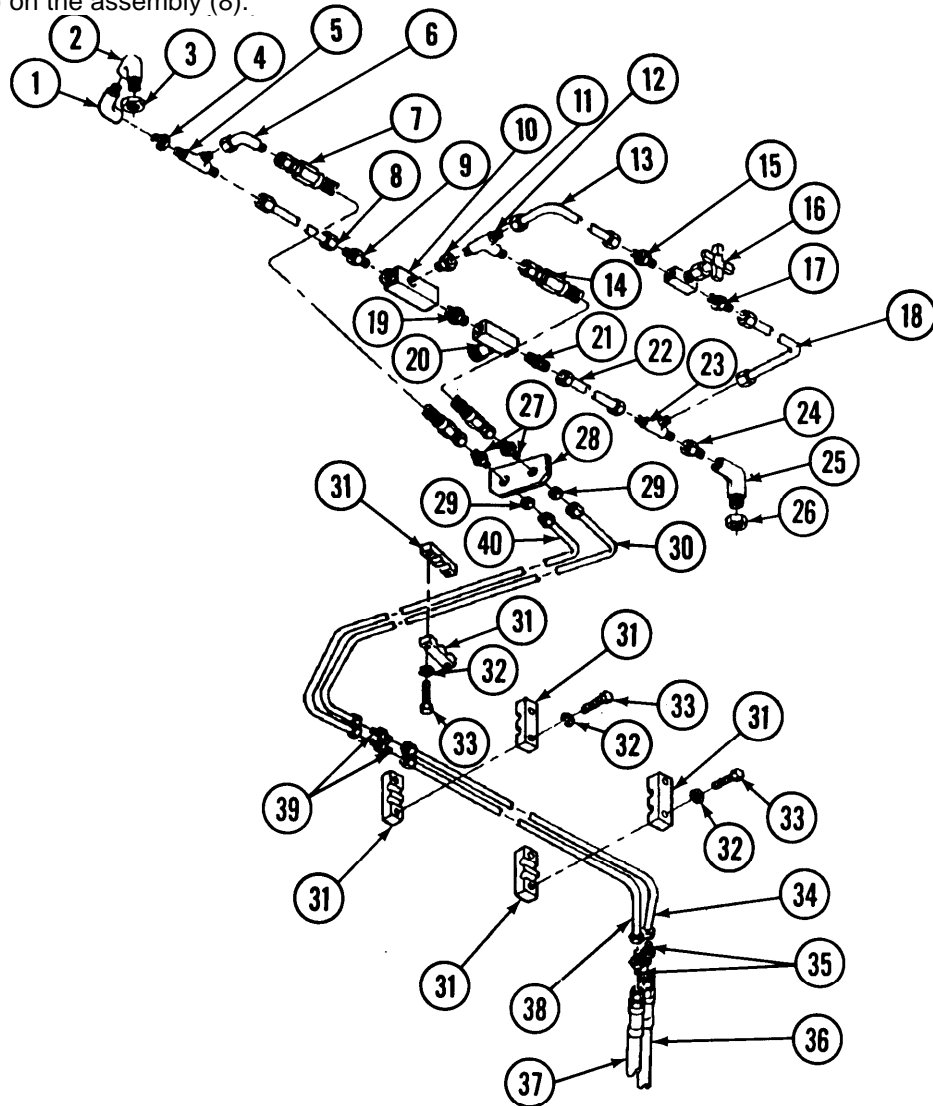
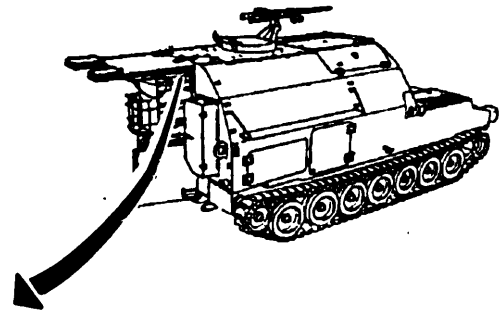
NOTE

Apply Teflon pipe sealant to all male pipe threads prior to installation.

1. Install control valve (20) with metered flow arrow pointing toward rear of vehicle.
2. Install pilot check valve (1 O) with free flow arrow pointing toward front of vehicle.
3. Install nut (26) on elbow (25).
4. Install adapter (24) on elbow (25).
5. Install tee (23) on adapter (24).

17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS REPLACEMENT (continued).

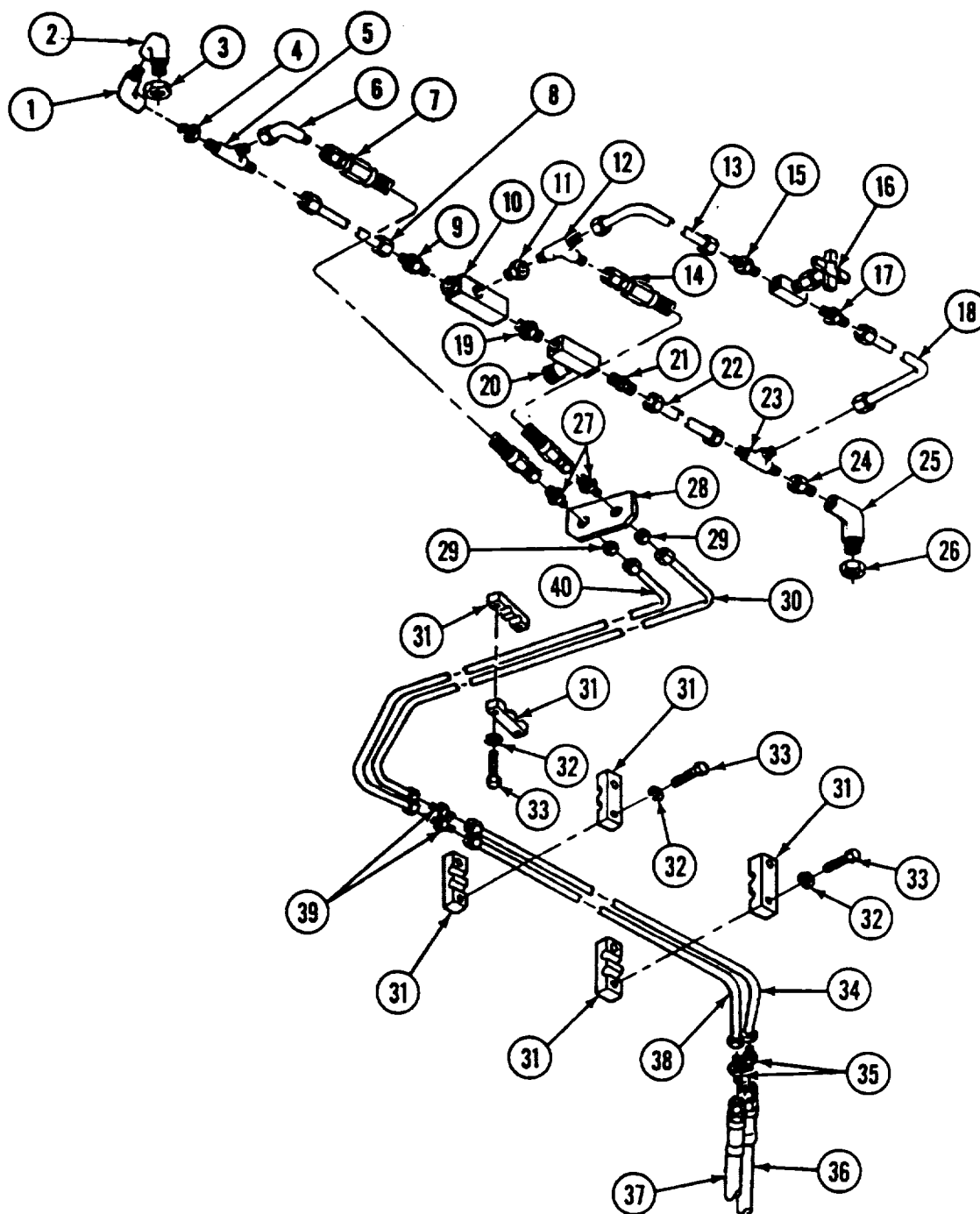
6. Install tube assembly (22) on tee (23).
7. Install connector (21) on tube assembly (22).
8. Install flow-control valve (20) on connector (21).
9. Install adapter (19) on flow-control valve (20).
10. Install pilot check valve (10) on adapter(19).
11. Install adapter (9) on pilot check valve (10).
12. Install adapter (11) on pilot check valve (10).
13. Install tee (12) on adapter (11).
14. Install tee (5) on the assembly (8).



17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS REPLACEMENT (continued).

15. Install adapter (4) on tee (5).
16. Install elbow (1) on adapter (4).
17. Install elbow (2) on elbow (1).
18. Install self-locking nut (3) on elbow (2).
19. Install tube assembly (8) on adapter (9). Connect tube assembly (8) by turning elbow (2) and tightening self-locking nut (3). Tighten tube assembly (8).
20. Install tube assembly (13) on tee (12).
21. Install adapter (15) on tube assembly (1 3).
22. Install valve (16) on adapter (1 3).
23. Install adapter (17) on valve (16).
24. Install tube assembly (18) on adapter (17) and tee (23).
25. Install elbow (6) on tee (5).
26. Install hose assembly (7) on elbow (6).
27. Install hose assembly (14) on tee (12).
28. Install two tube nipples (27) on two hose assemblies (7 and 14).
29. Connect two hose assemblies (7 and 14) to ceiling bracket (28).
30. Install two nuts (29) on two hose assemblies (7 and 14).
31. Install two tube assemblies (30 and 40) on two nuts (29).
32. Install two tube nipples (39) on two tube assemblies (30 and 40).
33. Install two tube assemblies (34 and 38) on two tube nipples (39).
34. Install two tube nipples (35) on two tube assemblies (34 and 38).
35. Connect two hoses (36 and 37) to two tube nipples (35).
36. Install three clamps (31) on two tube assemblies (34 and 38) and tube assemblies (30 and 40).
37. Install two new lockwashers (32) and screws (33) on each of three clamps (31).

17-30. UPPER REAR DOOR HYDRAULIC ACTUATOR TUBES, HOSES, AND FITTINGS REPLACEMENT
(continued).



FOLLOW-ON MAINTENANCE:

- Install hydraulic actuator (para 17-29).
- Install left stowage net (15-73).

17-31. HYDRAULIC FILTER AND FILLER CAP REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)
- Strap wrench (Item 66, Appendix I) (refer to TM 9-2350-287-10).

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Filter element assembly (Item 43, Appendix H)

- Gasket (Item 78, Appendix H)
- Lockwasher (2) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground
 - Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
 - Right projectile rack assembly removed (para 15-83).
-

a. REMOVAL**WARNING**

To avoid possible injury, make sure all systems are shut down and MASTER switch is set to OFF. Hydraulic fluid may be hot and can cause burns.

CAUTION

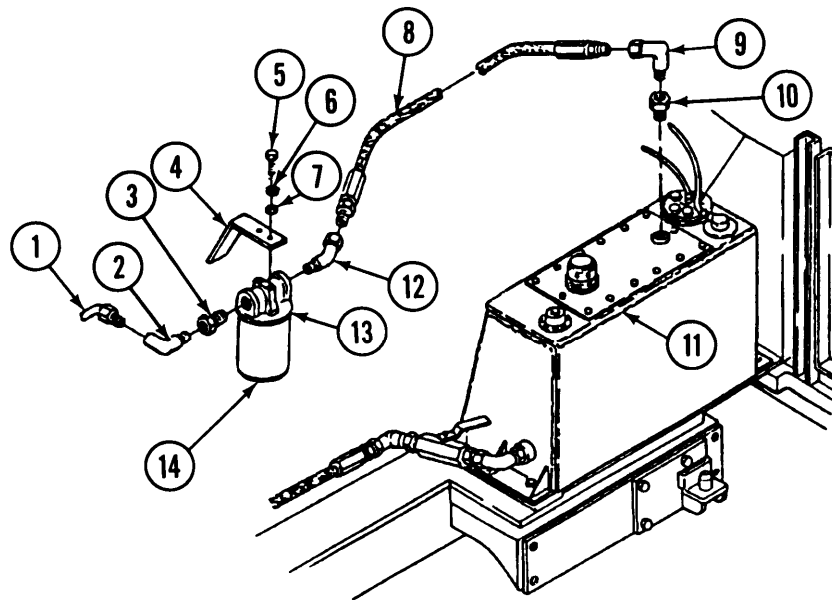
To prevent contamination of hydraulic system, cap hydraulic lines and ports immediately after disconnecting lines.

NOTE

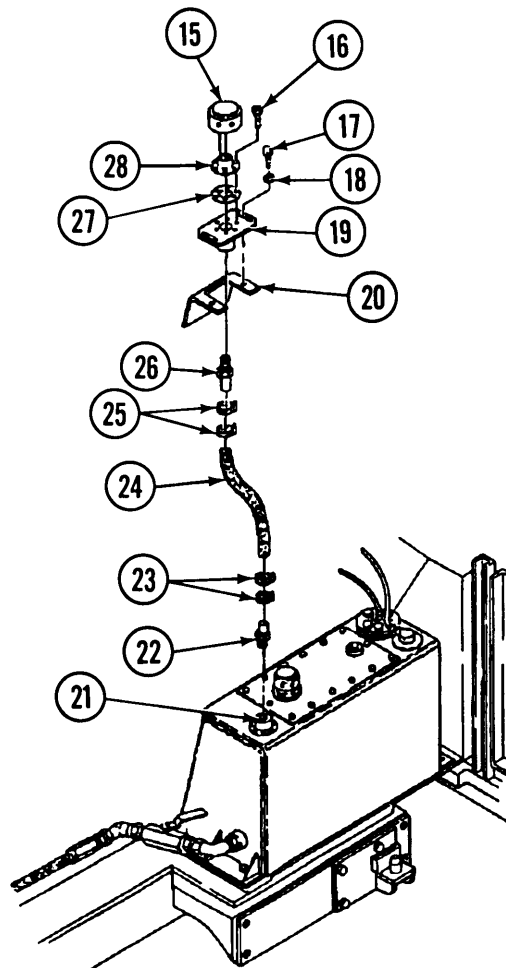
If replacing filter element only, perform steps 1 and 2 only.

1. Place drain pan under fluid filter (13).
2. Remove filter element (14) from fluid filter (13). Discard filter element.
3. Remove elbow (9) and pipe bushing (10) from hydraulic reservoir access cover (11).
4. Disconnect hose assembly (8) from two elbows (9 and 12). Remove elbow (12) from filter (13).
5. Remove tube (1), elbow (2), and reducer bushing (3) from filter (13).
6. Remove two screws (5), lockwashers (6), and washers (7) from bracket (4). Discard lockwashers.
7. Remove filter (13) from bracket (4).

17-31. HYDRAULIC FILTER AND FILLER CAP REPLACEMENT (continued).



8. Remove two screws (17) and washers (18) from plate (19).
9. Remove plate (19) from bracket (20).
10. Remove two clamps (23) from hose (24) and pull hose (24) from fitting (22).
11. Remove fitting (22) from flange (21).
12. Remove two clamps (25) from hose (24) and pull hose (24) from fitting (26).
13. Pull off cap (15) from plate (19) and remove six screws (16) from plate (19).
14. Remove filler flange (28) and gasket (27) from plate (19). Discard gasket.
15. Remove fitting (26) from plate (19).



17-31. HYDRAULIC FILTER AND FILLER CAP REPLACEMENT (continued).

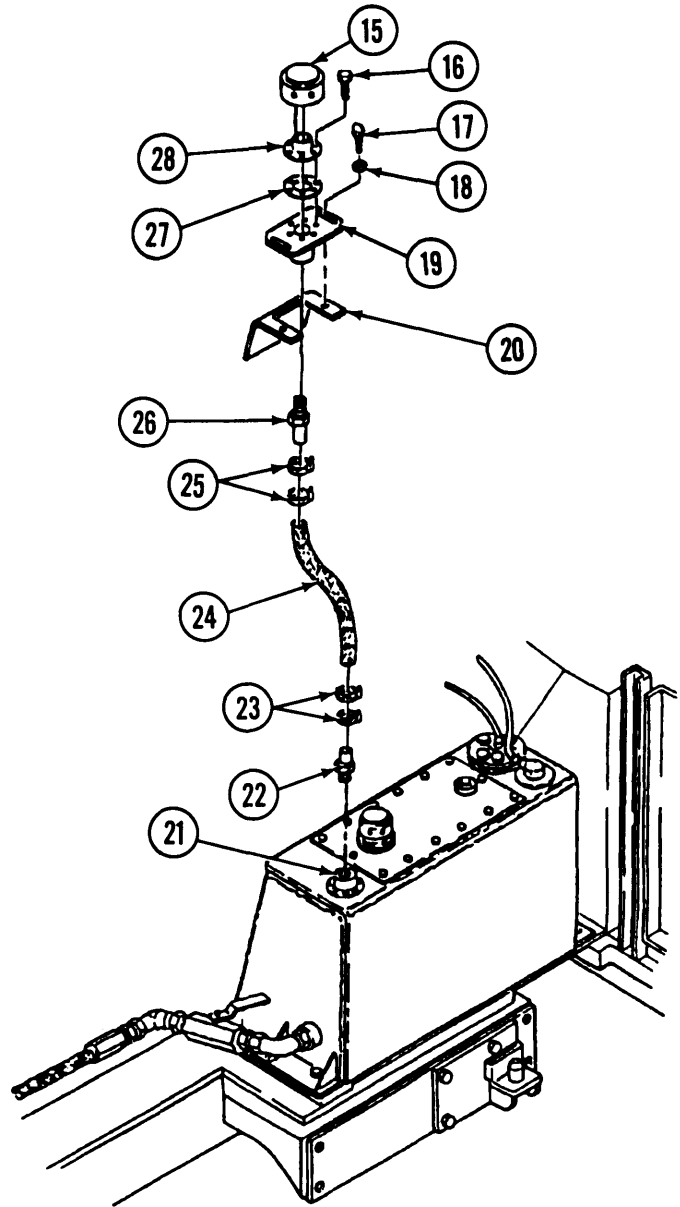
b. INSTALLATION

NOTE

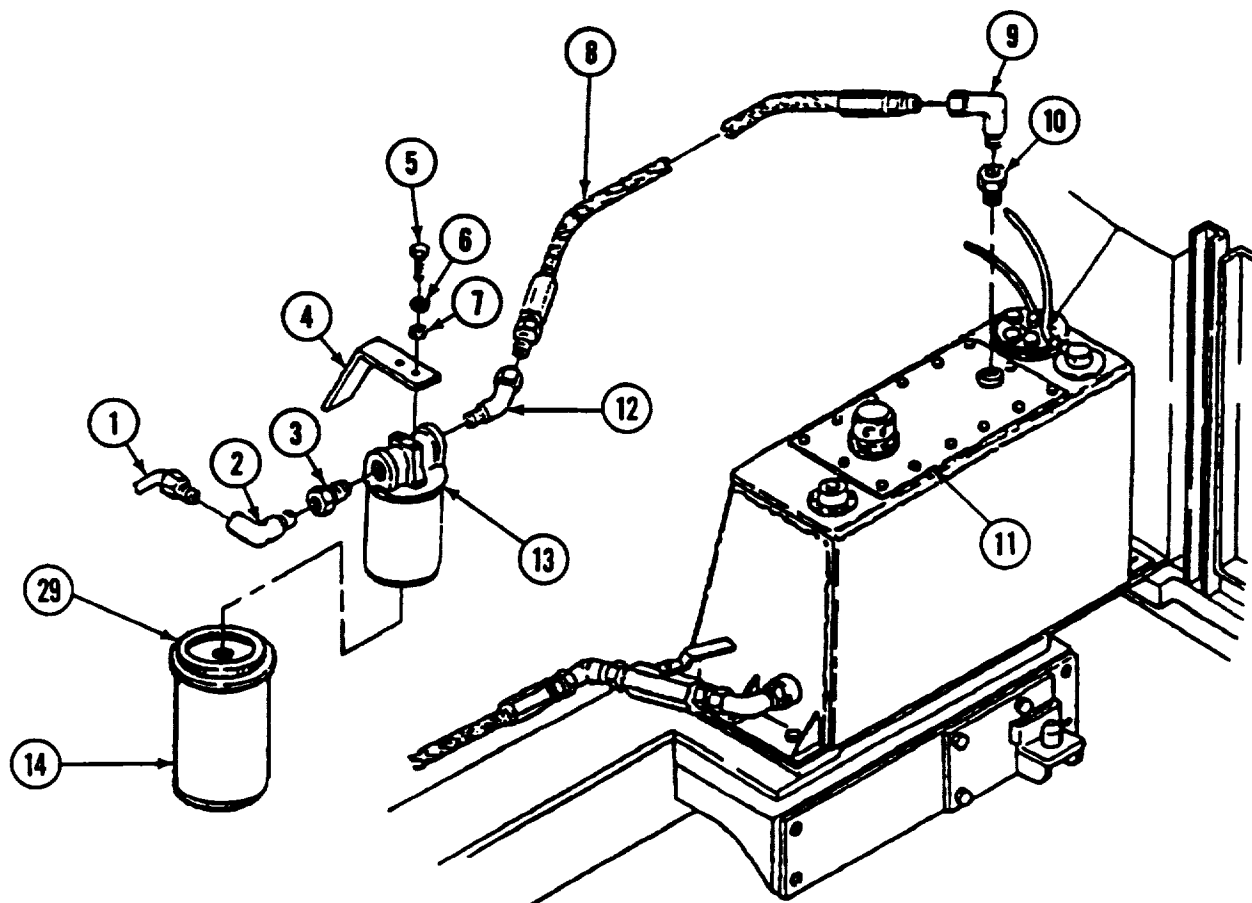
If replacing filter element only, perform steps 14 through 16 only.

Apply Teflon pipe sealant to all male pipe threads prior to installation.

1. Install fitting (26) on plate (19).
2. Install new gasket (27) and filler flange (28) on plate (19).
3. Install six screws (16) on plate (19). Install cap (15) on plate (19).
4. Connect hose (24) to fitting (26) and install two clamps (25) on hose (24).
5. Install fitting (22) on flange (21).
6. Connect hose (24) to fitting (22) and install two clamps (23) on hose (24).
7. Install plate (19) on bracket (20).
8. Install two washers (18) and screws (17) on plate (19).
9. Install filter (13) on bracket (4).
10. Install two washers (7), new lockwashers (6), and screws (5) on bracket (4).
11. Install reducer bushing (3), elbow (2), and tube (1) on fitter (13).
12. Install elbow (12) on fitter (13). Connect hose assembly (8) to two elbows (9 and 12).
13. Install pipe bushing (10) and elbow (9) on hydraulic reservoir access cover (11).
14. Apply light coat of oil to gasket (29) on new filter element (14).
15. Install new filter element (14) on fluid filter (13) and hand-tighten.
16. Operate APU (refer to TM 9-2350-282-10), and check fluid filter (13) for leaks.



17-31. HYDRAULIC FILTER AND FILLER CAP REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install right projectile rack assembly (para 15-83).

17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial setup:

Tools/Test Equipment:

- Automotive adjustable wrench (Item 4, Appendix I)
- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Lockwasher (6) (Item 196, Appendix H)
- Tiedown strap (as required) (Item 373, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
 - Left projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).
 - Heating and ventilating ducts removed (para 16-2).
 - Hydraulic ball valve closed (refer to TM 9-2350-287-10).
 - Crew AFES cylinder bottle No. 4 bracket removed (para 21-7).
-

a. REMOVAL

WARNING

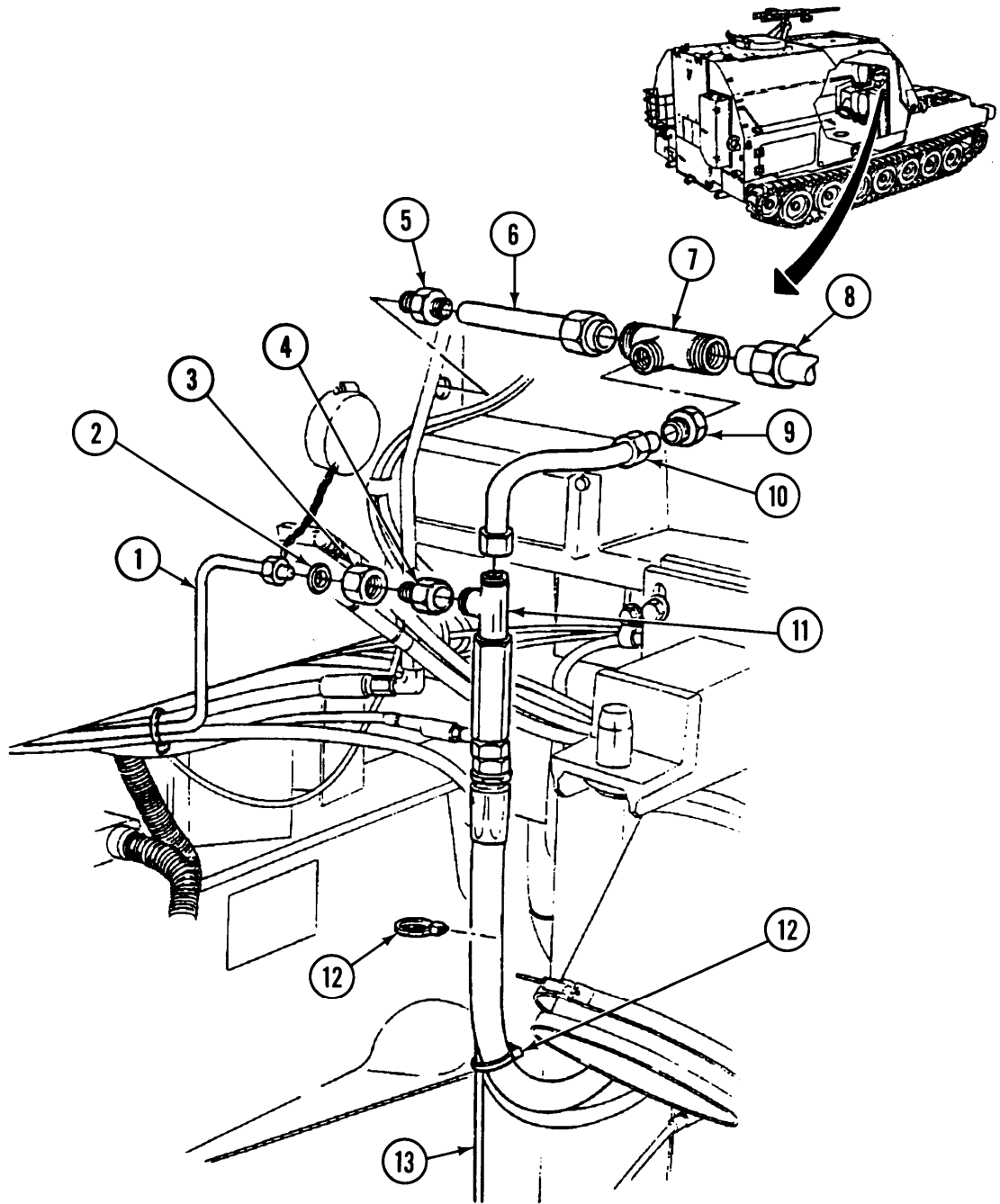
- **To avoid possible injury, make sure all systems are shut down and MASTER switch is set to OFF. Hydraulic fluid may be hot and can cause burns.**
- **System contains hydraulic oil under high pressure. Never disconnect a hydraulic hose or fitting without first dropping pressure to zero. A high-pressure oil stream can pierce the body and cause severe injury.**

CAUTION

To prevent contamination of hydraulic system, cap hydraulic lines and ports immediately after disconnecting lines.

1. Place drain pan under hose assembly (8).
2. Disconnect hose assembly (8) from tee (7).
3. Disconnect tube assembly (10) from reducer (9) and tee (11).
4. Remove tee (7) and tube assembly (6) from nipple (5) on bulkhead.
5. Remove reducer (9) and tee (7) from tube assembly (6).
6. Disconnect tube assembly (1), sleeve (2), and nut (3) from reducer (4), and remove reducer (4) from tee (11).

17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).



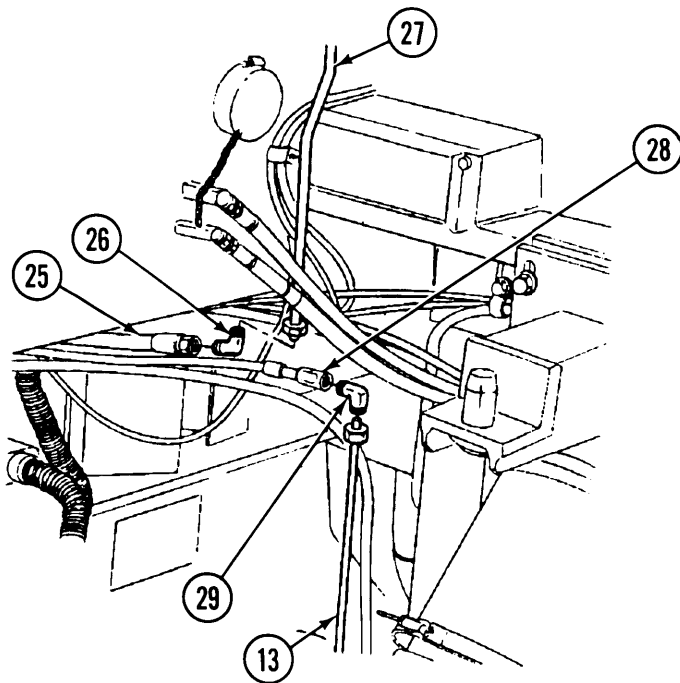
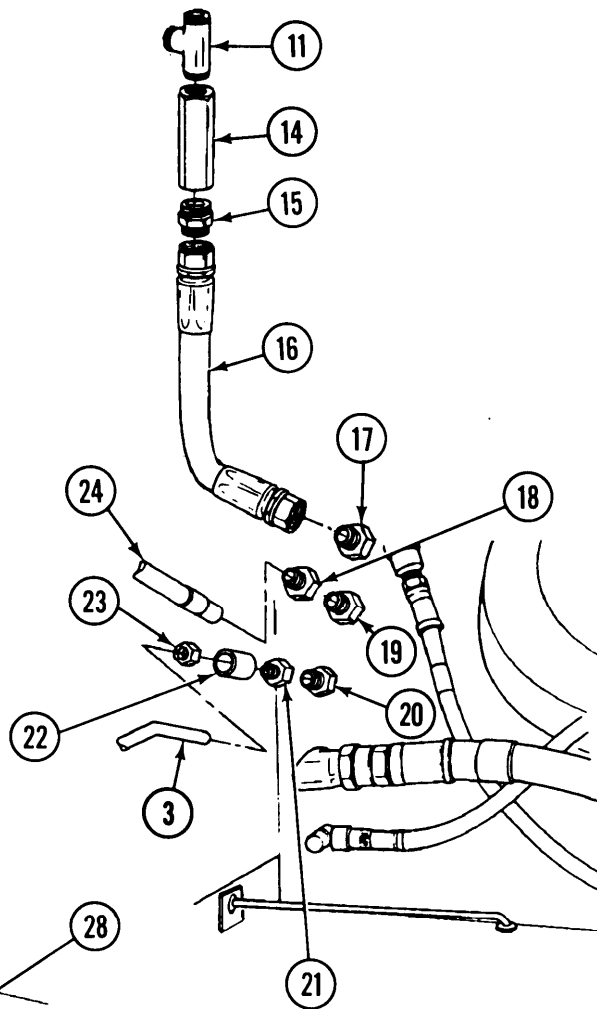
NOTE

Number of tiedown straps may vary.

7. Remove tiedown straps (12) securing two tube assemblies (1 and 13). Discard tiedown straps.

17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

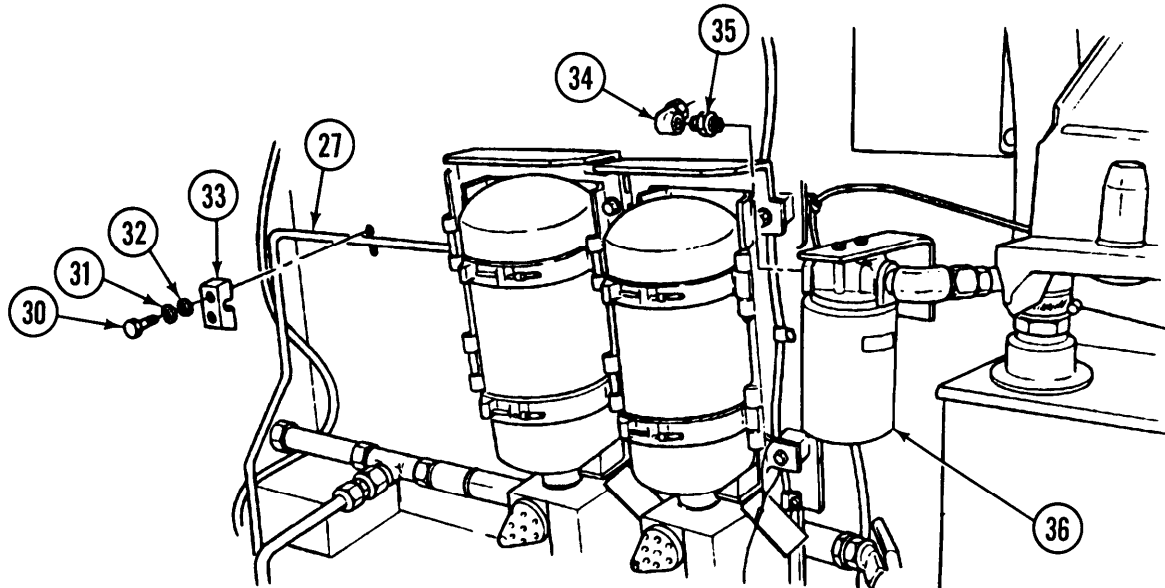
8. Remove hose assembly (16), with tee (11), connector (14), and adapter (15) attached, from bulkhead adapter (17).
9. Remove tee (11) from connector (14).
10. Remove connector (14) and adapter (15) from hose assembly (16).
11. Disconnect tube assembly (13), nut (23), and sleeve (22) from reducer (21).
12. Remove reducer (21) from bulkhead adapter (20).
13. Disconnect hose assembly (24) from reducer (18).
14. Remove reducer (18) from bulkhead adapter (19).



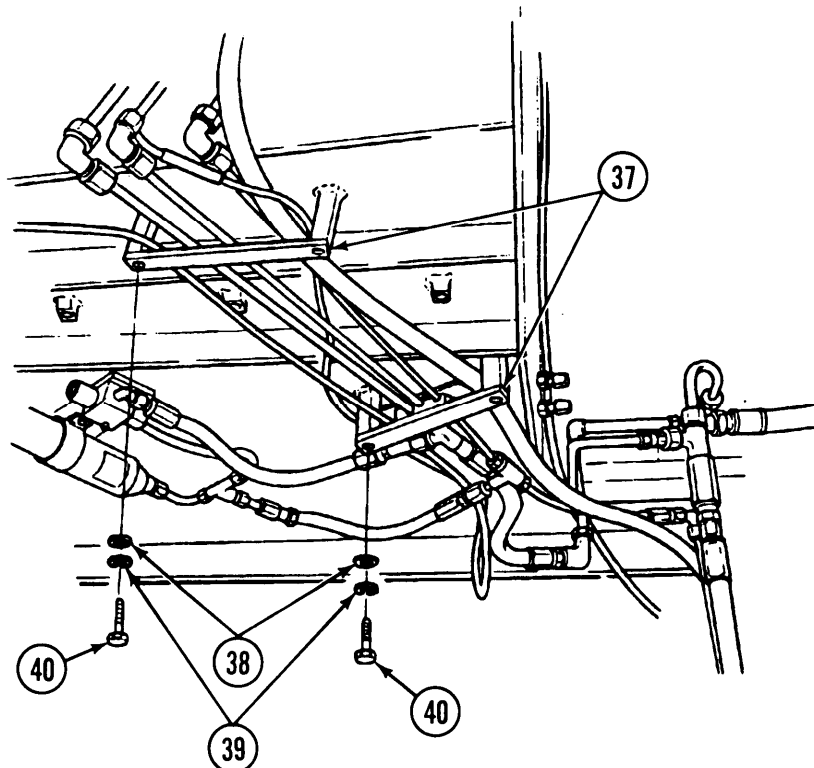
15. Disconnect tube assembly (13) from elbow (29) on hose assembly (28), and remove tube assembly (13) from vehicle.
16. Disconnect tube assembly (27) from elbow (26) on hose assembly (25).

17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

17. Remove two screws (30), lockwashers (31), and washers (32) and clamp (33) from tube assembly (27). Discard lockwashers.
18. Disconnect tube assembly (27) from elbow (34), and remove elbow (34) and bushing (35) from filter assembly (36).



19. Remove four screws (40), lockwashers (39), and washers (38) and two brackets (37) from under APU compartment. Discard lockwashers.



17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

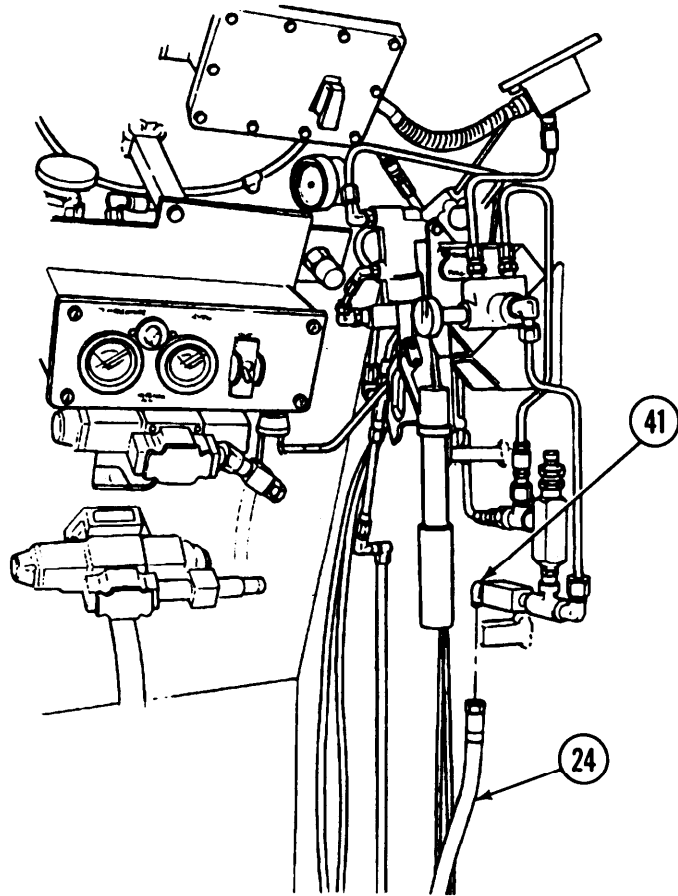
20. Disconnect hose assembly (24) from elbow (41), and remove hose assembly (24) from vehicle.

b. **INSTALLATION**

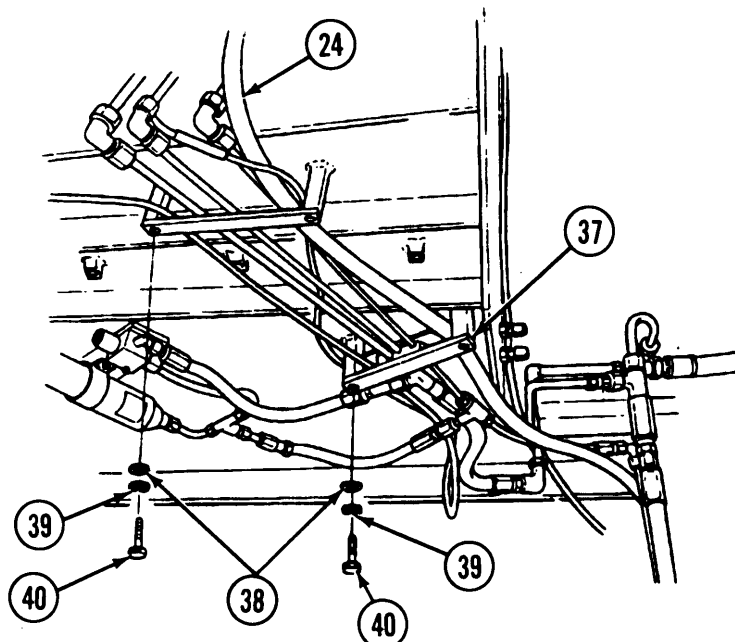
NOTE

Teflon pipe sealant must be applied to threads of all male fittings at installation.

1. Connect hose assembly (24) to elbow (41).

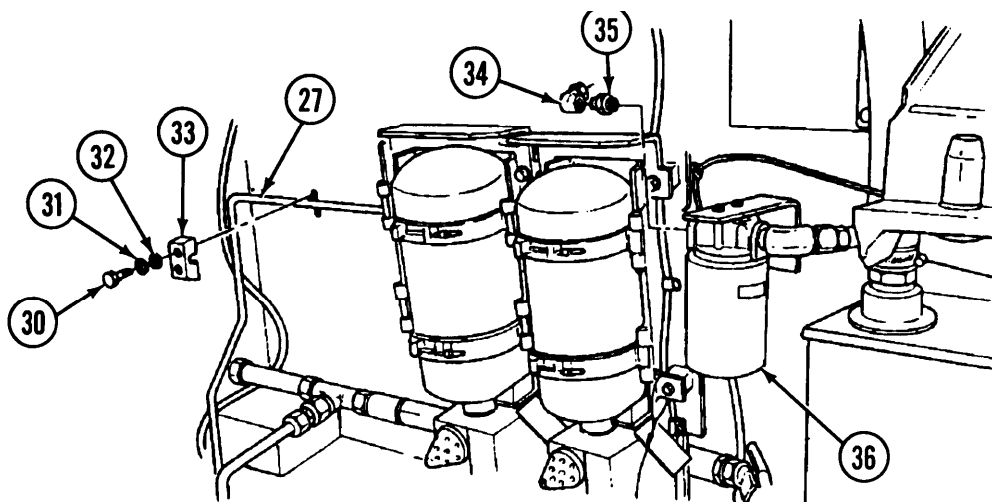


2. Secure hose assembly (24) under APU compartment with two brackets (37) and four washers (38), new lockwashers (39), and screws (40).



17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

3. Install bushing (35) and elbow (34) in filter assembly (36).
4. Connect tube assembly (27) to elbow (34).
5. Secure tube assembly (27) to hull with clamp (33) and two washers (32), new lockwashers (31), and screws (30).

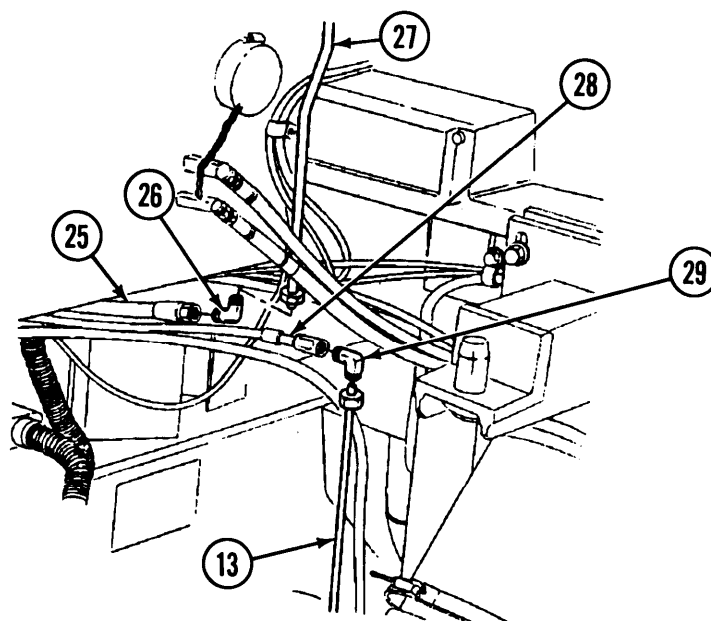


6. Connect tube assembly (27) to elbow (26) on hose assembly (25).

NOTE

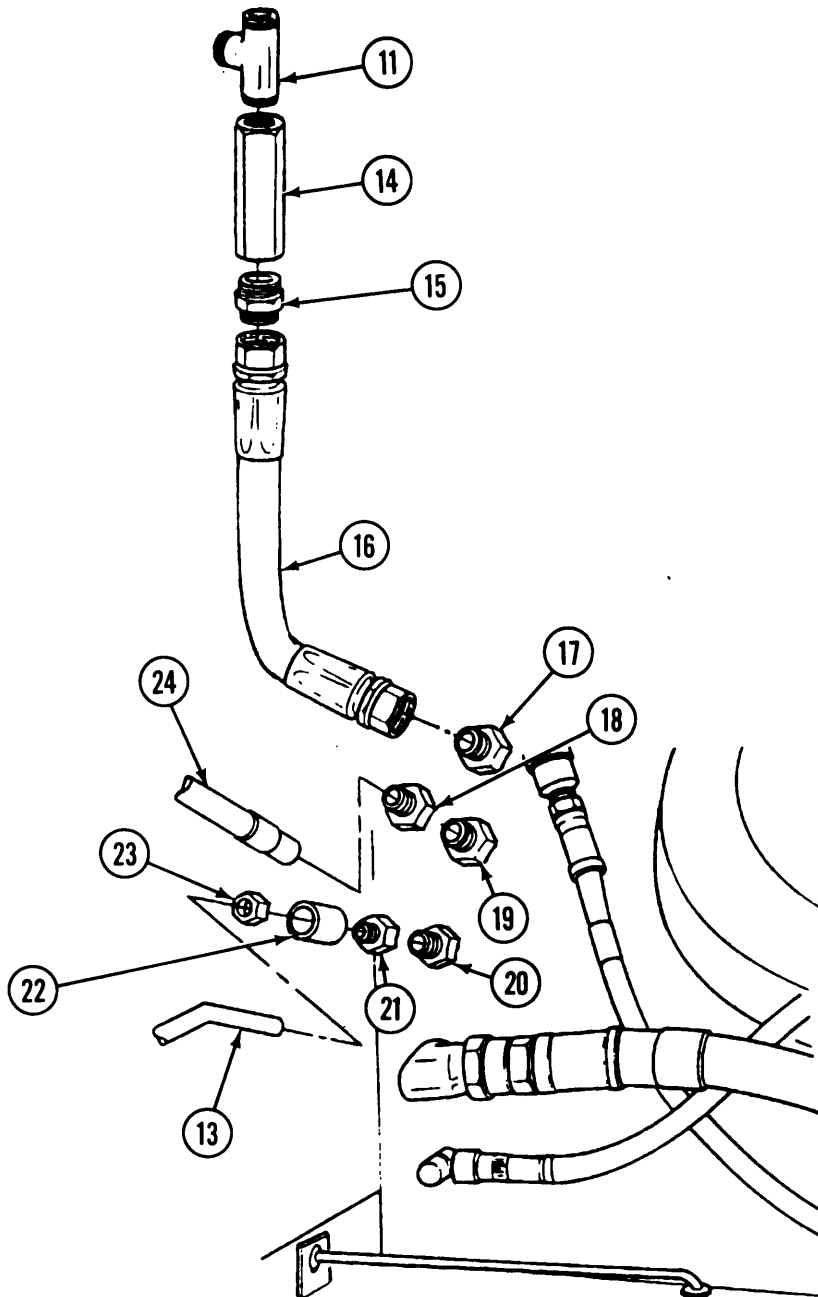
Tighten connections finger-tight until both ends of tube assembly are connected. Connections may have to be loosened to ensure proper fit of tube assemblies.

7. Connect tube assembly (13) to elbow (29) on hose assembly (28).



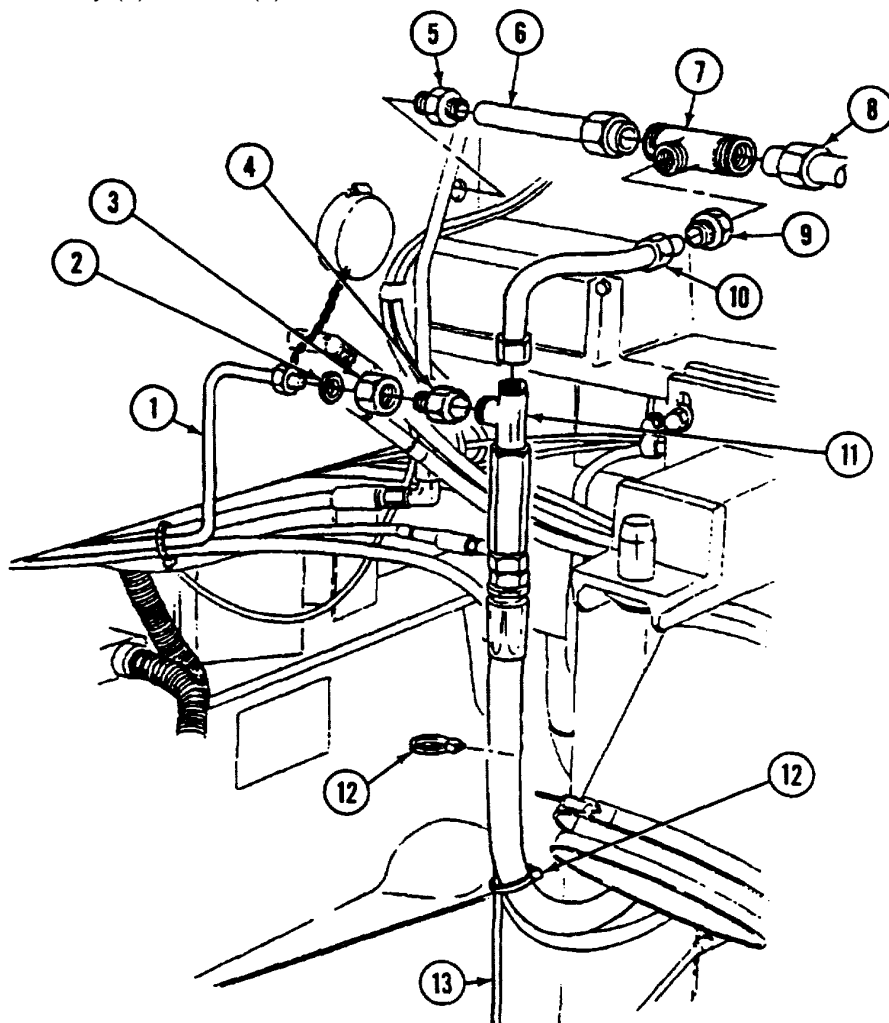
17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

8. Install reducer (21) on bulkhead adapter (20).
9. Connect tube assembly (13) to reducer (21) with sleeve (22) and nut (23).
10. Connect reducer (18) and hose assembly (24) to bulkhead adapter (19).
11. Connect hose assembly (16) to bulkhead adapter (17).
12. Install adapter (15), connector (14), and tee (11) on hose assembly (16).



17-32. HYDRAULIC SUCTION AND RETURN LINES REPLACEMENT (continued).

13. Install reducer (4) on tee (11).
14. Connect nut (3), sleeve (2), and tube assembly (1) to tee (11).
15. Secure two hose assemblies (16 and 24) to two tube assemblies (1 and 13) with electrical tiedown straps (12).
16. Install reducer (9) and tee (7) on tube assembly (6).
17. Install tube assembly (6), with tee (7) and reducer (9) attached, to nipple (5) on bulkhead.
18. Connect tube assembly (10) to tee (11) and reducer (9).
19. Connect hose assembly (8) and tee (7).

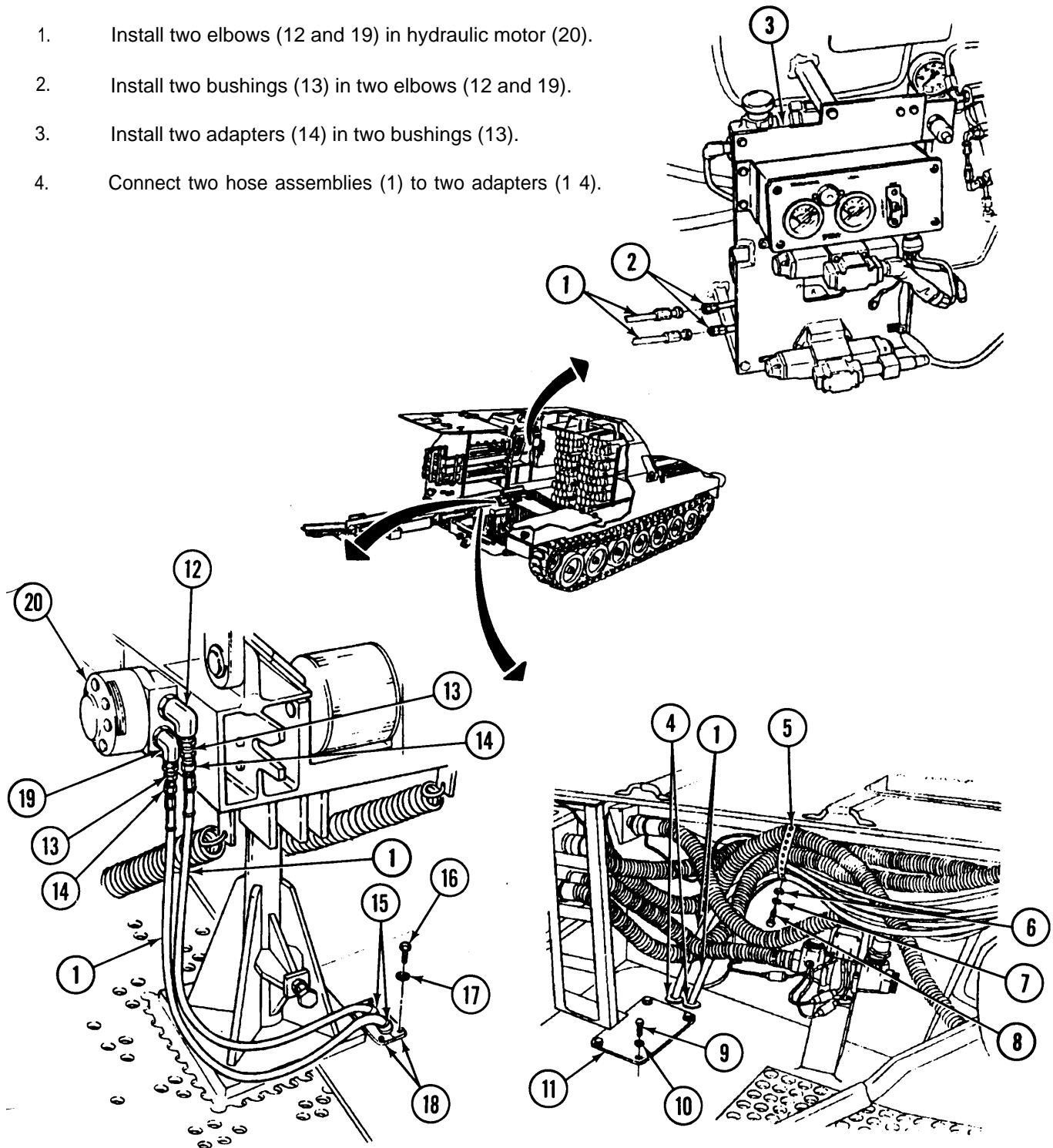
**FOLLOW-ON MAINTENANCE:**

- Install heating and ventilating ducts (16-2).
- Move left projectile rack assembly (refer to TM 9-2350-287-10).
- Open hydraulic ball valve (refer to TM 9-2350-287-10).
- Install crew AFES cylinder bottle No. 4 bracket (para 21-7).

17-34. CONVEYOR HYDRAULIC HOSES AND FITTINGS REPLACEMENT (continued).

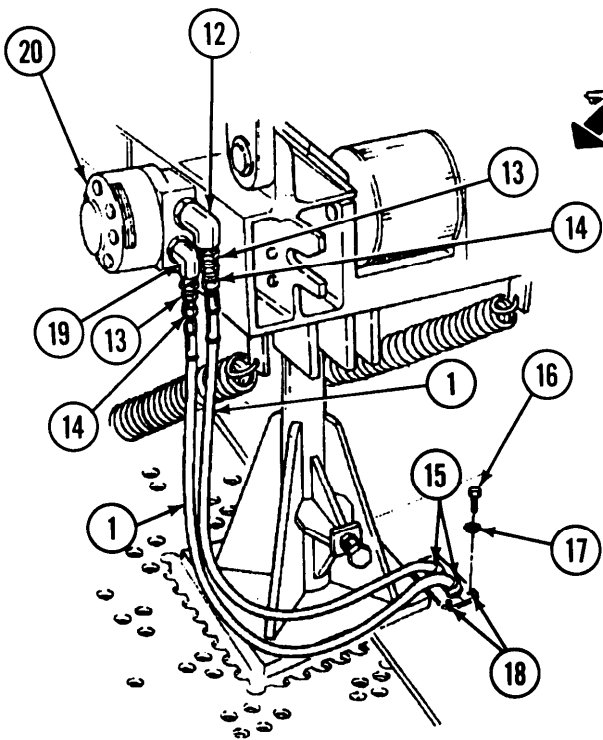
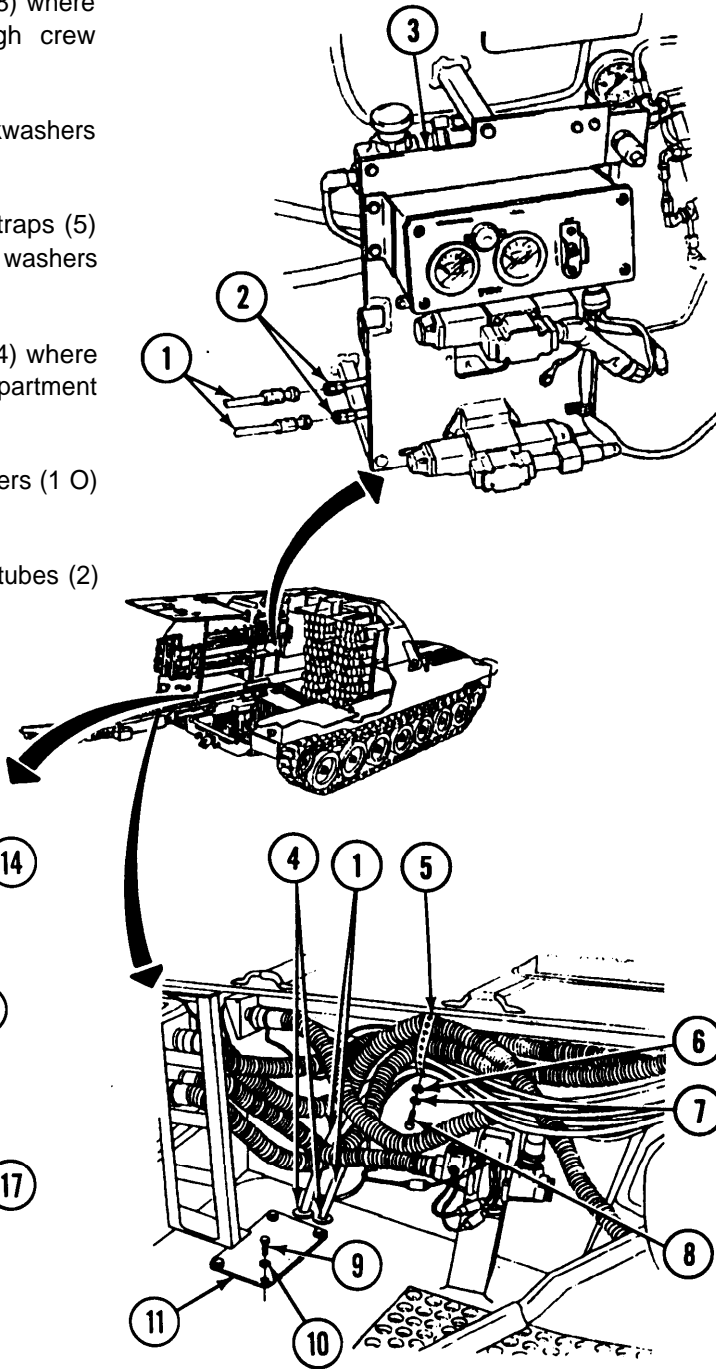
b. INSTALLATION

1. Install two elbows (12 and 19) in hydraulic motor (20).
2. Install two bushings (13) in two elbows (12 and 19).
3. Install two adapters (14) in two bushings (13).
4. Connect two hose assemblies (1) to two adapters (1 4).



17-34. CONVEYOR HYDRAULIC HOSES AND FITTINGS REPLACEMENT (continued).

5. Position two grommets (15) and plates (18) where hose two assemblies (1) pass through crew compartment floor.
6. Secure two plates (18) with four new lockwashers (17) and screws (16).
7. install two hose assemblies (1) in two straps (5) and secure with two new lockwashers (7), washers (6), and screws (8).
8. Position plate (11) and two grommets (4) where hose assemblies pass through crew compartment floor.
9. Secure plate (11) with two new lockwashers (1 0) and screws (9).
10. Connect two hose assemblies (1) to two tubes (2) at hydraulic control panel (3).



FOLLOW-ON MAINTENANCE:

- Operate APU and check hydraulic system for leaks (refer to TM 9-2350-287-10).
- Start conveyor and check for leaks (refer to TM 9-2350-287-10).
- Install left rear fatigue mat (refer to TM 9-2350-287-10).
- Stow conveyor (refer to TM 9-2350-287-10).
- Close upper and lower rear doors (refer to TM 9-2350-287-10).

17-35. APU COMPARTMENT HYDRAULIC HOSES REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)
- Lockwasher (2) (Item 163, Appendix H)
- Preformed packing (Item 227, Appendix H)
- Preformed packing (Item 386, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Hydraulic system pressure relieved to 0 psi (refer to TM 9-2350-287-10).
- APU plenum removed (para 18-17).
- Hydraulic ball valve closed (refer to TM 9-2350-287-10).
- APU generator air duct removed (para 18-13).

a. REMOVAL

WARNING

To avoid possible injury, make sure all systems are shut down. Hydraulic fluid may be hot and can cause burns.

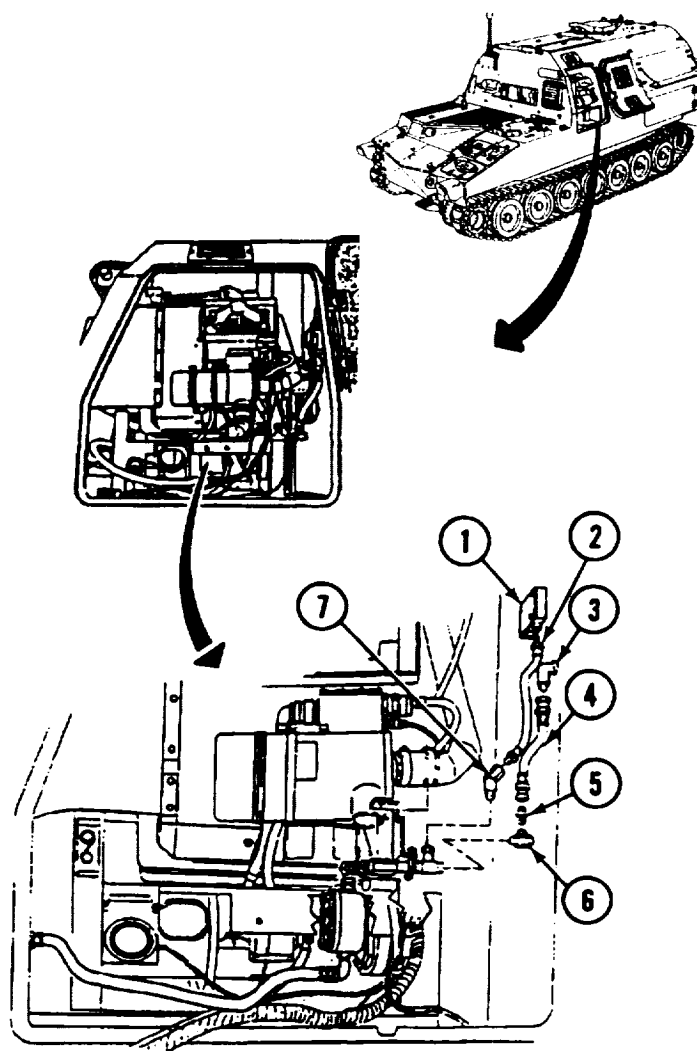
CAUTION

To prevent contamination of hydraulic system, cap hydraulic lines and ports immediately after disconnecting lines.

NOTE

To prevent spilling of hydraulic oil, place drain pan under hydraulic pump and hoses to catch oil.

1. Disconnect and remove hose (2) from pressure switch (1) and elbow (7).
2. Disconnect and remove hose (4) from elbow (3) and adapter (5).
3. Remove elbow (3) from APU wall coupling.
4. Remove adapter (5) from valve (6).



17-35. APU COMPARTMENT HYDRAULIC HOSES REPLACEMENT (continued).

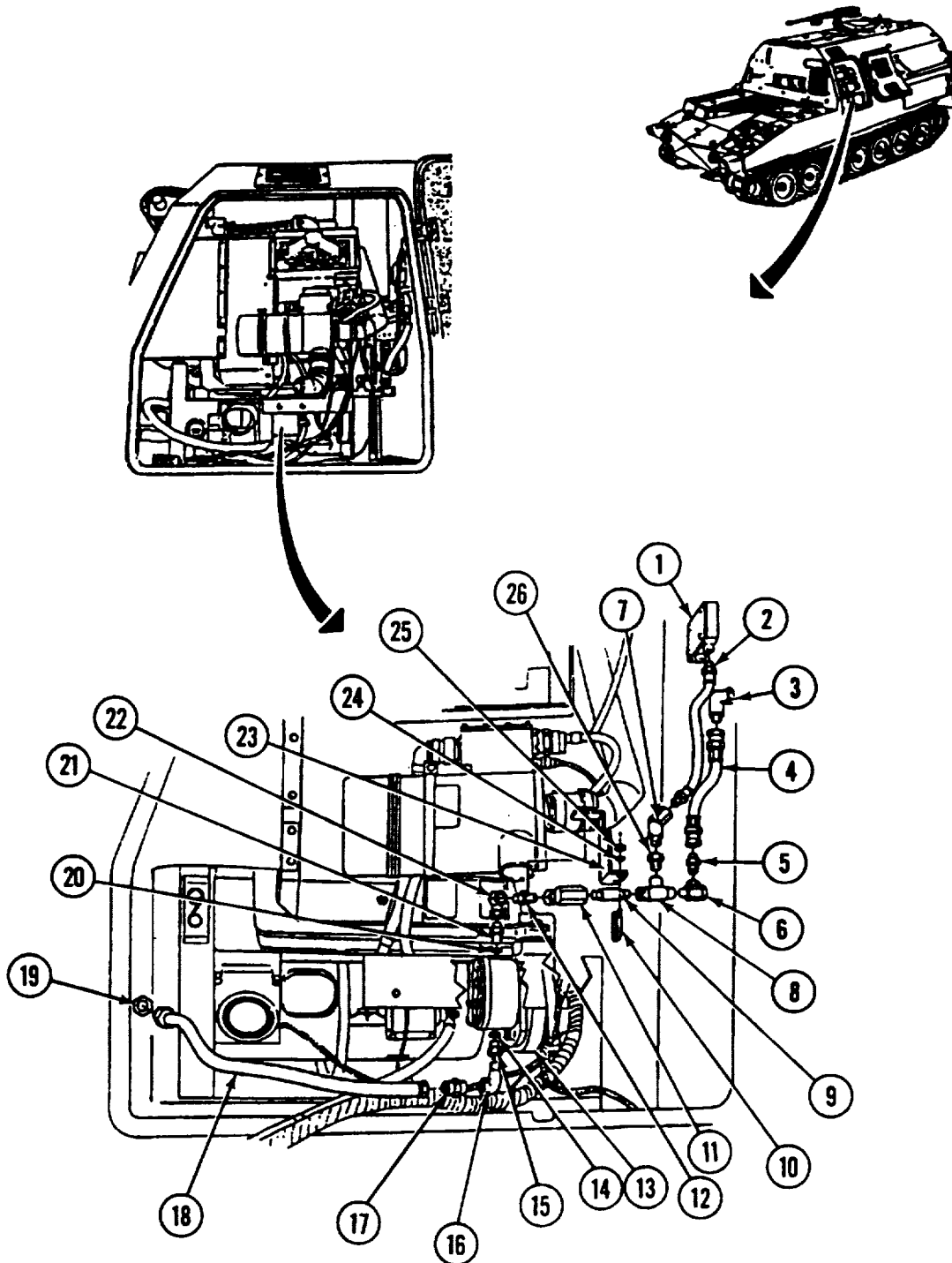
5. Remove two nuts (25) and lockwashers (24) and U-bolt (10) from bracket (23) and nipple (9). Discard lockwashers.
6. Remove valve (6), tee (8), nipple (9), elbow (11), adapter (12), elbow (22), adapter (21), and preformed packing (20) from pump (13). Discard packing.
7. Remove elbow (7) and adapter (26) from tee (8).
8. Disconnect and remove hose (18) from APU bulkhead nipple (19) and adapter (17).
9. Remove adapter (17) and elbow (16) from adapter (15).
10. Remove adapter (15) and preformed packing (14) from pump (13). Discard packing.

b. INSTALLATION**NOTE**

Apply Teflon pipe sealant to all make pipe threads prior to installation.

1. Install adapter (15) and new preformed packing (14) on pump (13).
2. Install elbow (16) and adapter (17) on adapter (15).
3. Connect hose (18) to APU bulkhead nipple (19) and adapter (17).
4. Install elbow (7) and adapter (26) in tee (8).
5. Install adapter (21), new preformed packing (20), elbow (22), adapter (12), elbow (11), nipple (9), tee (8), and valve (6) on pump (13).
6. Install U-bolt (10) on nipple (9) and bracket (23).
7. Install two new lockwashers (24) and nuts (25) on U-bolt (10).
8. Install adapter (5) on valve (6).
9. Install elbow (3) in APU wall coupling.
10. Connect hose (4) to elbow (3) and adapter (5).
11. Connect hose (2) to pressure switch (1) and elbow (7).

17-35. APU COMPARTMENT HYDRAULIC HOSES REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install APU generator air duct (para 18-13).
- Install APU plenum (para 18-17).
- Open hydraulic ball valve (refer to TM 9-2350-287-10).

[Paragraphs 17-36 and 17-37 Deleted]

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CHAPTER 18
AUXILIARY POWER UNIT GENERATOR AND ENGINE,
AND CONTROLS MAINTENANCE

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18-4	APU Engine Support Stand and Support Assembly Replacement	18-9
18-5	APU Hour Meter Replacement	18-12
18-6	APU01 Oil Drain Tubing and Fittings and Drain Valve Catch Assembly Replacement	18-13
18-7	APU Oil Fill Tube and Breather Hose Replacement	18-18
18-8	APU Oil Filter Replacement	18-20
18-9	APU Oil Pressure Transmitter Replacement	18-21
18-10	APU Air Cleaner, Inlet and Outlet Hoses, and Tubes Replacement	18-23
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18-26	APU Cable Assembly (11671380-1) Replacement	18-65
18-27	APU Cable Assembly (11671380-2) Replacement	18-67
18-28	APU Wiring Harness (12329660), Fuel Solenoid to Hour Meter Replacement	18-70
18-29	APU Cable (12329662) Replacement	18-74

18-1. GENERAL.

This chapter illustrates and describes maintenance procedures for the auxiliary power unit (APU).

Change 1 18-1

18-2. APU REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Automotive adjustable wrench, 8" (Item 4, Appendix I)
- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 126, Appendix H)
- Lockwasher (6) (Item 164, Appendix H)
- Shim (Item 336, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Master switch set to OFF (refer to TM 9-2350-287-10).
 - Battery ground cables disconnected (para 7-41).
 - APU compartment side door opened (refer to TM 9-2350-287-10).
 - APU plenum removed (para 18-17).
 - APU panels removed (para 18-14).
 - APU compartment access plate removed (para 15-39)
 - Hydraulic reservoir ball valve closed (refer to TM 9-2350-287-10).
-

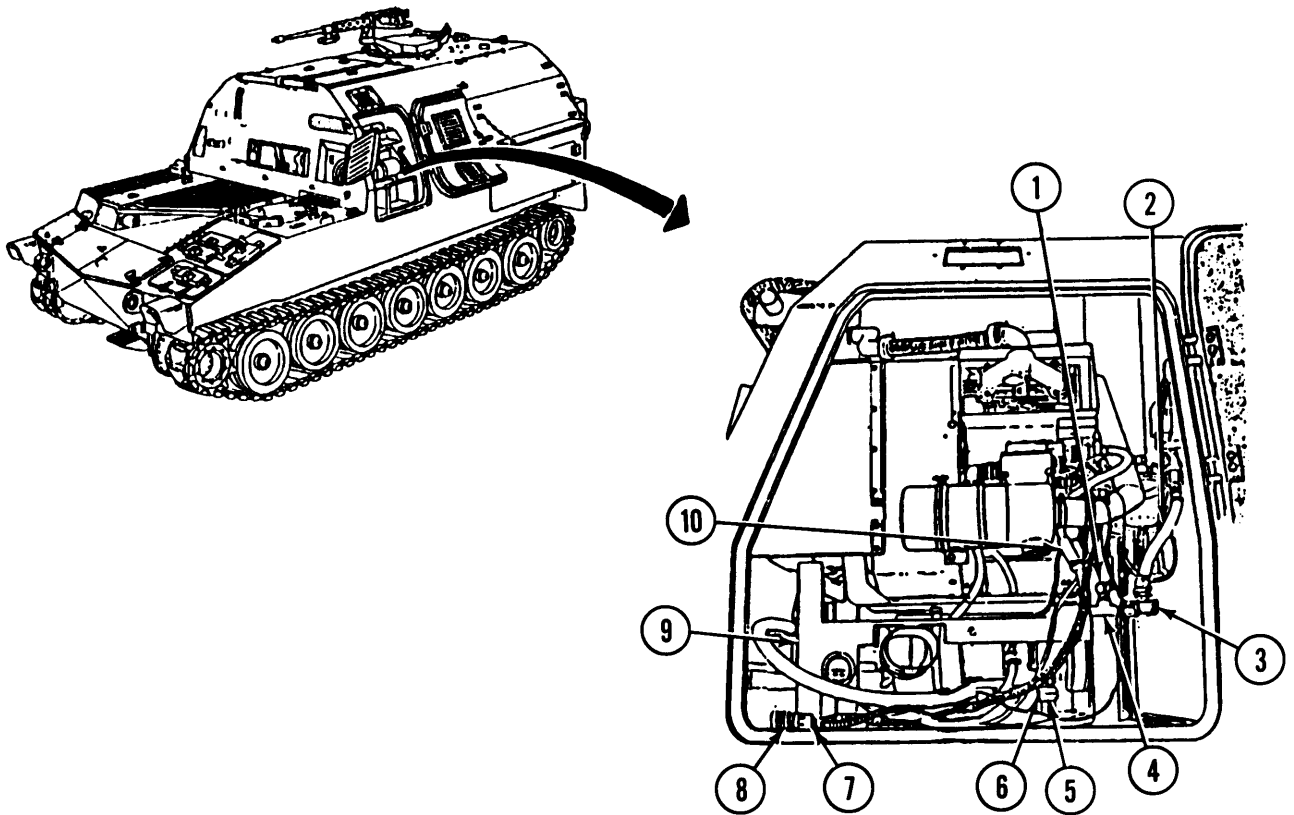
a. REMOVAL

NOTE

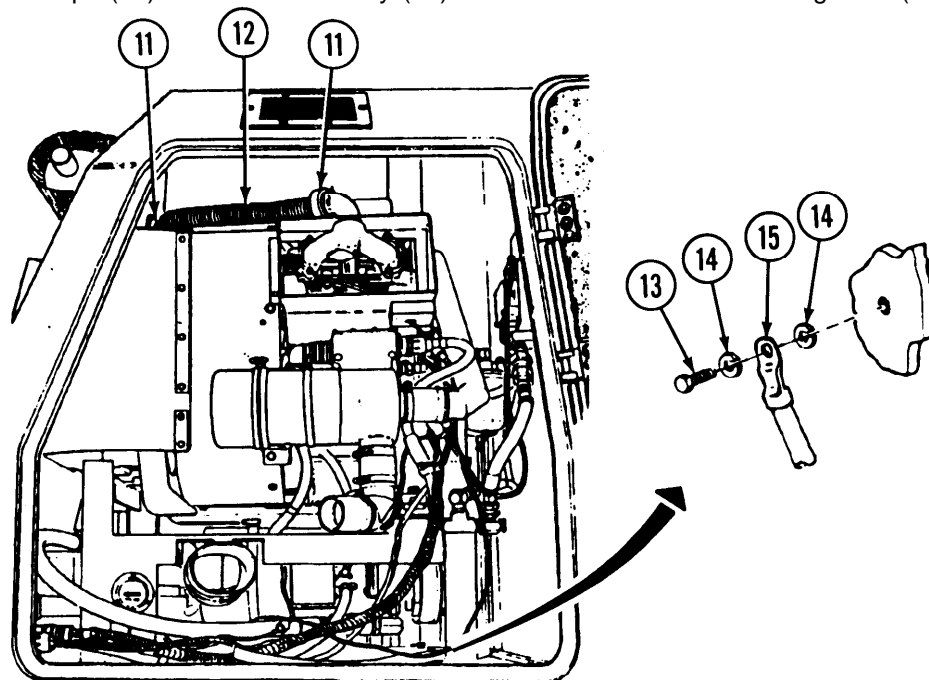
Cables, lines, tubes, and harnesses that are disconnected in order to remove the auxiliary power unit (APU) must be taped to the sides of the APU so they do not get damaged.

1. Disconnect two electrical wiring harness connectors (7 and 8) from APU compartment-wall connections.
2. Disconnect two hydraulic pressure switch electrical connectors No. 61 (10) from the APU.
3. Disconnect hydraulic pump outlet hose coupling (2) from elbow (3). Allow hose to drain into suitable container.
4. Disconnect hydraulic pressure hose (1) from hydraulic T-connection (4). Allow hose to drain into suitable container.
5. Disconnect hydraulic pump inlet hose coupling (6) from elbow (5). Allow hose to drain into suitable container.
6. Place hose through APU support stand (9), and allow hose to lie straight against forward APU compartment bulkhead.

18-2. APU REPLACEMENT (continued).

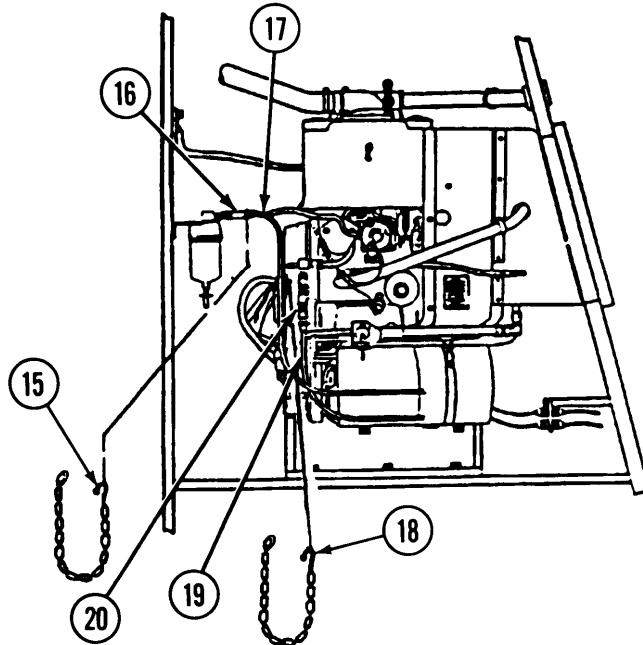


7. Disconnect ground lead (15) at bulkhead by removing screw (13) and two lockwashers (14). Discard lockwashers.
8. Remove two clamps (11) and tube assembly (12) from exhaust outlet. Remove gasket (hidden). Discard gasket.



18-2. APU REPLACEMENT (continued).

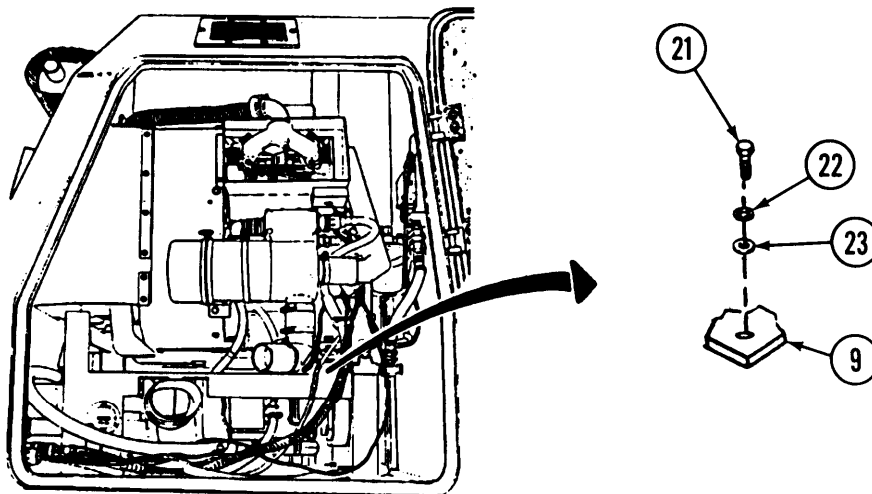
9. Remove locking (15) and disconnect secondary filter outlet line (17) at quick-disconnect fitting (16).
10. Remove locking (18) and disconnect fuel return line (19) at quick-disconnect coupling (20).



NOTE

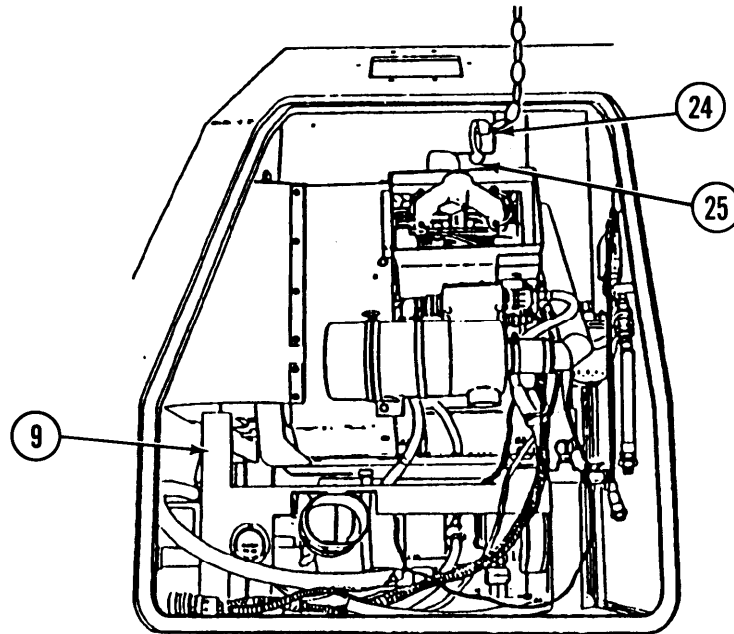
Pull fuel return line through opening and let it hang inside vehicle. Also pull fuel filter drain hoses through APU support stand and allow them to hang out of APU doorway.

11. Remove six screws (21), lockwashers (22), and washers (23) securing support stand (9) to APU compartment floor. Discard lockwashers.



18-2. APU REPLACEMENT (continued).

12. Secure clevis (24) to APU lifting bracket (25).

**WARNING**

- The APU unit has minimal clearance when removed from APU compartment. To avoid injury to hands and fingers, use care when removing the APU.
- Personnel must stand clear during lifting operations. A swinging or shifting load may cause severe injury.

CAUTION

Use care when removing the APU from the vehicle in order to prevent damage to cables, lines, tubes, and harnesses.

13. Attach hoist to clevis (24).
14. Remove APU with attached support stand (9) from APU compartment.
15. Remove hoist from clevis (24).
- b. INSTALLATION**
1. Using hoist install APU with attached support stand (9) in APU compartment.

18-2. APU REPLACEMENT (continued).

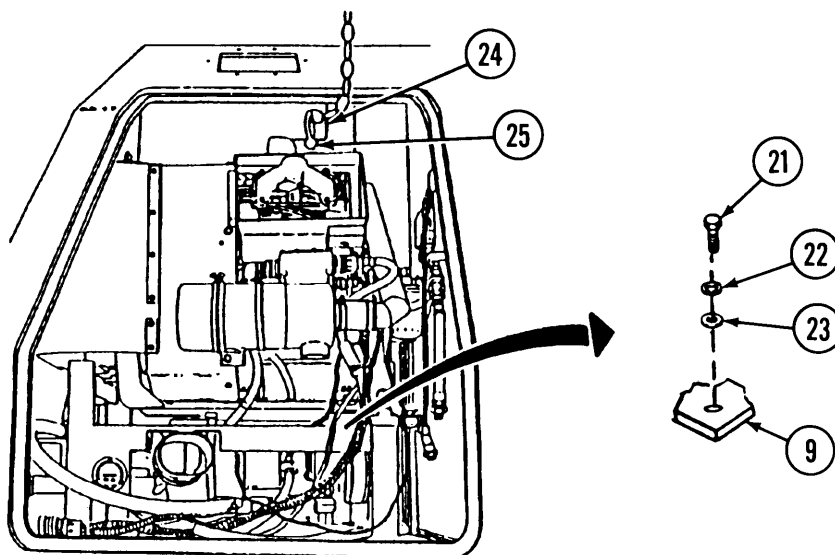
WARNING

The APU unit has minimal clearance when being installed into the APU compartment. To avoid injury to hands and fingers, use care when installing the APU.

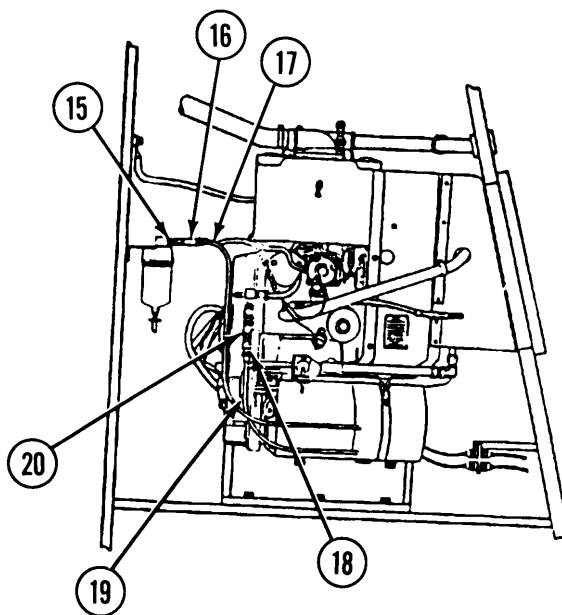
CAUTION

Use care when installing the APU in the vehicle in order to prevent damage to cables, lines, tubes, and harnesses.

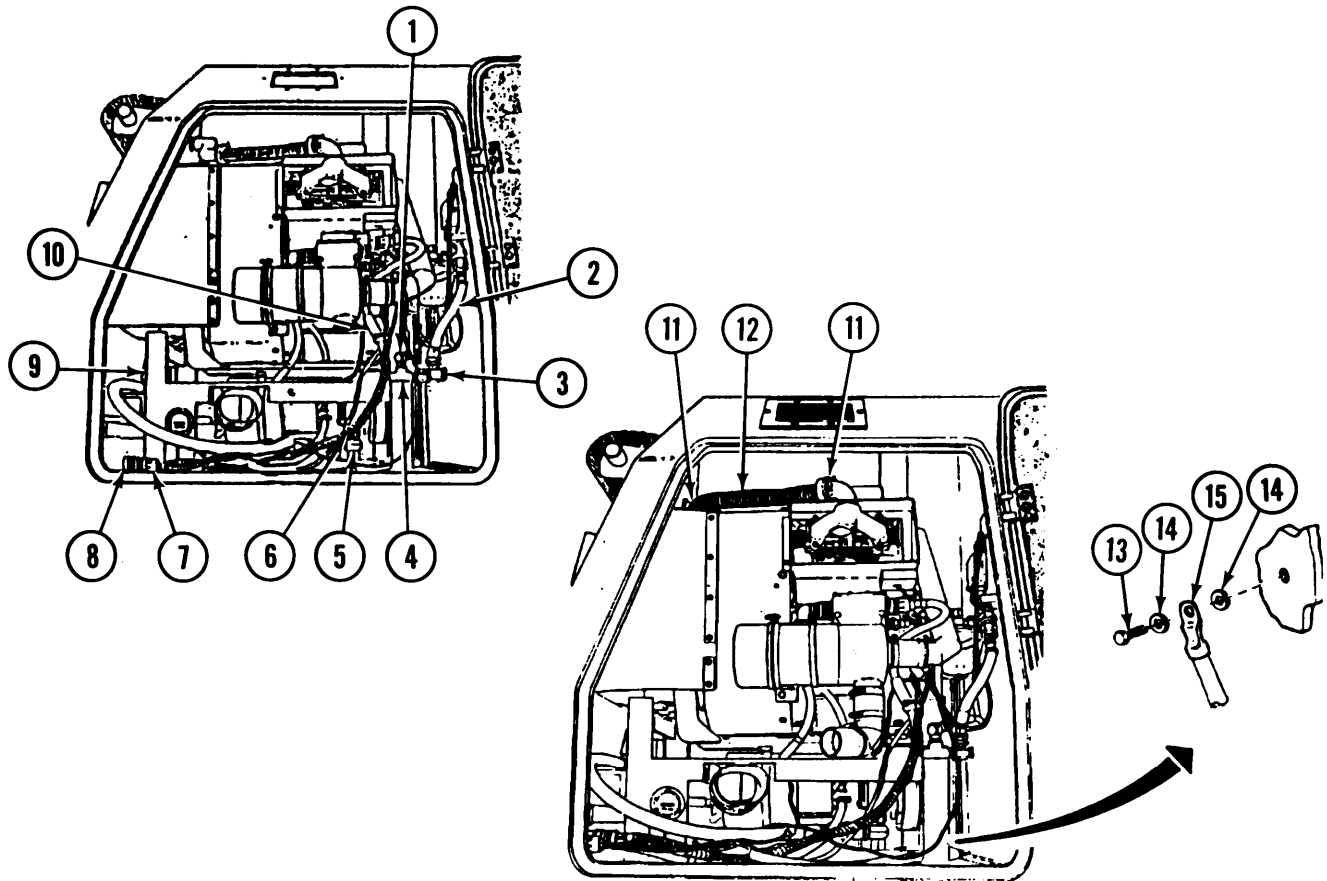
2. Remove clevis (24) from APU lifting bracket (25).
3. Secure support stand (9) to APU compartment floor with six screws (21), new lockwashers (22), and washers (23).



4. Connect fuel return line (19) at quick-disconnect coupling (20) and install locking (18).
5. Connect secondary filter outlet line (17) at quick-disconnect fitting (16) and install locking (15).



10-2. APU REPLACEMENT (continued).



6. Install new gasket (hidden) and secure tube assembly (12) to exhaust outlet with two clamps (11).
7. Connect ground lead (15) to bulkhead with screw (13) and two new lockwashers (14).
8. Connect hydraulic pump inlet hose coupling (6) to elbow (5).
9. Connect hydraulic pressure line (1) to hydraulic T-connection (4).
10. Connect hydraulic pump outlet hose coupling (2) to elbow (3).
11. Connect two hydraulic pressure switch electrical connectors No. 61 (10) to APU.
12. Connect two electrical wiring harness connectors (7 and 8) to APU compartment-wall connections.
13. Start APU (refer to TM 9-2350-287-10). Check for hydraulic leaks.

FOLLOW-ON MAINTENANCE:

- Install APU plenum (para 18-17).
- Install APU panels (para 18-14).
- Close APU compartment side door (refer to TM 9-2350-287-10).
- Open hydraulic reservoir ball valve (refer to TM 9-2350-287-10).
- Install APU compartment access plate (para 15-39).
- Connect battery ground cables (para 7-41).

18-3. APU SUPPORT MOUNTS REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (Item 165, Appendix H)
- Resilient mount (Item 243, Appendix H)

Equipment Conditions:

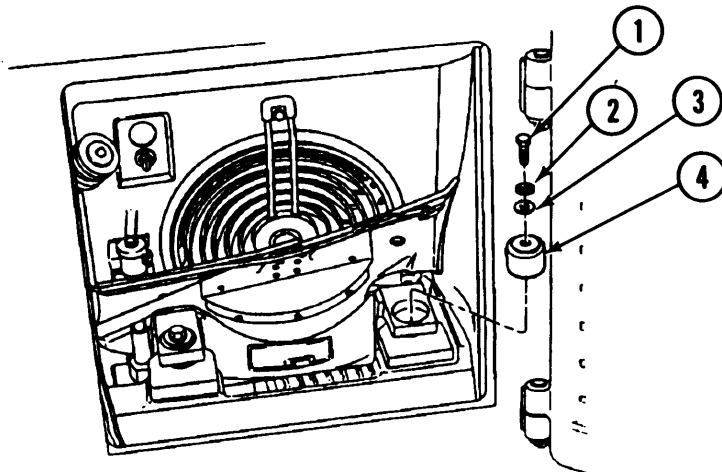
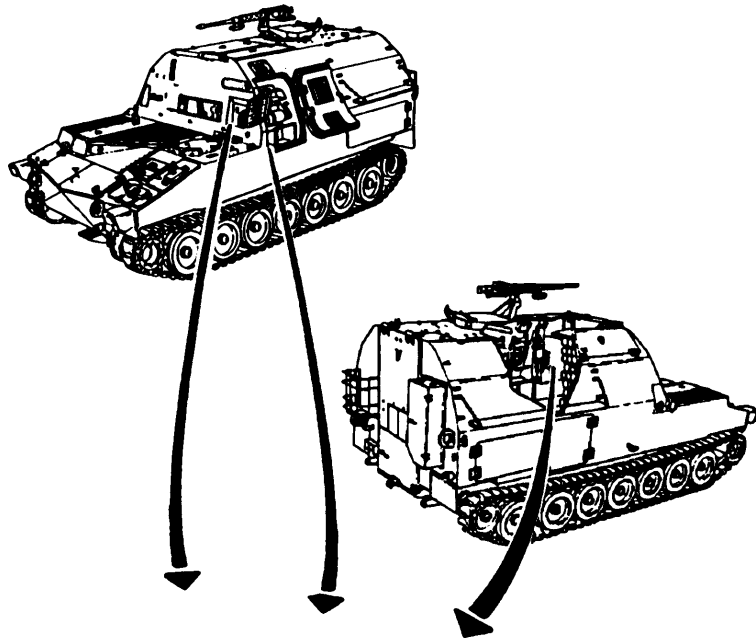
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU compartment access plate removed (para 15-39).
- APU compartment front and side door opened (refer to TM 9-2350-287-10).
- APU generator duct removed (para 18-17).

a. REMOVAL

1. Remove screw (1), lockwasher (2), and washer (3) at location where support mount (4) is to be replaced. Discard lockwasher.
2. Pry up support and engine enough to push support mount (4) out of hole in support. Discard support mount.

b. INSTALLATION

1. Pry up support and engine enough to insert new support mount (4) in hole in support.
2. Install washer (3), new lockwasher (2), and screw (1) at location of new support mount (4).



FOLLOW-ON MAINTENANCE:

- Install APU compartment access plate (para 15-39).
- Close APU compartment front and side door (refer to TM 9-2350-287-10).
- Install APU generator duct (para 18-17).

18-4. APU ENGINE SUPPORT STAND AND SUPPORT ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- Five-ton hoist (Item 23, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

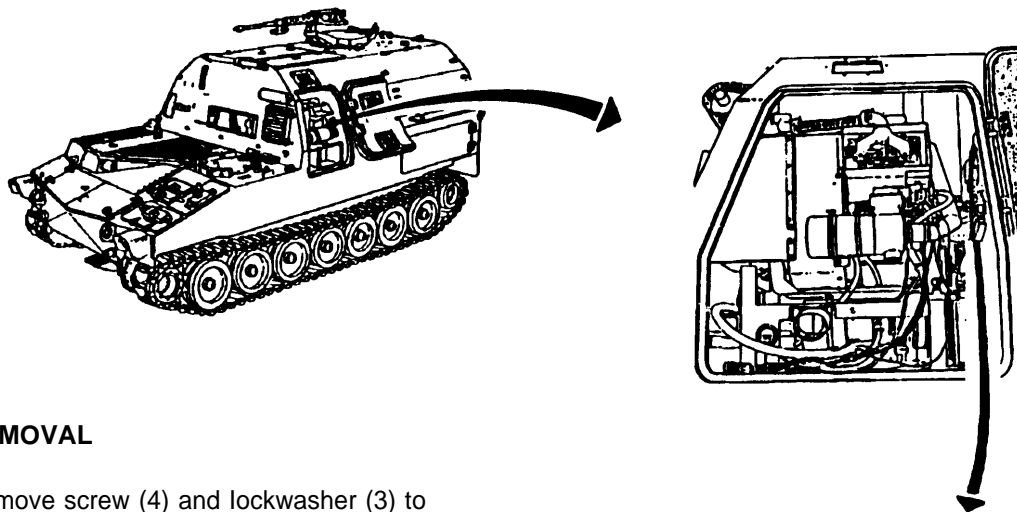
Materials/Parts:

- Lockwasher (Item 135, Appendix H)
- Lockwasher (5) (Item 185, Appendix H)
- LockWasher (4) (Item 166, Appendix H)

Personnel Required: Two

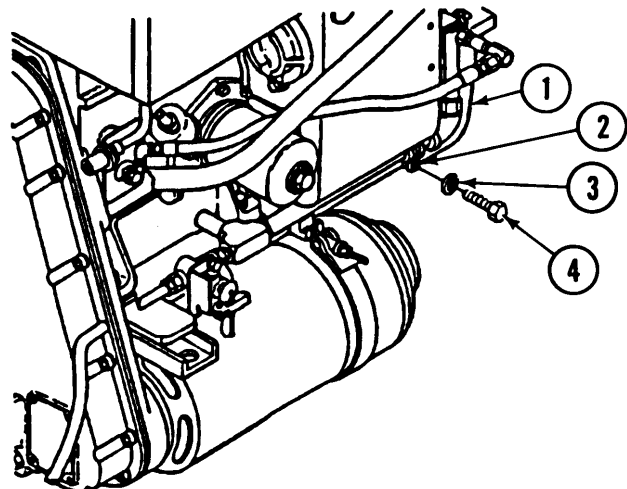
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU removed (para 18-2).
- APU generator air duct removed (para 18-17).



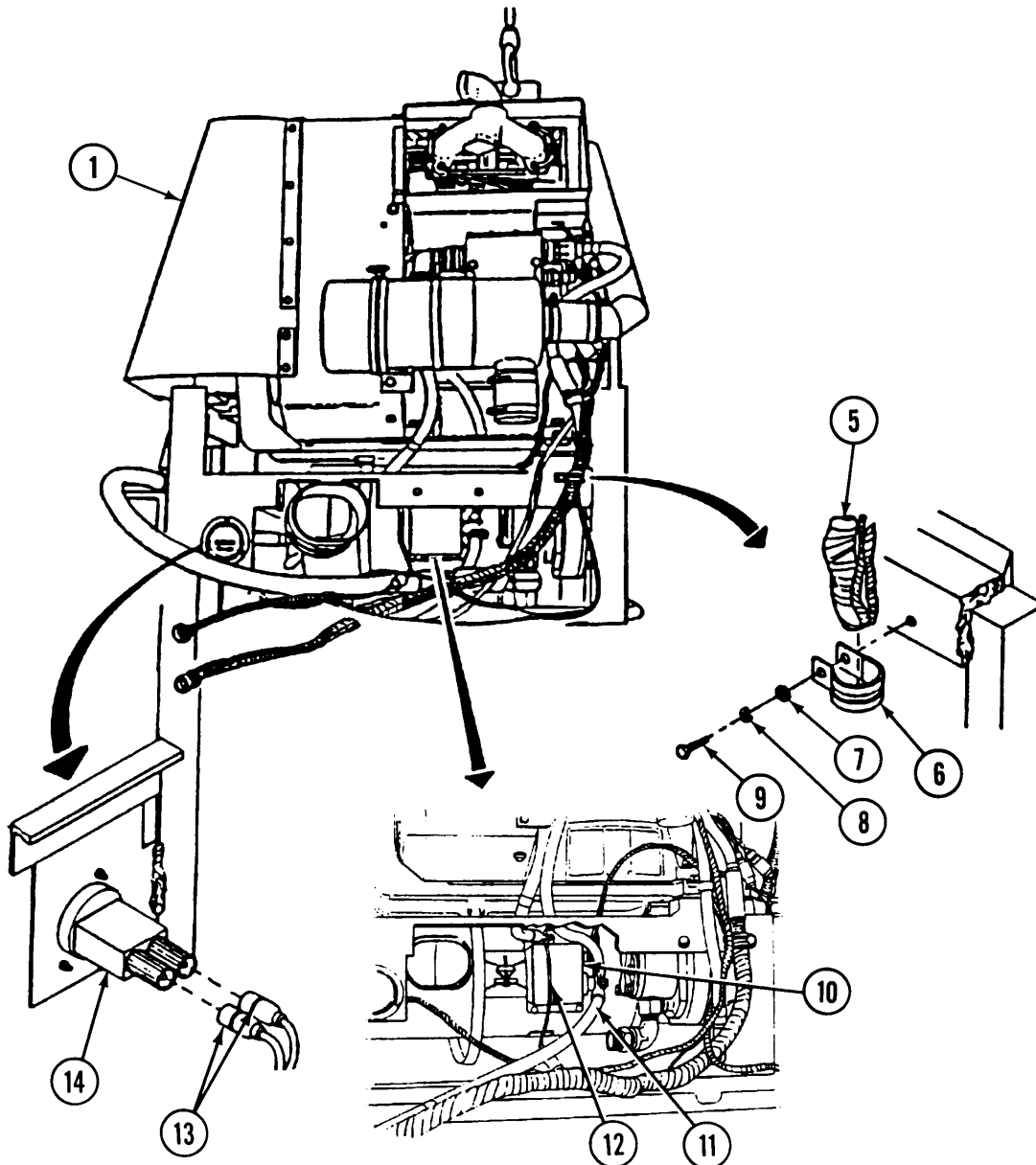
a. REMOVAL

1. Remove screw (4) and lockwasher (3) to separate clamp (2) from APU support stand (1). Discard lockwasher.



**18-4. APU ENGINE SUPPORT STAND AND SUPPORT ASSEMBLY REPLACEMENT
(continued).**

2. Disconnect two electrical connectors (13) from hour meter (14).
3. Release electrical harnesses (5) from APU support stand (1) by removing screw (9), lockwasher (8), washer (7), and clamp (6). Discard lockwasher.
4. Disconnect ground lead connector (12) from generator (10).
5. Disconnect electrical lead 66 (11) from generator (10).



6. Attach lifting clevis (16) in APU lifting eye plate (15) and attach hoist to clevis.

18-4. APU ENGINE SUPPORT STAND AND SUPPORT ASSEMBLY REPLACEMENT (continued).

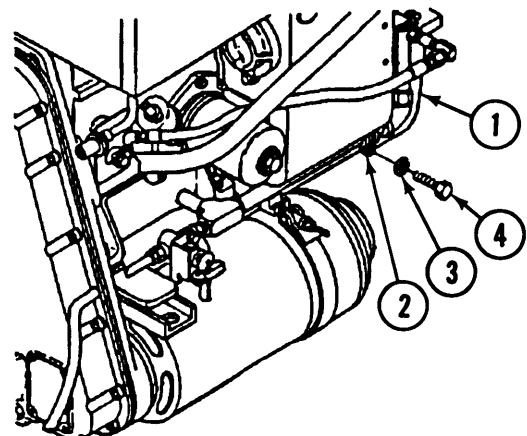
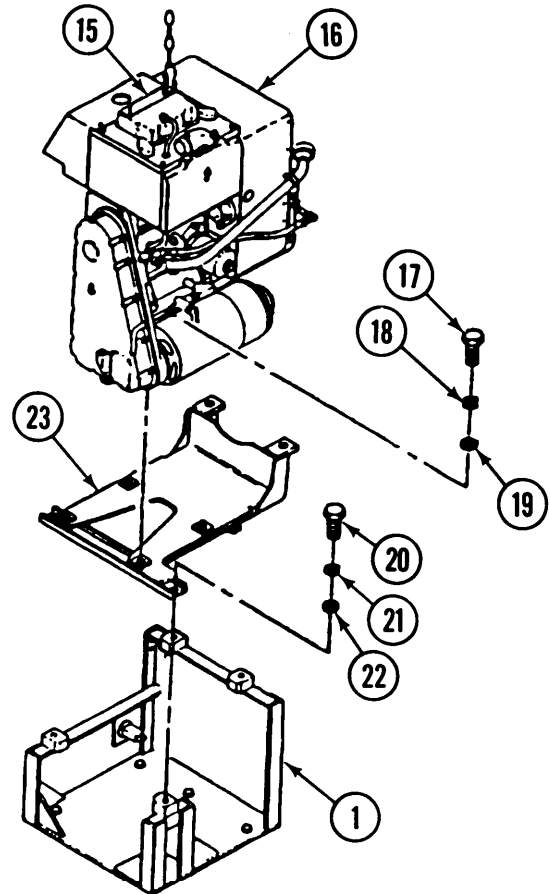
WARNING

Personnel must stand clear during lifting operations. A swinging or shifting load can cause severe injury.

7. Remove four screws (20), lockwashers (21), and washers (22). Using hoist, lift APU from support stand (1). Discard lockwashers.
8. Remove four screws (17), lockwashers (18), and washers (19) and support assembly (23) from APU. Discard lockwashers.

b. INSTALLATION

1. Install support assembly (23) on APU using four washers (19), new lockwashers (18), and screws (17).
2. Attach lifting clevis (16) to APU lifting eye plate (15) and attach suitable hoist to clevis.
3. Using hoist, install APU on support stand (1). Secure APU to support stand (1) with four washers (22), new lockwashers (21), and screws (20).
4. Connect electrical lead 66 (11) to generator (10).
5. Connect ground lead connector (12) to generator (10).
6. Install electrical harnesses (5) on support stand (1) using clamp (6), washer (7), new lockwasher (8), and screw (9).
7. Connect two electrical connectors (13) to hour meter (14).
8. Install clamp (2), new lockwasher (3), and screw (4) on APU support stand (1).



FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).
- Install APU generator air duct (para 18-17).

18-5. APU HOUR METER REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

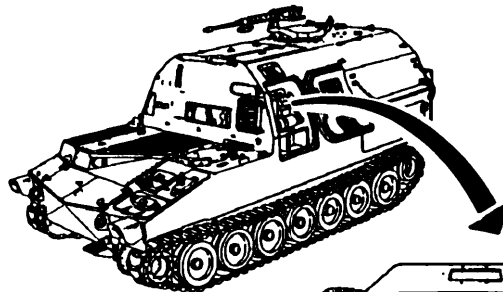
- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU plenum removed (para 18-17).

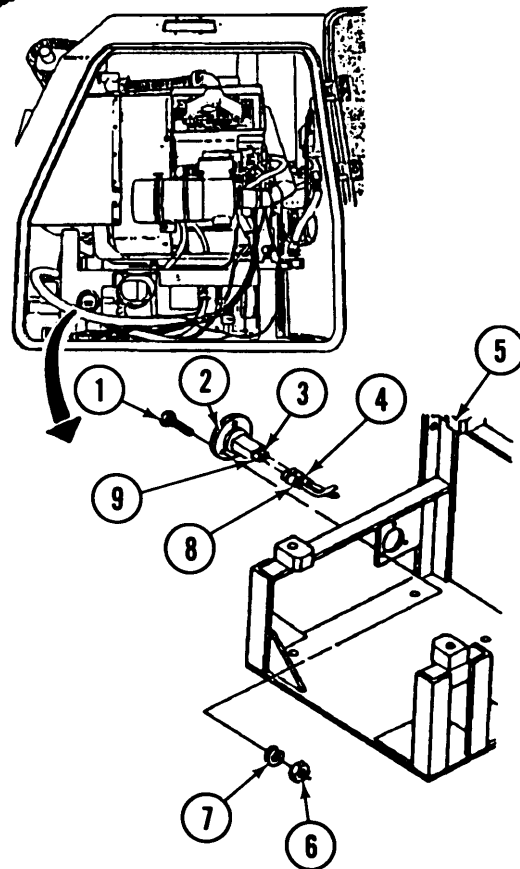
Materials/Parts:

- Lockwasher (3) (Item 159, Appendix H)
-



a. REMOVAL

1. Remove wire BY (4) from hour meter positive terminal (3).
2. Remove wire BZ (8) from hour meter negative terminal (9).
3. Remove three screws (1), lockwashers (7), and nuts (6) securing hour meter (2) to APU support (5). Discard lockwashers.



b. INSTALLATION

1. Install hour meter (2) on APU support (5) with three nuts (6), new lockwashers (7), and screws (1).
2. Connect wire BZ (8) to hour meter negative terminal (9).
3. Connect wire BZ (4) to hour meter positive terminal (3).

FOLLOW-ON MAINTENANCE:

- Install APU plenum (para 18-17).

18-6. APU OIL DRAIN TUBING AND FITTINGS AND DRAIN VALVE CATCH ASSEMBLY REPLACEMENT.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Lockwasher (2) (Item 161, Appendix H)
- Lockwasher (Item 166, Appendix H)

Materials/Parts:

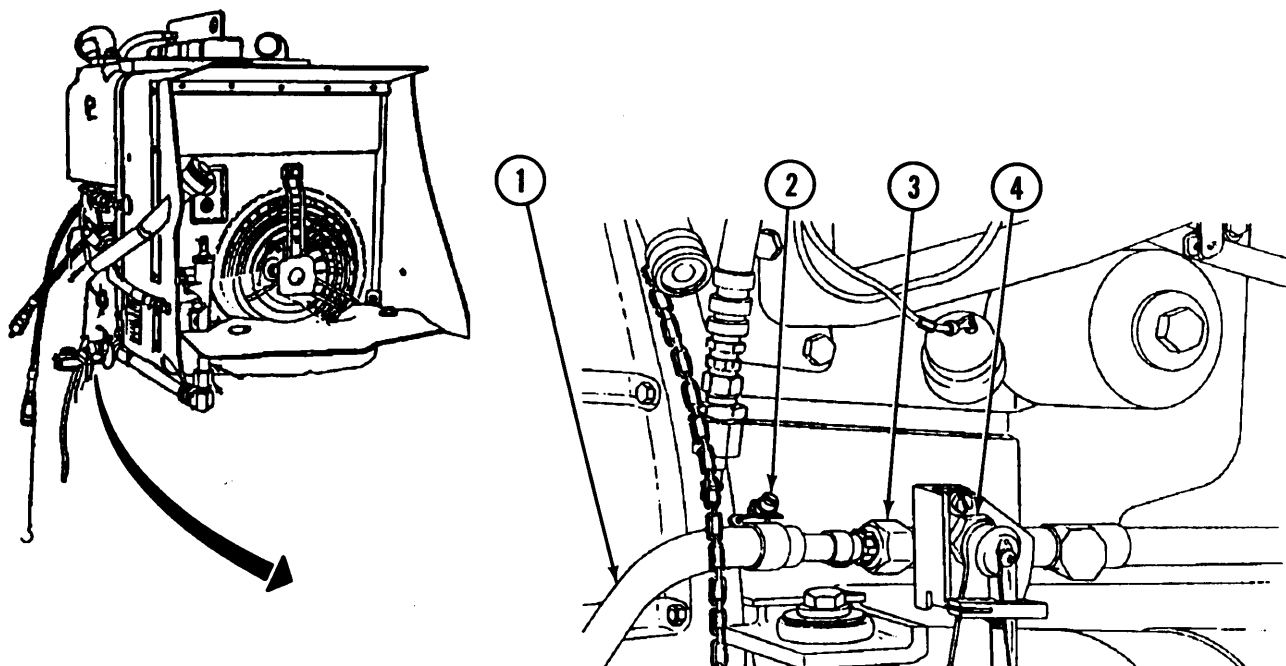
- Sealing compound (Item 63, Appendix D)
- Lockwasher (Item 123, Appendix H)
- Lockwasher (2) (Item 135, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU removed (para 18-2).
 - APU crankcase drained (Appendix G).
-

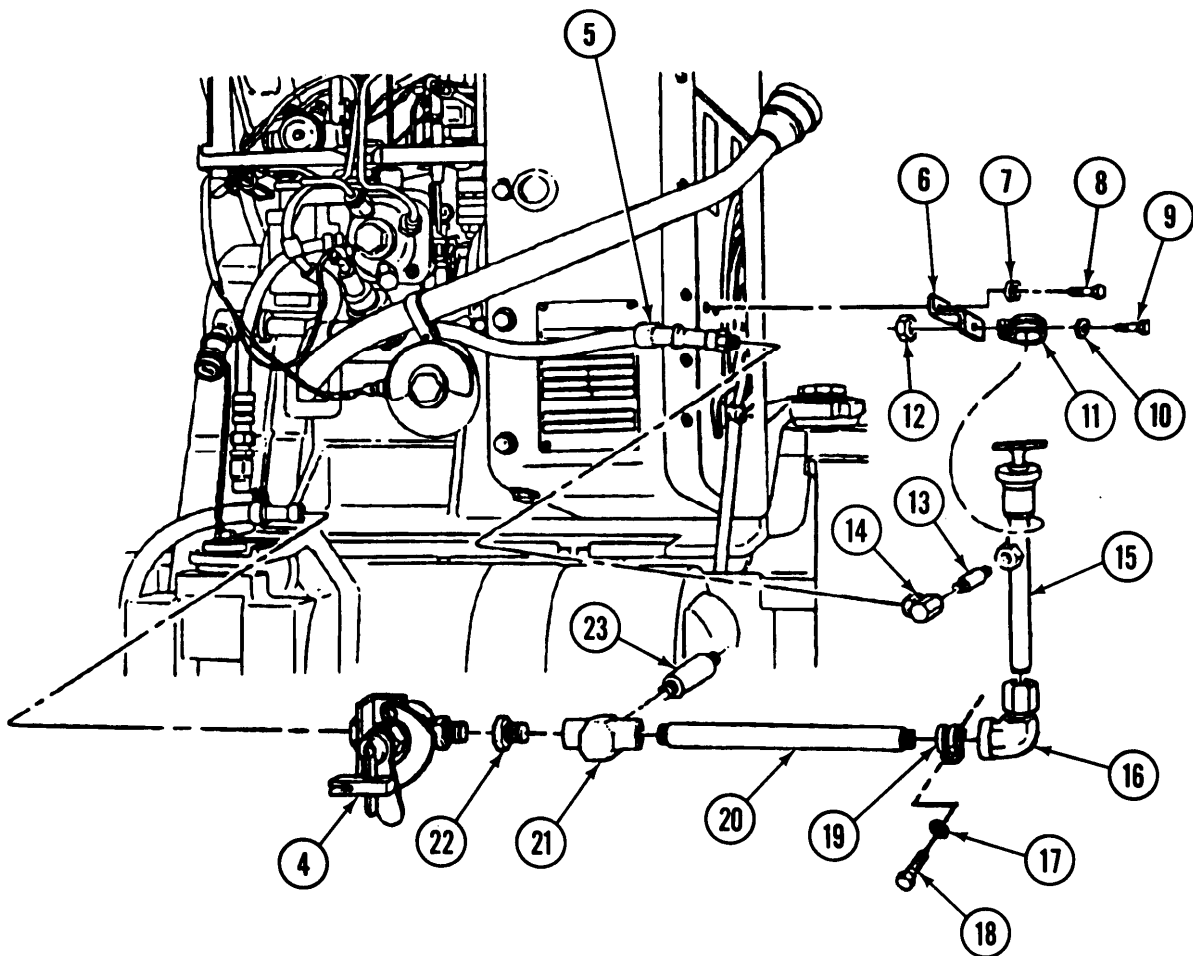
a. REMOVAL

1. Loosen clamp (2) and remove hose (1) from fitting (3).
2. Remove fitting (3) from valve (4).



18-6. APU OIL DRAIN TUBING AND FITTINGS AND DRAIN VALVE CATCH ASSEMBLY REPLACEMENT (continued).

3. Remove valve (4) and bushing (22) from tee (21).
4. Remove screw (18), lockwasher (17), and clamp (19) from nipple (20) and APU. Discard lockwasher.
5. Disconnect hose (5) from elbow (14).
6. Remove elbow (14) and nipple (13) from tube assembly (15).
7. Remove two screws (8) and lockwashers (7) and bracket (6) from APU. Discard lockwashers.
8. Remove screw (9), lockwasher (10), nut (12), clamp (11) and bracket (6) from tube assembly (15).
9. Remove tube assembly (15) from elbow (16).
10. Remove elbow (16) and nipple (20) from tee (21).
11. Remove tee (21) and nipple (23) from APU.



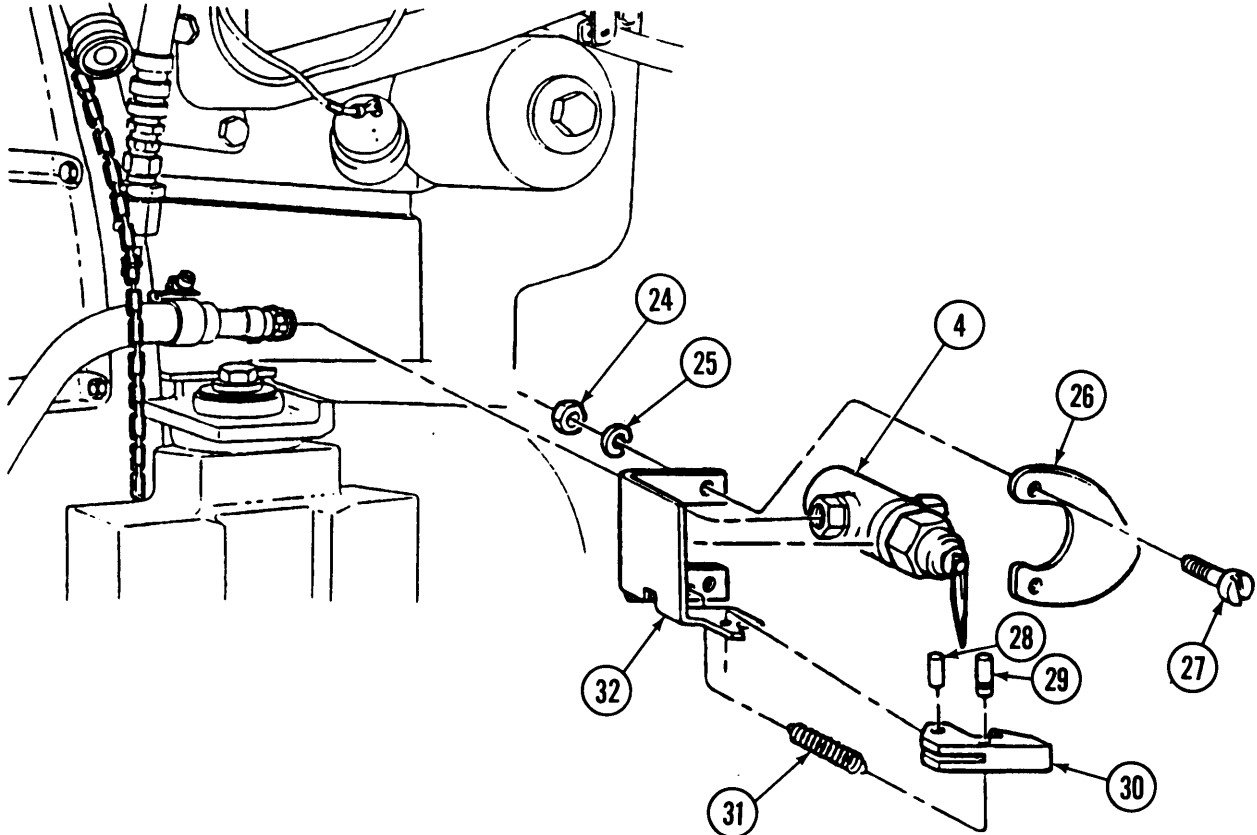
18-6. APU OIL DRAIN TUBING AND FITTINGS AND DRAIN VALVE CATCH ASSEMBLY REPLACEMENT (continued).

b. DISASSEMBLY

1. Remove two screws (27), lockwashers (25), nuts (24), I.D. plate (26), and bracket (32) from valve (4). Discard lockwashers.
2. Remove spring (31) from bracket (32) and safety valve catch (30).
3. Remove pin (28) and safety valve catch (30) from bracket (32).
4. Remove pin (29) from safety valve catch (30).

c. ASSEMBLY

1. Install pin (29) on safety valve catch (30).
2. Install safety valve catch (30) and pin (28) on bracket (32).
3. Install spring (31) on bracket (32) and safety valve catch (30).
4. Install bracket (32) and I.D. plate (26) on valve (4) with two screws (27), new lockwashers (25), and nuts (24).



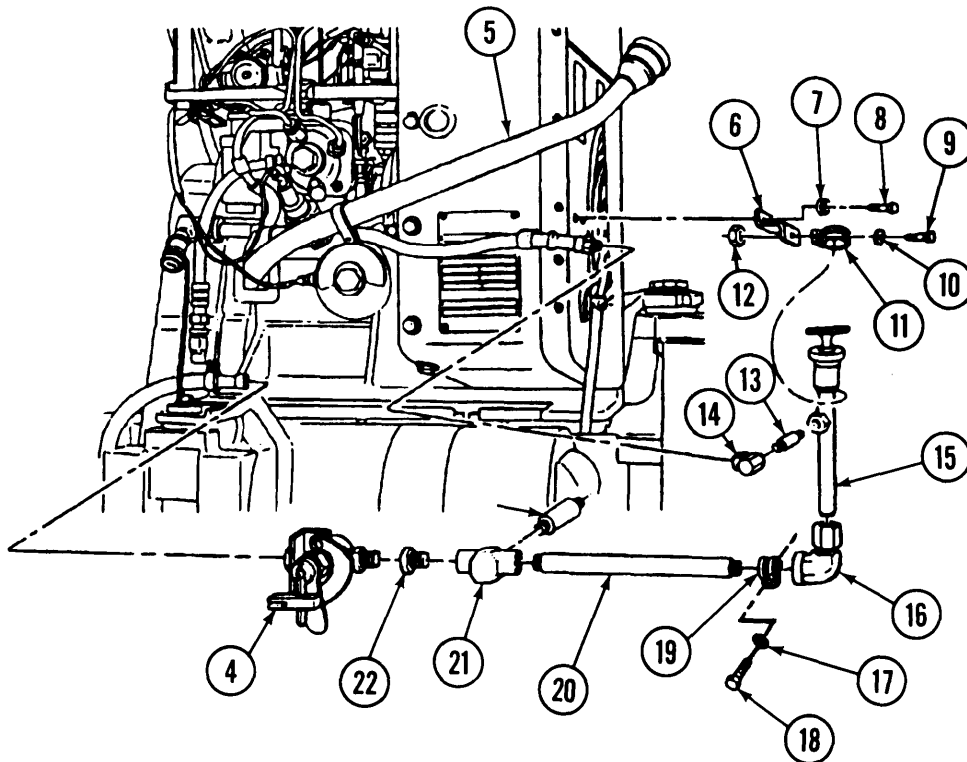
18-6. APU OIL DRAIN TUBING AND FITTINGS AND DRAIN VALVE CATCH ASSEMBLY REPLACEMENT (continued).

d. INSTALLATION

WARNING

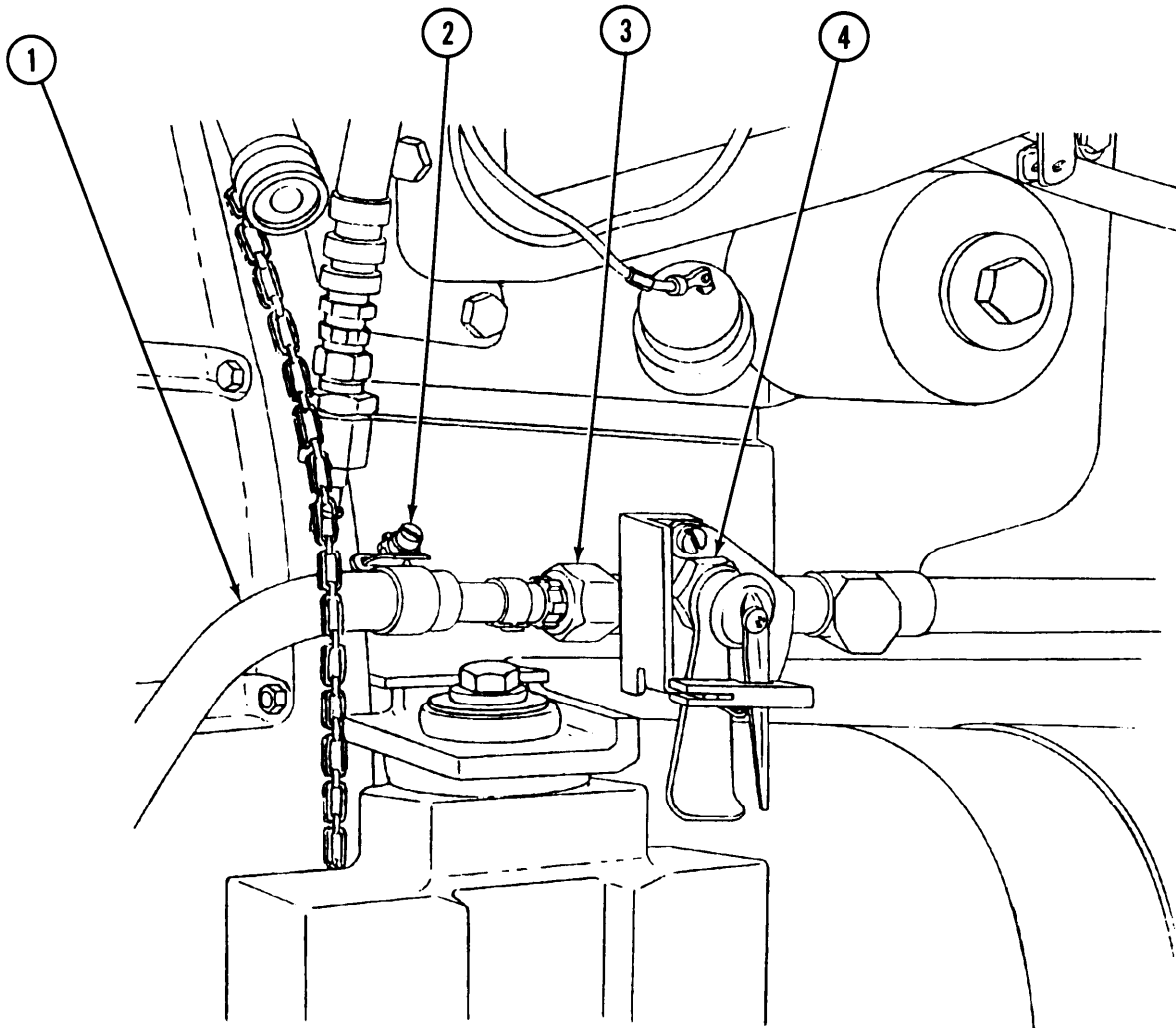
Sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If sealing compound gets on skin or clothing, wash immediately with soap and water.

1. Apply sealing compound to threads and install nipple (23) and tee (21) on APU.
2. Apply sealing compound to threads and install nipple (20) and elbow (16) on tee (21).
3. Install tube assembly (15) on elbow (16).
4. Install bracket (6) and clamp (11) on tube assembly (15) with screw (9), new lockwasher (10), and nut (12).
5. Install bracket (6) on APU with two screws (8) and new lockwashers (7).
6. Apply sealing compound to threads and install nipple (13) and elbow (14) on tube assembly (15).
7. Connect hose (5) to elbow (14).
8. Install clamp (19) on nipple (20) and APU with screw (18) and new lockwasher (17).
9. Install bushing (22) and valve (4) on tee (21).



18-6. APU OIL DRAIN TUBING AND FITTINGS AND DRAIN VALVE CATCH ASSEMBLY REPLACEMENT (continued).

10. Install fitting (3) on valve (4).
11. Install hose (1) on fitting (3) and tighten clamp (2).

**FOLLOW-ON MAINTENANCE:**

- Install APU (para 18-2).
- Fill APU crankcase (Appendix G).

18-7. APU OIL FILL TUBE AND BREATHER HOSE REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (2) (Item 123, Appendix H)

- Lockwasher (Item 135, Appendix H)

Materials/Parts:

- Sealing compound (Item 61, Appendix D)
- Gasket (Item 75, Appendix H)
- Gasket (Item 76, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU removed (para 18-2).
-

a. REMOVAL

1. Remove elbow (1) from oil fill tube assembly (5).
2. Disconnect hose assembly (3) from elbow (15) at injection pump (16).
3. Disconnect hose assembly (3) from oil fill tube assembly (5).
4. Disconnect hose assembly (4) from elbow (11).
5. Disconnect hose assembly (4) from elbow (2).
6. Remove elbow (2) from oil fill tube assembly (5).
7. Remove screw (10), lockwasher (9), and clamp (8) from oil fill tube assembly (5). Discard lockwasher.
8. Remove two screws (12) and lockwashers (13) and oil fill tube assembly (5) and gasket (14) from APU. Discard gasket and lockwashers
9. Remove cap (6) and gasket (7) from oil fill tube assembly (5). Discard gasket.

b. INSTALLATION

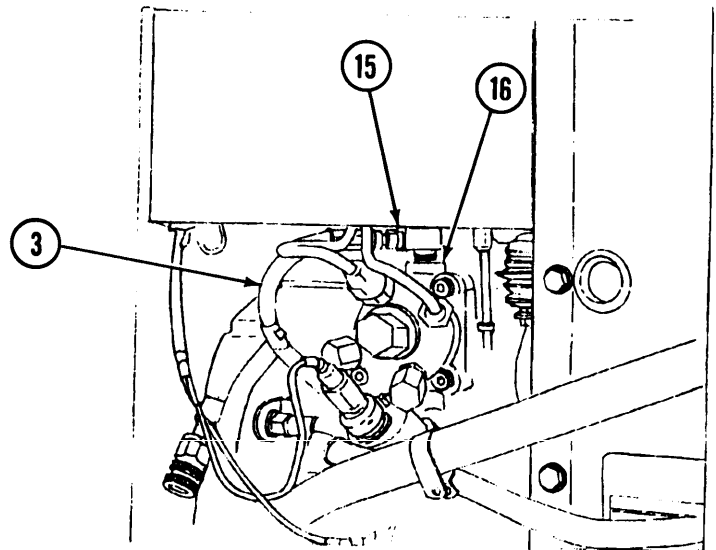
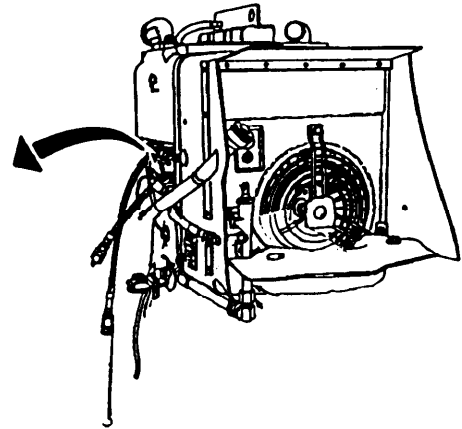
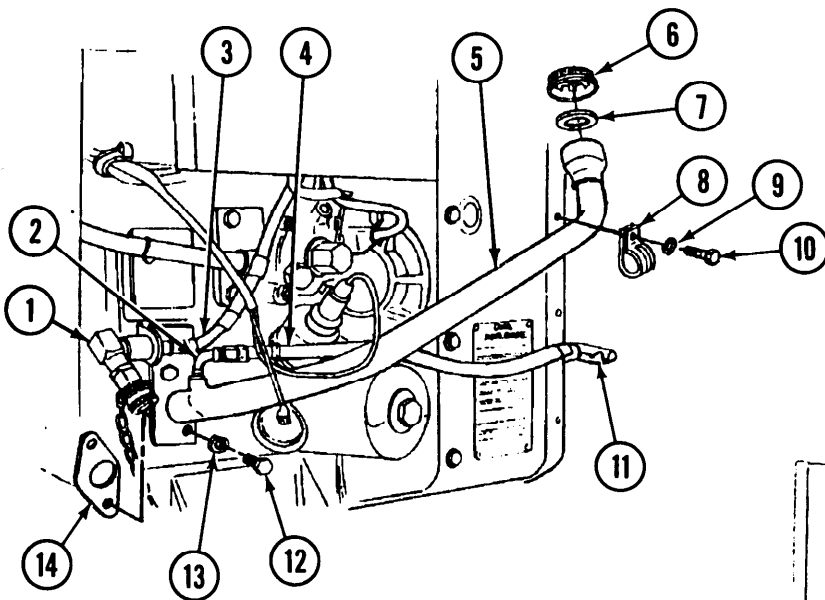
1. Install new gasket (7) and cap (6) on oil fill tube assembly (5).
2. Install screw (10), lockwasher (9), and clamp (8) on oil fill tube assembly (5).
3. Install new gasket (14) and oil fill tube assembly (5) on APU with two screws (12) and new lockwashers (13).

18-7. APU OIL FILL TUBE AND BREATHER HOSE REPLACEMENT (continued).

WARNING

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

4. Apply sealing compound to elbow (2) and install elbow (2) on oil fill tube assembly (5).
5. Connect hose assembly (4) to elbow (2).
6. Connect hose assembly (4) to elbow (11).
7. Connect hose assembly (3) to oil fill tube assembly (5).
8. Connect hose assembly (3) to elbow (15) at injection pump (16).
9. Apply sealing compound to elbow (1) and install elbow (1) on oil fill tube assembly (5).



FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).

18-8. APU OIL FILTER REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Drain pan (Item 14, Appendix I) • General mechanic's tool kit (Item 24, Appendix I) | <ul style="list-style-type: none"> • APU compartment access plate removed (para 15-39). • APU side door opened (refer to TM 9-2350-287-10). |
|--|---|

Equipment Conditions:

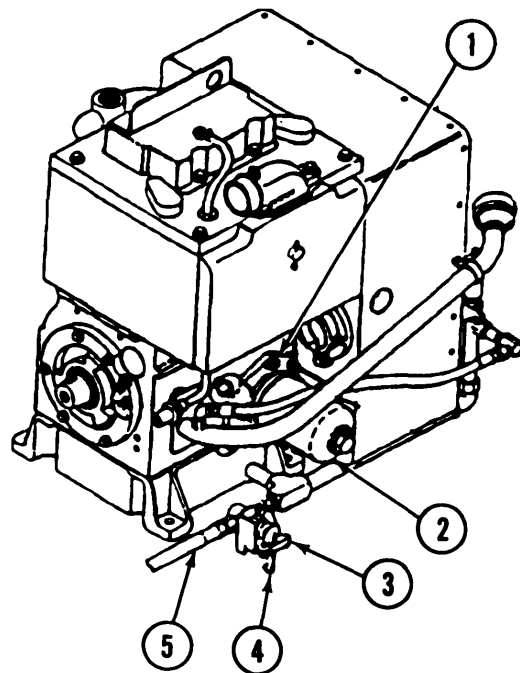
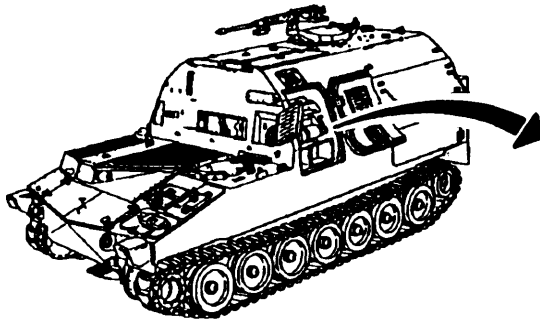
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Place drain pan under drain valve hose (5), open catch (3), and turn key (4) counter clockwise to drain oil from APU.
2. Remove APU oil filter (2) from adapter plate (1). Discard oil filter.

b. INSTALLATION

1. Install new oil filter (2) on adapter plate (1) until gasket contacts plate (1); tighten one-half turn.
2. Turn key (4) clockwise to close drain valve; secure with catch (3).



FOLLOW-ON MAINTENANCE:

- Install APU compartment access plate (para 15-39).
- Close APU side door (refer to TM 9-2350-287-10).

18-9. APU OIL PRESSURE TRANSMITTER REPLACEMENT.*This Task Covers:*

- a. Removal b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

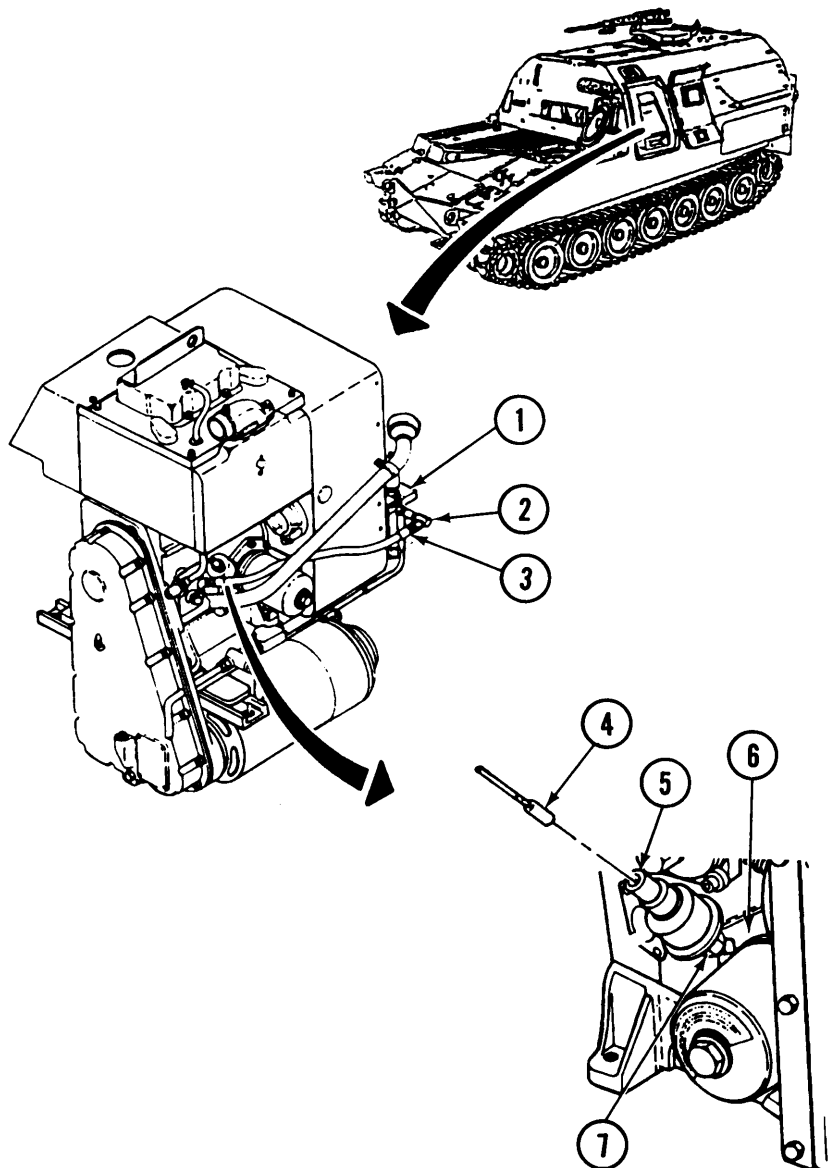
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU removed (para 18-2).

Materials/Parts:

- Teflon tape (Item 70, Appendix D)

a. REMOVAL

1. Remove breather hose (3) from elbow (2) at saber gage tube assembly (1).
2. Disconnect electrical lead (4) from oil pressure transmitter (5).
3. Remove oil pressure transmitter (5) and adapter (7) from engine block (6).
4. Remove adapter (7) from oil pressure transmitter (5).



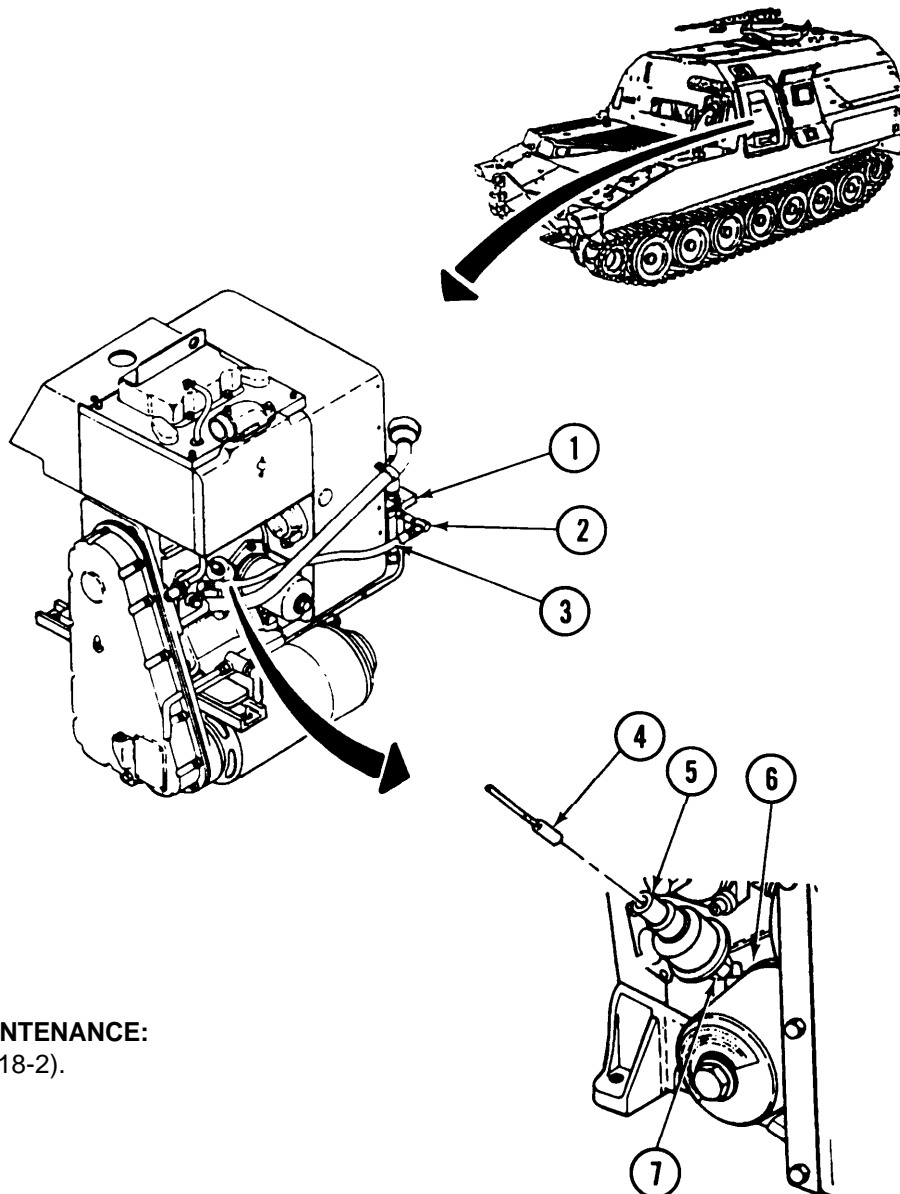
18-9. APU OIL PRESSURE TRANSMITTER REPLACEMENT (continued).

b. INSTALLATION

NOTE

Use Teflon tape on all male pipe fittings prior to installation.

1. Install adapter (7) on oil pressure transmitter (5).
2. Install oil pressure transmitter (5) and adapter (7) on engine block (6).
3. Connect electrical lead (4) to oil pressure transmitter (5).
4. Install breather hose (3) on elbow (2) at saber gage tube assembly (1).



FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).

18-10. APU AIR CLEANER, INLET AND OUTLET HOSES, AND TUBES REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

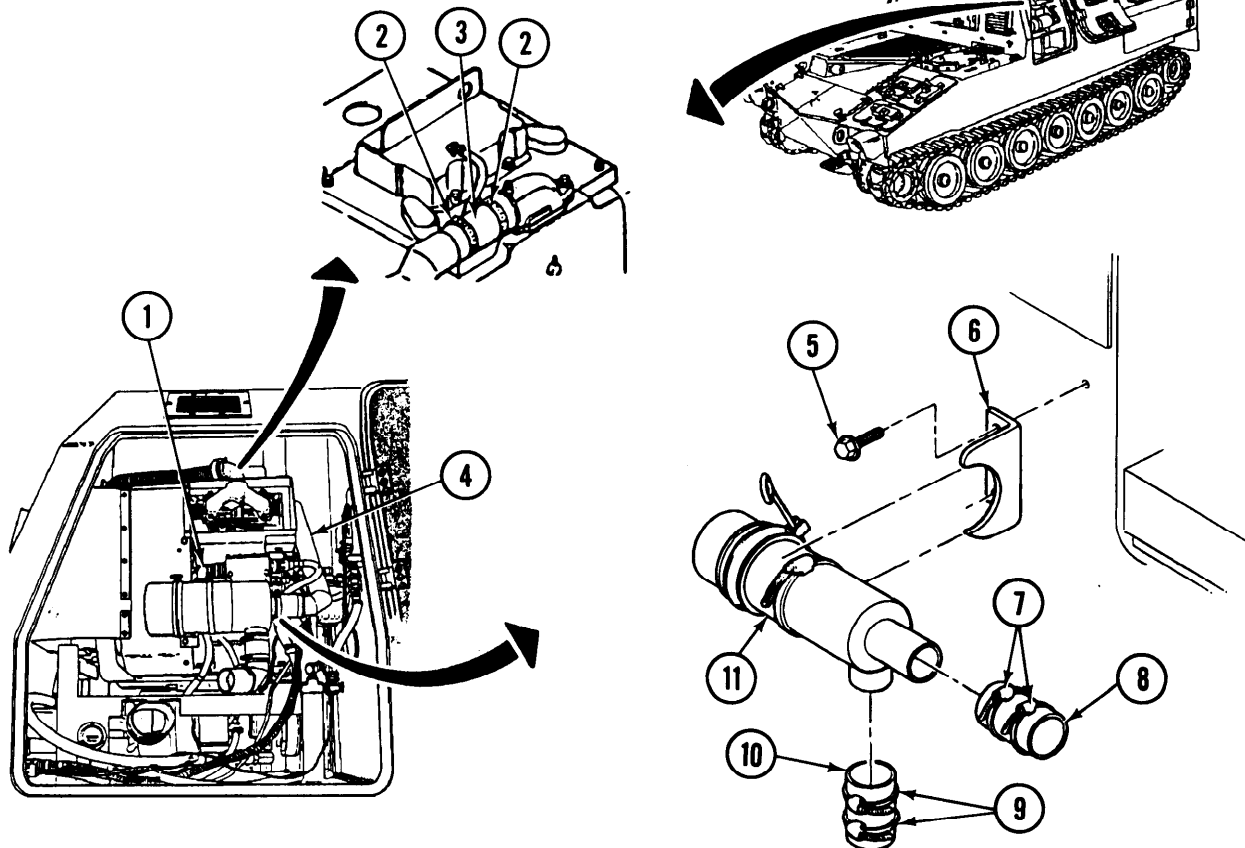
- Sealing compound (Item 59, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU air cleaner filter removed (refer to TM 9-2350-287-10).
- APU plenum removed (para 18-17).

a. REMOVAL

1. Remove two hose clamps (10) and hose (9) from APU air cleaner (11).
2. Loosen four clamps (2 and 7) and remove tube (4), two hoses (3 and 8), and four clamps (2 and 7) from the APU.
3. Loosen clamp (1) and remove air cleaner (11) from bracket (6).
4. Remove two screws (5) and bracket (6) from APU.



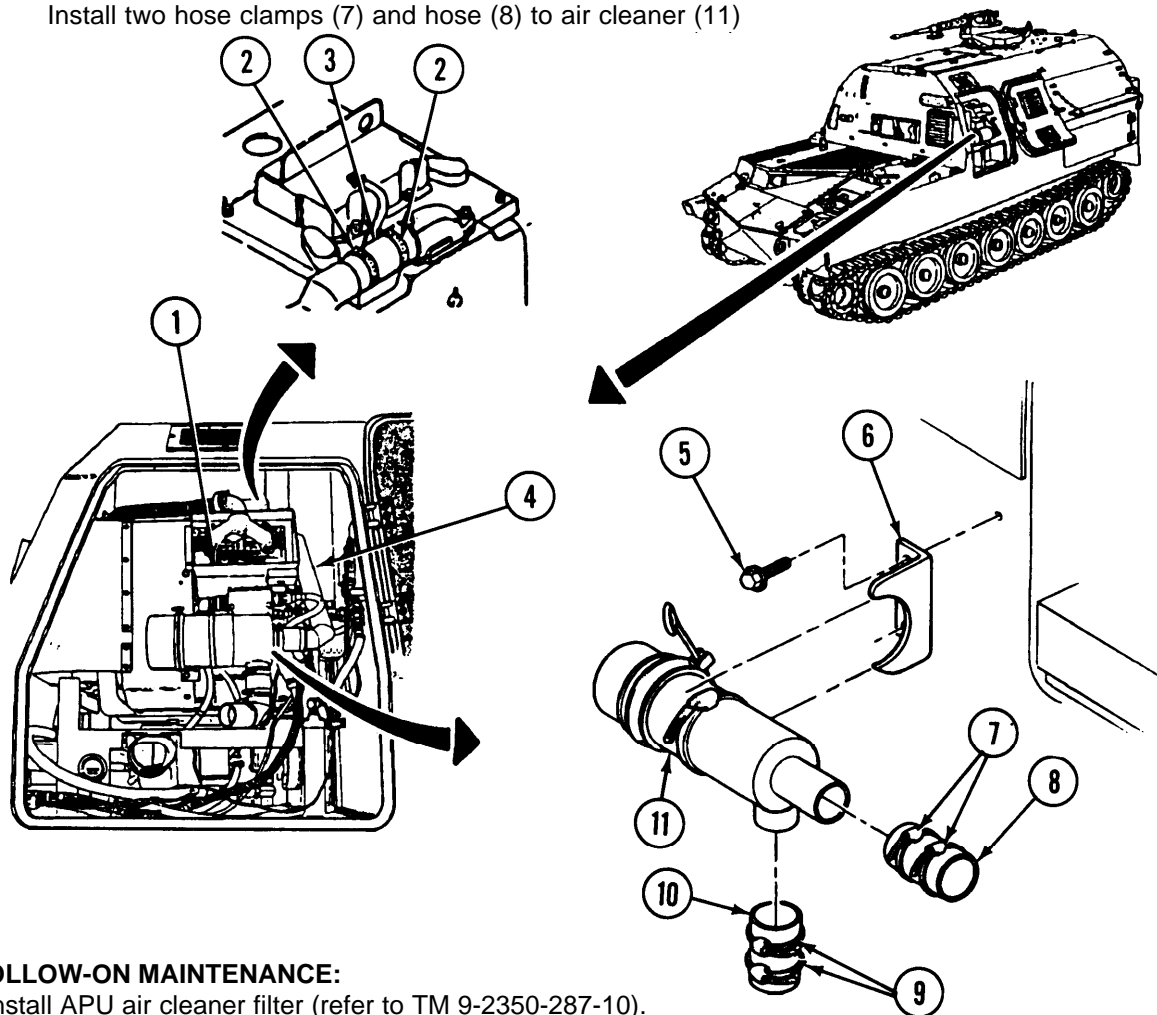
**18-10. APU AIR CLEANER, INLET AND OUTLET HOSES, AND TUBES REPLACEMENT
(continued).**

WARNING

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

b. INSTALLATION

1. Apply sealing compound to threads of screws (5).
2. Install two screws (5) and bracket (6) on APU.
3. Install air cleaner (11) on bracket (6) and tighten clamp (1).
4. Install two hoses (3 and 8), four clamps (7 and 10), and tube (4) on the APU. Tighten four clamps (7 and 10).
5. Install two hose clamps (7) and hose (8) to air cleaner (11)



FOLLOW-ON MAINTENANCE:

- Install APU air cleaner filter (refer to TM 9-2350-287-10).
- Install APU plenum (para 18-17).

18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- Drain pan (Item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

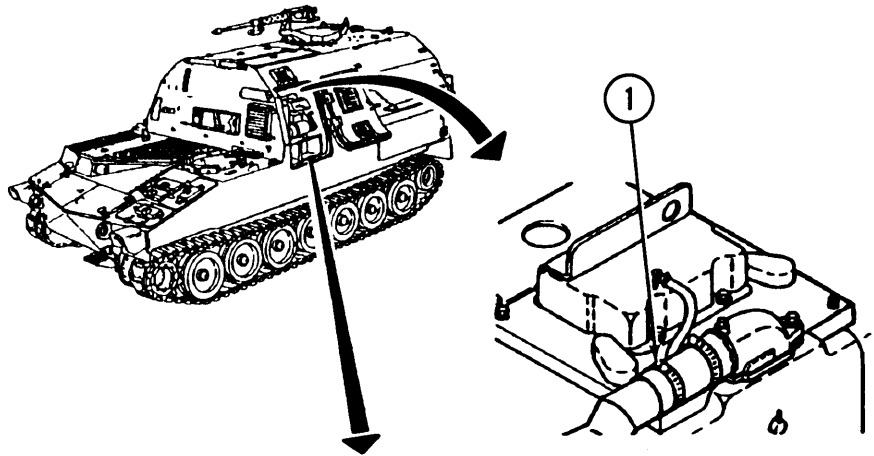
Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)

- Teflon tape (Item 70, Appendix D)
- Lockwasher (3) (Item 137, Appendix H)

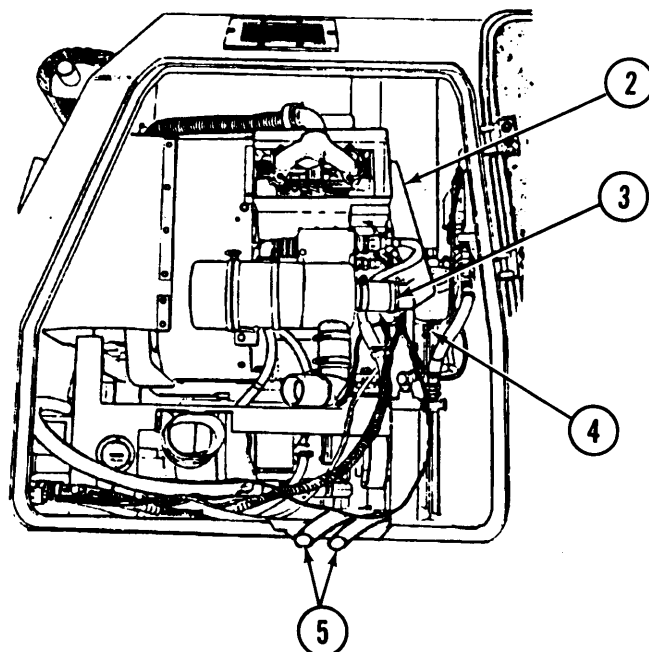
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU plenum removed (para 18-17).



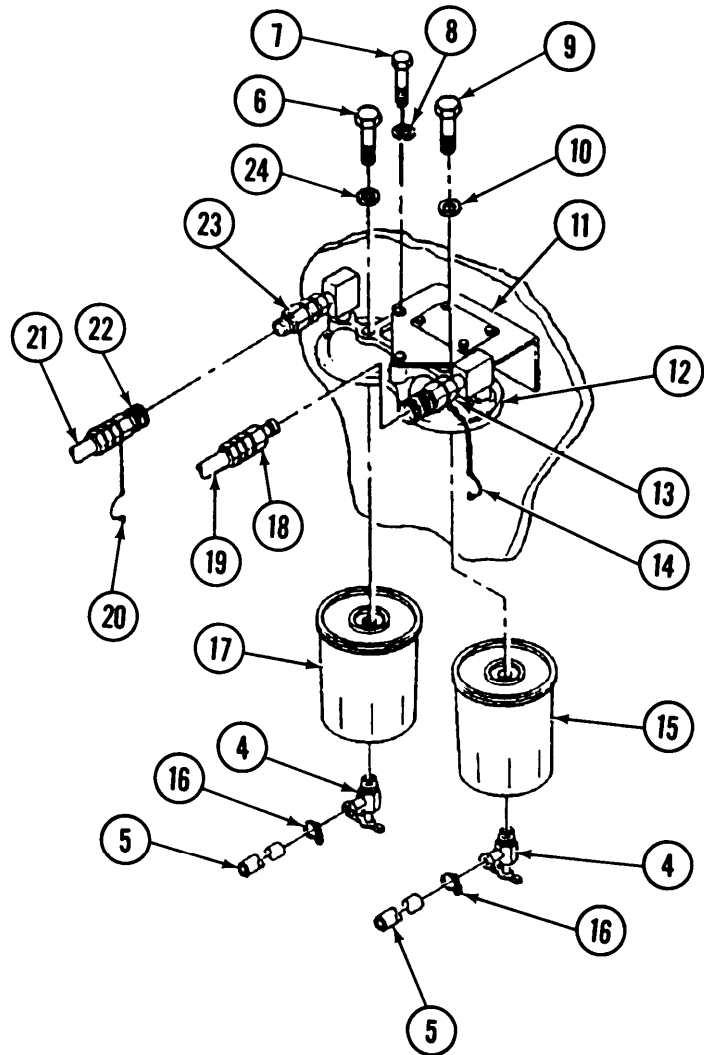
a. REMOVAL

1. Place ends of two fuel drain hoses (5) in drain pan. Open two drain cocks (4). When fuel flow stops, close drain cocks (4).
2. Loosen two clamps (1 and 3), and remove air cleaner tube (2) from APU.



18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).

3. Remove screw (6) and washer (24) and APU primary fuel filter (17) from mounting bracket (11).
4. Remove screw (9) and washer (10) and APU secondary fuel filter (15) from mounting bracket (11).
5. Remove two clamps (16) and two hoses (5) from two drain cocks (4).
6. Remove two drain cocks (4) from two filters (15 and 17).
7. Pull retainer clip (20). Disconnect primary filter input line (21) at quick-disconnect coupling halves (22 and 23).
8. Pull retainer clip (14). Disconnect secondary filter output line (19) at quick-disconnect coupling halves (13 and 18).
9. Remove three screws (7) and lockwashers (8) and filter head (12) and attached parts from mounting bracket (11). Discard lockwashers.

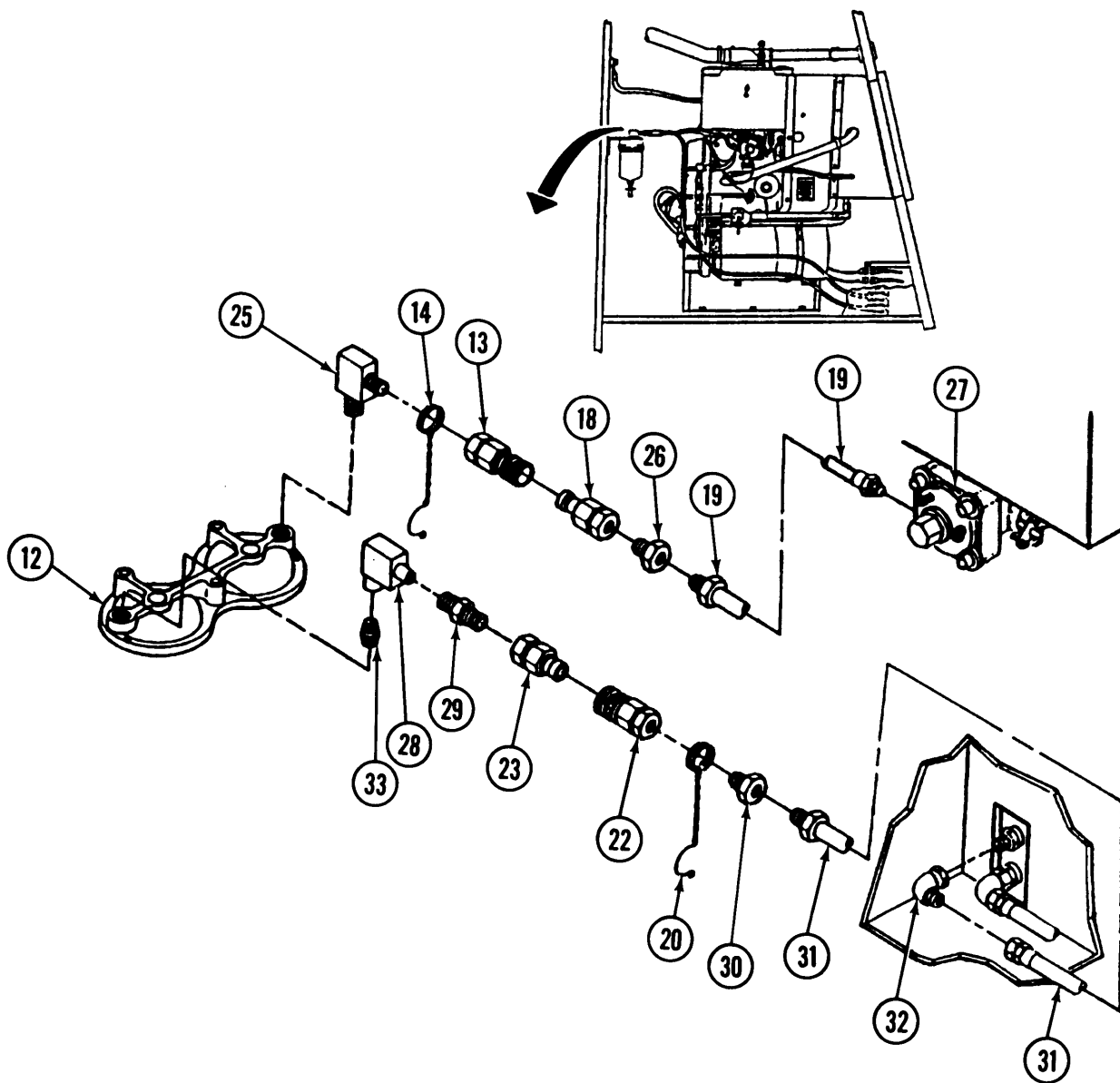


b. DISASSEMBLY

1. Remove coupling half (22) from connector (30), releasing retainer clip (20).
2. Remove coupling half (18) from connector (26).
3. Remove connector (26) from secondary filter output line (19).
4. Remove secondary filter output line (19) from injection pump (27).
5. Remove coupling half (23) from nipple (29).

18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).

6. Remove nipple (29) from elbow (28).
7. Remove elbow (28) from nipple (33).
8. Remove coupling half (13) from elbow (25), releasing retaining clip (14).
9. Remove elbow (25) from filter head (12).
10. Remove connector (30) from inlet fuel hose (31).
11. Remove inlet fuel hose (31) from elbow (32).
12. Remove elbow (32) from bulkhead.



18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).

13. Disconnect APU fuel return hose (35) at quick-disconnect coupling half (37) from injection pump (27).
14. Remove hose (35) from elbow (34).
15. Remove elbow (34) from bulkhead,
16. Remove quick-disconnect coupling half (37) and adapter (36) from hose (35).

WARNING

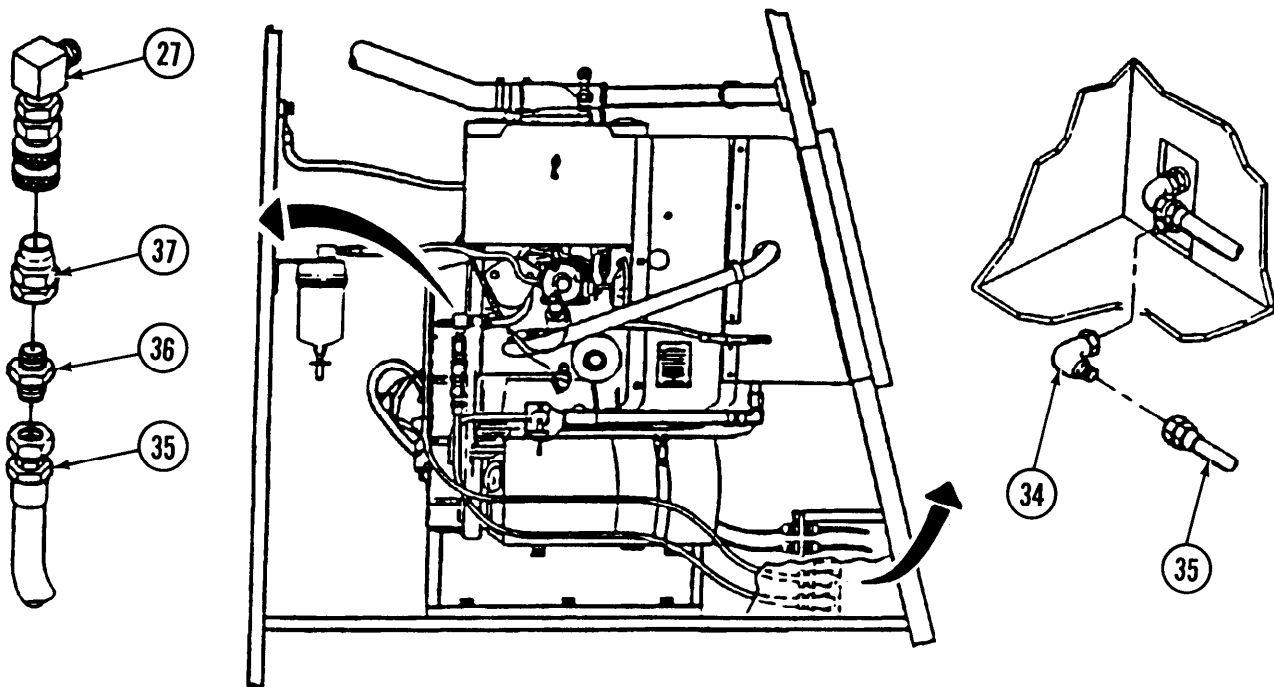
Drycleaning solvent (PD-680) is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flames or excessive heat.

NOTE

Apply Teflon tape to all male threads of items being installed.

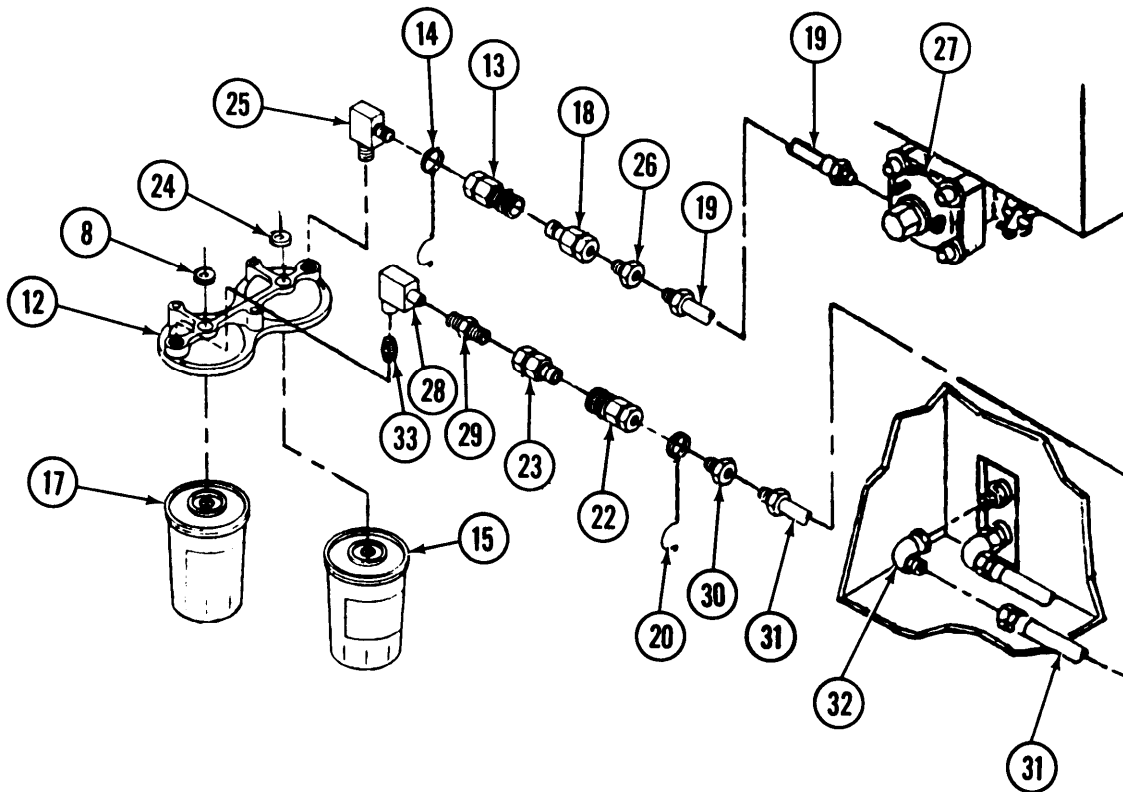
c. ASSEMBLY

1. Clean all threads using drycleaning solvent.
2. Install quick-disconnect coupling half (37) and adapter (36) on APU fuel return hose (35).



18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).

3. Install elbow (34) on bulkhead.
4. Install hose (35) on elbow (34).
5. Connect hose (35) at quick-disconnect coupling half (37) to injection pump (27).
6. Install elbow (32) on bulkhead.
7. Install inlet fuel hose (31) on elbow (32).
8. Install connector (30) on inlet fuel hose (31).
9. Install elbow (25) in filter head (12).
10. Position ring of retainer clip (14) on coupling half (13) and install coupling half (13) on elbow (25).
11. Install nipple (33) in filter head (12).
12. Install elbow (28) and nipple (29) on nipple (33).
13. Install secondary filter output line (19) to injection pump (27).
14. Moisten two washers (8 and 24) and seals at tops of filters (15 and 17) with diesel fuel.

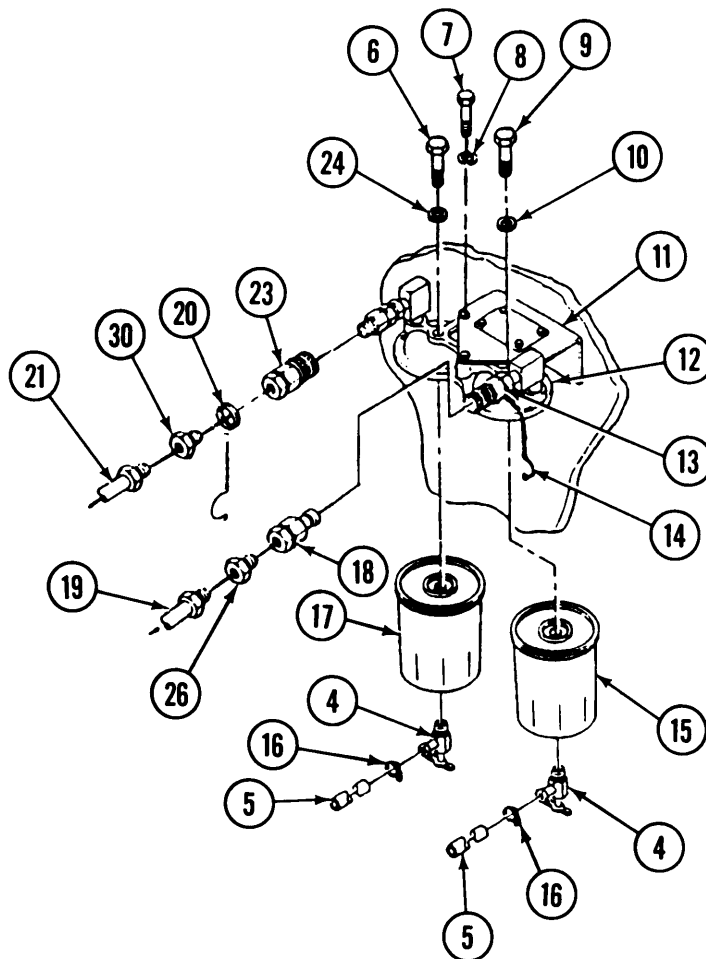


18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).

NOTE

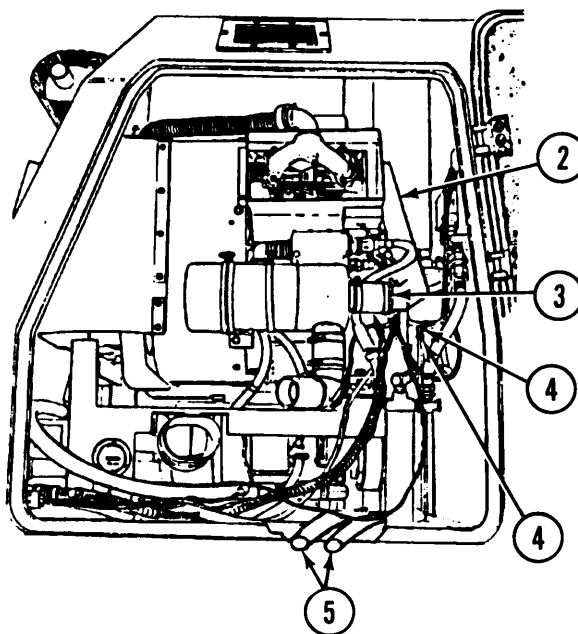
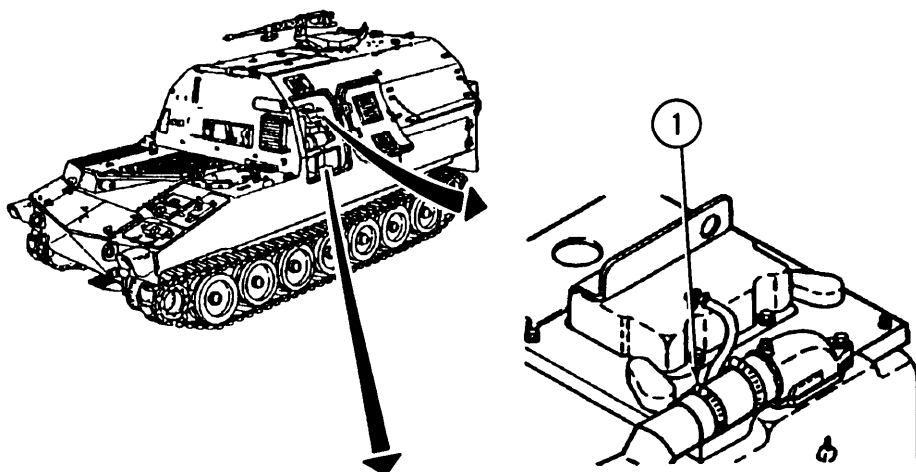
Make sure filter seating areas of filter head are clean.

15. Install filter (17) against inside of filter head (12) with washer (24) and screw (6). Finger-tighten screw (6).
16. Install secondary filter (15) against outside of filter head (12) with washer (10) and screw (9). Finger-tighten screw (9).
17. Tighten two screws (6 and 9) 1 1/2 additional turns to compress seals at tops of filters (15 and 17).
18. Install two drain cocks (4) on two filters (15 and 17). Close drain cocks (4).
19. Install connector (26) on secondary fuel line (19).
20. Install coupling half (18) on connector (26).
21. Position ring of retainer clip (20) on coupling half (22), then install coupling half (22) on connector (29).
22. Install two hoses (5) on two drain cocks (4) with two clamps (16).



18-11. APU PRIMARY AND SECONDARY FUEL FILTERS REPLACEMENT (continued).**d. INSTALLATION**

1. Install filter head (12) and attached parts on mounting bracket (11) with three new lockwashers (10) and three screws (9).
2. Connect secondary filter output line (19) by connecting coupling halves (13 and 18). Insert clip of retainer clip (14) behind knurled release sleeve of coupling half (13).
3. Connect primary filter input line (21) by connecting coupling halves (22 and 23). Insert clip of retainer clip (20) behind knurled release sleeve of coupling half (23).
4. Install air cleaner tube (2) and clamps (1 and 3) on APU.
5. Place two drain hoses (5) in slot at bottom flange of APU door.

**FOLLOW-ON MAINTENANCE:**

- Install APU plenum (para 18-17).
- Operate APU and check for leakage (refer to TM 9-2350-287-10).

18-12. APU EXHAUST MUFFLER, PIPES, AND SHIELD REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (4) (Item 164, Appendix H)
- Shim (Item 337, Appendix H)

Materials/Parts:

- Gasket (Item 76, Appendix H)
- Gasket (Item 105, Appendix H)
- Lockwasher (9) (Item 136), Appendix H)

Equipment Conditions:

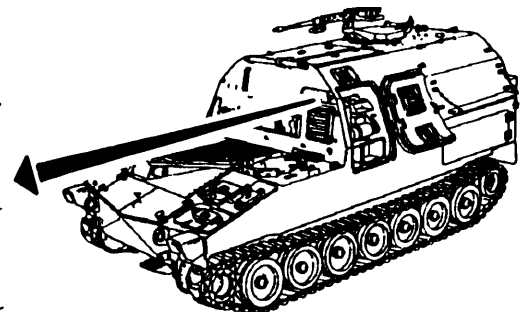
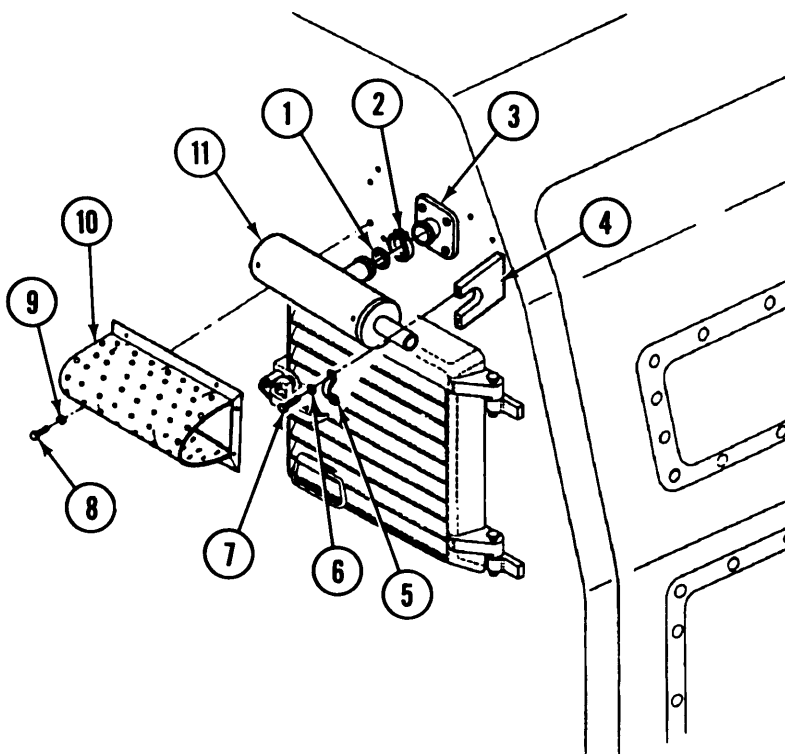
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU compartment side door opened (refer to TM 9-2350-287-10).

a. REMOVAL

WARNING

Do not touch flexible pipe or tube assembly until it has cooled down. Failure to follow this may cause burns or injury to personnel.

1. Remove seven screws (8), lockwashers (9), and muffler shield (10) from vehicle hull. Discard lockwashers.
2. Remove two screws (7), lockwashers (6), and retaining strap (5) from the APU muffler bracket (4). Discard lockwashers.



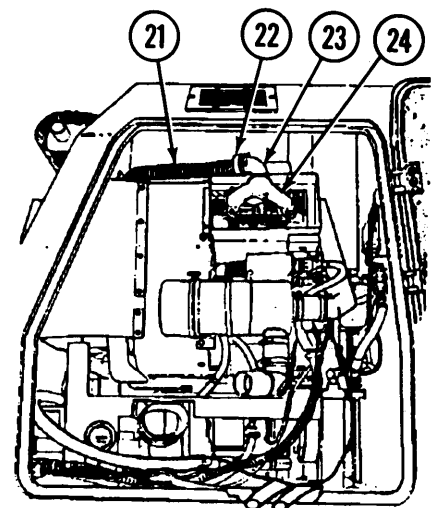
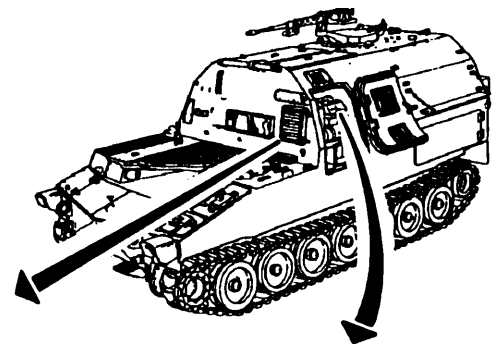
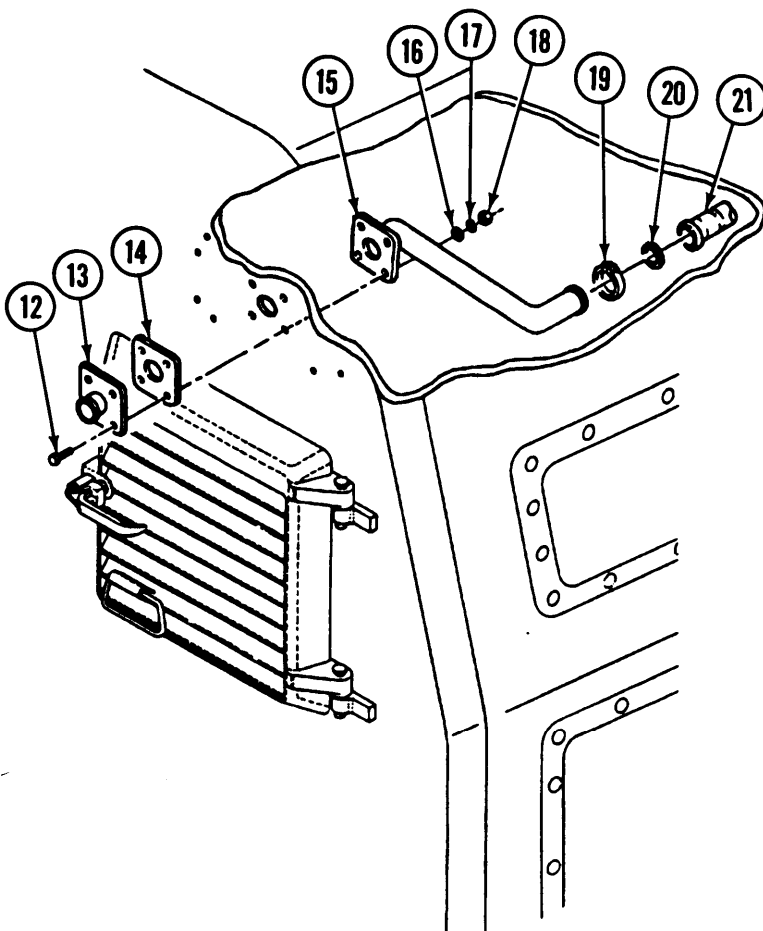
18-12. APU EXHAUST MUFFLER, PIPES, AND SHIELD REPLACEMENT (continued).

3. Remove clamp (2) and APU muffler (11) from flange (3). Remove and discard gasket (1).

WARNING

Do not touch flexible pipe or tube assembly until it has cooled down. Failure to follow this may cause burns or injury to personnel.

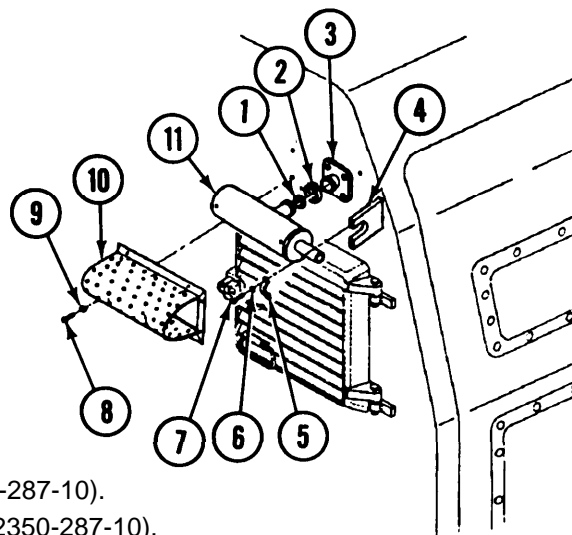
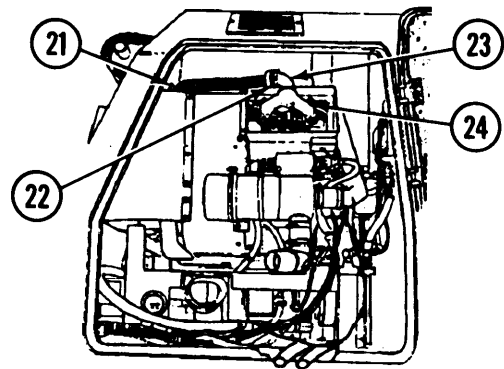
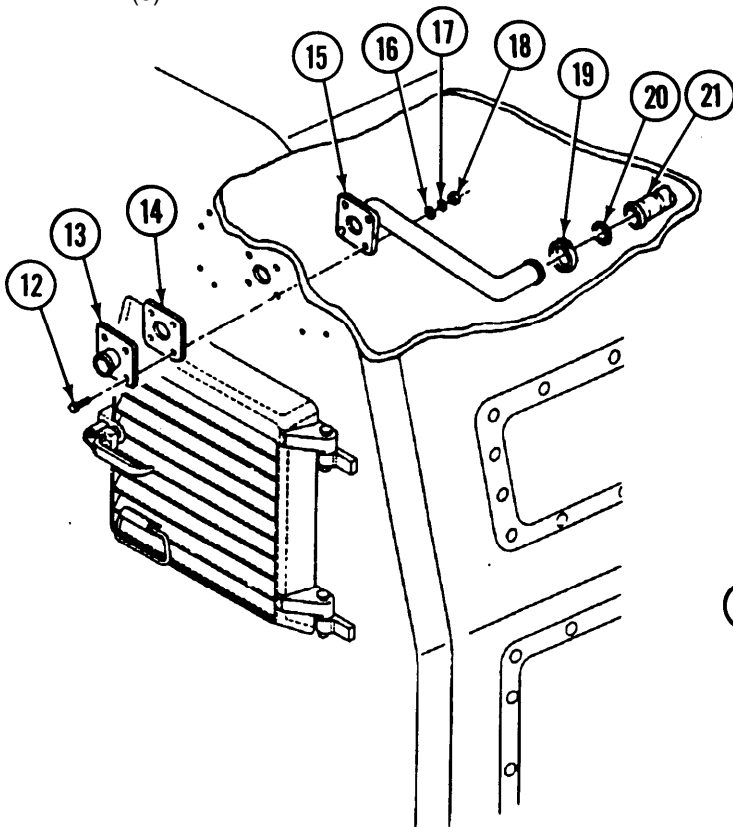
4. Remove clamp (19) and pull flexible pipe (21) from exhaust pipe (15) in APU compartment.
5. Remove shim (20) from exhaust pipe (7). Discard shim.
6. Remove four nuts (18), lockwashers (17), washers (16), and exhaust pipe (15) from APU compartment. Discard lockwashers.
7. Remove four screws (12), gasket (14), and flange (13) from outside of vehicle hull. Discard gasket.
8. Remove clamp (22) from APU exhaust manifold elbow (23) and remove flexible hose (21).
9. Unscrew and remove elbow (23) from exhaust manifold (24).



18-12. APU EXHAUST MUFFLER, PIPES, AND SHIELD REPLACEMENT (continued).

b. INSTALLATION

1. Install elbow (23) on exhaust manifold (24).
2. Install flexible hose (21) on elbow (23) and secure with clamp (22).
3. Install flange (13) and new gasket (14) on outside of vehicle hull with four screws (12).
4. Position exhaust pipe over (15) four screws (12) in APU compartment.
5. Secure exhaust pipe (15) on four screws (12) with four washers (16), new lockwashers (17), and nuts (18).
6. Position clamp (19) on flange of exhaust pipe (15).
7. Install new shim (20) between exhaust pipe (15) and flexible pipe (21). Install flexible pipe (21) on exhaust pipe (15) with clamp (19).
8. Install new gasket (1), clamp (2), and APU muffler (11) on flange (3).
9. Install retaining strap (5) on the APU muffler bracket (4) with two new lockwashers (6) and screws (7).
10. Install muffler shield (10) on vehicle hull over APU muffler (11) with seven new lockwashers (9) and screws (8).



FOLLOW-ON MAINTENANCE:

- Close APU compartment side door (refer to TM 9-2350-287-10).
- Run APU and inspect for exhaust leaks (refer to TM 9-2350-287-10).

18-13. APU COOLING AIR DUCT REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- APU exhaust manifold elbow removed (para 18-12).

Equipment Conditions:

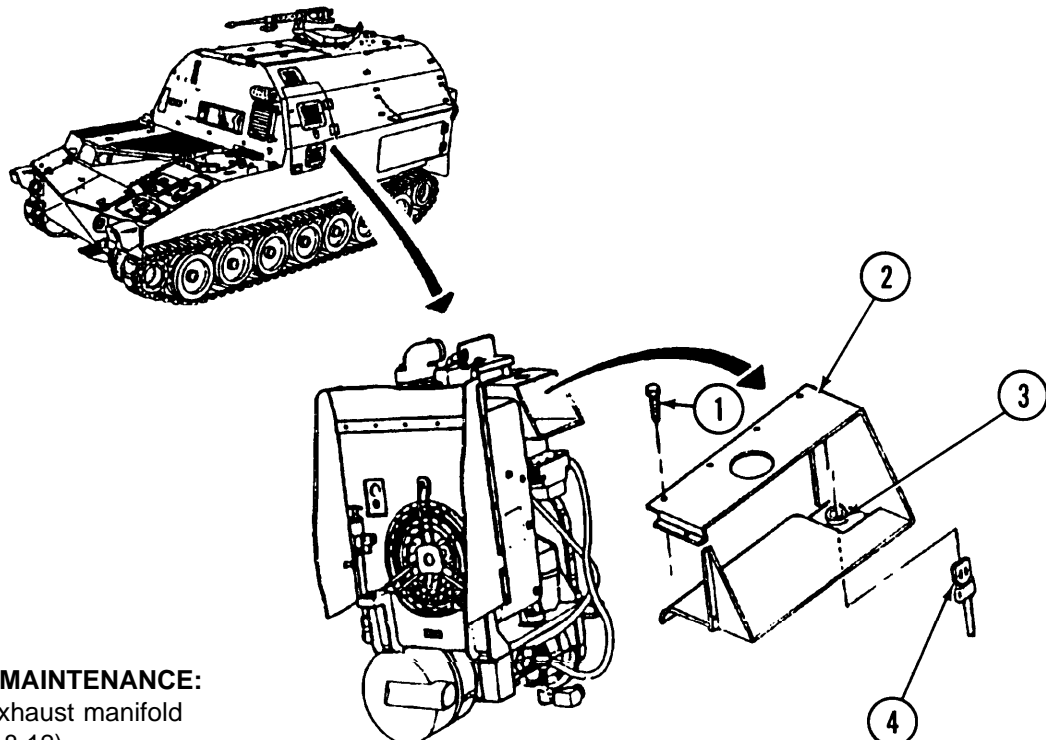
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

a. REMOVAL

1. Disconnect ground lead wire 493 (4) from high-temperature switch and pull through grommet (3).
2. Remove six screws (1) from APU cooling air duct (2) and remove air duct (2) from APU.

b. INSTALLATION

1. Install air duct (2) on APU using six screws (1).
2. Install wire 493 (4) through grommet (3) and connect to high-temperature switch.



FOLLOW-ON MAINTENANCE:

- Install APU exhaust manifold elbow (para 18-12).

18-14. APU PANELS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (17) (Item 123, Appendix H)
- Lockwasher (Item 164, Appendix H)
- Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

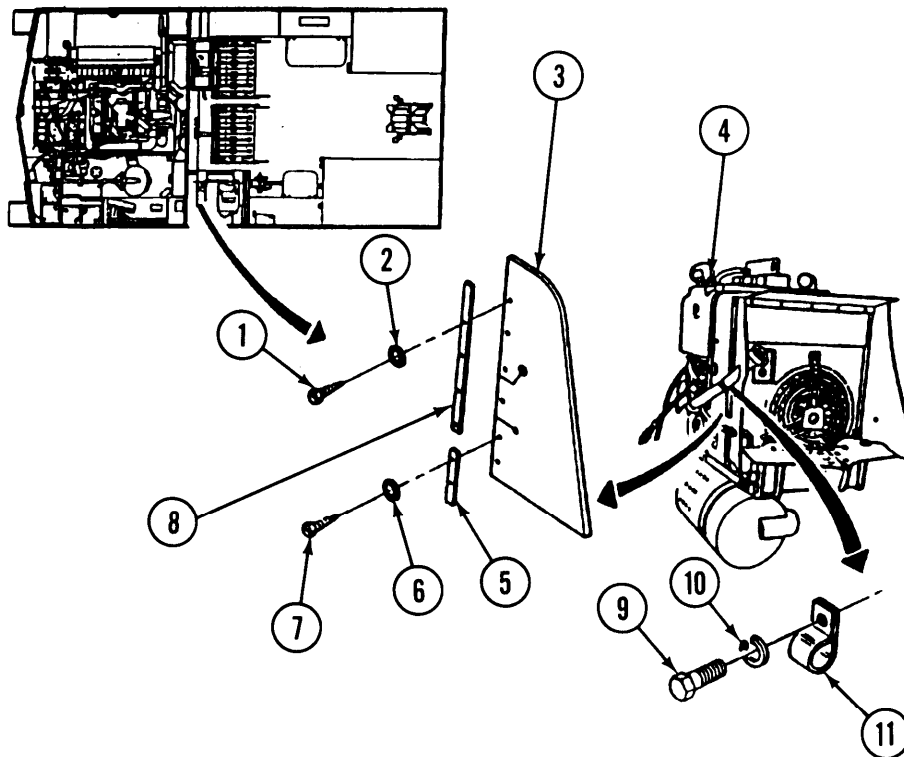
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU compartment front and side doors opened (refer to TM 9-2350-287-10). (for right and top panel and panel duct).
 - APU compartment access panel removed (para 15-39) (for left panel).
-

a. REMOVAL

NOTE

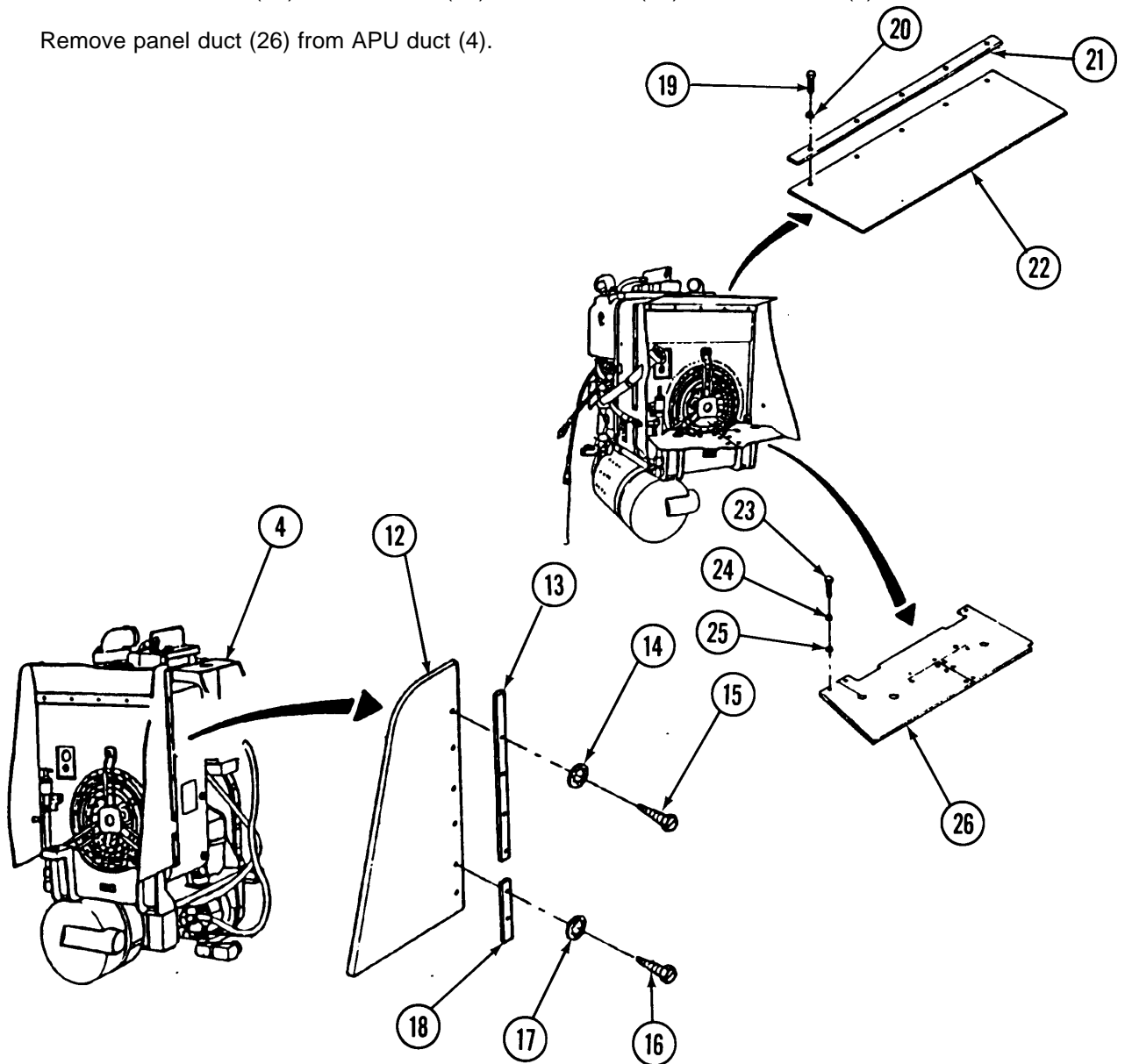
Access to right panel, top panel, and panel duct can be obtained through APU compartment front and side doors.

1. Remove screw (9) and lockwasher (10) from clamp assembly (11). Discard lockwasher.



18-14. APU PANELS REPLACEMENT (continued).

2. Remove three screws (1) and lockwashers (2) and retainer (8) from APU duct (4). Discard lockwashers.
3. Remove two screws (7) and lockwashers (6) and retainer (5) from APU duct (4). Discard lockwashers.
4. Remove left panel (3) from APU duct (4).
5. Remove four screws (15) and lockwashers (14) and retainer (13) from APU duct (4). Discard lockwashers.
6. Remove two screws (16) and lockwashers (17) and retainer (18) from APU duct (4). Discard lockwashers.
7. Remove right panel (12) from APU duct (4).
8. Remove five screws (19) and lockwashers (20), retainer (21), and top panel (22) from APU duct (4).
9. Remove five screws (23), lockwashers (24), and washers (25) from APU duct (4). Discard lockwashers.
10. Remove panel duct (26) from APU duct (4).

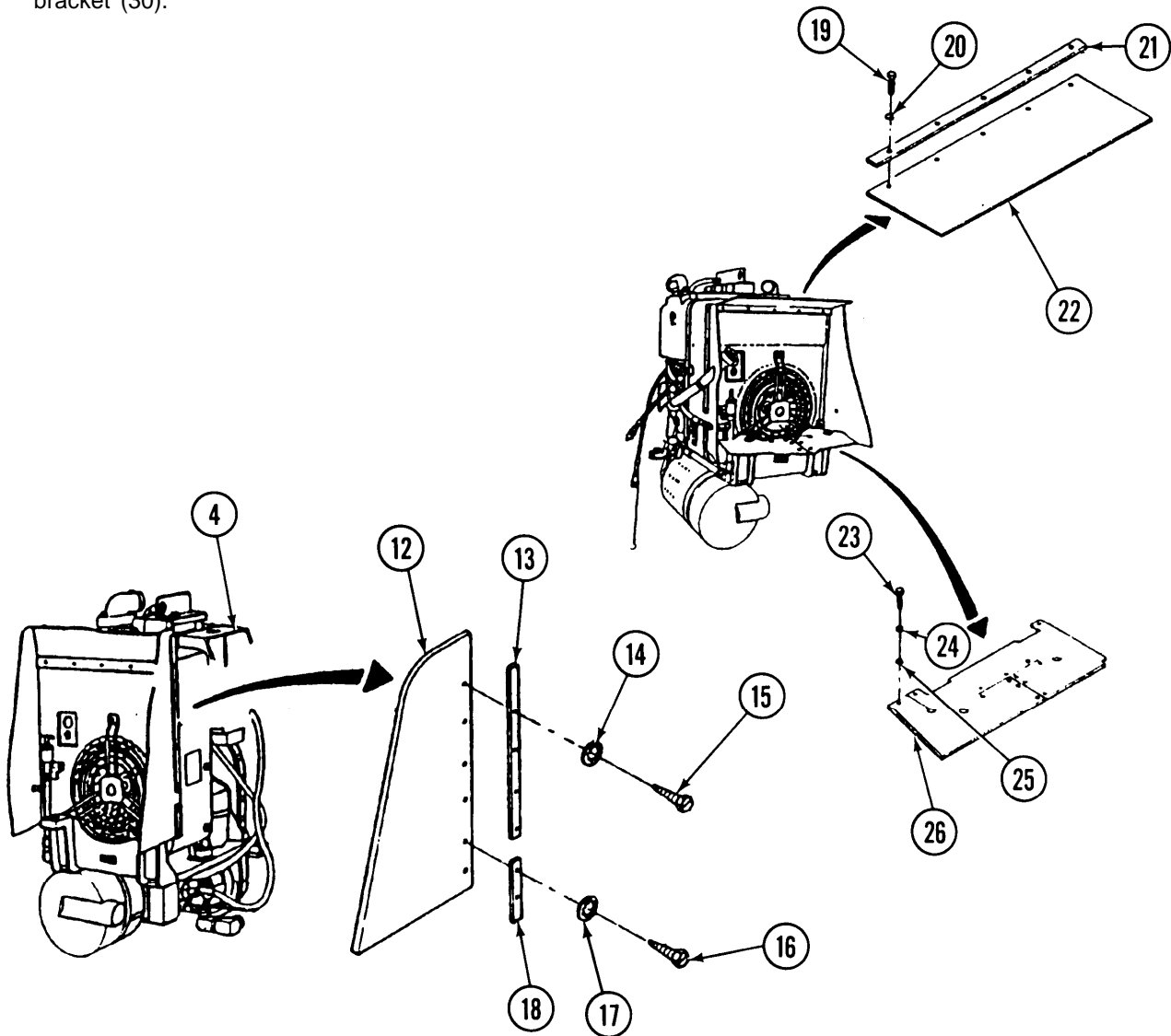


18-14. APU PANELS REPLACEMENT (continued).

11. Remove two screws (29), lockwashers (28) and washers (27) from each of three brackets (30) and remove three brackets (30) from vehicle hull. Discard lockwashers.
12. Inspect hook and pile fasteners (31) and replace if damaged.

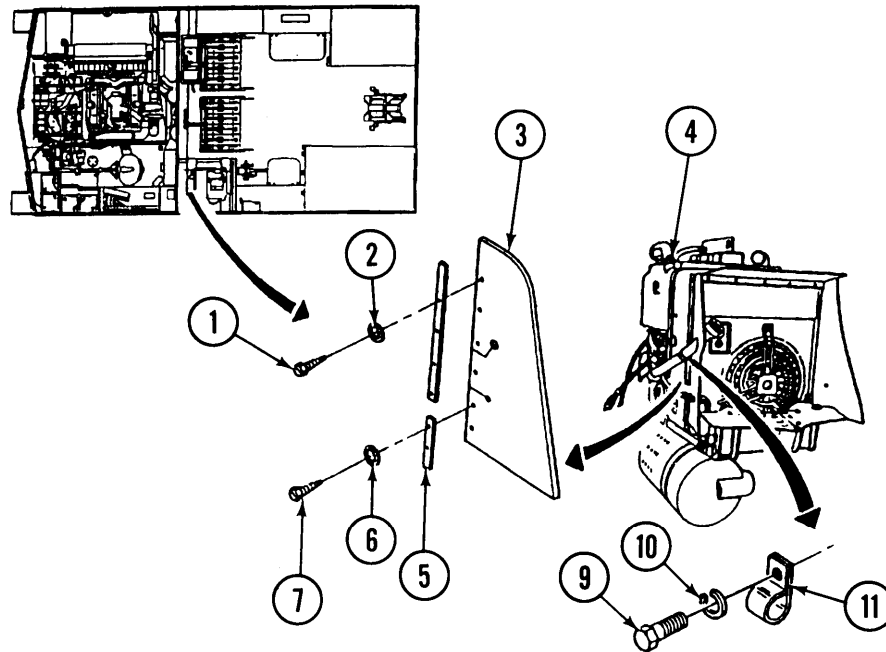
b. INSTALLATION

1. Peel backing from hook and pile fastener (31) and install hook and pile fastener (31) on bracket, if removed.
2. Install three brackets (30) on vehicle hull with two screws (29) new lockwashers (28) and washers (27) for each bracket (30).



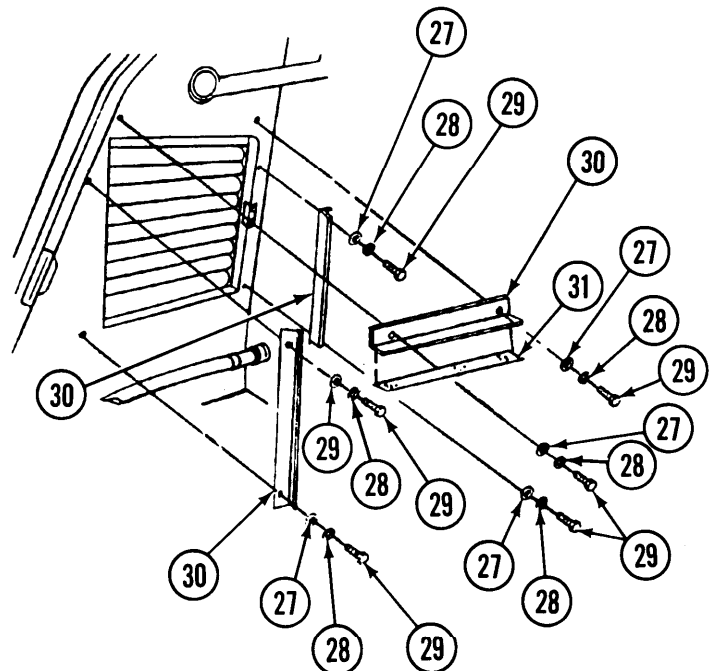
3. Install panel duct (26) on APU duct (4) with five screws (23), new lockwashers (24) and washers (25).
4. Install top panel (22) and retainer (21) on APU duct (4) with five screws (19) and new lockwashers (20).

18-14. APU PANELS REPLACEMENT (continued).



5. Install right panel (12) and retainer (18) on APU duct (4) with two screws (16) and new lockwashers (17).
6. Install retainer (13) on APU duct (4), with four screws (15) and new lockwashers (14).

7. Install left panel (3) and retainer (5) on APU duct (4) with two screws (7) and new lockwashers (6).
8. Install retainer (8) on APU duct (4) with three screws (1) and new lockwashers (2).
9. Install clamp (11) on APU duct (4) with new lockwasher (10) and screw (9).



FOLLOW-ON MAINTENANCE:

- Close APU compartment front and side doors (refer to TM 9-2350-287-10) (for right and top panels and panel duct).
- Install APU compartment access cover (para 15-39) (for left panel).

18-15. APU PANEL SUPPORTS REPLACEMENT.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Rubber adhesive (Item 4, Appendix D)
- Lockwasher (6) (Item 196, Appendix H)

Materials/Parts:

- Dry cleaning solvent (Item 27, Appendix D)
- Rag (Item 56, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU panels removed (para 18-14).
-

a. REMOVAL

1. Remove two screws (5), lockwashers (6), and washers (7) and support (8) from hull. Discard lockwashers.
2. Remove two screws (14), lockwashers (13), and washers (12) and support (11) from hull. Discard lockwashers.
3. Remove two screws (1), lockwashers (2), and washers (3) and support (4) from hull. Discard lockwashers.

b. DISASSEMBLY

1. Remove three hook-and-pile tape sections (9) from three supports (4, 8, and 11), and remove hook-and-pile tape section (10) from hull.

WARNING

Drycleaning solvent (P-D-680) is toxic and flammable. Always wear protective goggles and gloves, and use only in well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat,

2. Thoroughly clean surfaces of three supports (4, 8, and 11) and hull surfaces with drycleaning solvent and clean, dry rags.

WARNING

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

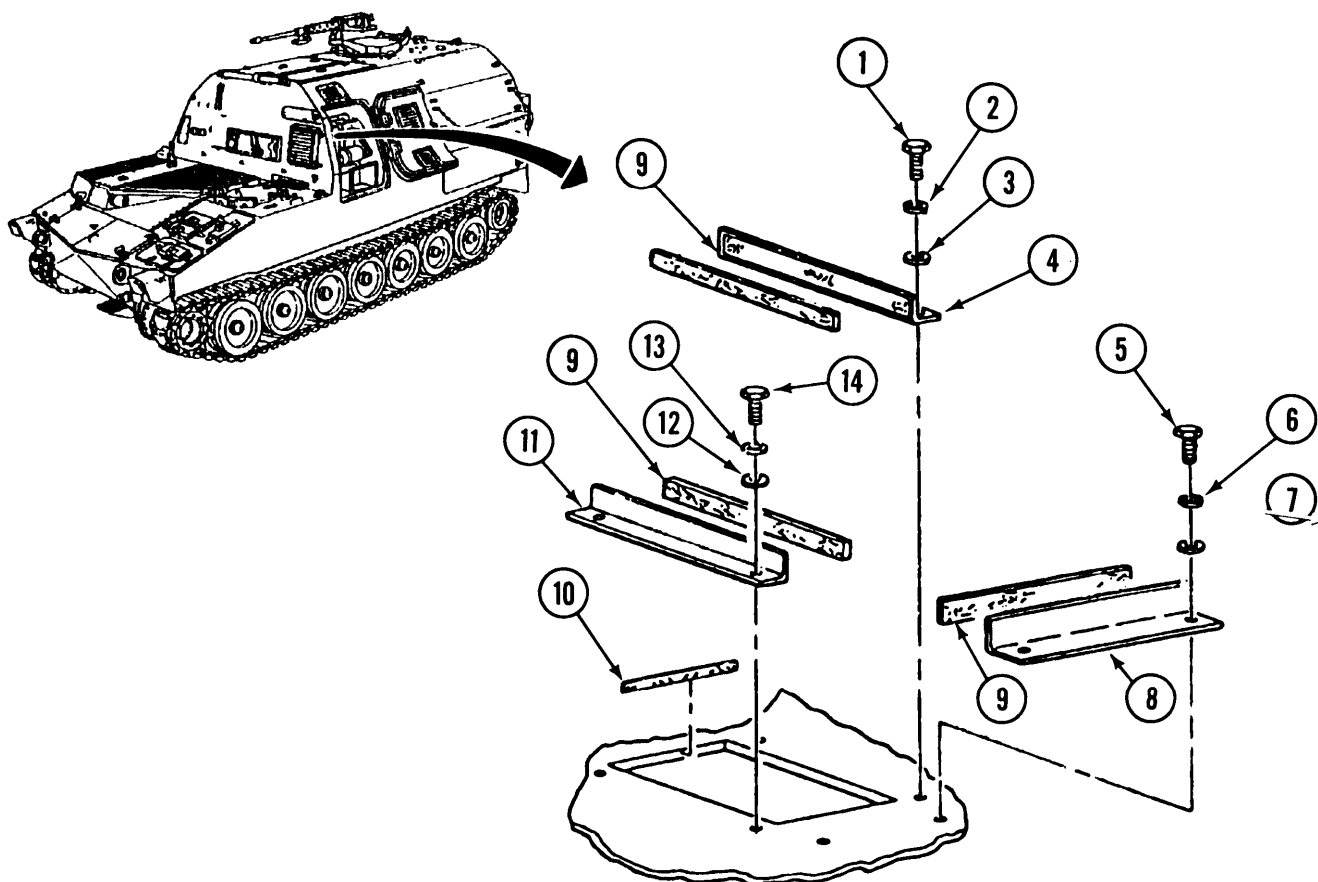
18-15. APU PANEL SUPPORTS REPLACEMENT (continued).

c. ASSEMBLY

1. Apply thin coating of rubber adhesive to mounting surfaces of three supports (4, 8, and 11) and hull. Allow to dry until tacky.
2. Install precoated hook-and-pile tape sections (9) on three supports (4, 10, and 11) and hull.

d. INSTALLATION

1. Install support (4) on hull using two washers (3), new lockwashers (2), and screws (1).
2. Install support (11) on hull using two washers (12), new lockwashers (13), and screws (14).
3. Install support (8) on hull using two washers (7), new lockwashers (6), and screws (5).

**FOLLOW-ON MAINTENANCE:**

- Install APU panels (para 18-14).

18-16. APU GENERATOR REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Drycleaning solvent (Item 28, Appendix D)
- Sealant, adhesive (Item 6, Appendix D)
- Lockwasher (3) (Item 126, Appendix H)
- Lockwasher (2) (Item 164, Appendix H)
- Self-locking nut (2) (Item 308, Appendix H)
- Self-locking nut (6) (Item 314, Appendix H)
- Self-locking nut (2) (Item 323, Appendix H)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU removed (para 18-2).
 - APU support stand and support assembly removed (para 18-4).
 - APU generator air duct removed (para 18-17).
 - APU hydraulic pump removed (para 17-21).
-

a. REMOVAL

1. Remove self-locking nut (9), lockwasher (10), and electrical lead 61 (11) from terminal A (3), Discard lockwasher.
2. Remove self-locking nut (12), lockwasher (13), and electrical lead 478A (14) from terminal D (16). Discard lockwasher.
3. Remove self-locking nut (1), three lockwashers (18), and two electrical ground leads (2) from terminal E (17). Discard lockwashers.
4. Remove self-locking nut (5), washer (6), electrical lead 62 (8), and electrical lead 66 (7) from terminal B (15). Discard self-locking nut.

NOTE

One person should support generator when mounting nuts are being loosened.

5. Loosen six self-locking nuts (19) from APU generator (4) and mounting studs (21).
6. With the aid of assistant, remove APU generator (4) by turning Counterclockwise then pulling it from APU chain case (22).
7. Remove six new self-locking nuts (19) and washers (20) from mounting studs (21). Discard self-locking nuts.

b. INSTALLATION

1. Install six new self-locking nuts (19) and washers (20) on mounting studs (21). Do not tighten nuts (19).
2. With the aid of assistant, position generator (4) on chain housing mounting studs (21) in APU chaincase (22) so terminal box is at 2 o'clock position.

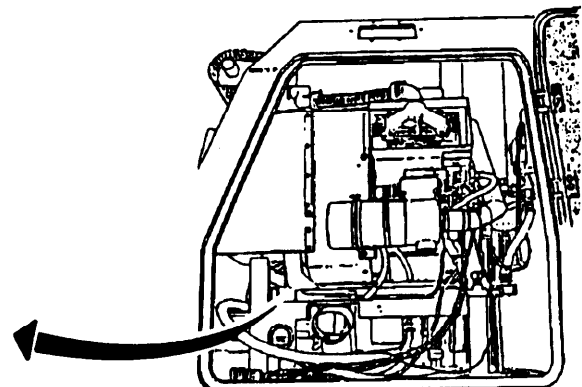
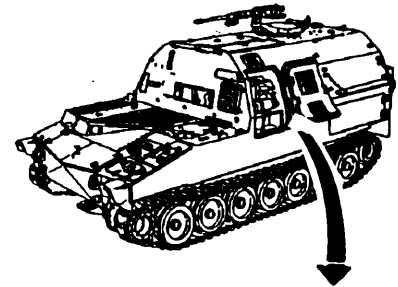
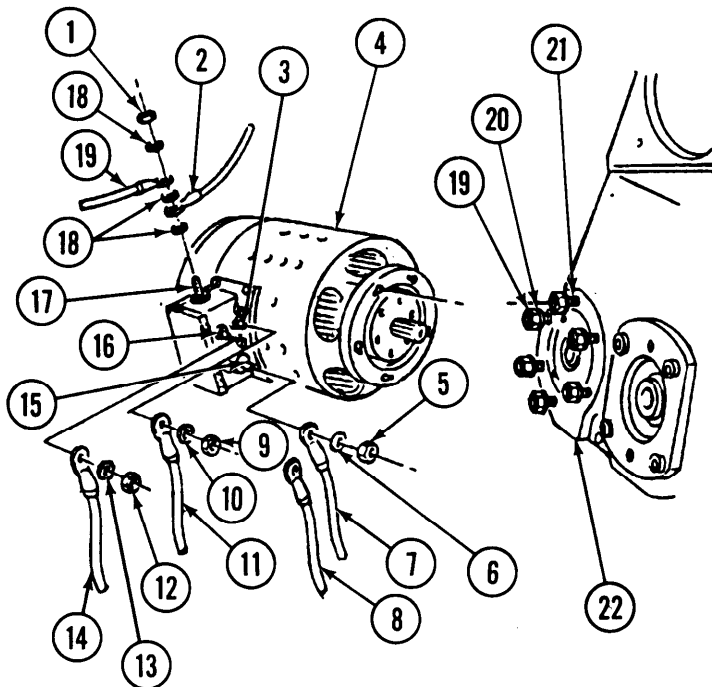
18-16. APU GENERATOR REPLACEMENT (continued).

3. Make sure all washers (20) are inside generator endbell, then turn generator (4) clockwise to lock in place.
4. Tighten six self-locking nuts (19) on APU generator (4) and mounting studs (21).

WARNING

Drycleaning 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.

5. Remove any traces of old sealant from four terminals (3, 15, 16, and 17) with drycleaning solvent.
6. Install two electrical ground leads (2) on terminal E (17) with three new lockwashers (18) and new self-locking nut (1).
7. Install electrical lead 61 (14) on terminal D (16) with new lockwasher (13) and new self-locking nut (12).
8. Install electrical lead 478A (11) on terminal A (3) with new lockwasher (10) and new self-locking nut (9).
9. Install electrical lead 62 (12) and electrical lead 66 (7) on terminal B (15) with washer (6) and new self-locking nut (5).
10. Seal four terminals (3, 15, 16, and 17) and connected leads with sealant adhesive.



FOLLOW-ON MAINTENANCE:

- Install APU hydraulic pump (para 17-21).
- Install APU generator air duct (para 18-17).
- Install APU support stand and support assembly (para 18-4).
- Install APU (para 18-2).

18-17. APU PLENUM REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

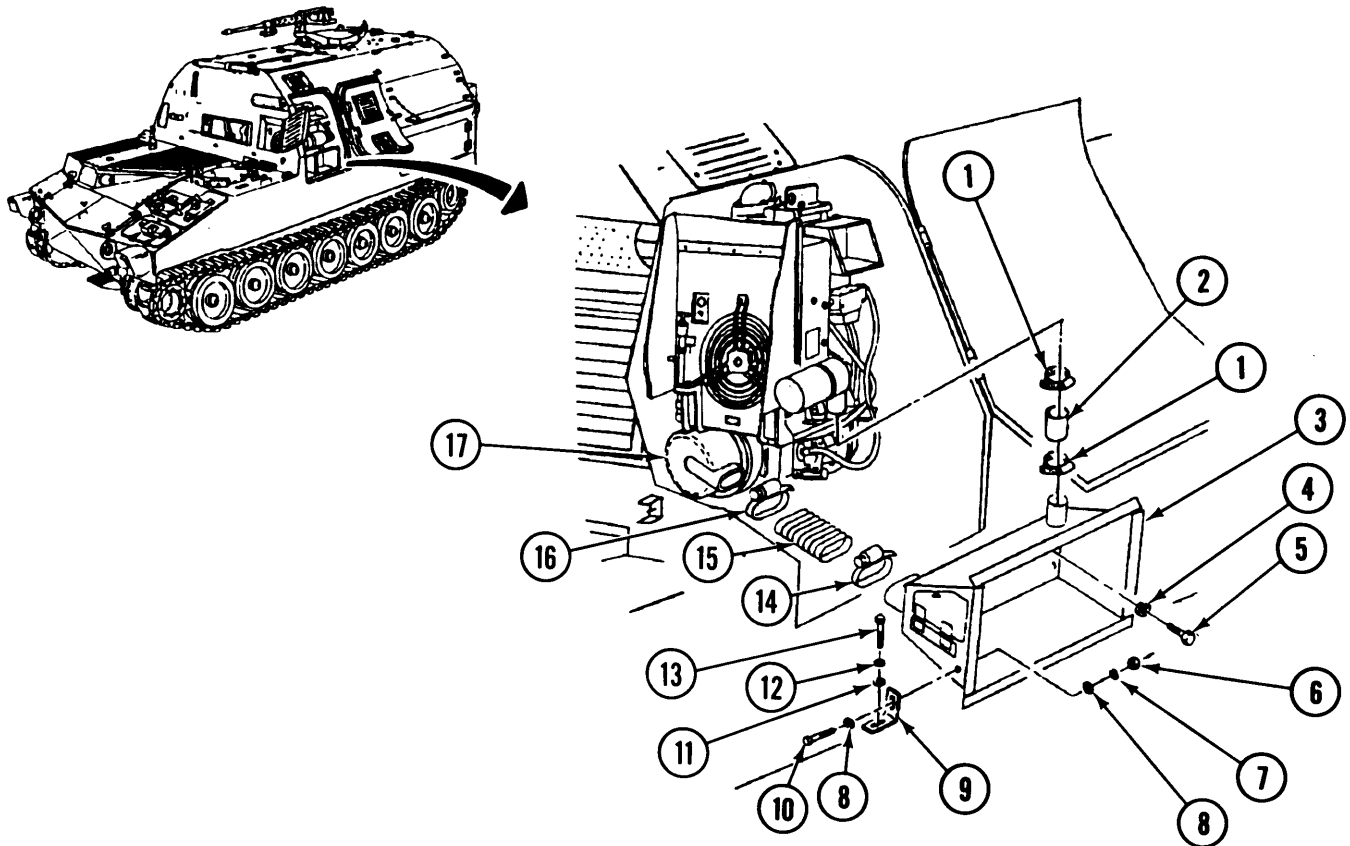
- Lockwasher (6) (Item 196, Appendix H).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU compartment side door opened (refer to TM 9-2350-287-10).

a. REMOVAL

1. Remove two screws (10), four washers (8), two lockwashers (7), and nuts (6) from APU plenum (3). Discard lockwashers.
2. Remove two screws (5) and lockwashers (4) from APU plenum (3). Discard lockwashers.
3. Loosen two clamps (1) on hose (2), and push hose (2) free of plenum (3).
4. Loosen clamp (16) on air duct hose (15), pull air duct hose (15) from generator air duct (17), and remove plenum (3) from vehicle.



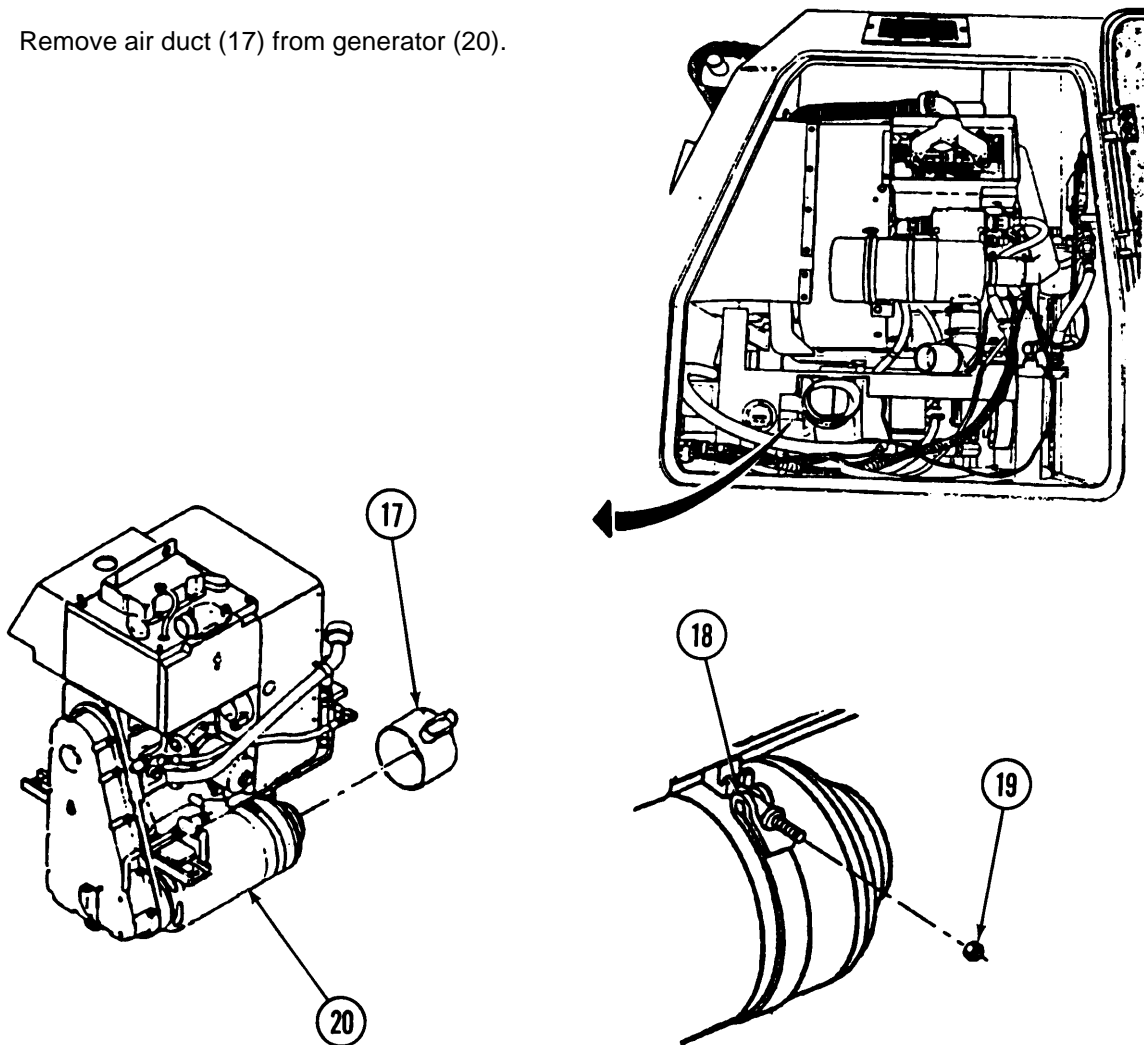
18-17. APU PLENUM REPLACEMENT (continued).

5. Loosen clamp (14) and remove air duct hose (15) from plenum (3).

NOTE

Perform step 6 only if brackets are damaged.

6. Remove two screws (13), lockwashers (12), and washers (11) and two brackets (9) from APU compartment. Discard lockwashers.
7. Remove nut (19) and release strap (18).
8. Remove air duct (17) from generator (20).

**b. INSTALLATION**

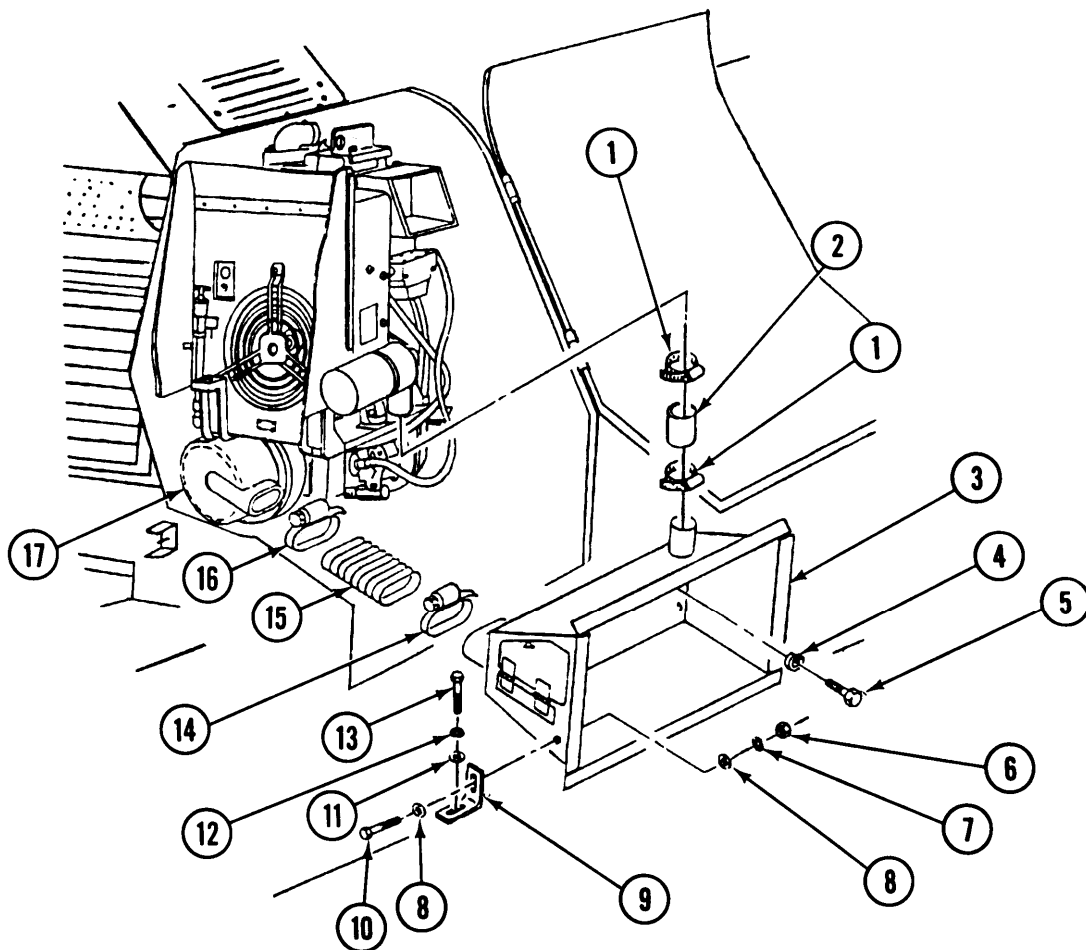
1. Install air duct (17) on generator (20) and secure strap (18) with nut (19).

18-17. APU PLENUM REPLACEMENT (continued).

NOTE

Perform step 2 only if brackets were removed.

2. Install two brackets (9) in APU compartment with two washers (11), new lockwashers (12), and screws (13).
3. Install air duct hose (15) on plenum (3) with clamp (14).
4. Install plenum (3) in vehicle, installing air duct hose (15) over generator air duct (17), and secure with clamp (16).
5. Push hose (2) down into plenum, and tighten two clamps (1).
6. Install two new lockwashers (4) and screws (5) in plenum (3).
7. Secure plenum (3) to two brackets (9) with two nuts (6), four washers (7), two new lockwashers (8), and screws (10).



FOLLOW-ON MAINTENANCE:

- Close APU compartment side door (refer to TM 9-2350-287-10).

18-18. APU STARTER RELAY REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 137, Appendix H)
- Lockwasher (2) (Item 138, Appendix H)

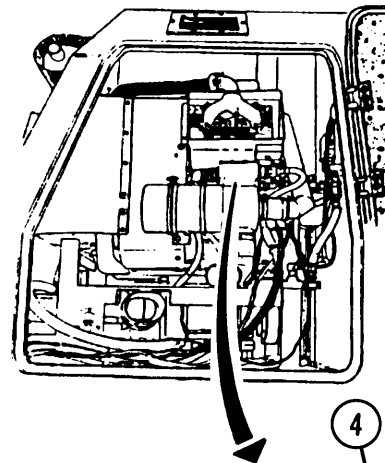
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- APU compartment side door opened (refer to TM 9-2350-287-10).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

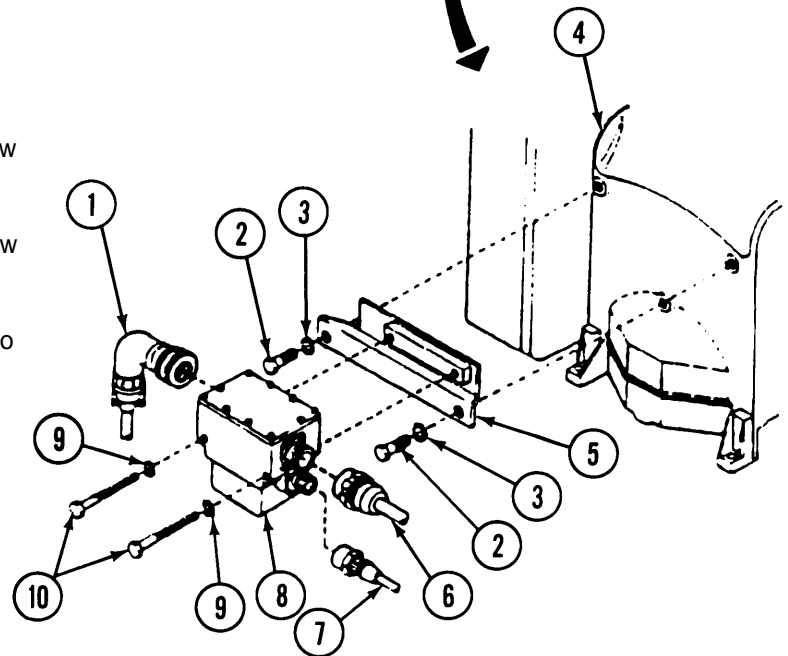
a. REMOVAL

1. Disconnect cable assemblies (1, 6, and 7) from auxiliary power unit (APU) starter relay (8).
2. Remove two screws (10) and lockwashers (9) and relay (8) from support (5). Discard lockwashers.
3. Remove two screws (2) and lockwashers (3) and support (5) from APU (4). Discard lockwashers.



b. INSTALLATION

1. Install support (5) on APU (4) with two new lockwashers (3) and screws (2).
2. Install relay (8) on support (5) with two new lockwashers (9) and screws (10).
3. Connect cable assemblies (1, 6, and 7) to relay (8).



FOLLOW-ON MAINTENANCE:

- Connect battery ground cables (para 7-41).
- Close APU compartment side door (refer to TM 9-2350-287-10).

18-19. APU HYDRAULIC PRESSURE SWITCH ASSEMBLY REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- Drain pan (item 14, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- APU compartment side door opened (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- Left front crew compartment dome light removed (para 7-30).

Personnel Required: Two

a. REMOVAL

1. Disconnect two electrical pressure switch connectors (1) from APU wiring harness 12329640.

CAUTION

To prevent hydraulic contamination system, hydraulic lines and ports must be capped immediately after disconnection.

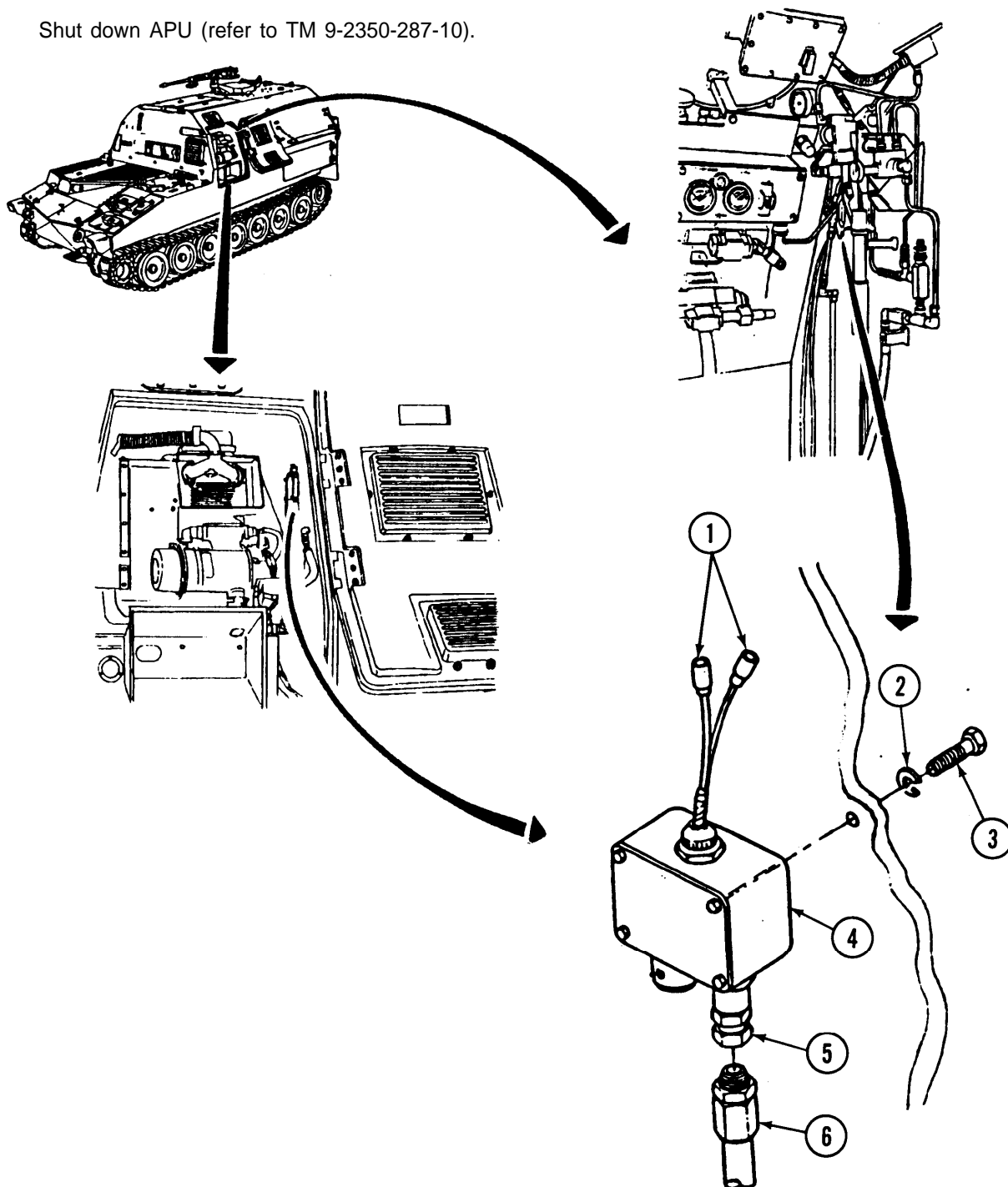
2. Place drain pan under APU pressure hose (6).
3. Disconnect APU pressure hose (6) from hydraulic pressure switch assembly (4) at connector (5).
4. While an assistant supports switch assembly (4), remove four screws (3) and lockwashers (2) from switch assembly (4).
5. Remove pressure switch assembly (4) from wall of APU compartment.

b. INSTALLATION

1. While assistant supports hydraulic pressure switch assembly (4), secure switch assembly (4) to APU compartment wall with four new lockwashers (2) and screws (3).
2. Connect APU pressure hose (6) to pressure switch assembly (4) at connector (5).
3. Connect two electrical pressure switch assembly connectors (1) to APU wiring harness 12329640.

18-19. APU HYDRAULIC PRESSURE SWITCH ASSEMBLY REPLACEMENT (continued).

4. Turn on APU fuel switch and MASTER switch, and run APU (refer to TM 9-2350-287-10), and check for leaks at switch assembly (4) and APU pressure hose (6).
5. Shut down APU (refer to TM 9-2350-287-10).

**FOLLOW-ON MAINTENANCE:**

- Install left front crew compartment dome light (para 7-30).
- Close APU compartment side door (refer to TM 9-2350-287-10).
- Connect battery ground cables (para 7-41).

18-20. APU DIODE REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Silicon sealant adhesive (Item 6, Appendix D)
- Lockwasher (Item 121, Appendix H)
- Lockwasher (Item 124, Appendix H)
- Lockwasher (Item 125, Appendix H)

- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- Left projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).
- APU access plate removed (para 15-39).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350 -287-10).
-

a. REMOVAL

1. Loosen screw (2) and remove access panel (1) from APU.
2. Remove nut (10), lockwasher (11), and support (12) from APU preheat solenoid (13). Discard lockwasher.
3. Remove screw (5), lockwasher (8), nut (9), and wire (6) from APU diode (7). Discard lockwasher.
4. Remove nut (3), lockwasher (4), and diode (7) from support (12). Discard lockwasher.

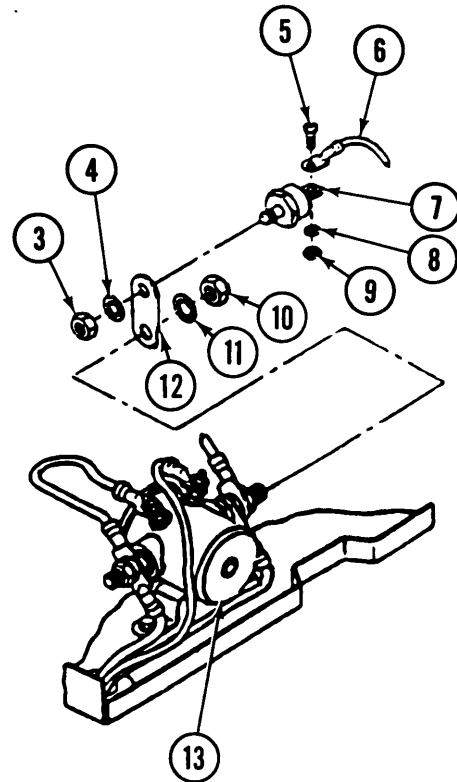
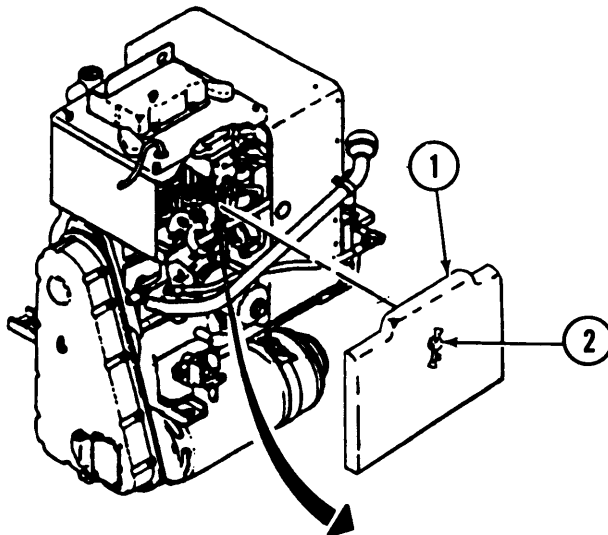
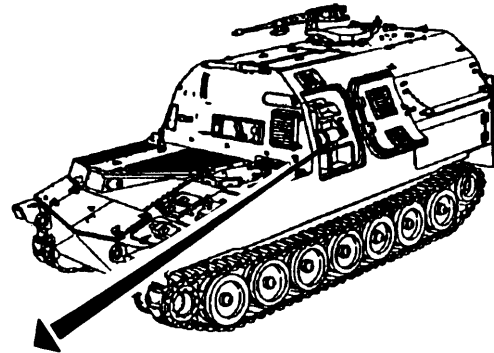
b. INSTALLATION

WARNING

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

1. Seal all exposed terminals with silicon sealant adhesive.
2. Install diode (7) on support (12) with new lockwasher (4) and nut (3).
3. Install wire (6) on diode (7) with nut (9), new lockwasher (8), and screw (5).
4. Install support (12), new lockwasher (11), and nut (10) on APU preheat solenoid (13).
5. Install access panel (1) on APU and tighten screw (2).

18-20. APU DIODE REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install APU access plate (para 15-39).
- Move left projectile rack assembly toward front of vehicle (refer to TM 9-2350-287-10).
- Connect battery ground cables (para 7-41).

18-21. APU WIRING HARNESS (12329640) REPLACEMENT.

This Task Covers:

- | | |
|-----------------------------------|---|
| <p>a. Removal
c. Assembly</p> | <p>b. Disassembly
d. Installation</p> |
|-----------------------------------|---|

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Electrical insulation tape (Item 67, Appendix D)
- Sealant adhesive (Item 6, Appendix D)
- LockWasher (Item 121, Appendix H)
- LockWasher (4) (Item 125, Appendix H)

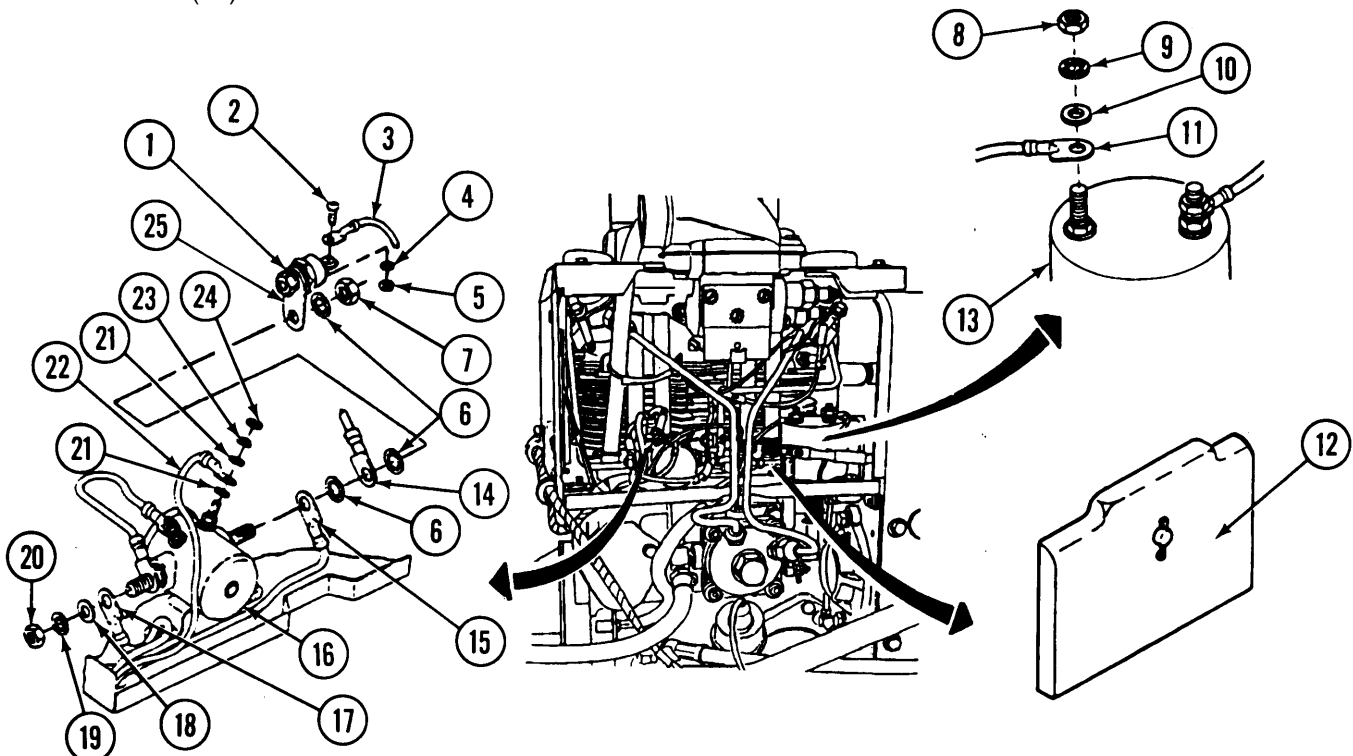
- LockWasher (3) (Item 164, Appendix H)
- LockWasher (2) (Item 188, Appendix H)
- Self-locking nut (2) (Item 308, Appendix H)
- Self-locking nut (Item 322, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU removed (para 18-2).

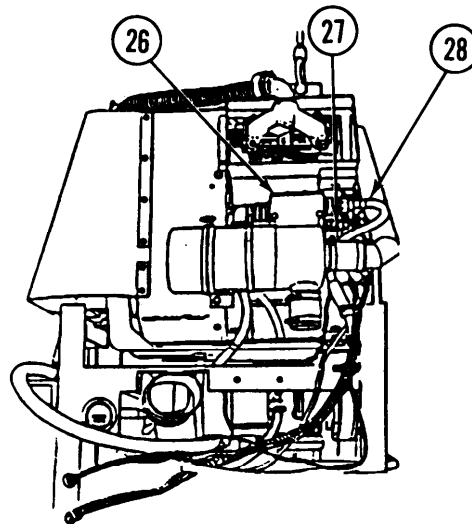
a. REMOVAL

1. Remove engine cylinder shroud door panel (12) from APU.
2. Remove nut (5), lockwasher (4), lead 5 (3), and screw (2) from diode (1). Discard lockwasher.
3. Remove nut (24), lockwasher (23), two washers (21), and lead 487 (22) from preheat solenoid (16). Discard lockwasher.
4. Remove nut (7) and three lockwashers (6), diode support (25), circuit R (14), and circuit 65 (15) from preheat solenoid (16). Discard lockwashers.

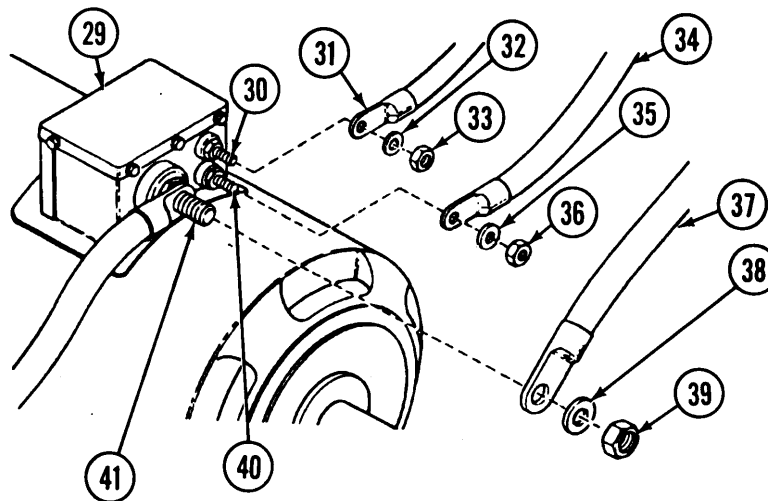


18-21. APU WIRING HARNESS (12329640) REPLACEMENT (continued).

5. Remove nut (20), lockwasher (19), washer (18), and lead circuit N (17) from preheat solenoid (16). Discard lockwasher.
6. Remove nut (8), lockwasher (9), washer (10), and lead circuit 421 (11) at fuel shutoff solenoid (13). Discard lockwasher.
7. Remove connector circuit 66 (28) from top right side of starter relay (26).
8. Remove connector circuit 65 (27) from bottom right side of starter relay (26).

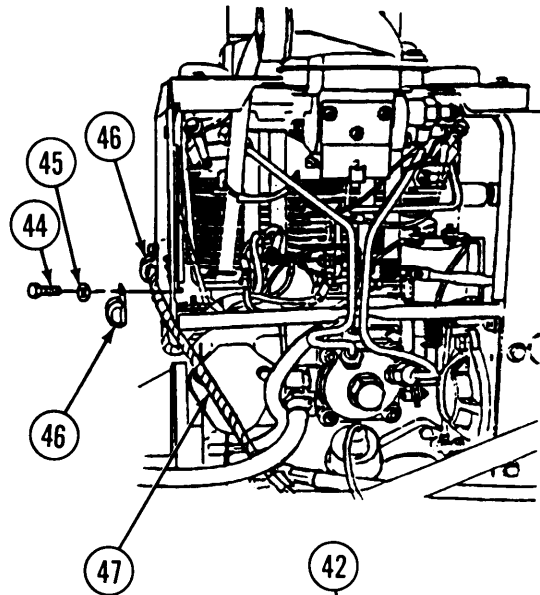


9. Remove self-locking nut (39), washer (38), and lead 62 (37) from positive terminal B (41) on generator terminal box (29). Discard self-locking nut.
10. Remove self-locking nut (36), washer (35), and lead 478A (34) at interpole terminal D (40) on generator terminal box (29). Discard self-locking nut.
11. Remove self-locking nut (33), washer (32), and lead 61 (31) from field terminal A (30) on generator terminal box (29). Discard self-locking nut.



18-21. APU WIRING HARNESS (12329640) REPLACEMENT (continued).

- 12. Loosen two clamps (42) and remove air intake hose (43) from APU.
- 13. Remove two screws (44), lockwashers (45), and clamps (46) securing APU wiring harness 12329640 (47) to rear side of APU. Discard lockwashers.
- 14. Remove screw (51), lockwasher (50), washer (49), clamp (48) and wiring harness 12329640 (47) from APU. Discard lockwasher.

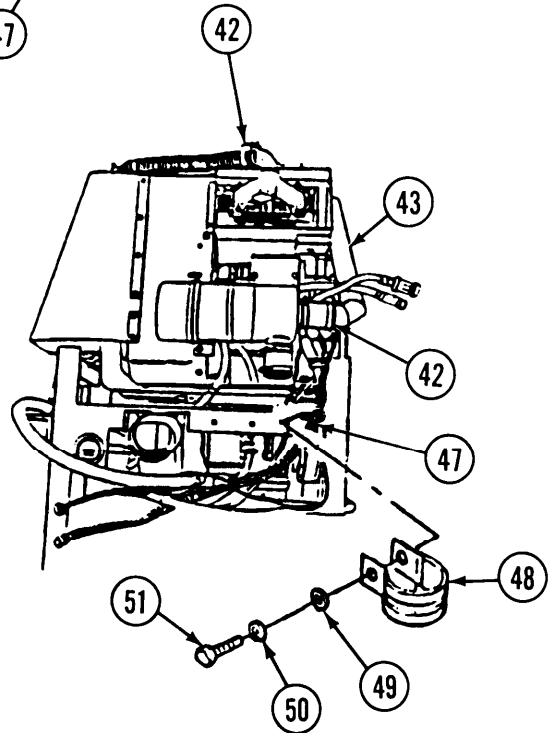


b. DISASSEMBLY

NOTE

Remove electrical insulation tape only from section of wiring harness to be disassembled.

- 1. Remove electrical insulation tape from section of wiring harness.
- 2. Separate and isolate each wiring harness branch.
- 3. Disassemble each wiring harness branch and replace defective wires.



c. ASSEMBLY

- 1. Assemble each wiring harness branch.
- 2. Install electrical insulation tape to section of wiring harness.

d. INSTALLATION

WARNING

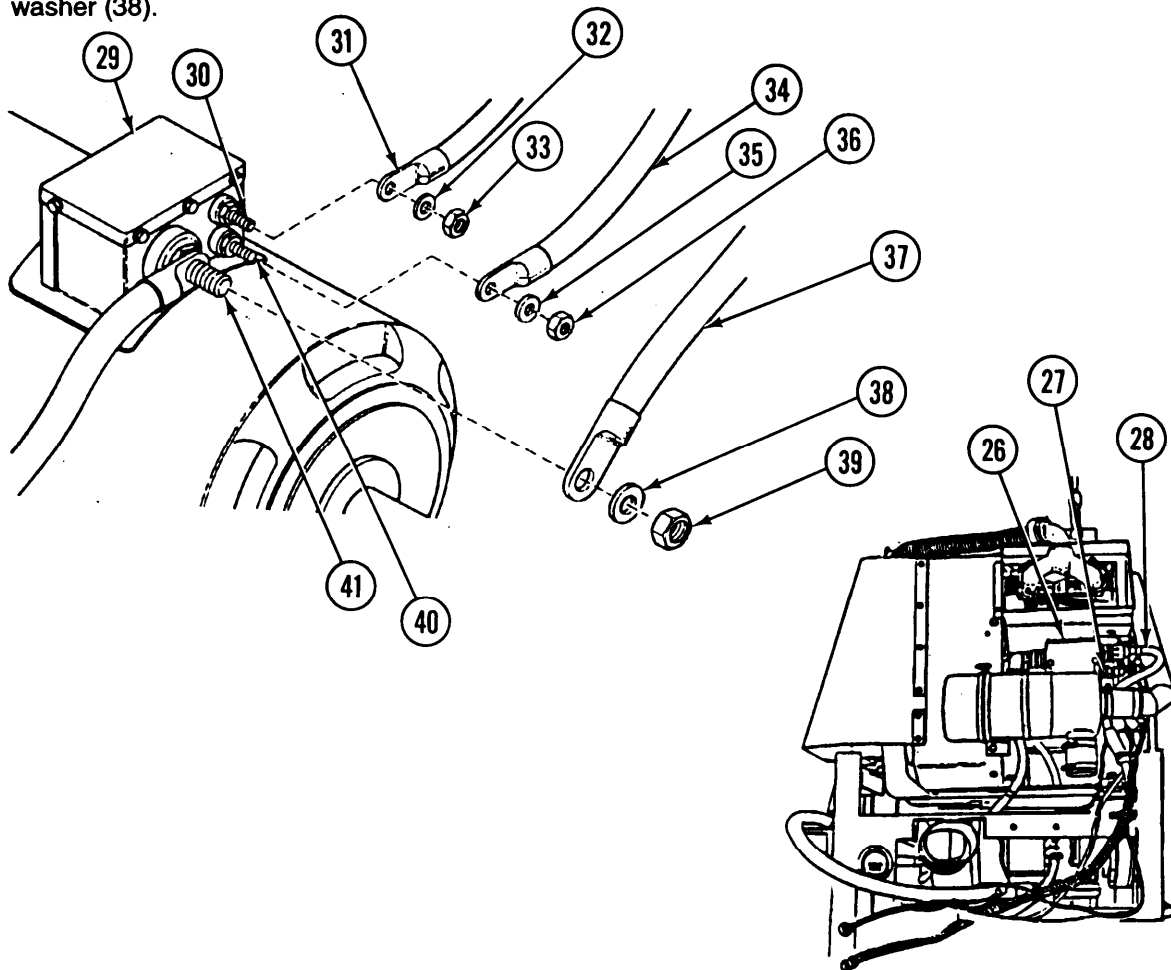
Adhesives can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive gets on skin or clothing, wash immediately with soap and water.

NOTE

Seal all exposed terminals with sealant adhesive.

18-21. APU WIRING HARNESS (12329640) REPLACEMENT (continued).

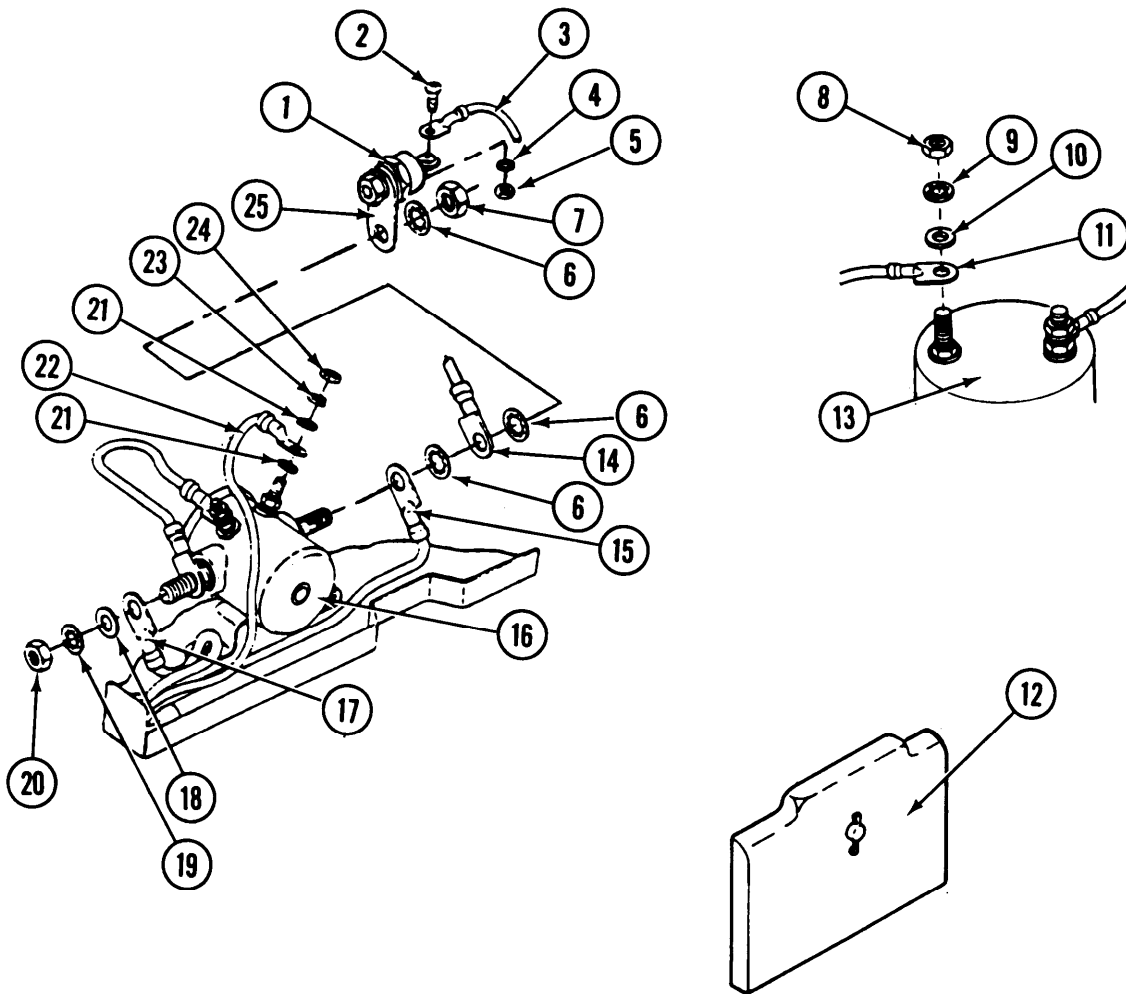
1. Install wiring harness 12329640 (49) on APU with clamp (48), new lockwasher (50), washer (49), and screw (51).
2. Secure APU wiring harness (47) to rear side of APU with two clamps (46), new lockwashers (45), and screws (44).
3. Install air intake hose (43) and tighten two clamps (42).
4. Install lead 478A (34) on interpole terminal D (40) on generator terminal box (29) with washer (35), and new self-locking nut (36).
5. Install lead 61 (31) on field terminal A (30) on generator terminal box (29) with washer (32), and new self-locking nut (33).
6. Install lead 62 (37) on positive terminal B (41) on generator terminal box (29) with new self-locking (39) and washer (38).



7. Install connector circuit 65 (27) to bottom right side of starter relay (26).
8. Install connector circuit 66 (28) to top right side of starter relay (26).

18-21. APU WIRING HARNESS (12329640) REPLACEMENT (continued).

9. Install lead circuit 421 (11) on fuel shutoff solenoid (13) with nut (8), new lockwasher (9), and washer (10).
10. Install lead circuit N (17) on preheat solenoid (16) with nut (20), new lockwasher (19), and washer (18).
11. Install diode support (25), circuit R (14), and circuit 65 (15) on preheat solenoid (16) with three new lockwashers (6) and nut (7).
12. Install lead 487 (22) on preheat solenoid (16) with two washers (21), new lockwasher (23), and nut (24).
13. Install lead 5 (3) on diode (1) with screw (2), new lockwasher (4), and nut (5).
14. Install engine cylinder shroud door panel (12) on APU.



FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).

18-22. APU WIRING HARNESS (12329650) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (Item 138, Appendix H)
- Lockwasher (3) (Item 164, Appendix H)

Materials/Parts:

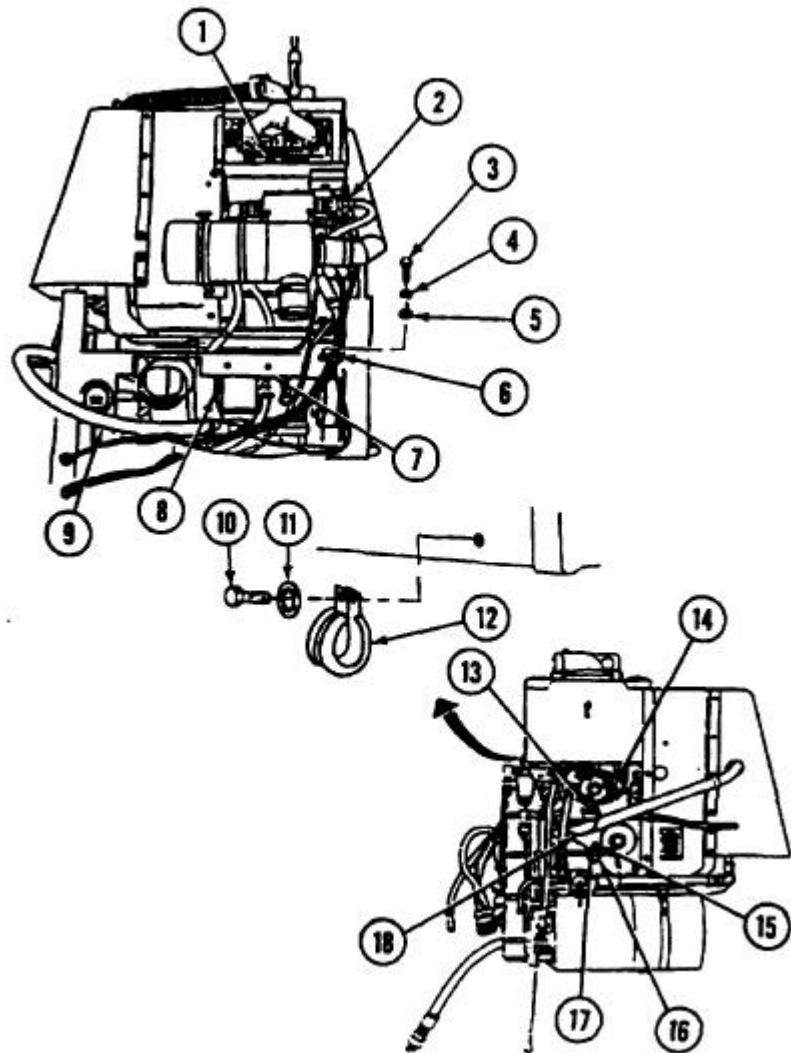
- Adhesive, sealant (Item 6, Appendix D)
- Tape, insulation, electrical (Item 67, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- APU removed (para 18-2).

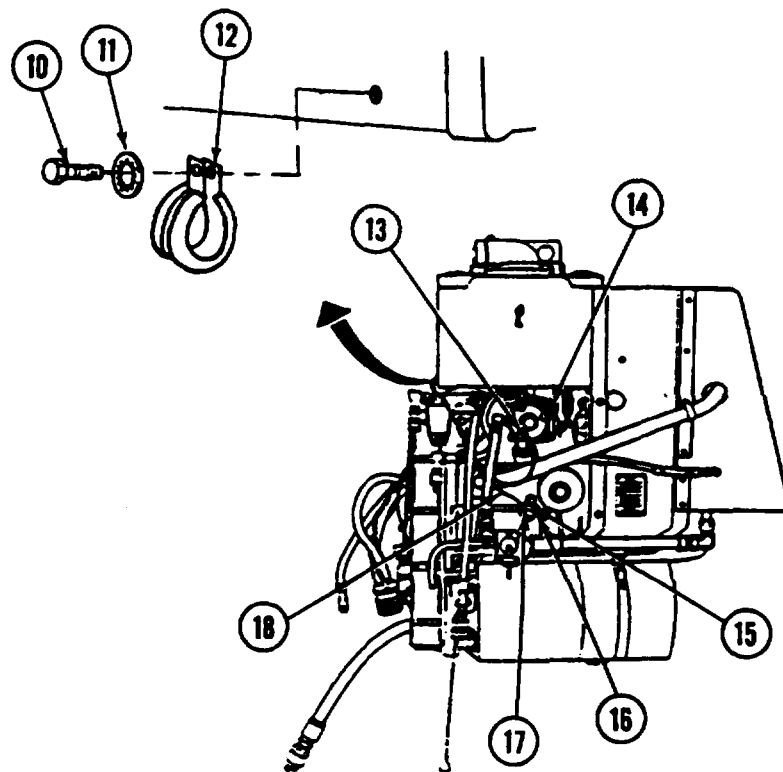
a. REMOVAL

1. Disconnect ground lead (9) going to ground lead (8) attached to terminal E on generator terminal box (7).
2. Disconnect lead 493 (2) from lead attached to engine high air temperature switch (1).
3. Disconnect lead 420 (13) going to engine oil pressure sending unit (14).
4. Remove screw (15) and lockwasher (16) securing lead 420A (18) at engine low oil pressure switch (17). Discard lockwasher.
5. Remove two screws (10), lockwashers (11), and clamps (12) securing wiring harness 12329650 to rear side of the APU.
6. Remove screw (3), lockwasher (4), washer (5), clamp (6), and wiring harness 12329650 from the APU. Discard lockwasher.



18-22. APU WIRING HARNESS (12329650) REPLACEMENT (continued).

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**b. INSTALLATION****WARNING**

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

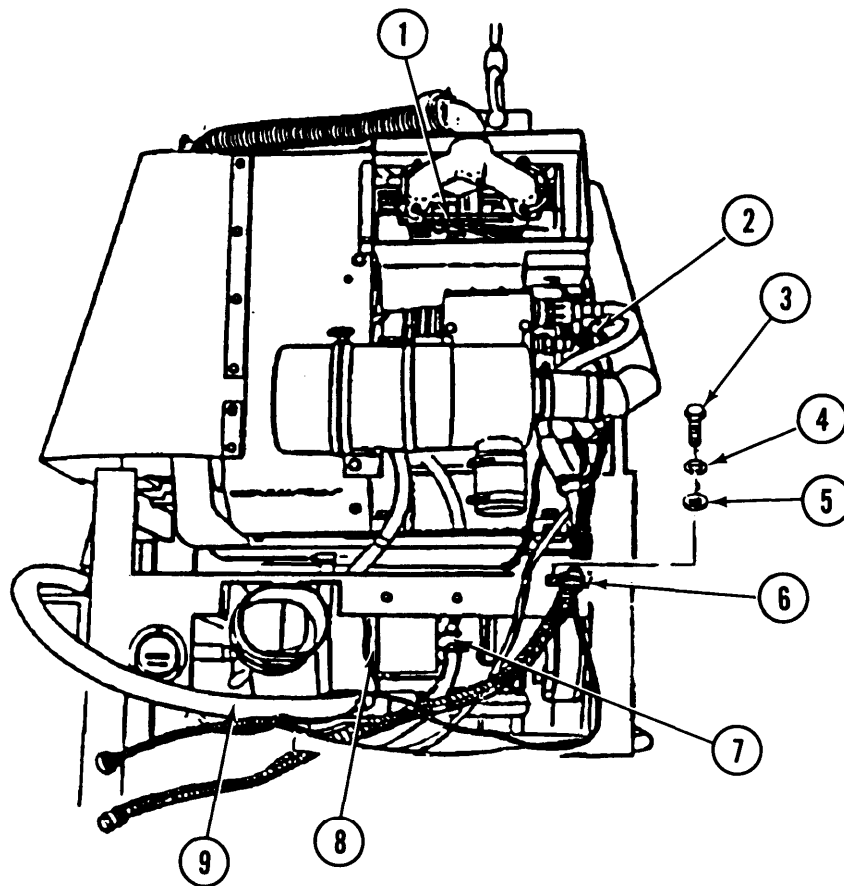
NOTE

Seal all exposed terminals with sealant adhesive.

Change 1 18-58

18-22. APU WIRING HARNESS (12329650) REPLACEMENT (continued).

1. Install wiring harness 12329650 on APU with clamp (6), washer (5), new lockwasher (4) and screw (3).
2. Install two clamps (12), new lockwashers (11), and screws (10) securing wiring harness 12329650 to rear side of APU.
3. Install new lockwasher (16) and screw (15) securing lead 420A (18) at engine low oil pressure switch (17).
4. Connect lead 420 (13) going to engine oil pressure sending unit (14).
5. Connect lead 493 (2) to lead attached to engine high air temperature switch (1).
6. Connect ground lead (9) going to ground lead (8) attached to terminal Eon generator terminal box (7).


FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).

18-23. APU CABLE ASSEMBLY (11672191) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Sealant adhesive (Item 6, Appendix D)
- Self-locking nut (Item 322, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - MASTER switch set to OFF (refer to TM 9-2350-287-10).
 - Battery ground cables disconnected (para 7-41).
 - APU air intake plenum removed (para 18-17).
-

a. REMOVAL

1. Disconnect cable 11672191 plug CKT66 (1) from starter relay (2).
2. Remove self-locking nut (5) and washer (4) securing lead 62 of cable 12329640 (6) and lead 66 (3) of cable 11672191 to positive terminal B at generator terminal box (7).
3. Remove cable 11672191 from APU.

b. INSTALLATION

WARNING

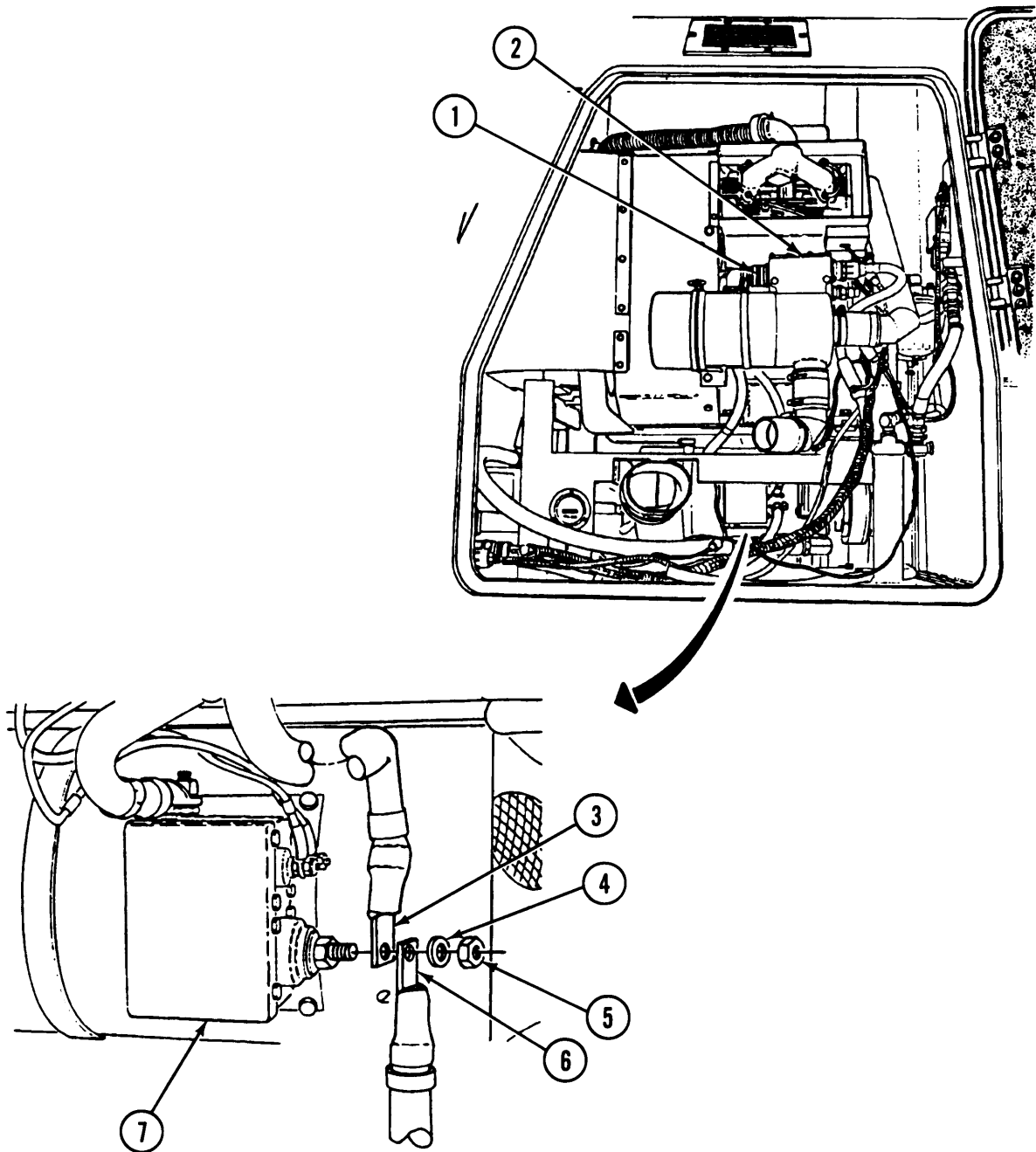
Adhesives can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive gets on skin or clothing, wash immediately with soap and water.

NOTE

Seal all exposed terminals with sealant adhesive.

1. Install cable 11672191 on APU.
2. Install self-locking nut (5) and washer (4) securing lead 62 (6) and lead 66 (3) to positive terminal B at generator terminal box (7).
3. Connect cable 11672191 plug CKT66 (1) to starter relay (2).

18-23. APU CABLE ASSEMBLY (11672191) REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Install APU air intake plenum (para 18-17).
- Connect battery ground cables (para 7-41).

18-24. APU CABLE ASSEMBLY (11671371) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

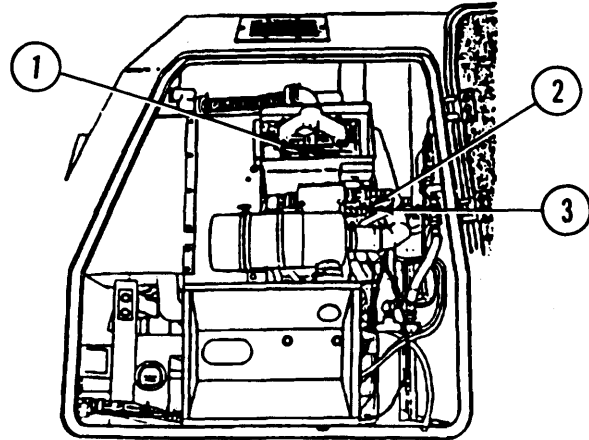
- Sealant adhesive (Item 6, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).

a. REMOVAL

1. Disconnect lead No. 493 (2) from wiring harness 12329650 (3).
2. Disconnect lead No. 493 (2) from high air temperature switch (1).
3. Remove APU cable assembly 11671371 from vehicle.



b. INSTALLATION

WARNING

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

NOTE

Seal all exposed terminals with sealant adhesive.

1. Install APU cable assembly 11671371 in vehicle.
2. Connect lead No. 493 (2) to high air temperature switch (1).
3. Connect lead No. 493 (2) to wiring harness 12329650 (3).

FOLLOW-ON MAINTENANCE:

- Connect battery ground cables (para 7-41).

18-25. APU GROUND CABLES (11671369-1) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

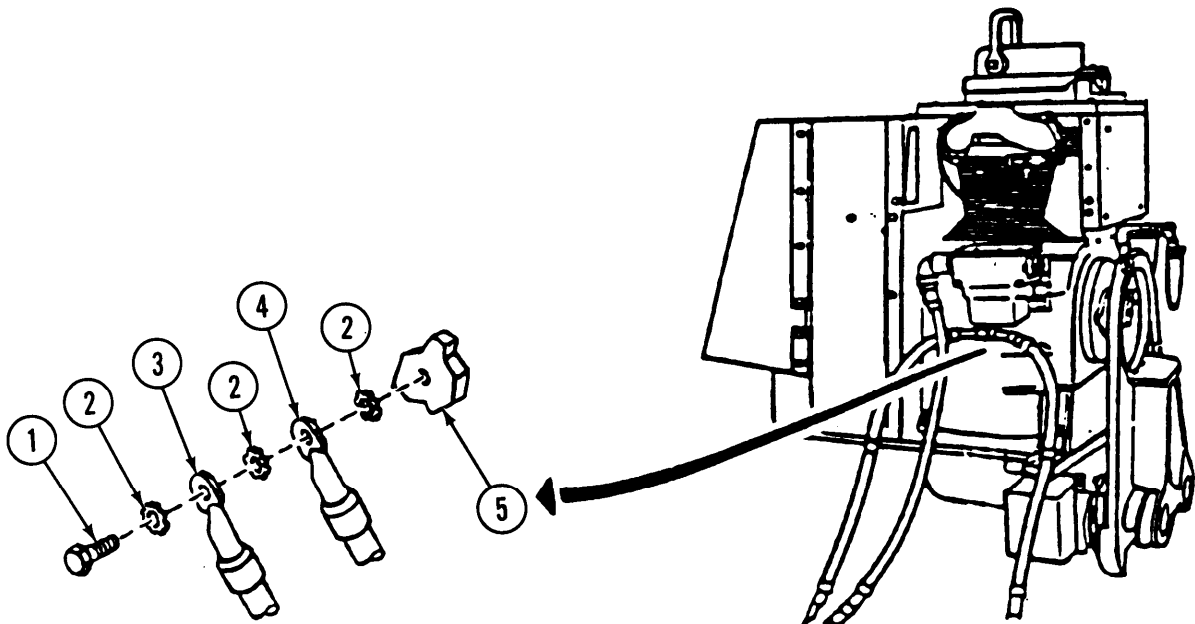
- Lockwasher (Item 126, Appendix H)
- Lockwasher (3) (Item 138, Appendix H)
- Lockwasher (Item 164, Appendix H)
- Self-locking nut (Item 322, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - ApJ plenum removed (para 18-17).
 - MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).

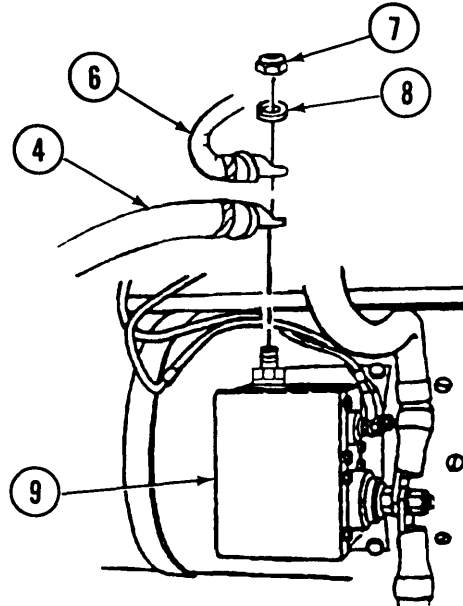
a. REMOVAL

1. Remove screw (1), three lockwashers (2), ground lead (3), and ground lead 11671369-1 (4) from APU engine block (5). Discard lockwashers.



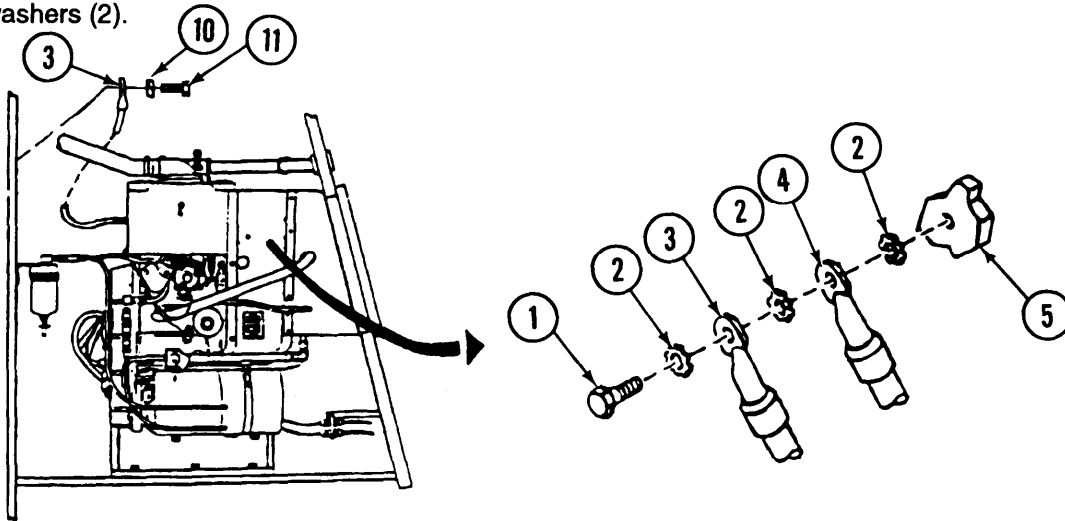
18-25. APU GROUND CABLES (11671369-1) REPLACEMENT (continued).

2. Remove self-locking nut (7) and lockwasher (8) securing cable assembly 12329662 (6) and ground lead 11671369-1 (4) to generator relay box terminal E (9). Discard lockwasher and self-locking nut.
3. Remove screw (11), lockwasher (10), and ground lead (3) from rear wall of APU compartment. Discard lockwasher.



b. INSTALLATION

1. Install ground lead (3) on rear wall of APU compartment with screw (11) and new lockwasher (10).
2. Install ground lead 11671369-1 (4) and cable assembly 12329662 (6) on generator relay box terminal E (9) with new lockwasher (8) and self-locking nut (7).
3. Install ground lead (3) and ground lead 11671369-1 (4) on APU engine block (5) with screw (1) and three new lockwashers (2).



FOLLOW-ON MAINTENANCE:

- Connect battery ground cables (para 7-41).
- Install APU plenum (para 18-17).

18-26. APU CABLE ASSEMBLY (11671380-1) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Sealant adhesive (Item 6, Appendix D)
- Lockwasher (Item 125, Appendix H)

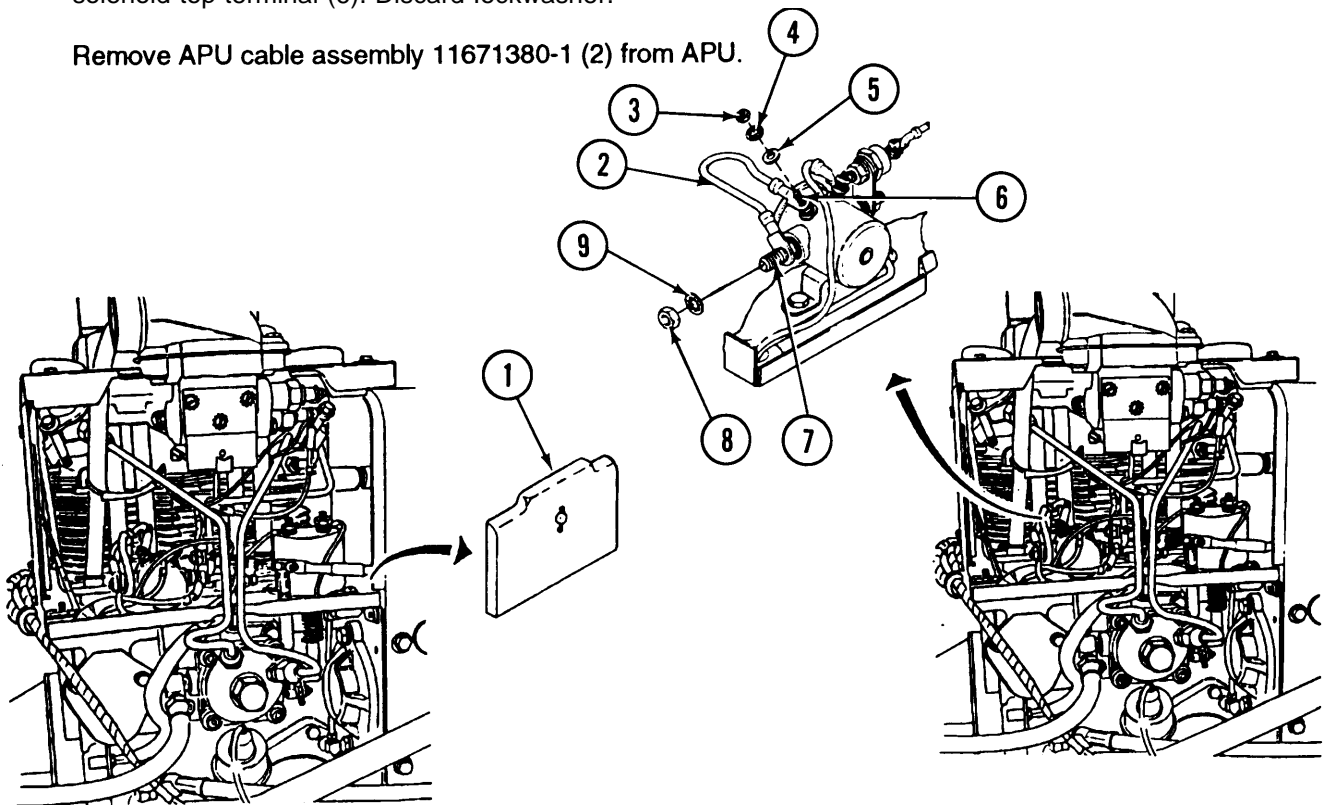
- Lockwasher (Item 188, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - APU removed (para 18-2).
-

a. REMOVAL

1. Remove engine cylinder shroud door panel (1) from APU.
2. Remove nut (8) and lockwasher (9) securing APU cable assembly 11671380-1 (2) to preheat solenoid side terminal (7). Discard lockwasher.
3. Remove nut (3), lockwasher (4), and washer (5) securing APU cable assembly 11671380-1 (2) to preheat solenoid top terminal (6). Discard lockwasher.
4. Remove APU cable assembly 11671380-1 (2) from APU.



18-26. APU CABLE ASSEMBLY (11671380-1) REPLACEMENT (continued).

b. INSTALLATION

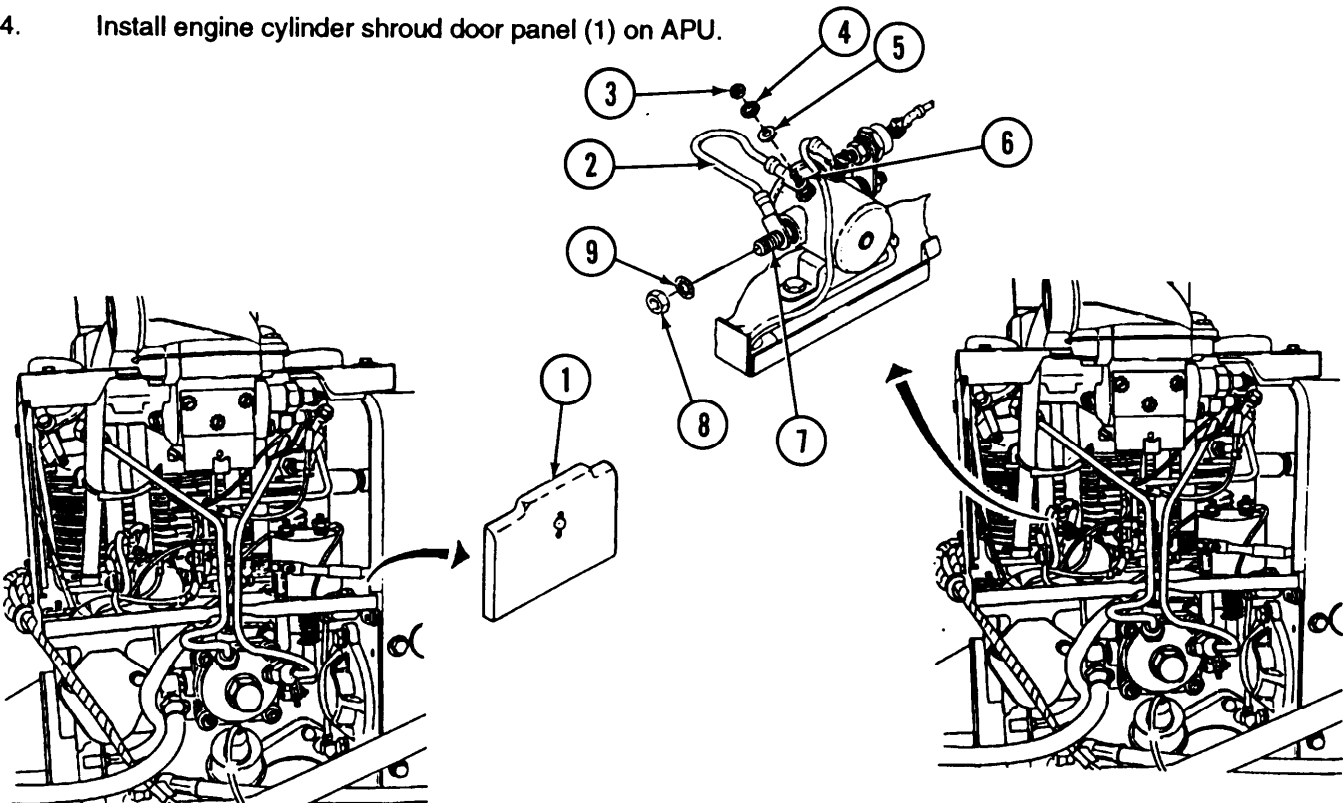
WARNING

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

NOTE

Seal all exposed terminals with sealant adhesive.

1. Install cable assembly 11671380-1 (2) in APU.
2. Install washer (5), new lockwasher (4), and nut (3) securing APU cable assembly 11671380-1 (2) to preheat solenoid top terminal (6).
3. Install new lockwasher (9) and nut (8) securing APU cable assembly 11671380-1 (2) to preheat solenoid side terminal (7).
4. Install engine cylinder shroud door panel (1) on APU.



FOLLOW-ON MAINTENANCE:

- Install APU (para 18-2).

18-27. APU CABLE ASSEMBLY (11671380-2) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Sealant adhesive (Item 6, Appendix D)
- Lockwasher (2) (Item 125, Appendix H)
- Lockwasher (Item 188, Appendix H)

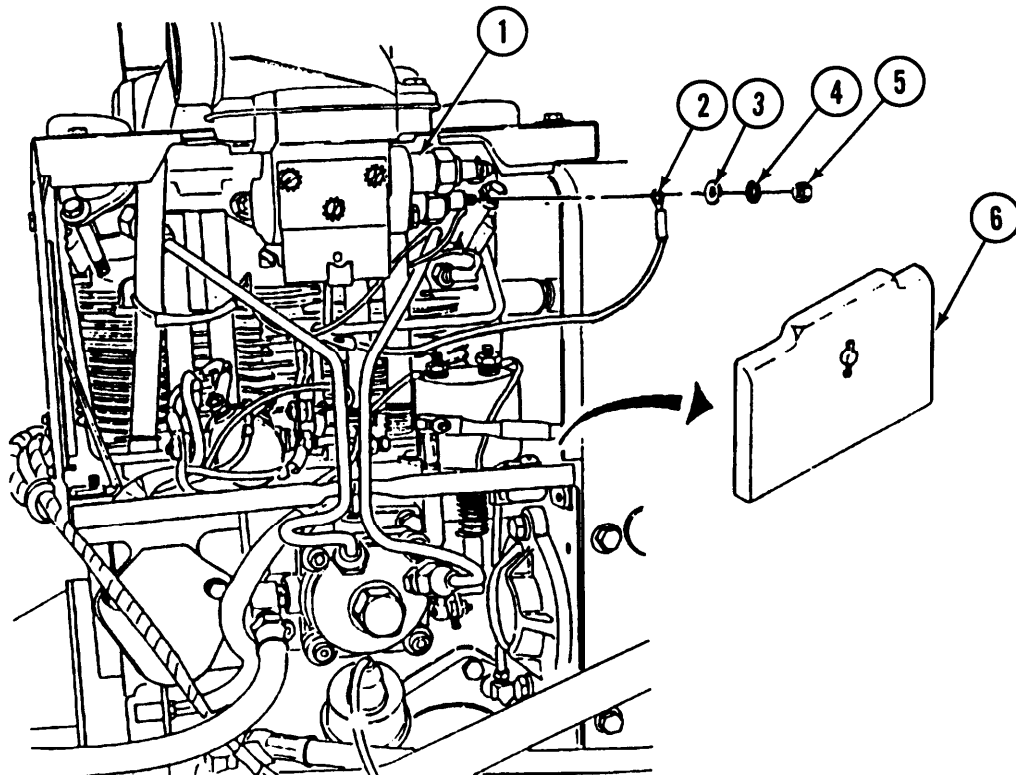
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- Left projectile rack assembly removed (para 15-83).
- APU access plate removed (para 15-39).

a. REMOVAL

1. Remove engine cylinder shroud door panel (6) from APU.
2. Remove nut (5), lockwasher (4), and washer (3) securing lead assembly circuit R (2) to manifold heater (1). Discard lockwasher.



18-27. APU CABLE ASSEMBLY (11671380-2) REPLACEMENT (continued).

3. Remove nut (10), two lockwashers (8), APU diode (9), and lead assembly circuit R (2) from preheat solenoid (7) side terminal. Discard lockwasher.
4. Remove cable assembly 11671380-2 from APU.

b. INSTALLATION

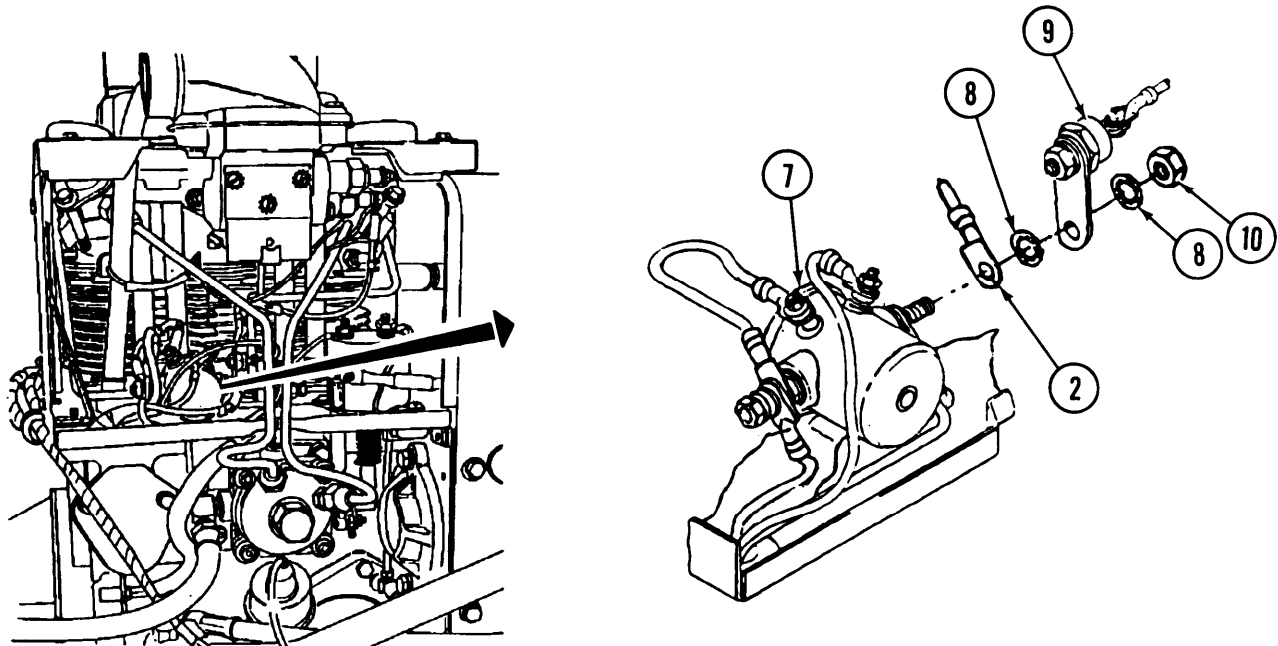
WARNING

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

NOTE

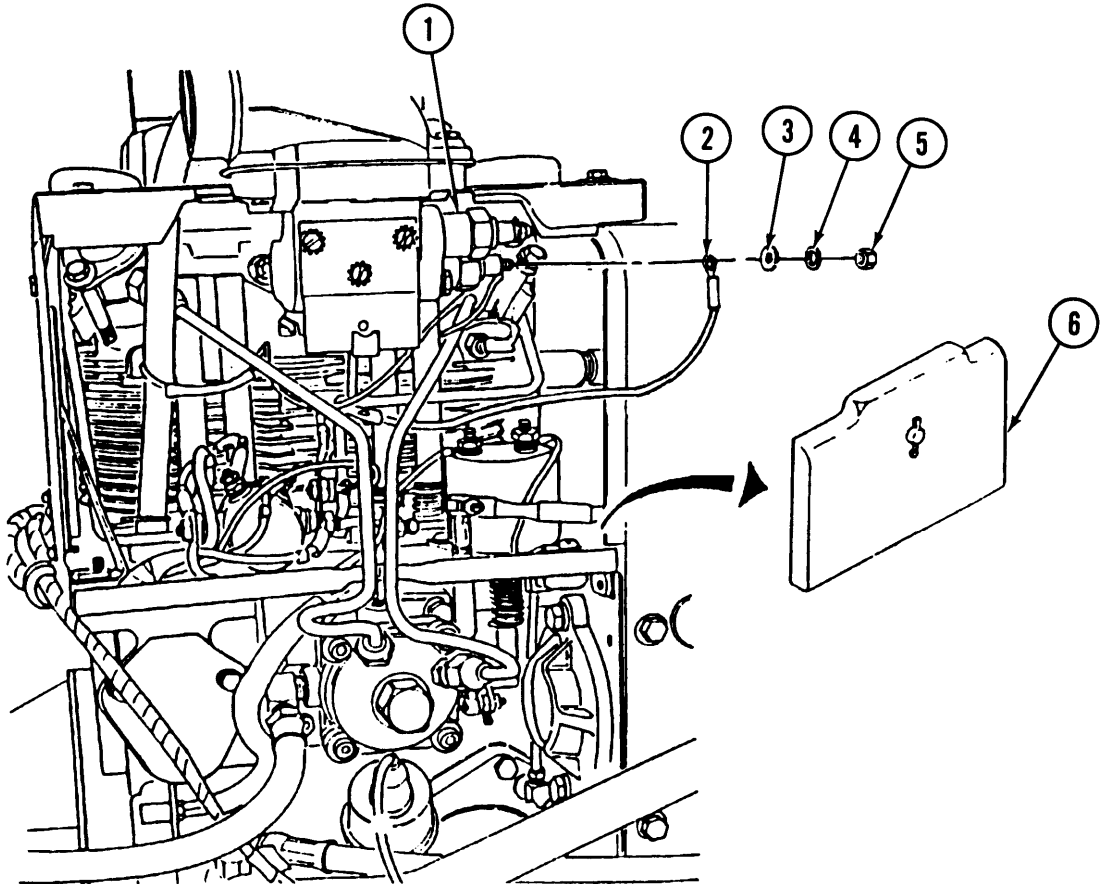
Seal all exposed terminals with sealant adhesive.

1. Install cable assembly 11671380-2 on APU.
2. Install two new lockwashers (8) and nut (10) securing lead assembly circuit R (2) and APU diode (9) to preheat solenoid (7) side terminal.



18-27. APU CABLE ASSEMBLY (11671380-2) REPLACEMENT (continued).

3. Install washer (3), new lockwasher (4), and nut (5) securing lead assembly circuit R (2) to manifold heater (1).
4. Install engine cylinder shroud door panel (6) on vehicle.

**FOLLOW-ON MAINTENANCE:**

- Install APU access plate (para 15-39).
- Install left projectile rack assembly (para 15-83).
- Connect battery ground cables (para 7-41).

18-28. APU WIRING HARNESS (12329660), FUEL SOLENOID TO HOUR METER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 164, Appendix H)
- Lockwasher (2) (Item 188, Appendix H)

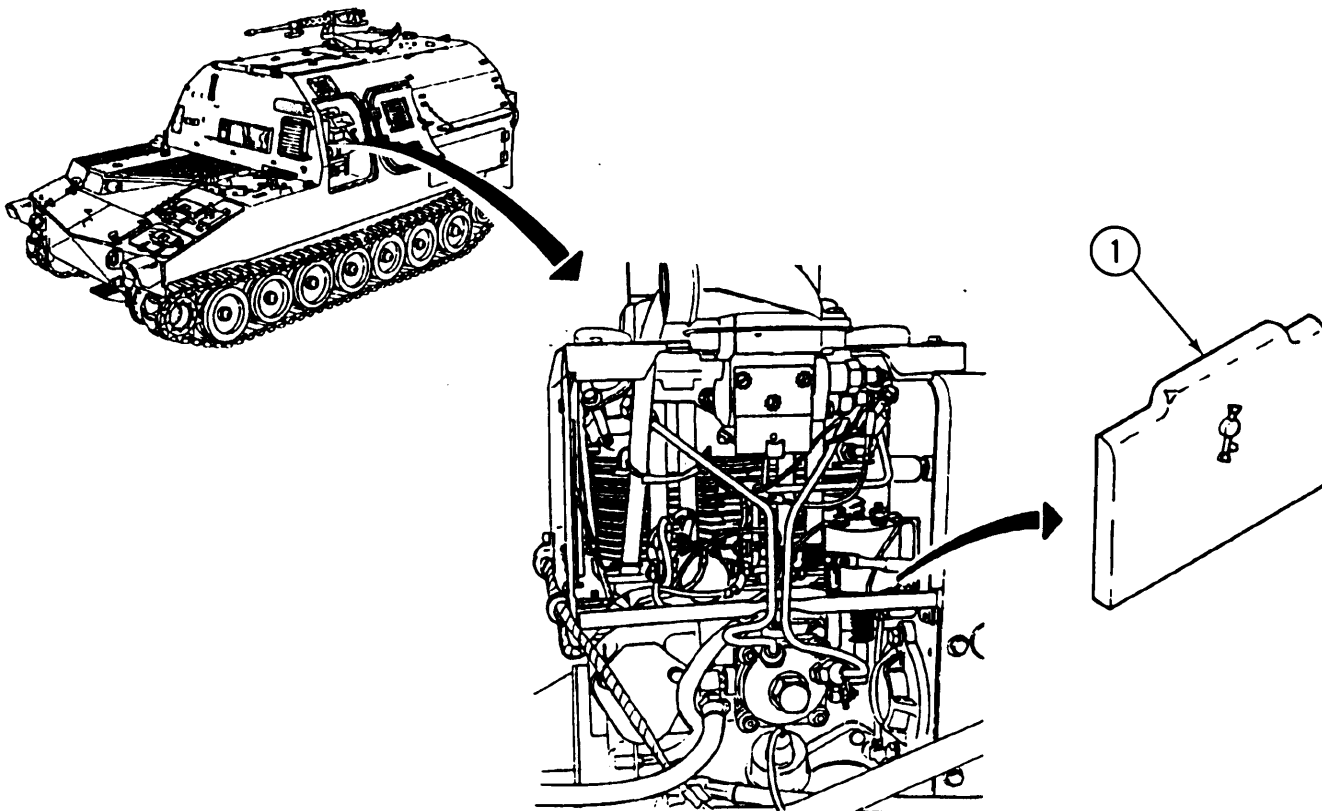
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- Left projectile rack assembly removed (para 15-83).
- APU compartment access plate removed (para 15-39).
- APU intake plenum removed (para 18-17).

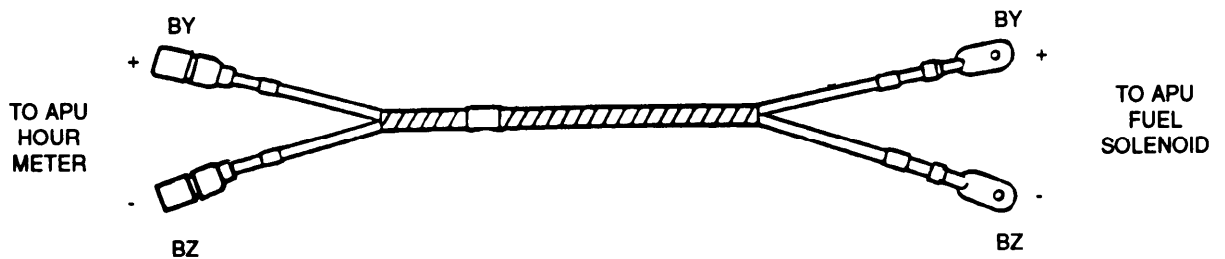
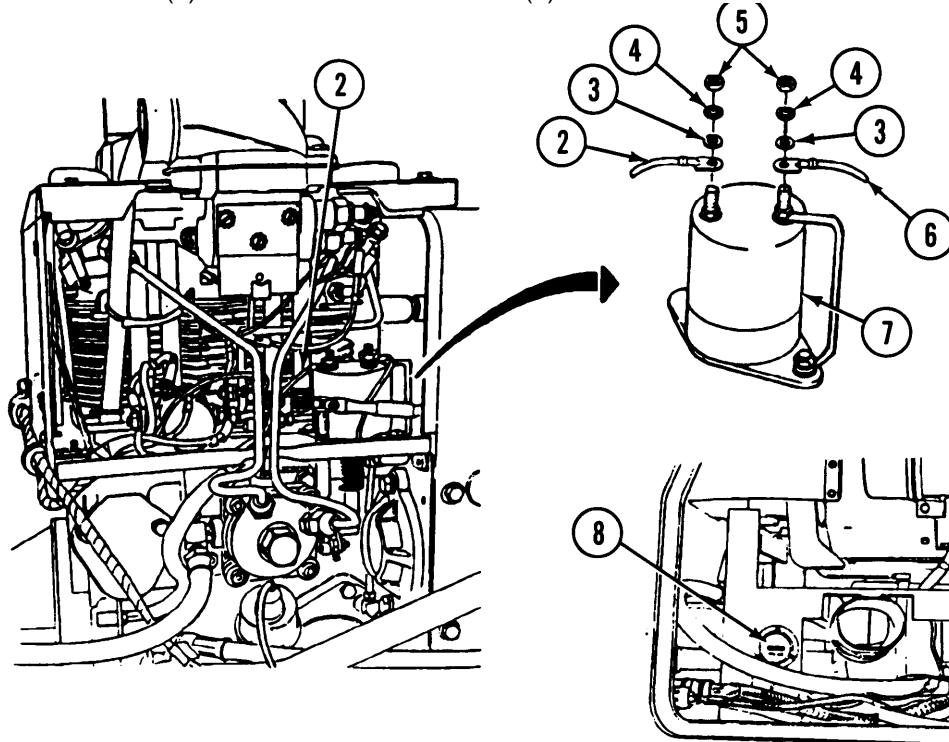
a. REMOVAL

1. Remove engine cylinder shroud door panel (1) from vehicle.



18-28. APU WIRING HARNESS (12329660), FUEL SOLENOID TO HOUR METER REPLACEMENT (continued).

2. Remove nut (5), lockwasher (4), and washer (3) from each fuel solenoid (7) terminal. Discard lockwashers.
3. Remove harness BY (2) from fuel solenoid (7).
4. Remove harness BZ (6) from fuel solenoid (7).
5. Disconnect harness BY (2) connector and harness BZ (6) connector from APU hour meter (8).

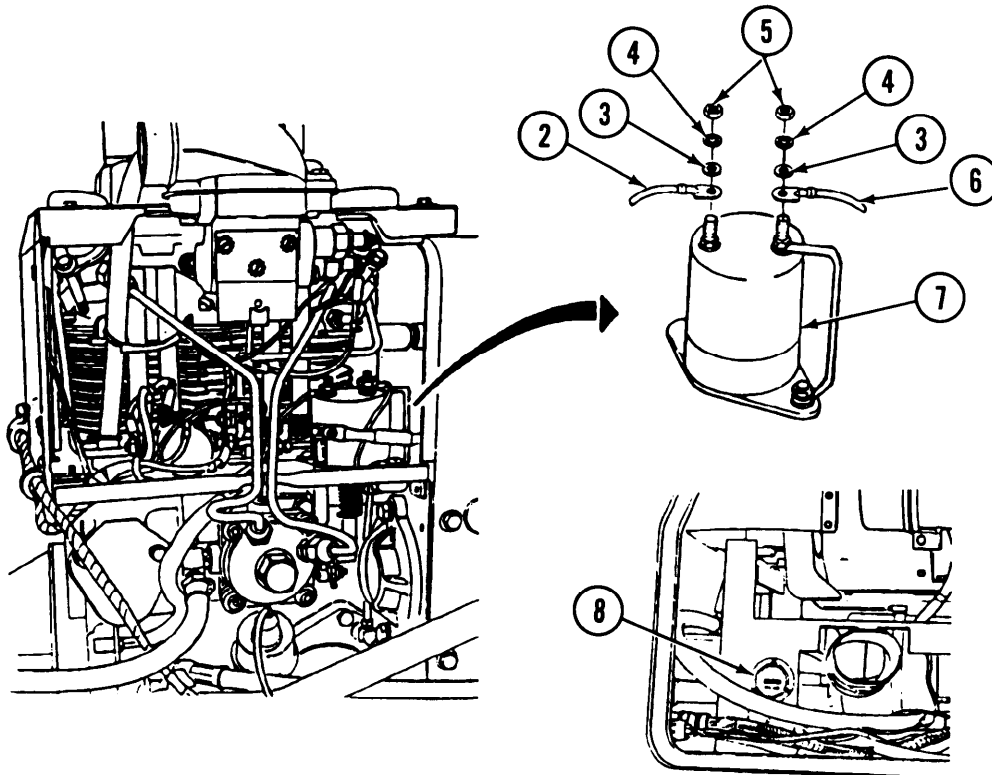
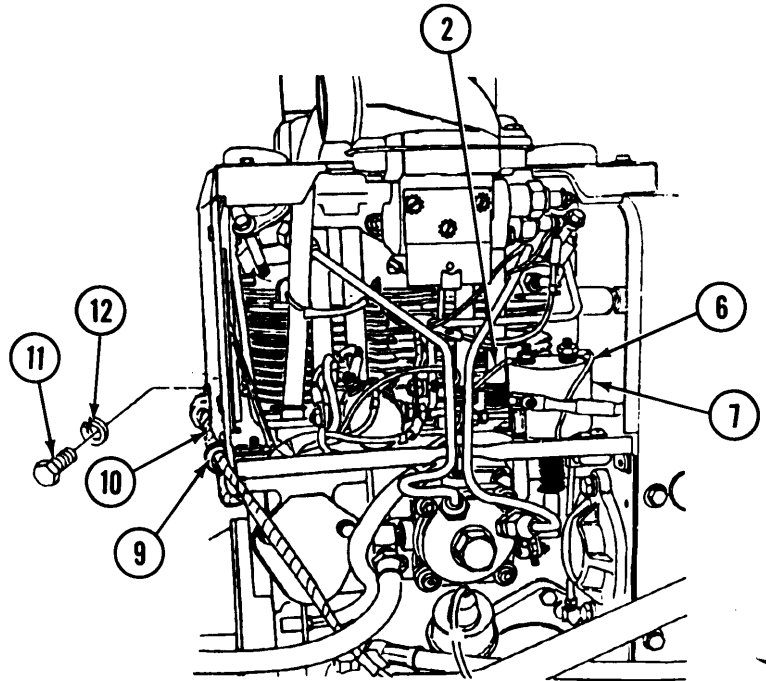


18-28. APU WIRING HARNESS (12329660), FUEL SOLENOID TO HOUR METER REPLACEMENT (continued).

6. Remove two screws (11), lockwashers (12) and clamps (9) from wiring harness (10).
7. Remove wiring harness (10) from APU.

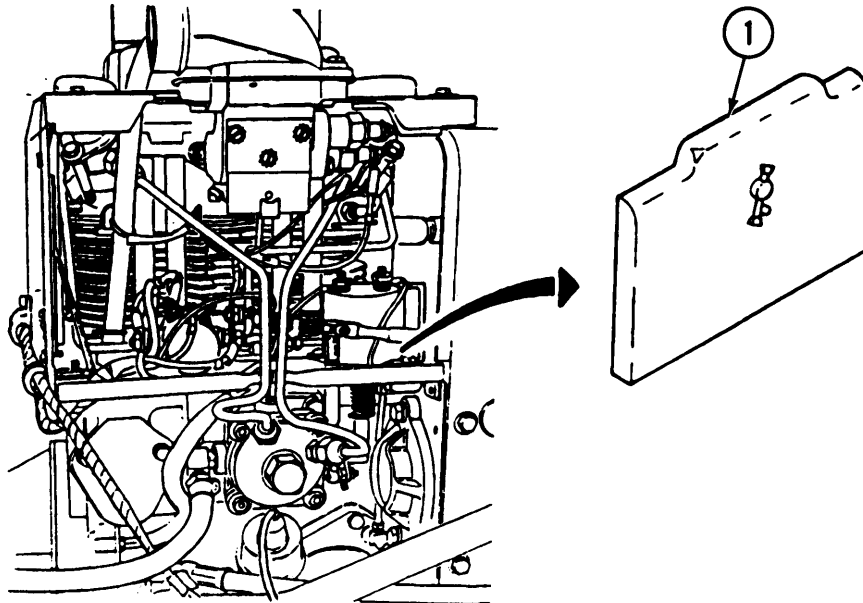
b. INSTALLATION

1. Install wiring harness (10) on APU.
2. Install two clamps (9) on wiring harness (10) with two screws (11) and new lockwashers (12).
3. Connect harness BZ (6) connector and harness BY (2) connector to APU hour meter (8).
4. Connect harness BZ (6) to fuel solenoid (7).
5. Connect harness BY (2) to fuel solenoid (7).
6. Install washer (3), new lockwasher (4), and nut (5) to each fuel solenoid (7) terminal.



18-28. APU WIRING HARNESS (12329660), FUEL SOLENOID TO HOUR METER REPLACEMENT (continued).

7. Install engine cylinder shroud door panel (1) on vehicle.

**FOLLOW-ON MAINTENANCE:**

- Install APU intake plenum (para 18-17).
- Install APU compartment access plate (para 15-39).
- Install left projectile rack assembly (para 15-83).
- Connect battery ground cables (para 7-41).

18-29. APU CABLE (12329662) REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix H)

Materials/Parts:

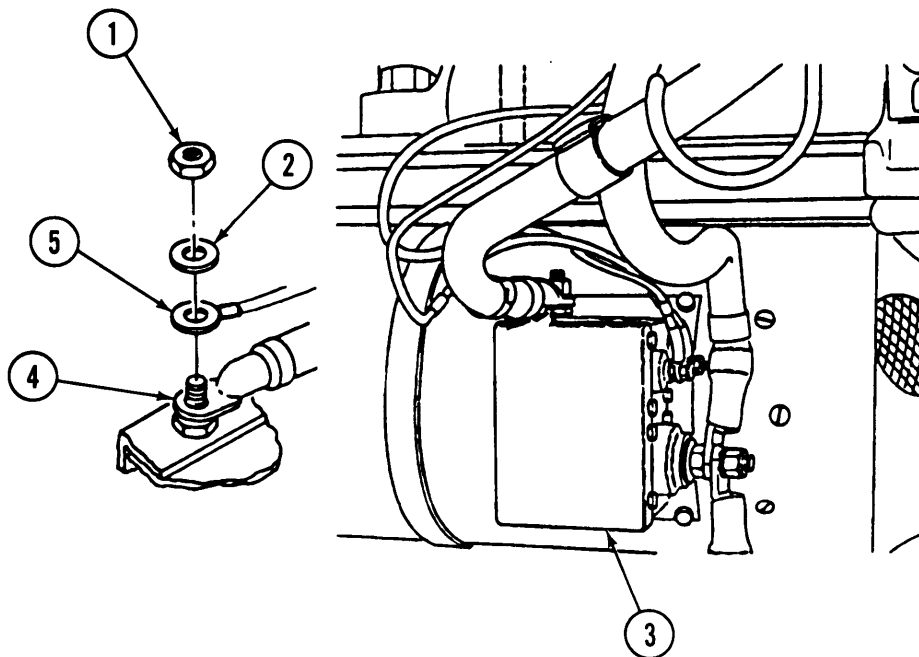
- Sealant adhesive (Item 6, Appendix D)
- Self-locking nut (Item 322, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).
- Air intake plenum removed (para 18-17).

a. REMOVAL

1. Remove self-locking nut (1) and washer (2) from terminal E (4) of generator terminal box (3). Discard self-locking nut.
2. Remove ground lead (5) from terminal E (4).



3. Remove connector (6) of ground lead (5) from wiring harness connector (7).

18-29. APU CABLE (12329662) REPLACEMENT (continued).

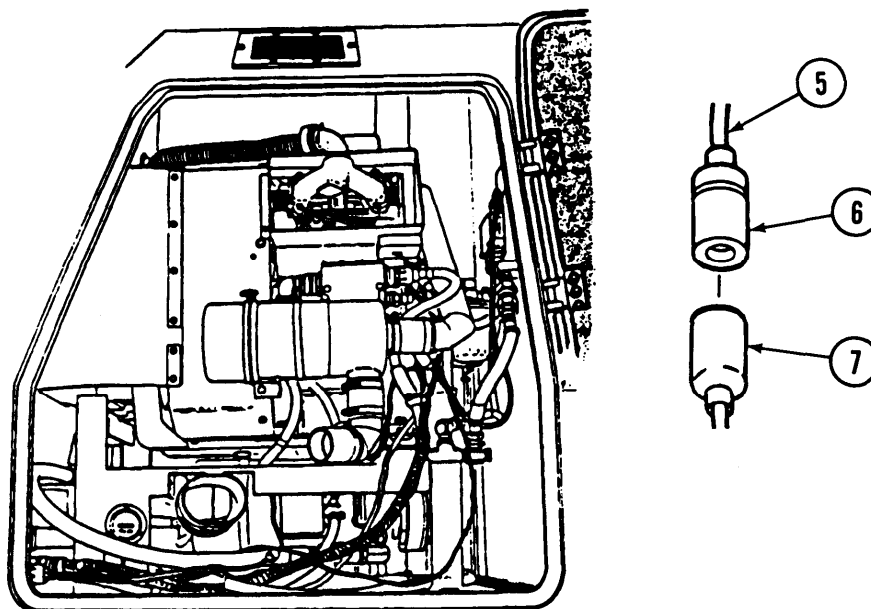
b. INSTALLATION**WARNING**

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

NOTE

Seal all exposed terminals with sealant adhesive.

1. Install connector (6) of ground lead (5) to wiring harness connector (7).
2. Install ground lead (5) on terminal E (4).
3. Install washer (2) and self-locking nut (1) on terminal E (4) of generator terminal box (3).

**FOLLOW-ON MAINTENANCE:**

- Install air intake plenum (para 18-17).
- Connect battery cables (para 7-41).

CHAPTER 19

ELECTRICAL EQUIPMENT/SIGNALING DEVICES MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
19-1	General	19-1
19-2	STE/ICE Instrument Shunt Replacement	19-1
19-3	STE/ICE Fuel Pressure Transducer and Differential Switch Replacement	19-4
19-4	STE/ICE Air Box Transducer Replacement	19-6
19-5	STE/ICE Pulse Tachometer Replacement	19-7
19-6	STE/ICE Air Cleaner Transducer Replacement	19-8

19-1. GENERAL.

This chapter contains procedures for the removal and installation of the simplified test equipment internal combustion engine (STE/ICE). The STE/ICE consists of the following:

- Instrument Shunt
- Fuel Pressure Transducer and Differential Switch
- Air Box Transducer
- Pulse Tachometer
- Air Cleaner Transducer

19-2. STE/ICE INSTRUMENT SHUNT REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Battery terminal puller (Item 6, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 148, Appendix H)
- Lockwasher (4) (Item 149, Appendix H)
- Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery access doors opened (refer to TM 9-2350-287-10).

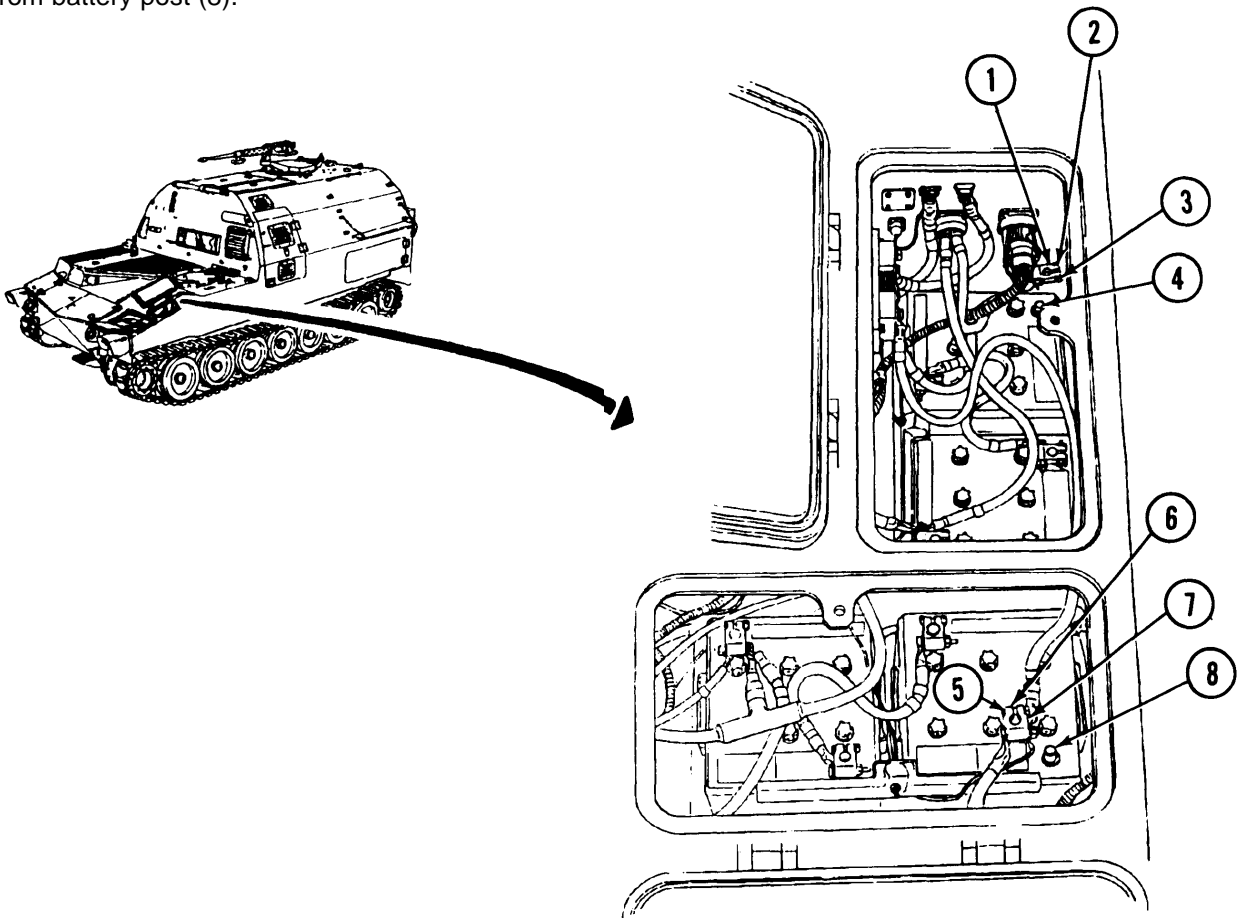
19-2. STE/ICE INSTRUMENT SHUNT REPLACEMENT (continued).

a. REMOVAL

WARNING

Remove all jewelry such as rings, identification tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

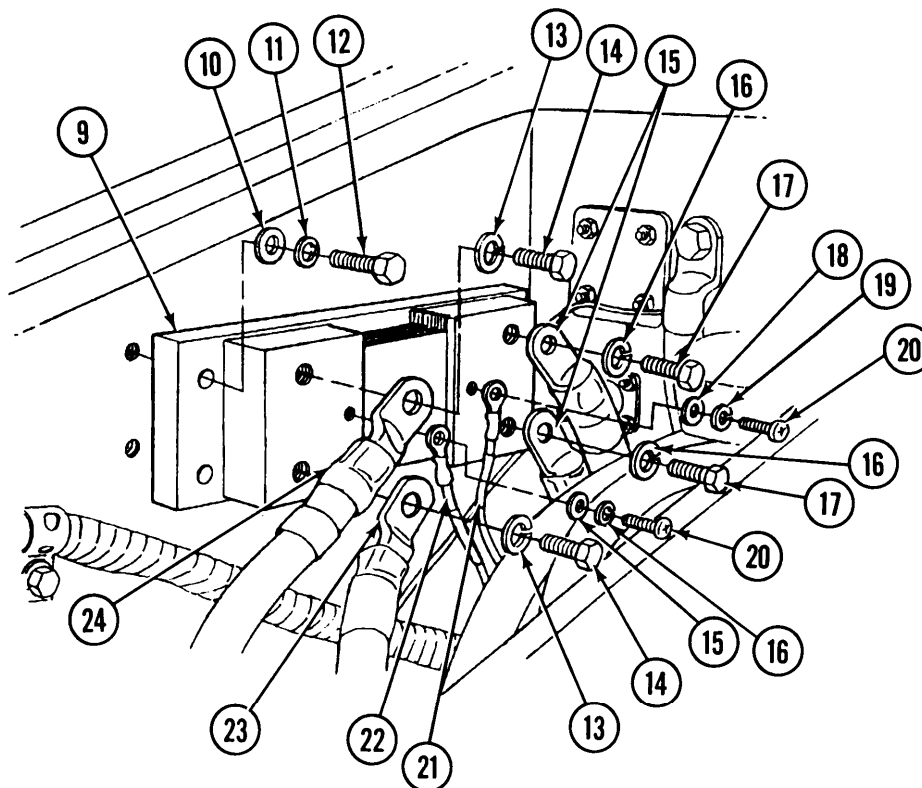
1. Loosen nut (2) and screw (3) on terminal (1), and, using battery terminal puller, remove terminal (1) from battery post (4).
2. Loosen nut (5) and screw (7) on battery terminal (6), and using battery terminal puller, remove terminal (6) from battery post (8).



3. Remove two screws (17), lockwashers (16), and ground leads 10897992 (15) from STE/ICE instrument shunt (9). Discard lockwashers.
4. Remove two screws (20), lockwashers (19), washers (18), and leads BA and BB (21 and 22) from instrument shunt (9). Discard lockwashers.

19-2. STE/ICE INSTRUMENT SHUNT REPLACEMENT (continued).

5. Remove two screws (14), lockwashers (13), and leads 12330348 and 10897992 (23 and 24) from instrument shunt (9). Discard lockwashers.
6. Remove four screws (12), lockwashers (11), washers (10), and instrument shunt (9) from hull. Discard lockwashers.


b. INSTALLATION

1. Install STE/ICE instrument shunt (9) on hull with four washers (10), new lockwashers (11), and screws (12).
2. Install leads 10897992 and 12330348 (24 and 23) on instrument shunt (9) with two new lockwashers (13) and screws (14).
3. Install two leads BB and BA (22 and 21) on instrument shunt (9) with two washers (18), new lockwashers (19), and screws (20),
4. Install two leads 10897992 (17) on instrument shunt (9) with two new lockwashers (15) and screws (16).
5. Install terminal (6) on battery post (8), and tighten screw (7) and nut (5).
6. Install terminal (1) on battery post (4), and tighten screw (3) and nut (2).

FOLLOW-ON MAINTENANCE:

- Close battery access doors (refer to TM 9-2350-287-10).

19-3. STE/ICE FUEL PRESSURE TRANSDUCER AND DIFFERENTIAL SWITCH REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cap and plug set (Item 13, Appendix D)
- Rag (Item 56, Appendix D)
- Teflon pipe sealant (Item 63, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - MASTER switch set to OFF (refer to TM 9-2350-287-10).
 - Battery ground cables disconnected (para 7-42).
 - Transmission access doors opened (refer to TM 9-2350-287-10).
-

a. REMOVAL

CAUTION

Cap all fuel, oil, air, or engine component openings with protective covers. Do not use tape to seal fuel or oil openings. Tape adhesive can contaminate fuel and oil.

1. Disconnect wiring harness connector (12) from STE/ICE fuel pressure transducer (11).
2. Remove fuel pressure transducer (11) from elbow (10).

NOTE

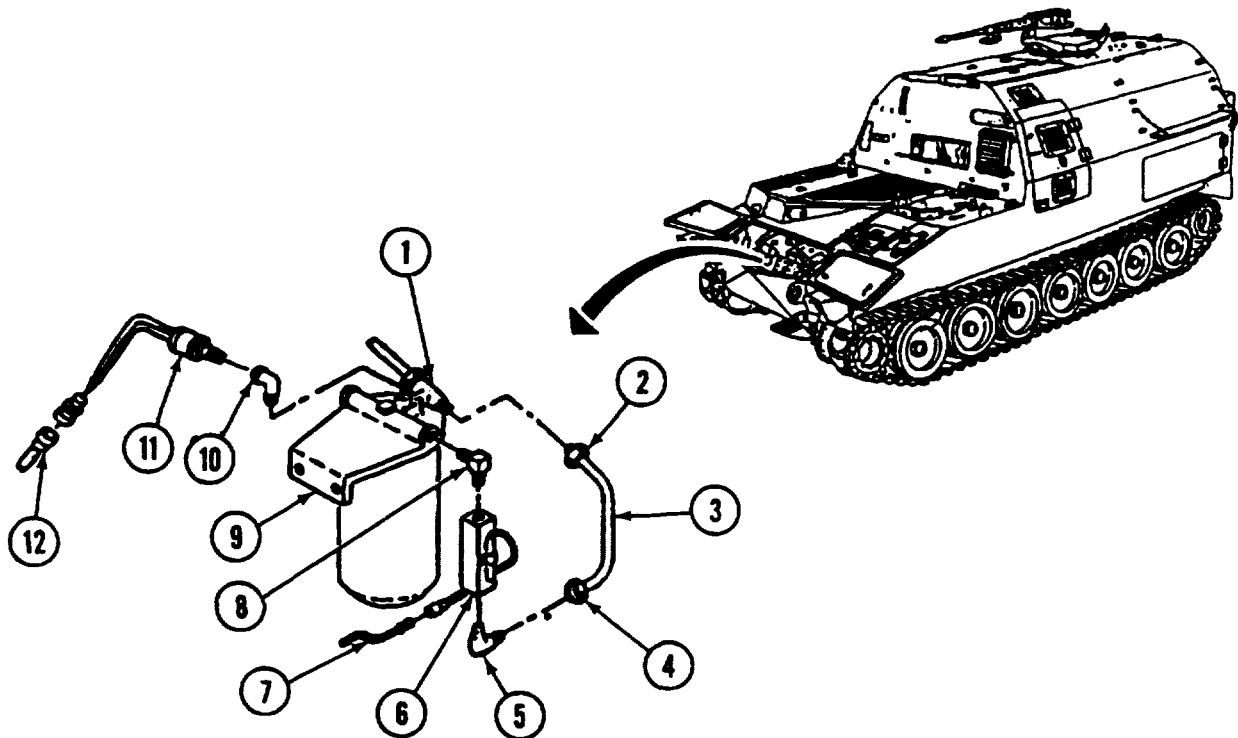
Note position of fittings before removing.

3. Remove elbow (10) from fuel fitter (9).
4. Disconnect wiring harness connector (7) from differential switch (6).
5. Loosen nut (4) at elbow (5), loosen nut (2) at tee (1), and remove tube (3) from elbow (5) and tee (1).
6. Remove elbow (5) from differential switch (6).
7. Remove differential switch (6) and elbow (8) from fuel filter (9).
8. Remove elbow (8) from differential switch (6).

19-3. STE/ICE FUEL PRESSURE TRANSDUCER AND DIFFERENTIAL SWITCH REPLACEMENT (continued).**b. INSTALLATION****NOTE**

- Apply Teflon pipe sealant to all male threads before installation.
- Remove all caps and plugs blocking fuel lines and hoses.

1. Install differential switch (6) on elbow (8).
2. Install elbow (8) and differential switch (6) on fuel filter (9).
3. Install elbow (5) on differential switch (6).
4. Install tube (3) on elbow (5) and tee (1) by tightening nut (2) at tee (1) and tightening nut (4) at elbow (5).
5. Connect wiring harness connector (7) to differential switch (6).
6. Install elbow (10) on fuel filter (9).
7. Install fuel pressure transducer (11) on elbow (10).
8. Connect wiring harness connector (12) to fuel pressure transducer (11).

**FOLLOW-ON MAINTENANCE:**

- Close transmission access doors (refer to TM 9-2350-287-10).
- Connect battery ground cables (para 7-42).

19-4. STE/ICE AIR BOX TRANSDUCER REPLACEMENT.*This Task Covers:*

a. Removal

b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Teflon pipe sealant (Item 63, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).

[Equipment Condition Deleted]

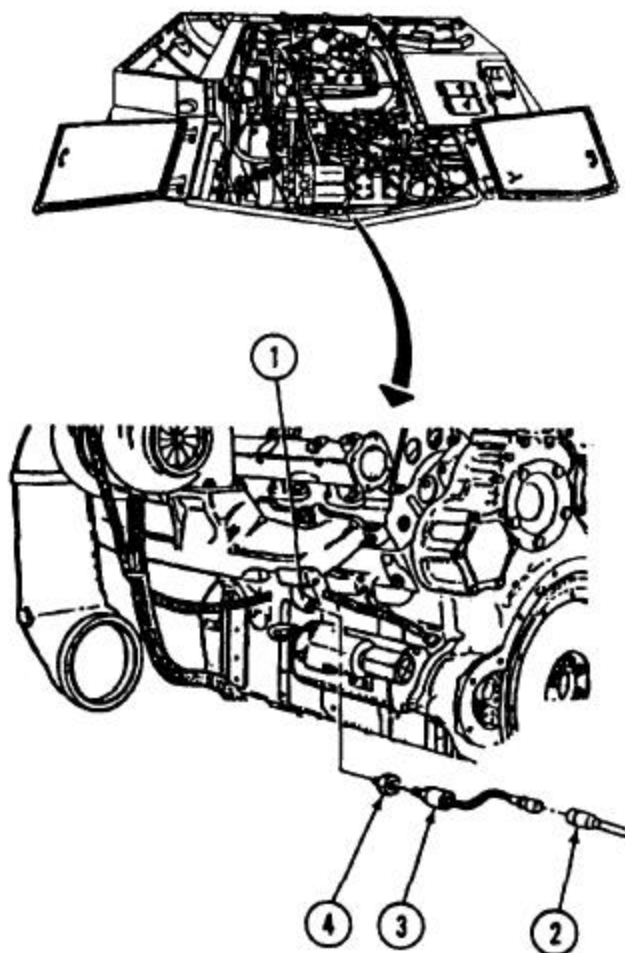
- Battery ground cables disconnected (para 7-42).

a. REMOVAL

1. Disconnect wiring harness connector (2) from STE/ICE air box transducer (3).
2. Remove transducer (3) from pipe reducer (4).
3. Remove pipe reducer (4) from elbow (1).

b. INSTALLATION

1. Apply Teflon pipe sealant and install pipe reducer (4) in elbow (1).
2. Apply Teflon pipe sealant and install transducer (3) in pipe reducer (4).
3. Connect wiring harness connector (2) to transducer (3).

**FOLLOW-ON MAINTENANCE:**

- Connect battery ground cables (para 7-42).
- [Follow-On Task Deleted]**

19-5. STE/ICE PULSE TACHOMETER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

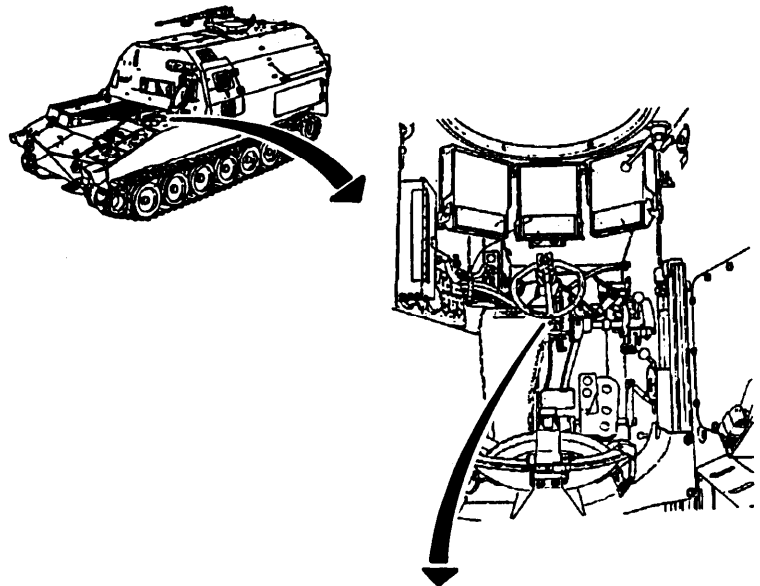
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Driver's hatch cover opened and secured (refer to TM 9-2350-287-10).

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

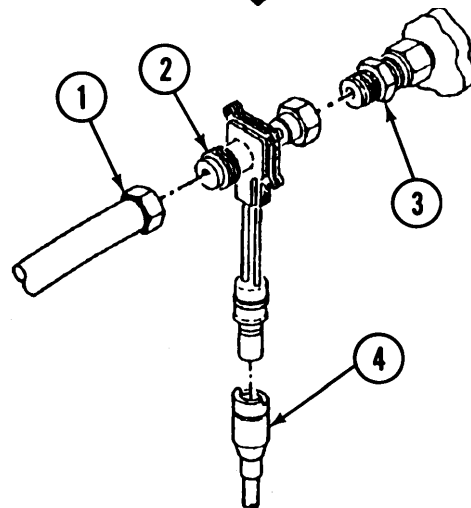
a. REMOVAL

1. Disconnect tachometer cable connector (1) from STE/ICE pulse tachometer (2).
2. Disconnect plug (4) from pulse tachometer (2).
3. Remove pulse tachometer (2) from adapter (3).



b. INSTALLATION

1. Install pulse tachometer (2) on adapter (3).
2. Connect plug (4) to pulse tachometer (2).
3. Connect tachometer cable connector (1) to pulse tachometer (2).



FOLLOW-ON MAINTENANCE:

- Close driver's hatch cover (refer to TM 9-2350-287-10).

19-6. STE/ICE AIR CLEANER TRANSDUCER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Teflon pipe sealant (Item 63, Appendix D)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

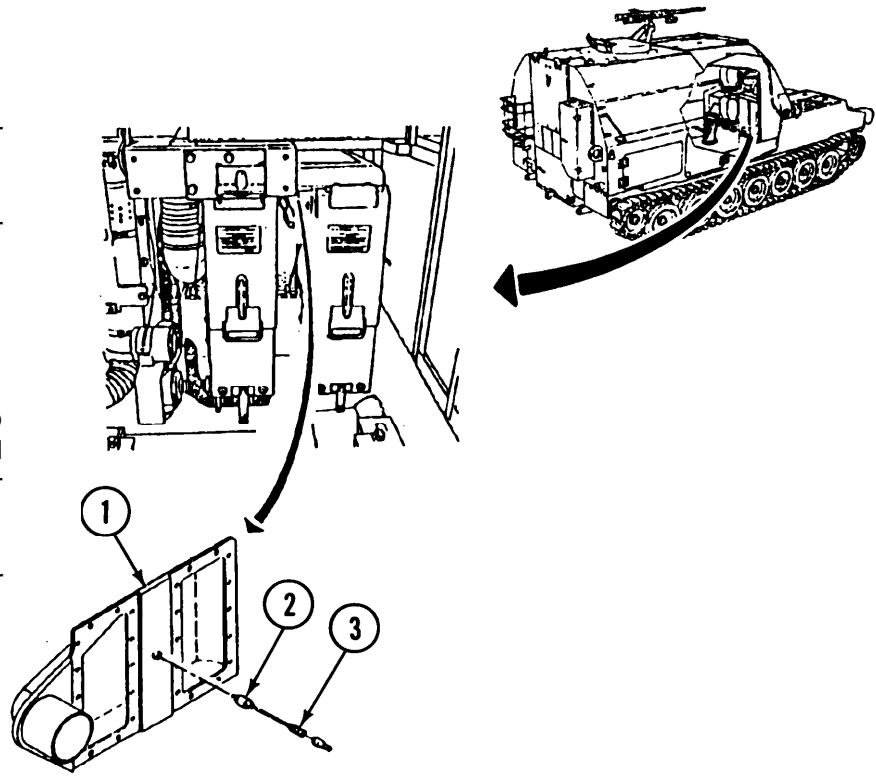
- MASTER switch set to OFF (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-42).
- Right projectile rack assembly moved to rear of vehicle (refer to TM 9-2350-287-10).

a. REMOVAL

1. Disconnect wiring harness connector (3) from STE/ICE air cleaner transducer (2).
2. Remove transducer (2) from air cleaner cover (1).

b. INSTALLATION

1. Apply Teflon pipe sealant to transducer (2) and install transducer (2) on air cleaner cover (1).
2. Connect wiring harness connector (3) to transducer (2).



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FOLLOW-ON MAINTENANCE:

- Connect battery ground cables (para 7-42).
- Move right projectile rack assembly into position (refer to TM 9-2350-287-10).

CHAPTER 20 GAGES, WEIGHING AND MEASURING DEVICES MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
20-1	General	20-1
20-2	Speedometer and Tachometer Systems Replacement	20-1

20-1. GENERAL.

This chapter contains information for the removal and installation of the speedometer and tachometer systems.

20-2. SPEEDOMETER AND TACHOMETER SYSTEMS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (2) (Item 127, Appendix H)
- Lockwasher (2) (Item 175, Appendix H)
 - Lockwasher (Item 177, Appendix H)
- Lockwasher (4) (Item 183, Appendix H)
- Preformed packing (Item 223, Appendix H)

- Air intake grille opened (refer to TM 9-2350-287-10).
- Front hull slope plate removed (para 15-11).
- Transmission access doors opened (refer to TM 9-2350-287-10).
 - Right transmission trunnion cap removed (para 8-4).
 - Driver's portable instrument panel removed (para 7-6).

Personnel Required: Two

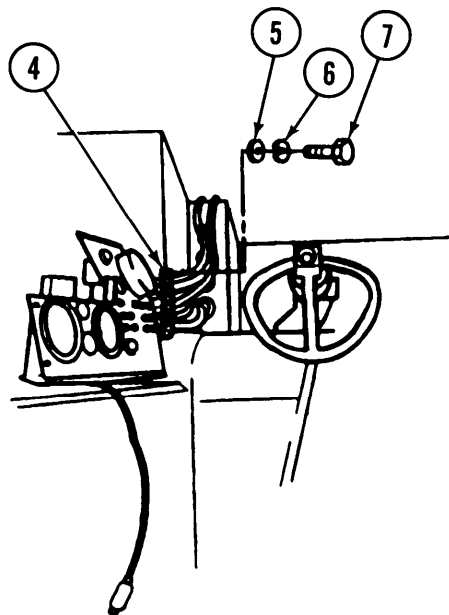
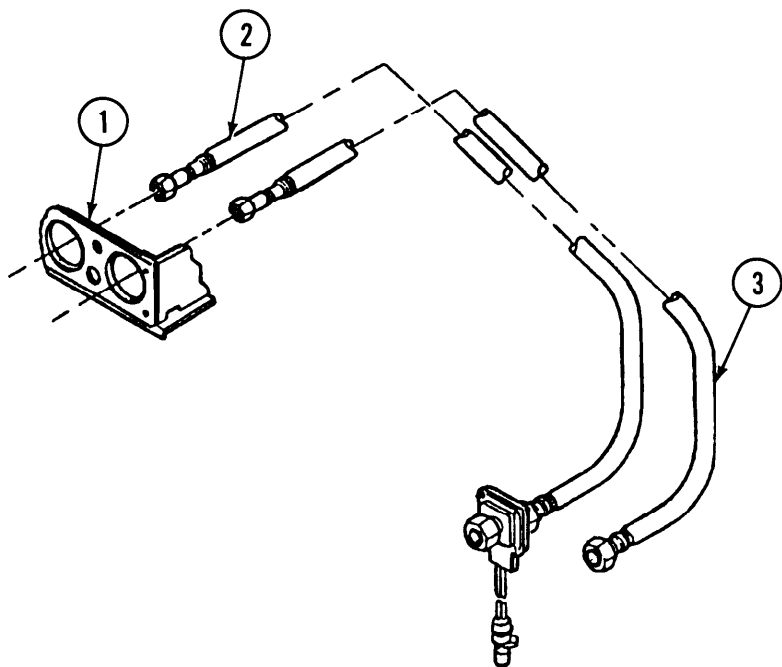
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
-

20-2. SPEEDOMETER AND TACHOMETER SYSTEMS REPLACEMENT.

a. REMOVAL

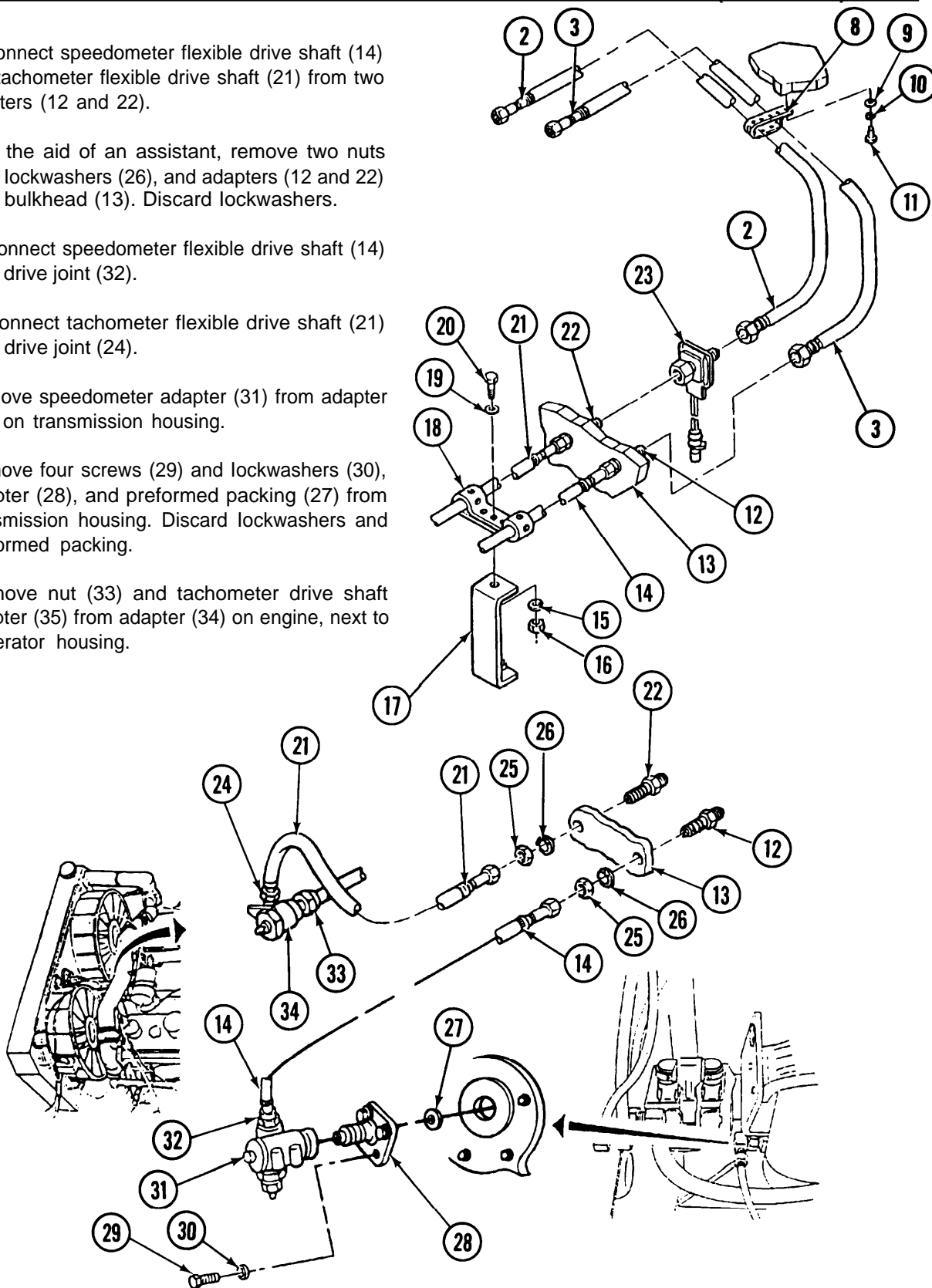
1. Disconnect speedometer shaft assembly (3) and tachometer shaft assembly (2) from driver's instrument panel (1).
2. Remove screw (7), lockwasher (6), and washer (5) from top of each of two straps (4). Discard lockwashers.
3. Remove speedometer shaft assembly (3) and tachometer shaft assembly (2) from two straps (4).



4. Remove screw (11), lockwasher (10), washer (9), strap (8), speedometer shaft assembly (3), and tachometer shaft assembly (2) from driver's compartment bulkhead.
5. Disconnect speedometer shaft assembly (3) from adapter (12) at bulkhead (13). Remove speedometer shaft assembly (3) from driver's compartment.
6. Disconnect tachometer shaft assembly (2) from STE/ICE pulse tachometer (23). Remove tachometer shaft assembly (2) from driver's compartment.
7. Remove STE/ICE pulse tachometer (23) from adapter (22) at bulkhead (13).
8. Remove nut (16), lockwasher (15), washer (19), screw (20), and retaining strap (18) from speedometer flexible drive shaft (14), tachometer flexible drive shaft (21), and support bracket (17). Discard lockwasher.

20-2. SPEEDOMETER AND TACHOMETER SYSTEMS REPLACEMENT (continued).

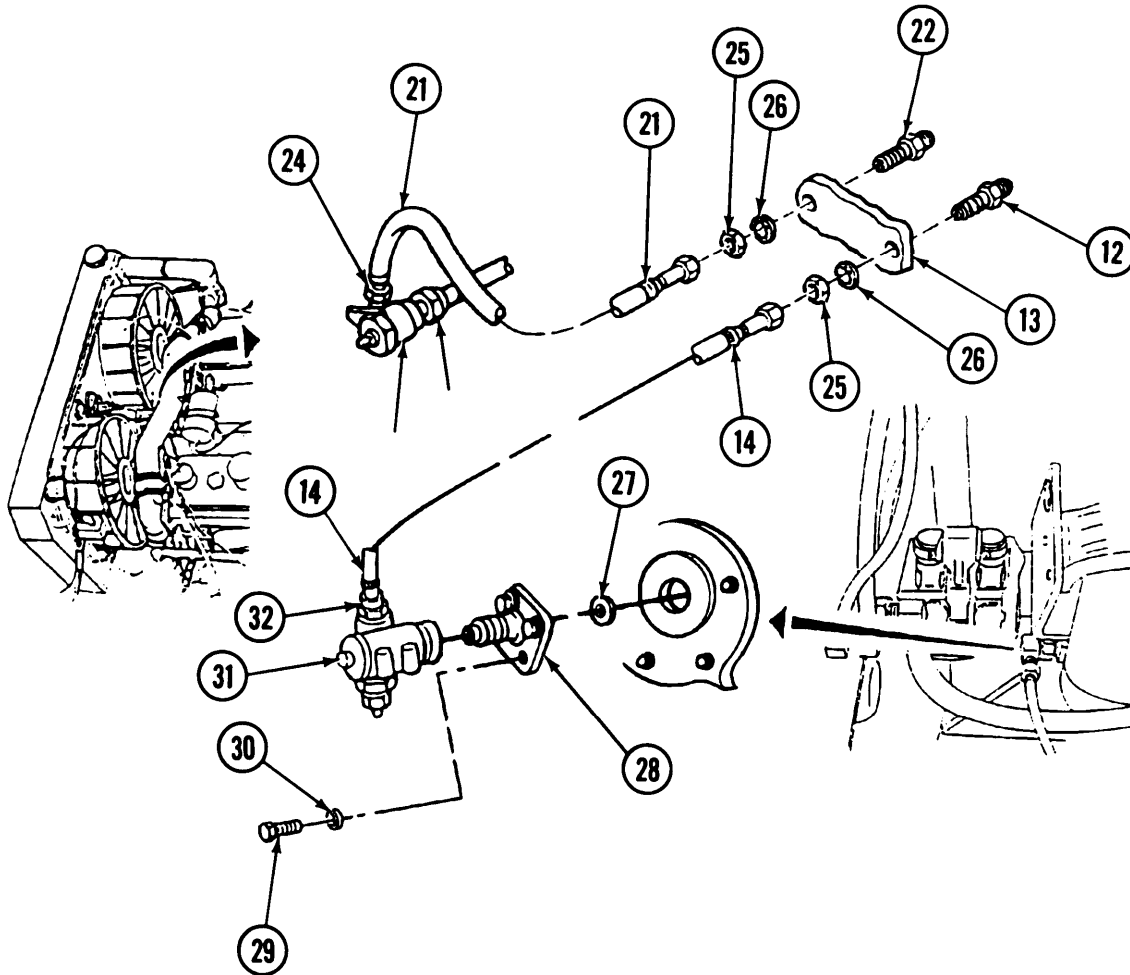
9. Disconnect speedometer flexible drive shaft (14) and tachometer flexible drive shaft (21) from two adapters (12 and 22).
10. With the aid of an assistant, remove two nuts (25), lockwashers (26), and adapters (12 and 22) from bulkhead (13). Discard lockwashers.
11. Disconnect speedometer flexible drive shaft (14) from drive joint (32).
12. Disconnect tachometer flexible drive shaft (21) from drive joint (24).
13. Remove speedometer adapter (31) from adapter (28) on transmission housing.
14. Remove four screws (29) and lockwashers (30), adapter (28), and preformed packing (27) from transmission housing. Discard lockwashers and preformed packing.
15. Remove nut (33) and tachometer drive shaft adapter (35) from adapter (34) on engine, next to generator housing.



20-2. SPEEDOMETER AND TACHOMETER SYSTEMS REPLACEMENT (continued).

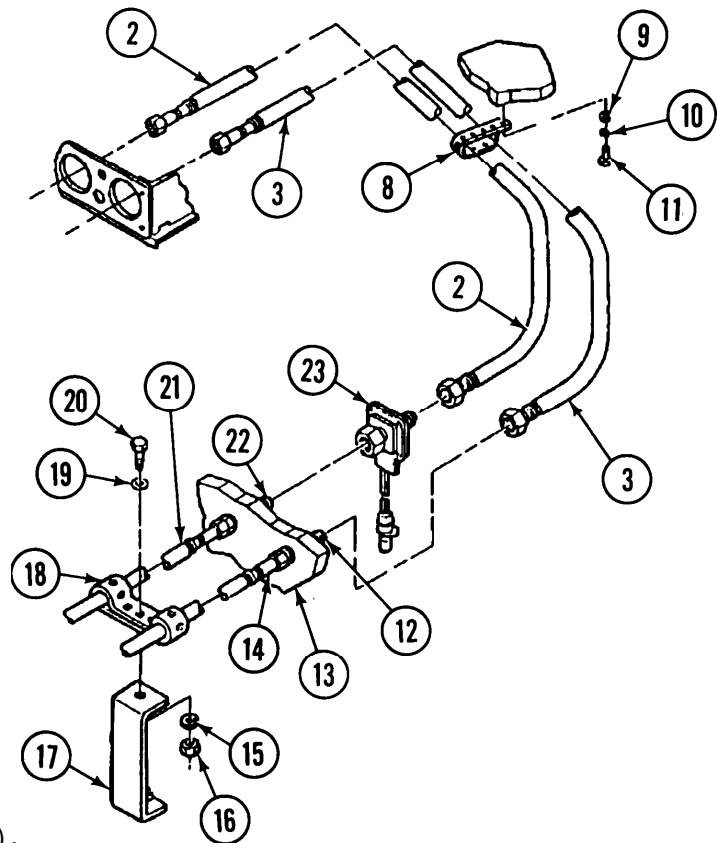
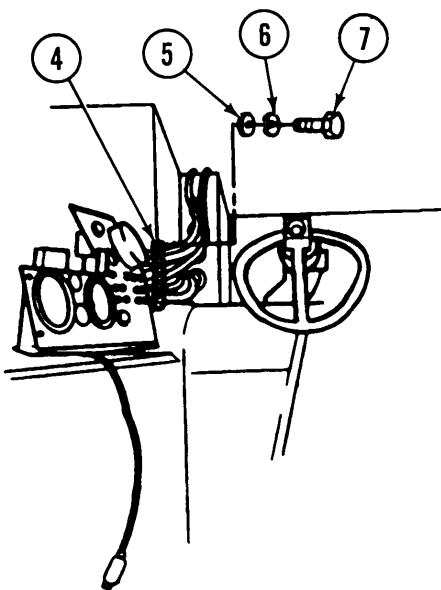
b. INSTALLATION

1. Install tachometer drive shaft adapter (35) and nut (33) on adapter (34) on engine, next to generator housing.
2. Install new preformed packing (27) and adapter (28) on transmission housing with four screws (29) and new lockwashers (30).
3. Install speedometer adapter (31) on adapter (28) on transmission housing.
4. Install tachometer flexible drive shaft (21) on drive joint (24).
5. Install speedometer flexible drive shaft (14) on drive joint (32).
6. With the aid of an assistant, install two adapters (12 and 22) in bulkhead (13) with two new lockwashers (26) and two nuts (25).



20-2. SPEEDOMETER AND TACHOMETER SYSTEMS REPLACEMENT (continued).

7. Connect speedometer flexible drive shaft (14) and tachometer flexible drive shaft (21) to two adapters (12 and 22) in bulkhead (13).
8. Install retaining strap (18) on support bracket (17), speedometer flexible drive shaft (14), and tachometer flexible drive shaft (21) with screw (20), washer (19), new lockwasher (15), and nut (16).
9. Install STE/ICE pulse tachometer (23) on adapter (22) at bulkhead (13).
10. Install tachometer shaft assembly (2) on STWICE pulse tachometer (23).
11. Install speedometer shaft assembly (3) on adapter (12) at bulkhead (13).
12. Position strap (8) on tachometer shaft assembly (2) and speedometer shaft assembly (3), and install strap (8) in driver's compartment with screw (11), new lockwasher (10), and washer (9).
13. Install speedometer shaft assembly (3) and tachometer shaft assembly (2) in two straps (4).
14. Install screw (7), new lockwasher (6), and washer (5) in top of each of two straps (4).
15. Connect tachometer shaft assembly (2) and speedometer shaft assembly (3) to driver's instrument panel (1).



FOLLOW-ON MAINTENANCE:

- Install right transmission trunnion cap (para 8-4)..
- Close transmission access doors (refer to TM 9-2350-287-10).
- Install front hull slope plate (para 15-11).
- Close air intake grille (refer to TM 9-2350-287-10).
- Install driver's portable instrument panel (para 7-6).

**CHAPTER 20.1
GLOBAL POSITIONING SYSTEM (GPS)**

Paragraph Number	Paragraph Title	Page Number
20.1-1	General	20.1-1
20.1-2	GPS Antenna Assembly and Antenna Mount Replacement	20.1-1
20.1-3	GPS Cable Assembly (12967967-2) Replacement	20.1-4
20.1-4	GPS Cable Assembly (12967937) Replacement	20.1-5
20.1-5	GPS Mounting Bracket Assembly Repair	20.1-6

20.1-1. GENERAL.

This chapter provides maintenance instructions for the removal, disassembly, and assembly of the Global Positioning System (GPS) antenna assembly and mount, GPS cable assembly (12967967-2), GPS cable assembly (12967937), and GPS mounting bracket assembly.

20.1-2. GPS ANTENNA ASSEMBLY AND ANTENNA MOUNT REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- MASTER switch set to OFF (refer to TM 9-2350-287-10).

Materials/Parts:

- Sealing compound (Item 59, Appendix D)
 - Silicone compound (Item 64, Appendix D)
 - Lockwasher (8) (Item 153.1, Appendix H)
-



20.1-2. GPS ANTENNA ASSEMBLY AND ANTENNA MOUNT REPLACEMENT (continued).

a. REMOVAL

1. Remove four screws (2) and lockwashers (3) from antenna assembly (1). Discard lockwashers.
2. Disconnect cable assembly 12967967-2 (4) from antenna assembly (1), and remove antenna assembly (1) from antenna mount (8).
3. Remove four screws (9), lockwashers (10), and washers (11) and antenna mount (8) from vehicle hull. Discard lockwashers.
4. Remove two screws (6) and washers (5) and resilient mount (7) from vehicle hull.

b. INSTALLATION**NOTE**

If replacing resilient mount, fill second hole of mount with silicone compound.

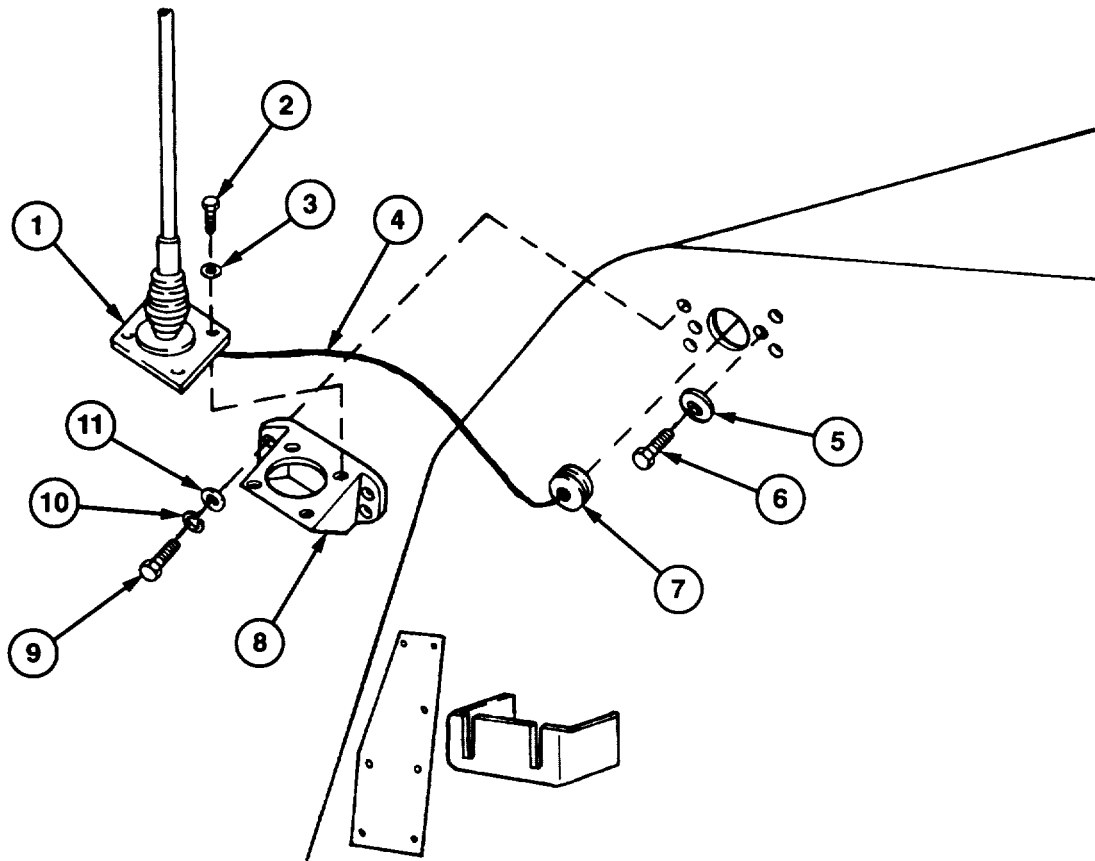
1. Install resilient mount (7) on vehicle hull with two screws (6) and washers (5).

WARNING

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

2. Apply sealing compound to threads of four screws (9), and install antenna mount (8) on vehicle hull with four screws (9), washers (11), and new lockwashers (10).
3. Connect cable assembly 12967967-2 (4) to antenna assembly (1).
4. Apply sealing compound to threads of four screws (2), and install antenna assembly (1) on antenna mount (8) with four screws (2) and new lockwashers (3).

20.1-2. GPS ANTENNA ASSEMBLY AND ANTENNA MOUNT REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- None

Change 1 20.1-3



20.1-3. GPS CABLE ASSEMBLY (12967967-2) REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (15) Item 175, Appendix H)

Equipment Conditions:

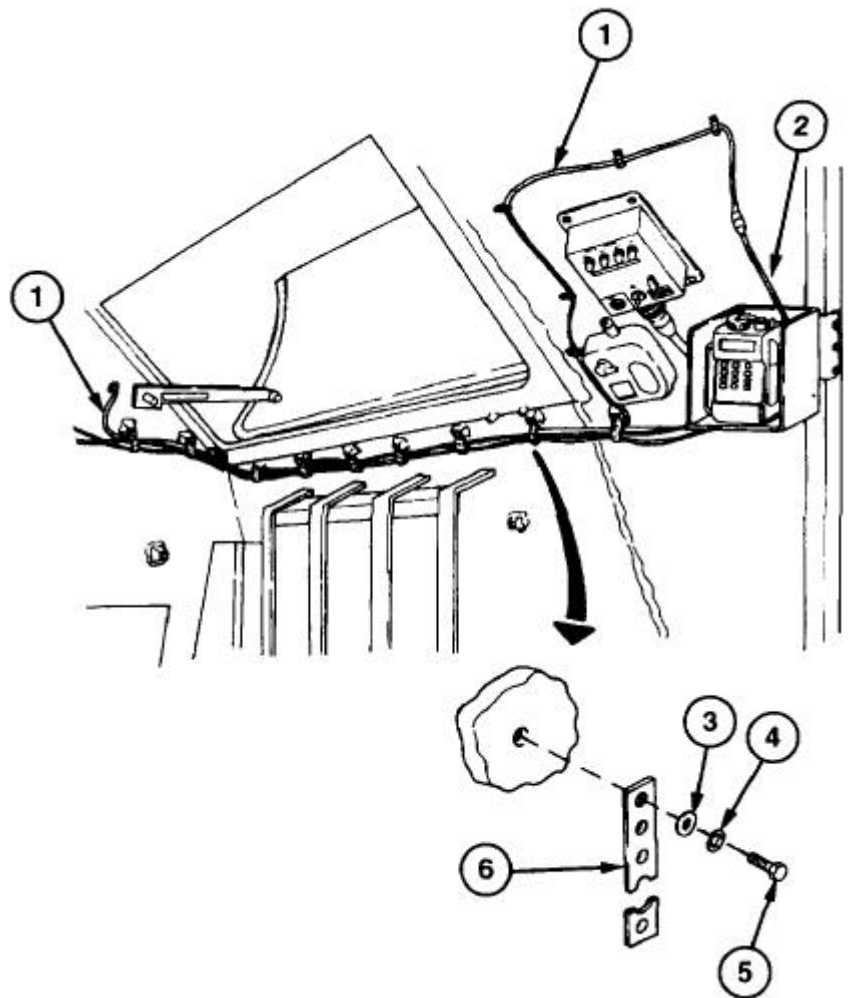
- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- GPS antenna assembly and antenna mount removed (para 20.1-2).

a. REMOVAL

1. Disconnect cable assembly 12967967-2 (1) from cable assembly 12967937 (2).
2. Remove 15 screws (5), lockwashers (4), washers (3), and straps (6) and cable assembly 12967967-2 (1) from vehicle hull. Discard lockwashers.

b. INSTALLATION

1. Install cable assembly 12967967-2 (1) on vehicle hull with 15 straps (6), screws (5), washers (3), and new lockwashers (4).
2. Connect cable assembly 12967967-2 (1) to cable assembly 12967937 (2).



FOLLOW-ON MAINTENANCE:

- Install GPS antenna assembly and antenna mount (para 20.1-2).

20.1-4. GPS CABLE ASSEMBLY (12967937) REPLACEMENT.

This Task Covers:

- a. Removal
- b. Installation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- MASTER switch set to OFF (refer to TM 9-2350-287-10).

Equipment Conditions:

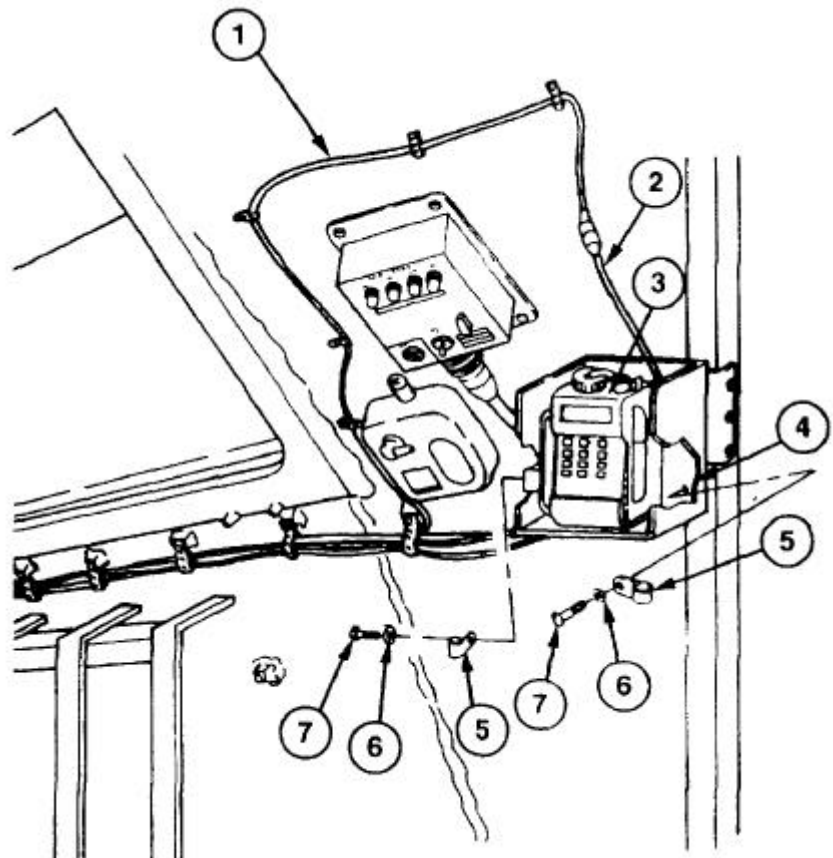
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

1. Disconnect GPS cable assembly 12967937 (2) from GPS unit (3).
2. Disconnect cable assembly 12967937 (2) from cable assembly 12967967-2 (1).
3. Remove two screws (7), washers (6), and clamps (5) and cable assembly 12967937 (2) from GPS mounting plate (4).

b. INSTALLATION

1. Install two clamps (5), washers (6), and screws (7) and cable assembly 12967937 (2) on GPS mounting plate (4).
2. Connect cable assembly 12967937 (2) to cable assembly 12967967-2 (1).
3. Connect cable assembly 12967937 (2) to GPS unit (3).



FOLLOW-ON MAINTENANCE:

- None

20.1-5. GPS MOUNTING BRACKET ASSEMBLY REPAIR.

This Task Covers:

- | | |
|-------------|-----------------|
| a. Removal | b. Installation |
| c. Assembly | d. Installation |
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwasher (3) (Item 153.1, Appendix H)
- Lockwasher (8) (Item 173, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - GPS receiver removed from mounting bracket (refer to TM 11-5825-291-13).
-

a. REMOVAL

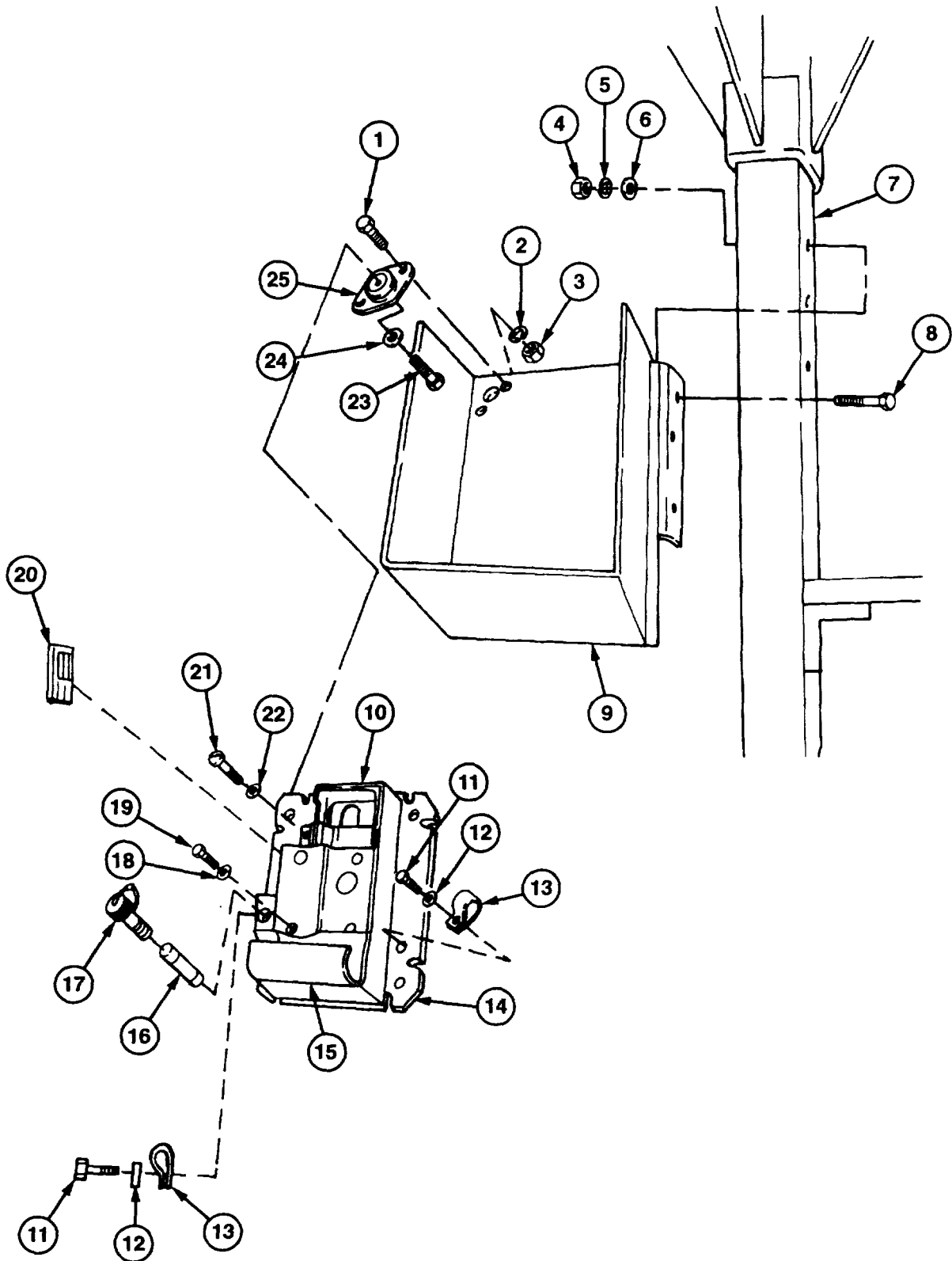
1. Remove two screws (11), washers (12), and loop clamps (13) from mounting plate (14).
2. Remove three nuts (4), lockwashers (5), washers (6), and screws (8) and adapter mount (9) from canister compartment support (7). Discard lockwashers.

b. DISASSEMBLY

1. Remove four screws (23) and washers (24) and mounting plate (14) from adapter mount (9).
2. Remove eight nuts (3), lockwashers (2), and screws (1) and four isolators (25) from adapter mount (9). Discard lockwashers.
3. Remove fuse holder (17) and spare fuse (16) from mounting plate (14).
4. Remove four screws (21) and washers (22) and block and gasket (10) from mounting plate (14).
5. Remove four screws (19) and washers (18) and GPS mount (15) from mounting plate (14).
6. Remove identification plate (20) from mounting plate (14).

Change 1 20.1-6

20.1-5. GPS MOUNTING BRACKET ASSEMBLY REPAIR (continued).



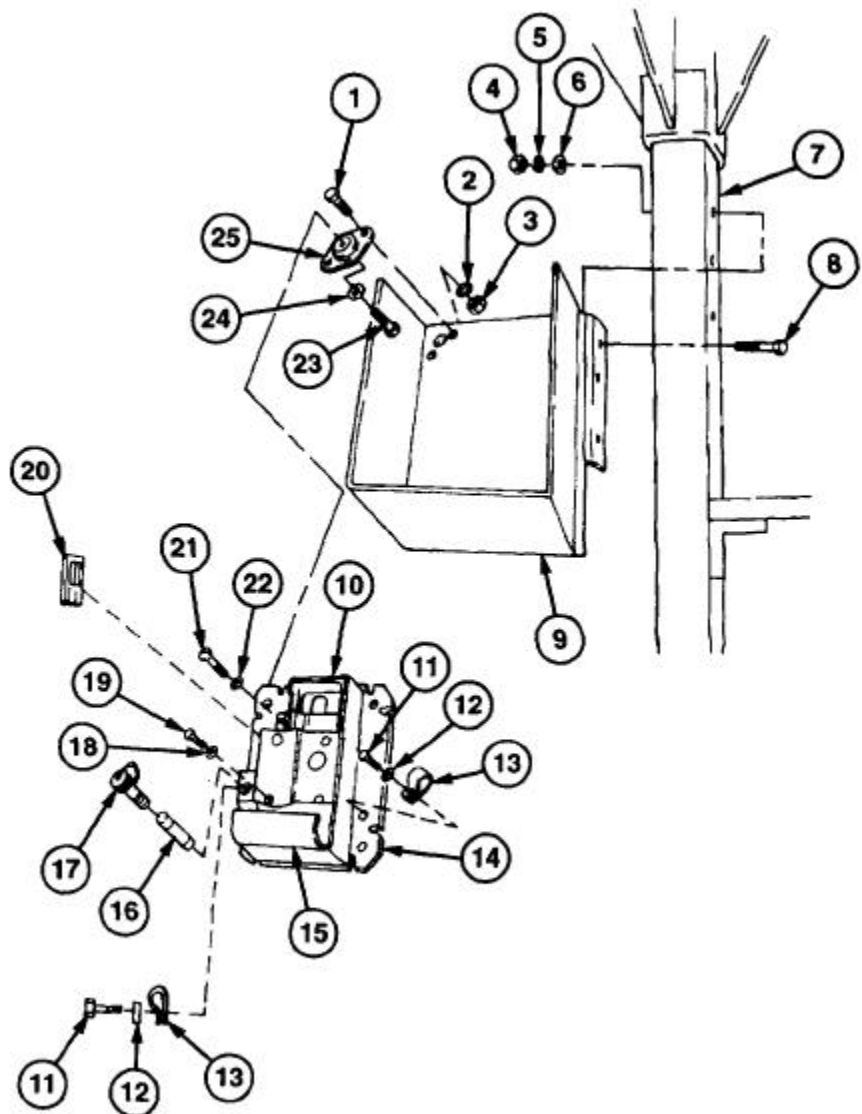
20.1-5. GPS MOUNTING BRACKET ASSEMBLY REPAIR (continued).

c. ASSEMBLY

1. Install identification plate (20) on mounting plate (14).
2. Install GPS mount (15) on mounting plate (14) with four screws (19) and washers (18).
3. Install block and gasket (10) on mounting plate (14) with four screws (21) and washers (22).
4. Install spare fuse (16) and fuse holder (17) on mounting plate (14).
5. Install four isolators (25) on adapter mount (9) with eight screws (1), new lockwashers (2), and nuts (3).
6. Install mounting plate (14) on adapter mount (9) with four screws (23) and washers (24).

d. INSTALLATION

1. Install adapter mount (9) on canister compartment support (7) with three screws (8), washers (6), new lockwashers (5), and nuts (4).
2. Route power and antenna cables through two loop clamps (13).
3. Install two loop clamps (13) on mounting plate (14) with two screws (11) and washers (12).



FOLLOW-ON MAINTENANCE:

- Install GPS receiver in mounting bracket (refer to TM 11-5825-291-13).

CHAPTER 21

FIRE FIGHTING EQUIPMENT COMPONENTS MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
21-1	General	21-1
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21-3	Crew AFES Deactivation for Safe Maintenance	21-4
21-4	Engine AFES Cylinder Bottles Replacement	21-7
21-5	Crew AFES Cylinder Bottles Replacement	21-12
21-6	Engine AFES Tubing and Nozzles Replacement	21-16
21-7	Crew AFES Cylinder Bottle Bracket Straps, Brackets, and Mounts Replacement	21-21
21-8	Engine AFES Cylinder Bottle Bracket Straps, Brackets, and Mounts Replacement	21-25
21-9	Engine Compartment Fire Sensing Elements Replacement	21-29
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21-11	Engine AFES Electrical Relays Replacement	21-40
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21-13	Engine AFES Test and Alarm (T/A) Panel Replacement	21-50
21-14	Crew AFES Optical Fire Sensing Apparatus (OFSA) Replacement	21-52
21-15	Crew AFES Test and Alarm (T/A) Panel and Standard Control Electronic Amplifier (SCEA) Replacement	21-54
21-16	AFES Manual Discharge System Repair	21-56

21-1. GENERAL

This chapter illustrates and describes maintenance procedures for removal, disassembly, assembly, installation and adjustment of Automatic Fire Extinguisher System (AFES). Maintenance procedures for this section include the following; engine and crew AFES deactivation for safe maintenance, engine and crew AFES cylinder bottle replacement, bottle straps and mounts replacement, engine tubing and nozzle replacement, engine and crew sensing apparatus, engine and crew AFES test and alarm panels and replacement of standard control electronic amplifier and manual cable control adjustment.

21-2. ENGINE AFES DEACTIVATION FOR SAFE MAINTENANCE.

This Task Covers:

- a. Deactivation
- b. Activation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)
- Left and right projectile rack assemblies moved to rear (refer to TM 9-2350-287-10).

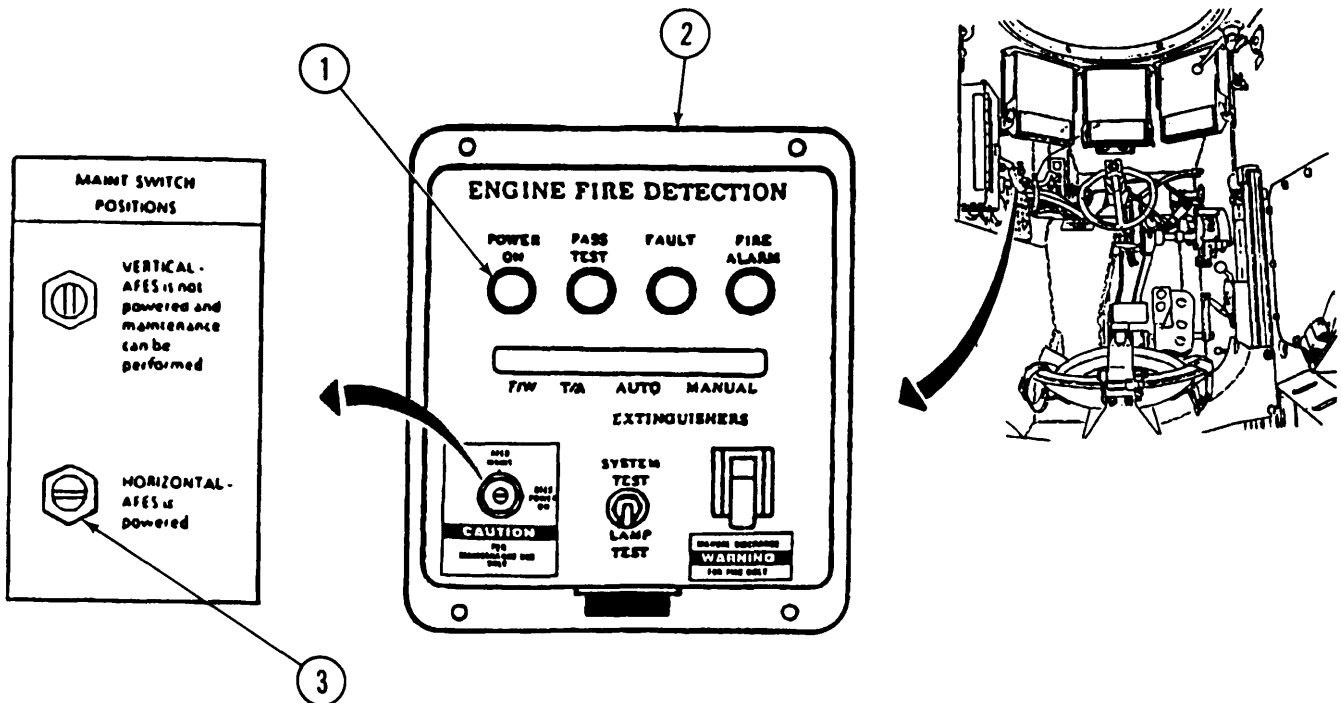
Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. DEACTIVATION

WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

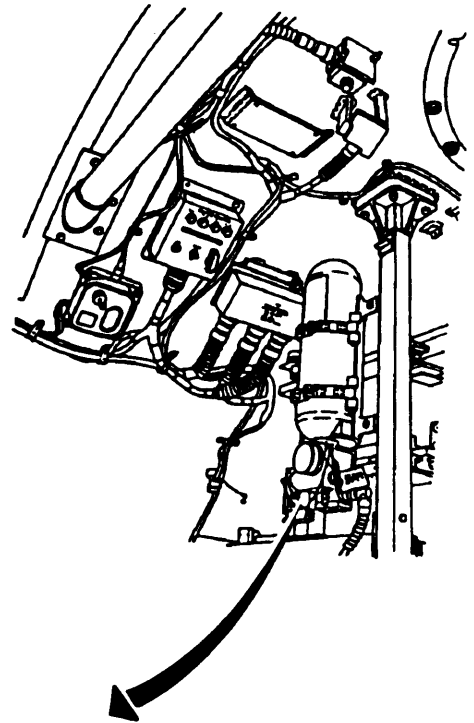
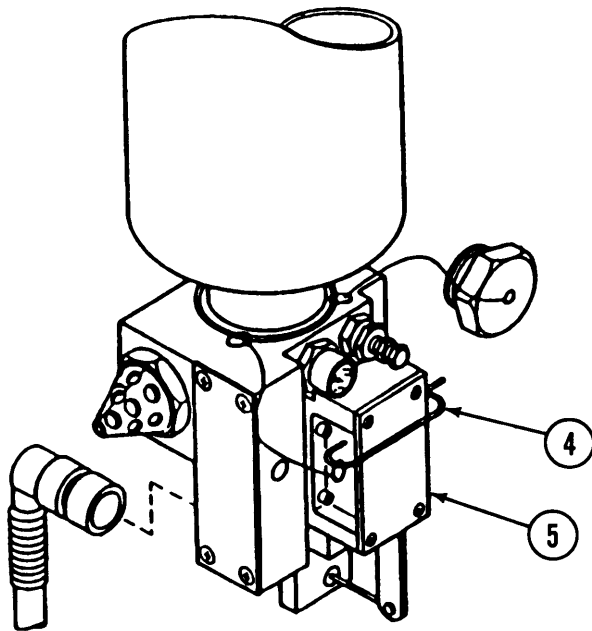


21-2. ENGINE AFES DEACTIVATION FOR SAFE MAINTENANCE (continued).

1. Turn MASTER switch to ON (refer to TM 9-2350-287-10).
2. Turn Maintenance switch (3) on engine test and alarm (T/A) panel (2) to vertical position. Make sure all lights, including POWER ON light (1), go off.
3. Turn MASTER switch to OFF (refer to TM 9-2350-287-10).
4. Install locking pin (4) in valve actuator (5) of bottle No. 2.

b. ACTIVATION

1. Remove locking pin (4) from valve actuator (5) of engine cylinder bottle No. 2.
2. Turn MASTER switch ON (refer to TM 9-2350-287-10).
3. Turn Maintenance switch (3) on T/A panel (2) to horizontal position.
4. Turn MASTER switch OFF (refer to TM 9-2350-287-10).



FOLLOW-ON MAINTENANCE:

- Perform engine AFES TEST (refer to TM 9-2350-287-10).
- Install left and right projectile rack assemblies (refer to TM 9-2350-287-10).

21-3. CREW AFES DEACTIVATION FOR SAFE MAINTENANCE.

This Task Covers:

a. Deactivation

b. Activation

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Left and right projectile rack assemblies moved to rear (refer to TM 9-2350-287-10).

Equipment Conditions:

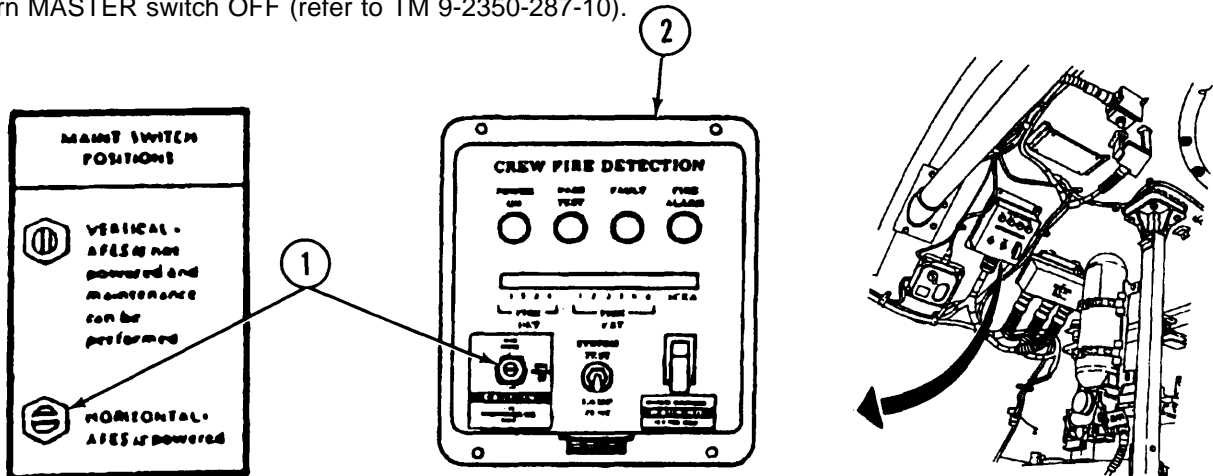
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. DEACTIVATION

WARNING

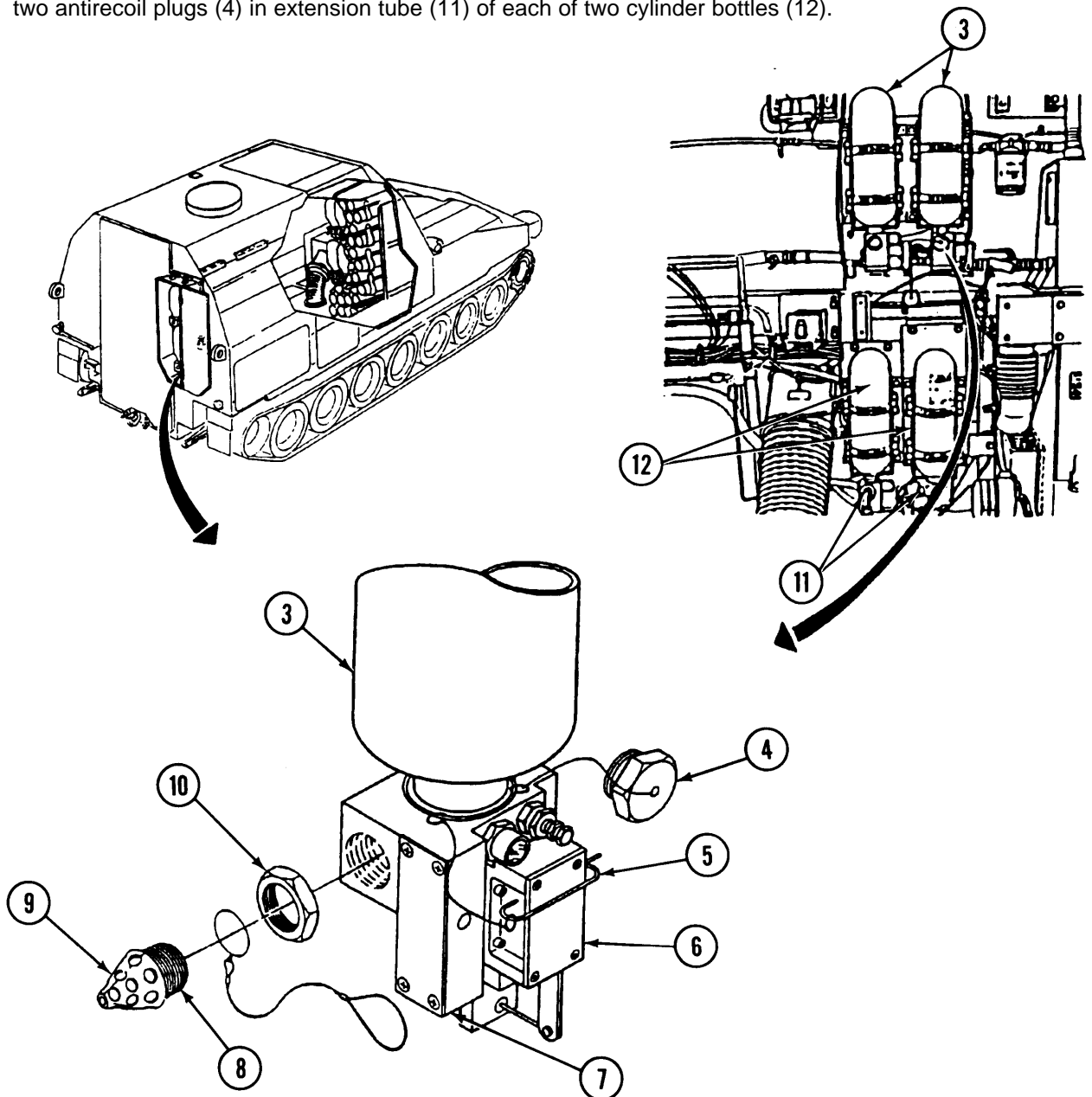
- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

1. Turn MASTER switch ON (refer to TM 9-2350-287-10).
2. Turn Maintenance switch (1) on crew test and alarm (T/A) panel (2) to vertical position. Make sure all lights go off.
3. Turn MASTER switch OFF (refer to TM 9-2350-287-10).



21-3. CREW AFES DEACTIVATION FOR SAFE MAINTENANCE (continued).

4. Install locking pin (5) in each valve actuator (6) on four crew compartment cylinder bottles (3) and two cylinder bottles (12) in rear fire extinguisher box assembly.
5. Loosen six nuts (10) on six dispersal nozzles (8).
6. Remove six dispersal nozzles (8) from four valve assemblies (7) and from extension tube (11) on each of two cylinder bottles (3 and 12).
7. Remove four antirecoil plugs (4) from bulkhead and two antirecoil plugs (4) from fire extinguisher box assembly.
8. Install four antirecoil plugs (4) in valve assemblies (7) of four crew compartment cylinder bottles (3), and install two antirecoil plugs (4) in extension tube (11) of each of two cylinder bottles (12).



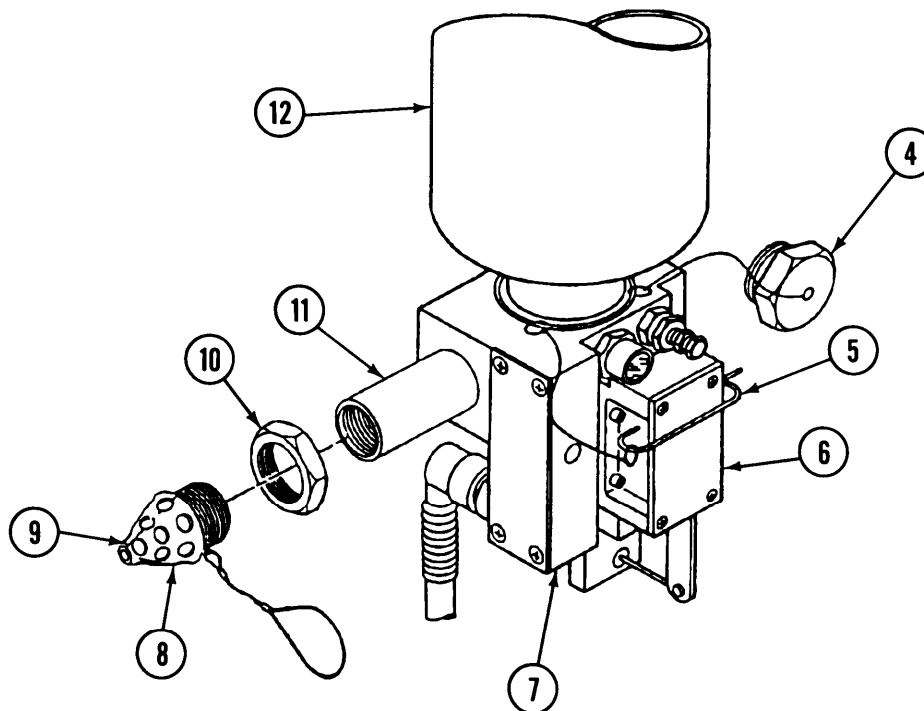
21-3. CREW AFES DEACTIVATION FOR SAFE MAINTENANCE (continued).

b. ACTIVATION

WARNING

Remove locking pins from valve actuator of crew AFES cylinder bottle assemblies before reactivating crew AFES. Failure to do so could result in malfunction of AFES, resulting in injury to personnel.

1. Remove four antirecoil plugs (4) from valve assemblies (7) of four crew compartment cylinder bottles (3), and remove two antirecoil plugs (4) from extension tubes (11) of two cylinder bottles (12).
2. Screw six nuts (10) onto six dispersal nozzles (8).
3. Install six dispersal nozzles (8) on four valve assemblies (7) and two extension tubes (11).
4. Back off each of six dispersal nozzles (8) no more than one full turn until engraved line (9) on dispersal nozzle (8) points up.
5. Tighten six nuts (10) against four valve assemblies (7) and two extension tubes (11).



FOLLOW-ON MAINTENANCE:

- Install left and right projectile rack assemblies (refer to TM 9-2350-287-1 O).
- Move Maintenance switch on crew T/A panel to horizontal position.
- Perform crew AFES test (para 21-15).

21-4. ENGINE AFES CYLINDER BOTTLES REPLACEMENT.

This Task Covers:

a. Removal**b. Installation**

Initial Setup:

Tools/Test Equipment:

- Adjustable wrench (Item 3, Appendix I)
- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cotter pin (Item 12, Appendix H)
- Preformed packing (2) (Item 224, Appendix H)
- Preformed packing (2) (Item 225, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Left and right projectile rack assemblies moved to rear (refer to TM 9-2350-287-10).
 - Engine AFES deactivated (para 21-2).
 - Ventilation hose removed (para 16-4).
-

a. REMOVAL**WARNING**

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

21-4. ENGINE AFES CYLINDER BOTTLES REPLACEMENT (continued).

NOTE

Engine AFES cylinder bottle assembly No. 1 must be removed in order to remove engine AFES cylinder bottle assembly No. 2.

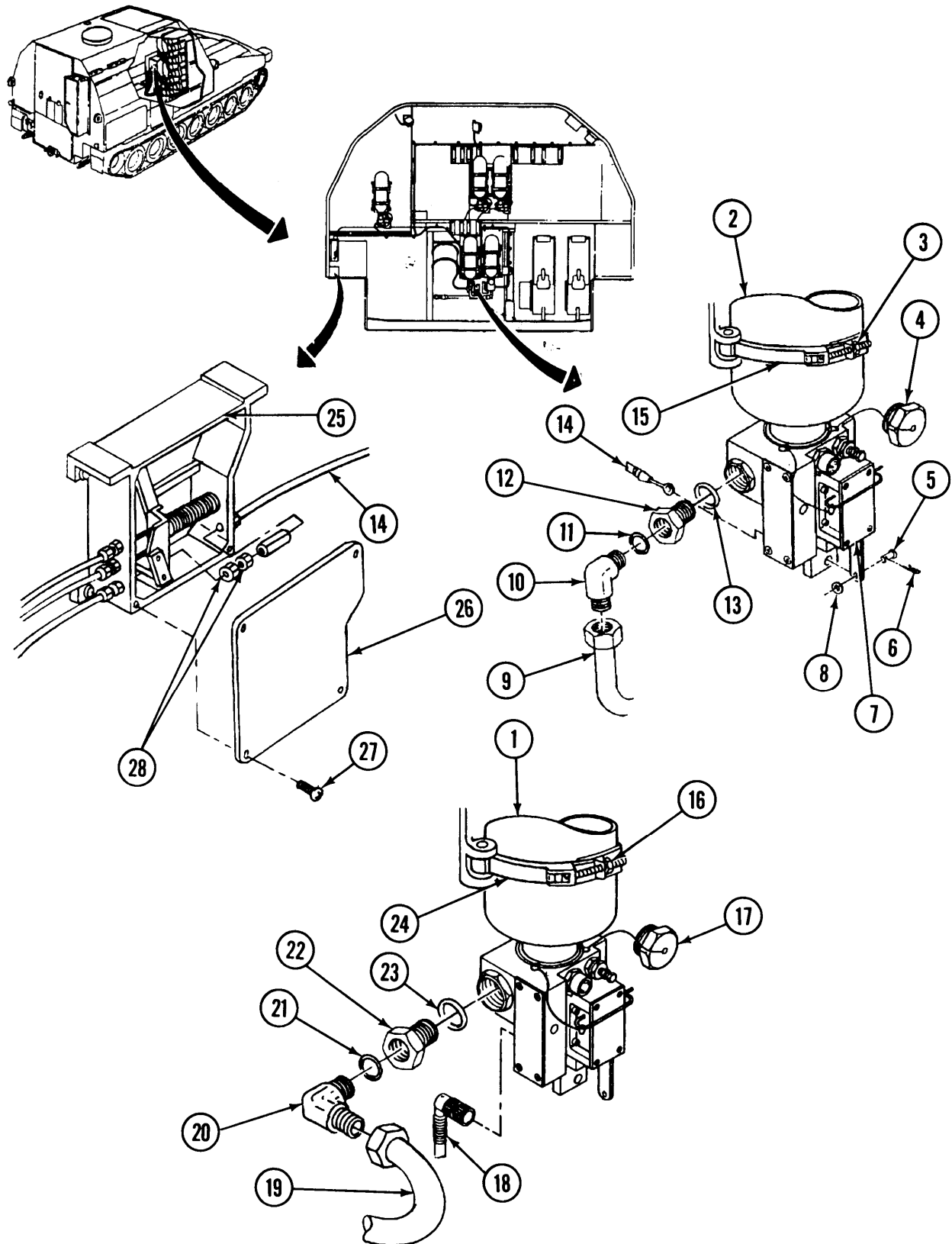
1. Disconnect hose (19) at elbow (20).
2. Disconnect elbow (20) and plug adapter (22) from discharge port of engine AFES cylinder bottle assembly No. 1 (1).
3. Remove preformed packing (21) from elbow (20), and remove preformed packing (23) from plug adapter (22). Discard preformed packings.
4. Install anti-recoil plug (17) in discharge port of cylinder bottle assembly No. 1 (1).
5. Remove electrical wiring harness (18) from rear of cylinder bottle assembly No. 1 (1).
6. Loosen two hex nuts (16) and release two straps (24).
7. Remove cylinder bottle assembly No. 1 (1) from bracket.

NOTE

For correct installation, note position of cylinder bottle assembly No. 2 on bracket.

8. Loosen two hex nuts (3), and rotate engine AFES cylinder bottle assembly No. 2 (2) counterclockwise until elbow (10) is accessible.
9. Disconnect hose (9) from elbow (10).
10. Disconnect elbow (10) and plug adapter (12) from discharge port of cylinder bottle assembly No. 2 (2).
11. Remove preformed packing (11) from elbow (10), and remove preformed packing (13) from plug adapter (12). Discard preformed packings.
12. Install anti-recoil plug (4) in discharge port of cylinder bottle assembly No. 2 (2).
13. Remove four screws (27) and cover (26) from actuator assembly (25).
14. Loosen two nuts (28) on engine AFES cylinder bottle cable (14).
15. Remove cotter pin (6), pin (5), and washer (8) to disconnect cable assembly (14) from manual valve actuator (7) of cylinder bottle assembly No. 2 (2). Discard cotter pin.
16. Disconnect and remove cable assembly (14) from manual valve actuator (7) of cylinder bottle assembly No. 2 (2).
17. Release two straps (15) and remove cylinder bottle assembly No. 2 (2) from bracket.

21-4. ENGINE AFES CYLINDER BOTTLES REPLACEMENT (continued).



21-4. ENGINE AFES CYLINDER BOTTLES REPLACEMENT (continued).

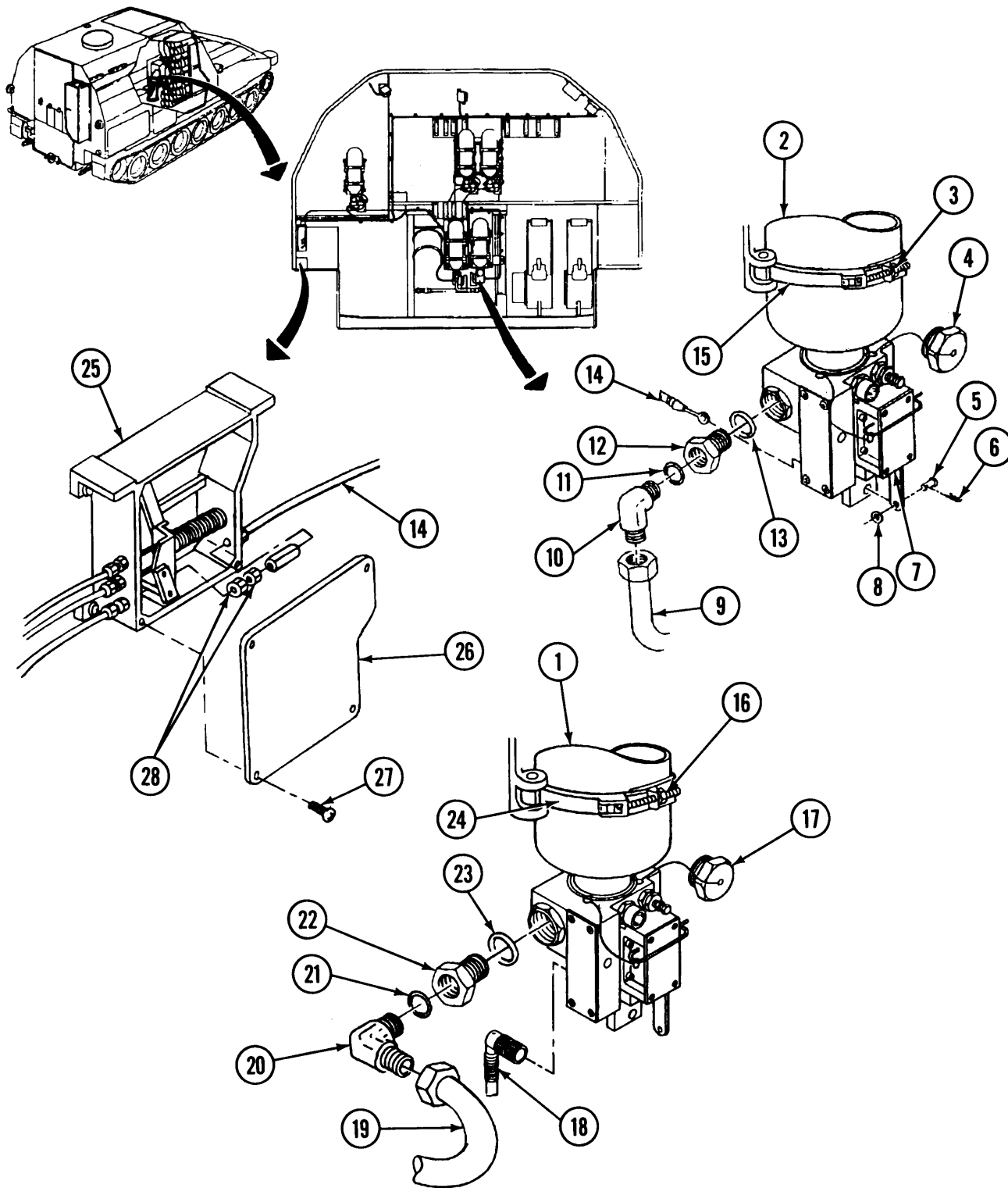
b. INSTALLATION

WARNING

- **Do not pull excessively on cable assembly. Accidental discharge of AFES may occur, resulting in death or serious injury to personnel.**
- **Engine AFES cylinder bottles must be installed in correct position. Failure to do so may render extinguishers useless in putting out engine compartment fires, causing serious injury to personnel and damage to equipment.**

1. Install cylinder bottle assembly No. 2 (2), loosely, on bracket.
2. Install cable assembly (14), washer (8), pin (5), and new cotter pin (6) on manual valve actuator (7) of cylinder bottle assembly No. 2 (2).
3. Tighten two nuts (28) on engine AFES cylinder bottle cable assembly (14).
4. Install cover (26) on actuator assembly (25) with four screws (27).
5. Remove anti-recoil plug (4) from discharge port of cylinder bottle assembly No. 2 (2).
6. Install new preformed packing (11) on elbow (10) and install new preformed packing (13) on plug adapter (12).
7. Connect elbow (10) and plug adapter (12) to discharge port of cylinder bottle assembly No. 2 (2).
8. Connect tube (9) to elbow (10).
9. Rotate cylinder bottle assembly No. 2 (2) clockwise to original position, as noted at removal and tighten two hex nuts (3) on two straps (15).
10. Install cylinder bottle assembly No. 1 (1) on bracket.
11. Tighten two hex nuts (16) on two straps (24).
12. Install electrical wiring harness (18) on rear of cylinder bottle assembly No. 1 (1),
13. Remove anti-recoil plug (17) from discharge port of cylinder bottle assembly No. 1 (1).
14. Install new preformed packing (21) on elbow (20) and install new preformed packing (23) on plug adapter (22).
15. Install elbow (20) and plug adapter (22) on discharge port of cylinder bottle assembly No. 1 (1).
16. Connect hose (19) to elbow (20).

21-4. ENGINE AFES CYLINDER BOTTLES REPLACEMENT (continued)



FOLLOW-ON MAINTENANCE:

- Install ventilation hose (para 16-4).
- Reactivate engine AFES (para 21-2).
- Install left and right projectile rack assemblies (refer to TM 9-2350-287-10).

21-5. CREW AFES CYLINDER BOTTLES REPLACEMENT.

This Task Covers:

- a. Removal b. Installation

Initial Setup:

Tools/Test Equipment:

- Adjustable wrench (Item 3, Appendix 1)
- General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Cotter pin (as required) (Item 12, Appendix H)

Equipment Conditions:

- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Engine AFES deactivated (para 21-2).
- Crew AFES deactivated (para 21-3).

a. REMOVAL

WARNING

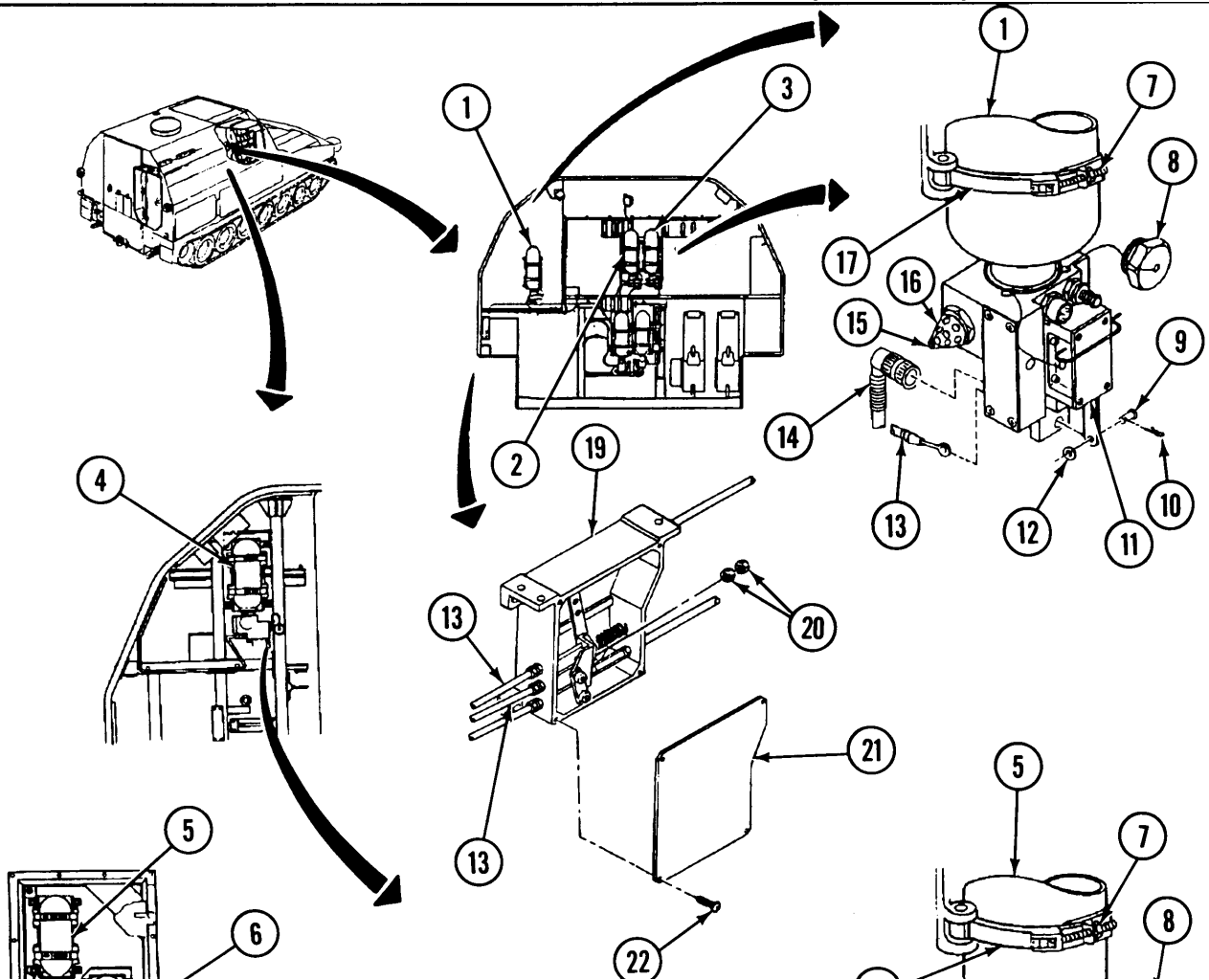
- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.
- Make sure locking pin has been installed in valve actuators of crew extinguisher cylinder bottles Nos. 1, 2, 3, and 4 before attempting to remove cylinder bottle assemblies. Failure to do so may result in injury or death to personnel.

NOTE

- Crew AFES cylinder bottle assemblies Nos. 3 and 4 are connected to the manual discharge system. If either of these bottles are being removed, perform steps 1 through 5. Crew AFES cylinder bottle assembly No. 3(1) is shown.
- If crew AFES cylinder bottle assemblies Nos. 1, 2, 5, or 6 are being removed, perform step 1, then go to step 6. Crew AFES cylinder bottle assembly No. 5(5) is shown.

1. Remove nozzles (15) from discharge ports of bottle assemblies (1,2,3, and 4) and extender (18) of cylinder bottle assemblies (5 and 6) and replace with anti-recoil plugs (8).
2. Remove four screws (22) and cover (21) from actuator assembly (1 9).
3. Loosen two nuts (20) on top cable (13) for crewAFES cylinder bottle No. 3 (1) or two nuts (20) on middle cable (13) for crew AFES cylinder bottle No. 4 (3).

21-5. CREW AFES CYLINDER BOTTLES REPLACEMENT (continued).



4. Remove cotter pin (10), pin (9), washer (12) and cable assembly (13) from manual valve actuators (11) of cylinder bottle assemblies Nos. 3 and 4 (1 and 3). Discard cotter pin.
5. Remove cable assembly (13) from cylinder bottle assemblies Nos. 3 and 4 (1 and 3).
6. Remove electrical wiring harness (14) from cylinder bottle assemblies (1, 2, 3, 4, 5, and 6).
7. Loosen two hexnuts (7), and release two straps (17) to remove each cylinder bottle assembly (1, 2, 3, 4, 5, and 6) from bracket.

21-5. CREW AFES CYLINDER BOTTLES REPLACEMENT (continued).

b. INSTALLATION

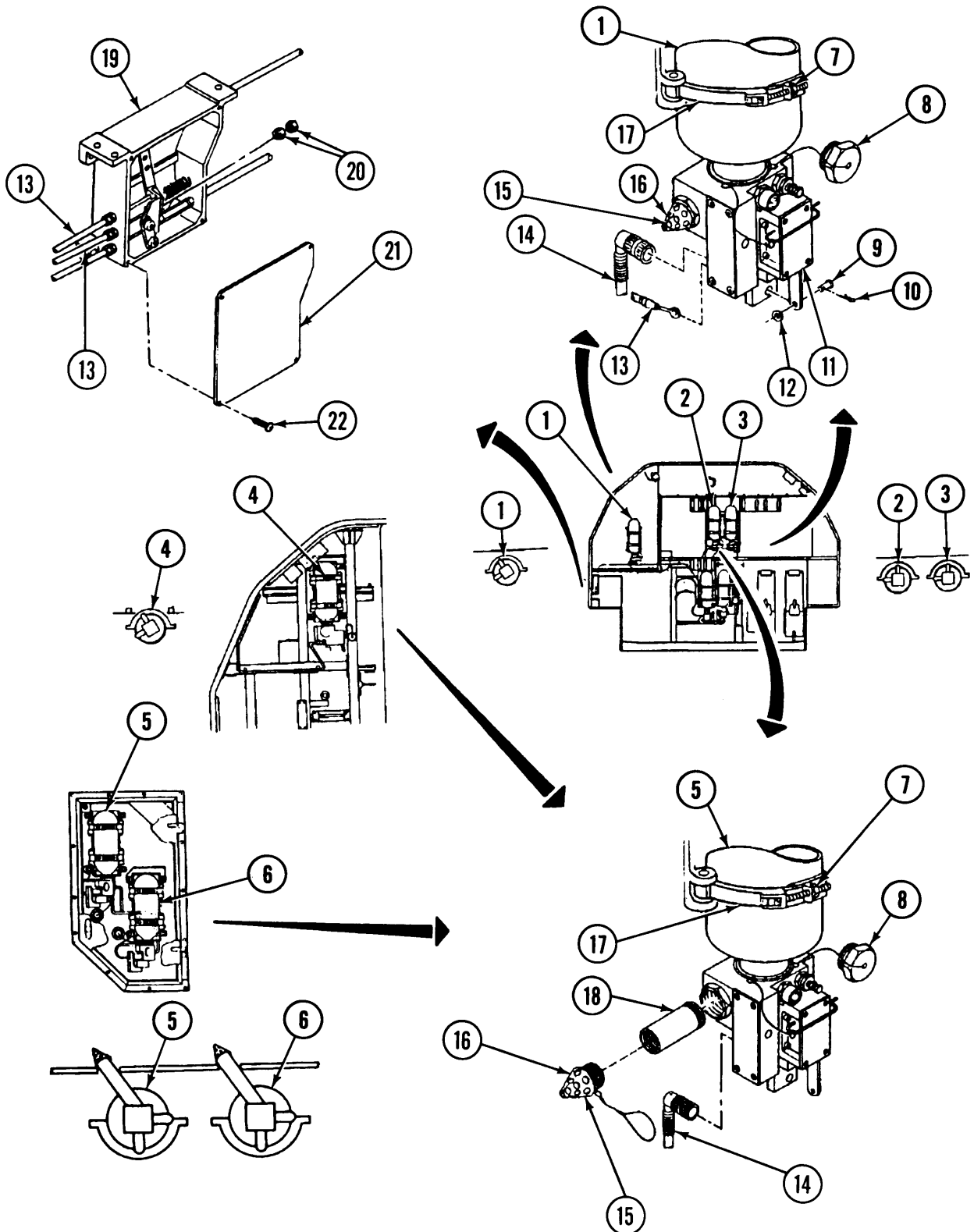
WARNING

Make sure red valve flow indicator is pushed up before installing extinguisher bottles in correct position. Failure to reset valve may discharge extinguishers. Incorrect position may render extinguishers useless in putting out crew compartment fires, causing serious injury to personnel and equipment.

NOTE

- The two engine compartment cylinder bottles are larger than the crew compartment cylinder bottles.
 - Crew AFES cylinder bottles Nos. 3 and 4 are connected to the manual discharge system. If these bottles are being installed, perform steps 1 through 8. If any other bottle is being installed, perform steps 1, 2, 7, and 8).
1. Install each cylinder bottle assembly (1, 2,3,4,5, and 6) on bracket in proper position and secure by tightening two hexnuts (7) on two straps (17).
 2. Connect electrical wiring harness (14) to cylinder bottle assemblies (1, 2, 3, 4, 5, and 6).
 3. Install and connect cable assembly (13) in cylinder bottle assemblies Nos. 3 and 4(1 and 3).
 4. Connect cable assembly (13) to manual valve actuators (11) of cylinder bottle assemblies Nos. 3 and 4 (1 and 3) with washer (1 2), pin (9), and new cotter pin (10).
 5. Tighten two nuts (20) on top cable (13) for crew AFES cylinder bottle No. 3 (1) or two nuts (20) on middle cable (13) for crew AFES cylinder bottle No. 4 (3).
 6. Install cover (21) on actuator assembly (19) with four screws (22).
 7. Remove anti-recoil plugs (8) from discharge port of cylinder bottle assemblies (1, 2, 3, and 4) and extenders (18) of cylinder bottle assemblies (5 and 6).
 8. Install six nozzles (15) on four cylinder bottle assemblies (1, 2 ,3, and 4) and two extenders (18) of cylinder bottle assemblies (5 and 6).

21-5. CREW AFES CYLINDER BOTTLES REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Activate crew AFES (para 21-3).
- Activate engine AFES (para 21-2).
- Install left and right projectile racks (refer to TM 9-2350-287-10).

21-6. ENGINE AFES TUBING AND NOZZLES REPLACEMENT.

This task covers

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- LockWasher (4) (Item 195, Appendix H)
- Preformed packing (2) (Item 222, Appendix H)
- Preformed packing (2) (Item 223, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

- Engine AFES deactivated (para 21-2).
- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10) (for crew compartment procedure only).
- Power Pack removed (para 3-2) (for engine compartment procedure only).

a. **REMOVAL**

WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

CAUTION

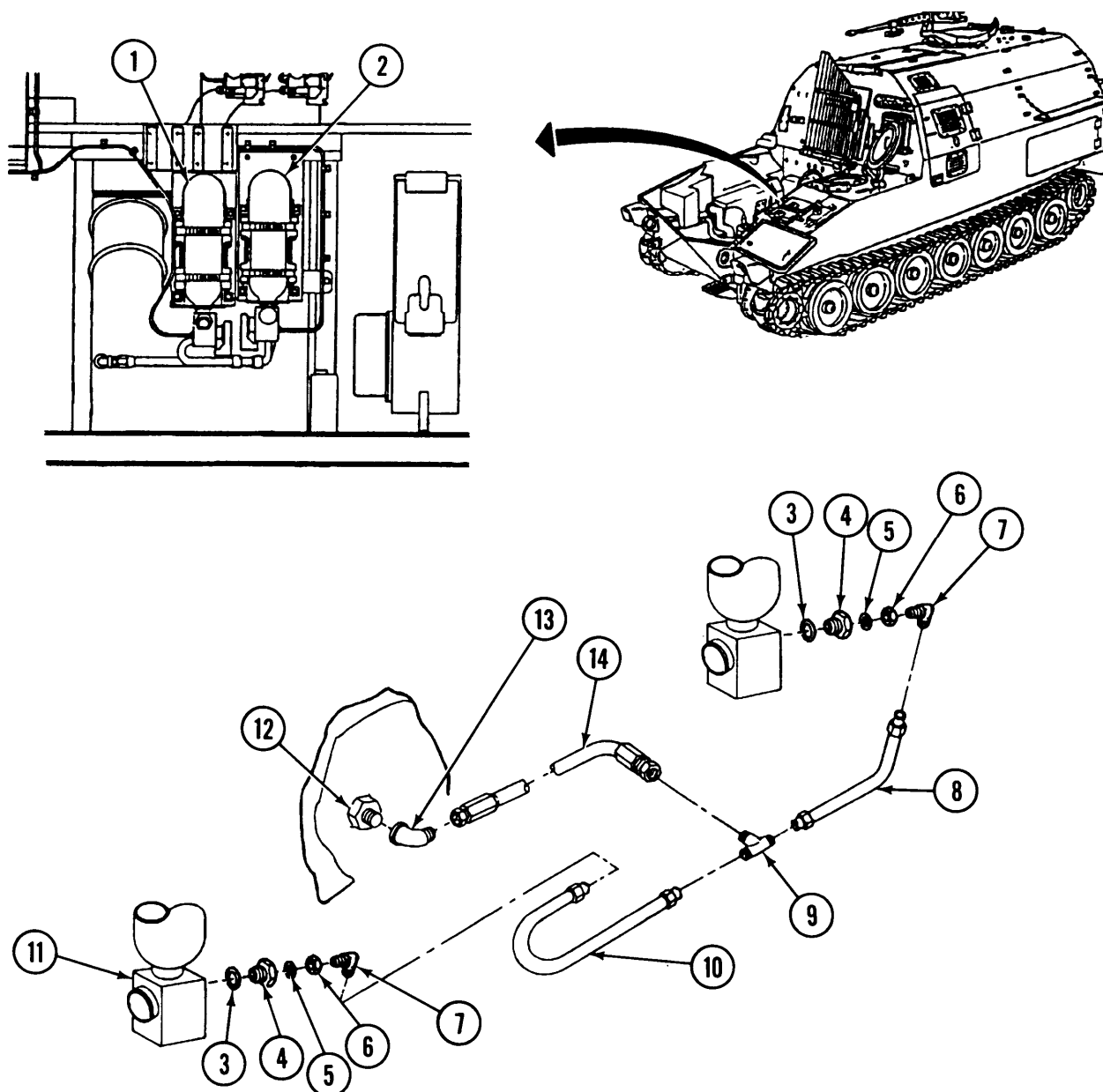
Do not bend tube assemblies when disconnecting them. If necessary, loosen tube assemblies at both ends before disconnecting them from elbows.

NOTE

- Steps 1 through 6 cover removal of engine AFES tubing and nozzles in crew compartment. Steps 7 through 12 cover removal of engine AFES tubing and nozzles in engine compartment.
- Steps 1 through 3 may have been completed when engine AFES was deactivated.

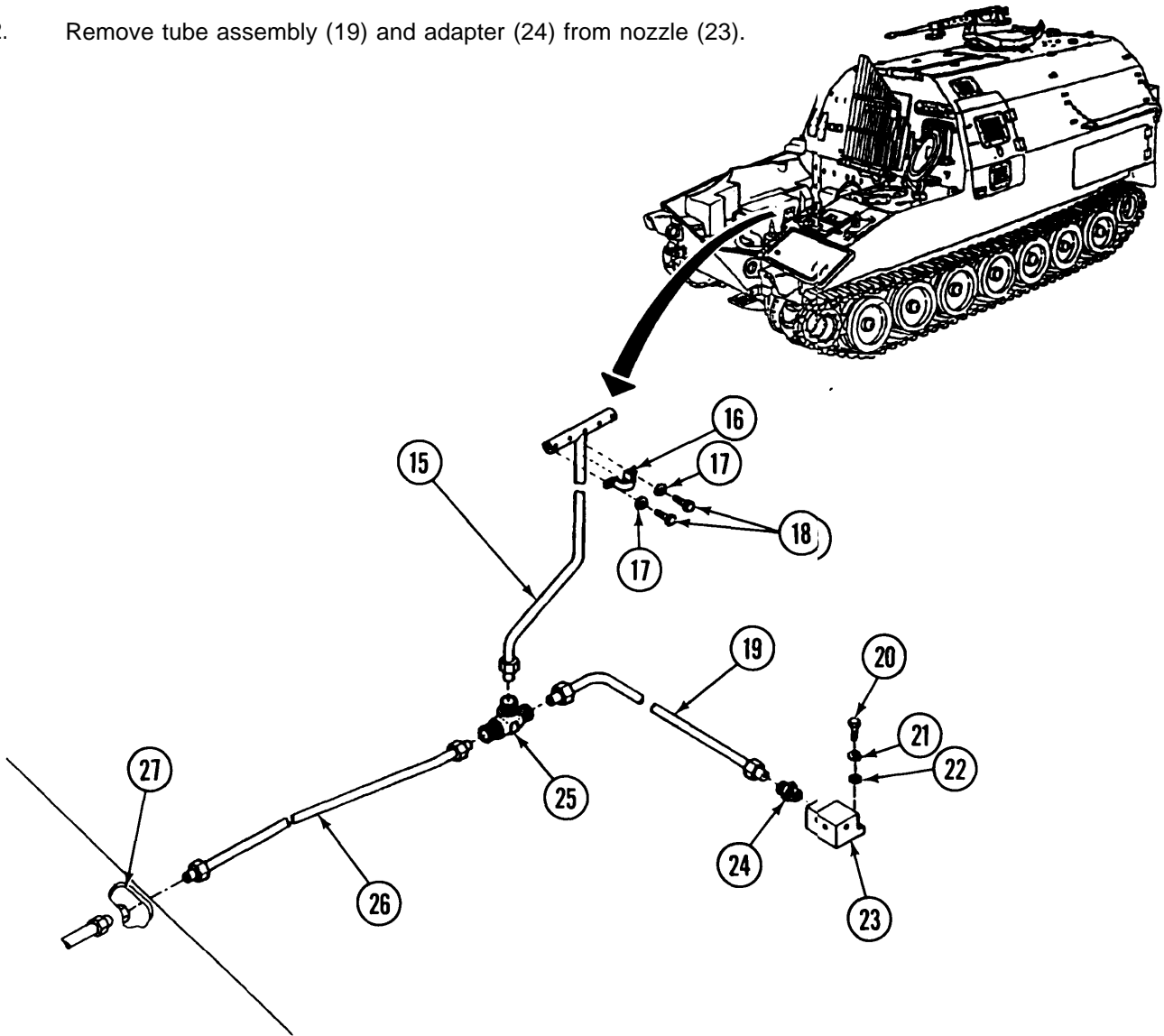
21-6. ENGINE AFES TUBING AND NOZZLES REPLACEMENT (continued).

1. Disconnect two tube assemblies (8 and 10) from two elbows (7) on two valve actuators (11) of engine AFES cylinder bottles (1 and 2).
2. Remove two elbows (7), nuts (6) and adapters (4), preformed packings (3) and preformed packings (5) from two valve actuators (11). Discard preformed packings.
3. Install two antirecoil plugs in two valve actuators (11).
4. Disconnect two tube assemblies (8 and 10) from double check-valve tee (9).
5. Remove double check-valve tee (9), hose (14), and elbow (13) from bulkhead adapter (12).
6. Inspect double check-valve tee (9) for rust, build up, restricted flow and sticking check valves. Replace, if necessary.



21-6. ENGINE AFES TUBING AND NOZZLES REPLACEMENT (continued).

7. Disconnect tube assembly (26) from bulkhead adapter (27) and tee (25).
8. Disconnect tube assembly (15) from tee (25).
9. Remove two screws (18) and lockwashers (17), strap (16), and tube assembly (15) from engine compartment. Discard lockwashers.
10. Disconnect tube assembly (19) from tee (25), and remove tee (25) from vehicle.
11. Remove two screws (20), lockwashers (21), and washers (22) and nozzle (23) with tube assembly (19) attached, from engine compartment. Discard lockwashers.
12. Remove tube assembly (19) and adapter (24) from nozzle (23).



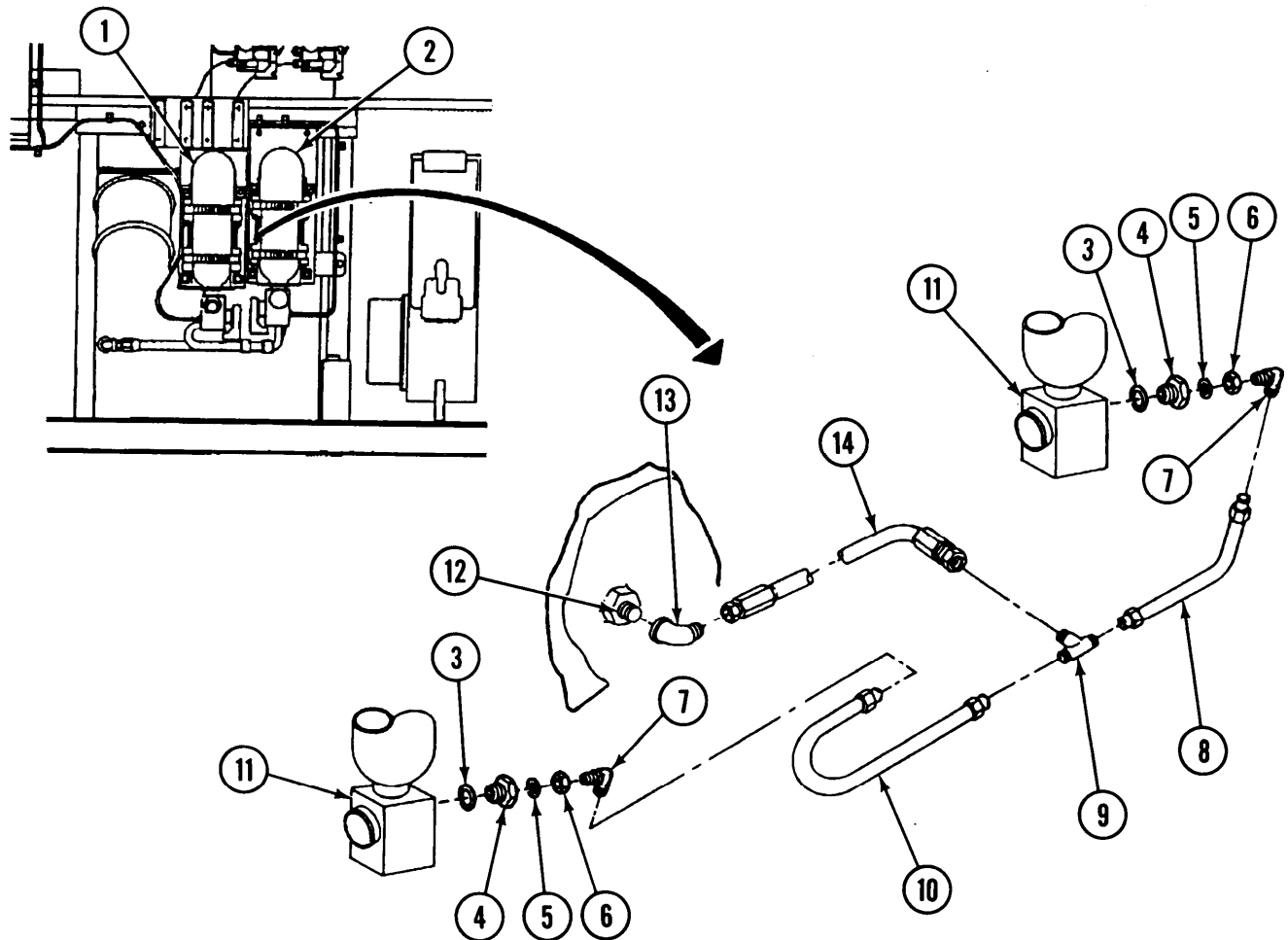
21-6. ENGINE AFES TUBING AND NOZZLES REPLACEMENT (continued).

b. INSTALLATION

NOTE

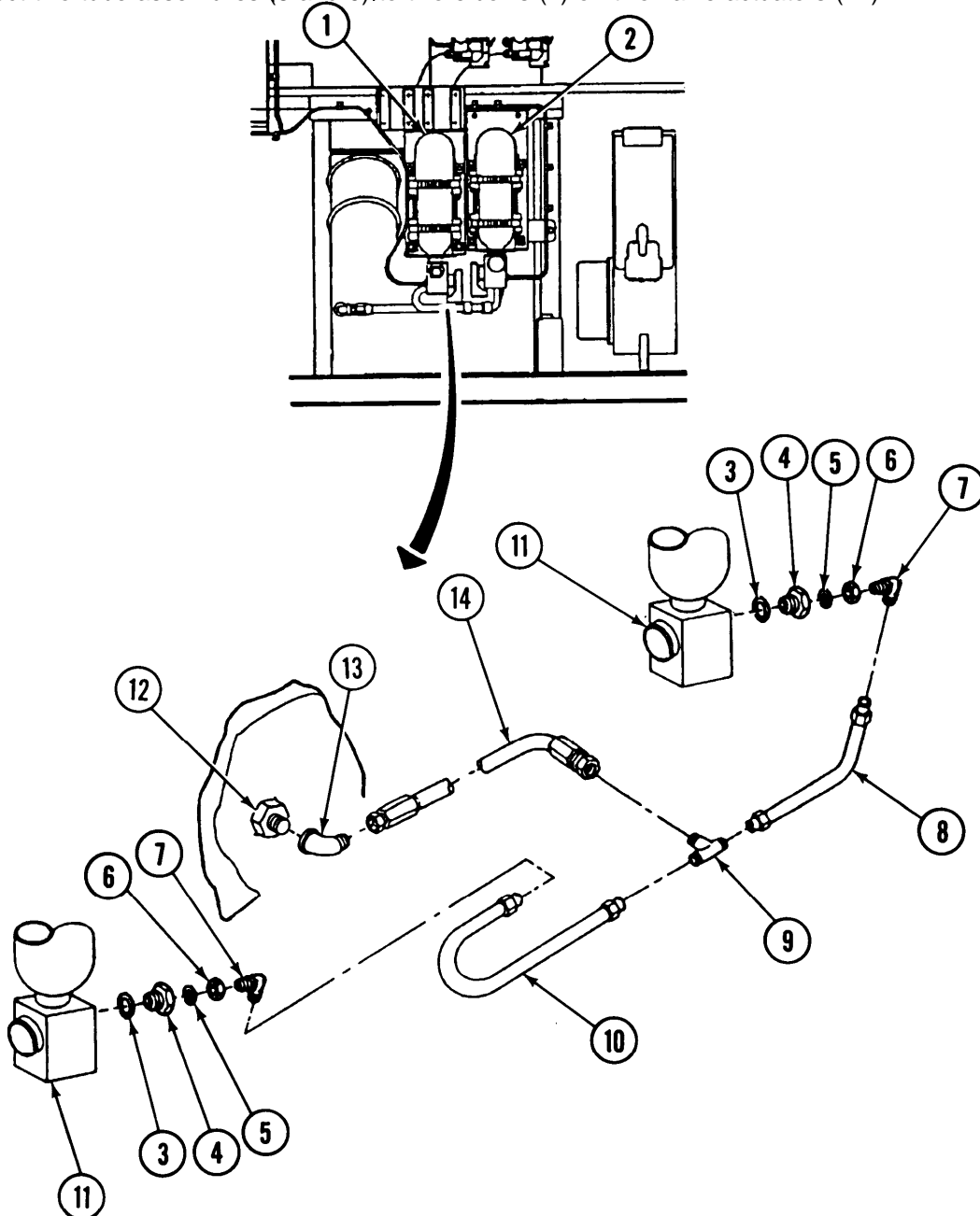
Steps 1 through 6 cover installation of tubing and nozzles in engine compartment.
Steps 7 through 11 cover installation of tubing in crew compartment.

1. Install tube assembly (19) and adapter (24) on nozzle (23).
2. Install nozzle (23), with tube assembly (19) attached, in engine compartment with two screws (20), new lockwashers (21), and washers (22).
3. Install tee (25) in vehicle, and connect tube assembly (19) to tee (25).
4. Install tube assembly (15), strap (16), and two screws (18) and new lockwashers (17) in vehicle.
5. Connect tube assembly (15) to tee (25).
6. Connect tube assembly (26) to bulkhead adapter (27) and tee (25).
7. Install elbow (13), hose (14), and double check-valve tee (9) on bulkhead adapter (1 2).
8. Connect two tube assemblies (8 and 10) to double check-valve tee (9).



21-6. ENGINE AFES TUBING AND NOZZLES REPLACEMENT (continued).

9. Install two antirecoil plugs in two valve actuators (11).
10. Install two adapters (4), nuts (6), and elbows (7), new preformed packings (3) and new preformed packings (5) in two valve actuators (14).
11. Connect two tube assemblies (8 and 10) to two elbows (7) on two valve actuators (11).



FOLLOW-ON MAINTENANCE:

- Reactivate engine AFES (para 21-2).
- Install left and right projectile rack assemblies (refer to TM 9-2350-287-10).
- Install powerpack (para 3-2).

21-7. CREW AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cotter pin (Item 17, Appendix H)
- LockWasher (Item 163, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Crew AFES deactivated (para 21-3).
- Crew AFES cylinder bottles removed (para 21 -5).

a. REMOVAL

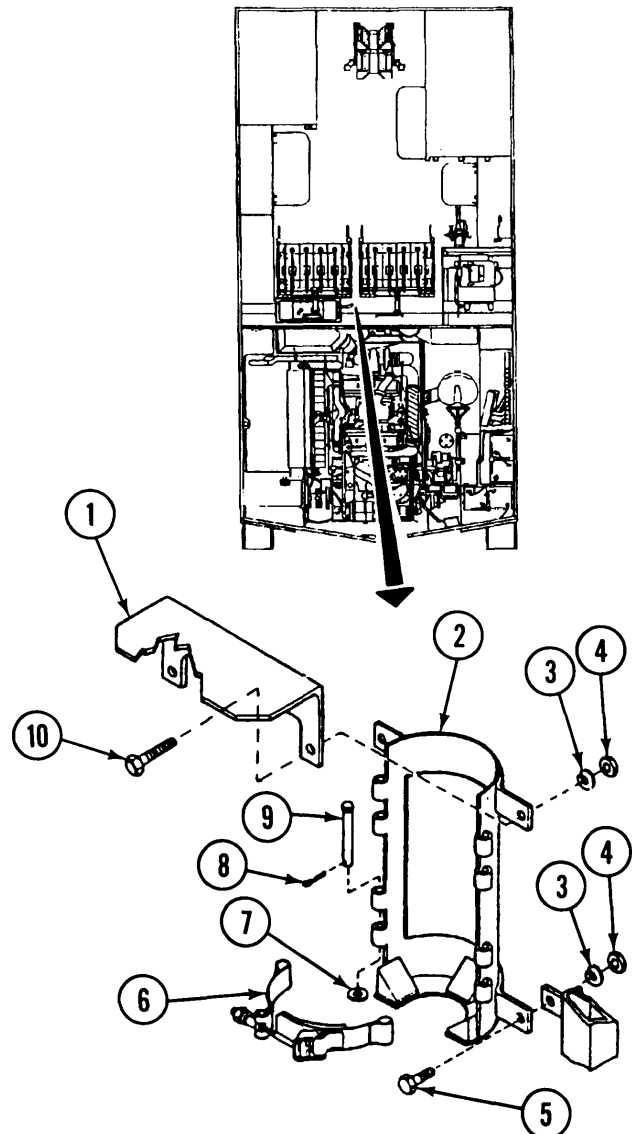
WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

NOTE

All crew AFES cylinder bottle bracket straps are removed the same way.

1. Remove 24 cotter pins (8), washers (7), and pins (9) and 12 bracket straps (6) from six brackets (2). Discard cotter pins.

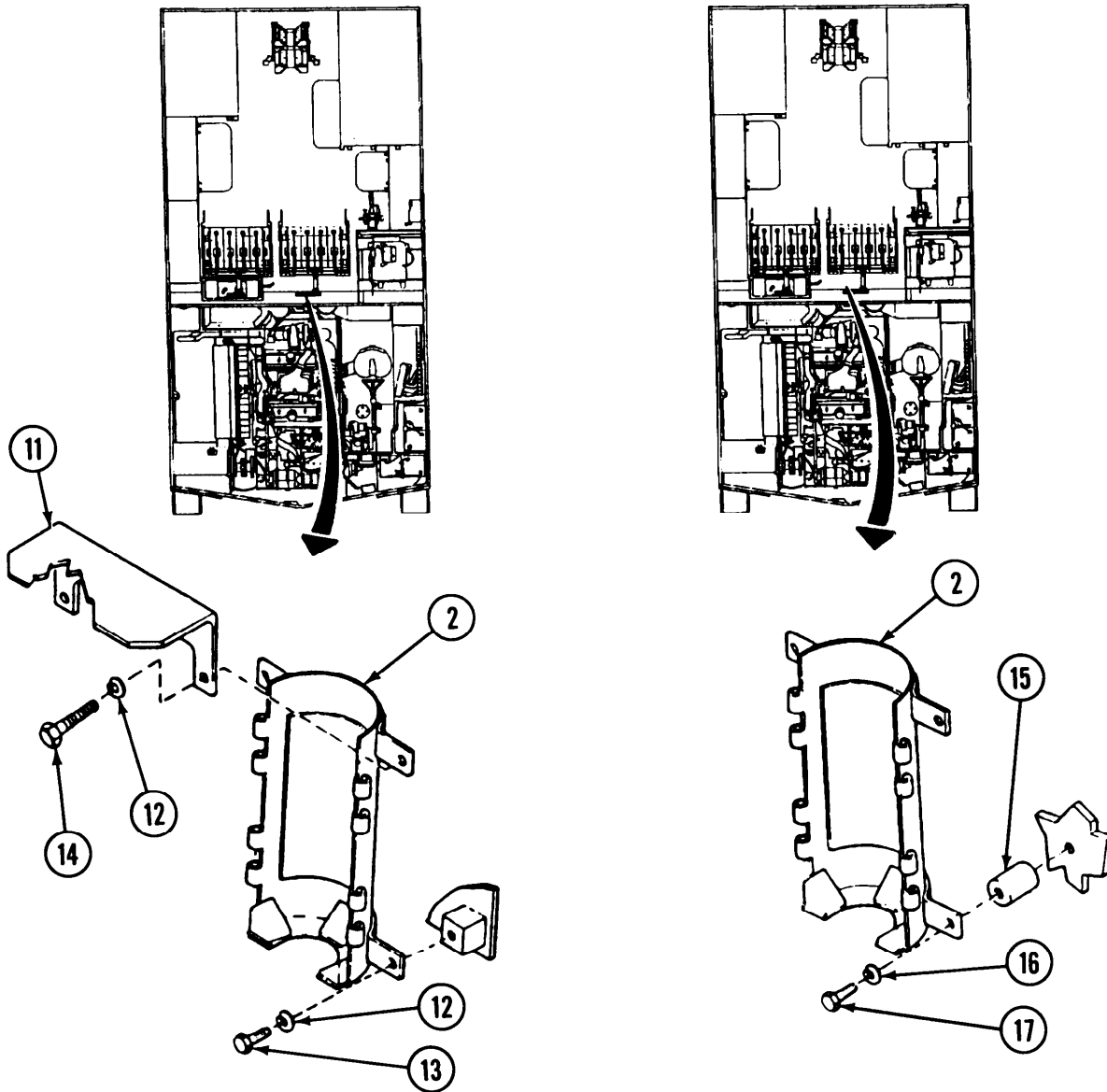


21-7. CREW AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

NOTE

Step 2 covers crew AFES cylinder bottle No. 2 bracket; step 3 covers cylinder bottle Nos. 1,3, and 4 brackets; step 4 covers cylinder bottle No. 5 bracket; and step 5 covers cylinder bottle No. 6 bracket.

2. Remove four nuts (4) and lockwashers (3) and two screws (5), screws (10), and brackets (1 and 2) from canister compartment. Discard lockwashers.
3. Remove two screws (13) and screws (1 4), four lockwashers (12), and two brackets (2 and 11) from bulkhead. Discard lockwashers.
4. Remove four screws (17), lockwashers (1 6), and spacers (15) and bracket (2) from crew AFES auxiliary box assembly. Discard lockwashers.



21-7. CREW AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

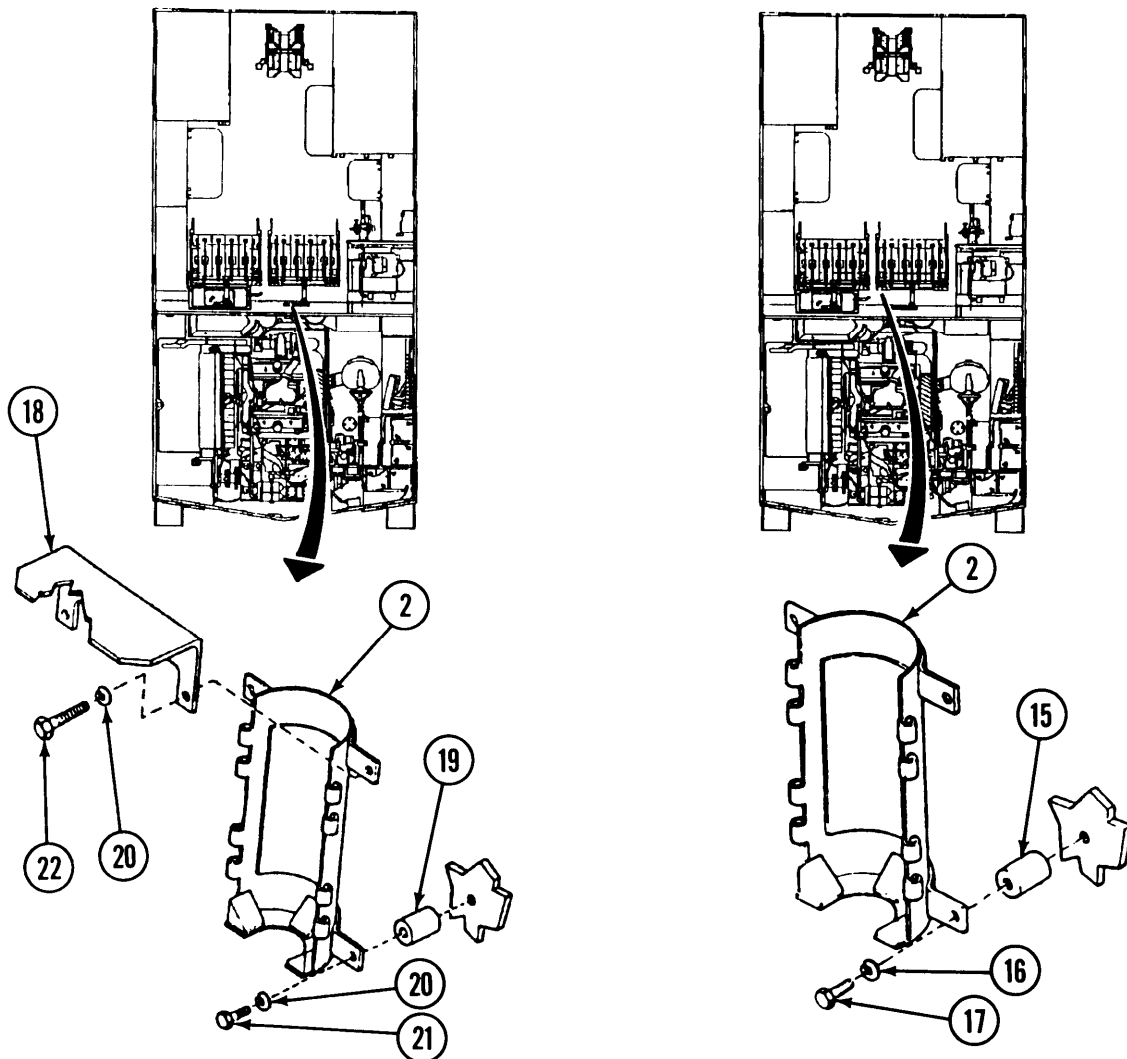
5. Remove two screws (21) and screws (22), four lockwashers (20) and spacers (19), and two brackets (2 and 18) from crew AFES auxiliary box assembly. Discard lockwashers.

b. INSTALLATION

NOTE

Step 1 covers cylinder bottle No. 6 bracket; step 2 covers cylinder bottle No. 5 bracket; step 3 covers cylinder bottle Nos. 1,3, and 4 brackets; and step 4 covers cylinder bottle No. 2 bracket. Step 5 covers all brackets.

1. Install two brackets (2 and 18) and four spacers (19) in crew AFES auxiliary box assembly with two screws (21) and screws (22) and four new lockwashers (20).
2. Install bracket (2) and four spacers (15) in crew AFES auxiliary box assembly with four screws(17) and new lockwashers (16).



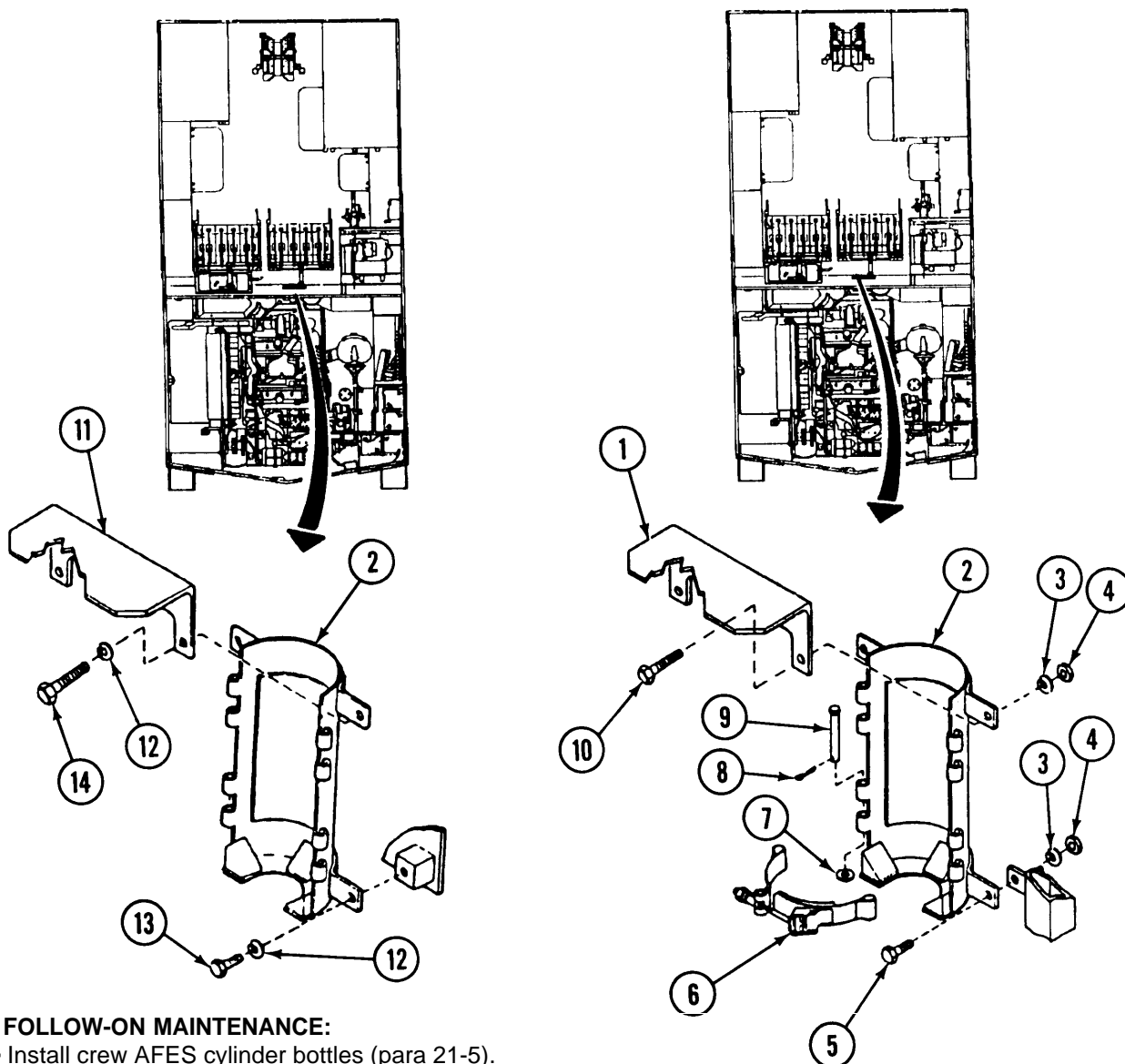
21-7. CREW AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

3. Install two brackets (2 and 11) on bulkhead with two screws (13) and screws (14) and four new lockwashers (12).
4. Install two brackets (1 and 2) on canister compartment with four nuts (4) and new lockwashers (3) and two screws (5) and screws (10).

NOTE

All crew AFES cylinder bottle bracket straps are installed the same way.

5. Install 12 bracket straps (6) on six brackets (2) with 24 pins (9), washers (7), and new cotter pins (8).



FOLLOW-ON MAINTENANCE:

- Install crew AFES cylinder bottles (para 21-5).
- Reactivate crew AFES (para 21-3).

21-8. ENGINE AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

- Lockwasher (Item 166, Appendix H)

- Lockwasher (item 175, Appendix H)

Materials/Parts:

- Cotter pin (8) (Item 17, Appendix H)
- Lockwasher (5) (Item 164, Appendix H)
- Lockwasher(12) (Item 165, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Engine AFES cylinder bottles removed (para 21-4).

a . REMOVAL

WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

21-8. ENGINE AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

NOTE

Bracket straps on both engine AFES cylinder bottle brackets are removed the same way.

1. Remove eight cotter pins (14 and 27), washers (13 and 26), and pins (11 and 24) and four bracket straps (12 and 25) from two cylinder bottle brackets (10 and 21). Discard cotter pins.

NOTE

. Cylinder bottle bracket No. 1 (10) must be removed prior to removing cylinder bottle bracket No. 2 (21).

I Perform steps 2 through 4 to remove cylinder bottle No. 1 bracket (10).

I Perform steps 5 through 10 to remove engine cylinder bottle No. 2 bracket (21).

2. Remove four screws (15), lockwashers (16), and cylinder bottle bracket (10) from mount (1). Discard lockwashers.
3. Remove screw (9), lockwasher (8), washer (7), clamp (6), and electrical wiring harness (5) from mount (1). Move wiring harness (5) clear of mount (1). Discard lockwasher.
4. Remove two screws (4), lockwashers (3), washers (2), and mount (1) from hull. Discard lockwashers.
5. Remove two screws (28) and nuts (23), four lockwashers (22), and cylinder bottle No. 2 bracket (21) from support (20) and mount (17). Discard lockwashers.
6. Remove two screws (19), lockwashers (18) and mount (17) from hull. Discard lockwashers.
7. Remove screw (40), lockwasher (39), washer (38) from bracket (34) and hull. Discard lockwasher.
8. Remove two screws (42) and lockwashers (36), four washers (35), two nuts (37), shim(s) (41), from support (20) and bracket (34). Discard lockwashers.
9. Remove two screws (43) and lockwashers (32), four washers (31), two nuts (33), support (20), and bracket (34) from angle bracket (30). Discard lockwashers.
10. Remove screw (44), lockwasher (45), washer (29), and angle bracket (30) from hull. Discard lockwasher.

b. INSTALLATION

NOTE

- Cylinder bottle No. 2 bracket (21) must be installed before cylinder bottle No. 1 bracket (10).

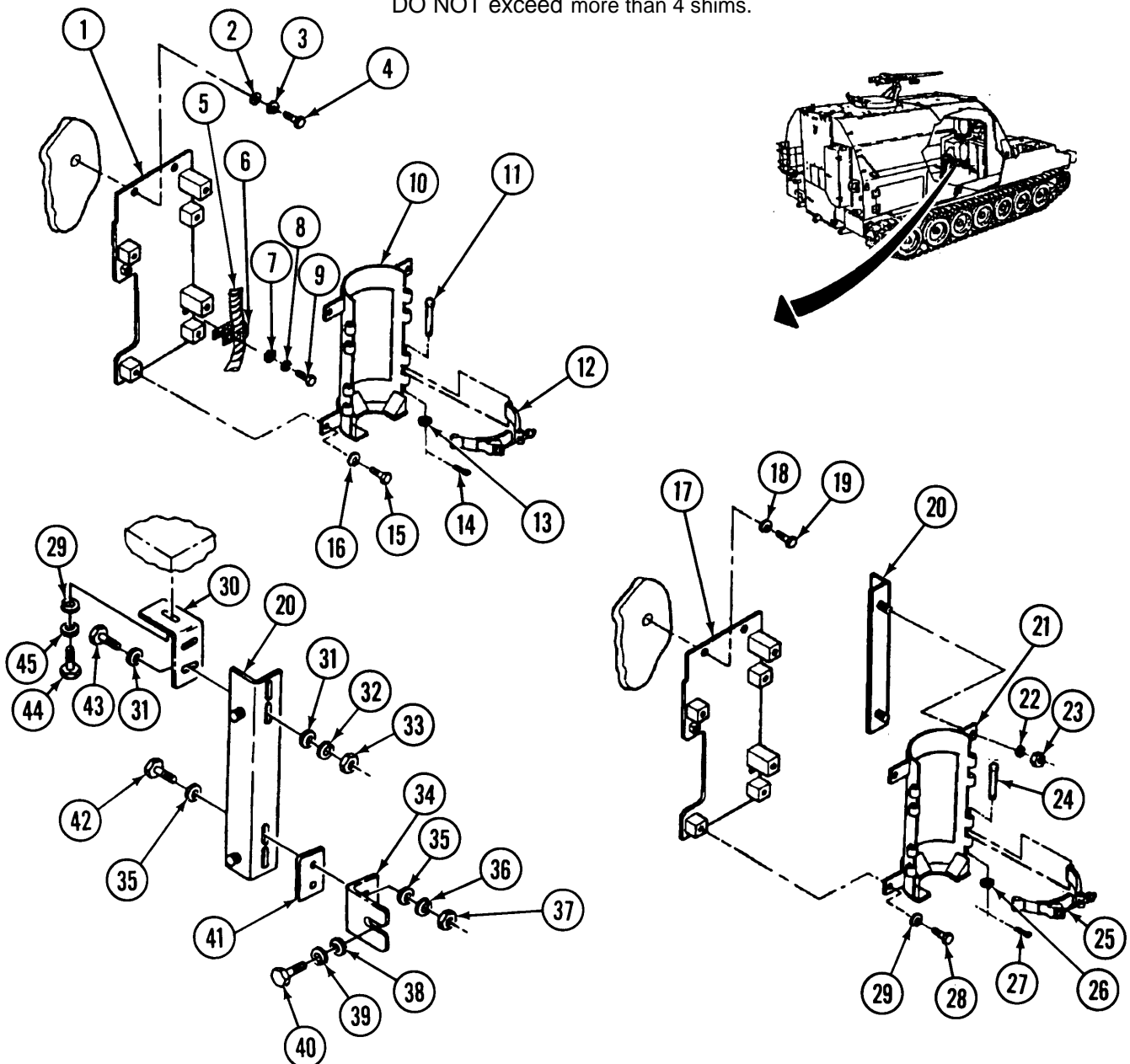
21-8. ENGINE AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

Steps 1 through 9 cover installation of cylinder bottle No. 2 bracket. Steps 10 through 12 cover installation of cylinder bottle No. 1 bracket.

1. Install, but do not tighten, angle bracket (30) on hull with screw (44), new lockwasher (45), and washer (29).
2. Install support (20), on angle bracket (30) with two screws (43) and new lockwashers (32), four washers (31), and two nuts (33).
3. Install, but do not tighten, bracket (34) on hull with screw (40), new lockwasher (39), and washer (38).

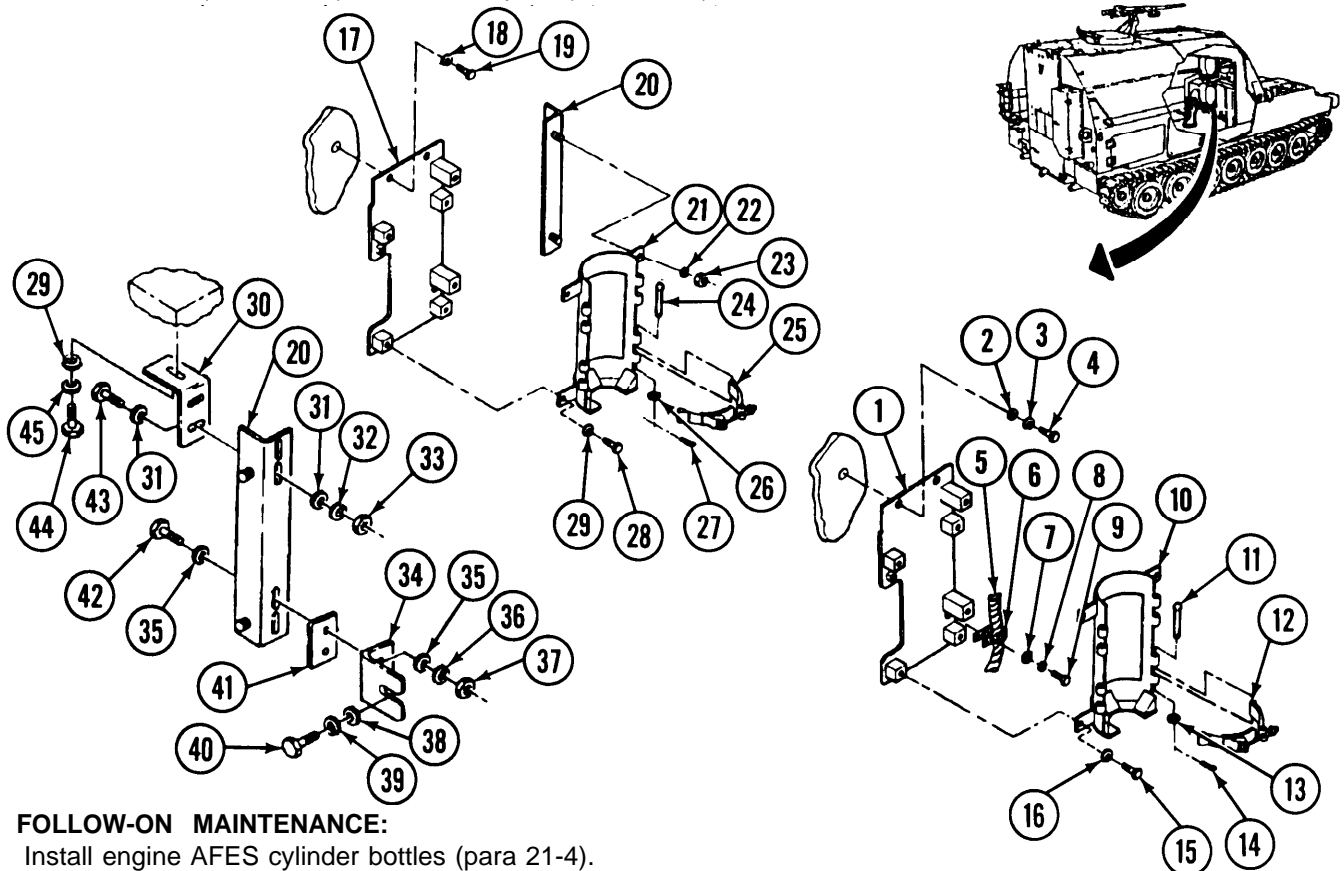
NOTE

DO NOT exceed more than 4 shims.



21-8. ENGINE AFES CYLINDER BOTTLE BRACKET STRAPS, BRACKETS, AND MOUNTS REPLACEMENT (continued).

4. Install shims (41) between support (20) and bracket (34), as required to maintain vertical position of support (20), and secure with two screws (42), new lockwashers (36), four washers (35), and two nuts (37).
5. Tighten screws (40 and 44) to secure brackets (30 and 34) and support (20) in vertical position.
6. Position mount (17) on hull with two screws (19) new lockwashers (18).
7. Position cylinder bottle bracket (21) on mount (17) and support (20), and align all mounting holes.
8. Install cylinder bottle bracket (21) from support (20), and tighten two screws (19) on support (20).
9. Install cylinder bottle bracket (21) on support (20) and mount (17) with two screws (28) and nuts (23) and four new lockwashers (22).
10. Install mount (1) on hull with two screws (4), new lockwashers (2), and washers (3).
11. Position electrical wiring harness (5) on mount (1). Install clamp (6) on mount (1) with screw (9), new lockwasher (8), and washer (7).
12. Install cylinder bottle bracket (10) on mount (1) with four screws (15) and new lockwashers (16).
13. Install four bracket straps (12 and 25) on two cylinder bottle brackets (10 and 21) with eight pins (11 and 24), washers (13 and 26), new cotter pins (14 and 27).



FOLLOW-ON MAINTENANCE:
 Install engine AFES cylinder bottles (para 21-4).
 Activate engine AFES (para 21-2).

21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Rag (Item 56, Appendix D)
- LockWasher (88) (Item 161, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Forward battery compartment access doors opened (refer to TM 9-2350-287-10).
 - Powerpack removed (para 3-2).
 - Master relay removed (para 7-21).
 - Engine AFES deactivated (para 21-2)
-

a. **REMOVAL**

WARNING

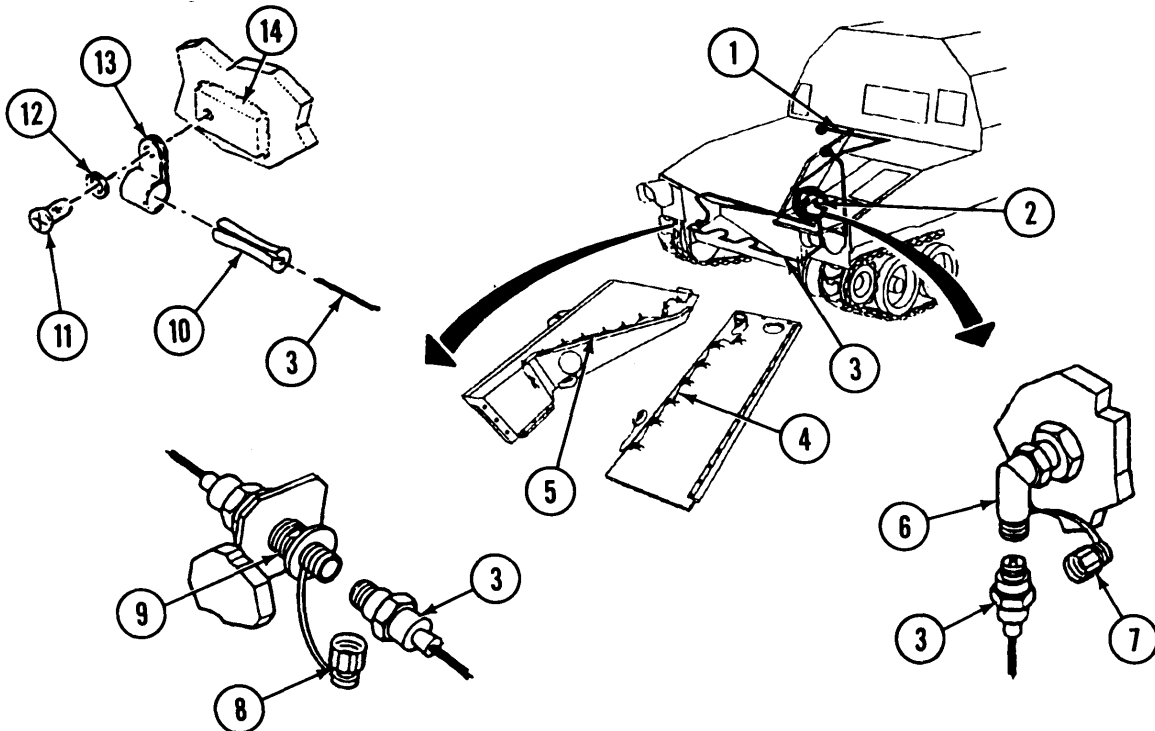
- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel

21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

NOTE

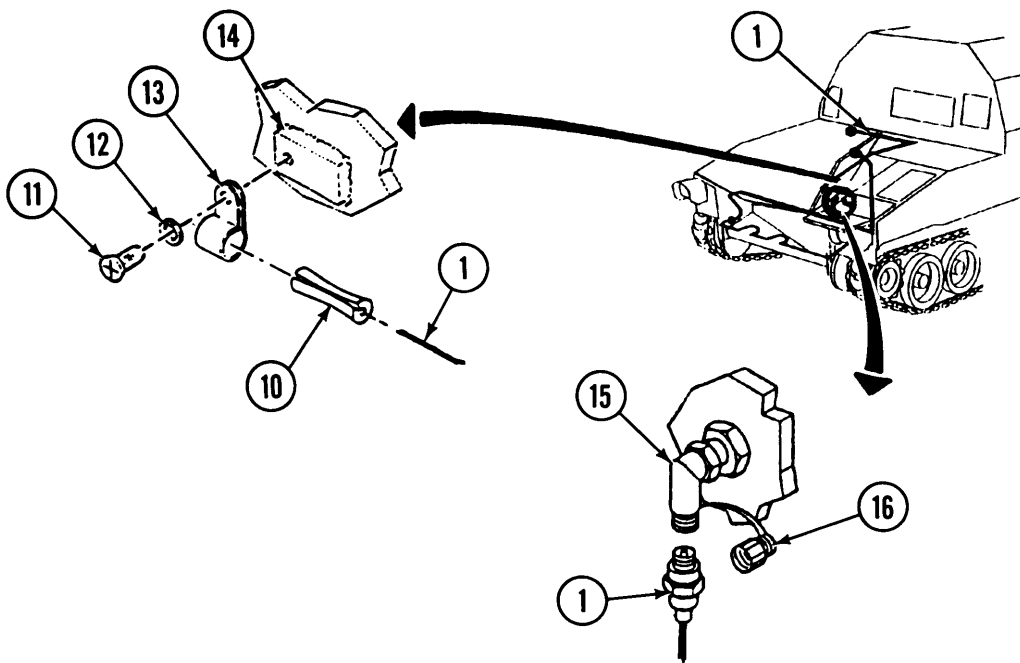
- There are five sections of fire sensing elements. Three sections are located in the engine compartment, and two are located on the underside of the deck plates.
- To remove fire sensing elements (3), perform steps 1 through 4.
- To remove fire sensing elements (1), perform steps 5 through 7.
- To remove fire sensing elements (4), perform steps 8 through 10.
- To remove fire sensing elements (5), perform steps 11 through 14.
- To remove fire sensing element (2), perform steps 15 through 17.
- Note location and routing of installed sensing element before removal from engine compartment. Install new sensing element in same location, using same routing.

1. Disconnect connector of sensing element (3) from elbow coupling (6) in engine compartment. Cap elbow coupling (6) with plastic cap (7) attached to elbow coupling (6).
2. Disconnect connector of sensing element (3) from straight coupling (9) in engine compartment. Cap straight coupling (9) with plastic cap (8) attached to straight coupling (9).
3. Remove 24 screws (11), lockwashers (12), and clamps (13) from 24 mounting plate assemblies (14). Discard lockwashers.
4. Remove sensing element (3), with rubber bushings (10) attached, from 24 clamps (13).

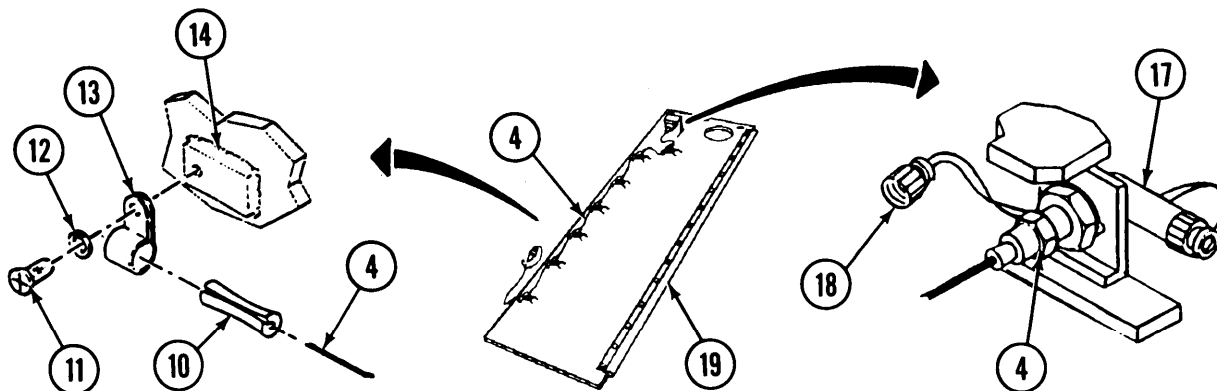


21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

5. Disconnect connector of sensing element (1) from elbow coupling (15) in engine compartment. Cap elbow coupling (15) with plastic cap (16) attached to elbow coupling (15).
6. Remove eight screws (11), lockwashers (12), and clamps (13) from eight mounting plate assemblies (14). Discard lockwashers.
- 7.

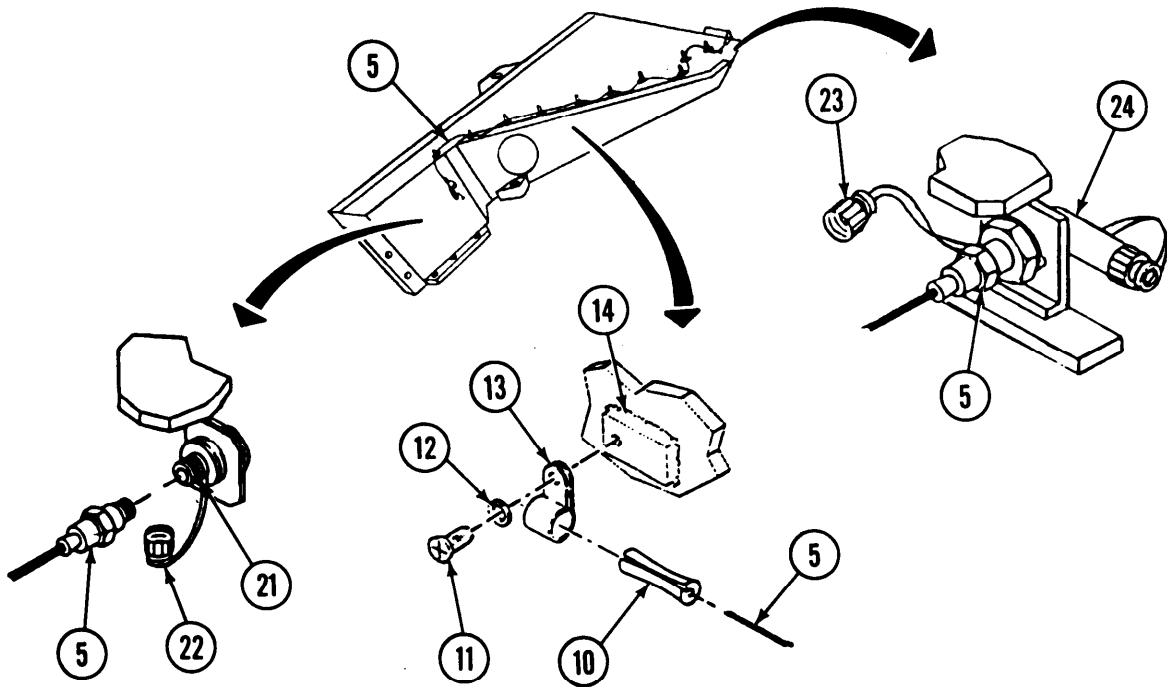


8. Disconnect connector of sensing element (4) from elbow coupling (17), on plate (19). Cap elbow coupling (17) with plastic cap (18) attached to elbow coupling (17).
9. Remove 10 screws (11), lockwashers (1 2), and clamps (1 3) from 10 mounting plate assemblies (14). Discard lockwashers.
10. Remove sensing element (4), with rubber bushings (10) attached, from 10 clamps (13) and plate.



21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

11. Disconnect connector of sensing element (5) from straight coupling (21). Cap straight coupling (21) with plastic cap (22) attached to straight coupling (21).
12. Disconnect connector of sensing element (5) from elbow coupling (24). Cap elbow coupling (24) with plastic cap (23) attached to elbow coupling (24).
13. Remove 22 screws (11), lockwashers (12), and clamps (13) from 22 mounting plate assemblies (14). Discard lockwashers.
14. Remove sensing element (5), with rubber bushings (10) attached, from 22 clamps (13).



15. Disconnect connector of sensing element (2) from straight coupling (25). Cap straight coupling (25) with plastic cap (26) attached to straight coupling (25).
16. Remove 24 screws (11), lockwashers (1 2), and clamps (1 3) from 24 mounting plate assemblies (14). Discard lockwashers.
17. Remove sensing element (2), with rubber bushings (10) attached, from 24 clamps (13).

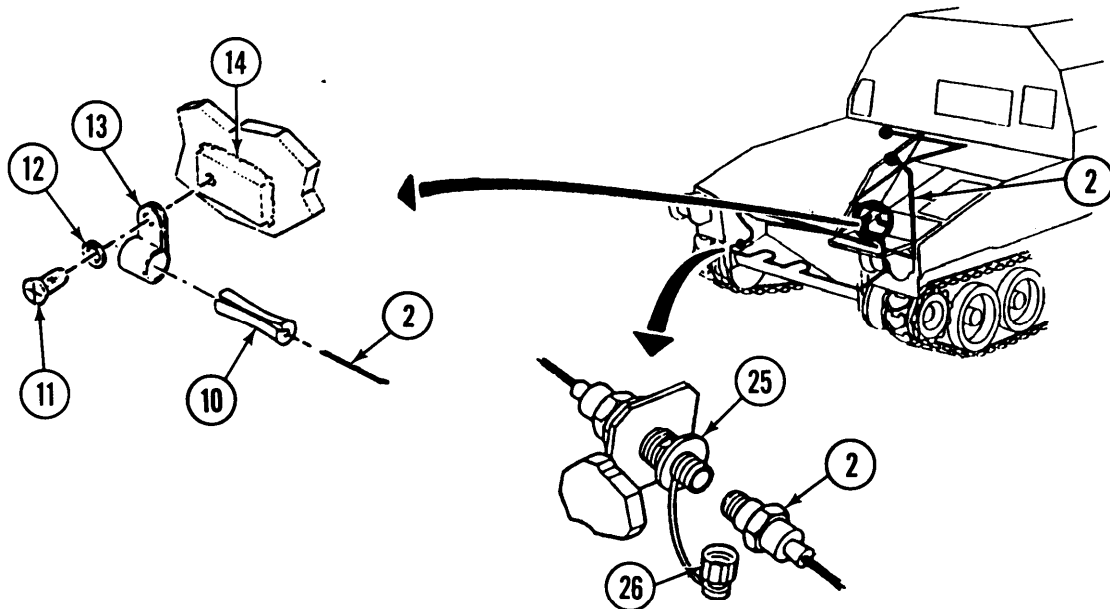
b. INSTALLATION

NOTE

- There are five sections of fire sensing elements. Three sections are located in the engine compartment and two are located on the underside of the deck plates.
- To install fire sensing element (2), perform steps 1 through 7.

21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

- To install fire sensing element (5), perform steps 8 through 11.
 - To install fire sensing element (4), perform steps 12 through 15.
 - To install fire sensing element (1), perform steps 16 through 19.
 - To install fire sensing element (3) perform steps 20 through 23.
1. Secure sensing element (2), with rubber bushings (10) attached, in 24 clamps (13).
 2. Remove one plastic cap (26) from straight coupling (25).
 3. Connect connector of sensing element (2) to straight coupling (25).
 4. Install, loosely, each of 23 clamps (13) on each of 24 mounting plate assemblies (14) with screw (11) and new lockwasher (12) for each clamp (13).



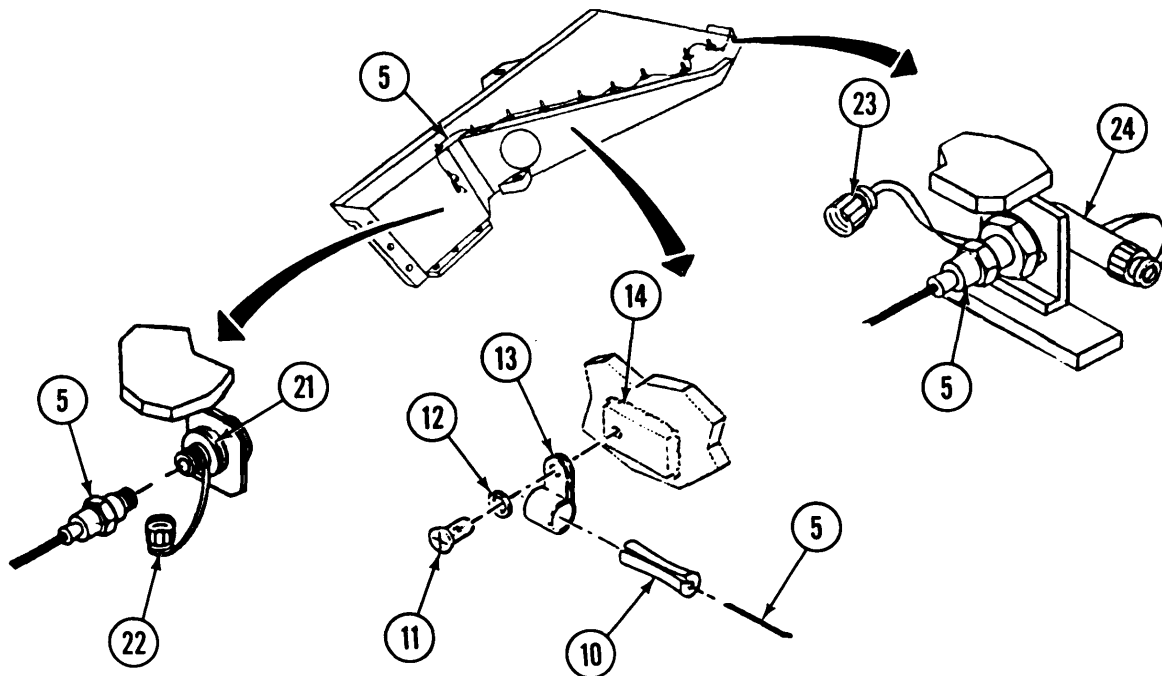
5. Install 24 rubber bushings (10), equally spaced along length of sensing element (2).

CAUTION

- When hand-shaping sensing element for installation, do not crush or bend element excessively. The smallest allowable radius is 1 inch (15 cm). Excessive bending can damage sensing element.
 - Make sure there is 1/2 inch to 3/4 inch (1 -2 cm) clearance between sensing element and personnel heater exhaust tube. Failure to do this can lead to equipment damage and inadvertent bottle discharge.
6. Hand-shape sensing element (2) to route correctly through front portion of engine compartment.
 7. Install rubber bushings (10) in 24 clamps(13). Tighten clamps (13).

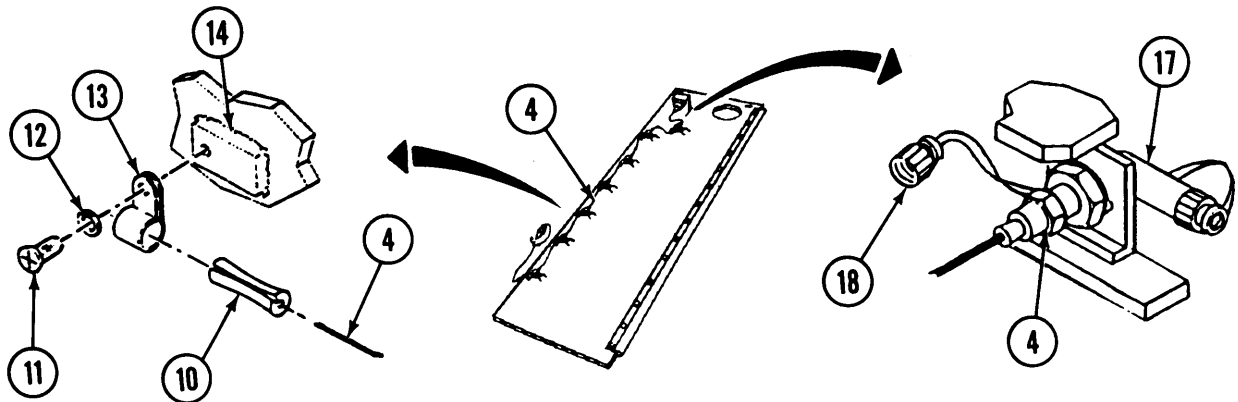
21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

8. Remove two plastic caps (22 and 23) from straight coupling (21) and elbow coupling (24).
9. Connect connectors of sensing element (5) to straight coupling (21) and elbow coupling (24).
10. Install, loosely, each of 22 clamps (13) on each of 22 mounting plate assemblies (14) with screw (11) and new lockwasher (12) for each clamp (13).
11. Correctly perform 5 through 7 to secure sensing element (5) in engine compartment.

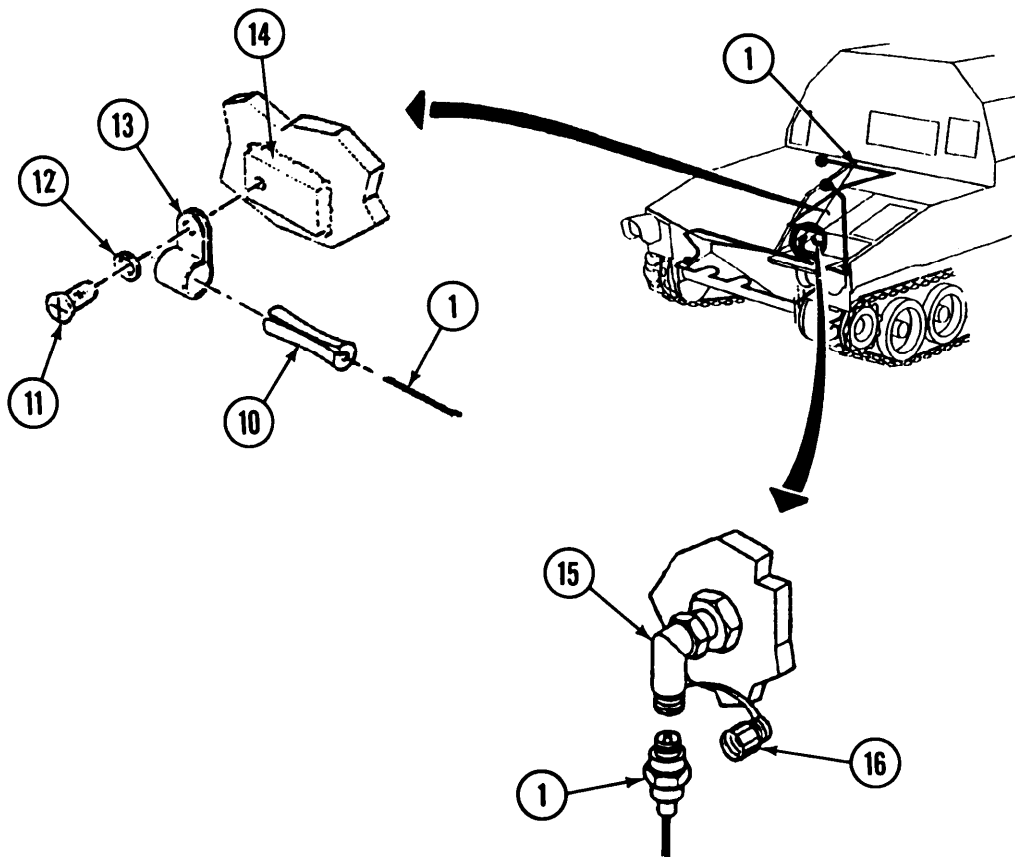


12. "Remove one plastic cap (18) from elbow coupling (17).
13. Connect connectors of sensing element (4) to elbow coupling (17).
14. Install, loosely, each of 10 clamps (13) on each of 10 mounting plate assemblies (14) with screw (11) and new lockwasher (12) for each clamp (13).
15. Perform steps 5 through 7 to secure sensing element (4) in engine compartment.

21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

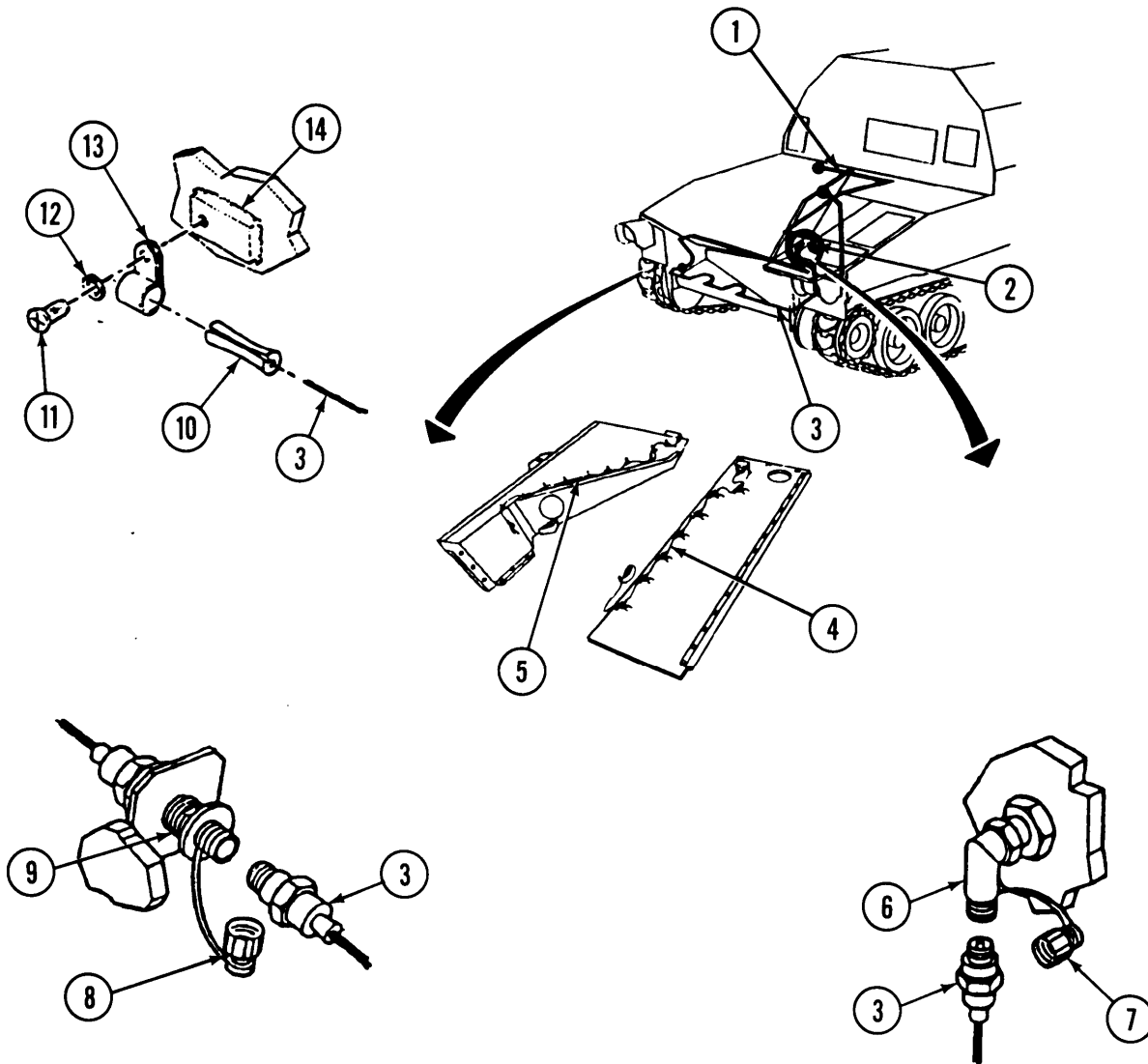


16. Remove one plastic cap (16) from elbow coupling (15) in engine compartment.
17. Connect connector of sensing element (1) to elbow coupling (15) in engine compartment.
18. Install, loosely, each of eight clamps (13) on each of 8 mounting plate assemblies (14) with screw (11) and new lockwasher (12) for each clamp (13).
19. Perform steps 5 through 7 to secure sensing element (1) in engine compartment.



21-9. ENGINE COMPARTMENT FIRE SENSING ELEMENTS REPLACEMENT (continued).

20. Remove two plastic caps (7 and 8) from elbow coupling (6) and straight coupling (9) in engine compartment.
21. Connect connector of sensing element (3) to elbow coupling (6) and straight coupling (9) in engine compartment.
22. Install, loosely, each of 24 clamps (13) on each of 24 mounting plate assemblies (14) with screw (1) and new lockwasher (12) for each clamp (1 3).
23. Perform steps 5 through 7 to secure sensing element (3) in vehicle.



FOLLOW-ON MAINTENANCE:

- Install master relay (para 7-21).
- Install powerpack (para 3-2).
- Activate engine AFES (para 21-2).
- Close forward battery compartment access doors (refer to TM 9-2350-287-10).

21-10. ENGINE COMPARTMENT FIRE SENSING ELEMENT COUPLINGS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Personnel Required: Two

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-1 0).

- Battery compartment access doors opened (refer to TM 9-2350-287-10).
 - Powerpack removed (para 3-2).
 - Master relay removed (for bulkhead elbow couplings only) (para 7-21).
-

a. **REMOVAL**

WARNING

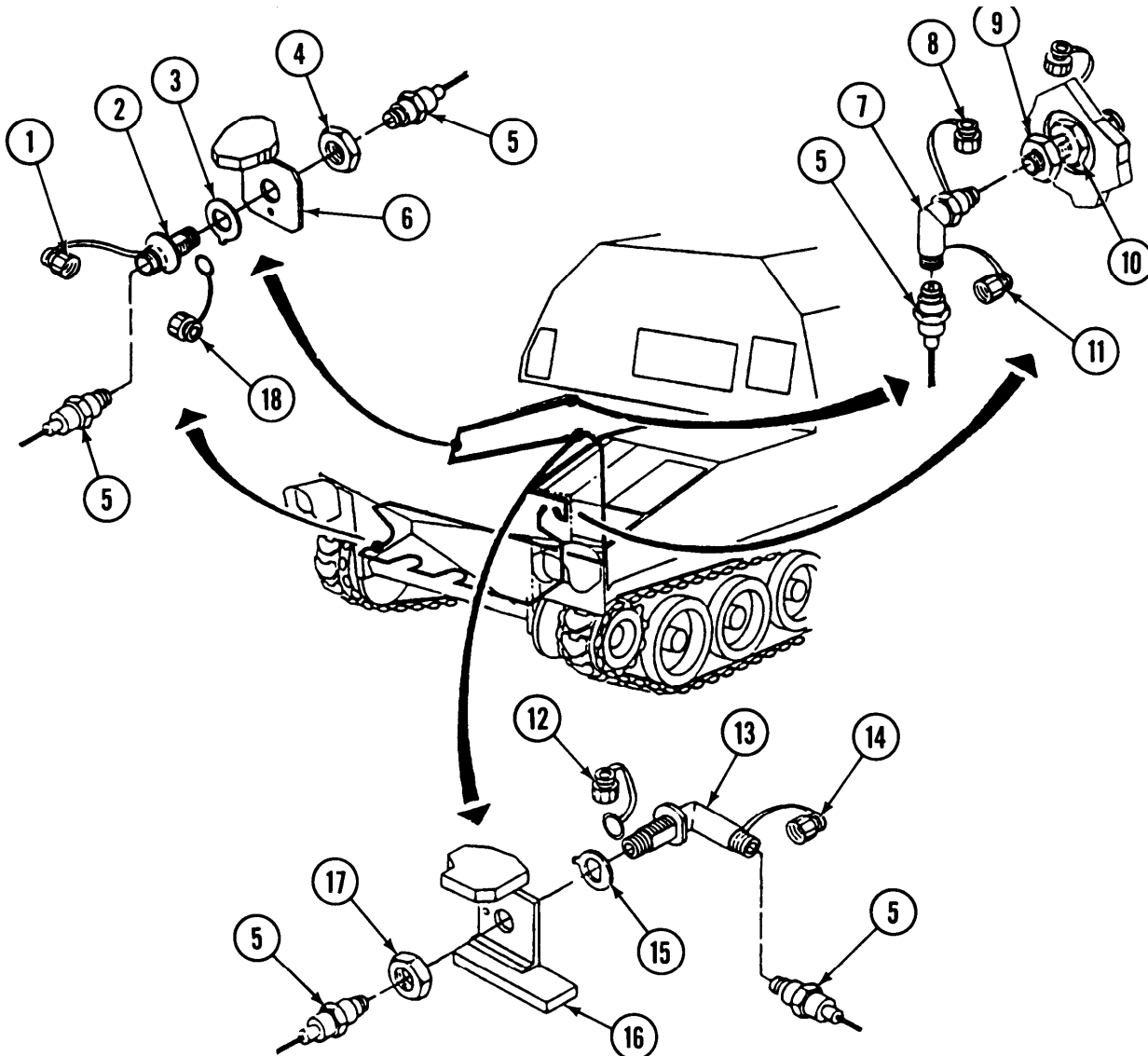
- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

NOTE

Steps 1 through 4 refer to removal of two bulkhead elbow couplings. Replacement procedures are the same for both bulkhead elbow couplings. If replacing any other coupling, begin at step 6.

21-10. ENGINE COMPARTMENT FIRE SENSING ELEMENT COUPLINGS REPLACEMENT (continued).

1. Disconnect sensing element (5) from bulkhead elbow coupling (7). Pull sensing element (5) clear of elbow coupling (7).
2. Loosen nut (9) on adapter (10) and remove elbow coupling (7) from adapter (10). Cap elbow coupling (7) at both ends with two caps (8 and 11).
3. Disconnect sensing element (5) from elbow coupling (13) at both ends.
4. With the aid of an assistant, remove nut (17), key washer (15), and elbow coupling (13) from bracket (16). Cap elbow coupling (13) at both ends with two caps (12 and 14).
5. Disconnect sensing element (5) from both ends of straight coupling (2).
6. With the aid of an assistant, remove nut (4), key washer (3), and straight coupling (2) from bracket (6). Cap straight coupling (2) at both ends with two caps (1 and 18).



21-10. ENGINE COMPARTMENT FIRE SENSING ELEMENT COUPLINGS REPLACEMENT
(continued).

b. INSTALLATION

1. Remove two caps (1 and 18) from straight coupling (2), and install straight coupling (2) on bracket (6) with key washer (3) and nut (4). Do not tighten nut (4).
2. With the aid of an assistant, turn straight coupling (2) and key washer (3) until tab on key washer (3) fits into slot on bracket (6), Tighten nut (4).

CAUTION

Do not overtighten sensing element couplings. Damage to sensing element may occur.

3. Connect sensing element (5) to both ends of straight coupling (2).
4. Remove two caps (12 and 14) from elbow coupling (13), and install elbow coupling(13) on bracket (16) with key washer (15) and nut (17). Do not tighten nut (17).
5. With the aid of an assistant, turn elbow coupling (13) and key washer (15) in bracket (16) until tab in key washer (15) fits into slot on bracket (16). Tighten nut (17).

CAUTION

Do not overtighten sensing element couplings. Damage to sensing element may occur.

6. Connect sensing element (5) to both ends of elbow coupling(13).

NOTE

Steps 7 and 8 cover installation of two bulkhead elbow couplings. An assistant is needed to hold bulkhead elbow couplings in place while securing.

7. Remove two caps (8 and 11) from elbow coupling (7), install elbow coupling (7) on adapter (10), and tighten nut (9) on adapter (10).

CAUTION

Do not overtighten sensing element couplings. Damage to sensing element may occur.

8. Connect sensing element (5) to elbow coupling (7).

FOLLOW-ON MAINTENANCE:

- Install powerpack (para 3-2).
- Install master relay, if removed (para 7-21).
- Close battery compartment access doors (refer to TM 9-2350-287-10).
- Perform engine AFES test (refer to TM 9-2350 -287-10).

21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix I)

Materials/Parts:

- Lockwashers (2) (Item 148, Appendix H)
- Lockwashers (8) (Item 161, Appendix H)
- Lockwashers (12) (Item 184, Appendix H)
- Lockwashers (6) (Item 196, Appendix H)

Equipment Conditions:

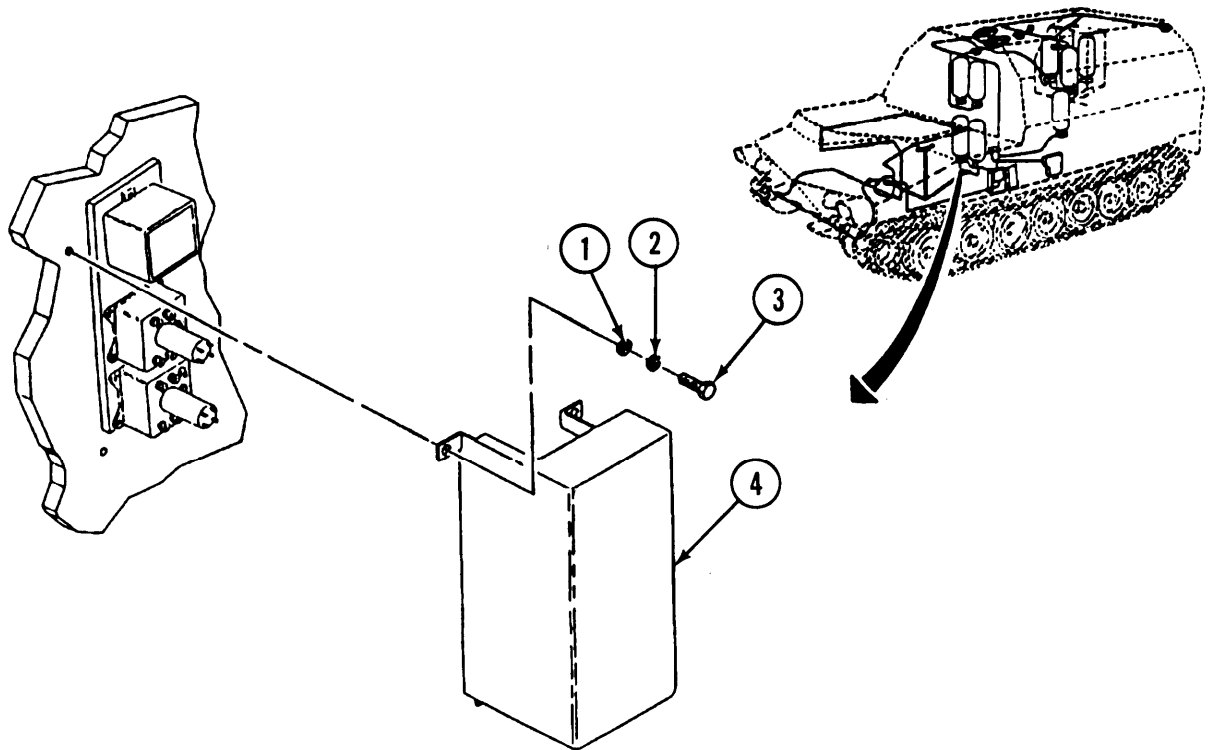
- Vehicle parked on level ground (refer to TM 9-2350-287-10)
 - Engine AFES deactivated (para 21 -2).
 - Engine AFES T/A panel removed (para 21-13).
-

a. REMOVAL

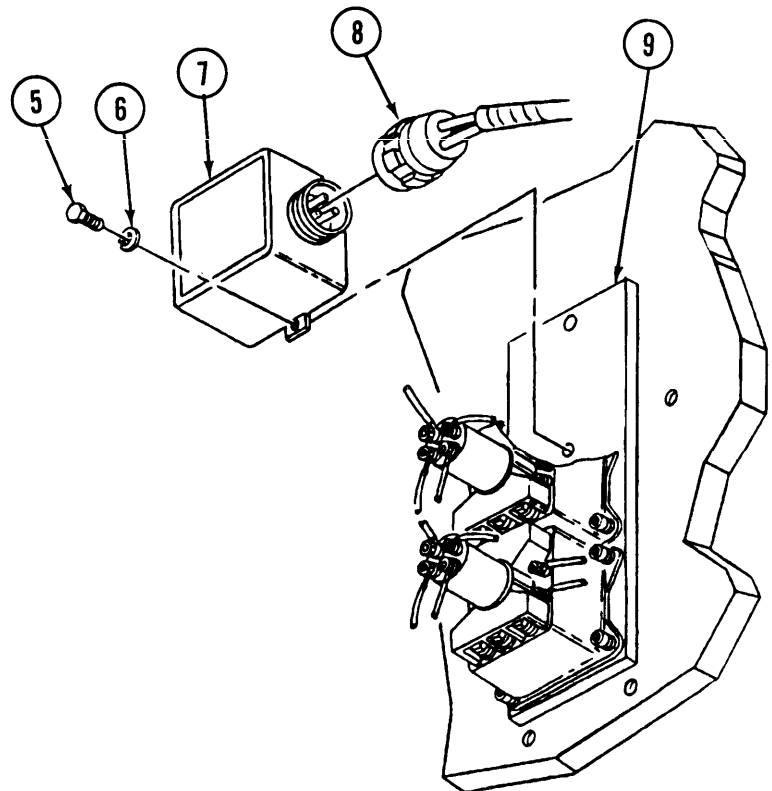
WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
 - The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.
1. Remove four screws (3), lockwashers (2), and washers (1) from engine AFES relay cover (4). Discard lockwashers.
 2. Remove AFES relay cover (4) from bulkhead.

21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

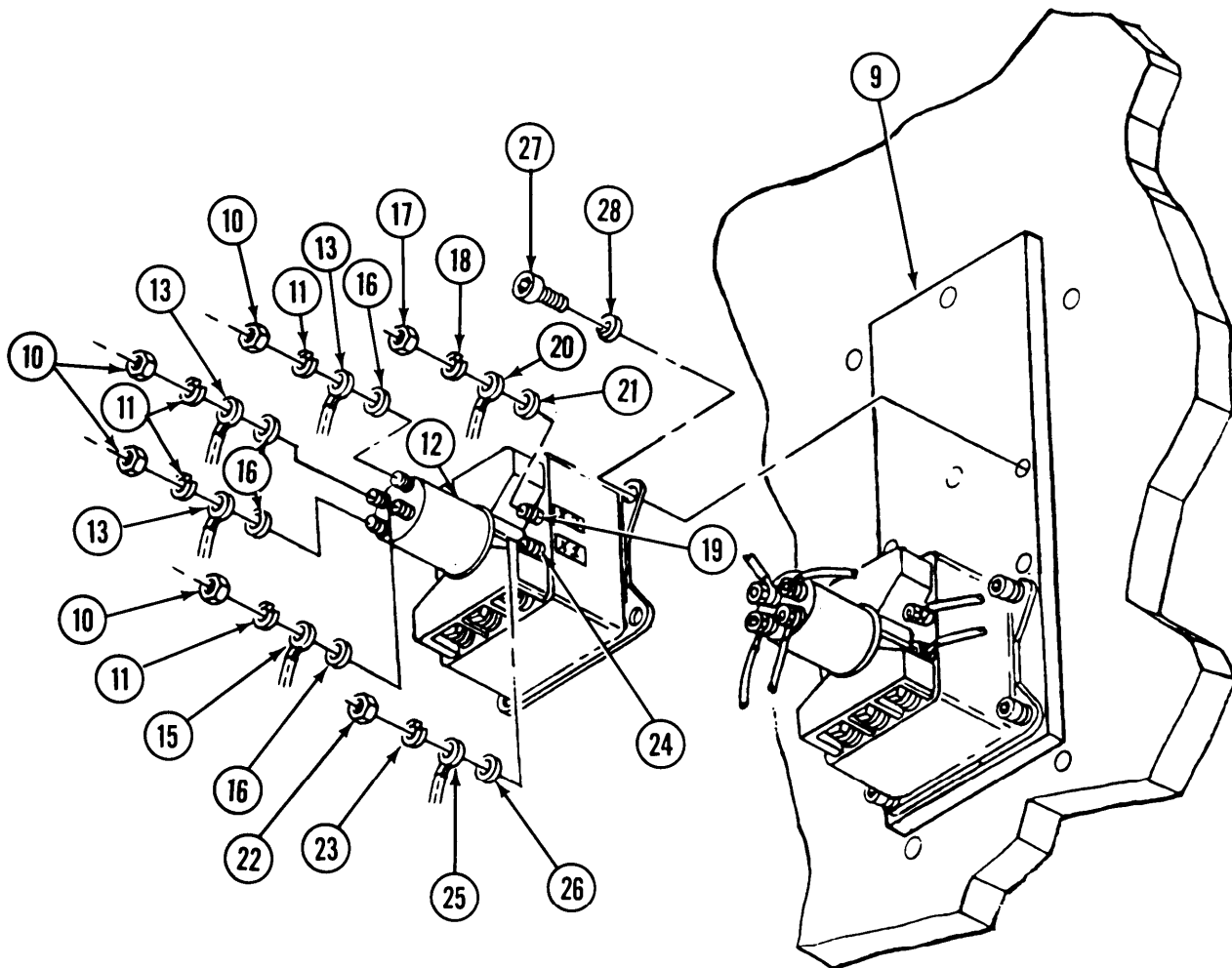


3. Disconnect plug (8) from relay (7).
4. Remove two screws (5) and two lockwashers (6) and engine AFES electrical relay (7) from mounting pad (9). Discard lockwashers.



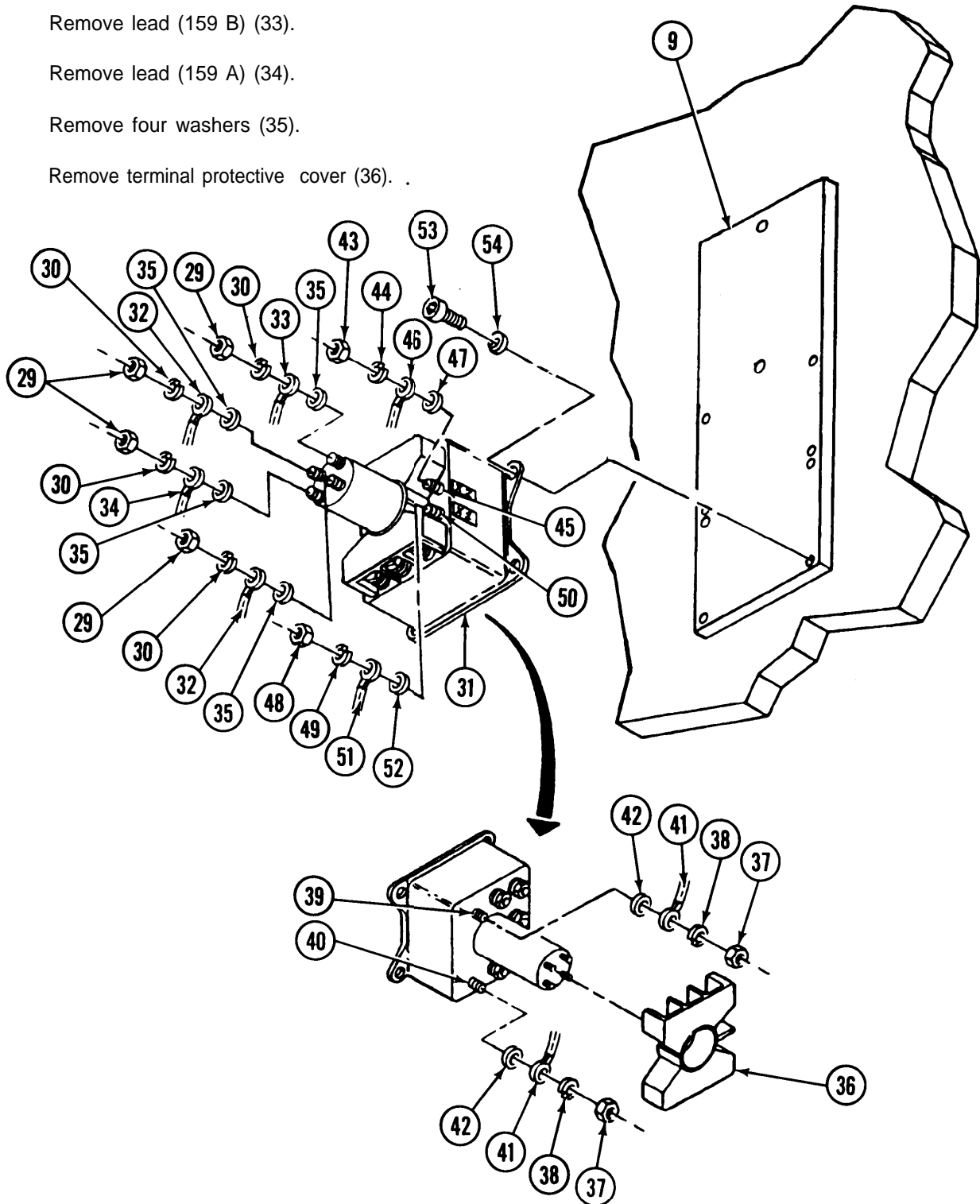
21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

5. Remove four nuts (10) and four lockwashers (11) from upper relay (12). Discard lockwashers.
6. Remove two leads (159 C-2) (13).
7. Remove lead (159 C) (14).
8. Remove lead (159 D) (15).
9. Remove four washers (16).
10. Remove one nut (17) and one lockwasher (18) from terminal (X-1) (19). Discard lockwasher.
11. Remove lead (GND) (20) and washer (21).
12. Remove one nut (22) and one lockwasher (23) from terminal (X-2) (24). Discard lockwasher.
13. Remove lead (159) (25) and washer (26).
14. Remove four screws (27), four lockwashers (28) and upper relay (12). Discard lockwashers.



21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

15. Remove four nuts (29) and four lockwashers (30) from lower relay (31). Discard lockwashers.
16. Remove two leads (159 A-2) (32).
17. Remove lead (159 B) (33).
18. Remove lead (159 A) (34).
19. Remove four washers (35).
20. Remove terminal protective cover (36).



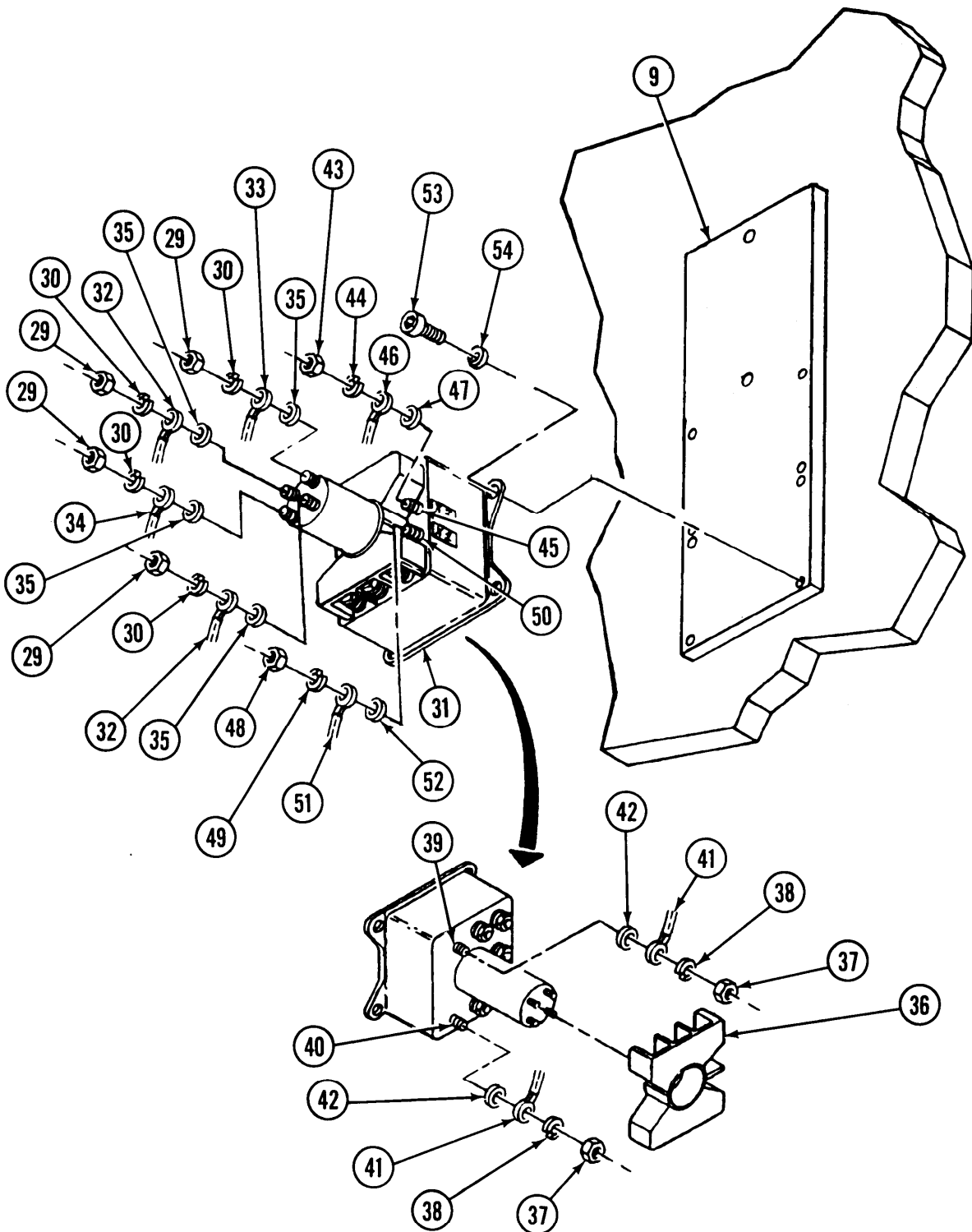
21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

21. Remove two nuts (37 and two lockwashers (38) from terminals (C-1 and C-2) (39 and 40). Discard lockwashers.
22. Remove two leads (159 D (41).
23. Remove two washers (42).
24. Remove one nut (43) and one lockwasher (44) from terminal (X-1) (45). Discard lockwasher.
25. Remove lead (GND) (46) and washer (47).
26. Remove one nut (48) and one lockwasher (49) from terminal (X-2) (50). Discard lockwasher.
27. Remove lead (159) (51) and washer (52).
28. Remove four screws (53), four lockwashers (54) and lower relay (31). Discard lockwashers.

b. INSTALLATION

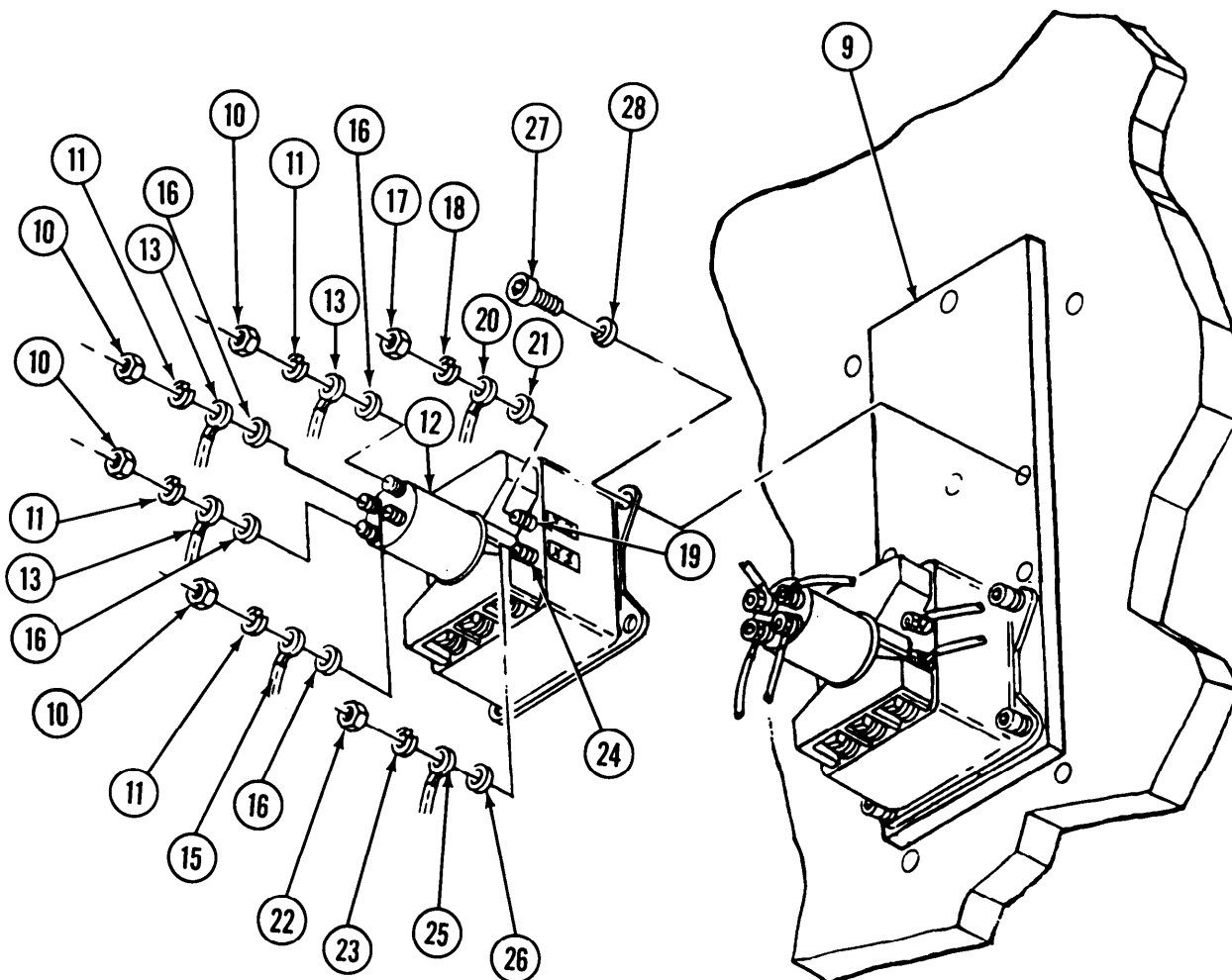
1. Install lower relay (31) on mounting pad (9) with four new lockwashers (54) and lower relay (31).
2. Install washer (52) and lead (159) (51) on terminal (X-2) (50) and secure with one new lockwasher (49) and one nut (48).
3. Install washer (47) and lead (G ND) (46) on terminal (X-1) (45) and secure with one new lockwasher (44) and one nut (43).
4. Install two washers (42) and two leads (159 D) (41) on terminals (C-1 and C-2) (39 and 40) and secure with two new lockwashers (38) and two nuts (37).
5. Install terminal protective cover (36).
6. Install four washers (35) to lower relay (31).
7. Install lead (159 A) (34) to lower relay (31).
8. Install lead (159 B) (33) to lower rely (31)..
9. Install two leads (159 A-2) (32) to lower relay (31).
10. Secure leads (32-34) with four new lockwashers (30) and four nuts (29) to lower relay (31).

21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).



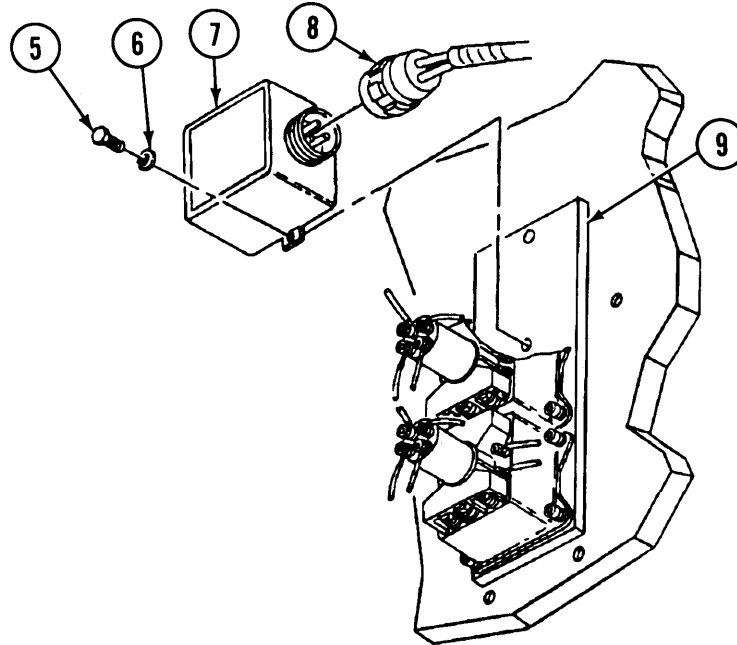
21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

11. Install upper relay (12) on mounting pad (9) with four new lockwashers (28) and four screws (27).
12. Install washer (26) and lead (159) (25) on terminal (X-2) (24) and secure with one new lockwasher (23) and one nut (22).
13. Install washer (21) and lead (GND (20) on terminal (X-1) (19) and secure with one new lockwasher (18) and one nut (17).
14. Install four washers (16) to upper relay (1 2).
15. Install lead (159 D)(15) to upper relay (1 2).
16. Install lead (159 C) (14) to upper relay (12).
17. Install two leads (159 C-2) (13) to upper relay (12).
18. Secure leads (13-15) with four new lockwashers (11) and four nuts (10) to upper relay (12).

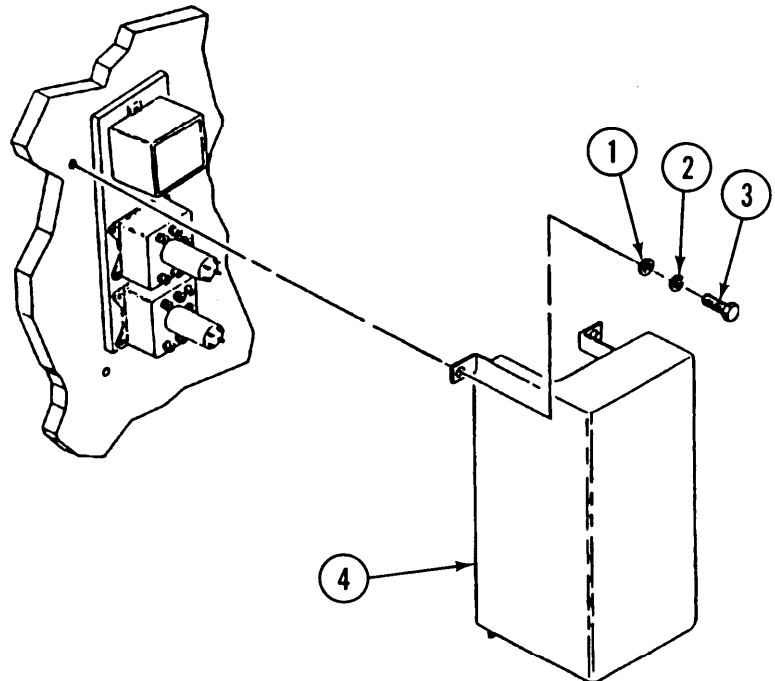


21-11. ENGINE AFES ELECTRICAL RELAYS REPLACEMENT (continued).

19. Install engine AFES electrical relay (7) on mounting pad (9) with two new lockwashers (6) and two screws (5).
20. Connect plug (8) to engine AFES electrical relay (7).



21. Install engine AFES electrical relay cover (4) to bulkhead with four washers (1), four new lockwashers (2) and four screws (3).
22. Install engine fire detection box.



FOLLOW-ON MAINTENANCE:

- Install engine AFES T/A panel (para 21-13).
- Reactivate engine AFES (para 21-2).

21-12. ENGINE AFES REMOTE STATUS INDICATOR (RSI) REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanics tool kit (Item 24, Appendix 1)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Engine AFES deactivated (para 21-2).

Materials/Parts:

- Lockwasher (2) (Item 196, Appendix H)
-

a. REMOVAL

WARNING

Any automatic fire extinguishing system (AFES unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.

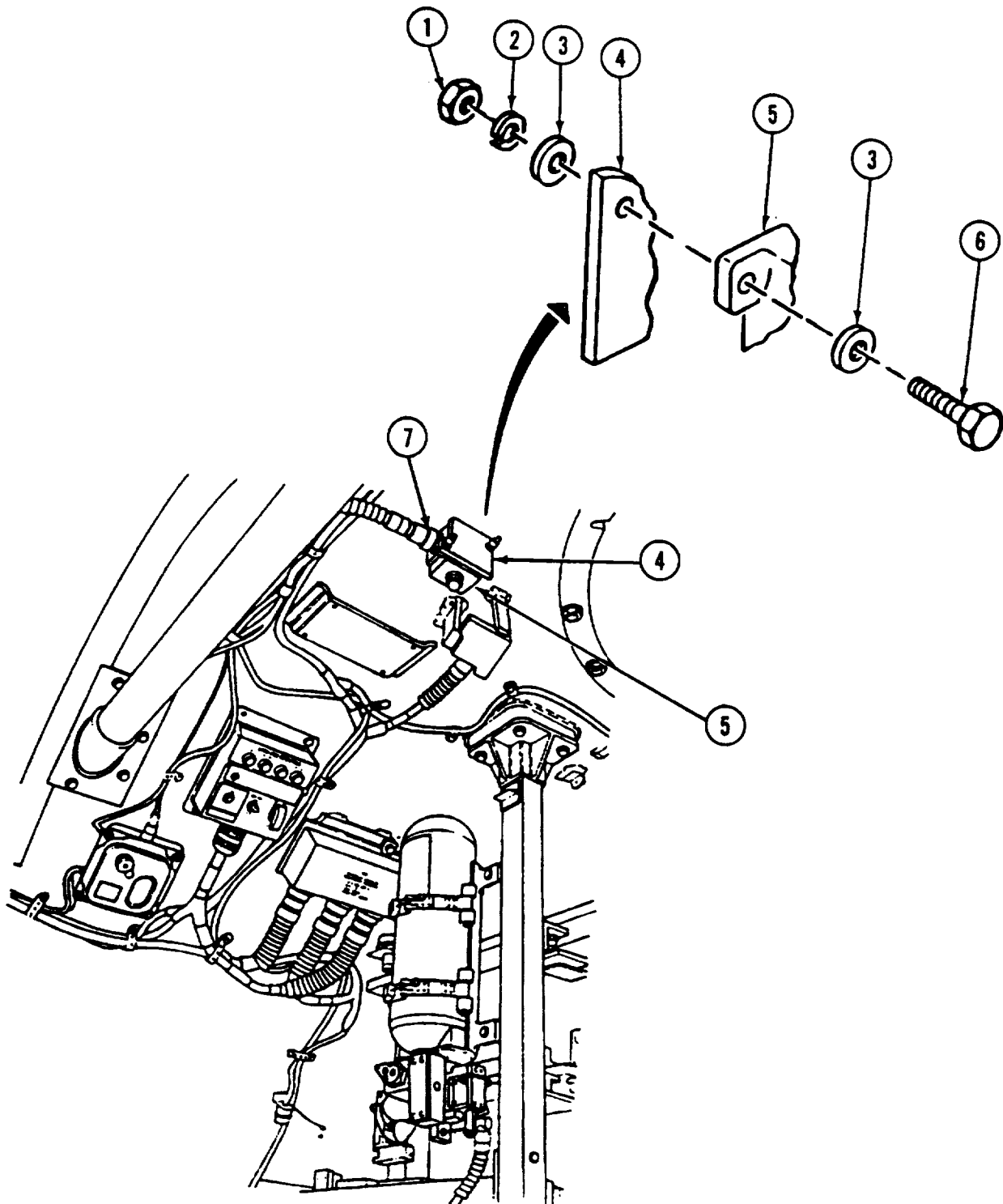
The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

1. Disconnect wiring harness plug (7) from engine AFES RSI (5).
2. Remove two nuts (1) and lockwashers (2), four washers (3), two screws (6), and RSI (5) from RSI bracket (4). Discard lockwashers.

b. INSTALLATION

1. Install RSI (5) to RSI bracket (4) with two nuts (1) and new lockwashers (2), four washers (3), and two screws (6).
2. Connect wiring harness plug (7) to RSI (5).

21-12. ENGINE AFES REMOTE STATUS INDICATOR (RSI) REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Reactivate engine AFES (para 21-2).

21-13. ENGINE AFES TEST AND ALARM (T/A) PANEL REPLACEMENT.*This Task Covers:*

- a. Removal
- b. Installation

*Initial Setup:***Tools/Test Equipment:**

- General mechanic's tool kit (Item 24, Appendix H)

Materials/Parts:

- Lockwasher (2) (Item 136, Appendix H)

- Lockwasher (9) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Engine AFES deactivated (para 21-2).

a. REMOVAL**WARNING**

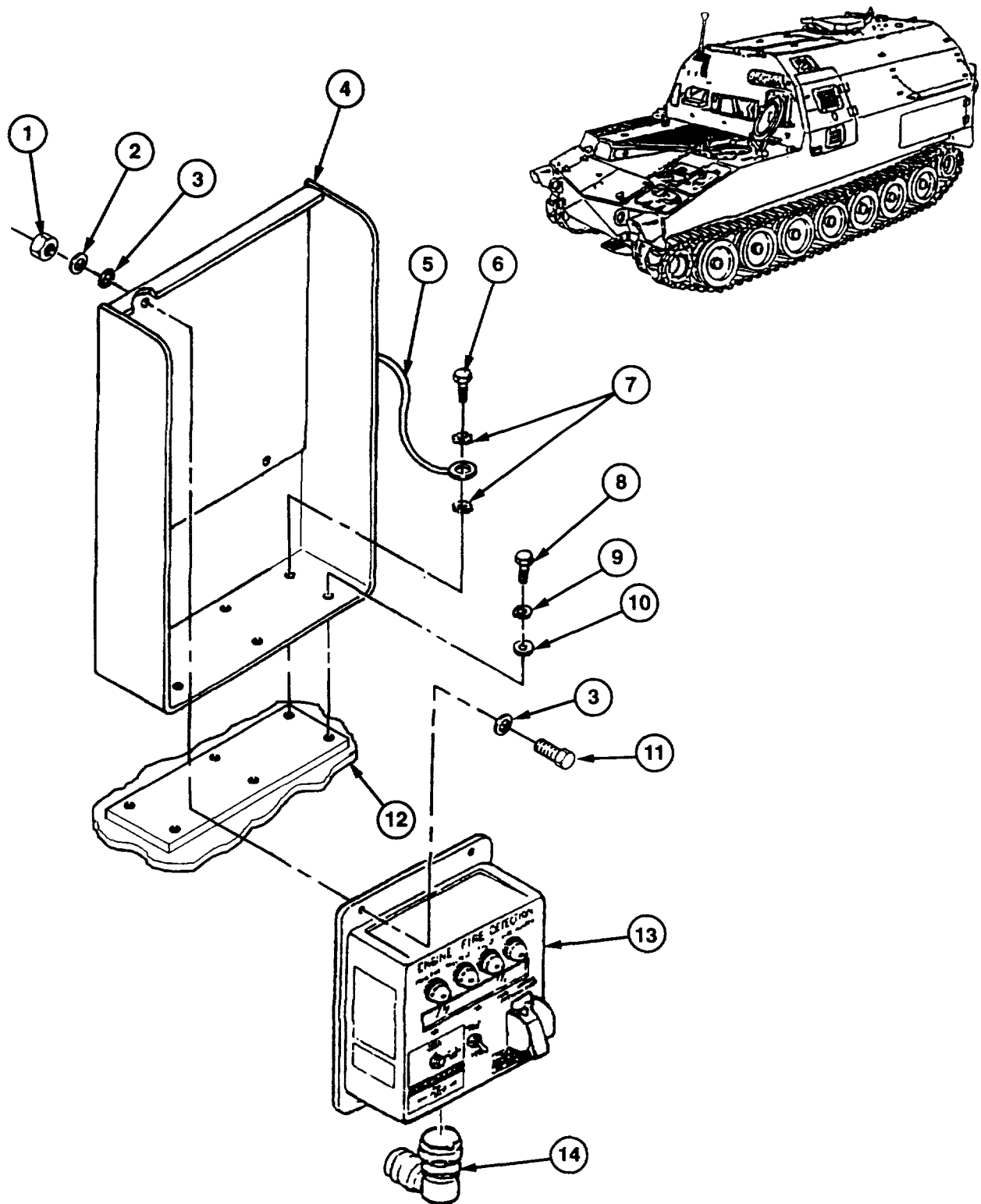
- **Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi (5171 kPa). Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.**
- **The engine AFES is designed to provide from two to four hours of fire protection AFTER vehicle shutdown. Turning off the MASTER switch does NOT deactivate the AFES. Working on the AFES when the system is active may cause serious injury to personnel.**

1. Disconnect wiring harness plug (14) from engine AFES test and alarm (T/A) panel (13).
2. Remove four nuts (1), lockwashers (2), and screws (11), eight washers (3), and T/A panel (13) from bracket (4). Discard lockwashers.
3. Remove five screws (8), lockwashers (9), and washers (10) from bracket (4). Discard lockwashers.
4. Remove screw (6), ground lead (5), two lockwashers (7), and bracket (4) from bracket (12). Discard lockwashers.

b. INSTALLATION

1. Install bracket (4) and ground lead (5) on bracket (12) with screw (6) and two new lockwashers (7).
2. Install five screws (8), new lockwashers (9), and washers (10) on bracket (4).
3. Install T/A panel (13) on bracket (4) with four screws (11), eight washers (3), and four new lockwashers (2) and nuts (1).
4. Connect wiring harness plug (14) to engine T/A panel (13).

21-13. ENGINE AFES TEST AND ALARM (T/A) PANEL REPLACEMENT (continued).



FOLLOW-ON MAINTENANCE:

- Activate engine AFES (para 21-2).

21-14. CREW AFES OPTICAL FIRE SENSING APPARATUS (OFSA) REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Paper, lens (Item 51, Appendix D)
- Lockwasher (2) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Crew AFES deactivated (para 21-3).
-

a. REMOVAL**WARNING**

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi (5171 kPa). Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from two to four hours of fire protection AFTER vehicle shutdown. Turning off the MASTER switch does NOT deactivate the AFES. Working on the AFES when the system is active may cause serious injury to personnel.

CAUTION

- Record position of crew AFES OFSA prior to removal. Failure to do so can result in failure of OFSA to detect fires when reinstalled.
- Removal procedures for all fire-sensing apparatuses are the same.

1. Scribe location of OFSA (1) on bracket (7).
2. Disconnect electrical cable (2) from OFSA (1).
3. Remove two screws (3), nuts (6), and lockwashers (5), four washers (4), and OFSA (1) from bracket (7). Discard lockwashers.

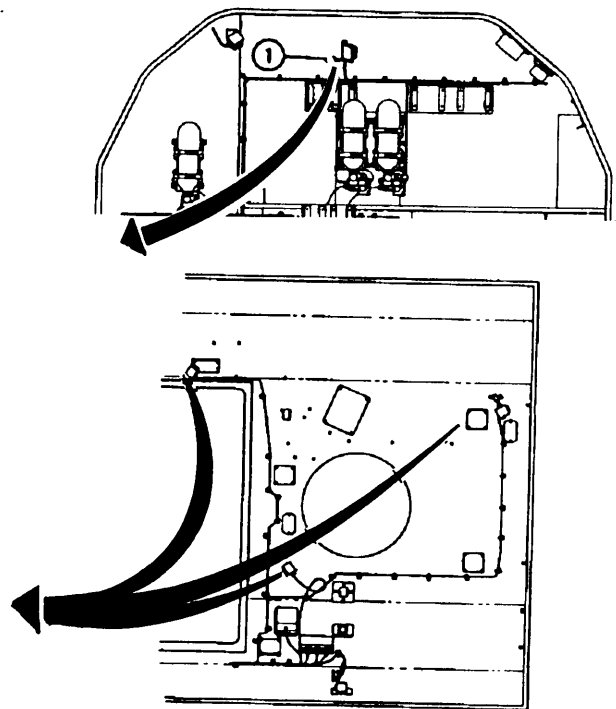
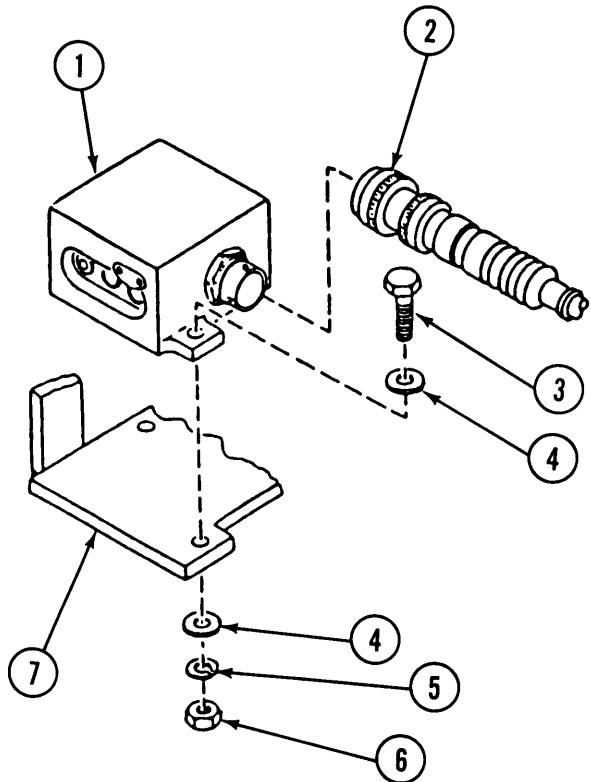
**21-14. CREW AFES OPTICAL FIRE SENSING APPARATUS (OFSA) REPLACEMENT
(continued).**

b. INSTALLATION

CAUTION

Install OFSA in same position as noted at removal. Failure to do so can result in failure of OFSA to detect fires.

1. Position OFSA (1) on bracket (7) between scribed marks.
2. Install OFSA (1) on bracket (7) with two screws (3), four washers (4), two new lockwashers (5), and two nuts (6).
3. Install electrical cable (2) on OFSA (1).
4. Clean OFSA lenses with lens paper.



FOLLOW-ON MAINTENANCE:

- Reactivate crew AFES (para 21-3).

21-15. CREW AFES TEST AND ALARM (T/A) PANEL AND STANDARD CONTROL ELECTRONIC AMPLIFIER (SCEA) REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Lockwasher (Item 162, Appendix H)

Materials/Parts:

- Lockwasher (2) (Item 164, Appendix H)
- Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Crew AFES deactivated (para 21-3).
-

a. **REMOVAL**

WARNING

- Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.
- The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.

NOTE

Steps 1 and 2 cover crew T/A panel removal. Steps 3 and 4 cover (SCEA) removal.

1. Disconnect wiring harness plug (1) from crew T/A panel (10).
2. Remove four screws (9), lockwashers (8), and washers (7) and crew T/A panel (10) from hull. Discard lockwashers.
3. Disconnect three wiring harness plugs (6) from SCEA unit (2).
4. Support SCEA unit (2), and remove two screws (3), lockwashers (4), and washers (5) and SCEA unit (2) from hull. Discard lockwashers.

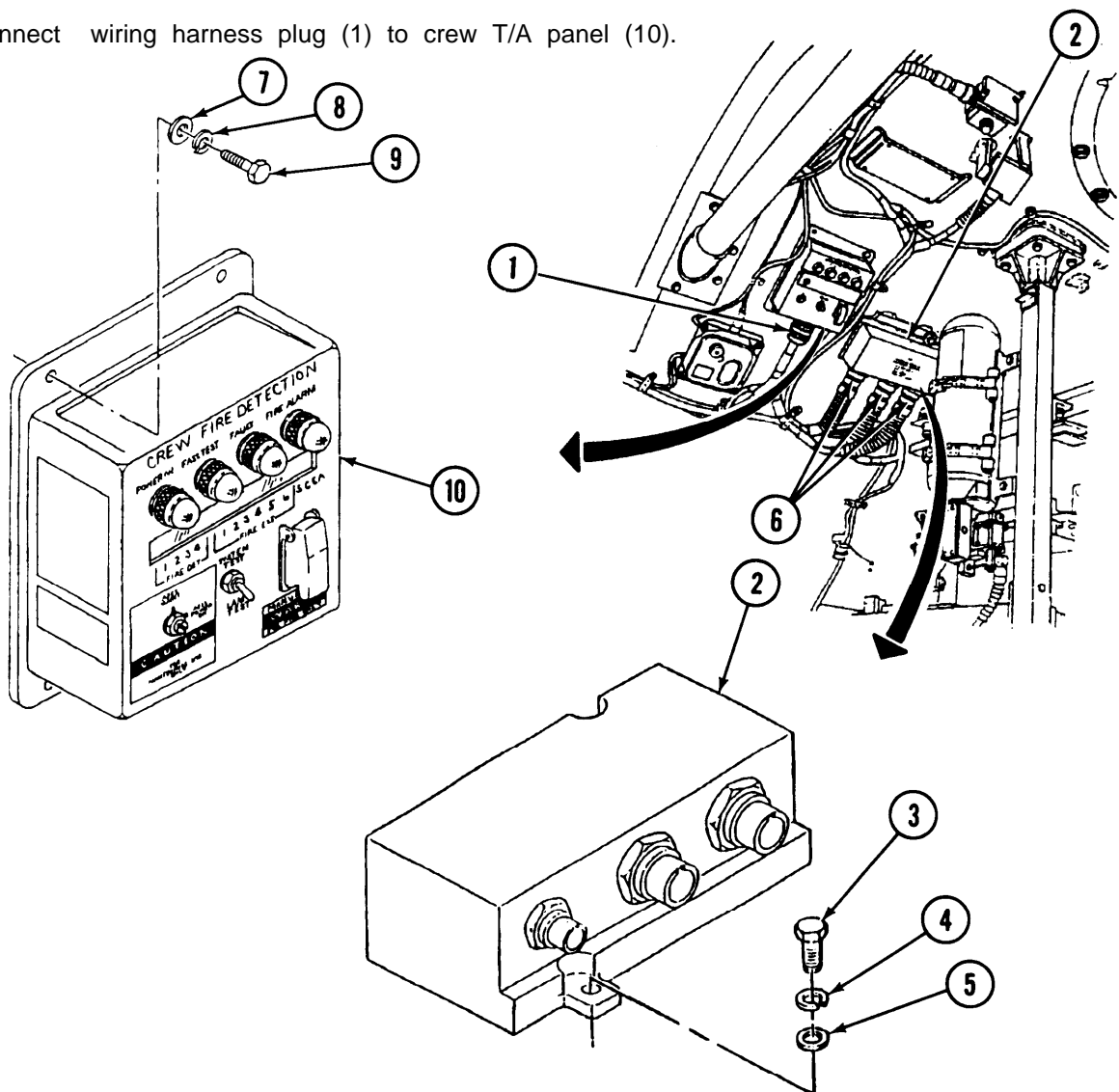
21-15. CREW AFES TEST AND ALARM (WA) PANEL AND STANDARD CONTROL ELECTRONIC AMPLIFIER (SCEA) REPLACEMENT (continued).

b. INSTALLATION

NOTE

Steps 1 and 2 cover (SCEA) Installation. Steps 3 and 4 cover crew T/A panel installation.

1. Install SCEA unit (2) to hull with two screws (3), new lockwashers (4), and washers (5).
2. Connect three wiring harness plugs (6) to SCEA unit (2).
3. Install crew T/A panel (10) to hull with four screws (9), new lockwashers (8), and washers (7).
4. Connect wiring harness plug (1) to crew T/A panel (10).



FOLLOW-ON MAINTENANCE:

- Reactivate crew AFES (para 21-3).

21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR.

This Task Covers:

- | | |
|---------------|-----------------|
| a. Removal | b. Disassembly |
| c. Assembly | d. Installation |
| e. Adjustment | |

Initial Setup:

Tools/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Materials/Parts:

- Cotter pin (3) (Item 12, Appendix H)
- Cotter pin (item 18, Appendix H)
- Cotter pin (Item 34, Appendix H)
- Fire extinguisher seal (2) (Item 299, Appendix H)
- Lockwasher (6) (Item 164, Appendix H)
- LockWasher (11) (item 175, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Engine AFES deactivated (para 21-2).
- Crew AFES deactivated (para 21-3).
- Left and right projectile rack assemblies moved to rear of vehicle (refer to TM 9-2350-287-10).
- Battery ground cables disconnected (para 7-41).

a. **REMOVAL**

WARNING

- **Any automatic fire extinguishing system (AFES) unit in need of maintenance or repair is more prone to accidental discharge. Accidental discharge could lead to frostbite or other injury. Small parts or tools become dangerous projectiles when propelled by Halon discharging at 750 psi. Do not strike cylinder bottles with tools and do not drop cylinder bottles. To prevent accidental discharge, be careful when handling cylinder bottles.**
- **The engine AFES is designed to provide from 2 to 4 hours of fire protection AFTER vehicle shutdown. Turning off the master switch does NOT deactivate the AFES. Working on the AFES when active may cause serious injury to personnel.**

1. Remove four screws (14), and cover (13) from actuator assembly (3).
2. Loosen, but do not remove, socket head setscrew (5) securing handle cable(6) to pin (4). Remove cable end from pin (4).

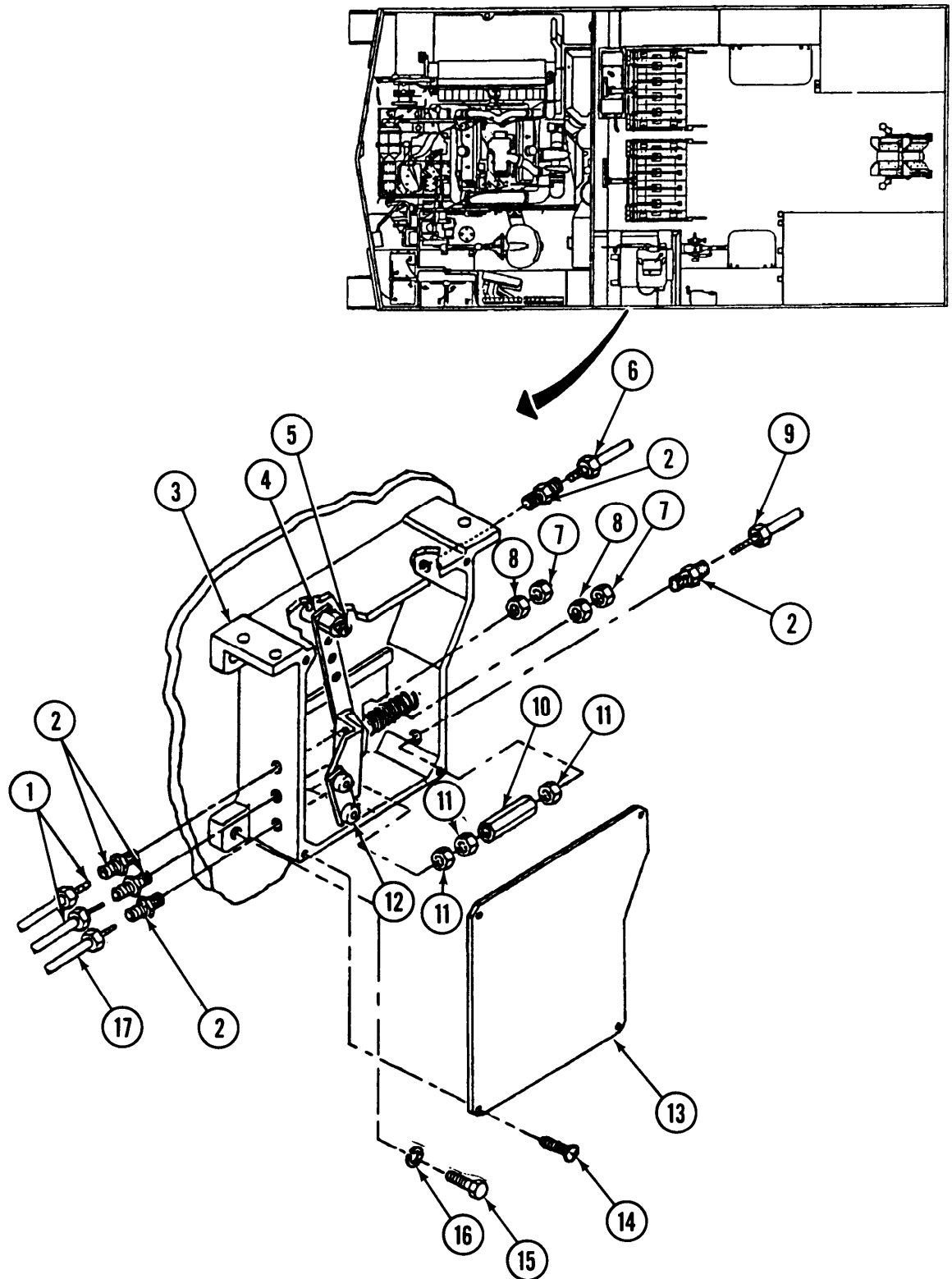
NOTE

For correct installation, tag cables when removing.

3. Remove two nuts (7) and nuts (8) which hold each of two cylinder cables (1) to cable block (1 2).
4. Remove connector nut (1 O) and three nut (11) attaching lower cylinder cable(17) and handle cable assembly (9) to cable block (12).
5. Remove five threaded fittings (2) attaching two handle cables (6 and 9) and two cylinder cables (1) and cylinder cable (17) to actuator assembly (3). Remove two cables (1) and cable(17) from actuator assembly (3).

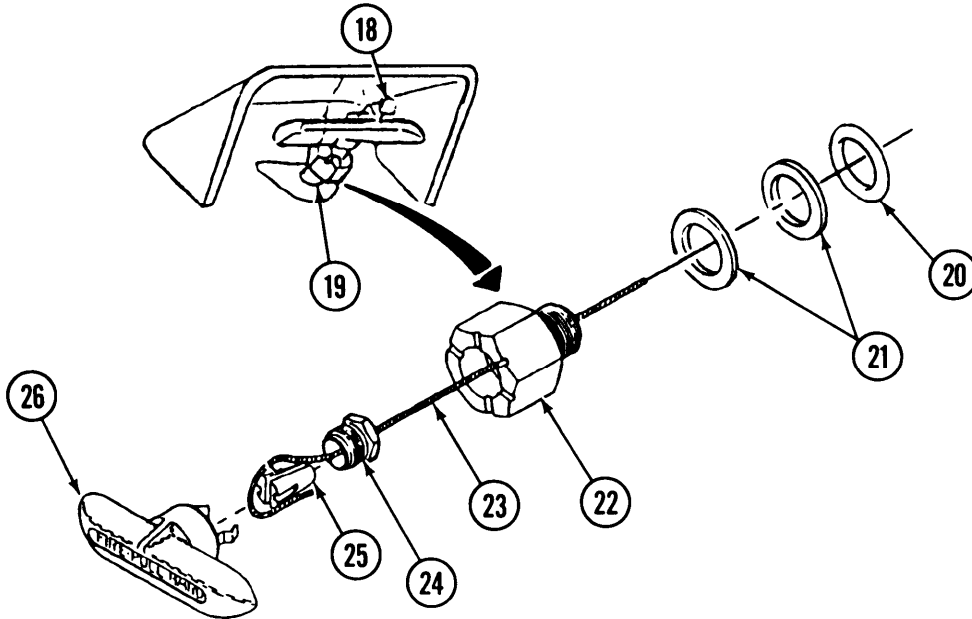
21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

6. Remove four screws (15) and lockwashers (16), and actuator assembly (3) from vehicle. Discard lockwashers.

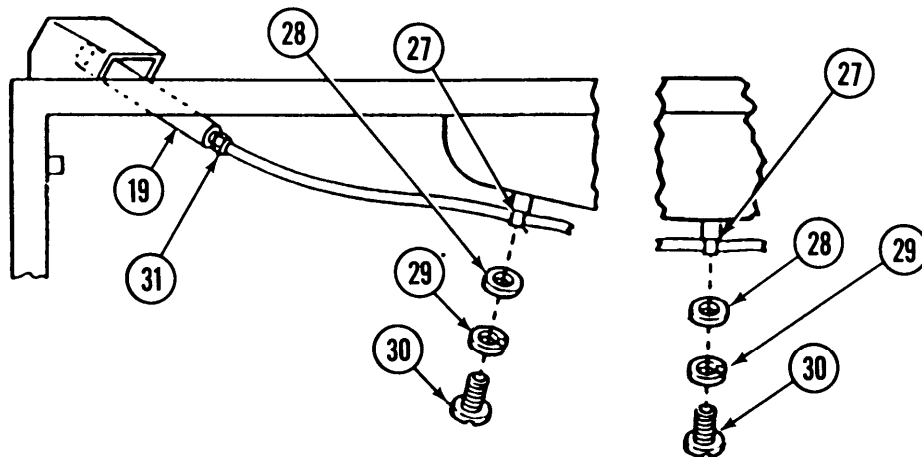


21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

7. Remove fire extinguisher seal (18) from exterior handle (26). Discard seal.
8. Pull handle (26) free of nut (22).
9. Back fastener (24) from handle (26). Pull wedge (25) from fastener (24) and remove cable (23) from fastener (24).
10. Remove nut (22), packing (20) and two washers (21) from outside end of handle tube (19).

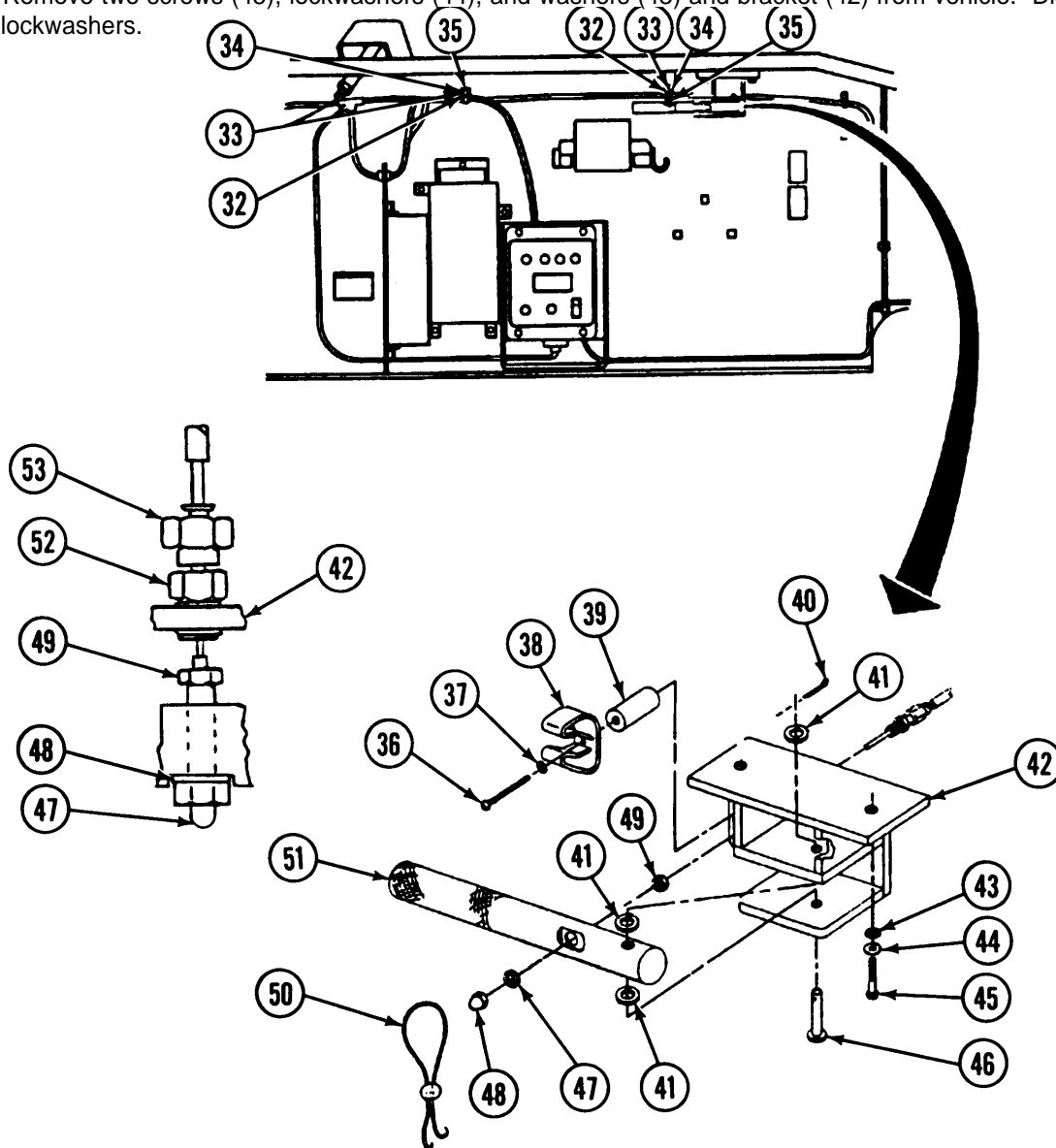


11. Remove adapter (31) from inside end of handle tube (19), removing cable from tube inside of vehicle.
12. Remove two screws (30), lockwashers (29), and washers (28) from two cable straps (27). Remove two cable straps (27) from cable, and remove cable from vehicle. Discard lockwashers.



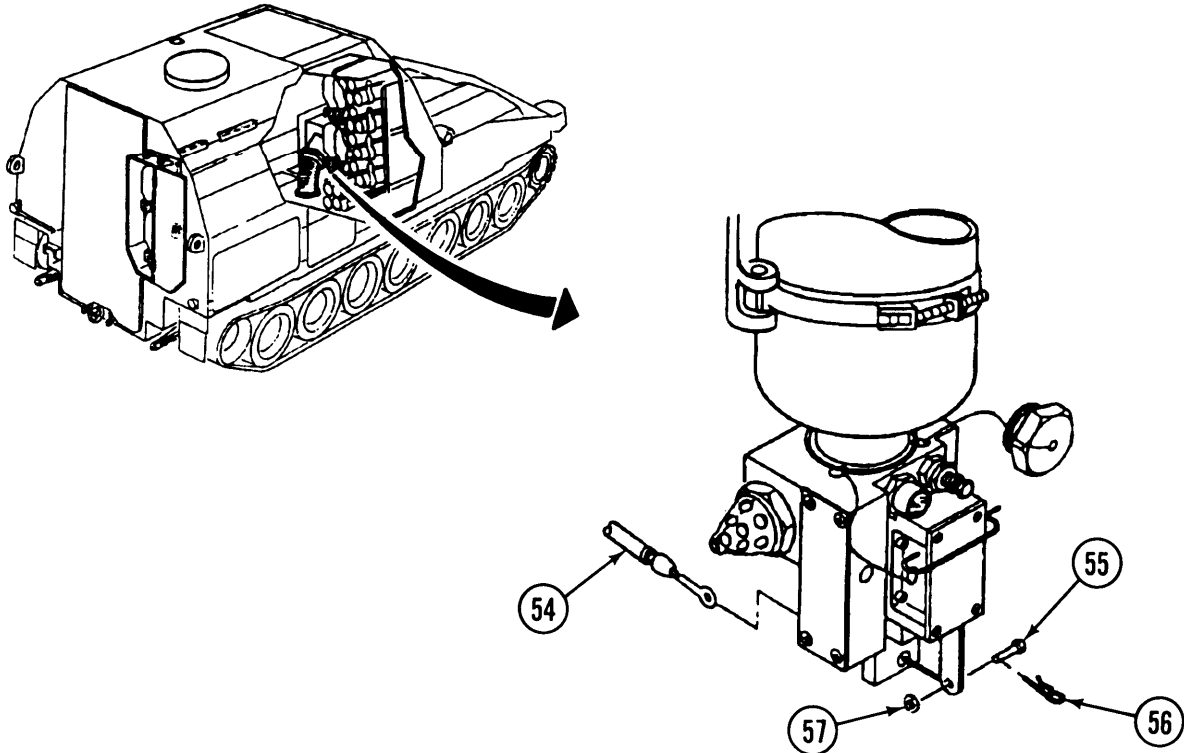
21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

13. Remove fire extinguisher seal (50), cable cap nut (47), and washer (48) from driver's compartment handle (51). Discard seal.
14. Remove cotter pin (40), pin (46), three washers (41), and handle (51) from bracket (42). Discard cotter pin.
15. Remove screw (36), washer (37), clip (38), and spacer (39) from bracket (42).
16. Remove nut (49) from threaded end of cable.
17. Remove threaded fitting (52) from bracket (42) and remove cable (53).
18. Remove two screws (32), lockwashers (33), washers (34) and cable straps (35) from cable (53). Remove cable (53) from vehicle and install cable straps (35). Discard lockwashers.
19. Remove two screws (45), lockwashers (44), and washers (43) and bracket (42) from vehicle. Discard lockwashers.

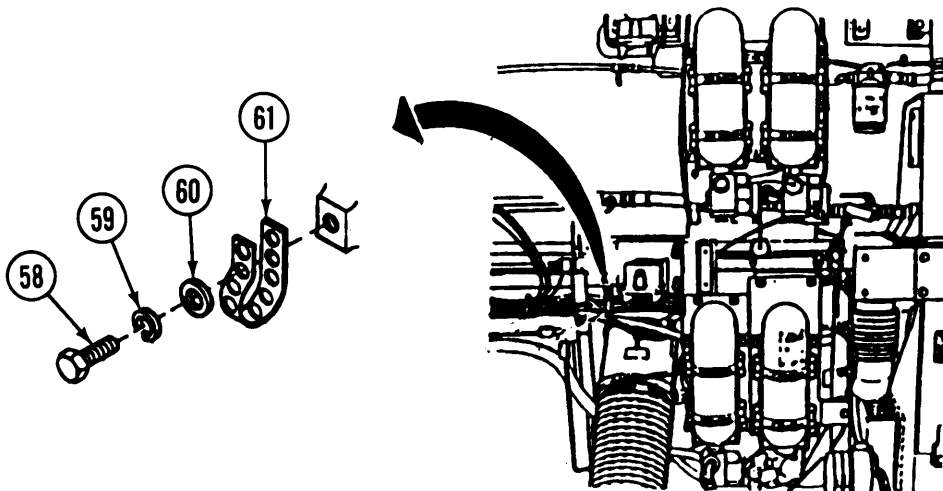


21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

20. Remove cotter pin (56) from cable pin (55) at crew fire extinguishers No. 3 and No. 4 and engine fire extinguisher No. 2. Remove cable pin (55) and washer (57) from each extinguisher. Discard cotter pins.
21. Remove threaded fittings (54) holding cables to crew fire extinguishers No. 3 and No. 4 and engine fire extinguisher No. 2. Remove cables from extinguishers.
22. Remove cable for crew extinguisher No. 3 from vehicle, removing and replacing strap assemblies as needed.

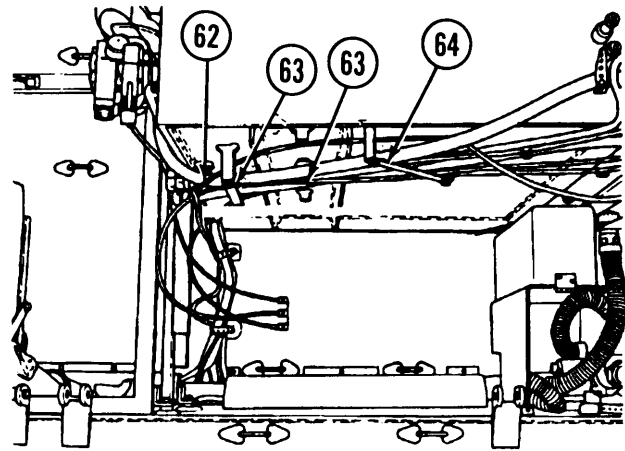


23. Remove screw (58), lockwasher (59), and washer (60) from each of seven cable straps (61). Remove two cable straps (61) and harnesses from crew fire extinguisher No. 4, and remove five cable straps (61) and harnesses from engine fire extinguisher No. 2. Discard lockwashers.



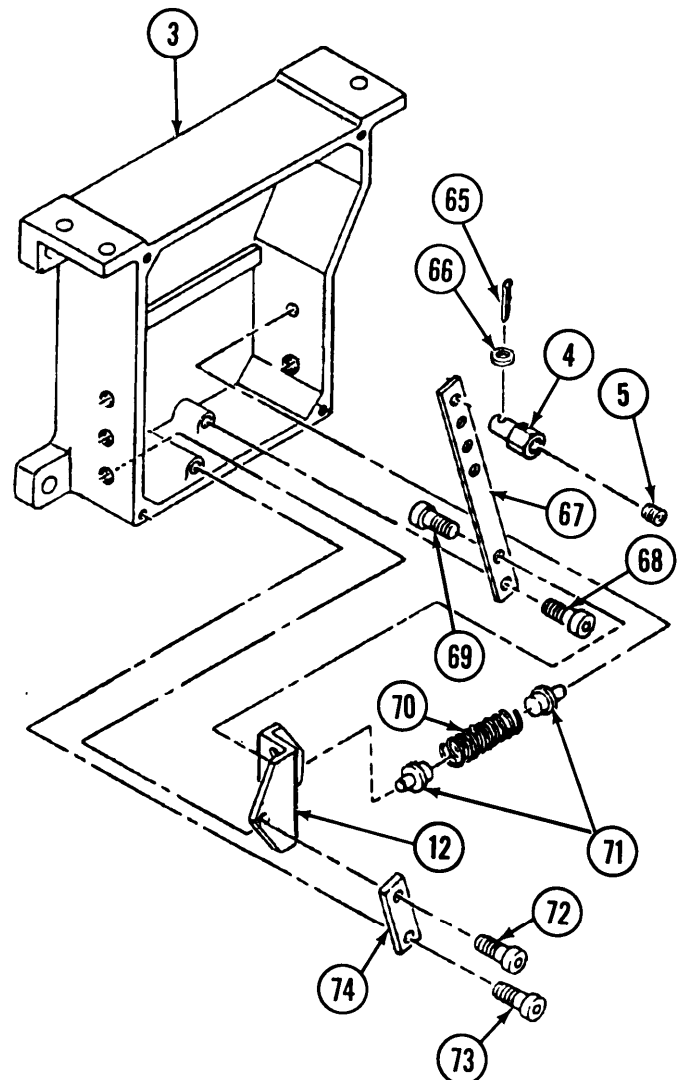
21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

24. Remove crew fire extinguisher No. 4 cable (62) and engine fire extinguisher No. 2 cable (64) from two brackets (63). Remove two cables (62 and 64) from vehicle.



b. DISASSEMBLY

1. Compress and remove spring (70) and two spring guides (71) from actuator assembly (3).
2. Remove two shouldered screws (72 and 73) and arm (74) from actuator assembly (3).
3. Remove shouldered screw (68), arm (67) and cable block (12) from actuator assembly (3).
4. Remove shouldered screw (69) and arm (67) from cable block (12).
5. Remove setscrew (5) and cotter pin (65) from pin (4).
6. Remove pin (4) and washer (66) from arm (67).



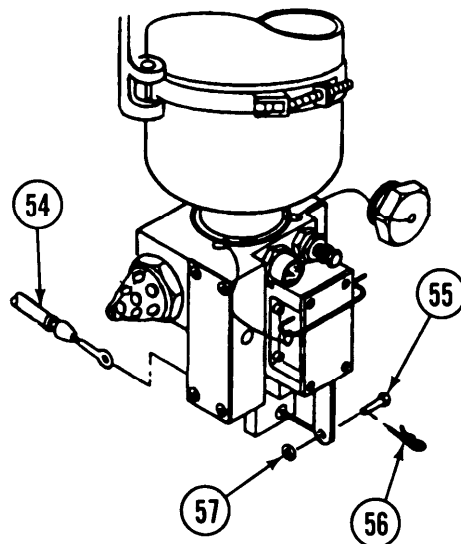
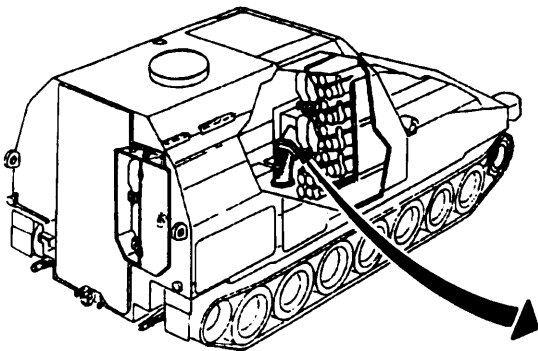
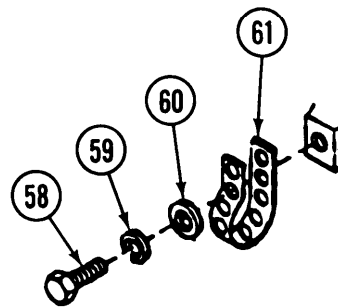
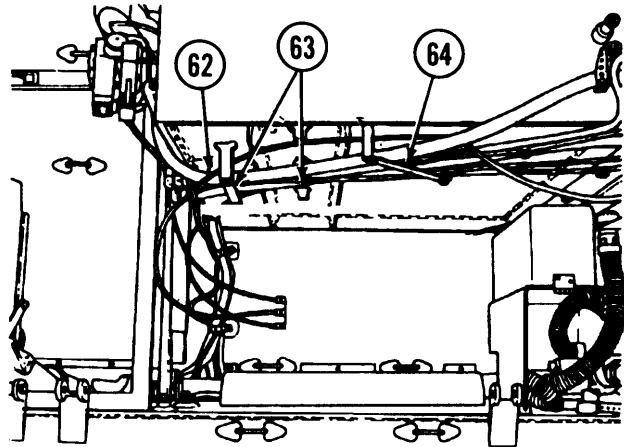
c. ASSEMBLY

1. Install washer (66) and pin (4) in arm (67). Secure with new cotter pin (65).
2. Loosely install setscrew (5) in pin (4).
3. Install arm (67) on cable block (12) with shouldered screw (69).
4. With shouldered screw (68), install arm (67) and cable block (12) in actuator assembly (3).
5. With two shouldered screws (72 and 73), install arm (74) on cable block (12) and actuator assembly (3).
6. Install two spring guides (71) in actuator assembly (3) and on cable block (1 2).
7. Install spring (70) between two spring guides (71).

21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

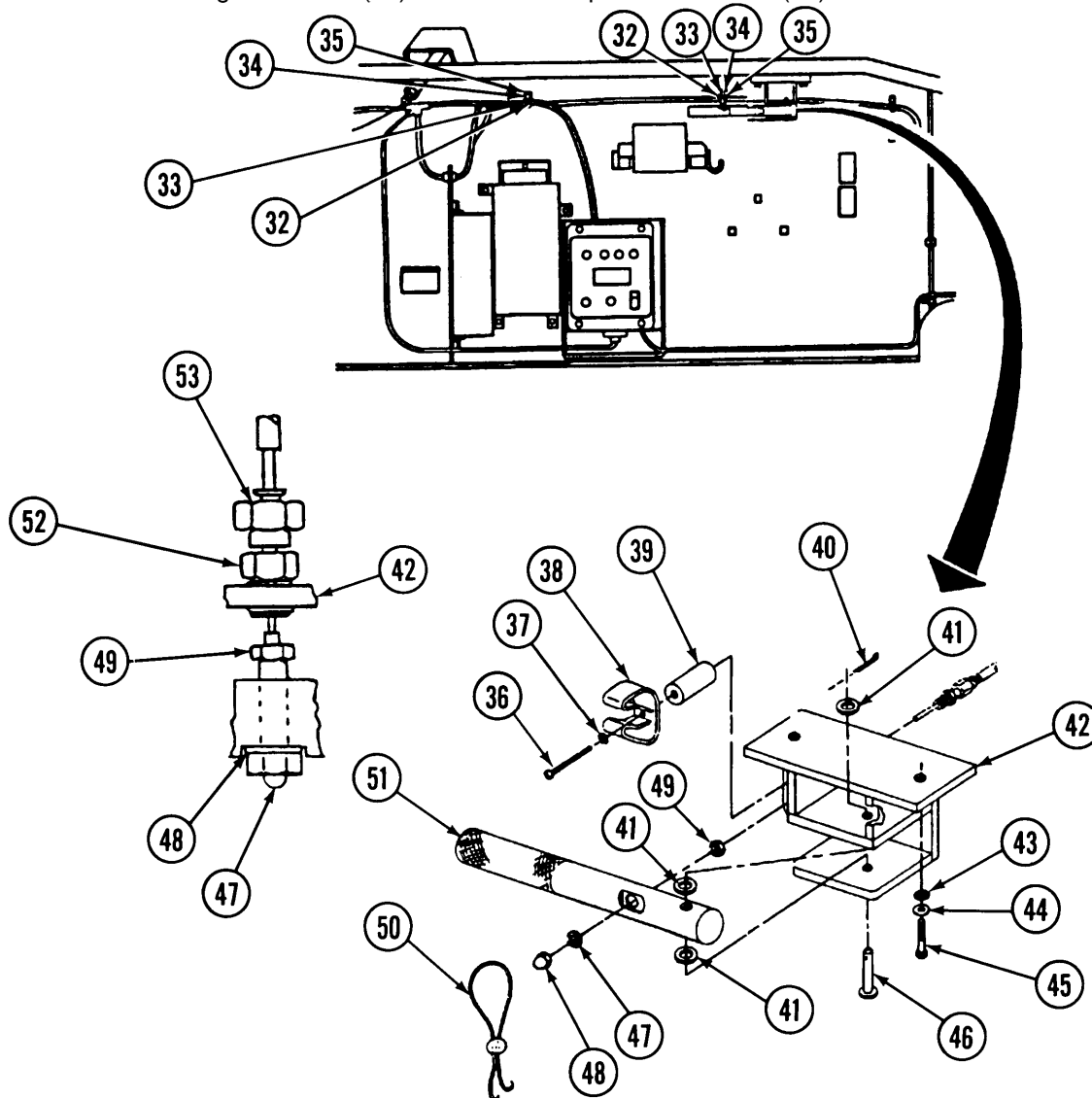
d. INSTALLATION

1. Install crew fire extinguisher No. 4 cable (62) and engine fire extinguisher No. 2 cable (64) in two brackets (63) under APU compartment.
2. Install two cable straps (61) on two cables of crew fire extinguisher No. 4 and five cable straps (61) on five cables of engine fire extinguisher No. 2, and secure cables and harnesses with screw (58), new lockwasher (59) and washer (60) for each cable strap (61).
3. Install threaded fittings (54) holding cables to crew fire extinguishers Nos. 3 and No. 4 and engine fire extinguisher No. 2.
4. Secure cable to crew fire extinguishers No. 3 and No. 4 and engine fire extinguisher No. 2 using cable pin (55), washer (57) and new cotter pin (56) for each cable.



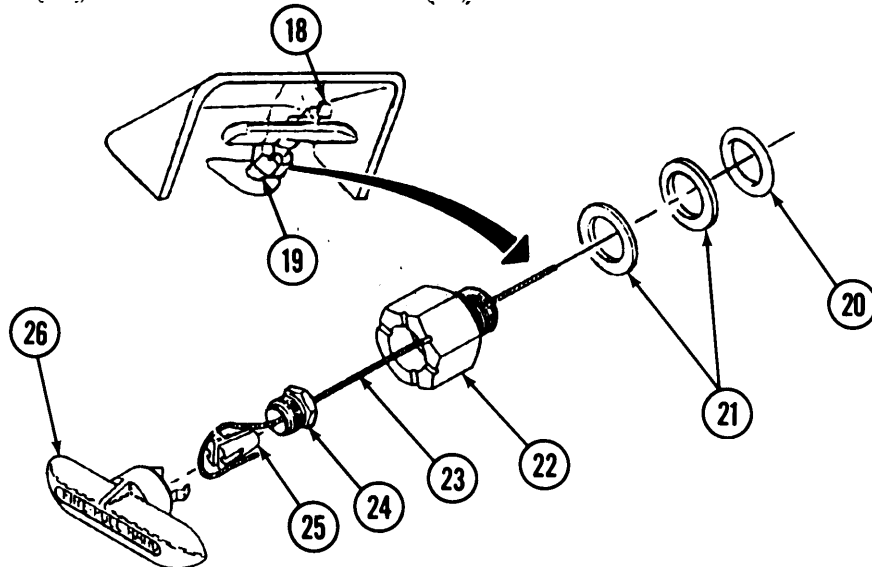
21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

5. Install bracket (42) in vehicle with two screws (45), new lockwashers (44) and washers (43).
6. Install two screws (32), lockwashers (33), and washers (34) from cable straps (35). Install cable (53) and two cable straps (35).
7. Install threaded fitting (52) in bracket (42), and install cable (53).
8. Install nut (49) on threaded end of cable.
9. Install spacer (39), clip (38), and washer (37) on bracket (42) with screw (36).
10. Install handle (51) on bracket (42) with pin (46), three washers (41), and new cotter pin (40).
11. Install cable cap nut (47) and washer (48) on driver's compartment handle (51).
12. Install fire extinguisher seal (50) on driver's compartment handle (51).

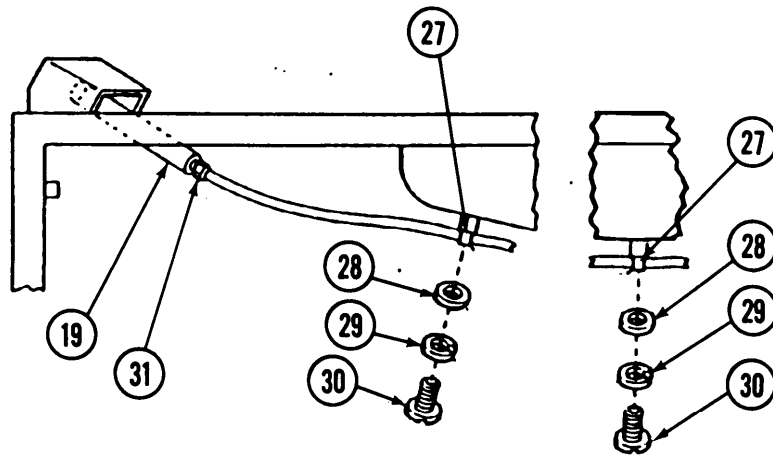


21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

13. Pull cable (23) up from cable sheath and feed cable (23) to outside of vehicle.
14. Connect adapter (31) to inside end of handle tube(19).



15. Install two cable straps (27) with two screws (30), new lockwashers (29), and washers (28).



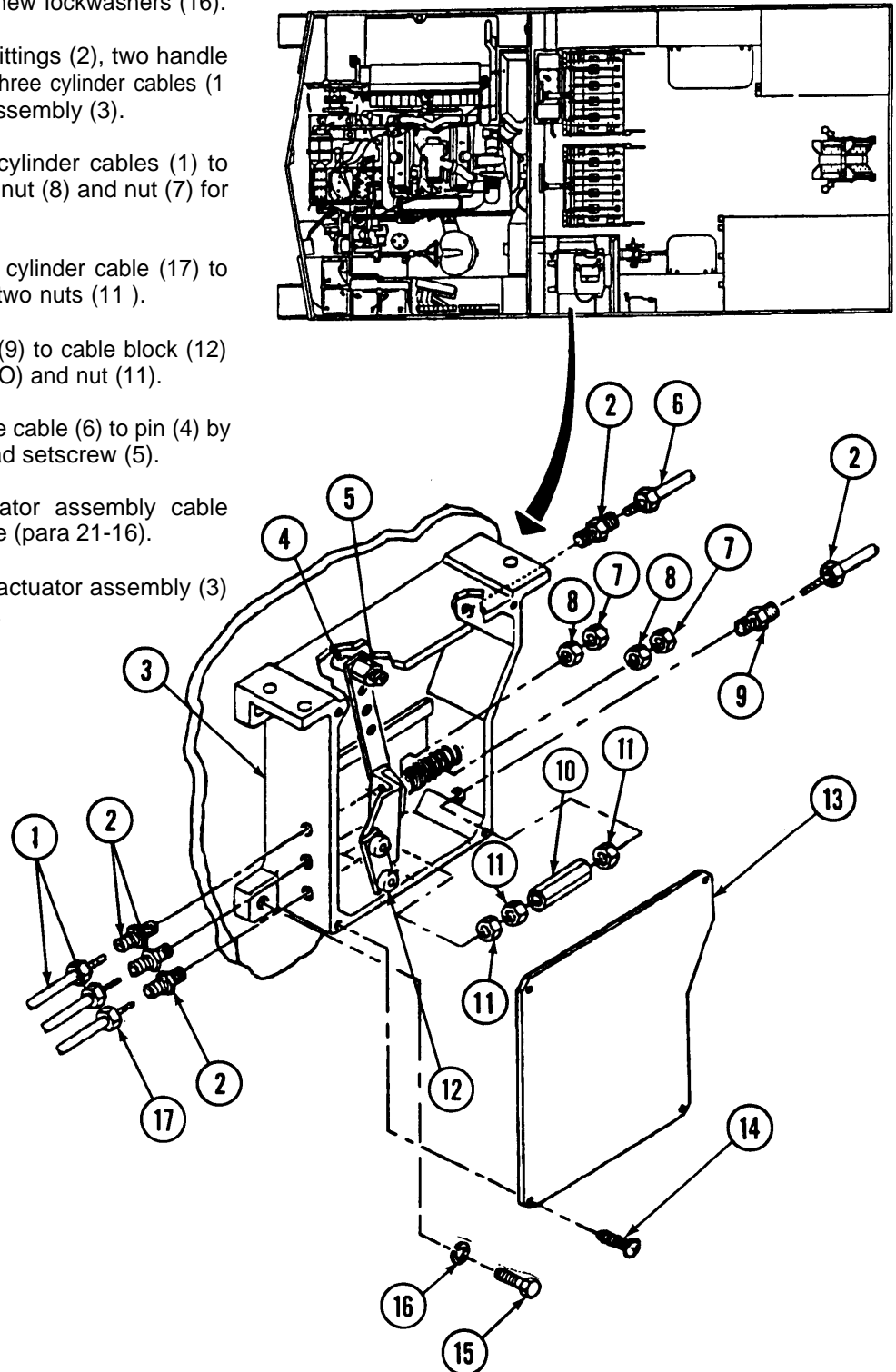
16. Install two washers (21), packing (20) and nut (22) on outside end of handle tube (19).
17. Secure cable (23) to wedge (25) with fastener (24).
18. Install handle (26) on cable (23) by tightening fastener (24).
19. Secure handle (26) to nut (22).
20. Install new fire extinguisher seal (18) on exterior handle (26).

21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

NOTE

Liberally lubricate all internal parts of actuator assembly before installation.

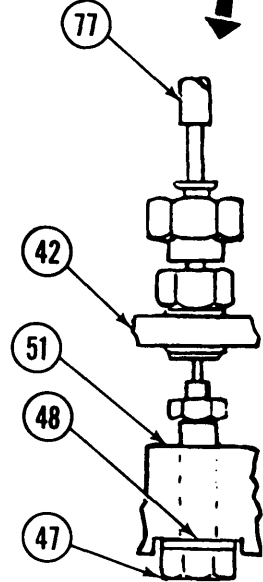
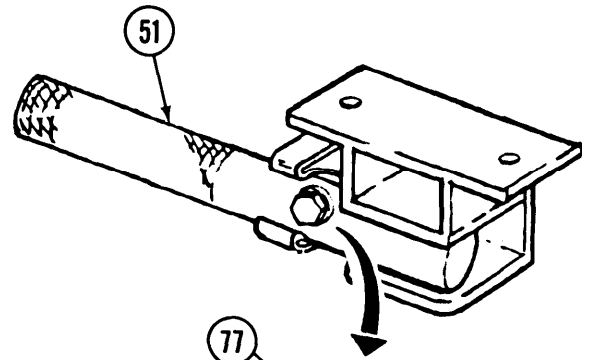
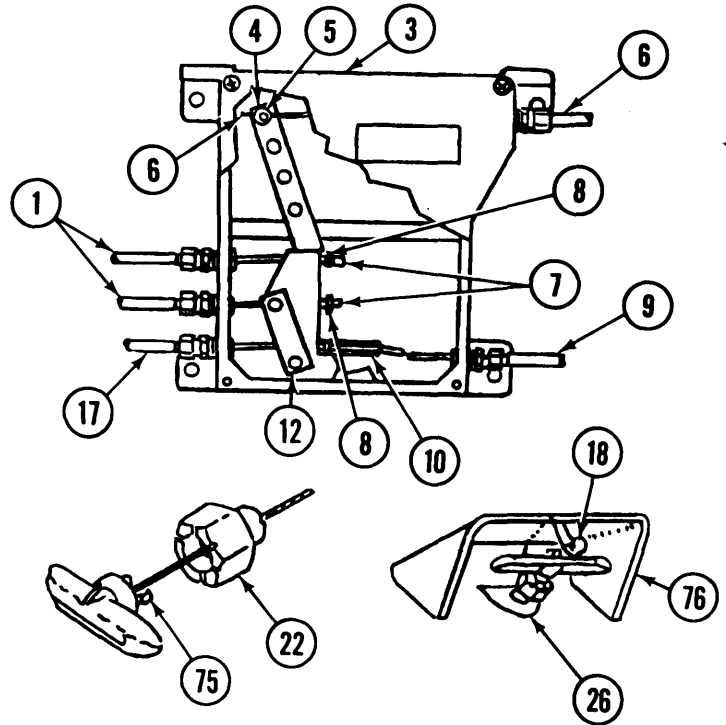
21. Install actuator assembly (3) in vehicle with four screws (15) and new lockwashers (16).
22. Install five threaded fittings (2), two handle cables (6 and 9) and three cylinder cables (1 and 17) in actuator assembly (3).
23. Loosely secure two cylinder cables (1) to cable block (12) with nut (8) and nut (7) for each cable.
24. Loosely secure lower cylinder cable (17) to cable block (12) with two nuts (11).
25. Secure handle cable (9) to cable block (12) with connector nut (10) and nut (11).
26. Loosely secure handle cable (6) to pin (4) by tightening socket head setscrew (5).
27. Perform AFES actuator assembly cable adjustment procedure (para 21-16).
28. Install cover (13) on actuator assembly (3) with four screws (14).



21-16. AFES MANUAL DISCHARGE SYSTEM REPAIR (continued).

e. ADJUSTMENT

1. Remove slack from bottom cable (17) at cable block (12) in actuator assembly (3). Set nut (8) against cable block (12). Turn nut (7) until flush against nut (8).
2. Remove slack from middle cable (l). Set nut (8) for a 1/32-inch gap to cable block (12). Tighten nut (7).
3. Remove slack front op cable (1). Set adjustment nut (8) for a 1/8-inch gap to actuator block (1 2). Tighten connector nut (10).
4. Remove slack from handle cable (6). Remove extinguisher seal (1 8). Adjust cable length for 1/4- to 1/2-inch gap between handle retaining springs (75) and packing nut (22). Secure actuator assembly end of cable to pin (4) by tightening setscrew (5).
5. Cut off excess handle cable (6) length inside actuator assembly (3) to leave between 3/8 to 1/2-inch beyond pin (4).
6. Install fire extinguisher seal (18) through exterior guard (76) and around handle (26).
7. Remove slack from handle cable (77). Tighten cable cap nut (47) until cable cap nut (47) and washer (48) rest against handle (51).
8. Tighten threaded fitting (42) against cable cap nut (47).



FOLLOW-ON MAINTENANCE:

- Activate engine AFES (para 21-2).
- Activate crew AFES (para 21-3).
- Install left and right projectile rack assemblies (refer to TM 9-2350-287-10).
- Connect battery ground cables (para 7-41).

CHAPTER 22 CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL (CBR) EQUIPMENT MAINTENANCE

Paragraph Number	Paragraph Title	Page Number
22-1	General	22-1
22-2	M2A2 Air Purifier Replacement	22-1
22-3	M3 Electric Air Heater Replacement	22-4
22-4	Air Outlet Orifice Connector Replacement	22-6
22-5	Hose Assemblies Replacement	22-7
22-6	M43 Detector Mounting Bracket Replacement	22-21
22-7	M42 Alarm Chassis Base Replacement	22-23

22-1. GENERAL

This chapter illustrates and describes procedures for removal, disassembly, cleaning and inspection, assembly, and installation of the chemical, biological, and radiological equipment, which include the M2A2 air purifier, M3 air electric heater, air outlet orifice connector, hose assemblies, M43 detector mounting bracket, and M42 alarm chassis base.

22-2. M2A2 AIR PURIFIER REPLACEMENT.

This Task Covers:

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

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

• Lockwasher (6) (Item 196, Appendix H)

Materials/Parts:

- Rag (Item 56, Appendix D)
- Lockwasher (Item 133, Appendix H)
- Lockwasher (2) (Item 136, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Upper and lower rear doors opened (refer to TM 9-2350-287-10).

22-2. M2A2 AIR PURIFIER REPLACEMENT (continued).

a. REMOVAL

1. Remove two screws (5), four washers (6), and two lockwashers (10) and nuts (1 1) from canister rack (26). Discard lockwashers.

NOTE

Record number of shims prior to removing frame to ensure proper installation.

2. Remove screw (19), lockwasher (1 8), washer (1 7), frame (1 6), and shims (25) from vehicle floor and canister rack (26). Discard lockwasher.
3. Disconnect air hose (8) from air outlet connector (9).
4. Remove four quick-disconnect hoses (12, 13,14 and 15) from air purifier assembly (24).
5. Release strap (7).
6. Disconnect electrical connector (1) from air purifier assembly (24).

CAUTION

Use care when removing air purifier assembly from frame assembly. Damage to ground wire may result.

7. Remove air purifier assembly (24) from frame assembly (20).
8. Remove screw (2), lockwasher (3), and ground wire (4) air purifier assembly (24). Discard lockwasher.
9. Remove four screws (21), five lockwashers (22), ground wire (4), and frame assembly (20) from standoffs (23). Discard lockwashers.

b. INSTALLATION

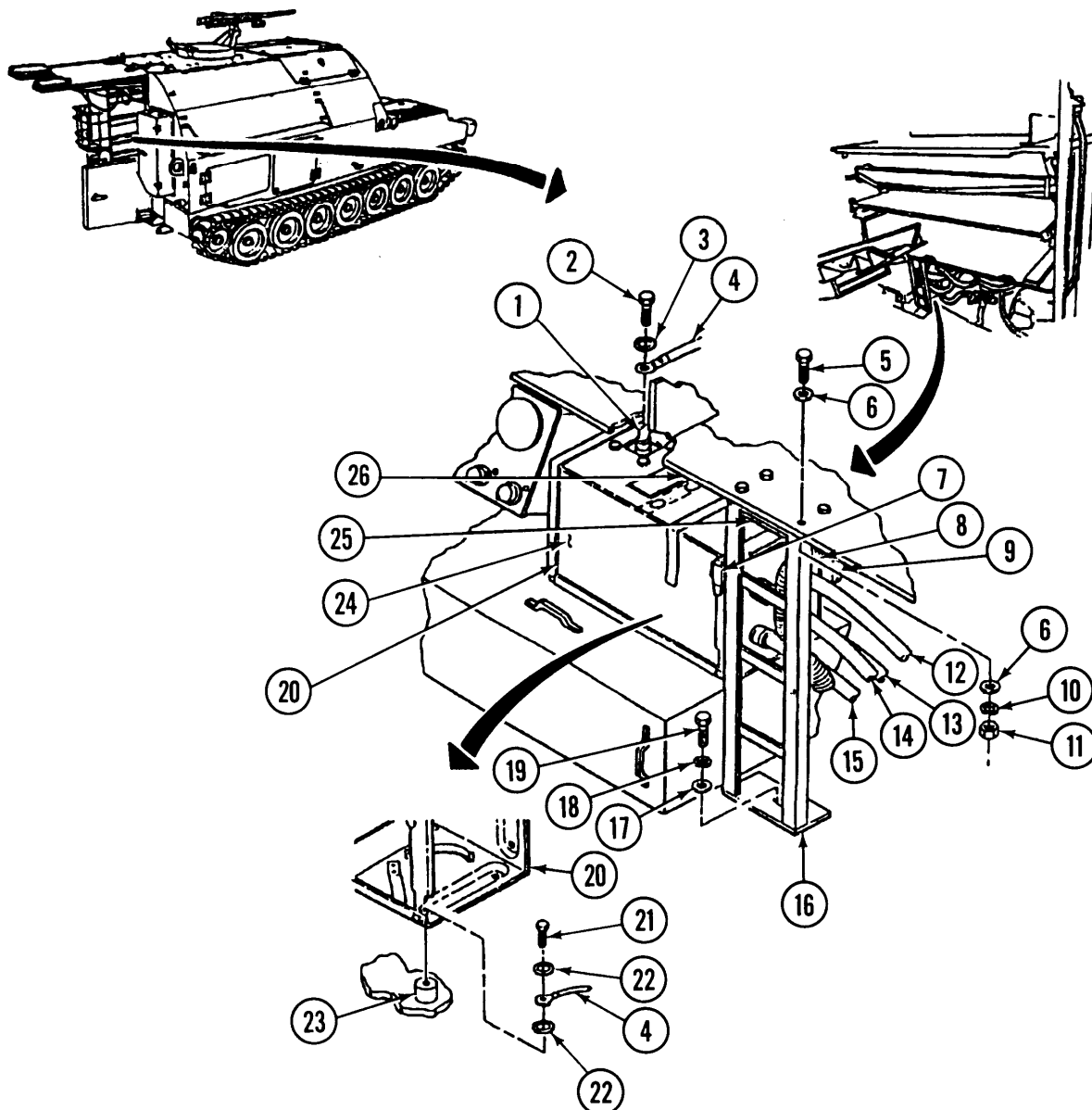
1. Install frame assembly (20) and ground wire (4) on standoffs (23) with four screws (21) and five new lockwashers (22).
2. Install ground wire (4) on frame assembly (20) with screw (2) and new lockwasher (3).
3. Position air purifier assembly (24) on frame assembly (20).
4. Lift strap (7) and install air purifier assembly (24) in frame assembly (20) and secure with strap (7).
5. Install electrical connector (1) in air purifier assembly (24).
6. Install four quick-disconnect hoses (12, 13, 14, and 15) on air purifier assembly (24)
7. Connect air hose (8) to air outlet connector (9).

22-2. M2A2 AIR PURIFIER REPLACEMENT (continued).

NOTE

The amount of shims (25) used in step 8 will vary. Install the correct amount of shims, not to exceed six, to ensure proper fit.

8. Install shims (25) and frame (16) on vehicle floor with screw (19), new lock washer (18), and washer (17).
9. Secure guard (16) and shims (25) to canister rack (26) with two screws (5), four washers (6), two new lockwashers (10), and two nuts (11).

**FOLLOW-ON MAINTENANCE:**

- Close upper and lower rear doors (refer to TM 9-2350-287-10).

22-3. M3 ELECTRIC AIR HEATER REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Materials Parts:

- Adhesive sealant, (Item 6, Appendix D)
- Lockwasher (4) (Item 196, Appendix H)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).
 - Upper and lower rear doors opened (refer to TM 9-2350-287-10).
-

NOTE

. There are four electrical heaters in the vehicle. All are replaced the same way.

| Adapters (3) for the driver's heaters are installed as shown. One adapter of the crew heater is installed in the top port.

a. REMOVAL

1. Disconnect three wires (13) from heater (4).
2. Loosen two clamps (2 and 8). Slide clamps (2 and 8) off two hoses (1).
3. Pull two hoses (1) from two adapters (3).
4. Remove four screws (9), lockwashers (11), and nuts (12) and heater (4) from deck or bracket (10). Discard lockwashers.

NOTE

| Perform step 5 only if lamp is inoperative.

| Perform step 6 if knob is cracked or broken.

5. Remove lens (6) and lamp (7). Discard lamp.
6. Remove knob (5) from heater (4). Discard knob.

b. INSTALLATION

NOTE

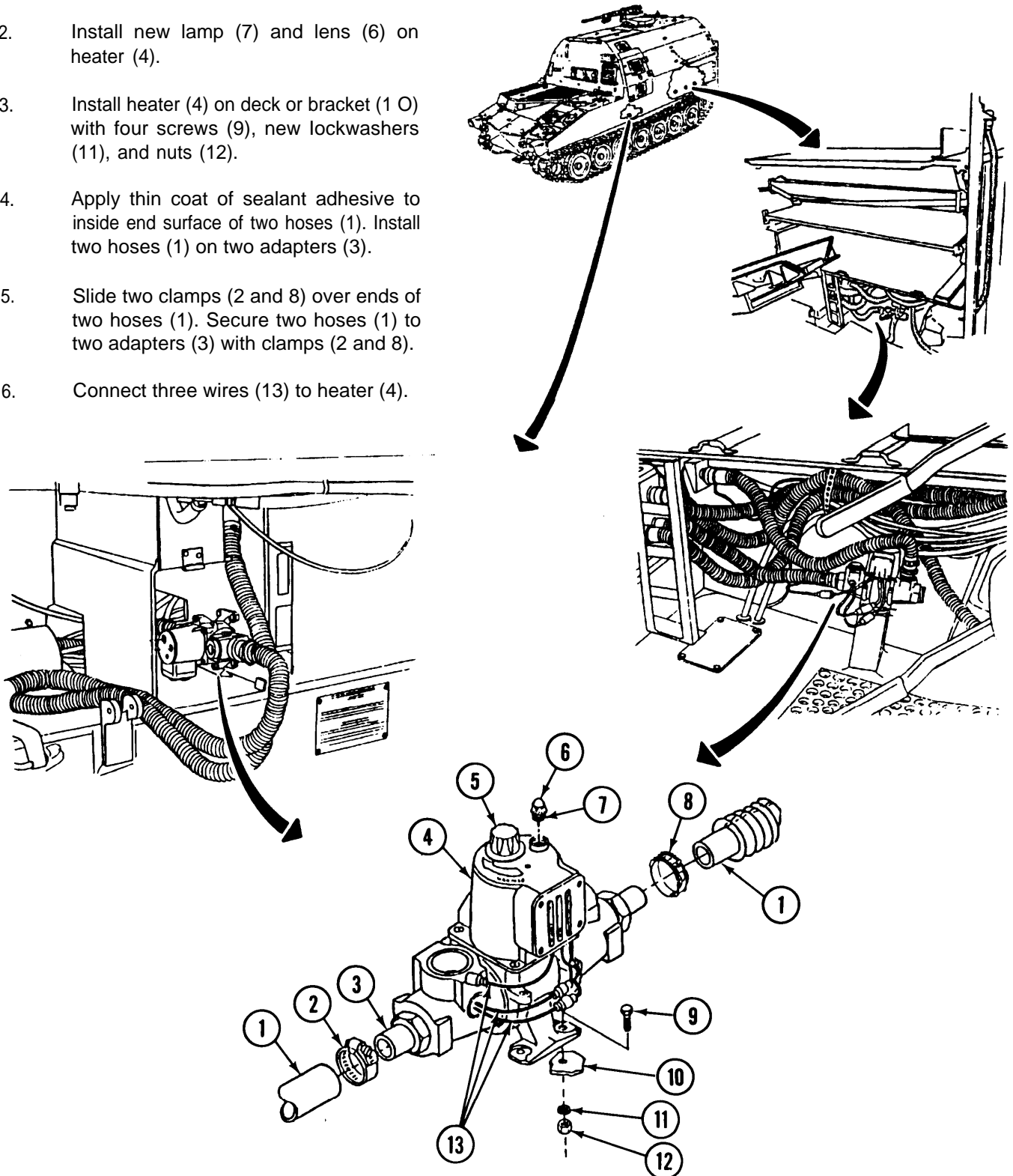
| Perform step 1 only if knob was removed.

| Perform step 2 only if lamp and lens were removed.

1. Install new knob (5) on heater (4).

22-3. M3 ELECTRIC AIR HEATER REPLACEMENT (continued).

2. Install new lamp (7) and lens (6) on heater (4).
3. Install heater (4) on deck or bracket (10) with four screws (9), new lockwashers (11), and nuts (12).
4. Apply thin coat of sealant adhesive to inside end surface of two hoses (1). Install two hoses (1) on two adapters (3).
5. Slide two clamps (2 and 8) over ends of two hoses (1). Secure two hoses (1) to two adapters (3) with clamps (2 and 8).
6. Connect three wires (13) to heater (4).

**FOLLOW-ON MAINTENANCE:**

- Close upper and lower rear doors (refer to TM 9-2350-287-10).

22-4. AIR OUTLET ORIFICE CONNECTOR REPLACEMENT.

This Task Covers:

- a. Removal b. Installation
-

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix I)

Equipment Conditions:

- Vehicle parked on level ground (refer to TM 9-2350-287-10).

Materials/Parts:

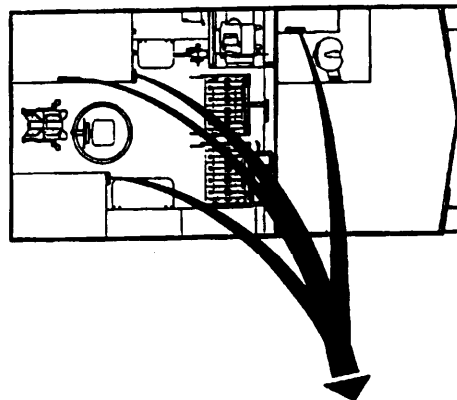
- Lockwasher (Item 196, Appendix H)
-

NOTE

There are four air outlet orifice connectors and brackets in the vehicle. All are replaced the same way.

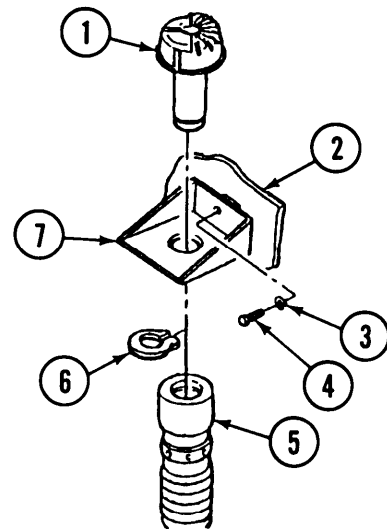
a. REMOVAL

1. Remove hose assembly (5) from connector (1).
2. Remove external retaining ring (6) from connector (1).
3. Remove connector (1) from bracket (7).
4. Remove screw (4) and lockwasher (3) from canister compartment support (2) and bracket (7). Discard lockwasher.



b. INSTALLATION

1. Install bracket (7) on canister compartment support (2) with screw (4) and new lockwasher (3).
2. Install connector (1) on bracket (7).
3. Install external retaining ring (6) on connector (1).
4. Install hose assembly (5) on connector (1).



FOLLOW-ON MAINTENANCE:

- None

22-5. HOSE ASSEMBLIES REPLACEMENT.

This Task Covers:

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Commander's Station Heater to Connector Hose Assemblies Removal c. Left-Side Crew Lower Station Heater to Connector Hose Assemblies Removal e. Left-Side Crew Upper Station Heater to Connector Hose Assemblies Removal g. Driver's Station Heater to Connector Hose Assemblies Removal | <ul style="list-style-type: none"> b. Commander's Station Heater to Connector Hose Assemblies Installation d. Left-Side Crew Lower Station Heater to Connector Hose Assemblies Installation f. Left-Side Crew Upper Station Heater to Connector Hose Assemblies Installation h. Driver's Station Heater to Connector Hose Assemblies Installation |
|---|---|

Initial Setup:

Tool/Test Equipment:

Ž General mechanic's tool kit (Item 24, Appendix 1)

Materials/Parts:

- Clamp (as required) (Item 9, Appendix H)
- Lockwasher (as required) (Item 196, Appendix H)

Equipment Conditions:

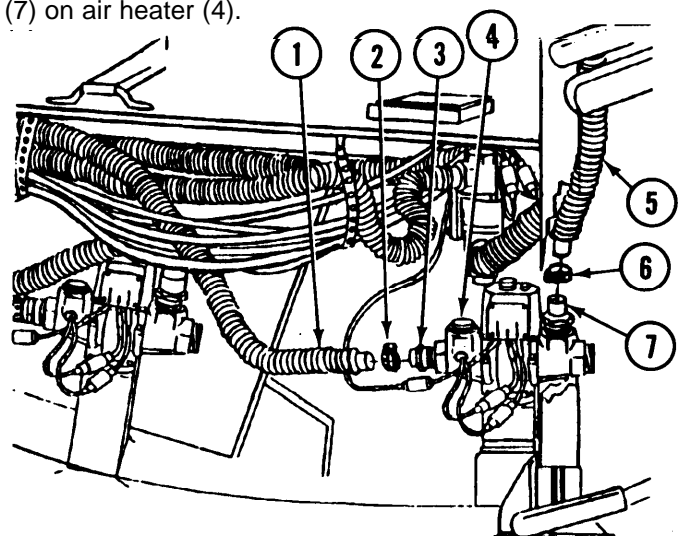
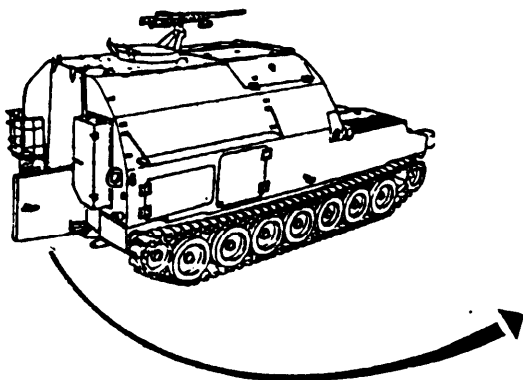
- Ž Vehicle parked on level ground (refer to TM 9-2350-287-10).
- Lower rear door opened (refer to TM 9-2350-287-10).

- a. COMMANDER'S STATION HEATER TO CONNECTOR HOSE ASSEMBLIES REMOVAL

WARNING

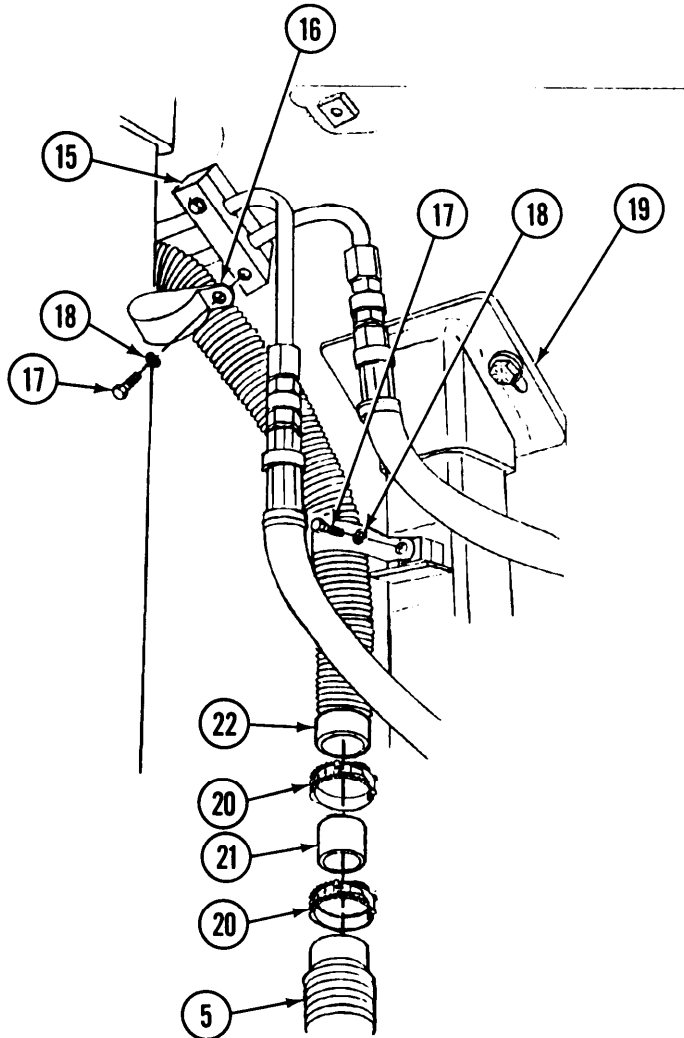
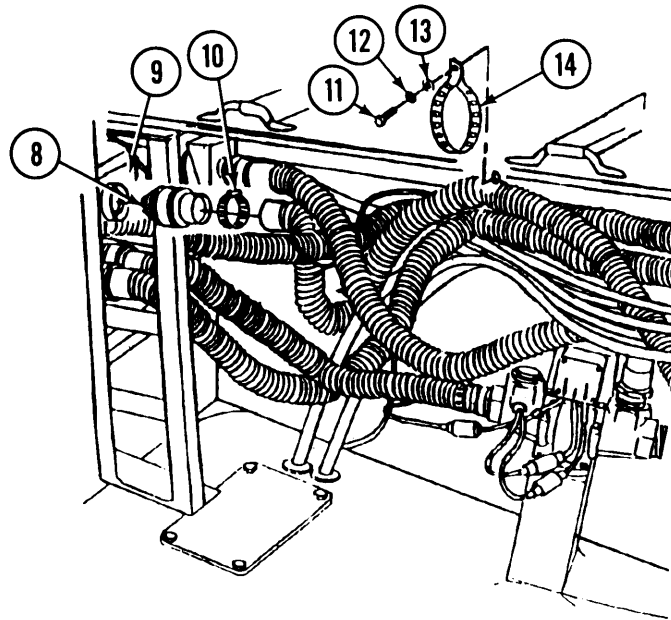
If NBC contamination is suspected, air hoses should be replaced only by authorized personnel. Failure to follow this warning may result in severe injury or death to personnel.

1. Remove clamp (2) and hose (1) from adapter (3) on air heater (4).
2. Remove clamp (6) and hose (5) from adapter (7) on air heater (4).



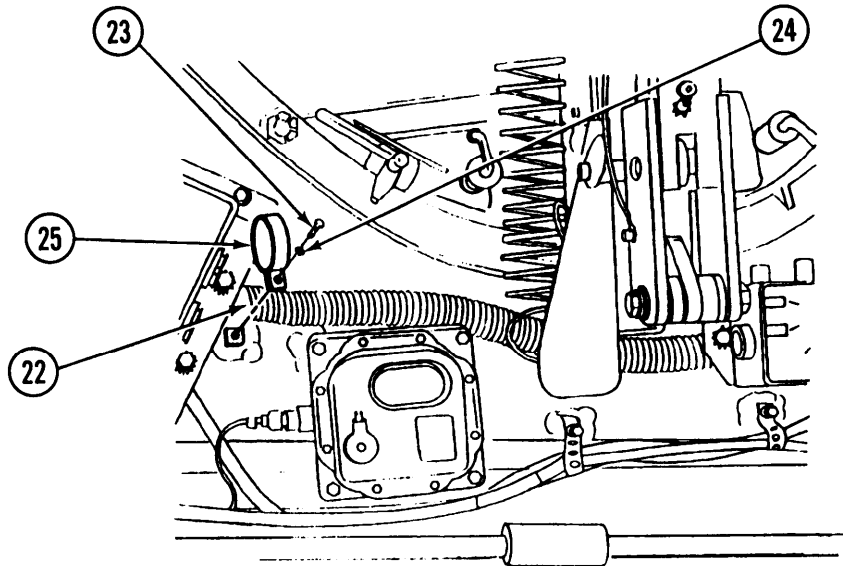
22-5. HOSE ASSEMBLIES REPLACEMENT (continued).

3. Remove screw (11), lockwasher (12), washer (13), and strap (14) securing hose (1) to bulkhead. Discard lockwashers.
4. Disconnect hose (1) from air purifier (9).
5. Remove clamp (10) and quick-disconnect coupling half (8) from hose (1).
6. Remove two clamps (20) and hoses (5 and 22) from tube coupling (21). Discard clamps.
7. Remove two screws (17), lockwashers (18), and clamps (16) securing hose (22) to left side canister compartment shelves (19) and hydraulic tube clamp (15). Discard lockwashers.

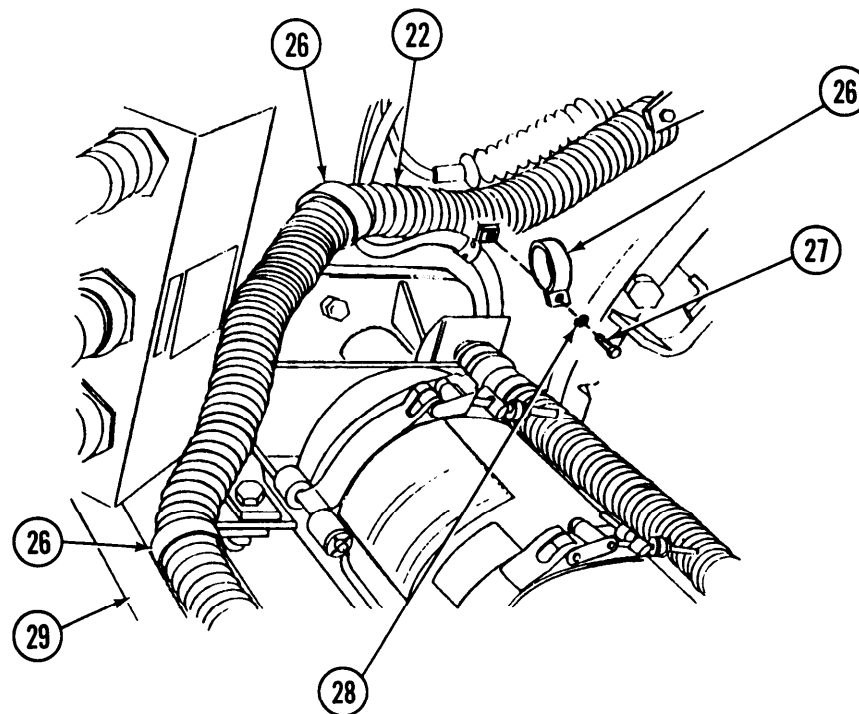


22-5. HOSE ASSEMBLIES REPLACEMENT (continued).

8. Remove screw (23), lockwasher (24), and clamp (25) securing hose (22) to ceiling of crew compartment. Discard lockwasher.

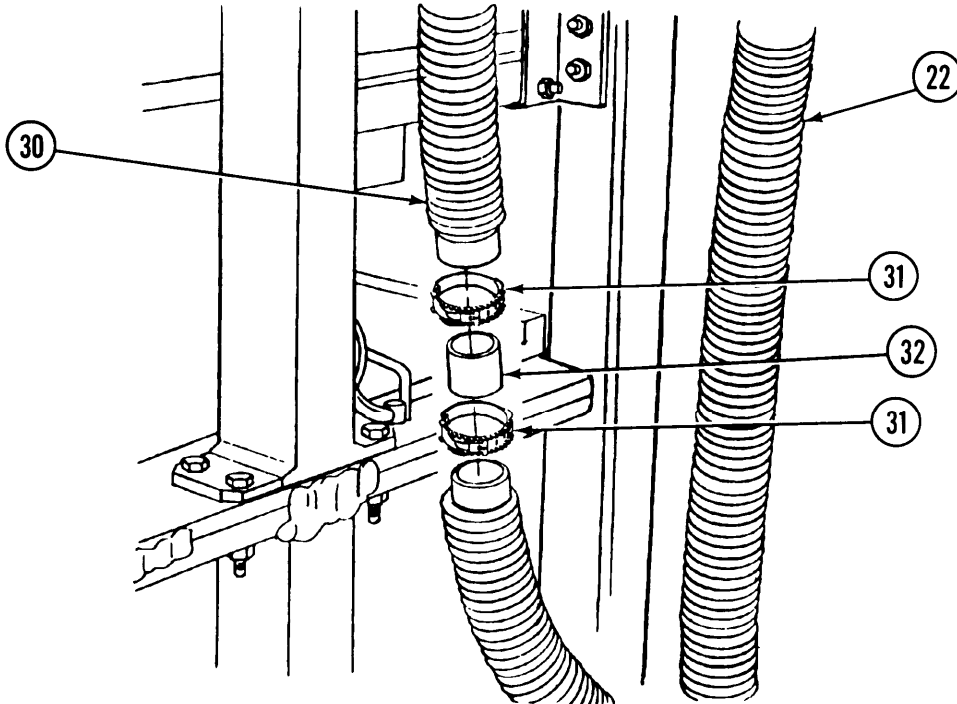


9. Remove three screws (27), lockwashers (28), and clamps (26) securing hose (22) to ceiling of crew compartment and right side canister compartment shelves (29). Discard clamps.



22-5. HOSE ASSEMBLY REPLACEMENT (continued).

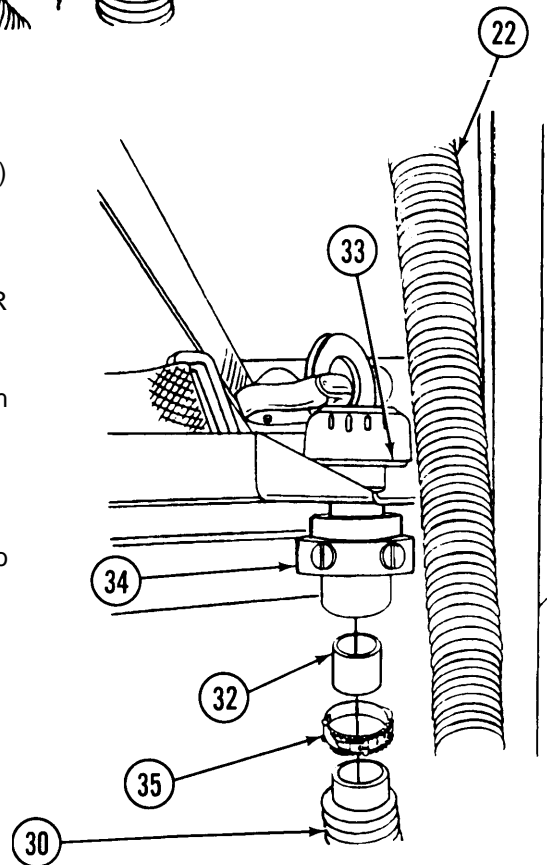
10. Remove two clamps (31) and hoses (22 and 30) from tube coupling (31). Discard clamps.



11. Disconnect hose (30) from orifice connector (33).
12. Remove clamp (35) and quick-disconnect coupling half (34) from hose (30). Discard clamp.

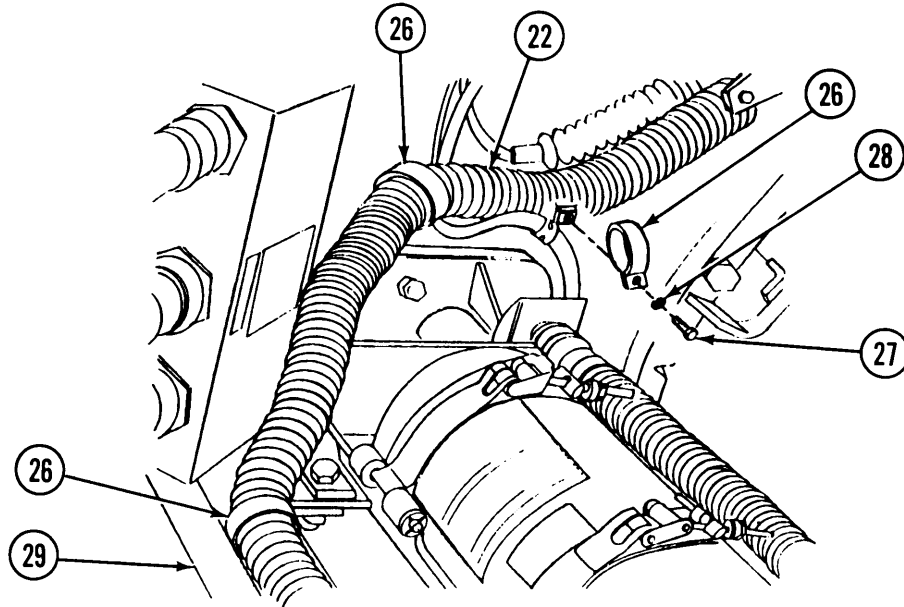
b. COMMANDER'S STATION HEATER TO CONNECTOR HOSE ASSEMBLIES INSTALLATION

1. Install quick-disconnect coupling half (34) on hose (30) with new clamp (35).
2. Connect hose (30) to orifice connector (33).
3. Install two hoses (30 and 22) on tube coupling (32) with two new clamps (31).

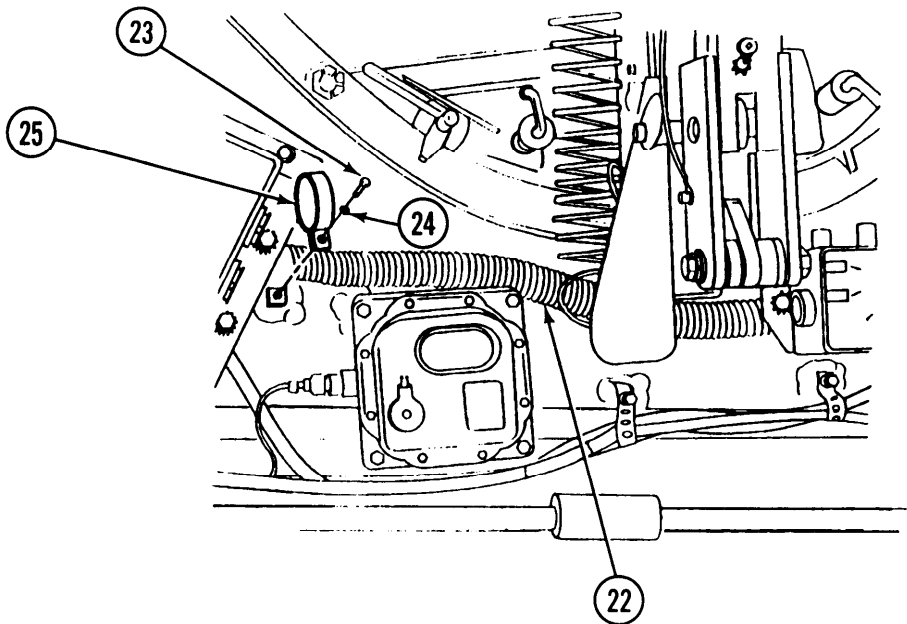


22-5. HOSE ASSEMBLY REPLACEMENT (continued).

4. Secure hose (22) to ceiling of crew compartment and right side canister compartment shelves (29) with three clamps (26), new lockwashers (28), and screws (27).

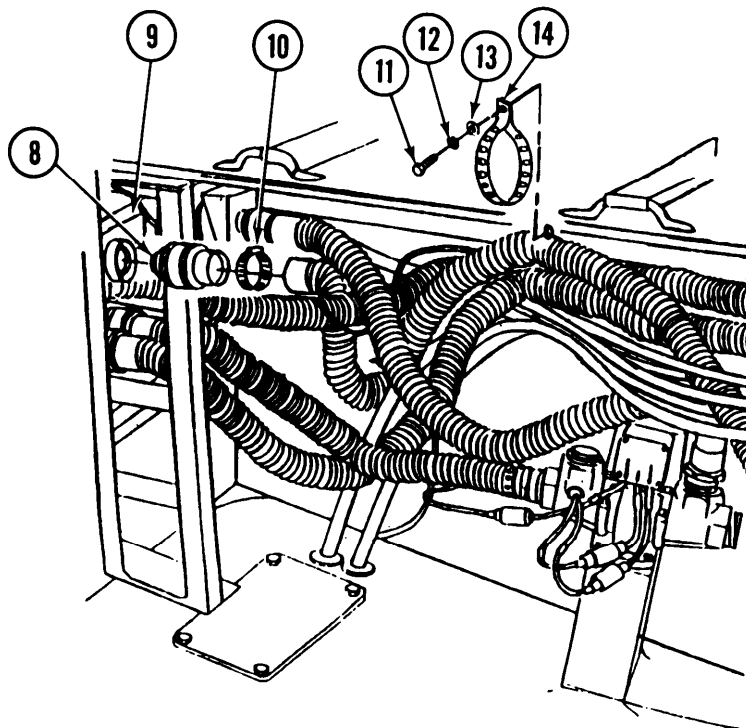
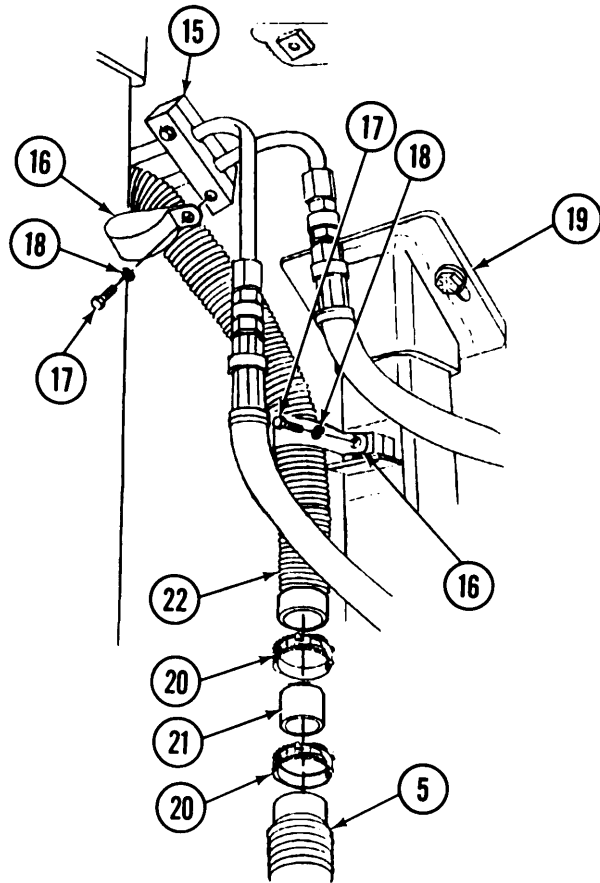


5. Secure hose (22) to ceiling of crew compartment with clamp (25), new lockwasher (24), and screw (23).



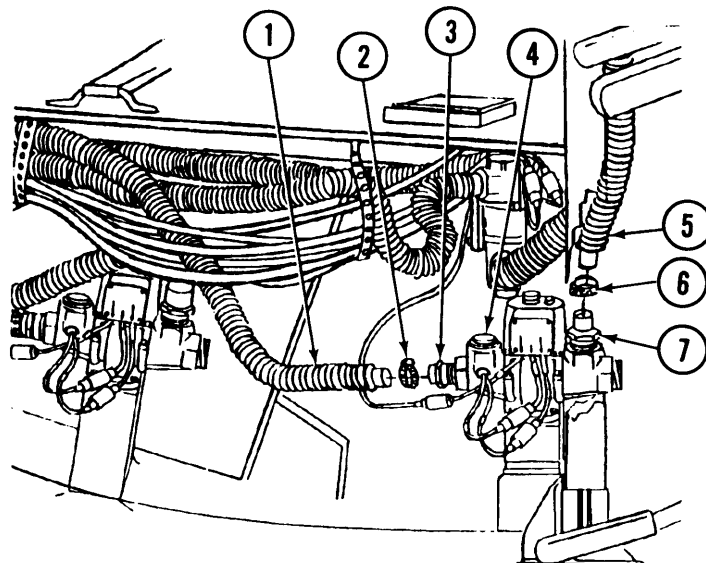
22-5. HOSE ASSEMBLY REPLACEMENT (continued).

6. Install two hoses (5 and 22) on tube coupling (21) with two new clamps (20).
7. Secure hose (22) to hydraulic tube clamp (15) and left side canister compartment shelves (19) with two clamps (16), new lockwashers (18), and screws (17).
8. Install quick-disconnect coupling half (8) on hose (1) with clamp (10).
9. Connect hose (1) to air purifier (9).
10. Secure hose (1) to bulkhead with strap (14), washer (13), new lockwasher (12), and screw (11).



225. HOSE ASSEMBLY REPLACEMENT (continued).

11. Install hose (5) on adapter (7) on air heater (4) with clamp (6).
12. Install hose (1) on adapter (3) on air heater (4) with clamp (2).

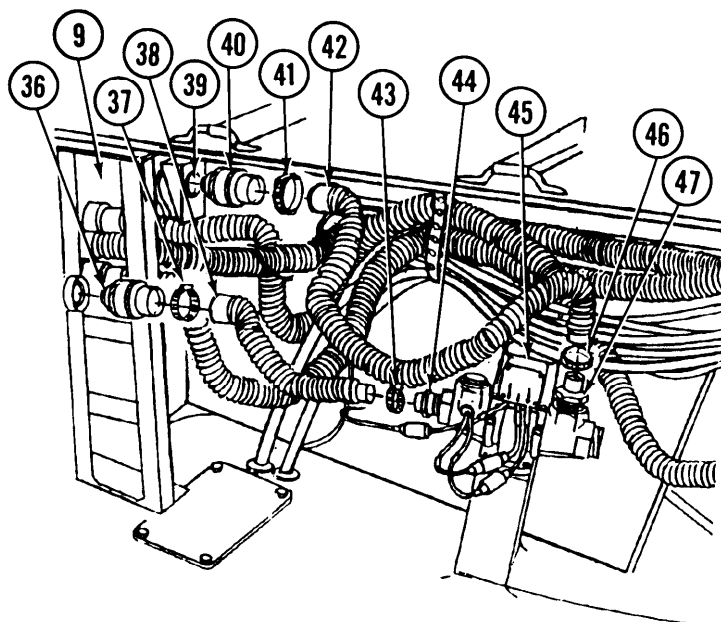


c. LEFT SIDE CREW LOWER STATION HEATER TO CONNECTOR HOSE ASSEMBLIES REMOVAL

WARNING

If NBC contamination is suspected, air hoses should be replaced only by authorized personnel. Failure to follow this warning may result in severe injury or death to personnel.

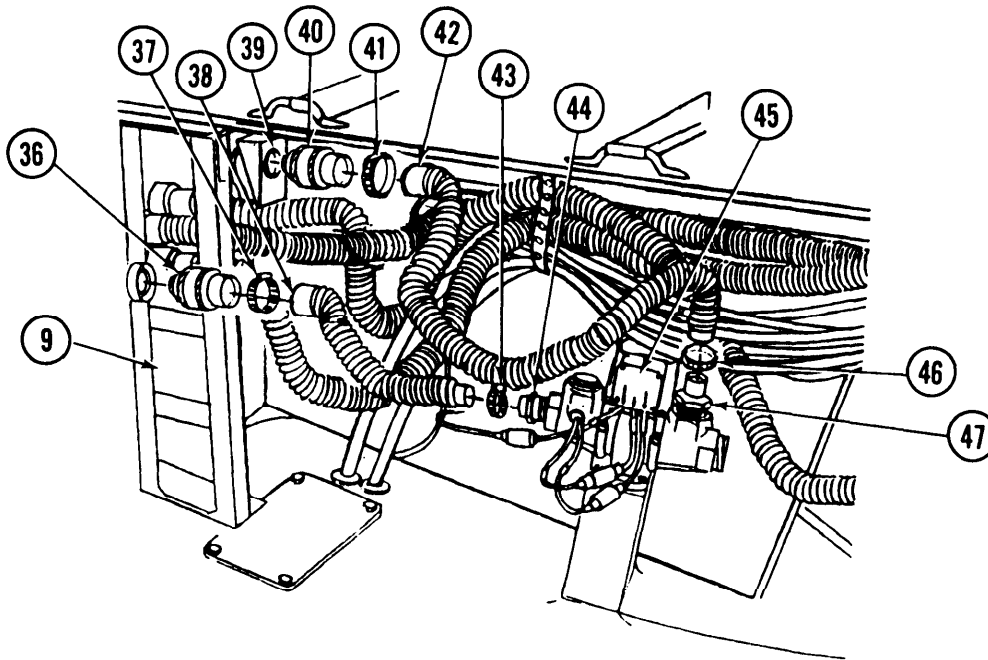
1. Remove clamp (43) and hose (38) from adapter (44) on air heater (45).
2. Disconnect hose (38) from air purifier (9).
3. Remove clamp (37) and quick-disconnect coupling half (36) from hose (38).
4. Remove clamp (46) and hose (42) from adapter (47) on air heater (45). Discard clamp.
5. Disconnect hose (42) from orifice connector (39).
6. Remove clamp (41) and quick-disconnect coupling half (40) from hose (42). Discard clamp.



22-5. HOSE ASSEMBLY REPLACEMENT (continued).

d. LEFT SIDE CREW LOWER STATION HEATER TO CONNECTOR HOSE ASSEMBLIES INSTALLATION

- 1, Install quick-disconnect coupling half (40) on hose (42) with new clamp (41).
- 2, Connect hose (42) to orifice connector (39).
- 3, Connect hose (42) to adapter (47) on air heater (45) with new clamp (46).
- 4, Install quick-disconnect coupling half (36) on hose (38) with clamp (37).
- 5, Connect hose (38) to air purifier (9),
- 6, Connect hose (38) to adapter (44) on air heater (45) with clamp (43).



e. LEFT SIDE CREW UPPER STATION HEATER TO CONNECTOR HOSE ASSEMBLIES REMOVAL

WARNING

If NBC contamination is suspected, air hoses should be replaced only by authorized personnel. Failure to follow this warning may result in severe injury or death to personnel.

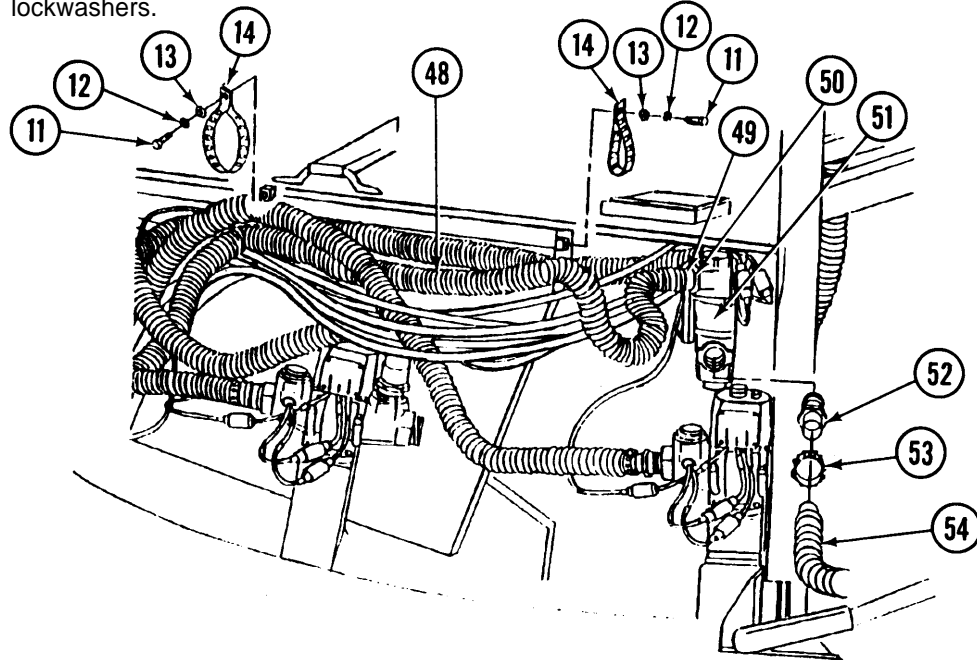
1. Remove clamp (49) and hose (48) from adapter (50) on air heater (51).
2. Remove clamp (54) and hose (52) from adapter (53) on air heater (51). Discard clamp.

22-5. HOSE ASSEMBLY REPLACEMENT (continued).

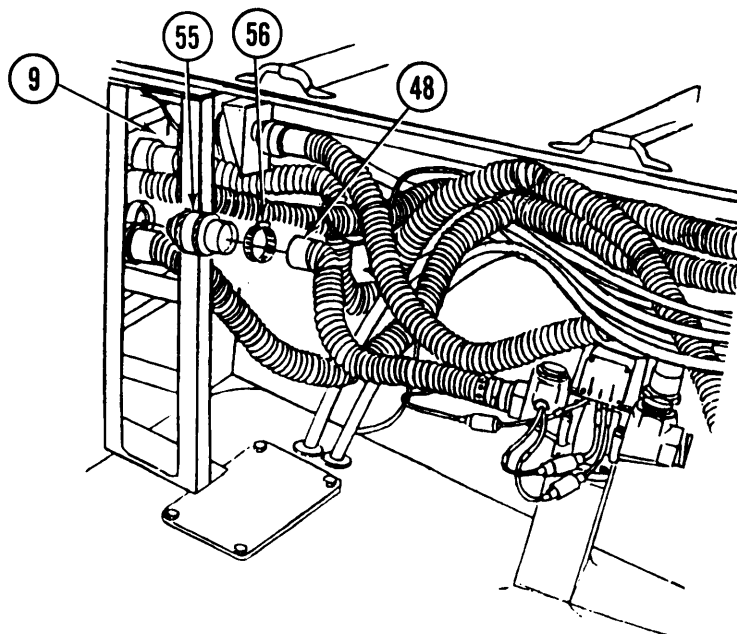
NOTE

Straps secure more than one hose. After removing the necessary hose, loosely secure the strap and the other hoses to the bulkhead.

3. Remove two screws (11), lockwashers (12), washers (13), and straps (14) securing hose (48) to bulkhead. Discard lockwashers.

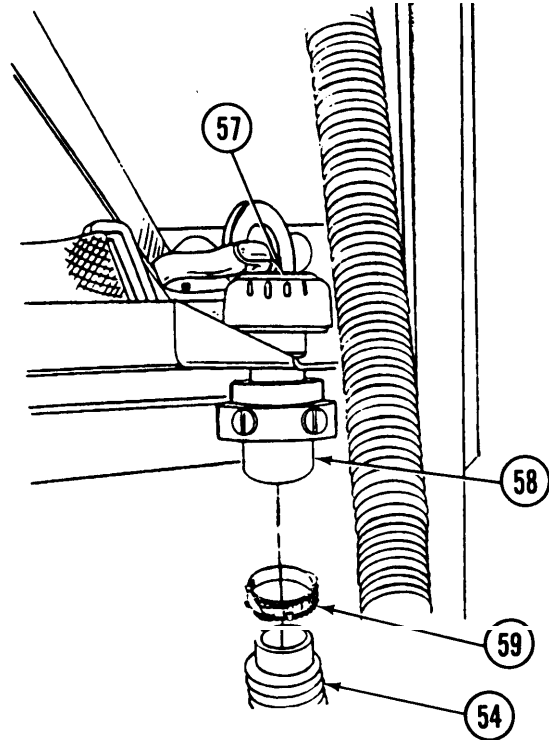


4. Disconnect hose (48) from air purifier (9).
5. Remove clamp (57) and quick-disconnect coupling half (55) from hose (48).



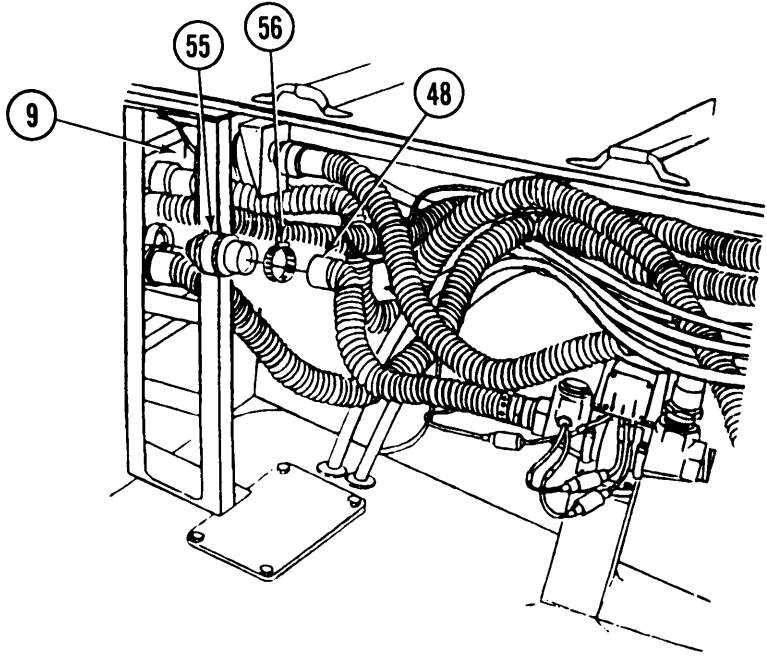
22-5. HOSE ASSEMBLY REPLACEMENT (continued).

- 6. Disconnect hose (54) from air orifice connector (57).
- 7. Remove clamp (59) and quick-disconnect half (58) from hose (54). Discard clamp.



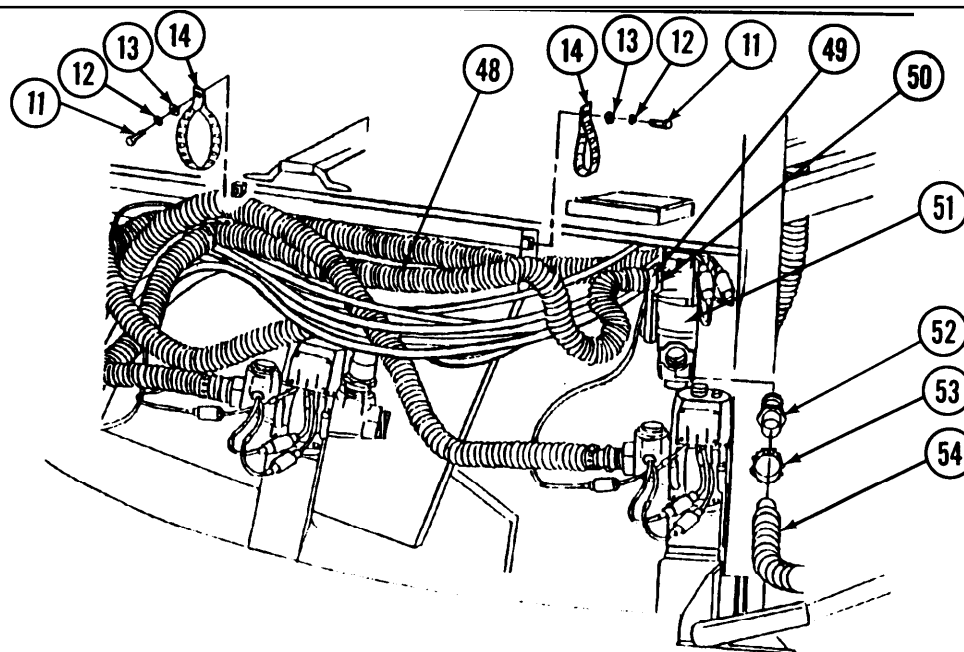
f. LEFT SIDE CREW UPPER STATION HEATER TO CONNECTOR HOSE ASSEMBLIES INSTALLATION

- 1. Install quick-disconnect coupling (58) on hose (54) with new clamp (59).
- 2. Connect hose (54) to orifice connector (57).
- 3. Install quick disconnect coupling half (55) on hose (48) with clamp (56).
- 4. Connect hose (48) to air purifier (9).



- 5. Secure hose (48) to bulkhead with two straps (14), washers (13), new lockwashers (12), and screws (11).
- 6. Connect hose (54) to adapter (52) on air heater (51) with new clamp (53).
- 7. Install hose (48) on adapter (50) on air heater (51) with clamp (49).

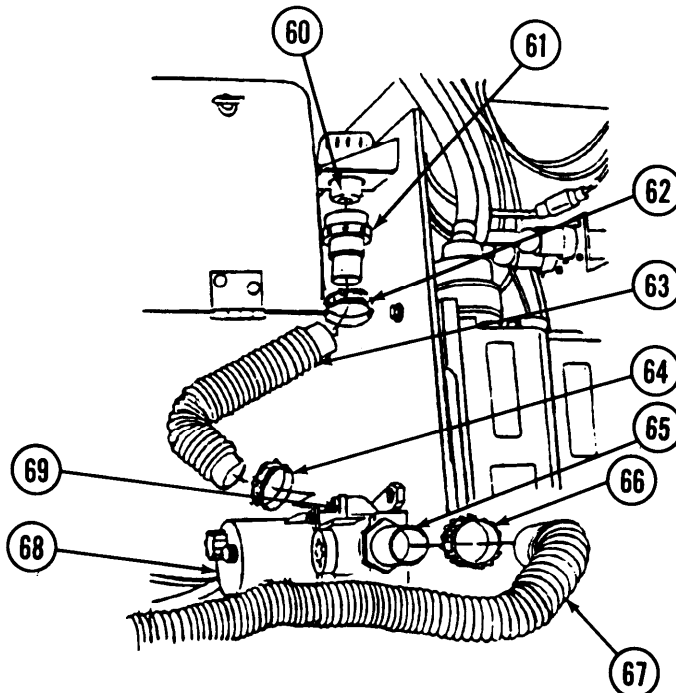
22-5. HOSE ASSEMBLY REPLACEMENT (continued).


9. DRIVER'S STATION HEATER TO CONNECTOR HOSE ASSEMBLIES REMOVAL

WARNING

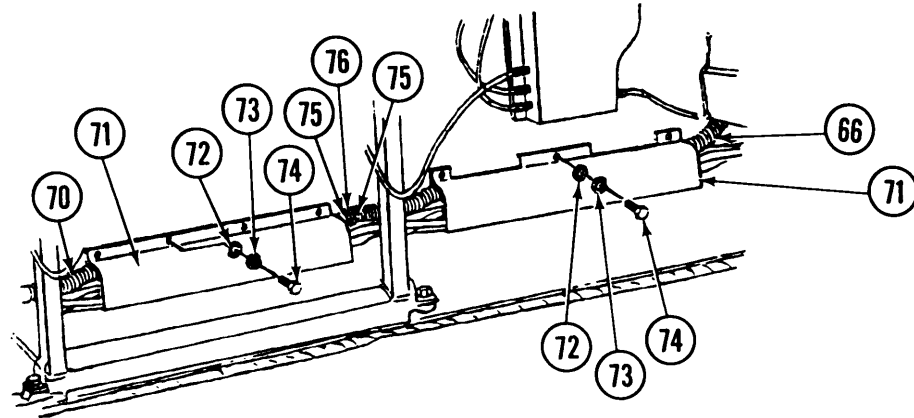
If NBC contamination is suspected, air hoses should be replaced only by authorized personnel. Failure to follow this warning may result in severe injury or death to personnel.

1. Remove clamp (66) and hose (67) from adapter (65) on air heater (68).
2. Remove clamp (64) and hose (63) from adapter (69) on air heater (68). Discard clamp.
3. Disconnect hose (63) from orifice connector (60).
4. Remove clamp (62) and quick-disconnect coupling half (61) from hose (63). Discard clamp.



22-5. HOSE ASSEMBLY REPLACEMENT (continued).

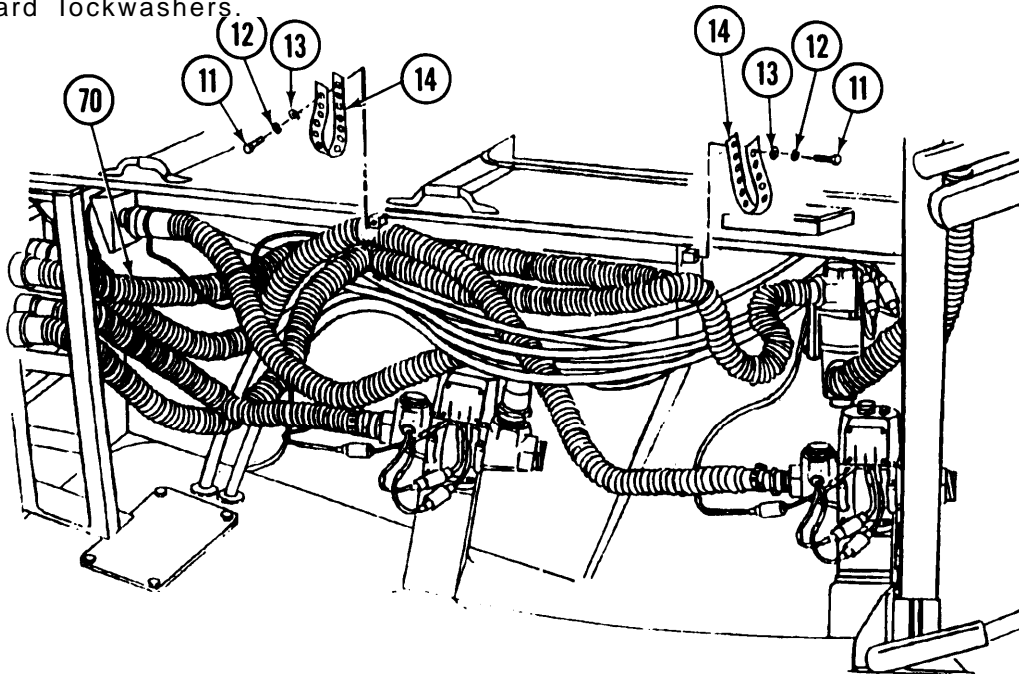
5. Remove seven screws (74), lockwashers (73), washers (72), and two harness guards (71) from bulkhead.
- Discard lockwashers.
6. Remove two clamps (75) and hoses (60 and 70) from tube coupling (76).



NOTE

Straps secure more than one hose. After removing the necessary hose, loosely secure the straps and the other hoses to the bulkhead.

7. Remove two screws (11), lockwashers (12), washers (13), and straps (14) securing hose (70) to bulkhead.
- Discard lockwashers.

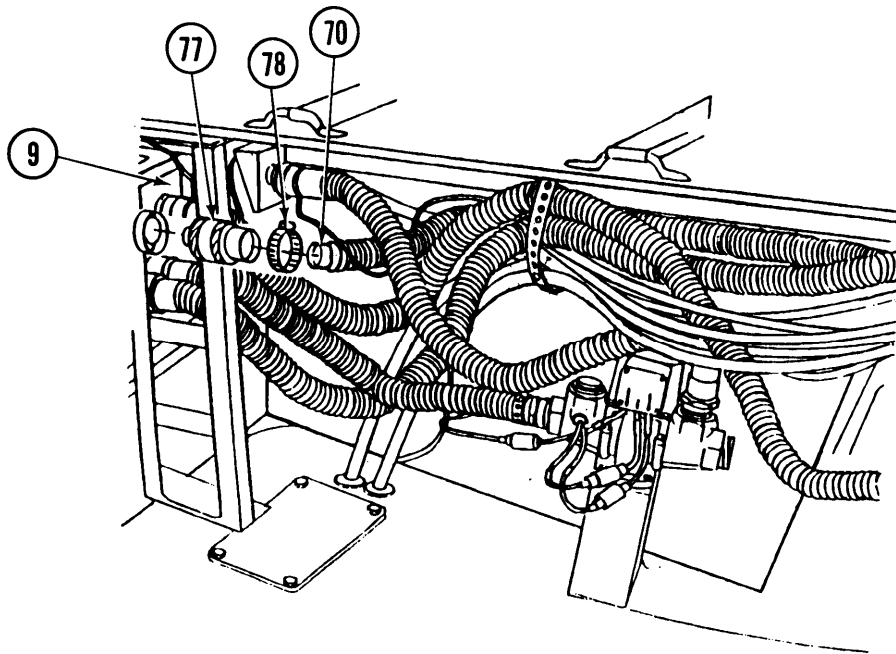


22-5. HOSE ASSEMBLY REPLACEMENT (continued).

8. Disconnect hose (70) from air purifier (9).
9. Remove clamp (78) and quick-disconnect coupling (77) from hose (70).

h. DRIVER'S STATION HEATER TO CONNECTOR HOSE ASSEMBLIES INSTALLATION

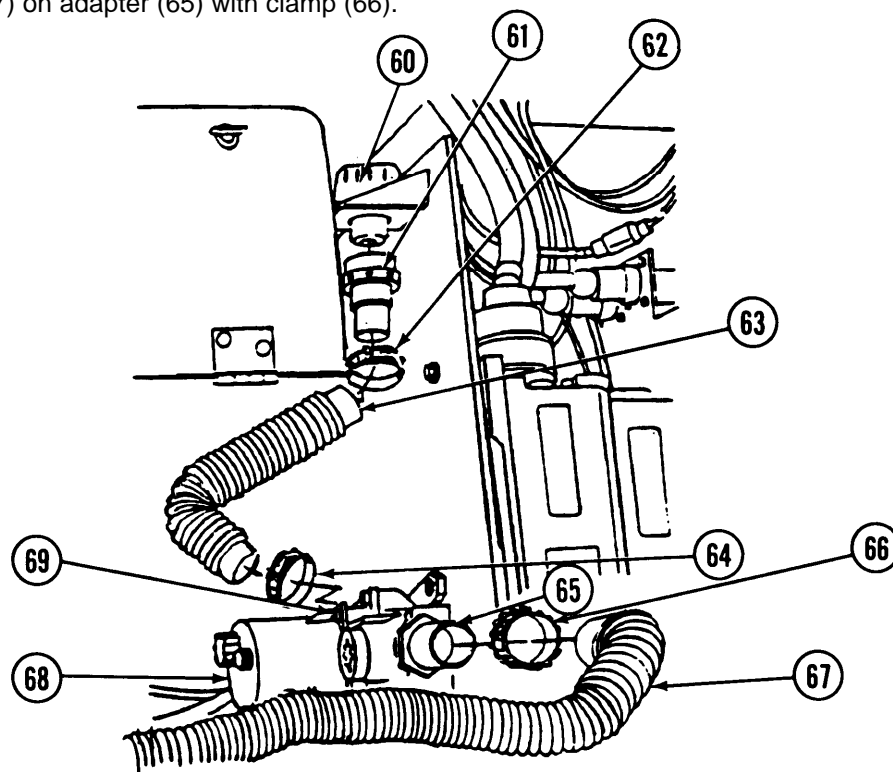
1. Install quick-disconnect coupling half (77) on hose (70) with clamp (78).
2. Connect hose (70) to air purifier (9).



3. Secure hose (70) to bulkhead with two straps (14), washers (13), new lockwashers (12), and screws (11).
4. Install two hoses (66 and 70) on tube coupling (76) with two clamps (75).
5. Position hoses (66 and 70) behind two harness guard (71), and secure two harness guards (71) to bulkhead with seven washers (72), new lockwashers (73), and screws (74).

22-5. HOSE ASSEMBLY REPLACEMENT (continued).

6. Install quick-disconnect coupling half (61) on hose (63) with new clamp (62).
7. Connect hose (63) to orifice connector (60).
8. Install hose (63) on adapter (69) with new clamp (64).
9. Install hose (67) on adapter (65) with clamp (66).



FOLLOW-ON MAINTENANCE:

- Ž Close upper rear door (refer to TM 9-2350-287-10).
- Ž Close lower rear door (refer to TM 9-2350-287-10).

22-6. M43 DETECTOR MOUNTING BRACKET REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

- General mechanic's tool kit (Item 24, Appendix 1)

Ž Upper and lower rear doors opened (refer to TM 9-2350-287-10).

Ž Battery ground cables disconnected (para 7-42).

Materials/parts:

- Lockwasher (3) (Item 164, Appendix H)

Ž M43 detector and mount removed (refer to TM 9-2350-287-10).

Equipment Conditions:

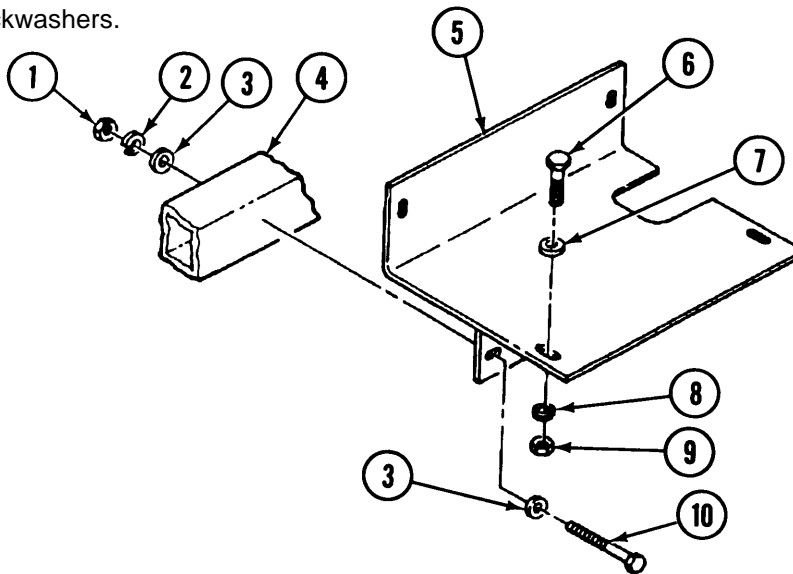
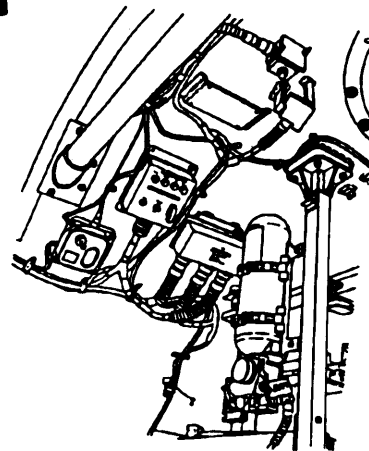
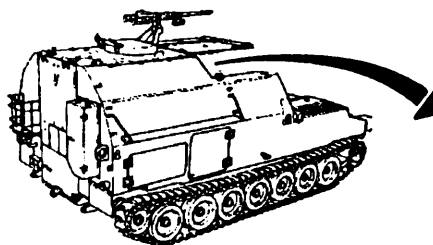
- Vehicle parked on level ground (refer to TM 9-2350-287-10).

a. REMOVAL

NOTE

Perform step 1 only if screws and nuts are installed.

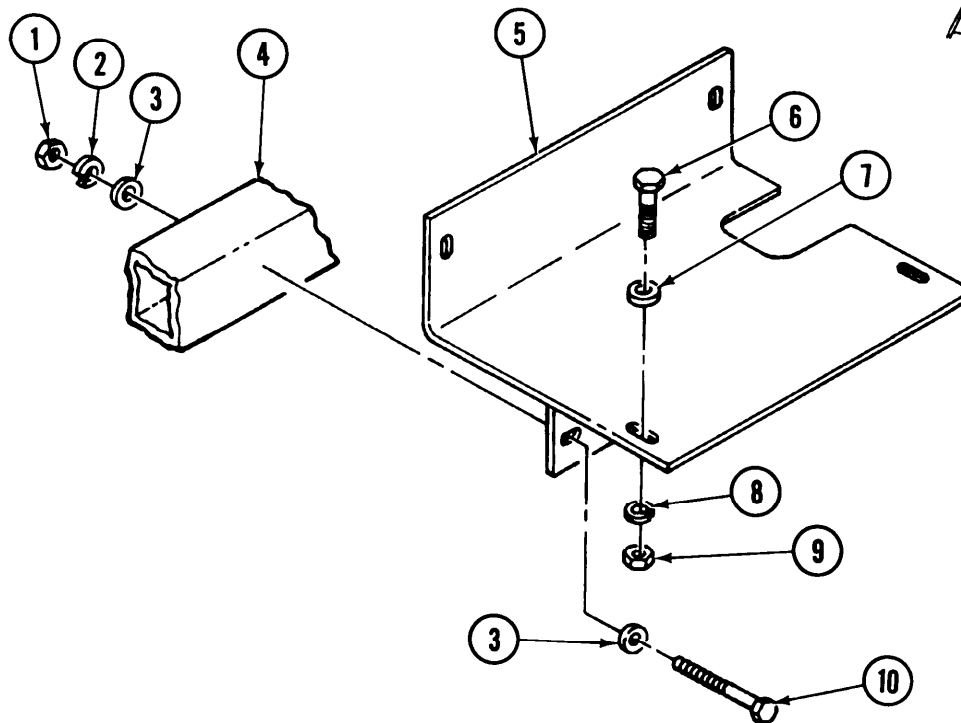
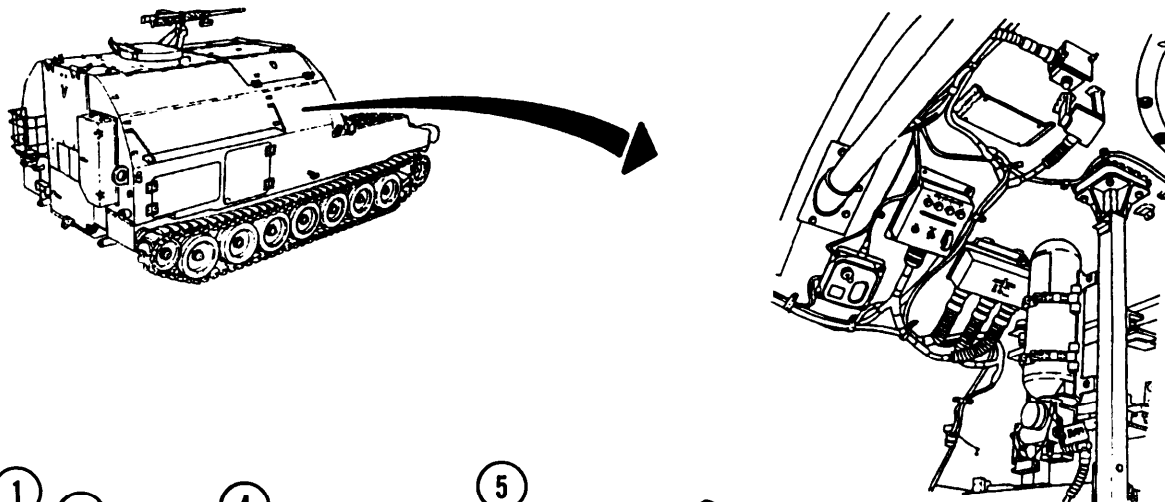
1. Remove four screws (6), washers (7), lockwashers (8), and nuts (9) from mounting bracket (5). Discard lockwashers.
2. Remove three screws (1 O), six washers (3), three lockwashers (2) and nuts (1), and mounting bracket (5) from horizontal brace (4). Discard lockwashers.



22-6. M43 DETECTOR MOUNTING BRACKET REPLACEMENT (continued).

b. INSTALLATION

1. Install mounting bracket (1) on horizontal brace (8) with three screws (6), six washers (7), three new lockwashers (9), and three nuts (10).
2. Install four screws (2), washers (3), new lockwashers (4), and nuts (5) in mounting bracket(1).



FOLLOW-ON MAINTENANCE:

- Install M43 detector and mount (refer to TM 9-2350-287-10).
- Close upper and lower rear doors (refer to TM 9-2350-287-10).
- Connect battery ground cables (para 7-42).

22-7. M42 ALARM CHASSIS BASE REPLACEMENT.

This Task Covers:

a. Removal

b. Installation

Initial Setup:

Tool/Test Equipment:

ŽGeneral mechanic's tool kit(Item 24, Appendix 1)

ŽUpper and lower rear doors opened (refer to TM 9-2350-287-10).

ŽBattery ground cables disconnected (para 7-42).

Materials/Parts:

ŽLockwasher (4) (Item 196, Appendix H)

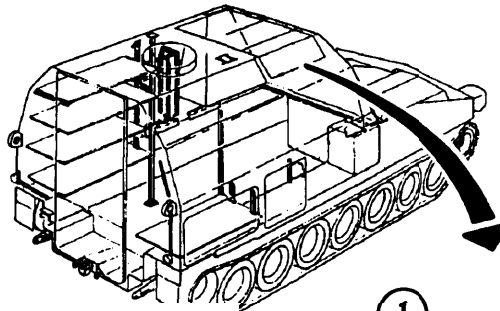
• M42 alarm removed (refer to TM 9-2350-287-10).

Equipment Conditions:

• Vehicle parked on level ground (refer to TM 9-2350-287-10).

NOTE

There are four outlet orifice connectors and brackets in the vehicle. All are replaced the same way.

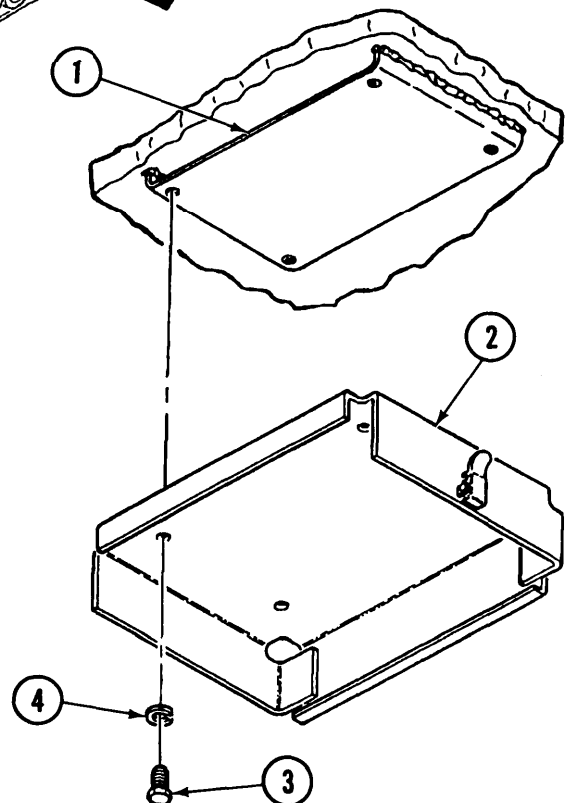


a. REMOVAL

Remove four screws (3) and lockwashers (4) and chassis base (2) from vehicle ceiling bracket (1). Discard lockwashers.

b. INSTALLATION

Install chassis base (2) on vehicle ceiling bracket (1) with four screws (3) and new lockwashers (4).



FOLLOW-ON MAINTENANCE:

ŽInstall M42 alarm (refer to TM 9-2350-287-10),

ŽClose upper and lower rear doors (refer to TM 9-2350-287-10).

ŽConnect battery ground cables (para 7-42).

**APPENDIX A
REFERENCES**

Paragraph Number	Paragraph Title	Page Number
A-1	General	A-1
A-2	Regulations	A-1
A-3	Manuals	A-1
A-4	Pamphlets, Bulletins	A-3
A-5	Miscellaneous Publications	A-3

A-1. GENERAL.

The following is a list of publications applicable to materiel covered in this technical manual. Appropriate indexes should be consulted frequently for the latest revisions and additions.

A-2. REGULATIONS.

Defense Traffic Management Regulation	AR 55-355
Malfunctions Involving Ammunition and Explosives	AR 75-1
The Army Physical Security Program	AR 190-13
Security of Army Property at Unit and Installation Level	AR 190-51
Environmental Protection and Enhancement	AR 200-1
Dictionary of United States Army Terms	AR 310-25
Authorized Abbreviations and Brevity Codes	AR 310-50
Accident Reporting and Records.....	AR 385-40
Prevention of Motor Vehicle Accidents	AR 385-55
Army Logistics Readiness and Sustainability	AR700-138
Reporting of Product Quality Deficiencies Across Component Lines.....	AR 702-7
Packaging of Army Materiel for Shipment and Storage.....	AR 746-1
Army Material Maintenance Policy and Retail Maintenance Operations	AR 750-1

A-3. MANUALS.

NBC Protection.....	FM 3-4
NBC Decontamination	FM 3-5
First Aid for Soldiers.....	FM 21-11
Operator's and Organizational Maintenance Manual: For Alarm, Chemical Agent, Automatic: Portable, Manpack, M8 (NSN 6665-00-935-6955) Fixed Emplacement, M10 (6665-00-169-1446) for Trucks, Utility: 1/4-Ton, M11 (6665-00-169-1447); for Truck: 3/4-Ton, M12 (6665-00-169-1448); for Truck: 2 1/2-Ton, M13 (6665-00-169-1449); for Full-Track, Armored Personnel Carriers and Recovery Vehicles, M14 (6665-00-169-1450); for Carrier, Command and Reconnaissance, Armored, M15 (6665-00-169-1451) with Power Supply for Truck, Utility: 1/4-Ton, M16 (6665-00-169-1452); with Power Supply for Truck: 3/4-Ton, M17 (6665-00-169-1453) and with Power Supply for Truck: 2 1/2-Ton, M18 (6665-00-169-1454)	TM 3-6665-225-12

A-3. MANUALS (continued).

Operator, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools), Various Machine Gun Mounts and Combinations Used on Tactical and Armored Vehicles Mounts	TM 9-1005-245-14
Inspection, Care and Maintenance of Antifriction Bearings	TM 9-214
Operator's Manual: Carrier, Ammunition, Tracked M992A1 (NSN 2350-01-352-3021)	TM-9-2350-287-10
Unit, Direct Support, and General Support Maintenance Repair Parts and Special Tools List for Carrier, Ammunition, Tracked: M992A1	TM 9-2350-287-24P
Direct Support and General Support Maintenance Manual for Carrier, Ammunition, Tracked M992A1 (NSN 2350-01-352-3021)	TM 9-2350-287-34
Unit, Direct Support and General Support Maintenance Manual Standards for Inspection and Classification of Tracks, Track Components and Solid-Rubber Tires (FSC 2530)	TM 9-2530-200-24
Organizational, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools) for Heaters, Vehicular Compartment	TM 9-2540-205-24&P
Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools List for Simplified Test Equipment for Internal Combustion Engines	TM 9-4910-571-12&P
Operator's, Unit, Intermediate Direct Support and Intermediate General Support Maintenance Manual for Lead-Acid Storage Batteries	TM 9-6140-200-14
Chemical, Toxicological and Missile Fuel Handlers Protective Clothing	TM 10-277
Operation and Maintenance Manual: Mounted Water and Ration Heater	TM 10-7310-241-12&P
Operations and Maintenance Manual. Satellite Signals Navigation Set AN/PSN-11	TM 11-5825-291-13
Operator's and Unit Organizational Maintenance Manual for Inter- communication Set, ANNIC-1(V) (NSN 5830-00-856-3273); and Control, Intercommunication Set, C-10456N RC (NSN 5830-01-082-0804)	TM 11-5830-340-12
Operator's, Unit, Direct Support and General Support Maintenance Manual for Digital Multimeter AN/PSM-45 (NSN 6625-01-139-2512)	TM 11-6625-3052-14
Packaging of Materiel: Preservation (Vol I)	TM 38-230-1
Packaging of Materiel: Packing (Vol II)	TM 38-230-2
Procedures for Destruction of Improved Conventional Munitions (ICM) to Prevent Enemy Use	TM 43-0002-33
Painting Instructions for Army Materiel	TM 43-0139
Transportable Guidance: Carrier, Cargo, Full-Tracked: 7-Ton, Ammunition, M992A1 Field Artillery Ammunition Support Vehicle (FAASV)	TM 55-2350-287-14
General Procedures for Purging and Charging of Fire Control Instruments	TM 750-116
Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)	TM 750-244-3
Destruction of Conventional Ammunition and Improved Conventional Munitions to Prevent Enemy Use (Excluding Toxic and Incapacitating Chemical Agents) (For Combat Units)	TM 750-244-5-1
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use	TM 750-244-6

A-4. PAMPHLETS, BULLETINS, AND FORMS.

Consolidated Index of Army Publications and Blank Forms	DA Pam 25-30
The Army Maintenance Management System (TAMMS)	DA Pam 738-750
Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A)	DA Pam 738-751
Preventive Maintenance Schedule and Record	DD Form 314
Processing and Reprocessing Record for Shipment, Storage and Issue of Vehicles and Spare Engines	DD Form 1397
Equipment Inspection and Maintenance Worksheet	DA Form 2404
Storage Serviceability Standard: Tracked Vehicles, Wheeled Vehicles, and Component Parts	SB 740-98-1
Product Quality Deficiency Report	SF Form 368
Solder and Soldering	TB SIG 222
Nonaeronautical Equipment Army Oil Analysis Program (AOAP)	TB 43-0210
Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds and Test Kit in Engine Cooling Systems	TB 750-651

A-5. Miscellaneous Publications.

Expendable items (except Medical, Class V, Repair Parts, and Heraldic items)	CTA 50-970
Army Medical Department Expendable/Durable items	CTA 8-100

APPENDIX B MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

Paragraph Number	Paragraph Title	Page Number
B-1	General	B-1
B-2	Maintenance Functions	B-1
B-3	Explanation of Columns in the MAC, Section II	B-2
B-4	Explanation of Columns in Tool and Test Equipment Requirements, Section III	B-3

B-1. GENERAL.

Appendix B consists of the following sections:

- a. Section I provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.
- b. Section II is the maintenance allocation chart (MAC), which designates overall 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 categories.
- 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 I.

B-2. MAINTENANCE FUNCTIONS.

Maintenance functions are 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.** To keep an item in proper operating condition by periodically cleaning (including decontaminating when required), preserving, draining, painting, or replenishing 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.

B-2. MAINTENANCE FUNCTIONS (continued).

- f. **CALIBRATE.** To determine the accuracy of and cause corrections or adjustments to be made on instruments or test, measuring, and diagnostic equipment used in precision measurement. Calibration 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 end item or system.
- h. **REPLACE.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the third position code of the source, maintenance, and recoverability (SMR) code.
- i. **REPAIR.** To apply 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.
- j. **OVERHAUL.** To perform that maintenance effort (service/action) required to restore an item to a completely serviceable/operational condition as required by maintenance standards in an appropriate technical publication (i.e., depot maintenance work requirement). 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.** To perform those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of 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. The end item group number shall be "00."
- b. **COLUMN 2, COMPONENT/ASSEMBLY.** Column 2 contains the name of components, assemblies, subassemblies, and modules for which maintenance is authorized.
- c. **COLUMN 3, MAINTENANCE FUNCTION.** Column 3 lists the functions to be performed on the item listed in column 2.
- d. **COLUMN 4, MAINTENANCE LEVEL.** Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the level of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate work time figures will be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time

B-3. EXPLANATION OF COLUMNS IN THE MAC. SECTION II (continued).

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 MAC, The symbol designations for the **various** maintenance levels areas follows:

C** Operator or Crew
 O Unit
 F Direct **Support**
 H* General Support
 D Depot (** in the column indicates that work times are included in the depot maintenance work requirement)

- e. COLUMN 5, TOOLS AND EQUIPMENT. Column 5 specifies, by code, those common tool sets (not individual tools), special tools (test, measurement, and diagnostic equipment), and support equipment required to perform the designated maintenance function.
- f. COLUMN 6, REMARKS. When applicable, this column contains a letter code, in alphabetic order, which is keyed to remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

- a. COLUMN 1, TOOL OR TEST EQUIPMENT NUMBER REFERENCE CODE. This reference code correlates with the code used in the MAC, Section II, Column 5.
- b. COLUMN 2, MAINTENANCE CATEGORY. The symbol designation shown indicates the lowest level of maintenance authorized to use the tool or test equipment.
- c. COLUMN 3, ITEM NAME. This is the name or identification of the tool or test equipment.
- d. COLUMN 4, NATIONAL STOCK NUMBER. This is the national stock number of the tool or test equipment.
- e. COLUMN 5, TOOL NUMBER. This is the manufacturer's part number.

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(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			c	o	F	H	D		
01	ENGINE								
0100	Engine and Container	Inspect Service Test Adjust Replace Repair Overhaul	0.1 0.1	0.2 0.5 0.2 3.0	8.0	20.5		1,2,4,6,8, 10, 18, 19- 23, 37,41, 46,48,52	
	Engine Mounting Base Assembly, Mounts and Brackets	Inspect Lubricate Replace Repair		0.1 0.1	1.0 2.0			1,2,6,33	
1102	Flywheel Vibration Damper	Replace			0.5			4,6	
1106	Engine Oil Filter Hoses, Mount Assembly and Transmission Oil Hoses, Oil Transmitter Fittings, and Protective Cover	Replace Repair		0.1 0.5				1,2,6	
	Engine Oil filter	Service Replace Repair		0.1 0.2 0.3				1,2,6	
0108	Exhaust Manifolds	Replace			0.5			4,6	
0109	Accessory Drive Assembly and Mounting Hardware	Replace Repair		0.5	1.0			1,2,4,6	
03	FUEL SYSTEM								
0302	Right Side Lower Fuel Tank Pump and Hanger Assembly	Test Replace Repair		0.2 0.2	1.0			1,4,6	
	Left Side Lower Fuel Tank Pump and Hanger Assembly	Test Replace Repair		0.2 0.2	1.0			1,4,6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0304	Electrical Fuel Pump	Replace Repair		0.5	1.0			4, 5, 6	
	Fuel Pump, Engine Driver Inspect			0.1					
		Replace Repair		1.0	1.0			4, 5, 6	
	Air Cleaner and Hoses	Replace Repair		1.0				1, 2, 6	
				1.0					
	Air Cleaner Fan Assembly Inspect		0.1						
0305		Replace Repair		1.0 sw	1.0			1, 4, 6	
	Air Cleaner Assembly, Filter Element and Gaskets Replace	Inspect Repair	0.1	1.0 1.0				1, 2, 6	
0306	Turbocharger Lines and Fittings	Replace		0.5				2, 6	
0309	Upper and Lower Fuel Tanks and Related Parts	Inspect	0.2					1, 4-6	
		Service	0.3						
		Replace Repair			10.0	6.0			
0311	Fuel Filter and Fuel Strainer	Inspect	0.1						
		Service	0.2	0.5				1, 6	
		Replace		0.3					
		Repair		0.5					
0312	Glow Plug and Controller	Test		0.1				1, 6	
		Replace		0.1					
		Repair		1.0					
04	EXHAUST SYSTEM	Inspect	0.1					6	
		Replace		0.7					
		Repair		0.5					
0401	Engine Exhaust Piping and Insulation	Inspect Replace	0.2	0.1 0.5				6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
05	COOLING SYSTEM								
0501	Engine Coolant Radiator and Mountings	Inspect Service Replace Repair Overhaul		0.2 0.1	0.3 1.5	1.5	8.0	4, 6, 7, 35	
	Aeration Detector Assembly and Wiring Harness	Replace		1.0				6	
		[Text Deleted]							
0502	Engine Coolant Shroud and Mountings	Inspect Replace Repair	0.2	2.2	0.5			4, 5, 6	
0503	Engine Coolant Thermostats, Hoses, Tubes and Fittings	Replace Repair		0.3 0.5				2, 6	
0505	Engine Cooling Fan Drive Assembly	Inspect Service Replace Repair	0.1	0.3	0.2 3.5 3.0			4, 5, 6	
	Engine Cooling Vane Axial Fan (NOAAH)	Inspect Service Replace Repair	0.1	0.3	0.2 3.5 3.0			4, 5, 6	
06	ELECTRICAL SYSTEM								
0601	Generator (Alternator)	Inspect Test Replace Repair		0.3 0.2 1.0	1.0			1,2, 6	
0602	Generator Voltage Regulator, Starter and Bilge Pump Relays	Replace Repair		0.4	0.2			2, 6	
	Rectifier Assembly	Test Replace Repair		0.3 0.5	1.0			1, 4, 5, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0603	Engine Electrical Starter and Related Parts	Inspect Test Replace Repair		0.1 0.5 1.0	2.0			4-6	
0607	Drivers Portable Instrument Inspect Panel Assembly	Test Replace Repair	0.1	0.3 2.0 0.6				1, 2, 6	
	Light Indicators (All Indicators)	Replace Repair	0.1 0.1	0.2					
	Drivers Portable Instrument Inspect Panel Wiring Harness	Replace	0.1	2.0				1, 2, 6	
			[Text Deleted]						
	Low Coolant Indicator Light Assembly and Wiring Harness	Test Replace	0.1	0.3				1, 2, 6	
			[Text Deleted]						
	Drivers Instrument Panel Assembly	Inspect Replace Repair	0.1	1.0 1.0				1, 2, 6	
	Panel Assembly, Driver's	Inspect Replace Repair	0.1	0.5 0.5				1, 2, 6	
	Driver's Instrument Panel Replace Support Assembly	Repair		0.5 0.5				1, 2, 6	
	Accessory Control Box Assembly	Replace Repair		0.1 1.0				1, 2, 6	
	Accessory Control Box Cable Assembly	Replace		1.0				1, 2, 6	
			[Text Deleted]						
	Wiring Harness (All)	Replace		1.0				1, 2, 6	
			[Text Deleted]						
	Circuit Breaker Panel and Chemical Agent Detector Circuit Breaker	Replace Repair	0.1 0.5					1, 2, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0608	Circuit Breaker Panel, Hull Electrical	Replace Repair		0.1 0.5				1, 2, 6	
	Hydraulic Control Gage Panel Assembly	Replace Repair		0.5 1.0				1, 2, 6	
	Hydraulic Control Gage Panel Wiring Harness	Replace		1.0				1, 2, 6	
		[Text Deleted]							
	NBC Power Control Box	Test Replace Repair	0.1		0.1 1.0			1, 2, 6	
	NBC Power Control Box Harness Assemblies	Replace		0.5				1, 2, 6	
		[Text Deleted]							
	STE/ICE Resistor Box Assembly	Replace Repair		0.5		1.0		1, 2, 4-6	
	STE/ICE Control Box Wiring Harness	Replace Repair			0.5 0.5			1, 2, 6	
	Auxiliary Power Unit Control Box Assembly	Test Replace Repair Replace	0.1		0.2 1.5 1.0			1, 2, 4-6	
	Auxiliary Power Unit Control Box Wiring Harness Assembly							1, 2, 6	
		[Text Deleted]							
	Combat Override Switch Assembly	Replace Repair		0.3 0.5				1, 2, 6	
	Parking Brake Light and Stoplight Control Switches	Replace		0.5				6	
	[Text Deleted]								
0609	Dome Light Assembly	Test Replace Repair	0.1		0.5 0.2			1, 2, 6	
	Headlight Mount Assembly Replace	Repair		0.5 0.2			1, 2, 6		
	Headlight Assembly	Test Replace Repair	0.1		0.5 1.0			1, 2, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
	Headlight Resilient Mount Replace Wiring Harness	[Text Deleted]		0.5				1, 2, 6	
	Service Taillight, Stop and Blackout Taillight	Test Replace Repair	0.1	0.5 0.5				1, 2, 6	
	Master Warning Light Assembly	Replace [Text Deleted]		0.5				1, 2, 6	
0610	PowerPoint Pressure and Temperature Switches	Test Replace		0.3 0.3				1, 2, 6	
0612	Storage Batteries, Cables Inspect and Supports	Service Replace Repair	0.1 0.2	0.5 0.5				1, 2, 6	
0613	Wiring Harness (All)	Test Replace Repair		2.0 15.0 0.5				1, 2, 4, 6 8.0 0.5	
0616	Personnel Ventilating Air Duct Fan (NOAAH)	Test Replace Repair		0.5 0.5	1.0			1, 2, 4, 6	
07 0705	TRANSMISSION Transmission Shift Control Linkage and Neutral Safety Switch	Lubricate Inspect Adjust Replace Repair	0.1 0.2	0.1 0.2 3.6 2.0				2, 6	
	Transmission Shift Control Quadrant Assembly	Replace Repair		1.0 1.0				6	
0710	Transmission and Shipping Container	Test Adjust Replace Repair Overhaul		0.3 0.2	5.0	9.0		2, 4-6, 49 **	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
0721	Transmission Supports, Pressure Check Plugs, Oil Screen, Gage Rod and Inspection Plates	Service Replace Repair		0.1 2.0		1.0		2, 6, 49	
08	TRANSFER, FINAL DRIVE, PLANETARY, AND DROP GEARBOX ASSEMBLIES								
0801	Power Transfer and Shipping Container Assembly	Replace Repair Overhaul			1.0	2.0		4, 5, 6	
	Universal Joints	Lubricate Inspect Replace Repair	0.1 0.1	0.1 1.0 1.2				2, 6, 44	
	Final Drive with Shipping Container Assembly	Inspect Service Replace Repair Overhaul	0.1 0.1	0.1 2.5	5.0	2.0		1,2, 4, 6, 12, 13, 26	
	Final Drive Assembly	Replace Repair		1.0	2.0				
12	BRAKE								
1201	Parking Brake Control Linkage and Latch Assembly	Inspect Adjust Replace Repair	0.1	0.1 0.2 1.5 1.0				1, 2, 6	
1206	Service Brake Control Linkage	Inspect Service Adjust Replace	0.2 0.2	0.5 1.0				1,2, 6	
13	WHEELS AND TRACKS								

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(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			c	o	F	H	D		
1301	Suspension Arm, Hub Assembly and Roadwheel	Inspect Service Replace Repair Overhaul	0.1 0.1	0.5 1.0	2.0	2.1	*	1,4,6,11, 17,25,27, 28,34,38	
1303	Track Adjusting Idler Arm and Hub Assembly Support and Wheels	Inspect Service Replace Repair	0.1 0.1	2.0	3.0			2,4,6	
	Track Adjuster Assembly	Inspect Adjust Replace Repair	0.1 0.3	1.5	1.0			2,16,18,36	
1304	Track Drive Sprockets and Hub	Inspect Replace	0.1	0.1 1.0				1,2,6	
1305	Vehicle Double Pin Track Shoe Assembly	Inspect Adjust Replace Repair	0.1 0.5	2.0 1.5				1,2,6,14, 15,35	
14	STEERING								
1401	Steering Control Linkage	Lubricate Adjust Inspect Replace	0.1 0.1	0.2 0.1 2.0				6	
15	FRAME, TOWING ATTACHMENTS, DRAW- BARS, AND ARTICULA- TION SYSTEMS								
1503	Towing Pintle Assembly	Inspect Lubricate Replace Repair	0.1 0.1	0.5 0.5				1,2,6	
16	SPRINGS AND SHOCK ABSORBERS								

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(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			c	o	F	H	D		
1604	Suspension Shock Absorber	Inspect Service Replace	0.1	0.2 1.0				2,6, 38	
18	BODY, CAB, HOOD, AND HULL								
1801	Hull Front Plates	Replace Repair		0.5 0.5				2,6, 45	
	Transmission and Battery Access Doors	Inspect Replace Repair	0.1	0.5 1.0				1,2,6,45	
	Engine Compartment Bulkhead Insulation, Shields and Engine Access Cover Assembly	Inspect Replace Repair	0.1	0.5 1.0				1,2,6,45	
	Top Center Door	Inspect Replace Repair	0.1	0.1 0.1 1.0	1.0			2,4,6,45	
	Right Side Canister Door	Inspect Replace Repair	0.1	0.1 0.2 1.0	1.0			1,2,4,6,45	
	Left Side Canister Door	Inspect Replace Repair	0.1	0.1 0.2 1.0	1.0			1,2,4,6,45	
	Personnel Door	Lubricate Inspect Replace Repair	0.1 0.1	0.1 0.5 0.7	1.0			2,4,6,45	
	Upper Rear Door Assembly	Inspect Replace Repair	0.1	0.1 0.46 0.24	1.0			1,2,4-6 7,45	
	Lower Rear Door Assembly with Lock Handle	Inspect Replace Repair	0.1	0.1 0.3 0.7	1.0			2,4-6,45	

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(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
1802	APU Compartment Side Door	Inspect Replace Repair	0.1	0.1 0.2 0.1				1,2,6,45	
	APU Compartment Front Door	Inspect Replace Repair	0.1	0.1 0.1 0.2				1,2,6,45	
	APU compartment Access Plate and Cap Assembly	Inspect Replace Repair	0.1	0.1 0.2				6	
	AFES Fire Extinguisher Box	Replace Repair		1.0 0.5				1,2,6,45	
	Commander's Cupola, Machine Gun Support and Ring Assemblies	Inspect Replace Repair	0.1	0.1 0.4 0.2				1,2,6,37	
	Commander's Cupola Hatch Door	Inspect Replace Repair		0.01 1.0 0.5				1,2,6	
1803	Front Fenders and Retaining Plates	Replace		0.3				6	
1803	Driver's Hatch Cover, Latch and Torsion Bar	Inspect Service Replace Repair	0.1 0.2	0.1 1.0 0.1	0.5			1,2,5,6,44	
	Driver's Hatch Security Latch	Replace Repair		0.3 0.5				6	
	Driver's Periscope M45 Cover, Doors, Seals, Sleeves and Control Cams	Replace Repair		0.5 0.5				6	
1804	Engine Compartment Hull Floor Plates	Replace		0.5				1,2,6	
1806	Driver's Seat Assembly	Lubricate	0.1					1,2,6	
		Inspect		0.1					
		Replace		0.1					
		Repair		0.1					

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(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			c	o	F	H	D		
1808	Commander's Seat	Repair		0.1				1,2,6	
		Lubricate	0.1						
		Inspect		0.1					
		Replace		0.1					
	Right Side Double Crew Seat	Repair		0.5				1,2,6	
		Lubricate	0.1						
		Inspect		0.1					
		Replace		0.3					
	Left Side Single Crew Seat	Repair		0.1				1,2,6	
		Lubricate	0.1						
		Inspect		0.1					
		Replace		0.3					
	Pioneer Kit, Towing Cable Straps, Water Can Straps, and Track Fixture Straps	Repair		0.1				1,2,6	
		Inspect			0.1				
Replace				0.1					
Crow Bar Stop, Barrel Straps and Rack Hoist Straps	Replace			0.2			1,2,6		
	Repair			0.2					
Right Side Duffle Bag Stowage	Inspect		0.1				3,6		
	Lubricate		0.1						
	Replace			0.1					
	Repair			1.0					
Left Side Duffle Bag Stowage	Inspect		0.1				3,6		
	Lubricate		0.1						
	Replace		0.1						
	Repair			1.0					
NBC Stowage Box	Inspect		0.01				1,2,6		
	Replace			0.5					
	Repair			0.5					
Projectile Rack	Inspect		0.1				1,2,4,6,44		
	Lubricate		0.1						
	Replace			1.0					
	Repair				1.0				
	Test					1.0			

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks	
			C	O	F	H	D			
22	Projectile Rack Canister Stowage Boxes, Braces, and Rack Removal Aid	Inspect Replace Repair	0.1	0.8 0.5				1, 2, 6		
	Right Rear Canister Compartment Shelving, 155 mm Charges	Inspect Replace Repair	0.1	0.8 0.5				1, 2, 6		
	Left Rear Canister Compartment Shelving	Inspect Replace Repair	0.1	0.8 0.5				1, 2, 6		
	Left Rear Canister Compartment Wear Strips and Guard	Replace Repair		0.3 0.3				1,2, 6		
	Left Rear Canister Compartment Restraint Bar Assembly	Inspect Lubricate Replace Repair	0.1 0.1	0.1 0.2	0.5			1, 2, 4, 6		
	Right Rear Canister Compartment Restraint Bar Assembly	Inspect Lubricate Replace Repair	0.1 0.1	0.1 0.2	0.5			1, 2, 4, 6		
	Telephone Cable Reel and Guide with Hand Crank	Lubricate Replace Repair	0.1	0.3 0.5				1, 2, 6		
	Mounted Water Ration Heater (MWRH) Bracket BODY, CHASSIS, AND HULL ASSOCIATED ITEMS	Replace Repair		0.5 0.5				2, 6		
	2201	Shroud Assembly	Inspect Replace Repair	0.1 0.2		0.5			4, 6	
	2202	Heating and Ventilating Duct	Replace		0.7				1, 2, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
2205	Bilge Pump	Test Replace Repair	0.1	0.5	1.0			2, 4, 6	
2207	Personnel Heater Assembly	Inspect Test Adjust Replace Repair	0.2	0.2 0.2 2.0	3.0			2, 4, 6	
	Personnel Heater Mounting Clamps, Saddle Ducts, Hoses and Filter	Inspect Replace Repair	0.2	1.0	1.0			2, 4-6	
	[Text Deleted]								
24	HYDRAULIC AND FLUID SYSTEMS								
2400	Conveyor Support Stand	Inspect Replace Repair	0.1	0.3 0.1				1, 2, 6	
	Conveyor Forward Dead- End Section and Latch Assembly	Inspect Replace Repair	0.1	1.0	0.8			1, 2, 4, 6	
	Conveyor Rear Dead-End Section and Latch Assembly	Inspect Replace Repair	0.1	1.0	1.0			1, 2, 4, 6	
	Conveyor Drive-End Section Assembly	Inspect Lubricate Replace Repair	0.1 0.1	1.0 0.3				1,2, 6	
	Conveyor Center Section Assembly	Inspect Replace Repair	0.1	1.0 0.3				1, 2, 6	
	Conveyor Takeup- End Section Assembly	Inspect Replace Repair	0.1	0.7 0.2				1, 2, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
2402	Conveyor Subassembly	Inspect Replace Repair	0.1	0.8 0.5				1, 2, 6	
	Hydraulic Reservoir Assembly	Inspect Service Replace Repair	0.1	0.7 0.3 0.5				1, 2, 6	
	[Text Deleted]								
	Hydraulic Control Panel Tube Assemblies, Flow Regulator and Relief Valve	Inspect Replace Repair	0.1	0.1 0.3				1, 2, 6	
2404	Hydraulic Control Panel Directional Valve Assemblies, Subplates and Bracket	Inspect Replace Repair	0.1	0.5 0.5				1, 2, 6, 42	
	[Text Deleted]								
2406	Upper Rear Door Hydraulic Actuator	Inspect Replace Repair	0.1	0.5	1.0			1, 2, 4, 6	
29	Hydraulic Filler and Cap, Return Line Filter, Hoses, Suction Ball Valve and Associated Parts AUXILIARY GENERATOR AND ENGINE, AND CONTROLS	Inspect Replace Repair	0.1	0.5 0.5				1, 2, 6	

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(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
2901	APU Assembly, APU Support Assembly and Resilient Mounts	Test Service Replace Repair	0.2	1.5 1.5 1.2	20.0			1, 2, 4, 6, 45	
2916	APU Oil Filler Cap, Filter Element, Gage, Lines and Fittings	Inspect Replace Repair	0.1	0.7 0.4				1, 2, 6	
2919	APU Driving Mechanism Assembly	Replace			0.5			4, 6	
2933	APU Air Cleaner and Air Intake Ducting	Service Replace Repair	0.1	0.1 0.1				1, 2, 6	
2937	APU Fuel Filters	Replace		0.5				6	
2938	APU Fuel Lines and Fittings	Replace		0.5				6	
2941	APU Exhaust Muffler, Pipes and Shield	Replace		0.2				6	
2952	APU Exhaust Cooling Ducts and Engine Shrouds	Replace Repair		0.6	1.0			1, 2, 6	
2961	APU Generator and Mounting Strap	Replace Repair		0.5	1.0			1, 2, 6	
2963	APU Wiring Harness (All)	Replace [Text Deleted]		1.0				1, 2, 6	
33	SPECIAL PURPOSES KITS								
3307	Ventilation Kit	Replace			1.0			4-6	
42	ELECTRICAL EQUIPMENT								
4209	STE/ICE Current Shunt	Inspect Replace Repair		0.1 0.1 0.2				2, 6	

**SECTION II MAINTENANCE ALLOCATION CHART
FOR
CARRIER, AMMUNITION, TRACKED,
M992A1**

(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
47	GAGES (NONELECTRICAL),WEIGHING AND MEASURING DEVICES								
4701	Speedometer Drive Shaft, Adapters, and Fittings	Lubricate	0.1					2, 6	
		Replace		1.0					
	Tachometer Drive Shaft, Adapters, and Fittings	Repair		1.0				2, 6	
		Test		0.5					
		Replace		1.0					
	Repair			1.0					
68	WARNING, SCANNING, AND SIGNALING DEVICES, AND NAVIGATIONAL INSTRUMENTS (LAND, AIR, AND WATER)								
6807	GPS Receiver Antenna Assembly	Test	0.1	**				1, 2, 6	
		Replace		0.2			**		
		Repair							
	GPS Receiver Mounting Bracket	Inspect	0.1					1, 2, 6	
		Replace		0.2					
		Repair		0.3					
	GPS Receiver Mount Subassembly	Inspect	0.1					1, 2, 6	
		Replace		0.2					
		Repair		0.3					
76	FIRE FIGHTING EQUIPMENT COMPONENTS								
7639	Fire Extinguisher Bottles	Inspect	0.1					1, 2, 6, 9	
		Test	0.1						
		Replace		0.5					
	Engine AFES-Remote Status Indicator (RSI)	Repair			**	**		1, 2, 6, 9	
		Test	0.1						
		Replace		0.2					
		Repair		0.5					

**SECTION II MAINTENANCE ALLOCATION CHART
FOR
CARRIER, AMMUNITION, TRACKED,
M992A1**

(1) Group Number	(2) Component Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment	(6) Remarks
			C	O	F	H	D		
	Engine Compartment Test and Alarm (T/A) Panel	Test Replace Repair	0.1	0.3			**	1,2, 6, 9	
	Crew AFES-Standard Control Electronic Amplifier (SCEA)	Test Replace Repair	0.1	0.3			**	1, 2, 6, 9	
	Crew Compartment Test and Alarm (T/A) Panel	Test Replace Repair	0.1	0.2			**	1, 2, 6, 9	
	AFES Manual Discharge Actuator Assembly	Inspect Adjust Replace Repair	0.1	0.5 1.0 0.5				1, 2, 6	
7645	AFES Bottle Warning Labels	Replace		0.3				6	
91	CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL (CBR) EQUIPMENT								
9111	NBC Ventilated Face Piece System, M2A2 Air Purifier	Test Replace Repair	0.1	0.3	0.1			4, 6	
9130	NBC Ventilated Face Piece System, M3 Electric Air Heater and Adapters	Test Replace Repair	0.1	0.5 0.5				1, 2, 6	
	NBC Ventilated Face Piece System, M43 NBC Alarm Detector Mounting Bracket	Replace		0.5					

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL AND TEST EQUIPMENT REQUIREMENTS				
Tool or Teat Equipment Number Reference Code	Maintenance Category	Item Name	National Stock Number	Tool Number
1	O	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR: Organizational maintenance, Common No. 1, less power	4910-00-754-0654	SC 4910-95-CL- A074
2	O	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR: Organizational maintenance, Common No. 2, less power	4910-00-754-0650	SC 4910-95-CL-A072
3	O	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR: Organizational Maintenance, Supplemental No. 1, Less Power	4910-00-754-0653	SC 4910-95-CL-A73
4	F	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR: Field maintenance, basic, less power	4910-00-348-7696	SC 4910-95-CL-A31
5	F	SHOP EQUIPMENT, AUTOMOTIVE MAINTENANCE AND REPAIR: Field maintenance, wheeled vehicles.	4910-00-754-0714	SC 4910-95-CL-A02
6	O, F	TOOL KIT, GENERAL MECHANIC IS AUTOMOTIVE	5180-00-177-7033	SC 5180-90-N26
7	O	TOOL KIT WELDER'S	5180-00-754-0661	SC 5180-90-CL-N39
8	O	SIMPLIFIED TEST EQUIPMENT FOR INTERNAL COMBUSTION ENGINES	4910-01-222-6589	12259266
9	O	TEST EQUIPMENT, DIGITAL MEGOMETER		
10	O	SLING, BEAM TYPE	3940-01-280-0872	12355173
11	O	LIFTER, ROAD WHEEL	4910-00-912-4469	11593605
12	O	SLING, LIFTING, FINAL DRIVE	4910-00-034-0875	10914179
13	O	BOLT, EYE	5306-00-050-0347	MS51937-5
14	O	REMOVER AND REPLACER	5120-00-084-7627	10925993

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL AND TEST EQUIPMENT REQUIREMENTS				
Tool or Test Equipment Number Reference Code	Maintenance Category	Item Name	National Stock Number	Tool Number
15	O	GAGE, ROAD WHEEL PLATE	4910-00-034-0874	10911904
16	O	FIXTURE, TRACK CONNECTING	5120-00-605-3926	8741739
17	O	WRENCH, SOCKET	5120-00-708-3642	7083642
18	O	COUPLING ASSEMBLY, QUICK DISCONNECT	4730-00-738-8571	7388571
19	O	ADAPTER, STRAIGHT, PIPE	4730-01-094-9018	5262058
20	O	LEAD, ELECTRICAL	5995-00-084-0789	10913655
21	O	HOSE ASSEMBLY, NONMETALLIC	4720-00-080-8586	8708306
22	F	SOCKET, WRENCH, FACE	4720-00-080-8586	8390124
23	O	STRAINER ELEMENT	4730-00-981-2766	10930717
24	O	PULLER, SLIDE	5120-00-557-3615	5573615
25	O	ADAPTER, TORSION BAR	5120-01-017-5328	12251805
26	O	PIN, STRAIGHT, THREADED	5315-00-034-0883	10914195
27	O	REPLACER, BEARING CUP	5120-00-034-0880	10914187
28	O	REPLACER, PLAIN, ENCASED	5120-00-034-0879	10914186
29	O	REPLACER, BEARING	5120-00-034-0885	10914197
30	O	SOCKET, WRENCH, FACE	5120-00-034-0867	10914193
31	O	REPLACER, PLAIN ENCASED	5120-00-034-0878	10914185
32	F	REPLACER, PLAIN ENCASED	5120-00-034-0881	10914188
33	O	WRENCH, BOX	5120-00-051-5567	11605662
34	O	HANDLE, MANUAL CONTROL	5340-00-034-0884	10914196
35	O	CLEANER, OIL COOLER	4910-00-494-8257	11641959
36	O	PULLER, END CONNECTOR		57K3156

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL AND TEST EQUIPMENT REQUIREMENTS				
Tool or Test Equipment Number Reference Code	Maintenance Category	Item Name	National Stock Number	Tool Number
37	O	SLING, MULTIPLE LEG	3940-00-977-7398	10930560
38	O	PULLER, MECHANICAL	5120-00-084-7626	10913972
39	F	GAGE	5210-00-613-6779	11671961
40	F	PULLER, MECHANICAL	5120-00-613-6775	11671732
41	O	GRILLE, METAL	2510-01-247-2976	12268262
		[Text Deleted]		
43	F	REPAIR KIT, AUTOMATIC FIRE EXTINGUISHER	4210-01-269-8368	5705554
44	O	WIRE TWISTER, PLIER, Size 12	5120-00-542-4171	GGGW340
45	O	SLING, ENDLESS	3940-00-675-5003	PD-10196
46	O	WIRING HARNESS	6150-01-115-2276	12268162
47	O	LEAD ASSEMBLY, ELECTRICAL	6150-01-320-4733	12268426
48	O	LEAD ASSEMBLY, ELECTRICAL	6150-01-324-3386	12268427
49	O	SOCKET WRENCH ATTACHMENT	5120-00-596-1199	4080-24
50	O	RULE, STEEL, MACHINIST'S	5210-00-234-5225	666-R-791
51	O	TESTER, HYDRAULIC	4940-00-595-5720	GS5
52	O	GROUND HOP STE/ICE CONNECTOR		12447296

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APPENDIX C TORQUE VALUES FOR THREADED FASTENERS

Paragraph Number	Paragraph Title	Page Number
C-1	General	C-1
C-2	Torque Limits	C-1
C-3	How To Use Torque Table	C-1
C-4	Tightening Metal Fasteners	C-3
C-5	Fastener Size and Thread Pattern	C-4
C-6	Fastener Grade	C-5

C-1. GENERAL.

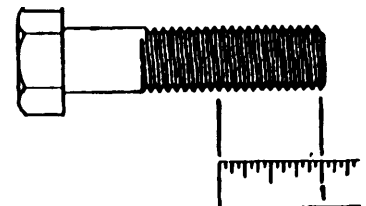
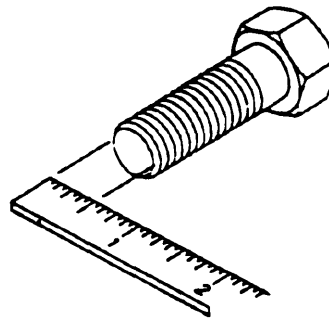
This section provides general torque limits for screws used on the M992A1 vehicle. Special torque limits are indicated in the maintenance procedures for applicable components. The general torque limits given in this appendix shall be used when specific torque limits are not indicated in the maintenance procedure. These general torque limits cannot be applied to screws that retain rubber components. The rubber components will be damaged before the correct torque limit is reached. If a special torque limit is not given in the maintenance instructions, tighten the screw or nut until it touches the metal bracket, then tighten it one more turn.

C-2. TORQUE LIMITS.

Table C-1 lists dry torque limits. Dry torque limits are used on screws that do not have lubricants applied to threads. Table C-2 lists wet torque limits. Wet torque limits are used on screws that have high-pressure lubricants applied to threads.

C-3. HOW TO USE TORQUE TABLE.

1. Measure the diameter of the screw to be installed.
2. Count the number of threads per inch or use a pitch gage.
3. Under the heading SIZE, look down the left-hand column until the diameter of screw to be installed is found (there will usually be two lines beginning with the same size).
4. In the second column under SIZE, find the number of threads per inch that matches the number of threads counted in step 2.

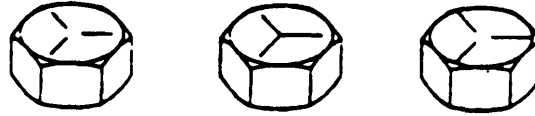


C-3. HOW TO USE TORQUE TABLE- (continued).

5. To find the grade of the screw that is to be installed, match the markings on the head to the correct picture of CAPSCREW HEAD MARKINGS on the table.

Manufacturer's marks may vary.
These are all SAE Grade 5 (3 lines).

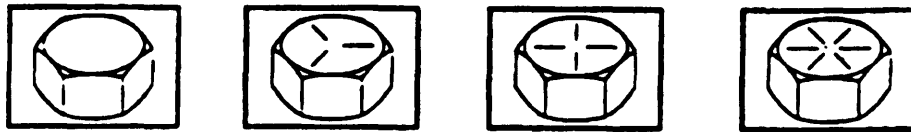
CAPSCREW HEAD MARKINGS



6. Look down the column under the picture found in step 5 until the torque limit in foot-pounds for the diameter and threads per inch of the screw being installed is found.

Table C-1. Torque Limits for Dry Fasteners

SAE CAPSCREW HEAD MARKINGS



SIZE			TORQUE							
			SAE GRADE No. 1 or 2		SAE GRADE No. 5		SAE GRADE No. 6 or 7		SAE GRADE No. 8	
DIA. IN.	THREADS PER INCH	MMs	FOOT- POUNDS	N. m	FOOT- POUNDS	N.m	FOOT- POUNDS	N.m	FOOT- POUNDS	N.m
1/4	20	6.35	5	6.78	8.0	10.85	10	13.56	12.0	16.27
1/4	28	6.35	6	8.14	10.0	13.56	—	—	14.0	18.98
5/16	18	7.94	11	14.82	17.0	23.05	19	25.76	24.0	32.52
5/16	24	7.94	13	17.63	19.0	25.76	—	—	27.0	36.61
3/8	16	9.53	18	24.41	31.0	42.04	34	46.10	44.0	59.66
3/8	24	9.53	20	27.12	35.0	47.46	—	—	49.0	66.44
7/16	14	11.11	28	37.97	49.0	66.44	55	74.58	70.0	94.92
7/16	20	—	30	40.68	55.0	74.58	—	—	78.0	105.77
1/2	13	12.70	39	52.88	75.0	101.70	85	115.26	105.0	142.38
1/2	20	—	41	55.60	85.0	115.26	—	—	120.0	162.78
9/16	12	14.28	51	69.16	110.0	149.16	120	162.72	155.0	210.18
9/16	18	—	55	74.58	120.0	162.72	—	—	170.0	230.52
5/8	11	15.88	63	85.43	150.0	203.40	167	226.45	210.0	284.76
5/8	18	—	85	128.82	170.0	230.52	—	—	240.0	325.44
3/4	10	19.05	105	142.38	270.0	356.12	280	379.68	375.0	506.50
3/4	16	—	115	155.84	285.0	400.02	—	—	420.0	586.52
7/8	9	22.23	160	216.86	375.0	536.62	440	595.64	605.0	820.38
7/8	14	—	175	237.30	435.0	589.85	—	—	675.0	915.30
1	8	25.40	235	318.66	590.0	800.04	660	694.86	910.0	1233.86
1	14	—	250	338.00	660.0	894.96	—	—	990.0	1342.44
1-1/8	—	25.58	—	—	800.0	1064.8	—	—	1280.0	1735.7
					880.0	1193.3	—	—	1444.0	1922.8
1-1/4	—	31.75	—	—	—	—	—	—	1820.0	2467.9
									2000.0	2712.0
1-3/8	—	34.93	—	—	1460.0	1979.8	—	—	2300.0	3227.3
					1680.0	2278.1	—	—	2720.0	3688.3
1-1/2	—	38.10	—	—	1840.0	2630.6	—	—	3160.0	4285.0
					2200.0	2863.2	—	—	3560.0	4827.4

C-3. HOW TO USE TORQUE TABLE (continued).**Table C-2. Torque Limits for Wet Fasteners**

SIZE			TORQUE							
			SAE GRADE No. 1 or 2		SAE GRADE No. 5		SAE GRADE No. 6 or 7		SAE GRADE No. 8	
DIA. IN.	THREADS PER INCH	MMs	FOOT- POUNDS	N.m	FOOT- POUNDS	N.m	FOOT- POUNDS	N.m	FOOT- POUNDS	N.m
1/4	20	6.35	4.9	6.10	7.2	9.76	9.0	12.0	10.8	14.64
1/4	28	6.35	5.4	7.33	9.0	12.20	—	—	12.6	17.06
5/16	18	7.84	9.9	13.34	15.3	22.54	17.1	23.18	21.6	29.27
5/16	24	7.94	11.7	15.87	17.1	23.18	—	—	24.3	32.95
3/8	16	9.53	16.2	21.97	27.9	37.84	30.6	41.49	39.6	53.69
3/8	24	9.53	18.0	24.41	31.5	42.71	—	—	44.1	59.80
7/16	14	11.11	25.2	34.17	44.1	59.80	49.5	67.12	63.0	85.42
7/16	20	—	27.0	36.61	49.5	67.12	—	—	70.2	95.19
1/2	13	12.70	35.1	47.58	67.5	91.53	76.5	103.73	94.5	128.14
1/2	20	—	36.9	50.04	76.5	103.73	—	—	106.0	146.50
9/16	12	14.28	45.9	62.24	99.0	134.24	108.0	146.45	139.5	189.16
8/16	18	—	45.5	67.12	106.0	146.45	—	—	153.0	207.47
5/8	11	15.88	56.7	76.89	135.0	183.06	150.3	203.80	189.0	256.28
5/8	18	—	85.5	115.84	153.0	207.47	—	—	216.0	296.90
3/4	10	19.05	94.5	128.14	243.0	329.51	252.0	341.71	337.5	457.65
3/4	16	—	103.5	140.35	265.5	360.2	—	—	378.0	536.87
7/8	9	22.23	144.0	195.26	355.5	482.06	396.0	536.98	544.5	738.34
7/8	14	—	157.5	213.57	391.5	530.87	—	—	607.5	823.77
1	8	25.40	211.5	286.79	531.0	720.04	594.0	805.46	819.0	1110.56
1	14	—	225.0	305.10	594.0	805.46	—	—	891.0	1208.20
1-1/8	—	25.58	—	—	720.0	976.32	—	—	1152.0	1562.13
					792.0	1073.97	—	—	1286.0	1757.52
1-1/4	—	31.75	—	—	—	—	—	—	1638.0	2221.11
									1800.0	2440.80
1-3/8	—	34.93	—	—	1314.0	1781.82	—	—	2742.0	2904.57
					1512.0	2050.28	—	—	2448.0	3319.47
1-1/2	—	38.10	—	—	1746.0	2367.54	—	—	2844.0	3856.50
					1880.0	2684.88	—	—	3204.0	4344.66

C-4. TIGHTENING METAL FASTENERS.

When torquing a fastener, select a torque wrench whose range (Table C-3) fits the required torque value. A torque wrench is most accurate from 25 percent to 75 percent of its stated range. A torque wrench with a stated range of 0 to 100 will be most accurate from 25 to 75 foot-pounds. The accuracy of readings will decrease as you approach 0 foot-pounds or 100 foot-pounds. The ranges in Table C-3 are based on this principle.

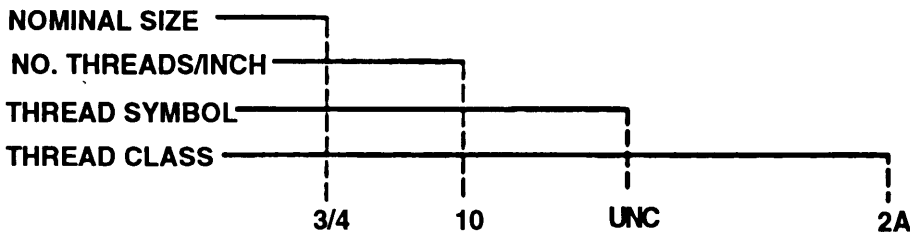
C-4. TIGHTENING METAL FASTENERS (continued).

Table C-3. Torque Ranges	
STATED RANGE	MOST EFFECTIVE RANGE
0-200 in-lb	4-13 ft-lb
0-600 ft-lb	150-450 ft-lb
0-170 ft-lb	44-131 ft-lb
15-75 ft-lb	30-60 ft-lb

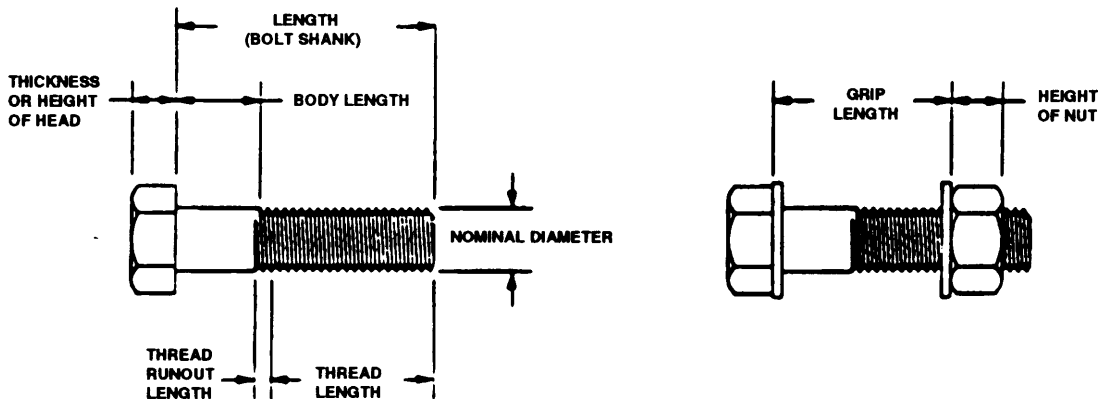
C-5. FASTENER SIZE AND THREAD PATTERN.

Threaded fasteners are categorized according to diameter of the fastener shank. Thread styles are divided into broad groups, the two most common being coarse (Unified Coarse-UNC) and fine (Unified Fine-UNF). These groups are defined by the number of threads per inch on the bolt shanks. In addition, threads are categorized by thread class (Table C-4), which is a measure of the degree between threads of bolt or screw (external threads) and threads of the attaching nut or tapped hole (internal threads of the attaching nut or tapped hole) (internal threads). The most common thread class for bolts and screws is Class 2.

Table C-4. Thread Classes and Description		
EXTERNAL	INTERNAL	INTERNAL
1A	1B	LOOSE FIT
2A	2B	MEDIUM FIT
3A	3B	CLOSE FIT



NOTE: Unless followed with -LH (e.g. 314-10 UNC-2A-LH), threads are right-hand.



C-6. FASTENER GRADE.

In addition to being classified by thread type, thread fasteners are also classified by material. The most familiar fastener classification system is the SAE grading system (Table C-5).

Table C-5. SAE Screw and Bolt Markings	
SCREWS	BOLTS
<p>SAE GRADE 2 NO MARKING</p> <p>SAE GRADE 3 2 RADIAL DASHES 180° APART</p> <p>SAE GRADE 5 3 RADIAL DASHES 120° APART</p>	<p>SAE GRADE 6 4 RADIAL DASHES 90° APART</p> <p>SAE GRADE 7 5 RADIAL DASHES 72° APART</p> <p>SAE GRADE 8 6 RADIAL DASHES 60° APART</p>

Markings on Hex Locknuts

GRADE A - No Marks
 GRADE B - 3 Marks
 GRADE C - 6 Marks

GRADE A - No Marks
 GRADE B - Letter B
 GRADE C - Letter C

GRADE A - No Notches
 GRADE B - One Notch
 GRADE C - Two Notches

APPENDIX D EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Paragraph Number	Paragraph Title	Page Number
D-1	Scope	D-1
D-2	Explanation of Columns	D-1
	Expendable Supplies and Materials List	D-2

Section I. INTRODUCTION

D-1 . SCOPE.

This appendix lists expendable/durable supplies and materials you will need to operate and maintain the M992A1. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

D-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" of maintenance paragraphs or narrative instructions to identify the material needed (e.g., Drycleaning solvent, Item 27, Appendix D).
- b. **Column (2) - Level.** This column identifies the lowest level of maintenance that requires the listed item.
 - C Operator/Crew
 - O Unit
 - F Direct Support
 - H General Support
- 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 (CAGEC).** Indicates the federal item name and, if required, a description to identify the item. The last line for each indicates the commercial and government entity code (CAGEC) in parentheses followed by the part number, if applicable.
- e. **Column (5) - U/M (Unit of Measure).** Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation: BT (bottle), CN (carton), DR (drum), EA (each), FT (foot), GL (gallon), HD (hundred), KT (kit), LB (pound), OZ (ounce), PG (package), PT (pint), QT (quart), RL (roll), and TU (tube). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC)	(5) U/M
1	O	8040-00-809-8252	ADHESIVE, 4-OZ BOTTLE (81349) MIL-A-1154	BT
2	O	8040-00-2904301	ADHESIVE, CEMENT, 1 QT (81349) MIL-A-5092	EA
3	O	8040-00-664-4318	ADHESIVE, CEMENT, 1 PT (81349) MIL-A-5092	EA
4	O	8040-00-262-9026	ADHESIVE, RUBBER, TYPE 1 (80244) MMM-A-1617	EA
5	O	8040-00-664-4318	ADHESIVE, RUBBER, TYPE 2 (18876) 9995460	EA
6	O	8040-00-148-7207	ADHESIVE, SEALANT, SILICON RTV (81349) MIL-A-46106	KT
7	O	6850-00-181-7929	ANTIFREEZE, PERM O-A-548, 1-GAL. CAN (81349) MIL46153	GL
8	O	6850-00-181-7933	ANTIFREEZE, PERM O-A-548, 1-GAL. CAN (81349) MIL-A-46153	GL
9	O	6850-00-174-1806	ANTIFREEZE, ARCTIC-TYPE, 55-GAL. DRUM (81349) MIL-A-11755	DR
10	O	8030-00-087-8630	ANTI-SEIZE COMPOUND (81349) MIL-T-83484	LB
11	O	8030-00-597-5367	ANTI-SEIZE COMPOUND (81349) MIL-A-907	LB
12	O	5305-00-066-8130	CAPSCREW (96906) M590727-213	EA
13	O	5340-00-450-5718	CAP AND PLUG SET (19207) 10935405	EA
14	O	6850-00-598-7328	CLEANING COMPOUND, (81349) MIL-C-10597	KT
15	O	6850-00-227-1887	CLEANING COMPOUND (81349) MIL-C-43454	QT

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (continued)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC)	(5) U/M
16	O	6850-00-224-6665	CLEANING COMPOUND (81349) MIL-C-11090	CN
17	O	6850-00-224-6657	CLEANING COMPOUND, RIFLE (81349) MIL-C-372	CN
18	O	6850-00-224-6663	CLEANING COMPOUND, RIFLE (81349) MIL-C-372	GL
19	O	6850-00-105-3084	CLEANING COMPOUND (81349) MIL-C-81302	CN
20	O	5350-00-221-0872	CLOTH, ABRASIVE CROCUS, 50 SHEETS (81348) PC458	PG
21	O	7920-00-044-9281	CLOTH, CLEANING, LOW-LINT (81349) MIL-C-85403	LB
22	O	8010-01-160-6744	COATING, ALIPHATIC POLYURETHANE, CHEMICAL RESISTANT, BROWN (81349) MIL-C-46168	KT
23	O	8010-01-160-6741	COATING, ALIPHATIC POLYURETHANE, CHEMICAL RESISTANT, GREEN (81349) MIL-C-46168	KT
24	O	8030-00-163-5792	COATING COMPOUND, PLASTIC (04866) VC3	BT
25	O	6850-00-901-0591	DEICING-DEFROSTING COMPOUND (81349) MIL-A-8243	CN
26	O	6810-00-107-1510	DISTILLED WATER (81348) O-C-265	GL
27	O	6850-00-281-1985	DRY CLEANING SOLVENT (58536) A-A-711	GL
28	O	6850-00-281-3061	DRY CLEANING SOLVENT, 4-OZ CAN (81348) P-D-680	CN
29	O	8010-00-133-5706	ENAMEL, INSULATING (81349) MIL-E-22118	PT
30	O	8010-00-664-7653	ENAMEL, SYN, GLOSS, WHITE (81349) TT-E-489	QT

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (continued)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC)	(5) U/M
31	O	9110-00-391-7813	FUEL, JELLIED, ALCOHOL 2.625-OZ CAN (94745) 4006	CN
32	O	9150-00-935-1017	GREASE, AUTOMOTIVE ART, 14-OZ CAN (81349) MIL-G-10924	OZ
33	O	9150-00-190-0904	GREASE, AUTOMOTIVE ART, MIL-G-10924 (98308) BRAYCOTE610	LB
34	O	9150-00-190-0905	GREASE, AUTOMOTIVE ART, MIL-G-10924 (98308) BRAYCOTE610	LB
35	O	9150-00-935-9808	HYDRAULIC FLUID, PET, OHT, MIL-H-6083 (98308) BRAYCOTE783C	GL
36	O	9150-00-935-9807	HYDRAULIC FLUID, PET, OHT, MIL-H-6083 (98308) BRAYCOTE783C	OT
37	O	5860-00-753-4967	INHIBITOR, CORROSION (81348) 0-1-00590B	OZ
38	O	9150-00-834-5608	LUBRICANT, SOLID FILM (11770) EVERLUBE 620	TU
38.1	O	9150-01-260-2534	LUBRICANT, SOLID FILM, 16-OZ CAN (81349) MIL-L-23398	CN
39	O	9150-00-231-6689	LUBRICATING OIL, GEN PURPOSE, PL, SPC (81348) VVL800	QT
40	O	9150-00-189-6727	LUBRICATING OIL (81349) MIL-L-2104B	QT
41	O	9150-00-188-9858	LUBRICATING OIL (81349) MIL-L-2104B	CN
42	O	9150-00-186-6668	LUBRICATING OIL, ENG (81349) MIL-L-2104B	CN
43	O	9150-00-188-6681	LUBRICATING OIL, ENG (81349) MIL-L-2104B	QT
44	O	9150-00-231-9062	LUBRICATING OIL, GEN, 5-GAL. CAN (81348) VVL800	GL
45	O	9150-00-231-2361	LUBRICATING OIL, GEN (81349) MIL-L-3150	QT

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (continued).

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC)	(5) U/M
46	O	9150-00-231-2356	LUBRICATING OIL, GEN (81349) MIL-L-3150	CN
47	O	9150-00-543-7220	LUBRICATING OIL, MOLY-SIL (81349) DOD-L-25681	LB
48	O	9150-00-402-2372	LUBRICATING OIL, OES. 5-GAL. CAN (15445) CONOCODN500 FLUID, TYPE 1	CN
49	O	9150-00-402-4478	LUBRICATING OIL, OES, 1-QT CAN (15445) CONOCODN600 FLUID	QT
50	O	8010-00-292-3048	PAINT, RUST INHIBITOR PRIMER (81348) TT-P-659	QT
51	O	6640-00-285-4694	PAPER, LENS (81348) MNNP40	HD
52	O	9150-00-250-0926	PETROLATUM, TECHNICAL, 1.75-LB CAN (81348) VVP236	LB
53	O	9150-00-250-0933	PETROLATUM, TECHNICAL, 7.5-LB CAN (81348) VVP236	LB
54	O	8030-00-145-0156	PLASTIC PLASTISOL, TYPE I OR II, CLASS 2, BLACK (81349) MIL-P-20689	PT
55	O	8010-00-582-5318	PRIMER, COATING (81348) TT-P-1757	QT
56	O	7920-00-205-1711	RAG, WIPING (64067) 7920-00-205-1711	LB
57	O	8030-00-209-8010	SEALER, TYPE I OR II (81349) MIL-S-11030	PT
58	O	8030-00-823-7917	SEALING COMPOUND, GRADE C (81349) MIL-S-22473	BT
59	O	8030-01-104-5392	SEALING COMPOUND, TYPE II, GRADE N (81349) MIL-S-46163	BT
60	O	8030-00-159-8176	SEALING COMPOUND (81349) MIL-S-45180	TU

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (continued).

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC)	(5) U/M
61	O	8030-00-275-8115	SEALING COMPOUND, SYNTHETIC GLASS, TYPE II (81349) MIL-S-11030	PT
62	O	8030-00-252-3391	SEALING COMPOUND (77247) AGASKETN02	OZ
63	O	1015-01-255-4144	SEALING COMPOUND, TEFLON PIPE SEALANT (19207) 12297953	TU
64	O	6850-00-880-7616	SILICONE COMPOUND (81349) MIL-S-8660	OZ
65	O	3439-01-150-1051	SOLDER, ROSIN CORE (17794) 1243-0001	RL
66	O	3439-00-555-4629	SOLDER, TIN ALLOY (81348) SN60WRP2 0.032 1 LB	LB
67	O	5970-00-926-7219	TAPE, INSULATION, ELECTRICAL, 1/2 IN. WIDE (81348) HH-I-595	RL
68	O	5970-00-188-5477	TAPE, INSULATION, ELECTRICAL, 3/4 IN. WIDE (81349) MIL-I-7798A	RL
69	O	7510-00-0732-1337	TAPE, PACKAGING, WATERPROOF (81348) PPP-T-60, TYPE 4	RL
70	O	8030-00-889-3534	TAPE, ANTISEIZING, 1/4 IN. WIDE (81349) MIL-T-27730	RL
71	O	8030-00-889-3535	TAPE, ANTISEIZING, 1/2 IN. WIDE (81349) MIL-T-27730	RL
72	O	6830-01-167-6665	TECHNICAL NITROGEN (22270) 52220	EA
73	O	8010-00-242-2089	THINNER, PAINT MIXER (81348) TT-T-291 -GR1	GL
74	O	8010-00-558-7026	THINNER, PAINT MINERAL (81348) TT-T-291	CN
75	O	5610-00-141-7838	WALKWAY COMPOUND (81349) MIL-W-5044 TYPE 2	GL

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (continued).

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description(CAGEC)	(5) U/M
76	0	5310-00-809-9514	WASHER (19200) 10910174-9	EA
77	0	6145-01-341-9591	WIRE, ELECTRICAL (81349) M13486/1-4	FT

APPENDIX E

ELECTRICAL SYSTEM SCHEMATICS

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E-1. GENERAL

This appendix contains schematic drawings of the vehicle electrical systems and repairable wiring harnesses. Schematics for each wiring harness are identified by part number. Refer to the vehicle system schematic when performing troubleshooting for electrical problems. Refer to the wiring harness schematic when disassembling a wiring harness.

E-2. ELECTRICAL SYSTEM SCHEMATICS.

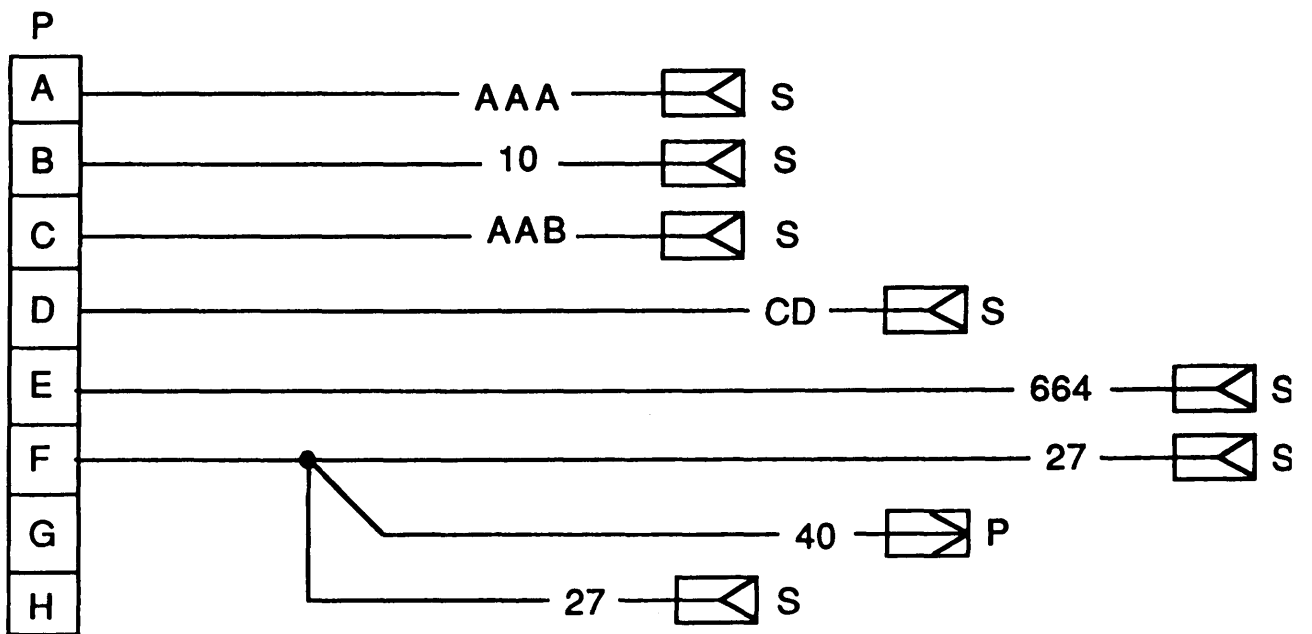


Figure E-1. Hydraulic Control Gage Wiring Harness (12333555)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

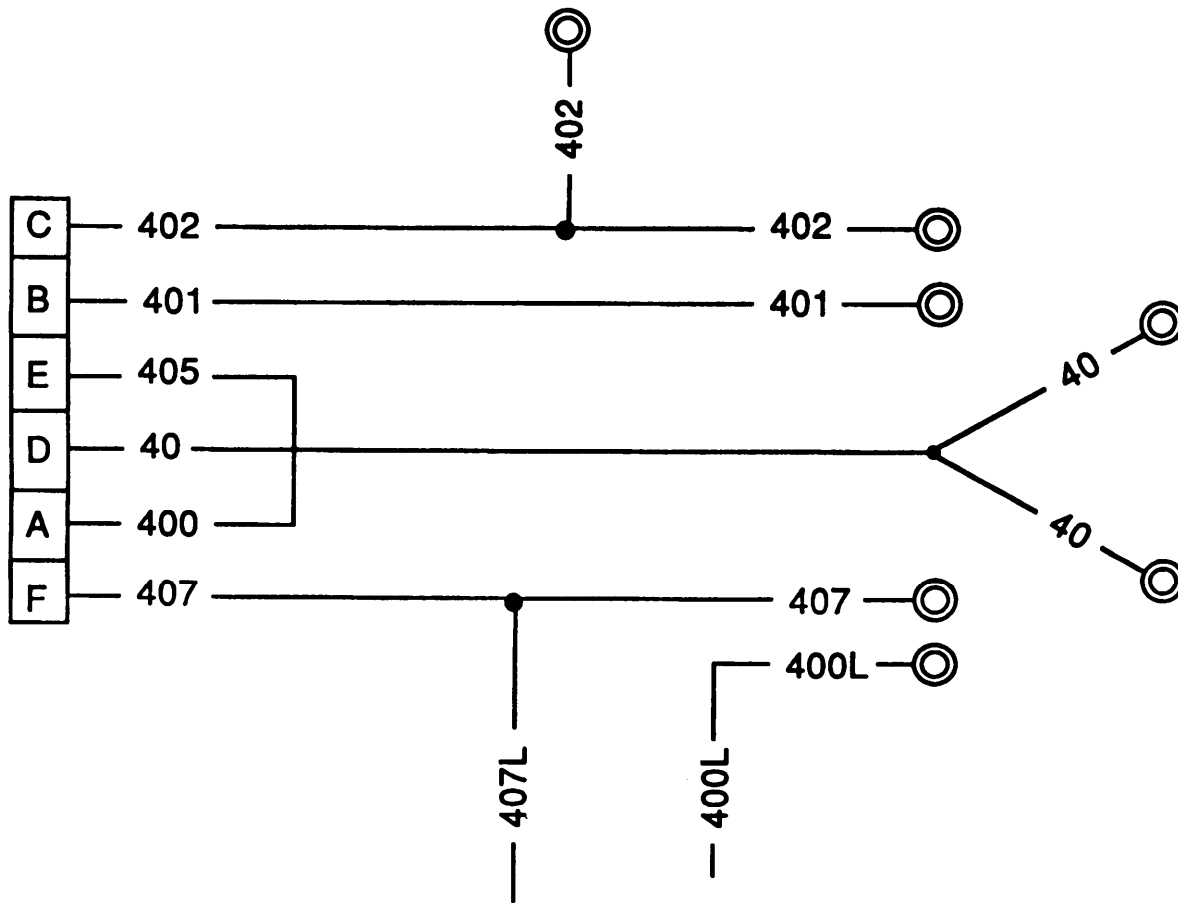


Figure E-2. Accessory Control Box Wiring Harness (10925417)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

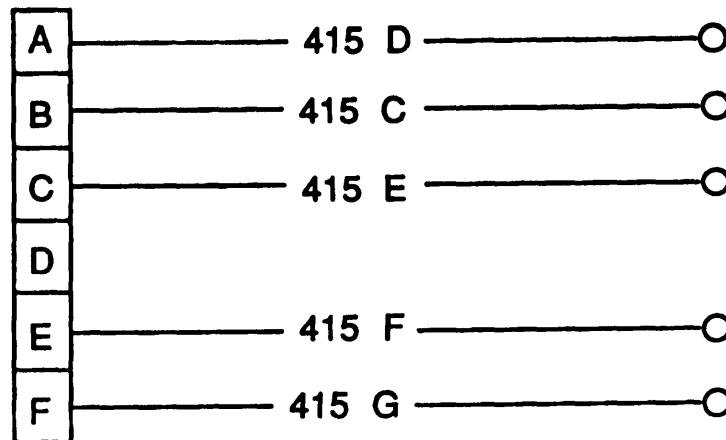


Figure E-3. NBC Power Control Box Harness Assemblies (12333343)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

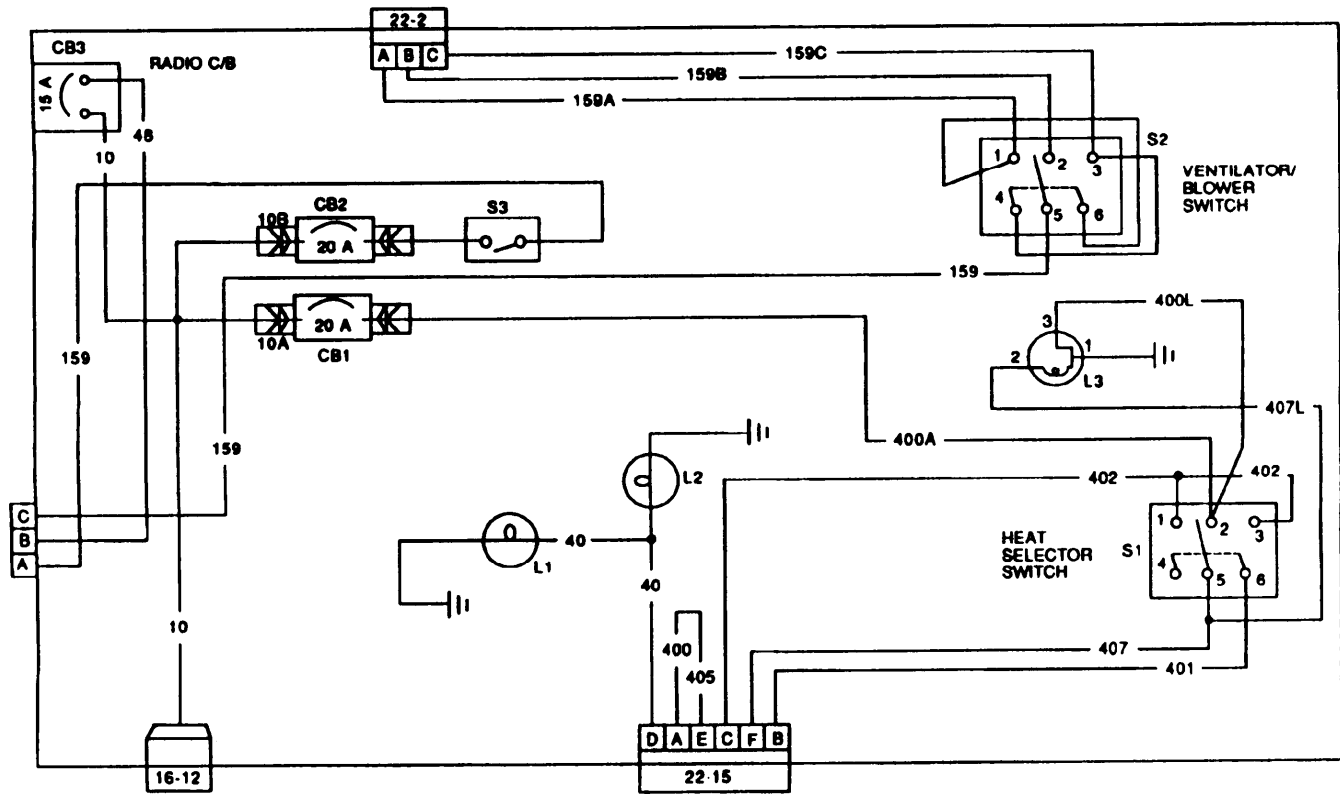


Figure E-4. Accessory Control Box Assembly (12330264)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

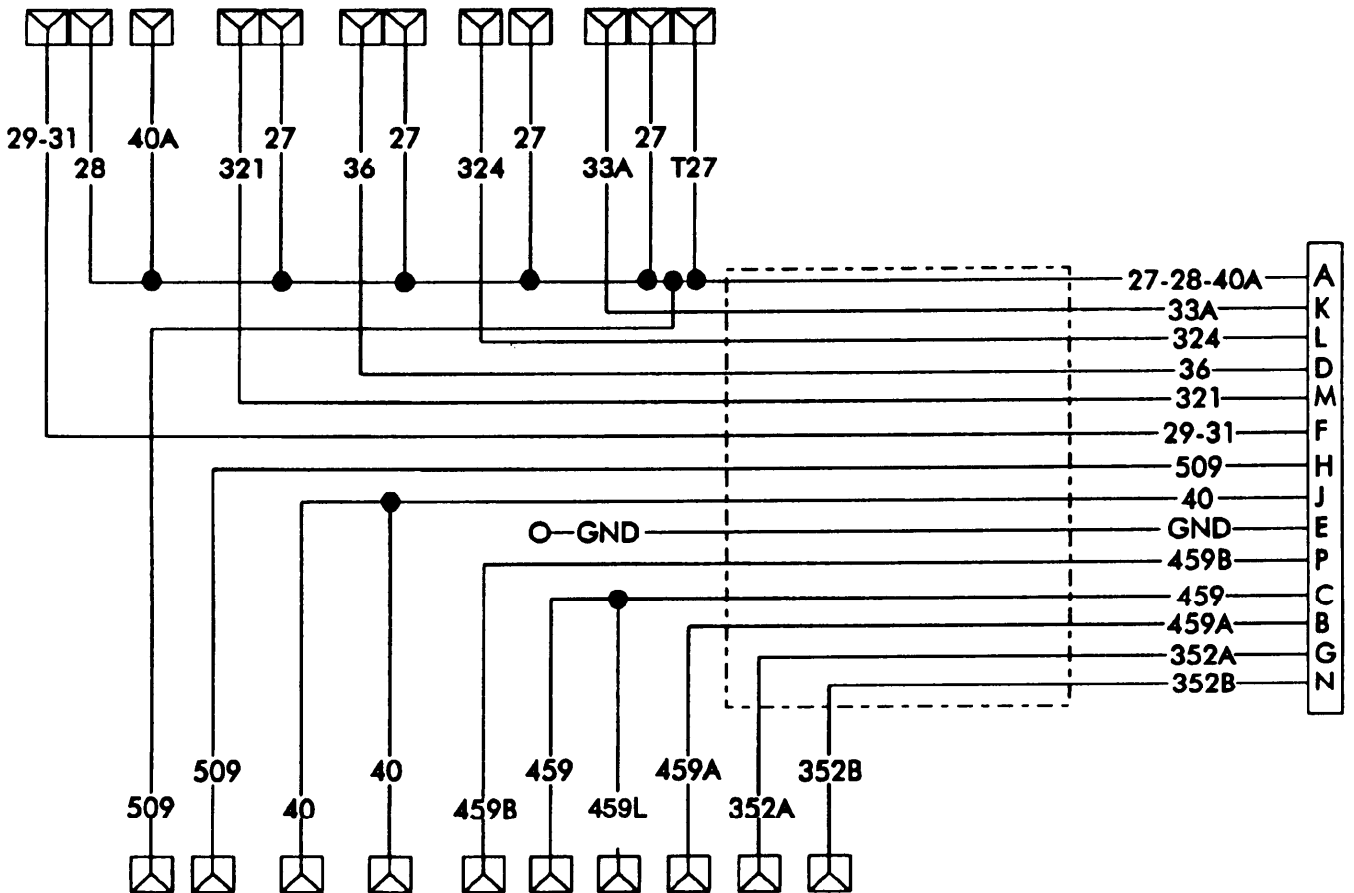


Figure E-5. Drivers Portable Instrument Panel Wiring Harness (12260298)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

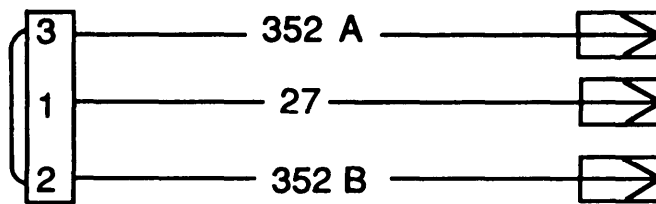


Figure E-6. Low Coolant Indicator Light Assembly and Wiring Harness (12260297)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

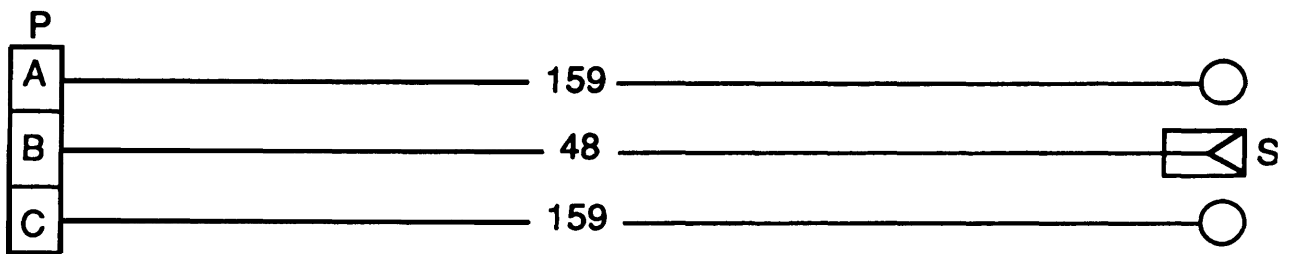


Figure E-7. Accessory Control Box Cable Assembly (12330270)

E-2. ELECTRICAL SYSTEM Schematics (continued).

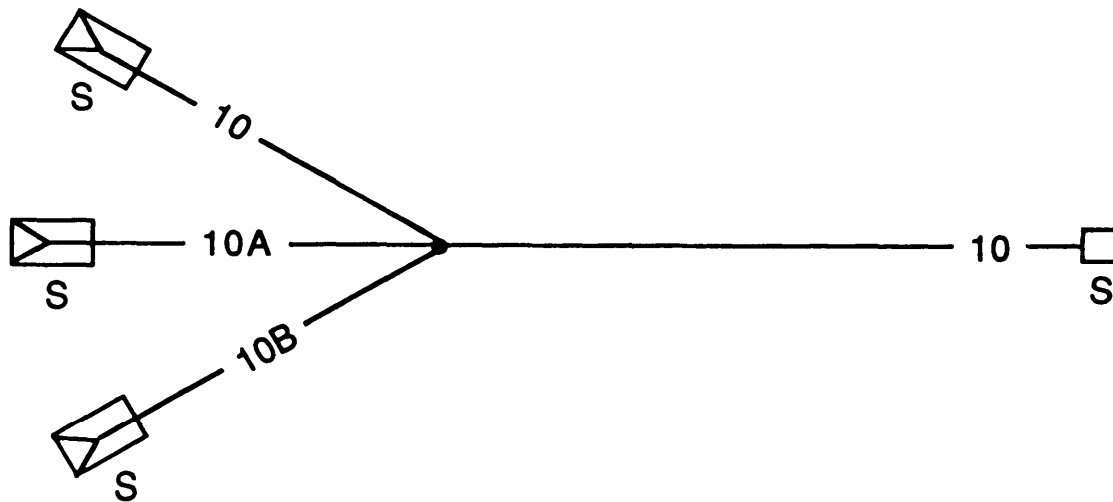


Figure E-8. Accessory Control Box Power Lead (12333387)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

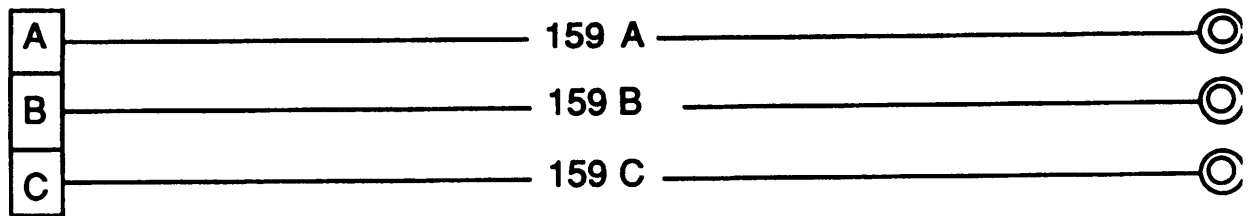


Figure E-9. Accessory Control Box Ventilator Blower Switch Lead Assembly (10925421)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

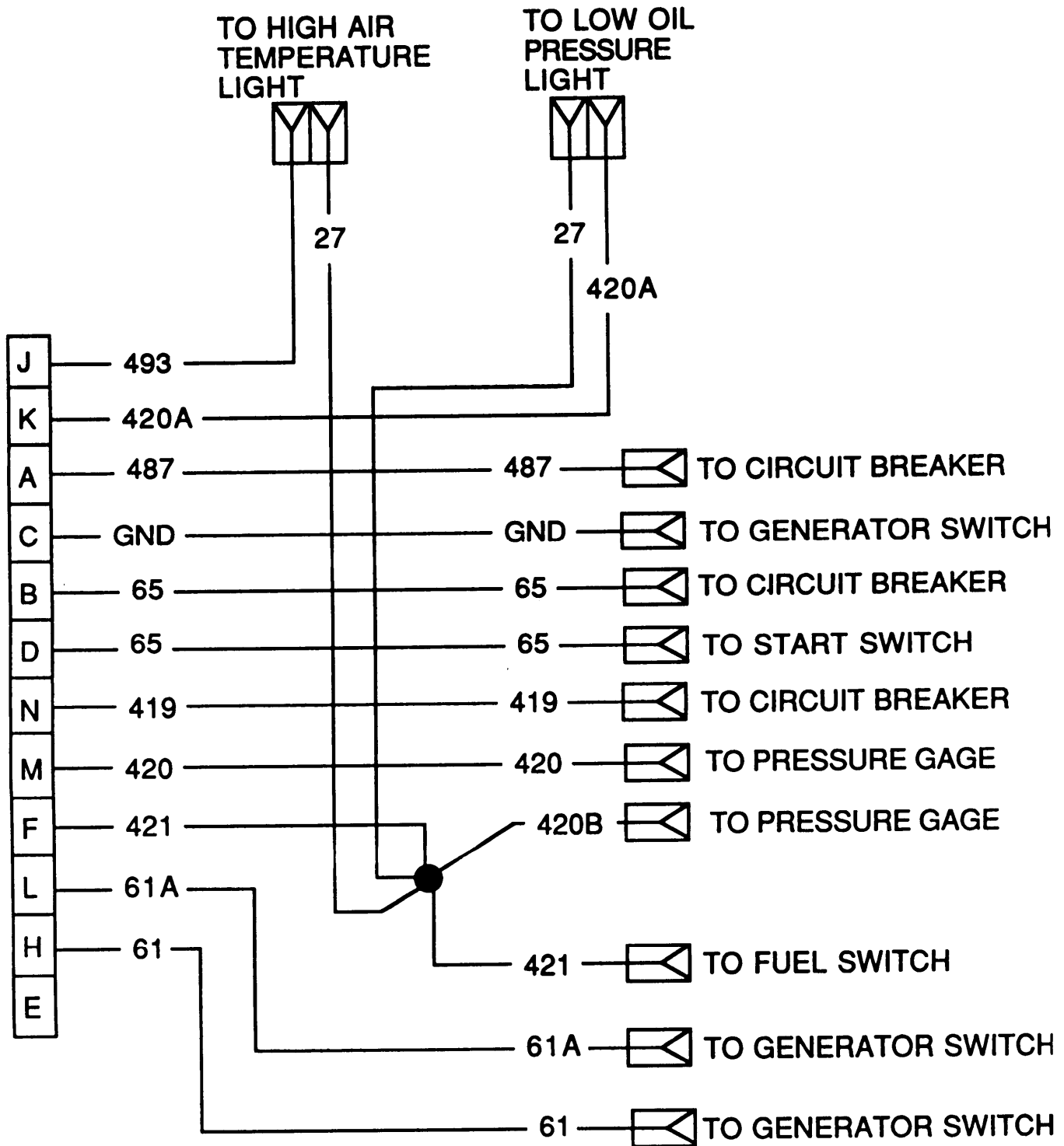


Figure E-10. Auxiliary Power Unit Control Box Wiring Harness Assembly (11672409)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

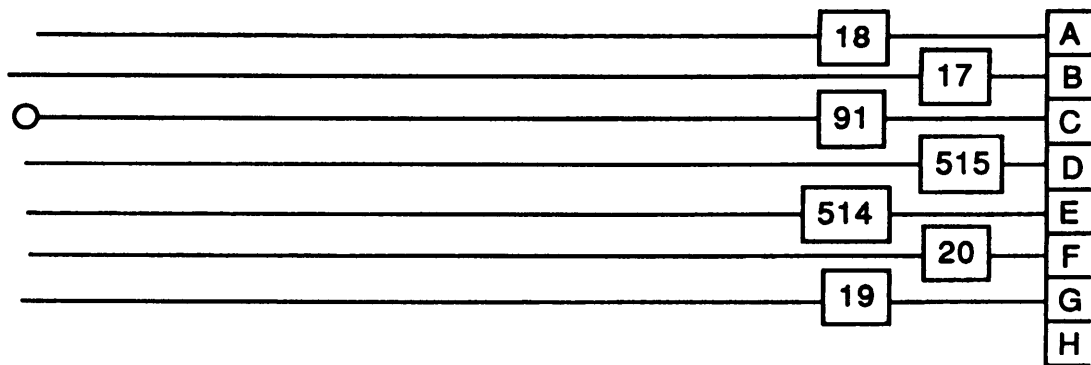


Figure E-11. Headlight Resilient Mount Wiring Harness (10922308)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

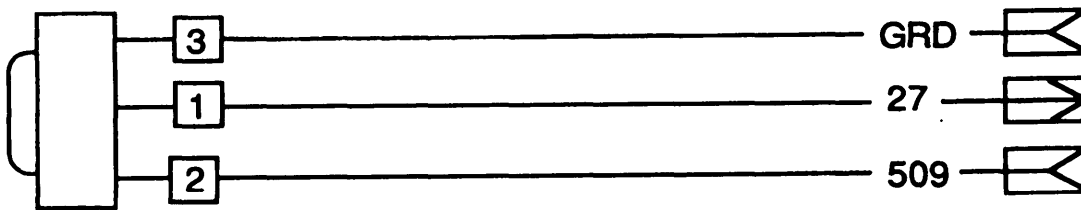


Figure E-12. Master Warning Light Assembly (10922337)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

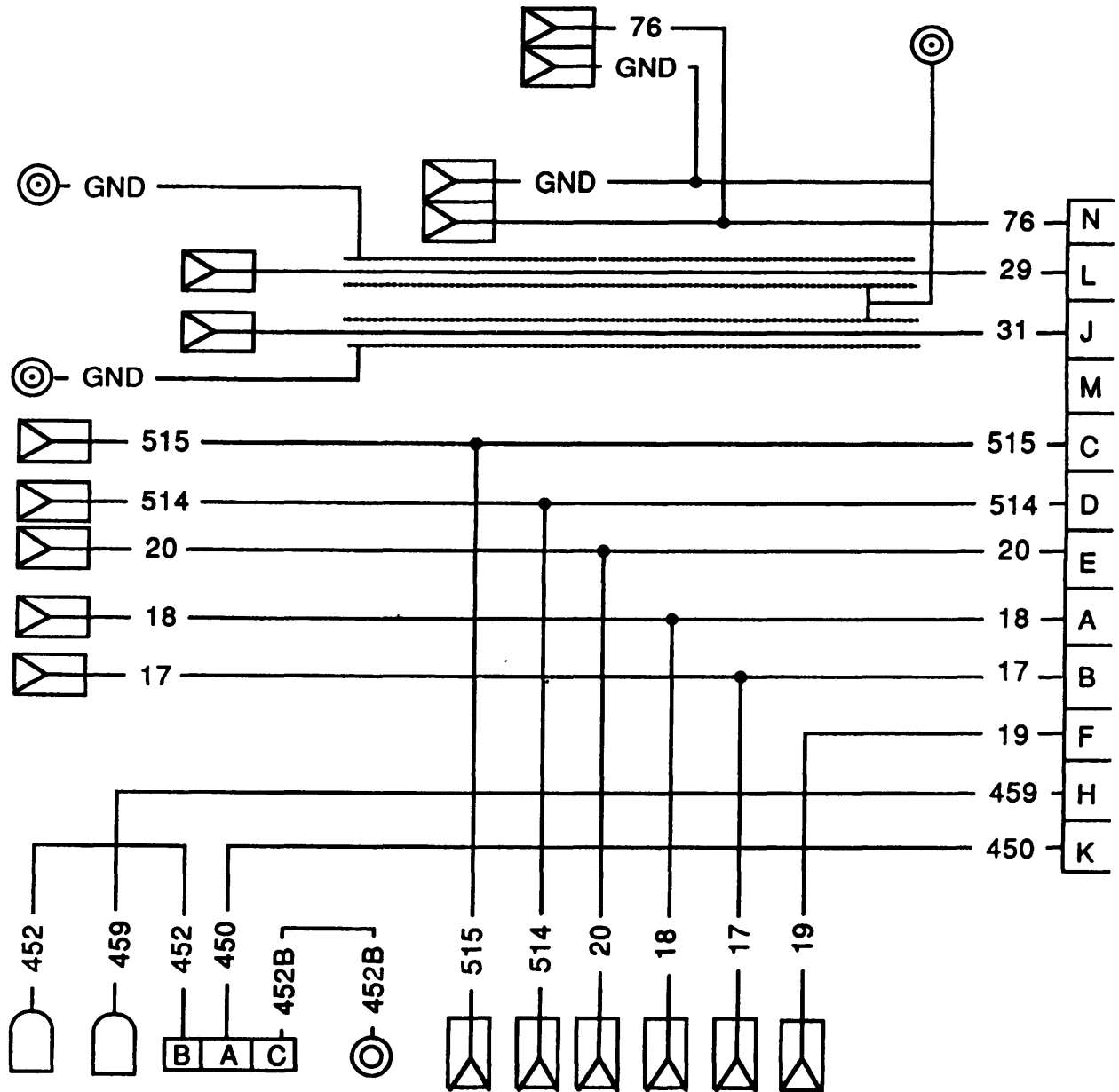


Figure E-13. Hull Front Wiring Harness (10921 380)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



Figure E-15. Bulkhead To Override Switch Lead Assembly (12268419)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



Figure E-16. Fuel Pump Circuit Breaker Leads (11682356-1)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

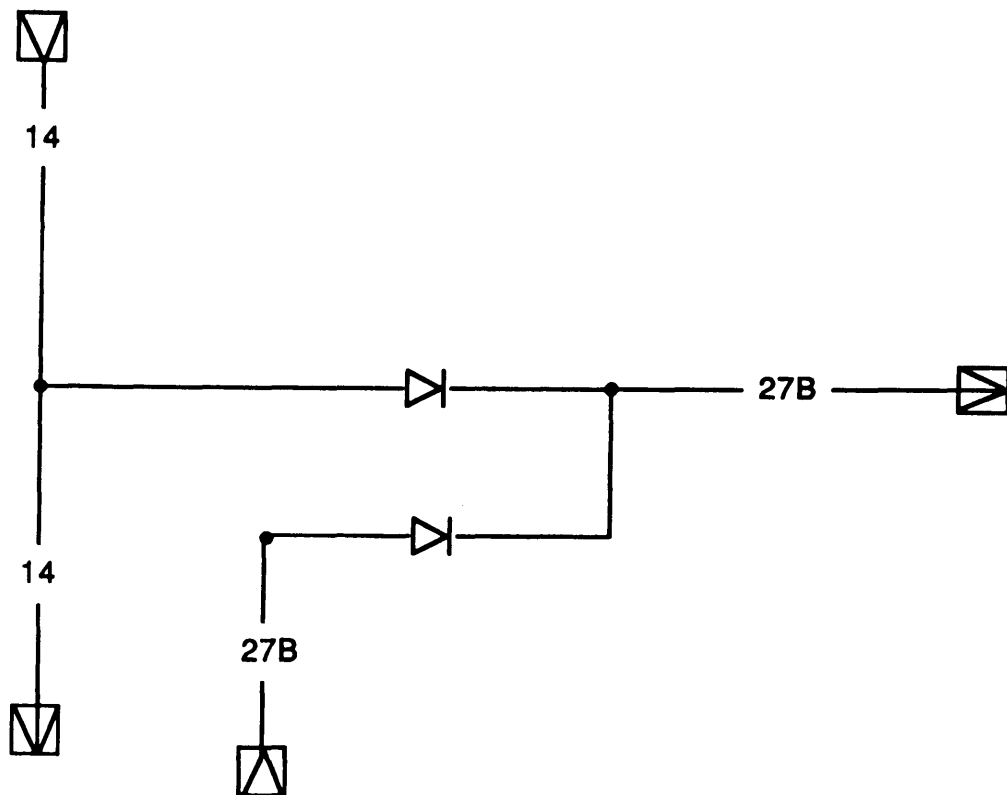


Figure E-17. Diode Harness Assembly (12268417)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

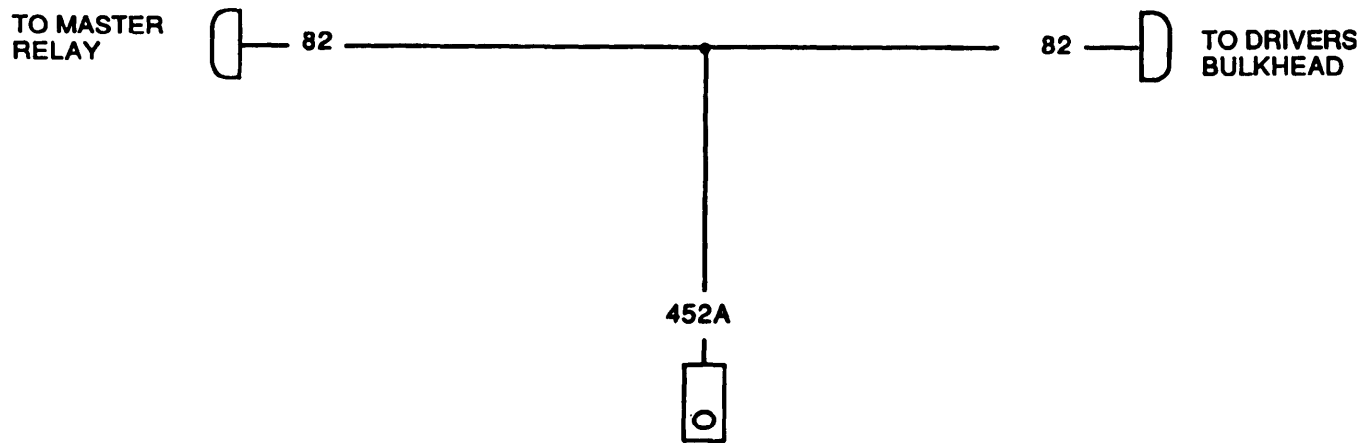


Figure E-18. Engine Bracket To Drivers Bulkhead Wiring Harness (12353403)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

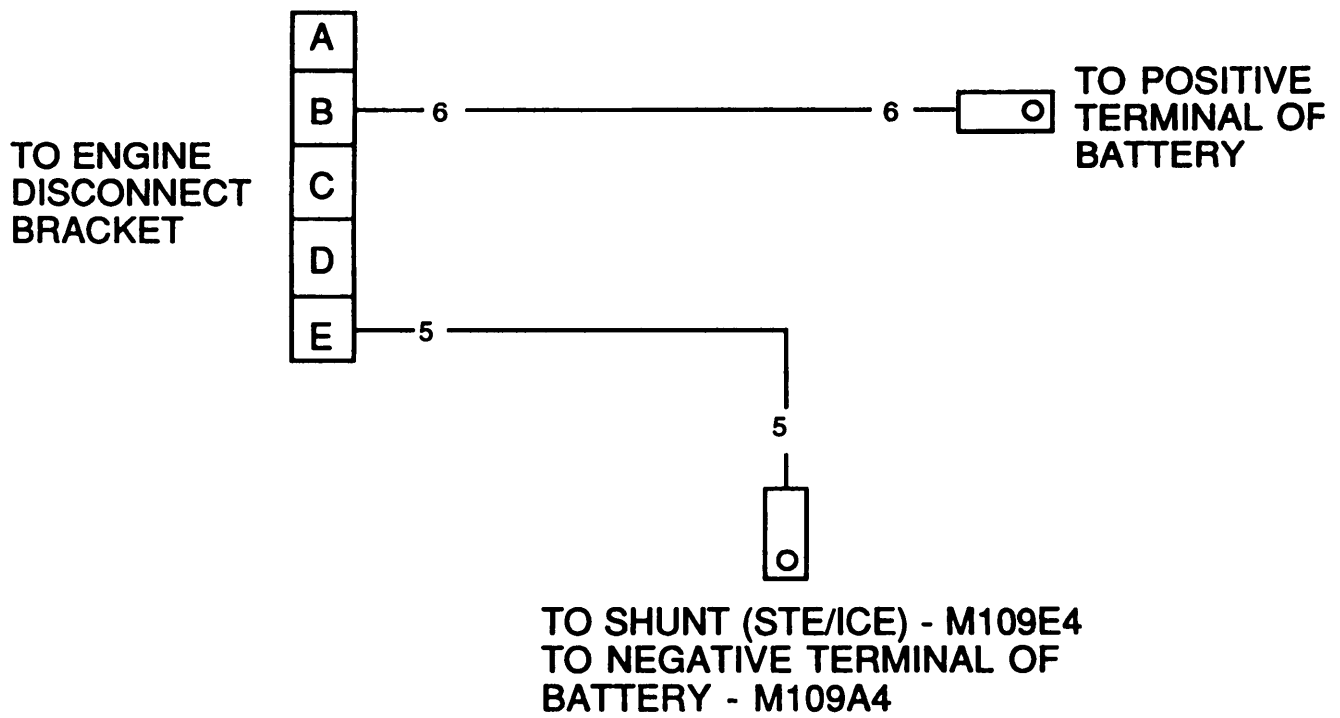


Figure E-20. Engine Disconnect Bracket To Batteries Lead Assembly (12353401)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

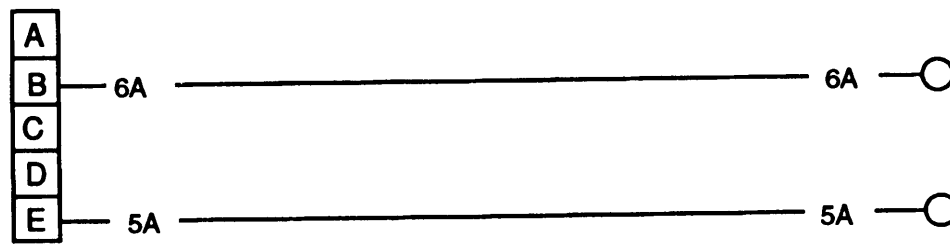


Figure E-21. Starter To Engine Electrical Disconnect (12353072)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

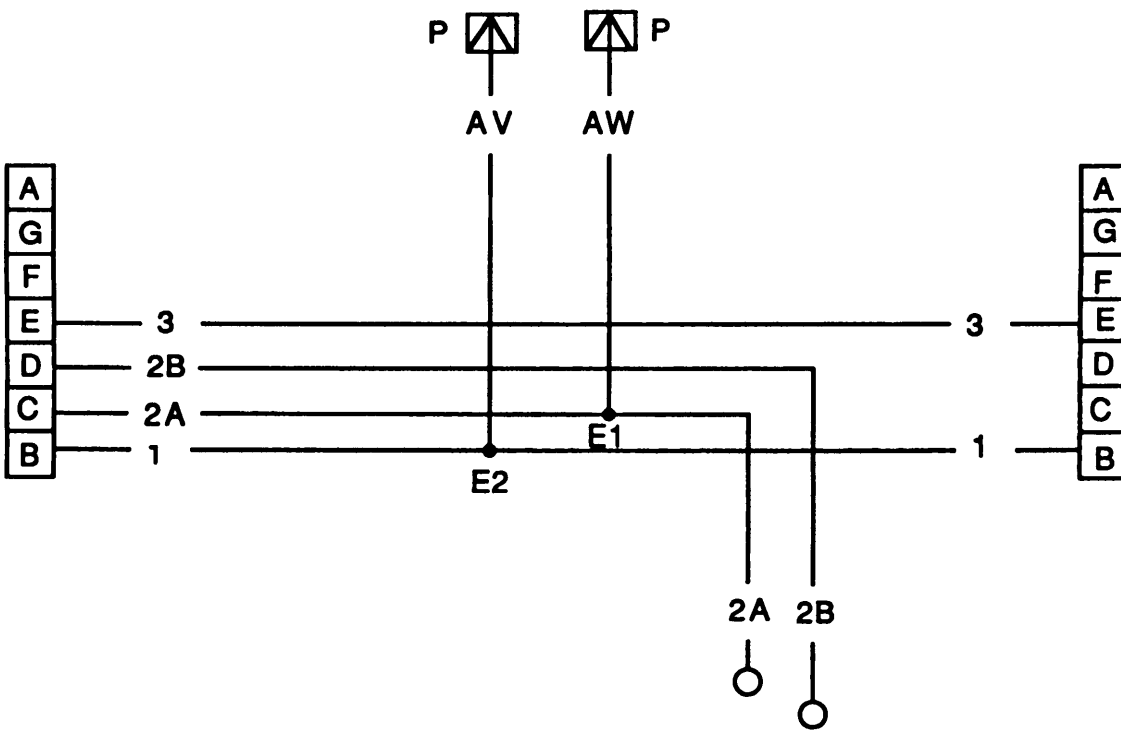


Figure E-22. Rectifier To Regulator Wiring Harness (12376406)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



Figure E-23. Battery To Drivers Bulkhead Cable Assembly (12330317)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

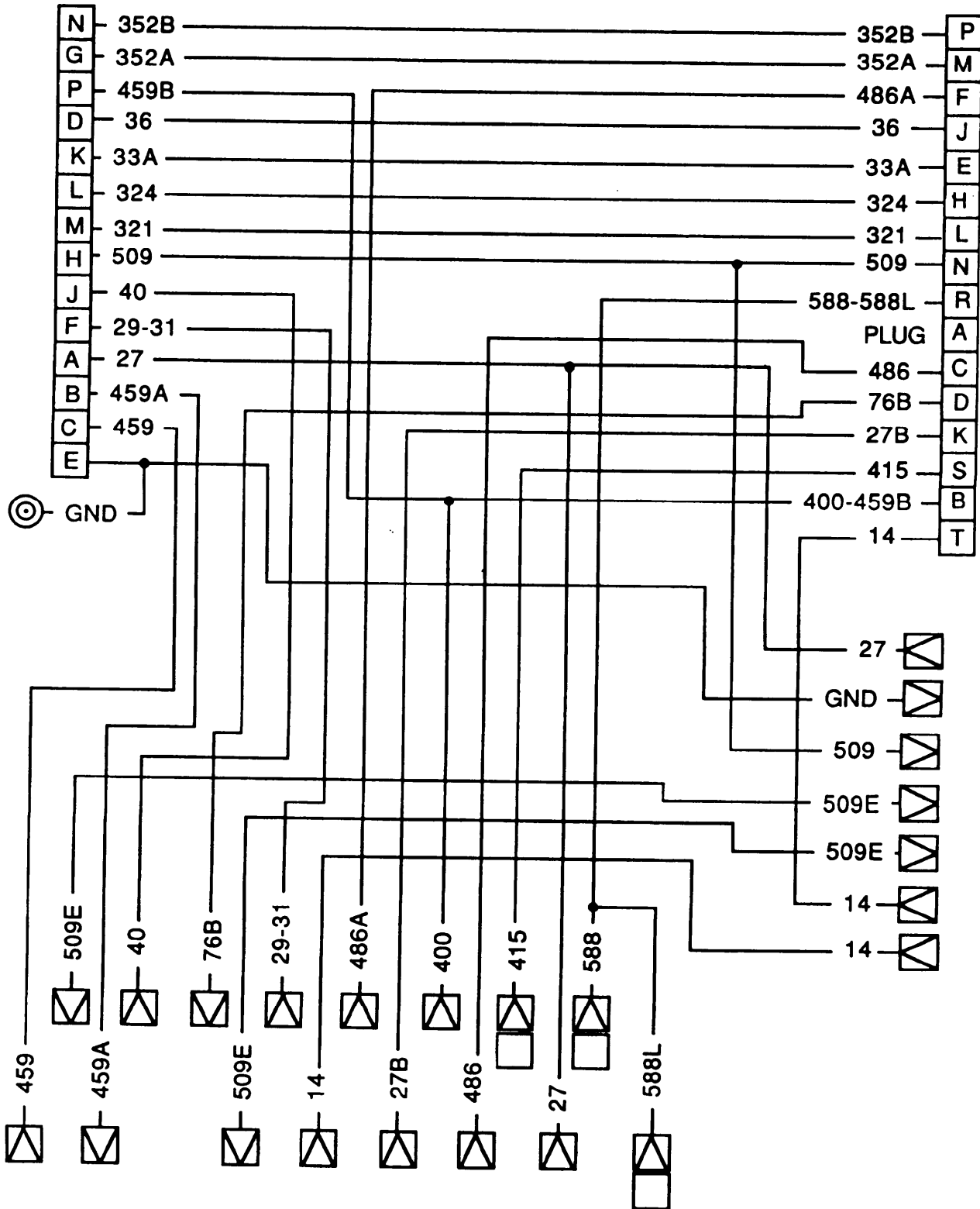


Figure E-24. Bulkhead To Portable Instrument Panel (12260287)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

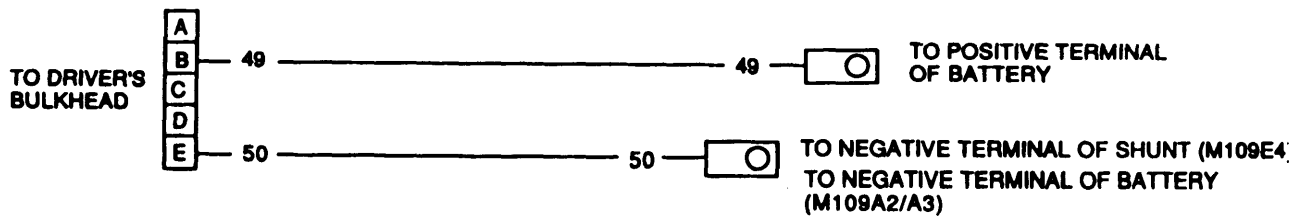


Figure E-25. Shunt Lead Assembly (12353402)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

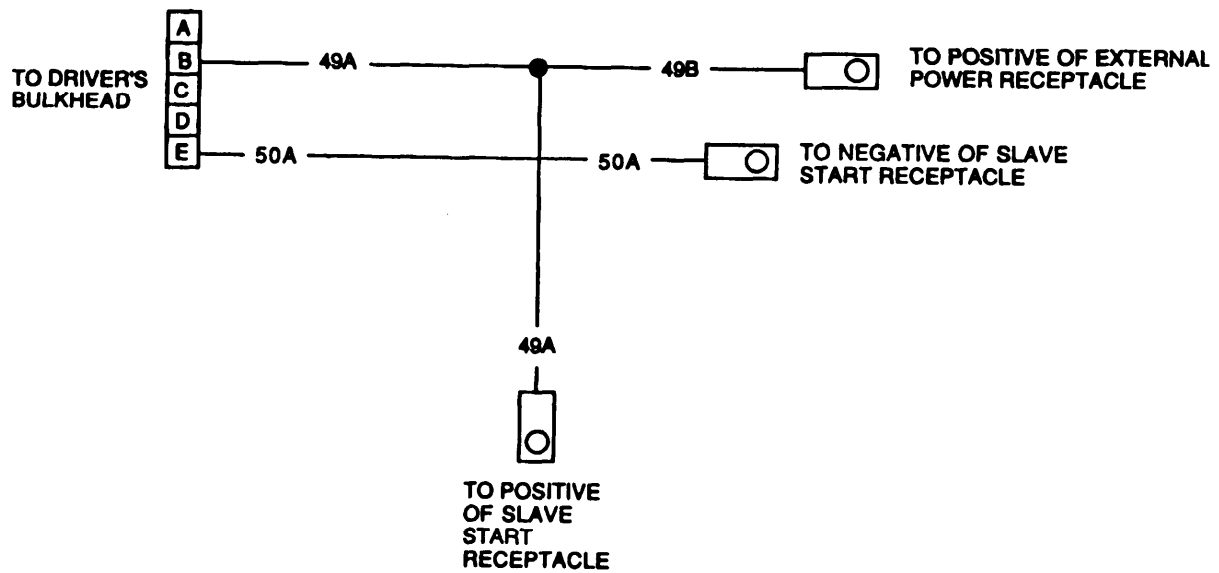


Figure E-26. Drivers Bulkhead To Slave Receptacles (12376573)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

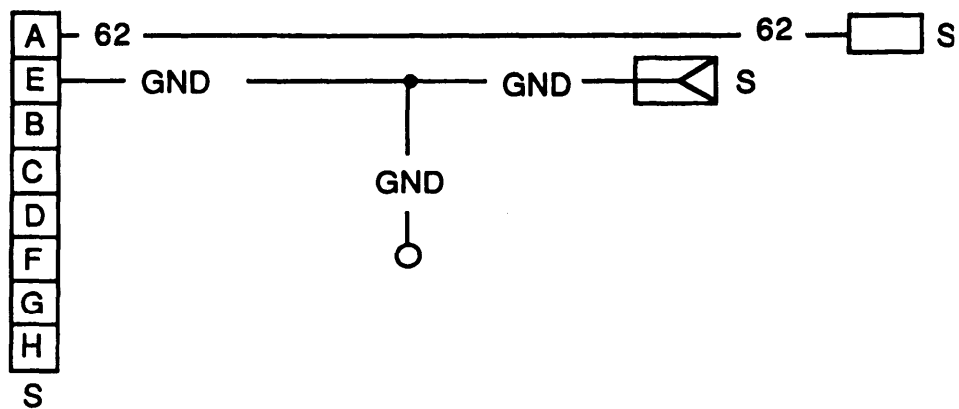


Figure E-27. APU Voltage Regulator Wiring Harness (12330256)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

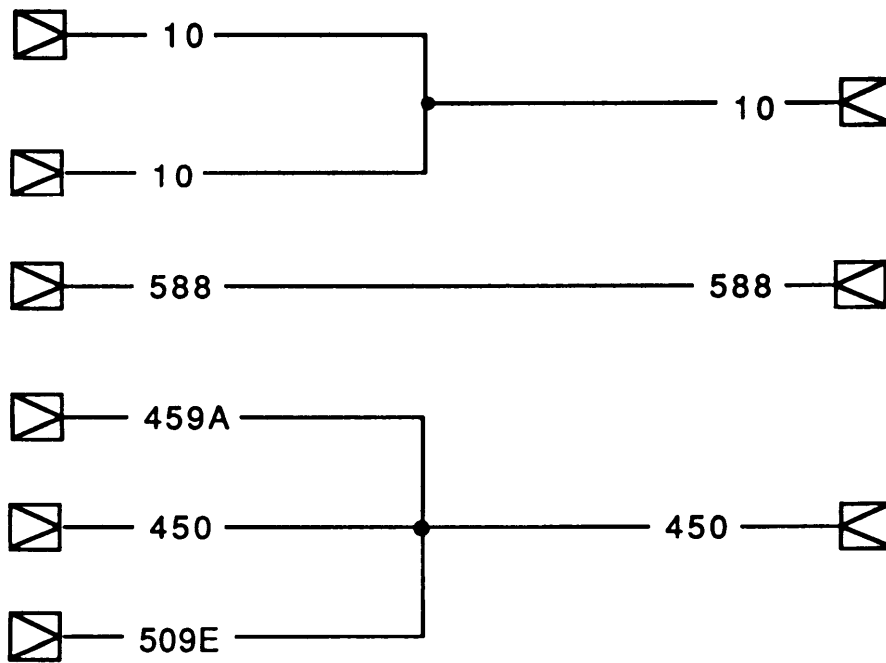


Figure E-28. Drivers Instrument Panel Wiring Harness (12268104)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

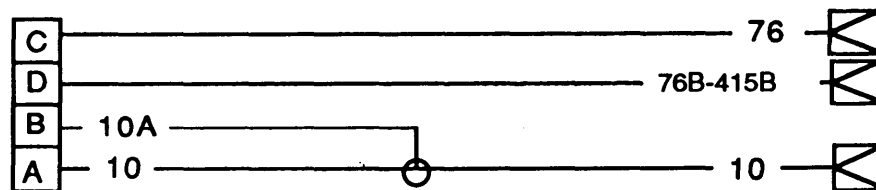


Figure E-29. Intake Fuel Pumps and Generator System Lead Assembly Harness (12353646)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

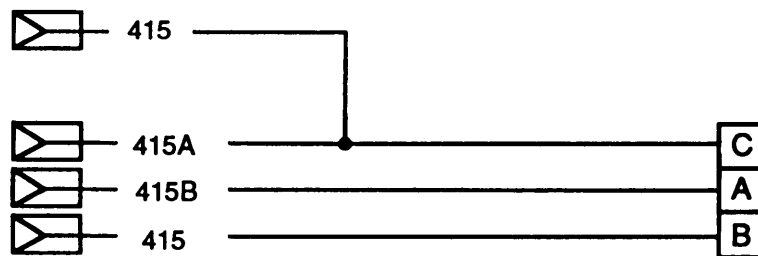


Figure E-30. Air Cleaner Blower Head Assembly (12353259)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

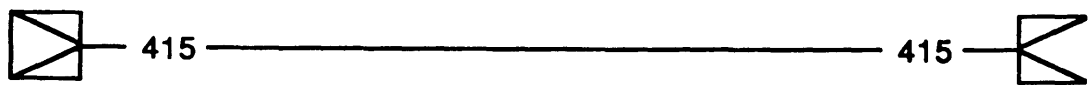


Figure E-31. Circuit Breaker To "Y" Connector Lead Assembly (12353647)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

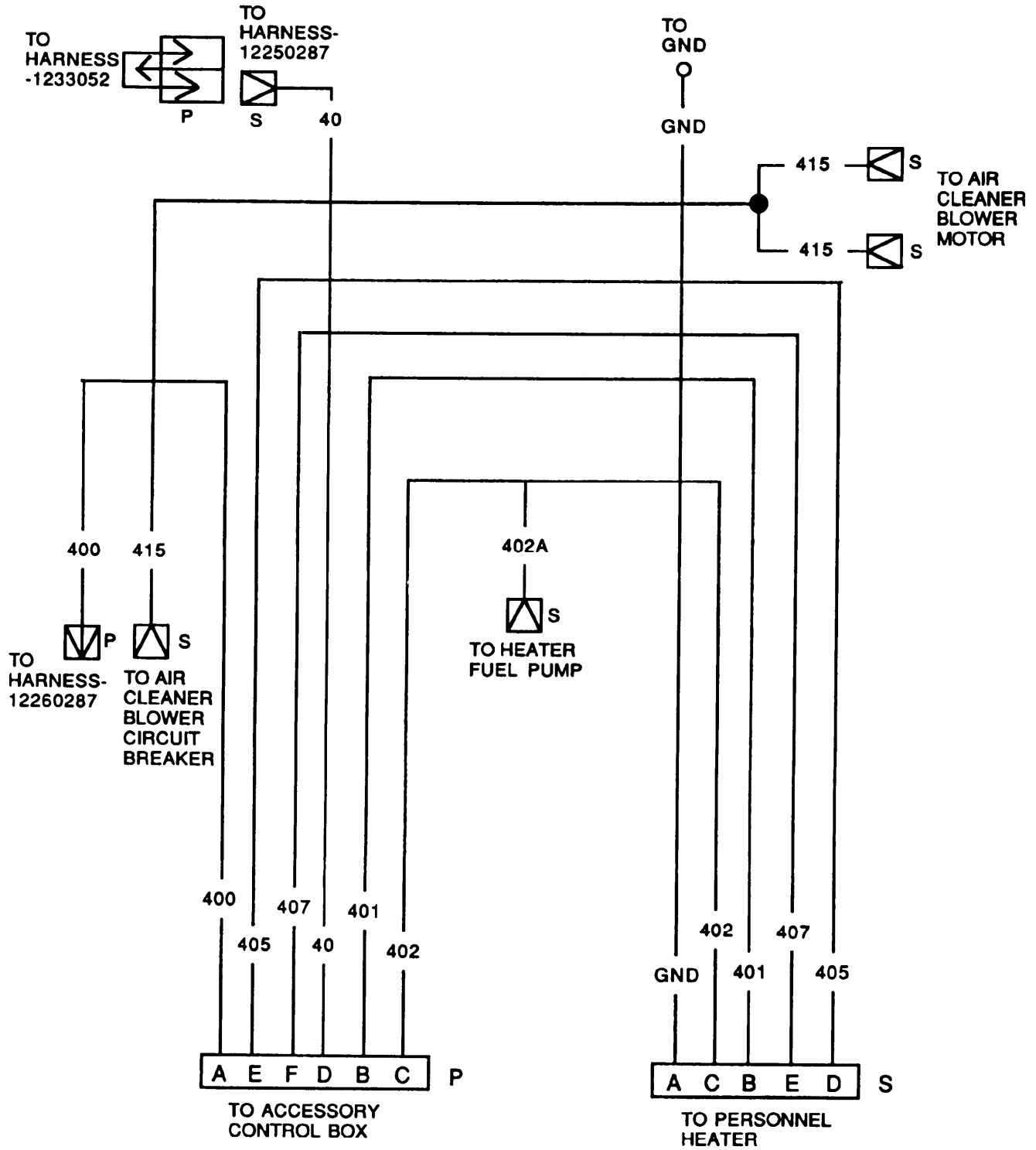


Figure E-32. Air Cleaner Blower Wiring Harness (12351544)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

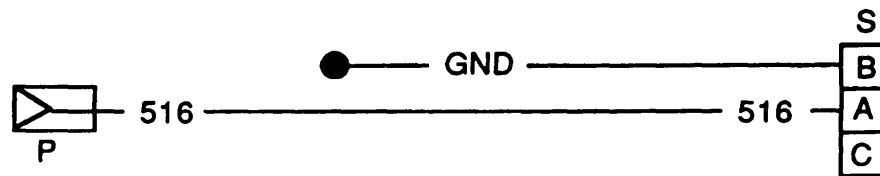


Figure E-33. Passive Night View Cable Assembly (12332740)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



Figure E-34. Slave Connector Ground Lead (12332678)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

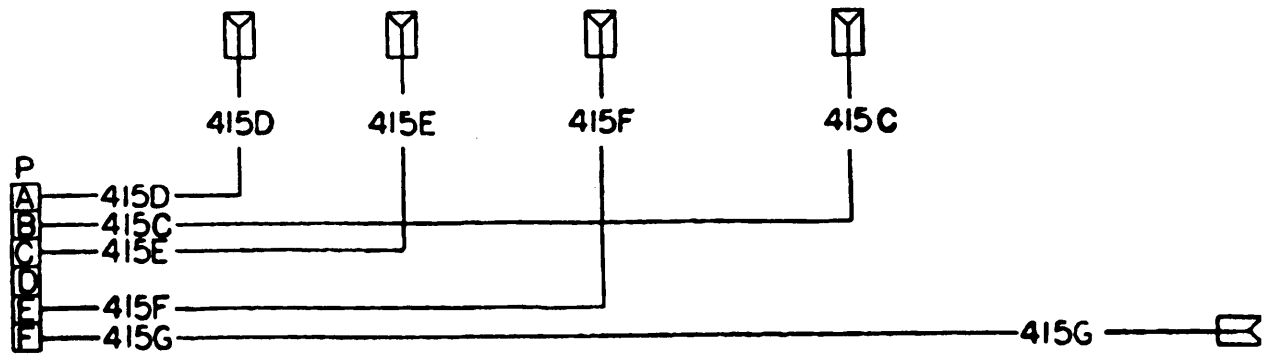


Figure E-35. NBC Power Control Box Wiring Harness (12330296)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

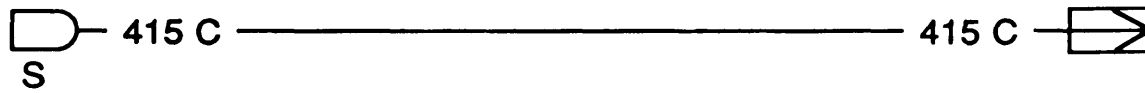


Figure E-36. Air Purifier Filter Blower Wiring Harness (12330298)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

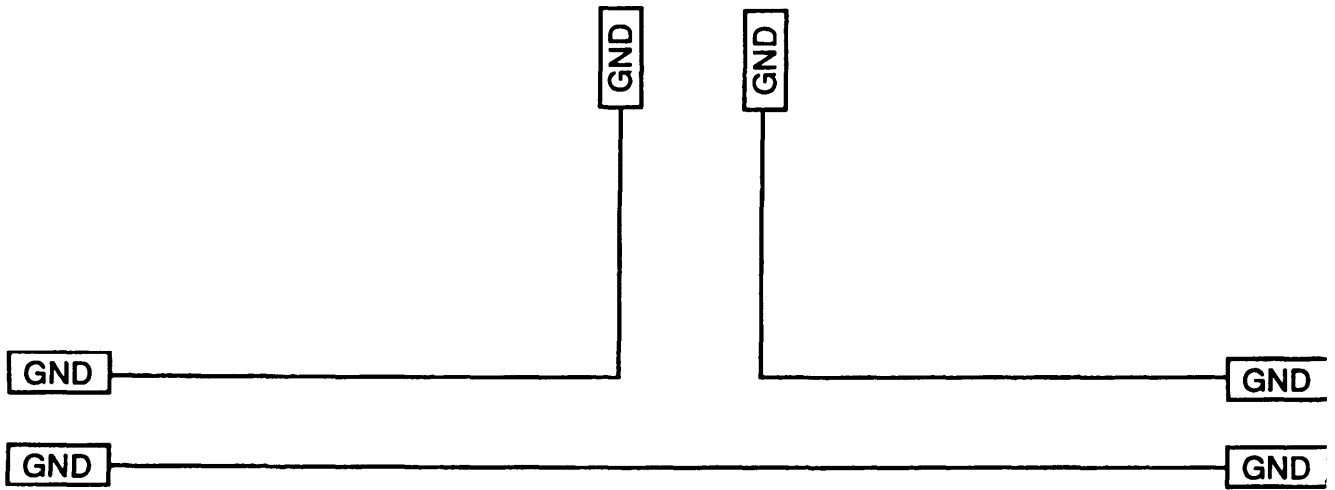


Figure E-37. Conveyor Control Switch (Override) (12376544)

E-2. ELECTRICAL SYSTEM Schematics (continued).

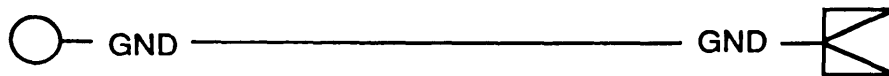


Figure E-38. Combat Override Switch (12353074)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

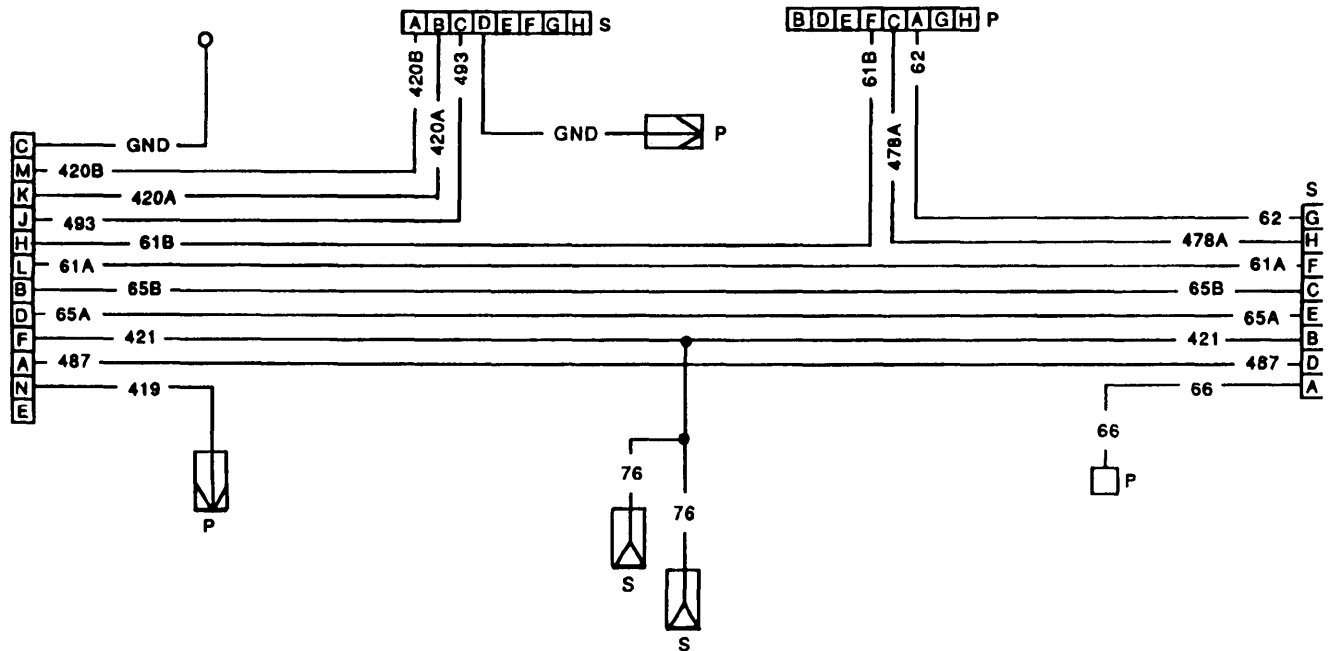


Figure E-39. Auxiliary Power Unit Control Box To APU (12330248)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

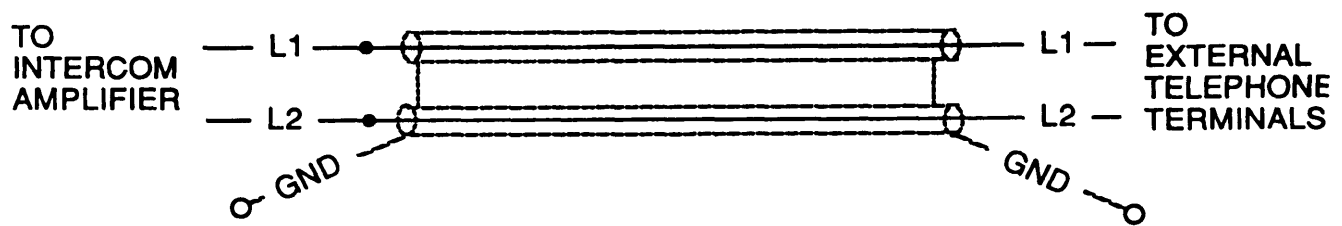


Figure E-40. Telephone Wiring Harness (12330024)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

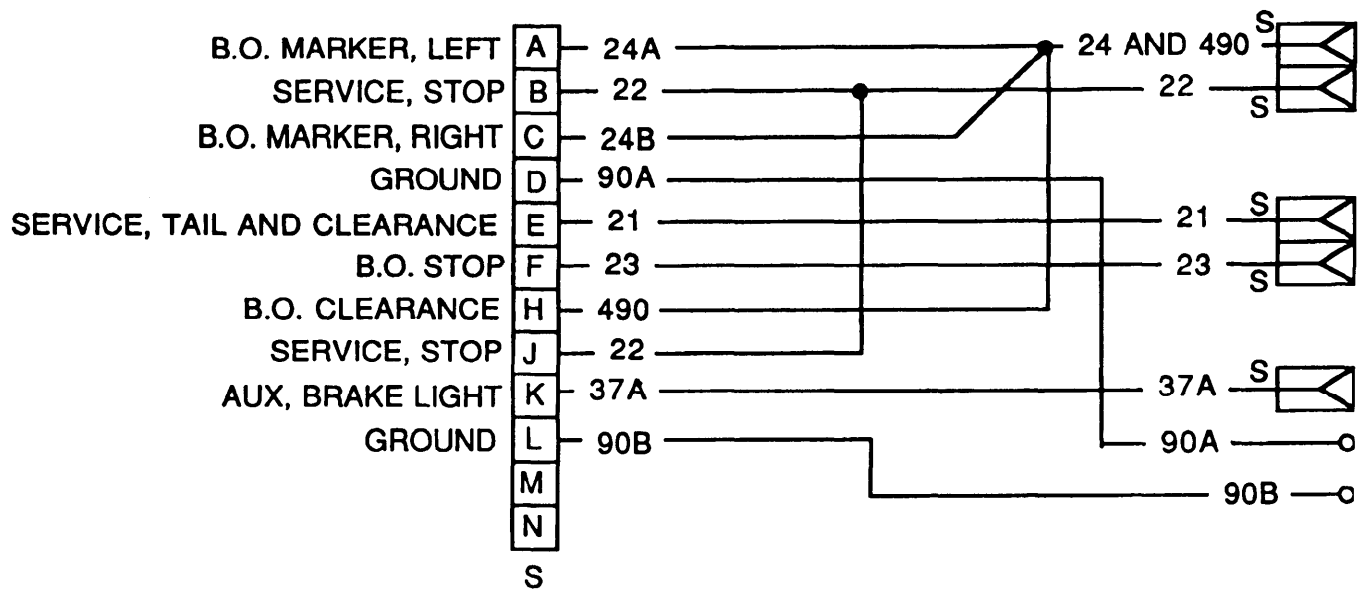


Figure E-41. Trailer Receptacle And Cable Assembly (12330246)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

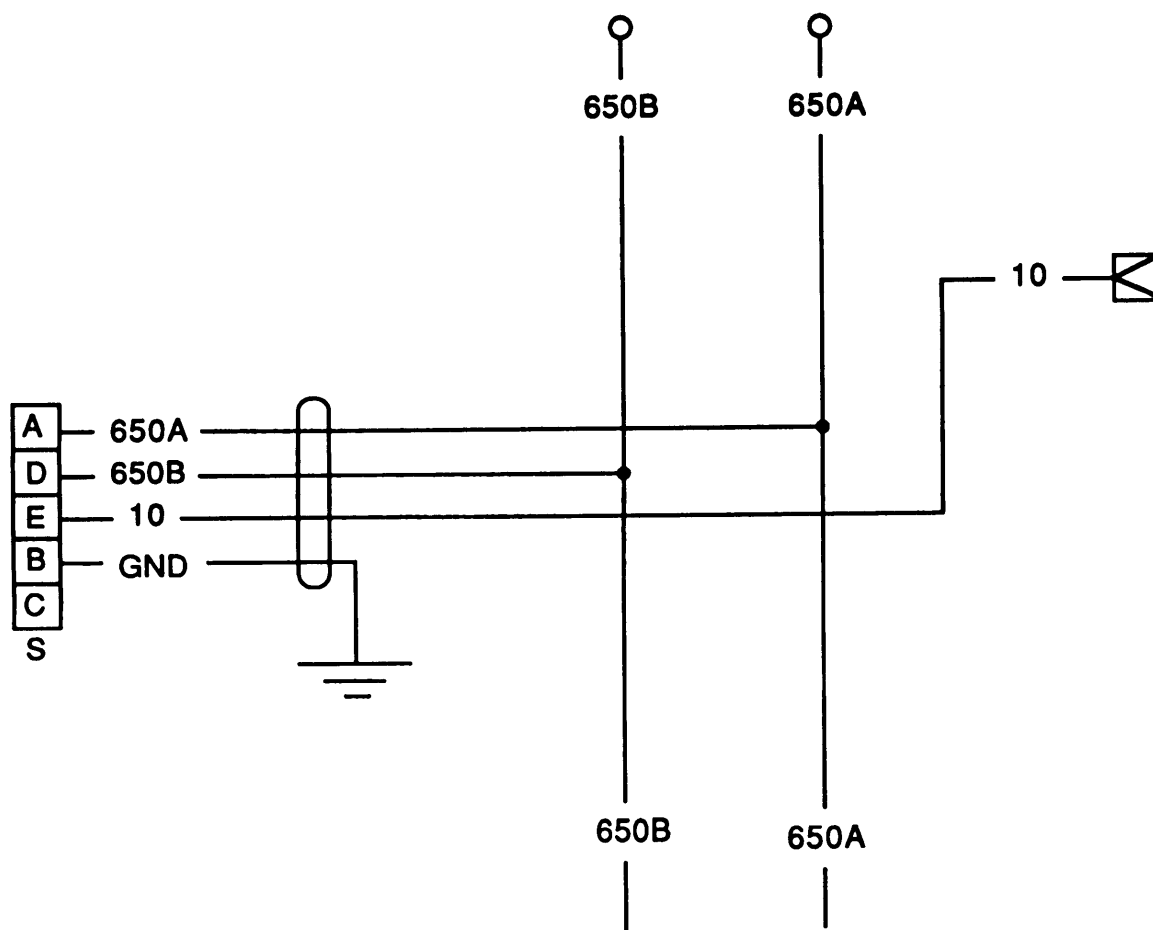


Figure E-42. Chemical Agent Detector (12330316)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

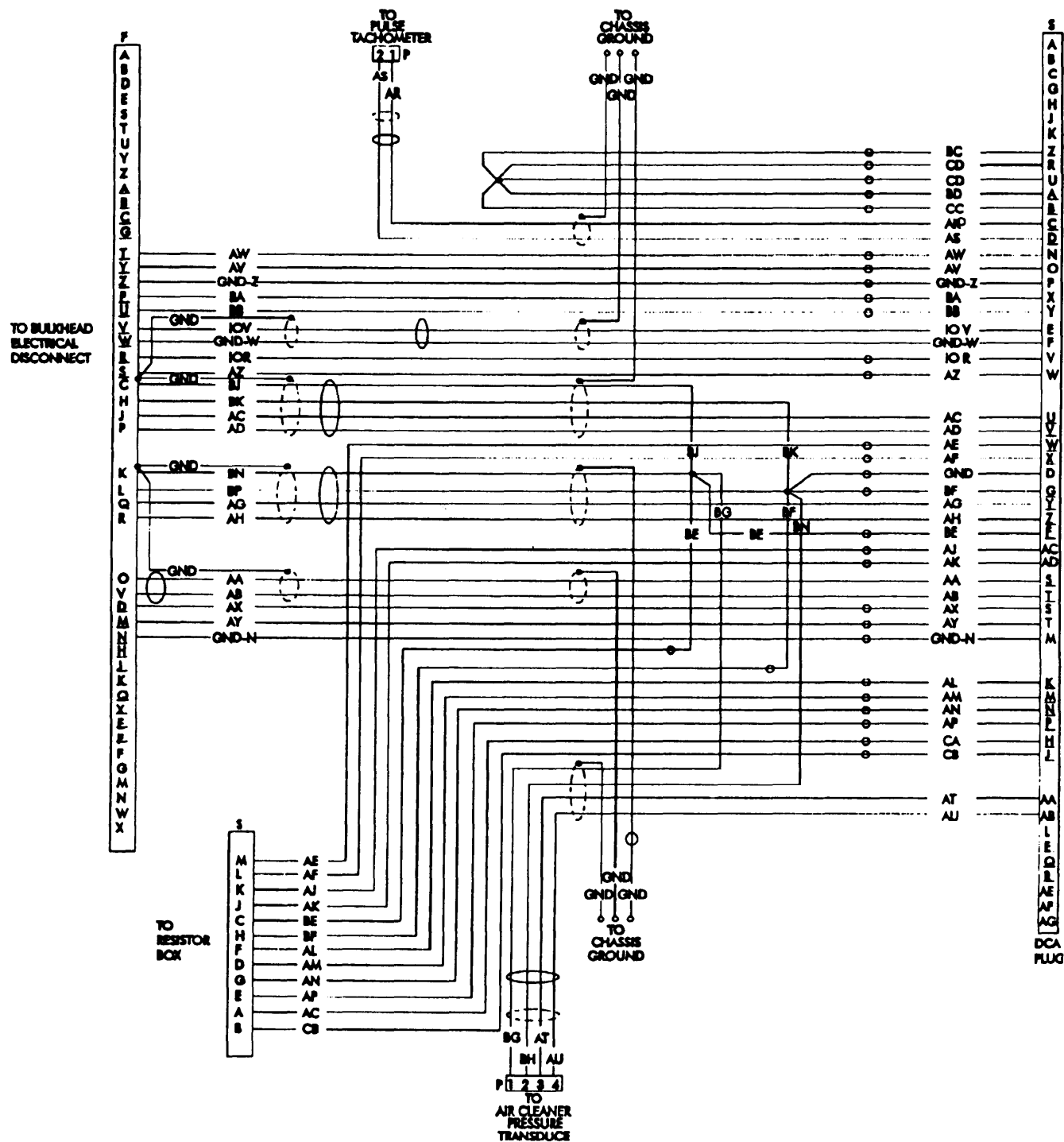


Figure E-43. STE/ICE Wiring Harness DCA To Driver (12329996)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

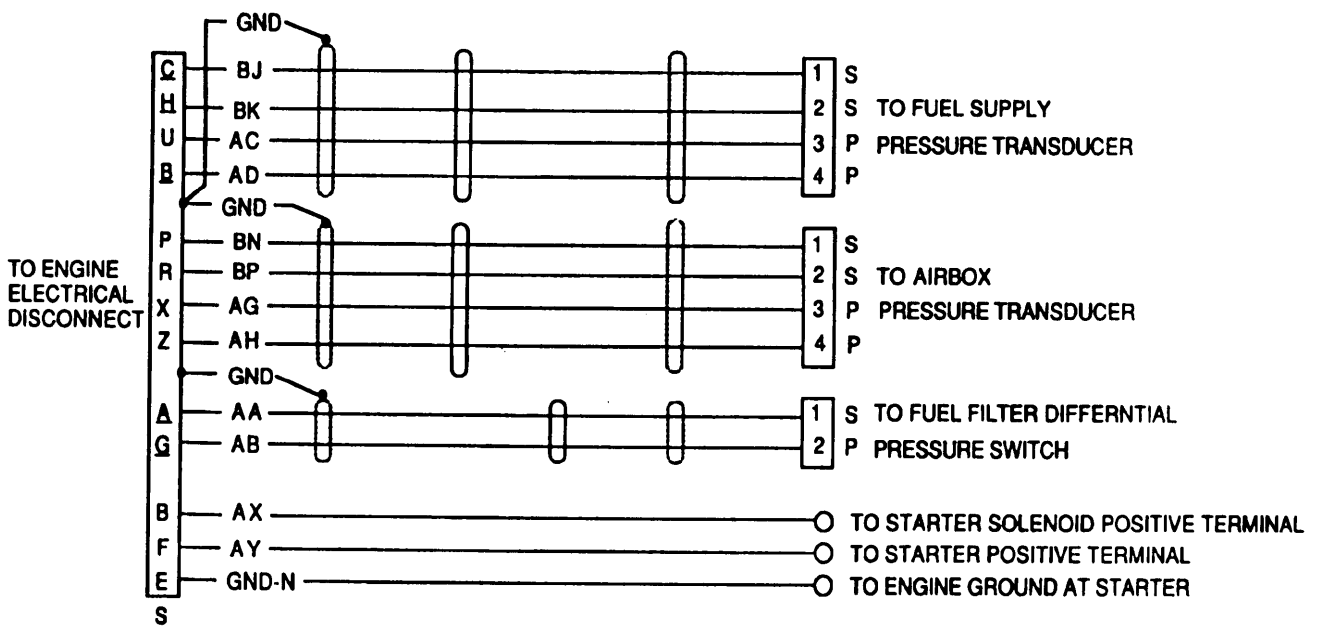


Figure E-45. STE/ICE Transducer To Engine Electrical (12329990)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

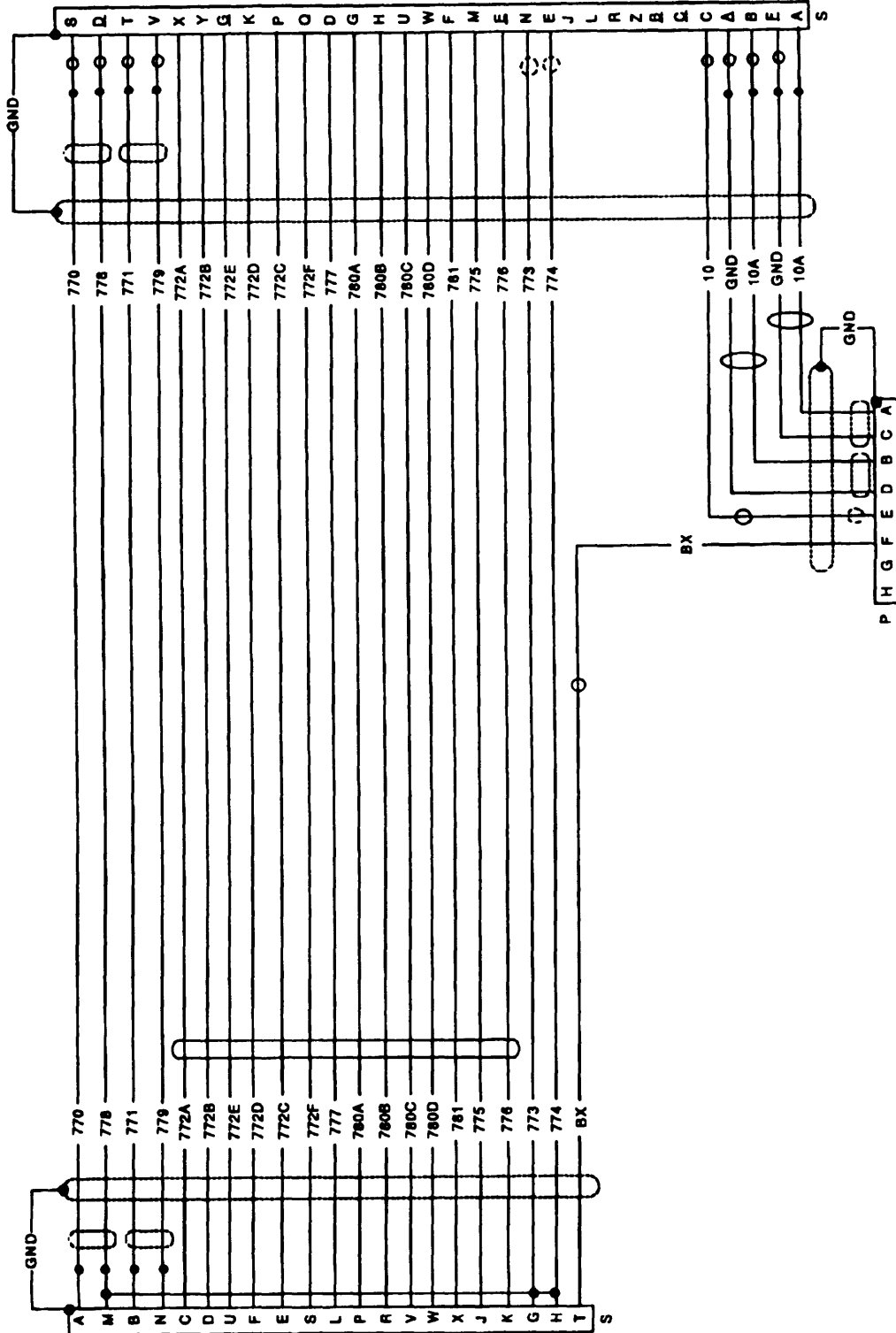


Figure E-46. SCEA Cable Assembly (12352316)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

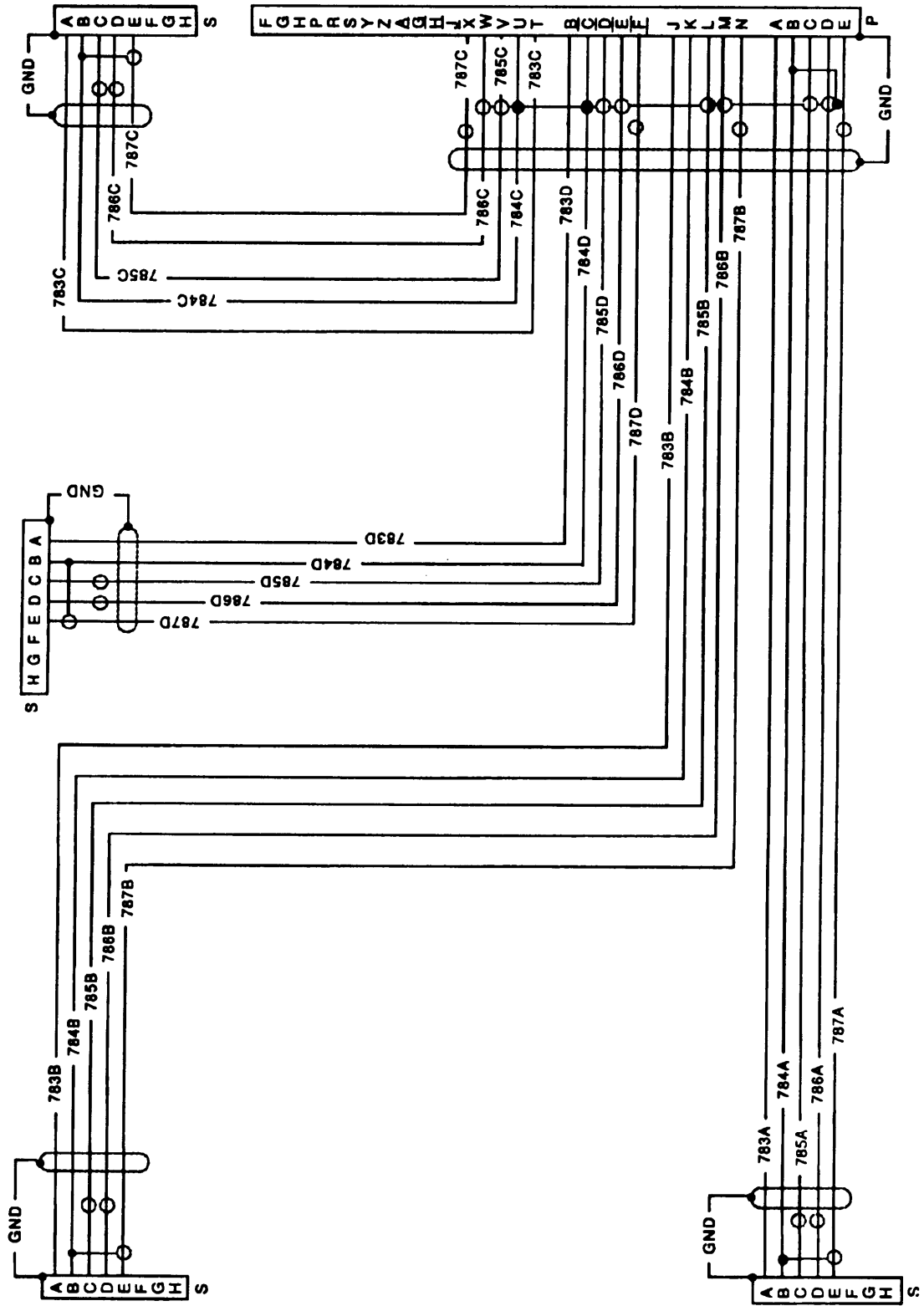


Figure E-47. OFSA Cable Assembly (12352353)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

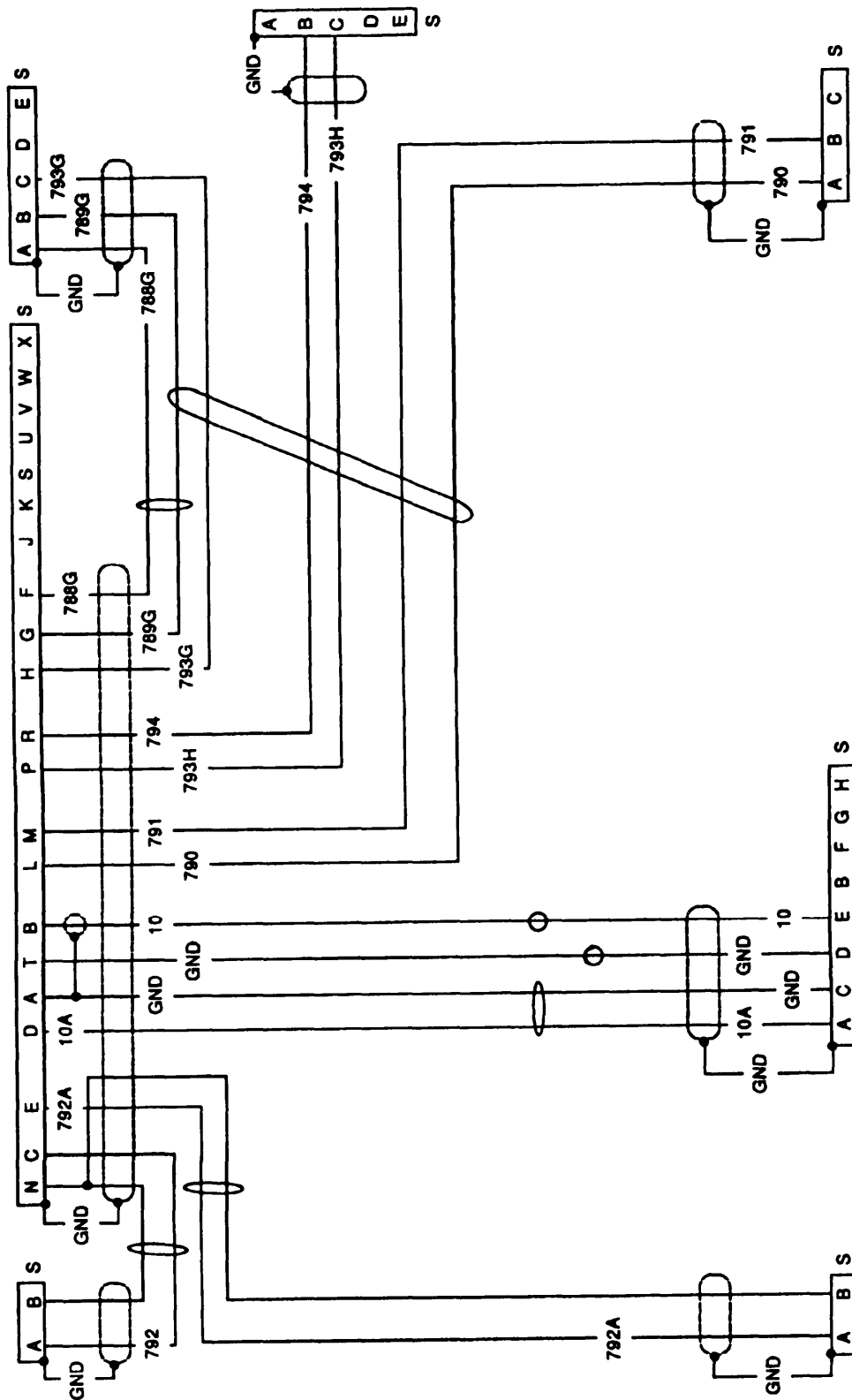


Figure E-48. AFES Engine Cable Assembly (12352354)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

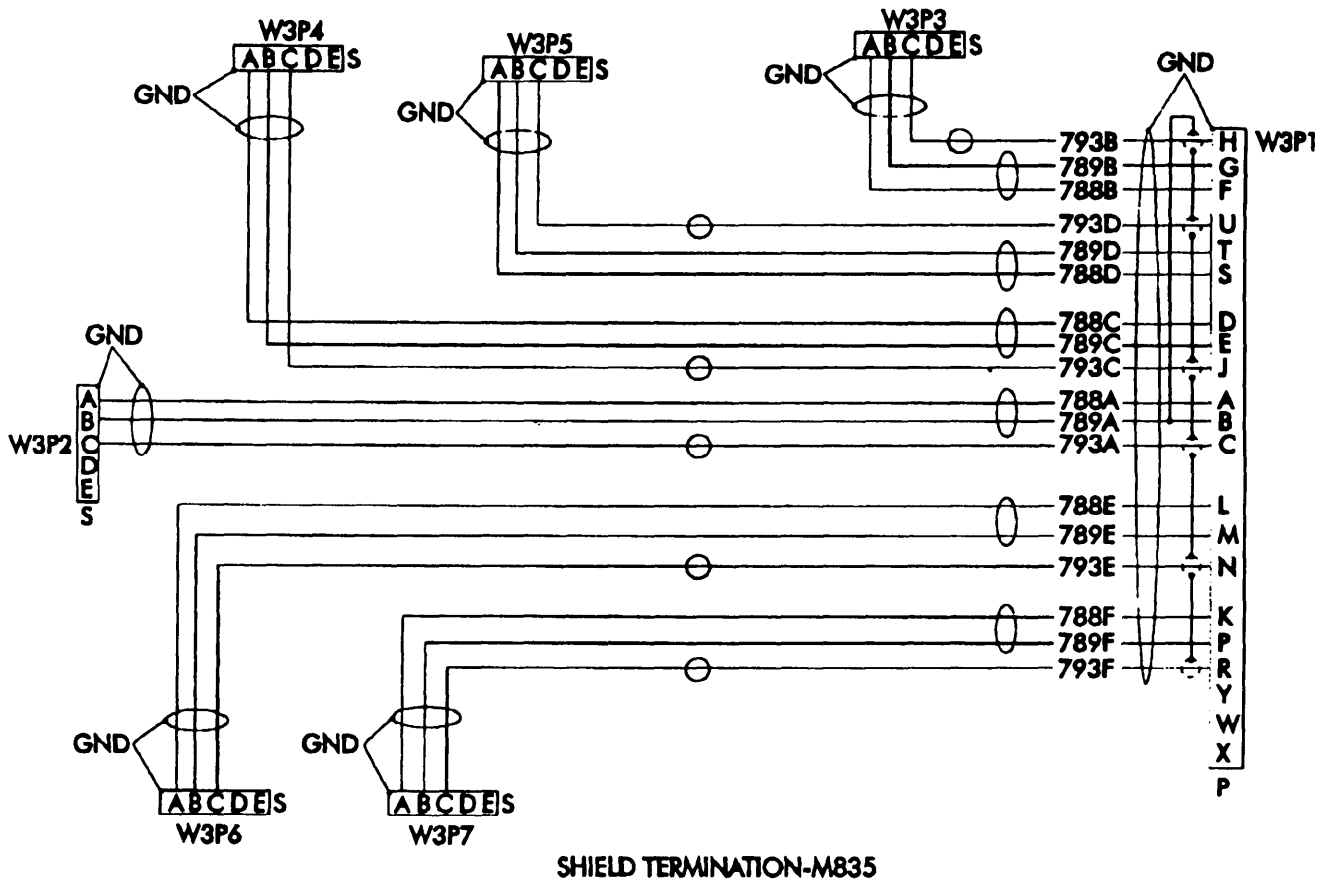


Figure E-49. Crew Fire Extinguisher Cable Assembly (12352315)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

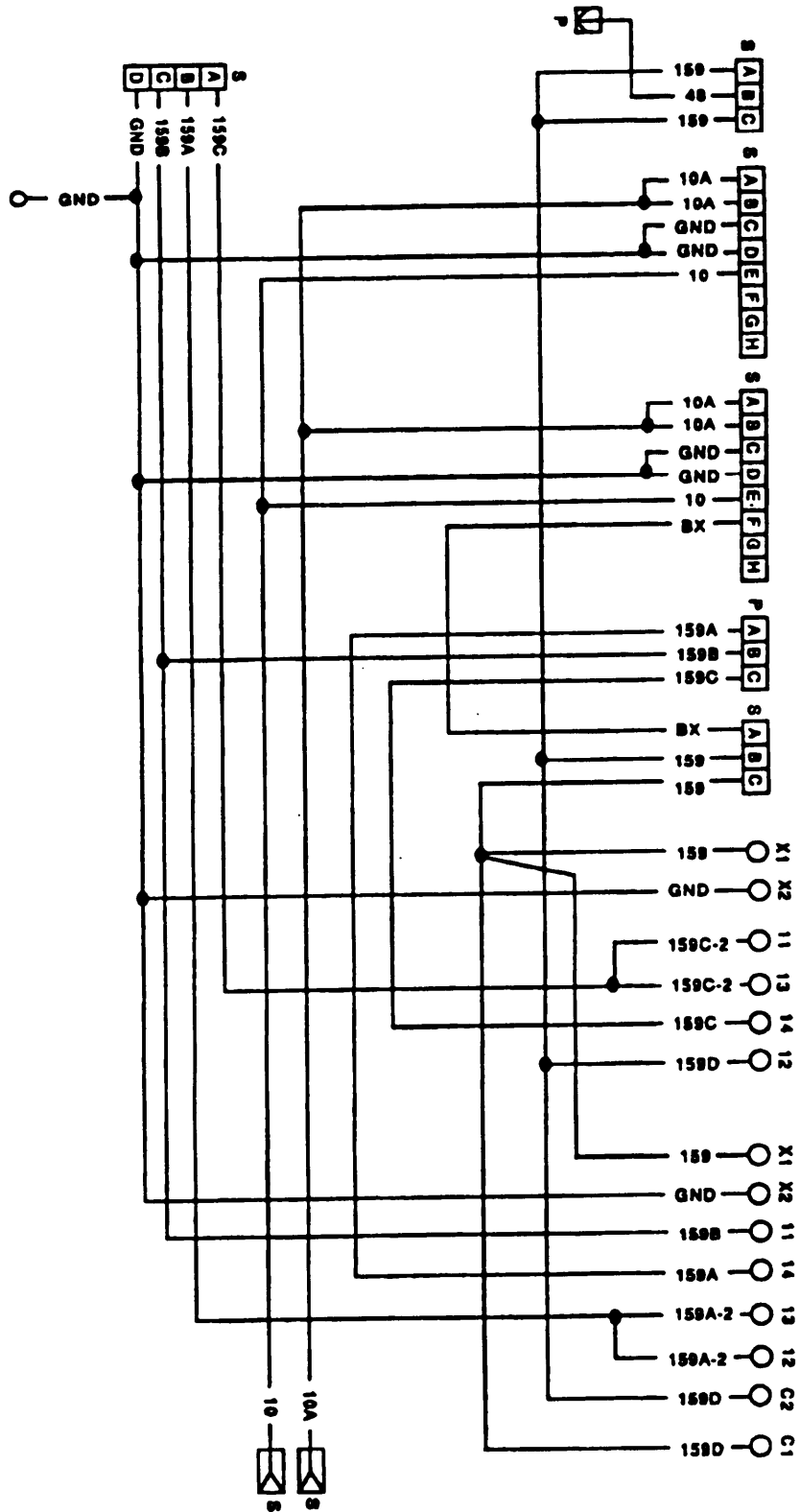


Figure E-50. Accessory Control Box To AFES Harness (12351461)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

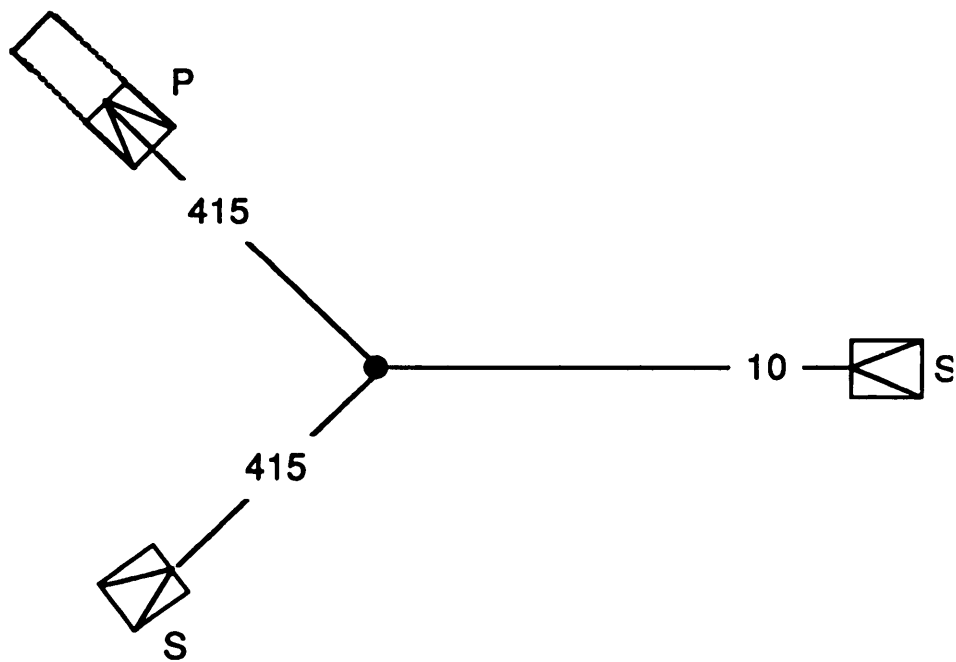


Figure E-51. Automatic Fire Extinguisher Circuit Breaker (12351754)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

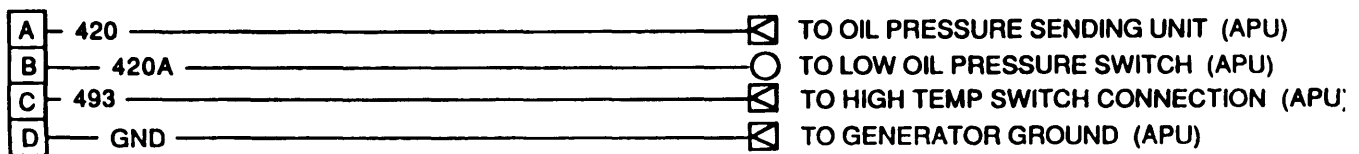


Figure E-52. APU Sending Unit (12329650)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

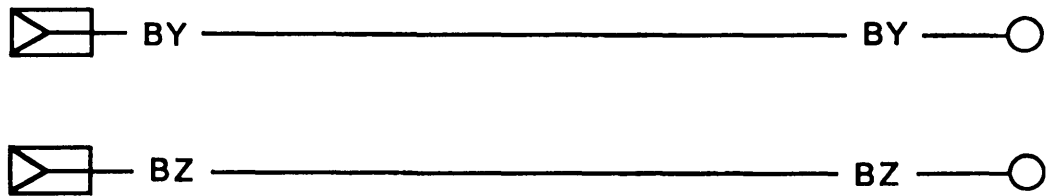


Figure E-53. Hour Meter Wiring Harness (12329660)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

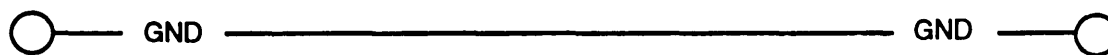


Figure E-54. APU Ground Leads (11671369)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



Figure E-55. APU Generator Ground Lead (12329662)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

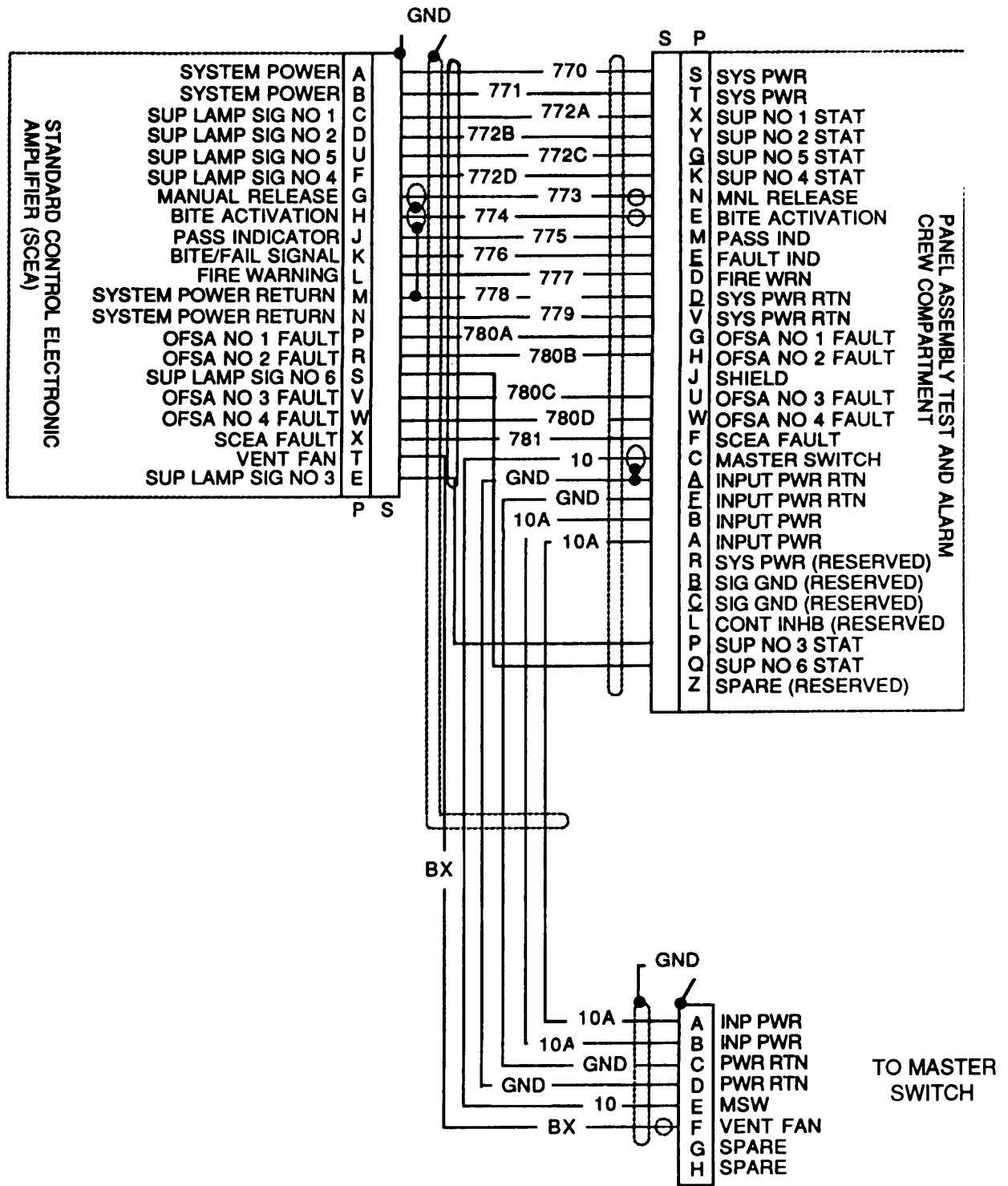


Figure E-57. Wiring Interconnection Diagram (12352349) (1 of 4)

E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).

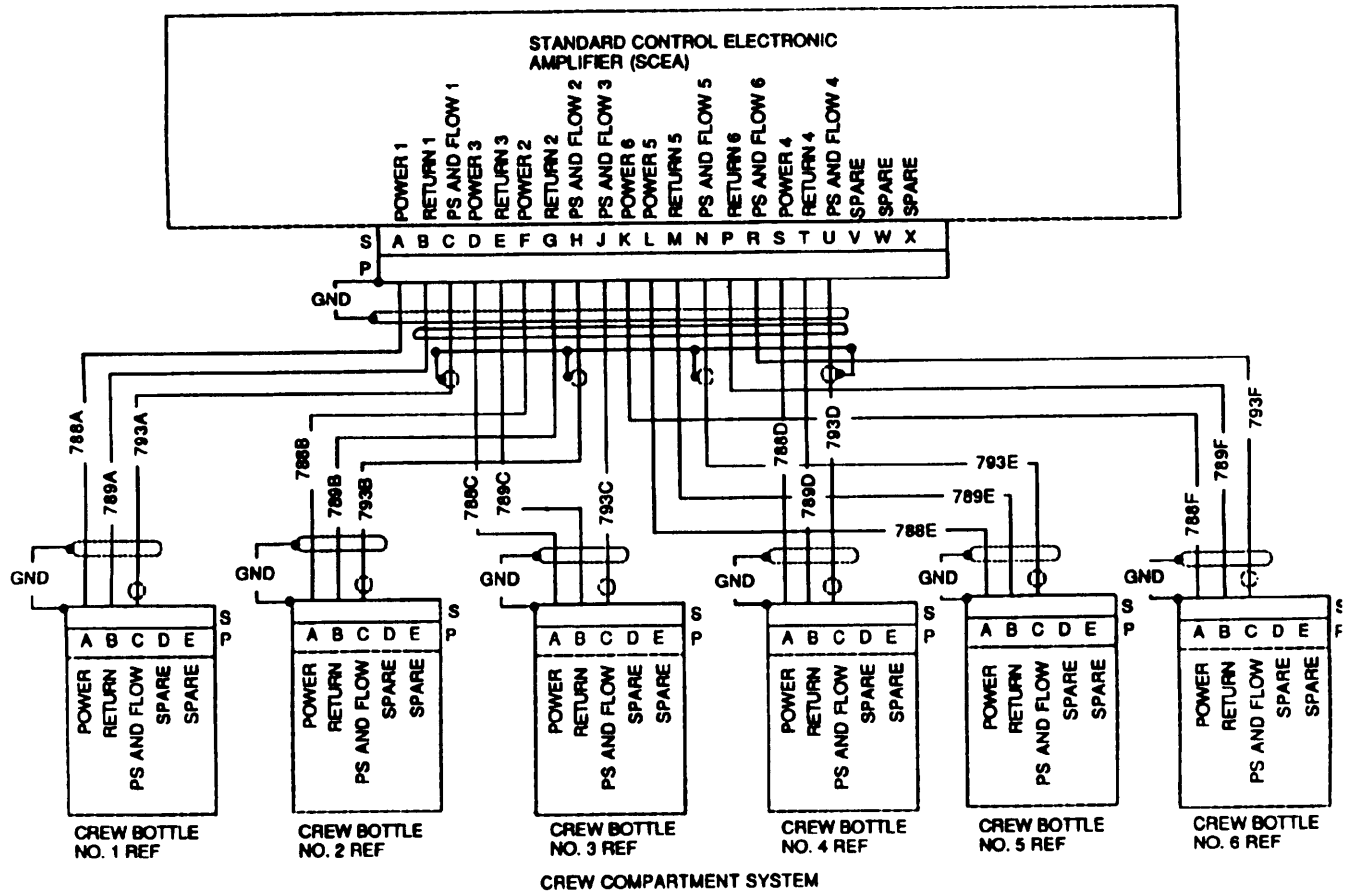
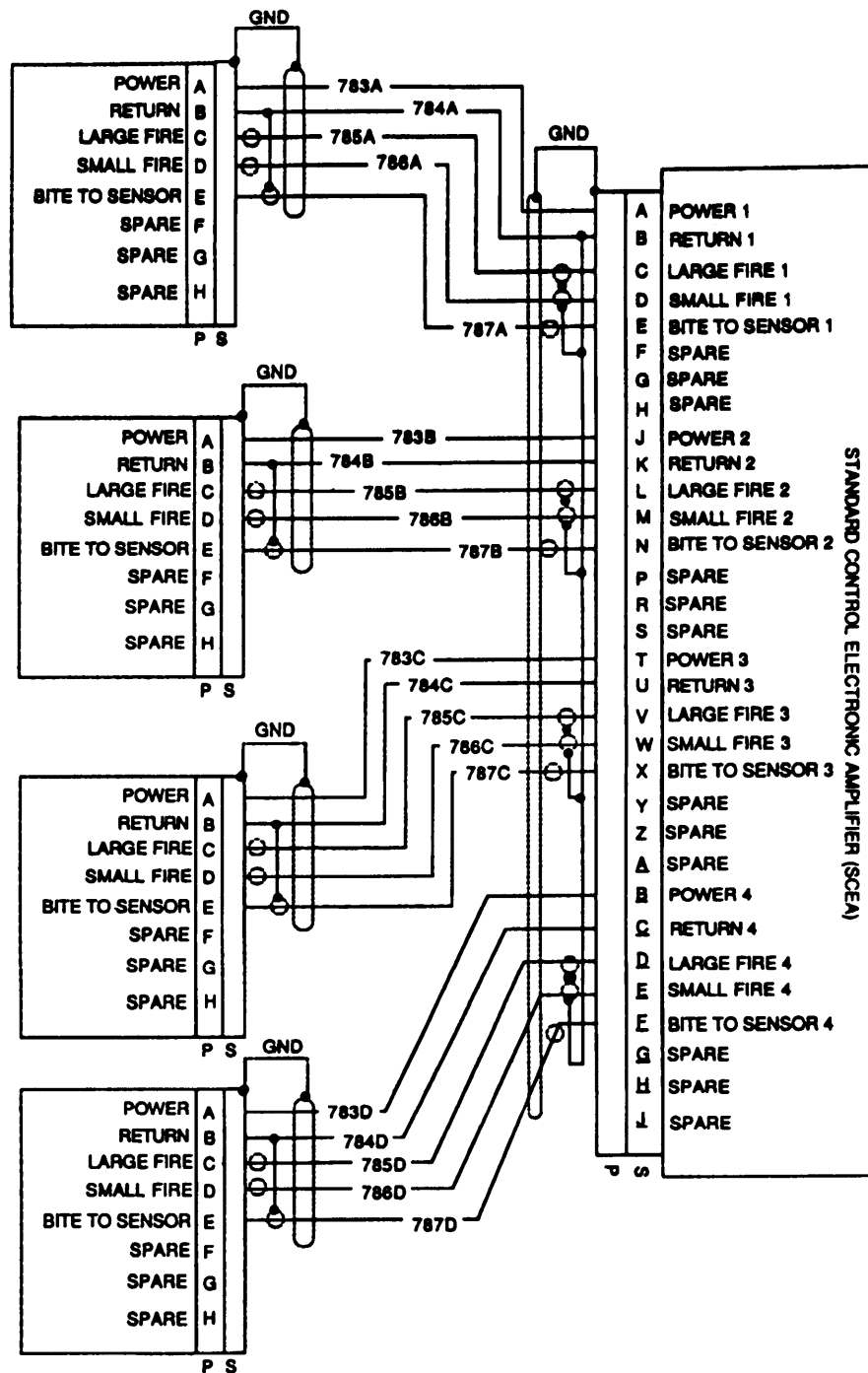


Figure E-57. Wiring Interconnection Diagram (12352349)(2 of 4)

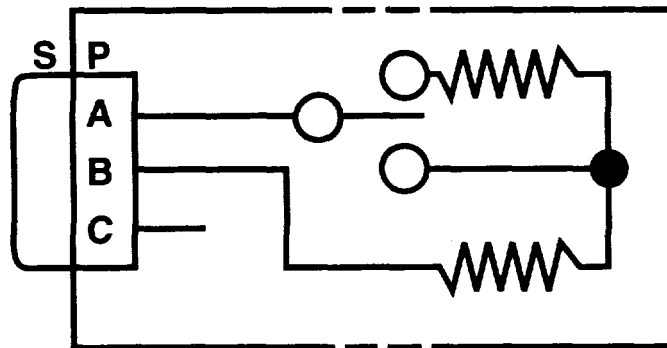
E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



OPTICAL FIRE SENSOR ASSY

Figure E-57. Wiring Interconnection Diagram (12352349) (3 of 4)

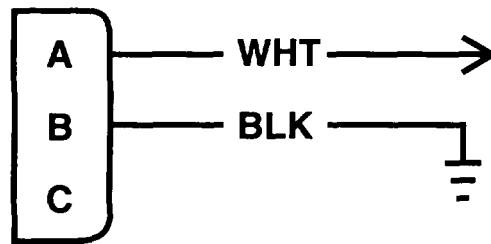
E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



*Mounted Water Ration Heater (MWRH)
Wiring Diagram*



E-2. ELECTRICAL SYSTEM SCHEMATICS (continued).



*Mounted Water Ration Heater (MWRH) Power Cable - 12447321
Wiring Diagram*

**APPENDIX F
HYDRAULIC SYSTEM SCHEMATIC**

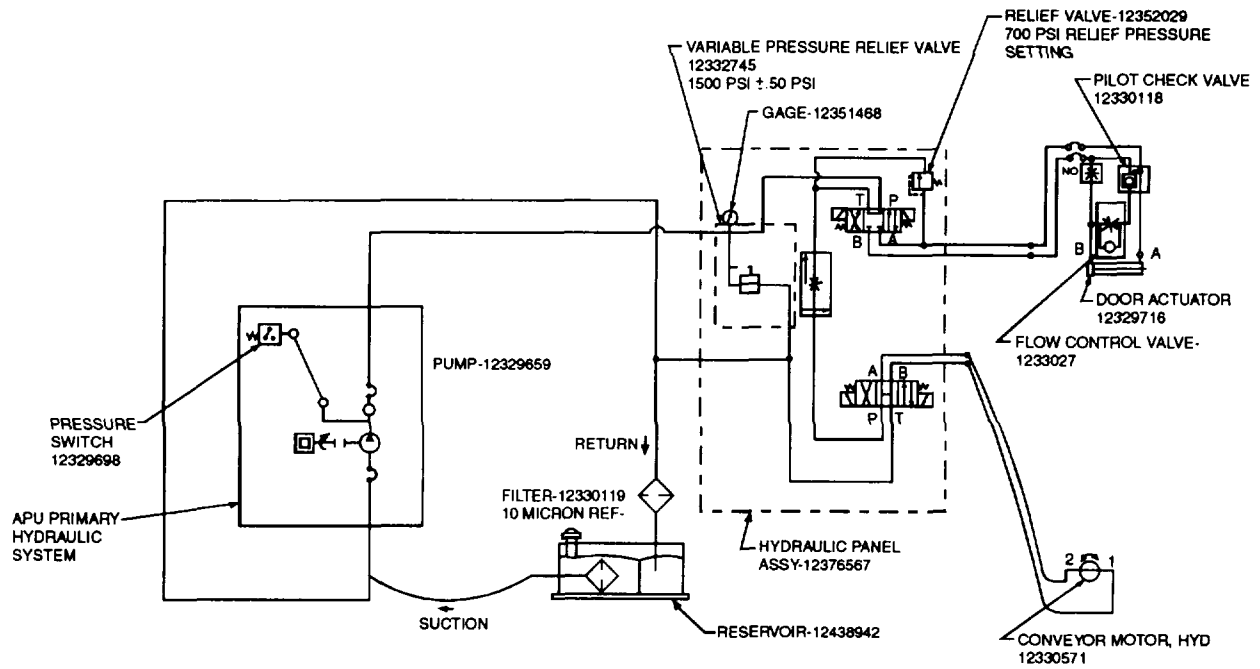
Paragraph Number	Paragraph Title	Page Number
F-1	General	F-1
F-2	Hydraulic System Schematic	F-2

F-1. GENERAL.

This appendix contains a schematic of the vehicle hydraulic system. Refer to this schematic when performing troubleshooting for hydraulic problems.

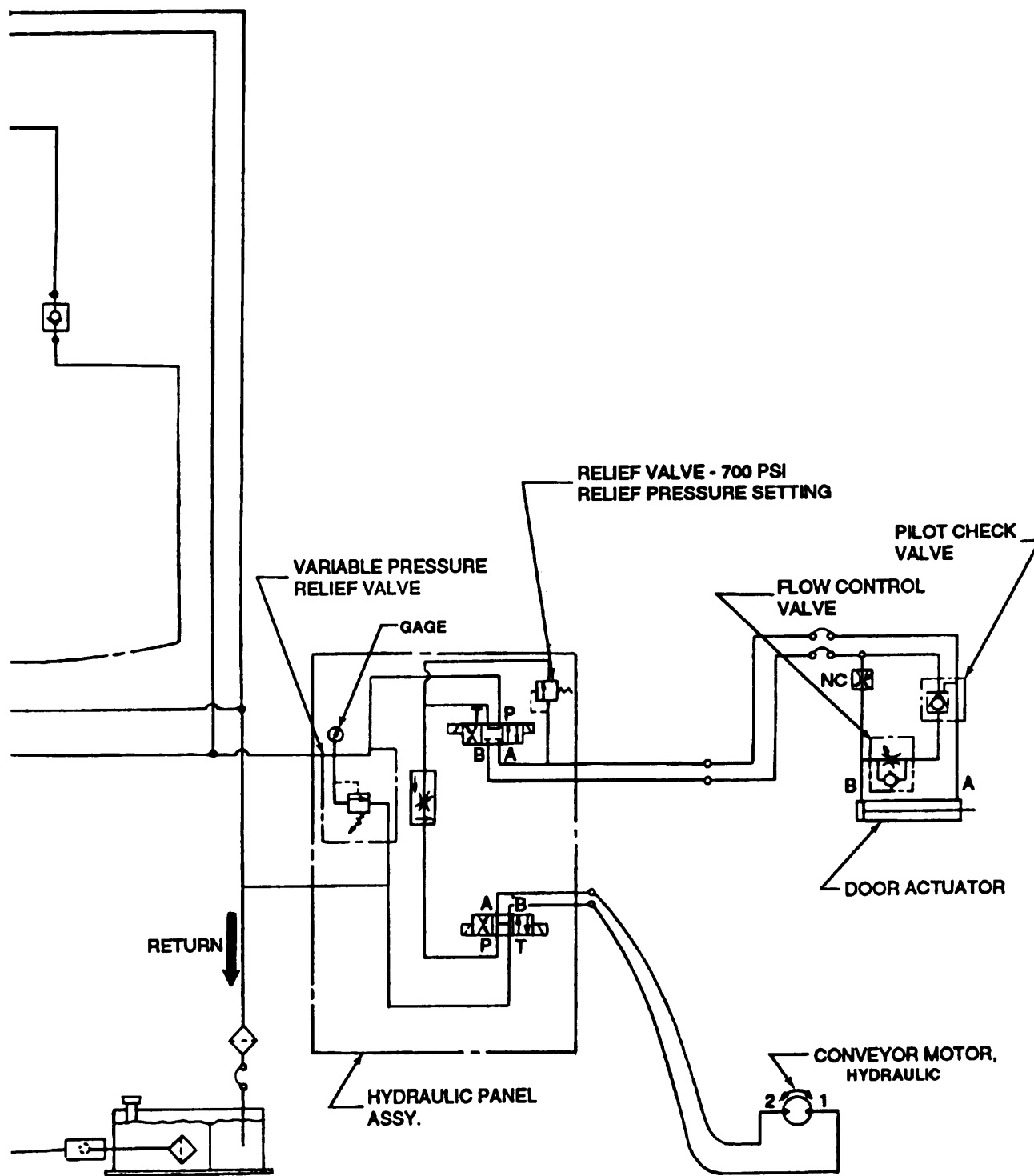
I

F-2. HYDRAULIC SYSTEM SCHEMATIC.



Change 1 F-2/(F-3 and F-4 deleted)

F-2. HYDRAULIC SYSTEM SCHEMATIC (continued).



APPENDIX G

LUBRICATION INSTRUCTIONS

This section lists all Unit maintenance lubrication instructions to be performed on the M992A1. Intervals (on-condition or hard time) and the related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Decrease the intervals if your lubricants are contaminated or if the equipment has been operating in adverse conditions, including longer than normal operating hours. The intervals may be extended during periods of low activity. If intervals are extended, take adequate preservation precautions.

For operator/crew lubrication instructions, refer to TM 9-2350-287-10.

For lubrication instructions for hull-related components and conveyor, refer to TM 9-2350-287-10).

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

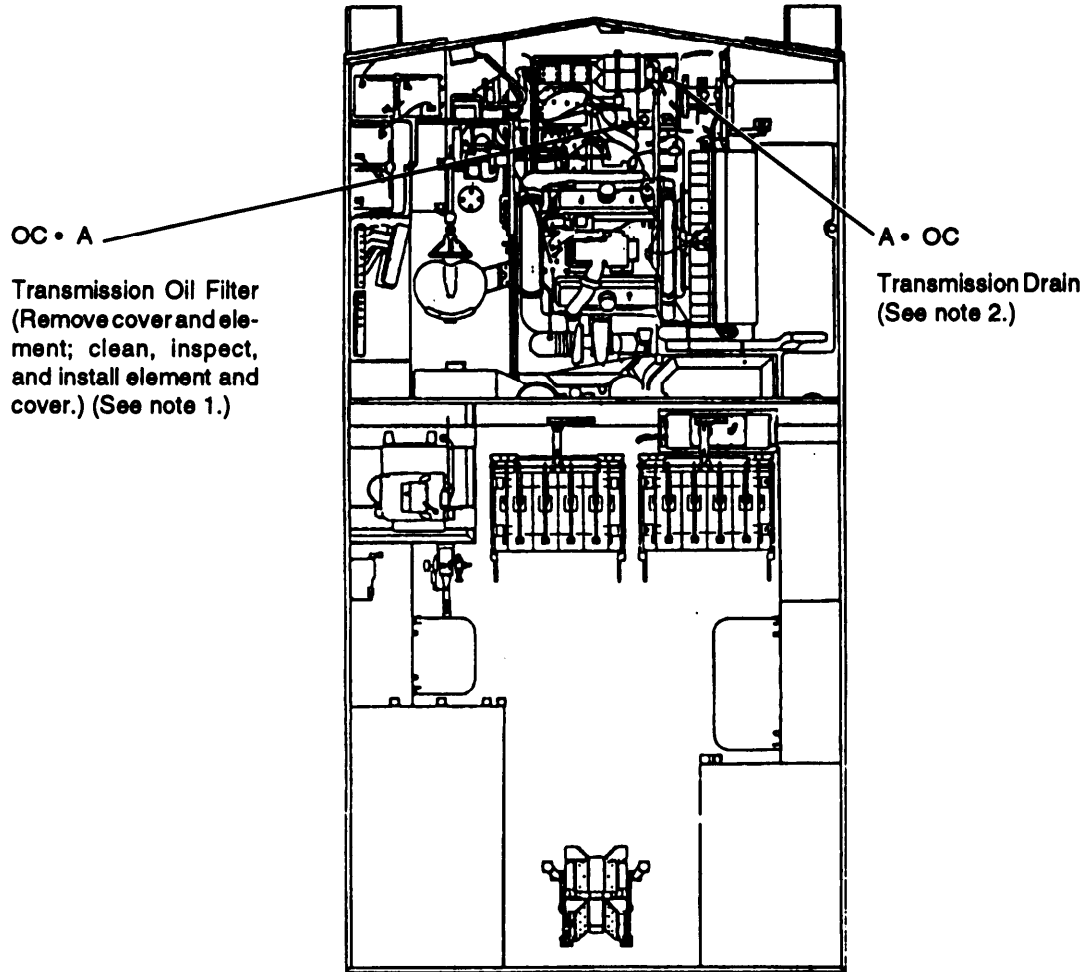
WARNING

Drycleaning 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).

Clean all fittings and areas around lubrication fittings with drycleaning solvent before lubricating components. After lubrication, wipe off excess oil or grease to prevent accumulation of foreign matter.

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
A	0.7

*The man-hour time specified is the time you need to do all the services prescribed.

— KEY —

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15°F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO (MIL-L-2104D) LUBRICATING OIL, Internal Combustion En- gine, Tactical Service OEA MIL-L-46167) LUBRICATING OIL Internal Combustion Engine, Arctic					Intervals are as fol- lows: A - Annually OC - On Condition Intervals are based on normal hours of op- eration and moderate operating conditions.
Transmission	48 qt (45.43 L)	OE/HDO 15W40	OE/HDO 15W40	OEA	

NOTES:

1. TRANSMISSION OIL FILTER. Remove three screws (2) and lockwashers (3), cover, and filter element (1). Clean filter element with drycleaning solvent. Use compressed air to dry element. Inspect element for damage, and replace if unserviceable.

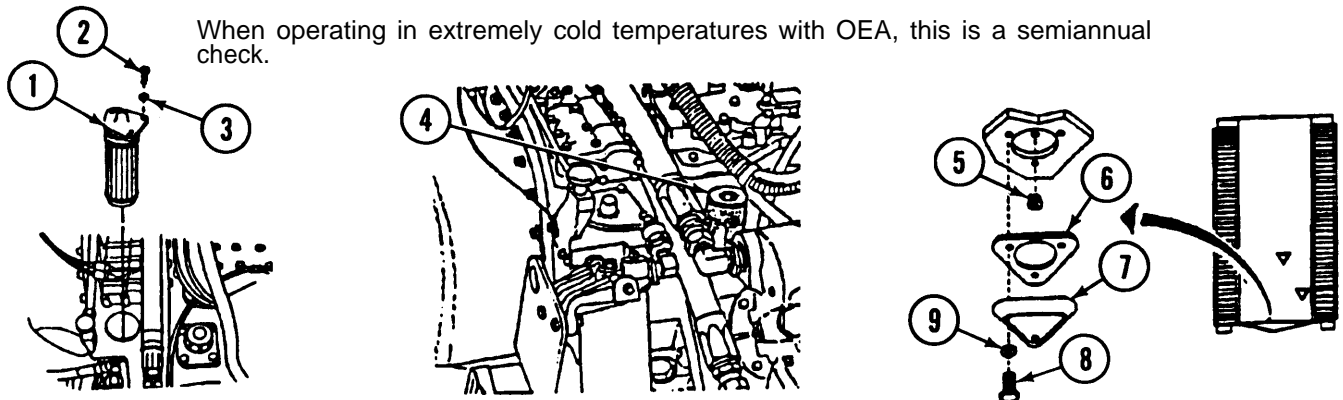
NOTE

Where AOAP support is not available, drain and refill transmission after 75 hours of operation or 750 miles, whichever comes first.

2. TRANSMISSION DRAIN. After operation, park vehicle on level ground (refer to TM 9-2350-287-1 O). Remove three screws (8) and washers (9), cover plate (7), gasket (6), and drain plug (5) from bottom of hull. After oil has drained, clean drain plug (5) with drycleaning solvent and install plug (5), gasket (6), and cover plate (7) with three screws (8) and washers (9) on bottom of hull. Refill transmission with oil to within "Operating Range." Check oil level before starting engine. Oil level indicator must be within "OPERATING RANGE" stamped on dipstick and filler cap (4). Add or drain oil (see key for required type) as required. Block vehicle tracks. With brakes applied and transmission in fourth gear, run engine at 1600-1900 rpm to warm the transmission oil. When transmission oil temperature gage reads over 180°F, run engine at 1200-1600 rpm for 1-3 minutes with transmission in neutral (N). After this period of time, oil temperature should stabilize between 180°F and 220°F. Stop engine, wait 3-5 minutes, then check oil level.

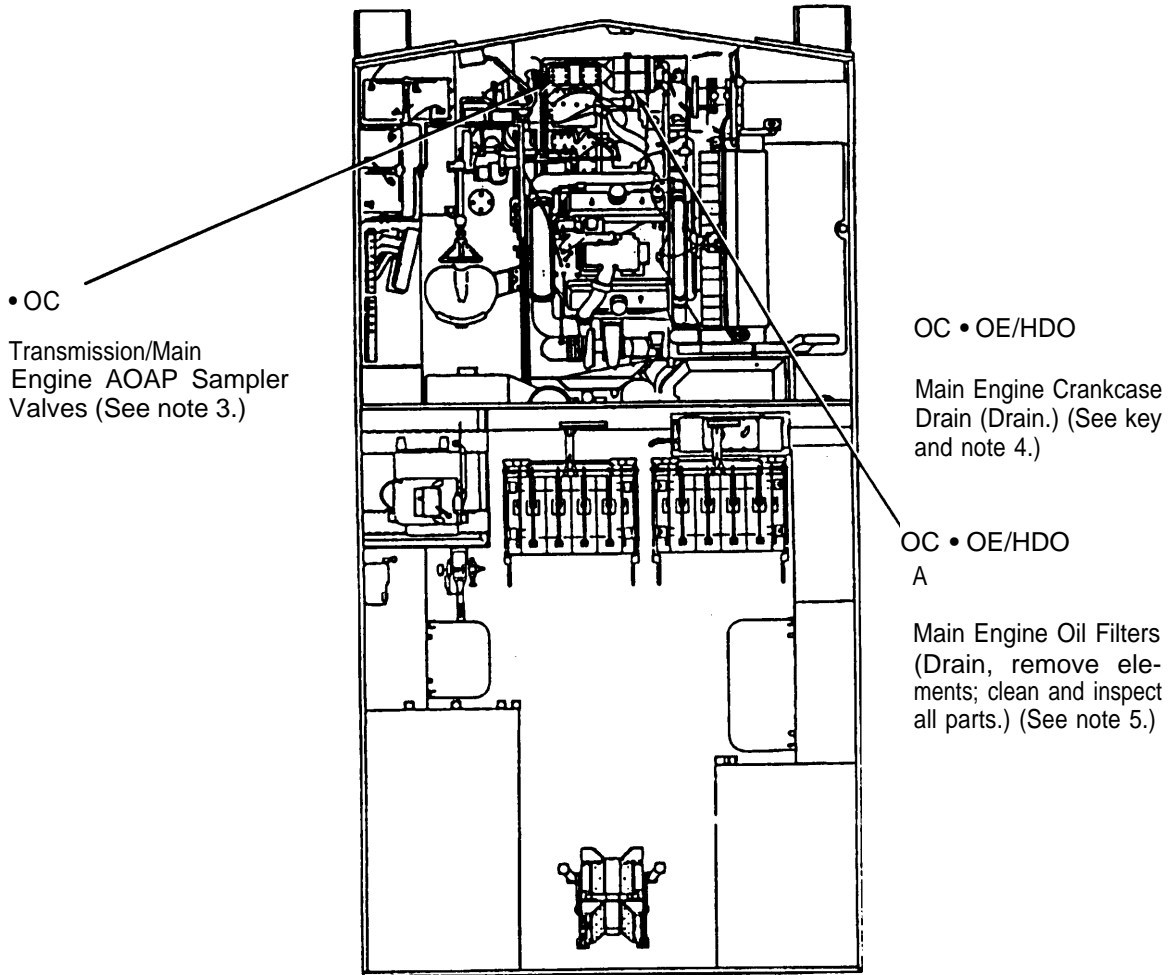
NOTE

When operating in extremely cold temperatures with OEA, this is a semiannual check.



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
OC	0.5
A	0.5

*The man-hour time specified is the time you need to do all the services prescribed.

— KEY —

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15° F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO (MIL-L-2104D) LUBRICATING OIL Internal Combustion Engine Tactical Service OEA (MIL-L-46167) LUBRICATING OIL Internal Combustion Engine, Arctic					Intervals are as follows: OC -On condition, or every 25 hours of operation or 30 days A - Annually, Intervals Intervals are based on normal hours of operation and moderate operating conditions.
Main Engine Crankcase	38 qt (35.9 L)	OE/HDO 15W/40	OE/HDO 15W/40	OEA	

NOTES:

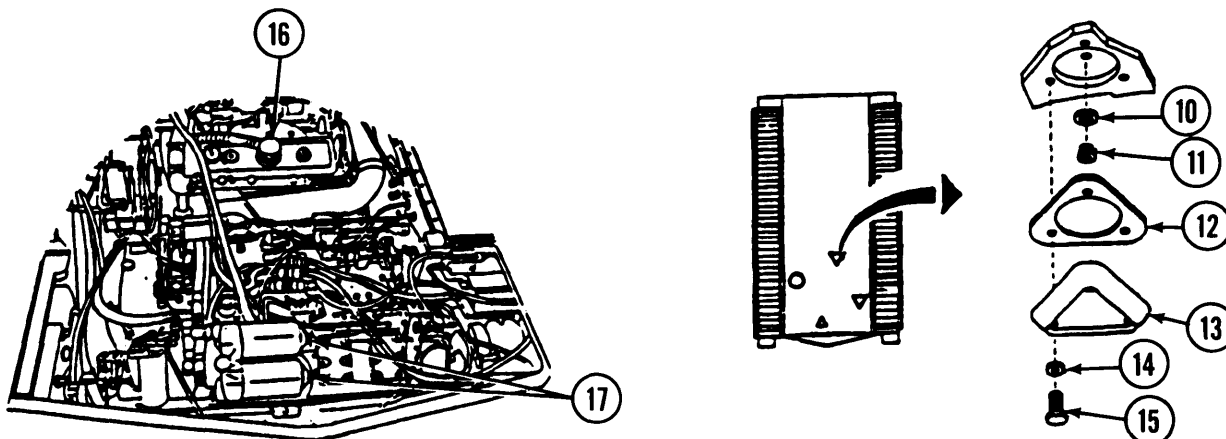
3. TRANSMISSION/MAIN ENGINE AOAP SAMPLER VALVES. Obtain oil sample from transmission and main engine through AOAP sampler valve after every 25 hours of operation or every 30 days, whichever comes first.

NOTE

When operating in extremely cold temperatures using OEA, this is a semiannual check.

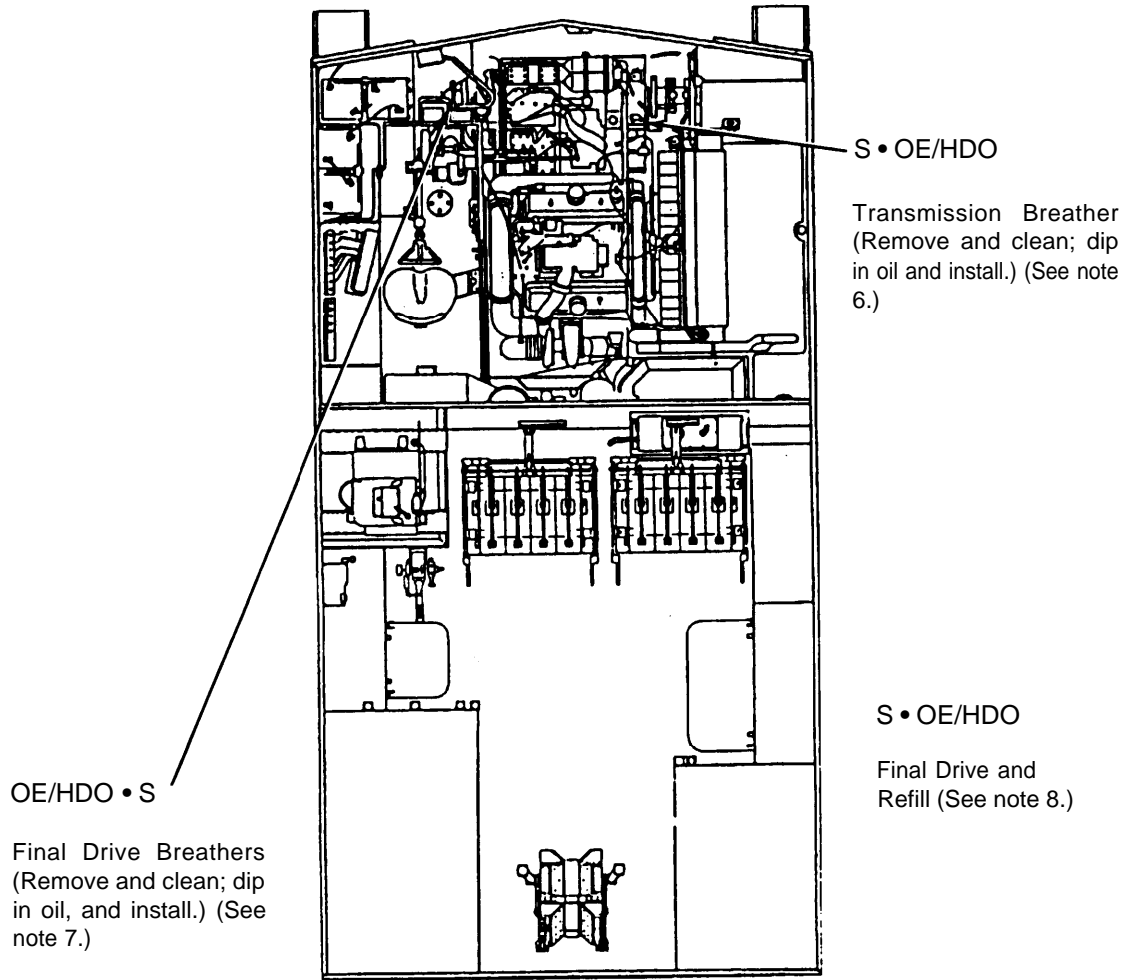
4. MAIN ENGINE CRANKCASE DRAIN. After operation, park vehicle on level ground (refer to TM 9-2350-287-10). Remove three screws (15) and washers (14), cover plate (13), and gasket (12) from bottom of vehicle, and remove drain plug (11) and packing (10) from engine crankcase. After oil is drained, clean drain plug (11) with drycleaning solvent. Install drain plug (11) and packing (10), cover plate (13), and gasket (12) on bottom of vehicle with three screws (15) and washers (9). Remove oil fill cap (16) and refill crankcase with oil to "L" mark on dipstick.

5. MAIN ENGINE OIL FILTERS. Drain two oil fitters (17), and remove filter elements (para 3-8). Clean parts with dry-cleaning solvent. Inspect parts, and replace any parts that appear damaged or unserviceable. Install two oil filters (para 3-8).



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
S	0.2

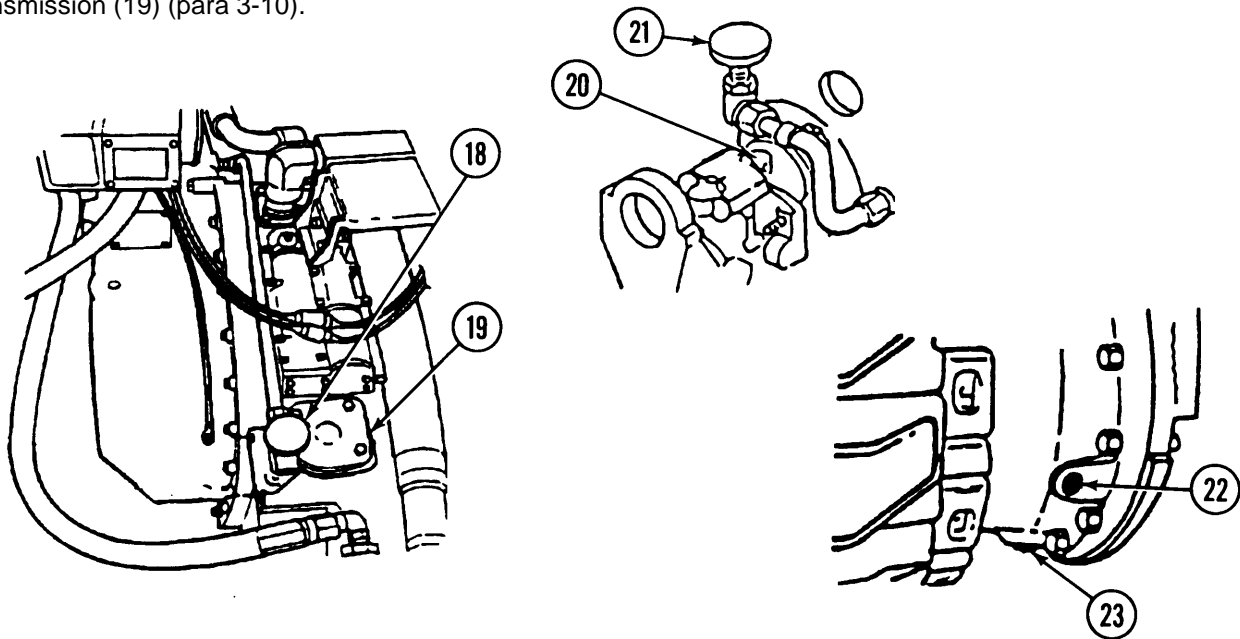
*The man-hour time specified is the time you need to do all the services prescribed.

- KEY -

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15° F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO (MIL-L-2104D) LUBRICATING OIL, Internal Com- bustion Engine, Tactical Service		OE/HDO 15W40			Intervals are as follows: S - Semi- annually Intervals are based on normal hours of operation and moderate operating conditions.
Transmission Breather					
Final Drive Breather					
Final Drive	2 qt (1.8L)				

NOTES:

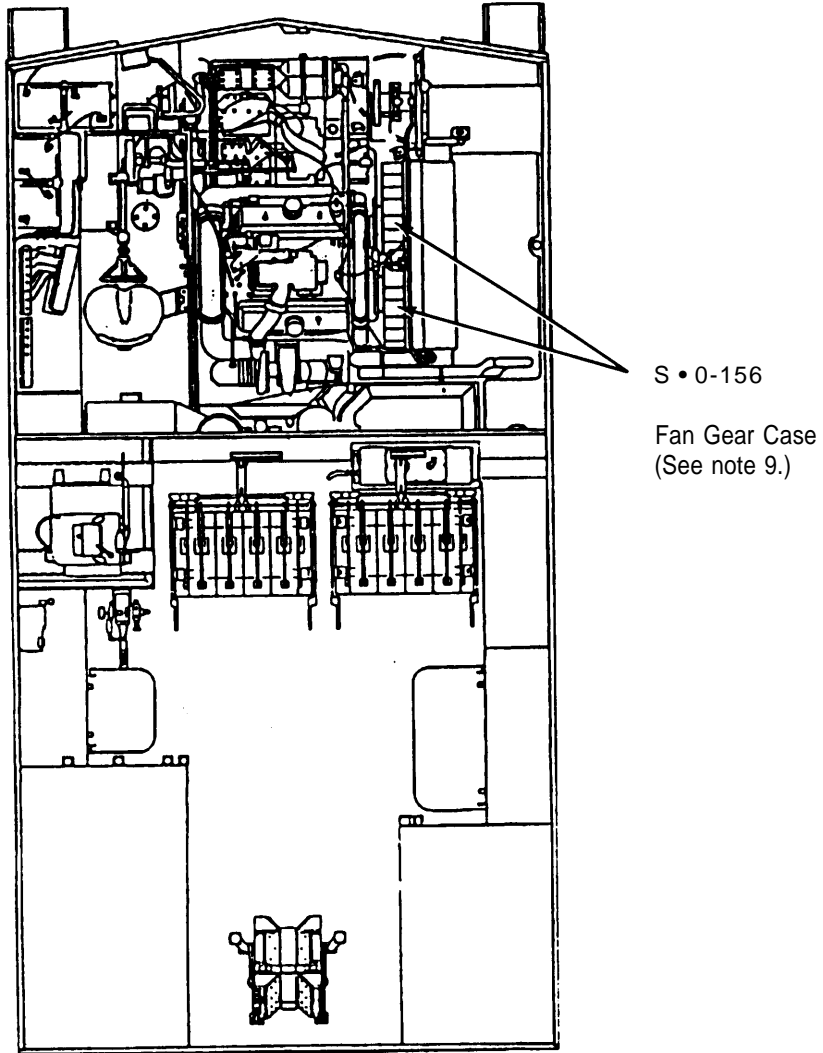
6. TRANSMISSION BREATHER. Remove breather (18) from transmission (19) (para 3-10), and clean with dry-cleaning solvent. Use compressed air to thoroughly dry breather (18), then dip breather (18) in oil and install in transmission (19) (para 3-10).



7. FINAL DRIVE BREATHERS. Remove breather (21) from left and right final drives (20). Clean two breathers (21) with drycleaning solvent. Use compressed air to thoroughly dry breathers (21), then dip breathers (21) in oil and install in left and right final drives (20).

8. FINAL DRIVE AND REFILL. Remove both level-check plugs (22) and both drain plugs (23). Clean drain plugs (23), apply Teflon antiseize tape to threads, install drain plugs (23), and add oil at level-check plug opening (see key for required oil type). Clean level-check plugs (22), apply Teflon antiseize tape to threads, and install level-check plugs (22).

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
S	0.1

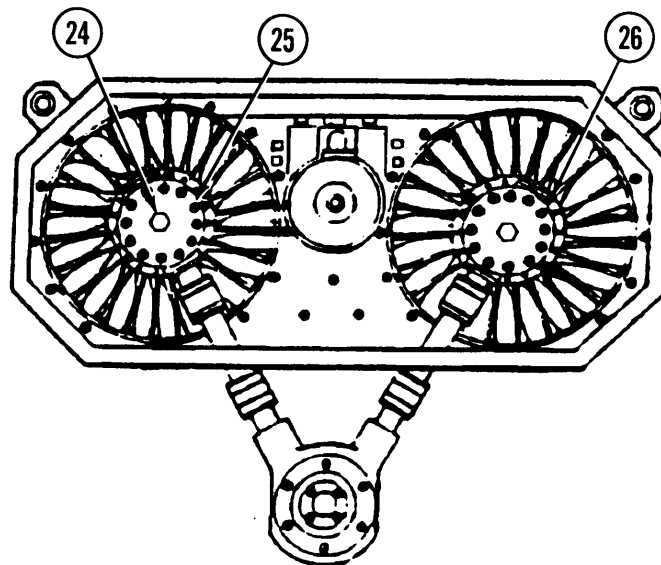
*The man-hour time specified is the time you need to do all the services prescribed.

- KEY -

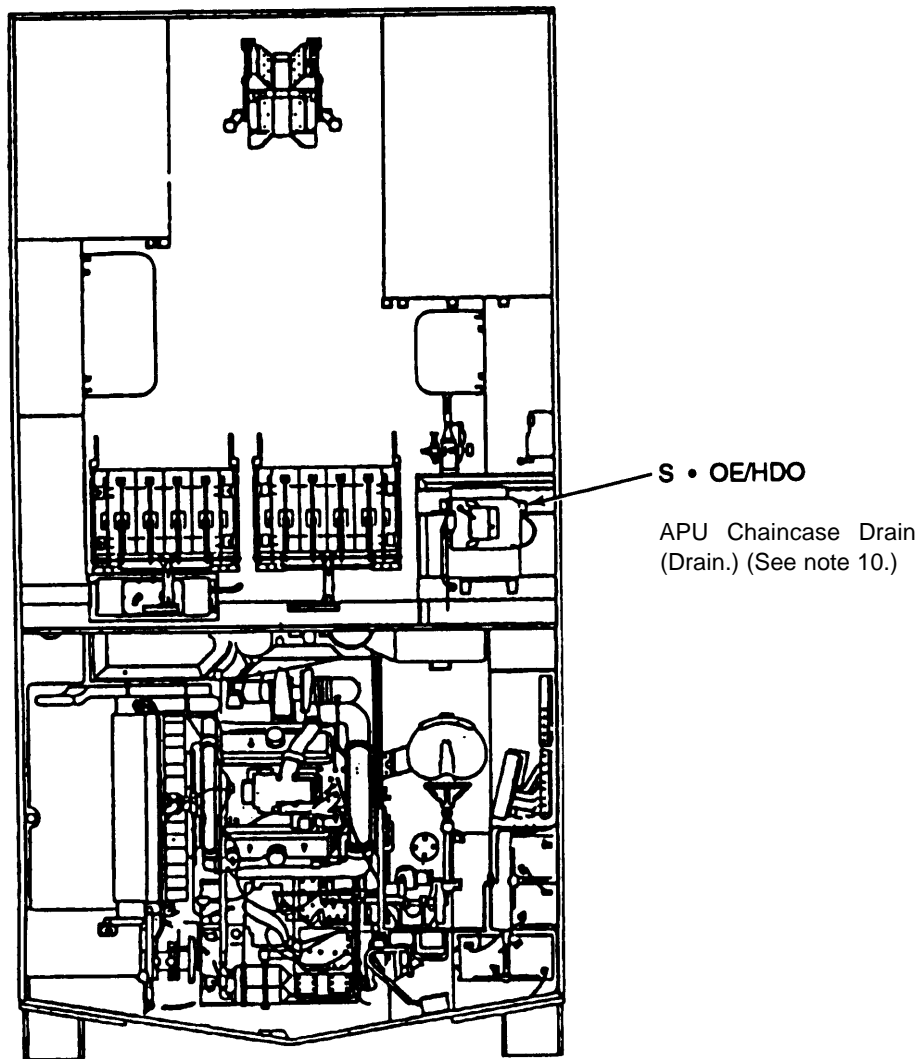
Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15° F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
0-156 (MIL-L-23699). LUBRICATING OIL, Turbine En- gine Fan Gear Case (Oil)		All Temperatures			Intervals are as follows: S-Semiannually Intervals are based on nor- mal hours of operation and moderate op- erating condi- tions.
Fan Gear Case	0.43 qt (0.40 L)				

NOTES:

9. FAN GEAR CASE. Remove radiator from shroud (para 6-8). Clean areas around plugs (24) on two fan gear box housings (25) with drycleaning solvent. Remove plug (24) from housing (25). Check that oil level is up to bottom of plug hole. If not, remove breather (26) from housing (25) and add oil until oil level reaches bottom of plug hole. Clean each plug (24) with drycleaning solvent, and install in housing (25). Clean breather (26) with drycleaning solvent and blow-dry with compressed air before reinstalling in housing (25).



INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
S	0.2

*The man-hour time specified is the time you need to do all the services prescribed.

- KEY -

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15°F (Above -9°C)	+40°F to -10°F (+4°C to -26°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO (MIL-L-2104D) LUBRICATING OIL, Internal Combustion Engine, Tactical Service					Intervals are as follows: D-Day; Daily Intervals are based on normal hours of operation and moder- ate operating conditions.
APU Chaincase	1 qt (0.9 L)		OE/HDO 15W40		

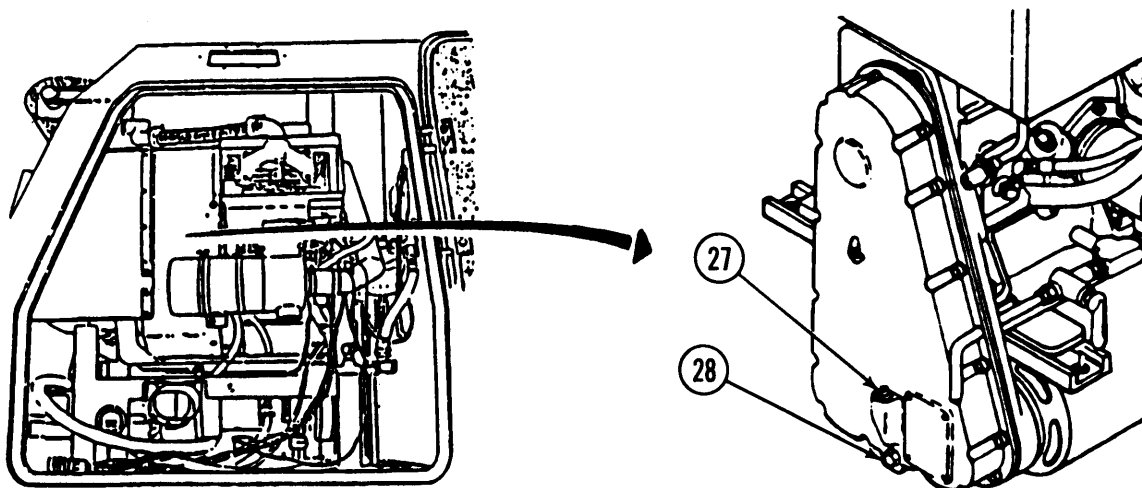
NOTES:

10. APU CHAINCASE DRAIN.

WARNING

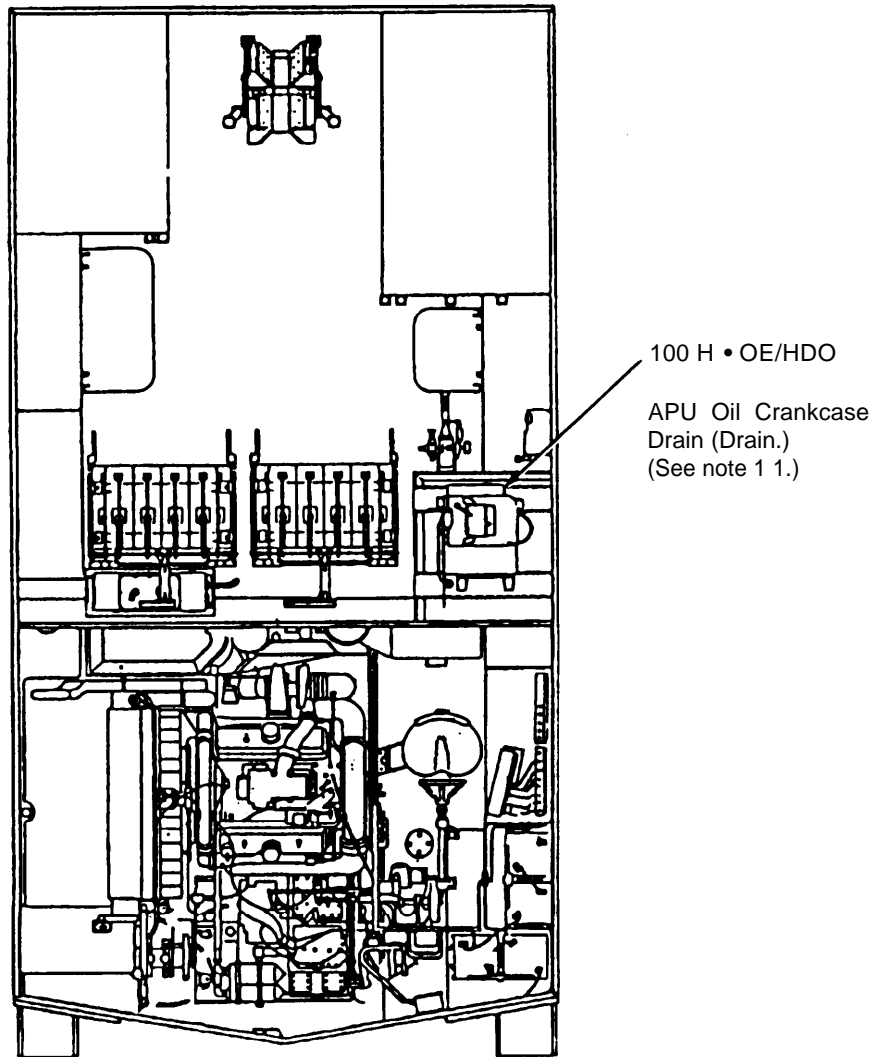
APU engine oil is hot after operation. Be careful when working in the APU compartment after the APU engine has been running. Failure to follow this warning can result in severe burns.

After APU operation, park vehicle on level ground (refer to TM 9-2350-287-10). Open APU side door (refer to TM 9-2350-287-10). Position a container under chaincase drain plug (28). Remove drain plug (28) from the APU and clean with drycleaning solvent. After oil has drained, apply Teflon antiseize tape to drain plug (28) and install drain plug (28) in the APU. Remove filter plug (27) from the APU and add oil through filler plug hole until oil level reaches bottom of filler plug hole. Clean filler plug (27) with drycleaning solvent and install filler plug (27) in the APU.



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS*
100 H	0.8

*The man-hour time specified is the time you need to do all the services prescribed.

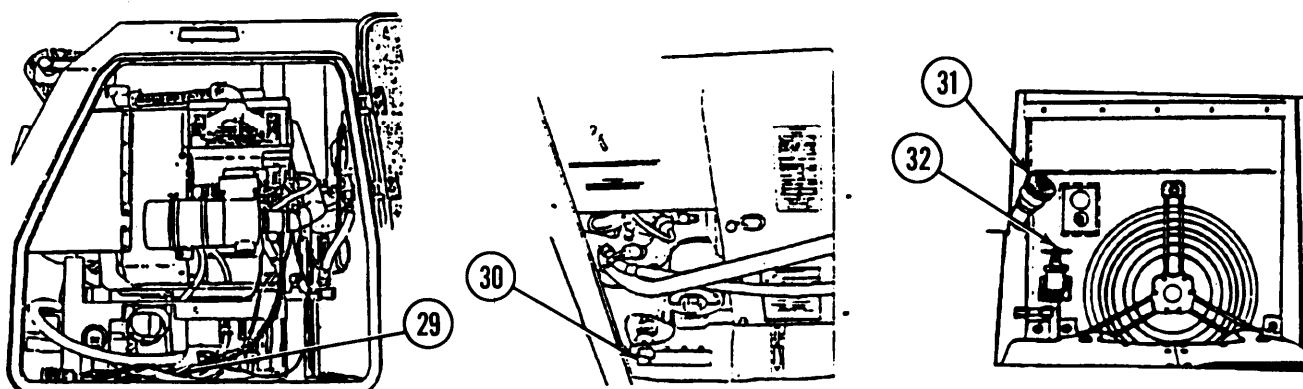
- KEY -

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15° F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
OE/HDO (MIL-L-2104D) LUBRICATING OIL Internal Combustion Engine, Tactical Service OEA (MIL-L-46167) LUBRICATING OIL, Internal Combustion, Engine Arctic					Intervals areas follows: H - Hour Intervals are based on normal hours of operation and moderate operating conditions.
APU Crankcase	3 1/2 qt (3.3 L)	OE/HDO 15W/40	OE/HDO 15W/40	OEA	

NOTES:

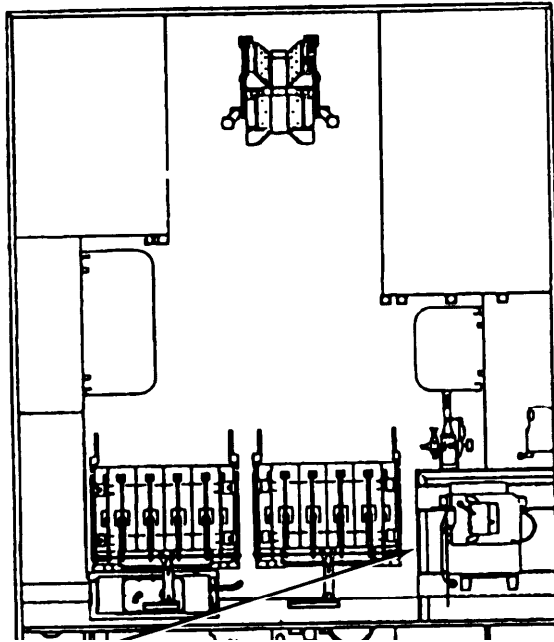
11. APU OIL CRANKCASE DRAIN.

Park the vehicle on level ground, and operate the APU to warm the crankcase oil (refer to TM 9-2350-287-10). Open APU compartment side door (refer to TM 9-2350-287-10). Move left projectile rack assembly to rear of vehicle (refer to TM 9-2350-287-10), and remove APU compartment access plate (para 15-39). Position a container under drain hose (29). Inside vehicle, open drain valve (30). When oil is drained, close drain valve (30). Remove filler cap (31) from the APU and refill crankcase with oil until oil level rises to "F" mark on dipstick (32).



LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



OE/HDO • 100 H
 APU Engine Oil Fitter
 (reached through
 APU access panel)
 (Change filter ele-
 ment.) (See note 12.)

INTERVAL	MAN-HOURS *
100H	0.8

* The man-hour time specified is the time you need to do all the services prescribed.

12. APU ENGINE OIL FILTER.

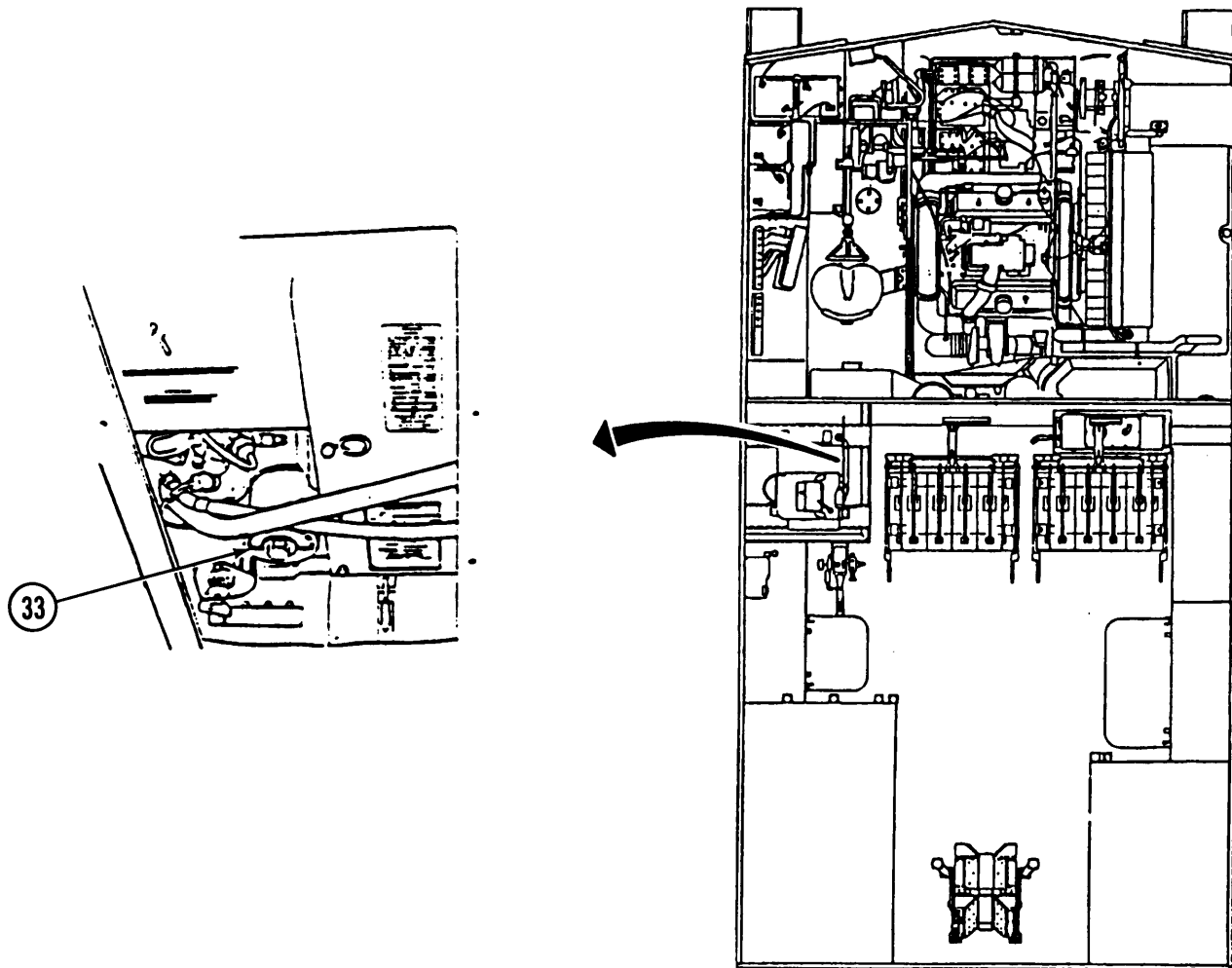
NOTE

Oil filter must be changed when APU crankcase oil is changed. Filter should be replaced more frequently when the vehicle is operating in dusty conditions.

If necessary, move left projectile rack assembly to rear of vehicle (refer to TM 9-2350-287-10), and remove APU compartment access plate (para 15-39). Remove filter (33) from the APU, and discard filter.

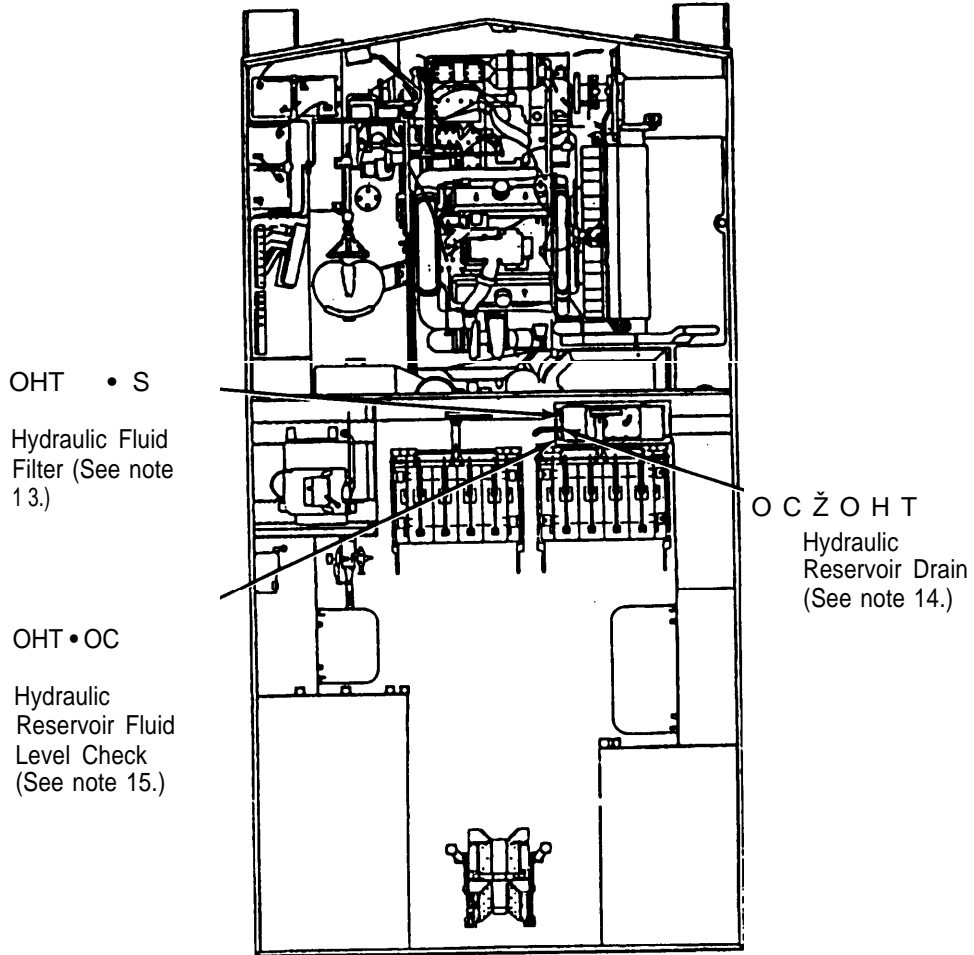
Lightly lubricate gasket of new filter (33) with oil. Install filter (33) on the APU and tighten filter (33) until gasket contacts lip of mounting stem; then tighten filter an additional one-half turn.

Start APU engine (refer to TM 9-2350-287-10), and check for oil leaks around filter (33). Tighten filter (33) if necessary if leaks occur. Install APU compartment access plate (para 15-39), and move left projectile rack assembly to front of vehicle (refer to TM 9-2350-287-10).



LUBRICANT Ž INTERVAL

INTERVAL • LUBRICANT



INTERVAL	MAN-HOURS *
OC	0.5
S	0.3

* The man-hour time specified is the time you need to do all the services prescribed.

- KEY -

Lubricants	Capacities	Expected Temperatures			Intervals
		Above 15° F (Above -9°C)	+40°F to -10°F (+4°C to -23°C)	+40°F to -65°F (+4°C to -54°C)	
OHT (MIL-H-6083) HYDRAULIC FLUID, Petroleum Base, Preservative, Hydraulic Equipment	18 1/2 gal. (69.8 L)	All Temperatures			Intervals are as follows: OC - On Condition S - Semiannually Intervals are based on normal hours of operation and moderate operating conditions.
Hydraulic Reservoir					
OHT (MIL-H-6083) HYDRAULIC FLUID, Petroleum Base, Preservative, Hydraulic Equipment					
Hydraulic Fluid Filter					

NOTES:

13. HYDRAULIC FLUID FILTER.

WARNING

Do not attempt this service until all systems have been shut down and hydraulic pressure has dropped to zero psi on gage. Hydraulic fluid may be hot. If system has been operating recently, make sure hydraulic fluid is cool before beginning. Check hydraulic temperature gage to make sure temperature is in the green range.

CAUTION

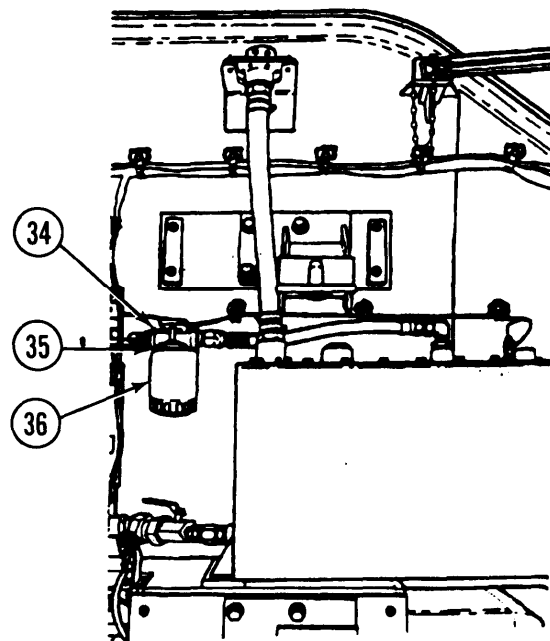
To prevent contamination of hydraulic system, cover all openings. Failure to comply can result in damage to hydraulic system components.

NOTE

Change hydraulic filter after first 100 hours of hydraulic system operation and semiannually thereafter. Filter and gasket should be replaced after hydraulic component disassembly and whenever hydraulic oil is changed.

Move right projectile rack assembly to rear of vehicle (refer to TM 9-2350-287-10). Remove filter (36), with gasket (35) attached, from base (34). Drain oil from filter (36) into suitable container. Discard filter.

Install new gasket (35) on new filter (38). Apply a light coating of hydraulic oil to gasket (35) and install filter (36) and gasket (35) on base (34). Tighten filter (36) hand-tight. Move right projectile rack assembly to front of vehicle (refer to TM 9-2350-287-10).



NOTES:

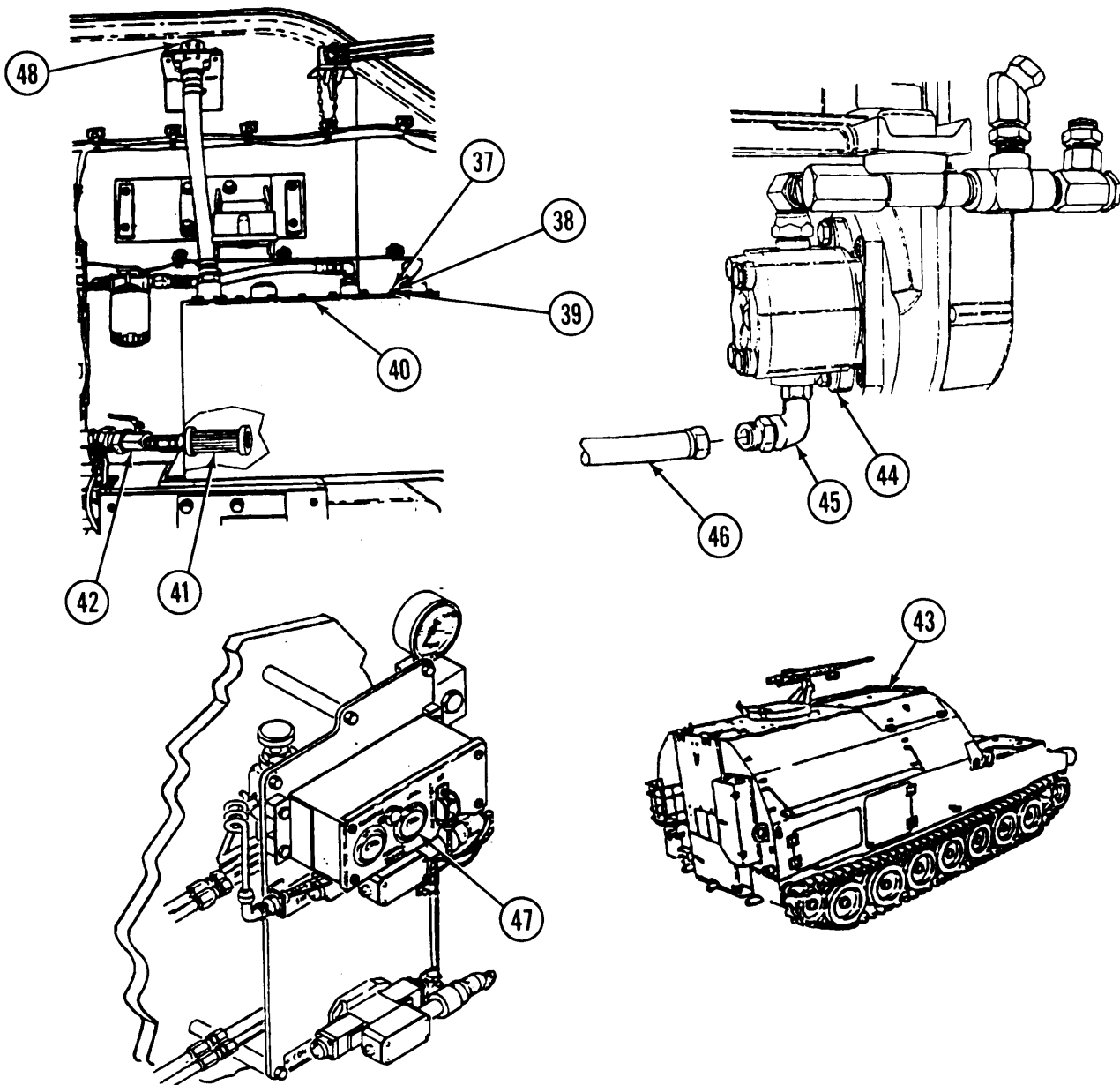
14. HYDRAULIC RESERVOIR DRAIN.

WARNING

Before performing this service, make sure all systems are shut down and the MASTER switch is OFF. Hydraulic fluid may be HOT.

CAUTION

Take necessary precautions to prevent the entry of contaminants into the hydraulic system. This service should be performed only in areas that are free of excessive moisture and dust.



Move right projectile rack assembly from against front wall of cargo compartment (refer to TM 9-2350-287-10). Close ball valve (42). Remove APU plenum (para 18-17). Disconnect hose assembly (45) from elbow (44) on bottom of APU hydraulic pump (43). Place end of hose assembly (45) in 15-gallon container. Open ball valve (42) and drain hydraulic reservoir. Close ball valve (42). Remove 14 screws (37), lockwashers (38), and washers (39) securing reservoir cover (40) to reservoir. Remove reservoir cover.

WARNING

Drycleaning 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.

Use a clean, lint-free rag to wipe residual hydraulic fluid from reservoir. Remove suction strainer (41) from inside reservoir. Use a clean, lint-free cloth and drycleaning solvent to clean suction strainer (41) and inner reservoir surfaces. Allow parts to dry and install suction strainer (41). While monitoring fluid level, add OHT until fluid rises to correct level. Install reservoir cover (40) with 14 washers (39), lockwashers (38), and screws (37). Connect hose assembly (45) to elbow (44) on bottom of APU hydraulic pump (43). Open ball valve (42).

CAUTION

To prevent serious damage to hydraulic components and resulting system failure, make sure ball valve is opened before operating system.

Install right projectile rack assembly against front wall of cargo compartment (refer to TM 9-2350-287-10).

15. HYDRAULIC RESERVOIR FLUID LEVEL CHECK.

CAUTION

Take necessary precautions to prevent entry of contaminants into the hydraulic system.

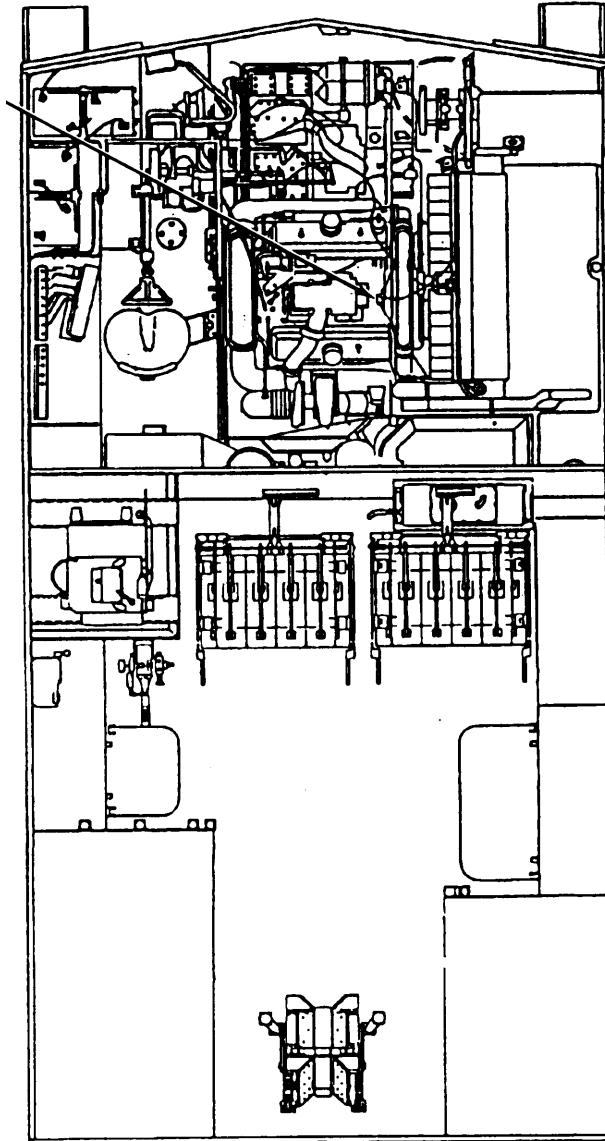
Turn MASTER switch ON (refer to TM 9-2350-287-10). Check fluid level gage (47), located on hydraulic control panel. Gage pointer should read within green range on gage. If fluid level is low, open center top loading door (46) and remove fill cap (48). While an assistant monitors fluid level on gage, add OHT until fluid level rises to full ("F") mark on the gage.

LUBRICANT ŽINTERVAL

INTERVAL • LUBRICANT

G A A Ž O C

Engine Mount Base
(reached when
powerpack is re-
moved) (See note
16.)



INTERVAL

MAN-HOURS *

OC

0.2

* The man-hour time specified is the time you need to do all the services prescribed.

- KEY -

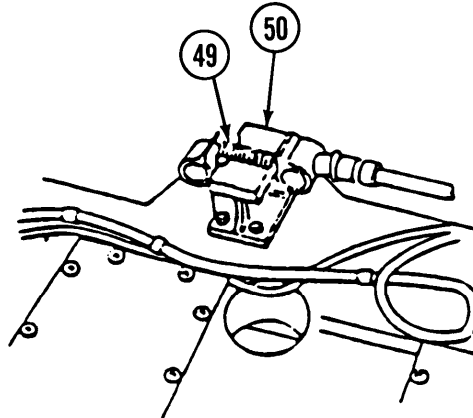
Lubricants	Expected Temperatures			Intervals
	Above 15° F (Above -9°C)	+400F to -10°F (+4°C to -23°C)	+400F to -65°F (+4°C to -54°C)	
GAA (MIL-G-10924) GREASE, Automot- ive and Artillery				Intervals are as follows: OC -On Condition Intervals are based on normal hours of operation and moderate operating conditions.
Engine Mount Base	All Temperatures			

NOTES:

NOTE

Lubricate engine mount base whenever powepack is removed.

16. ENGINE MOUNT BASE. Lubricate screw (49) on engine mount base (50).



APPENDIX H MANDATORY REPLACEMENT PARTS LIST

Paragraph Number	Paragraph Title	Page Number
H-1	General	% H-1
H-2	Explanation of ColumnsH-1
	Table H-1 Mandatory Replacement Pads List	H-2

H-1. GENERAL

This appendix is a cross-reference of item numbers to part numbers and is included for that purpose only.

H-2. EXPLANATION OF COLUMNS.

- a. Column (1) - Item Number. This number is assigned to the entry in Table 1 for cross-referencing to the part number. The item number appears in the Materials/Parts listing of each maintenance procedure.
- b. Column (2) - Item Name. This is the name given each item in the Materials/Parts listing of the maintenance procedure.
- c. Column (3) - National Stock Number. When available, the national stock number is listed for each part number.
- d. Column (4) - Part Number. This is the primary number used by the manufacturer 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. Column (5) - Reference. This is the number of the repair parts and special tools list (RPSTL) in which the referenced replacement part can be found. The RPSTL is the authorization for requisitioning replacement parts.

Table H-1. MANDATORY REPLACEMENT PARTS LIST

(1) ITEM NUMBER	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) REFERENCE
1	Assembled washer screw	5305-00-135-5157	9417926	TM 9-2350-287-24P
2	Bearing	3120-00-801-6692	3782	TM 9-2350-287-24P
3	Bleed plug	2590-00-925-8049	10948744	TM 9-2350-287-24P
4	Boot	5306-00-801-6703	10920637	TM 9-2350-287-24P
5	Boot	2530-00-039-8721	8338177	TM 9-2350-287-24P
6	Bushing	5365-00-446-3269	J6642-7	TM 9-2350-287-24P
7	Bushing	5365-00-446-3269	10917099	TM 9-2350-287-24P
8	Bushing	5365-00-019-5226	10922511	TM 9-2350-287-24P
9	Clamp	4730-00-269-3760	MS22064-5	TM 9-2350-287-24P
10	Cotter pin	5315-00-839-2325	MS24665-132	TM 9-2350-287-24P
11	Cotter pin	5315-00-839-5820	MS24665-134	TM 9-2350-287-24P
12	Cotter pin	5315-00-815-1405	MS24665-151	TM 9-2350-287-24P
13	Cotter pin	5315-00-234-1854	MS24665-153	TM 9-2350-287-24P
14	Cotter pin	5315-00-059-0157	MS24665-210	TM 9-2350-287-24P
15	Cotter pin	5315-01-012-2568	MS24665-246	TM 9-2350-287-24p
16	Cotter pin	5315-00-839-2326	MS24665-281	TM 9-2350-287-24P
17	Cotter pin	5315-00-842-3044	MS24665-283	TM 9-2350-287-24P
18	Cotter pin	5315-01-359-1451	MS24665-285	TM 9-2350-287-24P
19	Cotter pin	5315-00-845-7787	MS24665-289	TM 9-2350-287-24p
20	Cotter pin	5315-00-234-1861	MS24665-298	TM 9-2350-287-24P
21	Cotter pin	5315-00-809-5120	MS24665-299	TM 9-2350-287-24P
22	Cotter pin	5315-00-234-1863	MS24665-300	TM 9-2350-287-24P
23	Cotter pin	5310-00-839-5821	MS24665-351	TM 9-2350-287-24P
24	Cotter pin	5310-00-839-5822	MS24665-353	TM 9-2350-287-24P
25	Cotter pin	5315-00-012-0123	MS24665-355	TM 9-2350-287-24P
26	Cotter pin	5315-00-298-1481	MS24665-357	TM 9-2350-287-24P
27	Cotter pin	5315-00-187-9549	MS24665-418	TM 9-2350-287-24P
28	Cotter pin	5315-00-849-9857	MS24665-421	TM 9-2350-287-24P
29	Cotter pin	5310-00-013-7228	MS24665-423	TM 9-2350-287-24P
30	Cotter pin	5310-00-236-8371	MS24665-441	TM 9-2350-287-24P
31	Cotter pin	5310-00-013-7258	MS24665-497	TM 9-2350-287-24P
32	Cotter pin	5310-00-234-1848	MS24665-629	TM 9-2350-287-24P
33	Cotter pin	5310-00-852-4113	MS24665-639	TM 9-2350-287-24P
34	Cotter pin	5315-00-013-7137	MS24665-814	TM 9-2350-287-24P
35	Cotter pin	5305-00-954-4624	MS35198-25	TM 9-2350-287-24P
36	Cotter pin	5315-00-068-5629	MS9245-42	TM 9-2350-287-24P
37	Cotter pin	5315-00-816-1794	103374	TM 9-2350-287-24P
38	Cotter pin	5315-00-241-7330	12Z48PC426	TM 9-2350-287-24P
39	Cotter pin	5315-00-846-0126	137318	TM 9-2350-287-24P
40	Cotter pin	5315-00-243-1171	14-1509-08	TM 9-2350-287-24P
41	Filter and cap assembly	5845-00-490-1291	BML61328	TM 9-2350-287-24P
42	Filler bowl assembly	2910-00-031-9083	7413736	TM 9-2350-287-24P
43	Filter element assembly	2910-00-025-3493	M551085-1	TM 9-2350-287-24P
44	Fluid filter element	1650-00-554-7430	FE115	TM 9-2350-287-24P
45	Fluid filter element	2940-00-745-7730	T552	TM 9-2350-287-24P
46	Fluid filter element	2910-00-287-1912	CW226MP	TM 9-2350-287-24P
47	Fluid filter element	2910-00-287-1912	5574508	TM 9-2350-287-24P
48	Fluid filter element	2940-00-745-7730	5575032	TM 9-2350-287-24P
49	Gasket	5330-00-946-8344	MS52000-5	TM 9-2350-287-24P
50	Gasket	5330-00-641-4336	MS52000-8	TM 9-2350-287-24P
51	Gasket	5330-00-682-4609	10867301	TM 9-2350-287-24P
52	Gasket	5330-00-899-7888	10895744	TM 9-2350-287-24P
53	Gasket	5330-00-871-2897	10898122	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
54	Gasket	5330-00-860-2341	10903184	TM 9-2350-287-24P
55	Gasket	5330-00-886-2997	10903399	TM 9-2350-287-24P
56	Gasket	5330-00-453-9180	10903593	TM 9-2350-287-24P
57	Gasket	5330-00-878-6179	10903594	TM 9-2350-287-24P
58	Gasket	5330-00-882-7119	10903595	TM 9-2350-287-24P
59	Gasket	5330-00-115-4320	10909588	TM 9-2350-287-24P
60	Gasket	5330-00-446-3283	10910003	TM 9-2350-287-24P
61	Gasket	1015-00-117-2593	10912134	TM 9-2350-287-24P
62	Gasket	5330-00-809-1477	10919232	TM 9-2350-287-24P
63	Gasket	5330-00-809-1481	10919233	TM 9-2350-287-24P
64	Gasket	5330-00-446-3194	10919234	TM 9-2350-287-24P
65	Gasket	5330-00-080-1492	10921234	TM 9-2350-287-24P
66	Gasket	5330-00-080-1023	10922277	TM 9-2350-287-24P
67	Gasket	5330-00-475-1508	10922326	TM 9-2350-287-24P
68	Gasket	5330-00-988-9395	10925299	TM 9-2350-287-24P
69	Gasket	5330-00-988-9394	10925300	TM 9-2350-287-24P
70	Gasket	5330-00-986-9885	10930331	TM 9-2350-287-24P
71	Gasket	5330-00-968-3703	10935752	TM 9-2350-287-24P
72	Gasket	5330-00-950-3265	10954740	TM 9-2350-287-24P
73	Gasket	5330-00-990-9144	11605377	TM 9-2350-287-24P
74	Gasket	5330-01-059-4286	11674729	TM 9-2350-287-24P
75	Gasket	5330-00-641-7571	123-0191	TM 9-2815-221-34&P
76	Gasket	5330-00-932-1853	123-0677	TM 9-2815-221-34&P
77	Gasket	5330-01-207-3526	12332680	TM 9-2350-287-24P
78	Gasket	5330-01-184-5995	12332694	TM 9-2350-287-24P
79	Gasket	5330-01-199-5485	12333501	TM 9-2350-287-24P
80	Gasket	5330-01-199-5486	12333503	TM 9-2350-287-24P
81	Gasket	5330-01-199-5487	12333504	TM 9-2350-287-24P
82	Gasket	5330-01-186-5856	12343072	TM 9-2350-287-24P
83	Gasket	5330-01-199-5485	12333501	TM 9-2350-287-24P
84	Gasket	5330-01-280-8711	12352307	TM 9-2350-287-24P
84.1	Gasket	5330-00-917-2738	126400	TM 9-2350-287-24P
84.2	Gasket	5330-00-917-0488	126487	TM 9-2350-287-24P
85	Gasket	5330-00-551-0433	1503536	TM 9-2350-287-24P
86	Gasket	5330-00-290-7860	1595620	TM 9-2350-287-24P
87	Gasket	5330-01-088-5984	5104507	TM 9-2350-287-24P
88	Gasket	5330-00-980-1546	5130995	TM 9-2350-287-24P
89	Gasket	5330-00-212-6290	5150193	TM 9-2350-287-24P
90	Gasket	5330-00-846-9841	5574161	TM 9-2350-287-24P
91	Gasket	5330-00-833-0870	6437298	TM 9-2350-287-24P
92	Gasket	5330-00-709-8444	7098444	TM 9-2350-287-24P
93	Gasket	5330-00-732-0655	7320655	TM 9-2350-287-24P
94	Gasket	3110-00-214-0903	7320658	TM 9-2350-287-24P
95	Gasket	5330-00-741-9534	7419534	TM 9-2350-287-24P
96	Gasket	5330-00-576-4609	7525965	TM 9-2350-287-24P
97	Gasket	5330-00-753-9689	7539689	TM 9-2350-287-24P
98	Gasket	5330-00-733-8102	7710684	TM 9-2350-287-24P
99	Gasket	5330-00-047-4101	7972340	TM 9-2350-287-24P
100	Gasket	5330-00-047-4098	7972345	TM 9-2350-287-24P
101	Gasket	5330-00-047-4099	7972346	TM 9-2350-287-24P
102	Gasket	5330-00-047-4104	7972350	TM 9-2350-287-24P
	[Text Deleted]			
104	Gasket	5330-00-845-1521	8350176	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
105	Gasket	5365-00-209-1852	8705544	TM 9-2350-287-24P
106	Gasket	5330-00-882-7120	8762879	TM 9-2350-287-24P
107	Grommet	5325-00-042-5181	10931159	TM 9-2350-287-24P
108	Grommet	5325-00-449-5073	11644388	TM 9-2350-287-24P
109	Insulation cover	2990-01-083-5431	11636402	TM 9-2350-287-24P
110	Insulation cover	2990-01-083-5432	11636404	TM 9-2350-287-24P
111	Insulation cover	5640-01-083-5423	11636406	TM 9-2350-287-24P
112	Insulation cover	2990-01-043-8192	12260221-1	TM 9-2350-287-24P
113	Insulation cover	2990-01-042-2466	12260221-2	TM 9-2350-287-24P
114	Insulation sleeving	5970-01-087-0378	M23053/5-117-0	TM 9-2350-287-24P
115	Insulation, thermal	2540-01-374-2813	12268368	TM 9-2350-287-24P
116	Lockpin	5315-00-775-2864	7752864	TM 9-2350-287-24P
117	Lockpin	5315-00-775-3911	7753911	TM 9-2350-287-24P
118	Lockwasher	5310-00-022-8834	MS35333-108	TM 9-2350-287-24P
119	Lockwasher	5310-01-142-0326	MS35333-125	TM 9-2350-287-24P
120	Lockwasher	5310-01-078-9699	MS35333-136	TM 9-2350-287-24P
121	Lockwasher	5310-00-579-0079	MS35333-37	TM 9-2350-287-24P
122	Lockwasher	5310-00-559-0070	MS35333-38	TM 9-2350-287-24P
123	Lockwasher	5310-00-576-5752	MS35333-39	TM 9-2350-287-24P
124	Lockwasher	5310-00-550-1130	MS35333-40	TM 9-2350-287-24P
125	Lockwasher	5310-00-167-0721	MS35333-41	TM 9-2350-287-24P
126	Lockwasher	5310-00-595-7237	MS35333-42	TM 9-2350-287-24P
127	Lockwasher	5310-00-543-4385	MS35333-46	TM 9-2350-287-24P
128	Lockwasher	5310-00-821-6269	MS35334-10	TM 9-2350-287-24P
129	Lockwasher	5310-00-821-6269	MS35334-19	TM 9-2350-287-24P
130	Lockwasher	5310-00-835-0574	MS35334-20	TM 9-2350-287-24P
131	Lockwasher	5310-00-616-7998	MS35334-21	TM 9-2350-287-24P
132	Lockwasher	5310-00-209-0788	MS35335-16	TM 9-2350-287-24P
133	Lockwasher	5310-00-209-0788	MS35335-30	TM 9-2350-287-24P
134	Lockwasher	5310-00-596-7693	MS35335-31	TM 9-2350-287-24P
135	Lockwasher	5310-00-596-7691	MS35335-32	TM 9-2350-287-24P
136	Lockwasher	5310-00-209-0786	MS35335-33	TM 9-2350-287-24P
137	Lockwasher	5310-00-514-6674	MS35335-34	TM 9-2350-287-24P
138	Lockwasher	5310-00-627-6128	MS35335-35	TM 9-2350-287-24P
139	Lockwasher	5310-00-209-5116	MS35335-37	TM 9-2350-287-24P
140	Lockwasher	5310-00-013-8164	MS35335-45	TM 9-2350-287-24P
141	Lockwasher	5310-00-209-1239	MS35335-60	TM 9-2350-287-24P
142	Lockwasher	5310-00-913-9776	MS35335-91	TM 9-2350-287-24P
143	Lockwasher	5310-00-194-9213	MS35336-39	TM 9-2350-287-24P
144	Lockwasher	5310-00-261-7165	MS35336-41	TM 9-2350-287-24P
145	Lockwasher	5310-00-013-1182	MS35337-23	TM 9-2350-287-24P
146	Lockwasher	5310-00-614-3536	MS35337-37	TM 9-2350-287-24P
147	Lockwasher	5310-00-274-8708	MS35337-62	TM 9-2350-287-24P
148	Lockwasher	5310-00-261-8278	MS35338-100	TM 9-2350-287-24P
149	Lockwasher	5310-00-184-8971	MS35338-103	TM 9-2350-287-24P
150	Lockwasher	5310-00-680-6823	MS35338-108	TM 9-2350-287-24P
151	Lockwasher	5310-00-933-8119	MS35338-137	TM 9-2350-287-24P
152	Lockwasher	5310-00-933-8120	MS35338-138	TM 9-2350-287-24P
153	Lockwasher	5310-00-933-8121	MS35338-139	TM 9-2350-287-24P
153.1	Lockwasher	5310-00-984-7042	MS35338-141	TM 9-2350-287-24P
154	Lockwasher	5310-00-933-8778	MS35338-143	TM 9-2350-287-24P
155	Lockwasher	5310-00-596-9441	MS35338-33	TM 9-2350-287-24P
156	Lockwasher	5310-00-013-1052	MS35338-38	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
157	Lockwasher	5310-00-543-5060	MS35338-39	TM 9-2350-287-24P
158	Lockwasher	5310-00-543-2410	MS35338-40	TM 9-2350-287-24P
159	Lockwasher	5310-00-045-4007	MS35338-41	TM 9-2350-287-24P
160	Lockwasher	5310-00-045-3299	MS35338-42	TM 9-2350-287-24P
161	Lockwasher	5310-00-045-3296	MS35338-43	TM 9-2350-287-24P
162	Lockwasher	5310-00-582-5965	MS35338-44	TM 9-2350-287-24P
163	Lockwasher	5310-00-407-9566	MS35338-45	TM 9-2350-287-24P
164	Lockwasher	5310-00-637-9541	MS35338-46	TM 9-2350-287-24P
165	Lockwasher	5310-00-209-0965	MS35338-47	TM 9-2350-287-24P
166	Lockwasher	5310-00-584-5272	MS35338-48	TM 9-2350-287-24P
167	Lockwasher	5310-00-167-0680	MS35338-49	TM 9-2350-287-24P
168	Lockwasher	5310-00-820-6653	MS35338-50	TM 9-2350-287-24P
169	Lockwasher	5310-00-584-7888	MS35338-51	TM 9-2350-287-24P
170	Lockwasher	5310-00-754-2005	MS35338-52	TM 9-2350-287-24P
171	Lockwasher	5310-00-584-7890	MS35338-57	TM 9-2350-287-24P
172	Lockwasher	5310-00-274-8702	MS35338-60	TM 9-2350-287-24P
173	Lockwasher	5310-00-274-8707	MS35338-61	TM 9-2350-287-24P
174	Lockwasher	5310-00-274-8710	MS35338-62	TM 9-2350-287-24P
175	Lockwasher	5310-00-274-8715	MS35338-63	TM 9-2350-287-24P
176	Lockwasher	5310-00-011-6120	MS35338-64	TM 9-2350-287-24P
177	Lockwasher	5310-00-011-5093	MS35338-65	TM 9-2350-287-24P
178	Lockwasher	5310-00-011-5314	MS35338-66	TM 9-2350-287-24P
179	Lockwasher	5310-00-011-6121	MS35338-67	TM 9-2350-287-24P
180	Lockwasher	5310-00-081-1284	MS35338-68	TM 9-2350-287-24P
181	Lockwasher	5310-00-011-6123	MS35338-69	TM 9-2350-287-24P
182	Lockwasher	5310-00-011-6124	MS35338-70	TM 9-2350-287-24P
183	Lockwasher	5310-00-261-7340	MS35338-8	TM 9-2350-287-24P
184	Lockwasher	5310-00-184-8977	MS35338-98	TM 9-2350-287-24P
185	Lockwasher	5310-00-889-2528	MS45904-68	TM 9-2350-287-24P
186	Lockwasher	5310-00-889-2527	MS45904-72	TM 9-2350-287-24P
187	Lockwasher	5310-00-688-2195	MS51848-12	TM 9-2350-287-24P
188	Lockwasher	5310-01-030-8731	SE555	TM 9-2350-287-24P
189	Lockwasher	5310-00-337-8329	11014538	TM 9-2350-287-24P
189.1	Lockwasher	5310-00-185-9716	11594003	TM 9-2350-287-24P
190	Lockwasher	5310-00-137-3427	12X198	TM 9-2920-248-35
191	Lockwasher	5330-00-431-9220	125744	TM 9-2350-287-24P
192	Lockwasher	5310-00-165-8404	20-13-5	TM 9-2350-287-24P
193	Lockwasher	5310-00-988-7516	4024-32-00-0541	TM 9-2350-287-24P
194	Lockwasher	5310-00-274-8710	43W6335-40	TM 9-2350-287-24P
195	Lockwasher	5310-01-130-9065	6-1-5866-17	TM 9-2350-287-24P
196	Lockwasher	5310-00-582-5965	6220-21	TM 9-2350-287-24P
197	Lockwasher	5310-01-010-2266	8540010	TM 9-2350-287-24P
198	Lockwire	9501-00-293-4208	MS20995C32	TM 9-2350-287-24P
199	Lockwire	9501-00-331-3275	MS20995C41	TM 9-2350-287-24P
200	Lockwire	9505-01-236-9343	MS20995C91	TM 9-2350-287-24P
201	Lockwire	9505-00-684-4843	MS20995F41	TM 9-2350-287-24P
202	Lockwire	9505-00-248-9850	MS20995F47	TM 9-2350-287-24P
203	Lockwire	9525-00-529-9196	MS20995-NC41	TM 9-2350-287-24P
204	Lubrication fitting	4730-00-050-4208	MS15003-1	TM 9-2350-287-24P
205	Nipple	4730-00-196-1469	MS51953-121	TM 9-2350-287-24P
206	Nonmetallic seal	5330-00-796-2242	7962242	TM 9-2350-287-24P
207	Nonmetallic seal	5330-00-796-2254	7962254	TM 9-2350-287-24P
208	Nonmetallic washer	5310-00-285-5122	7995455	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
209	Oil filter parts kit	2940-00-740-3158	5703114	TM 9-2350-287-24P
210	Pad, cushioning'	2590-01-171-0086	12329528	TM 9-2350-287-24P
211	Pad, insulation	5970-01-089-4939	10909717	TM 9-2350-287-24P
212	Pad, rubber		12376466-1	TM 9-2350-287-24P
213	Pad, rubber	5330-01-382-4242	12376466-2	TM 9-2350-287-24P
214	Panel, structural	5640-01-174-0970	BML60287	TM 9-2350-287-24P
215	Panel, structural	5680-01-198-8889	12333506	TM 9-2350-287-24P
216	Panel, structural	5680-01-198-8888	12333507	TM 9-2350-287-24P
217	Panel, structural	5680-01-198-8887	12333508	TM 9-2350-287-24P
218	Pin, straight	5315-00-437-7206	10909303	TM 9-2350-287-24P
219	Preformed packing	5330-00-291-3289	AN123888	TM 9-2350-287-24P
220	Preformed packing	5330-00-297-9990	MS28775-6	TM 9-2350-287-24P
221	Preformed packing	5330-00-582-2133	MS28775-011	TM 9-2350-287-24P
222	Preformed packing	5330-00-722-4973	MS28775-110	TM 9-2350-287-24P
223	Preformed packing	5330-00-297-9990	MS28775-222	TM 9-2350-287-24P
224	Preformed packing	5330-00-251-8839	MS28778-12	TM 9-2350-287-24P
225	Preformed packing	5330-00-819-5111	MS28778-24	TM 9-2350-287-24P
226	Preformed packing	5330-00-804-5695	MS28778-6	TM 9-2350-287-24P
227	Preformed packing	5330-00-808-0794	MS28778-8	TM 9-2350-287-24P
227.1	Preformed packing	5330-00-248-3847	MS29513-115	TM 9-2350-287-24P
228	Preformed packing	5330-00-265-1089	MS29513-125	TM 9-2350-287-24P
229	Preformed packing	5330-00-599-2766	MS29513-222	TM 9-2350-287-24P
230	Preformed packing	5330-00-251-9376	MS29513-241	TM 9-2350-287-24P
231	Preformed packing	5330-00-844-2447	MS29561-241	TM 9-2350-287-24P
232	Preformed packing	5330-01-046-3300	M83461/1-012	TM 9-2350-287-24P
233	Preformed packing	5330-01-160-2508	M83461/1-110	TM 9-2350-287-24P
234	Preformed packing	5330-01-171-3435	M83461/1-222	TM 9-2350-287-24P
235	Preformed packing	5330-01-199-9925	10941532	TM 9-2350-287-24P
236	Preformed packing	5330-01-359-2109	12376238	TM 9-2350-287-24P
237	Preformed packing	5330-01-382-4272	12376239	TM 9-2350-287-24P
238	Preformed packing	5330-00-604-8094	5187310	TM 9-2350-287-24P
239	Preformed packing	5330-00-833-0870	6437298	TM 9-2350-287-24P
240	Preformed packing	5330-00-297-6329	7358626	TM 9-2350-287-24P
241	Preformed packing	5330-00-599-2180	7374386	TM 9-2350-287-24P
242	Preformed packing	5330-00-173-4770	7962251	TM 9-2350-287-24P
243	Resilient mount	5340-00-628-1161	11671653	TM 9-2350-287-24P
244	Retaining ring	5365-00-715-1152	MS16624-1037	TM 9-2350-287-24P
245	Retaining ring	5365-00-721-6876	MS16624-1125	TM 9-2350-287-24P
246	Retaining ring	5365-00-803-7303	MS16624-1075	TM 9-2350-287-24P
247	Retaining ring	5365-00-514-0380	MS16629-1143	TM 9-2350-287-24P
248	Retaining ring	5365-00-442-5845	MS16633-1050	TM 9-2350-287-24P
249	Retaining ring	5365-00-571-6847	8748475	TM 9-2350-287-24P
250	Rivet	5320-01-080-9250	MS16535-121	TM 9-2350-287-24P
251	Rivet	5320-00-165-8828	MS20470B6-8	TM 9-2350-287-24P
252	Rivet	5320-00-011-2618	MS35744-2	TM 9-2350-287-24P
253	Rubber strip	9320-01-164-1243	BML62438	TM 9-2350-287-24P
254	Rubber strip	9320-01-164-1243	12330709	TM 9-2350-287-24P
255	Safety relief valve	4820-00-475-1506	6410043	TM 9-2350-287-24P
256	Safety relief valve	4820-00-475-1506	10922327	TM 9-2350-287-24P
257	Safety wire (wire, nonelectrical)	9505-00-640-4893	AN995F32	TM 9-2350-287-24P
258	Screw	5305-01-339-9561	12268563	TM 9-2350-287-24P
259	Seal	5330-01-173-3478	BML60036-7	TM 9-2350-287-24P
260	Seal	5330-00-885-8465	10888632	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
261	Seal	5330-00-807-2853	10895858	TM 9-2350-287-24P
262	Seal	5330-00-873-5385	10895933	TM 9-2350-287-24P
263	Seal	5330-00-873-5386	10895940	TM 9-2350-287-24P
264	Seal	5365-00-178-6074	10903404	TM 9-2350-287-24P
265	Seal	5330-00-421-1605	10903415	TM 9-2350-287-24P
266	Seal	530-00-821-2282	10918933	TM 9-2350-287-24P
267	Seal	5330-00-345-8042	10920687	TM 9-2350-287-24P
268	Seal	5330-00-928-3001	10920707	TM 9-2350-287-24P
269	Seal	5330-00-971-5011	10921462	TM 9-2350-287-24P
270	Seal	5330-00-950-3265	10954740	TM 9-2350-287-24P
271	Seal	2540-00-948-0181	10956227	TM 9-2350-287-24P
272	Seal	5330-01-222-0837	12278617	TM 9-2350-287-24P
273	Seal	5330-01-382-4343	12329406-1	TM 9-2350-287-24P
274	Seal	5330-01-382-4264	12329406-3	TM 9-2350-287-24P
275	Seal	5330-01-382-4345	12329406-5	TM 9-2350-287-24P
276	Seal	5330-01-165-7744	12329406-6	TM 9-2350-287-24P
277	Seal	5330-01-173-3478	12329406-7	TM 9-2350-287-24P
278	Seal	5330-01-181-6455	12329717	TM 9-2350-287-24P
279	Seal	5330-01-181-6456	12329732	TM 9-2350-287-24P
280	Seal	5330-01-255-2725	12333022-1	TM 9-2350-287-24P
281	Seal	5330-01-207-3536	12332986	TM 9-2350-287-24P
282	Seal	5330-01-255-9494	12351742	TM 9-2350-287-24P
283	Seal	5330-01-255-1860	12351746-1	TM 9-2350-287-24P
284	Seal	5330-01-256-5258	12351746-2	TM 9-2350-287-24P
285	Seal	5330-01-257-1066	12351746-3	TM 9-2350-287-24P
286	Seal	5330-01-397-3398	12351746-4	TM 9-2350-287-24P
287	Seal		12351746-5	TM 9-2350-287-24P
288	Seal	5330-01-416-7234	12351746-6	TM 9-2350-287-24P
289	Seal	5330-01-232-6756	12351753	TM 9-2350-287-24P
290	Seal		12351882-1	TM 9-2350-287-24P
291	Seal		12351882-2	TM 9-2350-287-24P
292	Seal		12351889	TM 9-2350-287-24P
293	Seal	5330-00-290-7606	500033	TM 9-2350-287-24P
294	Seal	5330-00-345-8042	501443 Style 1	TM 9-2350-287-24P
295	Seal	5330-00-770-8123	6767782	TM 9-2350-287-24P
296	Seal	5330-00-047-4099	7972346	TM 9-2350-287-24P
297	Seal	5330-01-151-7316	7972350	TM 9-2350-287-24P
298	Seal		860-80-0963	TM 9-2350-287-24P
299	Seal, antipilferage	5340-00-835-9815	8720150	TM 9-2350-287-24P
300	Self-locking bolt	5306-00-841-1881	MS35764-1066	TM 9-2350-287-24P
301	Self-locking bolt	5306-01-006-2062	MS35764-1603	TM 9-2350-287-24P
302	Self-locking bolt	5306-01-280-5525	MS35764-1619	TM 9-2350-287-24P
303	Self-locking bolt	5306-00-845-5725	9411274T	TM 9-2350-287-24P
304	Self-locking nut	5310-00-595-7421	MS17829-8C	TM 9-2350-287-24P
305	Self-locking nut	5310-00-176-6333	MS17830-08C	TM 9-2350-287-24P
306	Self-locking nut	5310-00-266-4461	MS20365-832	TM 9-2350-287-24P
307	Self-locking nut	5310-00-807-1468	MS21042-4	TM 9-2350-287-24P
308	Self-locking nut	5310-00-982-5064	MS2104483	TM 9-2920-224-34&P
309	Self-locking nut	5310-00-811-3494	MS21044N08	TM 9-2350-287-24P
310	Self-locking nut	5310-00-225-6408	8712289-6	TM 9-2350-287-24P
311	Self-locking nut	5310-00-982-6810	MS21044N 12	TM 9-2350-287-24P
312	Self-locking nut	5310-00-877-5796	MS21044N4	TM 9-2350-287-24P
313	Self-locking nut	5310-00-950-0039	MS21044N6	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
314	Self-locking nut	5310-00-903-8282	MS21083N4	TM 9-2350-287-24P
315	Self-locking nut	5310-00-926-1852	MS21083N6	TM 9-2350-287-24P
316	Self-locking nut	5310-00-934-9758	MS35649-202	TM 9-2350-287-24P
317	Self-locking nut	5310-00-088-1251	MS51922-1	TM 9-2350-287-24P
318	Self-locking nut	5310-00-913-3366	MS51922-11	TM 9-2350-287-24P
319	Self-locking nut	5310-00-984-3807	MS51922-13	TM 9-2350-287-24P
320	Self-locking nut	5310-00-087-4652	MS51922-17	TM 9-2350-287-24P
321	Self-locking nut	5310-00-959-1488	MS51922-21	TM 9-2350-287-24P
322	Self-locking nut	5310-00-902-0183	MS51922-23	TM 9-2350-287-24P
323	Self-locking nut	5310-00-225-6993	MS51922-33	TM 9-2350-287-24P
324	Self-locking nut	5310-00-959-7600	MS51922-5	TM 9-2350-287-24P
325	Self-locking nut	5310-00-199-7736	MS51922-62	TM 9-2350-287-24P
326	Self-locking nut	5310-00-225-6409	MS51922-68	TM 9-2350-287-24P
327	Self-locking nut	5310-00-044-3340	8712289	TM 9-2350-287-24P
328	Self-locking nut	5310-00-840-6220	8712289-1	TM 9-2350-287-24P
329	Self-locking nut	5310-00-849-7025	8712289-2	TM 9-2350-287-24P
330	Self-locking nut	5310-00-868-8062	8712289-3	TM 9-2350-287-24P
331	Self-locking nut	5310-00-840-6222	8712289-4	TM 9-2350-287-24P
332	Self-locking nut	5310-00-873-6955	8712289-7	TM 9-2350-287-24P
333	Self-locking nut	5310-00-930-9760	8712289-8	TM 9-2350-287-24P
334	Self-locking nut	5310-00-930-9759	8712289-9	TM 9-2350-287-24P
335	Self-locking screw	5305-00-144-0393	10930585	TM 9-2350-287-24P
336	Shim	5365-00-209-1852	8705544	TM 9-2350-287-24P
337	Shim	5330-00-641-7571	123-0191	TM 9-2350-287-24P
338	Shim		12351749-2	TM 9-2350-287-24P
339	Shim		12351749-3	TM 9-2350-287-24P
340	Shim		12351749-4	TM 9-2350-287-24P
341	Shim		12351749-6	TM 9-2350-287-24P
342	Shock absorber kit	2540-00-930-8935	5702944	TM 9-2350-287-24P
342.1	Sleeve	4730-00-278-8767	S260	TM 9-2350-287-24P
343	Socket assembly	6220-00-202-8591	7972339	TM 9-2350-287-24P
344	Spacer, plate	5365-01-185-5917	12333479-1	TM 9-2350-287-24P
345	Split washer	5310-00-143-6491	10313530	TM 9-2350-287-24P
346	Spring	5360-00-328-9486	10921466	TM 9-2350-287-24P
347	Spring	5360-00-328-9499	10921467	TM 9-2350-287-24P
348	Spring pin	5315-01-210-7570	MS16562-112	TM 9-2350-287-24P
349	Spring pin	5315-00-240-0997	MS16562-13	TM 9-2350-287-24P
350	Spring pin	5315-00-298-9845	MS16562-159	TM 9-2350-287-24P
351	Spring pin	5315-00-823-8746	MS16562-206	TM 9-2350-287-24P
352	Spring pin	5315-00-616-4261	MS16562-28	TM 9-2350-287-24P
353	Spring pin	5315-00-810-3702	MS16562-36	TM 9-2350-287-24P
354	Spring pin	5315-00-810-3702	MS16562-38	TM 9-2350-287-24P
355	Spring pin	5315-00-844-6796	MS16562-39	TM 9-2350-287-24P
356	Spring pin	5315-00-844-3962	MS16562-44	TM 9-2350-287-24P
357	Spring pin	5315-00-814-3531	MS16562-50	TM 9-2350-287-24P
358	Spring pin	5315-00-809-8786	MS16562-51	TM 9-2350-287-24P
359	Spring pin	5315-00-844-3942	MS16562-6	TM 9-2350-287-24P
360	Spring pin	5315-00-844-3664	MS16562-67	TM 9-2350-287-24P
360.1	Spring pin	5315-01-216-5801	MS171562	TM 9-2350-287-24P
361	Spring pin	5315-00-576-8779	MS171597	TM 9-2350-287-24P
362	Spring pin	5315-01-100-7130	MS171600	TM 9-2350-287-24P
363	Spring pin	5315-00-582-7344	MS171687	TM 9-2350-287-24P
364	Spring pin	5315-00-902-8352	MS9047-110	TM 9-2350-287-24P

Table H-1. MANDATORY REPLACEMENT PARTS LIST (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
365	Spring pin	5315-00-687-9791	MS9048-007	TM 9-2350-287-24P
366	Spring pin	5315-01-209-2887	MS9048-137	TM 9-2350-287-24P
367	Spring pin	5315-00-854-6932	MS9048-138	TM 9-2350-287-24P
368	Spring pin	5315-00-619-3277	NAS561P8-18	TM 9-2350-287-24P
369	Spring pin	5315-00-063-9016	NAS561C8-22	TM 9-2350-287-24P
370	Spring tension washer	5310-01-213-7929	7358587	TM 9-2350-287-24P
371	Stud	5307-01-006-5515	MS51864-104-16	TM 9-2350-287-24P
372	Thermostat	6620-00-810-3921	10921755-1	TM 9-2350-287-24P
373	Tiedown strap	5975-00-935-5946	MS3367-2-1	TM 9-2350-287-24P
374	Tiedown strap	5975-00-133-8687	MS3367-5-0	TM 9-2350-287-24P
375	Tiedown strap	5975-00-570-9598	MS3367-7-9	TM 9-2350-287-24P
376	Track end connector kit	2530-01-339-3525	57K0986	TM 9-2350-287-24P
377	Track shoe kit	2530-01-353-7500	57K0985	TM 9-2350-287-24P
378	Washer	5310-00-950-1310	MS27183-4	TM 9-2350-287-24P
379	Washer	5310-00-740-4624	7404624	TM 9-2350-287-24P
380	Wire	9505-00-640-4893	AN995F32	TM 9-2350-287-24P
381	Wire	9505-00-087-3956	MS20995F20	TM 9-2350-287-24P
382	Wire		MS20995-F3201A.0	TM 9-2350-287-24P
383	Wire	9505-00-684-4843	MS20995F41	TM 9-2350-287-24P
384	Gasket	5330-00-599-5577	5161003	TM 9-2350-287-24P
385	Self-locking nut		NAS1409AS	TM 9-2350-287-24P
386	Preformed packing	5330-01-115-8223	3-910N552-90	TM 9-2350-287-24P

**APPENDIX I
TOOLS/TEST EQUIPMENT**

Paragraph Number	Paragraph Title	Page Number
I-1	General	I-1
I-2	Definition of Columns	I-1
	Table I-1 Common and Special Tool Requirements	I-2

I-1. GENERAL.

This appendix lists tools you will need to maintain the M992A1. This listing is for informational purposes only and is not authority to requisition the tools. Common tools are found in the supply catalogs, and special tools are found in TM 9-2350-287-24P.

I-2. DEFINITION OF COLUMNS.

- a. **Column (1)-Item Number.** This number is assigned to the entry in the listing and is referenced in the "Initial Setup" of maintenance paragraphs or narrative instructions to identify the tool needed (e.g., General mechanic's tool kit, Item 24, Appendix I).
- b. **Column (2)-Item Name.** Indicates the tool or tool set name and, if required, a description to identify the tool.
- c. **Column (3)-National Stock Number.** This is the national stock number (NSN) assigned to the tool. Use it to request or requisition the tool.
- d. **Column (4)-Part Number.** This is the part number assigned to the item.
- e. **Column (5)-Reference.** Indicates the technical manual or supply catalog in which the tool can be found.

Table I-1. COMMON AND SPECIAL TOOL REQUIREMENTS

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
1	Adjustable wrench, 10"	5120-00-449-8083	AD10	SC-4910-95-CL-A72
2	Adjustable wrench, 12"	5120-00-264-3796	11655778-5	SC-4910-95-CL-A74
3	Adjustable wrench, 15"	5120-00-264-3793	2117080	SC-4910-95-CL-A72
4	Automotive adjustable wrench, 8"	5120-00-240-5328	11655778-3	SC-5180-90-CL-N39
5	Automotive electrical tool kit	5180-00-422-8594	1711	SC-4910-95-CL-A72
6	Battery terminal puller	5120-00-944-4268	54000	SC-4910-95-CL-A74
7	Bearing cup replacer (inner)	5120-00-034-0880	10914187	TM 9-2350-287-24P
8	Bearing cup replacer (outer)	5120-00-034-0885	10914197	TM 9-2350-287-24P
9	Bearing replacer	5120-00-084-7627	10925993	TM 9-2350-287-24P
10	Blind hand riveter	5120-00-017-2849	98	SC-4910-95-CL-A74
10.1	Bolt, Machine	5306-01-388-5186	12447293	TM 9-2350-287-24P
11	Box wrench	5120-00-051-5567	11605662	TM 9-2350-287-24P
12	Crowbar	5120-00-224-1390	1833244	SC-4910-95-CL-A72
13	Digital multimeter	6625-01-139-2512	T00377	SC-4910-95-CL-A72
14	Drain pan, 4 gal.	4910-00-387-9592	450	SC-4910-95-CL-A72
15	Electric disk sander	5130-00-596-9728	6112-90	SC-4910-59-CL-A73
16	Electrical connector repair tool kit	5180-00-876-9336	7550526	SC-4910-95-CL-A74
17	Electrical power cable assembly	4910-00-930-8764	12268427	TM 9-2350-287-24P
18	Electrical power cable assembly	6150-01-115-2276	12268162	TM 9-2350-287-24P
19	Electrical power cable assembly	6150-01-320-4733	12268426	TM 9-2350-287-24P
20	Endless sling	3940-00-675-5003	PD-10196	TM 9-2350-287-24P
21	Eye bolt	5306-00-050-0347	MS51937-5	TM 9-2350-287-24P

Table I-1. COMMON AND SPECIAL TOOL REQUIREMENTS (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
22	Final drive lifting sling	5120-00-034-0875	10914179	TM 9-2350-287-24P
23	Five-ton hoist			TOE
24	General mechanic's tool kit	5180-00-177-7033	SC-5180-90-CL-N26	
25	Ground cable assembly	4910-00-084-0789	10913655	TM 9-2350-287-24P
26	Ground hop cable assembly	12447296	TM 9-2350-287-24P	
27	Guide pin	5120-00-034-0833	10914195	TM 9-2350-287-24P
28	Hand hydraulic jack	5120-00-224-7330	E12-9A	SC-4910-95-CL-A72
29	Hose assembly	4720-00-080-8588	8708306	TM 9-2350-287-24P
30	Hydraulic tester	4940-00-595-5720	GS5	TM 9-2350-287-24P
31	Insertor and remover tool	5120-00-915-4588	AE 959/14-03	SC-4910-95-CL-A74
32	Machinist's rule	5210-00-234-5225	666-R-791	TM 9-2350-287-24P
33	Machinist's vise, 4"	5120-00-293-1439	504M2	SC-4910-95-CL-A74
34	Manual control handle	5340-00-034-0884	10914196	TM 9-2350-287-24P
35	Measuring tape	5210-00-554-7085	GGG-T-106	SC-4910-95-CL-A72
36	Mechanical puller	5120-00-084-7626	10913972	TM 9-2350-287-24P
	[Item Deleted]			
38	Nitrogen charging kit	1025-01-070-3200	8449334	TM 9-2350-287-24P
39	Offset screwdriver	5120-00-256-9014	GGG-S-121	SC-4910-95-CL-A72
40	Oil cooler cleaner	4910-00-494-8257	11641959	TM 9-2350-287-24P
40.1	Pin, Tapered, Threaded	5315-01-412-5332	12438988	TM 9-2350-287-24P
41	Pipe-to-tube straight adapter	4730-01-094-9018	5262058	TM 9-2350-287-24P
42	Plier wrench	5120-00-494-1911	GGG-W-00649	SC-4910-95-CL-A72
43	Portable electric drill	5130-00-889-9004	WD00661	SC-4910-95-CL-A74
44	Powerpack lifting sling	3940-01-280-0872	12355173	TM 9-2350-287-24P
45	Protective screen assembly	4910-01-247-2976	12268262	TM 9-2350-287-24P

Table I-1. COMMON AND SPECIAL TOOL REQUIREMENTS (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
46	Quick-disconnect coupling	4730-00-738-8571	7388571	TM 9-2350-287-24P
47	Retaining ring pliers	5120-00-293-0049	B248360	SC-4910-95-CL-A72
48	Roadwheel gage plate	4910-00-034-0874	10911904	TM 9-2350-287-24P
49	Roadwheel lifter	4910-00-912-4469	11593605	TM 9-2350-287-24P
50	Safety screen	4910-00-981-2766	10930717	TM 9-2350-287-24P
51	Seal installer	5120-00-977-5579	KM-J-8550	TM 9-2350-287-24P
52	Slide hammer-type puller	5120-00-447-3615	5573615	TM 9-2350-287-24P
53	Snapping pliers	5120-00-789-0492	4440R	SC-4910-95-CL-A72
54	Socket wrench extension, 1/4" drive	5120-00-227-8105	M-102	SC-4910-95-CL-A72
55	Socket wrench extension, 3/4" drive, 8"	5120-00-243-7328	GGG-W-641	SC-4910-95-CL-A72
56	Socket wrench extension, 3/4" drive, 16"	5120-00-227-8079	L122	SC-4910-95-CL-A72
57	Socket wrench set, 3/8" drive, 12 pt.	5120-00-322-6231	51200017510	SC-4910-95-CL-A72
58	Socket wrench socket, 3/4" drive, 1"	5120-00-237-0989	5532	SC-4910-95-CL-A72
59	Socket wrench socket, 3/4" drive, 1 1/16"	5120-00-189-7928	1817	SC-4910-95-CL-A72
60	Socket wrench socket, 3/4" drive, 1 1/8"	5120-00-239-0021	GGG-W-641 TY2CL2STA	SC-4910-95-CL-A72
61	Socket wrench handle, 3/4" drive	5120-00-249-1076	1940708	SC-4910-95-CL-A72
62	Socket wrench socket, 3/4" drive, 1 1/2"	5120-00-293-0094	47148	SC-4910-95-CL-A72
63	Socket wrench socket adapter	5120-00-596-1199	4080-24	TM 9-2350-287-24P
64	Solder iron	3439-00-465-1649	TCP24G	SC-4910-95-CL-A74

Table I-1. COMMON AND SPECIAL TOOL REQUIREMENTS (continued)

(1) Item Number	(2) ITEM NAME	(3) National Stock Number	(4) PART NUMBER	(5) REFERENCE
65	STE/ICE test equipment	4910-01-222-6589	12259266	TOE
66	Strap wrench	5120-00-357-9154	7676003	SC-4910-95-CL-A76
67	Torsion bar adapter	5120-01-017-5328	12251805	TM 9-2350-287-24P
68	Torque wrench, 0.375" single end drive	5120-00-853-4538	F200-1	SC-4910-95-CL-A72
69	Torque wrench, 1/2" drive (0-175 ft-lb)	5120-00-640-6364	1753LDF	SC-4910-95-CL-A72
70	Torque wrench, 3/4" drive (0-600 ft-lb)	5120-00-221-7983	SW130-301	SC-4910-95-CL-A72
71	Track connecting fixture	5120-00-605-3926	8741739	TM 9-2350-287-24P
72	Track end connector puller	5180-01-388-7855	57K3156	TM 9-2350-287-24P
73	Twist drill, 3/16"	5133-00-227-9654	List 236-3-16	SC-4910-95-CL-A72
74	Wire twister pliers	5120-00-542-4171	M84-12	TM 9-2350-287-24P
75	Wrench socket	5120-00-708-3642	7083642	TM 9-2350-287-24P

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APPENDIX J ILLUSTRATED LIST OF MANUFACTURED ITEMS

Paragraph Number	Paragraph Title	Page Number
J-1	General	J-1
J-2	Definition of Columns	J-1
	Table 1 Illustrated List of Manufactured Items	J-2

J-1. GENERAL

This appendix includes instructions for making items authorized to be manufactured or fabricated.

A part number index in alphanumeric order is provided in Table 1 for the part number of each item to be fabricated.

Bulk materials needed for the manufacture of an item are listed by part number and national stock number (NSN) in the tabular listing.

J-2. DEFINITION OF COLUMNS.

Column (1) - Part Number of Item. This column lists the nomenclature and part number of the item that must be manufactured.

Column (2) - Part Number and NSN of Bulk Material. This column lists the part number and the NSN for the bulk material required to manufacture the item.

Column (3) - Required Length. This column specifies the dimensions of the item to be manufactured.

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS

(1) Part Number of item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Wire, nonelectrical AN995F32	AN995F32 9505-00-684-4841	As required
Wire, nonelectrical ASTM A580	ASTM A580 9505-00-331-3275	As required
Chain, weldless BACC19A1 -19	BACC19A1-19 4010-00-240-4697	As required
Chain, weldless C43974	C43974 4010-00-186-9413	As required
Wire, electrical LW-C20 (7) JO	LW-C20 (7) JO 6145-00-889-1062	As required
Hose, nonmetallic MIL-H-13444	MIL-H-13444 4720-01-207-3671	36 inches
Insulation sleeving MIL-I-003190/2	MIL-I-003190/2 5970-01-158-3819	As required
Wire, nonelectrical MS20995C32	MS20995C32 9505-00-298-4208	As required
Wire, nonelectrical MS20995C32	MS20995C32 9505-00-298-4841	As required
Wire, nonelectrical MS20995C91	MS20995C91 9505-01-236-9343	As required
Wire, nonelectrical MS20995F20	MS20995F20 9505-00-087-3956	As required
Wire, nonelectrical MS20995F32	MS20995F32 9505-00-684-4841	As required
Wire, nonelectrical MS20995F3201A.0	MS20995F3201A.0 9505-00-684-4841	As required
Wire, nonelectrical MS20995F41	MS20995F41 9505-00-684-4843	As required
Wire, nonelectrical MS20995F47	MS20995F47 9505-00-248-9850	As required
Hose, nonmetallic MS521301A2 17R	MS521301A2 17R 4720-00-882-1738	6.25 inches

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS (continued)

(1) Part Number of item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Hose, nonmetallic MS521301A2 17R	MS521301A217R 4720-00-882-1738	16.25 inches
Wire, electrical MW-C-16/19/U9	MW-C16/19/U9 6145-00-164-7006	As required
Wire, electrical MW-C20 (7) U9	MW-C20 (7) U9 6145-00-284-0827	As required
Wire, nonelectrical M13486/1-1	M13486/1-1 6145-00-699-8963	As required
Wire, nonelectrical M1 3486/1 -3	M13486/1 -3 5970-00-057-9973	As required
Wire, nonelectrical M13486/1 -4	M1 3486/1 -4 6145-01-341-9591	As required
Wire, nonelectrical MI 3486/1-5	M1 3486/1 -5 6145-00-152-6499	As required
Wire, nonelectrical MI 3486/1 -7	M13486/1-7 6145-00-705-6678	As required
Wire, nonelectrical MI 3486/1 -9	M13486/1 -9 6145-00-538-8222	As required
Wire, nonelectrical M13486/1-11	M13486/1-11 6145-00-538-8219	As required
Wire, nonelectrical M1348W1-12	M13486/1-12 6145-00-805-3354	As required
Wire, nonelectrical M13486/1-14	M13486/1-14 6145-00-705-6674	As required
Wire, nonelectrical MI 3486/2-2	MI 3486/2-2 6145-00-567-3255	As required
Wire, electrical M2275917-16-9	M22759/7-16-9 6145-00-600-6332	As required
Insulation sleeving M23053/5-103-9	M23053/5-103-9 5970-00-819-9569	As required
Insulation sleeving M23053/5-104-9	M23053/5-104-9 5970-00-088-2975	As required

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS (continued)

(1) Part Number of Item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Insulation sleeving M23053/5-110-0	M230W5-110-0 5970-00-815-1300	As required
Insulation sleeving M235OW5-109-0	M235053/5-109-0 5970-00-914-3118	As required
Wire, electrical M5086/1-20-0	M5086/1 -20-0 6145-00-177-4583	As required
Hose, nonmetallic M62217/1 -16	M62217/1 -16 4720-01-122-9847	5 inches
Hose, nonmetallic M62217/1 -16	M6221 7/1-16 4720-01-122-9847	52 inches
Hose, nonmetallic M62217/1 -16-52	M62217/1 -16-52 4720-01-122-9847	52 inches
Hose, nonmetallic M62217/1-32	M6221711-32 4720-01-088-1086	4.5 inches
Hose, nonmetallic M62217/1 -40	M62217/1 -40 4720-01-088-1087	4.75 inches
Hose, nonmetallic M62217/1-44	M6221 7/1-44 4720-01-088-1085	2.5 inches
Wire, electrical M81 044/9-14-9	M81 044/9-14-9 6145-01-062-4948	As required
Wire, electrical M81044/9-1 8-9	M81044/9-1 8-9 6145-00-493-4073	As required
Wire, electrical M81044/9-2-9	M810449-2-9 6145-01-084-3569	As required
Wire, electrical M81044/9-4-9	M81 044/9-4-9 6145-00-251-0188	As required
Webbing textile NAS1213R17JJ	NAS1213R17JJ 8305-01-003-4461	6 inches
Insulation sleeving NATVAR 261	NATVAR 261 5970-00-057-9973	As required
Insulation sleeving NATVAR 361	NAVVAR 361 5970-00-051-6514	As required

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS (continued)

(1) Part Number of Item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Chain, safety RR-C-271	RR-C-271 4010-00-129-6049	As required
Chain, safety RR-C-271	RR-C-271 4010-00-262-1551	12 links
Chain, safety RR-C-271 TYCL6AL	RR-C-271TYCL6AL 4010-00-262-1551	6 inches
Hose, nonmetallic ZZ-H-428	ZZ-H-428 4720-00-882-1738	18.5 inches
Hose, nonmetallic 12330386-1	12330386 4720-01-360-7924	18 inches
Hose, nonmetallic 12330386-2	12330386 4720-01-360-7924	20 inches
Hose, nonmetallic 12330386-3	12333086 4720-01-360-7924	60 inches
Fastener 12332732-1	12332732 8315-01-348-7449	16.62 inches
Fastener 12332732-2	12332732 8315-01-348-7449	16.5 inches
Fastener 12332732-3	12332732 8315-01-348-7449	15 inches
Fastener 12332733-1	12332733 8315-00-106-5974	16.69 inches
Fastener 12332733-2	12332733 8315-00-106-5974	16.06 inches
Fastener 12332733-3	12332733 8315-00-106-5974	14.38 inches
Hose, nonmetallic 12333119	12333119 4720-01-207-3671	36 inches
[Items Deleted]		

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS (continued)

(1) Part Number of Item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Hose, air duct 8724785	8724785 4720-00-535-1994	9 inches 10 inches 21 inches
Hose, air duct 8724787	8724787 4720-00-023-7009	9.5 inches
Shim 12351749-2	MIL-R-065 9320-01-057-6382	0.38 inches wide, 116.4 inches long
Shim 12351749-3	MIL-R-3065 9320-01-057-6382	0.38 inches wide, 164.4 inches long
Shim 12351749-6	MIL-R-3065 9320-01-057-6382	0.38 inches wide, 120.4 inches long
Chain 12351790-3	12351790 4010-00-554-8661	15 links
Chain, weldless 12351791-3	12351791 4010-00-585-2108	As required
Chain, weldless 12351791-5	12351791 4010-00-585-2108	18 links
Chain, weldless 12351843-2	12351843 4010-00-129-3221	18 links
Rubber strip 12351882-1	12351882 9320-01-010-0076	1.25 inches
Rubber strip 12351882-2	12351882-2 9320-01-010-0076	5.88 inches
Seal 12351889	MIL-R-3065 9390-00-247-2335	17 inches
Insulation sleeving 12614886-3	12614886 5970-00-166-2197	As required
Insulation sleeving 17-1-1725-76	17-1-1725-76 5970-01-072-8311	As required
Insulation sleeving 17-1-1728-651	17-1-1728-651 5970-00-811-0640	As required
Hose, nonmetallic 23511468	23511468 4720-00-494-9340	34 inches

Table 1. ILLUSTRATED LIST OF MANUFACTURED ITEMS (continued)

(1) Part Number of Item	(2) Part Number and NSN of Bulk Material	(3) Required Length
Hose, nonmetallic 33H579PN	33H579PN 4720-00-542-3304	40 inches
Hose, nonmetallic 483666	483666 4720-00-913-5910	As required
Hose, nonmetallic 483666-40	483666-40 4720-00-913-5910	40 inches
Wire, electrical 58349R	58349R 6145-00-538-8222	As required
Wire, electrical 7056678	7056678 6145-00-705-6678	As required
Hose, nonmetallic 841 HT-6	841 HT-6 4720-01-123-3812	32 inches
Hose, nonmetallic 841 HT-6	841 HT-6 4720-01-123-3812	86 inches
Insulation sleeving 8410796	8410796 5970-00-051-6514	As required
Strap, tiedown 8724501	8724501 5975-00-345-8055	As required
Nonmetallic rod 8724762	8724762 9390-00-146-9334	1 inch
Nonmetallic rod 8724763	87247632 9390-00-180-7289	As required

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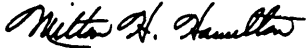
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By Order of the Secretary of the Army:

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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.

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
 1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
 1 Kilogram = 1000 Grams = 2.2 Lb.
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

TEMPERATURE

$s/s (^{\circ}F - 32) = ^{\circ}C$
 212° Fahrenheit is equivalent to 100° Celsius
 90° Fahrenheit is equivalent to 32.2° Celsius
 32° Fahrenheit is equivalent to 0° Celsius
 $s/s (^{\circ}C + 32) = ^{\circ}F$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.195
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

