ARMY TM 9-2320-365-20-5
AIR FORCE T.O. 36A12-1B-1095-2-5

TECHNICAL MANUAL
MAINTENANCE INSTRUCTIONS
UNIT MAINTENANCE
M1078 SERIES, 2 1/2-TON, 4 X 4,
LIGHT MEDIUM TACTICAL VEHICLES (LMTV)
VOLUME NO. 5 OF 5

MODEL	NSN	EIC
TRK, CAR., LMTV, M1078		
W/WN	2320-01-360-1898	BHH
W/O WN	2320-01-354-3385	BHD
TRK. VAN, LMTV, M1079		
W/WN	2320-01-360-1891	BHG
W/O WN	2320-01-354-3384	BHE
TRK. CHAS, LMTV, M1080	2320-01-353-9098	BHC
TRK, CAR., LMN, AIR DROP, M1081		
W/WN	2320-01-360-1899	BHJ
W/O WN	2320-01-355-3064	BHF

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ELECTRICAL ILLUMINATING
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HEADQUARTERS, DEPARTMENTS OF THE ARMY AND THE AIR FORCE

17 JUNE 1998

WARNING SUMMARY

WARNING

EXHAUST GASES CAN KILL

1. **DO NOT** operate your vehicle engine in an enclosed area.
2. **DO NOT** idle vehicle engine with cab windows closed.
3. **DO NOT** drive vehicle with inspection plates or covers removed.
4. **BE ALERT** at all times for exhaust odors.
5. **BE ALERT** for exhaust poisoning symptoms, they are:

   Headache

   Dizziness

   Sleepiness

   Loss of Muscular Control

6. **IF YOU SEE** another person with exhaust poisoning symptoms:

   Remove person from area.

   Expose to open air.

   Keep person warm.

   Do not permit person to move.

   Administer cardiopulmonary resuscitation, if necessary.*

* For cardiopulmonary resuscitation, refer to FM 21-11.

WARNING

Remove rings, bracelets, watches, necklaces, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause injury or short across electrical circuit and cause severe burns or electrical shock. Batteries can explode from a spark. Battery acid is harmful to skin and eyes. Always wear eye protection and rubber gloves when working with batteries.

WARNING

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 clothing being damaged.

WARNING SUMMARY (CONT)

WARNING

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

WARNING

- **Dry Cleaning Solvent (P-D-680) 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 Dry Cleaning Solvent is 100 degrees F (38 degrees C) and for Type II is 130 degrees F (50 degrees C). Failure to comply may result in serious injury or death to personnel.**

- **If personnel become dizzy while using Dry Cleaning Solvent, immediately get fresh air and medical help. If Dry Cleaning Solvent contacts skin or clothes, flush with cold water. If Dry Cleaning Solvent contacts eyes, immediately flush eyes with water and get immediate medical attention. Failure to comply may result in injury to personnel.**

WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

WARNING

After Nuclear, Biological, or Chemical (NBC) exposure of vehicle, all air filters shall be handled with extreme caution. Unprotected personnel may experience serious injury or death if residual toxic agents or radioactive material are present. If vehicle is exposed to chemical or biological agents, servicing personnel shall wear protective mask, hood, protective overgarments, and chemical protective gloves and boots in accordance with FM-3-4. All contaminated air filters shall be placed in double-lined plastic bags and moved swiftly to a segregation area away from the worksite. The same procedure applies for radioactive dust contamination. The Company NBC team should measure radiation prior to filter removal to determine extent of safety procedures required per the NBC Annex to the unit Standard Operating Procedures (SOP). The segregation area in which the contaminated air filters are temporarily stored shall be marked with appropriate NBC placards. Final disposal of contaminated air filters shall be in accordance with local SOP. Decontamination operation shall be in accordance with FM-3-5 and local SOP. Failure to comply may result in serious injury or death to personnel.

WARNING

Diesel fuel is flammable. Do not fill fuel tank with engine running, while smoking, or when near an open flame. Never overfill the tank or spill fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

WARNING

Adhesive sealant MIL-S-46163 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. Failure to comply may result in injury to personnel.

WARNING

Use care when removing/installing springs. Springs are under tension and can act as projectiles when being removed. Failure to comply can cause injury to personnel.

WARNING

Retaining rings are under tension and can act as projectiles when released causing severe eye injury. Use care when removing retaining rings. Failure to comply may result in injury to personnel.

WARNING

Ensure exhaust system is cool before performing maintenance. Failure to comply may result in injury to personnel.

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

WARNING

Do not operate LMTV vehicle with muffler removed. Toxic exhaust fumes may enter cab, resulting in serious injury or death to personnel.

WARNING

Do not work on fuel system when engine is hot; fuel can be ignited by a hot engine.

WARNING SUMMARY (CONT)

WARNING

Post signs that read "NO SMOKING WITHIN 50 FEET" when working with open fuel, fuel lines or fuel tanks. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Exhaust pipe, transmission oil lines, and transmission scavenge pump hose may be hot to the touch. Extreme care should be taken when checking exhaust pipe, transmission oil lines, and transmission scavenge pump hose for leaks. Failure to comply may result in injury to personnel.

WARNING

Compressed air used for cleaning purposes will not exceed 30 psi (207 Kpa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc). Failure to comply may result in injury to personnel.

WARNING

Wheel drum weighs approximately 90 lb (41 Kg). Use the aid of an assistant to help remove wheel drum. Failure to comply may result in injury to personnel.

WARNING

Wheel drum weighs approximately 90 lb (41 kg). Use the aid of an assistant to help install wheel drum. Failure to comply may result in injury to personnel.

WARNING

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

WARNING

Cage spring brake before air chamber is removed or severe injury to personnel will occur.

WARNING

Ensure air chamber is caged prior to installation. Failure to comply may result in injury to personnel.

WARNING

Ensure that tire is totally deflated before removing self-locking nuts. Failure to comply may result in serious injury or death to personnel.

WARNING

Spring brakes must be caged before attempting replacement of a rear axle wheel stud. Failure to comply may result in severe injury to personnel.

WARNING

Wear protective goggles to protect against possible injury from release of high pressure air. Failure to comply may result in injury to personnel.

WARNING

Prolonged contact with lubricating oil (MIL-L-2104) may cause a skin rash. Skin and clothing that come in contact with lubricating oil should be thoroughly washed immediately. Saturated clothing should be removed immediately. Areas in which lubricating oil is used should be well ventilated to keep fumes to a minimum. Failure to comply may result in injury to personnel.

WARNING

Hydraulic fluid (MIL-H-5606) is TOXIC. Wear protective goggles and gloves; use only in well ventilated area; avoid contact with skin, eyes, and clothes. Skin and clothing that come in contact with hydraulic oil should be washed immediately. Saturated clothing should be removed immediately. Failure to comply may result in injury to personnel.

WARNING

Wire rope can become frayed or contain broken wires. Wear heavy leather-palmed gloves when handling wire rope. Frayed or broken wires can injure hands. Failure to comply may result in injury to personnel.

WARNING

Never let moving wire rope slide through hands, even when wearing gloves. A broken wire could cut through gloves and cut hands.

WARNING SUMMARY (CONT)

WARNING

Wear appropriate eye protection when removing rivets. Failure to comply may result in injury to personnel.

WARNING

Wear appropriate eye protection when drilling holes. Failure to comply may result in injury to personnel.

WARNING

Wear leather gloves at all times when handling winch cable. Do not allow cable to slide through hands even with gloves on. Broken wires may cause injury to personnel.

WARNING

Use extreme caution when working around moving cable. Failure to do so may result in serious injury to personnel.

WARNING

Caution must be exercised while cab is raised. Ensure that locking mechanism is functioning properly before proceeding. Failure to comply may result in death or serious injury to personnel and damage to equipment.

WARNING

Diesel fuel is flammable. Arctic heater components and fuel lines may contain small amounts of fuel. If fuel is spilled, clean up immediately. Failure to comply may result in serious injury or death to personnel.

WARNING

Coolant may be very hot and under pressure from engine operation. Ensure engine is cool before performing maintenance. Failure to comply may result in injury to personnel.

WARNING

Do not remove oil filter while engine is hot. Failure to comply may result in injury to personnel.

WARNING

Sling spreader weighs approximately 200 lbs (91 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Remove all loose equipment from van body. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Van body weighs approximately 3,360 lbs (1525 kgs) empty. Attach a suitable lifting device prior to removal. Failure to comply may result in serious injury or death to personnel.

WARNING

Guide ropes must be attached at opposite comers of van body to aid in controlling van body during removal. Failure to comply may result in serious injury or death to personnel.

WARNING

Canter of gravity will change depending on equipment installed in van body. Attach and adjust lifting device so that van body lifts level. Failure to comply may result in serious injury or death to personnel or damage to equipment.

WARNING

Pod frame weighs approximately 80 lbs (36 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Do not install pod frame on van body for 72 hours after installing blind rivet nuts and spacers. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Goggles and gloves must be worn when working with glass. Failure to comply may result in injury to personnel.

WARNING SUMMARY (CONT)

WARNING

RH door assembly weighs approximately 85 lbs (39 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

LH door assembly weighs approximately 85 lbs (39 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Wear appropriate eye protection when handling fluorescent lamps. Failure to comply may result in injury to personnel.

WARNING

- **Heavy objects/loads, such as tool boxes and heavy parts, must always be carried on the floor with the weight distributed as equally as possible between left and right sides of M1079 van. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.**

- **Heavy cabinets must always be mounted as low as possible with the weight distributed as equally as possible between left and right sides of M1079 van. Remember to consider the weight of the items that will be stored in the cabinets. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.**

- **Always keep in mind, when placing items inside the M1079 van, that heavier items must always be positioned as low as possible and the weight distributed as equally as possible between left and right sides of M1079 van. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.**

WARNING

Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

WARNING

Extreme care must be taken when lowering gravel deflector. Coolant hoses could be pulled loose. Failure to comply could result in serious eye injury.

WARNING

- **Do not open coolant fill cap if temperature reads above 110°F (43°C). Steam or hot coolant is under pressure. Failure to comply may result in injury to personnel.**
- **Pressure in reservoir tank must be released before removing cap. Failure to comply may result in injury to personnel.**

WARNING

Excess coolant may splash out when hoses are removed from swingfire pump. Wear appropriate eye protection. Failure to comply may result in injury to personnel.

WARNING

Excess coolant may splash out upon removal of hoses on swingfire tube jacket. Ensure proper eye protection is worn. Failure to comply may result in injury to personnel.

WARNING

Excess coolant may splash out upon removal of hoses from swingfire valve. Ensure proper eye protection is worn. Failure to comply may result in injury to personnel.

WARNING

Heater weighs approximately 120 lbs (54 kgs). Use the aid of an assistant when lifting. Failure to comply may result in injury to personnel.

WARNING

200 amp alternator weighs approximately 70 lbs (32 kgs). The aid of an assistant is required to install 200 amp alternator. Failure to comply may result in injury to personnel.

WARNING

Light Material Handling Crane (LMHC) mast weighs approximately 110 lbs (50 kgs). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Light Material Handling Crane (LMHC) boom assembly weighs approximately 150 lbs (68 kgs). Use an assistant when removing LMHC boom assembly. Failure to comply may result in injury to personnel.

WARNING SUMMARY (CONT)

WARNING

Light Material Handling Crane (LMHC) boom weighs approximately 60 lbs (27 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

WARNING

Light Material Handling Crane (LMHC) weighs approximately 250 lbs (114 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel.

WARNING

Use care when removing/installing springs. Springs are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

WARNING

Air conditioner weighs approximately 300 lbs (136 kg). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel.

WARNING

Ensure cargo bed is free of equipment and debris, and is not warped or damaged in any way. Failure to comply may result in serious injury or death to personnel or damage to equipment.

WARNING

S-280 shelter weighs approximately 1500 lbs (680 kgs) empty. Attach a suitable lifting device prior to installation. Failure to comply may result in serious injury or death to personnel or damage to equipment.

TECHNICAL MANUAL
NO. 9-2320-365-20-5

TECHNICAL ORDER
NO. 36A12-1B-1095-2-5

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington D.C., 17 June 1998

Unit Maintenance Manual
M1078 SERIES, 2 1/2-TON, 4 x 4, LIGHT MEDIUM TACTICAL VEHICLES (LMTV)

MODEL	NSN	EIC
TRK, CAR., LMTV, M1078		
W/WN	2320-01-360-1898	BHH
W/0 WN	2320-01-354-3385	BHD
TRK, VAN, LMTV, M1079		
W/WN	2320-01-360-1891	BHG
W/O WN	2320-01-354-3384	BHE
TRK, CHAS, LMTV, M1080	2320-01-353-9098	BHC
TRK, CAR., LMTV, AIR DROP, M1081		
W/WN	2320-01-360-1899	BHJ
W/O WN	2320-01-355-3064	BHF

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of any way to improve the procedures, please let us know. Mail your letter, DA Form 2082 (Recommended Changes to Publications and Blank Forms), or DA form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-AC-NMLI, Rock Island, Ill, 61299. A reply will be furnished to you.

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HOW TO USE THIS MANUAL

OVERVIEW

This technical manual (TM) is provided to help you maintain the LMTV at the Unit Maintenance level. Because of its size, it is divided into five volumes. Volume 5 contains the following major sections in order of appearance:

- **WARNING SUMMARY.** Provides a summary of the most important warnings that apply throughout the manual.

- **CHAPTER 20, SPECIAL PURPOSE KITS MAINTENANCE**
- **CHAPTER 21, ARMAMENT/SIGHTING AND FIRE CONTROL MATERIEL MAINTENANCE**
- **CHAPTER 22, ELECTRICAL ILLUMINATING EQUIPMENT MAINTENANCE**
- **CHAPTER 23, AIR SYSTEM MAINTENANCE**
- **CHAPTER 24, GAGES (NON-ELECTRICAL) MAINTENANCE**
- **APPENDIX A, REFERENCES.** Lists publications used with the LMTV.
- **APPENDIX B, MAINTENANCE ALLOCATION CHART.** The maintenance allocation chart denotes the level of maintenance which performs specific maintenance tasks and the time required. It also lists tools and special tools required for each task.
- **APPENDIX C, TOOLS IDENTIFICATION LIST.** Lists equipment used in the performance of maintenance and references publications which contain information regarding the equipment.
- **APPENDIX D, EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST.** Lists expendable and durable items used in the performance of maintenance.
- **APPENDIX E, ILLUSTRATED LIST OF MANUFACTURED ITEMS.** Illustrates and describes items that must be fabricated from bulk materials for repair of the LMTV.
- **APPENDIX F, TORQUE LIMITS.** Lists the standard torque values for specific attaching hardware.
- **APPENDIX G, MANDATORY REPLACEMENT PARTS.**
- **APPENDIX H, LUBRICATION ORDER.**
- **APPENDIX J, ADDITIONAL AUTHORIZATION LIST (AAL).**
- **SUBJECT INDEX.** Lists important subjects contained in volume 5 in alphabetical order and gives the associated paragraph number.

FINDING INFORMATION

There are several ways to find the information you need in this manual. They are as follows:

- **FRONT COVER INDEX.** The front cover index contains a list of the most important topics contained in each volume. If features a black box at the right edge of the cover which corresponds with a black box on the page containing the topic. The topics listed on the front cover are highlighted in the table of contents with a box.
- **TABLE OF CONTENTS.** Lists chapters, sections, appendixes, and indexes with page numbers in order of appearance.
- **CHAPTER INDEXES.** List paragraphs contained in the individual chapters with paragraph and page numbers in order of appearance.
- **SYMPTOM INDEX.** Lists malfunctions contained in the troubleshooting table with page numbers in order of appearance.

TROUBLESHOOTING

Troubleshooting is contained in chapter 2. When a malfunction occurs, look at the symptom index for the vehicle troubleshooting table in chapter 2. Find the malfunction in the index. Turn to the page number listed for the malfunction in the troubleshooting table. Perform the steps required to correct the malfunction. If you can't find the malfunction, or the malfunction is not corrected, notify your supervisor.

- **SCHEDULED MAINTENANCE.** Your scheduled maintenance is located in Volume 1, table 2-1, PMCS. These checks and services are mandatory at the intervals listed. Always follow the WARNINGS and CAUTIONS.

- **UNSCHEDULED MAINTENANCE.** Unscheduled maintenance is located in chapters 3 thru 24. The PMCS and troubleshooting tables often reference you to these procedures. When you perform maintenance, look over the entire procedure before starting. Make sure you have the necessary tools and materials at hand. Always follow the WARNINGS and CAUTIONS.

FOLLOW THESE GUIDELINES WHEN USING THIS MANUAL:

- Become familiar with the entire maintenance procedure before beginning a maintenance task.

- Read all WARNINGS and CAUTIONS before performing any procedures.

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SPECIAL PURPOSE KITS MAINTENANCE

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Section I. INTRODUCTION

20-1. INTRODUCTION

This chapter contains maintenance instructions for replacing, repairing, and installing special purpose kit components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

Section II. MAINTENANCE PROCEDURES

20-2. CAB ARCTIC KIT HEATER ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Wrench, Torque, 0-600 lb-ft (Item 59, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)
Socket, Socket Wrench (Item 36, Appendix C)
Container (52 qt (50 L) capacity)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Antifreeze, Arctic Type (Item 12, Appendix D)

Personnel Required
(2)

WARNING

Coolant may be very hot and under pressure from engine operation. Ensure engine is cool before performing maintenance. Failure to comply may result in injury to personnel.

a. Removal.

(1) Position container under radiator (1).

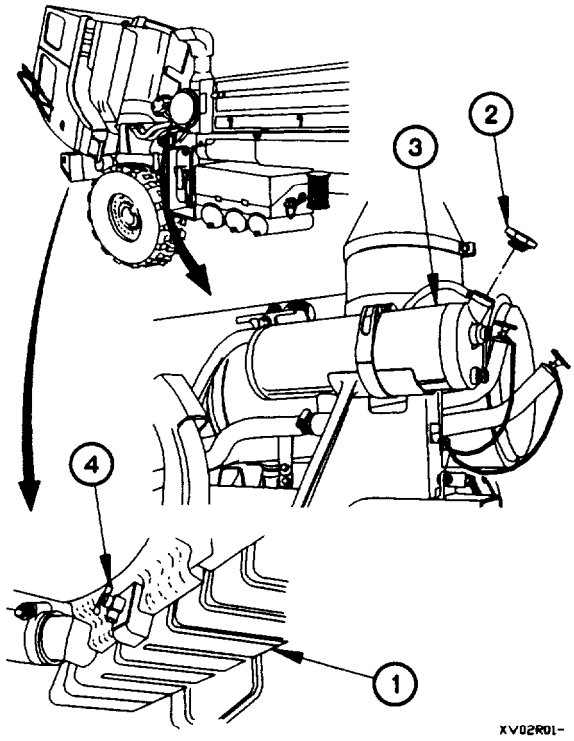
(2) Remove radiator cap (2) from radiator overflow tank

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

(3) Open radiator draincock (4) and drain coolant from radiator (1).

(4) Close radiator draincock (4).



20-2. CAB ARCTIC KIT HEATER ASSEMBLY REPLACEMENT (CONT)

NOTE

Tag hoses and connection points prior to disconnecting.

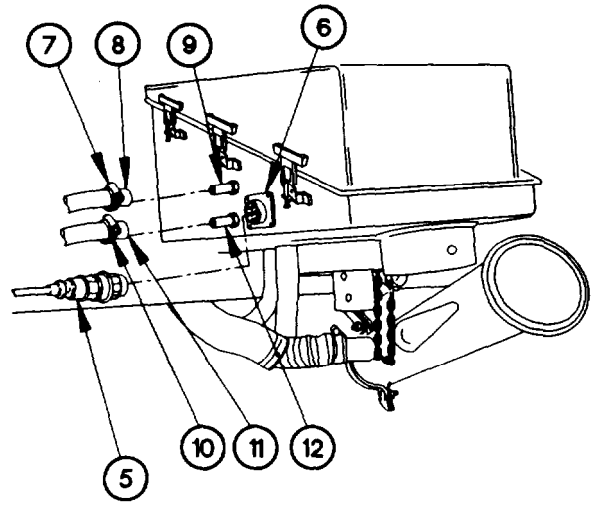
(5) Disconnect power supply cable (5) from connector (6).

WARNING

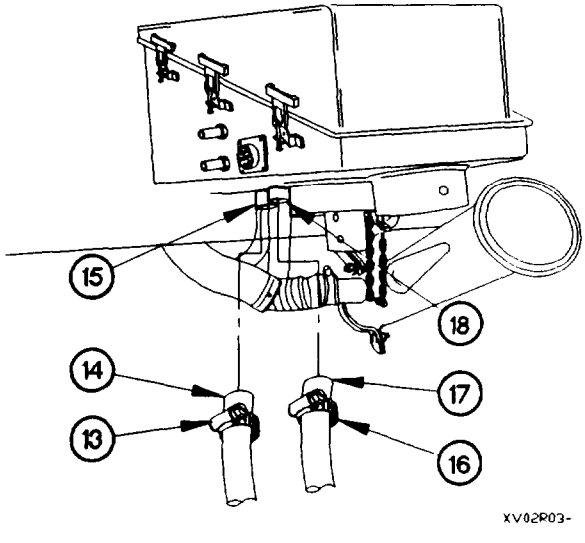
Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(6) Loosen clamp (7) and remove supply hose (8) from upper fitting (9).

(7) Loosen clamp (10) and remove return hose (11) from lower fitting (12).



XV02R02-



XV02P03-

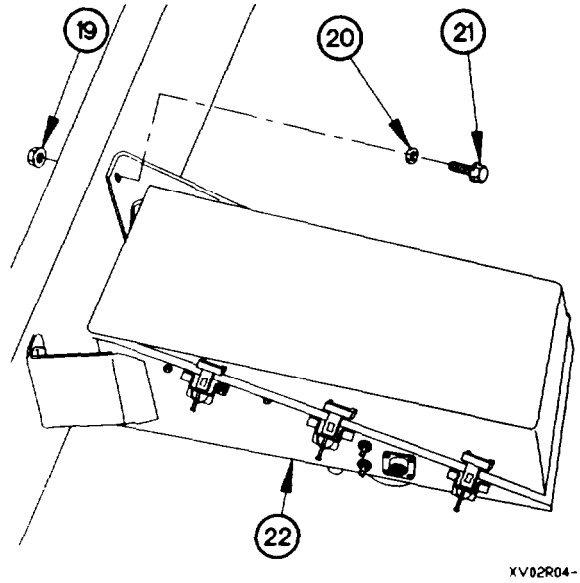
(8) Loosen clamp (13) and remove hose (14) from input fitting (15).

(9) Loosen clamp (16) and remove hose (17) from output fitting (18).

NOTE

Step (10) requires the aid of an assistant.

(10) Remove four nuts (19), washers (20), screws (21) and heater assembly (22) from vehicle.



XV02R04-

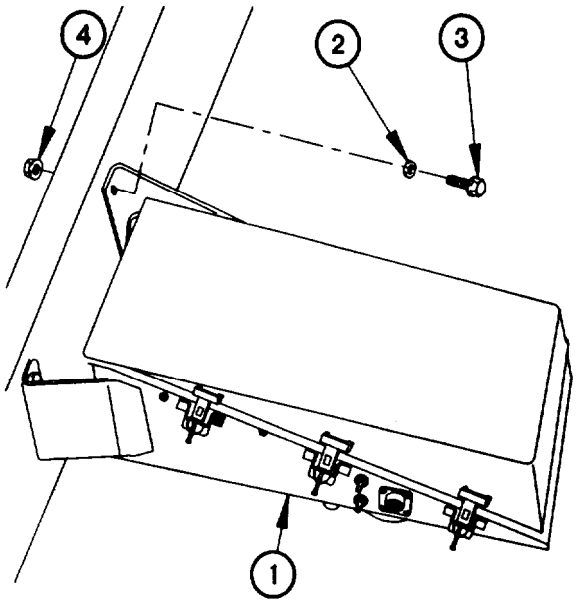
b. Installation.

NOTE

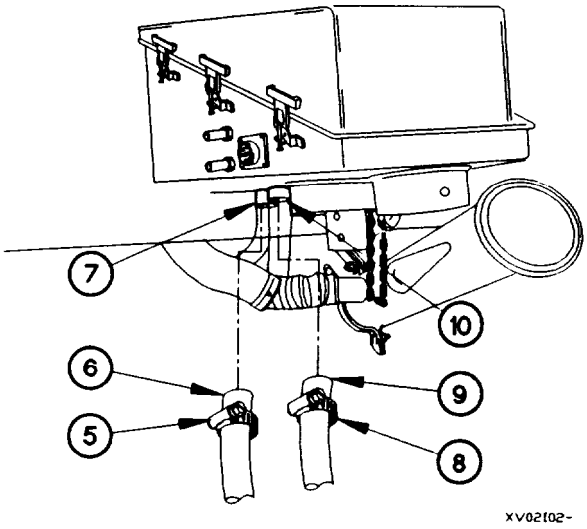
Steps (1) and (2) require the aid of an assistant.

(1) Position heater assembly (1) on vehicle with four washers (2), screws (3), and nuts (4).

(2) Tighten four nuts (4) to 230-231 lb-ft (312-313 N•m).



XV02101-



XV02102-

(3) Position clamp (5) and hose (6) on input fitting (7).

(4) Position clamp (8) and hose (9) on output fitting (10).

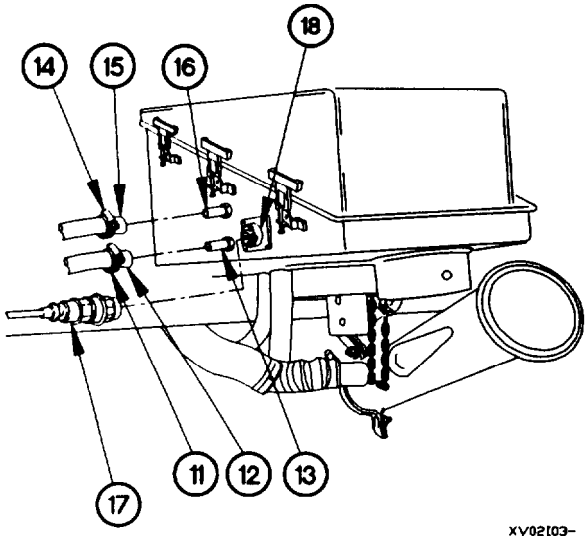
(5) Tighten clamps (5 and 8) to 60-72 lb-in. (17-18 N•m).

(6) Position clamp (11) and return hose (12) on lower fitting (13).

(7) Position clamp (14) and supply hose (15) on upper fitting (16).

(8) Tighten clamps (11 and 14) to 34-44 lb-in, (4-5 N•m).

(9) Connect power supply cable (17) to connector (18).



XV02103-

20-2. CAB ARCTIC KIT HEATER ASSEMBLY REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Fill radiator overflow tank with arctic coolant (TM 9-2320-365-10).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Operate cab arctic heater (TM 9-2320-365-10).

(5) Check for fuel or coolant leaks and for proper operation (TM 9-2320-365-10).

(6) Shut down engine (TM 9-2320-365-10).

End of Task

20-3. CAB ARCTIC COOLANT HEATER REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Cab arctic kit heater assembly removed (para 20-2).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Nut, Self-Locking (2) (Item 116, Appendix G)
Lockwasher (3) (Item 72, Appendix G)

WARNING

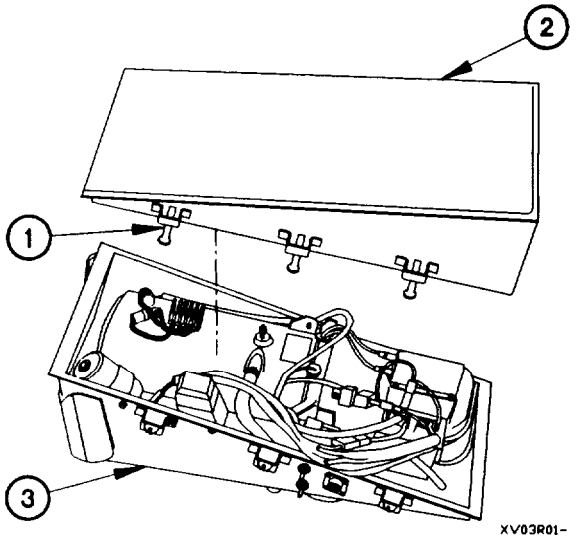
Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

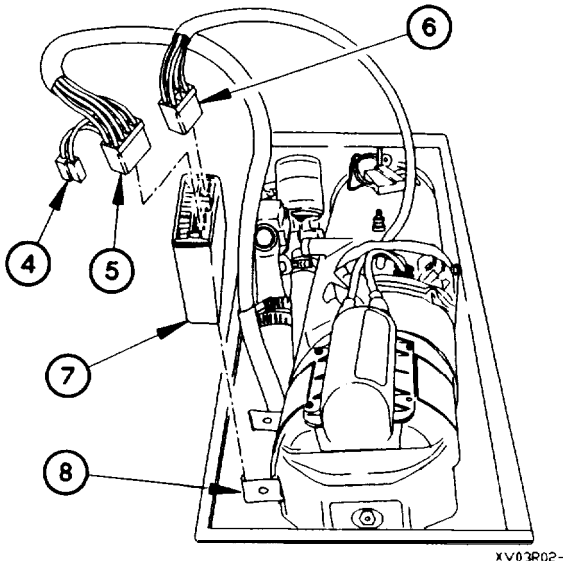
NOTE

Tag hoses and connection points prior to disconnecting.

a. Removal.

(1) Release six clamps (1) and remove cover (2) from heater enclosure (3).





(2) Disconnect connectors (4, 5, and 6) from control unit (7).

(3) Remove control unit (7) from coolant heater (8).

20-3. CAB ARCTIC COOLANT HEATER REPLACEMENT (CONT)

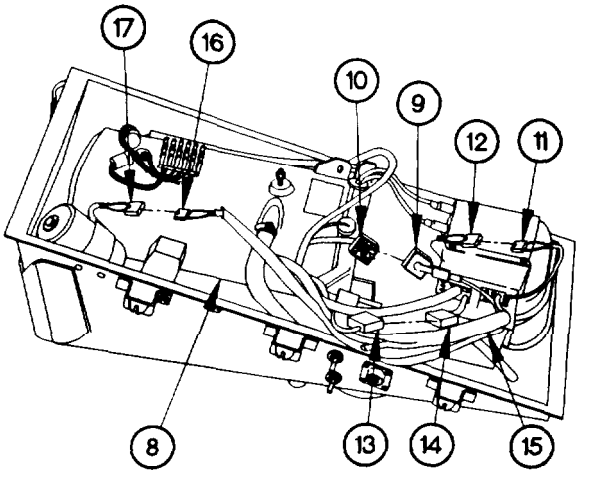
(4) Disconnect electrical connector (91 from relay (10).

(5) Disconnect electrical connector (11) from cable (12).

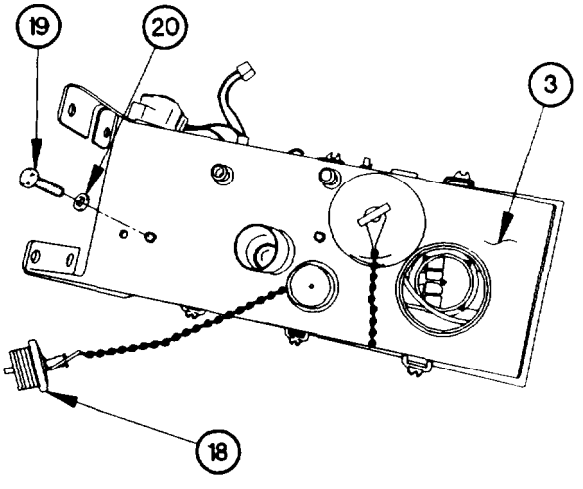
(6) Disconnect electrical connector (13) from cable (14).

(7) Position harness assembly (15) clear of coolant heater (8).

(8) Disconnect electrical connector (16) from electrical connector (17).



XV03R03-

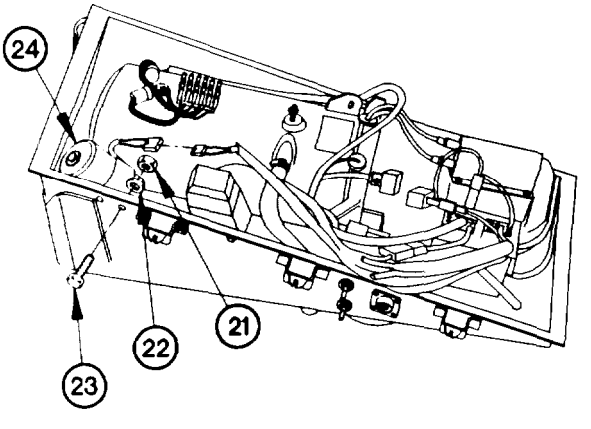


XV03P04-

(9) Remove cap plug (18) from heater enclosure (3).

(10) Remove three screws (19) and lockwashers (20) from heater enclosure (3). Discard lockwashers.

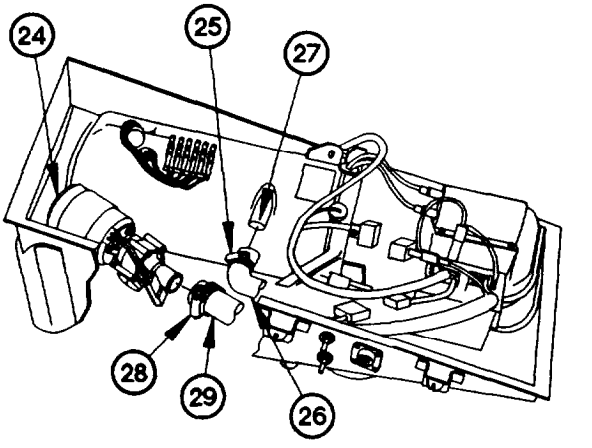
(11) Remove two self-locking nuts (21), washers (22), and screws (23) from water pump (24). Discard self-locking nuts.



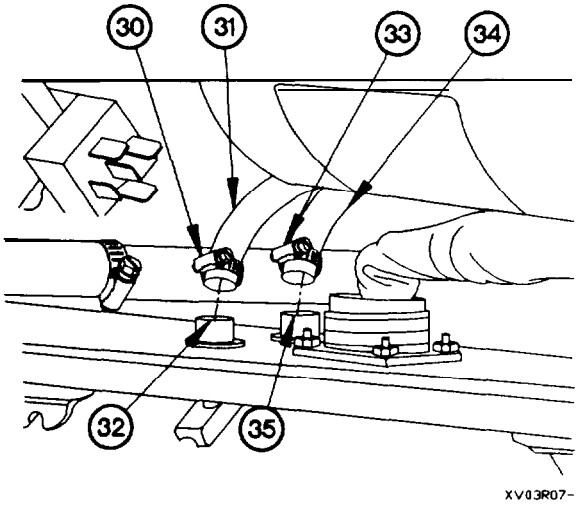
XV03R05-

(12) Loosen clamp (25) and remove supply hose (26) from fitting (27).

(13) Loosen clamp (28) and remove hose (29) from water pump (24).



XV03R06-

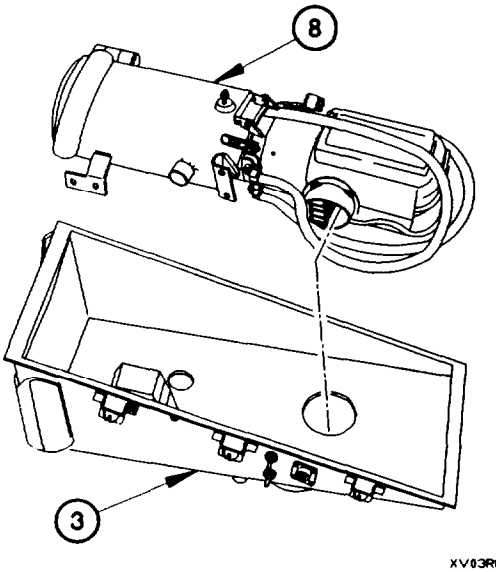


XV03R07-

(14) Loosen clamp (30) and remove supply hose (31) from upper fitting (32).

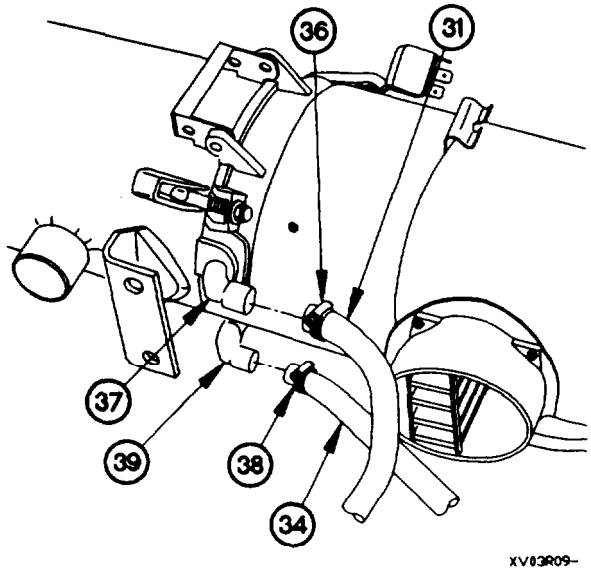
(15) Loosen clamp (33) and remove return hose (34) from lower fitting (35).

(16) Remove coolant heater (8) from heater enclosure (3).



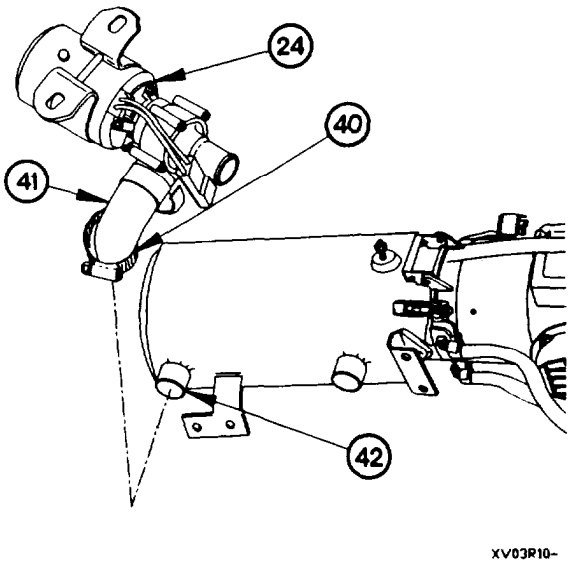
XV03R08-

20-3. CAB ARCTIC COOLANT HEATER REPLACEMENT (CONT)



(17) Loosen clamp (36) and remove supply hose (31) from coolant heater fitting S (37).

(18) Loosen clamp (38) and return hose (34) from coolant heater fitting R (39).

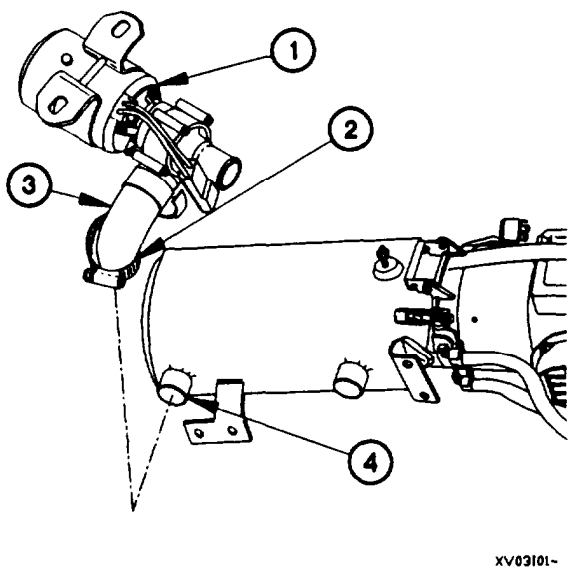


(19) Loosen clamp (40) on hose (41) and remove water pump (24) from tube (42).

b. Installation.

(1) Position water pump (1), clamp (2), and hose (3) on tube (4).

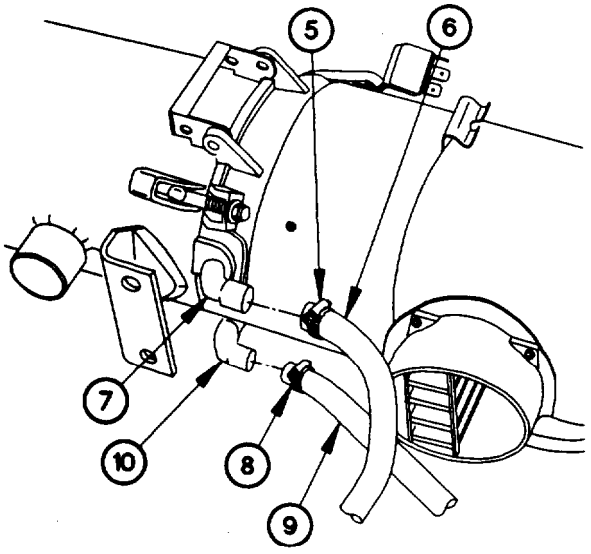
(2) Tighten clamp (2) to 60-72 lb-in. (7-8 N•m).



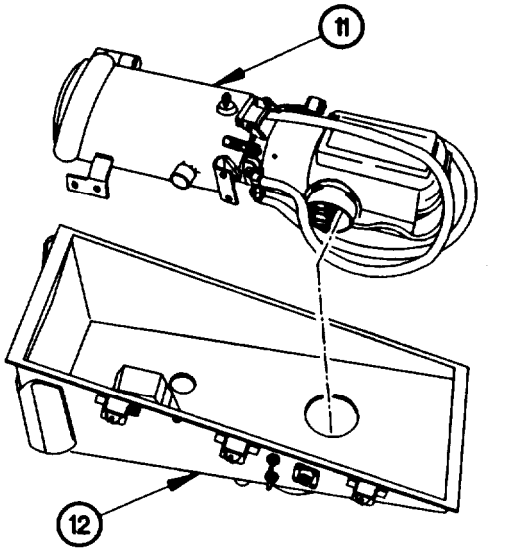
(3) Position clamp (5) and supply hose (6) on coolant heater fitting S (7).

(4) Position clamp (8) and return hose (9) on coolant heater fitting R (10).

(5) Tighten two clamps (5 and 8) to 38-48 lb-in. (4-5 N•m).



XV03102-



XV03103-

CAUTION

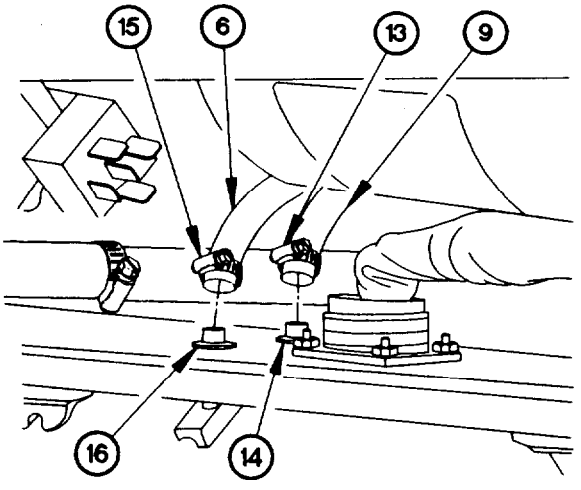
Carefully coil fuel hoses around furnace air intake port as coolant heater is positioned in cab arctic heater enclosure to prevent fuel hose kinks or damage. Failure to comply may result in damage to equipment.

(6) Position coolant heater (11) in heater enclosure (12).

(7) Position clamp (13) and return hose (9) on lower fitting (14).

(8) Position clamp (15) and supply hose (6) on upper fitting (16).

(9) Tighten two clamps (13 and 15) to 36-48 lb-in. (4-5 N•m).



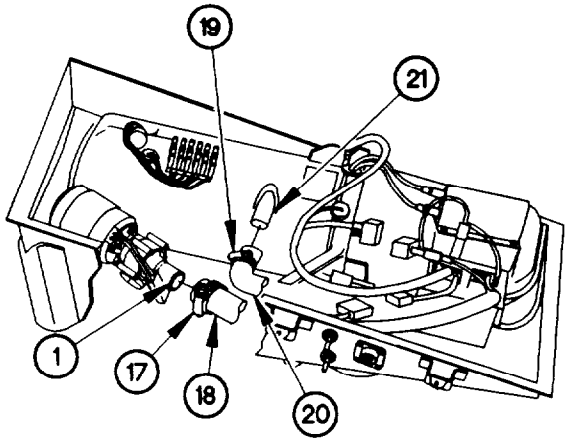
XV03104-

20-3. CAB ARCTIC COOLANT HEATER REPLACEMENT (CONT)

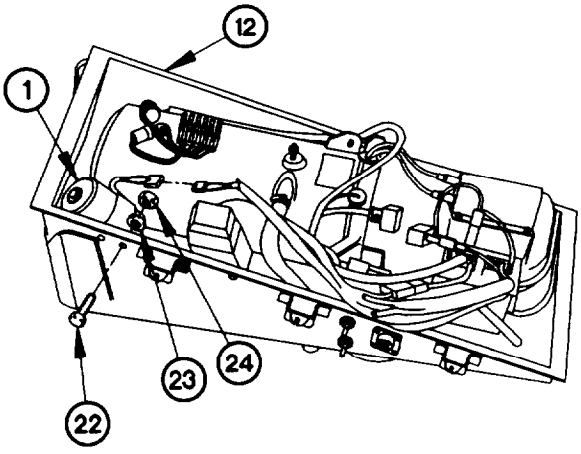
(10) Position clamp (17) and hose (18) on water pump (1).

(11) Position clamp (19) and hose (20) on fitting (21).

(12) Tighten clamps (17 and 19) to 60-72 lb-in. (7-8 N•m).



XV03I05-



XV03I06-

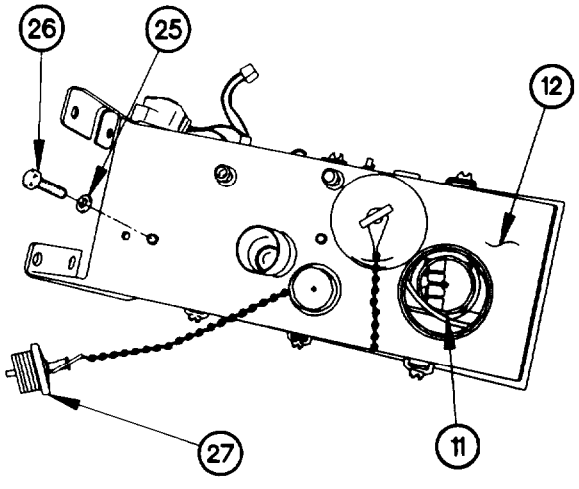
(13) Position two screws (22), washers (23), self-locking nuts (24) and water pump (1) on heater enclosure (12).

(14) Tighten two self-locking nuts (24) to 132-144 lb-in. (15-16 N•m).

(15) Position three lockwashers (25), screws (26) and coolant heater (11) on heater enclosure (12).

(16) Tighten three screws (26) to 26-28 lb-in. (3-4 N•m).

(17) Install cap plug (27) on heater enclosure (12).



XV03I07-

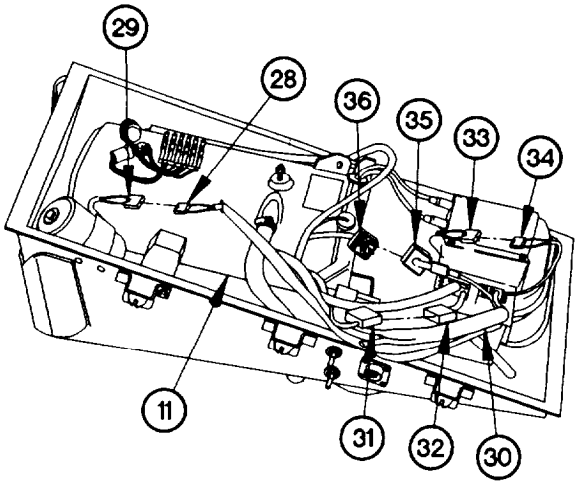
(18) Connect electrical connector (28) to electrical connector (29).

(19) Position harness assembly (30) on coolant heater (11).

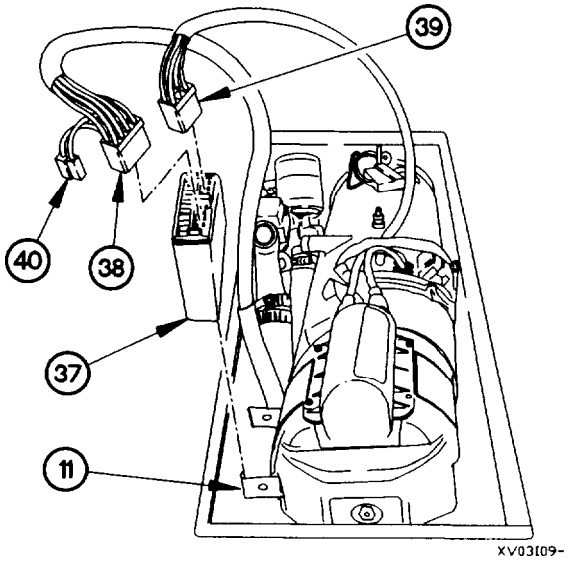
(20) Connect electrical connector (31) to cable (32).

(21) Connect electrical connector (33) to cable (34).

(22) Connect electrical connector (35) to relay (36).



XV03108-

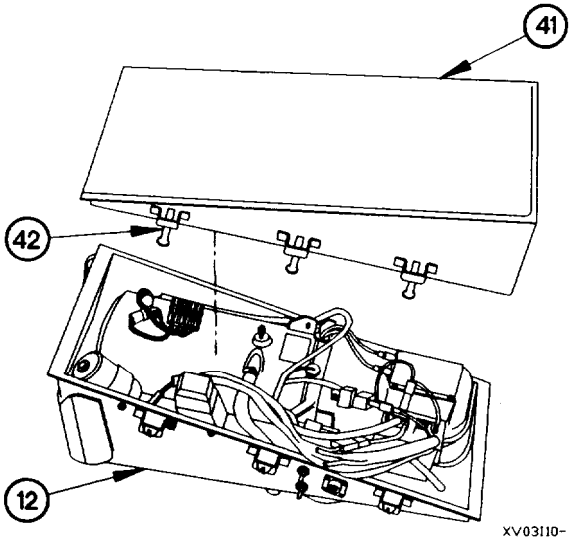


XV03109-

(22) Position control unit (37) on coolant heater (11).

(23) Connect connectors (38, 39, and 40) to control unit (37).

(24) Install heater enclosure cover (41) on heater enclosure (12) with six clamps (42).



XV03110-

c. Follow-On Maintenance.

Install cab arctic kit heater assembly (para 20-2).

End of Task.

20-4. CAB ARCTIC HEATER POWER CABLE REPLACEMENT

This task covers:

TBD

20-5. CAB ARCTIC HEATER FUEL FILTER AND FILTER ELEMENT REPLACEMENT

This task covers:

a. Filter Element Removal
b. Filter Element Installation
c. Fuel Filter Removal
d. Fuel Filter Installation
e. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Spare tire lowered (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)
Wrench, Strap, Adjustable (Item 56, Appendix C)
Pan, Drain (Item 24, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Oil, Fuel, Diesel, DF-A, Arctic (Item 37, Appendix D)
Nut, Self-Locking (2) (Item 149, Appendix G)
Antiseize Compound (Item 14, Appendix D)

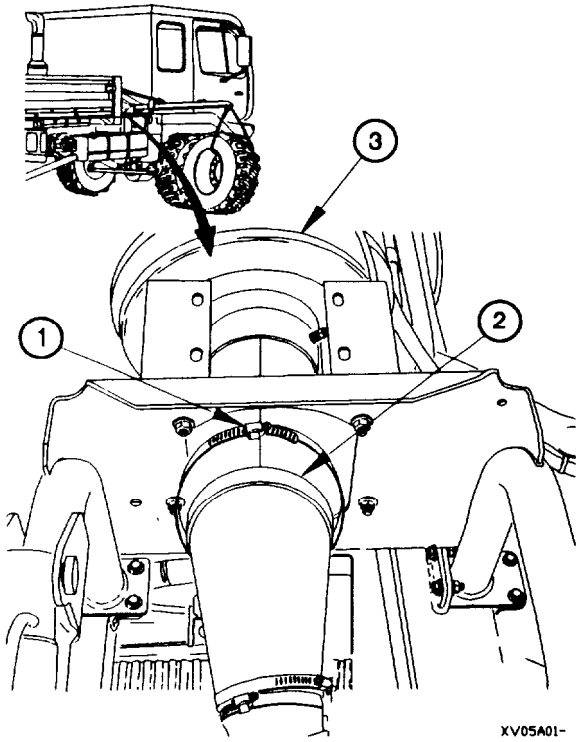
a. Filter Element Removal.

NOTE

Tag hoses and connection points prior to disconnecting.

(1) Loosen clamp (1) on intake air hose (2).

(2) Disconnect intake air hose (2) from rear of intake air cleaner (3).



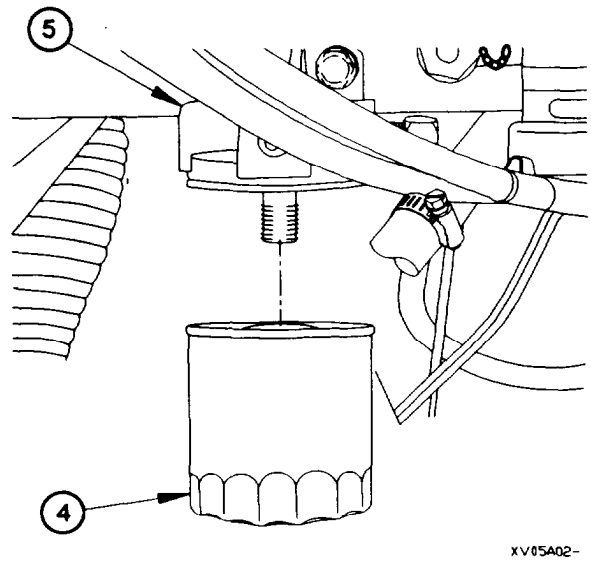
20-5. CAB ARCTIC HEATER FUEL FILTER AND FILTER ELEMENT REPLACEMENT (CONT)

WARNING

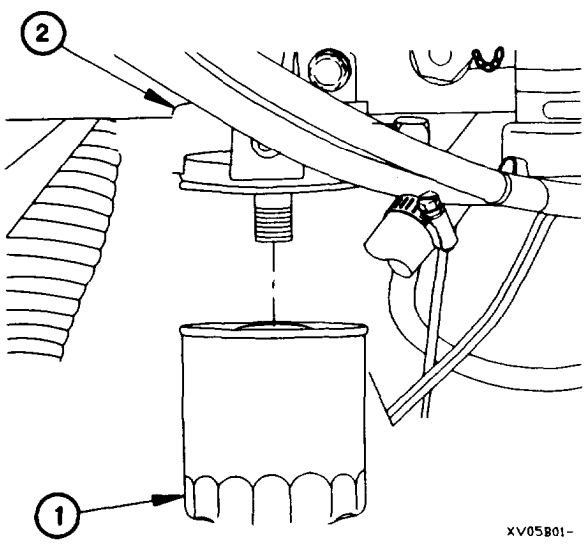
Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(3) Position drain pan under fuel filter element (4).

(4) Remove fuel filter element (4) from fuel filter assembly (5).

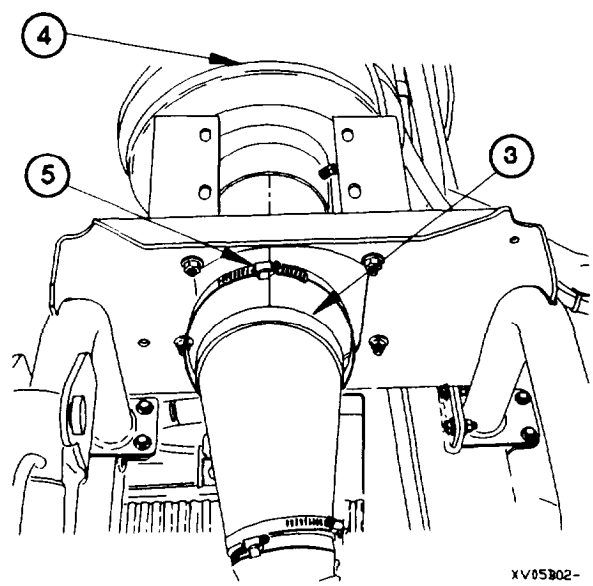


b. Filter Element Installation.



(1) Fill fuel filter element (1) with diesel fuel.

(2) Install fuel filter element (1) on fuel filter assembly (2).



(3) Connect intake air hose (3) to intake air cleaner (4).

(4) Tighten clamp (5) on intake air hose (3).

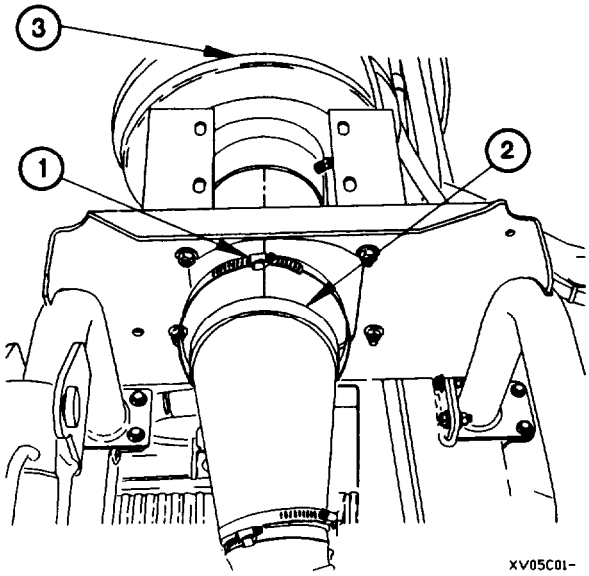
c. Fuel Filter Removal.

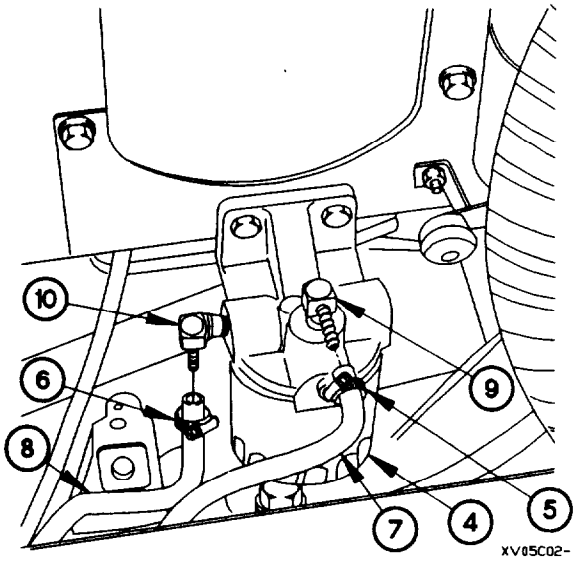
NOTE

Tag hoses and connection points prior to disconnecting.

(1) Loosen clamp (1) on intake air hose (2).

(2) Disconnect intake air hose (2) from intake air cleaner (3).





WARNING

Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(3) Position drain pan under fuel filter element (4).

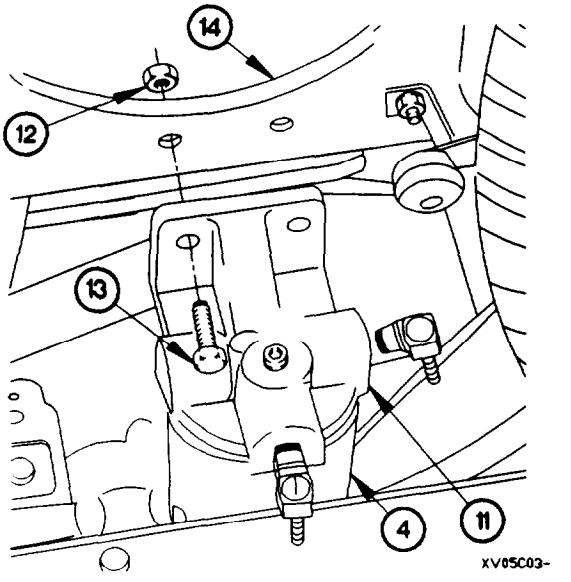
(4) Loosen two clamps (5 and 6) on fuel filter inlet and outlet hoses (7 and 8).

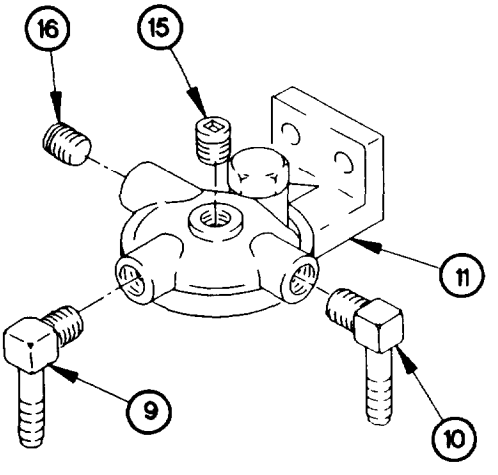
(5) Disconnect fuel filter inlet and outlet hoses (7 and 8) from fuel inlet and outlet 90-degree fittings (9 and 10).

20-5. CAB ARCTIC HEATER FUEL FILTER AND FILTER ELEMENT REPLACEMENT (CONT)

(6) Remove fuel filter element (4) from fuel filter assembly (11).

(7) Remove two self-locking nuts (12), screws (13), and fuel filter assembly (11) from spare tire retainer (14). Discard self-locking nuts.





(8) Place fuel filter assembly (1 1) in holding device.

(9) Remove fuel inlet and outlet 90-degree fittings (9 and 10) from fuel filter assembly (11).

(10) Remove plugs (15 and 16) from fuel filter assembly (11).

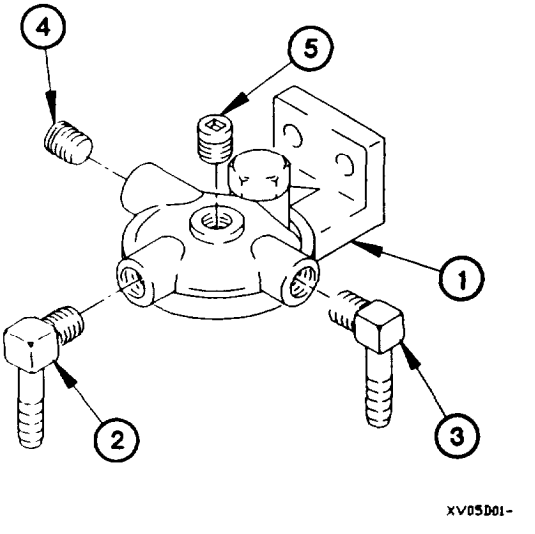
d. Fuel Filter Installation.

(1) Place fuel filter assembly (1) in holding device.

(2) Install plugs (2 and 3) in fuel filter assembly (1).

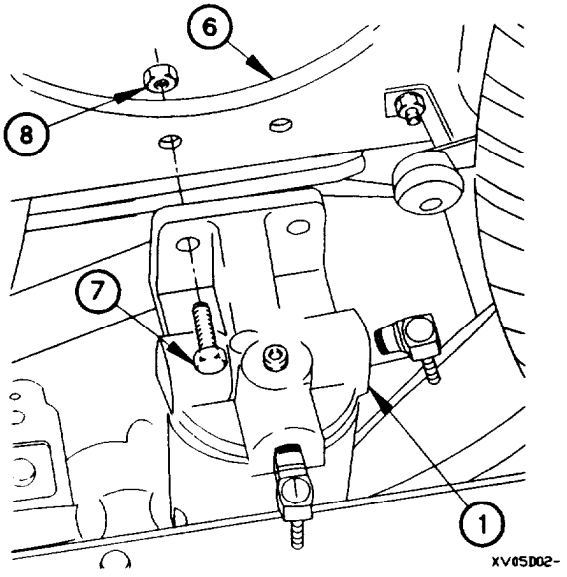
(3) Install fuel inlet and outlet 90-degree fittings (4 and 5) in fuel filter assembly (1).

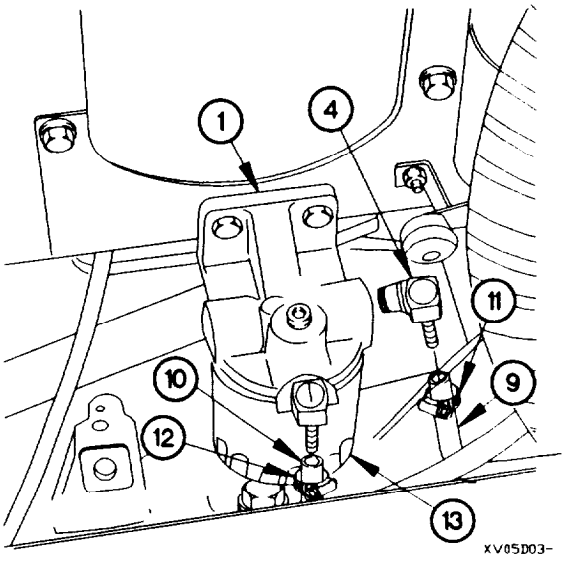
(4) Remove fuel filter assembly (1) from holding device.



(5) Position fuel filter assembly (1) on spare tire retainer (6) with two screws (7) and self-locking nuts (8).

(6) Tighten two locknuts (8) to 38-40 lb-ft (52-54 N•m).





WARNING

Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

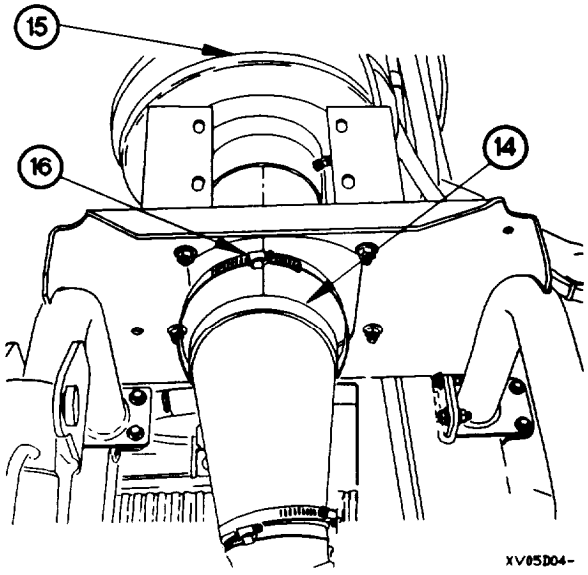
(7) Position fuel filter inlet and outlet hoses (9 and 10) on fuel inlet and outlet 90-degree fittings (4 and 5) with two clamps (11 and 12).

(8) Tighten two clamps (11 and 12) to 34-44 lb-in. (4-5 N•m).

(9) Fill fuel filter element (13) with diesel fuel oil.

(10) Install fuel filter element (13) on fuel filter assembly (1).

20-5. CAB ARCTIC HEATER FUEL FILTER AND FILTER ELEMENT REPLACEMENT (CONT)



(11) Connect intake air hose (14) to intake air cleaner (15).

(12) Tighten clamp (16).

e. Follow-On Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Operate cab arctic heater (TM 9-2320-365-10).

(5) Check for fuel leaks and proper operation.

(6) Shut down engine (TM 9-2320-365-10).

End of Task.

D-6. CAB ARCTIC HEATER MOTOR REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

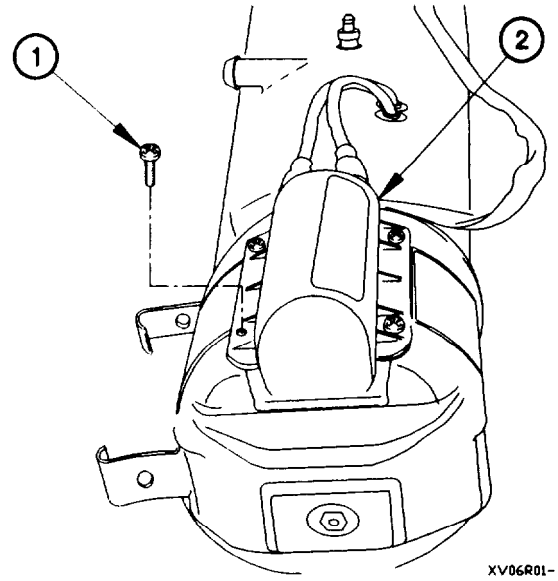
Equipment Conditions
Cab arctic coolant heater removed (para 20-3).

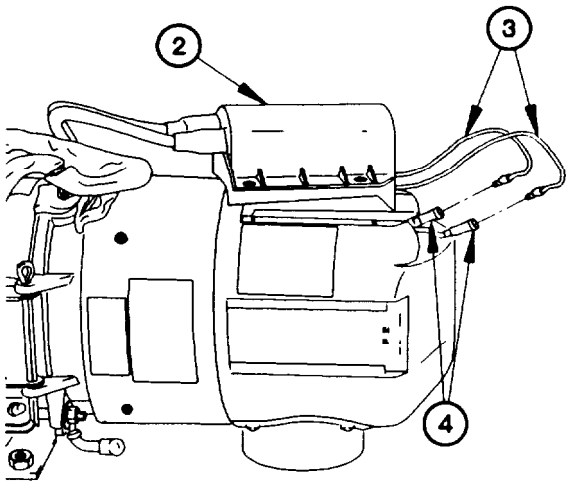
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (4) (Item 105, Appendix G)
Lockwasher (2) (Item 106, Appendix G)
Lockwasher (3) (Item 107, Appendix G)

a. Removal.

(1) Remove four screws (1) from ignition coil (2).





CAUTION

Use care when moving or removing coil to avoid damaging power connectors. Failure to comply may result in damage to equipment.

(2) Move ignition coil (2) enough to access power connectors (3).

NOTE

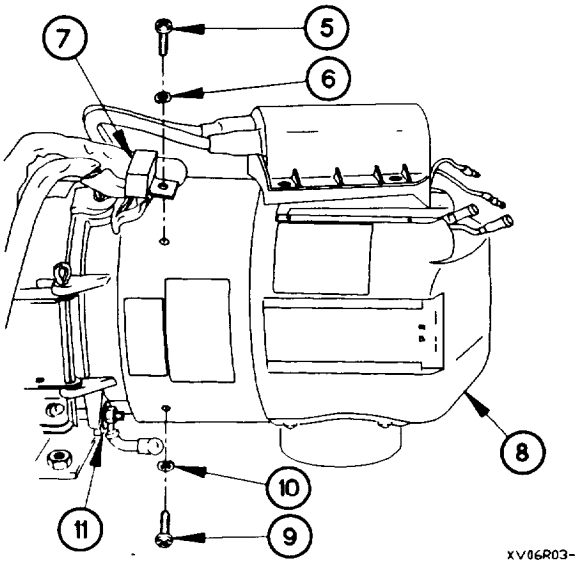
Tag connectors and connection points prior to disconnecting.

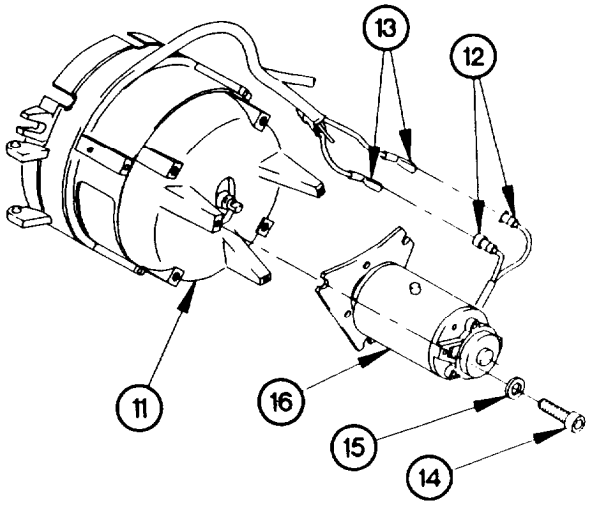
(3) Disconnect two power connectors (3) from two harness connectors (4).

20-6. CAB ARCTIC HEATER MOTOR REPLACEMENT (CONT)

(4) Remove screw (5), lockwasher (6), and relay (7) from motor cover (8). Discard lockwasher.

(5) Remove three screws (9), lockwashers (10), and motor cover (8) from motor support (11). Discard lockwashers.

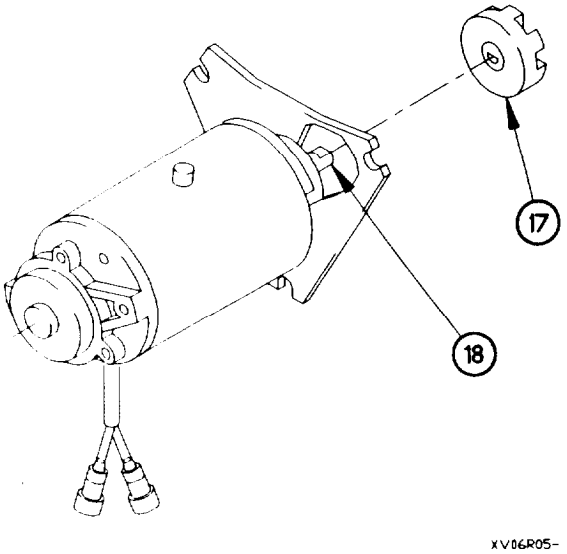




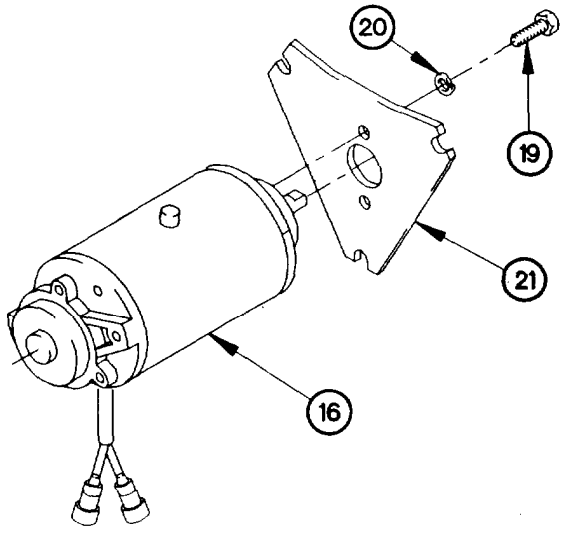
(6) Disconnect two motor connectors (12) from two harness connectors (13).

(7) Remove three screws (14), lockwashers (15), and heater motor (16) from motor support (11). Discard lockwashers.

(8) Remove clutch halve (17) from motor shaft (18).

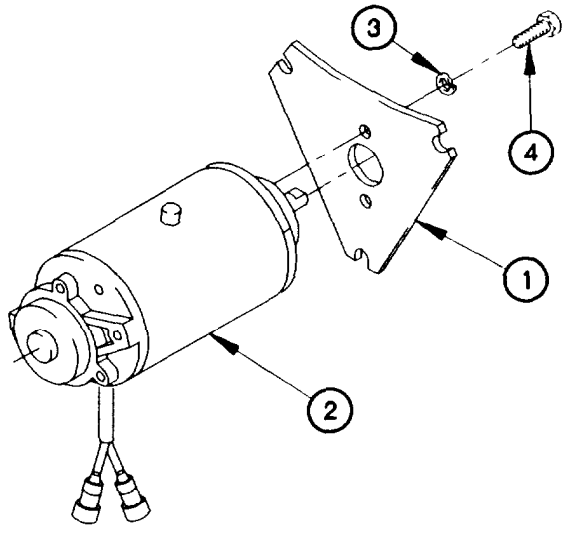


(9) Remove two screws (19), lockwashers (20), and flange (21) from heater motor (16). Discard lockwashers.



XV06R06-

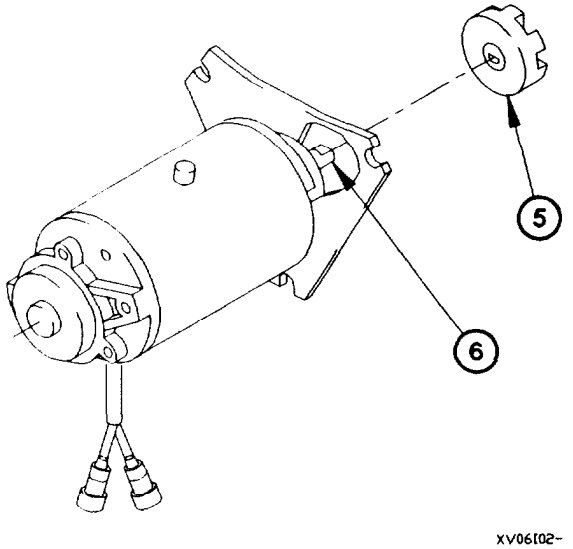
b. Installation.



XV06101-

(1) Install flange (1) on heater motor (2) with two lockwashers (3) and screws (4).

(2) Install clutch halve (5) on motor shaft (6).

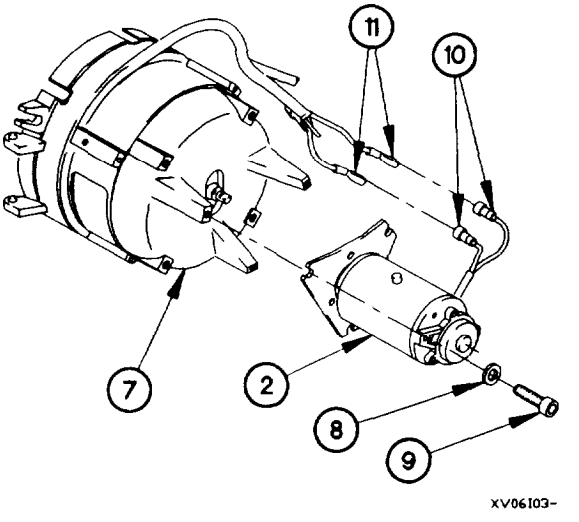


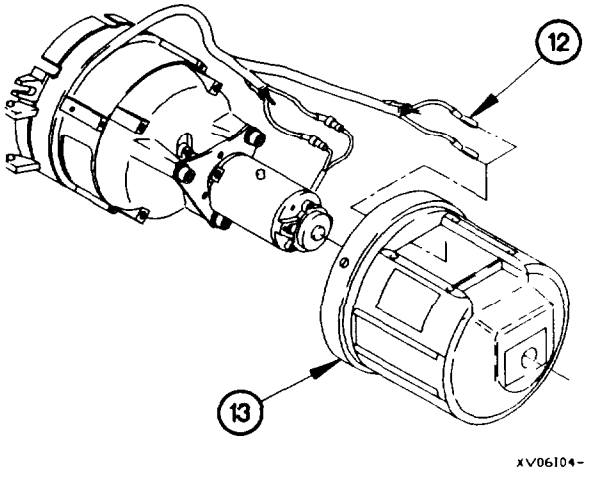
XV06102-

20-6. CAB ARCTIC HEATER MOTOR REPLACEMENT (CONT)

(3) Install heater motor (2) on motor support (7) with three lockwashers (8) and screws (9).

(4) Connect two motor connectors (10) to two harness connectors (11).

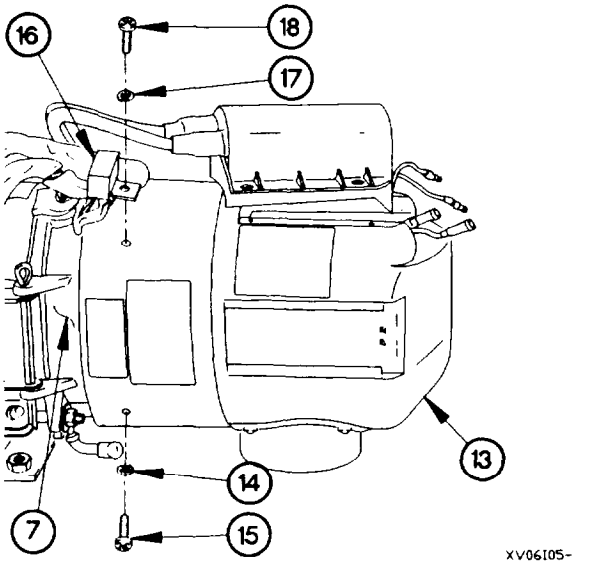




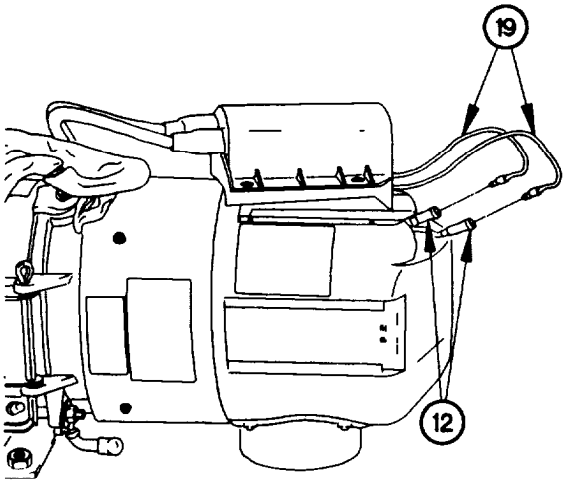
(5) Route two harness connectors (12) through opening in motor cover (13).

(6) Install motor cover (13) on motor support (7) with three lockwashers (14) and screws (15).

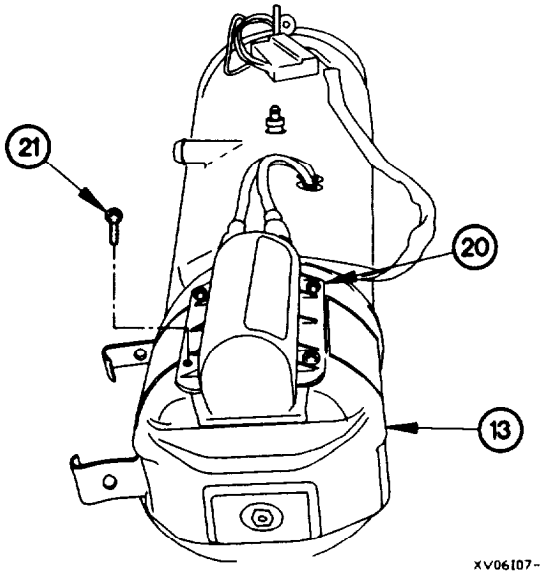
(7) Install relay (16) on motor cover (13) with lockwasher (17) and screw (18).



(8) Connect two power connectors (19) to two harness connectors (12).



XV06106-



XV06107-

CAUTION

Use care when installing coil to avoid damaging power connectors. Failure to comply may result in damage to equipment.

(9) Install ignition coil (20) on motor cover (13) with four screws (21).

c. Follow-On Maintenance.

Install cab arctic coolant heater (para 20-3).

End of Task.

20-7. CAB ARCTIC HEATER NO/NC SOLENOIDS REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)
Container (52 qt (50 L) capacity)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)
Nut, Self-Locking (5) (Item 142, Appendix G)
Nut, Self-Locking (2) (Item 134, Appendix G)
Antifreeze, Arctic Type (Item 12, Appendix D)

WARNING

- **Coolant may be very hot and under pressure from engine operation. Ensure engine is cool before performing maintenance. Failure to comply may result in injury to personnel.**
- **Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.**

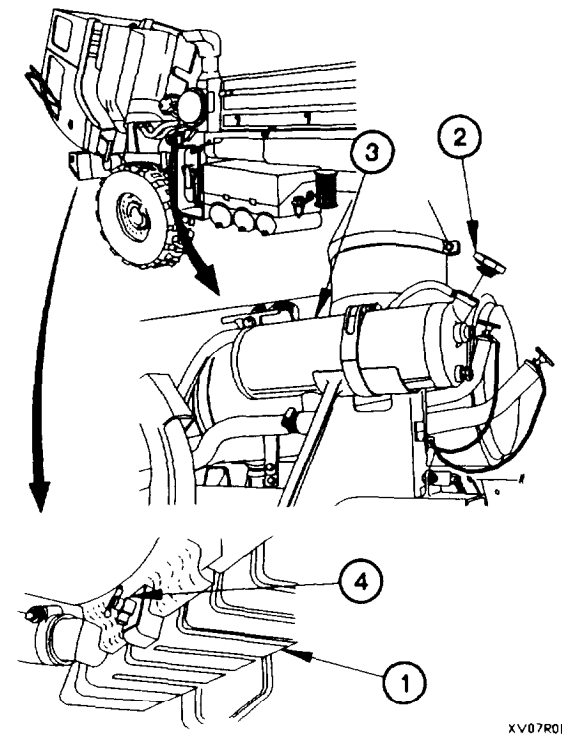
a. Removal.

(1) Position container under radiator (1).

(2) Remove radiator cap (2) from radiator overflow tank (3).

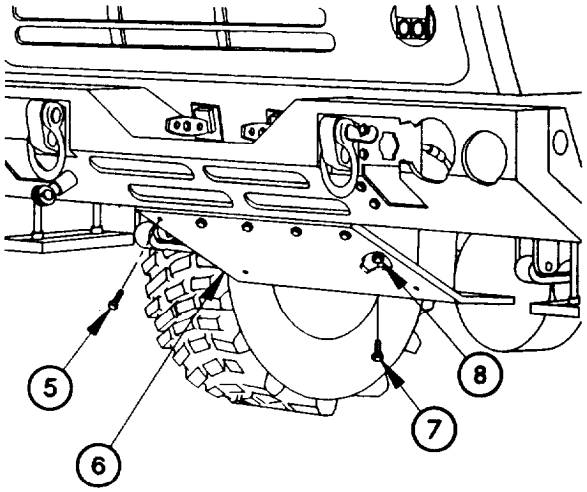
(3) Open radiator draincock (4) and drain all coolant from radiator (1).

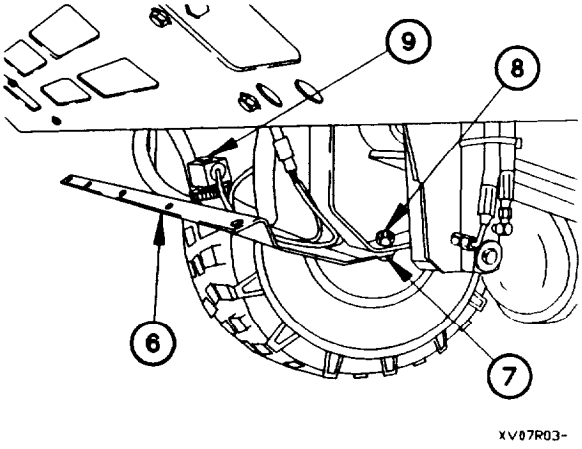
(4) Close radiator draincock (4).



(5) Remove five screws (5) from top edge of gravel deflector (6).

(6) Remove three center screws (7) and self-locking nuts (8) from bottom edge of gravel deflector (6). Discard self-locking nuts.





(7) Support gravel deflector (6) and loosen two screws (7) and self-locking nuts (8) from bottom edge of gravel deflector (6).

WARNING

Extreme care must be taken when lowering gravel deflector. Coolant hoses could be pulled loose. Failure to comply could result in serious eye injury.

(8) Lower gravel deflector (6) to access solenoid assembly (9).

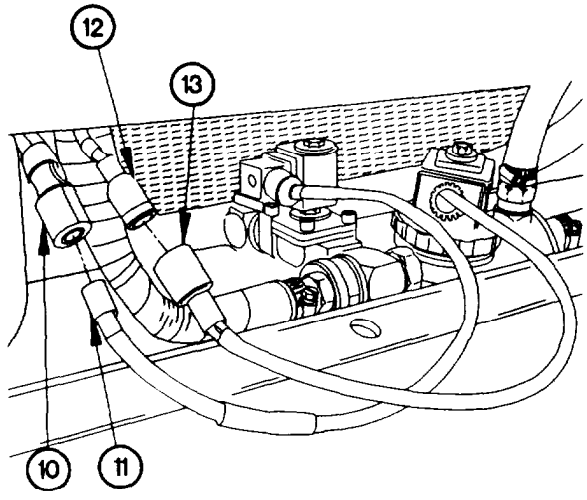
20-7. CAB ARCTIC HEATER NO/NC SOLENOIDS REPLACEMENT (CONT)

NOTE

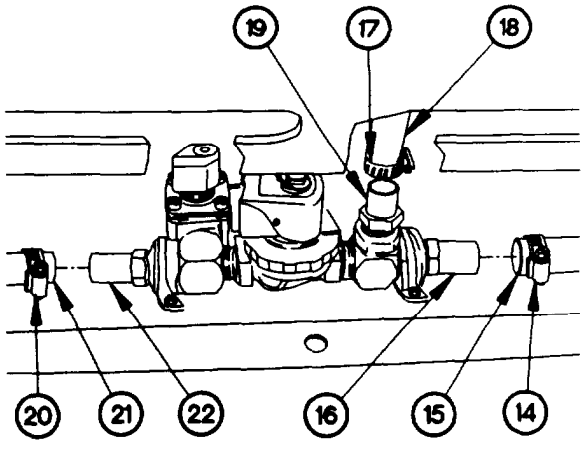
Tag electrical connectors, coolant hoses and connection points prior to disconnecting.

(9) Disconnect harness connector (10) from solenoid connector (11).

(10) Disconnect harness connector (12) from solenoid connector (13).



XV07R04-

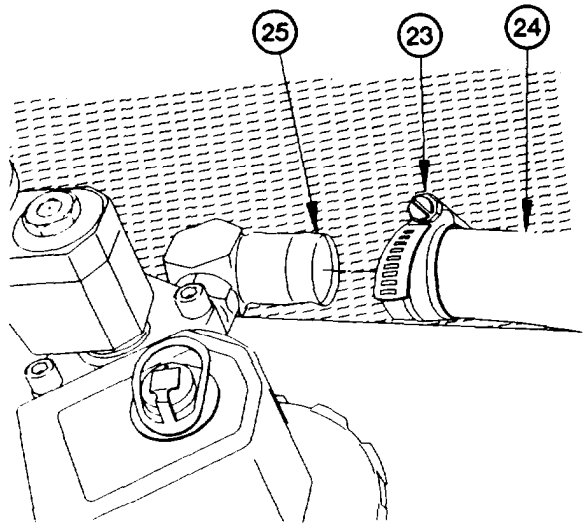


XV07R05-

(11) Loosen clamp (14) and remove hose (15) from fitting (16).

(12) Loosen clamp (17) and remove hose (18) from fitting (19).

(13) Loosen clamp (20) and remove hose (21) from fitting (22).

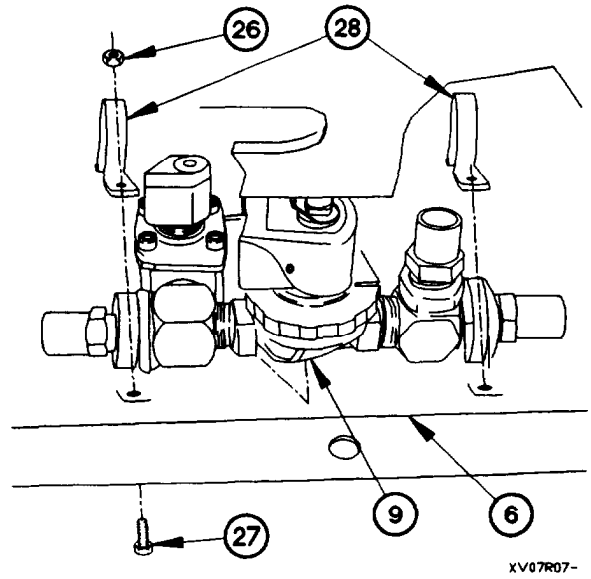


XV07R06-

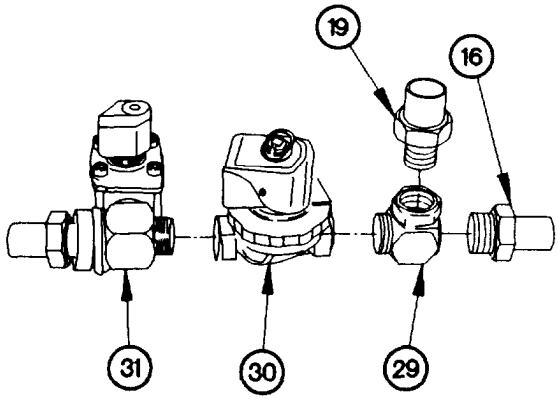
(14) Loosen clamp (23) and remove hose (24) from 90-degree fitting (25).

(15) Remove two self-locking nuts (26), screws (27) and clamps (28) from solenoid assembly (9). Discard self-locking nuts.

(16) Remove solenoid assembly (9) from gravel deflector (6).



XV07R07-



XV07R08-

(17) Remove two fittings (16 and 19) from tee (29).

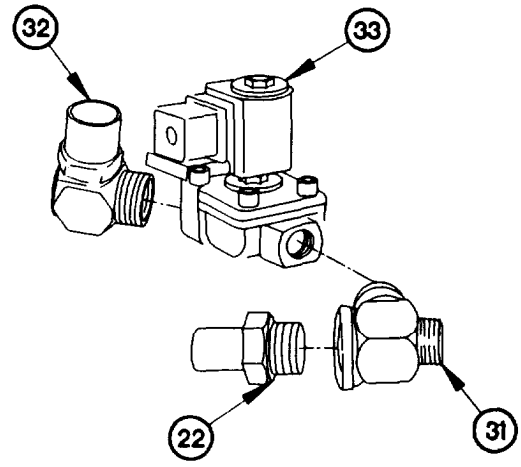
(18) Remove tee (29) from solenoid (30).

(19) Remove solenoid (30) from tee (31).

(20) Remove fitting (22) from tee (31).

(21) Remove 90-degree fitting (32) from solenoid (33).

(22) Remove tee (31) from solenoid (33).



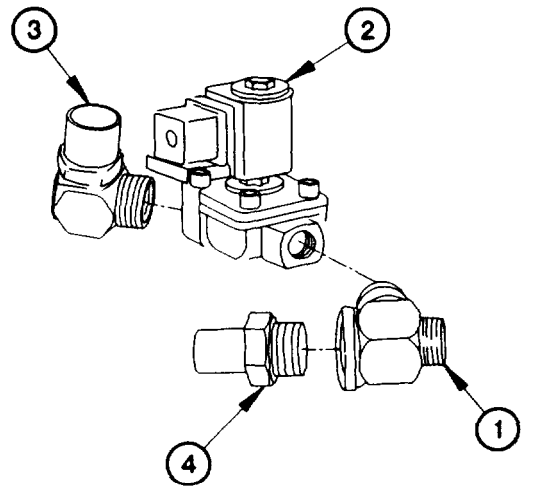
XV07R09-

20-7. CAB ARCTIC HEATER NO/NC SOLENOIDS REPLACEMENT (CONT)

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



XV07101-

(1) Apply antiseize compound to threads of tee (1).

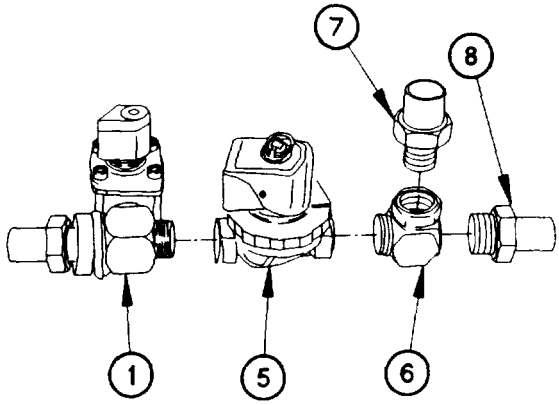
(2) Install tee (1) on solenoid (2).

(3) Apply antiseize compound on threads of 90-degree fitting (3).

(4) Install 90-degree fitting (3) on solenoid (2).

(5) Apply antiseize compound on threads of fitting (4).

(6) Install fitting (4) on tee (1).



XV07102-

(7) Apply antiseize compound on threads of tee (1).

(8) Install solenoid (5) on tee (1).

(9) Apply antiseize compound on threads of tee (6).

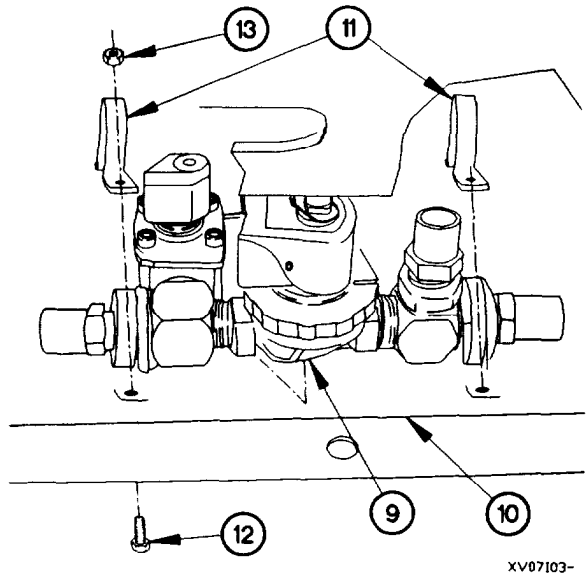
(10) Install tee (6) on solenoid (5).

(11) Apply antiseize compound on threads of two fittings (7 and 8).

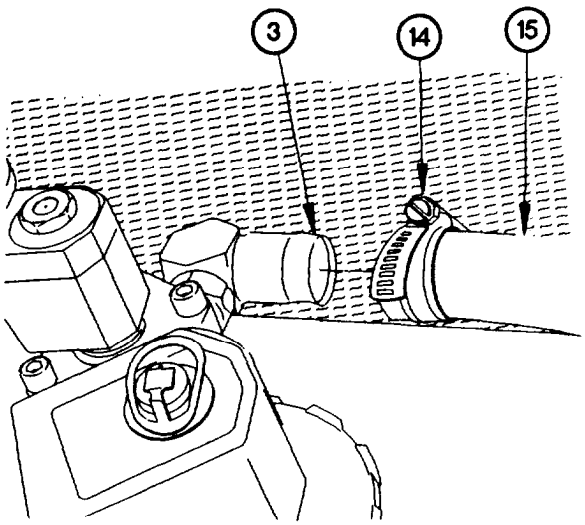
(12) Install two fittings (7 and 8) on tee (6).

(13) Position solenoid assembly (9) on gravel deflector (10) with two clamps (11), screws (12) and self-locking nuts (13).

(14) Tighten two self-locking nuts (13) to 75-93 lb-ft (102-126 N•m).



XV07103-



XV07104-

(15) Position clamp (14) and hose (15) on 90-degree fitting (3).

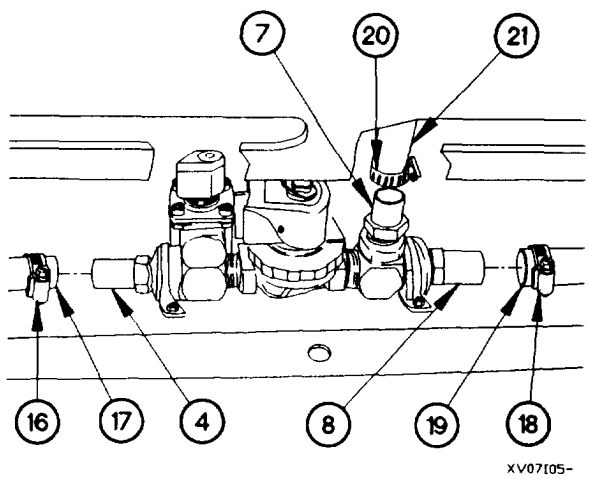
(16) Tighten clamp (14) to 60-72 lb-in. (7-8 N•m).

(17) Position clamp (16) and hose (17) on fitting (4).

(18) Position clamp (18) and hose (19) on fitting (8).

(19) Position clamp (20) and hose (21) on fitting (7).

(20) Tighten clamps (16, 18, and 20) to 60-72 lb-in. (7-8 N•m).

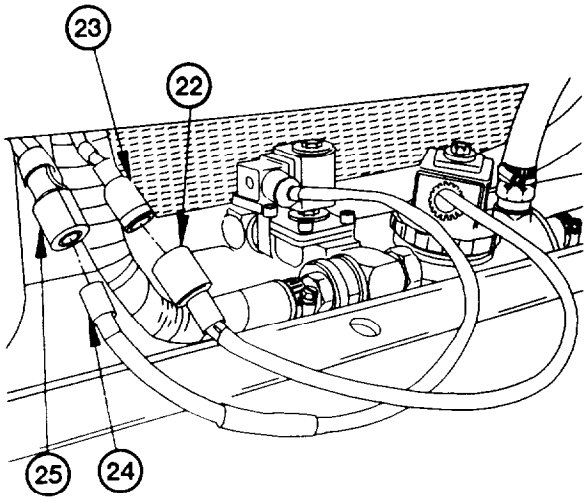


XV07105-

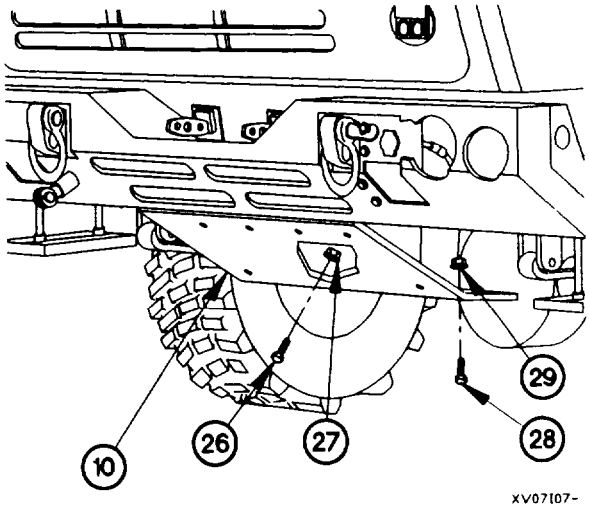
20-7. CAB ARCTIC HEATER NO/NC SOLENOIDS REPLACEMENT (CONT)

(21) Connect solenoid connector (22) to harness connector (23).

(22) Connect solenoid connector (24) to harness connector (25).



XV07106-



XV07107-

(23) position three screws (26) and self-locking nuts (27) on bottom of gravel deflector (10).

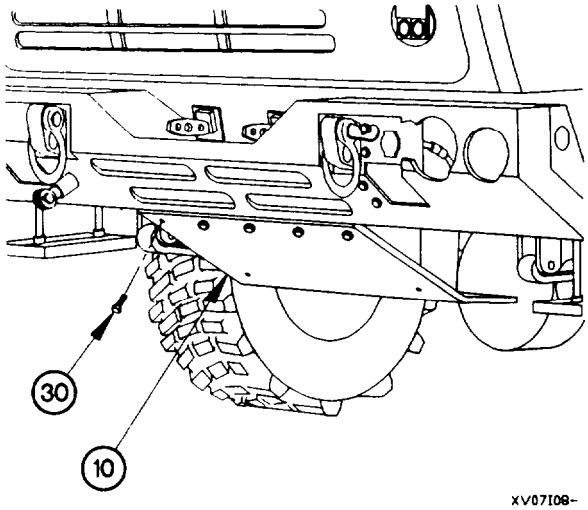
(24) Remove two screws (28) and self-locking nuts (29) from gravel deflector (10). Discard self-locking nuts.

(25) Position two screws (28) and self-locking nuts (29) on gravel deflector (10).

(26) Tighten five self-locking nuts (27 and 29) to 75-93 lb-ft (101-126 N•m).

(27) Position five screws (30) on upper edge of gravel deflector (10).

(28) Tighten five screws (301 to 42-52 lb-ft (57-71 N•m).



XV07108-

c. Follow-On Maintenance.

(1) Fill cooling system with arctic coolant (TM 9-2320-365-10).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Operate cab arctic heater (TM 9-2320-365-10).

(5) Check system for fuel or coolant leaks and for proper operation (TM 9-2320-365-10).

(6) Shut down engine (TM 9-2320-365-10).

End of Task.

20-8. CAB ARCTIC HEATER WIRING HARNESS REPLACEMENT

This task covers:

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

INITIAL SETUP

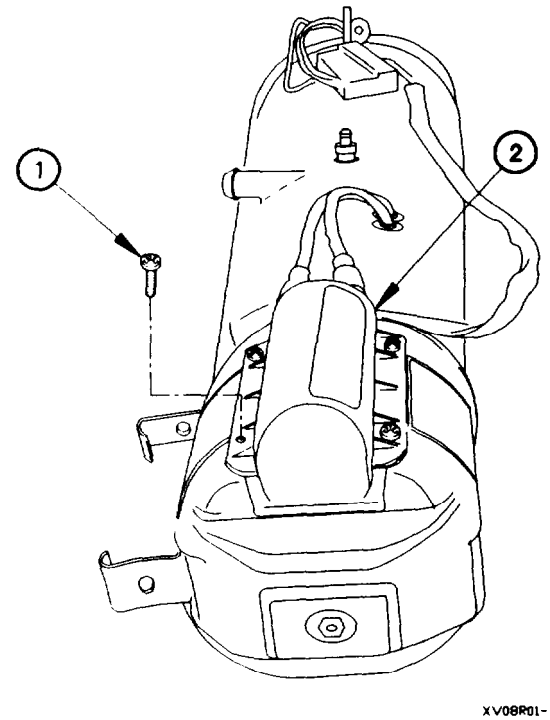
Equipment Conditions
Cab arctic coolant heater removed (para 20-3).

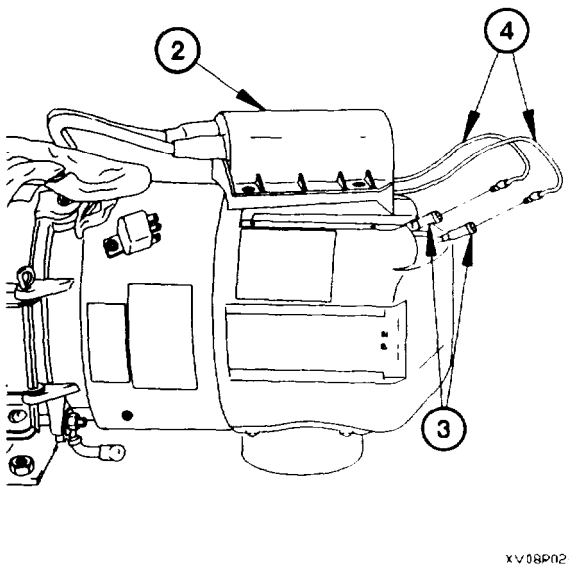
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Pin, Cotter (Item 209, Appendix G)
Lockwasher (4) (Item 105, Appendix G)

a. Removal.

(1) Remove four screws (1) from ignition coil (2).





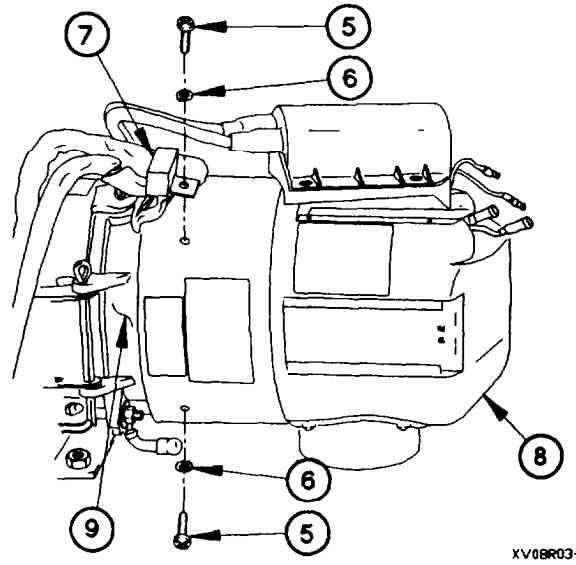
(2) Move ignition coil (2) enough to access two power connectors (3).

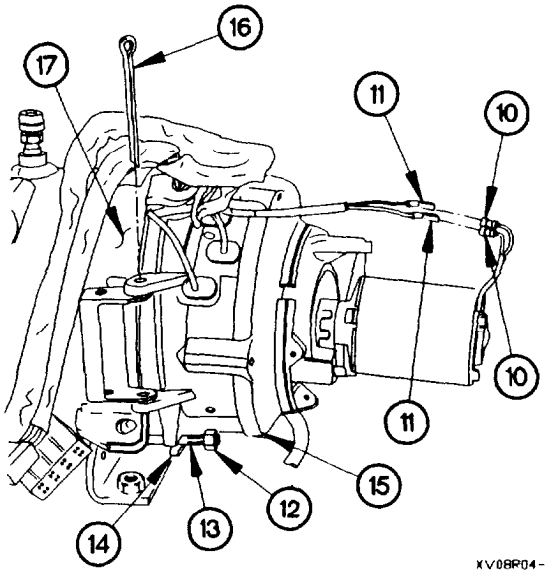
NOTE

Tag wires and connection points prior to disconnecting.

(3) Disconnect two wires (4) from two power connectors (3).

(4) Remove four screws (5), lockwashers (6), relay (7), and motor cover (8) from motor support (9). Discard lockwashers.





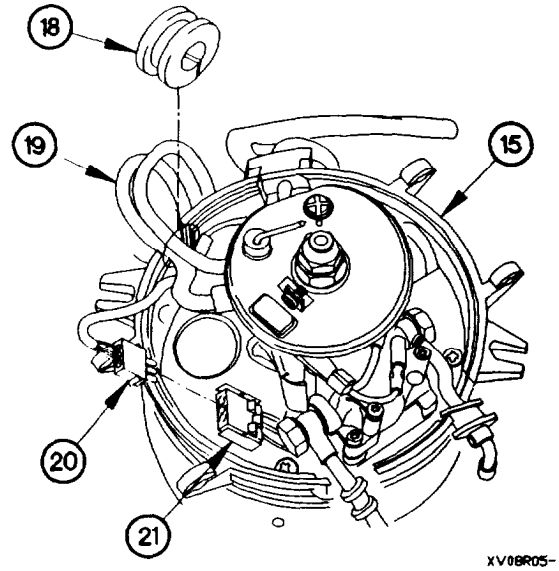
(5) Disconnect two motor connectors (10) from two harness connectors (11).

(6) Loosen two nuts (12) on eye bolts (13).

(7) Remove two eye bolts (13) from tabs (14) on each side of burner head (15).

(8) Remove cotter pin (16) from heat exchanger assembly (17). Discard cotter pin.

(9) Remove burner head (15) from heat exchanger assembly (17).



(10) Remove three rubber grommets (18) from cab arctic heater wiring harness (19).

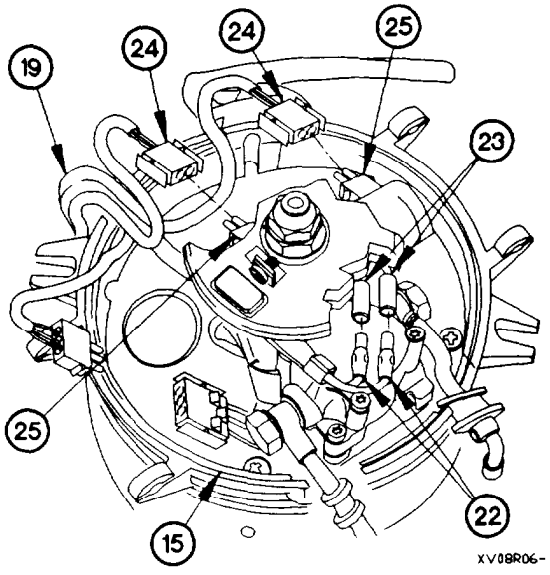
(11) Disconnect cab arctic heater wiring harness connector (20) from nozzle preheater connector (21) on burner head (15).

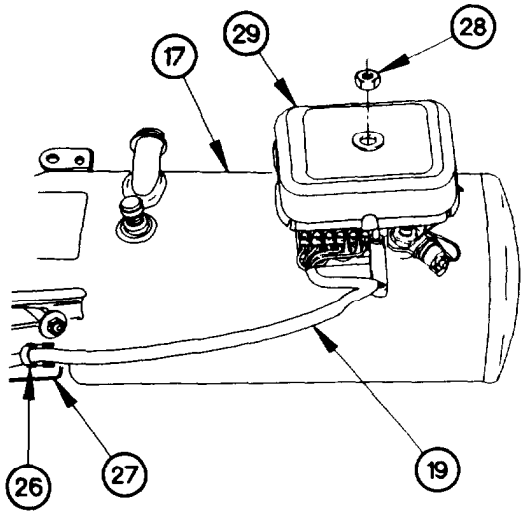
20-8. CAB ARCTIC HEATER WIRING HARNESS REPLACEMENT (CONT)

(12) Disconnect two cab arctic heater wiring harness connectors (22) from flame detection photocell connectors (23).

(13) Disconnect two cab arctic heater wiring harness connectors (24) from fuel solenoid valve (25).

(14) Remove cab arctic heater wiring harness (19) from burner head (15).





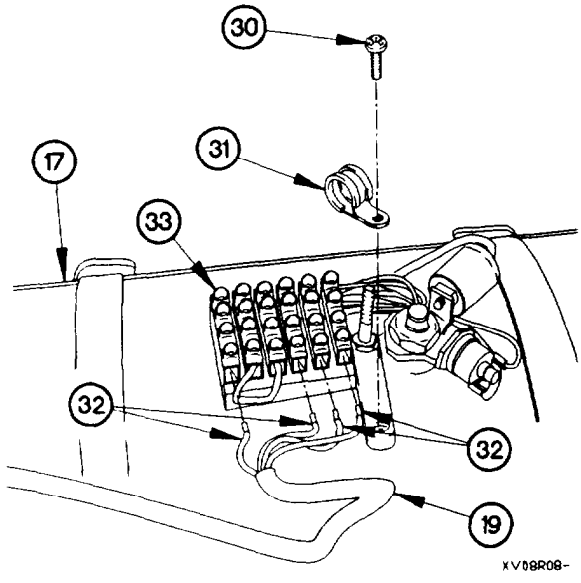
(15) Remove cable clamp (26) and cab arctic heater wiring harness (19) from heat exchanger hinge (27).

(16) Remove nut (28) and protective cover (29) from top of heat exchanger assembly (17).

(17) Remove screw (30) and cable clamp (31) from heat exchanger assembly (17).

(18) Disconnect four cab arctic heater wiring harness terminals (32) from control thermostat terminals (33).

(19) Remove cab arctic heater wiring harness (19) from heat exchanger assembly (17).

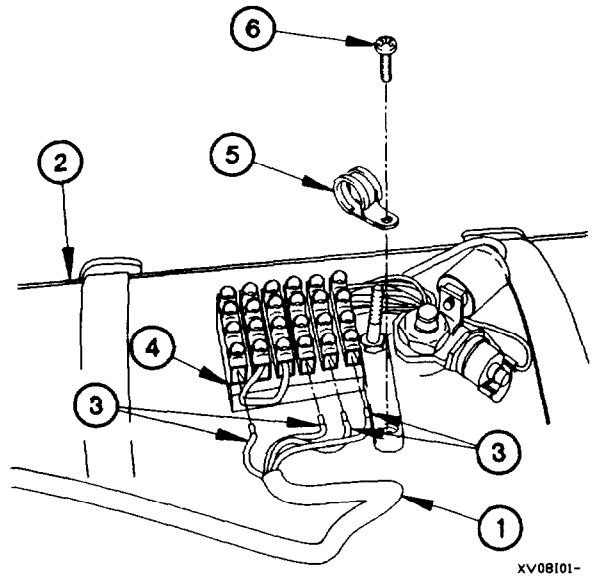


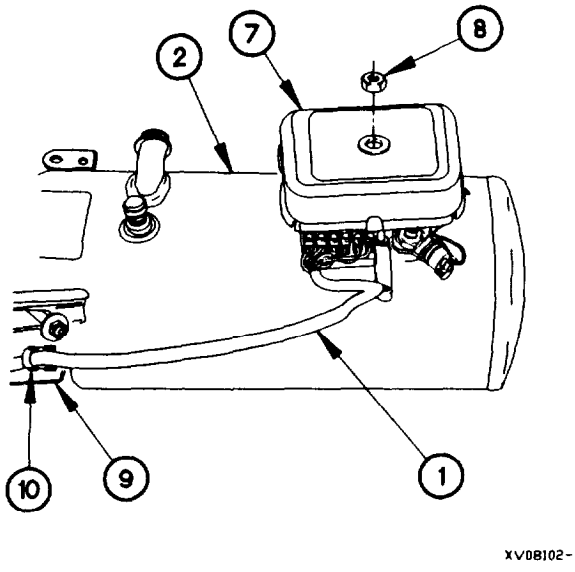
b. Installation.

(1) Position cab arctic heater wiring harness (1) on heat exchanger assembly (2).

(2) Connect four cab arctic heater wiring harness terminals (3) to control thermostat terminals (4).

(3) Install cable clamp (5) and screw (6) on heat exchanger assembly (2).



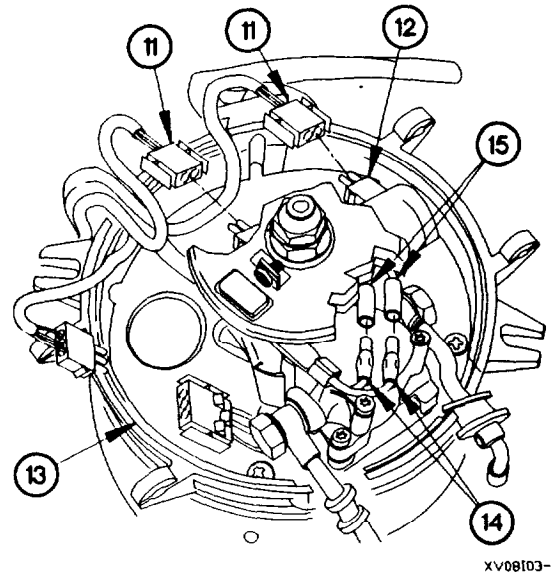


(4) Install protective cap (7) on top of heat exchanger assembly (2) with nut (8).

(5) Install cab arctic heater wiring harness (1) on heat exchanger hinge (9) with clamp (10).

(6) Connect two cab arctic heater wiring harness connectors (11) to fuel solenoid valve (12) on burner head (13).

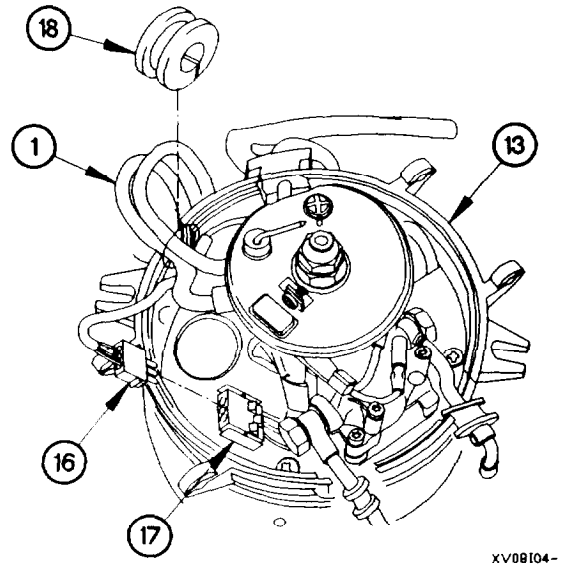
(7) Connect two cab arctic heater wiring harness connectors (14) to flame detection photocell connectors (15).

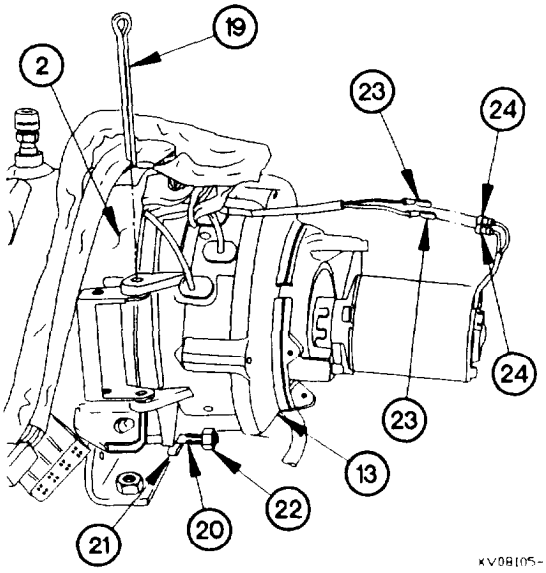


20-8. CAB ARCTIC HEATER WIRING HARNESS REPLACEMENT (CONT)

(8) Connect cab arctic heater wiring harness connector (16) to preheater electrical connector (17).

(9) Route cab arctic heater wiring harness (1) out of burner head (13) through rubber grommet (18).





(10) Install burner head (13) on heat exchanger assembly (2) with cotter pin (19).

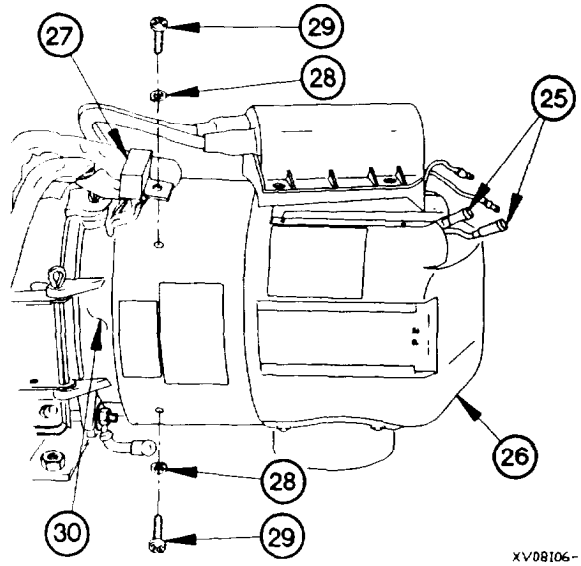
(11) Install two eye bolts (20) on tabs (21).

(12) Tighten nuts (22) on eye bolts (20).

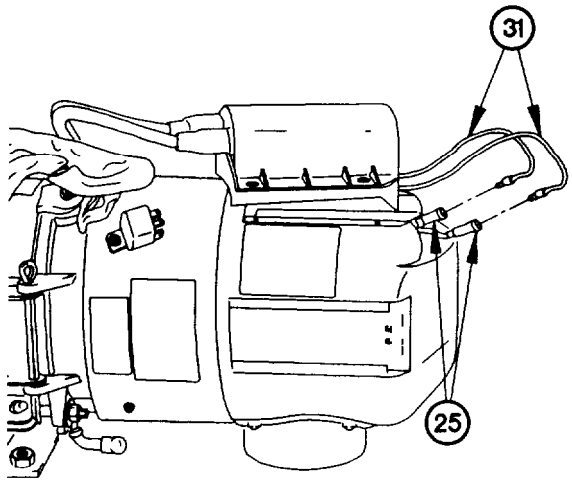
(13) Connect two cab arctic heater wiring harness connectors (23) to motor connectors (24).

(14) Insert two cab arctic heater wiring harness connectors (25) through back of motor cover (26).

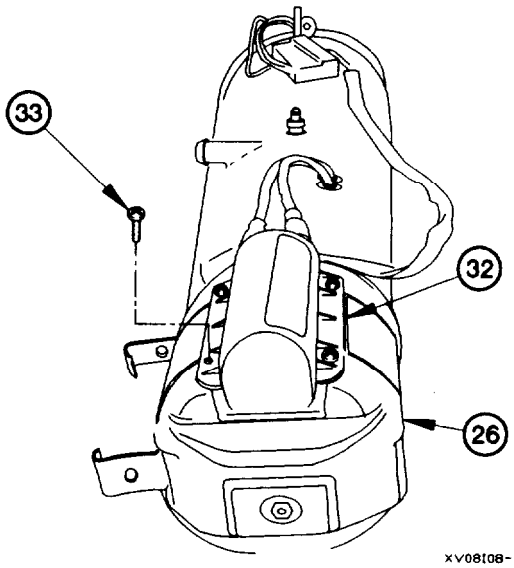
(15) Install motor cover (26), relay (27), four lockwashers (28), and screws (29) on motor support (30).



(16) Connect two cab arctic heater wiring harness connectors (25) to two power connectors (31).



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XV08108-

(17) Install ignition coil (32) and four screws (33) on motor cover (26).

c. Follow-On Maintenance.

Install cab arctic coolant heater (para 20-3).

End of Task.

20-9. CAB ARCTIC HEATER FUEL PUMP REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Cab arctic kit heater assembly removed (para 20-2).
Cab arctic coolant heater removed (para 20-3).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

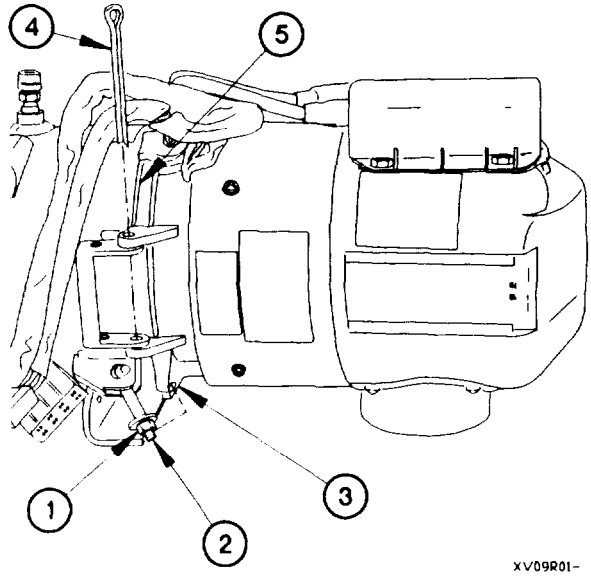
Materials/Parts
Lockwasher (2) (Item 107, Appendix G)
Pin, Cotter (Item 209, Appendix G)
Ring, Bushing (4) (Item 214, Appendix G)

a. Removal.

(1) Loosen two nuts (1) on eyebolts (2).

(2) Remove two eyebolts (2) from tabs (3).

(3) Remove cotter pin (4) from heater coolant assembly (5). Discard cotter pin.



CAUTION

Use care when moving burner head. Failure to comply may result in damage to equipment.

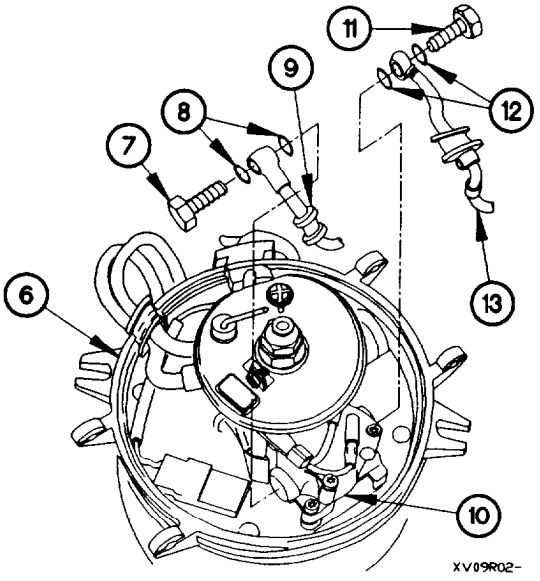
(4) Position burner head (6) in upright position.

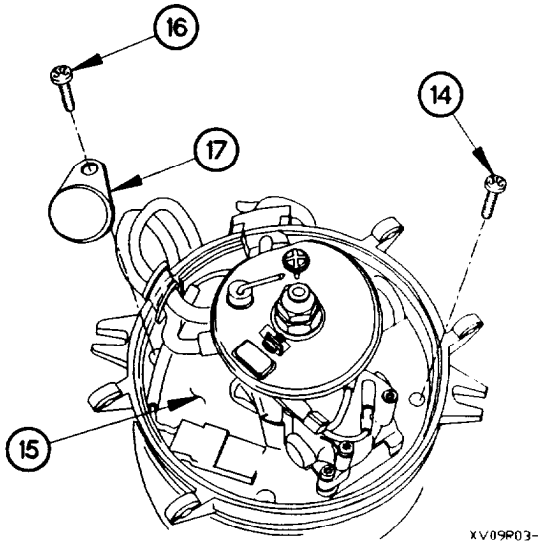
WARNING

Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(5) Remove screw (7) two gaskets (8) and supply fuel line (9) from fuel pump (10). Discard gaskets.

(6) Remove screw (11) two gaskets (12) and return fuel line (13) from fuel pump (10). Discard gaskets.





(7) Remove three self-locking screws (14) from nozzle plate (15). Discard self-locking screws.

(8) Remove lockscrew (16) and switch assembly (17) from nozzle plate (15).

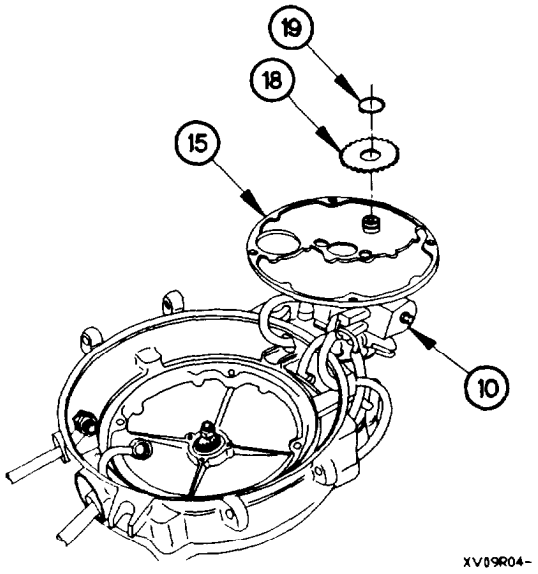
20-9. CAB ARCTIC HEATER FUEL PUMP REPLACEMENT (CONT)

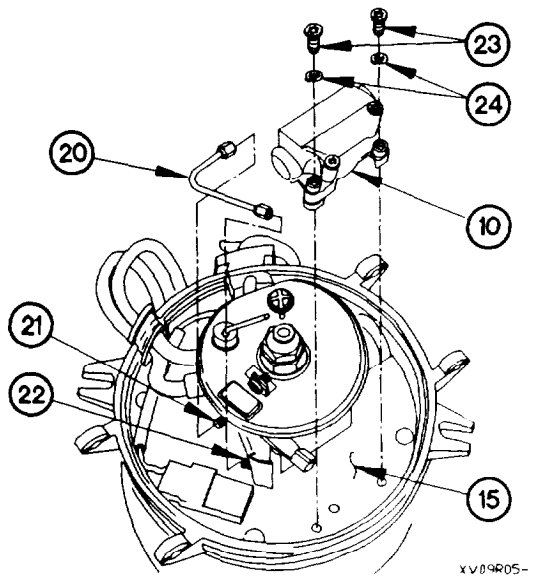
(9) Remove nozzle plate (15) for access to gear (18).

CAUTION

Use care when removing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(10) Remove retaining clip (19) and gear (18) from fuel pump (10).





(11) Disconnect fuel line (20) at nozzle holder fitting (21).

(12) Disconnect fuel line (20) from fuel pump fittings (22). Remove fuel line (20).

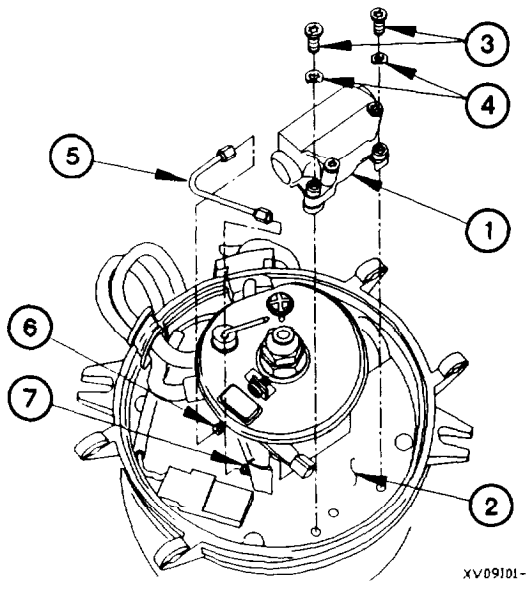
(13) Remove two screws (23), lockwashers (24), and fuel pump (10) from nozzle plate (15). Discard lockwashers.

b. Installation.

(1) Install fuel pump (1) on nozzle plate (2) with two screws (3) and lockwashers (4).

(2) Position fuel line (5) on fittings (6) and (7).

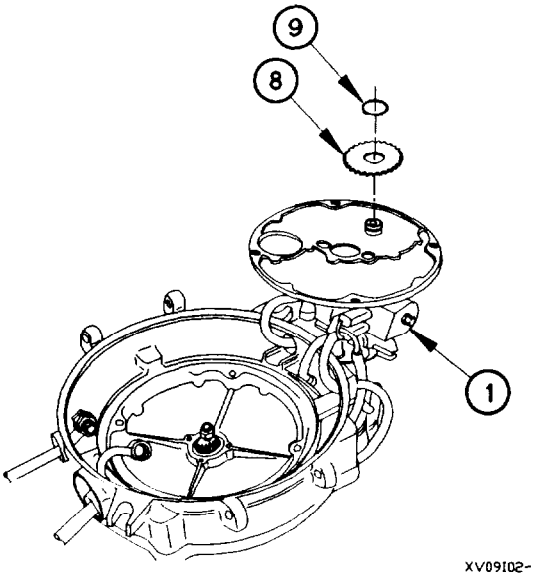
(3) Tighten fuel line (5) on fittings (6) and (7).

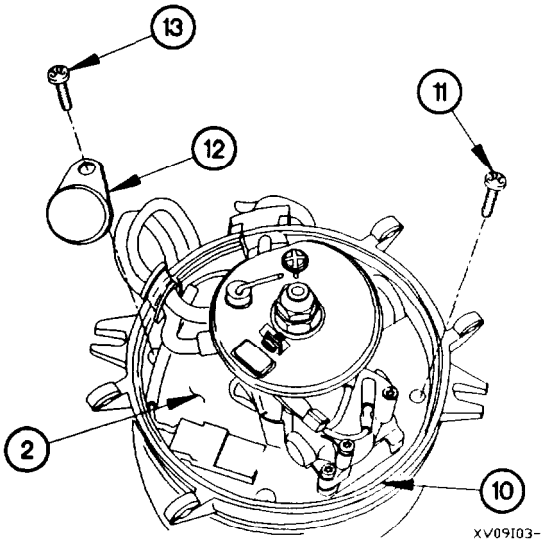


WARNING

Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(4) Install gear (8) on fuel pump (1) with retaining clip (9).



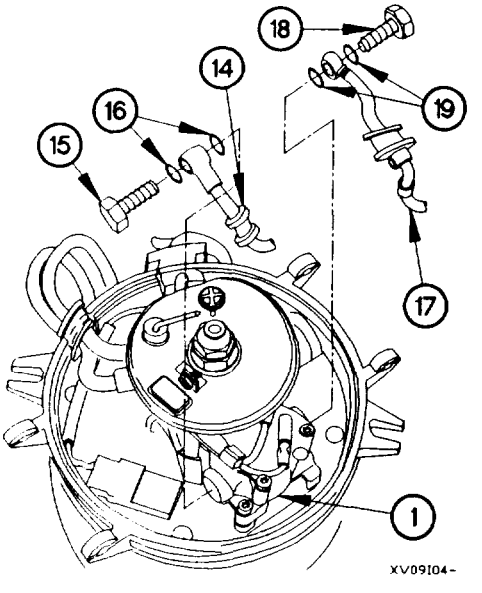


(5) Install nozzle plate (2) on burner head (10) with three lockscrews (11).

(6) Install switch assembly (12) with lockscrew (13).

(7) Install return fuel line (14) on fuel pump (1) with screw (15) and two gaskets (16).

(8) Install supply fuel line (17) on fuel pump (1) with screw (18) and two gaskets (19).

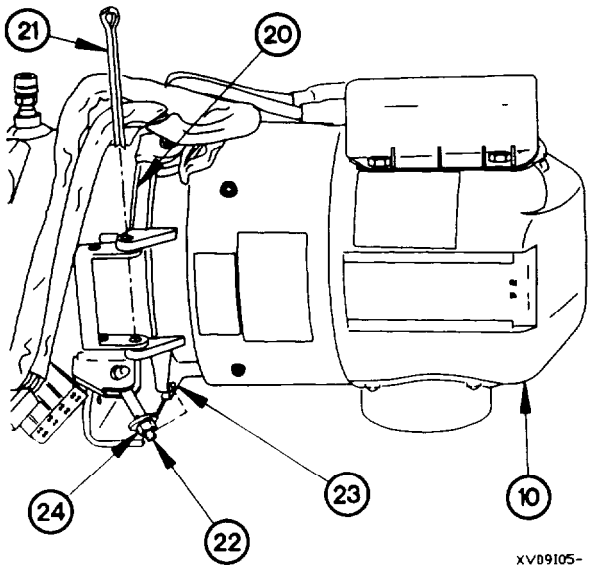


20-9. CAB ARCTIC HEATER FUEL PUMP REPLACEMENT (CONT)

(9) Install burner head (10) on heater coolant assembly (20) with cotter pin (21).

(10) Position two eyebolts (22) on tabs (23).

(11) Tighten two nuts (24) on eyebolts (22).



c. Follow-On Maintenance.

(1) Install cab arctic coolant heater (para 20-3).

(2) Install cab arctic kit heater assembly (para 20-2).

End of Task.

20-10. CAB ARCTIC HEATER FUEL NOZZLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Cab arctic coolant heater removed (para 20-3).

Materials/Parts
Pin, Cotter (Item 209, Appendix G)

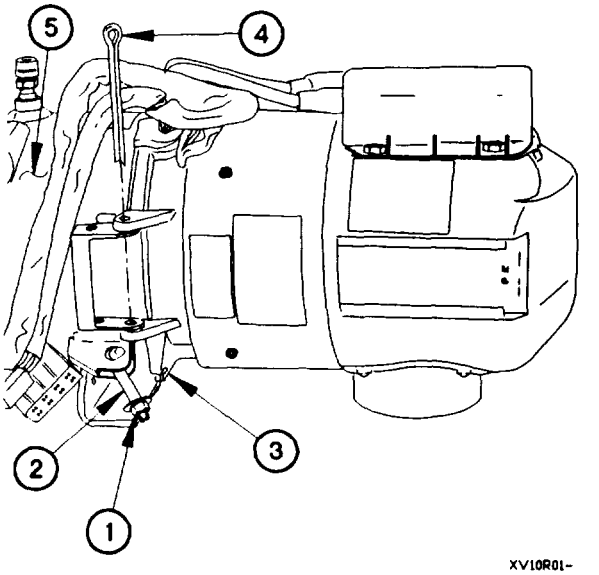
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-75 lb-in. (Item 86, Appendix B)

a. Removal.

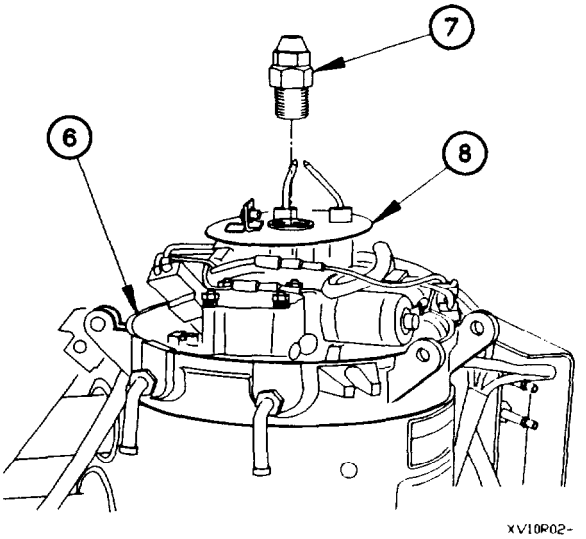
(1) Loosen two nuts (1) on bolts (2).

(2) Remove two bolts (2) from tabs (3).

(3) Remove cotter pin (4) from coolant heater (5). Discard cotter pin.



XV10R01-



XV10R02-

CAUTION

Use care when moving burner head. Failure to comply may result in damage to equipment.

(4) Position burner head (6) in upright position.

(5) Remove fuel nozzle (7) from nozzle holder (8).

20-10. CAB ARCTIC HEATER FUEL NOZZLE REPLACEMENT (CONT)

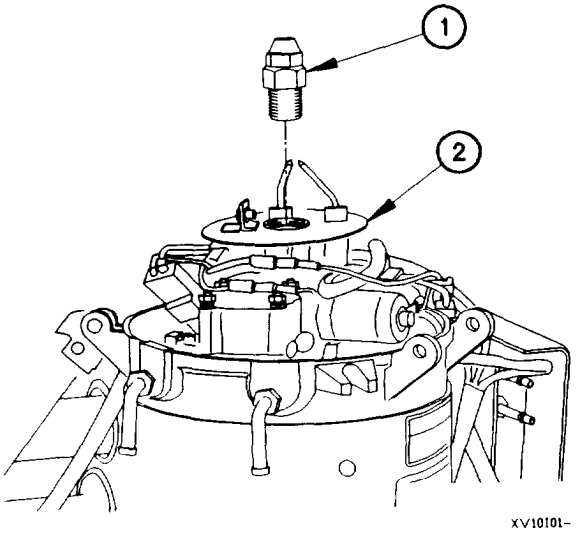
b. Installation.

CAUTION

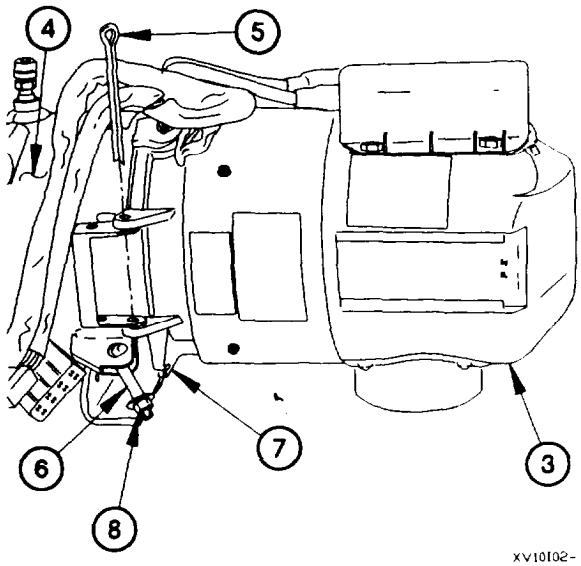
Use care when moving burner head. Failure to comply may result in damage to equipment.

(1) Position fuel nozzle (1) on nozzle holder (2).

(2) Tighten fuel nozzle (1) to 34 lb-in. (4 N•m).



XV10101-



XV10102-

(3) Position burner head (3) on coolant heater (4).

(4) Install cotter pin (5) on coolant heater (4).

(5) Position two bolts (6) in tabs (7).

(6) Tighten two nuts (8) on bolts (6).

c. Follow-On Maintenance.

Install cab arctic coolant heater assembly (para 20-3).

End of Task.

20-11. CAB ARCTIC HEATER COMBUSTION CHAMBER REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Cab arctic coolant heater removed (para 20-3).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

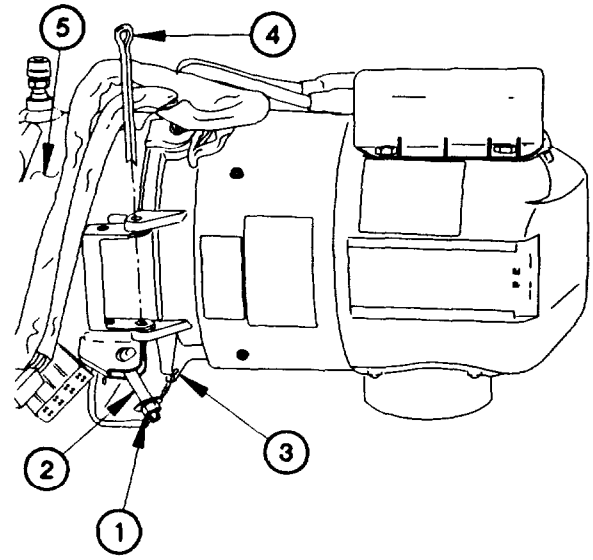
Materials/Parts
Pin, Cotter (Item 209, Appendix G)

a. Removal.

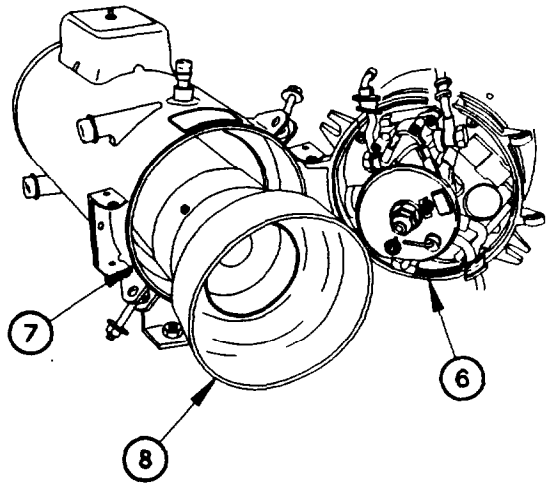
(1) Loosen two nuts (1) on bolts (2).

(2) Remove two bolts (2) from tabs (3).

(3) Remove cotter pin (4) from coolant heater (5). Discard cotter pin.



XV11R01-



XV11R02-

CAUTION

Use care when moving burner head to prevent damage to fuel lines. Failure to comply may result in damage to equipment.

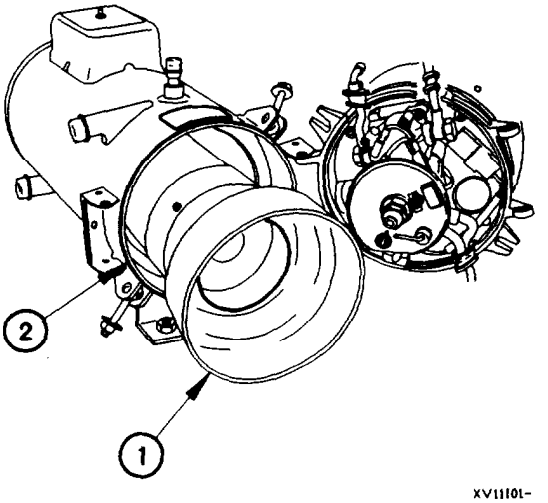
(4) Remove burner head (6) from heat exchanger (7).

(5) Remove combustion chamber (8) from heat exchanger (7).

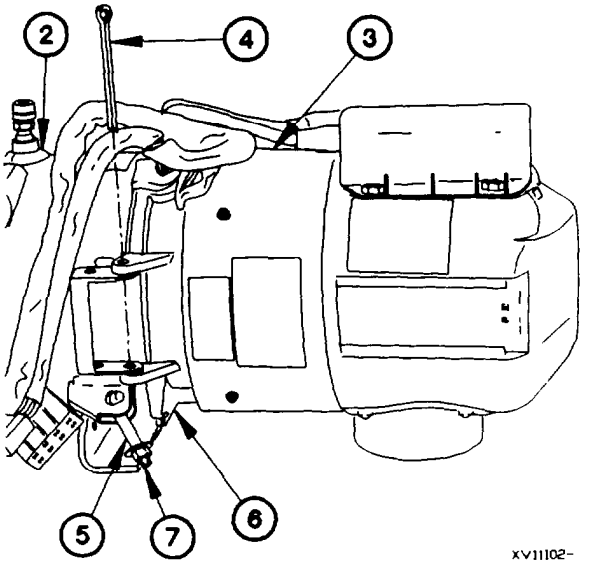
20-11. CAB ARCTIC HEATER COMBUSTION CHAMBER REPLACEMENT (CONT)

b. Installation.

(1) Install combustion chamber (1) in heat exchanger (2).



XV11101-



XV11102-

CAUTION

Use care when moving burner head to prevent damage to fuel lines. Failure to comply may result in damage to equipment.

(2) Install burner head (3) on heater coolant (2) with cotter pin (4).

(3) Position two bolts (5) on tabs (6).

(4) Tighten two nuts (7) on bolts (5).

c. Follow-On Maintenance.

Install cab arctic coolant heater (para 20-3).

End of Task.

20-12. CAB ARCTIC HEATER WATER PUMP REPLACEMENT

This task covers:

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

INITIAL SETUP

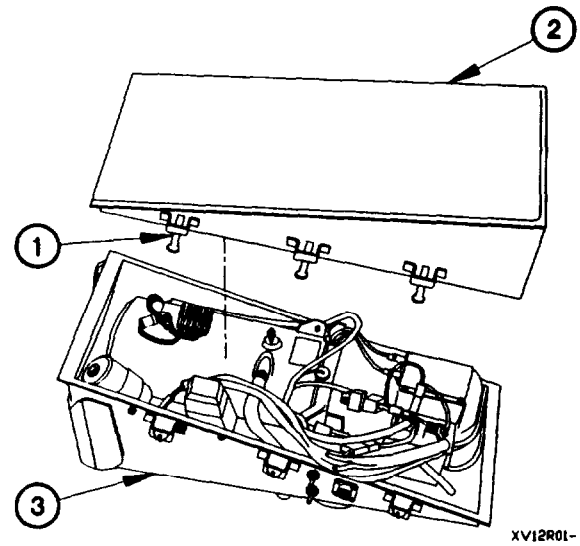
Equipment Conditions
Cab arctic kit heater assembly removed (para 20-2).

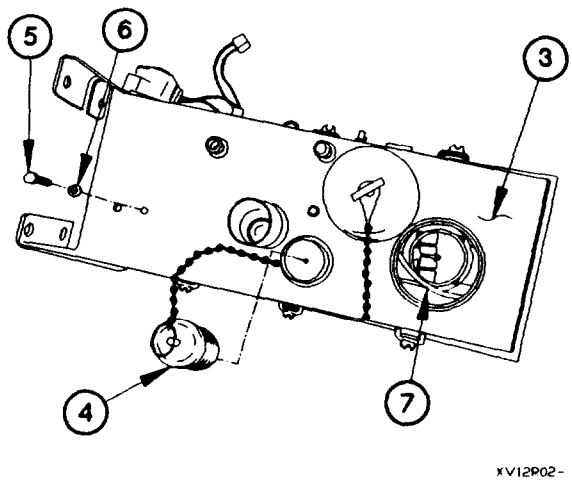
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

Materials/Parts
Nut, Self-Locking (2) (Item 134, Appendix G)

a. Removal.

(1) Release six clamps (1) and remove heater enclosure cover (2) from heater enclosure (3).





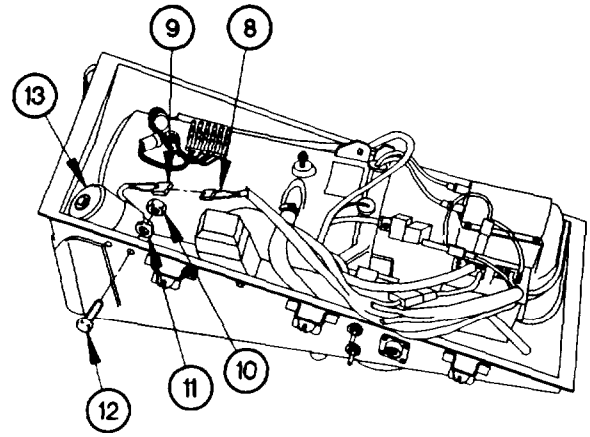
(2) Remove cap plug (4) from heater enclosure (3).

(3) Remove three screws (5) and washers (6) from coolant heater (7).

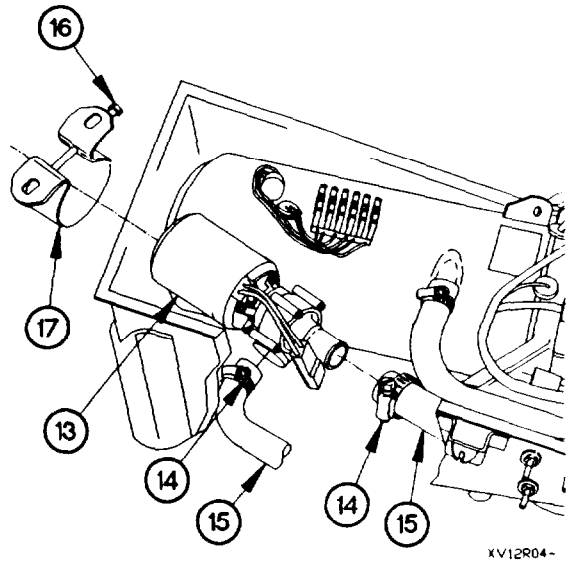
20-12. CAB ARCTIC HEATER WATER PUMP REPLACEMENT (CONT)

(4) Disconnect harness connector (8) from water pump connector (9).

(5) Remove two self-locking nuts (10), washers (11), and screws (12) from water pump (13). Discard self-locking nuts.



XV12R03-



XV12R04-

(6) Loosen two hose clamps (14) on hoses (15).

(7) Remove water pump (13) from two hoses (15).

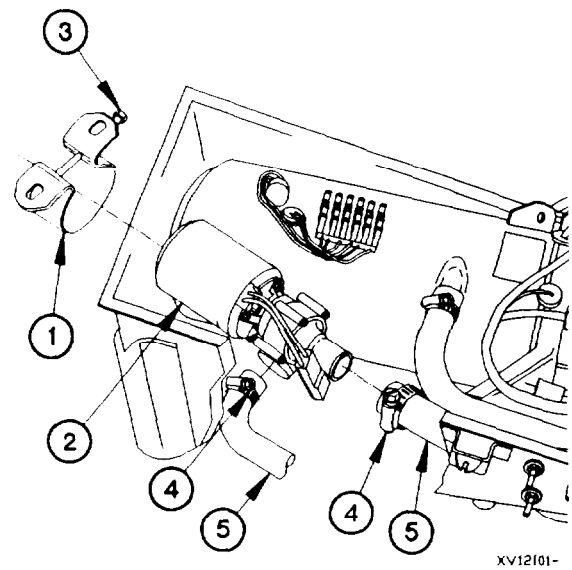
(8) Loosen screw (16) on pump clamp (17) and remove pump clamp from water pump (13).

b. Installation.

(1) Install pump clamp (1) on water pump (2) with screw (3).

(2) Position two hose clamps (4) and hoses (5) on water pump (2).

(3) Tighten two hose clamps (4) to 62-71 lb-in (7-8 N•m).

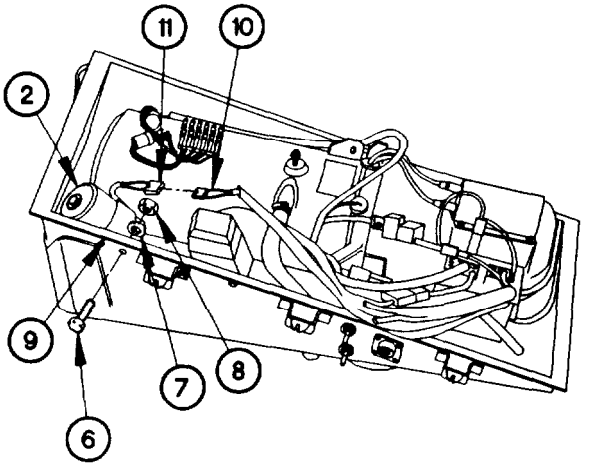


XV12I01-

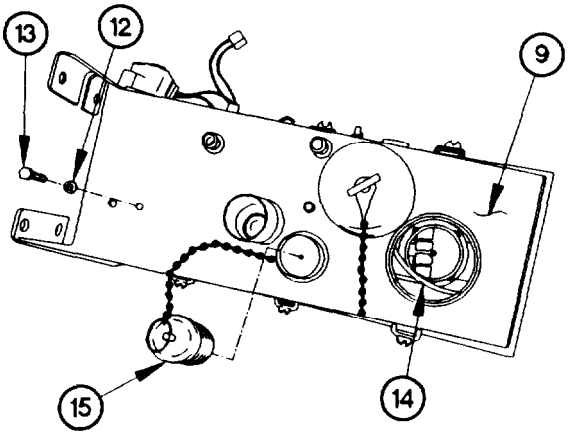
(4) Position two screws (6), washers (7), self-locking nuts (8), and water pump (2) on heater enclosure (9).

(5) Tighten two self-locking nuts (7) to 106-124 lb-in (12-14 N•m).

(6) Connect harness connector (10) to water pump connector (11).



XV12102-



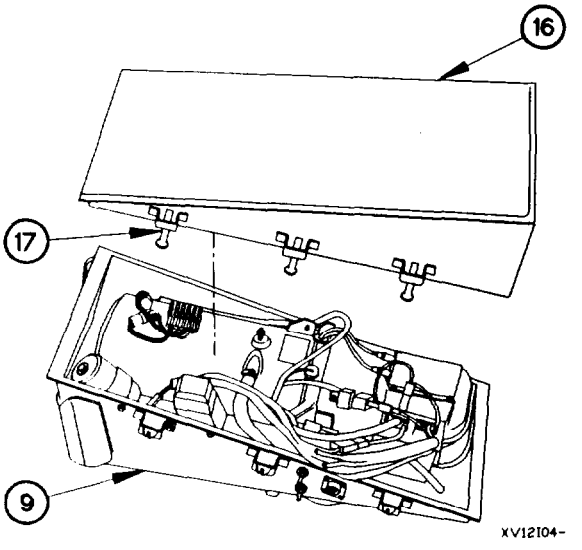
XV12103-

(7) Position three washers (12) and screws (13) in coolant heater (14).

(8) Tighten screws (13) to 26-28 lb-in. (3 N•m).

(9) Install cap plug (15) in heater enclosure (9).

(10) Install heater enclosure cover (16) on heater enclosure (9) with six clamps (17).



XV12104-

c. Follow-On Maintenance.

Install cab arctic kit heater assembly (para 20-2).

End of Task.

20-13. ARCTIC KIT WITH PTO CABLE ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Spare tire lowered (TM 9-2320-365-10).
Kick panel removed (para 16-3).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (5) (Item 148, Appendix G)

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

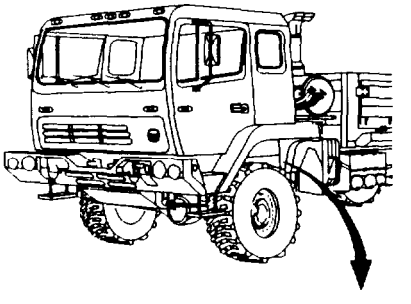
a. Removal.

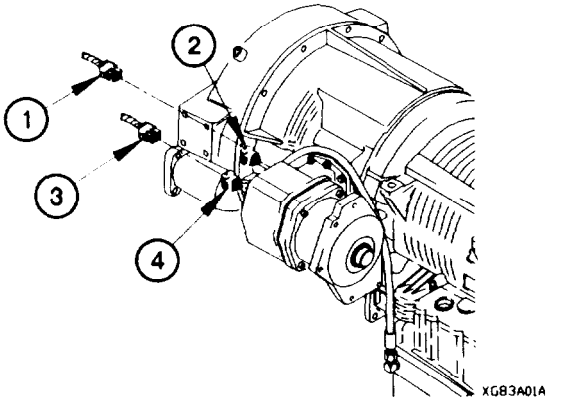
NOTE

- Tag connectors and connection points prior to disconnecting.
- Remove plastic cable ties, as required.
- Perform steps (1) and (2) on vehicles equipped with PTO.

(1) Disconnect connector P217 (1) from PTO solenoid (2).

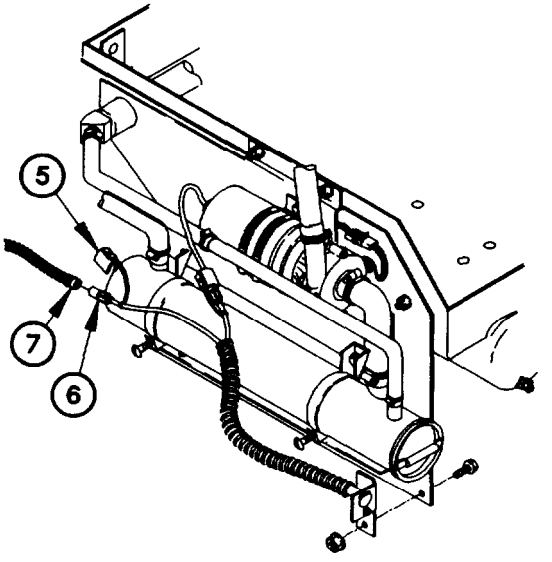
(2) Disconnect connector P216 (3) from PTO pressure switch (4).



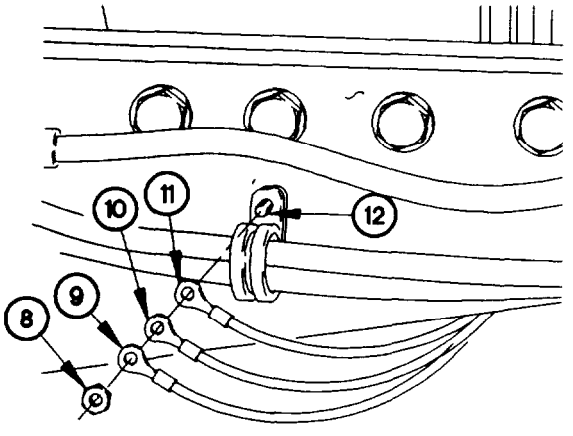


(3) Remove connector clamp (5) from connector P214 (6).

(4) Disconnect connector P214 (6) from connector J214 (7).



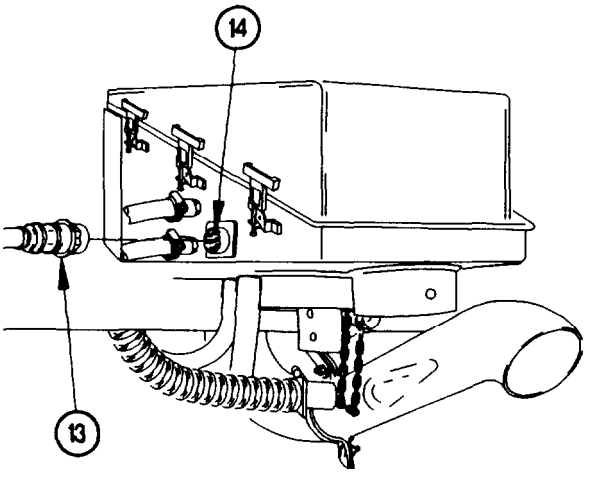
XG83A02A



XG83A03A

(5) Remove self-locking nut (8), terminal lugs TL85 (9), TL102 (10), and TL103 (11) from screw (12). Discard self-locking nut.

(6) Disconnect connector P410 (13) from connector J410 (14).

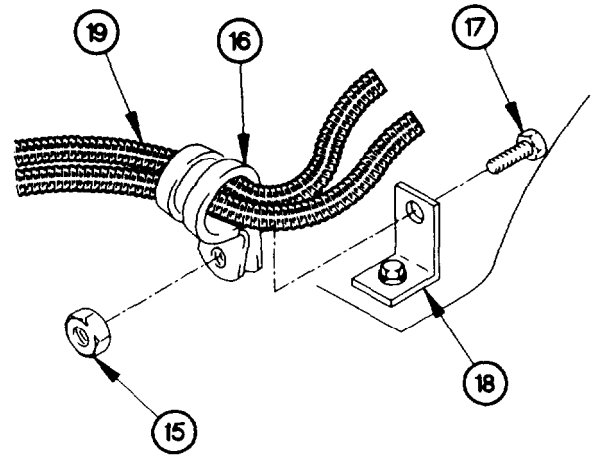


XG83A04A

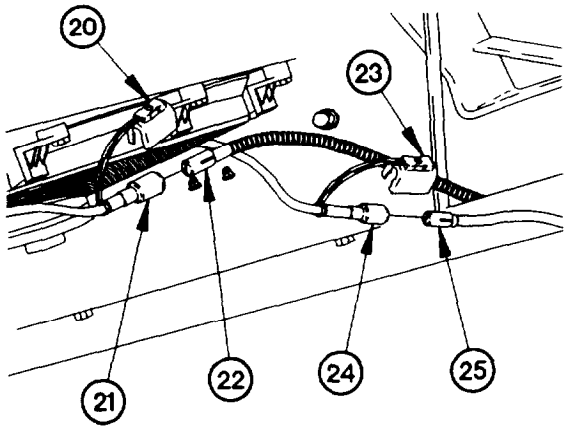
20-13. ARCTIC KIT WITH PTO CABLE ASSEMBLY REPLACEMENT (CONT)

(7) Remove self-locking nut (15), clamp (16), and screw (17) from bracket (18). Discard self-locking nut.

(8) Remove cab arctic kit with PTO cable assembly (19) from clamp (16).



XG83A05A



XG83A06A

(9) Remove self-locking nut (20), Clamp (21), and terminal lugs TL83 (22) and TL101 (23) from screw (24). Discard self-locking nut.

NOTE

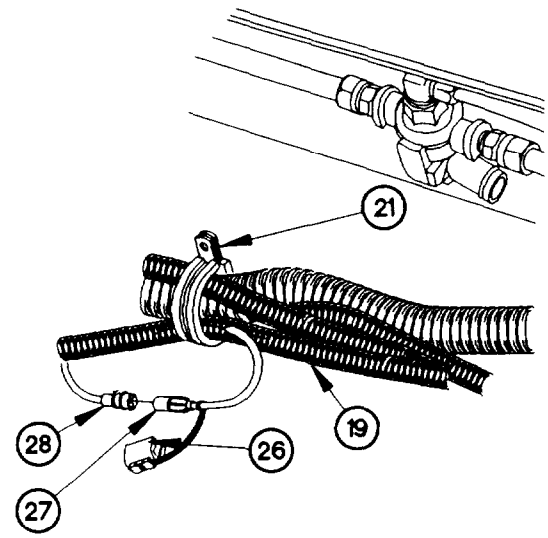
Perform steps (10) through (12) on vehicles equipped with 11K self-recovery winch.

(10) Remove terminal lug TL320 (25) from screw (24).

(11) Remove connector clamp (26) from connector P215 (27).

(12) Disconnect connector P215 (27) from connector J215 (28).

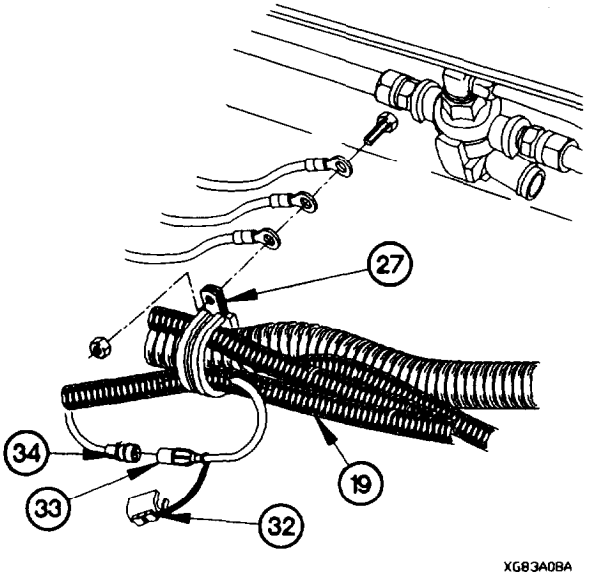
(13) Remove arctic kit with PTO cable assembly (19) from clamp (21).

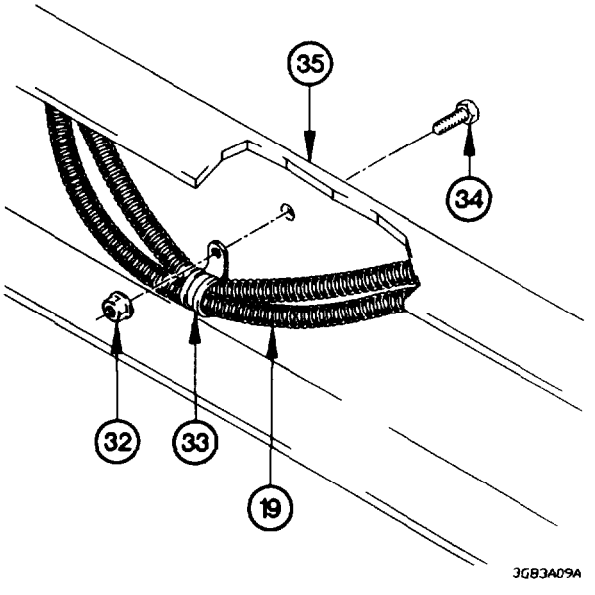


3G83A07A

(14) Remove connector clamp (29) from connector P202 (30).

(15) Disconnect connector P202 (30) from connector J202 (31).



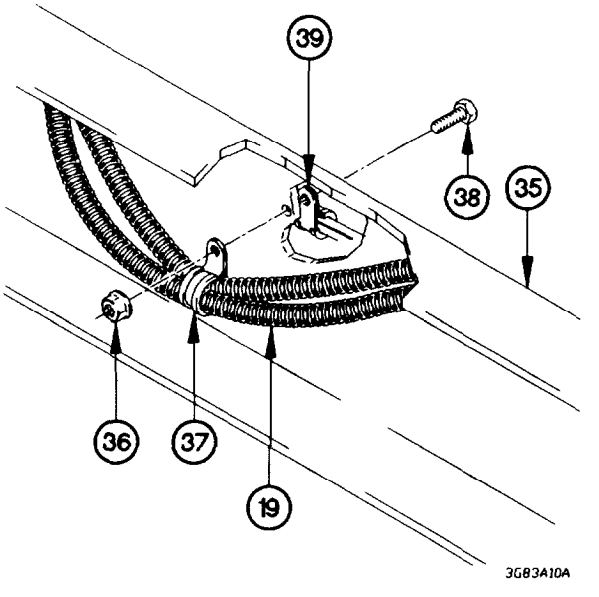


(16) Remove self-locking nut (32), clamp (33), and screw (34) from frame rail (35). Discard self-locking nut.

(17) Remove arctic kit with PTO cable assembly (19) from clamp (33).

(18) Remove self-locking nut (36), clamp (37), screw (38), and clamp (39) from frame rail (35). Discard self-locking nut.

(19) Remove arctic kit with PTO cable assembly (19) from clamp (37).



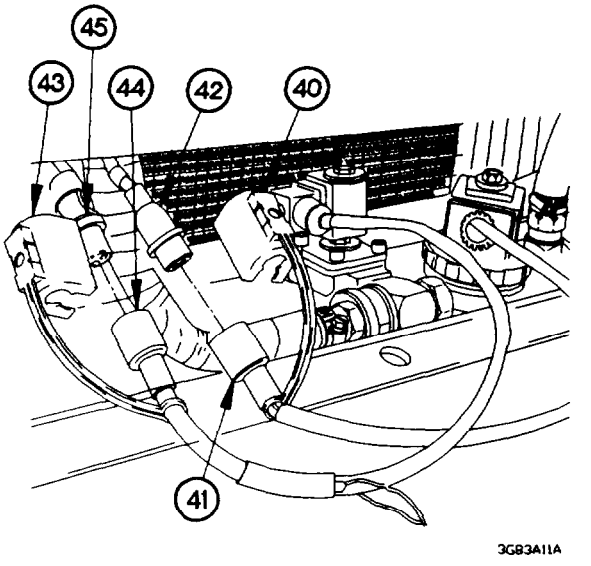
20-13. ARCTIC KIT WITH PTO CABLE ASSEMBLY REPLACEMENT (CONT)

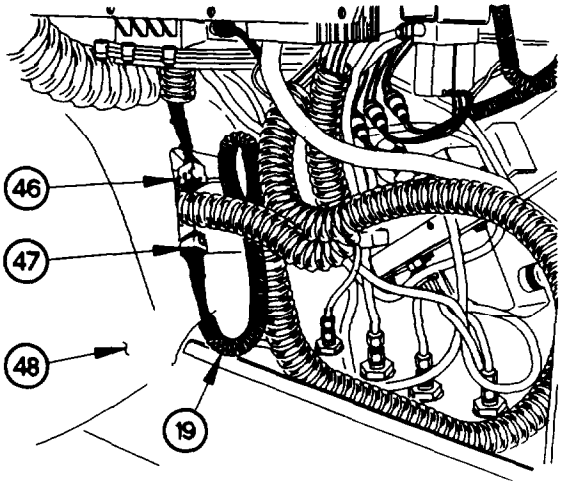
(20) Remove connector clamp (40) from connector P211 (41).

(21) Disconnect connector P211 (41) from connector J211 (42).

(22) Remove connector clamp (43) from connector P212 (44).

(23) Disconnect connector P212 (44) from connector J212 (45).





(24) Disconnect connector P210 (46) from connector J210 (47).

(25) Remove arctic kit with PTO cable assembly (19) from cab (48).

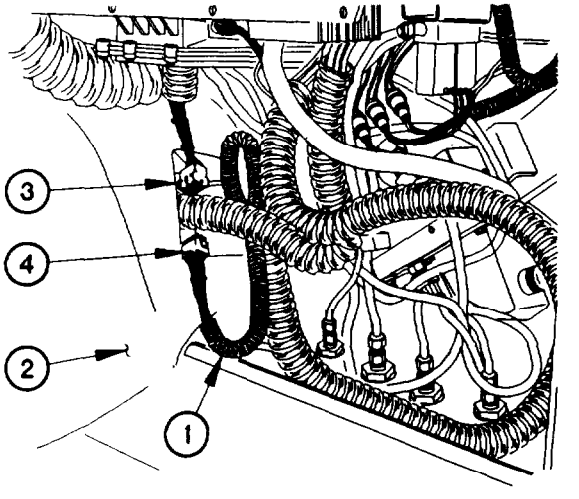
b. Installation.

NOTE

Install plastic cable ties as required.

(1) Position arctic kit with PTO cable assembly (1) in cab (2).

(2) Connect connector P210 (3) to connector J210 (4).

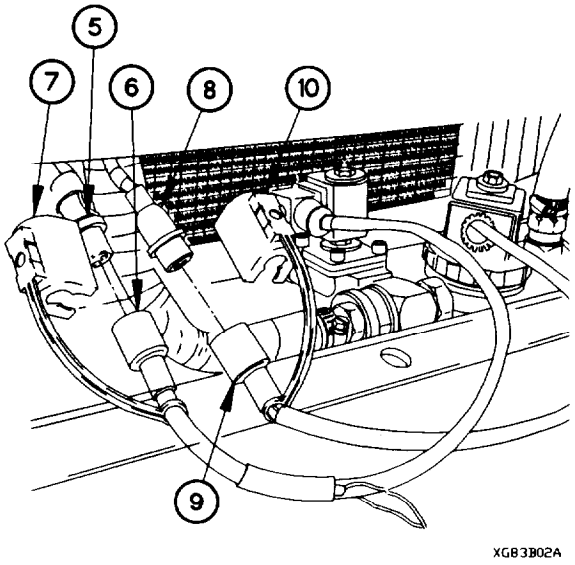


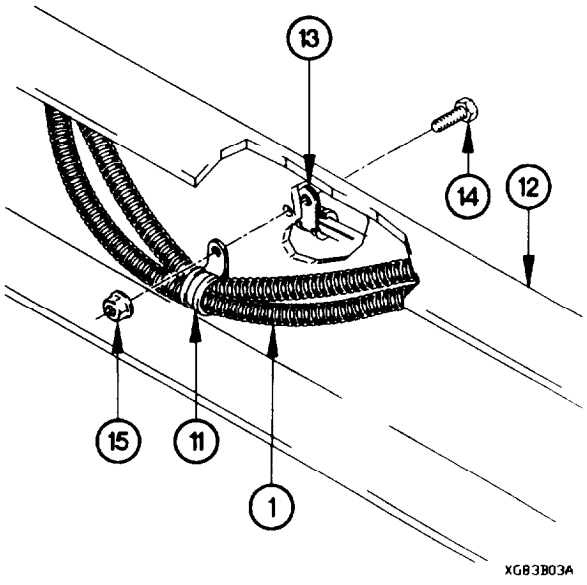
(3) Connect connector J212 (5) to connector P212 (6).

(4) Install connector clamp (7) on connector P212 (6)

(5) Connect connector J211 (8) to connector P211 (9).

(6) Install connector clamp (10) on connector P211 (9).





(7) Position arctic kit with PTO cable assembly (1) in clamp (11).

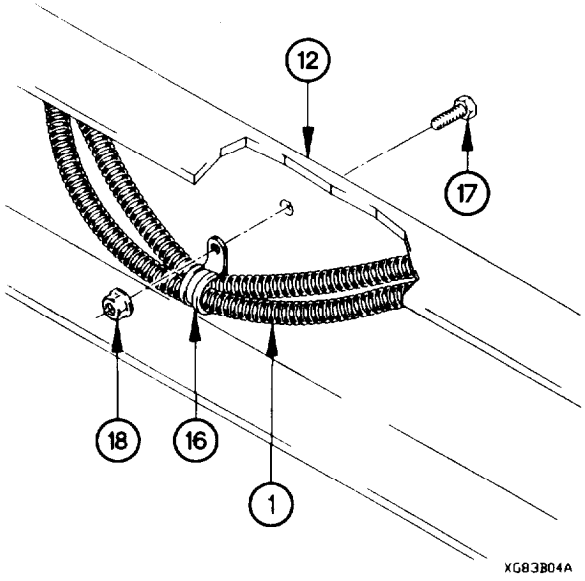
(8) Position clamp (11) on frame rail (12) with clamp (13), screw (14), and self-locking nut (15).

(9) Tighten self-locking nut (15) to 84-108 lb-in. (10-12 N•m).

(10) Position arctic kit with PTO cable assembly (1) in clamp (16).

(11) Position clamp (16) on frame rail (12) with screw (17) and self-locking nut (18).

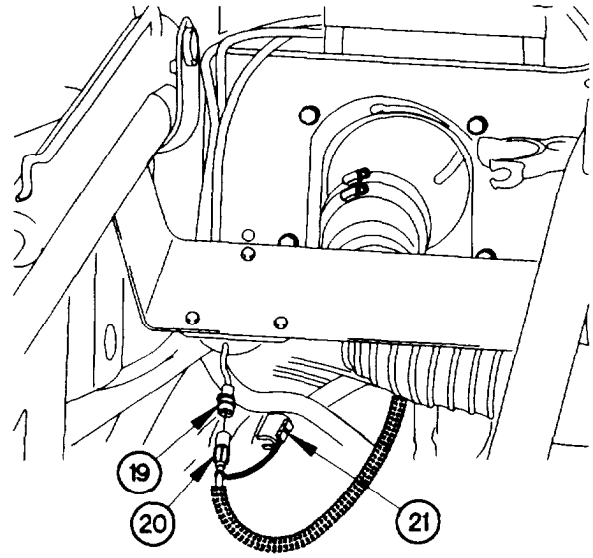
(12) Tighten self-locking nut (18) to 84-108 lb-in. (10-12 N•m).



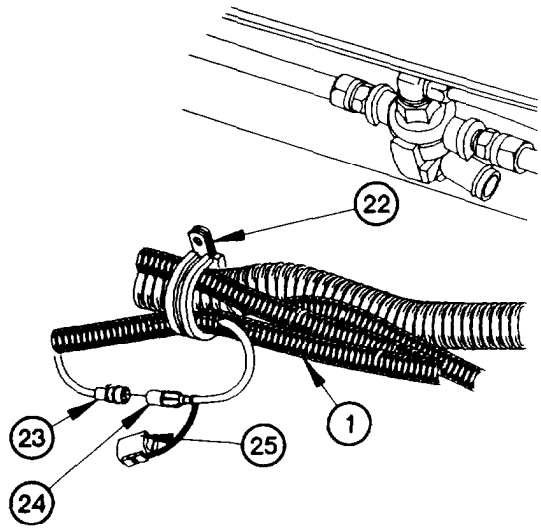
20-13. ARCTIC KIT WITH PTO CABLE ASSEMBLY REPLACEMENT (CONT)

(13) Connect connector J202 (19) to connector P202 (20).

(14) Install connector clamp (21) on connector P202 (20).



XG83B05A



XG83B06A

(15) Position arctic kit with PTO cable assembly (1) in clamp (22).

NOTE

Perform steps (16) through (18) on vehicles equipped with 11K self-recovery winch.

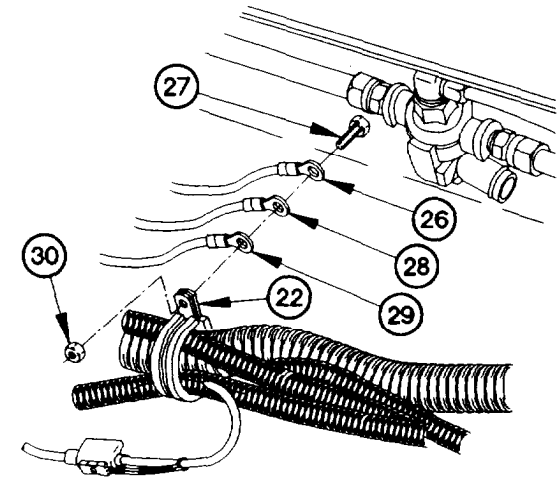
(16) Connect connector J215 (23) to connector P215 (24).

(17) Install connector clamp (25) on connector P215 (24).

(18) Position terminal lug TL320 (26) on screw (27).

(19) Position terminal lugs TL101 (28), TL83 (29), and clamp (22) on screw (27) with self-locking nut (30).

(20) Tighten self-locking nut (30) to 84-108 lb-in. (10-12 N•m).

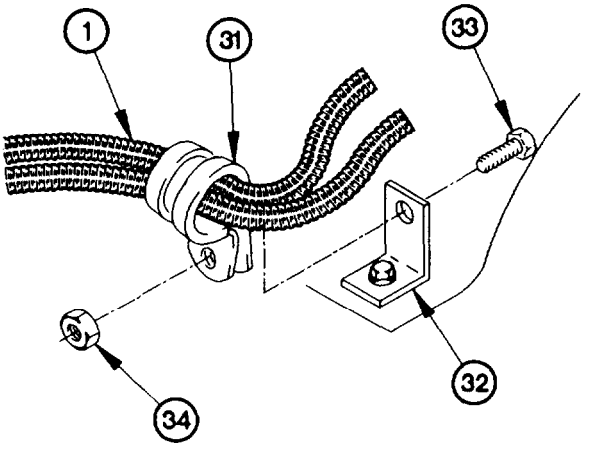


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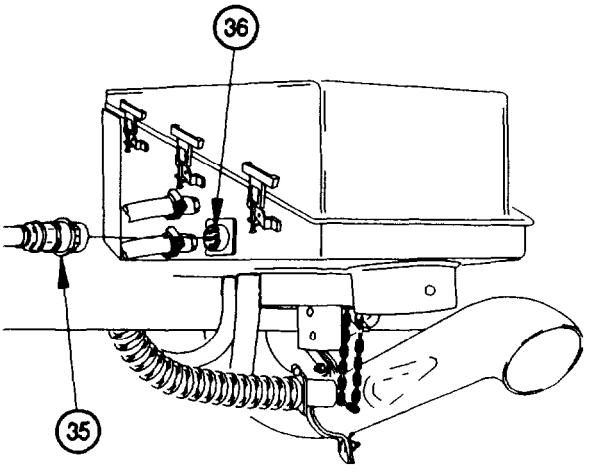
(21) Position arctic kit with PTO cable assembly (1) in clamp (31).

(22) Position clamp (31) on bracket (32) with screw (33) and self-locking nut (34).

(23) Tighten self-locking nut (34) to 84-108 lb-in. (10-12 N•m).



3G83B08A

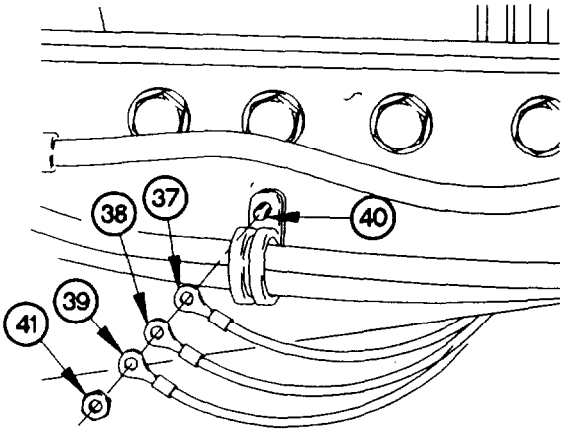


3G83B09A

(24) Connect connector P410 (35) to connector J410 (38).

(25) Position terminal lugs TL103 (37), TL102 (38), and TL85 (39) on screw (40) with self-locking nut (41).

(26) Tighten self-locking nut (41) to 84-108 lb-in. (10-12 N•m).

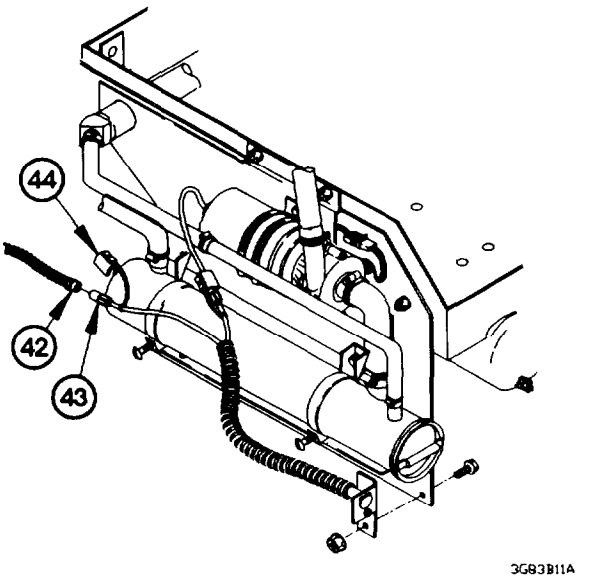


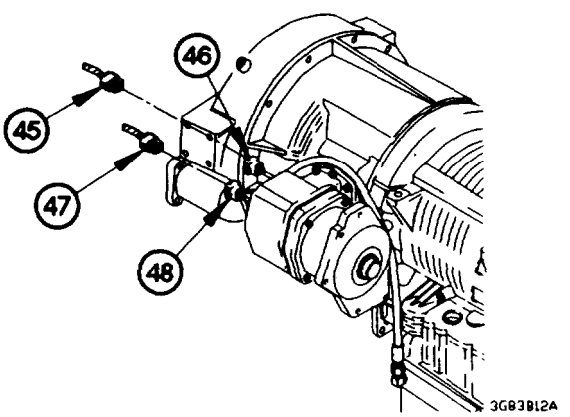
3G83B10A

20-13. ARCTIC KIT WITH PTO CABLE ASSEMBLY REPLACEMENT (CONT)

(27) Connect connector J214 (42) to connector P214 (43).

(28) Install connector clamp (44) on connector P214 (43).





NOTE

Perform steps (29) and (30) on vehicles equipped with PTO.

(29) Connect connector P216 (45) to PTO pressure switch (46).

(30) Connect connector P215 (47) to PTO solenoid (48).

c. Follow-On Maintenance.

(1) Install kick panel (para 16-3).

(2) Connect batteries (para 7-48).

(3) Operate swingfire fuel preheater and check for proper operation (TM 9-2320-365-10).

(4) Operate swingfire pump and check for proper operation (TM 9-2320-365-10).

(5) Operate cab arctic heater and check for proper operation (TM 9-2320-365-10).

(6) Operate PTO and check for proper operation, if equipped (TM 9-2320-365-10).

(7) Operate 11K SRW and check for proper operation, if equipped (TM 9-2320-365-10).

(8) Raise spare tire (TM 9-2320-365-10).

End of Task.

20-14. CARGO ARCTIC HEATER WIRING HARNESS REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

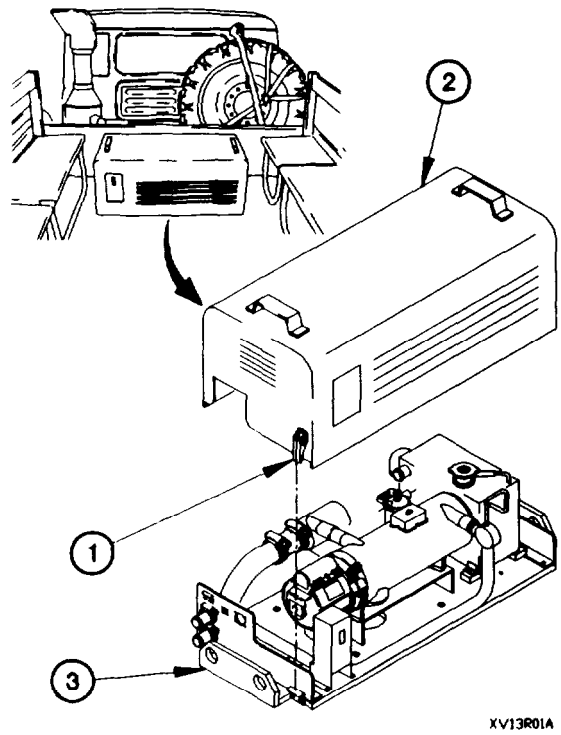
Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (4) (Item 105, Appendix G)
Pin, Cotter (Item 208, Appendix G)

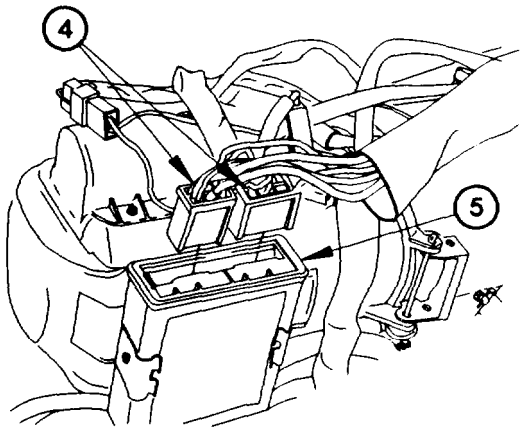
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when replacing cover. Failure to do so may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).



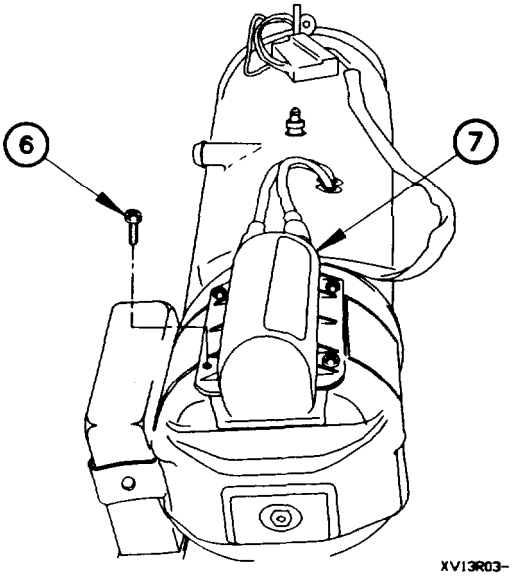


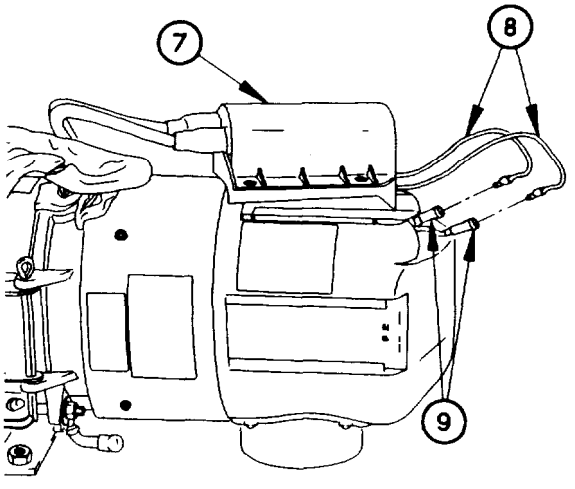
NOTE

Tag connectors and connection points prior to disconnecting.

(2) Disconnect two electrical connectors (4) from electronic control unit (5).

(3) Remove four screws (6) from ignition coil (7).



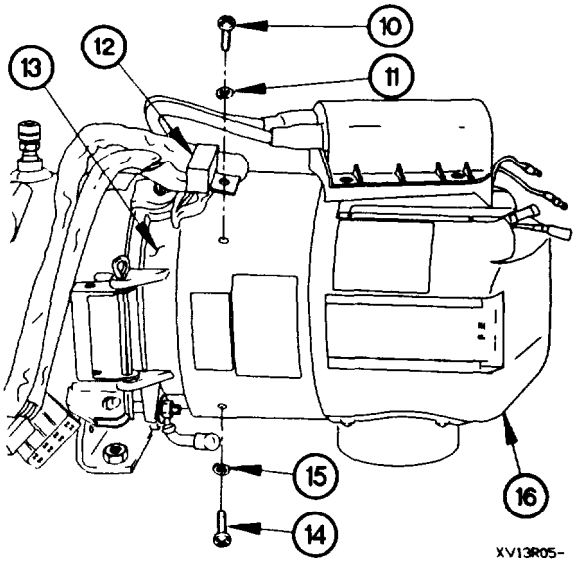


(4) Move ignition coil (7) enough to access power connectors (8).

(5) Disconnect two harness connectors (9) from power connectors (8).

(6) Remove screw (10), lockwasher (11) and igniter gap gauge (12) from motor support (13). Discard lockwasher.

(7) Remove three screws (14), lockwashers (15) and motor cover (16) from motor support (13). Discard lockwashers.



20-14. CARGO ARCTIC HEATER WIRING HARNESS REPLACEMENT (CONT)

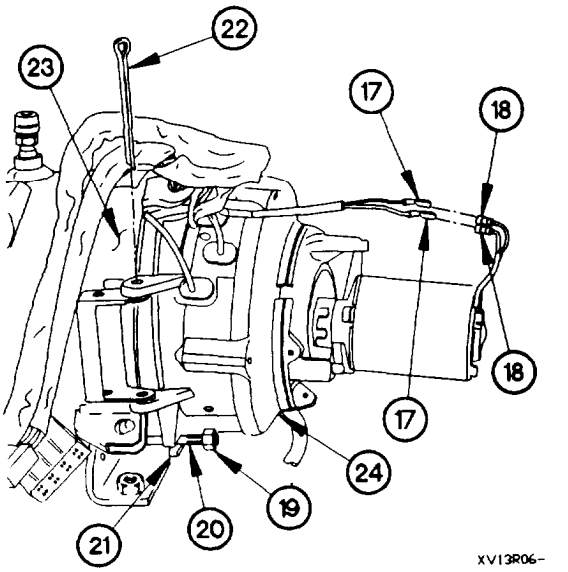
(8) Disconnect two harness connectors (17) from motor connectors (18).

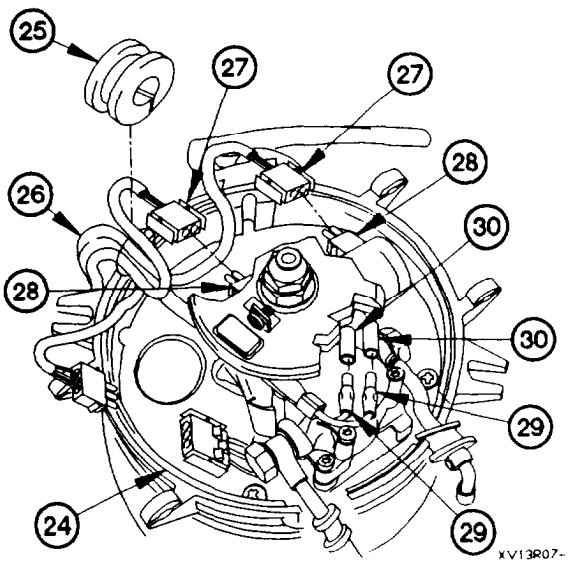
(9) Loosen two nuts (19) on bolts (20).

(10) Release two bolts (20) from tabs (21).

(11) Remove cotter pin (22) from heat exchanger (23). Discard cotter pin.

(12) Remove burner head (24) from heat exchanger (23).





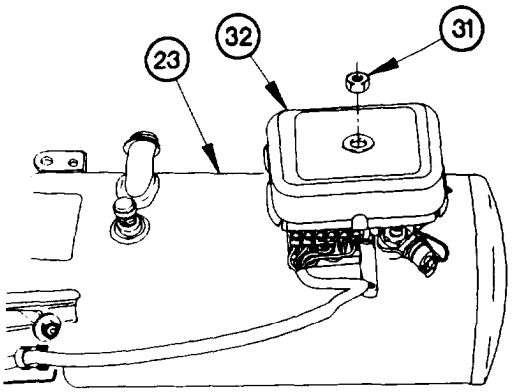
(13) Remove grommet (25) from harness (26).

(14) Disconnect two harness connectors (27) from photocell connectors (28).

(15) Disconnect two harness connectors (29) from valve (30).

(16) Remove harness (26) from burner head (24).

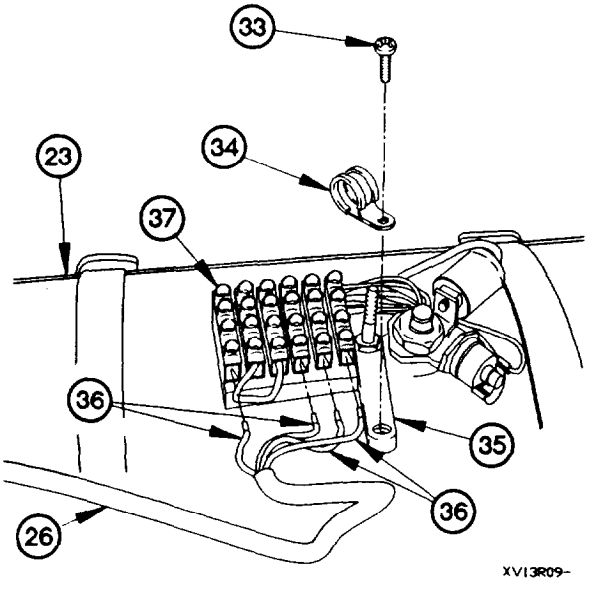
(17) Remove nut (31) and cover (32) from heat exchanger (23).



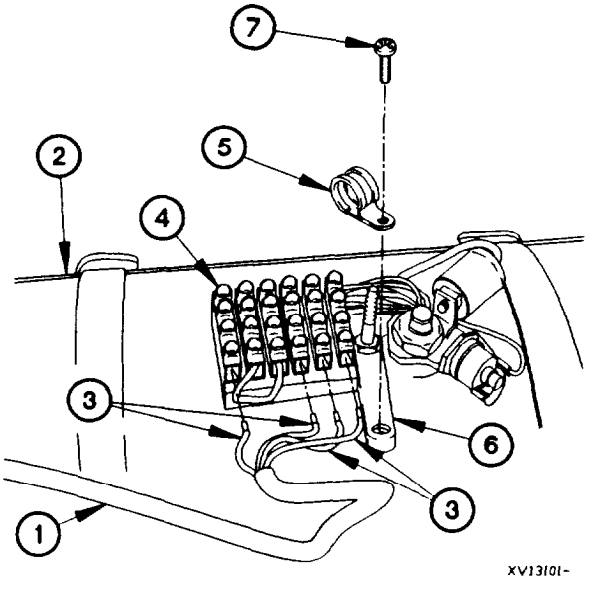
(18) Remove screw (33) and clamp (34) from mounting bracket (35).

(19) Disconnect four harness leads (36) from terminals (37).

(20) Remove harness (26) from heat exchanger (23).



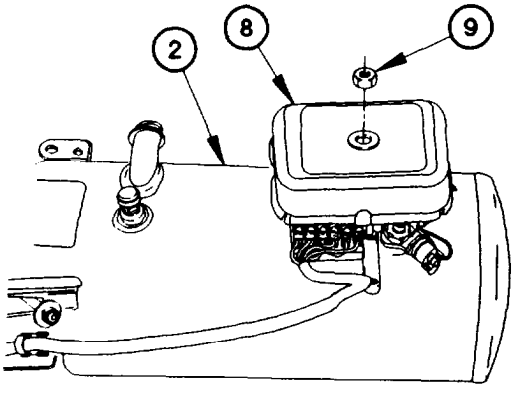
b. Installation.



(1) Position harness (1) on heat exchanger (2).

(2) Connect four harness leads (3) to terminals (4).

(3) Install clamp (5) and harness (1) on bracket (6) with screw (7).



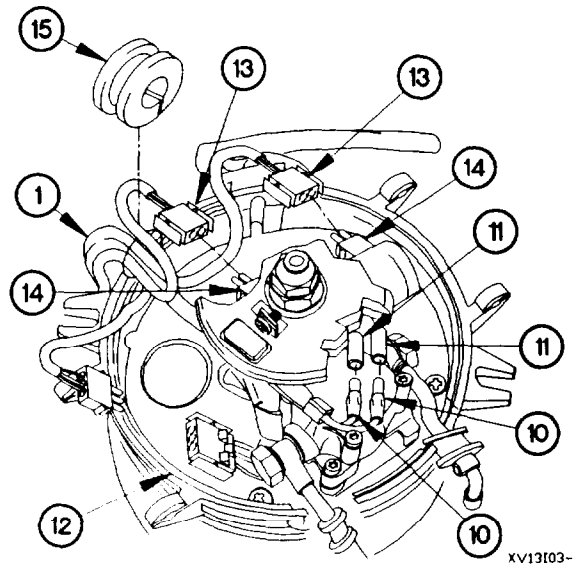
(4) Install cover (8) and nut (9) on heat exchanger (2).

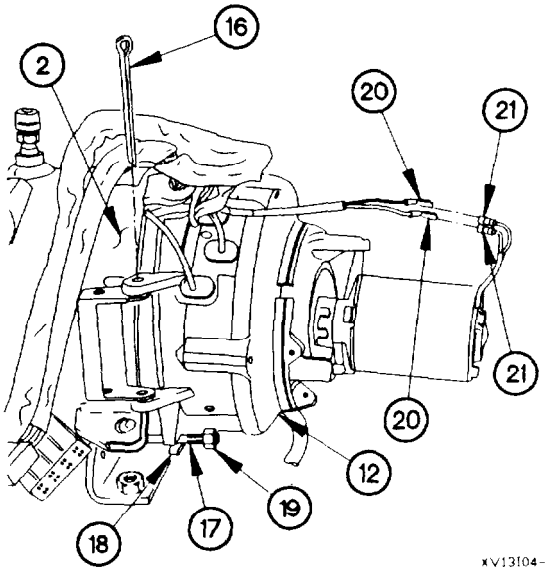
20-14. CARGO ARCTIC HEATER WIRING HARNESS REPLACEMENT (CONT)

(5) Connect two wiring harness connectors (10) to valve (11).

(6) Connect two wiring harness connectors (13) to photocell connectors (14).

(7) Position wiring harness (1) in grommet (15) and install in burner head (12).





(8) Position burner head (12) on heat exchanger (2) with cotter pin (16).

(9) Position two bolts (17) on tabs (18).

(10) Tighten two nuts (19) on bolts (17).

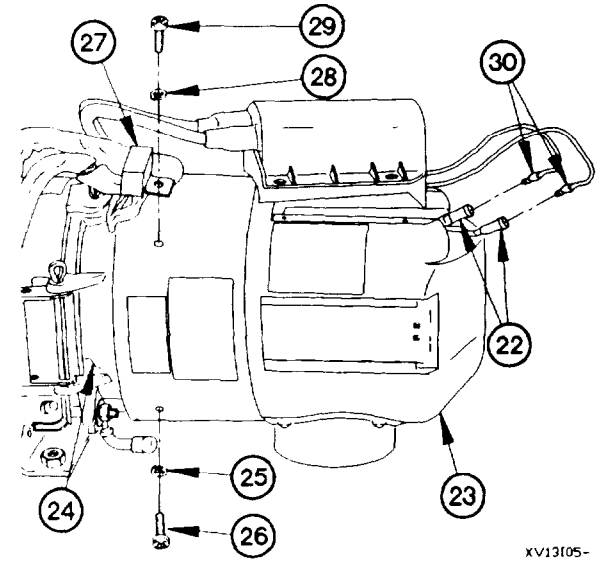
(11) Connect two harness connectors (20) to motor connectors (21).

(12) Position two harness connectors (22) through back of motor cover (23).

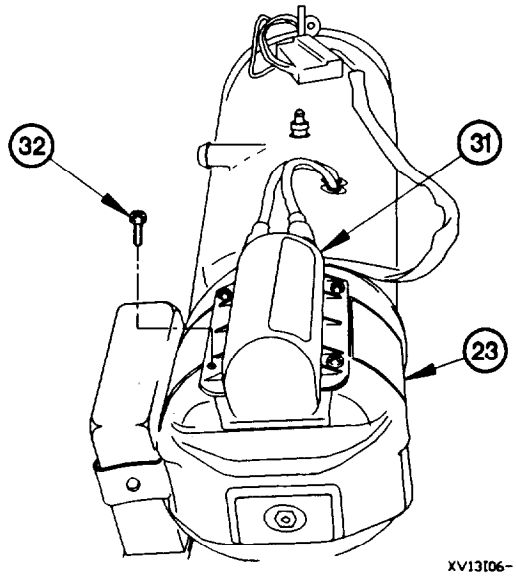
(13) Install motor cover (23) on motor support (24) with three lockwashers (25), and screws (26).

(14) Install igniter gap gauge (27) on motor cover (23) with lockwasher (28) and screw (29).

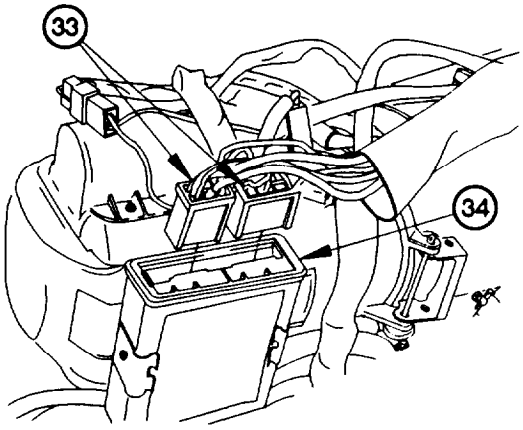
(15) Connect two harness connectors (22) to power leads (30).



(16) Install ignition coil (31) on motor cover (23) with four screws (32).



XV13106-



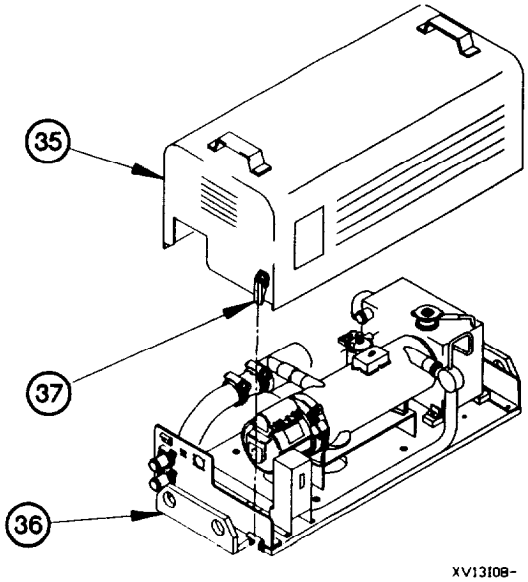
(17) Connect connector (33) on electronic control unit (34).

XV13107-

CAUTION

Enclosure cover fits very snugly. Use caution when replacing cover. Failure to comply may result in damage to equipment.

(18) Install cover (35) on heater enclosure (36) with two latches (37).



XV13108-

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-15. CARGO ARCTIC HEATER FURNACE WATER PUMP REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Coolant drained (para 20-34).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)
Pan, Drain (Item 24, Appendix C)

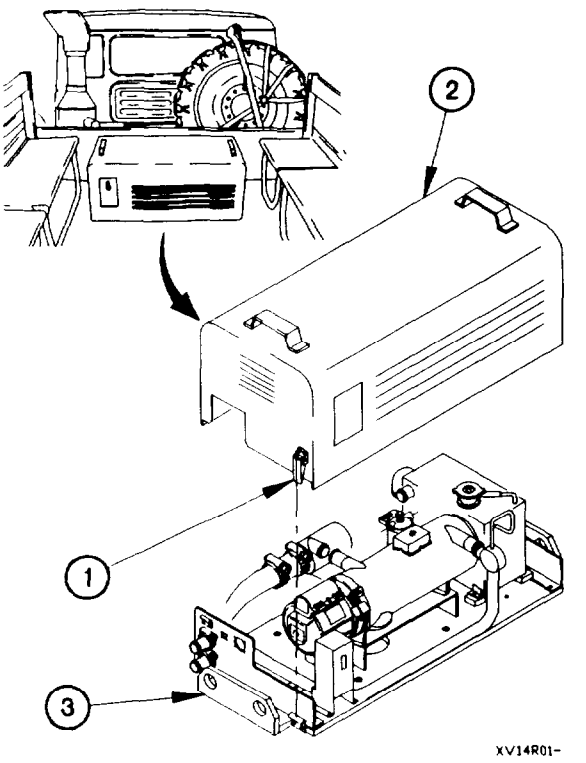
Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Antifreeze, Arctic Type (Item 12, Appendix D)

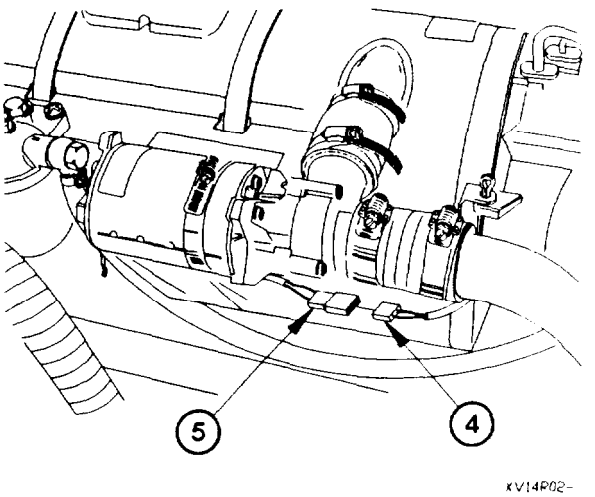
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





NOTE

Tag wires and connection points prior to disconnecting.

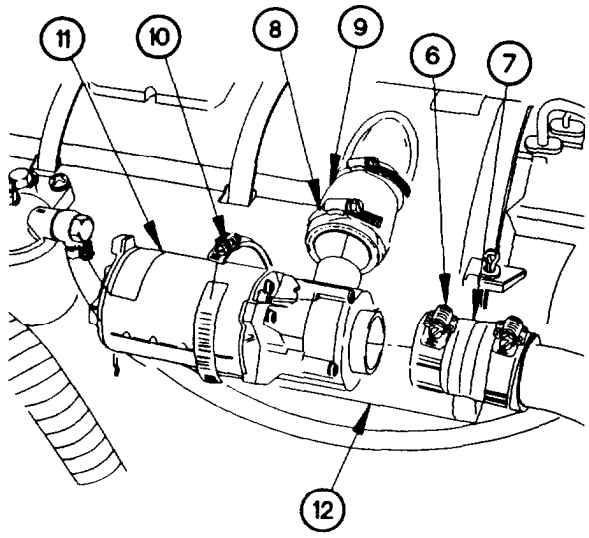
(2) Disconnect harness connector (4) from water pump connector (5).

(3) Loosen clamp (6) on hose (7).

(4) Loosen clamp (8) on hose (9).

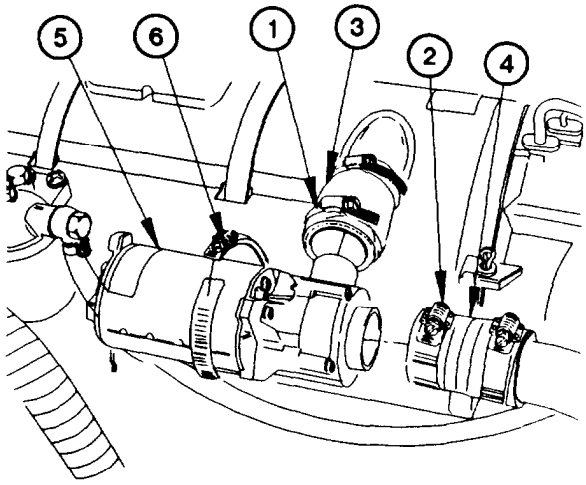
(5) Remove clamp (10) from water pump (11).

(6) Remove water pump (11) from coolant heater (12).



XV14R03-

b. Installation



XV14101-

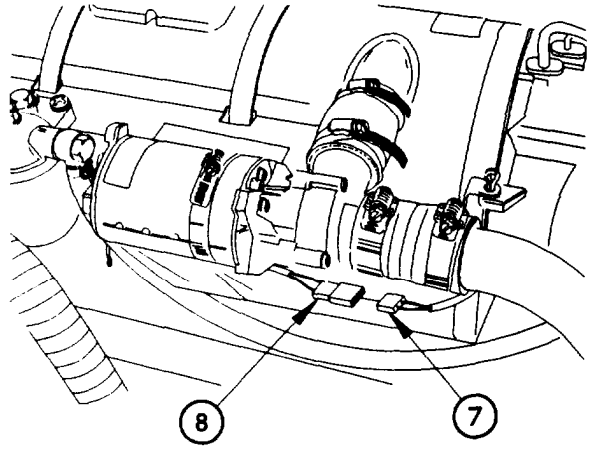
(1) Position two clamps (1 and 2) and hoses (3 and 4) on water pump (5).

(2) Tighten two clamps (1 and 2) to 27-33 lb-in (3-4 N•m).

(3) Position clamp (6) on water pump (1).

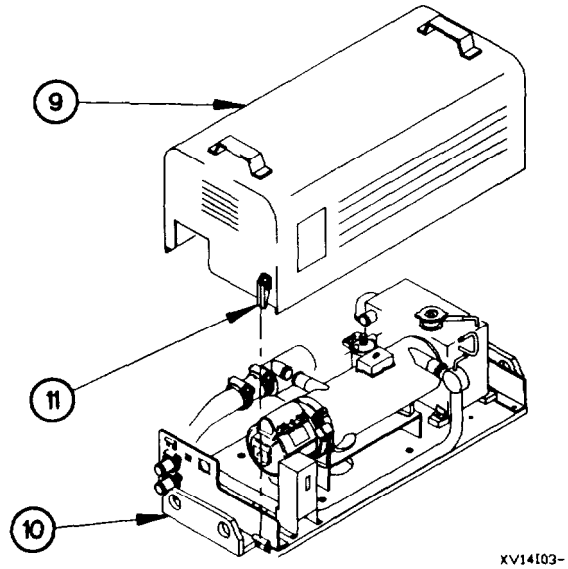
(4) Tighten clamp (6) to 27-33 lb-in (3-4 N•m).

(5) Connect harness connector (7) to water connector (8).



XV14102-

20-15. CARGO ARCTIC HEATER FURNACE WATER PUMP REPLACEMENT (CONT)



CAUTION

Enclosure fits very snugly. Use caution when installing cover. Failure to comply may result in damage to control knob and indicator.

(6) Install cover (9) on heater enclosure (10) with two latches (11).

c. Follow-On Maintenance.

(1) Fill and purge cargo arctic heater system (para 20-34).

(2) Connect batteries (para 7-48).

(3) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-16. CARGO ARCTIC HEATER ELECTRICAL CABLES REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

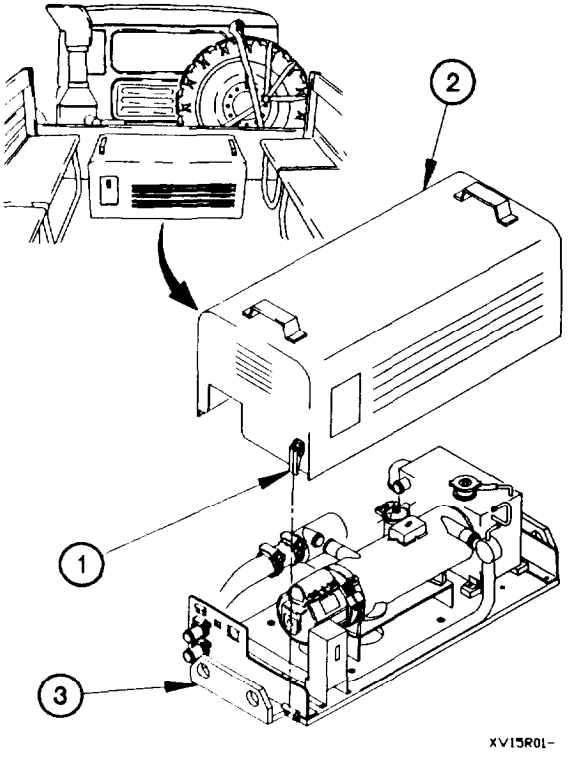
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

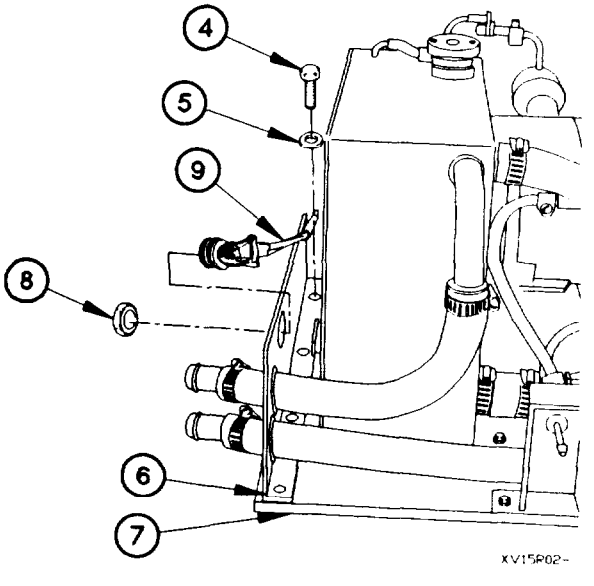
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).



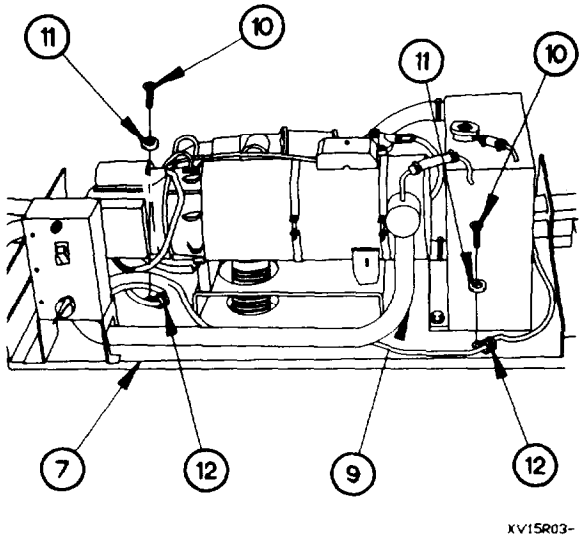


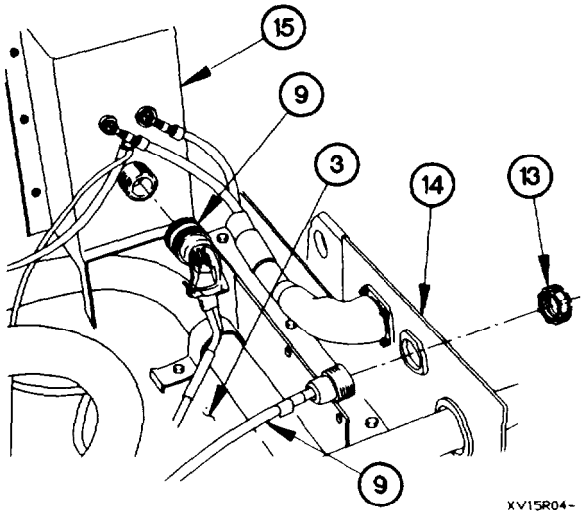
(2) Remove four screws (4), washers (5), and bracket (6) from heater base (7).

(3) Remove nut (8) and cable (9) from bracket (6).

20-16. CARGO ARCTIC HEATER ELECTRICAL CABLES REPLACEMENT/REPAIR (CONT)

(4) Remove two screws (10), washers (11), clamps (12) and cable (9) from heater base (7).





(5) Remove nut (13) and cable (9) from bracket (14).

(6) Disconnect cable (9) from control box (15).

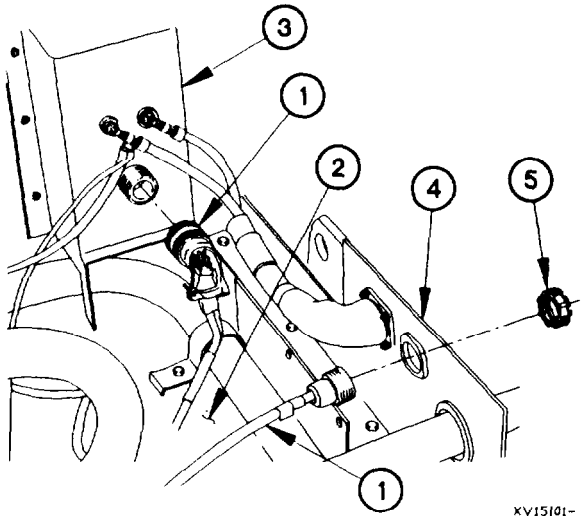
(7) Remove cable (9) from heater enclosure (3).

b. Installation

(1) Position cable (1) in heater enclosure (2).

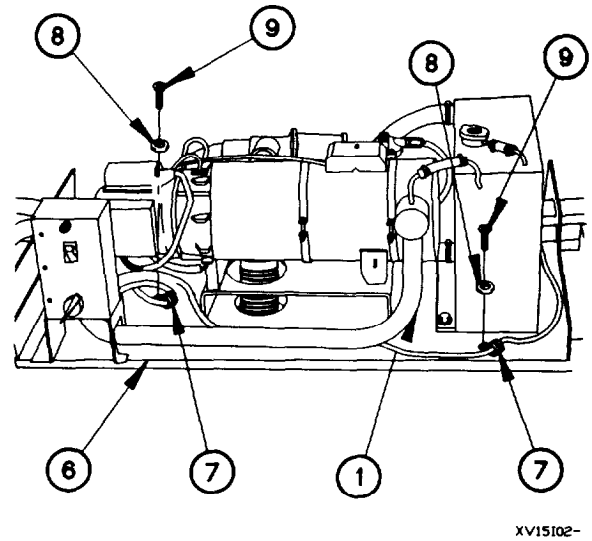
(2) Connect cable (1) to control box (3).

(3) Install cable (1) on bracket (4) with nut (5).

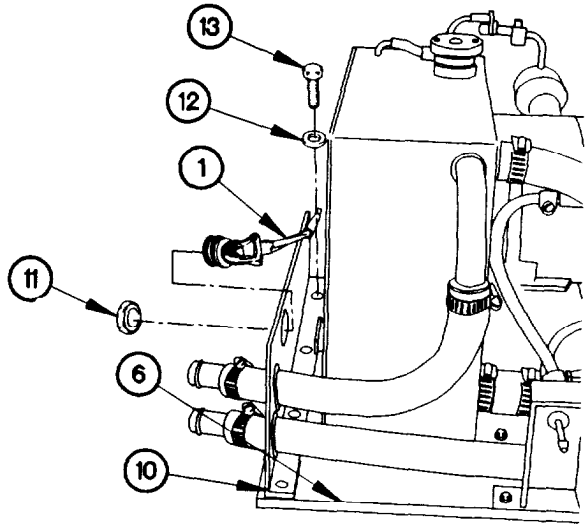


(4) Position cable (1) on heater base (6) with two clamps (7), washers (8) and screws (9).

(5) Tighten two screws (9) to 33-40 lb-ft (44-54 N•m).



XV15102-



XV15103-

(6) Install cable (1) on bracket (10) with nut (11).

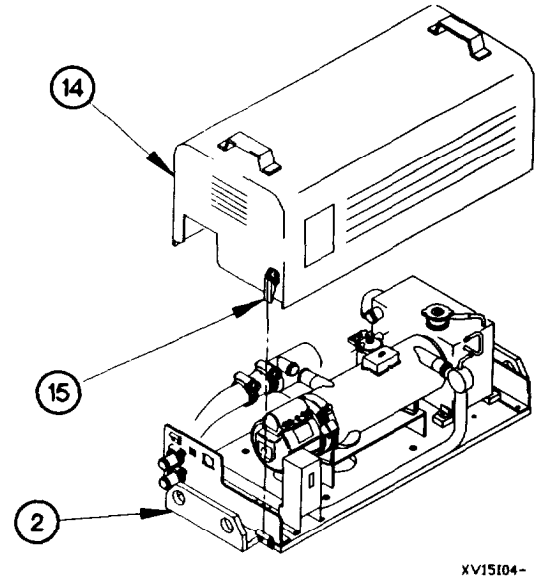
(7) Position bracket (10) on heater base (6) with four washers (12) and screws (13).

(8) Tighten four screws (13) to 101-123 lb-in. (11-14 N•m).

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(9) Install cover (14) on heater enclosure (2) with two latches (15).



XV15104-

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-17. CARGO ARCTIC HEATER POWER SUPPLY CABLE REPLACEMENT

This task covers:

TBD

20-18. CARGO ARCTIC VEHICULAR HEATER REPLACEMENT/REPAIR

This task covers:

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

INITIAL SETUP

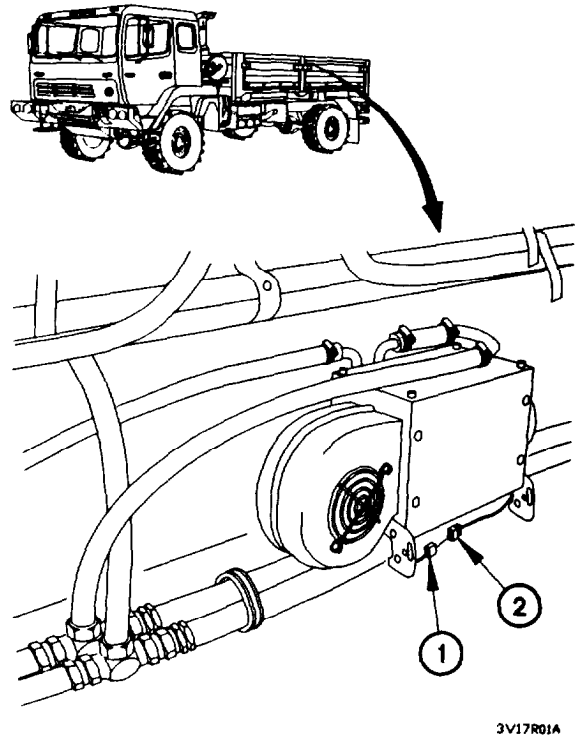
Equipment Conditions
Coolant drained (para 20-34).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-75 lb-in. (Item 86, Appendix B)
Pan, Drain (Item 24, Appendix C)

Materials/Parts
Cap and Plug Set (Item 15, Appendix D)
Nut, Self-Locking (4) (Item 124, Appendix G)
Ties, Cable, Plastic (Item 76, Appendix D)

a. Removal.

(1) Disconnect harness connector (1) from heater connector (2).



20-18. CARGO ARCTIC VEHICULAR HEATER REPLACEMENT/REPAIR (CONT)

NOTE

Remove plastic cable ties as required.

(2) Loosen clamp (3) on hose (4).

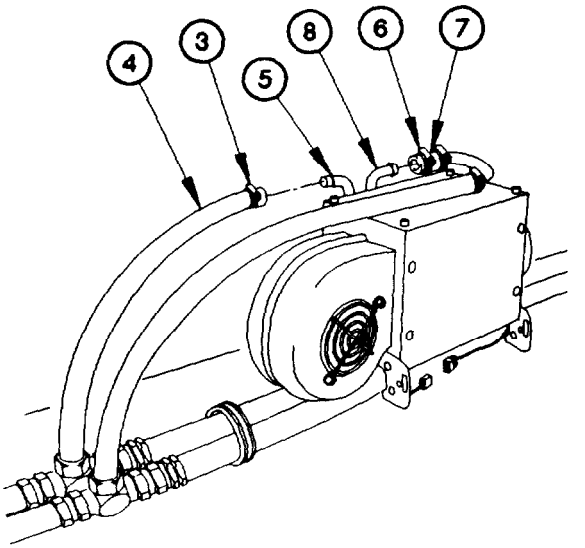
CAUTION

Cap or plug hoses and connection points to prevent contamination of cargo arctic heater system. Failure to comply may result in damage to equipment.

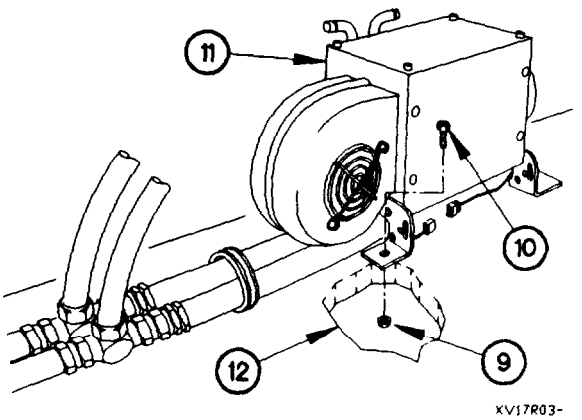
(3) Remove hose (4) from heater tube (5).

(4) Loosen clamp 16) on hose (7).

(5) Remove hose (7) from heater tube (8).



XV17R02-



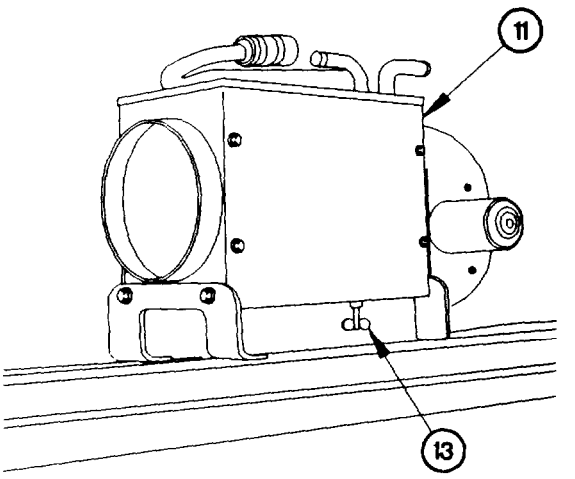
XV17R03-

NOTE

Step (6) requires the aid of an assistant.

(6) Remove four self-locking nuts (9) and screws (10) from heater (11). Discard self-locking nuts.

(7) Remove heater (11) from cargo bed (12).

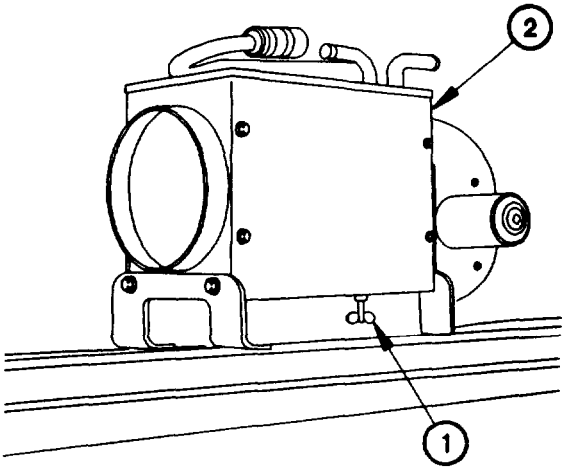


XV17R04-

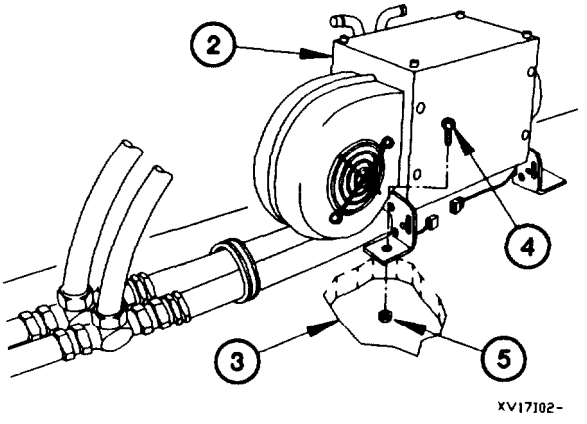
(6) Open draincock (13) on heater (11) and drain coolant into drain pan.

b. Installation.

(1) Close draincock (1) on heater (2).



XV17101-



XV17102-

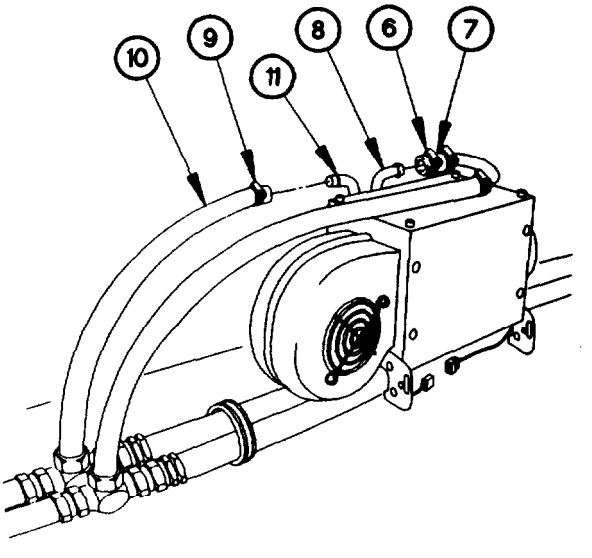
(2) Position heater (2) on cargo bed (3) with four screws (4) and self-locking nuts (5).

(3) Tighten four self-locking nuts (5) to 18-20 lb-ft (24-27 N•m).

(4) Position clamp (6) and hose (7) on heater tube (8).

(5) Position clamp (9) and hose (10) on heater tube (11).

(6) Tighten clamps (6 and 9) to 27-33 lb-in. (3-4 N•m).



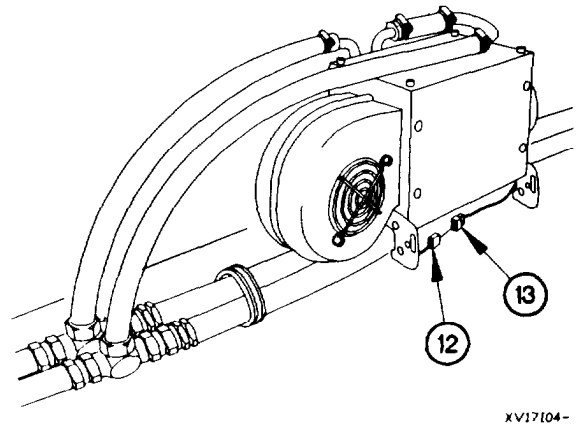
XV17103-

20-18. CARGO ARCTIC VEHICULAR HEATER REPLACEMENT/REPAIR (CONT)

NOTE

Install plastic cable ties as required.

(7) Connect harness connector (12) to heater connector (13).



c. Follow-On Maintenance.

(1) Fill and purge vehicular heater system (para 20-34).

(2) Connect batteries (para 7-48).

(3) Check vehicular heater for proper operation (TM 9-2320-365-10).

End of Task.

20-19. CARGO ARCTIC HEATER CONTROL UNIT REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

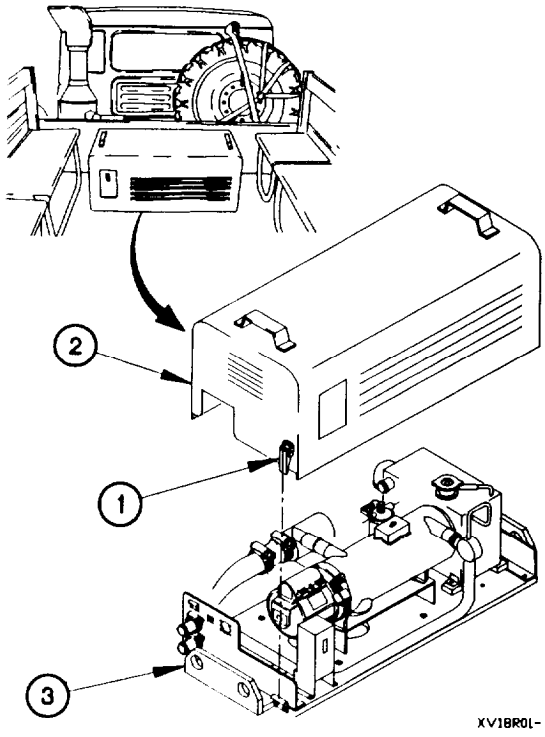
Materials/Parts
Lockwasher (2) (Item 82, Appendix G)
Washer, Nylon (2) (Item 273, Appendix G)

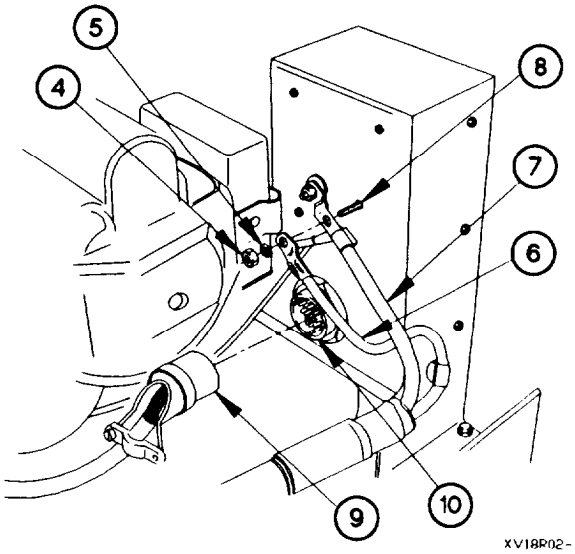
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





NOTE

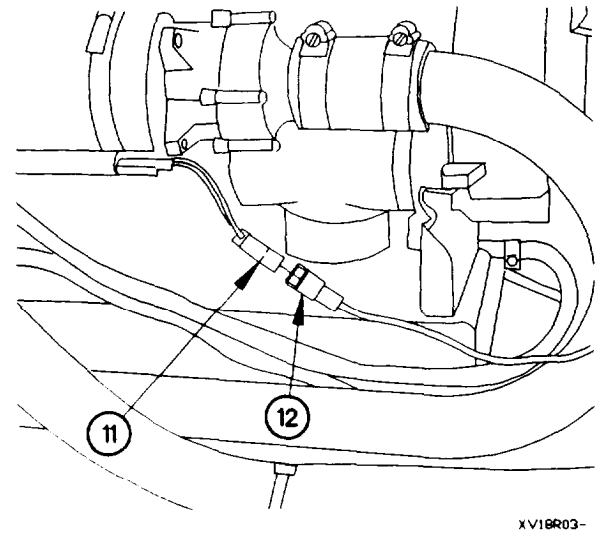
Tag wires and connection points prior to disconnecting.

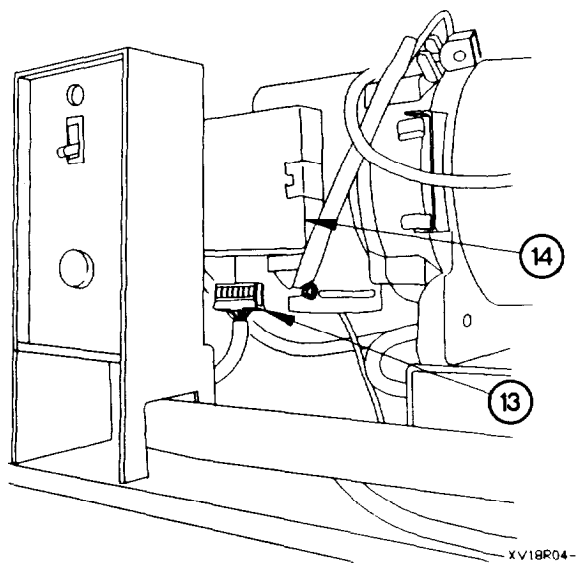
(3) Remove two nuts (4), lockwashers (5), and terminal lugs TL3/TL4 (6 and 7) from two posts (8). Discard lockwashers.

(4) Disconnect power cable (9) from receptacle (10).

20-19. CARGO ARCTIC FURNACE CONTROL UNIT REPLACEMENT (CONT)

(5) Disconnect harness connector (11) from water pump connector (12).

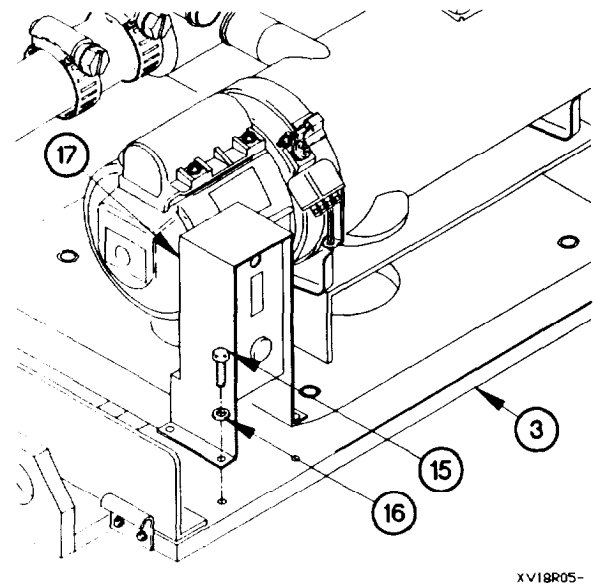




(6) Disconnect control connector (13) from electronic control connector (14).

(7) Remove four screws (15) and washers (16) from heater control (17).

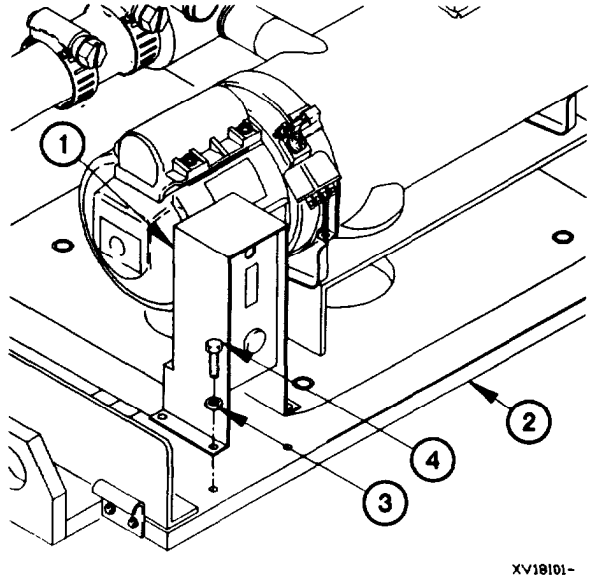
(8) Remove heater control unit (17) from heater enclosure (3).

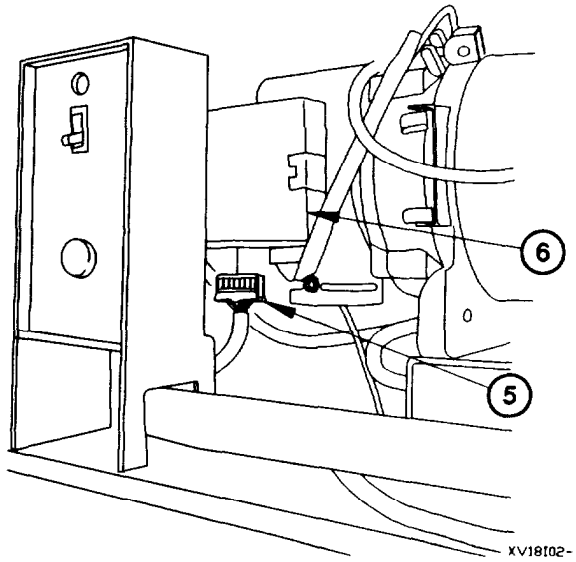


b. Installation.

(1) Position heater control (1) on heater enclosure (2) with four washers (3) and screws (4).

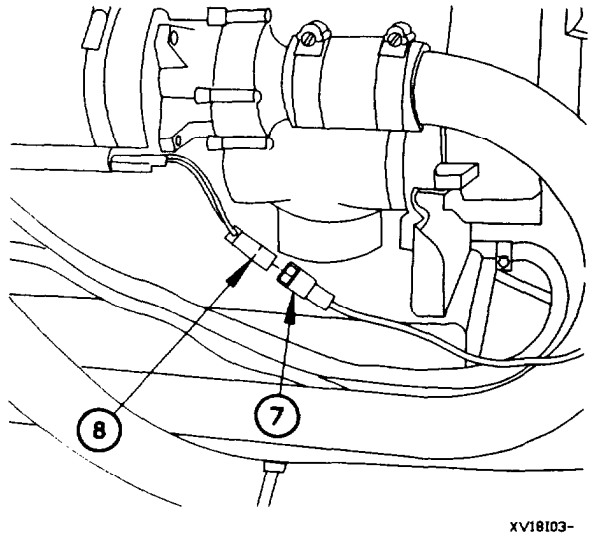
(2) Tighten four screws (4) to 101-123 lb-in (11-14 N•m).





(3) Connect control connector (5) to electronic control connector (6).

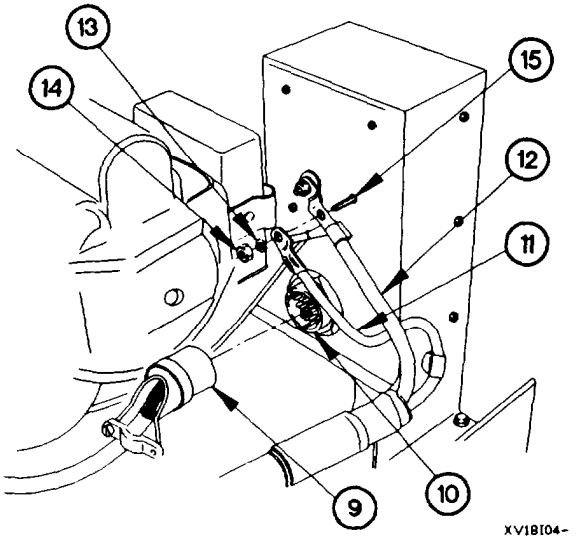
(4) Connect harness connector (7) to water pump connector (8).

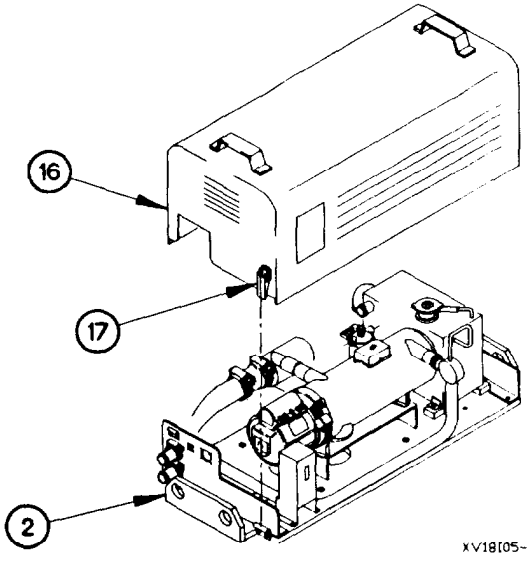


20-19. CARGO ARCTIC FURNACE CONTROL UNIT REPLACEMENT (CONT)

(5) Connect power cable (9) to heater receptacle (10).

(6) Install terminal lugs TL3/TL4 (11 and 12), lockwashers (13), and nuts (14) on terminal posts (15).





CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(7) Install cover (16) on heater enclosure (2) with two latches (17).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-20. CARGO ARCTIC HEATER INDICATOR LIGHT REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

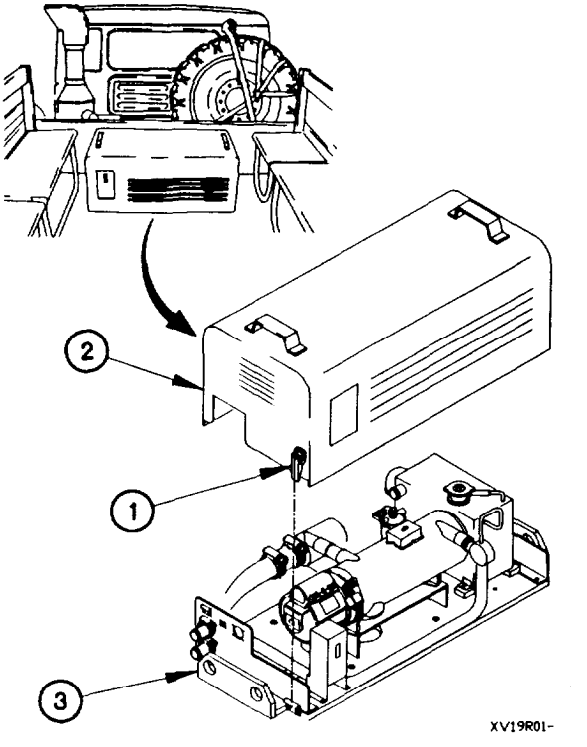
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

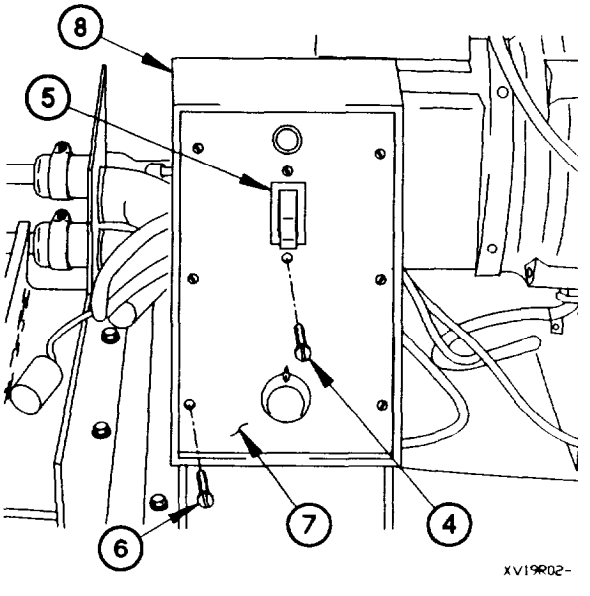
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





(2) Remove two screws (4) from circuit breaker (5).

(3) Remove six screws (6) from panel (7).

(4) Remove panel (7) from control unit (8).

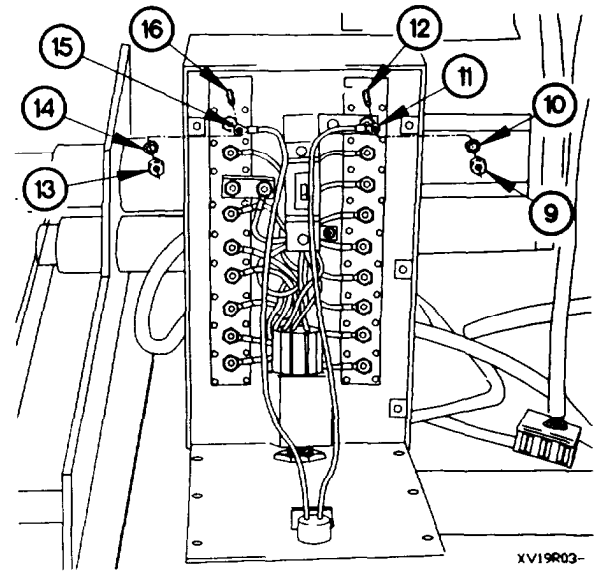
20-20. CARGO ARCTIC HEATER INDICATOR LIGHT REPLACEMENT (CONT)

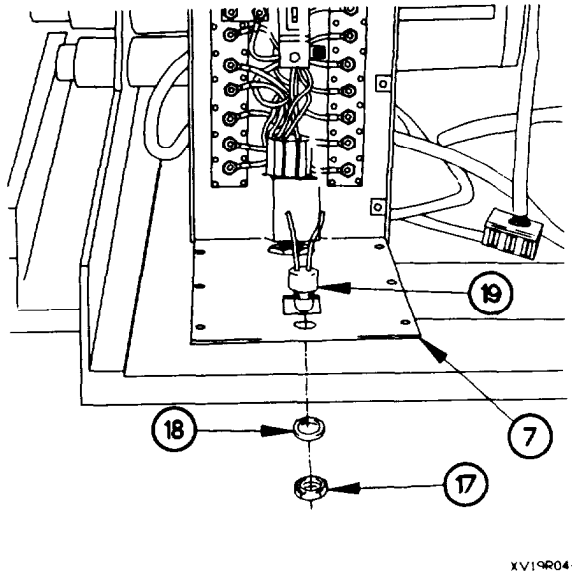
NOTE

Tag wires and connection points prior to disconnecting.

(5) Remove nut (9), lockwasher (10) and terminal lug (11) from TB2TL1 (12). Discard lockwasher.

(6) Remove nut (13), lockwasher (14) and terminal lug (15) from TB1TL1 (16). Discard lockwasher.

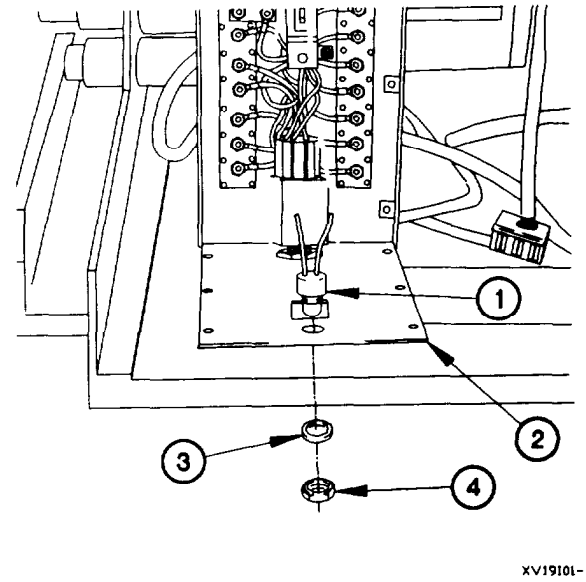




(7) Remove nut (17), washer (18) and indicator light (19) from panel (7).

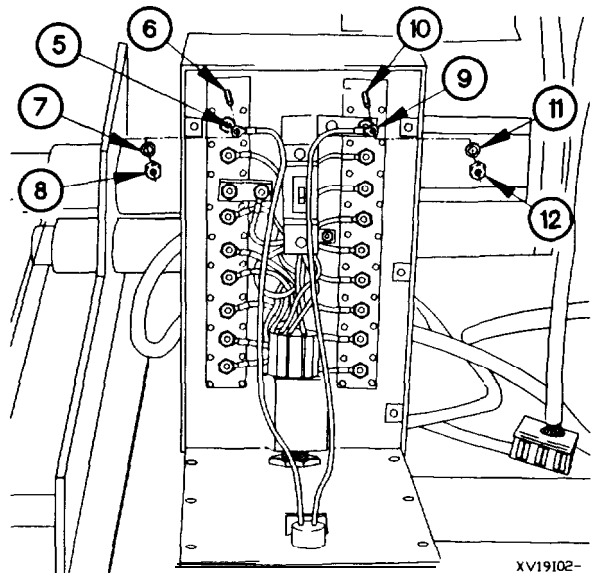
b. Installation.

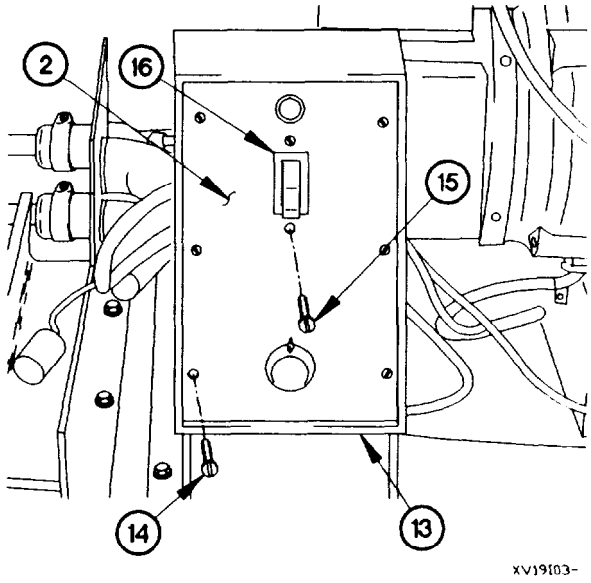
(1) Install indicator light (1) in panel (2) with washer (3) and nut (4).



(2) Install terminal lug (5) on TB1TL1 (6) with lockwasher (7) and nut (8).

(3) Install terminal lug (9) on TB2TL1 (10) with lockwasher (11) and nut (12).





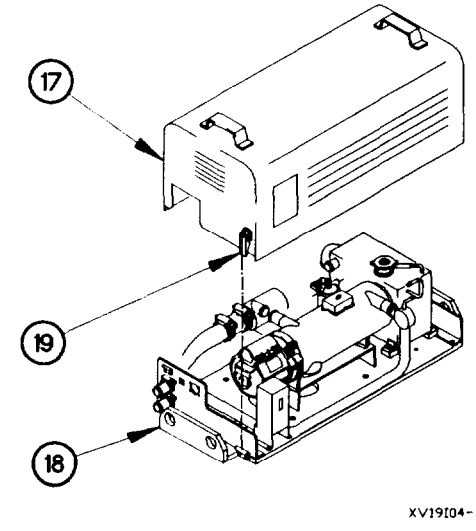
(4) Install panel (2) on control unit (13) with six screws (14).

(5) Install two screws (15) in circuit breaker (16).

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(6) Install cover (17) on heater enclosure (18) with two latches (19).



c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check for proper operation of indicator light (TM 9-2320-365-10).

End of Task.

20-21. CARGO ARCTIC HEATER CONTROL SWITCH REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

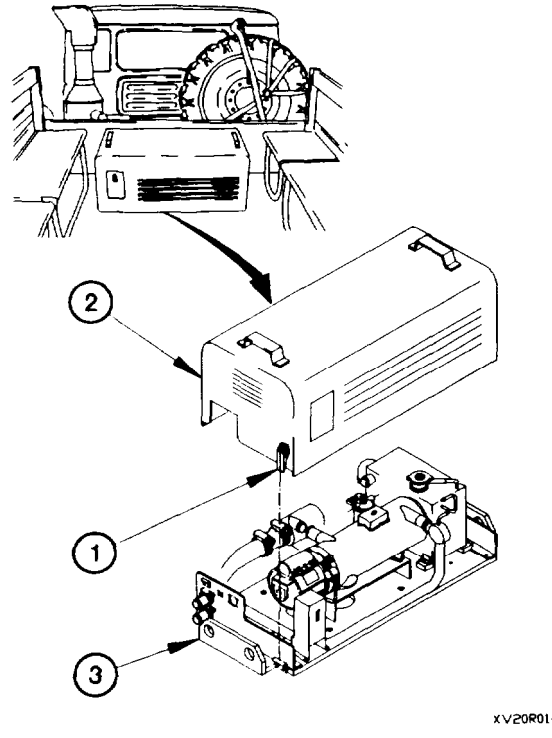
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

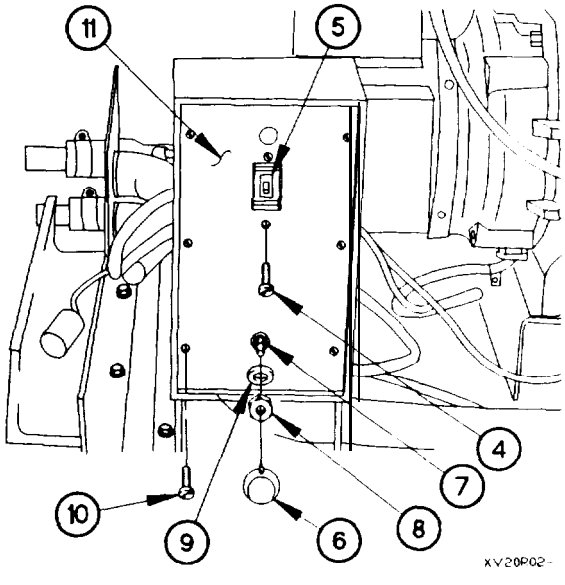
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).



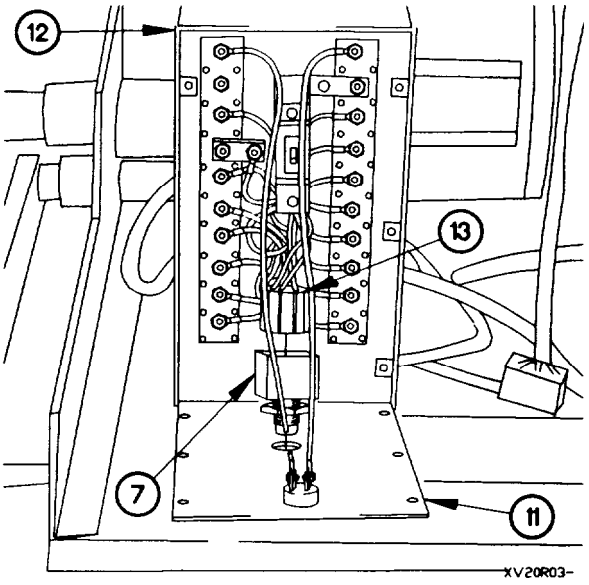


(2) Remove two screws (4) from circuit breaker (5).

(3) Remove knob (6) from switch (7).

(4) Remove nut (8) and washer (9) from switch (71.

(5) Remove six screws (10) from panel (11).

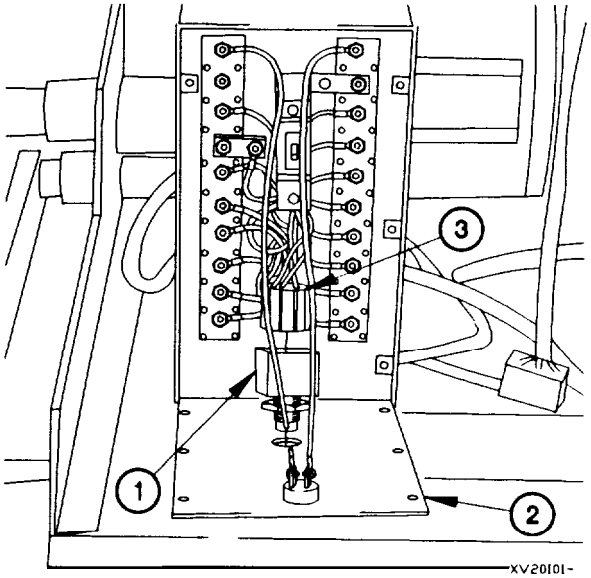


(6) Remove panel (11) from control unit (12).

(7) Disconnect connector (13) from switch (7).

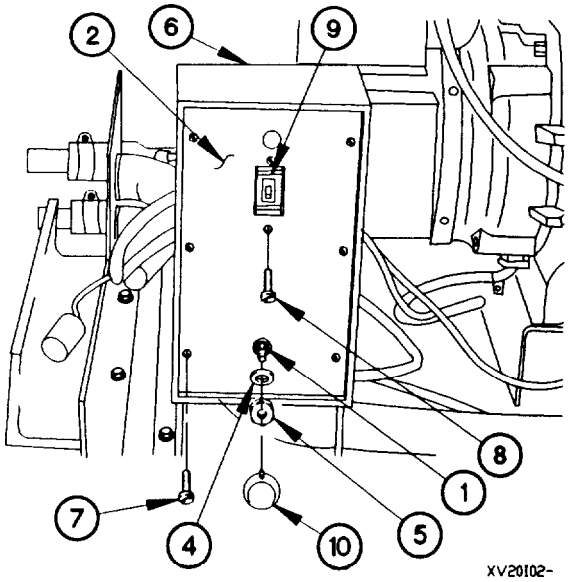
(8) Remove switch (7) from panel (11).

b. Installation.



(1) Position switch (1) on panel (2).

(2) Connect connector (3) to switch (1).



(3) Install washer (4) and nut (5) on switch (1).

(4) Install panel (2) on control unit (6) with six screws (7).

(5) Install two screws (8) on circuit breaker (9).

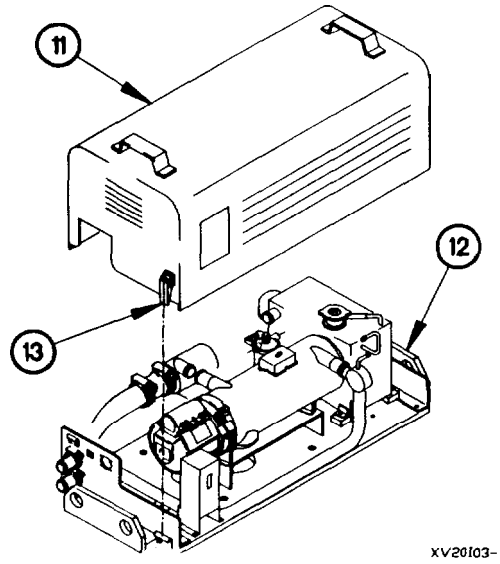
(6) Install knob (10) on switch (1).

20-21. CARGO ARCTIC HEATER CONTROL SWITCH REPLACEMENT (CONT)

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(7) Install cover (11) on heater enclosure (12) with two latches (13).



c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-22. CARGO ARCTIC HEATER CIRCUIT BREAKER REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-75 lb-in. (Item 86, Appendix B)

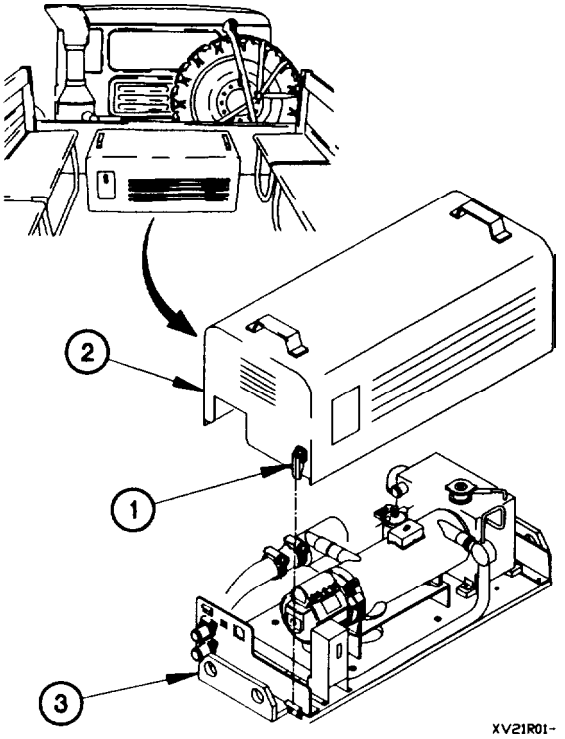
Materials/Parts
Lockwasher (2) (Item 82, Appendix G)

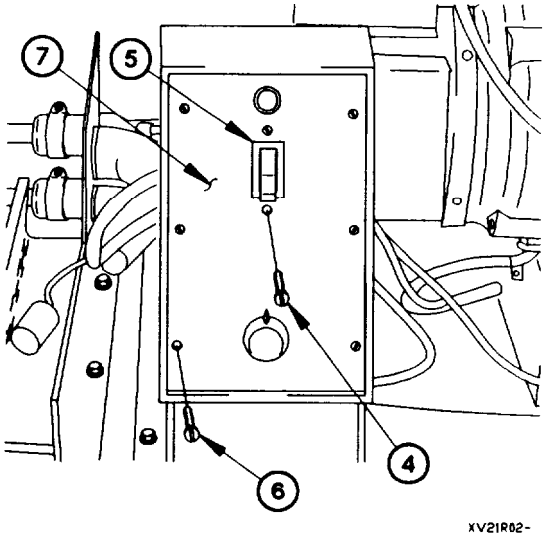
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





(2) Remove two screws (4) from circuit breaker (5).

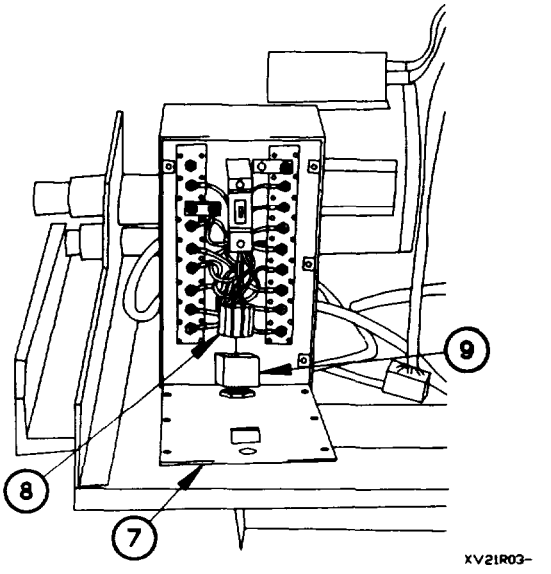
(3) Remove six screws (6) from panel (7).

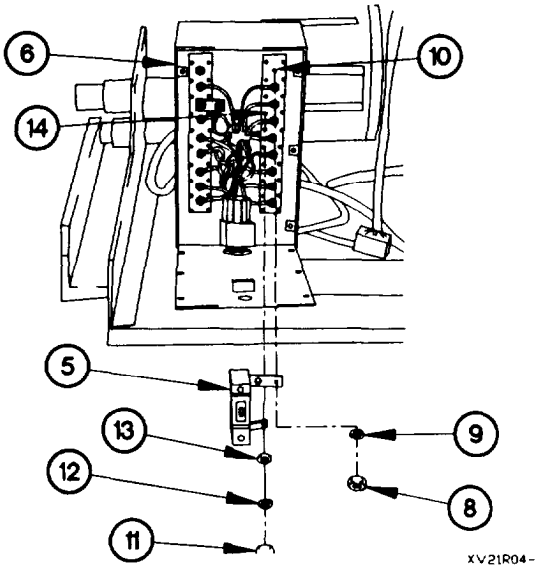
(4) Position panel (7) to gain access.

20-22. CARGO ARCTIC HEATER CIRCUIT BREAKER REPLACEMENT (CONT)

(5) Pull out panel (7).

(6) Disconnect connector (8) from switch (9).

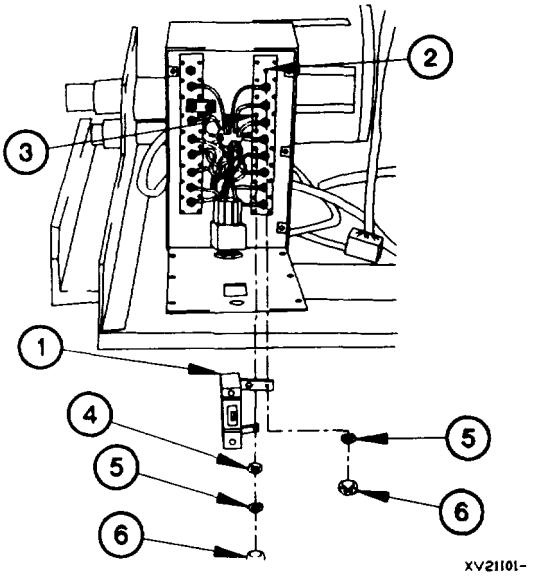




(7) Remove nut (8) and lockwasher (9) from terminal post (10). Discard lockwasher.

(8) Remove nut (11), lockwasher (12), and washer (13) from input terminal post (14). Discard lockwasher.

(9) Remove circuit breaker (5) from control unit (6).

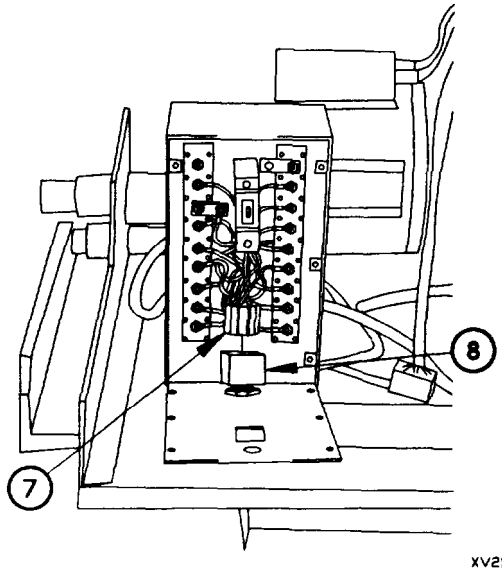


b. Installation.

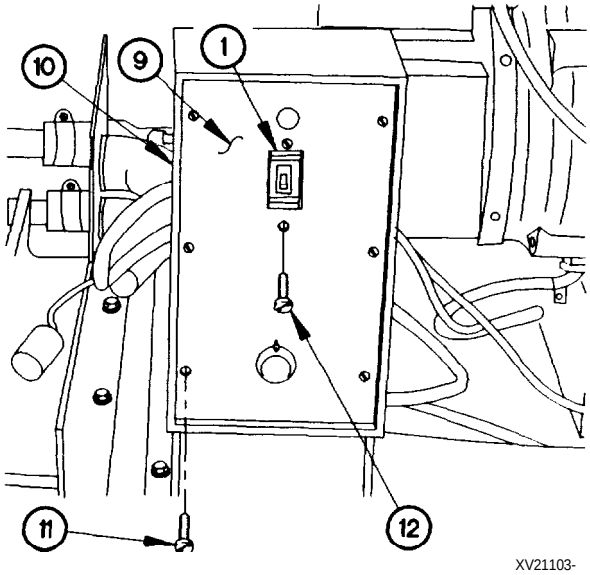
(1) Position circuit breaker (1) on terminal posts (2 and 3) with washer (4), lockwashers (5), and nuts (6).

(2) Tighten two nuts (6) to 9-11 lb-in. (1 N•m).

(3) Connect connector (7) to switch (8).



XV21102-



XV21103-

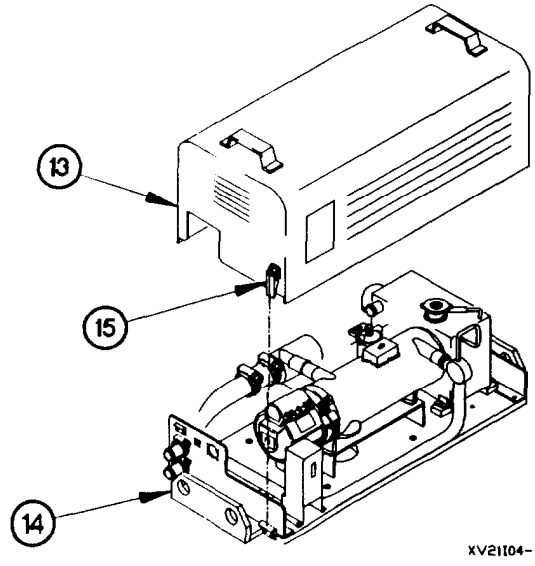
(4) Install panel (9) on control unit (10) with six screws (11).

(5) Install two screws (12) in circuit breaker (1).

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(6) Install cover (13) on heater enclosure (14) with two latches (15).



XV21104-

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-23. CARGO ARCTIC HEATER TERMINAL BOARD REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools end Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-75 lb-in. (Item 88, Appendix B)

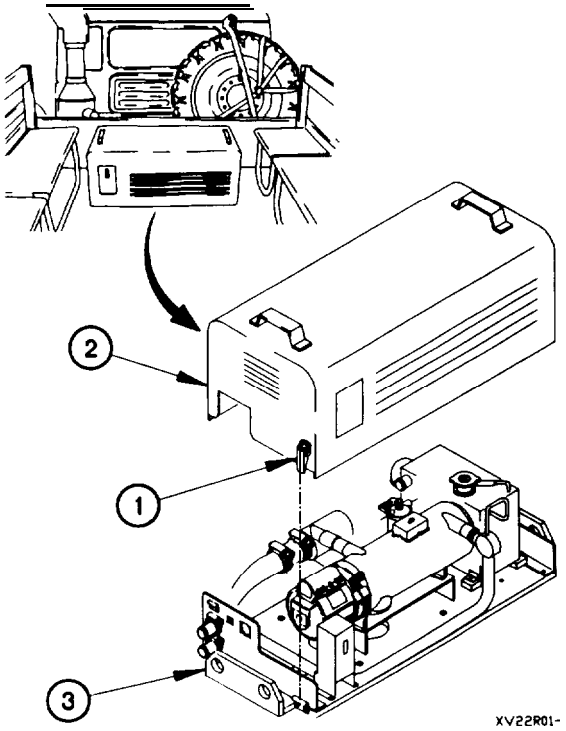
Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (21) (Item 82, Appendix G)

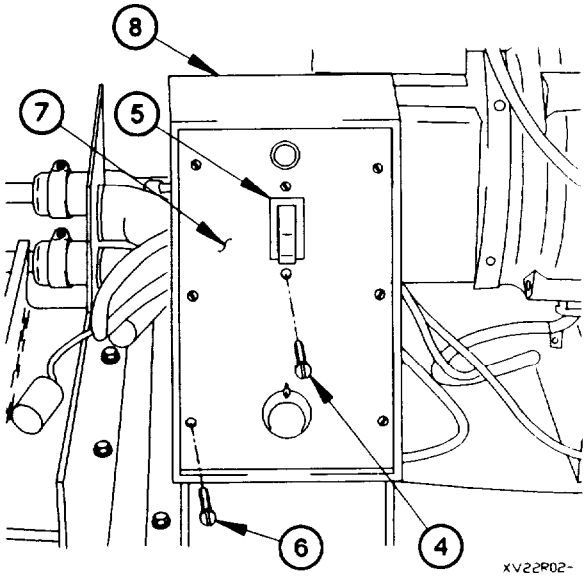
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





(2) Remove two screws (4) from circuit breaker (5).

(3) Remove six screws (6) from panel (7).

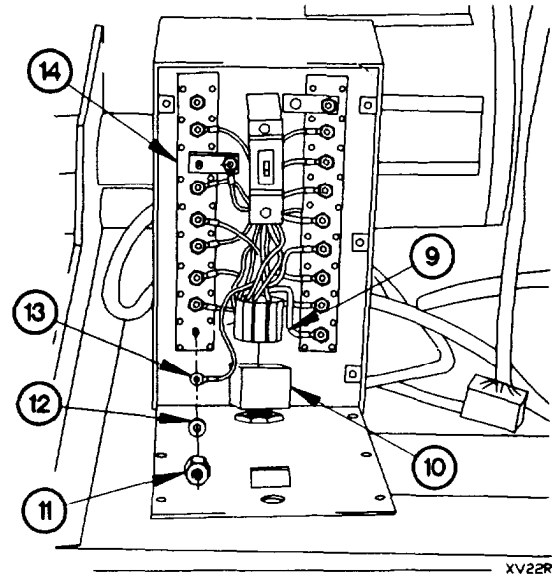
(4) Remove panel (7) from control unit (8).

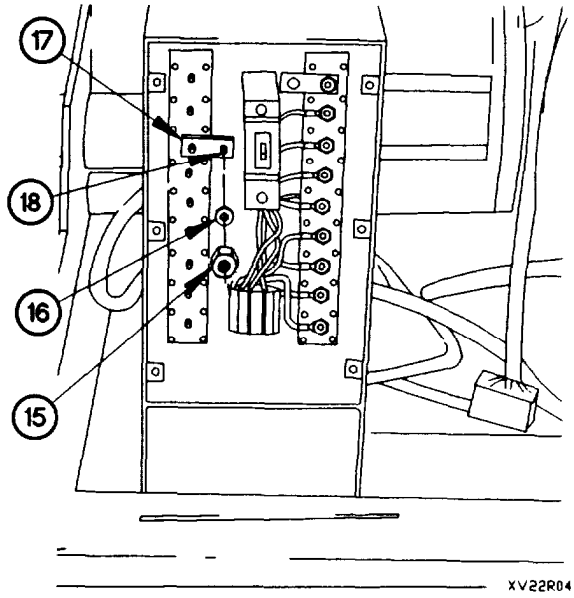
NOTE

Tag wires and connection points prior to disconnecting.

(5) Disconnect connector (9) from switch (10).

(6) Remove nine nuts (11), lockwashers (12) and terminal lugs (13) from terminal board TB1 (14). Discard lockwashers.

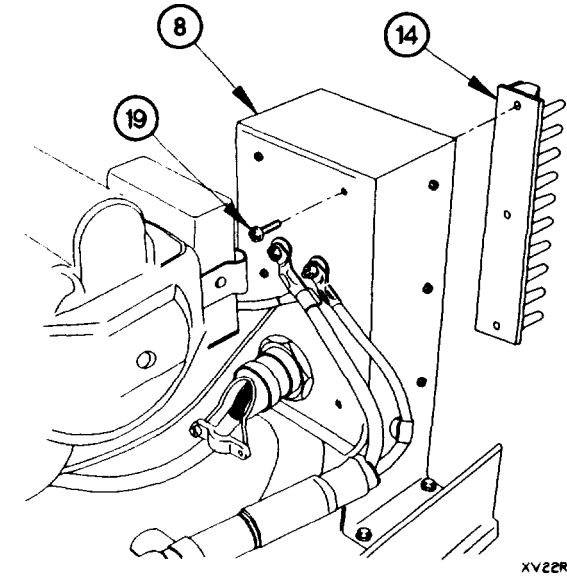




(7) Remove nut (15), lockwasher (16) and terminal link (17) from 8L3 (18). Discard lockwasher.

(8) Remove three screws (19) from control unit (8).

(9) Remove terminal board TB1 (14) from control unit (8).

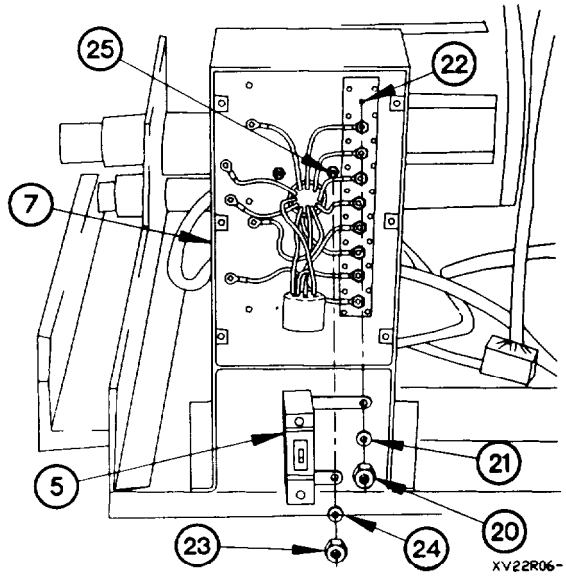


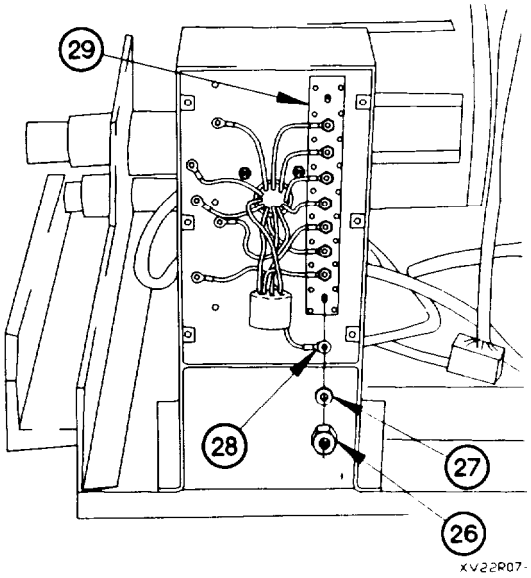
20-23. CARGO ARCTIC HEATER TERMINAL BOARD REPLACEMENT (CONT)

(10) Remove nut (20) and lockwasher (21) from TB2TL2 (22). Discard lockwasher.

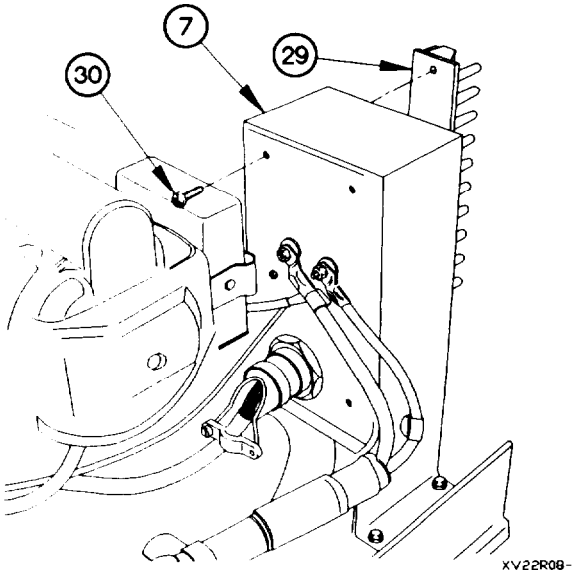
(11) Remove nut (23) and lockwasher (24) from BL2 (25). Discard lockwasher.

(12) Remove circuit breaker (5) from control unit (7).





(13) Remove nine nuts (26), lockwashers (27) and terminal lugs (28) from terminal board TB2 (29). Discard lockwashers.



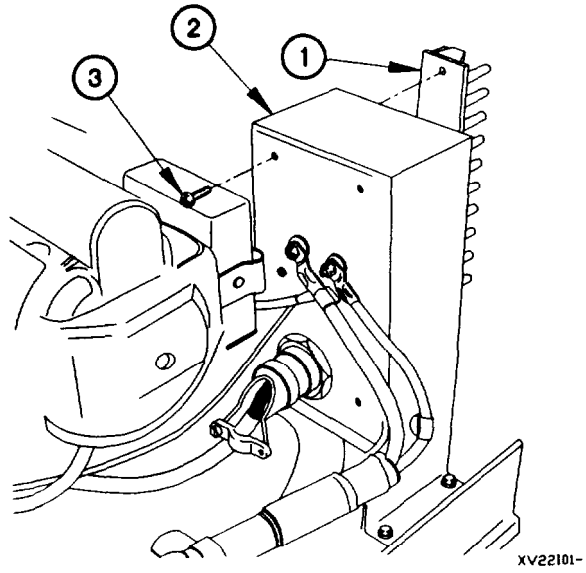
(14) Remove three screws (30) from control unit (7).

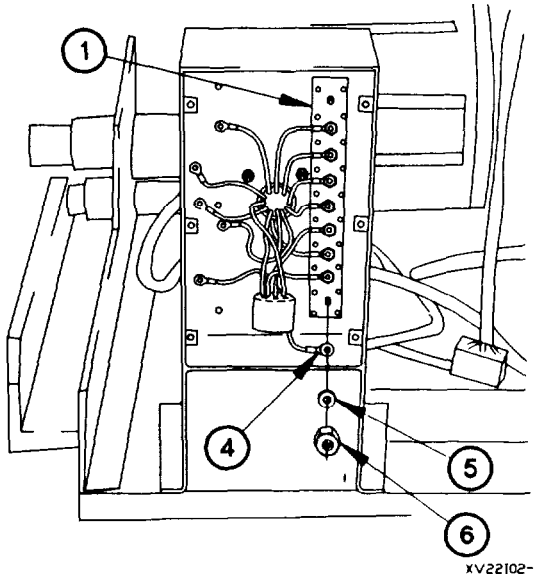
(15) Remove terminal board TB2 (29) from control unit (7).

b. Installation.

(1) Position terminal board TB2 (1) in control unit (2).

(2) Install three screws (3) in control unit (2).



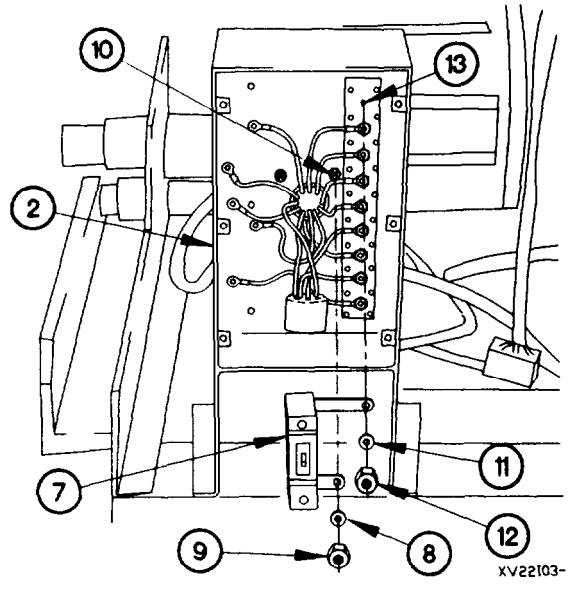


(3) Position nine terminal lugs (4) and lockwashers (5) on terminal board TB2 (1) with nine nuts (6).

(4) Position circuit breaker (7) in control unit (2).

(5) Install lockwasher (8) and nut (9) on TBL2 (10).

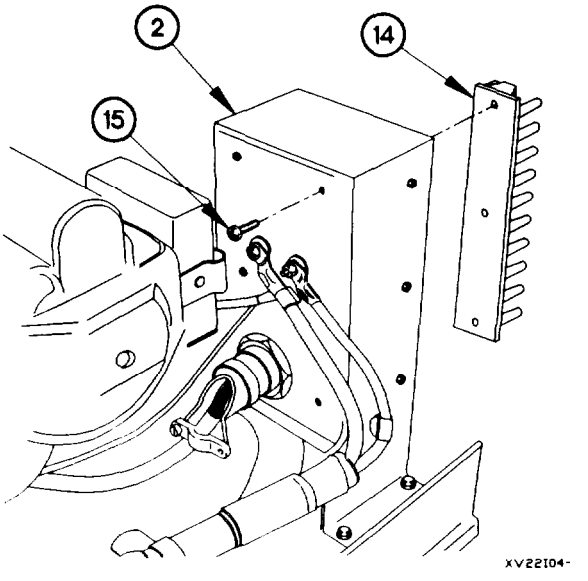
(8) Install lockwasher (11) and nut (12) on TB2TL2 (13).

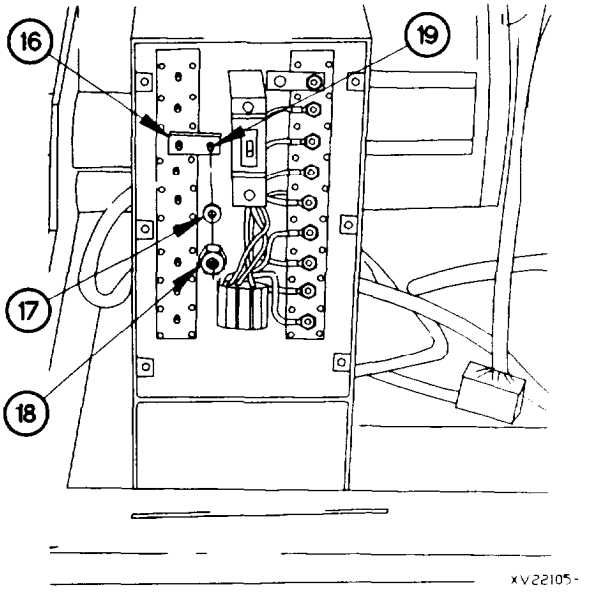


20-23. CARGO ARCTIC HEATER TERMINAL BOARD REPLACEMENT (CONT)

(7) Position terminal board TB1 (14) in control unit (2).

(8) Install three screws (15) in control unit (2).

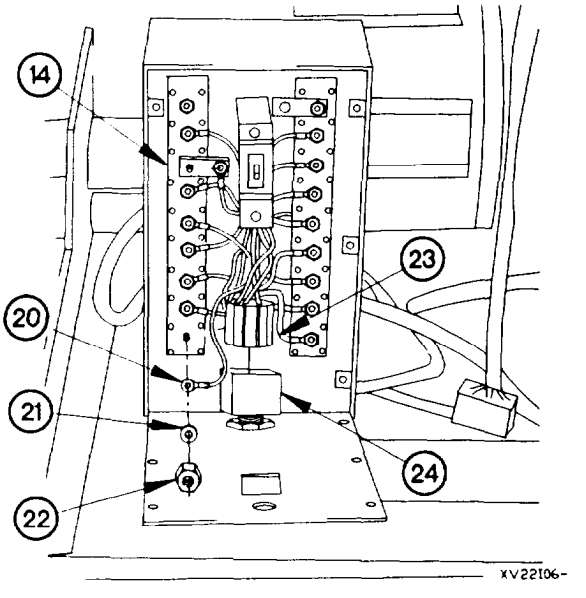




(9) Install terminal link (16) and lockwasher (7) on BL3 (18) with nut (19).

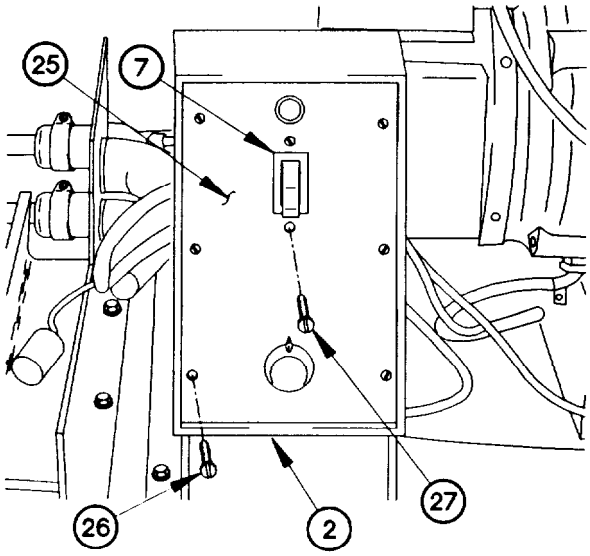
(10) Install nine terminal lugs (20) and lockwashers (21) on terminal board TB1 (14) with nine nuts (22).

(11) Connect connector (23) to switch (24).

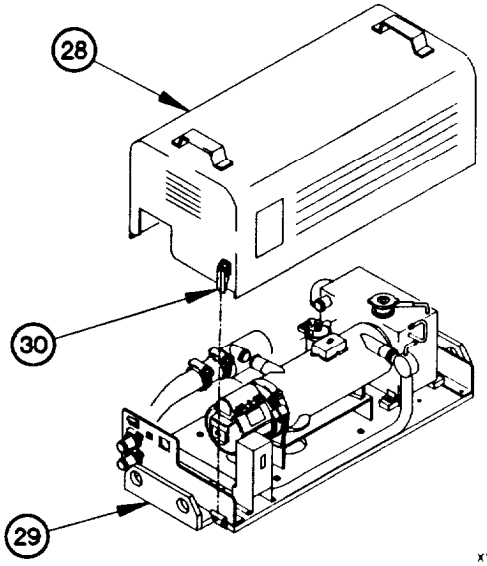


(12) Install panel (25) on control unit (2) with six screws (26).

(13) Install two screws (27) in circuit breaker (7).



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XV22108-

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(14) Install cover (28) on heater enclosure (29) with two latches (30).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-24. CARGO ARCTIC HEATER CONNECTOR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench Torque, 0-75 lb-in. (Item 86, Appendix B)

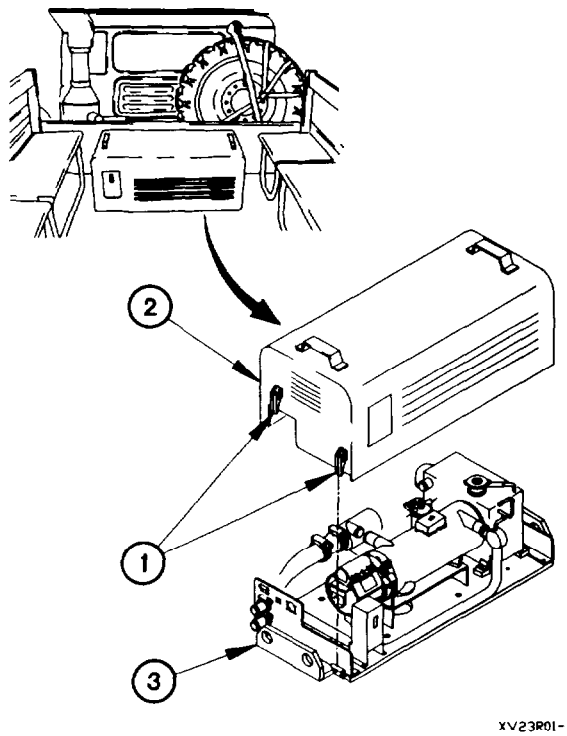
Materials/Parts
Lockwasher (12) (Item 82, Appendix G)

a. Removal.

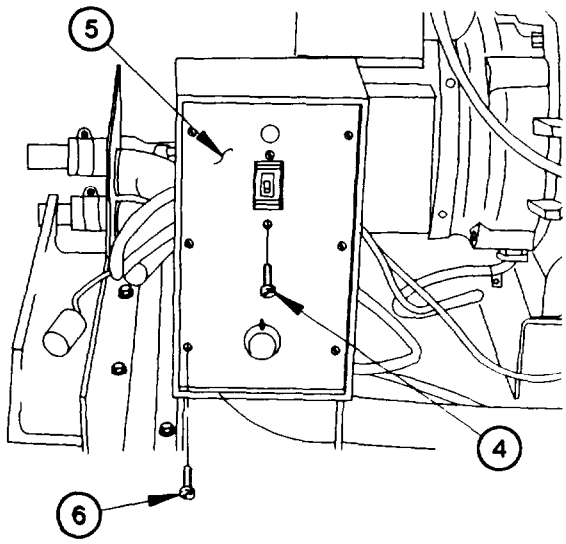
CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).



XV23R01-



XV23R02-

(2) Remove two screws (4) from panel (5).

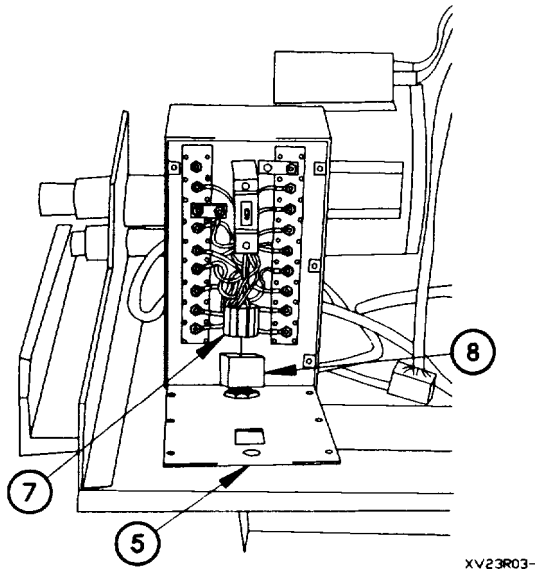
(3) Remove six screws (6) from panel (5).

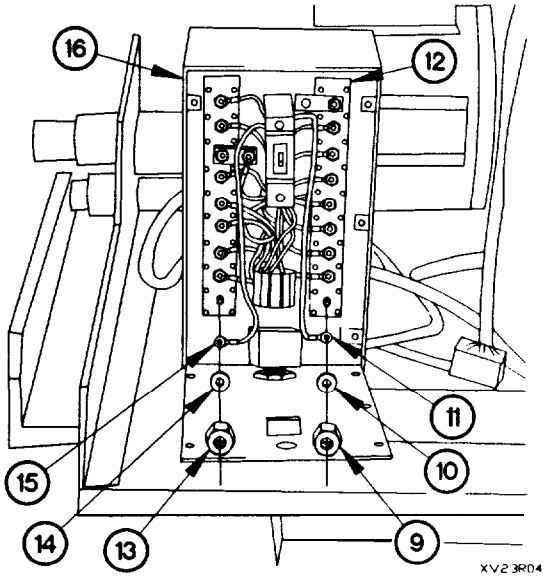
(4) Pull out panel (5) for access.

NOTE

Tag wires and connection points prior to disconnecting.

(5) Disconnect connector (7) from switch (8).





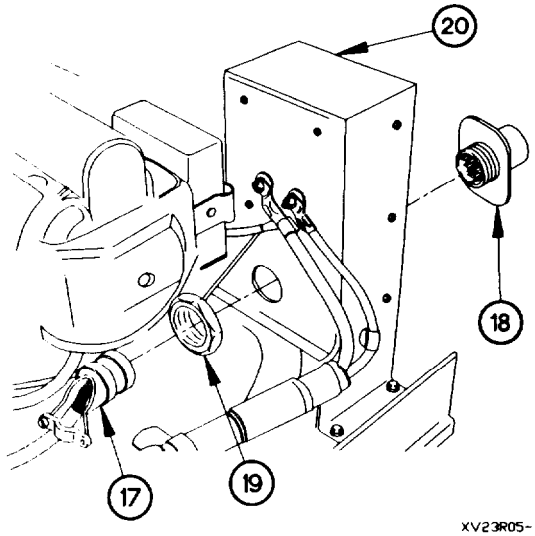
(6) Remove six nuts (9), lockwashers (10), and terminal lugs (11) from TB2 (12) TL15 through TL20. Discard lockwashers.

(7) Remove six nuts (13), lockwashers (14), and terminal lugs (15) from TB1 (16) TL5 through TL10. Discard lockwashers.

(8) Disconnect connector (17) from connector (18).

(9) Remove nut (19) from connector (18).

(10) Remove connector (18) from control unit (20).

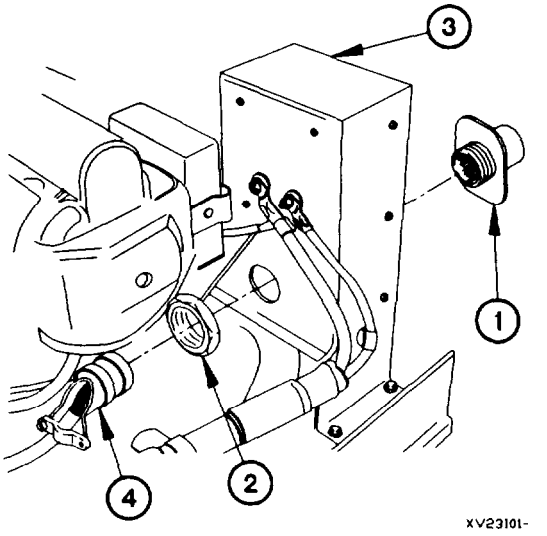


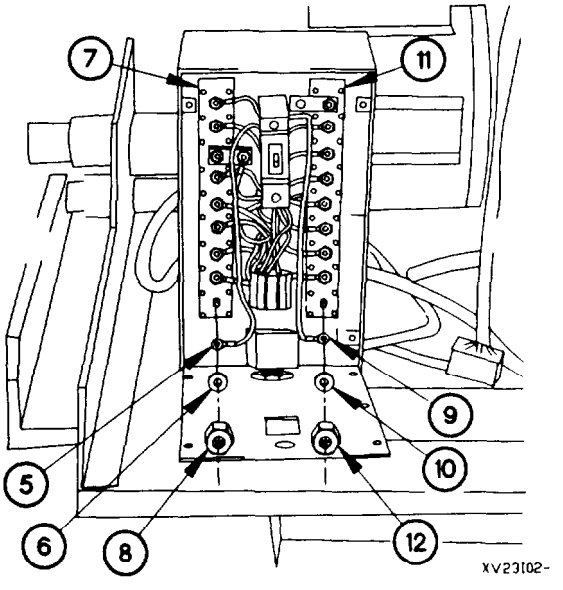
20-24. CARGO ARCTIC HEATER CONNECTOR REPLACEMENT (CONT)

b. Installation.

(1) Install connector (1) with nut (2) in control unit (3).

(2) Connect connector (4) to connector (1).

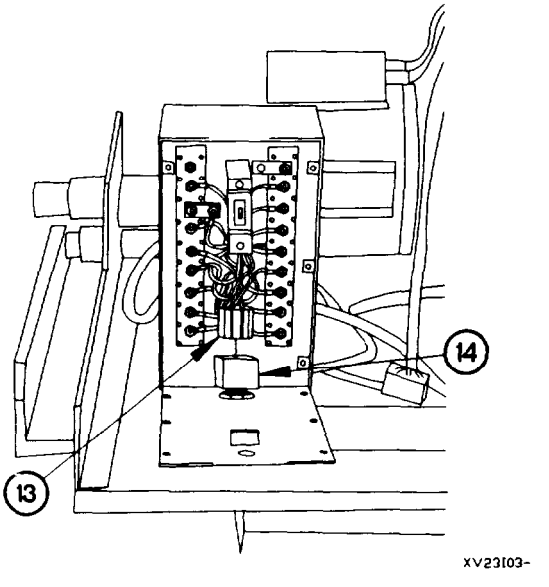


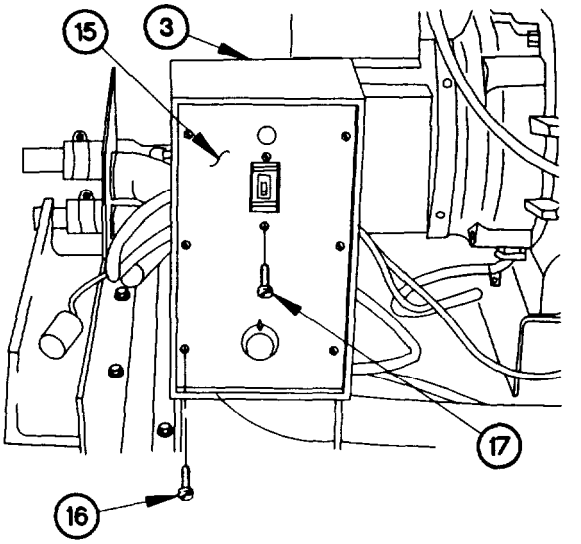


(3) Install six terminal lugs (5) and lockwashers (6) on TB1 (7) with six nuts (8).

(4) Install six terminal lugs (9) and lockwashers (10) on TB2 (11) TL5 through TL10 with six nuts (12).

(5) Connect connector (13) to switch (14).

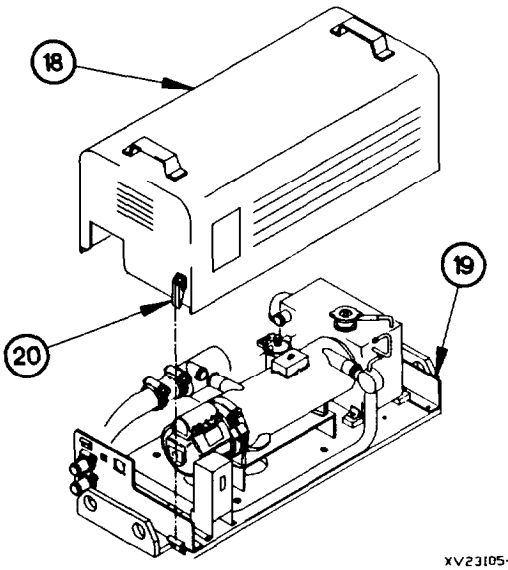




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(6) Install panel (15) on control unit (3) with six screws (16).

(7) Install two screws (17) in panel (15).



XV23105-

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(8) Install cover (18) on heater enclosure (19) with two latches (20).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-25. CARGO ARCTIC HEATER RESERVOIR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Coolant drained (para 20-34).
Batteries disconnected (para 7-48).

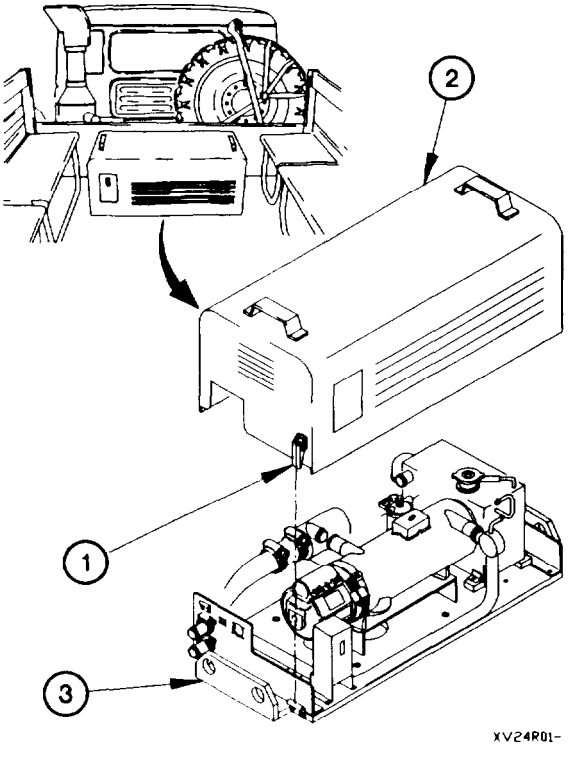
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

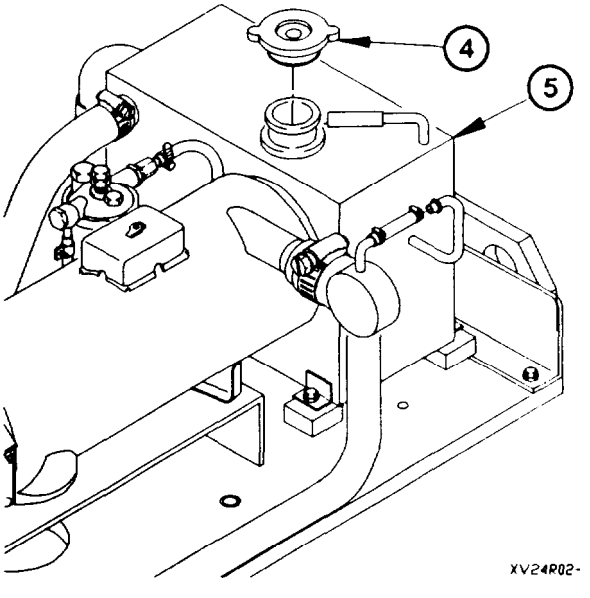
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).

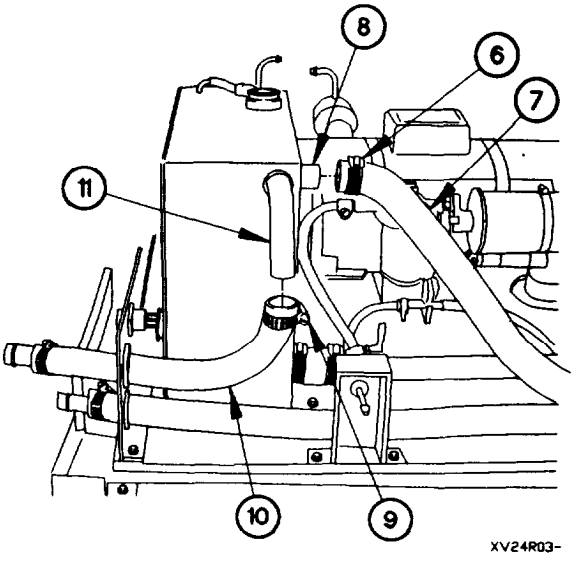


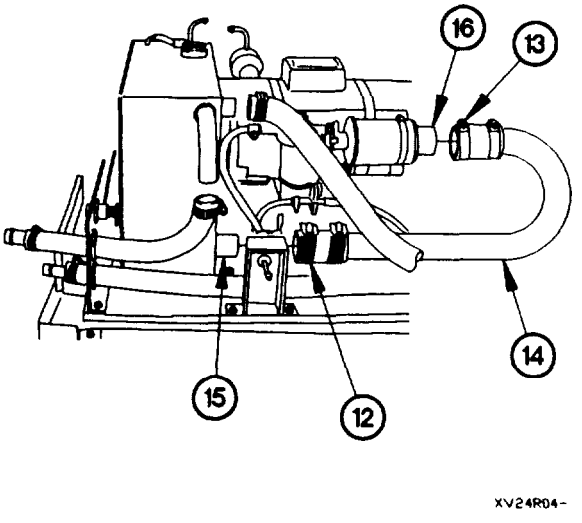


(2) Remove reservoir fill cap (4) from reservoir (5).

(3) Loosen clamp (6) on hose (7) and remove from reservoir tube (8).

(4) Loosen clamp (9) on hose (10) and remove from reservoir tube (11).



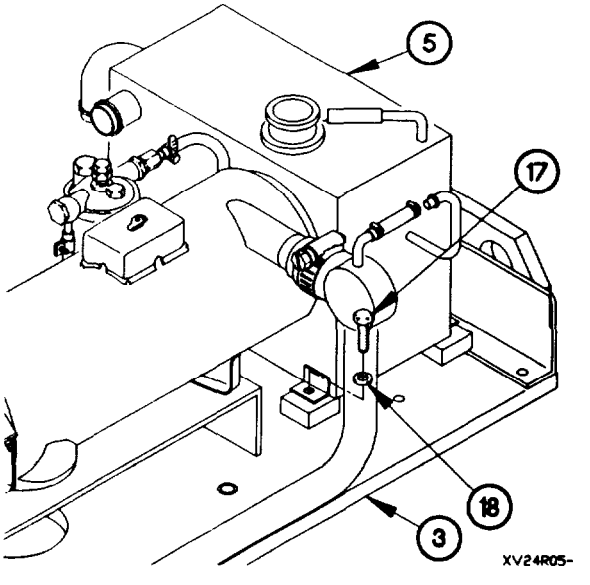


(5) Loosen clamps (12 and 13) on tube (14).

(6) Remove tube (14) from reservoir tube (15) and pump (16).

(7) Remove four screws (17) and washers (18) from reservoir (5).

(8) Remove reservoir (5) from heater enclosure (3).

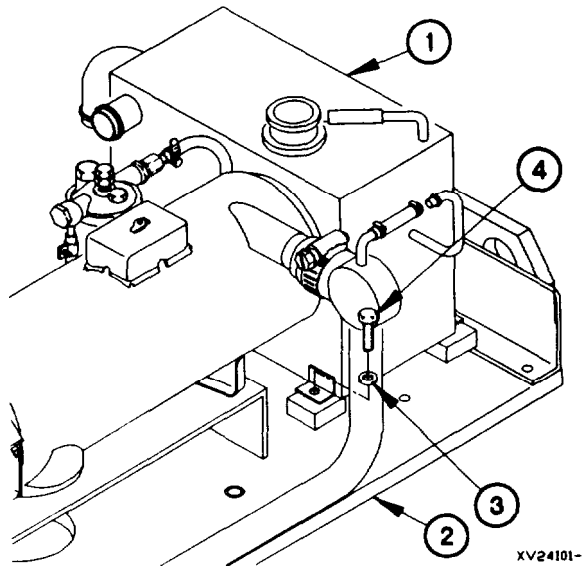


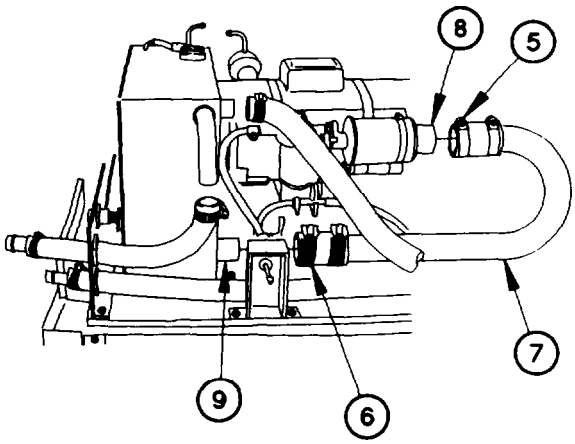
20-25. CARGO ARCTIC HEATER RESERVOIR REPLACEMENT (CONT)

b. Installation.

(1) Position reservoir (1) on heater enclosure (2) with four washers (3) and screws (4).

(2) Tighten four screws (4) to 22-26 lb-ft (30-35 N•m).





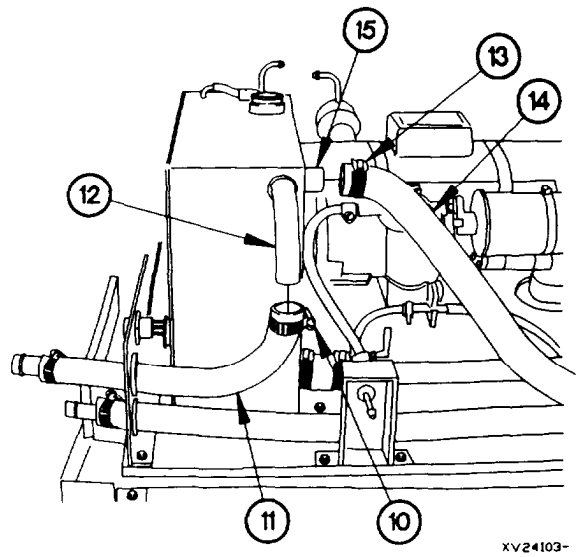
(3) Position clamps (5 and 6) and tube (7) on pump (8) and reservoir tube (9).

(4) Tighten two clamps (5 and 6) to 27-33 lb-in. (3-4 N•m).

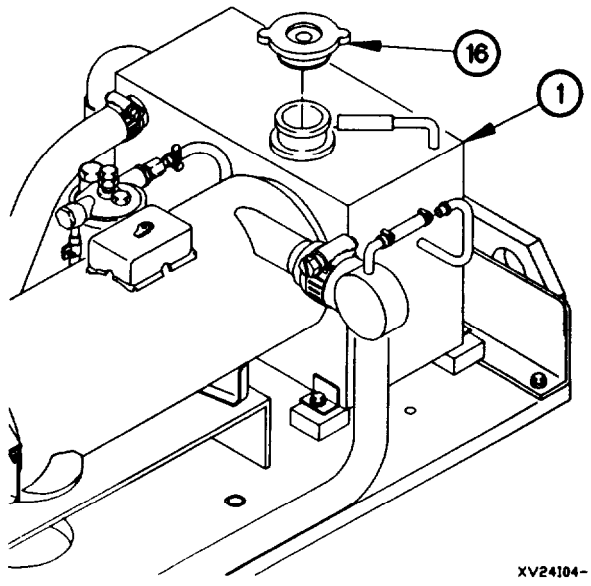
(5) Position clamp (10) and hose (11) on reservoir tube (12).

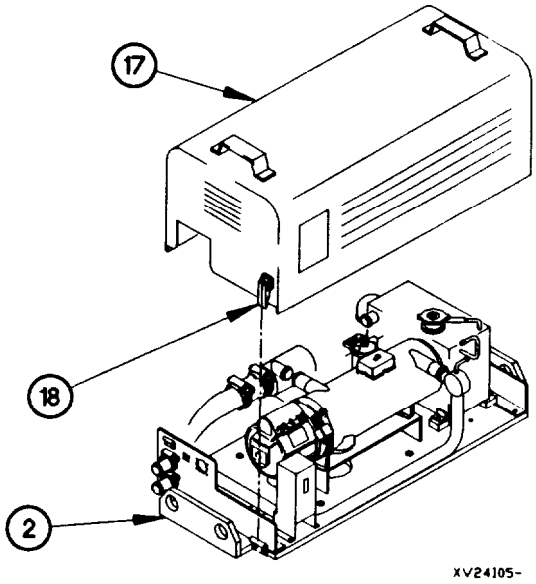
(6) Position clamp (13) and hose (14) on reservoir tube (15).

(7) Tighten two clamps (10 and 13) to 27-33 lb-in. (3-4 N•m).



(8) Install reservoir fill cap (16) on reservoir (1).





CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(9) Install cover (17) on heater enclosure (2) with two latches (18).

c. Follow-On Maintenance.

(1) Fill and purge cargo bed arctic heater system (para 20-34).

(2) Connect batteries (para 7-48).

(3) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-26. CARGO ARCTIC VEHICULAR HEATER ELECTRICAL CABLE REPLACEMENT/ REPAIR

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

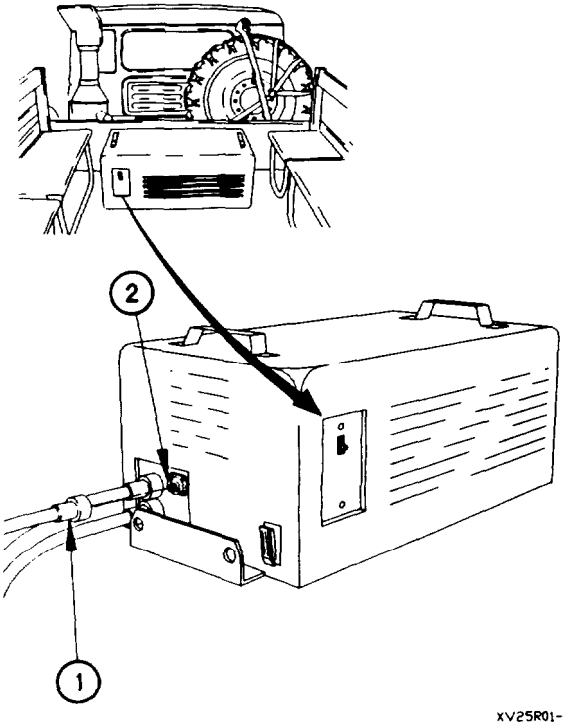
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)

a. Removal.

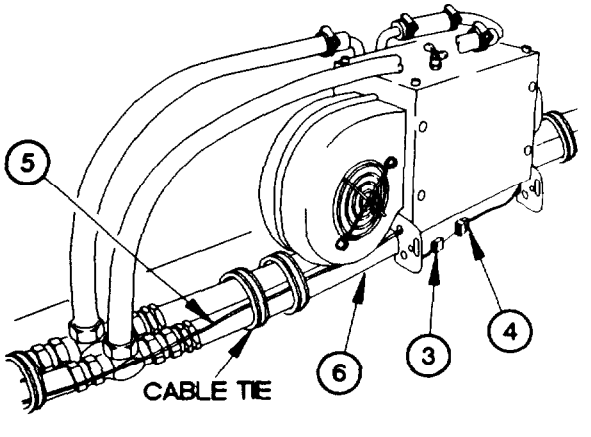
NOTE

Left and right side cargo arctic vehicular cables are removed the same way. Left side shown.

(1) Disconnect cable connector (1) from receptacle (2).



XV25R01-



XV25R02-

NOTE

- Remove plastic cable ties as required.
- Perform step (2) for each heater.

(2) Disconnect harness connector (3) from heater connector (4).

(3) Remove harness (5) from heater hoses (6).

b. Repair.

Repair is limited to replacement of connectors, contact sockets, and contact pins. Refer to Chapter 2 for general electrical repair.

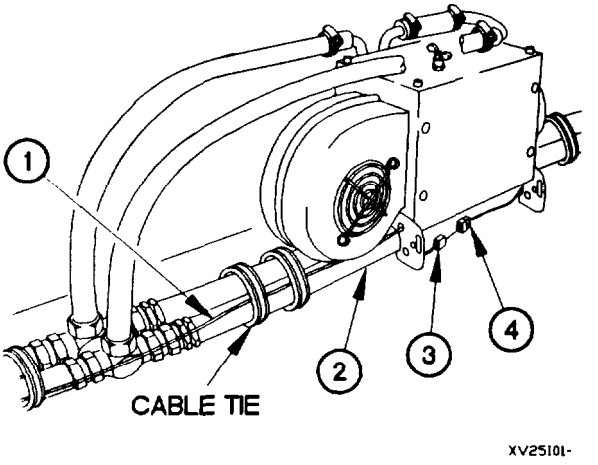
c. Installation.

(1) Position harness (1) on heater hoses (2).

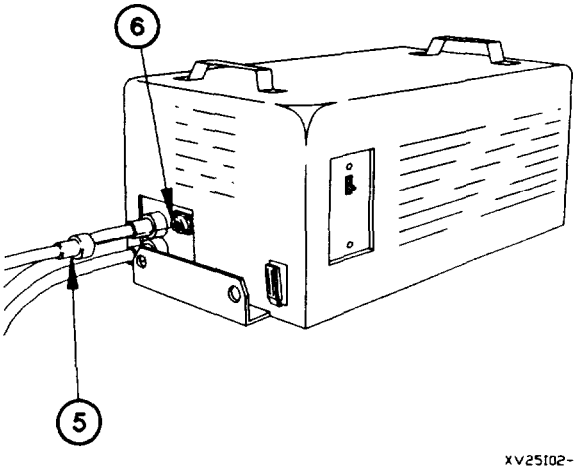
NOTE

- Install plastic cable ties as required.
- Perform step (2) for each heater.

(2) Connect heater connector (3) to harness connector



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(4) Connect cable connector (5) on receptacle (6).

d. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-27. CARGO ARCTIC VEHICULAR HEATER HOSES REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Cargo arctic heater drained (para 20-34).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Pan, Drain (Item 24, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-75 lb-in. (Item 86, Appendix B)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Antifreeze, Arctic Type (Item 12, Appendix D)
Nut, Self-Locking (Item 134, Appendix G)

a. Removal.

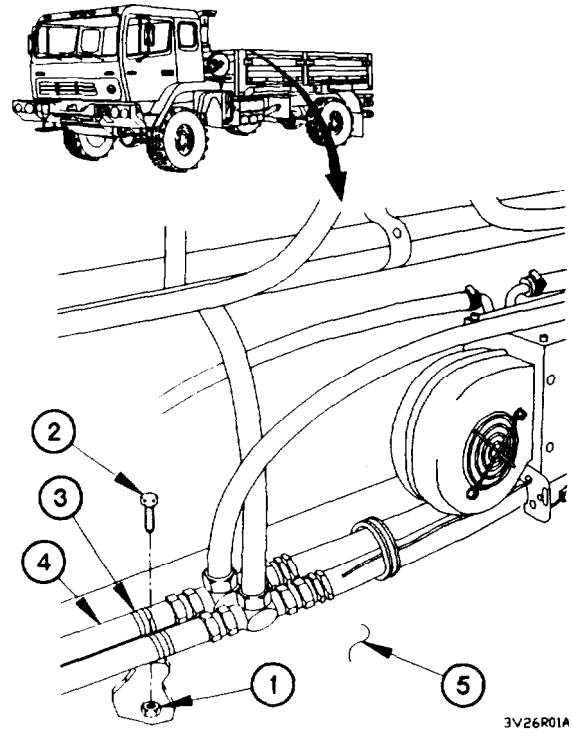
NOTE

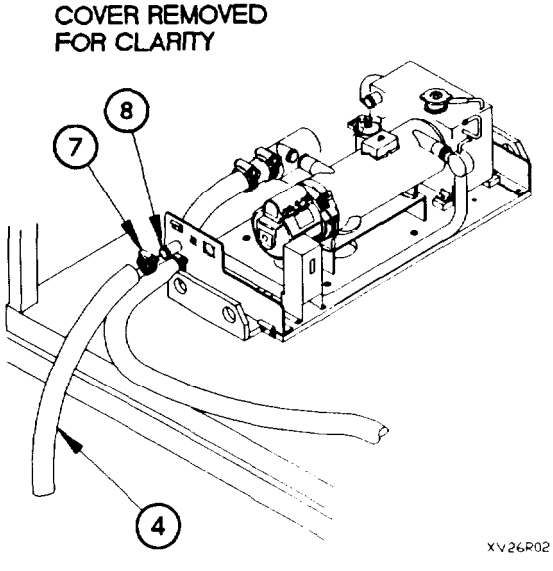
- All cargo arctic heater hoses are removed the same way. Left front heater shown.
- Remove plastic cable ties as required.

(1) Remove self-locking nut (1), screw (2), and clamp (3) from hose (4). Discard self-locking nut.

(2) Loosen clamp (5) and remove hose (4) from tee fitting (6).

(3) Remove clamp (5) from hose (4).





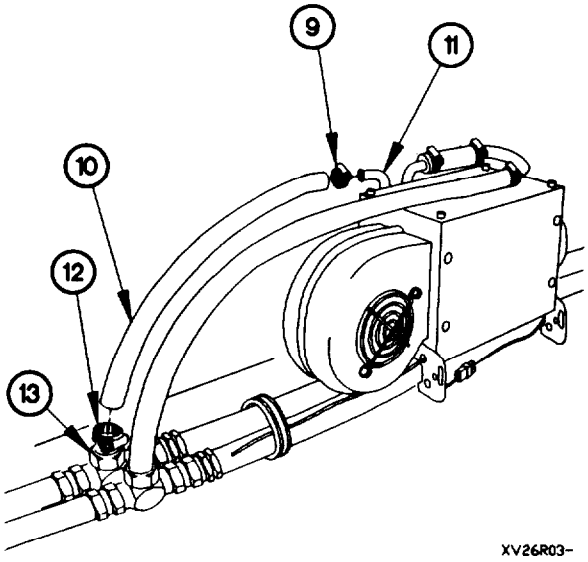
(4) Loosen clamp (7) and remove hose (4) from fitting (8).

(5) Remove clamp (7) from hose (4).

(6) Loosen clamp (9) and remove hose (10) from heater fitting (11).

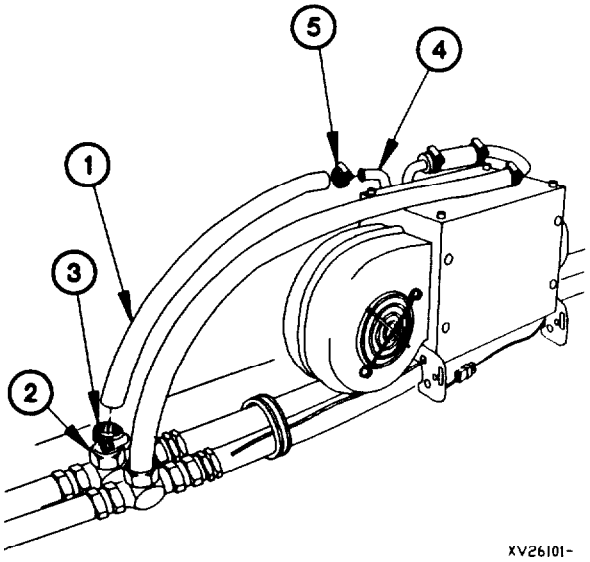
(7) Remove clamp (9) from hose (10).

(8) Loosen clamp (12) from tee fitting (13) and remove hose (10).



XV26R03-

b. Installation.

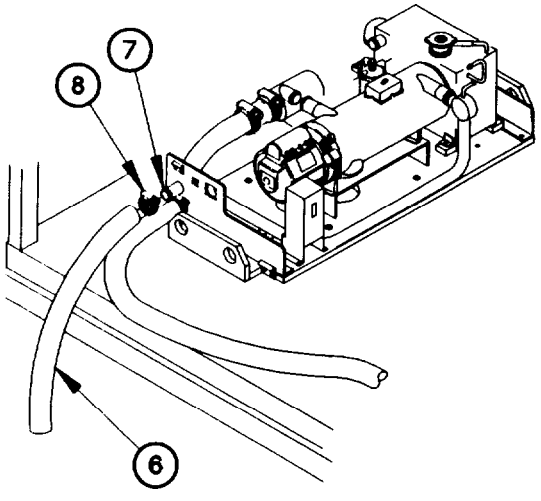


XV26101-

(1) Position hose (1) on tee fitting (2) with clamp (3).

(2) Position hose (1) on heater fitting (4) with clamp (5).

(3) Tighten clamps (3 and 5) to 27-33 lb-in. (3-4 N•m).



YVE6102-

(4) Position hose (6) on fitting (7) with clamp (8).

(5) Tighten clamp (8) to 27-33 lb-in. (3-4 N•m).

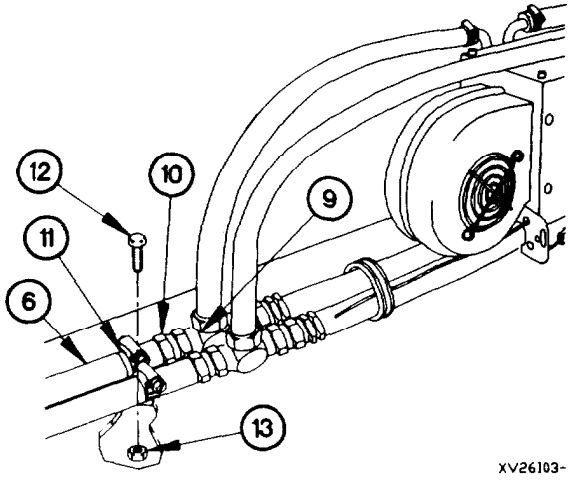
20-27. CARGO ARCTIC VEHICULAR HEATER HOSES REPLACEMENT (CONT)

(6) Position hose (6) on tee fitting (9) with clamp (10).

(7) Tighten clamp (10) to 27-33 lb-in. (8-12 N•m).

(8) Position clamp (11) on hose (6) with screw (12) and self-locking nut (13).

(9) Tighten self-locking nut (13) to 74-108 lb-in. (8-12 N•m).



d. Follow-On Maintenance.

(1) Fill and purge vehicular heater system (para 20-34).

(2) Connect batteries (para 7-48).

(3) Check cargo arctic heater for proper operation (TM 9-2320-365-10).

End of Task.

20-28. CARGO ARCTIC HEATER FUEL FILTER STRAINER/FILTER ASSEMBLY REPLACEMENT

This task covers:

a. Fuel Filter Strainer Removal
b. Fuel Filter Strainer Installation
c. Fuel Filter Head Assembly Removal
d. Fuel Filter Head Assembly Installation
e. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

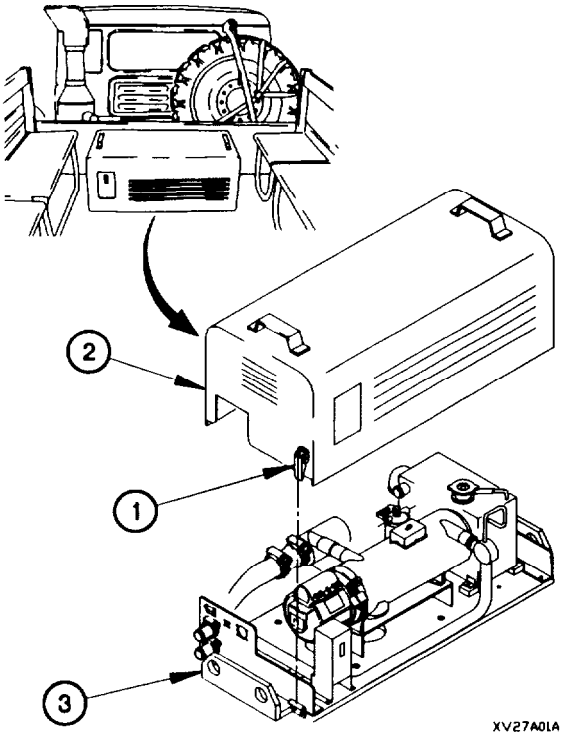
Materials/Parts
Lockwasher (2) (Item 105, Appendix G)
Gasket, Ring (Item 44, Appendix G)
Antiseize Compound (Item 14, Appendix D)

a. Fuel Filter Strainer Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).

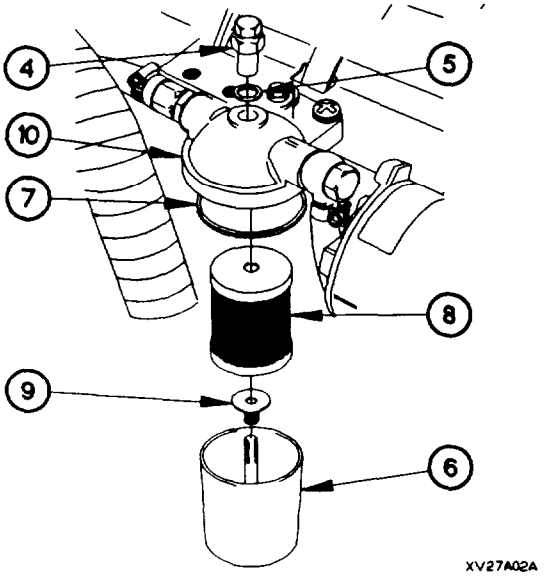


20-28. CARGO ARCTIC HEATER FUEL FILTER STRAINER/FILTER ASSEMBLY REPLACEMENT (CONT)

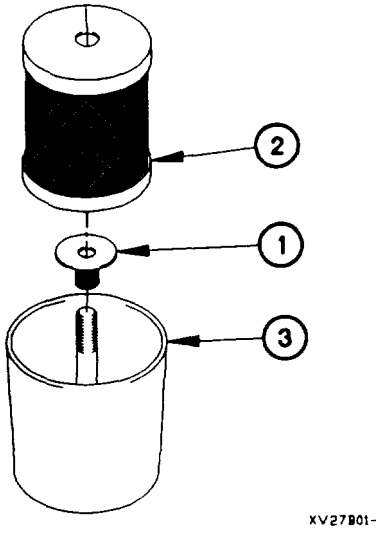
WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(2) Remove bolt (4), gasket ring (5), filter bowl (6), gasket ring (7), strainer (8), and spring (9) from fuel filter (10). Discard gasket rings.



b. Fuel Filter Strainer Installation.



(1) Install spring (1) and strainer (2) in filter bowl (3).

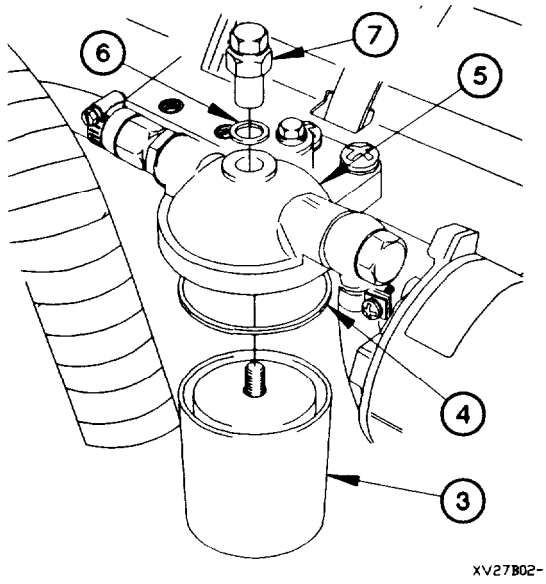
WARNING

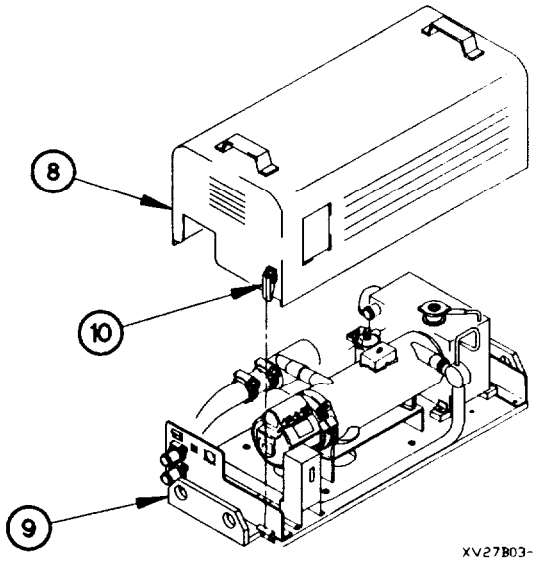
Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(2) Fill filter bowl (3) with diesel fuel.

(3) Position gasket ring (4) and filter bowl (3) on fuel filter assembly (5).

(4) Install gasket ring (6) and bolt (7) in fuel filter assembly (5)





CAUTION

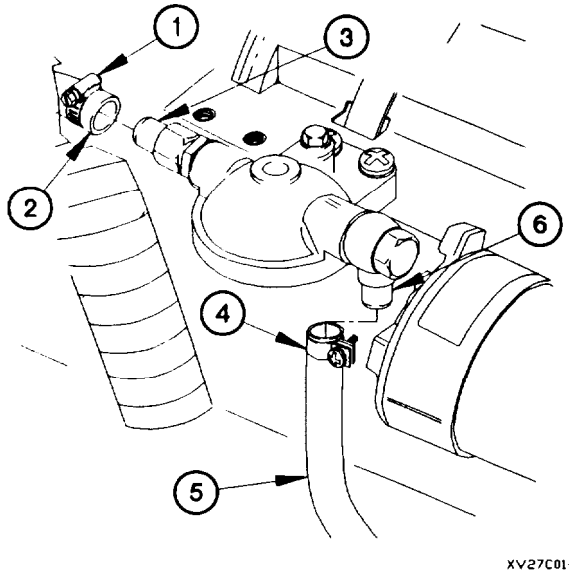
Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(5) Install cover (8) on heater enclosure (9) with two latches (10).

c. Fuel Filter Head Assembly Removal.

(1) Loosen hose clamp (1) and remove hose (2) from fitting (3).

(2) Loosen hose clamp (4) and remove hose (5) from 90-degree fitting (6).

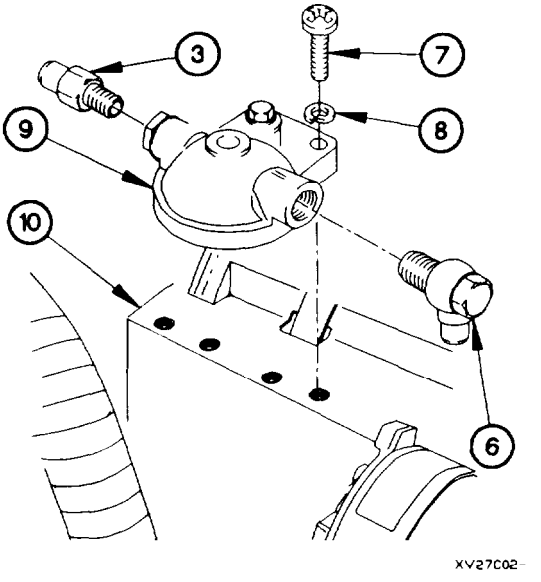


20-28. CARGO ARCTIC HEATER FUEL FILTER STRAINER/FILTER ASSEMBLY REPLACEMENT (CONT)

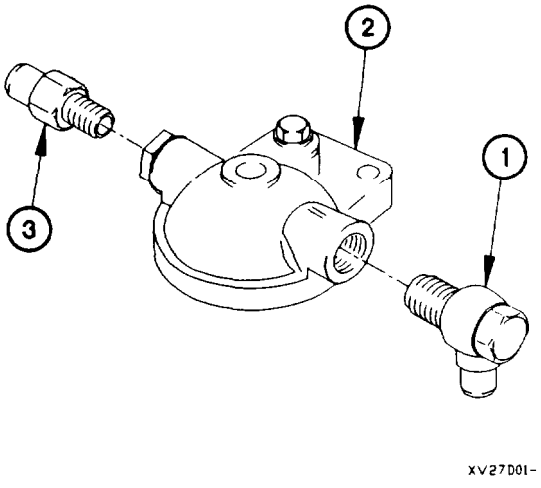
(3) Remove two screws (7), lockwashers (8), and fuel filter head (9) from mounting bracket (10). Discard lockwashers.

(4) Remove fitting (3) from fuel filter head (9).

(5) Remove 90-degree fitting (6) from fuel filter head (9).



d. Fuel Filter Head Assembly Installation.



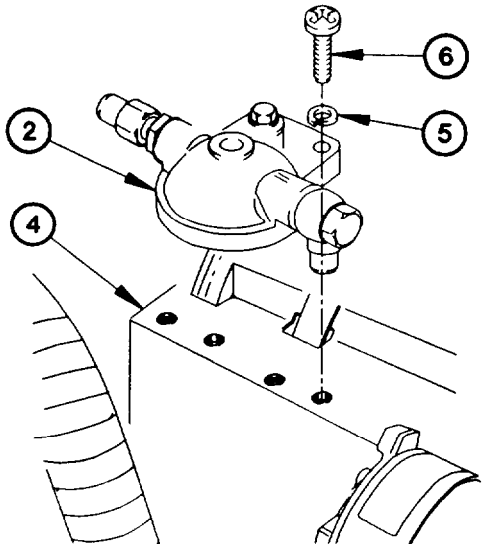
WARNING

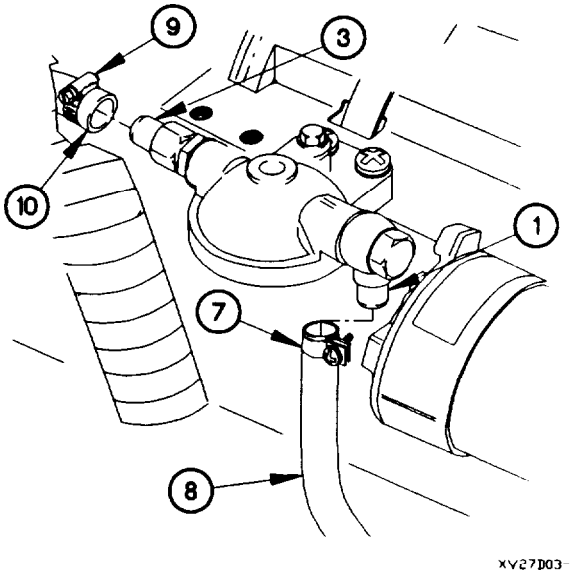
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(1) Apply antiseize compound on 90-degree fitting (1) and install on fuel filter head (2).

(2) Apply antiseize compound on inlet fitting (3) and install on fuel filter head (2).

(3) Install fuel filter head (2) on mounting bracket (4) with two lockwashers (5) and screws (6).





(4) Position hose clamp (7) and hose (8) on 90-degree fitting (1).

(5) Position hose clamp (9) and hose (10) on inlet fitting

(6) Tighten hose clamps (7 and 9) to 27-38 lb-in. (3-4 N•m).

e. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for fuel leaks and proper operation (TM 9-2320-365-10).

End of Task.

20-29. CARGO ARCTIC HEATER FUEL PUMP REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

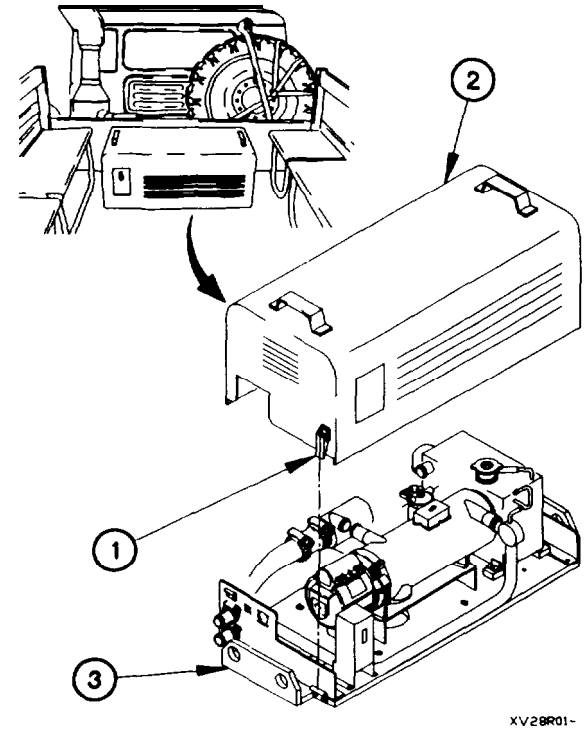
Materials/Parts
Lockwasher (4) (Item 109, Appendix G)
Lockwasher (2) (Item 107, Appendix G)
Ring, Bushing (4) (Item 214, Appendix G)
Pin, Cotter (Item 209, Appendix G)

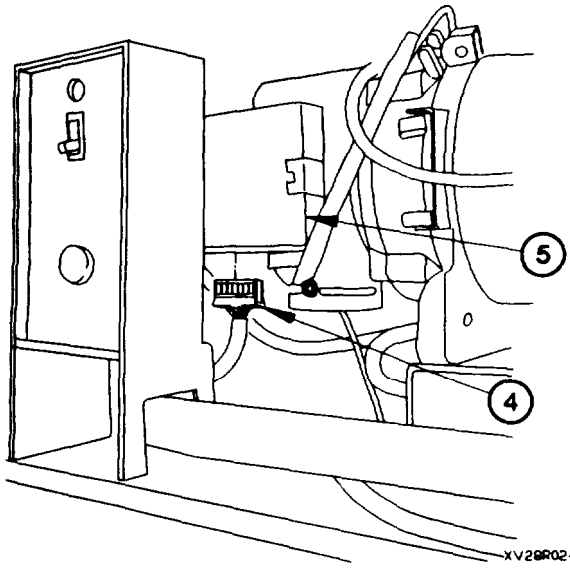
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





NOTE

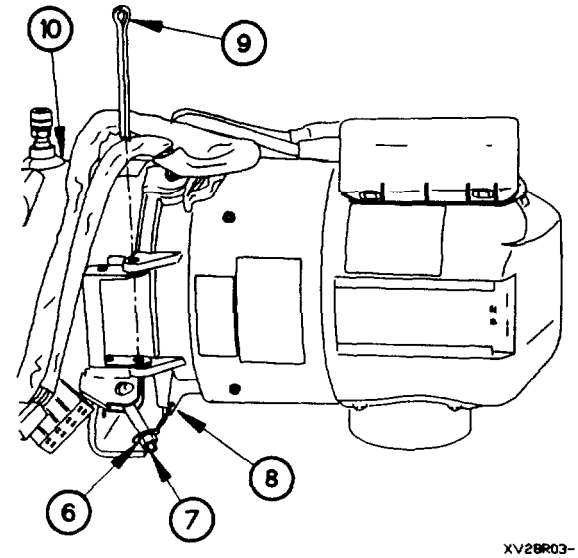
Tag electrical connectors and connection points prior to disconnecting.

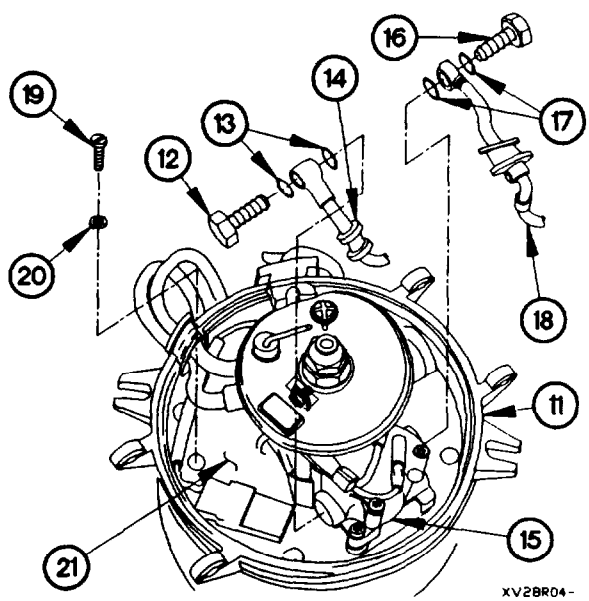
(2) Disconnect electrical connector (4) from electronic control unit (5).

(3) Loosen nut (6) on two bolts (7).

(4) Remove two bolts (7) from tabs (8).

(5) Remove cotter pin (9) from coolant heater assembly (10). Discard cotter pin.





CAUTION

Use care not to damage fuel hoses when moving burner head. Failure to comply may result in damage to equipment.

(6) Position burner head (11) in upright position.

WARNING

Diesel fuel is flammable. Arctic heater components and fuel hoses may contain small amounts of fuel. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(7) Remove screw (12), two gaskets (13), and fuel hose (14) from fuel pump (15). Discard gaskets.

(8) Remove screw (16), two gaskets (17), and fuel hose (18) from fuel pump (15). Discard gaskets.

(9) Remove four screws (19) and lockwashers (20) from nozzle plate (21). Discard lockwashers.

20-29. CARGO ARCTIC HEATER FUEL PUMP REPLACEMENT (CONT)

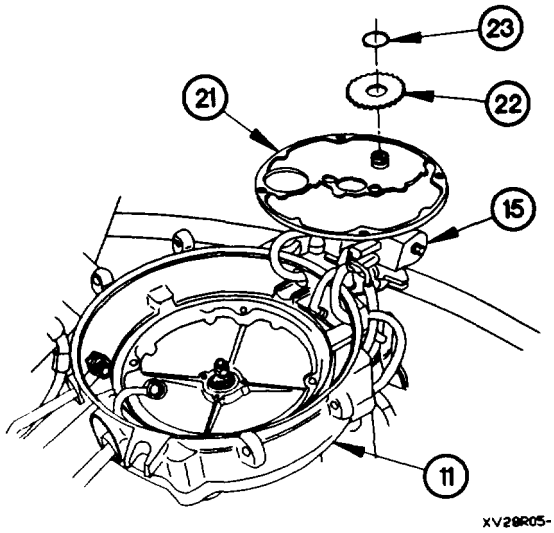
(10) Lift nozzle plate (21) to gain access to gear (22).

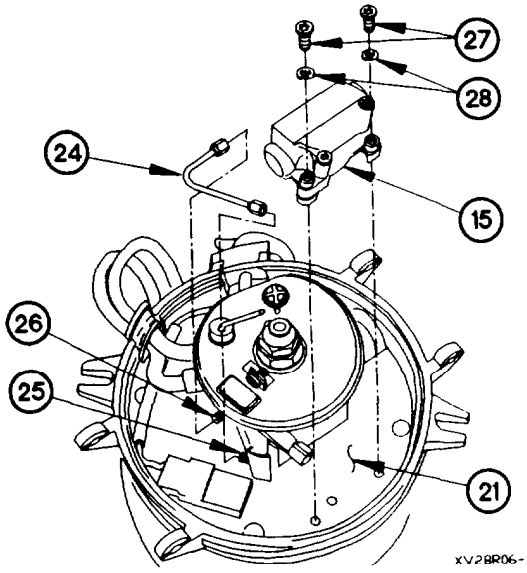
WARNING

Use care when removing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(11) Remove retaining clip (23) and gear (22) from fuel pump (15).

(12) Position nozzle plate (21) on burner head (11)





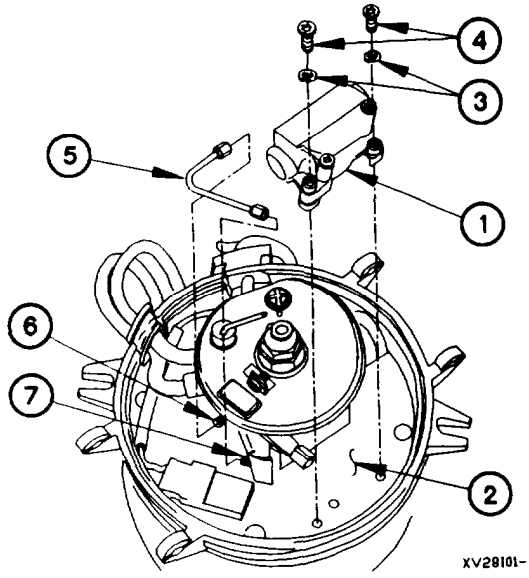
(13) Remove fuel line (24) from fuel pump fitting (25) and nozzle holder fitting (26).

(14) Remove two screws (27), lockwashers (28) and fuel pump (15) from nozzle plate (21). Discard lockwashers.

b. Installation.

(1) Install fuel pump (1) on nozzle plate (2) with two lockwashers (3) and screws (4).

(2) Install fuel line (5) on fuel pump fitting (6) and nozzle holder fitting (7).

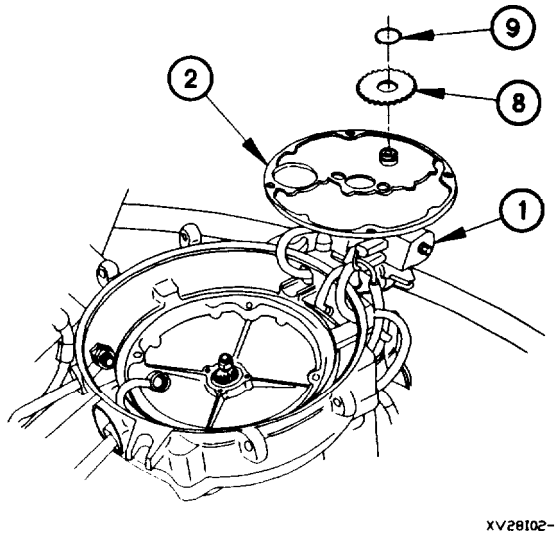


(3) Lift nozzle plate (2) to install gear (8).

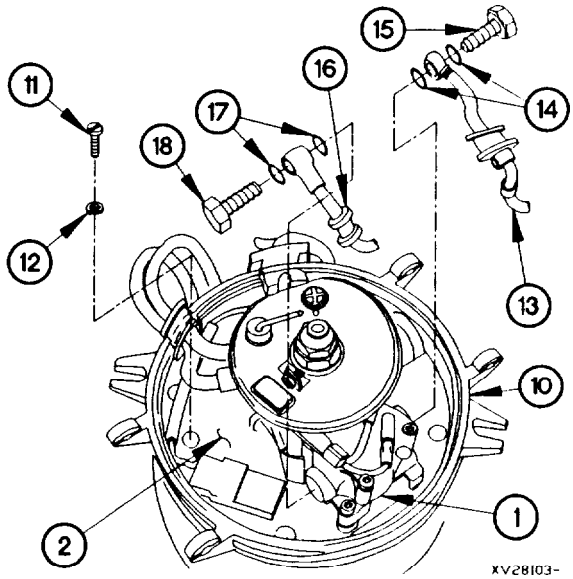
WARNING

Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(4) Install gear (8) on fuel pump (1) with retaining clip (9).



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(5) Install nozzle plate (2) on burner head (10) with four lockwashers (11) and screws (12).

(6) Install fuel line (13) on fuel pump (1) with two gaskets (14) and screws (15).

(7) Install fuel hose (16) on fuel pump (1) with two gaskets (17) and screws (18).

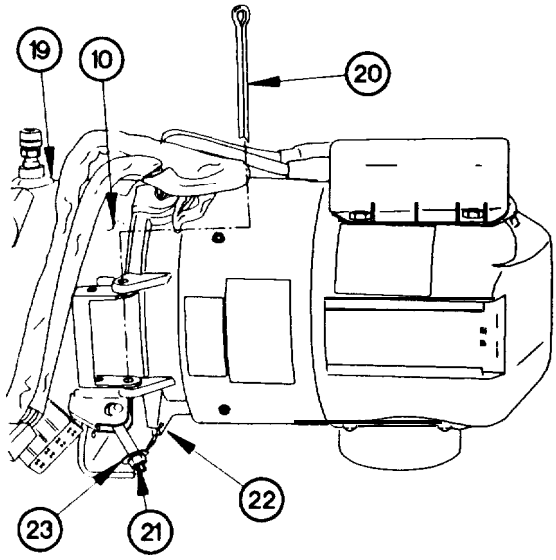
CAUTION

Use care not to damage fuel lines when moving burner head. Failure to comply may result in damage to equipment.

(8) Install burner head (10) on coolant heater assembly (19) with cotter pin (20).

(9) Position two bolts (21) on tabs (22).

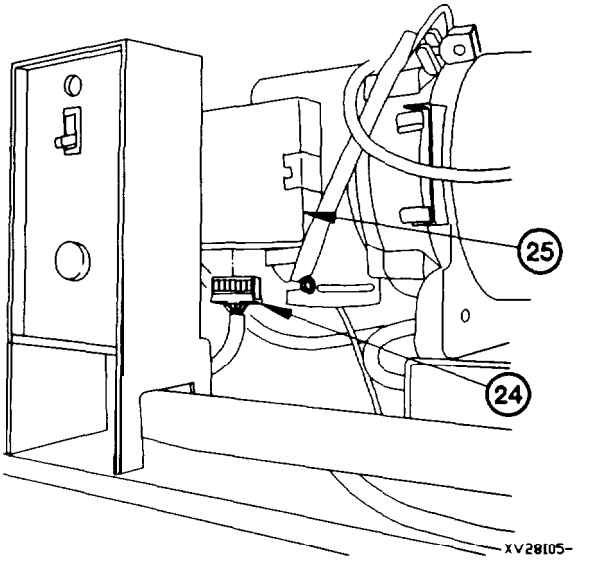
(10) Tighten two nuts (23) on bolts (21).

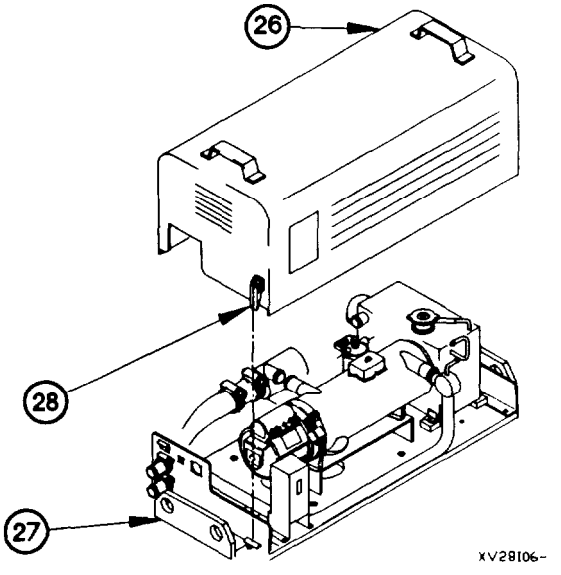


XVEBI04-

20-29. CARGO ARCTIC HEATER FUEL PUMP REPLACEMENT (CONT)

(11) Connect electrical connector (24) to electronic control unit (25).





CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(12) Install cover (26) on heater enclosure (27) with two latches (28).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-30. CARGO ARCTIC HEATER FUEL NOZZLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

Materials/Parts
Pin, Cotter (Item 209, Appendix G)

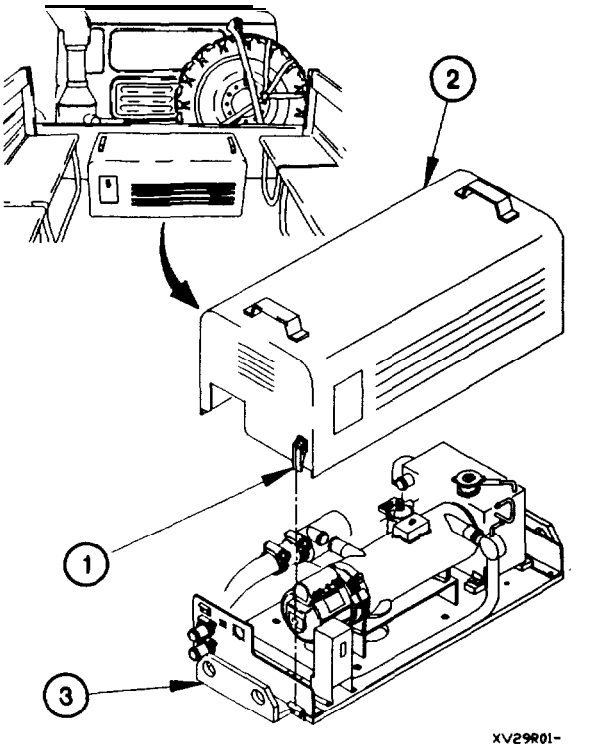
a. Removal.

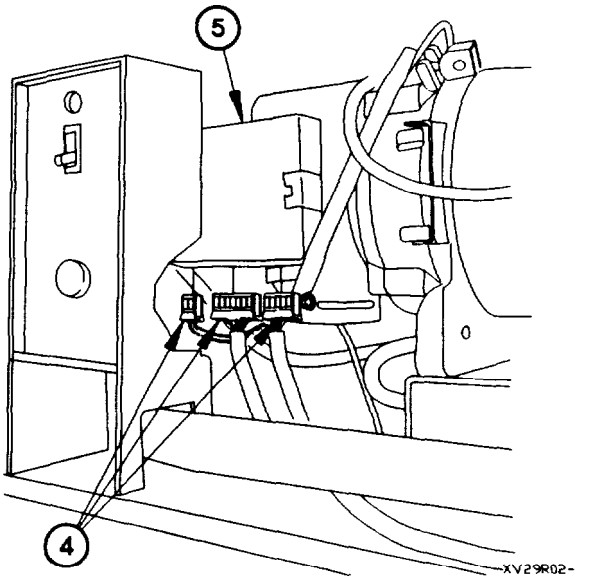
CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Open two latches (1) on enclosure cover (2).

(2) Remove enclosure cover (2) from heater enclosure assembly (3).





NOTE

Tag electrical connectors and connection points prior to disconnecting.

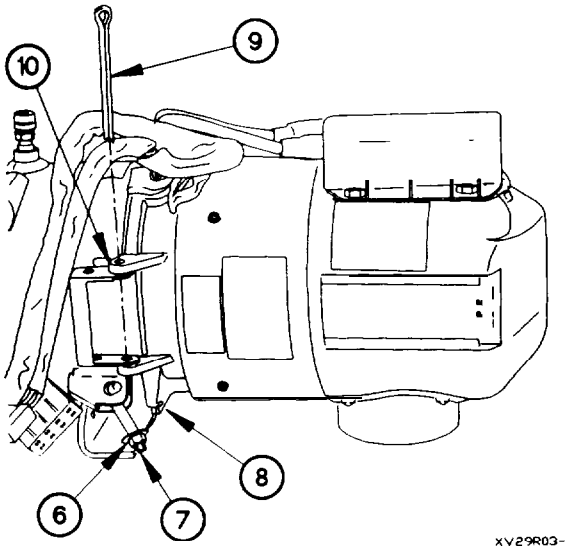
(3) Disconnect connector (4) from control unit (5).

20-30. CARGO ARCTIC HEATER FUEL NOZZLE REPLACEMENT (CONT)

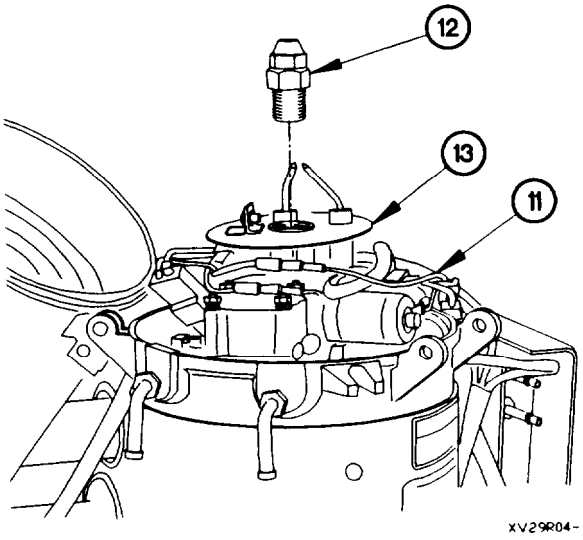
(4) Loosen nuts (6) on two bolts (7).

(5) Release two bolts (7) from tabs (8).

(6) Remove cotter pin (9) from coolant heater assembly (10). Discard cotter pin.



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XV29R04-

CAUTION

Use care when moving burner head to prevent damage to fuel lines. Failure to comply may result in damage to equipment.

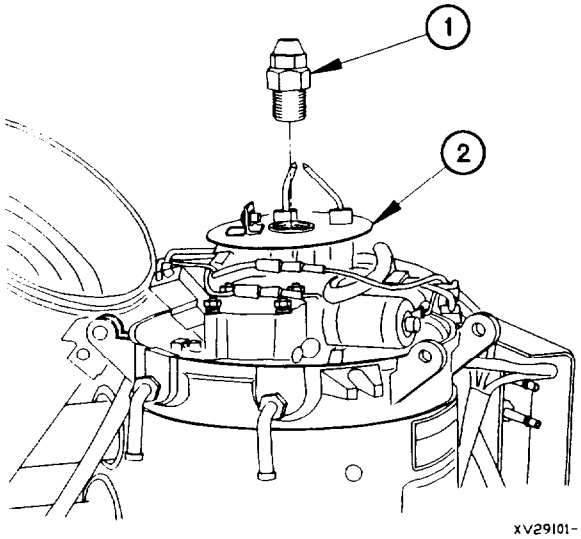
(7) Position burner head (11) in upright position.

(8) Remove fuel nozzle (12) from nozzle holder (13).

b. Installation.

(1) Position fuel nozzle (1) on nozzle holder (2).

(2) Tighten fuel nozzle (1) to 34 lb-in. (4 N•m).



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CAUTION

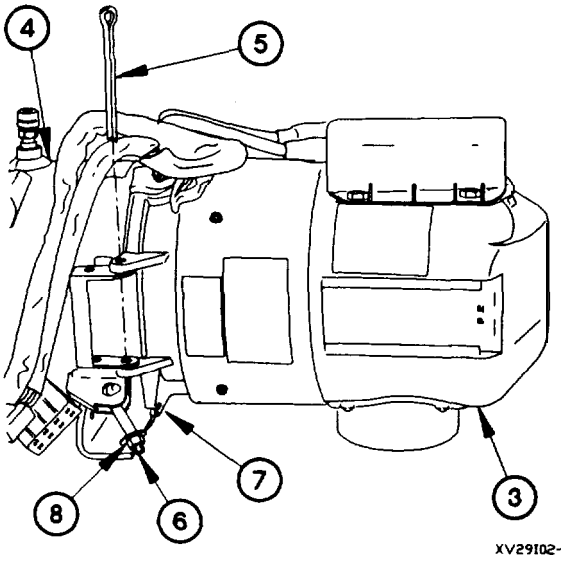
Use care when moving burner head to prevent damage to fuel lines. Failure to comply may result in damage to equipment.

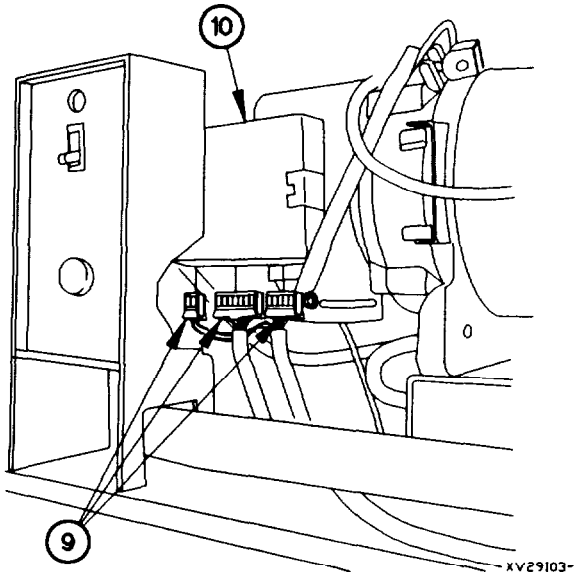
(3) Position burner head (3) on coolant heater assembly (4).

(4) Install cotter pin (5) on burner head (3).

(5) Position two bolts (6) in tabs (7).

(8) Tighten two nuts (8) on bolts (6).





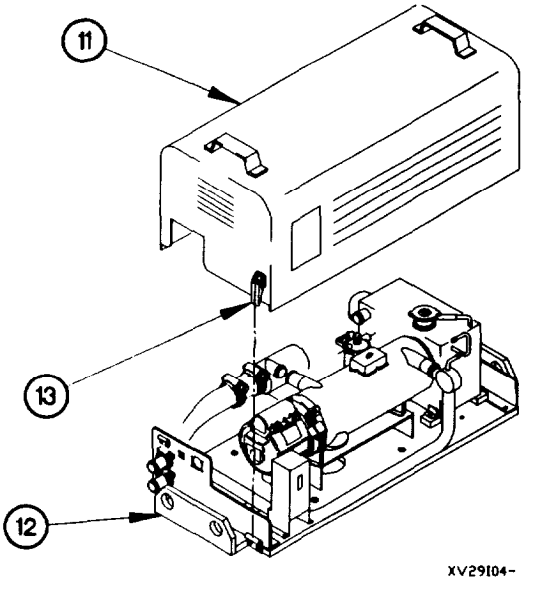
(7) Connect connector (9) to electronic control unit (10).

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(8) Position enclosure cover (11) on heater enclosure assembly (12).

(9) Fasten two latches (13) on enclosure cover (11).



20-30. CARGO ARCTIC HEATER FUEL NOZZLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-31. CARGO ARCTIC HEATER COMBUSTION CHAMBER REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Pin, Cotter (Item 209, Appendix G)

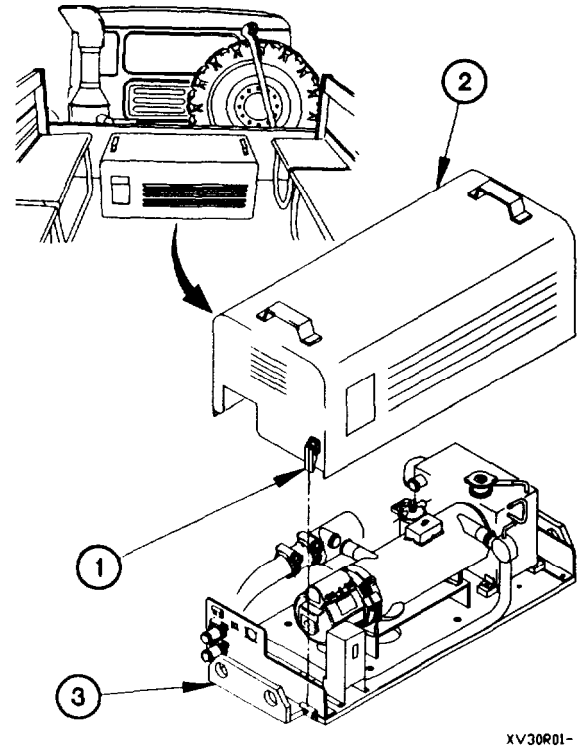
a. Removal.

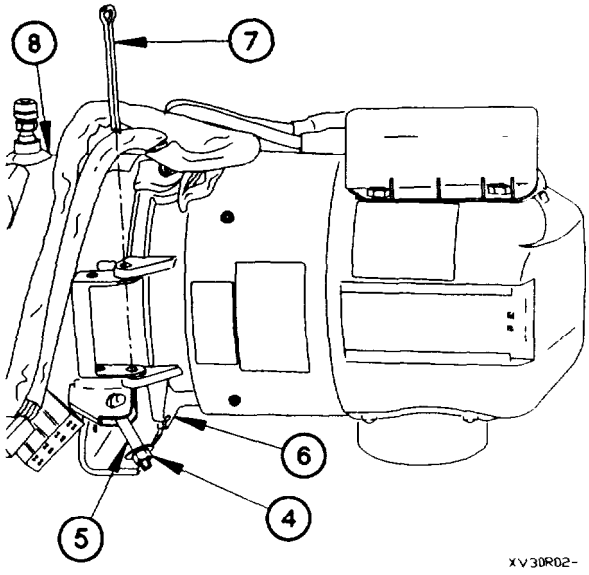
CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(1) Open two latches (1) on heater enclosure cover (2).

(2) Remove enclosure cover (2) from heater enclosure (3).





(3) Loosen two nuts (4) on bolts (5).

(4) Release two bolts (5) from tabs (6).

(5) Remove cotter pin (7) from heater coolant assembly (8). Discard cotter pin.

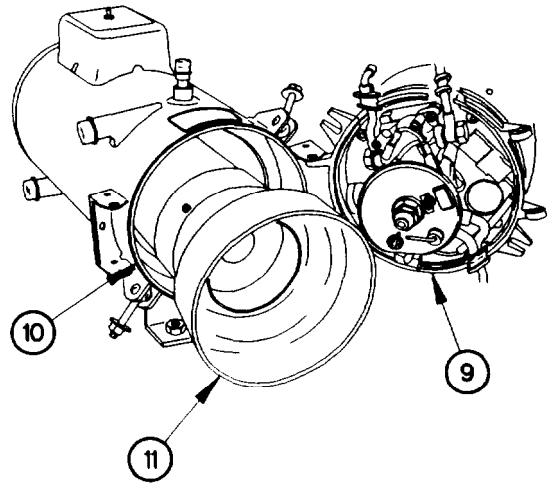
20-31. CARGO ARCTIC HEATER COMBUSTION CHAMBER REPLACEMENT (CONT)

CAUTION

Use care when moving burner head. Failure to comply may result in damage to equipment.

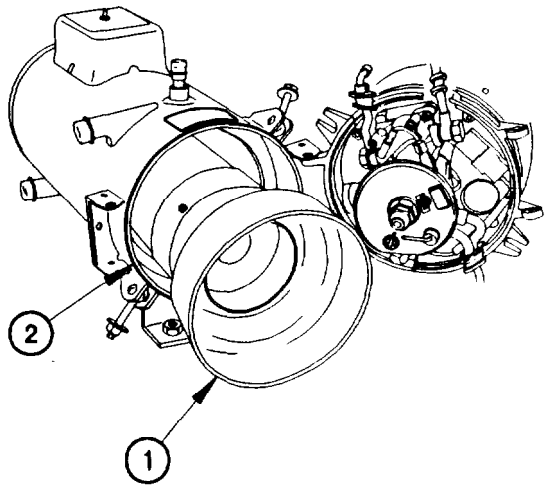
(6) Position burner head (9) away from heater coolant exchange (10).

(7) Remove combustion chamber (11) from heater coolant exchanger (10).



XV30R03-

b. Installation.



XV30101-

(1) Install combustion chamber (1) in heater coolant exchanger (2).

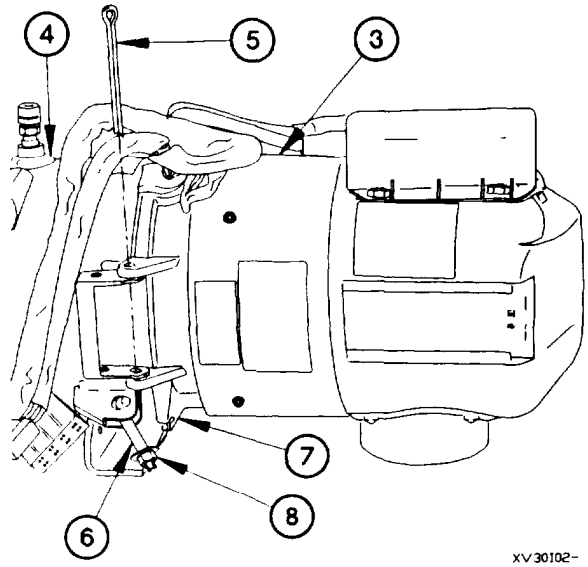
CAUTION

Use care when moving burner head. Failure to comply may result in damage to equipment.

(2) Install burner head (3) on heater coolant assembly (4) with cotter pin (5).

(3) Position two bolts (6) on tabs (7).

(4) Tighten two nuts (8) on bolts (6).



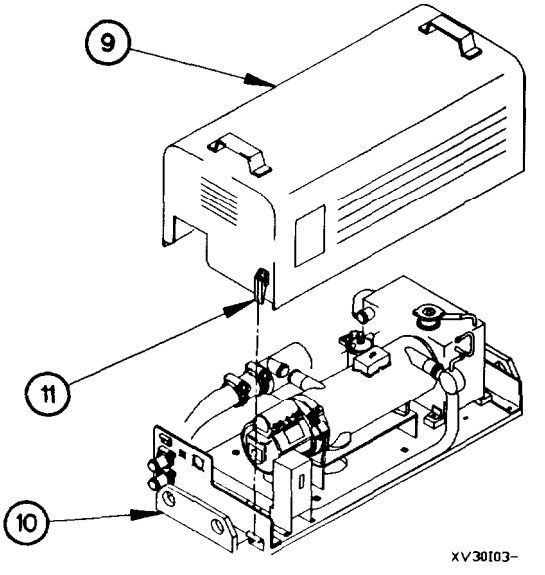
XV30102-

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(5) Position heater enclosure cover (9) on heater enclosure

(6) Fasten two latches (11) on heater enclosure cover (9).



c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(1) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-32. CARGO ARCTIC HEATER MOTOR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

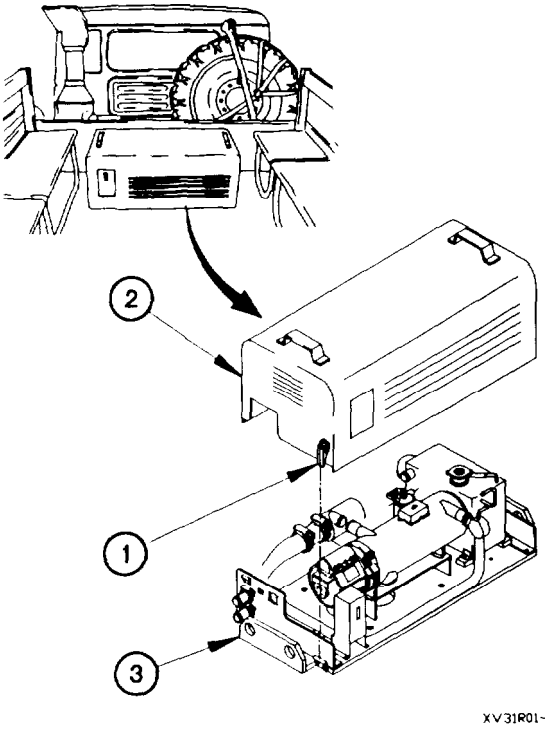
Materials/Parts
Lockwasher (4) (Item 105, Appendix G)
Lockwasher (3) (Item 106, Appendix G)
Lockwasher (3) (Item 107, Appendix G)

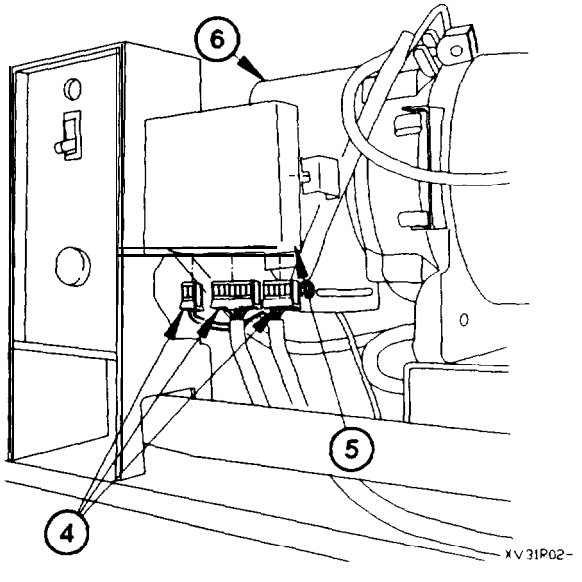
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to Comply may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).





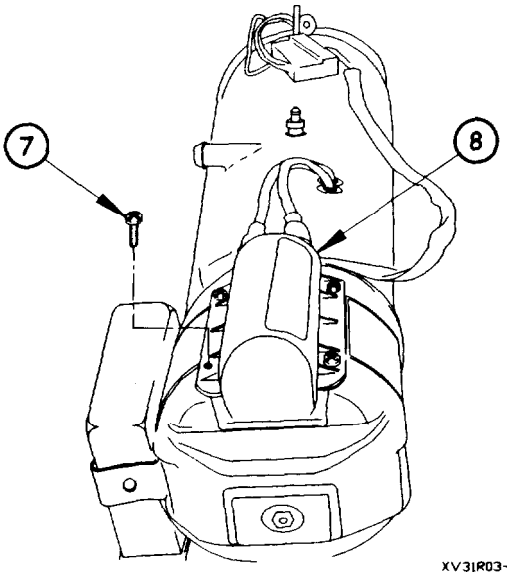
NOTE

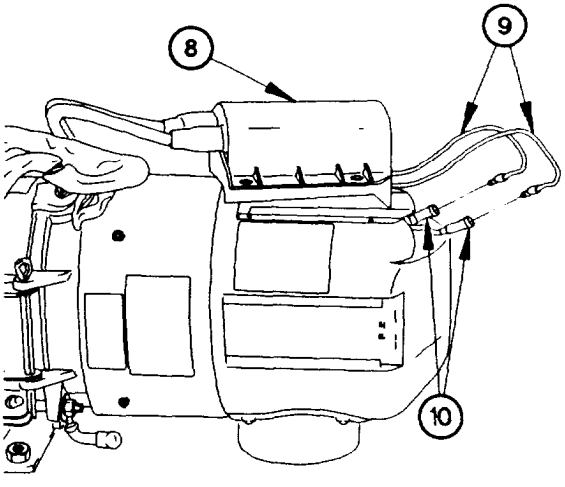
Tag electrical connectors and connection points prior to disconnecting.

(2) Disconnect three electrical connectors (4) from electronic control unit (5).

(3) Remove electronic control unit (5) from motor cover (6).

(4) Remove four screws (7) from ignition coil (8).





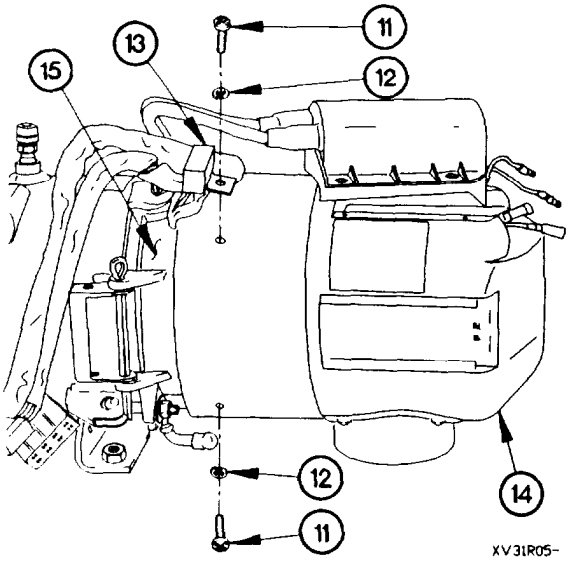
(5) Move ignition coil (8) enough to access ignition coil power leads (9).

(6) Disconnect two ignition coil power leads (9) from wiring harness (10).

CAUTION

Use care when removing motor cover. Failure to comply may result in damage to equipment.

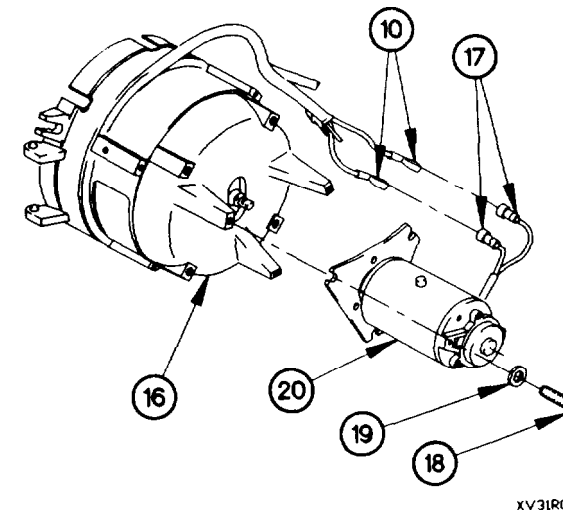
(7) Remove four screws (11), lockwashers (12), igniter gap gauge (13), and motor cover (14) from motor support (15). Discard lockwashers.

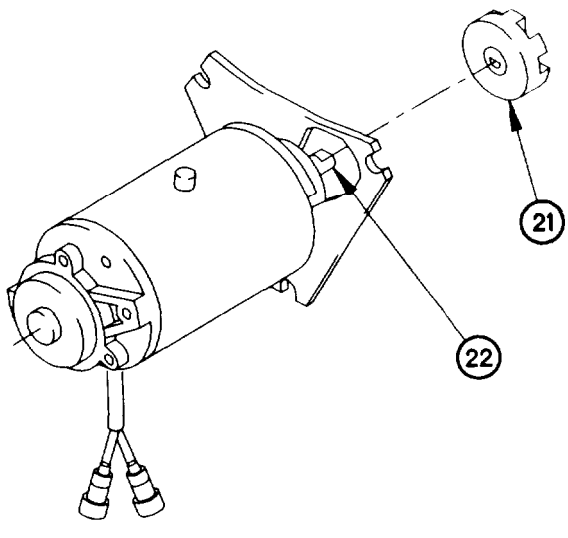


20-32. CARGO ARCTIC HEATER MOTOR REPLACEMENT (CONT)

(8) Disconnect two motor leads (17) from wiring harness (10).

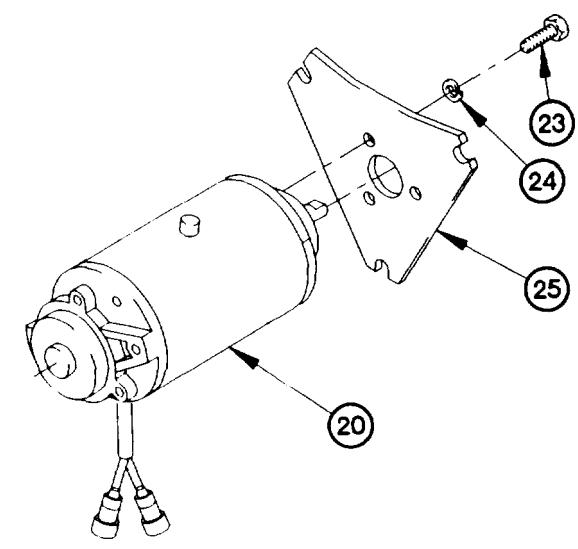
(9) Remove three screws (18), lockwashers (19), and motor (20) from motor support (16). Discard lockwashers.





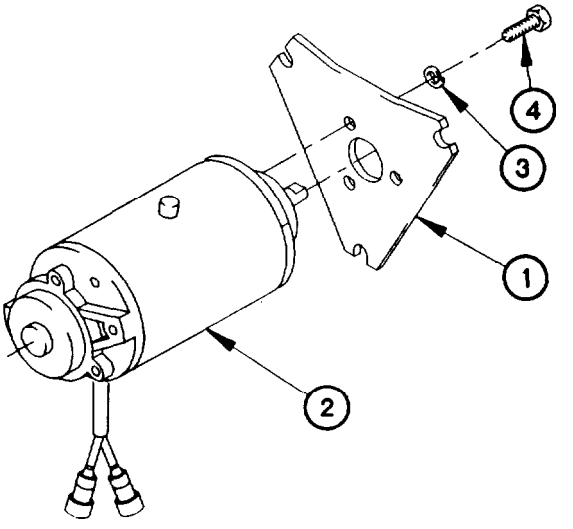
(10) Remove clutch half (21) from motor shaft (22).

(11) Remove three screws (23), lockwashers (24) and flange (25) from motor (20). Discard lockwashers.

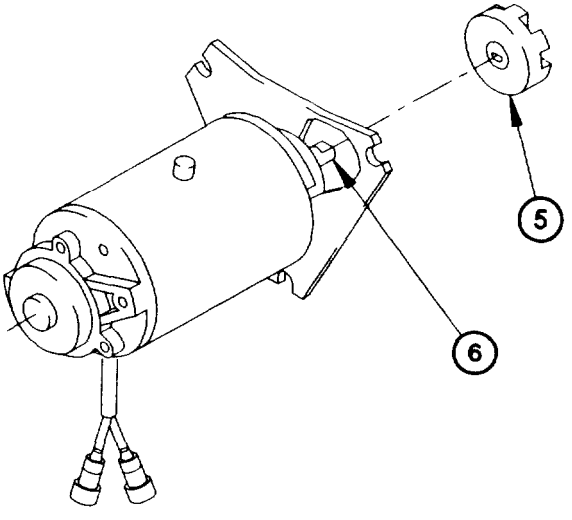


b. Installation.

(1) Install flange (1) on motor (2) with three lockwashers (3) and screws (4).



XV31101-

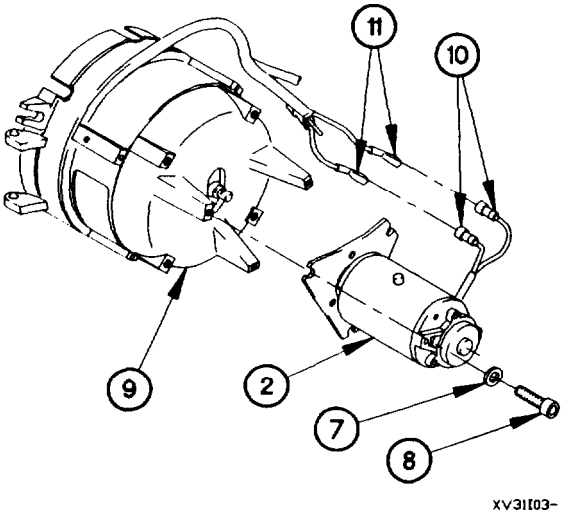


XV31102-

(2) Install clutch half (5) on motor shaft (6).

(3) Install motor (2) on motor support (7) with three lockwashers (8) and screws (9).

(4) Connect two motor leads (10) to wiring harness (11).



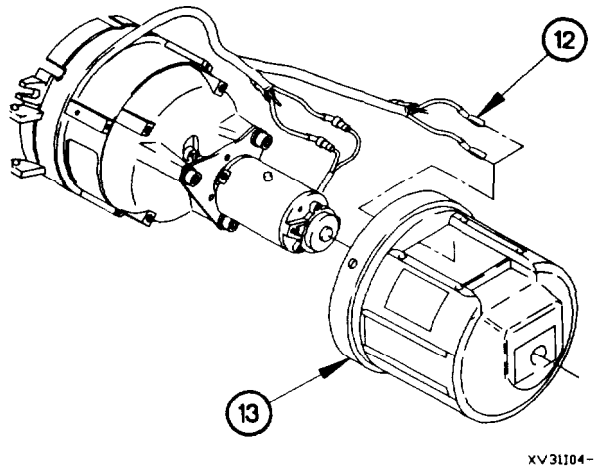
XV31103-

20-32. CARGO ARCTIC HEATER MOTOR REPLACEMENT (CONT)

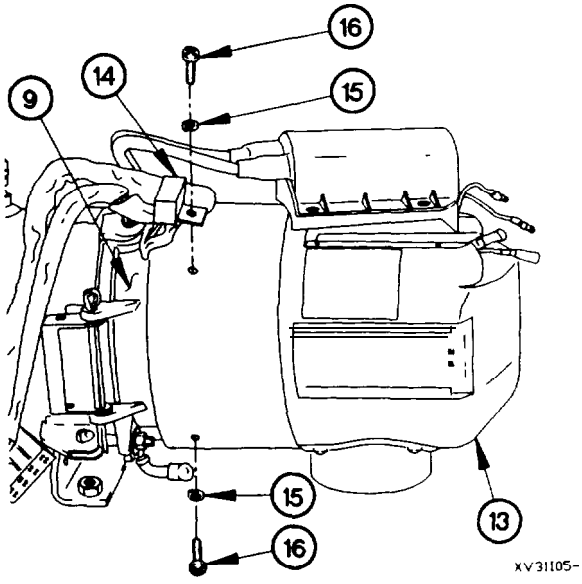
CAUTION

Use care when installing motor cover. Failure to comply may result in damage to equipment.

(5) Route two wiring harness electrical leads (12) through opening at rear of motor cover (13).



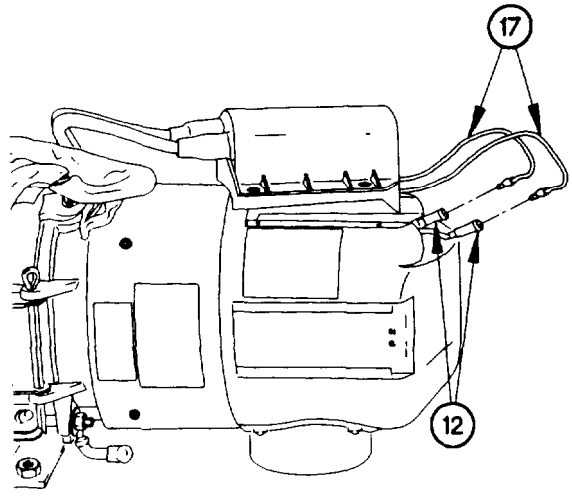
XV31104-



XV31105-

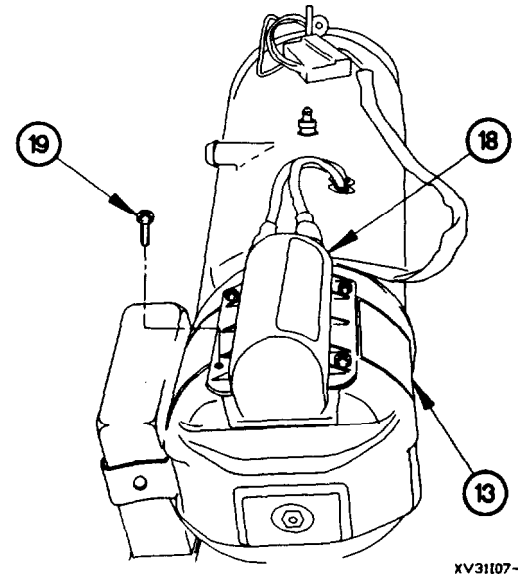
(6) Install motor cover (13) and igniter gap gauge (14) on motor support (9) with four lockwashers (15) and screws (16).

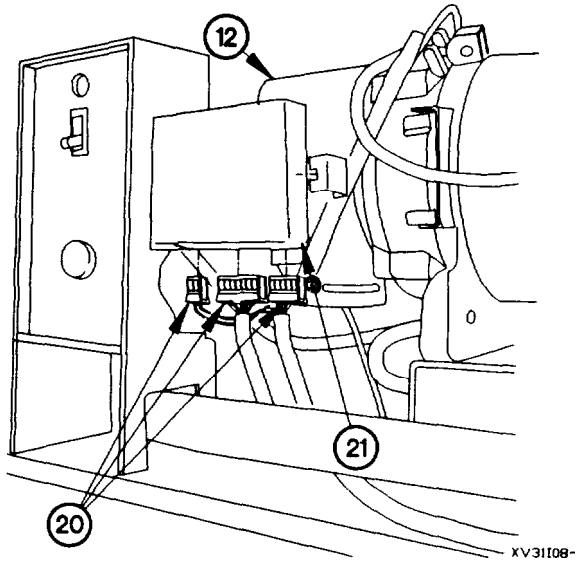
(7) Connect two ignition coil power leads (17) to wiring harness electrical leads (12).



XV31106-

(8) Install ignition coil (18) on motor cover (13) with four screws (19).





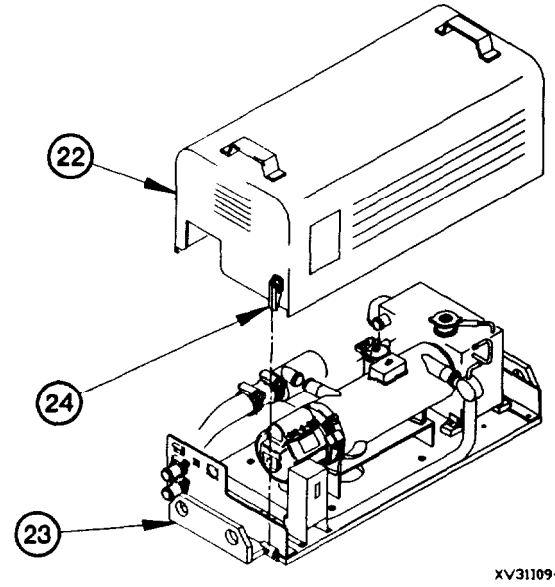
(9) Connect three electrical connectors (20) on electronic control unit (21).

(10) Install electronic control unit (21) on motor cover (12).

CAUTION

Enclosure cover fits very snugly. Use caution when installing cover. Failure to comply may result in damage to equipment.

(11) Install cover (22) on heater enclosure (23) with two latches (24).



c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-33. CARGO ARCTIC HEATER FURNACE EXHAUST PIPE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

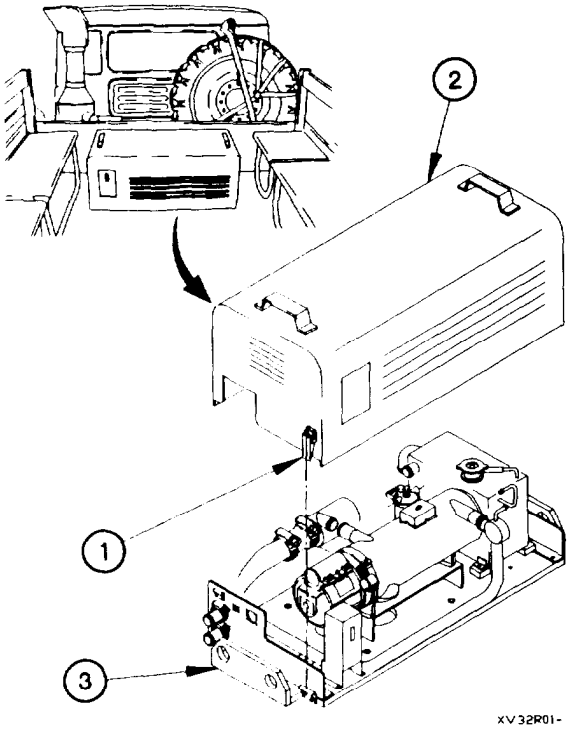
Materials/Parts
Nut, Self-locking (3) (Item 146, Appendix G)
Nut, Self-locking (1) (Item 134, Appendix G)
Nut, Self-locking (2) (Item 135, Appendix G)

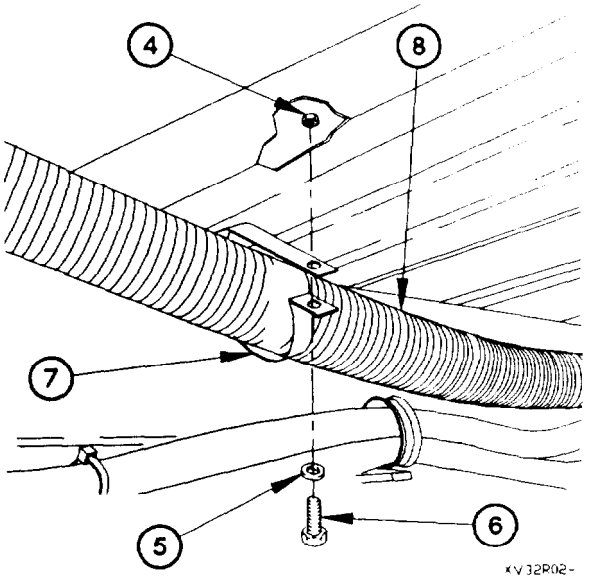
a. Removal.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

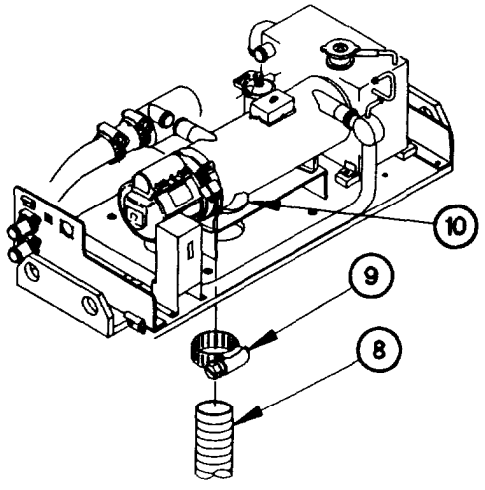
(1) Release two latches (1) and remove cover (2) from heater enclosure (3).



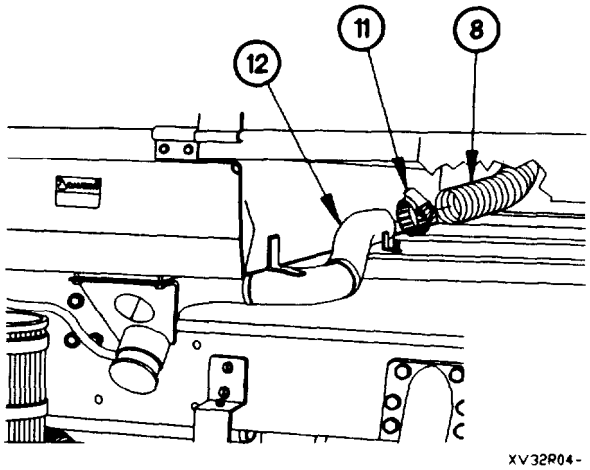


(2) Remove three self-locking nuts (4), washers (5), screws (6), and clamps (7) from flex hose (8). Discard self-locking nuts.

(3) Remove clamp (9) and flex hose (8) from heater exhaust port (10).



XV32R03-

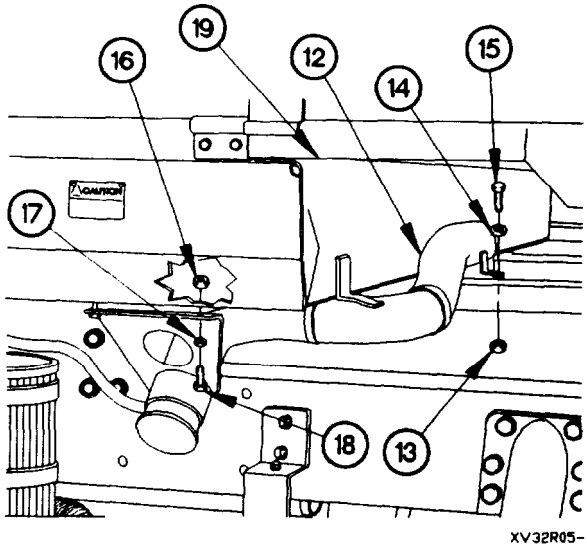


XV32R04-

(4) Remove clamp (11) and flex hose (8) from exhaust pipe (12).

(5) Remove self-locking nut (13), washer (14), and screw (15) from exhaust pipe (12). Discard self-locking nut.

(6) Remove two self-locking nuts (16), washers (17), screws (18) and exhaust pipe (12) from cargo bed (19). Discard self-locking nuts.



XV32R05-

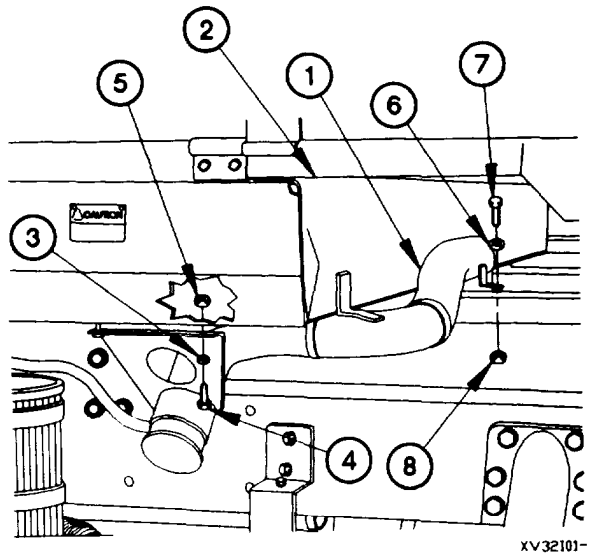
20-33. CARGO ARCTIC HEATER FURNACE EXHAUST PIPE REPLACEMENT (CONT)

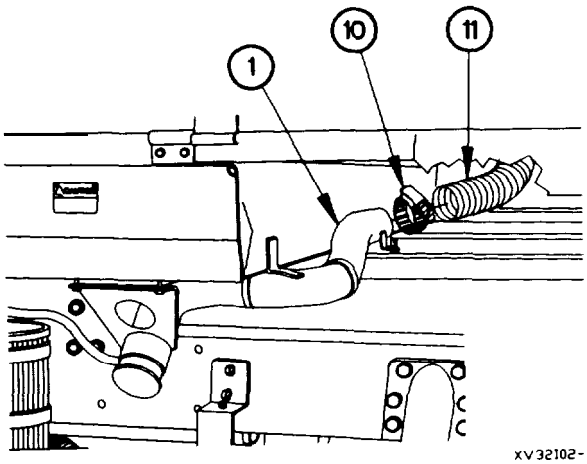
b. Installation.

(1) Position exhaust pipe (1) on cargo bed (2) with two washers (3), screws (4) and self-locking nuts (5).

(2) Position washer (6), screw (7), and self-locking nut (8) in exhaust pipe (1).

(3) Tighten self-locking nuts (5 and 8) to 21-27 lb-ft (28-36 N•m).



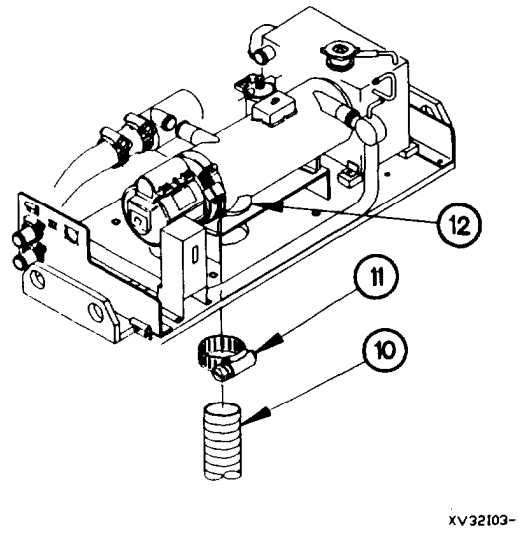


(4) Position clamp (10) and flex hose (11) on exhaust pipe (1).

(5) Tighten clamp (10) to 27-33 lb-in. (3-4 N•m).

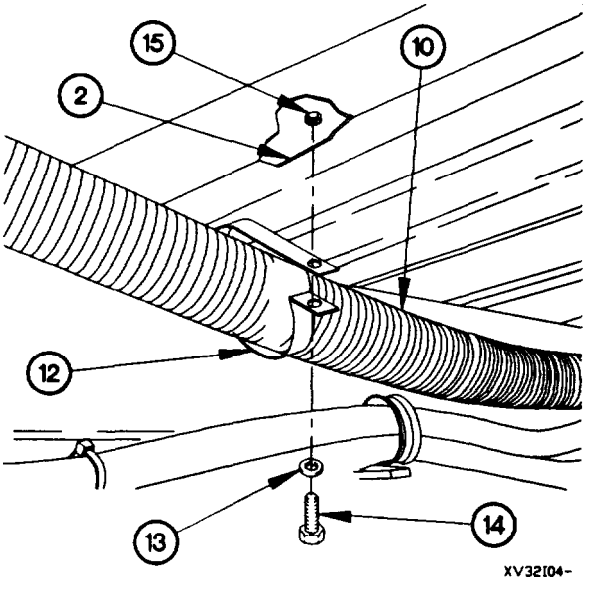
(6) Position clamp (11) and flex hose (10) on heater exhaust port (12).

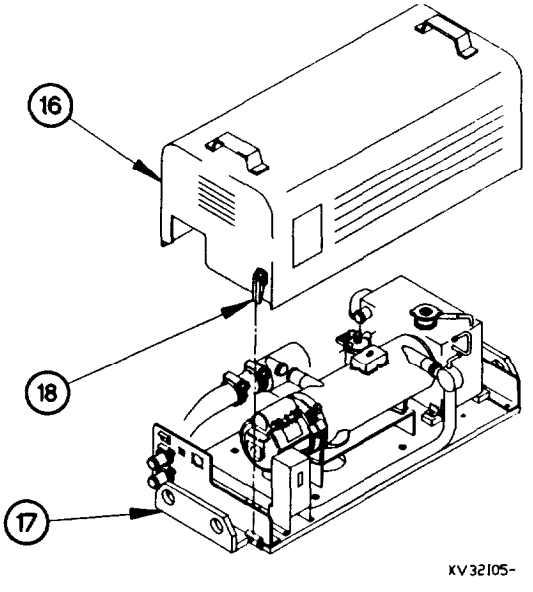
(7) Tighten clamp (11) to 27-33 lb-in. (3-4 N•m).



(8) Position flex hose (10) on cargo bed (2) with three clamps (12), washers (13), screws (14) and self-locking nuts (15).

(9) Tighten self-locking nuts (15) to 27-33 lb-in. (3-4 N•m).





CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(10) Install cover (16) on heater enclosure (17) with two latches (18).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cargo arctic heater and check for proper operation (TM 9-2320-365-10).

End of Task.

20-34. CARGO ARCTIC HEATER DRAINING, FILLING AND PURGING

This task covers:

a. Draining
b. Filling and Purging
c. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Dispensing Pump, Hand Driven (Item 5, Appendix C)
Pan, Drain (Item 24, Appendix C)

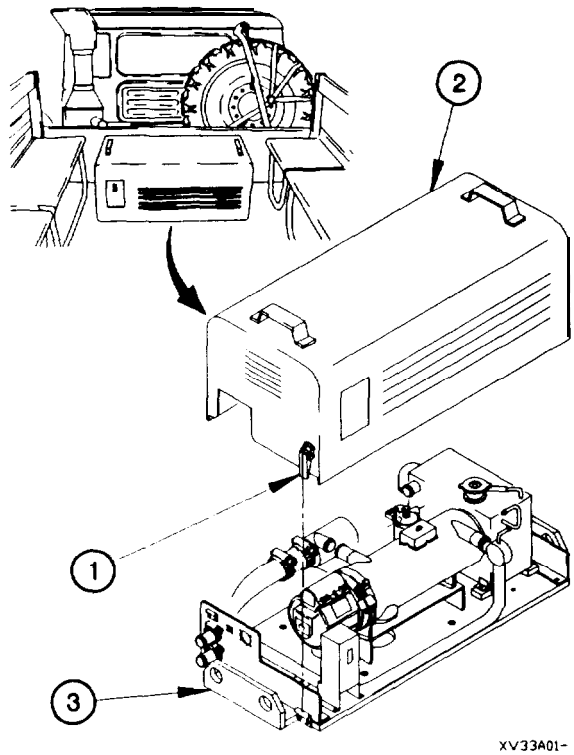
Materials/Parts
Antifreeze, Arctic Type (Item 12, Appendix D)

a. Draining.

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to do so may result in damage to equipment.

(1) Release two latches (1) and remove cover (2) from heater enclosure (3).

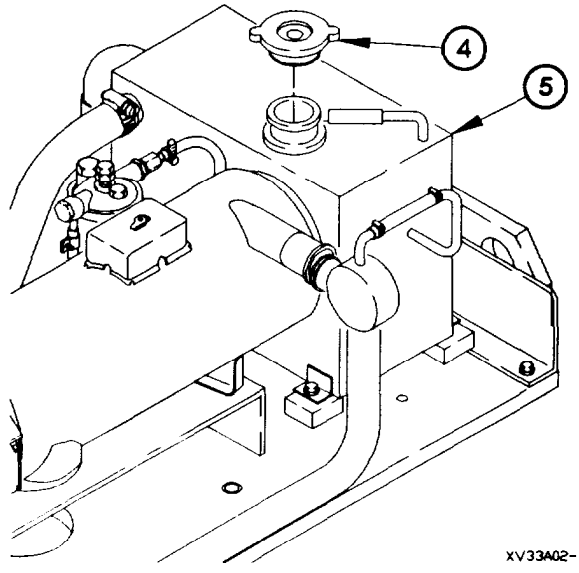


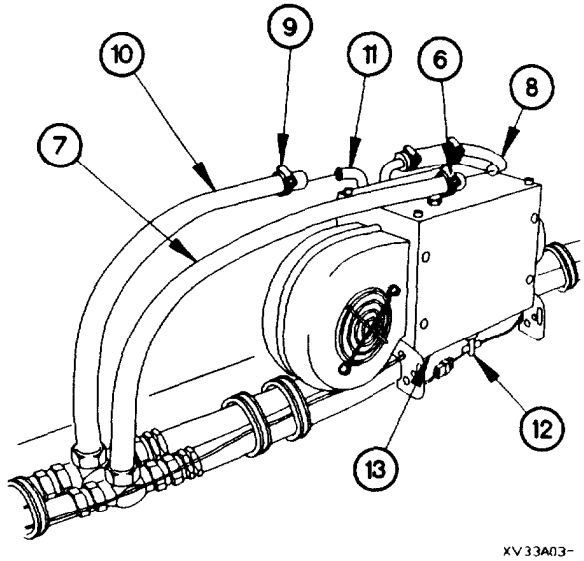
WARNING

- Do not open coolant fill cap if temperature reads above 110 degrees F (43 degrees C). Steam or hot coolant is under pressure. Failure to comply may result in injury to personnel.
- Pressure in reservoir tank must be released before removing cap. Failure to comply may result in injury to personnel.

(2) Remove reservoir fill cap (4) from reservoir (5).

(3) Pump coolant from reservoir (5).





NOTE

Rear left and right, and front left and right heaters are drained the same way. Left front shown.

(4) Loosen clamp (6) on supply hose (7).

(5) Remove supply hose (7) on heater fitting (8) and drain coolant into pan.

(6) Loosen clamp (9) from return hose (10).

(7) Remove return hose (10) from heater fitting (11) and drain coolant into pan.

(8) Open drain valve (12) on heater (13) and drain coolant into pan.

20-34. CARGO ARCTIC HEATER DRAINING, FILLING AND PURGING (CONT)

(9) Close drain valve (12) on heater (13).

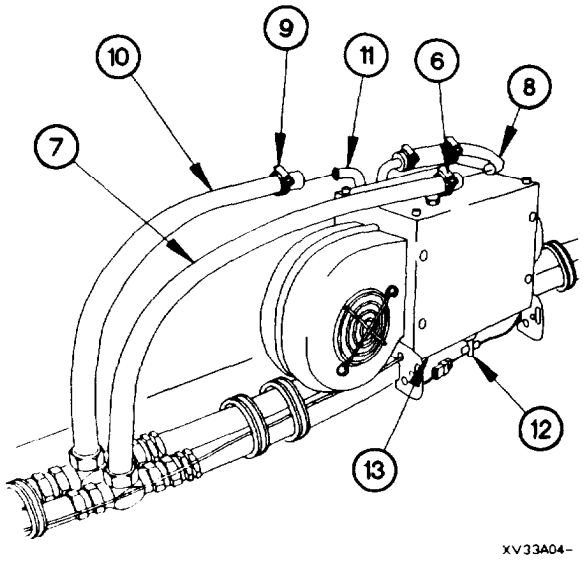
(10) Position clamp (9) and return hose (10) on heater fitting (11) with clamp (9).

(11) Position supply hose (7) on heater fitting (8) with clamp (6).

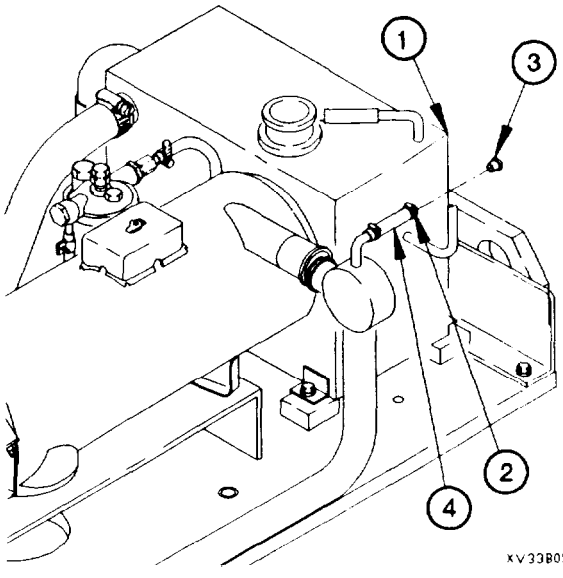
(12) Tighten clamps (9 and 6) to 26-33 lb-in. (3-4 N•M).

NOTE

Repeat steps (4) through (12) for right front, and left and right rear heaters.



b. Filling and Purging.



(1) Fill reservoir (1) with coolant.

(2) Loosen clamp (2) and remove plug (3) from purge hose (4).

(3) Start arctic heater (TM 9-2320-365-10).

(4) Stop arctic heater (TM 9-2320-365-10) when coolant flows from purge hose (4).

NOTE

Fill coolant reservoir after each purging cycle.

(5) Install plug (3) in purge hose (4) with clamp (2).

NOTE

Rear left and right, and front left and right heaters are purged the same way. Left front shown.

(6) Open purge valve (5) on heater (6).

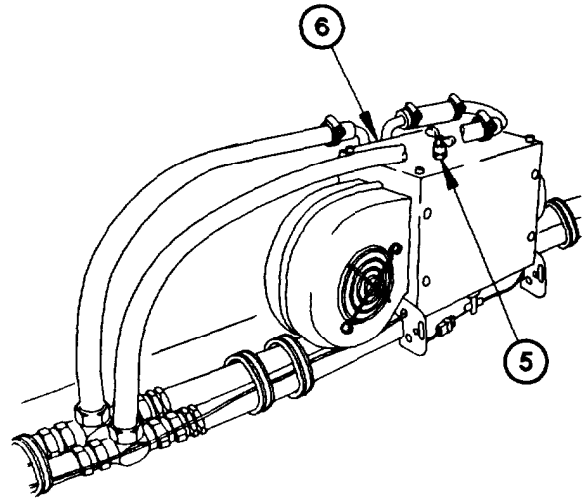
(7) Start arctic heater (TM 9-2320-365-10).

(8) Stop arctic heater (TM 9-2320-365-10) when coolant flows from purge valve.

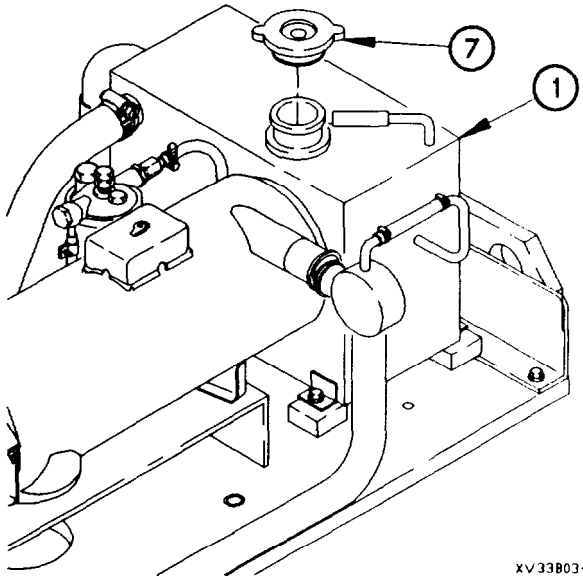
(9) Close purge valve (5) on heater (6).

NOTE

Repeat steps (6) through (9) for purging rear right, and front left and right heaters.



XV33B02-



XV33B03-

NOTE

Repeat steps (1) through (9) until all air is purged from coolant system.

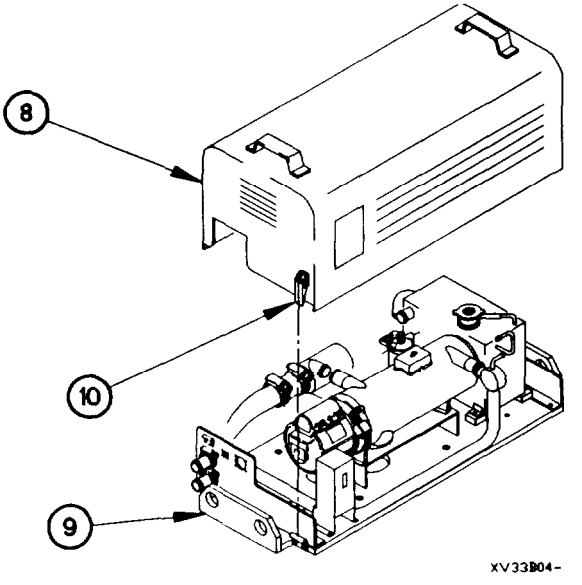
(10) Install reservoir fill cap (7) on reservoir (1).

20-34. CARGO ARCTIC HEATER DRAINING, FILLING AND PURGING (CONT)

CAUTION

Enclosure cover fits very snugly. Use caution when removing cover. Failure to comply may result in damage to equipment.

(11) Install cover (8) on heater enclosure (9) with two latches (10).



c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Operate cab coolant heater and check for leaks and proper operation (TM 9-2320-365-10).

End of Task.

20-35. SWINGFIRE KIT INITIAL INSTALLATION

This task covers:

a. Swingfire Installation

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Battery box removed (para 7-47).
Spare tire lowered (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Pan, Drain (Item 24, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)
Screwdriver Attachment, Socket Wrench (Item 53, Appendix B)

Materials/Parts
Grease, Automotive and Artillery (GAA) (Item 23, Appendix D)
Antiseize Compound (Item 14, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)

Personnel Required
(2)

a. Swingfire Installation.

(1) Remove radiator cap (1) from radiator overflow tank (2).

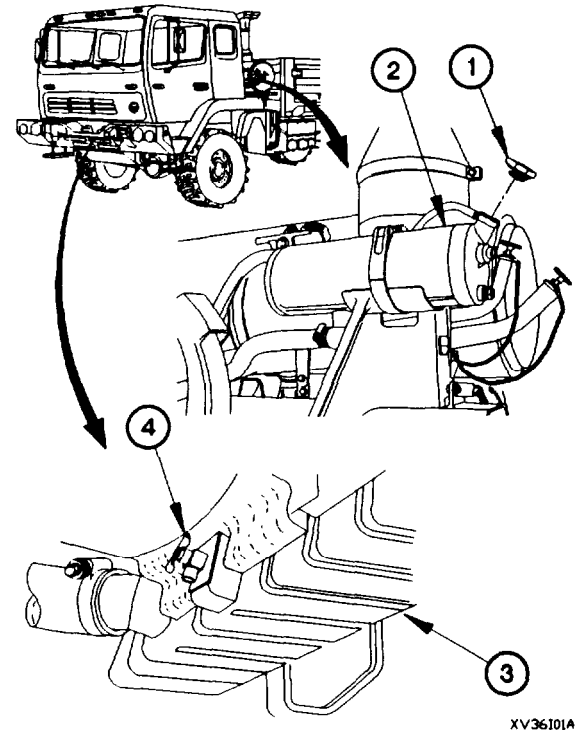
(2) Place container under radiator (3).

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

(3) Open radiator draincock (4) and drain coolant from radiator (3).

(4) Close radiator draincock (4).



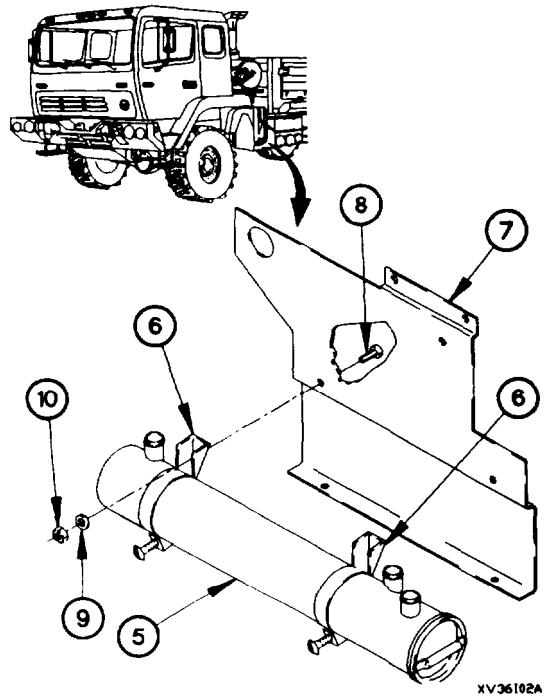
20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)

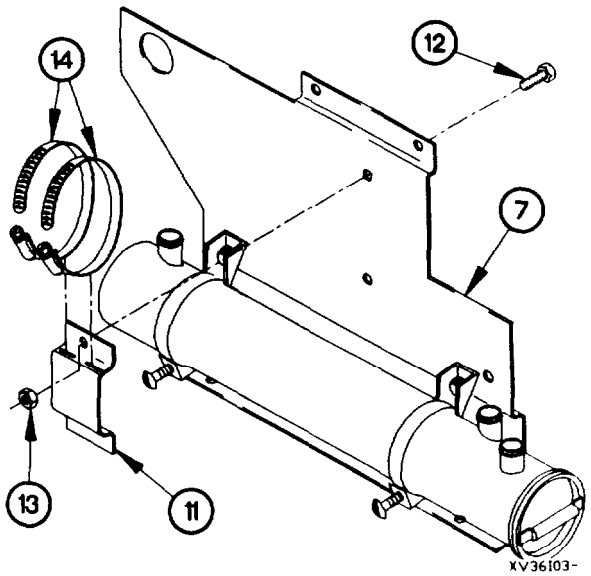
NOTE

Steps (5) through (9) require the aid of an assistant.

(5) Position tube jacket (5) in two clamps (6).

(6) Position tube jacket (5) and two clamps (6) on mounting bracket (7) with two screws (8), washers (9) and nuts (10).





(7) Position bracket (11) on mounting bracket (7) with two screws (12) and self-locking nuts (13).

(8) Tighten two self-locking nuts (13) to 22-24 lb-ft (27-33 N•m).

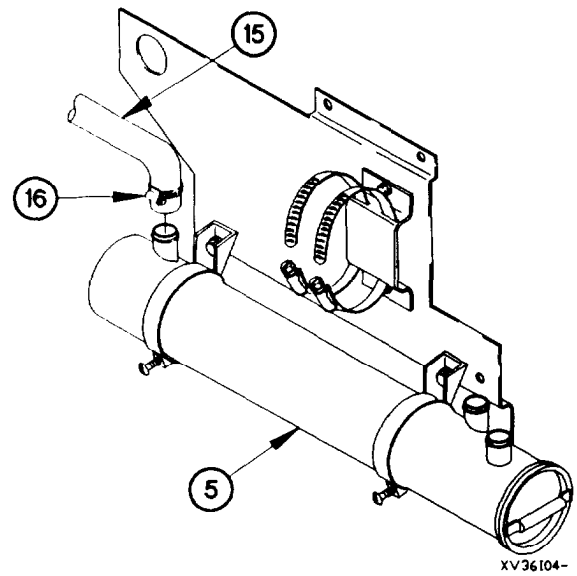
(9) Install two clamps (14) on bracket (11).

NOTE

A small amount of grease applied to tube jacket water inlet fitting will aid in installation of hose.

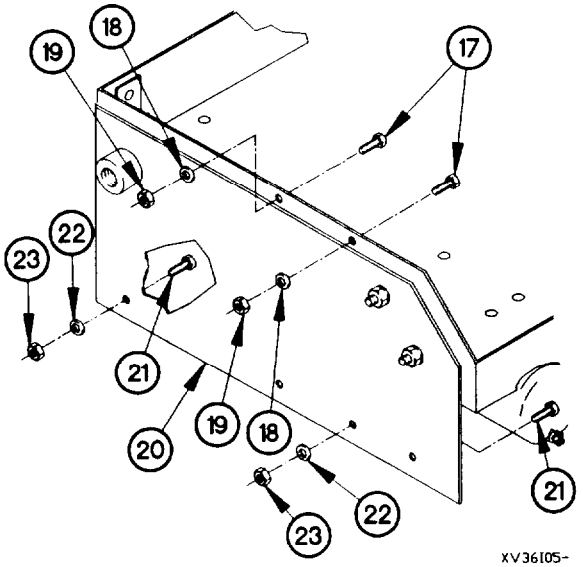
(10) Position hose (15) on tube jacket (5) with clamp (16).

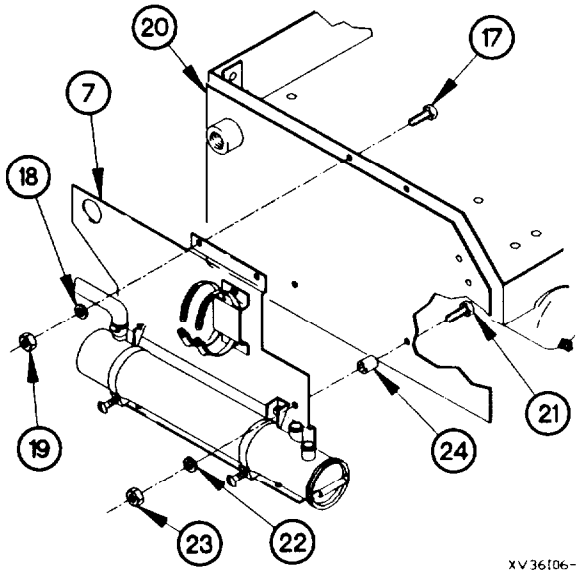
(11) Tighten clamp (16) to 60 lb-in. (7 N•m).



(12) Remove two screws (17), washers (18), and nuts (19) from battery box (20).

(13) Remove two screws (21), washers (22), and nuts (23) from battery box (20).





NOTE

Steps (14) through (16) require the aid of an assistant.

(14) Position mounting bracket (7) on battery box (20) with two screws (17), washers (18), and nuts (19).

(15) Position two screws (21), spacers (24), washers (22), and nuts (23).

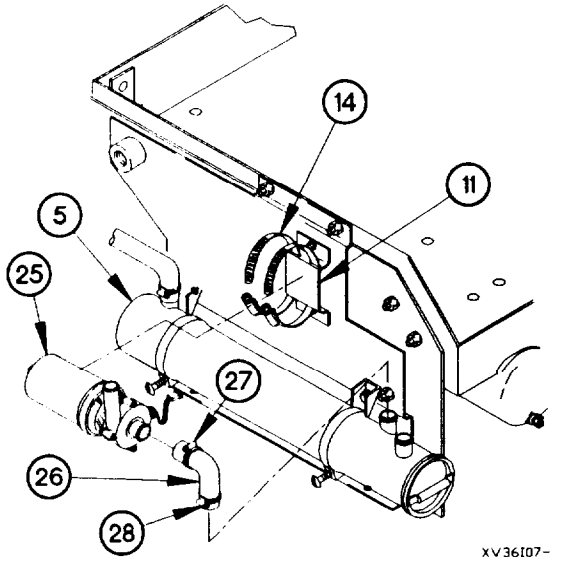
(16) Tighten four nuts (19 and 23) to 26-32 lb-ft (35-43 N•m).

(17) Install pump (25) on bracket (11) with two clamps (14).

(18) Position hose (26) on tube jacket (5) and pump (25) with clamps (27 and 28).

(19) Tighten clamp (27) to 100 lb-in. (11 N•m).

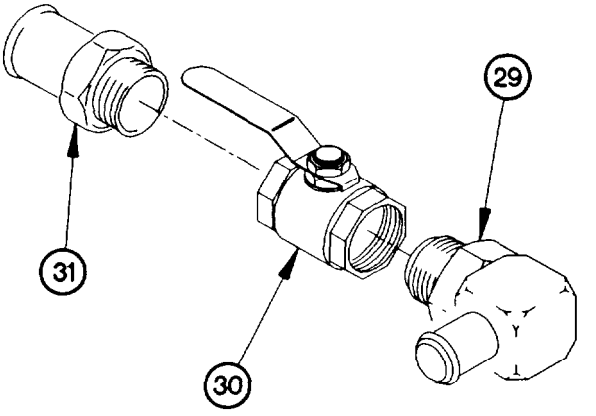
(20) Tighten clamp (28) to 60 lb-in. (7 N•m).



20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesives, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



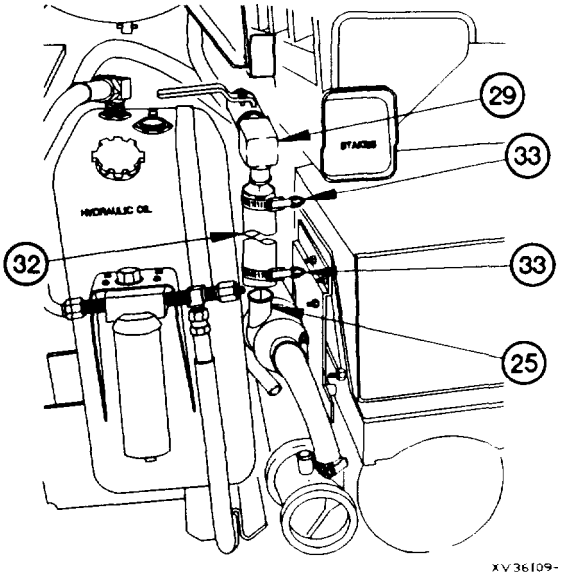
XV36108-

(21) Apply antiseize compound to threads of fitting (29).

(22) Install fitting (29) in swingfire valve (30).

(23) Apply antiseize compound to threads of reducer fitting (31).

(24) Install reducer fitting (31) in swingfire valve (30).



XV36109-

(25) Position hose (32) on pump (25) and fitting (29) with two clamps (33).

(26) Tighten two clamps (33) to 100 lb-in. (11 N•m).

(27) Position tube jacket (5) as required to ensure no hoses are kinked.

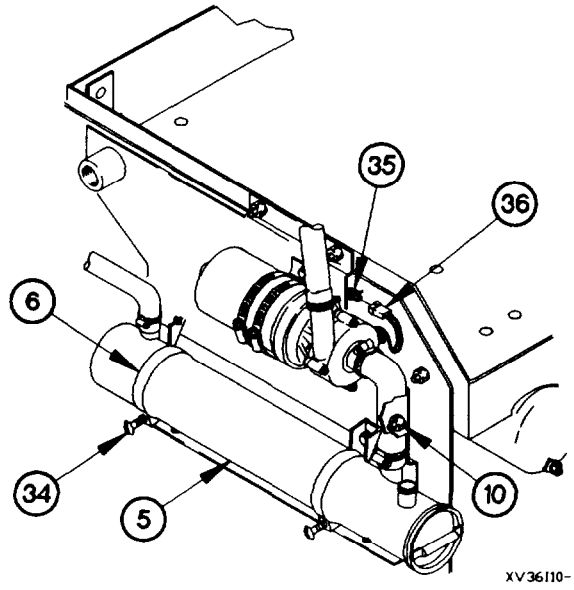
(28) Tighten two screws (34) on clamps (6).

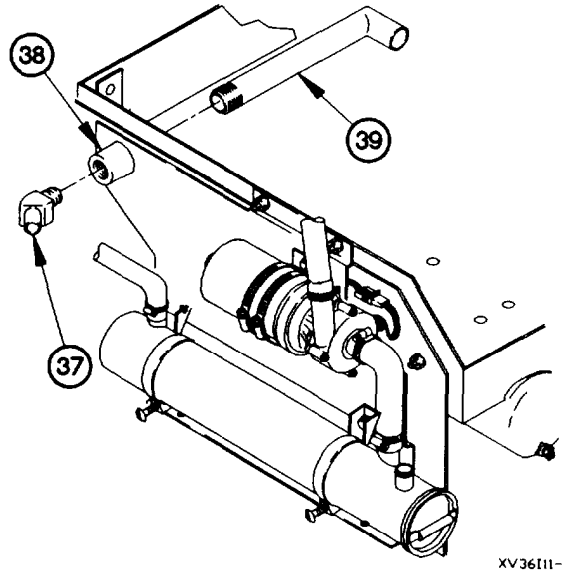
(29) Tighten two nuts (10) to 26-32 lb-ft (35-43 N•m).

NOTE

Connector P214 is located on left frame near transmission transfer case.

(30) Connect connector P214 (35) to pump connector (36).



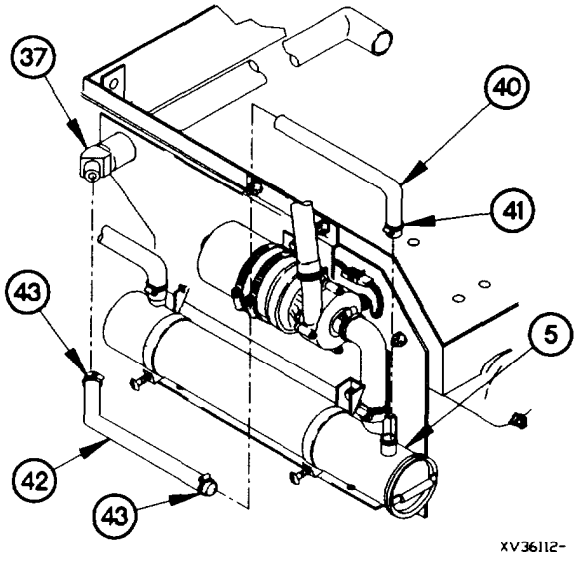


(31) Install reducer fitting (37) in fitting (38).

(32) Install exhaust tube (39) in other end of fitting (38).

(33) Install fitting (40) on tube jacket (5) with clamp (41).

(34) Install exhaust hose (42) between fitting (40) and reducer fitting (37) with two clamps (43).

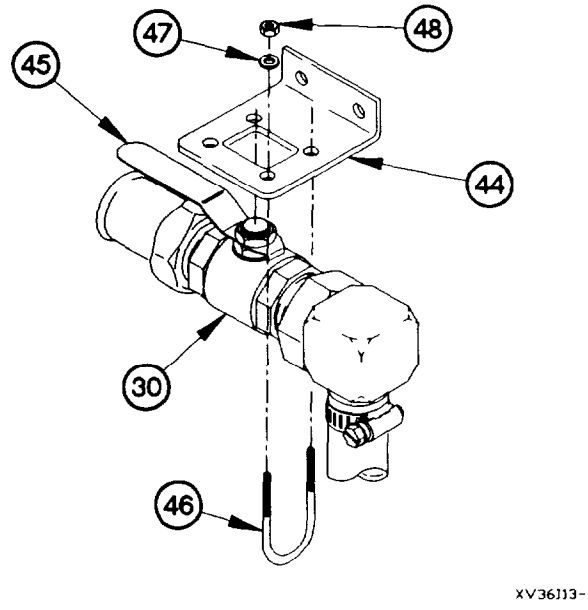


20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)

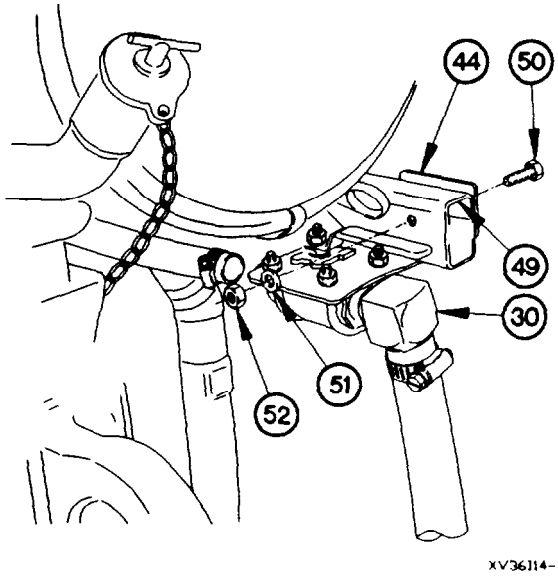
(35) Position swingfire valve (30) on mounting bracket (44) with handle (45) through mounting bracket.

(36) Position two U-bolts (46), four washers (47), and four self-locking nuts (48).

(37) Tighten four self-locking nuts (48) to 26-32 lb-ft (35-43 N•m).



XV36113-



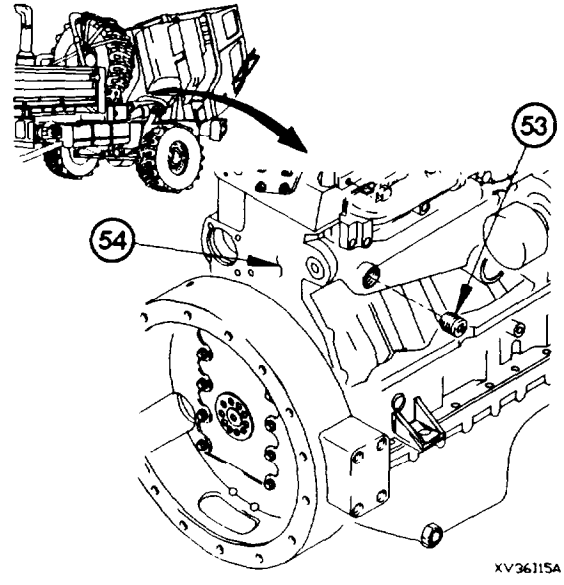
XV36114-

(38) Position swingfire valve (30) and mounting bracket (44) on frame (49) with two screws (50), washers (51), and self-locking nuts (52).

(39) Tighten two self-locking nuts (52) to 22-24 lb-ft (27-33 N•m).

(40) Raise cab (TM 9-2320-365-10).

(41) Remove plug (53) from right rear center of engine block (54).



XV36115A

WARNING

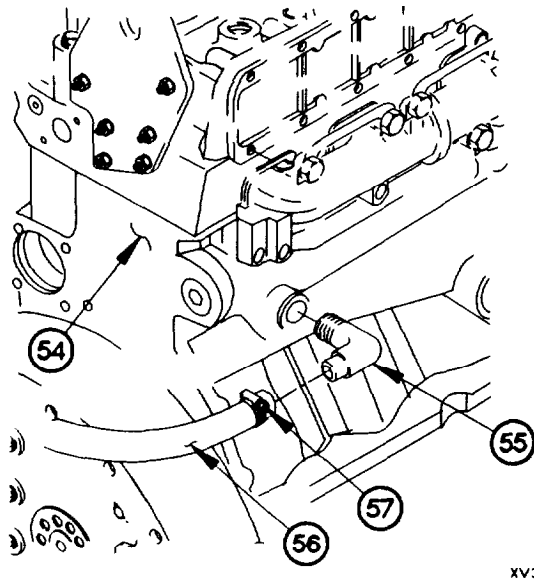
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesives, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(42) Apply antiseize compound to threads of fitting (55).

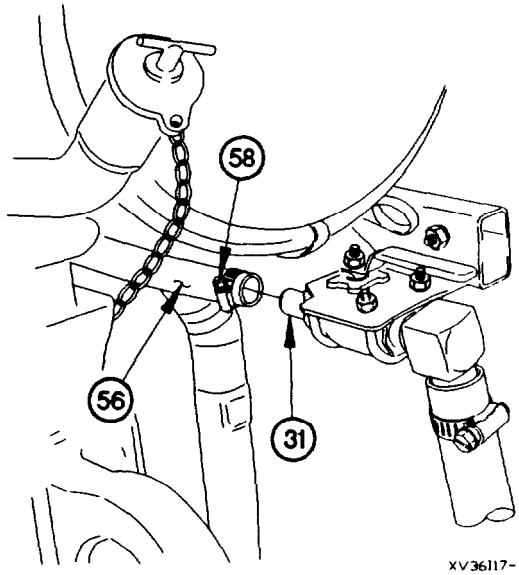
(43) Install fitting (55) to engine block (54).

(44) Position hose (56) on fitting (55) with clamp (57).

(45) Tighten clamp (57) to 60 lb-in. (7 N•m).



XV36116-



XV36117-

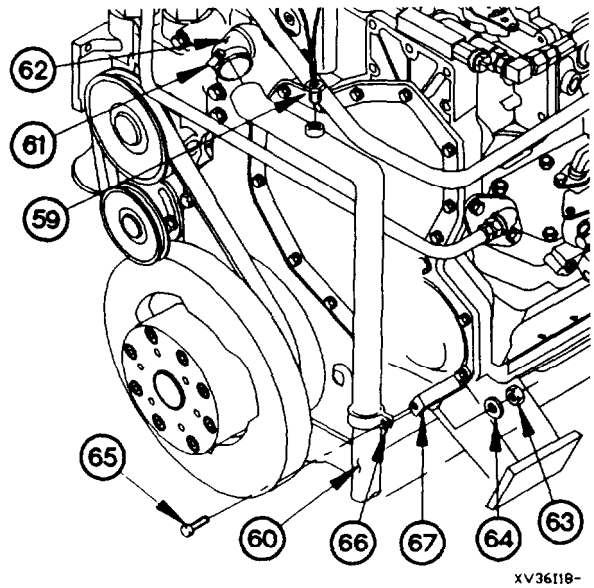
NOTE

Route hose up over rear of engine.

(46) Position other end of hose (56) on reducer fitting (31) with clamp (58).

(47) Tighten clamp (58) to 60 lb-in. (7 N•m).

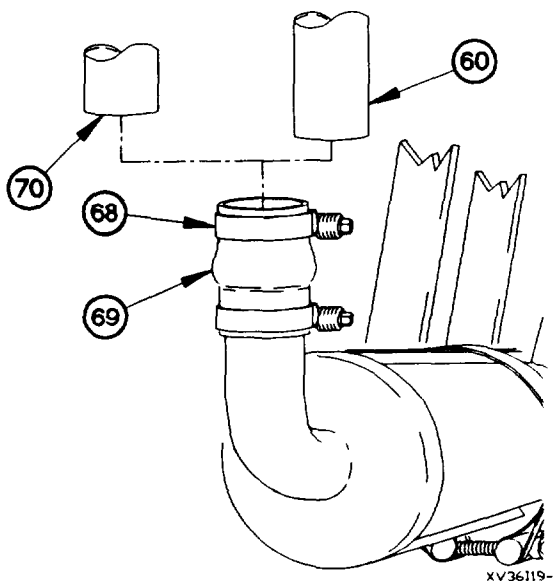
20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)



(48) Remove sensor (59) from by-pass tube (60).

(49) Remove clamp (61) and upper end of by-pass tube (60) from hose (62).

(50) Remove nut (63), washer (64), screw (65), and clamp (66) from bracket (67).



(51) Remove clamp (68) and lower end of by-pass tube (60) from hose (69).

(52) Remove by-pass tube (60) from vehicle. Retain by-pass tube for future use.

NOTE

Steps (53) and (54) require the aid of an assistant.

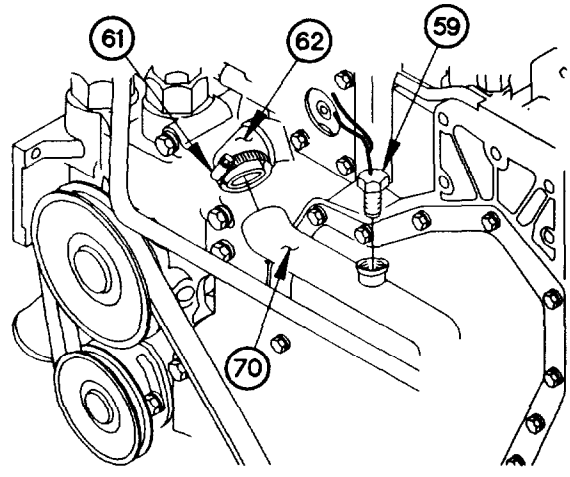
(53) Position lower end of by-pass tube (70) on hose (69) with clamp (68).

(54) Tighten clamp (68) to 60 lb-in. (7 N•m).

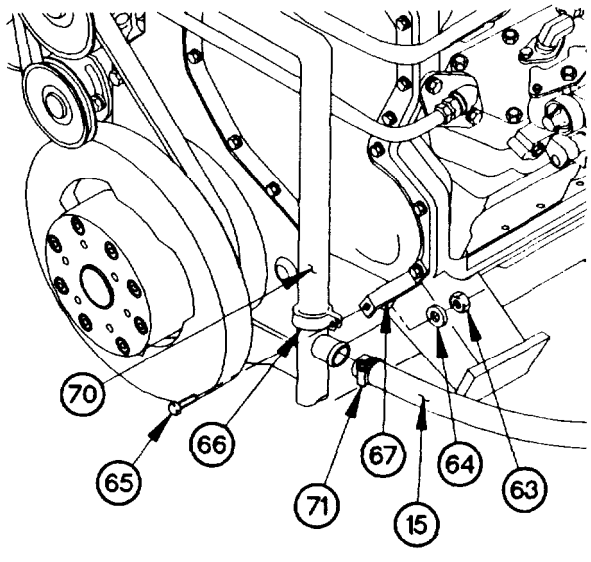
(55) Position upper end of by-pass tube (70) on hose (62) with clamp (61).

(56) Tighten clamp (61) to 60 lb-in. (7 N•m).

(57) Install sensor (59) on by-pass tube (70).



XV36120-



XV36121-

(58) Install clamp (66), screw (65), washer (64), and nut (63) on bracket (67).

(59) Position hose (15) on by-pass tube (70) with clamp (71).

(60) Tighten clamp (71) to 60 lb-in. (7 N•m).

(61) Fill cooling system (TM 9-2320-365-10).

(62) Check for cooling system leaks.

(63) Lower cab (TM 9-2320-365-10).

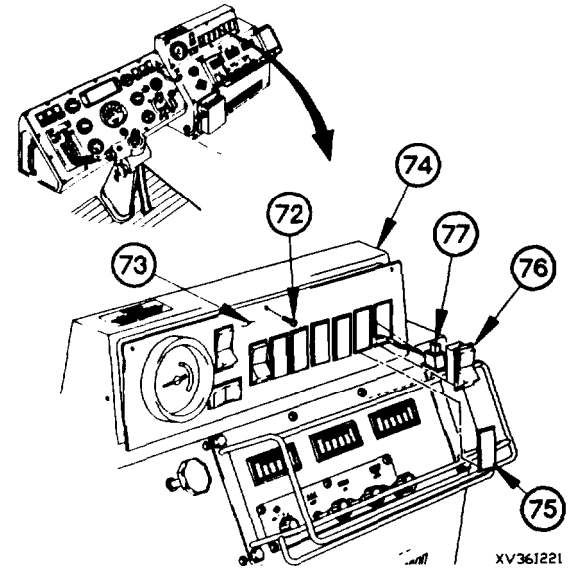
(64) Remove six screws (72) from auxiliary panel (73).

(65) Disconnect auxiliary panel (73) from housing (74).

(66) Remove two tabs (75) from auxiliary panel (73). Retain tabs for future use.

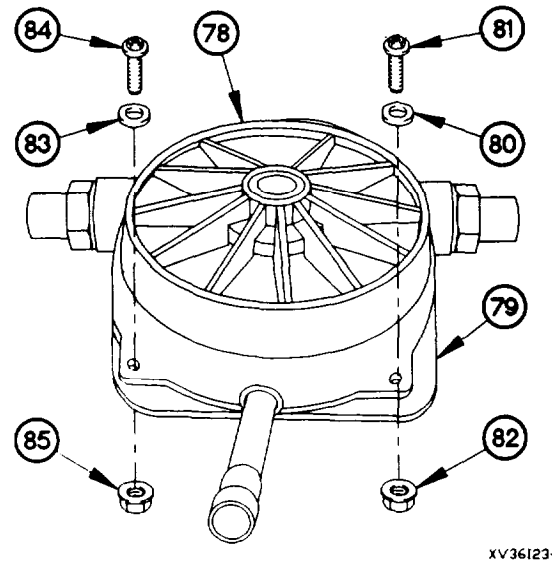
(67) Install swingfire pump switch (76) in front of auxiliary panel (73).

(68) Connect connector P909 (77) to back of swingfire pump switch (76).



XV361221

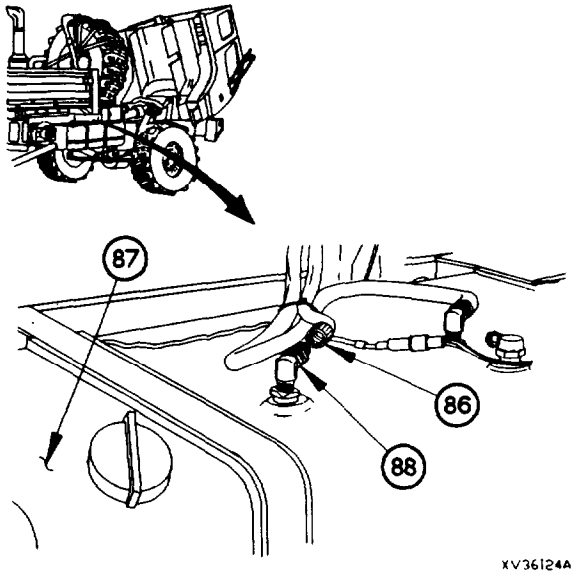
20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)



(69) Position fuel preheater (78) on bracket (79) with two washers (80), screws (81) and self-locking nuts (82).

(70) Position two washers (83), screws (84), and self-locking nuts (85) in fuel preheater (78).

(71) Tighten self-locking nuts (82 and 85) to 113 lb-in. (13 N•m).



WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(72) Collect fuel in line in drain pan.

(73) Cap or plug fuel lines and connections to prevent contamination of fuel system.

(74) Remove fuel supply hose (86) from fuel tank (87) at fitting (88).

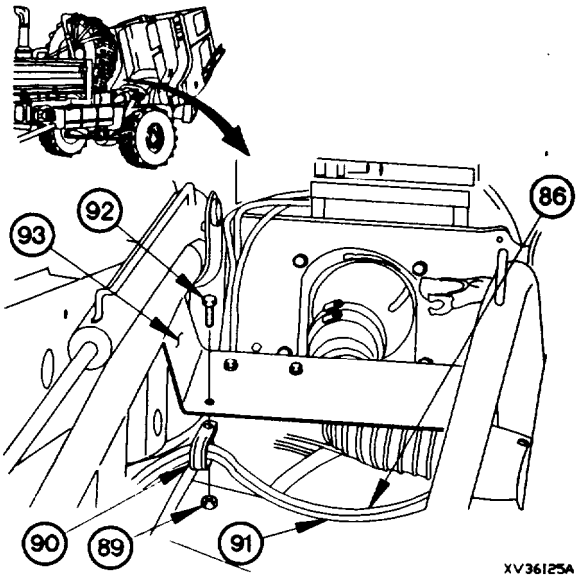
NOTE

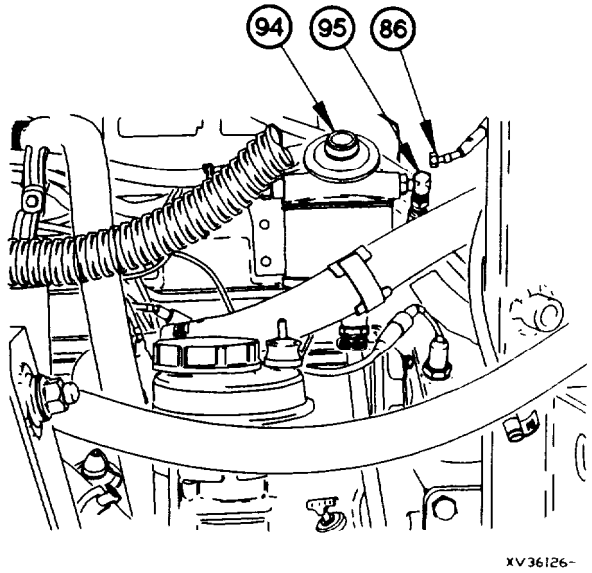
Remove plastic cable ties as required.

(74) Remove self-locking nut (89), clamp (90), fuel supply hose (86), fuel return hose (91), and screw (92) from spare tire retainer (93). Discard self-locking nut.

(75) Remove fuel supply hose (86) and fuel return hose (91) from clamp (90).

(76) Route fuel return hose (91) along left side of spare tire retainer (93).





(77) Raise cab (TM 9-2320-365-10).

(78) Remove fuel supply hose (86) from filter (94) at fitting (95). Place fuel supply hose in storage for future use.

(79) Route cable assembly (96) to spare tire retainer (93).

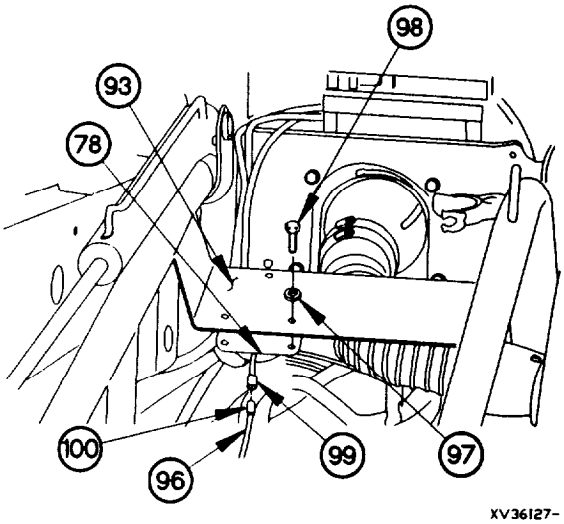
(80) Position fuel preheater (78) on spare tire retainer (93) with three washers (97) and screws (98).

(81) Tighten three screws (98) to 24 lb-ft (33 N•m).

NOTE

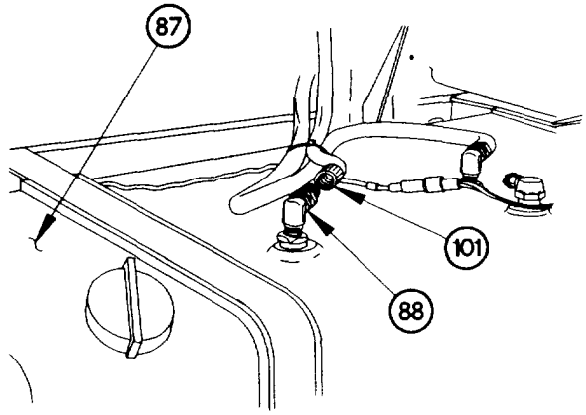
Locate connector P202 on cable harness under spare tire retainer.

(82) Connect fuel preheater connector (99) to cable assembly (96) at connector P202 (100).

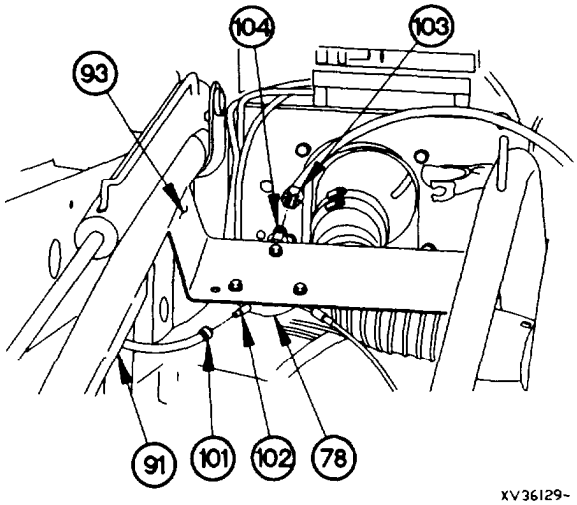


20-35. SWINGFIRE KIT INITIAL INSTALLATION (CONT)

(83) Connect fuel supply hose (101) to fuel tank (87) at fitting (88).



XV36128-



XV36129-

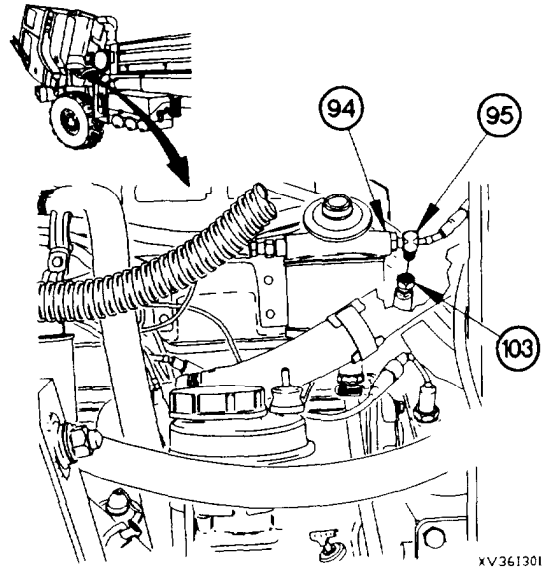
(84) Position fuel supply hose (101) on spare tire retainer (93) by fuel return hose (91).

(85) Install fuel supply hose (101) on fuel preheater (78) at fitting (102).

(86) Install fuel supply hose (103) on fuel preheater (78) at fitting (104).

(87) Install fuel supply hose (103) on filter (94) at fitting (95).

(88) Lower cab (TM 9-2320-365-10).



XV361301

(89) Install fuel preheater switch (105) in front of auxiliary panel (73).

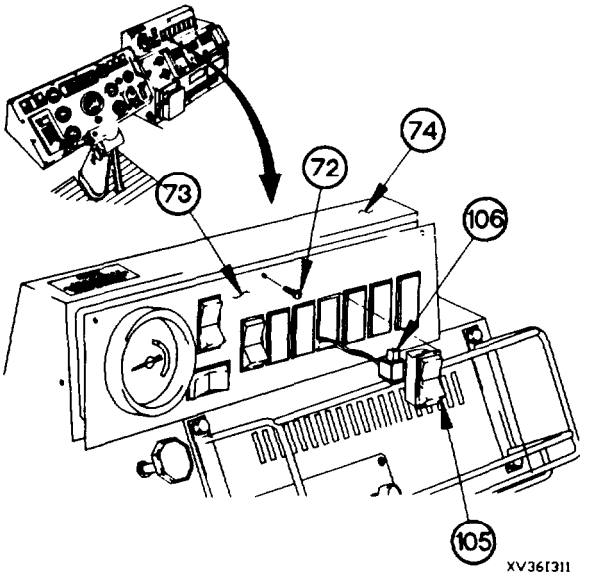
NOTE

Locate connector P202 on electrical harness.

(90) Connect connector P202 (106) to fuel preheater switch (105).

(91) Position auxiliary panel (73) on housing (74) with six screws (72).

(92) Tighten six screws (72) to 22 lb-in. (3 N•m).



b. Follow-On Maintenance.

(1) Install battery box (para 7-47).

(2) Operate swingfire (TM 9-2320-365-10).

End of Task.

20-36. SWINGFIRE KIT REMOVAL

This task covers:

a. Swingfire Removal

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Battery box removed (para 7-47).
Spare tire lowered (TM 9-2320-365-10).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Pan, Drain (Item 24, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)
Screwdriver Attachment, Socket Wrench (Item 53, Appendix B)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Antiseize Compound (Item 14, Appendix D)
Grease, Automotive and Artillery (GAA) (Item 23, Appendix D)
Nut, Self-Locking (5) (Item 134, Appendix G)
Nut, Self-Locking (4) (Item 136, Appendix G)
Nut, Self-Locking (4) (Item 124, Appendix G)

Personnel Required
(2)

a. Swingfire Removal.

(1) Remove radiator cap (1) from radiator overflow tank (2).

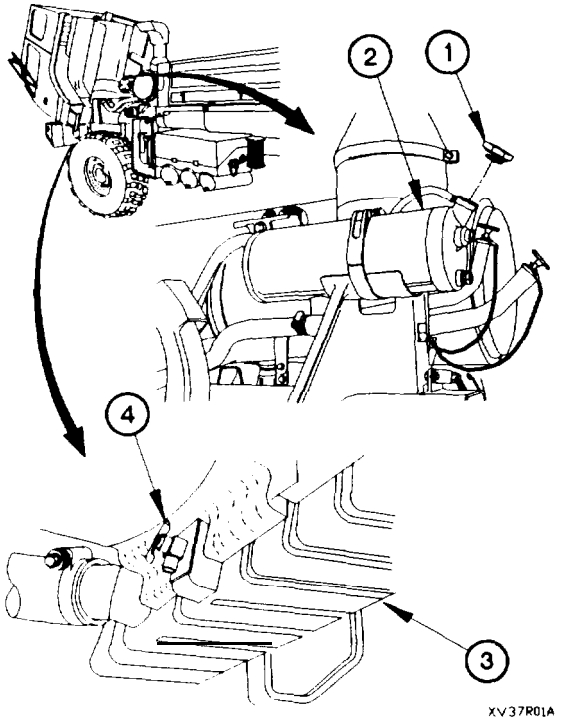
(2) Place container under radiator (3).

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

(3) Open radiator draincock (4) and drain coolant from radiator (3).

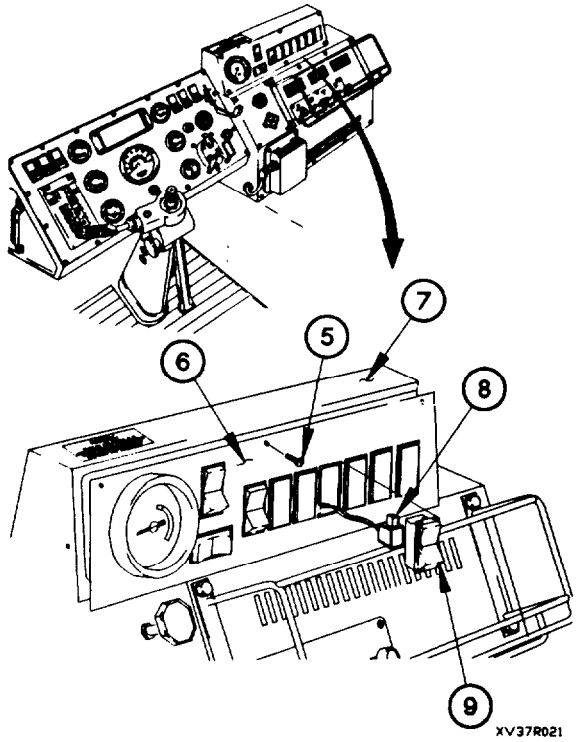
(4) Close radiator draincock (4).

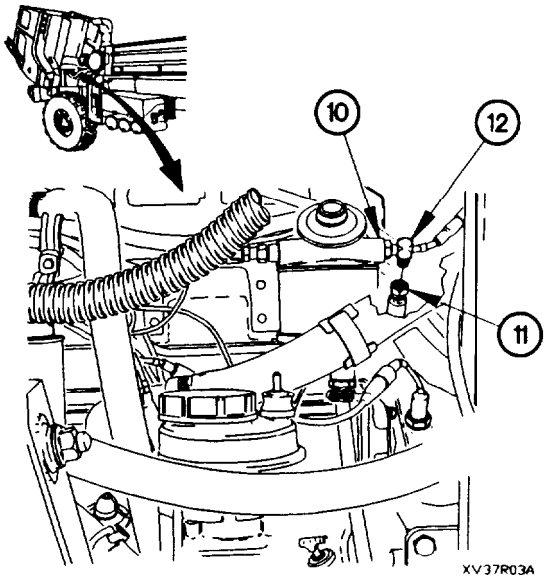


(5) Remove six screws (5) and auxiliary panel (6) from housing (7).

(6) Disconnect connector P202 (8) from fuel preheater switch (9).

(7) Remove fuel preheater switch (9) from auxiliary panel (6).





WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(8) Raise cab (TM 9-2320-365-10).

(9) Place drain pan underneath filter (10).

(10) Disconnect fuel supply hose (11) from filter (10) at fitting (12).

20-36. SWINGFIRE KIT REMOVAL (CONT)

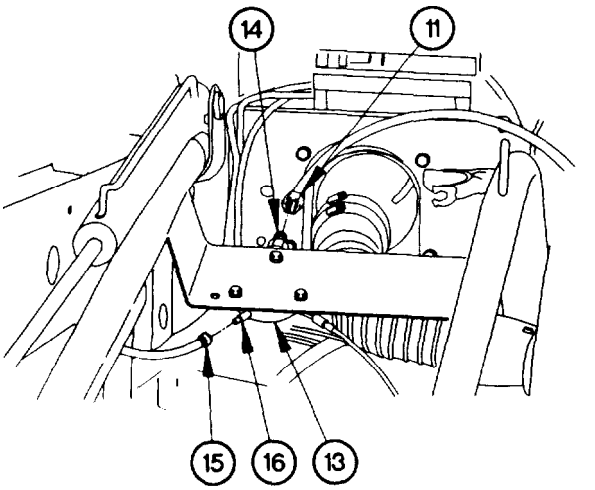
NOTE

Remove plastic cable ties as required.

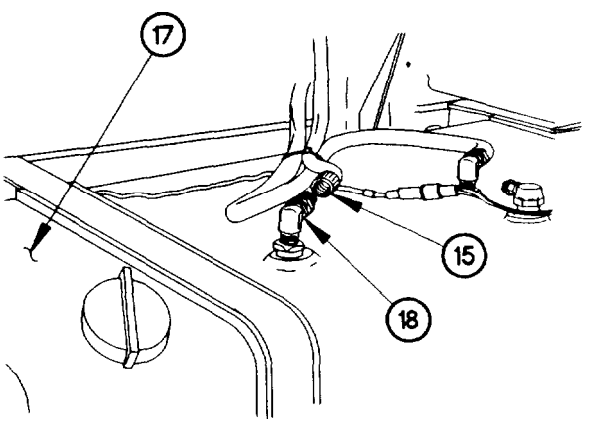
(11) Place drain pan underneath fuel preheater (13).

(12) Remove fuel supply hose (11) from fuel preheater (13) at fitting (14).

(13) Disconnect fuel supply hose (15) from fuel preheater (13) at fitting (16).



XV37R04-

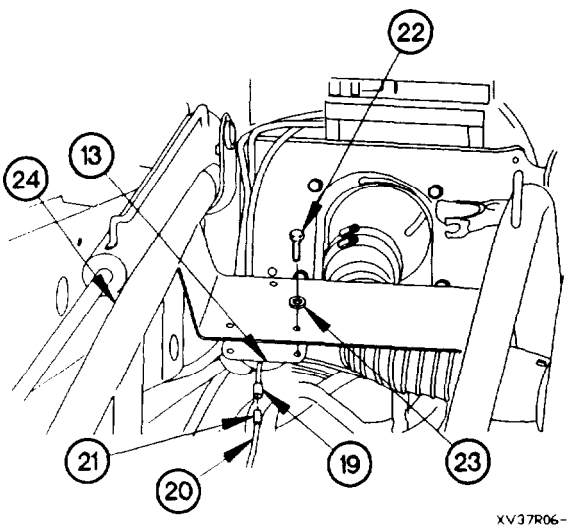


XV37R05

(14) Remove fuel supply hose (15) from fuel tank (17) at fitting (18).

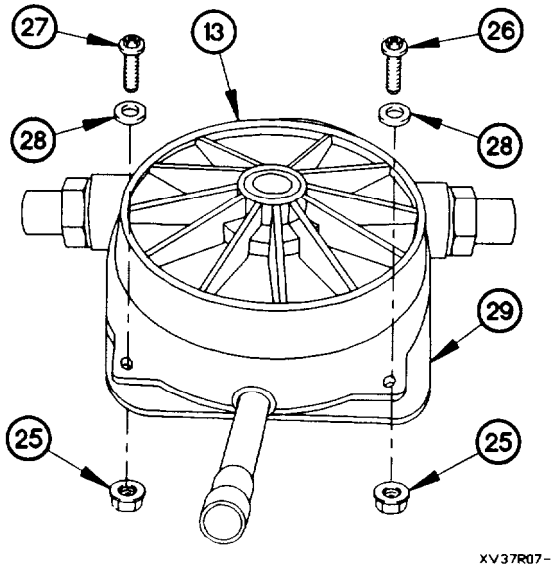
(15) Disconnect fuel preheater connector (19) from cable assembly (20) at connector P202 (21).

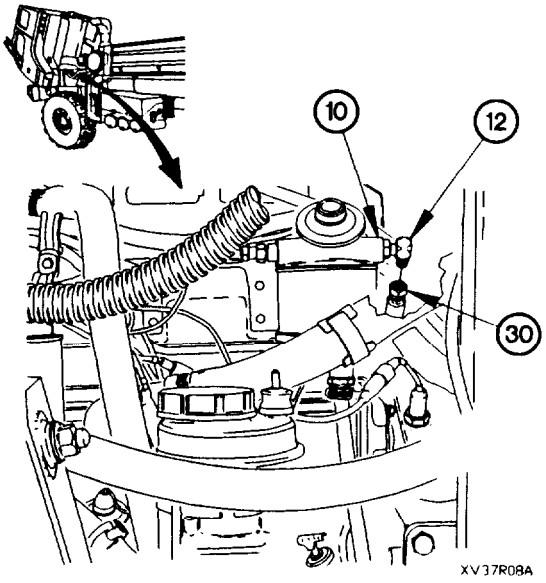
(16) Remove three screws (22), washers (23), and fuel preheater (13) from spare tire retainer (24).



XV37R06-

(17) Remove four self-locking nuts (25), two screws (26), two screws (27), four washers (28), and bracket (29) from fuel preheater (13). Discard self-locking nuts.



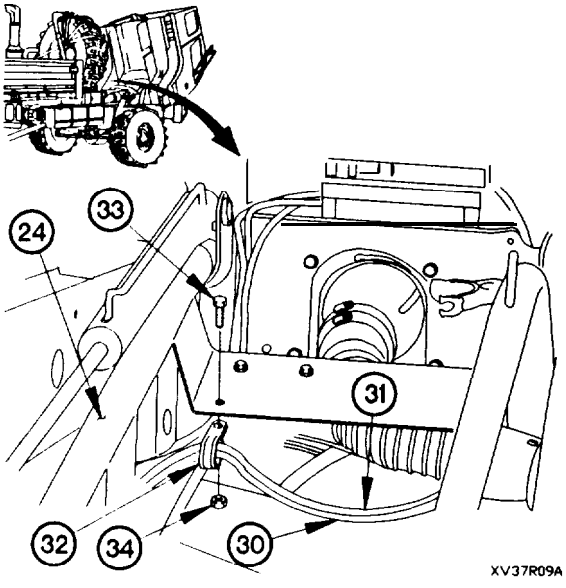


(18) Install fuel supply hose (30) to filter (10) at fitting (12).

(19) Route fuel supply hose (30) to spare tire retainer (24).

(20) Position fuel supply hose (30) and fuel return hose (31) into clamp (32).

(21) Install fuel supply hose (30) and fuel return hose (31) to spare tire retainer (24) with clamp (32), screw (33), and self-locking nut (34).

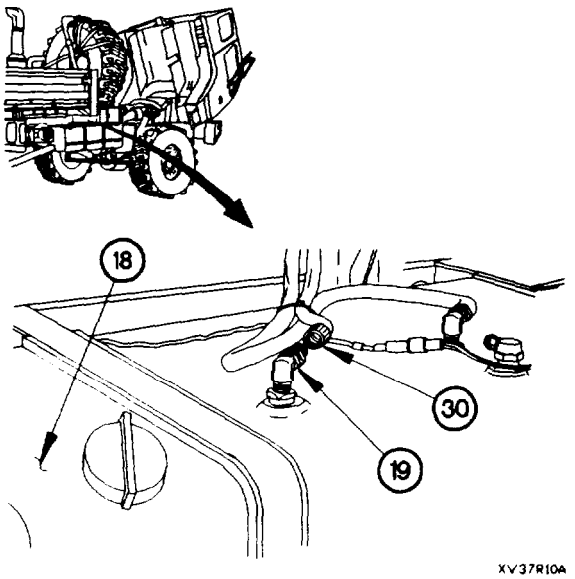


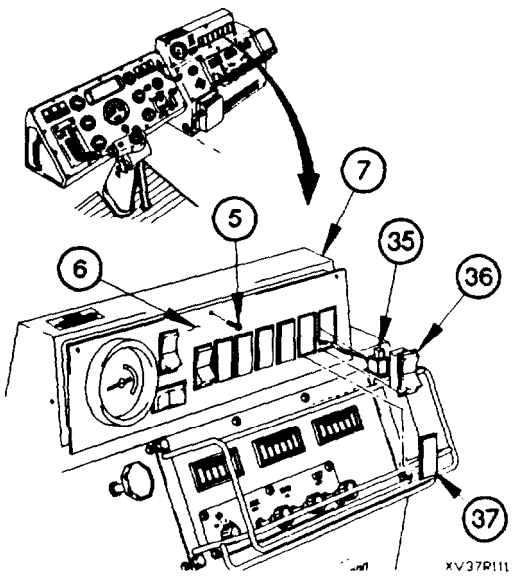
20-36. SWINGFIRE KIT REMOVAL (CONT)

(22) Route fuel supply hose (30) to fuel tank (18).

(23) Install fuel supply hose (30) on fuel tank (18) at fitting (19).

(24) Lower cab (TM 9-2320-365-10).





(25) Disconnect connector P909 (35) from swingfire pump switch (36).

(26) Remove swingfire pump switch (36) from auxiliary panel (6).

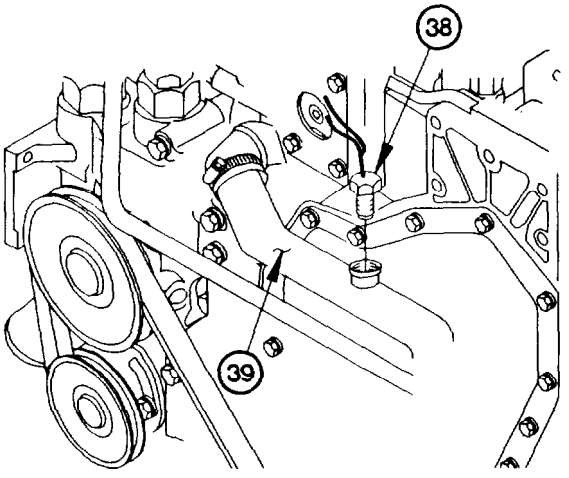
(27) Install two tabs (37) on auxiliary panel (6).

(28) Position auxiliary panel (6) on housing (7) with six screws (5).

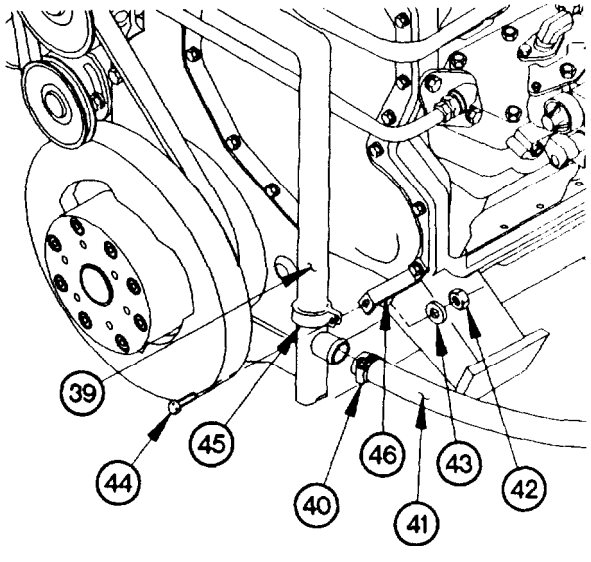
(29) Tighten six screws (5) to 22 lb-in. (3 N•m).

(30) Raise cab (TM 9-2320-365-10).

(31) Disconnect sensor (38) from swingfire by-pass tube (39).



XV37R12-

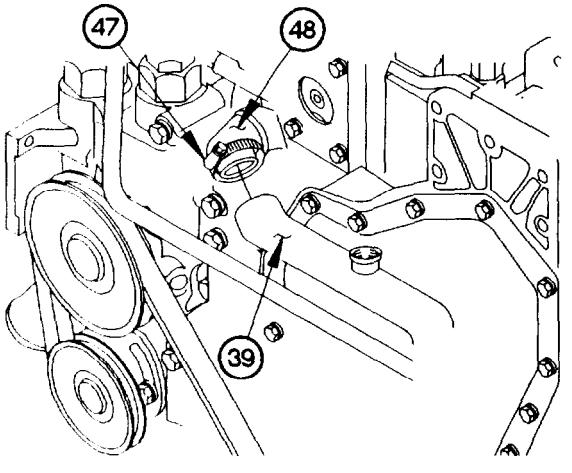


XV37R13-

(32) Remove clamp (40) and hose (41) from swingfire by-pass tube (39).

(33) Remove nut (42), washer (43), screw (44), and clamp (45) from bracket (46).

(34) Remove clamp (47) and upper end of swingfire by-pass tube (39) from hose (48).



XV37R14-

20-36. SWINGFIRE KIT REMOVAL (CONT)

(35) Remove clamp (49) and lower end of swingfire by-pass tube (39) from hose (50).

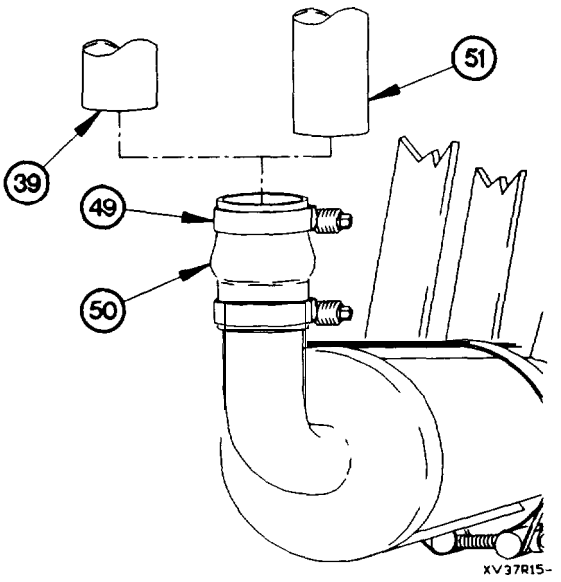
(36) Remove swingfire by-pass tube (39) from vehicle.

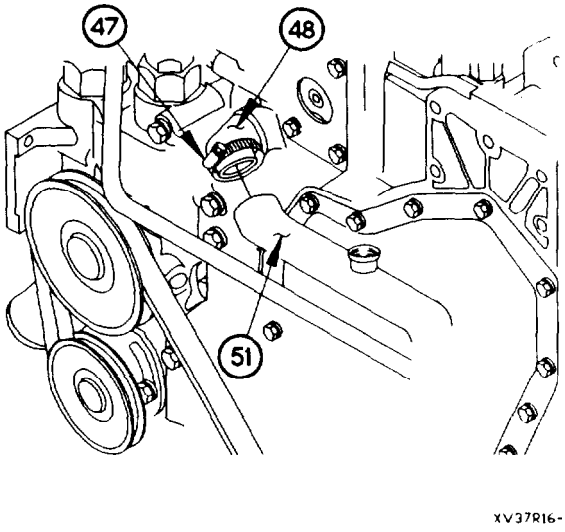
NOTE

Steps (37) and (38) require the aid of an assistant.

(37) Position lower end of by-pass tube (51) on hose (50) with clamp (49).

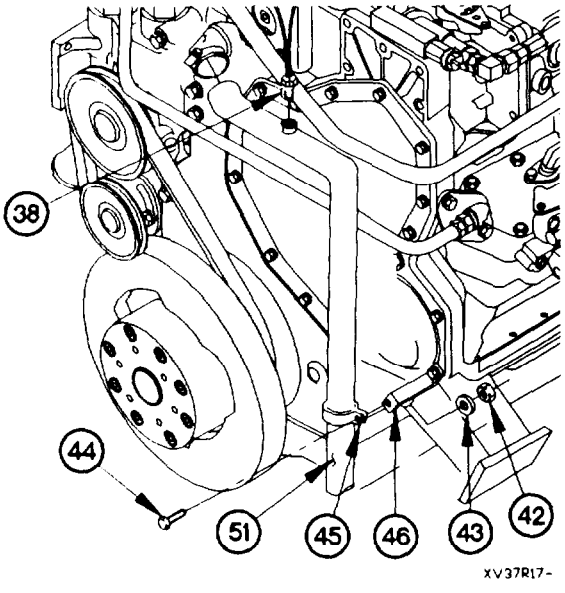
(38) Tighten clamp (49) to 60 lb-in. (7 N•m).





(39) Position upper end of by-pass tube (51) on hose (48) with clamp (47).

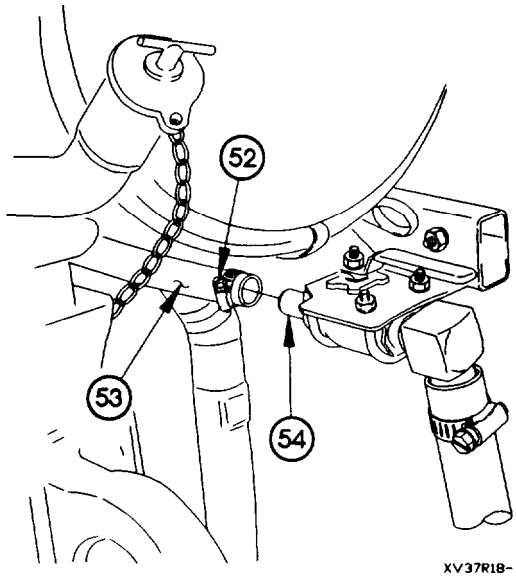
(40) Tighten clamp (47) to 60 lb-in. (7 N•m).

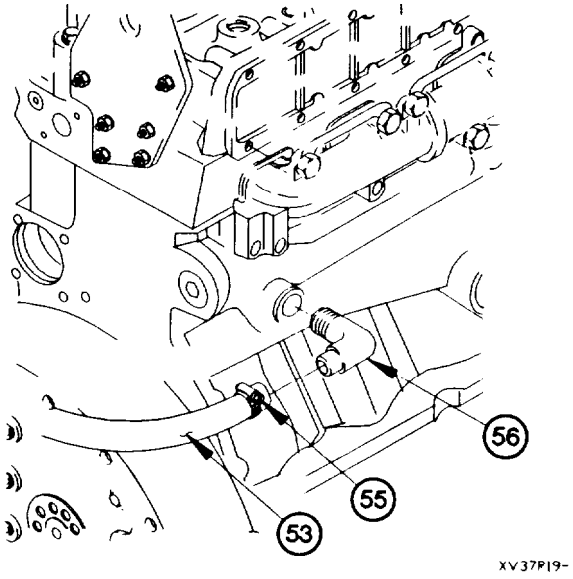


(41) Install clamp (45), screw (44), washer (43), and nut (42) on bracket (46).

(42) Connect sensor (38) to by-pass tube (51).

(43) Remove clamp (52) and hose (53) from swingfire valve (54) outlet.





(44) Remove clamp (55) and hose (53) from fitting (56).

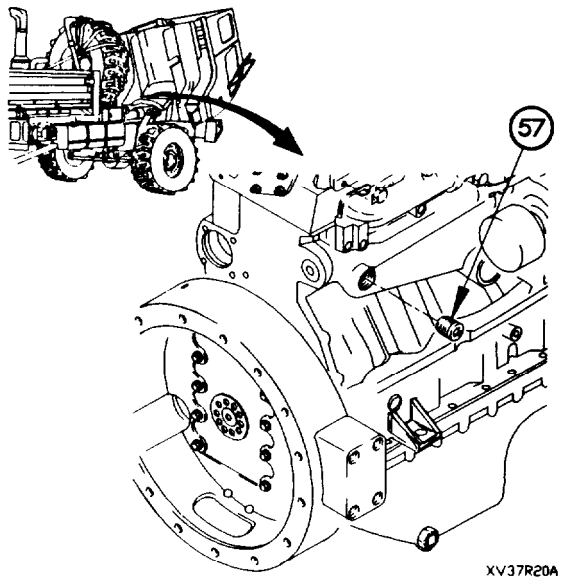
(45) Remove fitting (56) from right rear center of engine block.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesives, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(46) Apply antiseize compound to threads of plug (57).

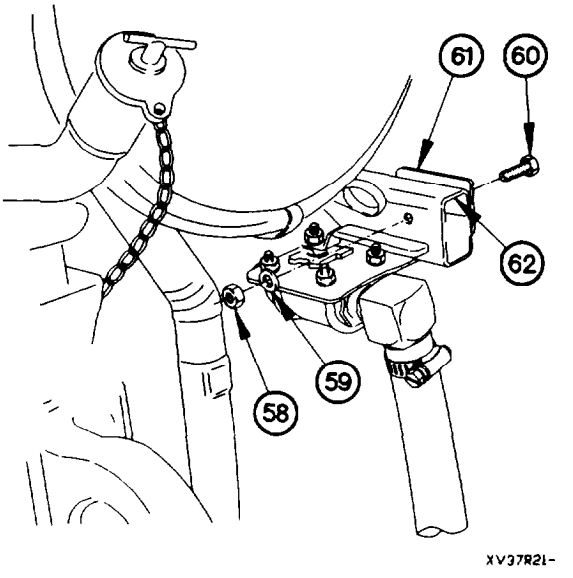
(47) Install plug (57) in engine block.

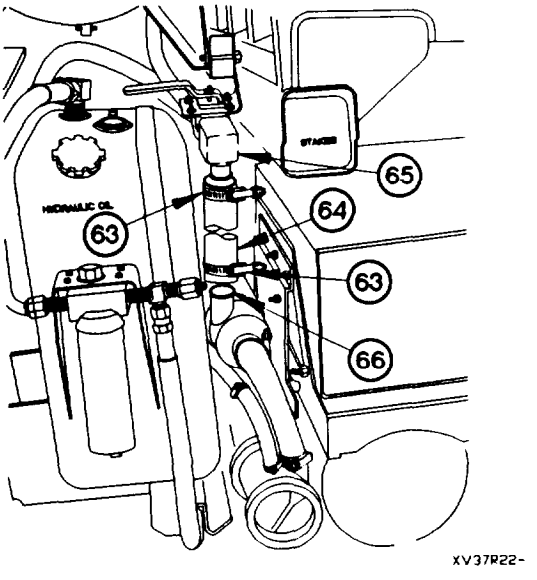


20-36. SWINGFIRE KIT REMOVAL (CONT)

(48) Lower cab (TM 9-2320-365-10).

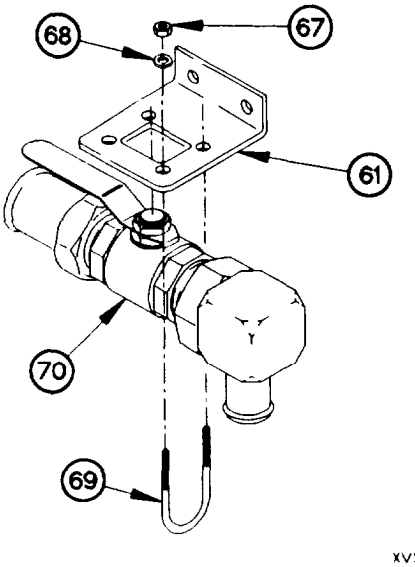
(49) Remove two self-locking nuts (58), washers (59), screws (60), and mounting bracket (61) from frame (62). Discard self-locking nuts.





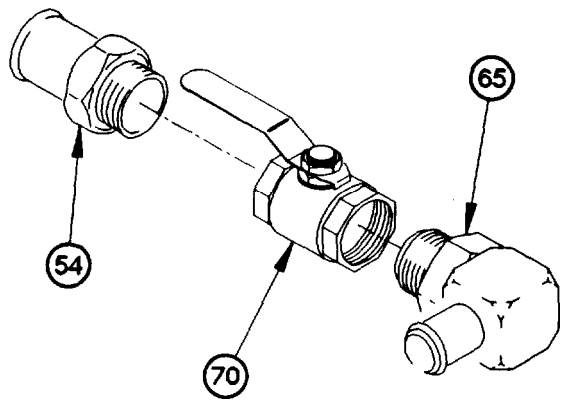
(50) Remove two clamps (63) and hose (64) from fitting (65) and pump (66).

(51) Remove four self-locking nuts (67) four washers (68), two U-bolts (69), swingfire valve (70) from mounting bracket (61). Discard self-locking nuts.

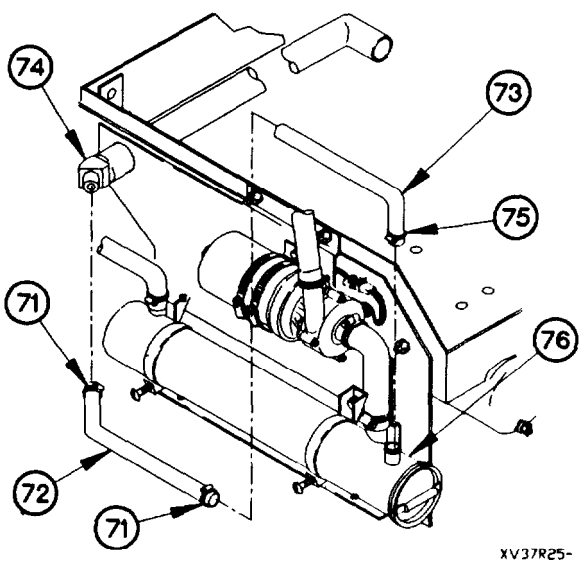


(52) Remove reducer fitting (54) from swingfire valve (70).

(53) Remove fitting (65) from swingfire valve (70).



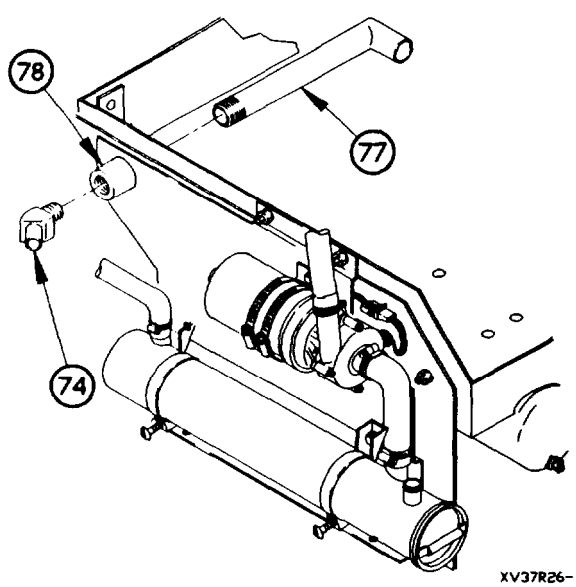
XV37R24-



XV37R25-

(54) Remove two clamps (71) and exhaust hose (72) from fitting (73) and reducer fitting (74).

(55) Remove clamp (75) and fitting (73) from tube jacket (76).



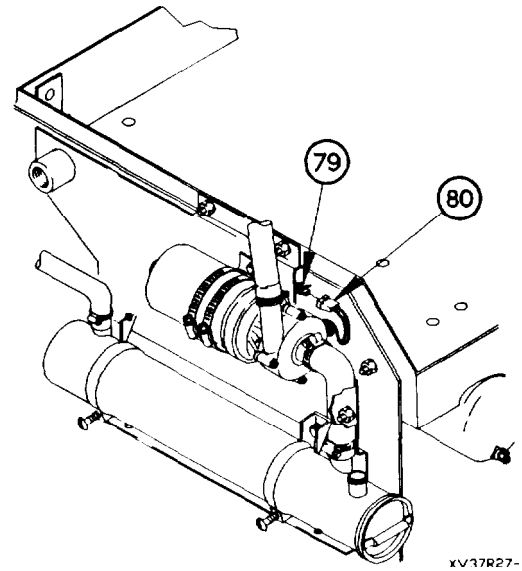
XV37R26-

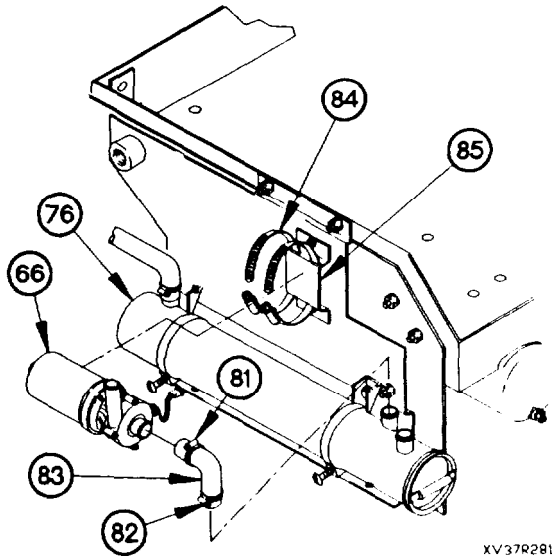
(56) Remove exhaust tube (77) from fitting (78).

(57) Remove reducer fitting (74) from other end of fitting (78).

20-36. SWINGFIRE KIT REMOVAL (CONT)

(58) Disconnect connector P214 (79) from pump connector (80).





(59) Remove clamps (81 and 82) and hose (83) from tube jacket (76) and pump (66).

(60) Remove two clamps (84) and pump (66) from bracket (85).

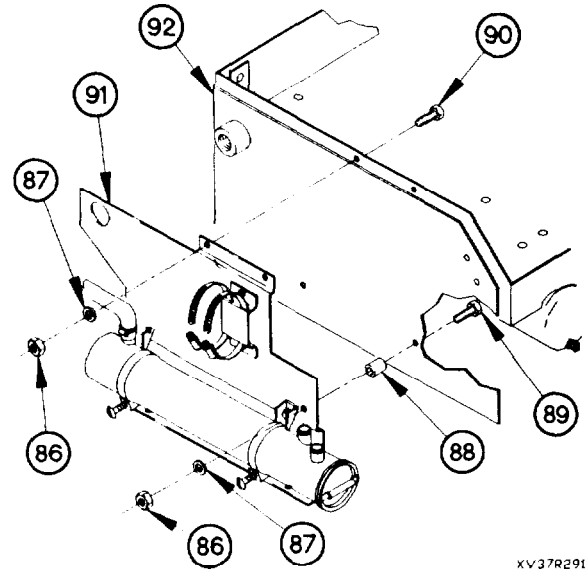
NOTE

Steps (61) through (63) require the aid of an assistant.

(61) Remove two nuts (86), washers (87), spacers (88), and screws (89) at two lower mounting holes.

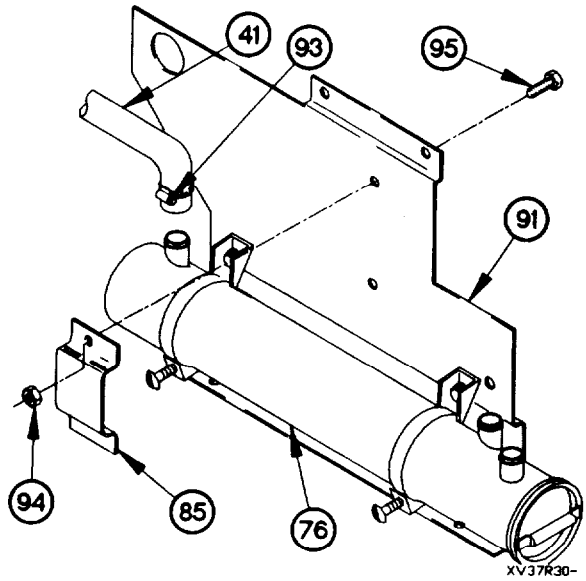
(62) Remove two nuts (86), washers (87), screws (90) and mounting bracket (91) from battery box (92).

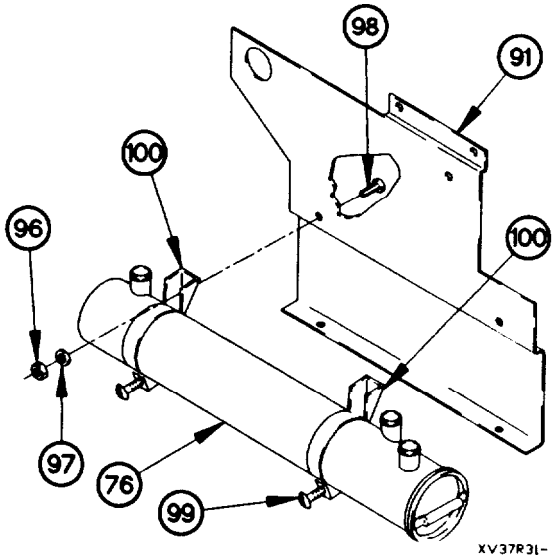
(63) Install four screws (89 and 90), four washers (87), and four nuts (86) to battery box (92).



(64) Remove clamp (93) and hose (41) from tube jacket (76).

(65) Remove two self-locking nuts (94), screws (95) and bracket (85) from mounting bracket (91). Discard self-locking nuts.





NOTE

Step (66) requires the aid of an assistant.

(66) Remove two nuts (96), washers (97), screws (98), screws (99). clamps (100). and tube jacket (76) from mounting bracket (91).

b. Follow-On Maintenance.

(1) Install battery box (para 7-47).

(2) Raise cab (TM 9-2320-365-10).

(3) Check for leaks and proper operation.

(4) Lower cab (TM 9-2320-365-10).

End of Task.

20-37. SWINGFIRE PUMP/MOTOR REPLACEMENT

This task covers:

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

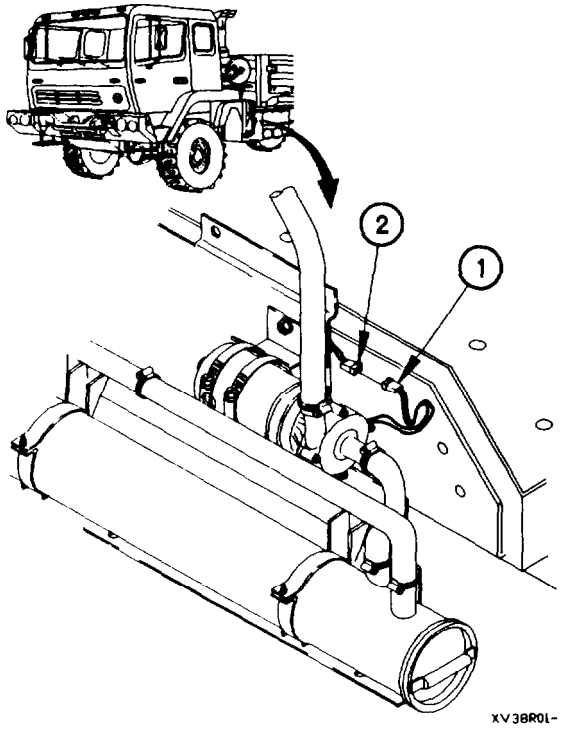
INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Cooling system drained (TM 9-2320-365-10).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Pan, Drain (Item 24, Appendix C)

Tools and Special Tools (Cont)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

Materials/Parts
Cap and Plug Set (Item 15, Appendix D)



a. Removal.

(1) Disconnect swingfire pump/motor connector (1) from wiring harness connector (2).

WARNING

Excess coolant may splash out when hoses are removed from swingfire pump. Wear appropriate eye protection. Failure to comply may result in injury to personnel.

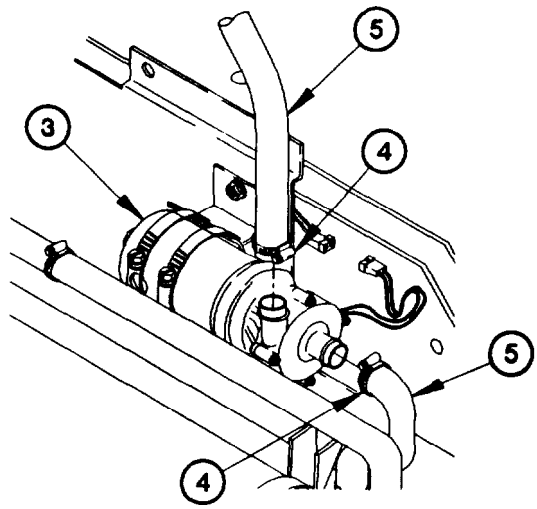
(2) Position drain pan under swingfire pump (3).

(3) Loosen two clamps (4) on hoses (5).

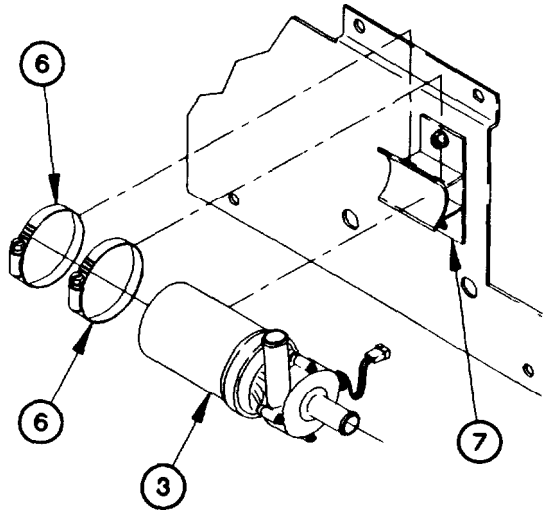
CAUTION

Cap or plug hoses to prevent contamination of cooling system. Failure to comply may result in damage to equipment.

(4) Remove two hoses (5) from swingfire pump (3).



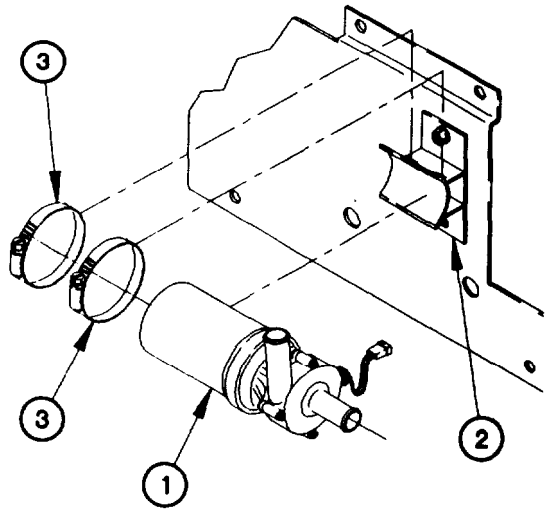
XV38R02-



XV38R03-

(5) Loosen two clamps (6) on swingfire pump (3).

(6) Remove two clamps (6) and swingfire pump (3) from bracket (7).



XV38I01-

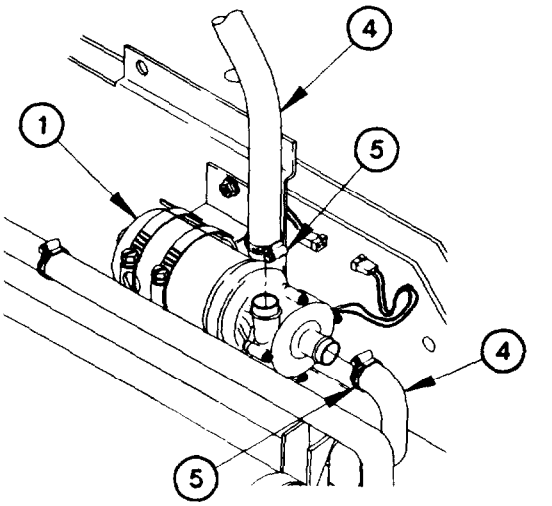
b. Installation.

(1) Install swingfire pump (1) on bracket (2) with two clamps (3).

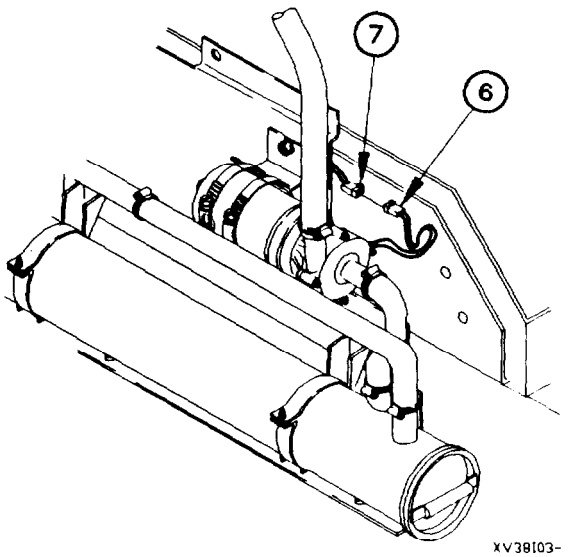
20-37. SWINGFIRE PUMP/MOTOR REPLACEMENT (CONT)

(2) Position two hoses (4) and clamps (5) on swingfire pump (1).

(3) Tighten two clamps (5) to 106 lb-in. (12 N•m).



XV38102-



XV38103-

(4) Connect swingfire pump/motor connector (6) to wiring harness connector (7).

c. Follow-On Maintenance.

(1) Fill cooling system (Appendix H).

(2) Connect batteries (para 7-48).

(3) Operate swingfire pump, checking for coolant leaks and for proper operation (TM 9-2320-365-10).

End of Task.

20-38. SWINGFIRE TUBE JACKET REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Cooling system drained (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Pan, Drain (Item 24, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Cap and Plug Set (Item 15, Appendix D)

Personnel Required
(2)

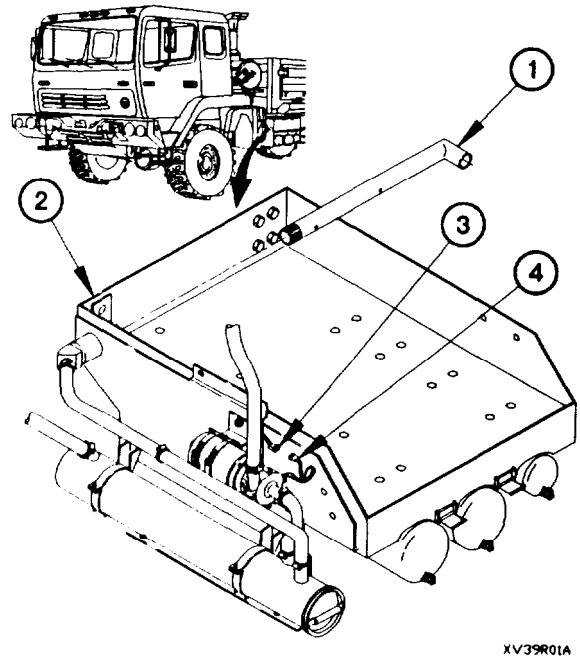
a. Removal.

(1) Remove tube (1) from plate adapter (2).

NOTE

Tag wires prior and connection points to disconnecting.

(2) Disconnect electrical harness (3) from connector (4).



20-38. SWINGFIRE TUBE JACKET REPLACEMENT (CONT)

WARNING

Excess coolant may splash out upon removal of hoses on swingfire tube jacket. Ensure proper eye protection is worn. Failure to comply may result in injury to personnel.

NOTE

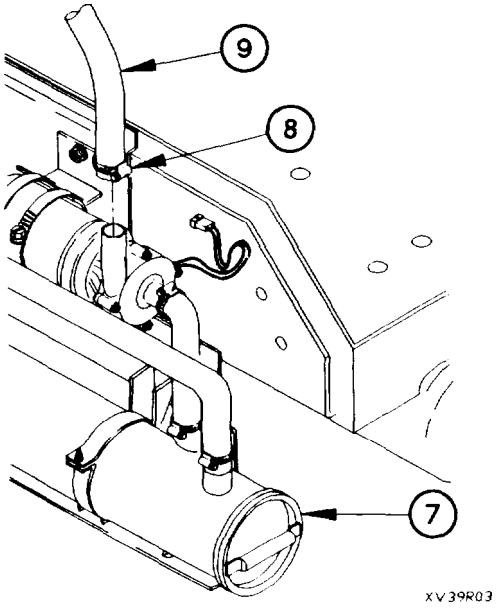
- Tag hoses and connection points prior to disconnecting.
- Collect excess coolant in drain pan.

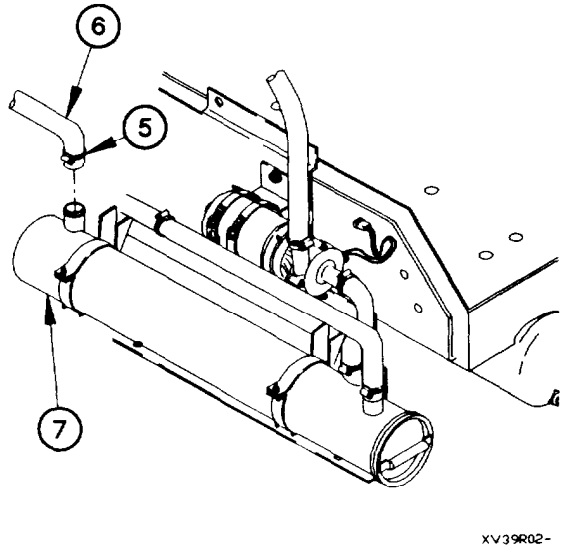
(3) Loosen clamp (5) on hose (6).

NOTE

Cap or plug hoses to prevent contamination of cooling system.

(4) Remove hose (6) from tube jacket (7).



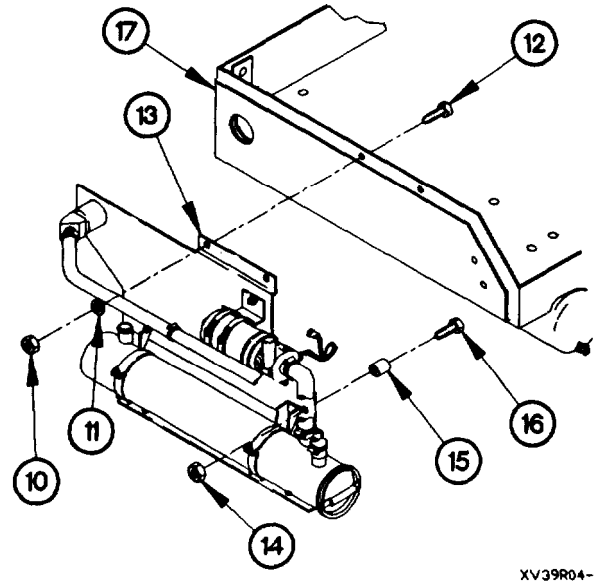


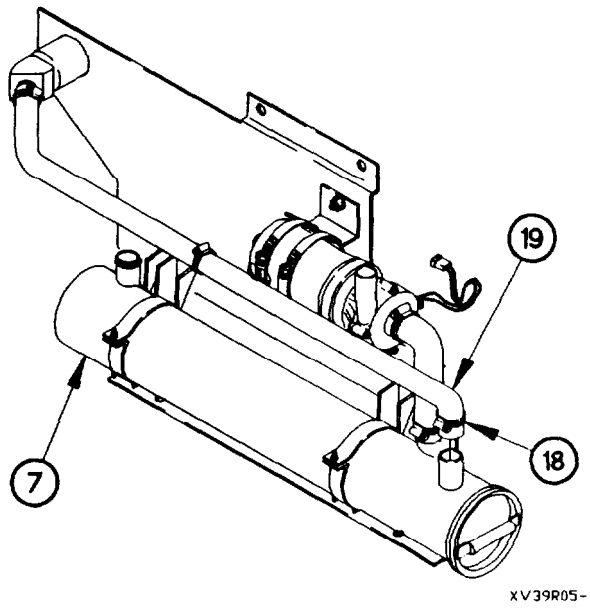
(5) Loosen clamp (8) on hose (9).

(6) Remove hose (9) from tube jacket (7).

(7) Remove two nuts (10), washers (11), and screws (12) from battery box cover and plate (13).

(8) Remove two nuts (14), spacers (15), screws (16), and plate (13) from battery box (17).



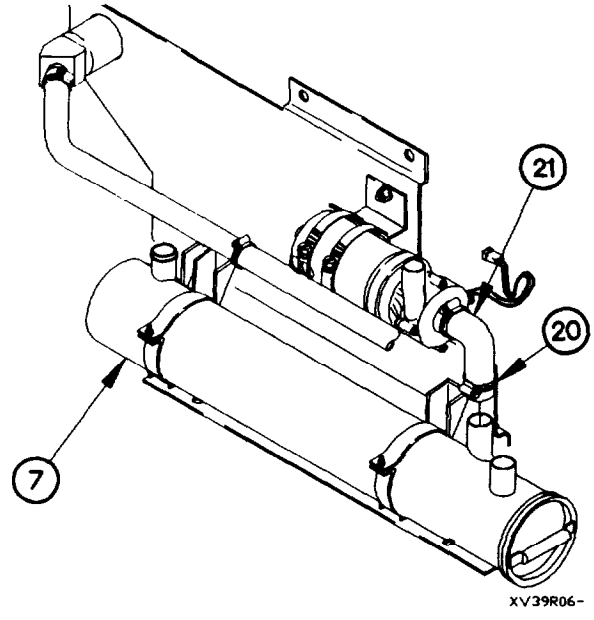


(9) Loosen clamp (18) on pipe (19).

(10) Remove pipe (19) from tube jacket (7).

(11) Loosen clamp (20) on hose (21).

(12) Remove hose (21) from tube jacket (7).

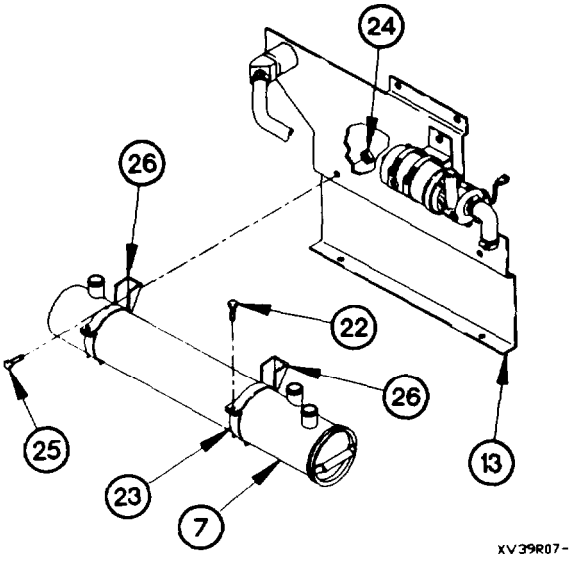


20-38. SWINGFIRE TUBE JACKET REPLACEMENT (CONT)

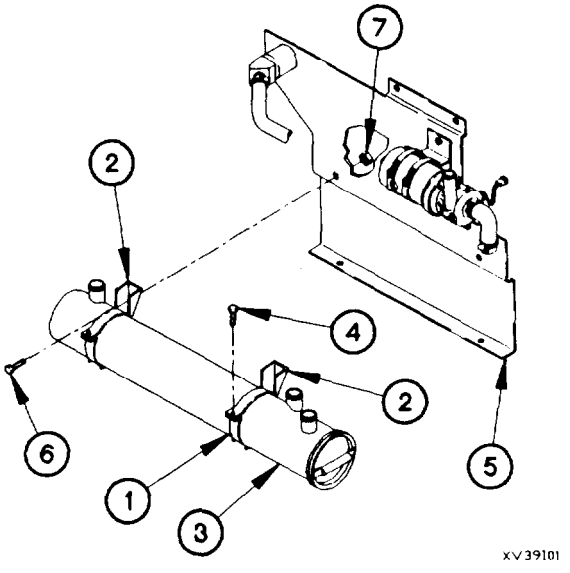
(13) Remove two screws (22) from straps (23).

(14) Remove two nuts (24), screws (25), and tube jacket (7) from plate (13).

(15) Remove two straps (23) and brackets (26) from tube jacket (5).



b. Installation.



(1) Position two straps (1) and brackets (2) on tube jacket (3) with two screws (4).

(2) Position tube jacket (3) on plate (5) with two screws (6) and nuts (7).

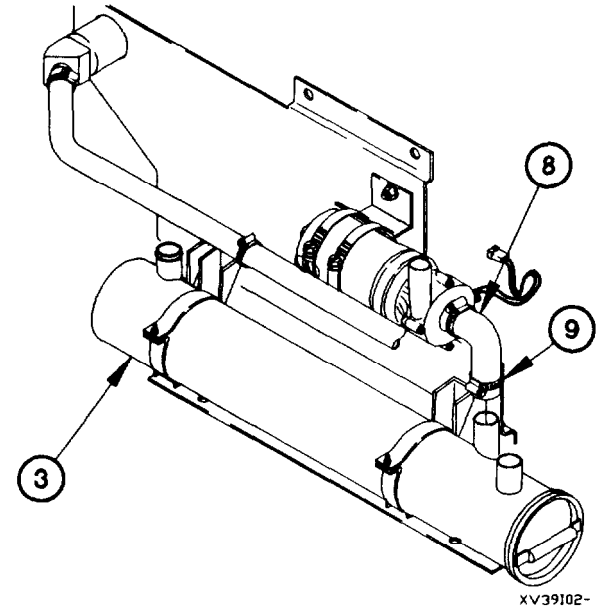
(3) Align tube jacket (3) on plate (5).

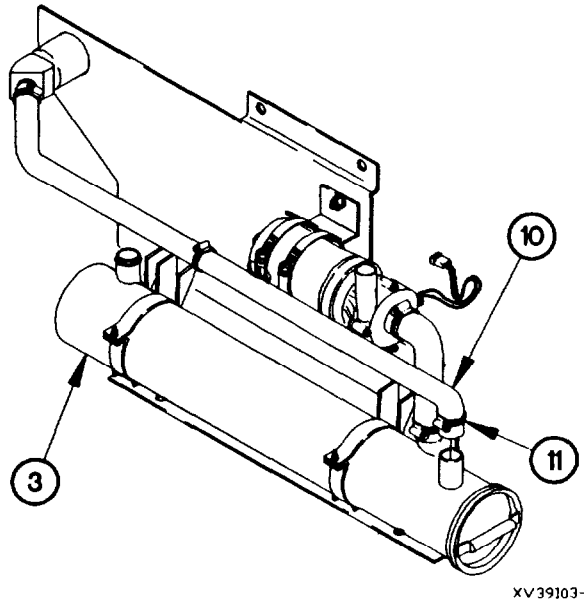
(4) Tighten two nuts (7) on brackets (2) to 20-25 lb-ft (27-34 N•m).

(5) Tighten two screws (4) on straps (1) to 20-25 lb-ft (27-34 N•m).

(6) Position hose (8) on tube jacket (3) with clamp (9).

(7) Tighten clamp (9) on hose (8).





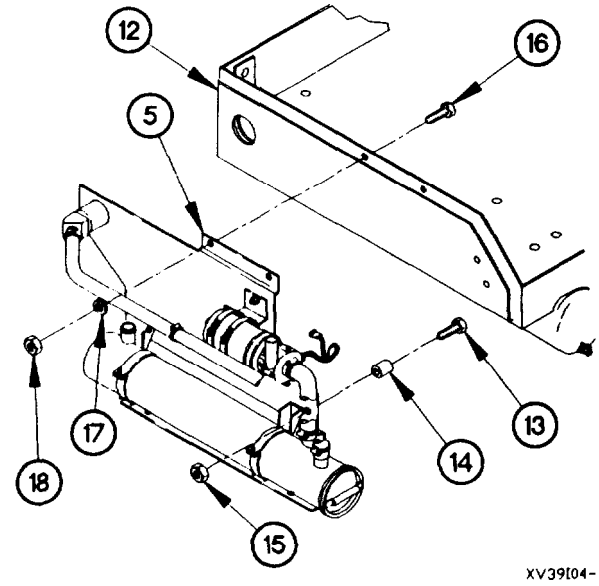
(8) Position pipe (10) on tube jacket (3) with clamp (11).

(9) Tighten clamp (11) on hose (10).

(10) Position plate (5) on vehicle (12) with two screws (13), spacers (14), and nuts (15).

(11) Position two screws (16), washers (17), and nuts (18) on plate (5).

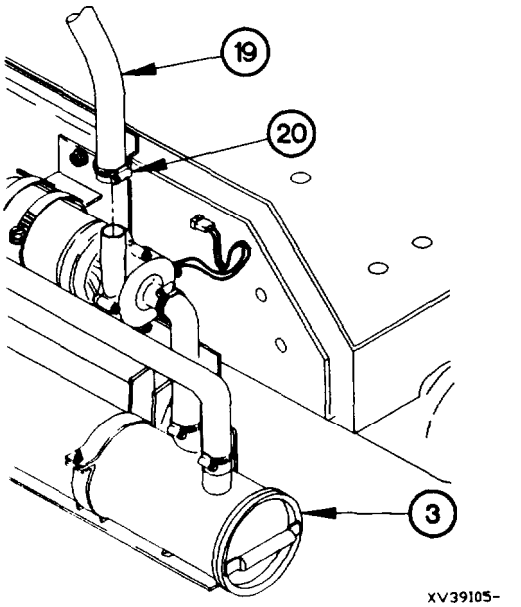
(12) Tighten four nuts (15 and 18) to 20-25 lb-ft (27-34 N•m).

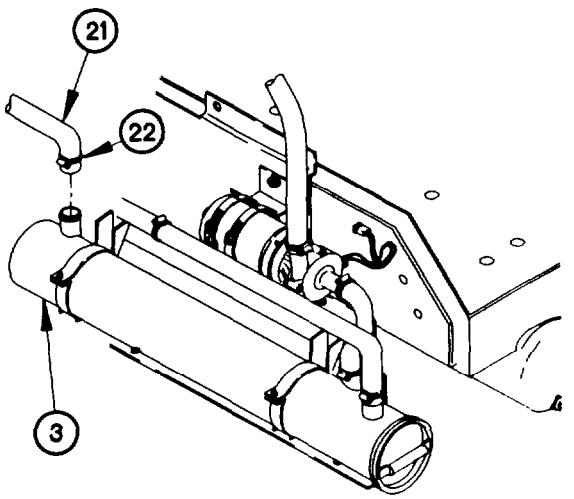


20-38. SWINGFIRE TUBE JACKET REPLACEMENT (CONT)

(13) Position hose (19) on tube jacket (3) with clamp (20).

(14) Tighten clamp (20) to 106 lb-in. (12 N•m).



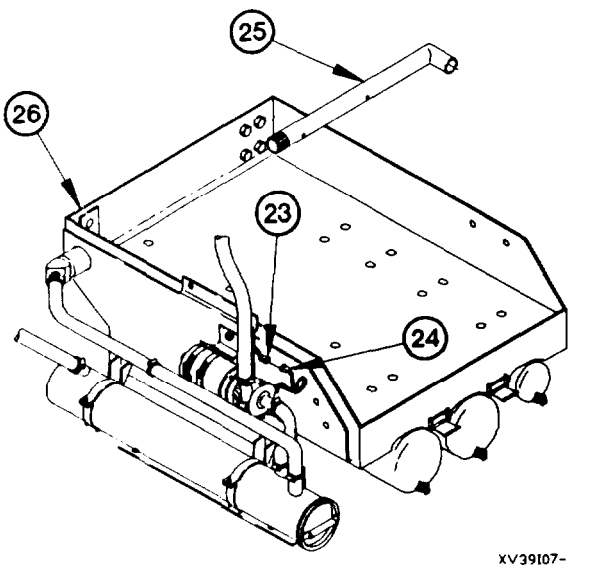


(15) Position hose (21) on tube jacket (3) with clamp (22).

(16) Tighten clamp (22) to 62 lb-in. (7 N•m).

(17) Connect electrical harness (23) at connector (24).

(18) Install tube (25) on plate adapter (26).



c. Follow-On Maintenance.

(1) Fill cooling system appendix H.

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Operate swingfire, check for leaks, and proper operation (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-39. SWINGFIRE VALVE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Cab raised (TM 9-2320-385-10).

Tools and Special Tools
Goggles Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Pan, Drain (Item 24, Appendix C)
Container (52qt (50L) capacity)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 49, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Cap and Plug Set (Item 15, Appendix D)
Antiseize Compound (Item 14, Appendix D)
Nut, Self-Locking (4) (Item 124, Appendix G)
Nut, Self-Locking (2) (Item 136, Appendix G)

a. Removal.

WARNING

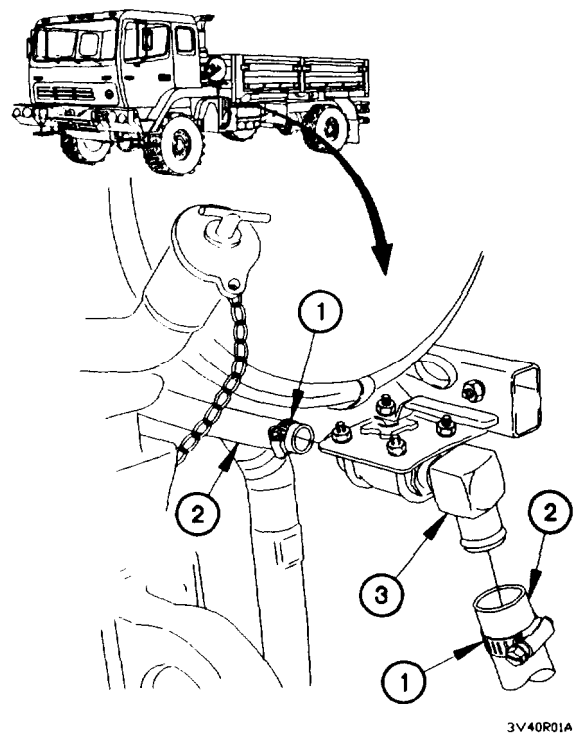
Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

(1) Place container under radiator (1).

(2) Remove radiator cap (2) from radiator overflow tank (3).

(3) Open radiator draincock (4) and drain all coolant from radiator (1).

(4) Close radiator draincock (4).



3V40R01A

20-39. SWINGFIRE VALVE REPLACEMENT (CONT)

WARNING

Excess coolant may splash out upon removal of hoses from swingfire valve. Ensure proper eye protection is worn. Failure to comply may result in injury to personnel.

NOTE

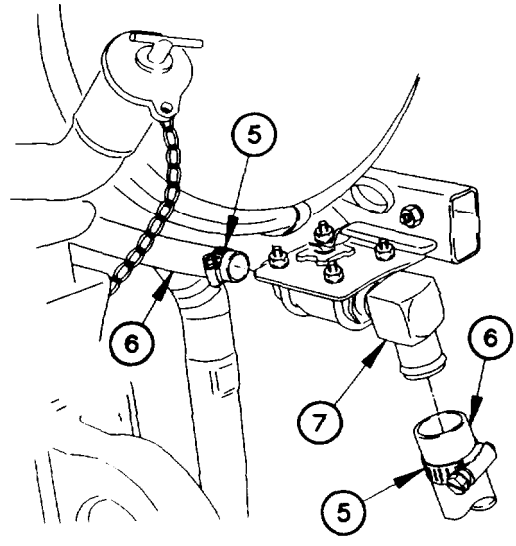
- Tag hoses and connection points prior to disconnecting.
- Collect excess coolant in drain pan.

(5) Loosen two clamps (5) on hoses (6).

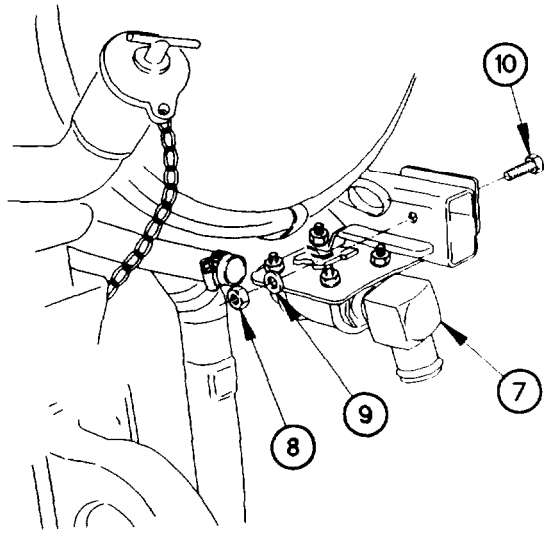
NOTE

Cap or plug hoses to prevent contamination of cooling system.

(6) Remove two hoses (6) from valve (7).



XV40R02-

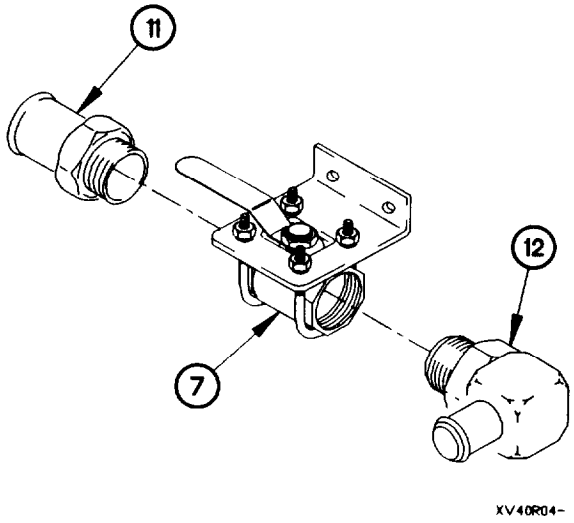


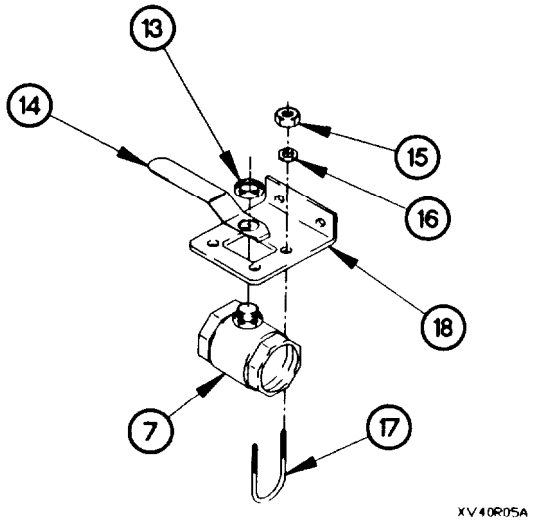
XV40R03-

(7) Remove two self-locking nuts (8), washers (9), screws (10), and valve (7) from vehicle. Discard self-locking nuts.

(8) Remove fitting (11) from valve (7).

(9) Remove 90-degree fitting (12) from valve (7).





(10) Remove nut (13) and handle (14) from valve (7).

(11) Remove four self-locking nuts (15) and washers (16) from two U-bolts (17). Discard self-locking nuts.

(12) Remove two U-bolts (17) and valve (7) from bracket (18).

b. Installation.

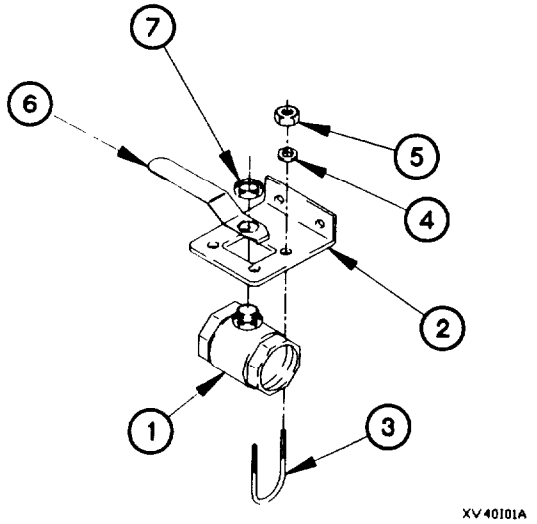
NOTE

Position self-locking nuts on U-bolts so that an equal number of threads show on each end of U-bolts.

(1) Position valve (1) on bracket (2) with two U-bolts (3), four washers (4) and self-locking nuts (5).

(2) Tighten four self-locking nuts (5) to 26-32 lb-ft (35-43 N•m.

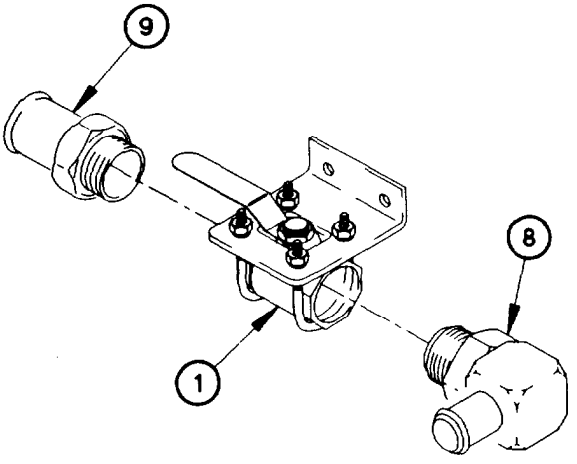
(3) Install handle (6) on valve (1) with nut (7).



20-39. SWINGFIRE VALVE REPLACEMENT (CONT)

WARNING

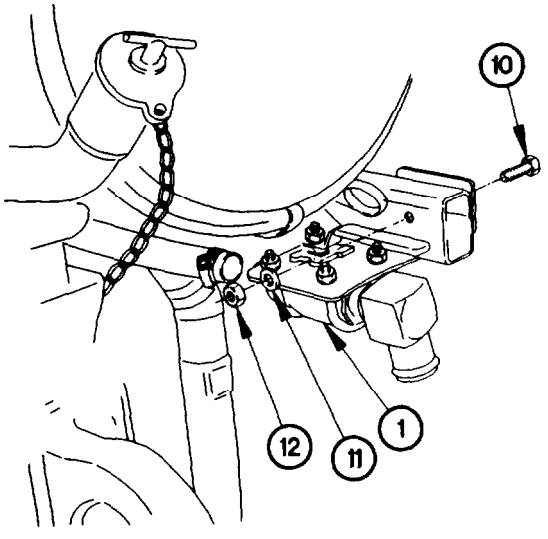
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



XV40102-

(5) Apply antiseize compound on 90-degree fitting (8) and install on valve (1).

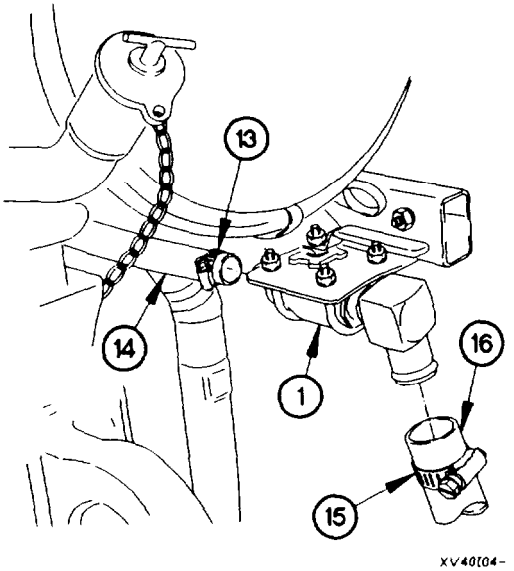
(6) Apply antiseize compound on fitting (9) and install on valve (1).



XV40103-

(7) Position valve (1) on vehicle with two screws (10), washers (11), and self-locking nuts (12).

(8) Tighten self-locking nuts (12) to 20-25 lb-ft (27-33 N•m).



XV40104-

(9) Position clamp (13) and hose (14) on valve (1).

(10) Tighten clamp (13) to 62 lb-in. (7 N•m).

(11) Position clamp (15) and hose (16) on valve (1).

(12) Tighten clamp (15) to 106 lb-in. (12 N•m).

c. Follow-On Maintenance.

(1) Lower cab (TM 9-2320-365-10).

(2) Add arctic coolant to radiator overflow tank (TM 9-2320-365-10).

(3) Check for coolant leaks under vehicle.

(4) Connect batteries (para 7-48).

(5) Start engine (TM 9-2320-365-10).

(6) Check for coolant leaks under vehicle.

NOTE

Coolant level will drop when normal operating temperature is reached.

(7) Check coolant level after normal operating temperature is reached. Add coolant as needed (TM 9-2320-365-10).

(8) Install radiator cap on radiator overflow tank.

(9) Check for coolant leaks under vehicle.

(10) Raise cab (TM 9-2320-365-10).

(11) Check for coolant leaks in engine compartment.

(12) Lower cab (TM 9-2320-365-10).

(13) Operate swingfire, check for leaks and proper operation (TM 9-2320-365-10).

(14) Shut down engine (TM 9-2320-365-10).

End of Task.

20-40. SWINGFIRE FUEL PREHEATER REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Spare tire lowered (TM 9-2320-365-10)

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Pan, Drain (Item 24, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Cap and Plug Set (Item 15, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)

a. Removal.

CAUTION

Cap or plug hoses and connecting points to prevent contamination to fuel system. Failure to comply may result in damage to equipment.

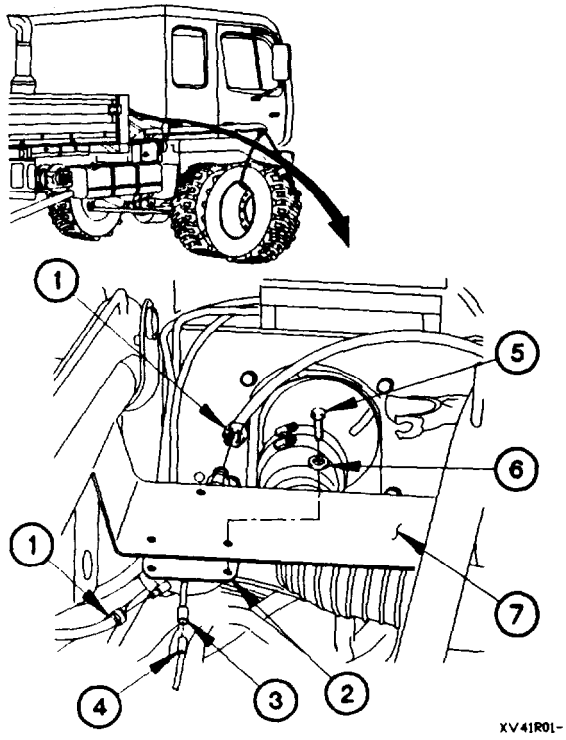
NOTE

- Tag hoses, wires, and connection points prior to disconnecting.
- Remove plastic cable ties as required.
- Position drain pan to collect fuel.

(1) Disconnect two hoses (1) from preheater (2).

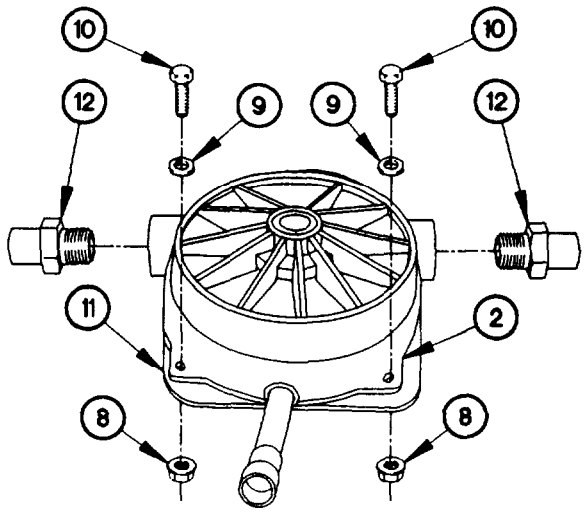
(2) Disconnect connector P202 (3) from electrical harness (4).

(3) Remove three screws (5), washers (6), and preheater (2) from spare tire retainer (7).



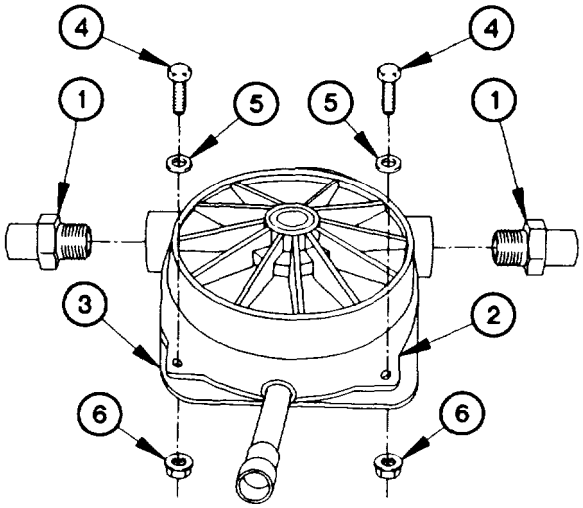
(4) Remove four nuts (8), washers (9), screws (10), and bracket (11) from preheater (2).

(5) Remove two fittings (12) from preheater (2).



XV41R02-

b. Installation.



XV41I01

(1) Install two fittings (1) in preheater (2).

(2) Install preheater (2) on bracket (3) with four screws (4), washers (5), and nuts (6).

(3) Position preheater (2) on spare tire retainer (7) with three washers (8) and screws (9).

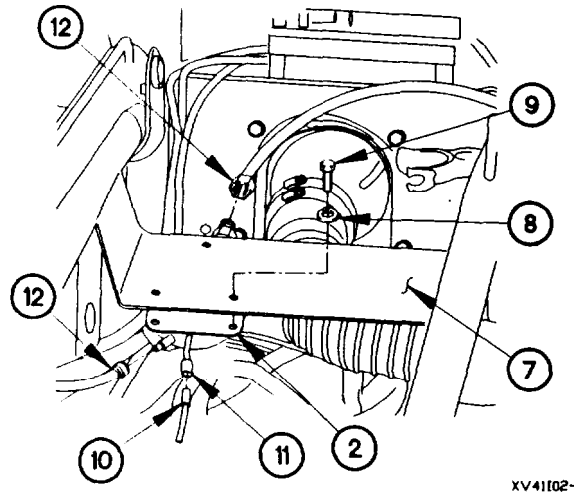
(4) Tighten three screws (9) to 22-24 lb-ft (27-33 N•m).

NOTE

Install plastic cable ties as required.

(5) Connect electric harness (10) to connector P202 (11).

(6) Connect two hoses (12) to preheater (2).



XV41I02-

20-40. SWINGFIRE FUEL PREHEATER REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Start engine (TM 9-2320-365-10).

(2) Operate swingfire system and check for proper operation (TM 9-2320-365-10).

(3) Shut down engine (TM 9-2320-365-10).

End of Task.

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

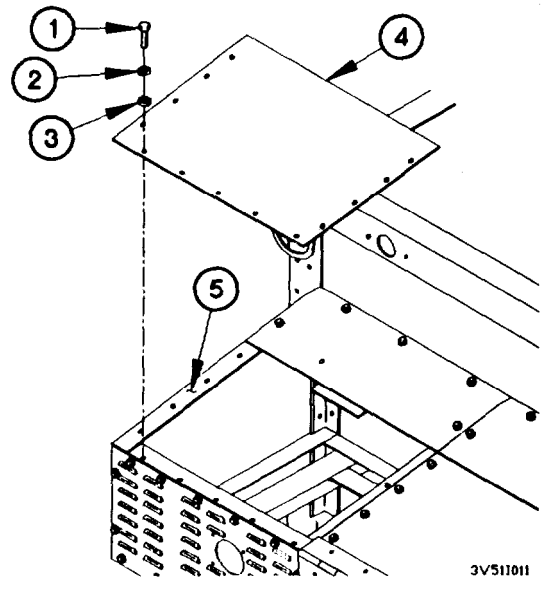
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

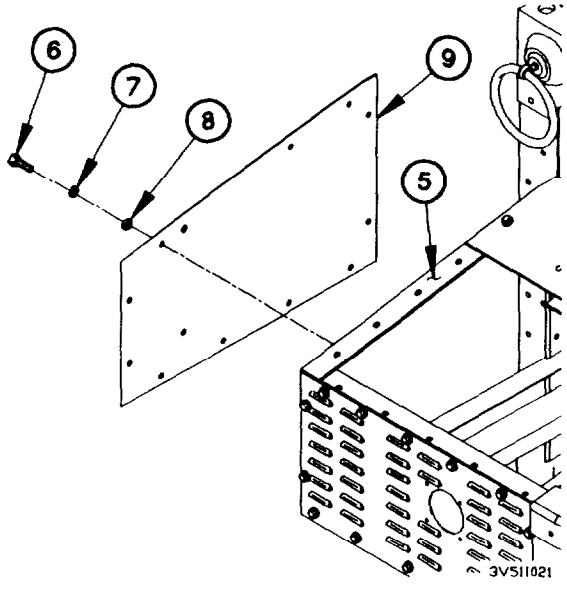
Materials/Parts
Lockwasher (44) (Item 62, Appendix G)
Lockwasher (18) (Item 84, Appendix G)
Lockwasher (12) (Item 76, Appendix G)
Sealant, Pipe, Teflon (Item 58, Appendix D)

Personnel Required
(2)

a. Installation.

(1) Remove 13 screws (1), lockwashers (2), washers (3), and curbside top front panel (4) from pod frame (5). Discard lockwashers.





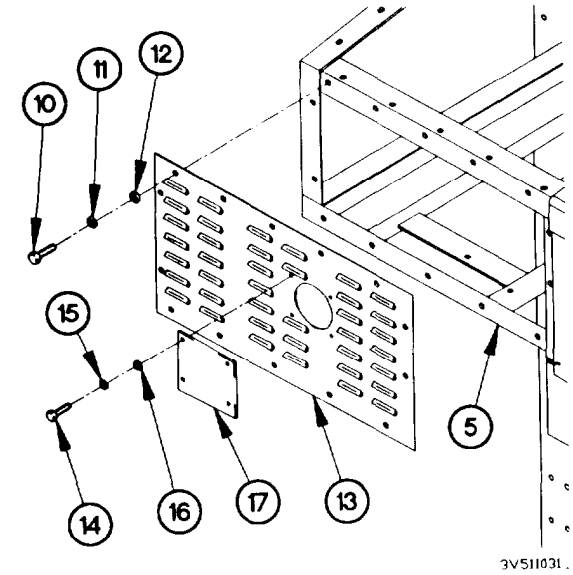
(2) Remove 13 screws (6), lockwashers (7), washers (8), and curbside panel (9) from pod frame (5). Discard lockwashers.

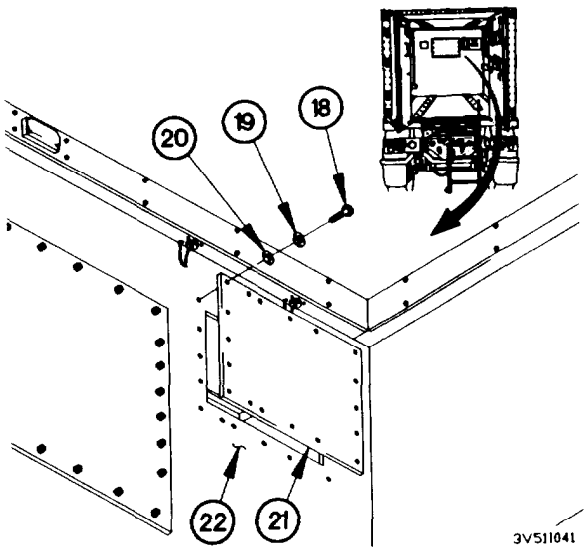
20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(3) Remove 14 screws (10), lockwashers (11), washers (12), and curbside front panel (13) from pod frame (5). Discard lockwashers.

(4) Remove four screws (14), lockwashers (15), washers (16), and cover plate (17) from curbside front Panel (13). Discard lockwashers.

(5) Retain cover plate (17) for future use.



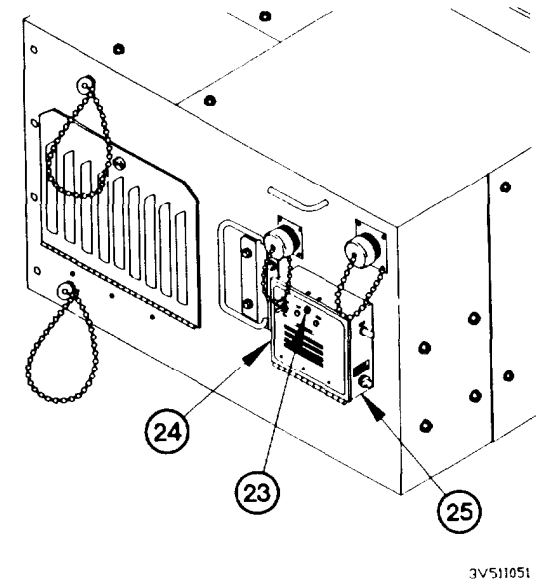


(6) Remove 18 screws (18), lockwashers (19), washers (20), and cover (21) from inside front van body wall (22), Discard lockwashers.

(7) Retain cover (21) for future use.

(8) Unlatch screw (23) on door (24).

(9) Open door (24) on heater control unit (25).



(10) Unlatch two screws (26) on heater control unit (25).

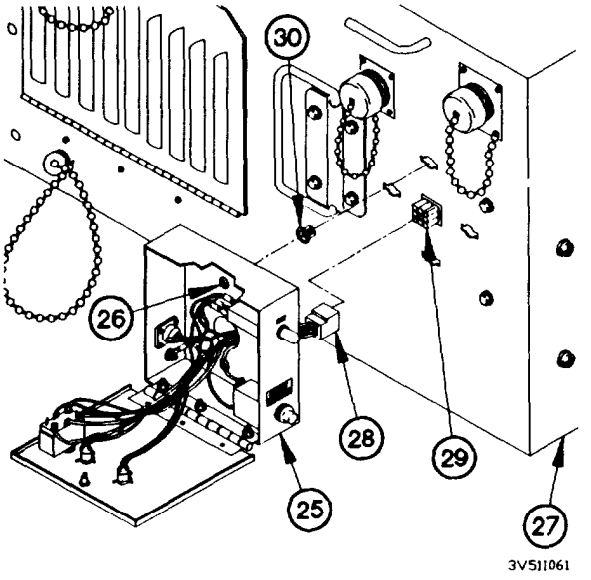
(11) Remove heater control unit (25) from heater (27).

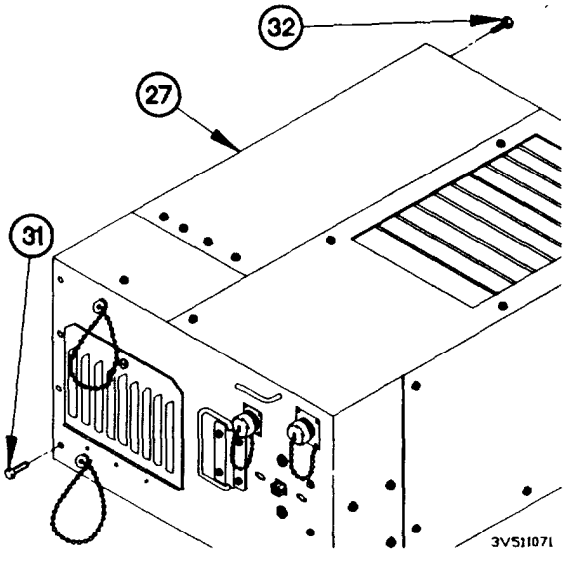
NOTE

Tag connectors and connection points prior to removal.

(12) Disconnect connector P4 (28) from connector J4 (29).

(13) Remove two twist locks (30) from heater (27).





(14) Remove eight screws (31) from heater (27).

(15) Remove eight screws (32) from heater (27).

(16) Retain screws (31 and 32) for future use.

WARNING

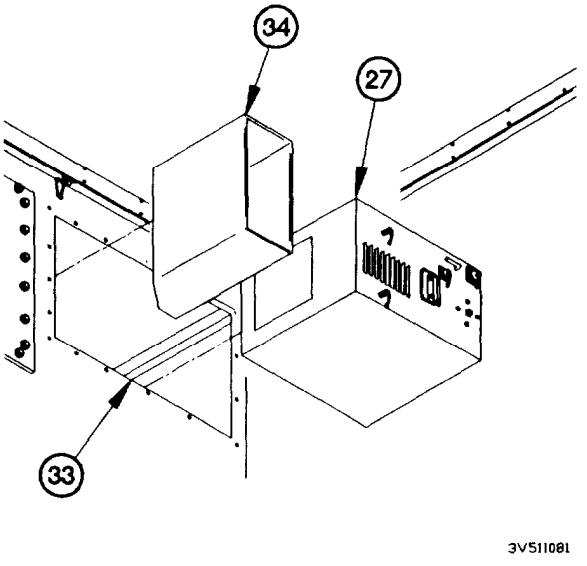
Heater weighs approximately 120 lbs (54 kgs). Use the aid of an assistant when lifting. Failure to comply may result in injury to personnel.

NOTE

Steps (17) through (22) requires the aid of an assistant.

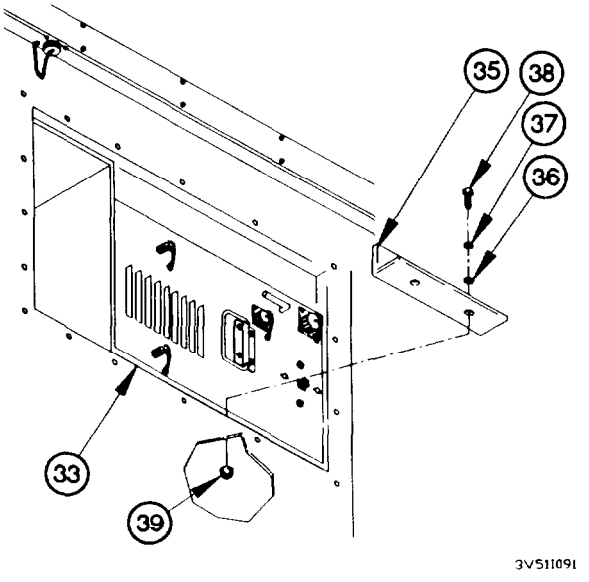
(17) Position heater (27) on pod panel (33).

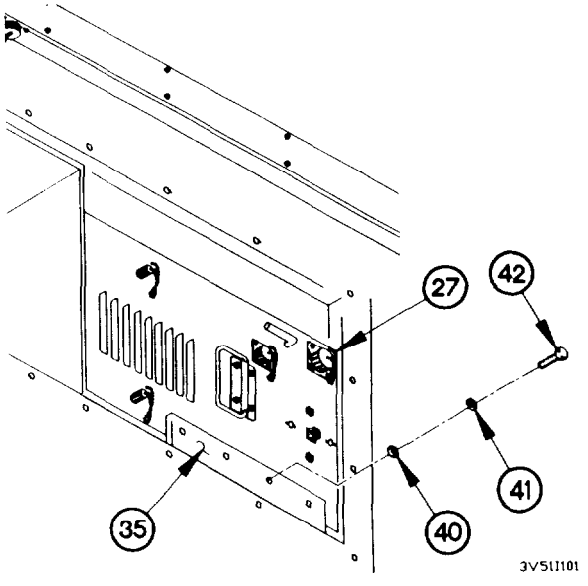
(18) Position heater duct (34) on pod panel (33).



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(19) Position bracket (35) on pod panel (33) with two washers (36), lockwashers (37), screws (38), and self-locking nuts (39).

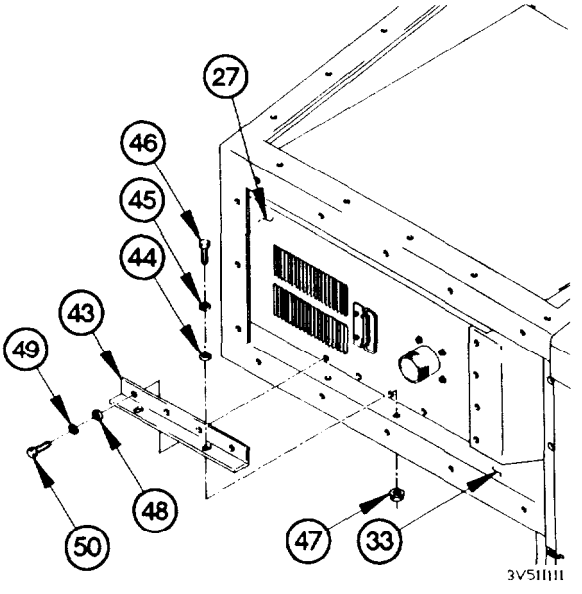




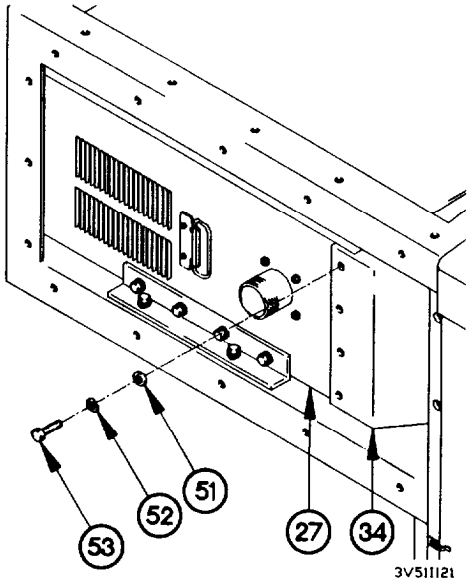
(20) Install bracket (35) on heater (27) with three washers (40), lockwashers (41) and screws (42).

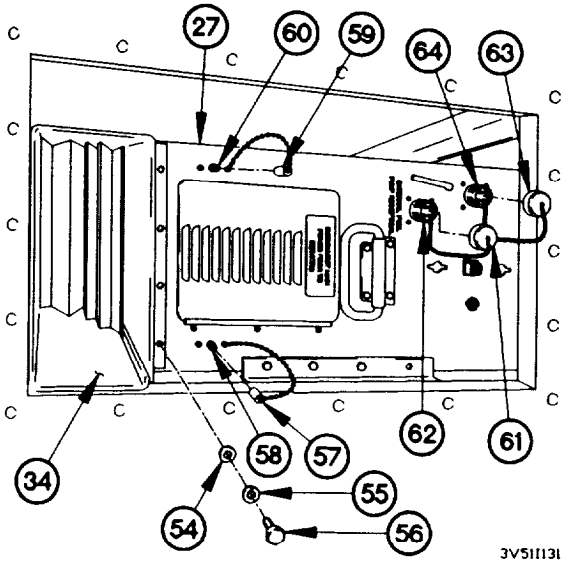
(21) Position bracket (43) on pod panel (33) with two washers (44), lockwashers (45), screws (46), and self-locking nuts (47).

(22) Install bracket (43) on heater (27) with four washers (48), lockwashers (49) and screws (50).



(23) Install heater duct (34) on heater (27) with four washers (51), lockwasher (52), and screws (53).





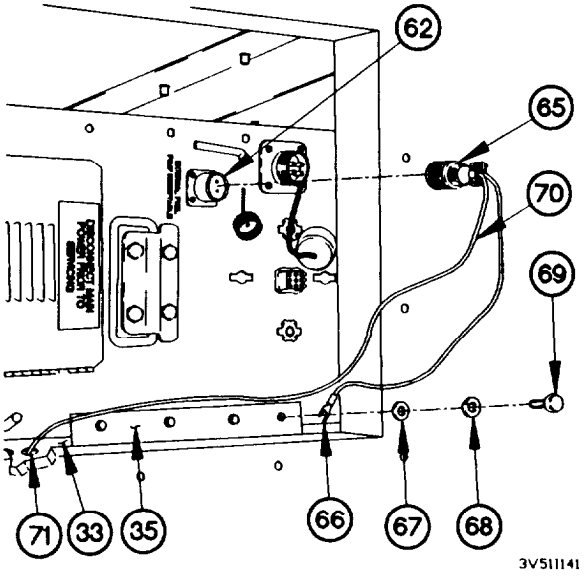
(24) Install heater duct (34) on heater (27) with four washers (54), lockwashers (55), and screws (56).

(25) Remove dust cap (57) from fuel overflow port (58).

(26) Remove dust cap (59) from fuel inlet port (60).

(27) Remove dust cap (61) from heater fuel pump power cable connector (62).

(28) Remove dust cap (63) from heater power connector (64).



(29) Connect connector J314 (65) to heater fuel pump power cable connector (62).

(30) Install terminal lug TL91 (66) on bracket (35) with washer (67), lockwasher (68), and screw (69).

(31) Route heater fuel pump power cable (70) through hole (71) in pod panel (33).

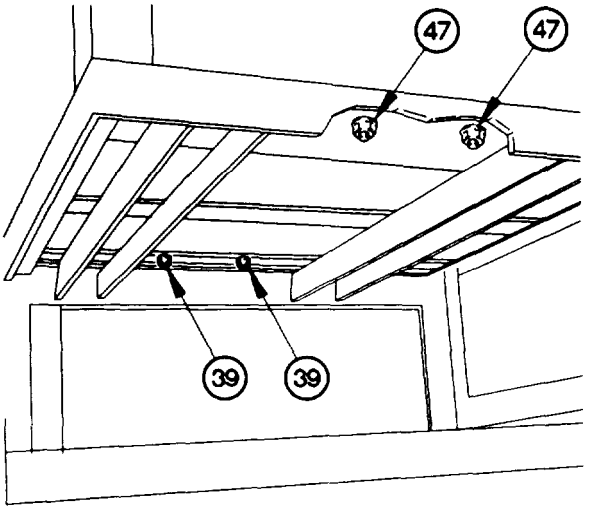
20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

NOTE

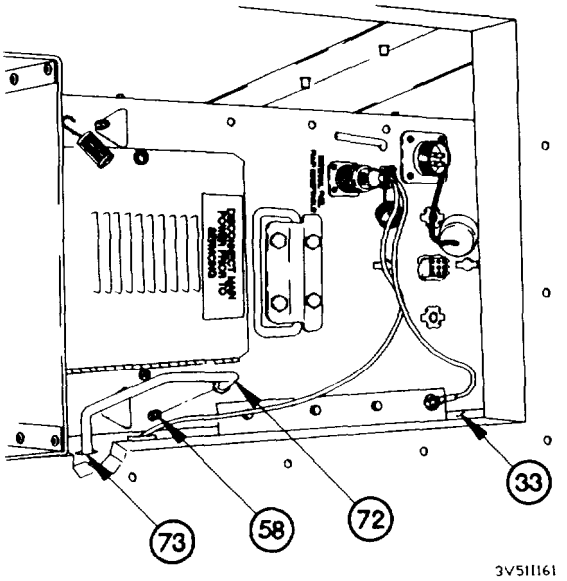
Steps (32) and (33) require the aid of an assistant.

(32) Tighten two self-locking nuts (39).

(33) Tighten two self-locking nuts (47).



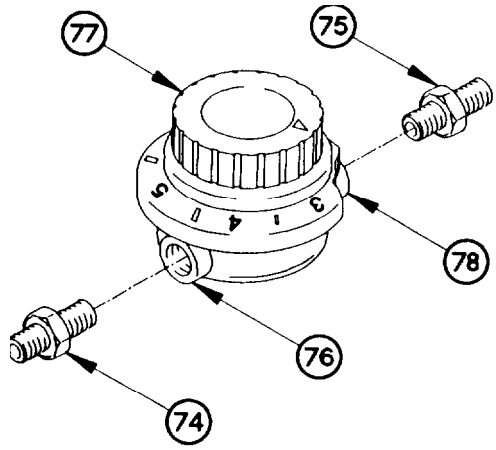
3V5111151



3V5111161

(34) Route fuel tube (72) through hole (73) in pod panel (33).

(35) Install fuel tube (72) on fuel overflow port (58).



3V511171

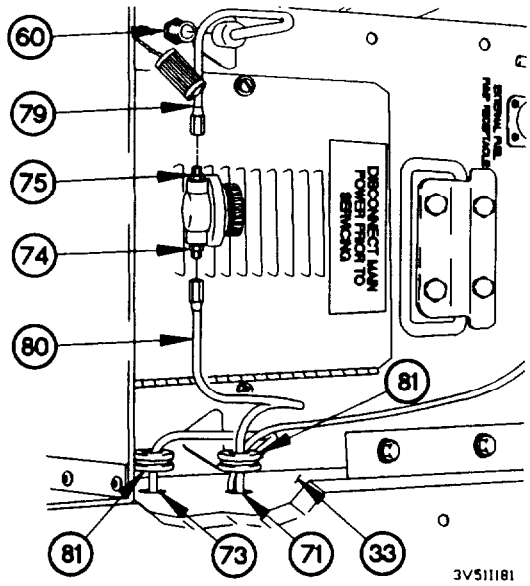
WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(36) Apply sealing compound to threads of fittings (74 and 75).

(37) Install fitting (74) in inlet port (76) of fuel regulator (77).

(38) Install fitting (75) in outlet port (78) of fuel regulator (77).



3V511181

(39) Install fuel tube (79) on fuel inlet port (60).

(40) Route fuel tube (80) through hole (71) in pod panel (33).

(41) Install fuel tubes (79 and 80) on fittings (74 and 75).

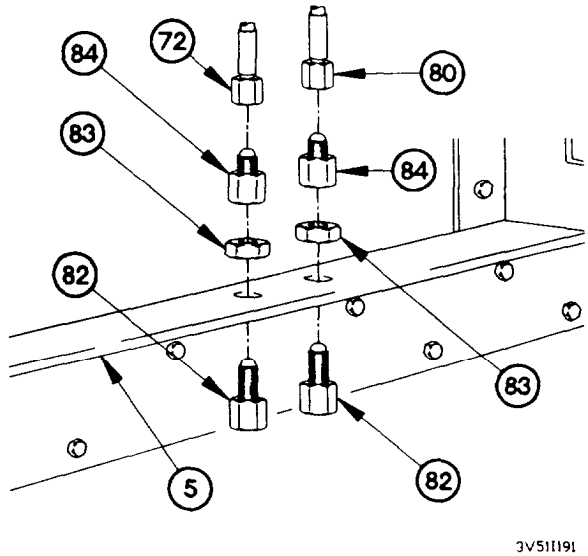
(42) Install two grommets (81) in holes (71 and 73) on pod panel (33).

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

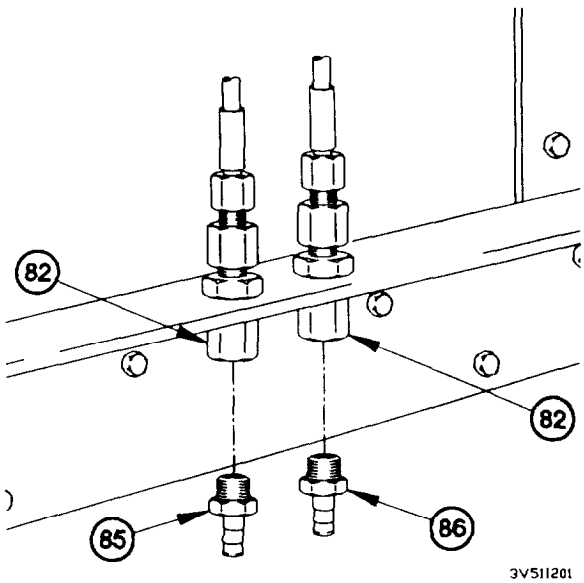
(43) Install two fittings (82) on pod frame (5) with two nuts (83).

(44) Install two adapters (84) on fittings (82).

(45) Install fuel tubes (72 and 80) on two adapters (84).



3V511191



3V511201

WARNING

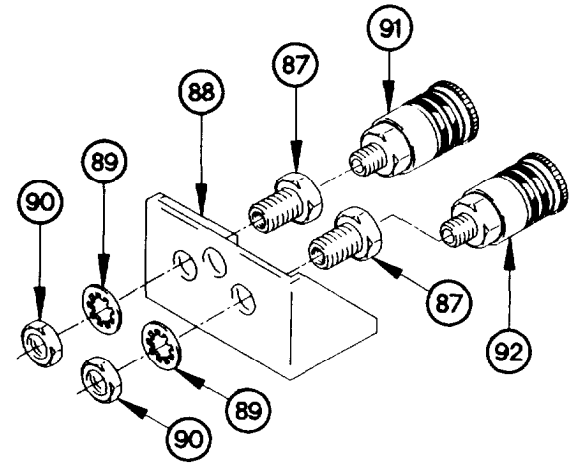
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(46) Apply sealing compound to threads of fittings (85 and 86).

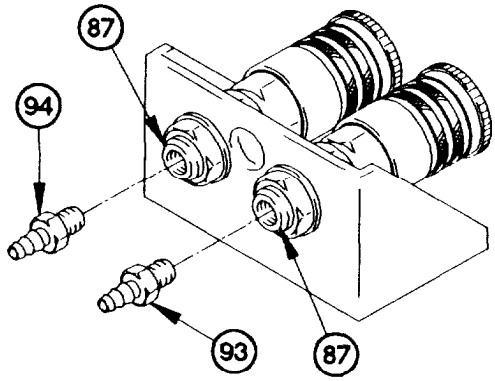
(47) Install fittings (85 and 86) on two fittings (82).

(48) Install two bushings (87) on bracket (88) with two lockwashers (89) and nuts (90).

(49) Install quick connect fittings (91 and 92) on two bushings (87).



3V511211



3V511221

WARNING

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(50) Apply sealing compound to threads of fittings (93 and 94).

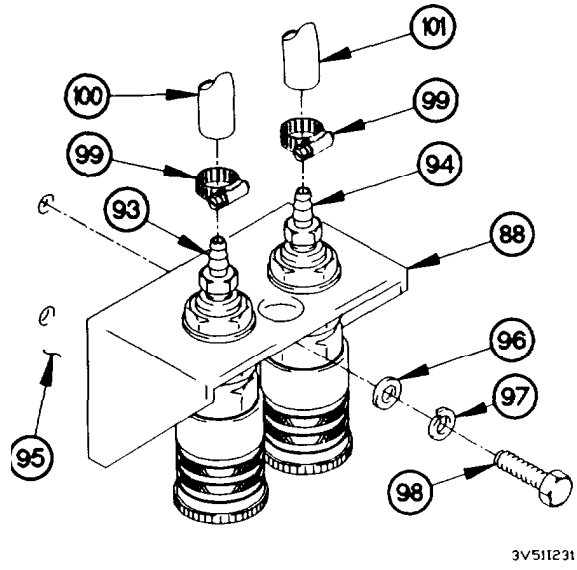
(51) Install fitting (93 and 94) in two bushings (87).

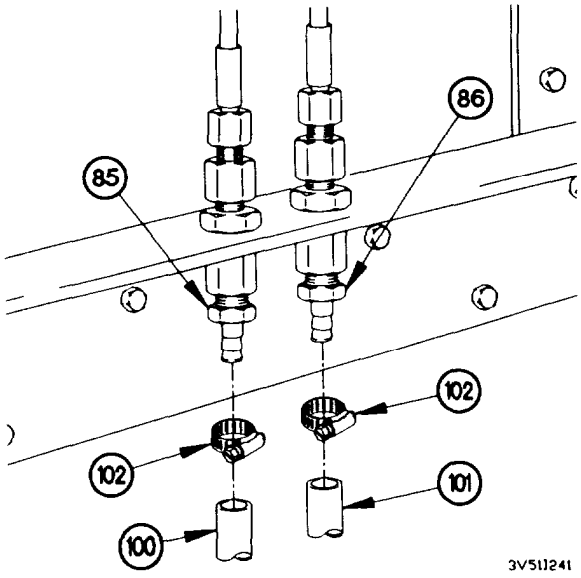
20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(52) Install bracket (88) on outside front van body wall (95) with two washers (96), lockwashers (97), and screws (98).

(53) Position two clamps (99) on hoses (100 and 101).

(54) Install hoses (100 and 101) on fitting (93 and 94) with two clamps (99).



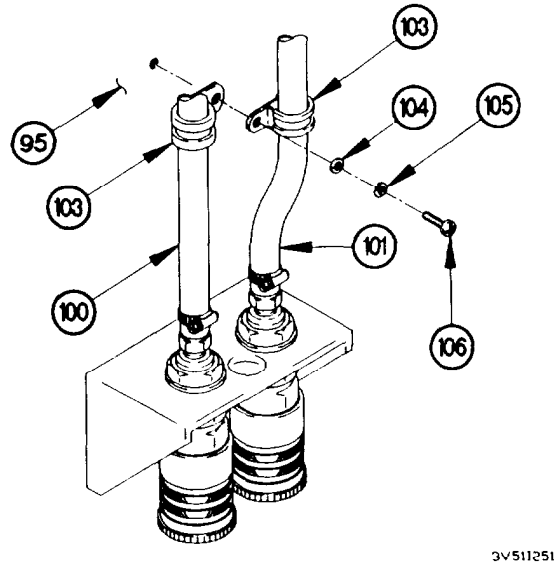


(55) Position two clamps (102) on hoses (100 and 101).

(56) Install two hoses (100 and 101) on fittings (85 and 86) with two clamps (102).

(57) Position six clamps (103) on hoses (100 and 101).

(58) Install six clamps (103) on outside front van body wall (95) with three washers (104), lockwashers (105), and screws (106).



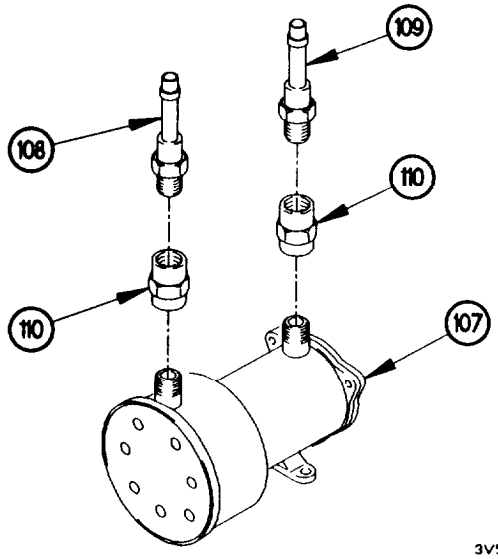
WARNING

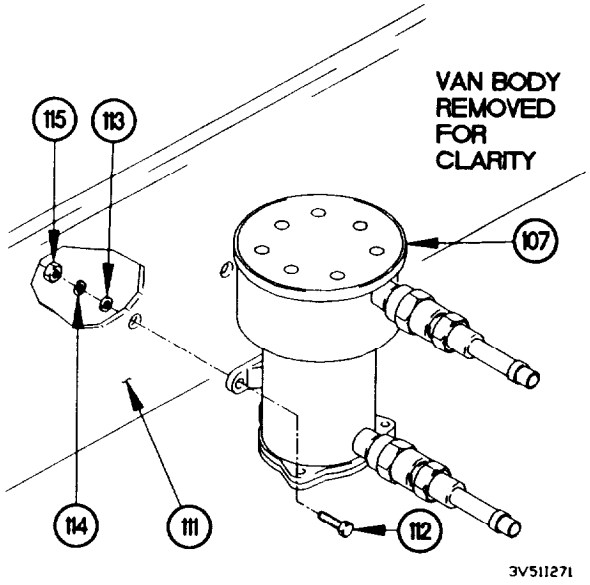
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(59) Apply sealing compound to threads of heater fuel pump (107) and fittings (108 and 109).

(60) Install two couplers (110) on heater fuel pump (107).

(61) Install fittings (108 and 109) on couplers (110).





NOTE

Step (62) requires the aid of an assistant.

(62) Install heater fuel pump (107) on sub-frame (111) with two screws (112), washers (113), lockwashers (114), and nuts (115).

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(63) Remove plug (116) from auxiliary supply port (117).

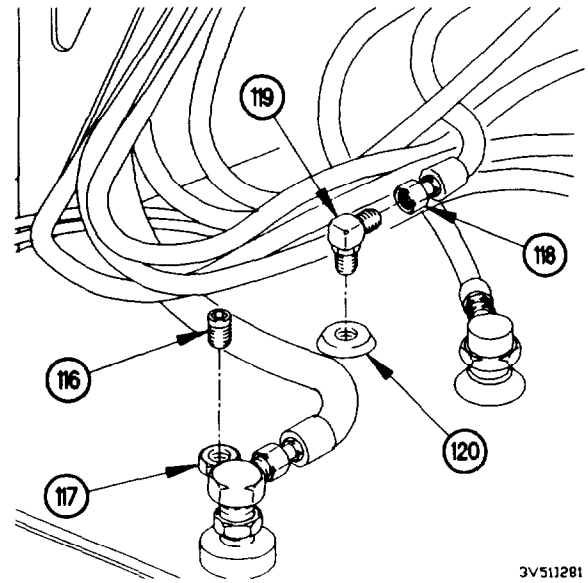
(64) Retain plug (116) for future use.

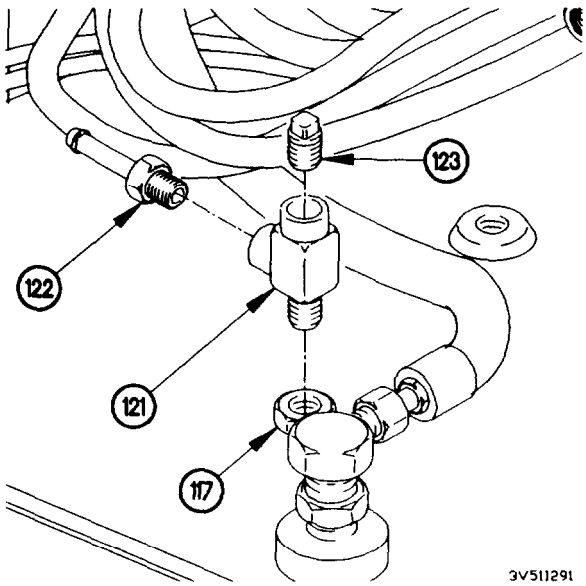
NOTE

Remove plastic cable ties as required.

(65) Disconnect fuel hose (118) from 90-degree return fitting (119).

(66) Remove 90-degree return fitting (119) from fuel tank (120).





WARNING

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(67) Apply sealing compound to threads of run tee fitting (121), fitting (122), and plug (123).

(68) Install run tee fitting (121) in auxiliary supply port (117).

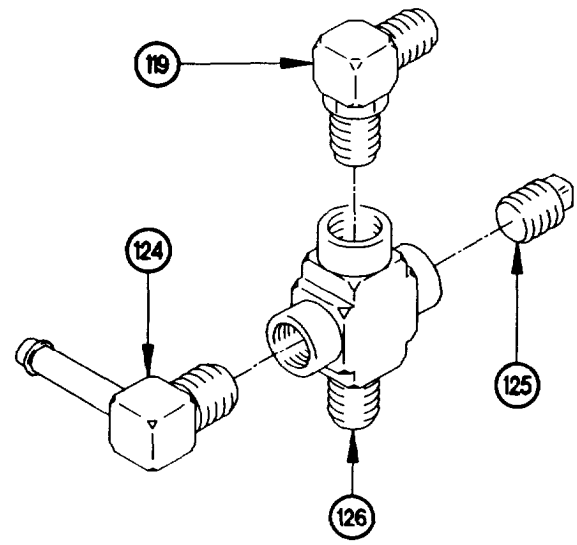
(69) Install fitting (122) and plug (123) on run tee fitting (121).

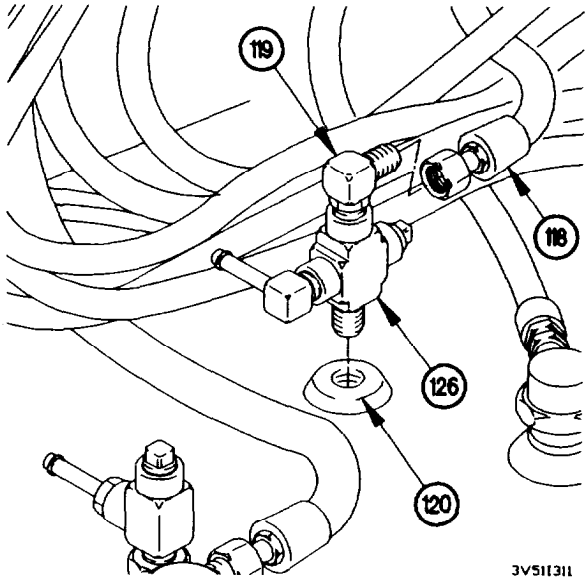
WARNING

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(70) Apply sealing compound to threads of 90-degree return fitting (119), 90-degree fitting (124), plug (125), and four-way fitting (126).

(71) Install 90-degree return fitting (119), 90-degree fitting (124), and plug (125) on four-way fitting (126).





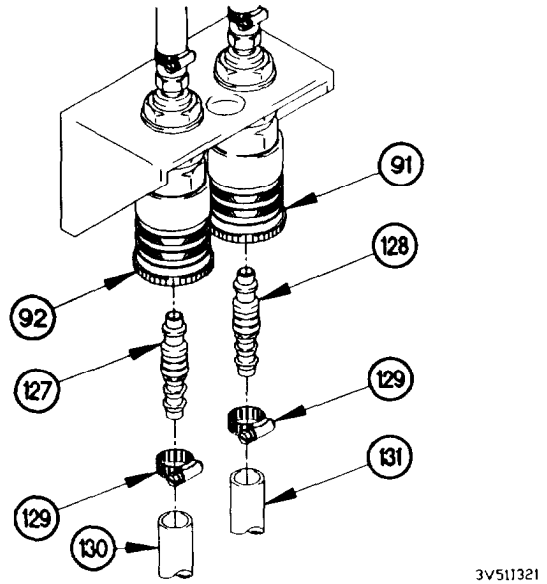
(72) Install four-way fitting (126) on fuel tank (120).

NOTE

Install plastic cable ties as required.

(73) Connect fuel hose (118) to 90-degree return fitting (119).

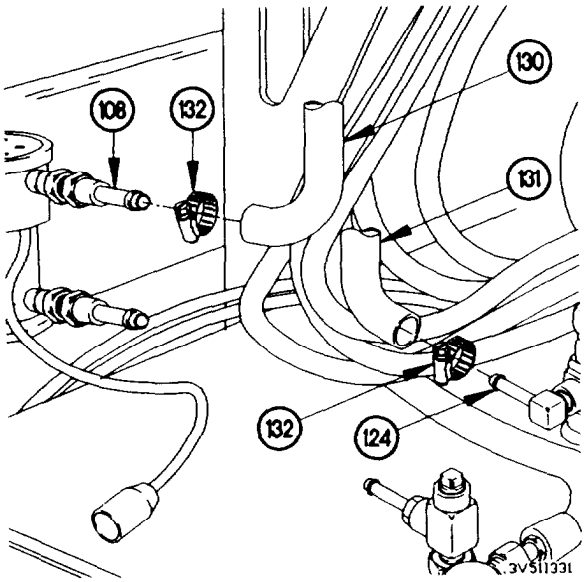
20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)



(74) Connect fitting (127 and 128) to quick connect fittings (91 and 92).

(75) Position two clamps (129) on hoses (130 and 131).

(76) Install hoses (130 and 131) on fittings (127 and 128) with two clamps (129).



(77) Position two clamps (132) on hoses (130 and 131).

(78) Install hoses (130 and 131) on fittings (108 and 124) with two clamps (132).

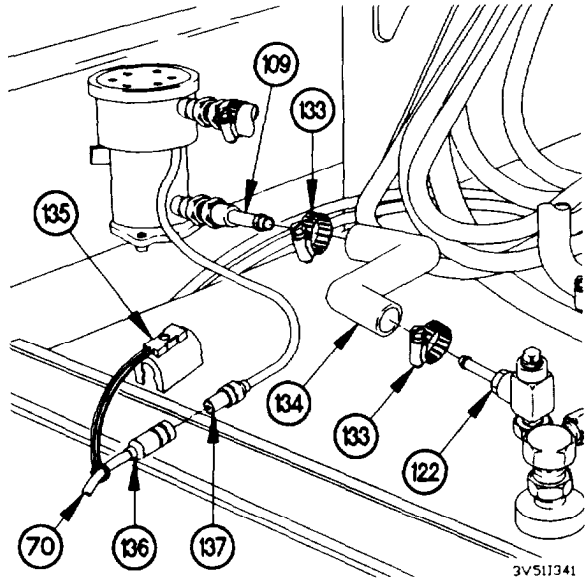
(79) Position two clamps (133) on hose (134).

(80) Install hose (134) on fittings (109 and 122) with two clamps (133).

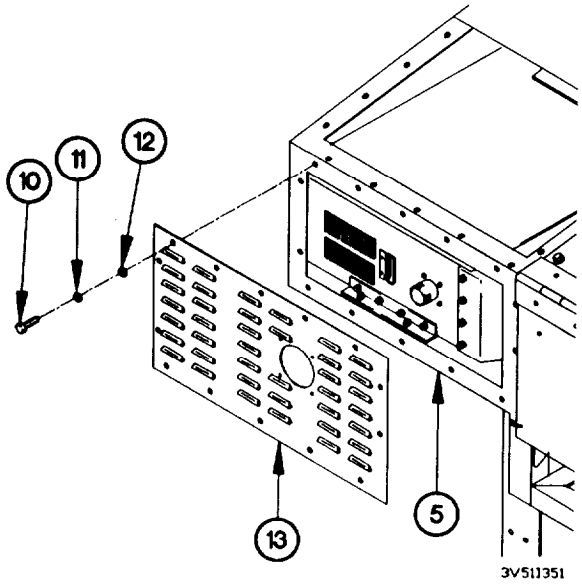
(81) Install connector clamp (135) on heater fuel pump power cable (70).

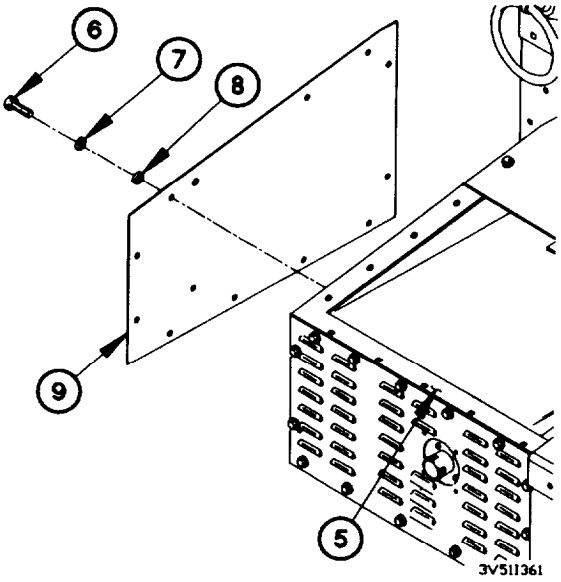
(82) Connect connector P310 (136) to heater fuel pump connector (137).

(83) Connect connector clamp (135) on heater fuel pump connector (137).



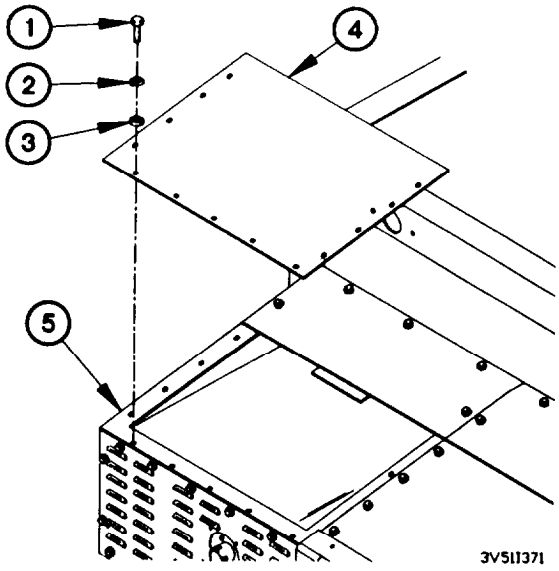
(84) Install curbside front panel (13) on pod frame (5) with 14 washers (12), lockwashers (11), and screws (10).





(85) Install curbside panel (9) on pod frame (5) with 13 washers (8), lockwashers (7), and screws (6).

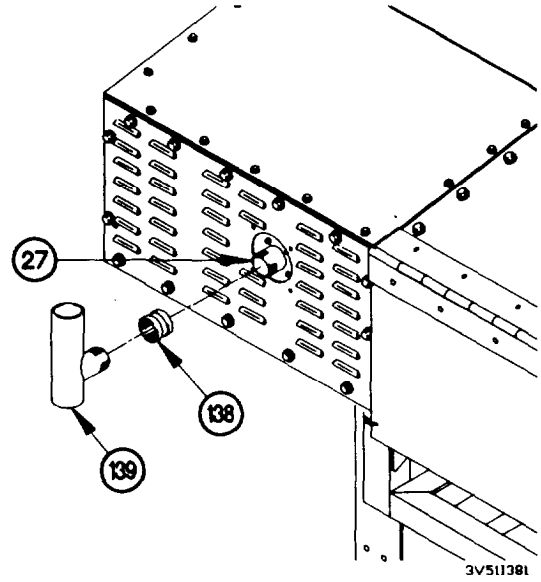
(86) Install curbside top front panel (4) on pod frame (5) with 13 washers (3), lockwashers (2), and screws (1).

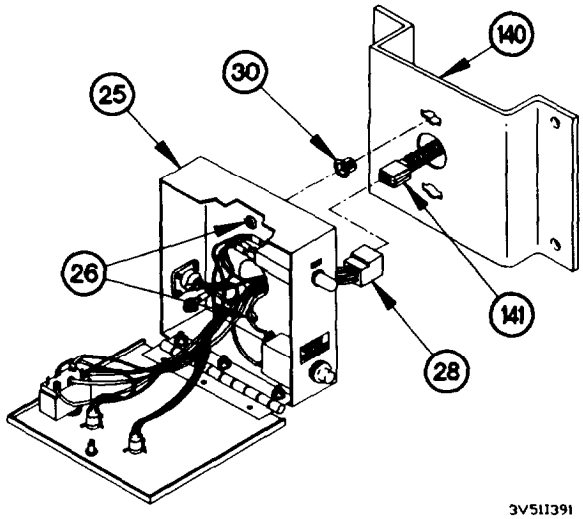


20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(87) Install coupler (138) on heater (27).

(88) Install exhaust pipe (139) on coupler (138).





(89) Install two twist locks (30) on bracket (140).

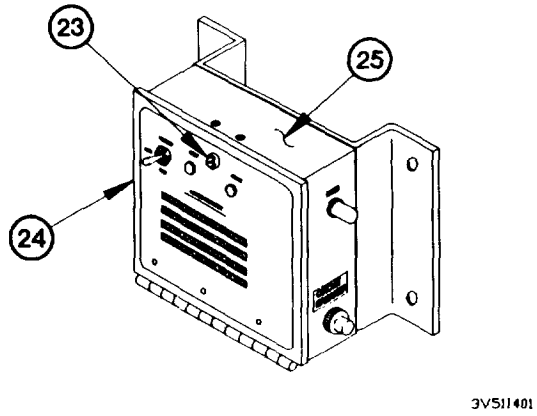
(90) Position heater control unit (25) on bracket (140).

(91) Latch two screws (26) on heater control unit (25).

(921 Connect connector J4A (141) to connector P4 (28).

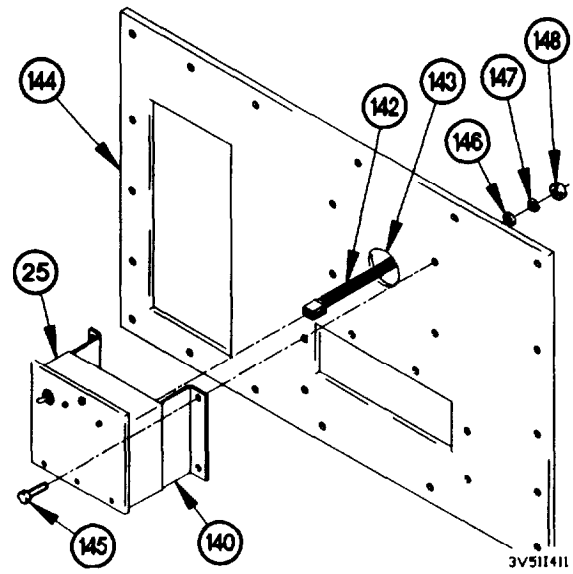
(93) Close door (24) on heater control unit (25).

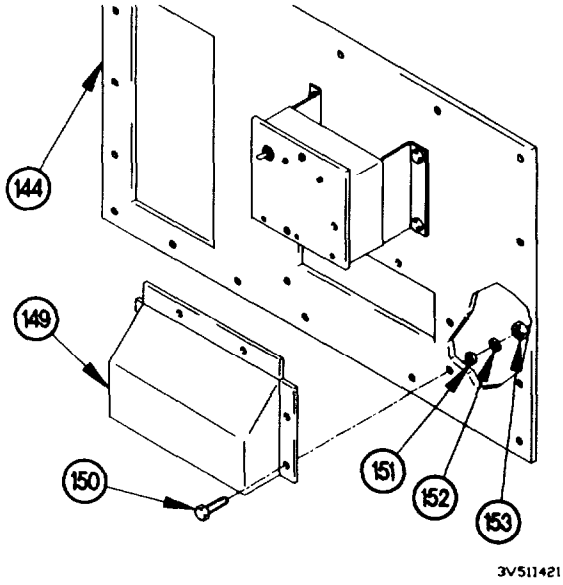
(94) Latch screw (23) on door (24).



(95) Route heater control cable (142) through hole (143) in heater cover (144).

(96) Install bracket (140) on heater cover (144) with four screws (145), washers (146), lockwashers (147), and nuts (148).





(97) Install hood (149) on heater cover (144) with six screws (150), washers (151), lockwashers (152), and nuts (153).

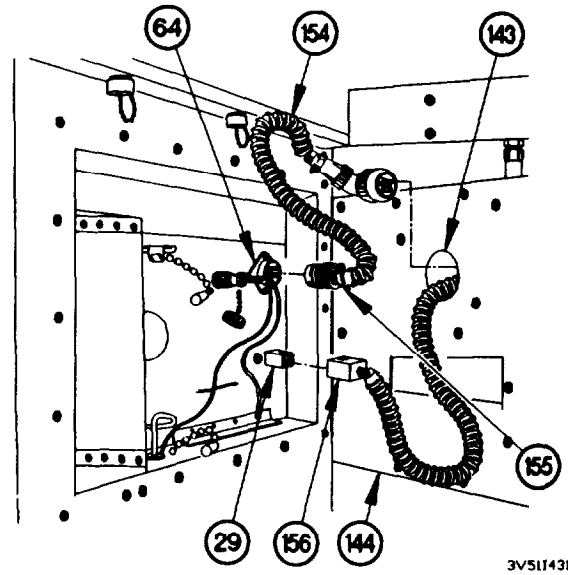
(98) Route heater power cable (154) through hole (143) in heater cover (144).

NOTE

Steps (99) and (100) require the aid of an assistant.

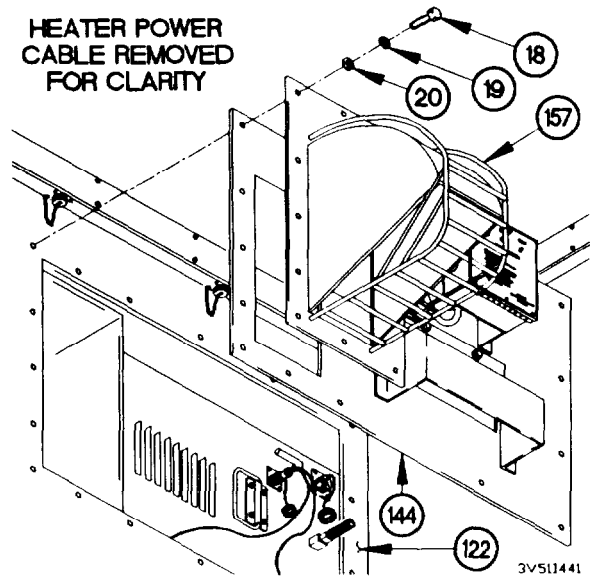
(99) Connect connector J244A (155) to heater power connector (64).

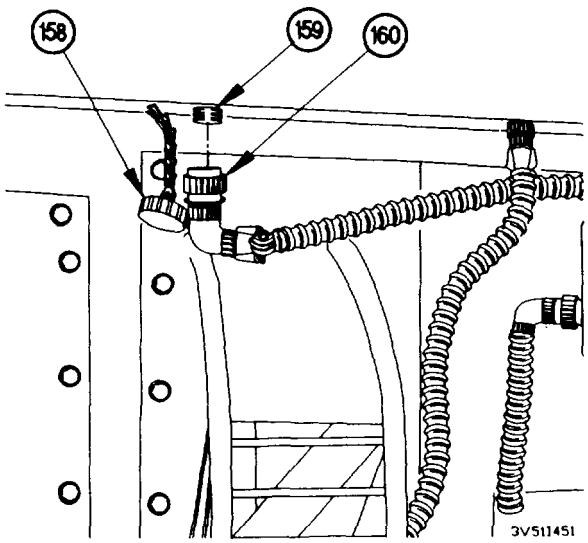
(100) Connect connector P4A (156) to connector J4 (29).



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(101) Install heater cover (144) on inside front van body wall (22) with heater deflector (157), 18 washers (20), lockwashers (19), and screws (18).





(102) Remove dust cap (158) from heater connector (159).

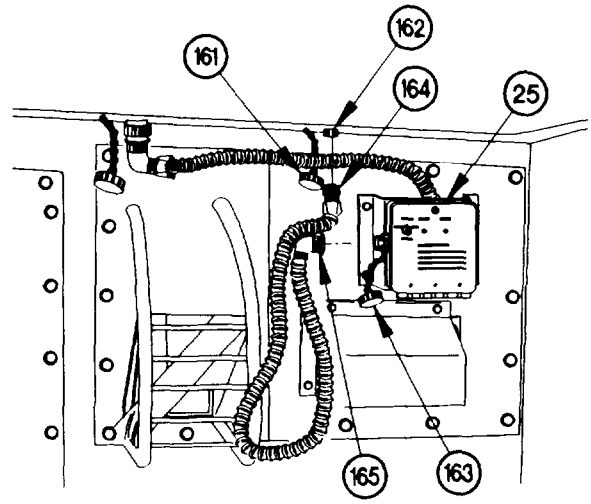
(103) Connect connector P244 (160) to heater connector (159).

(104) Remove dust cap (161) from thermostat connector (162).

(105) Remove dust cap (163) from heater control unit (25).

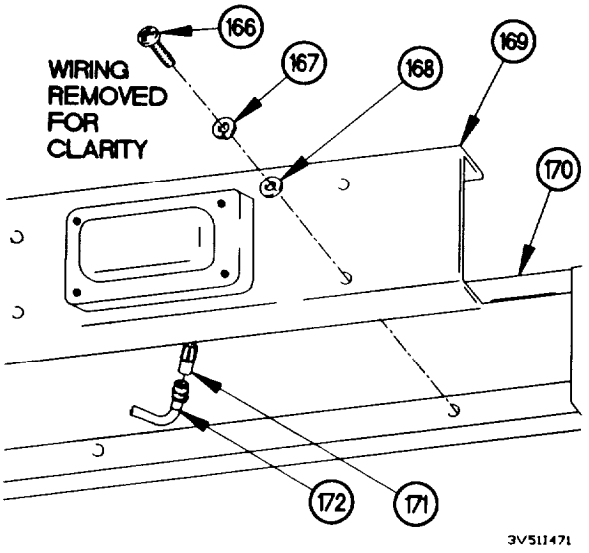
(106) Connect connector J245 (164) to thermostat connector (162).

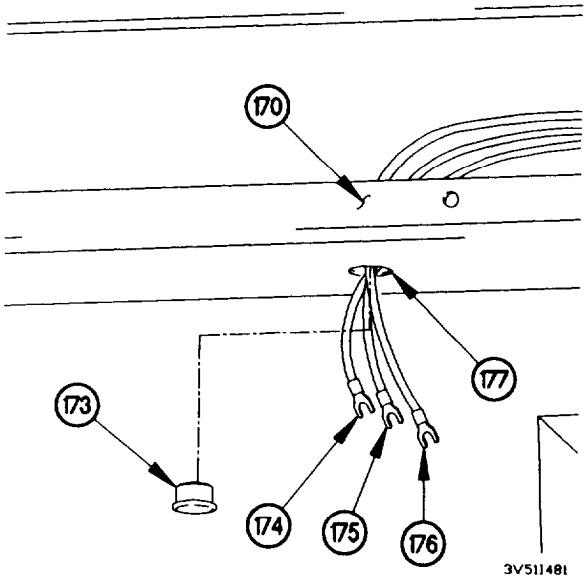
(107) Connect connector P245A (165) to heater control unit (25).



(108) Remove 12 screws (166), lockwashers (167), washers (168), and cover (169) from raceway (170). Discard lockwashers.

(109) Disconnect connector J165 (171) from connector P165 (172).

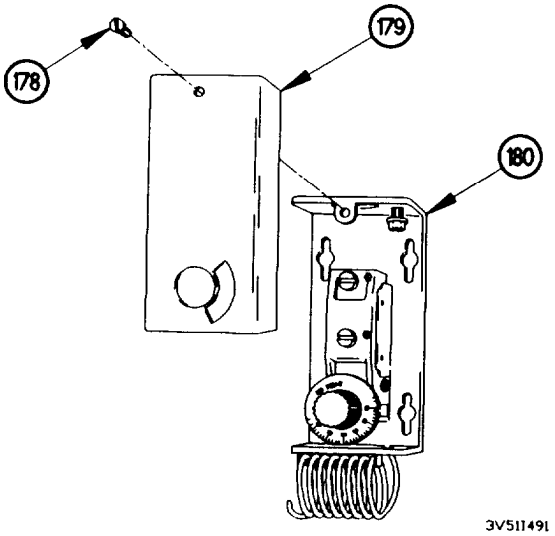




(110) Remove plug (173) from raceway (170).

(111) Retain plug (173) for future use.

(112) Route wire 1499R (174), wire 3086C (175), and wire 401 (176) through hole (177) in raceway (170).



(113) Remove screw (178) and cover (179) from thermostat (180).

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

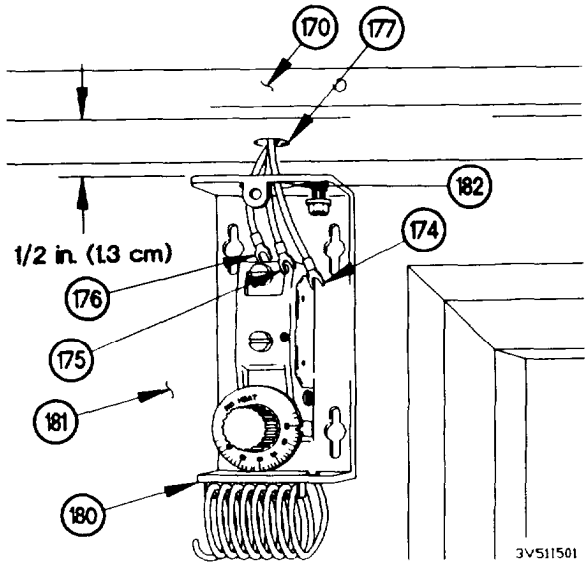
NOTE

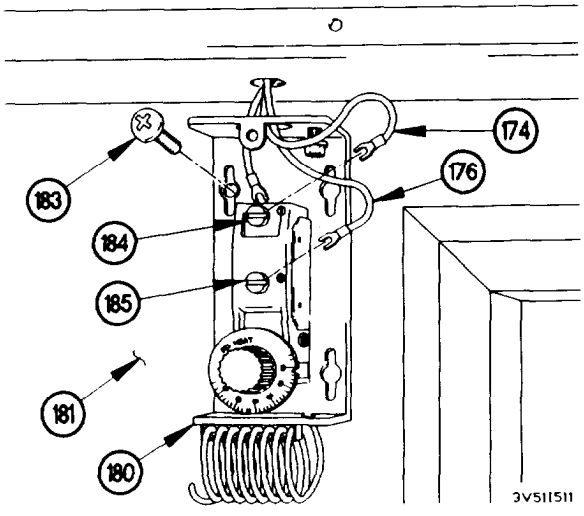
Steps (114) and (115) apply to initial installation.

(114) Position thermostat (180) centered and 1/2 in. (1.3 cm) below hole (177) in raceway (170).

(115) Match drill two holes in inside left van body wall (181).

(116) Route wire 1499R (174), wire 3086C (175), and wire 401 (176) through hole (182) in thermostat (180).





(117) Install thermostat (180) on inside left van body wall (181) with two screws (183).

(118) Loosen screws (184 and 185) on thermostat (180).

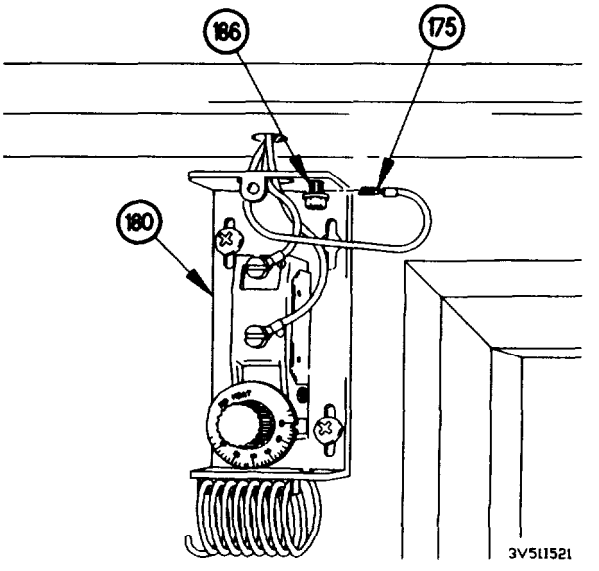
(119) Position wire 1499R (174) and wire 401 (176) on thermostat (180).

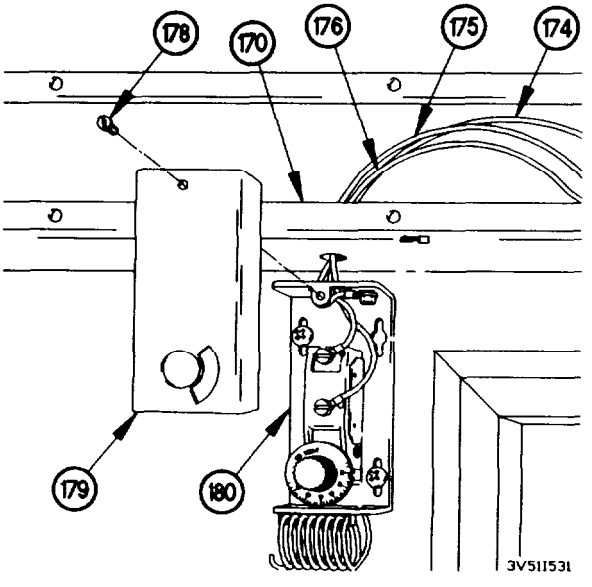
(120) Tighten screws (184 and 185) on thermostat (180).

(121) Loosen screw (186) on thermostat (180).

(122) Position wire 3086C (175) on thermostat (180).

(123) Tighten screw (186) on thermostat (180).





NOTE

Install plastic cable ties as required.

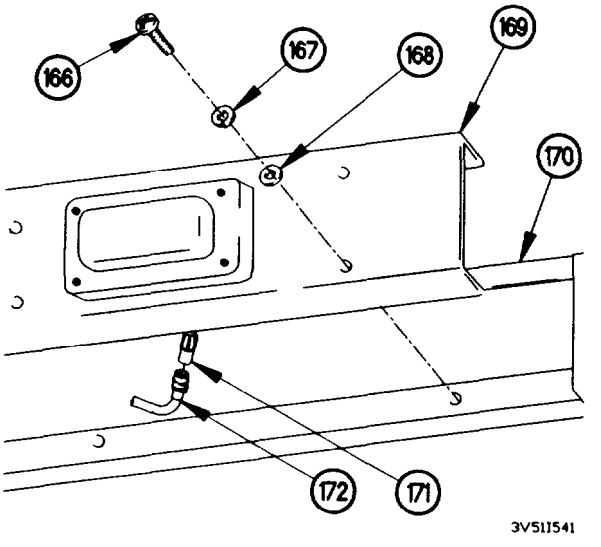
(124) Pull slack from wire 1499R (174), wire 3086C (175) and wire 401 (176) into raceway (170) and secure in place.

(125) Install cover (179) on thermostat (180) with screw (178).

(126) Connect connector J165 (171) to connector P165 (172).

(127) Install cover (169) on raceway (170) with 12 washers (188), lockwashers (167), and screws (166).

(128) Operate heater and check for proper operation (TM 9-2320-365-10).



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

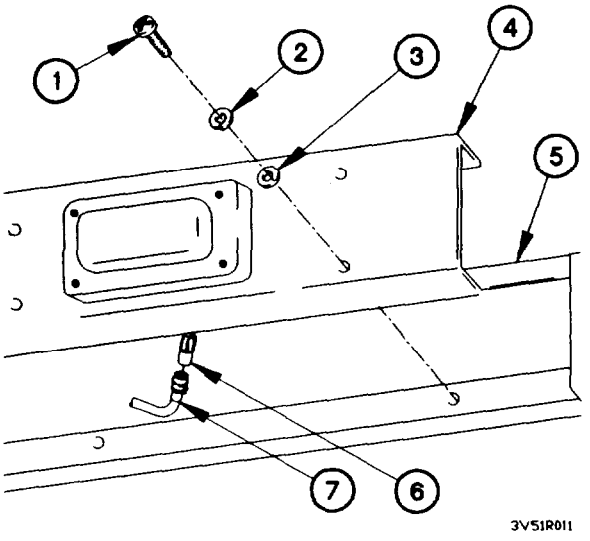
b. Removal.

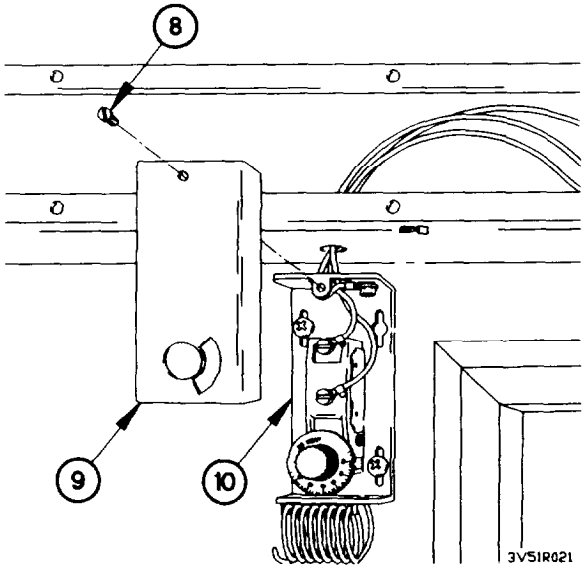
NOTE

Store all removed parts in kit package.

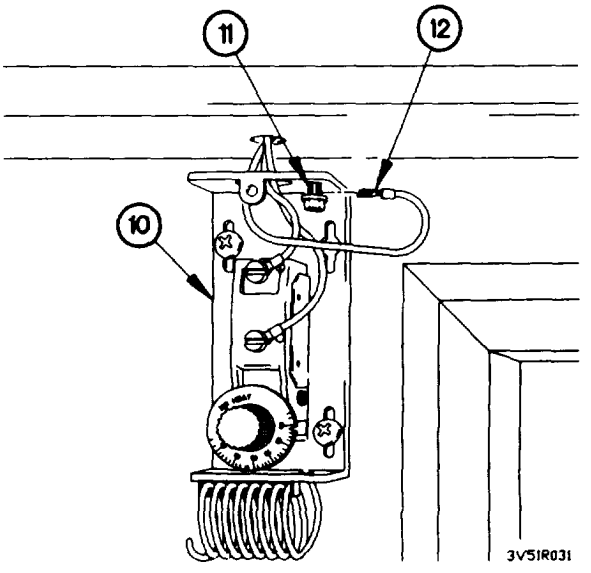
(1) Remove 12 screws (1), lockwashers (2), washers (3), and cover (4) from raceway (5). Discard lockwashers.

(2) Disconnect connector J165 (6) from connector P165 (7).





(3) Remove screw (8) and cover (9) from thermostat (10).



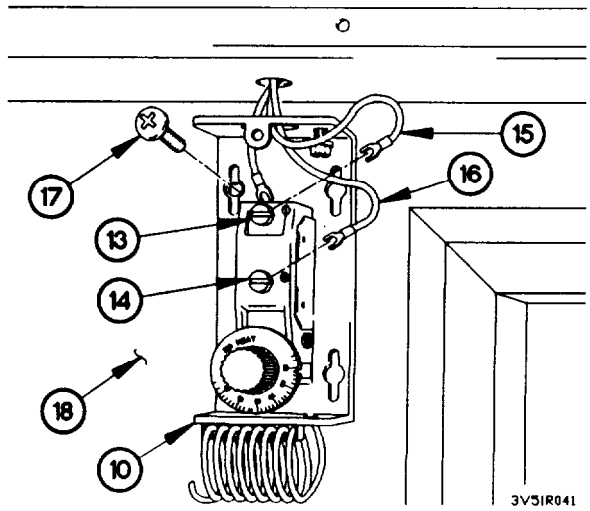
(4) Loosen screw (11) on thermostat (10).

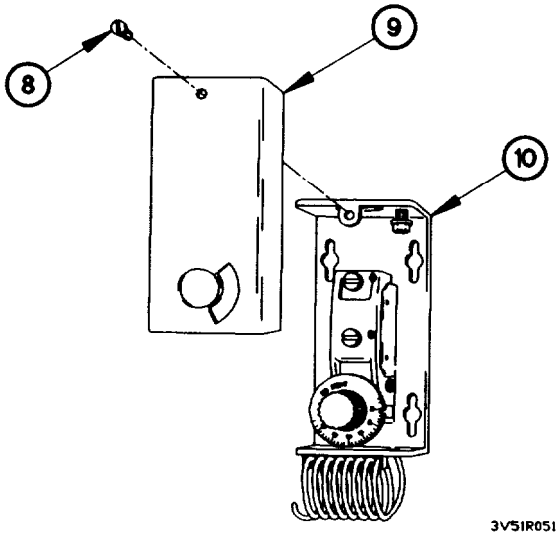
(5) Remove wire 3086C (12) from thermostat (10).

(6) Loosen screws (13 and 14) on thermostat (10).

(7) Remove wire 1499R (15) and wire 401 (16) from thermostat (10).

(8) Remove two screws (17) and thermostat (10) from inside left van body wall (18).





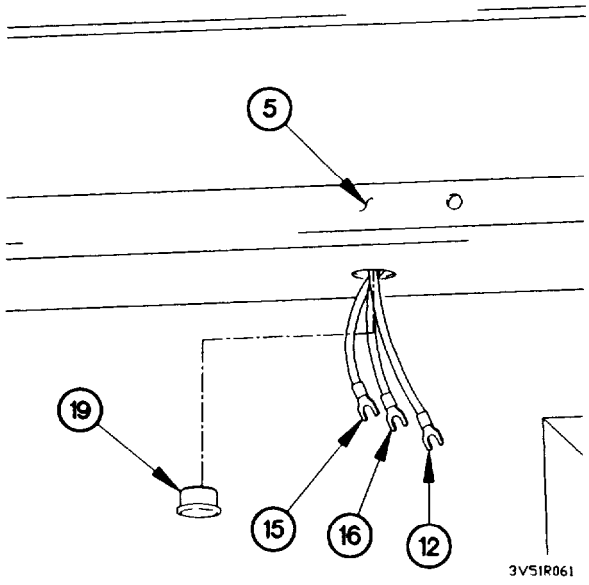
(9) Install cover (9) on thermostat (10) with screw (8).

NOTE

Remove plastic cable ties as required.

(10) Pull wire 1499R (15), wire 3086C (12), and wire 401 (16) into raceway (5).

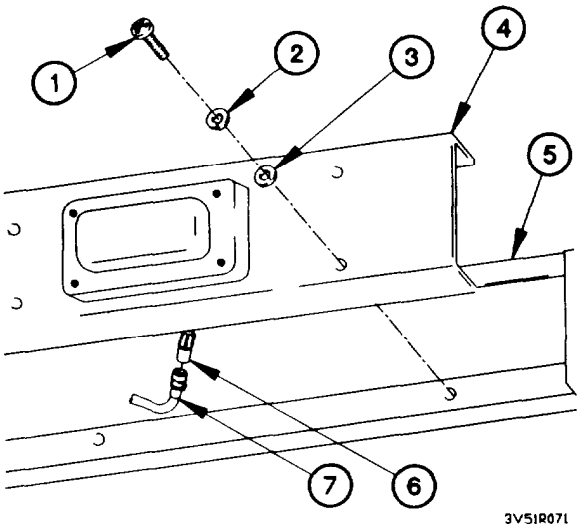
(11) Install plug (19) on raceway (5).

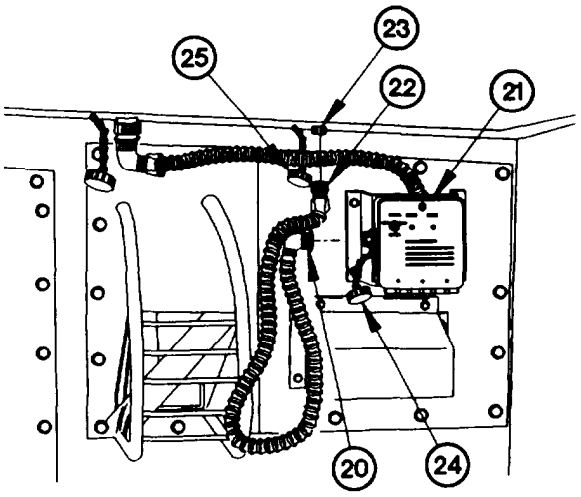


20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(12) Connect connector J165 (6) to connector P165 (7).

(13) Install cover (4) on raceway (5) with 12 washers (3), lockwashers (2), and screws (1).





(14) Disconnect connector P245A (20) from heater control unit (21).

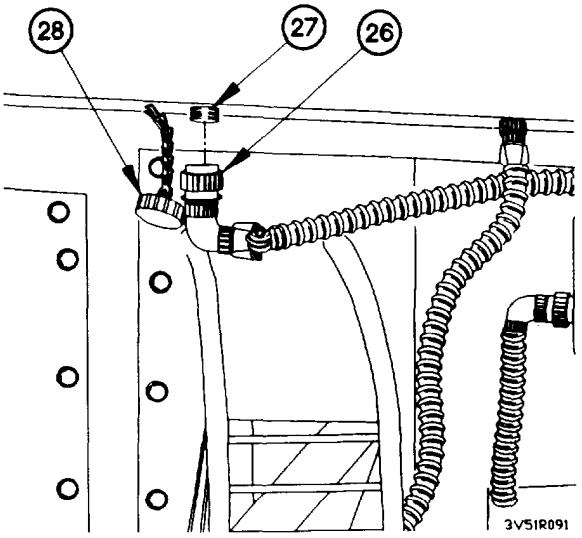
(15) Disconnect connector J245 (22) from thermostat connector (23).

(16) Install dust cap (24) on heater control unit (21).

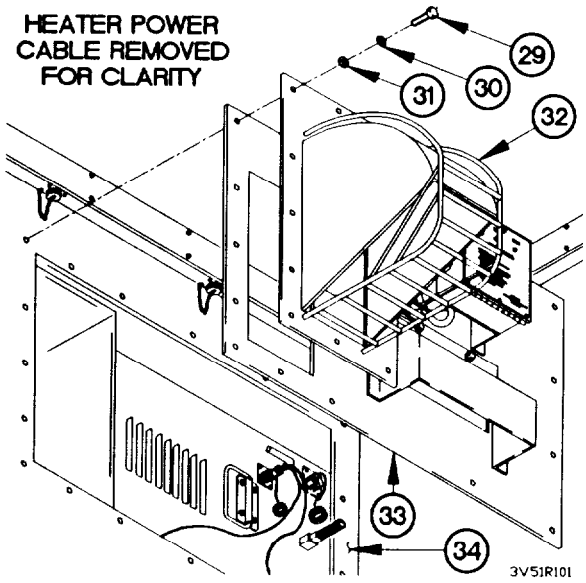
(17) Install dust cap (25) on thermostat connector (23).

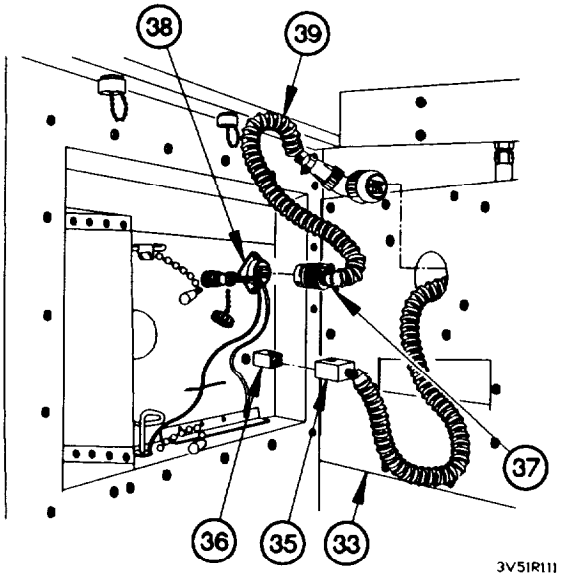
(18) Disconnect connect P244 (26) from heater connector (27).

(19) Install dust cap (28) on heater connector (27).



(20) Remove 18 screws (29), lockwashers (30), washers (31), heater deflector (32), and heater cover (33) from inside front van body wall (34). Discard lockwashers.





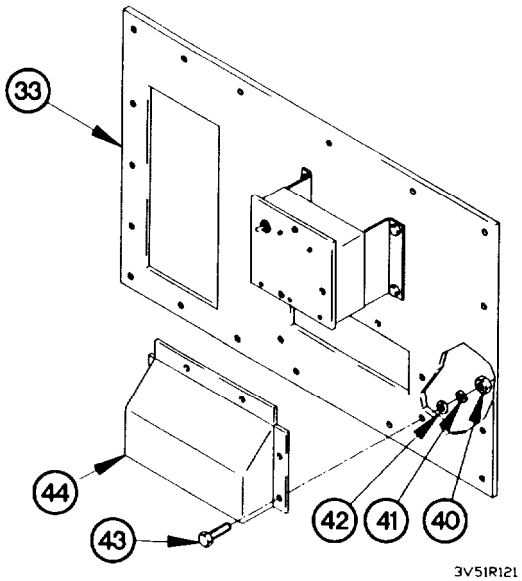
NOTE

Tag connectors and connection points prior to removal.

(21) Disconnect connect P4A (35) from connector J4 (36).

(22) Disconnect connector J244A (37) from heater power Cable connector (38).

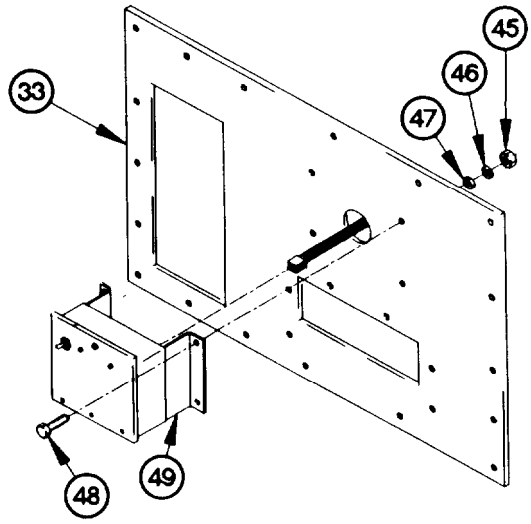
(23) Remove heater power cable (39) from heater cover (33).



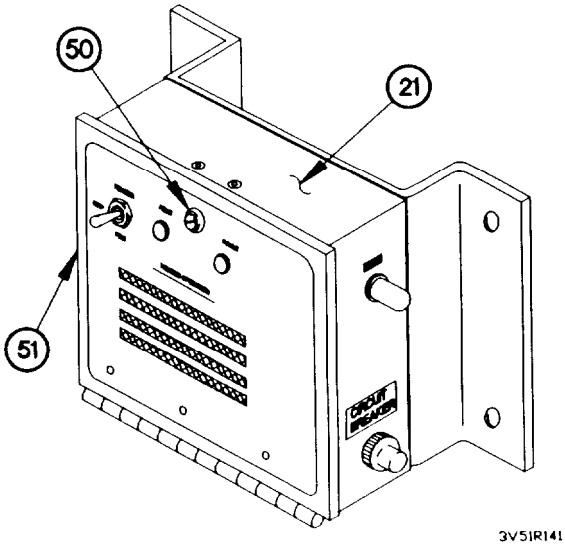
(24) Remove six nuts (40), lockwashers (41), washers (42), screws (43), and hood (44) from heater cover (33).

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(25) Remove four nuts (45), lockwashers (46), washers (47), screws (48), and bracket (49) from heater cover (33).



3V51R131



3V51R141

(26) Unlatch screw (50) on door (51).

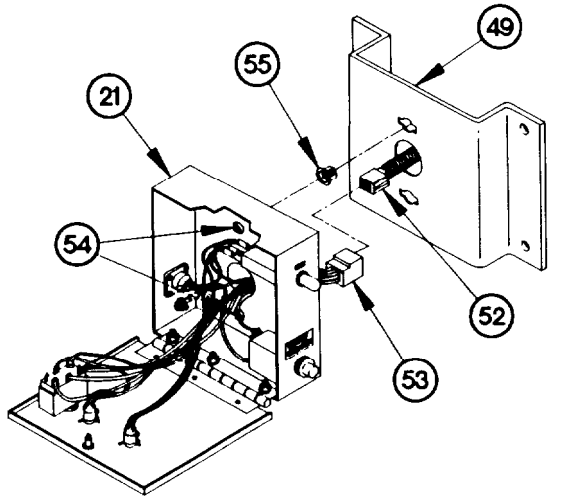
(27) Open door (51) on heater control unit (21).

(28) Disconnect connector J4A (52) from connector P4 (53).

(29) Unlatch two screws (54) on heater control unit (21).

(30) Remove heater control unit (21) from bracket (49).

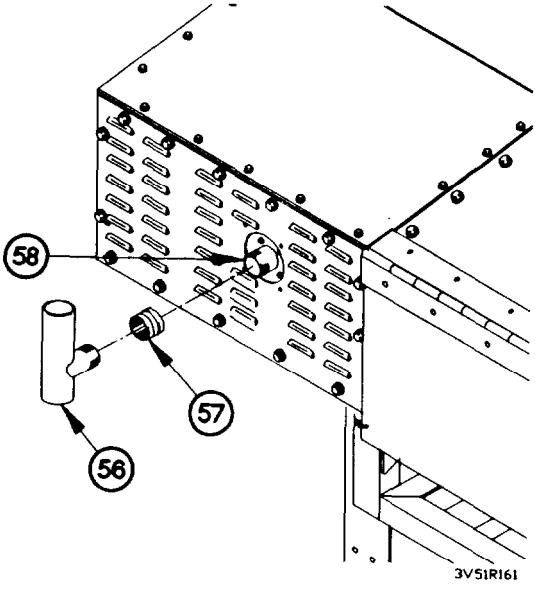
(31) Remove two twist locks (55) from bracket (49).

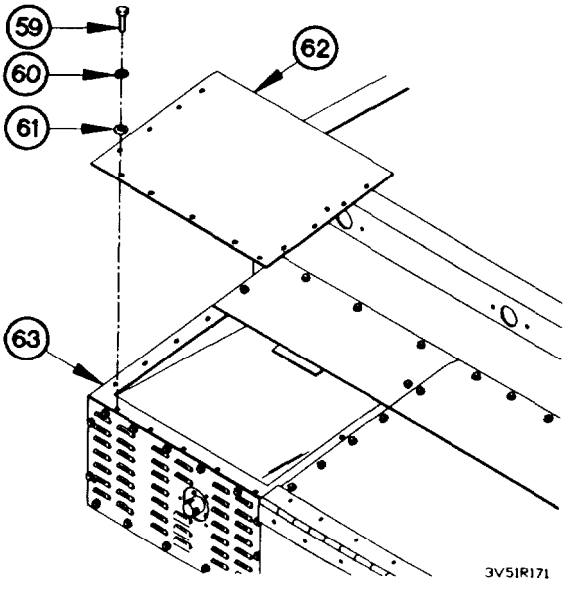


3V51R151

(32) Remove exhaust pipe (56) from coupler (57).

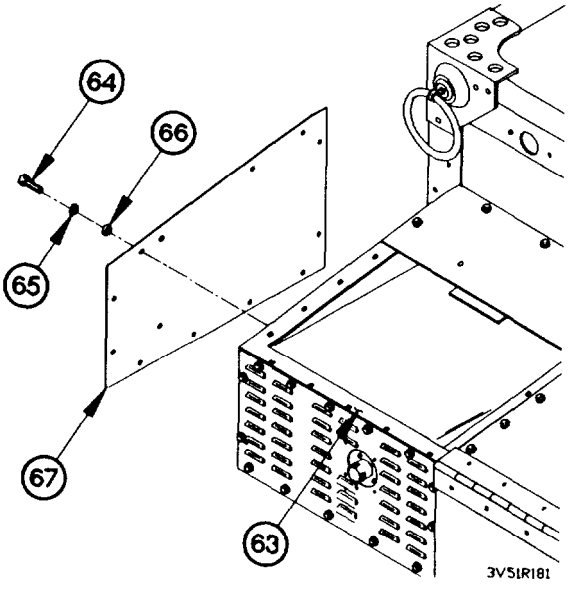
(33) Remove coupler (57) from heater (58).





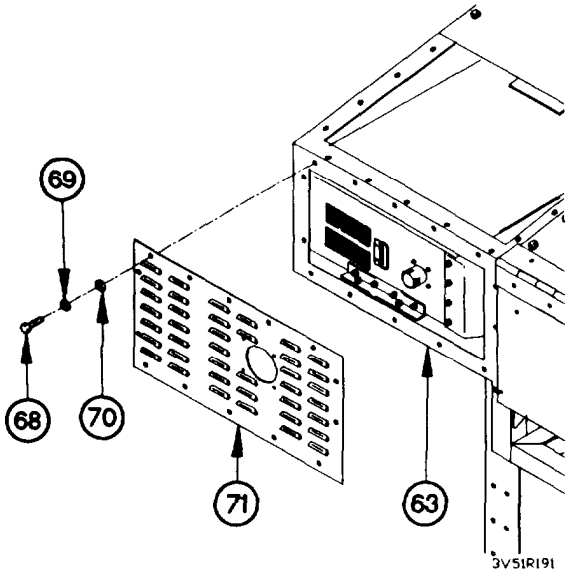
(34) Remove 13 screws (59), lockwashers (60), washers (61), and curbside top front panel (62) from pod frame (63). Discard lockwashers.

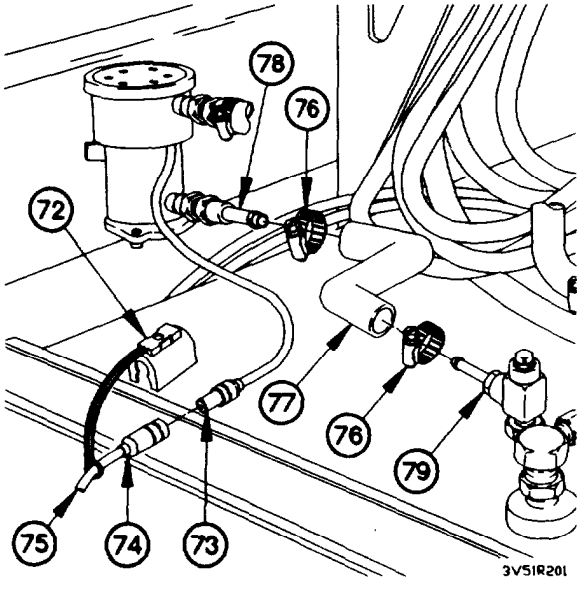
(35) Remove 13 screws (64), lockwashers (65), washers (66), and curbside panel (67) from pod frame (63). Discard lockwashers.



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(36) Remove 14 screws (68), lockwashers (69), washers (70) and curbside front panel (71) from pod frame (63). Discard lockwashers.





(37) Disconnect connector clamp (72) from heater fuel pump connector (73).

(38) Disconnect heater fuel pump connector (73) from connector P310 (74).

(39) Remove connector clamp (72) from heater fuel pump power cable (75).

WARNING

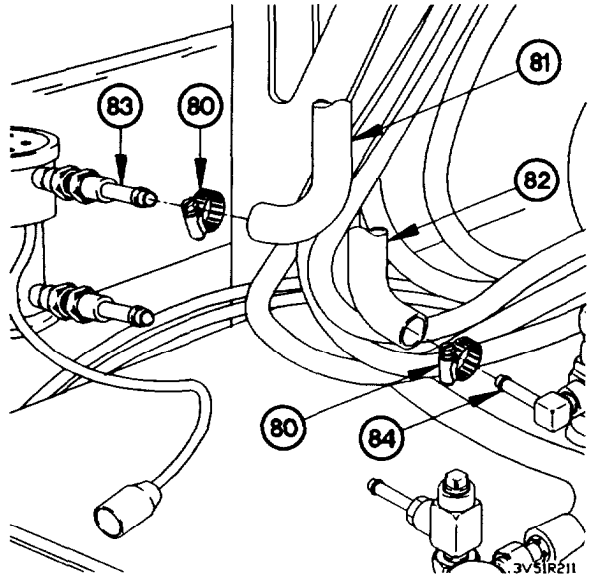
Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

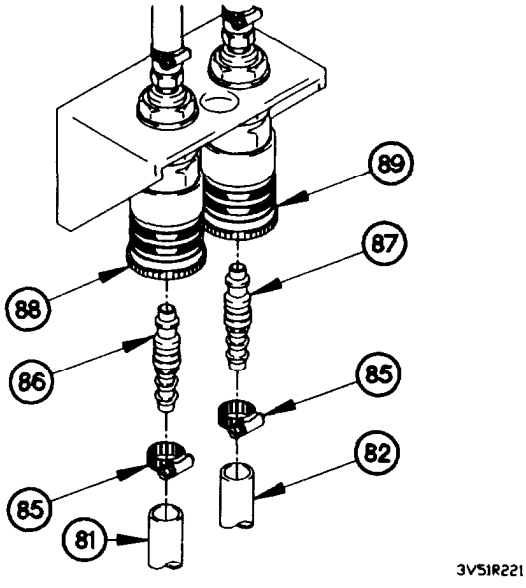
(40) Loosen two clamps (76) on hose (77).

(41) Remove hose (77) and two clamps (76) from fittings (78 and 79).

(42) Loosen two clamps (80) on hoses (81 and 82).

(43) Remove hoses (81 and 82) and two clamps (80) from fitting (83 and 84).





(44) Loosen two clamps (85) on hoses (81 and 82).

(45) Remove hoses (81 and 82) and two clamps (85) from fittings (86 and 87).

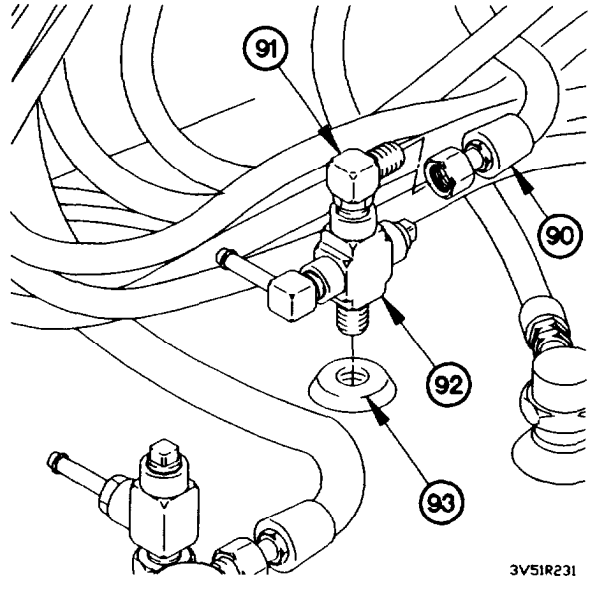
(46) Disconnect fittings (86 and 87) from quick connect fittings (88 and 89).

NOTE

Remove plastic cable ties as required.

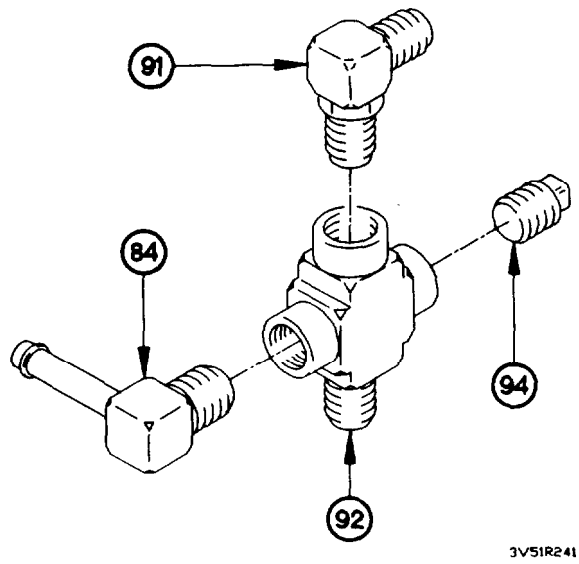
(47) Disconnect fuel hose (90) from 90-degree return fitting (91).

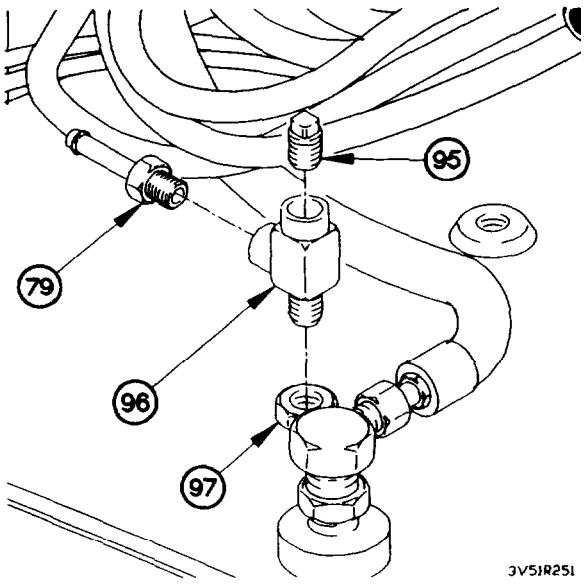
(48) Remove four-way fitting (92) from fuel tank (93).



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(49) Remove 90-degree return fitting (91), 90-degree fitting (84), and plug (94) from four-way fitting (92).



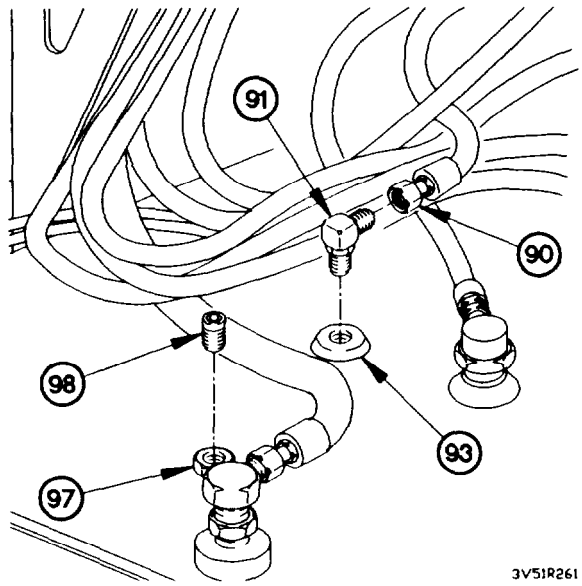


(50) Remove fitting (79) and plug (95) from run tee fitting (96).

(51) Remove run tee fitting (96) from auxiliary supply port (97).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and Water. Failure to comply may result in injury to personnel.



(52) Apply sealing compound to threads of 90-degree return fitting (91) and plug (98).

(53) Install 90-degree return fitting (91) on fuel tank (93).

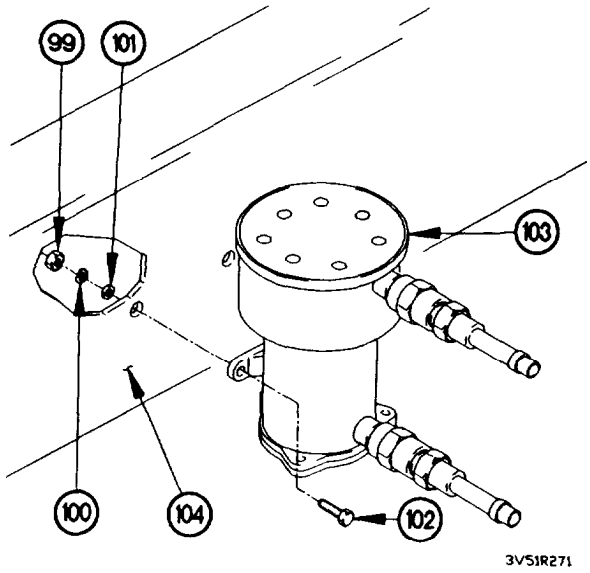
(54) Connect fuel hose (90) to 90-degree return fitting (91).

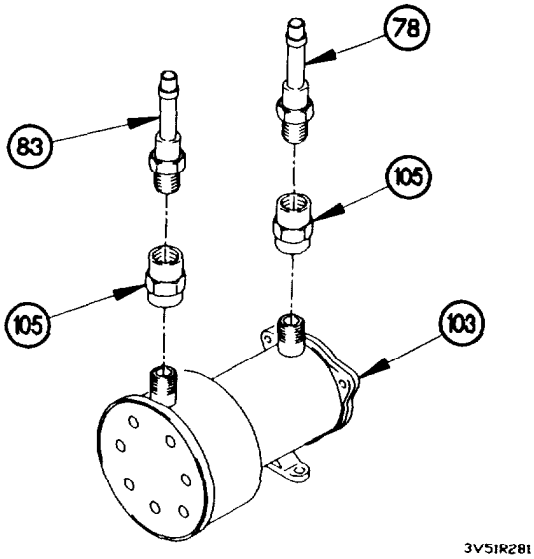
(55) Install plug (98) in auxiliary supply port (97).

NOTE

Step (56) requires the aid of an assistant.

(56) Remove two nuts (99), lockwashers (100), washers (101), screws (102), and heater fuel pump (103) from sub-frame (104). Discard lockwashers.



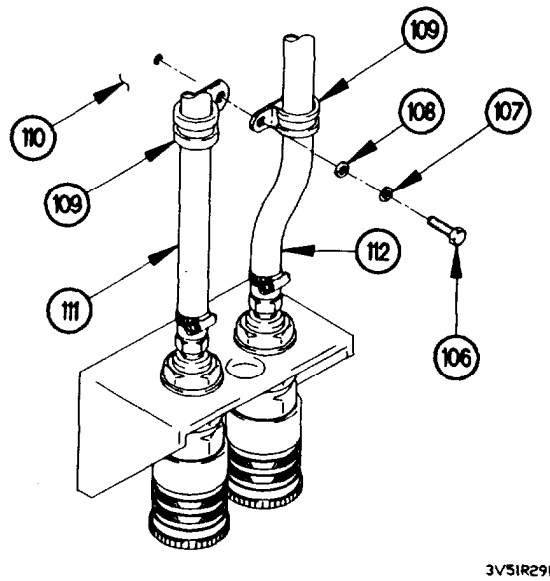


(57) Remove fitting (78 and 83) from two couplers (105).

(58) Remove two couplers (105) from heater fuel pump (103).

(59) Remove three screws (106), lockwashers (107), washers (108), and six clamps (109) from outside front van body wall (110). Discard lockwashers.

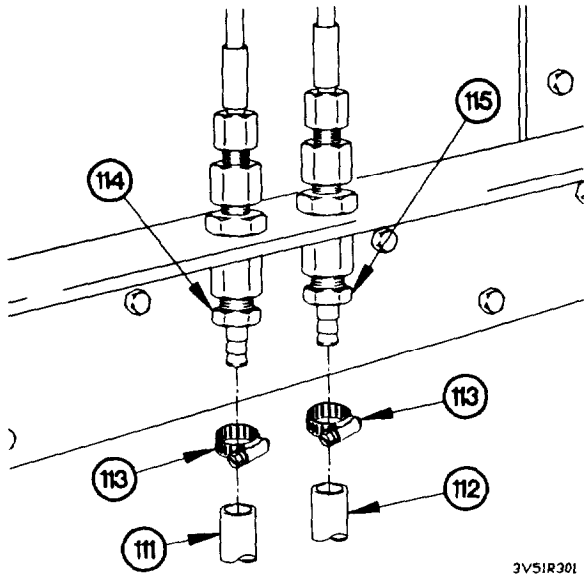
(60) Remove six clamps (109) from hoses (111 and 112).

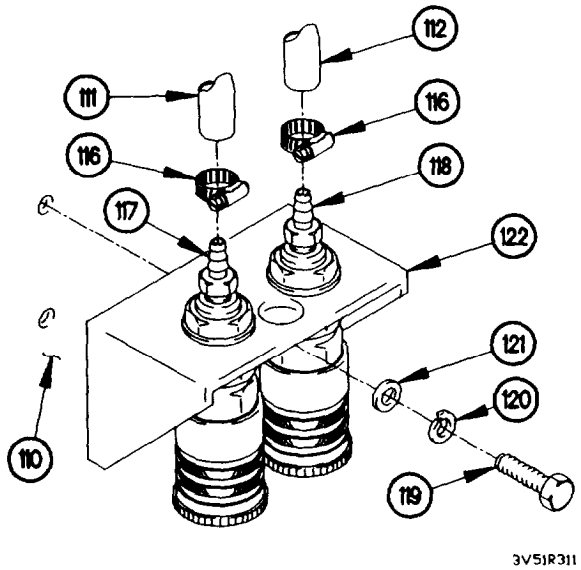


20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(61) Loosen two clamps (113) on hoses (111 and 112).

(62) Remove hoses (111 and 112) and clamps (113) from fittings (114 and 115).

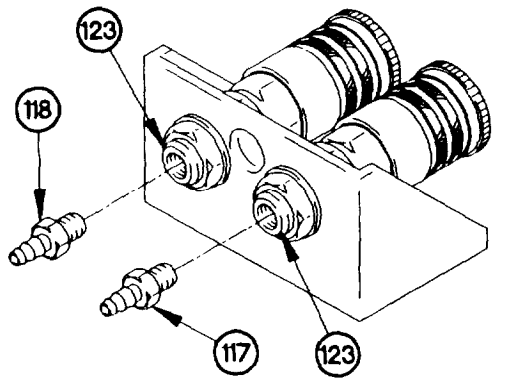




(63) Loosen two clamps (116) on hoses (111 and 112).

(64) Remove hoses (111 and 112) and clamps (116) from fittings (117 and 118).

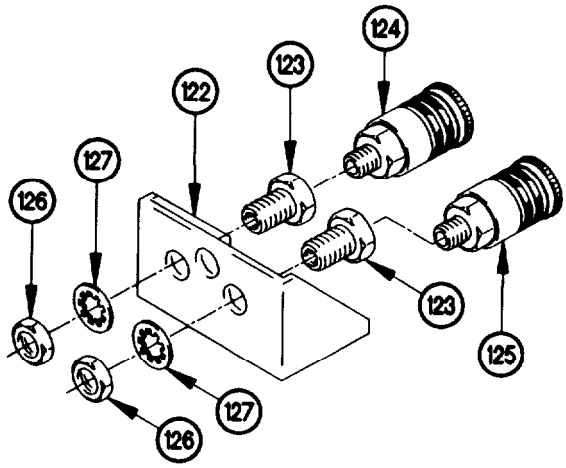
(65) Remove two screws (119), lockwashers (120), washers (121), and bracket (122) from outside front van body wall (110).



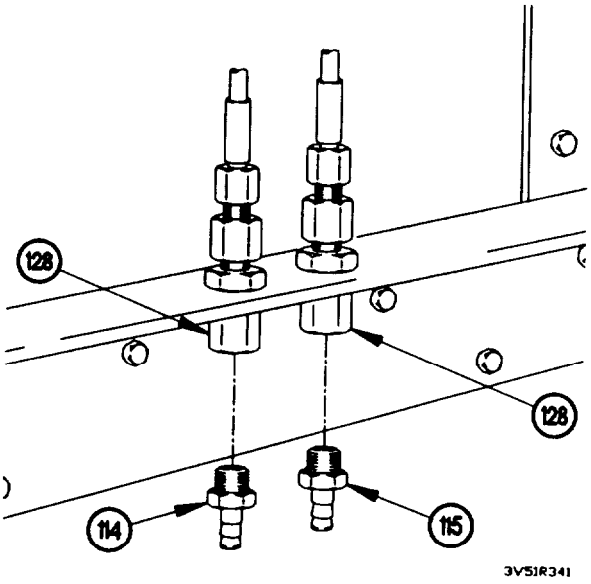
(66) Remove fittings (117 and 118) from two bushings (123).

(67) Remove quick connect fittings (124 and 125) from two bushings (123).

(68) Remove two nuts (126), lockwashers (127), and bushings (123) from bracket (122). Discard lockwashers.



3V51R331



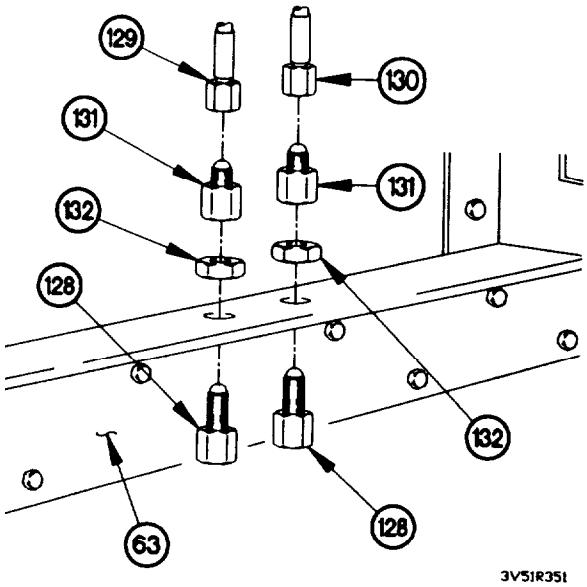
3V51R341

(69) Remove fitting (114 and 115) from two fittings (128).

(70) Remove fuel tubes (129 and 130) from two adapters (131).

(71) Remove two adapters (131) from fittings (128).

(72) Remove two nuts (132) and fittings (128) from pod frame (63).



3V51R351

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

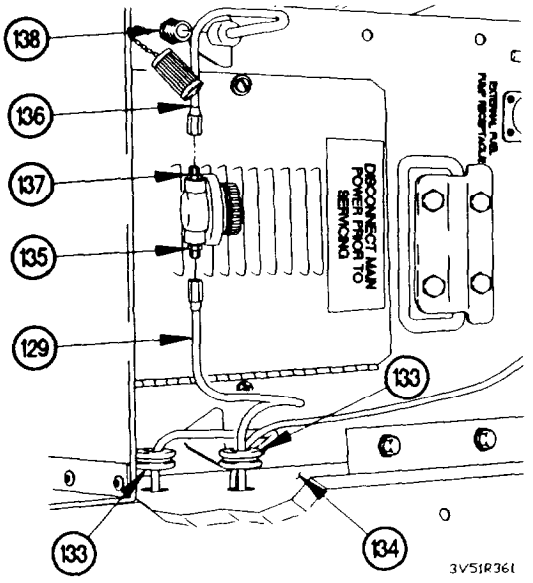
(73) Remove two grommets (133) from pod panel (134).

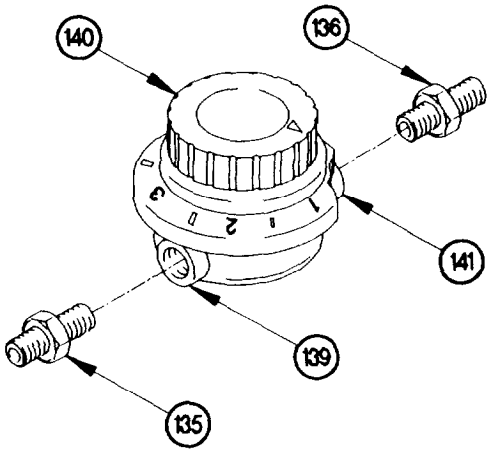
(74) Remove fuel tube (129) from fitting (135).

(75) Remove fuel tube (136) from fitting (137).

(76) Remove fuel tube (129) from pod panel (134).

(77) Remove fuel tube (136) from fuel inlet port (138).



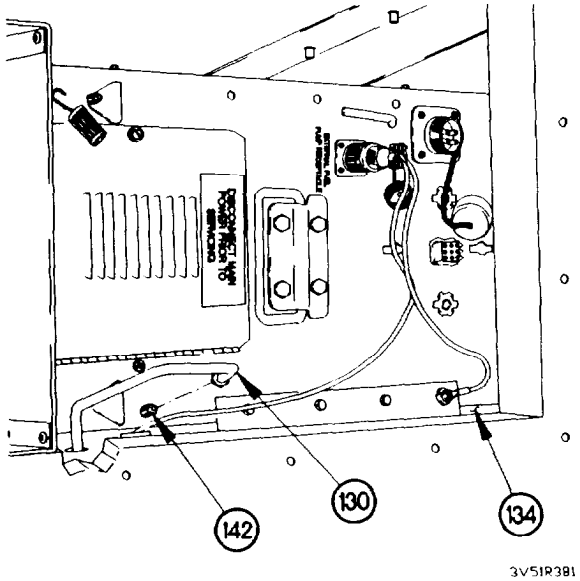


(78) Remove fitting (135) from outlet port (139) of fuel regulator (140).

(79) Remove fitting (136) from inlet port (141) of fuel regulator (140).

(80) Remove fuel tube (130) from fuel overflow port (142).

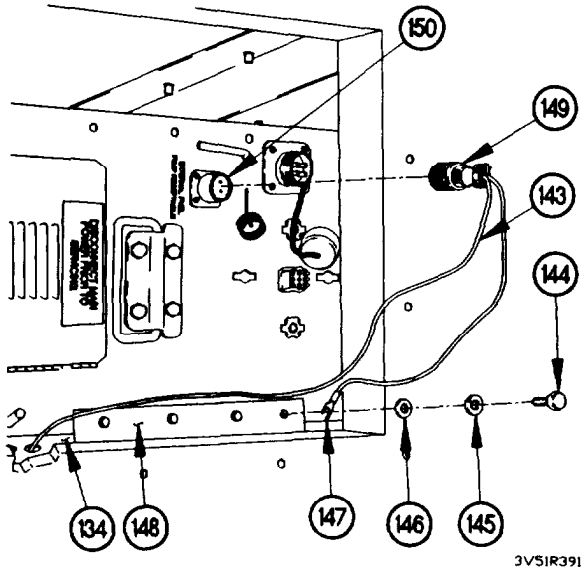
(81) Remove fuel tube (130) from pod panel (134).

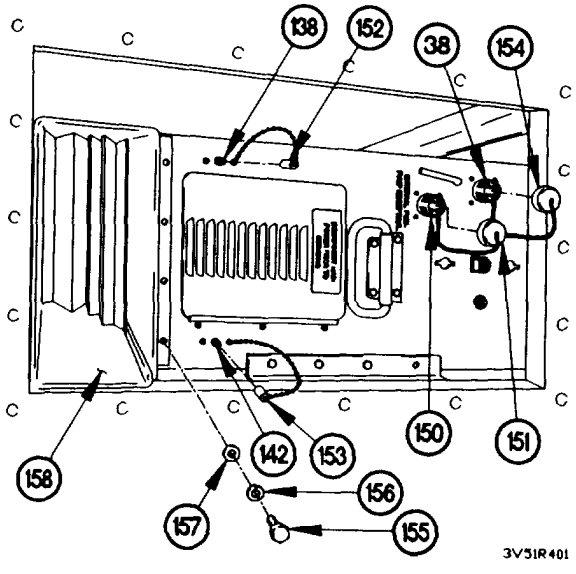


(82) Route heater fuel pump power cable (143) through hole in pod panel (134).

(83) Remove screw (144), lockwasher (145), washer (146), and terminal lug TL191 (147) from bracket (148).

(84) Disconnect connector J314 (149) from heater fuel pump power cable connector (150).





(85) Install dust cap (151) on heater fuel pump power cable connector (150).

(86) Install dust cap (152) on fuel inlet port (138).

(87) Install dust cap (153) on fuel overflow port (142).

(88) Install dust cap (154) on heater power cable connector (38).

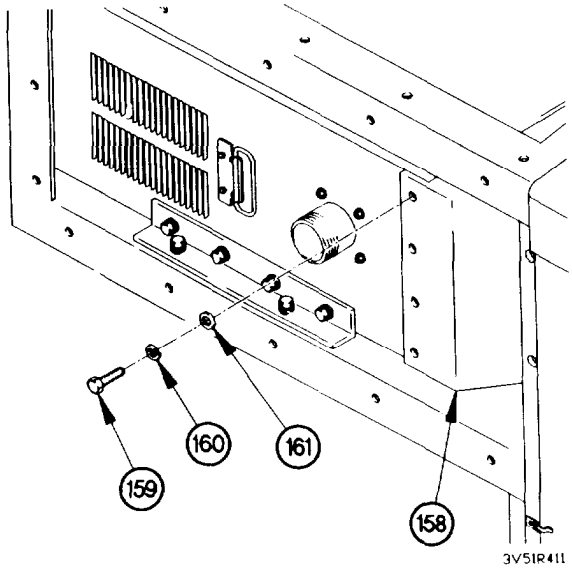
(89) Remove four screws (155). lockwashers (156), and washers (157) from heater duct (158). Discard lockwashers.

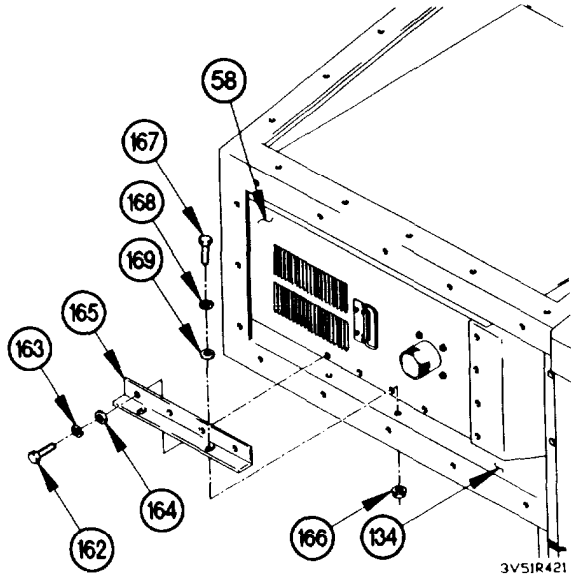
20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

NOTE

Steps (90) through (96) require the aid of an assistant.

(90) Remove four screws (159), lockwashers (160), and washers (161) from heater duct (158). Discard lockwashers.

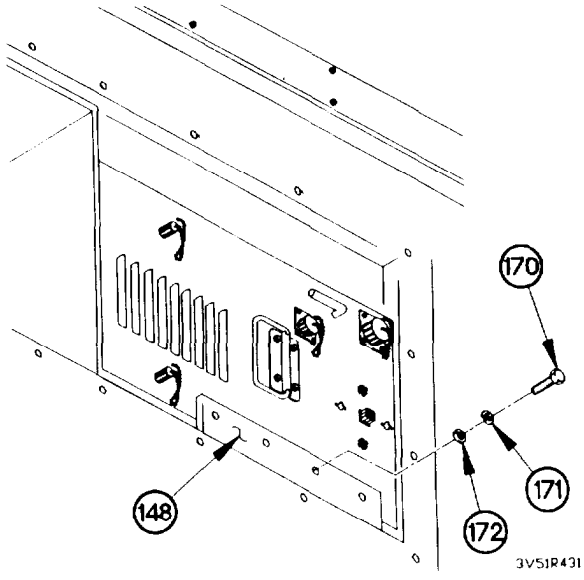




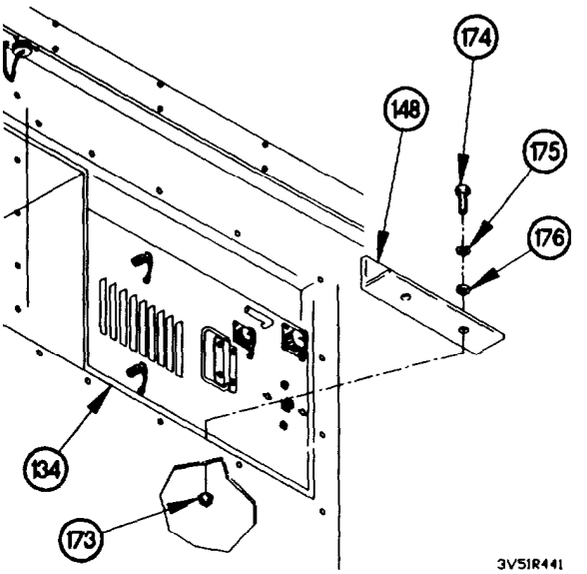
(91) Remove four screws (162), lockwashers (163), and washers (164) from bracket (165).

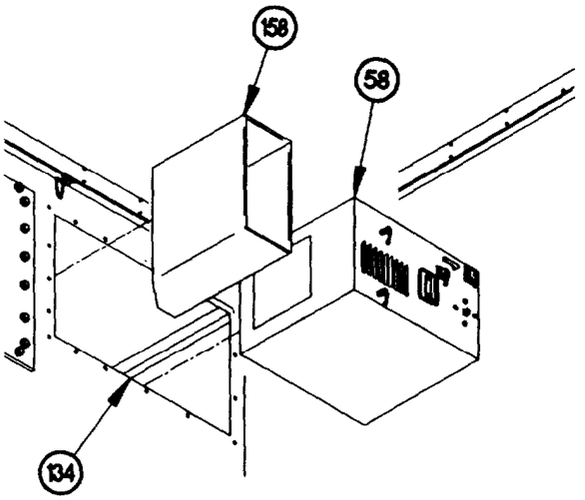
(92) Remove two self-locking nuts (166), screws (167), lockwashers (168), washers (169), and bracket (165) from pod panel (134).

(93) Remove three screws (170). lockwashers (171), and washers (172) from bracket (148).



(94) Remove two self-locking nuts (173), screws (174), lockwashers (175), washers (176), and bracket (148) from pod panel (134).



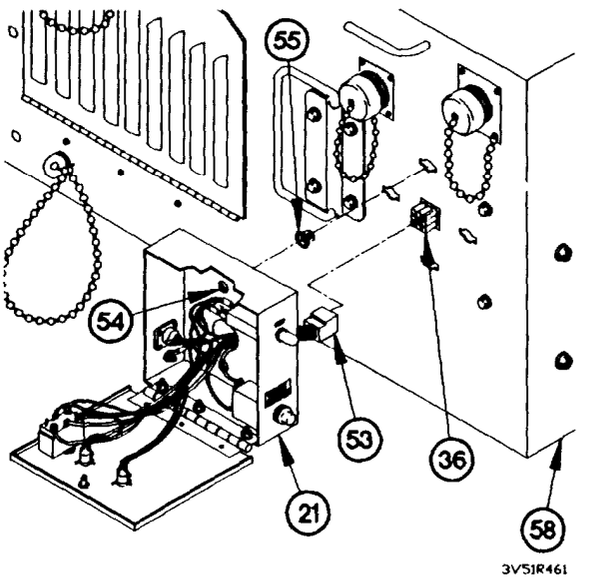


(95) Remove heater duct (158) from pod panel (134).

WARNING

Heater weighs approximately 126 lbs (54 kgs). Use the aid of an assistant when lifting. Failure to comply may result in injury to personnel.

(96) Remove heater (58) from pod panel (134).



(97) Install two twist locks (55) on heater (58).

(98) Position heater control unit (21) on heater (58).

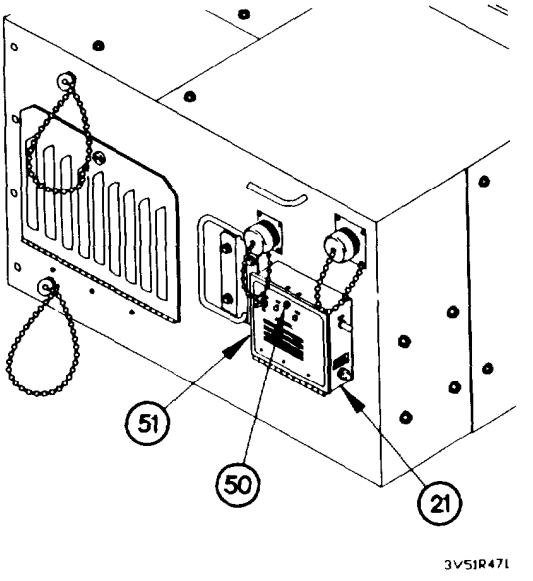
(99) Latch two screws (54) on heater control unit (21).

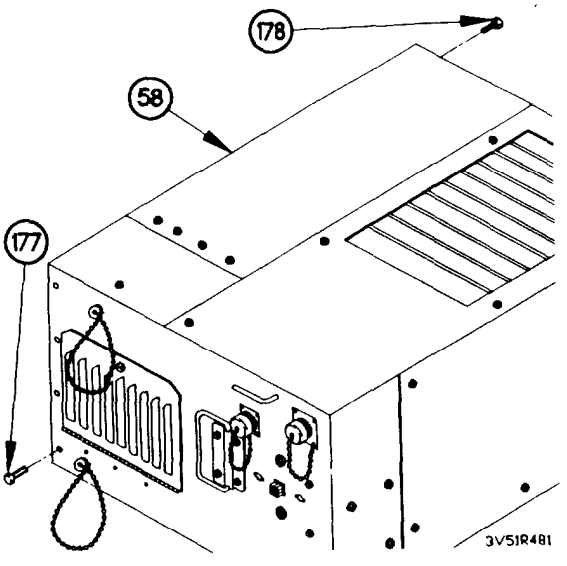
(100) Connect connector P4 (53) to connector J4 (36).

20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

(101) Close door (51) on heater control unit (21).

(102) Latch screw (50) on door (51).

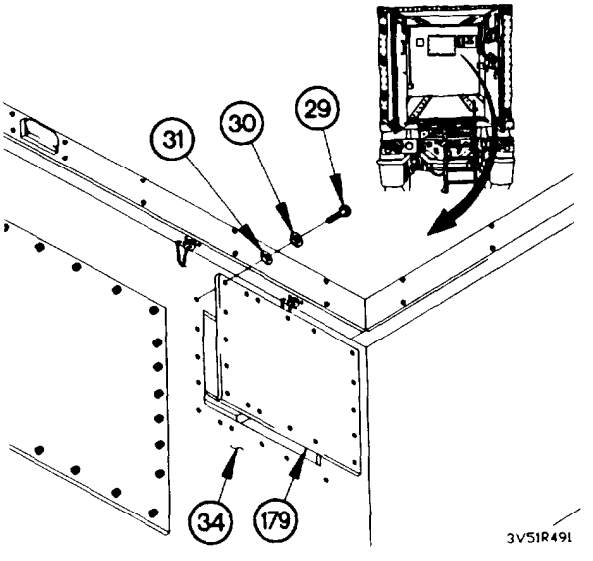




(103) Install eight screws (177) in heater (58).

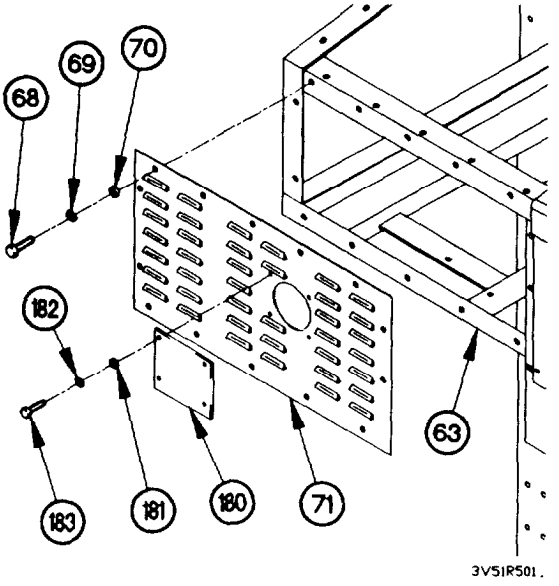
(104) Install eight screws (178) in heater (58).

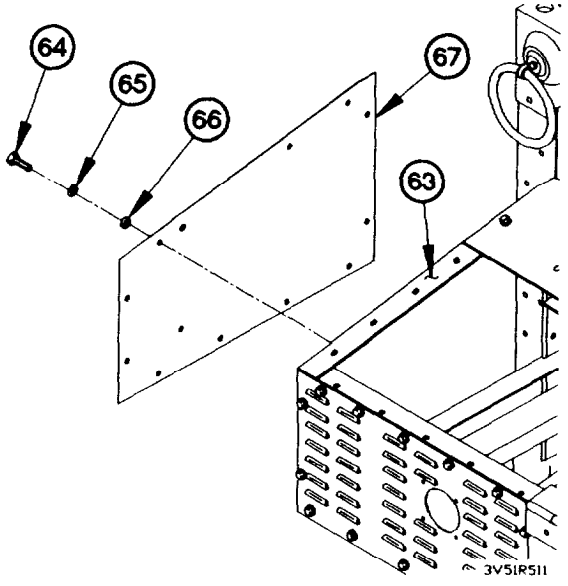
(105) Install cover (179) on inside front van body wall (34) with 18 washers (31), lockwashers (30), and screws (29).



(106) Install cover plate (180) on curbside front panel (71) with four washers (181), lockwasher (182), and screws (183).

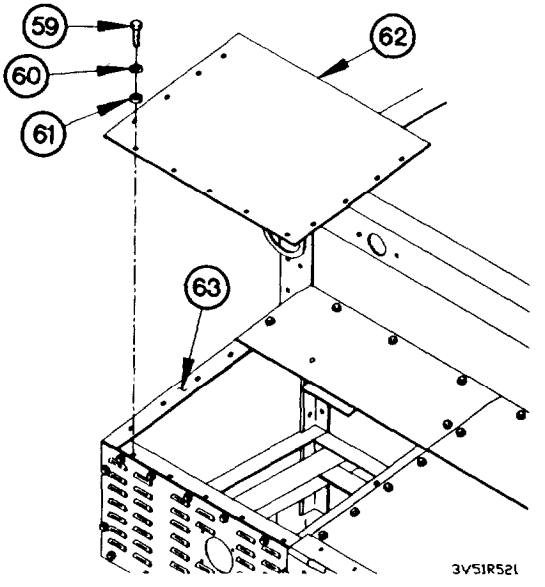
(107) Install curbside front panel (71) on pod frame (63) with 14 washers (70), lockwasher (69), and screws (68).





(108) Install curbside panel (67) on pod frame (63) with 13 washers (66), lockwashers (65), and screws (64).

(109) Install curbside top front panel (62) on pod frame (63) with 13 washers (61), lockwashers (60), and screws (59).



20-41. M1079 HEATER KIT INSTALLATION/REMOVAL (CONT)

c. Follow-on Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Lower cab (TM 9-2320-365-10).

(3) Connect AC power (TM 9-2320-365-10).

(4) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-42. M1079 HEATER POWER CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (18) (Item 84, Appendix G)

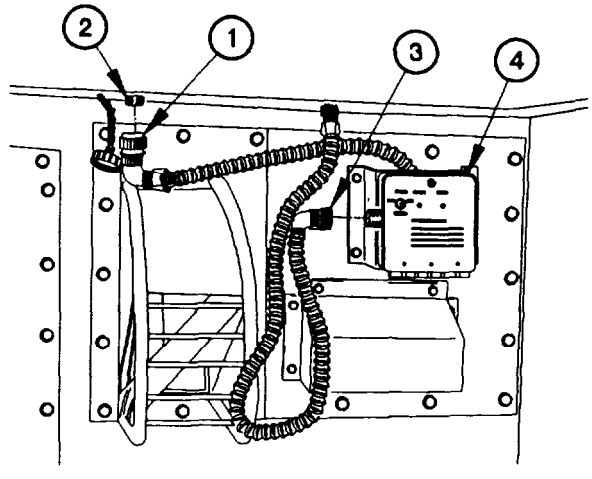
a. Removal.

NOTE

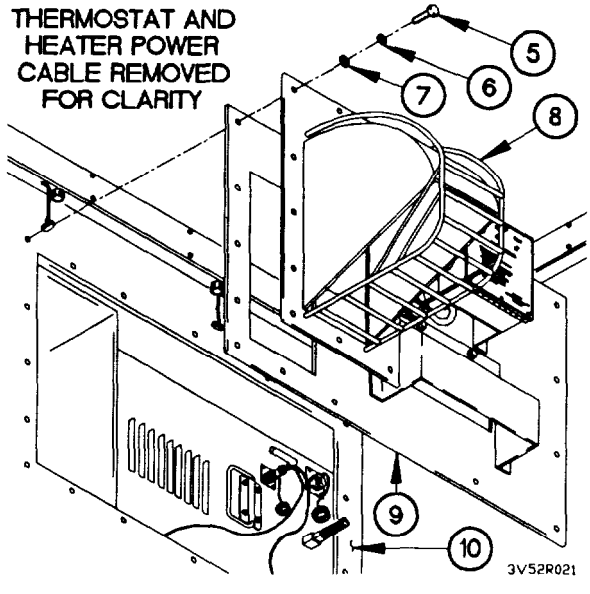
Tag connectors and connection points prior to removal.

(1) Disconnect connector P244 (1) from heater connector (2).

(2) Disconnect connector P245A (3) from heater control unit (4).



3V52R011



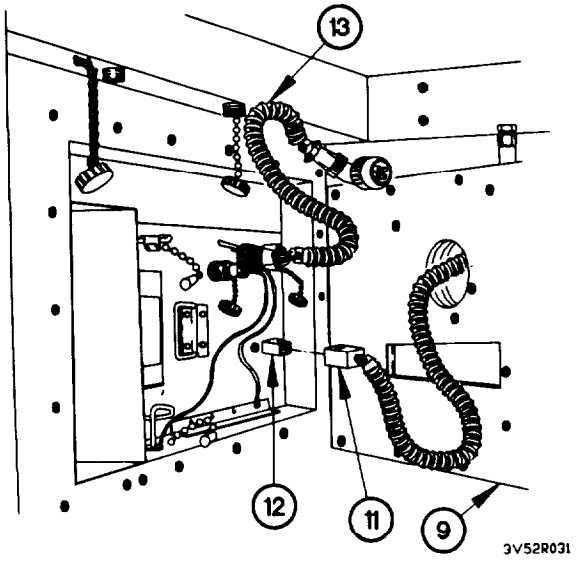
3V52R021

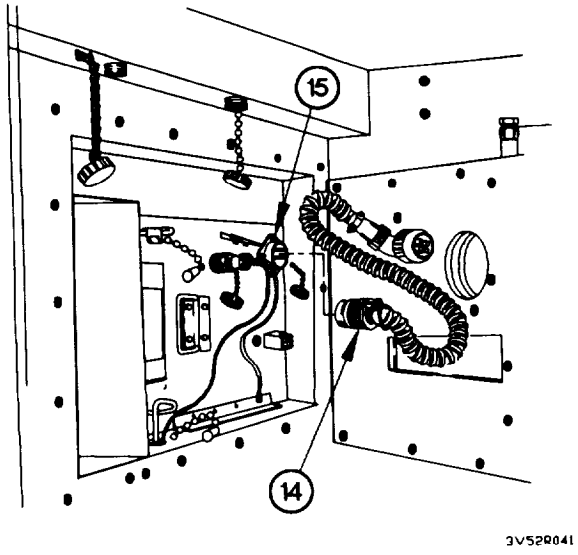
(3) Remove 18 screws (5), lockwashers (6), washers (7), heater deflector (8), and heater cover (9) from van body wall (10). Discard lockwashers.

20-42. M1079 HEATER POWER CABLE REPLACEMENT (CONT)

(4) Disconnect connector P4A (11) from connector J4 (12).

(5) Remove heater power cable (13) from heater cover (9).

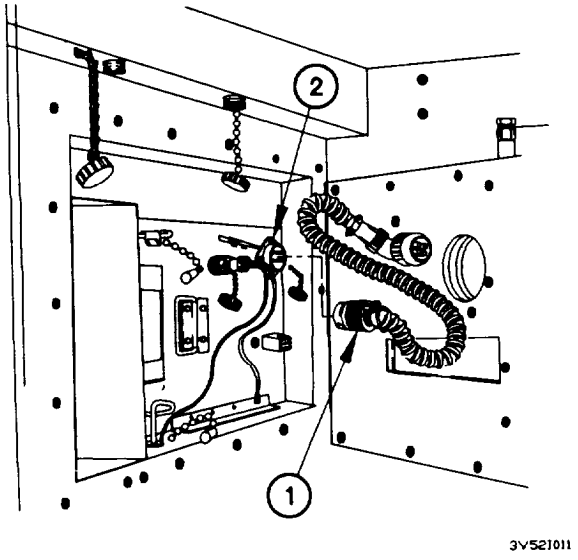




(6) Disconnect connector J244A (14) from heater power connector (15).

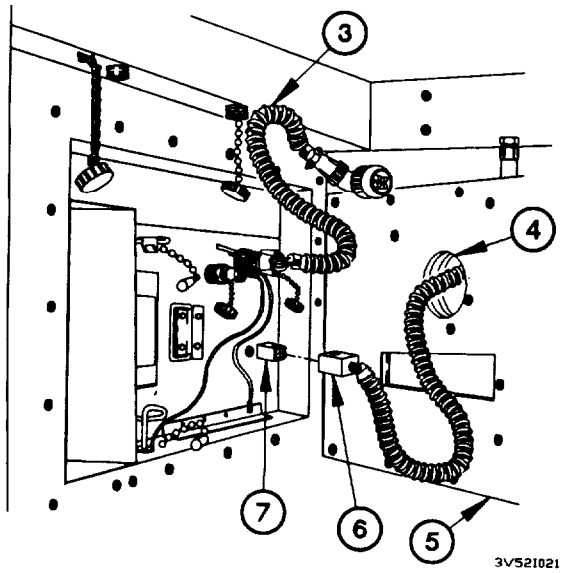
b. Installation.

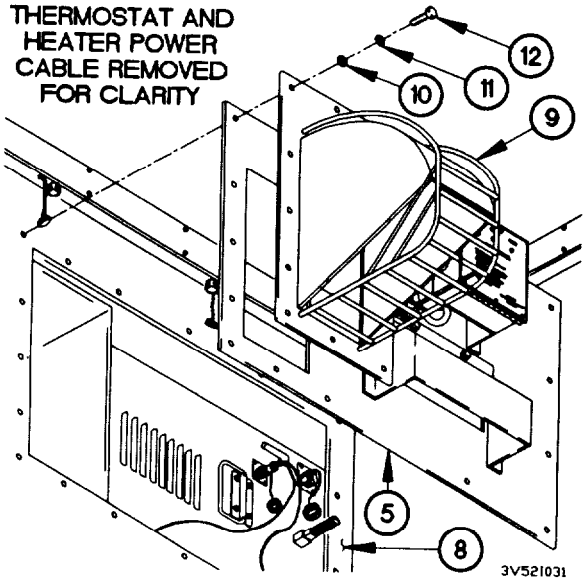
(1) Connect connector J244A (1) to heater power connector (2).



(2) Route heater power cable (3) through hole (4) in heater cover (5).

(3) Connect connector P4A (6) to connector J4 (7).

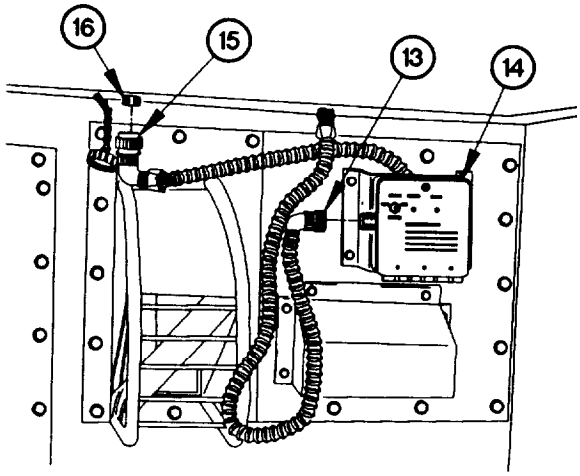




(4) Install heater cover (5) on van body wall (8) with heater deflector (9), 18 washers (10), lockwashers (11), and screws (12).

(5) Connect connector P245A (13) to heater control unit (14).

(6) Connect connector P244 (15) to heater connector (16).



20-42. M1079 HEATER POWER CABLE REPLACEMENT (CONT)

c. Follow-on Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check heater for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-43. M1079 HEATER CONTROL CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (18) (Item 92, Appendix G)

Personnel Required
(2)

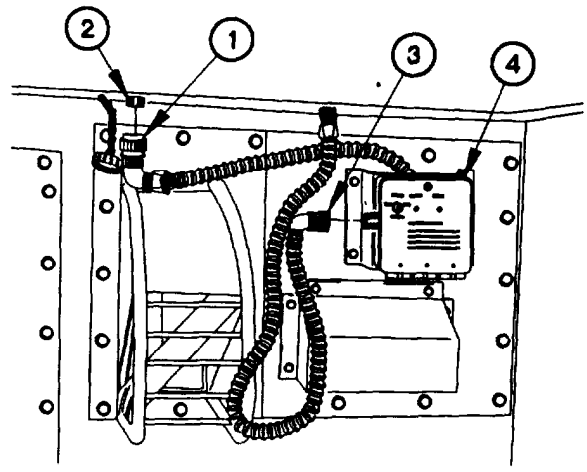
a. Removal.

NOTE

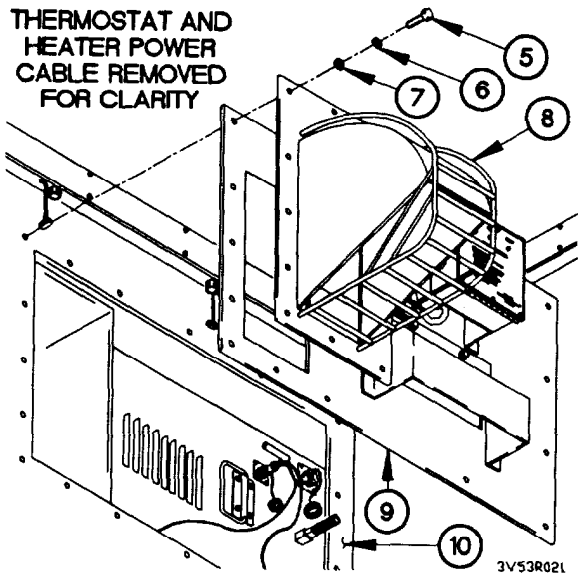
Tag connectors and connection points prior to disconnecting.

(1) Disconnect connector P244 (1) from heater connector (2).

(2) Disconnect connector P245A (3) from heater control unit (4).



3V53R011



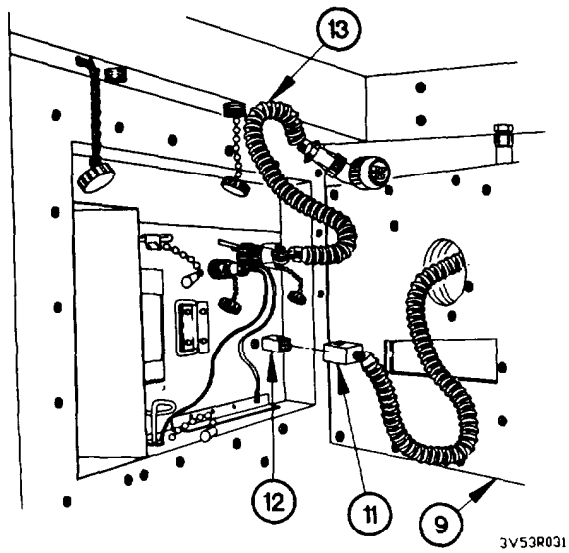
3V53R021

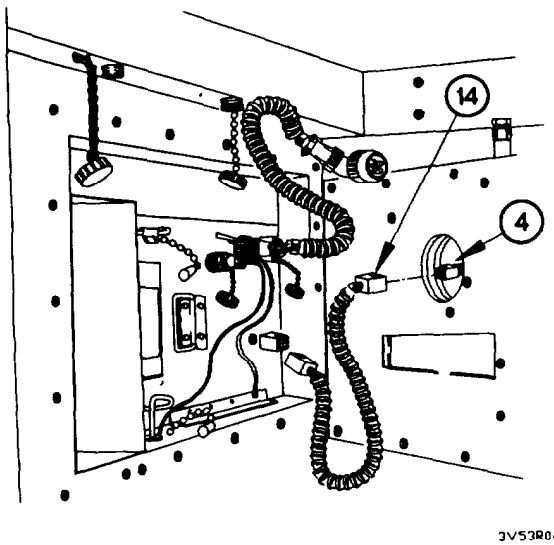
(3) Remove 18 screws (5), lockwashers (6), washers (7), heater deflector (8), and heater cover (9) from van body wall (10). Discard lockwashers.

20-43. M1079 HEATER CONTROL CABLE REPLACEMENT (CONT)

(4) Disconnect connector P4A (11) from connector J4 (12).

(5) Remove heater power cable (13) from heater cover (9).

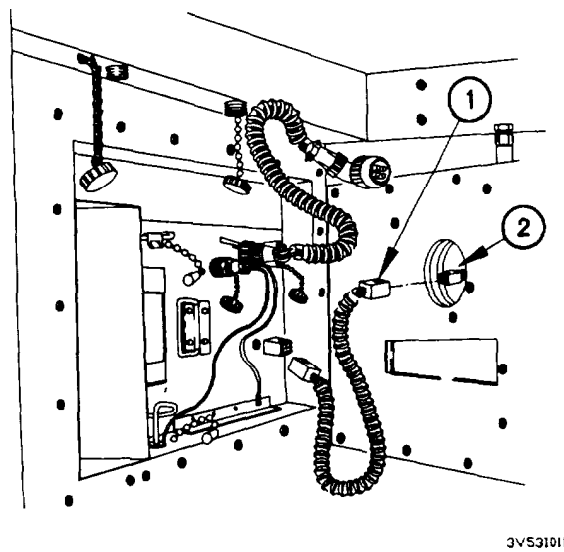




(6) Disconnect connector J4A (14) from connector P4 (4).

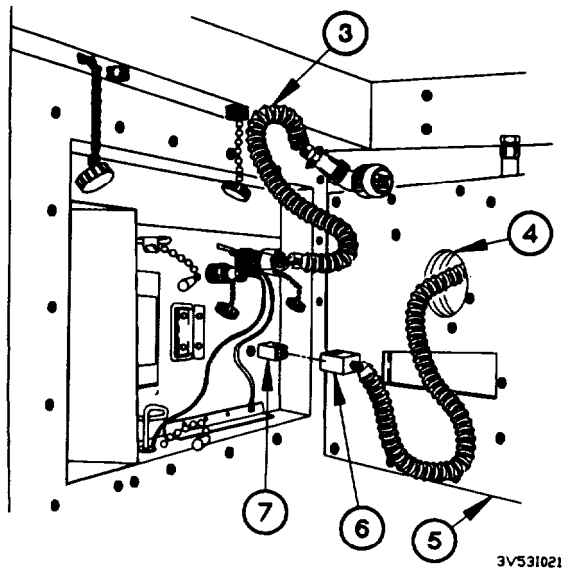
b. Installation.

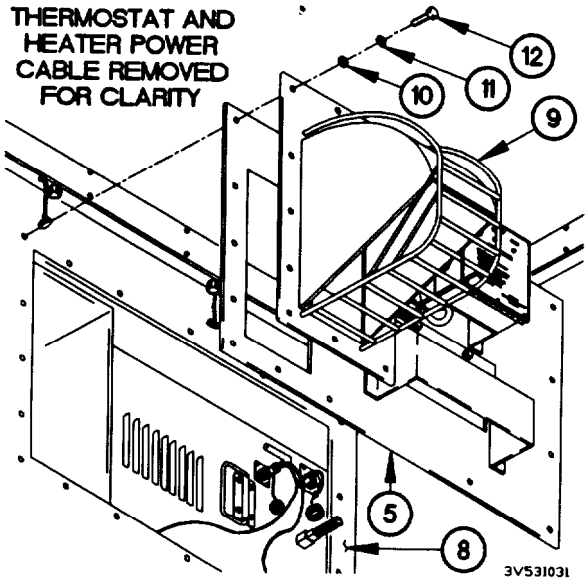
(1) Connect connector J4A (1) to connector P4 (2).



(2) Route heater power cable (3) through hole (4) in heater cover (5).

(3) Connect connector P4A (6) to connector J4 (7).

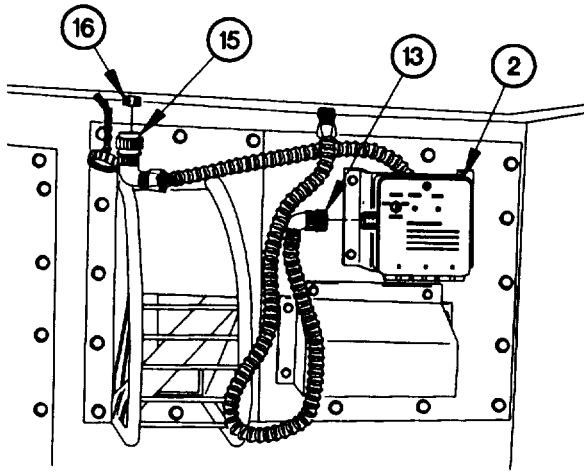




(4) Install heater cover (5) on van body wall (8) with heater deflector (9), 18 washers (10), lockwasher (11), and screws (12).

(5) Connect connector P245A (13) to heater control unit (2).

(6) Connect connector P244 (15) to heater connector (16).



20-43. M1079 HEATER CONTROL CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check heater for proper operation (TM 9-2320-365-10).

(3) Close LH and RH van doors (TM 9-2320-365-10).

End of Task.

20-44. M1079 HEATER THERMOSTAT REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)

References
TM 5-4520-253-23P

a. Removal.

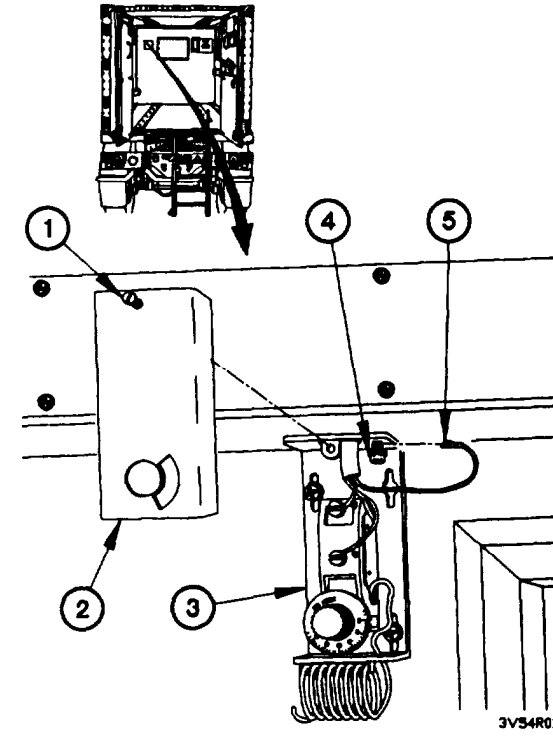
NOTE

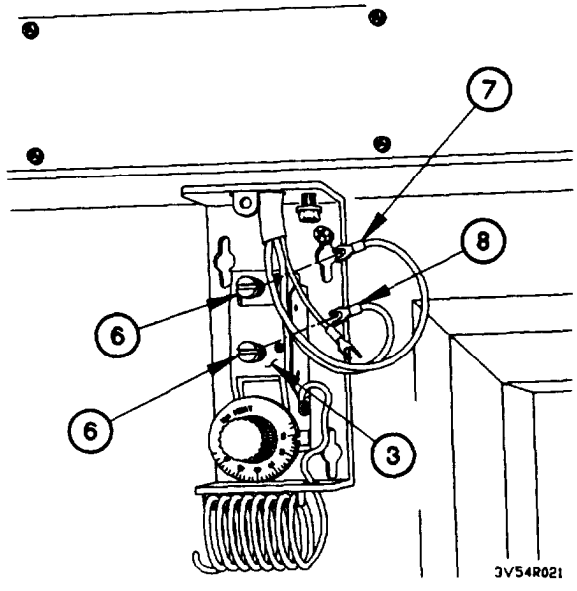
Tag wires and connection points prior to removal.

(1) Remove screw (1) and cover (2) from thermostat (3).

(2) Loosen screw (4) on thermostat (3).

(3) Remove wire 3086C (5) from thermostat (3).



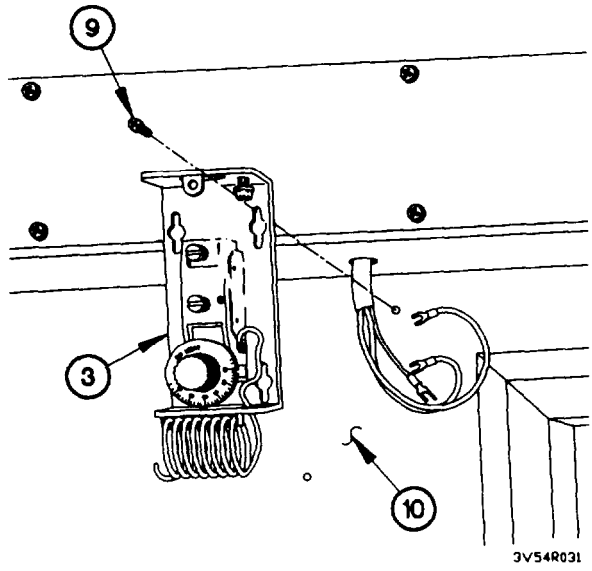


(4) Loosen two screws (6) on thermostat (3).

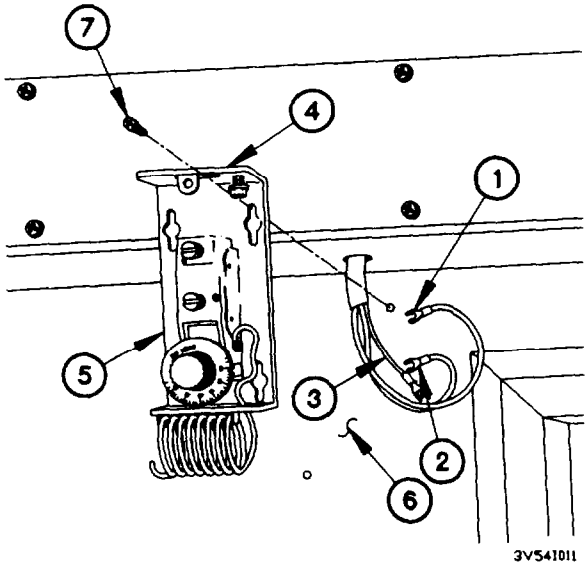
(5) Remove wire 1499R (7) and wire 401 (8) from thermostat (3).

20-44. M1079 HEATER THERMOSTAT REPLACEMENT (CONT)

(6) Remove two screws (9) and thermostat (3) from van body wall (10).

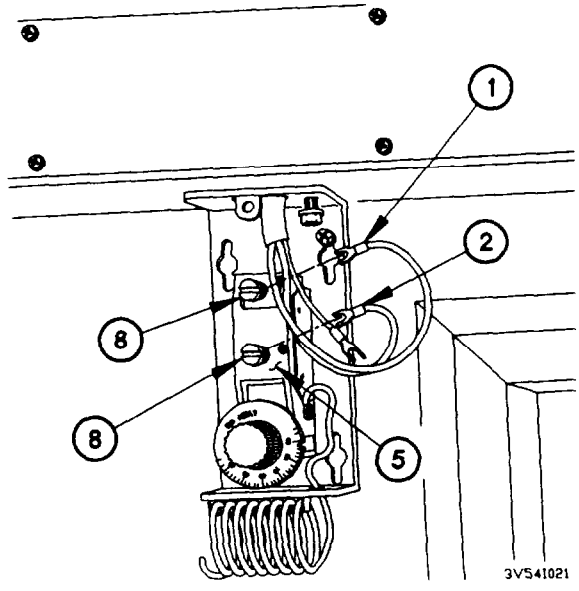


b. Installation.



(1) Route wire 1499R (1), wire 401 (2), and wire 3086C (3) through hole (4) on thermostat (5).

(2) Install thermostat (5) on van body wall (6) with two screws (7).



(3) Loosen two screws (8) on thermostat (5).

(4) Position wire 401 (2) and wire 1499R (1) on thermostat (5).

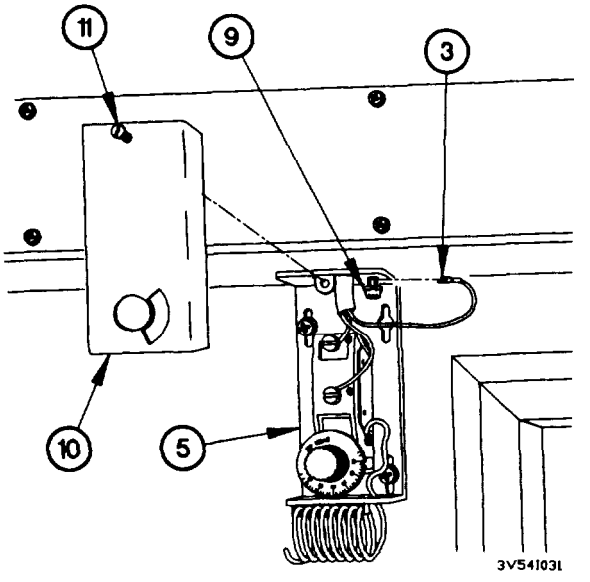
(4) Tighten two screws (8) on thermostat (5).

(6) Loosen screw (9) on thermostat (5).

(7) Position wire 3086C (3) on thermostat (5).

(8) Tighten screw (9) on thermostat (5).

(9) Install cover (10) on thermostat (5) with screw (11).



c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check thermostat for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-45. M1079 HEATER THERMOSTAT CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)

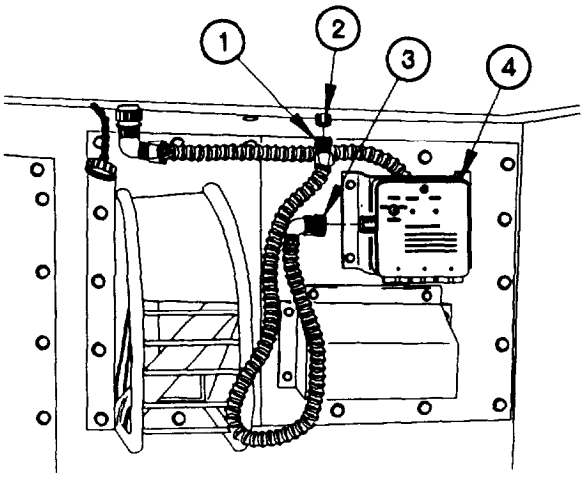
a. Removal.

NOTE

Tag connectors and connection points prior to disconnecting.

(1) Disconnect connector J245 (1) from thermostat connector (2).

(2) Disconnect connector P245A (3) from heater control unit (4).



3V55R011

b. Installation

(1) Connect connector P245A (3) to heater control unit (4).

(2) Connect connector J245 (1) to thermostat connector (2).

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check thermostat for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).
Spare tire lowered (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Sealant, Pipe, Teflon (Item 58, Appendix D)
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (18) (Item 84, Appendix G)
Lockwasher (3) (Item 83, Appendix G)
Ties, Cable, Plastic (Item 76, Appendix D)

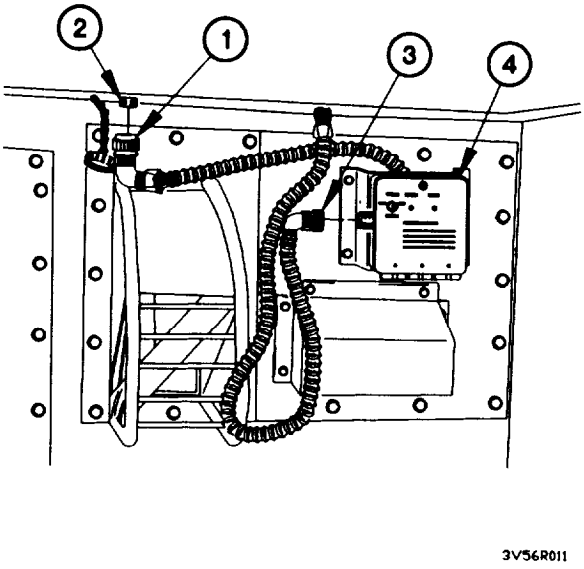
a. Removal.

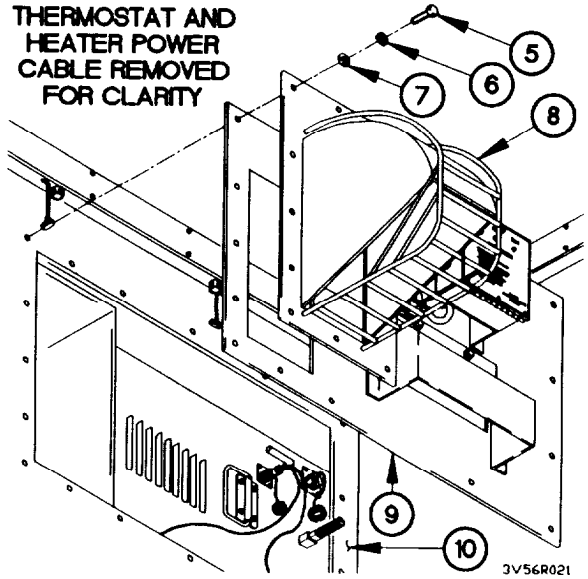
NOTE

Tag connector and connection points prior to removal.

(1) Disconnect connector P244 (1) from heater connector (2).

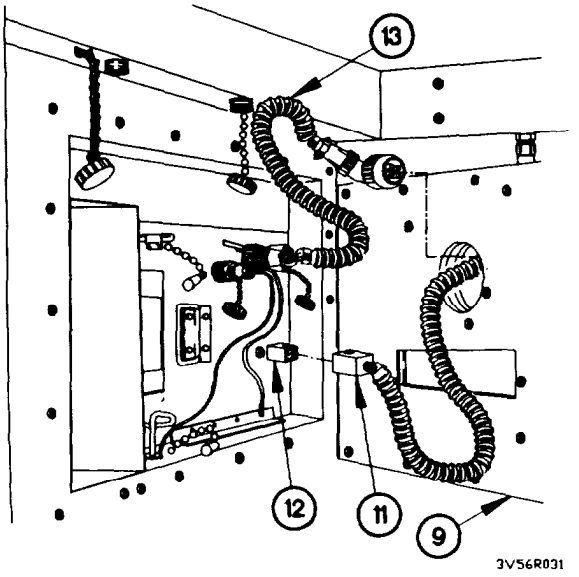
(2) Disconnect connector P245A (3) from heater control unit (4).





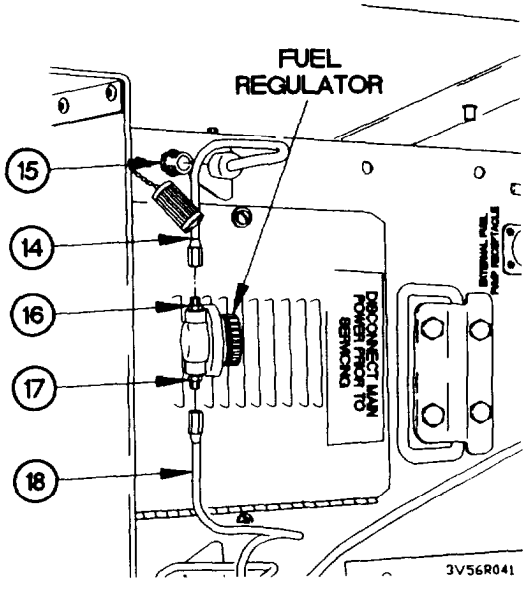
(3) Remove 18 screws (5), lockwashers (6), washers (7), heater deflector (8), and heater cover (9) from van body wall (10). Discard lockwashers.

20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)



(4) Disconnect connector P4A (11) from connector J4 (12).

(5) Remove heater power cable (13) from heater cover (9).



WARNING

Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

(6) Remove fuel tube (14) from fuel inlet port (15).

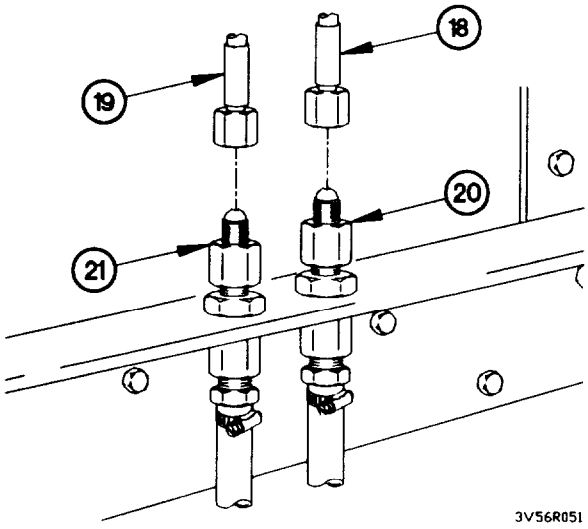
(7) Remove fuel tube (14) from fitting (16).

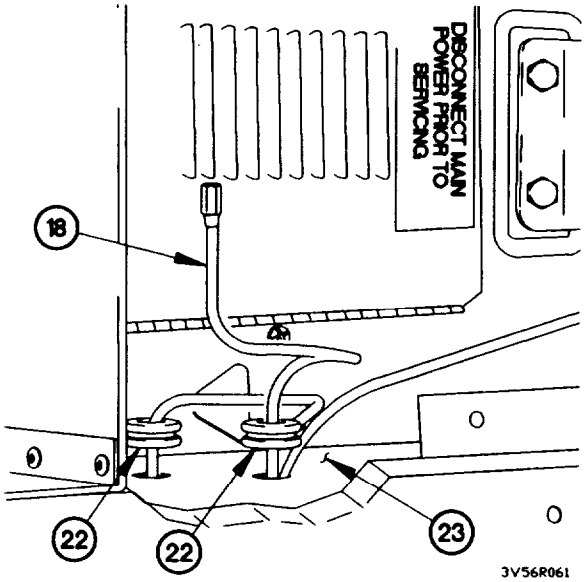
NOTE

Note position of fuel regulator prior to removal.

(8) Remove fitting (17) from fuel tube (18).

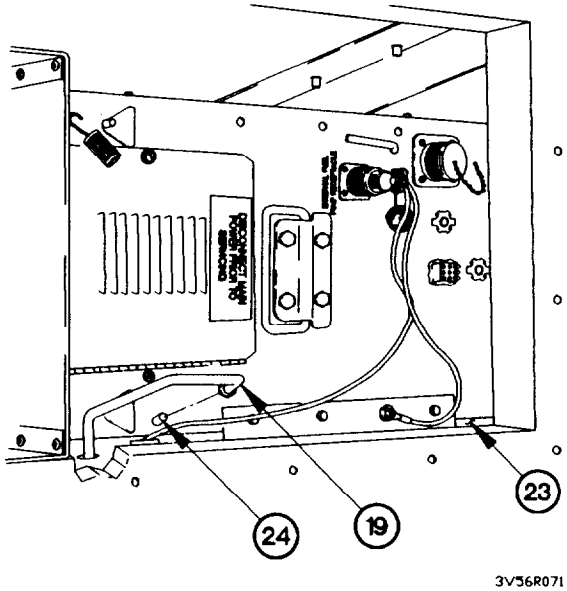
(9) Remove fuel tubes (18 and 19) from adapters (20 and 21).





(10) Remove two grommets (22) from pod panel (23).

(11) Remove fuel tube (18) from pod panel (23).



(12) Remove fuel tube (19) from fuel overflow port (24).

(13) Remove fuel tube (19) from pod panel (23).

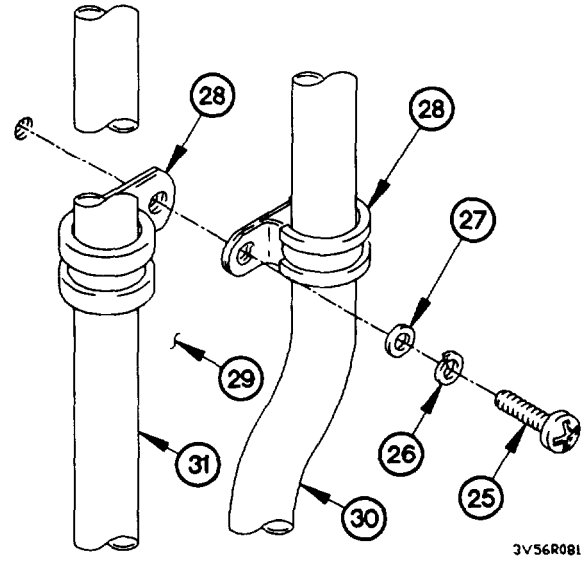
20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)

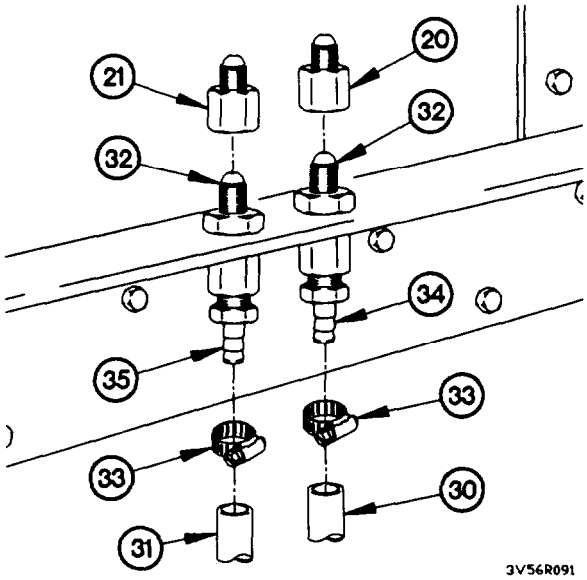
NOTE

Remove plastic cable ties as required.

(14) Remove three screws (25), lockwashers (26), washers (27), and six clamps (28) from van body wall (29). Discard lockwashers.

(15) Remove six clamps (28) from hoses (30 and 31).





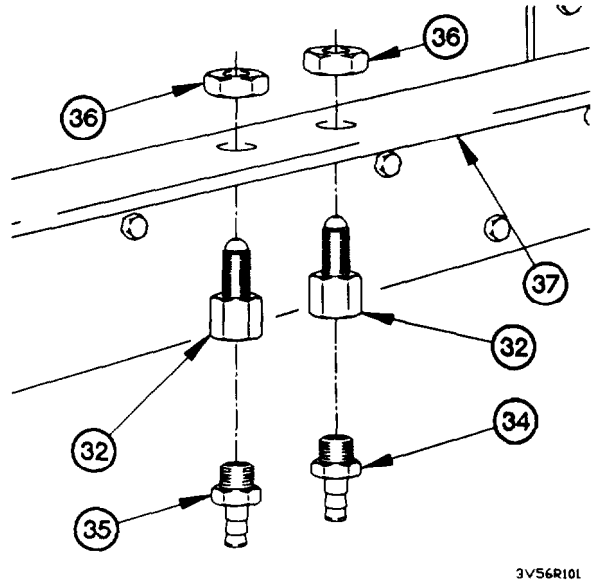
(16) Remove adapters (20 and 21) from two fittings (32).

NOTE

Tag hoses and connection point prior to removal.

(17) Loosen two clamps (33) on hoses (30 and 31).

(18) Remove hoses (30 and 31) and two clamps (33) from fittings (34 and 35).



(19) Remove fittings (34 and 35) from two fittings (32).

(20) Remove two nuts (38) and fittings (32) from pod frame (37).

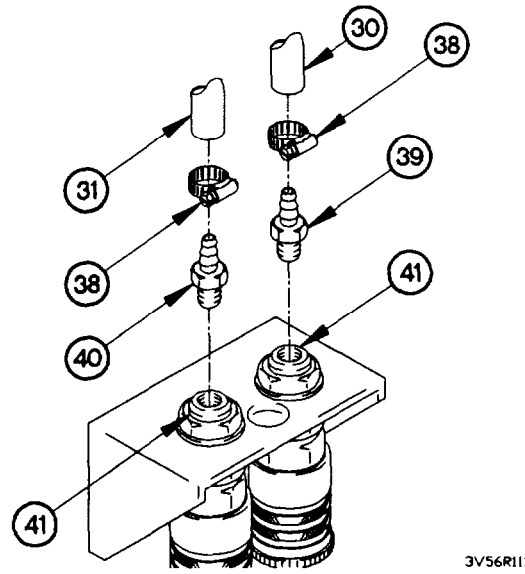
NOTE

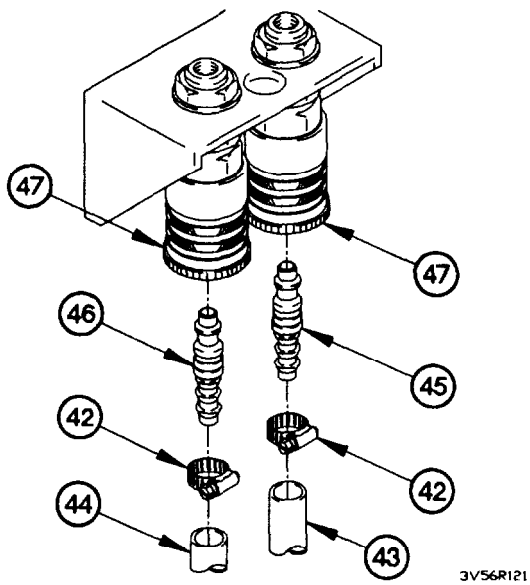
Remove plastic cable ties as required.

(21) Loosen clamps (38) on hoses (30 and 31).

(22) Remove hoses (30 and 31) and two clamps (38) from fittings (39 and 40).

(23) Remove fittings (39 and 40) from two bushings (41).





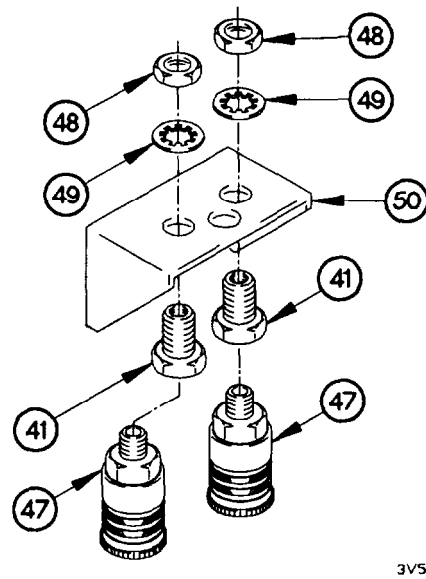
(24) Loosen two clamps (42) on hoses (43 and 44).

(25) Remove hoses (43 and 44) and two clamps (42) from fittings (45 and 46).

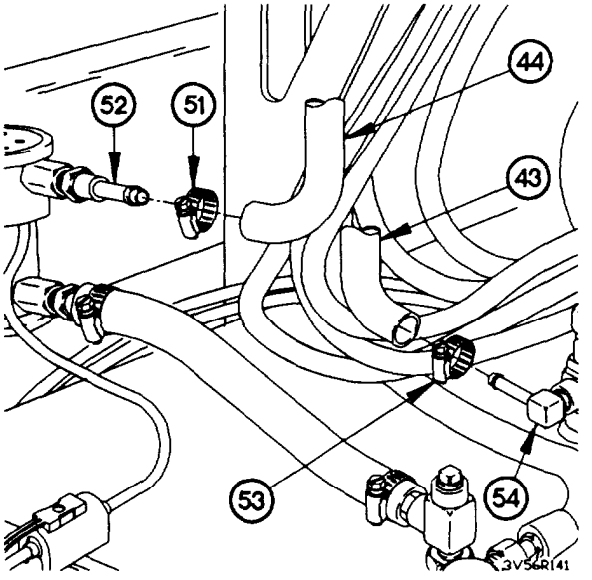
(26) Disconnect fitting (45 and 46) from two quick connect fittings (47).

(27) Remove two quick disconnect fittings (47) from bushings (41).

(28) Remove two nuts (48), washers (49), and bushings (41) from bracket (50).



20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)

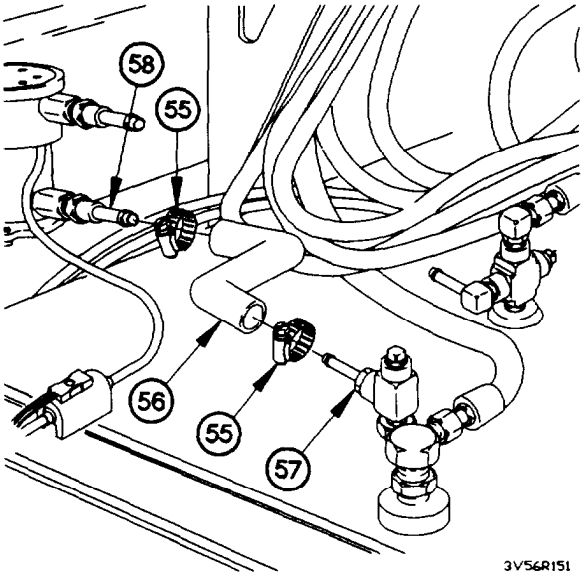


(29) Loosen clamp (51) on hose (44).

(30) Remove hose (41) and clamp (51) from fitting (52).

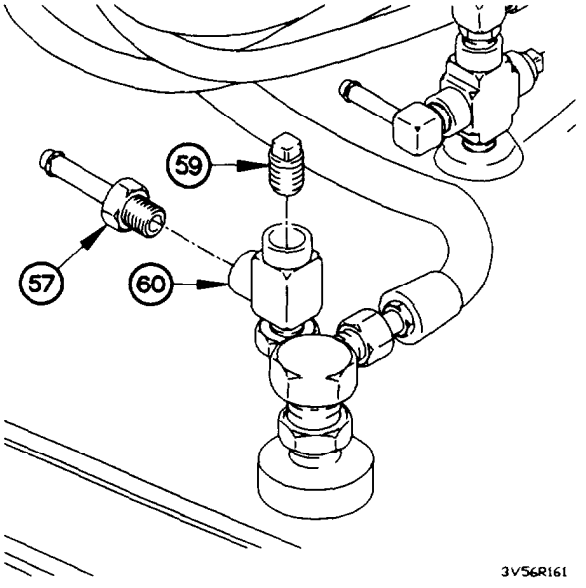
(31) Loosen clamp (53) on hose (43).

(32) Remove hose (43) and clamp (53) from 90-degree fitting (54).



(33) Loosen two clamps (55) on hose (56).

(34) Remove hose (56) and two clamps (55) from fittings (57 and 58).



(35) Remove fitting (57) and plug (59) from run tee fitting (60).

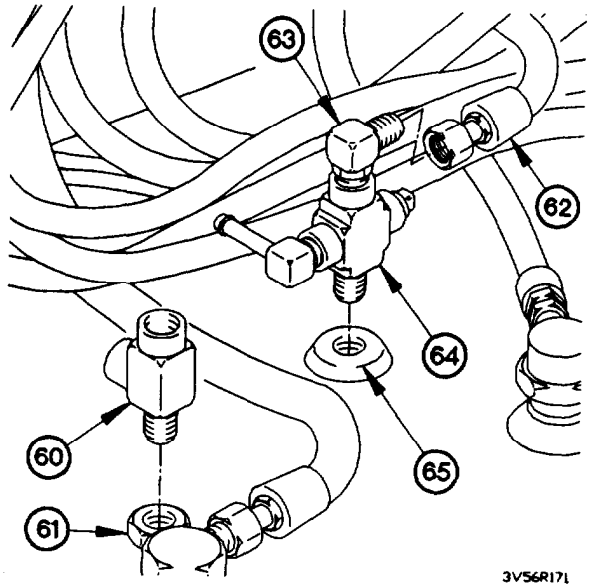
NOTE

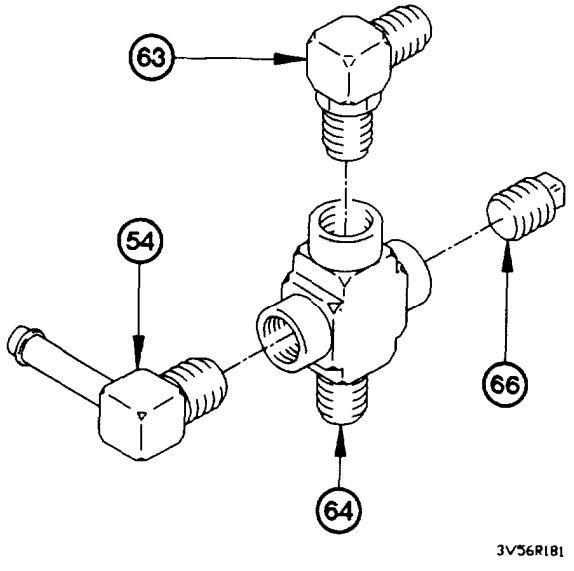
Note position of fitting prior to removal.

(36) Remove run tee fitting (60) from auxiliary supply port (61).

(37) Disconnect fuel hose (62) from 90-degree fuel return fitting (63).

(38) Remove four-way fitting (64) from fuel tank (65).





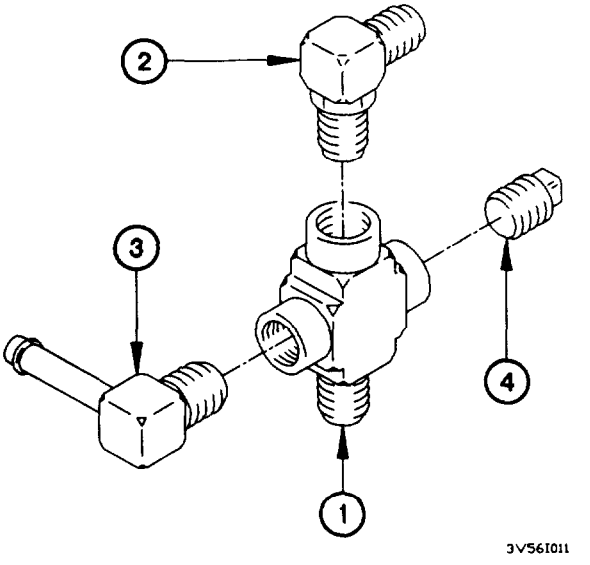
(39) Remove plug (66), 90-degree fitting (54), and 90-degree fuel return fitting (63) from four way fitting (64).

M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)

b. Installation.

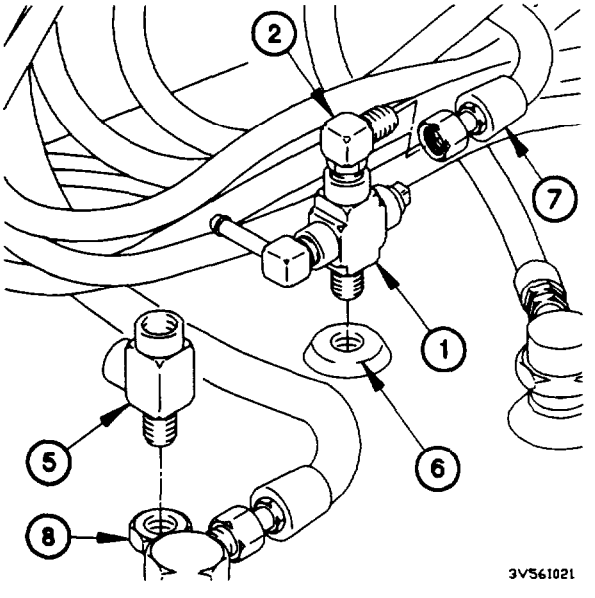
WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



(1) Apply sealing compound to four-way fitting (1), 90-degree fuel return (2), 90-degree fitting (3), and plug (4).

(2) Install 90-degree fuel return fitting (2), 90-degree fitting (3), and plug (4) on four-way fitting (1).



(3) Apply sealing compound to run tee fitting (5).

(4) Install four-way fitting (1) on fuel tank (6).

NOTE

Install plastic cable ties as required.

(5) Connect fuel hose (7) to 90-degree return fitting (2).

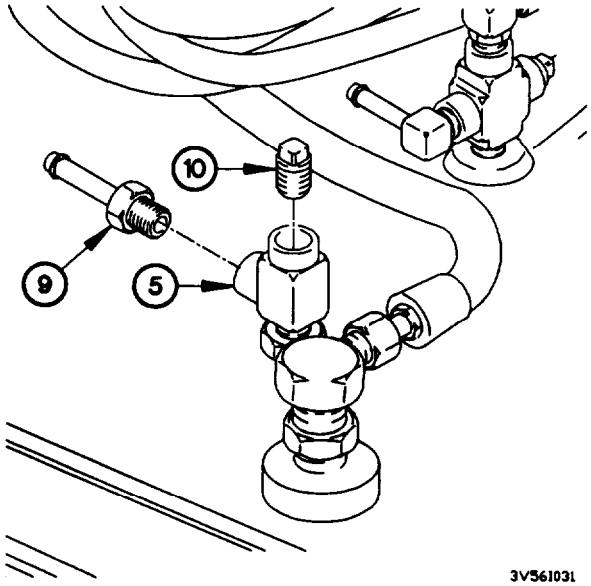
(6) Install run tee fitting (5) in auxiliary supply port (8).

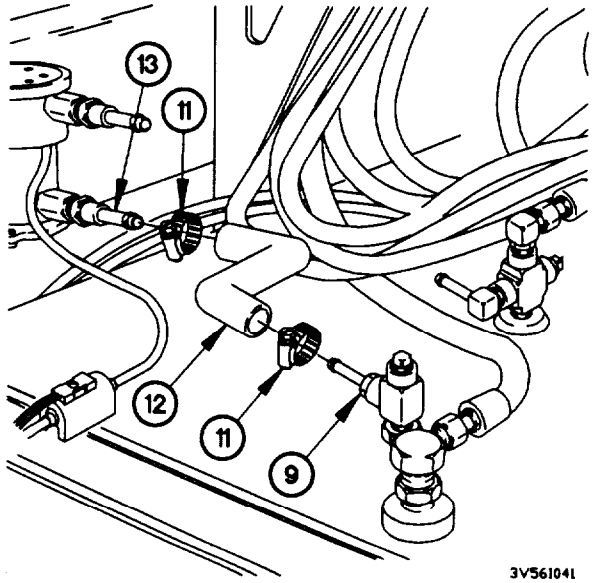
WARNING

Adhesives, solvents, and sealing compounds can bum easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a wall-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(7) Apply sealing compound to threads of fitting (9) and plug (10).

(8) Install fitting (9) and plug (10) on run tee fitting (5).





(9) Position two clamps (11) on hose (12).

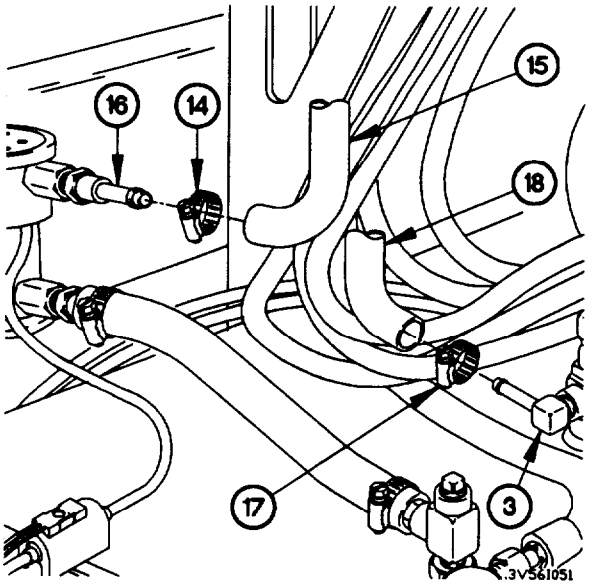
(10) Install hose (12) on fittings (9 and 13) with two clamps (11).

(11) Position clamp (14) on hose (15).

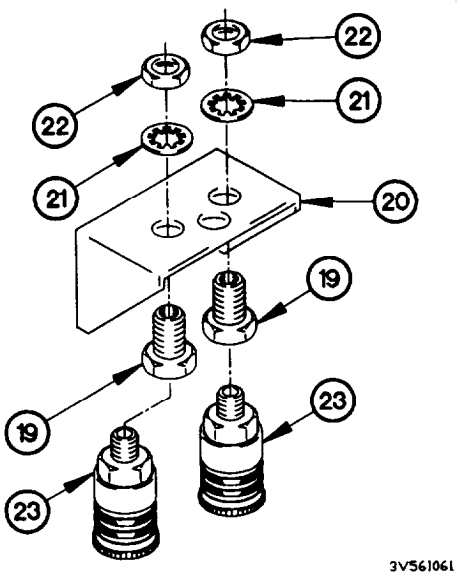
(12) Install hose (15) on fitting (16) with clamp (14).

(13) Position clamp (17) on hose (18).

(14) Install hose (18) on 90-degree fitting (3) with clamp (17).

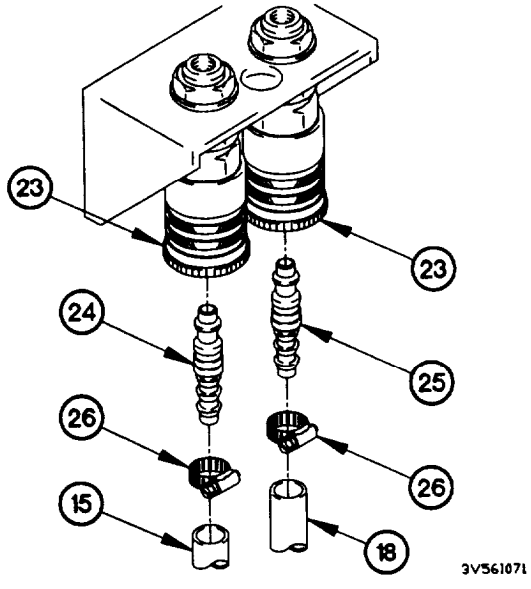


20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)



(15) Install two bushings (19) on bracket (20) with two washers (21) and nuts (22).

(16) Install two quick disconnect fittings (23) on bushings (19).



(17) Connect fittings (24 and 25) to two quick connect fittings (23).

(18) Position two clamps (26) on hoses (15 and 18).

(19) Install hoses (15 and 18) on fittings (24 and 25) with two clamps (26).

WARNING

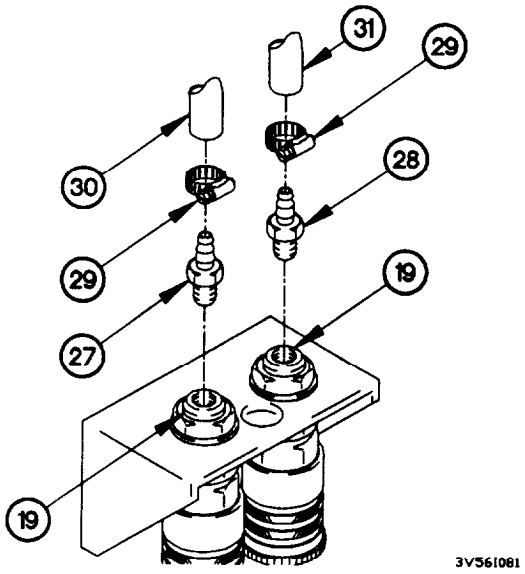
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

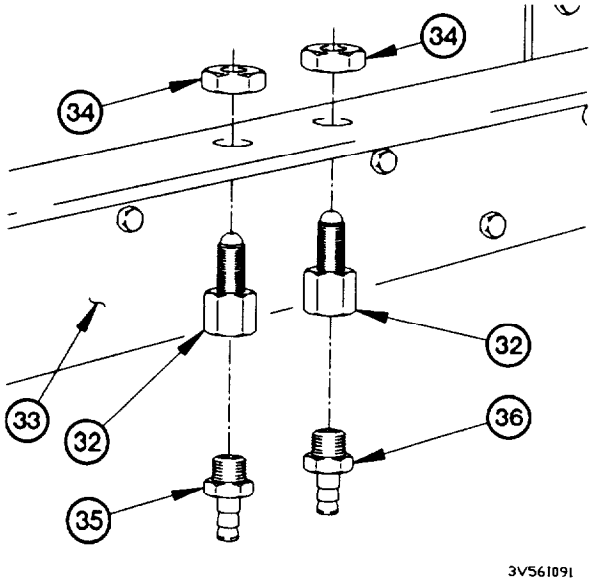
(20) Apply sealing compound to threads of fittings (27 and 28).

(21) Install fittings (27 and 28) on two bushings (19).

(22) Position two clamps (29) on hoses (30 and 31).

(23) Install hoses (30 and 31) on fitting (27 and 28) with two clamps (29).

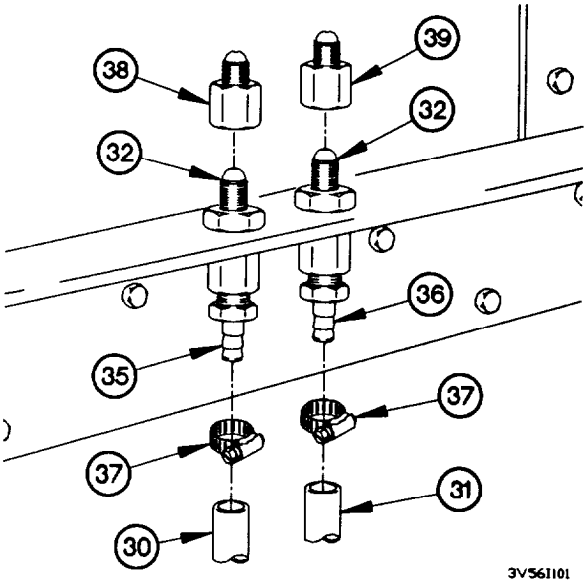




(24) Install two fittings (32) on pod frame (33) with two nuts (34).

(25) Apply sealing compounds to threads of fittings (35 and 36).

(26) Install fittings (35 and 36) on two fittings (32).



(27) Position two clamps (37) on hoses (30 and 31).

(28) Install hoses (30 and 31) on fittings (35 and 36) with two clamps (37).

(29) Install adapters (38 and 39) on two fittings (32).

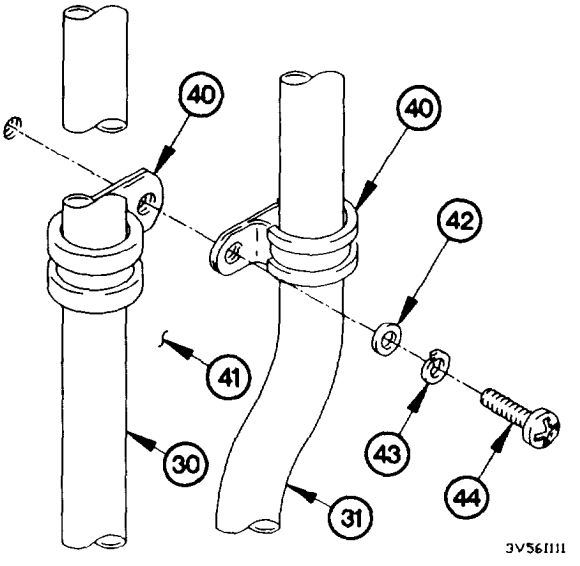
20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)

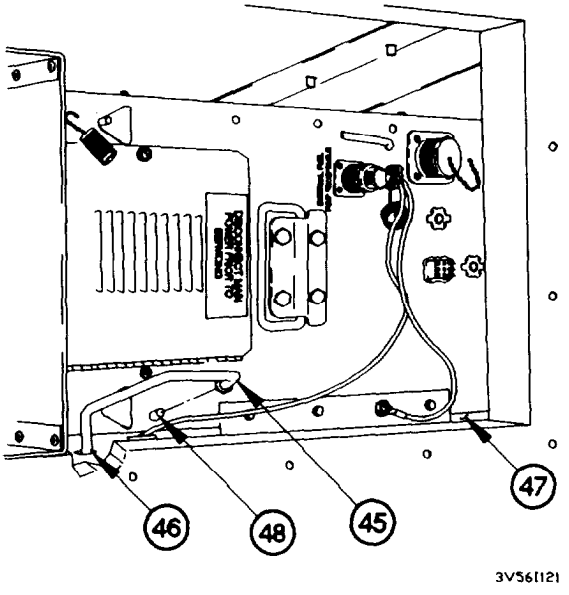
NOTE

Install plastic cable ties as required.

(30) Position six clamps (40) on hoses (30 and 31).

(31) Install six clamps (40) on van body wall (41) with three washers (42), lockwashers (43), and screws (44).



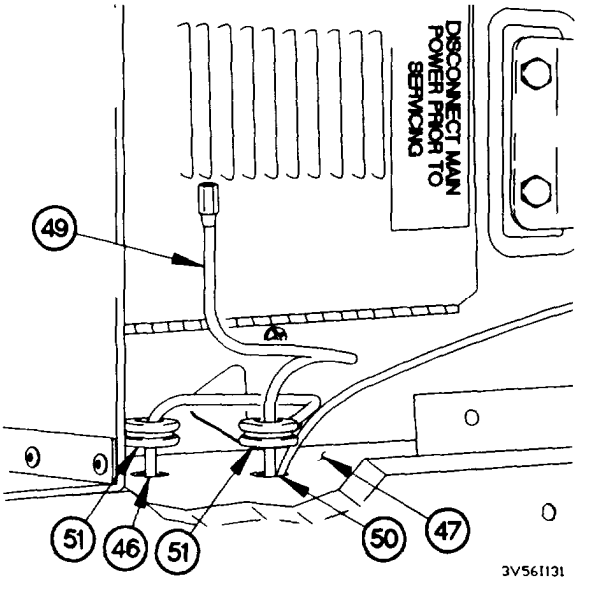


(32) Position fuel tube (45) in hole (46) on pod panel (47).

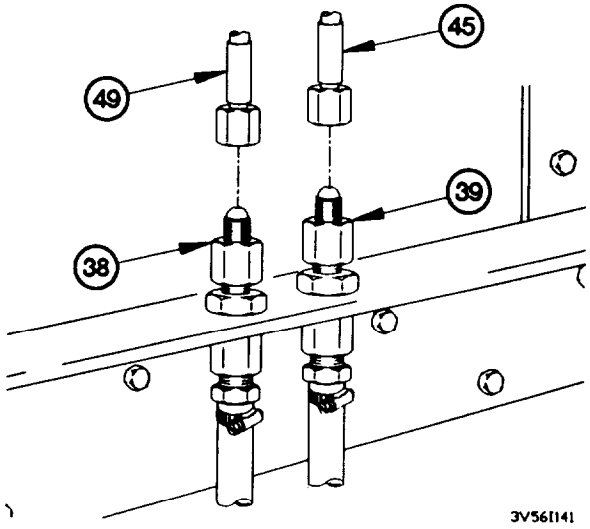
(33) Install fuel tube (45) on fuel overflow port (48).

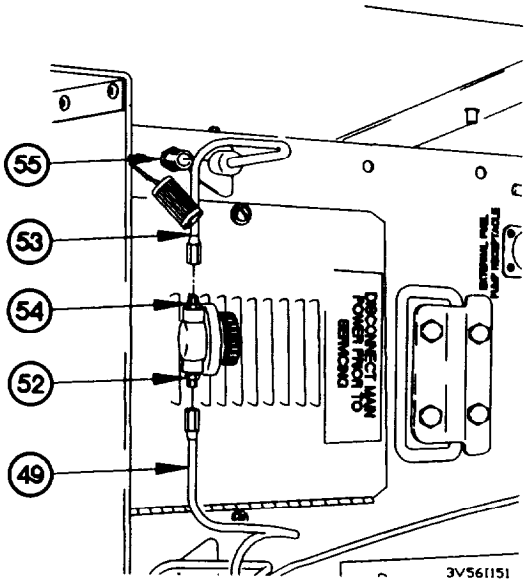
(34) Position fuel tube (49) in hole (50) on pod panel (47).

(35) Install two grommets (51) in holes (46 and 50) on pod panel (47).



(36) Install fuel tubes (45 and 49) on adapters (38 and 39).

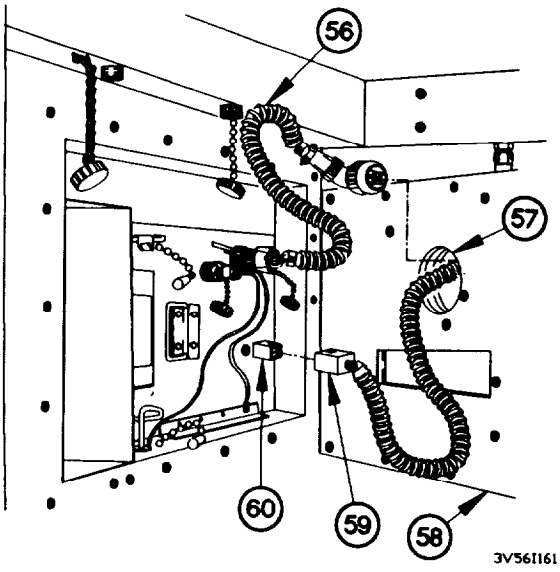




(37) Install fuel tube (49) on fitting (52).

(38) Install fuel tube (53) on fitting (54).

(39) Install fuel tube (53) on fuel inlet port (55).

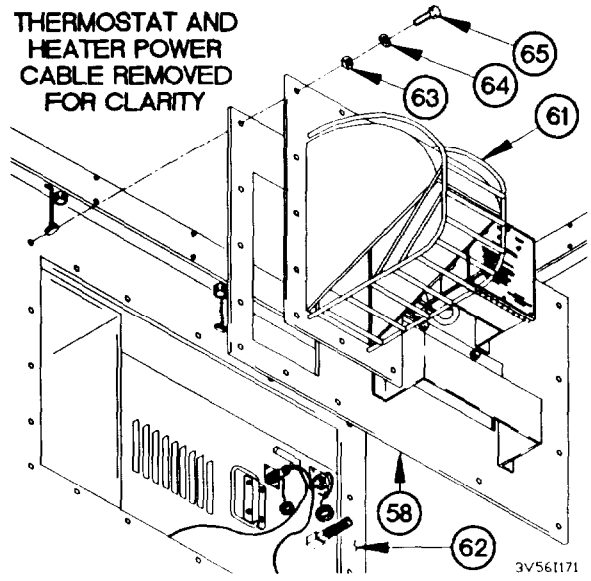


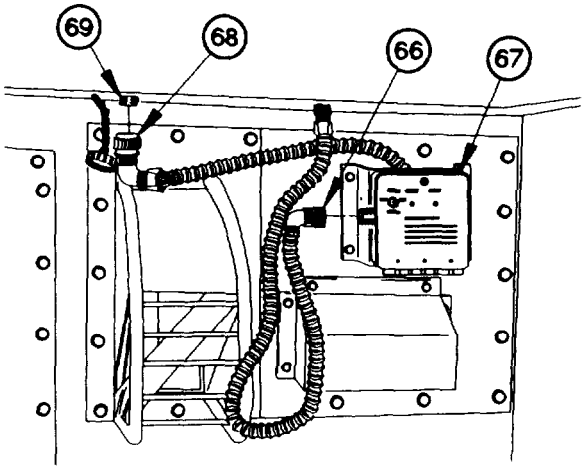
(40) Route heater power cable (56) through hole (57) in heater cover (58).

(41) Connect connector P4A (59) to connector J4 (60).

20-46. M1079 HEATER FUEL TUBES/HOSES REPLACEMENT (CONT)

(42) Install heater cover (58) and heater deflector (61) on van body wall (62) with 18 washers (63), lockwashers (64), and screws (65).





(43) Connect connector P245A (66) to heater control unit (67).

(44) Connect connector P244 (68) to heater connector (69).

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check heater for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

(4) Raise spare tire (TM 9-2320-365-10).

End of Task.

20-47. M1079 HEATER FUEL REGULATOR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Materials/Parts
Sealant, Pipe, Teflon (Item 58, Appendix D)
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (18) (Item 84, Appendix G)

Tools and Special Tools
Tool Kit, Genl Mech (Item 44. Appendix C)

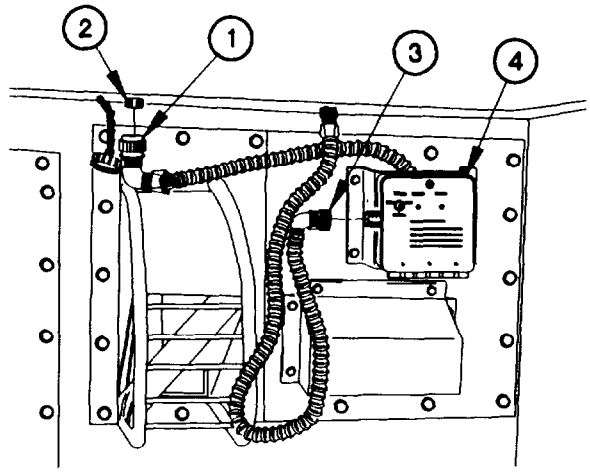
a. Removal.

NOTE

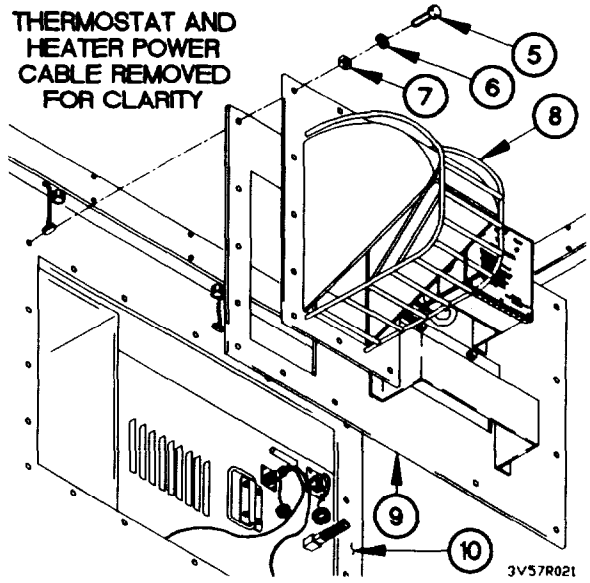
Tag connectors and connection points prior to disconnecting.

(1) Disconnect connector P244 (1) from heater connector (2).

(2) Disconnect connector P245A (3) from heater control unit (4).



3V57R011

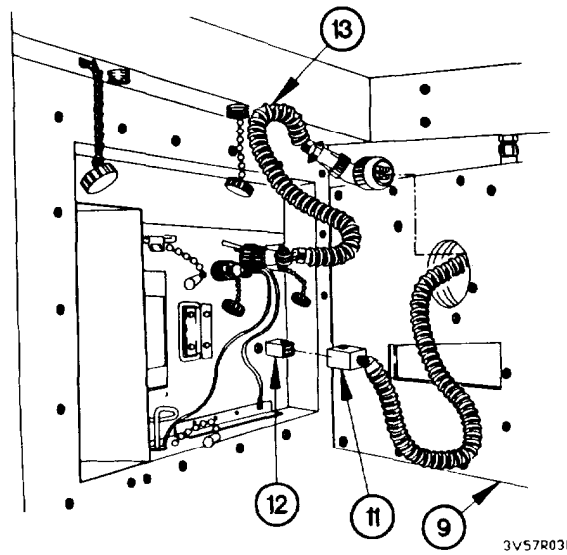


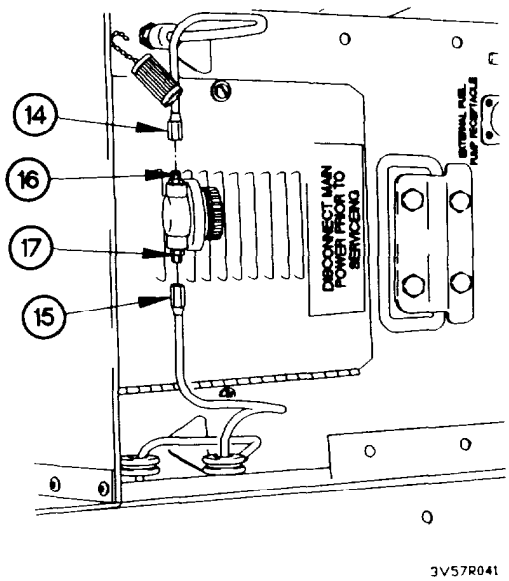
(3) Remove 18 screws (5), lockwashers (6), washers (7), heater deflector (8) and heater cover (9) from van body wall (10). Discard lockwashers.

20-47. M1079 HEATER FUEL REGULATOR REPLACEMENT (CONT)

(4) Disconnect connector P4A (11) from connector J4 (12).

(5) Remove heater power cable (13) from heater cover (9).





WARNING

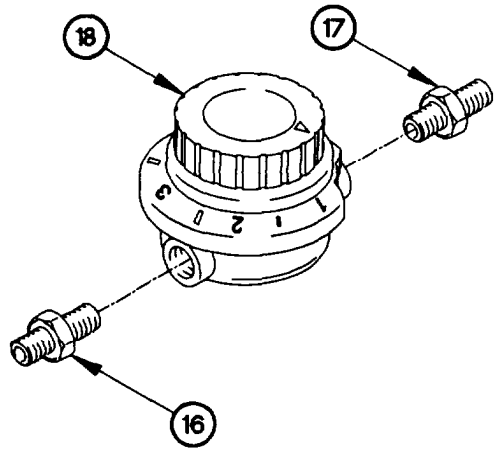
Diesel fuel is flammable. If fuel is spilled, clean it up immediately. Failure to comply may result in serious injury or death to personnel.

NOTE

- Tag tubes and connection points prior to disconnecting.
- Note position of fittings and fuel regulator prior to removal.

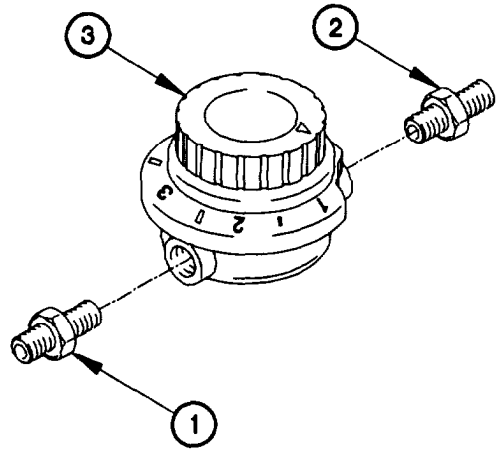
(6) Disconnect fuel tubes (14 and 15) from fittings (16 and 17).

(7) Remove fittings (16 and 17) from fuel regulator (18).



3V57R051

b. Installation.



3V571011

WARNING

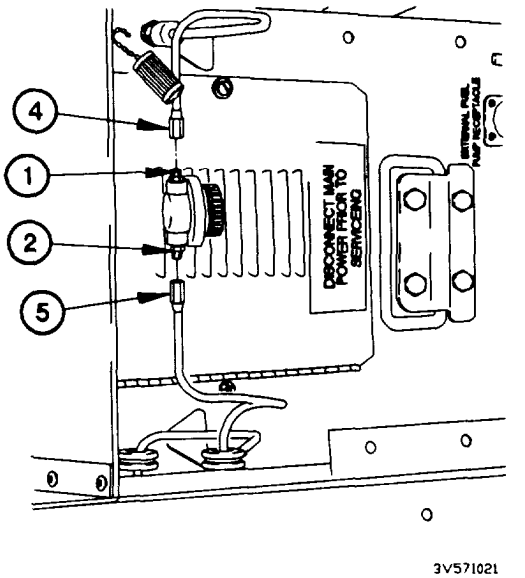
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. if adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

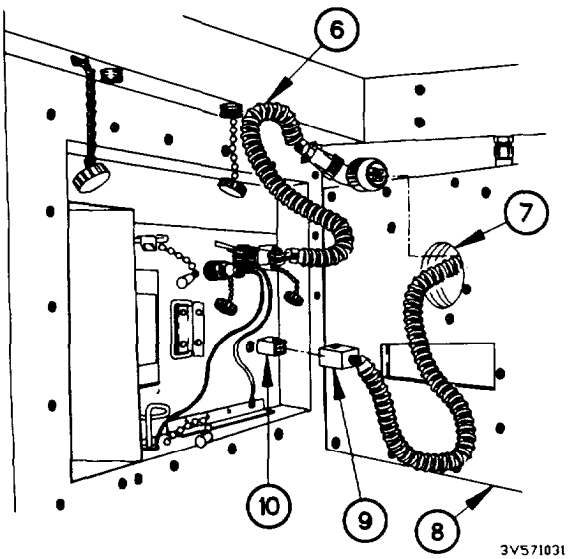
(1) Apply sealing compound to threads of fittings (1 and 2).

(2) Install fittings (1 and 2) on fuel regulator (3).

20-47. M1079 HEATER FUEL REGULATOR REPLACEMENT (CONT)

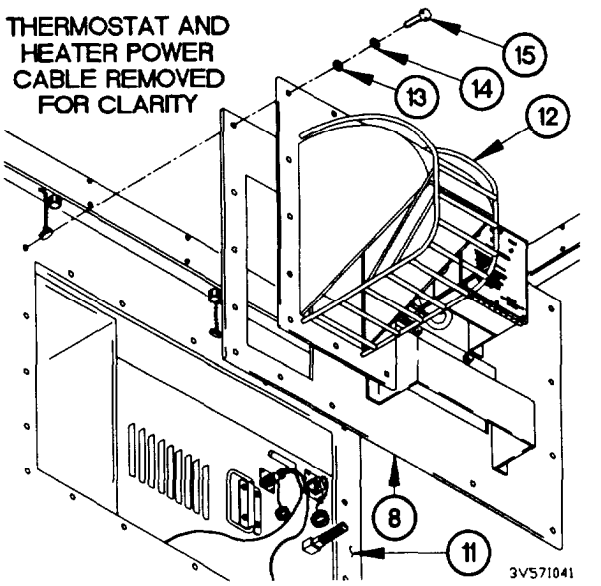
(3) Connect tubing (4 and 5) to fittings (1 and 2).



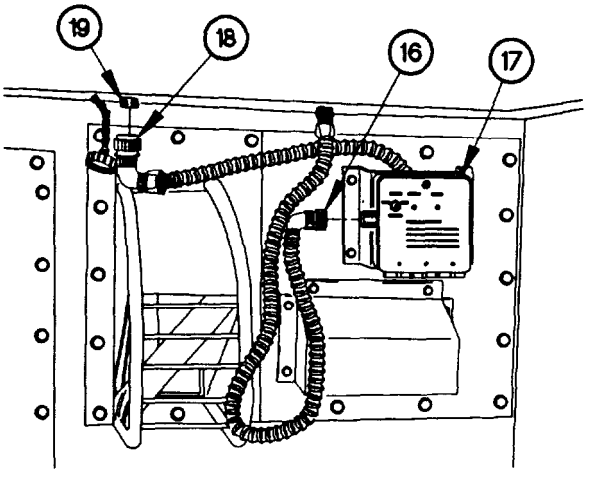


(4) Route heater power cable (6) through hole (7) in heater cover (8).

(5) Connect connector P4A (9) to connector J4 (10).



(6) Install heater cover (8) on van body wall (11) with heater deflector (12), washers (13), lockwashers (14), and screws (15).



3V571051

(7) Connect connector P245A (16) to heater control unit (17).

(8) Connect connector P244 (18) to heater connector (19).

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check heater for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-48. M1079 HEATER FUEL PUMP REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Sealant, Pipe, Teflon (Item 58, Appendix D)
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (2) (Item 83, Appendix G)

Personnel Required
(2)

a. Removal.

NOTE

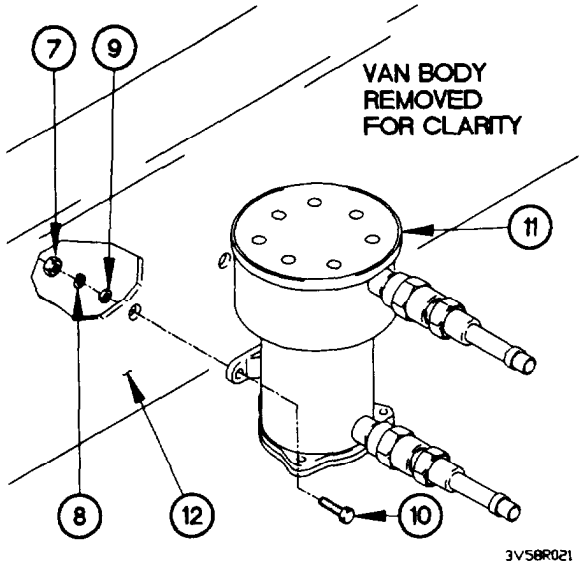
Tag hoses and connection points prior to removal.

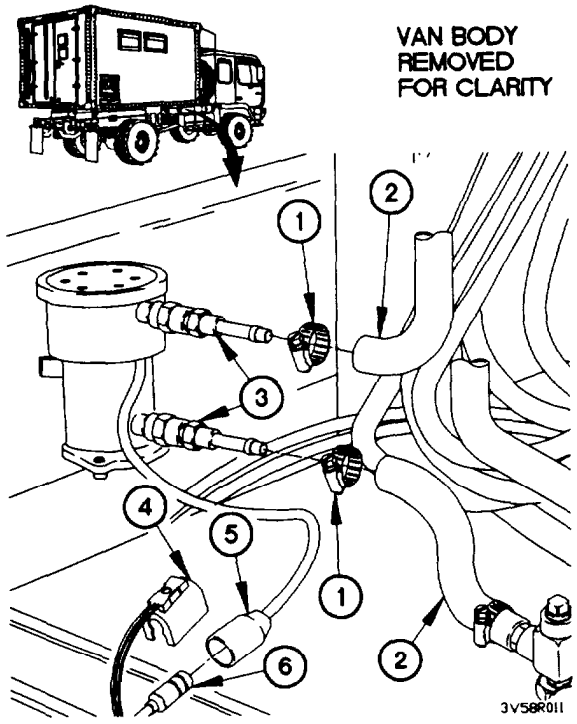
(1) Loosen two clamps (1) on hoses (2).

(2) Remove two hoses (2) and clamps (1) from fittings (3).

(3) Disconnect connector clamp (4) from heater fuel pump connector (5).

(4) Disconnect heater fuel pump connector (5) from connector P310 (6).





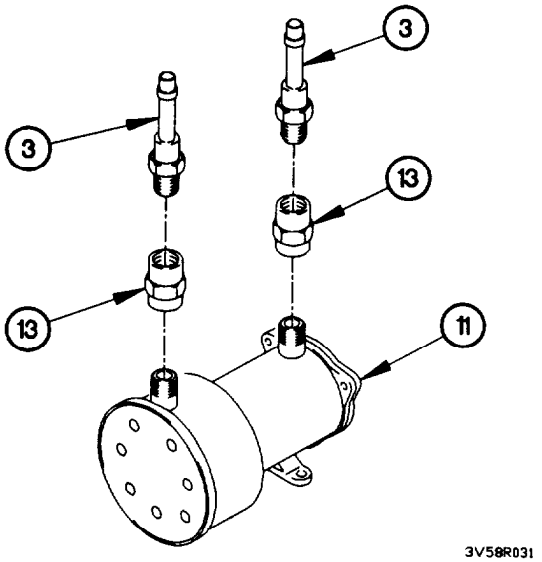
NOTE

Step (5) requires the aid of an assistant.

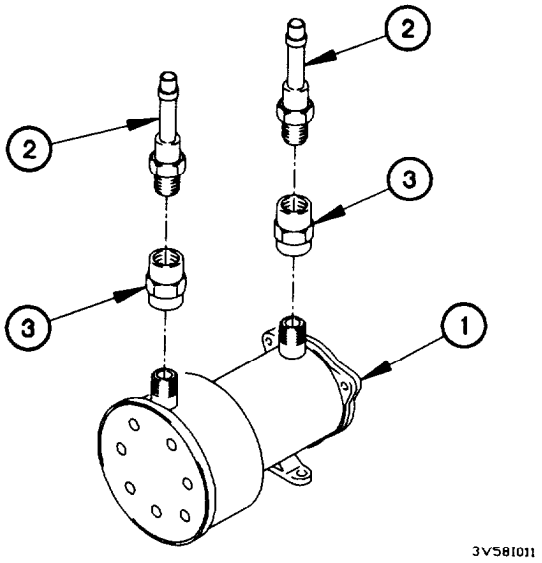
(5) Remove two nuts (7), lockwashers (8), washers (9), screws (10), and heater fuel pump (11) from sub-frame (12). Discard lockwashers.

(6) Remove two fittings (3) from couplers (13).

(7) Remove two couplers (13) from heater fuel pump (11).



b. Installation.



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. if adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(1) Apply sealing compound to threads of heater fuel pump (1) and two fittings (2).

(2) Install two couplers (3) on heater fuel pump (1).

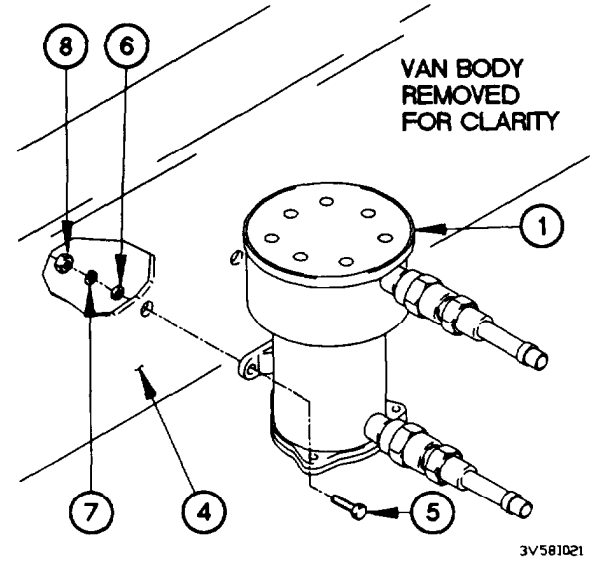
(3) Install fittings (2) on couplers (3).

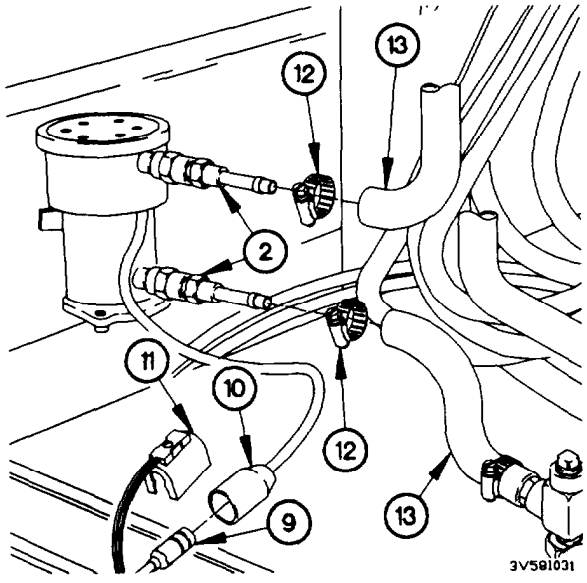
20-48. M1079 HEATER FUEL PUMP REPLACEMENT (CONT)

NOTE

Step (4) requires the aid of an assistant.

(4) Install heater fuel pump (1) on sub-frame (4) with two screws (5), washers (6), lockwashers (7), and nuts (8).





(5) Connect connector P310 (9) to heater fuel pump connector (10).

(6) Connect connector clamp (11) on heater fuel pump connector (10).

(7) Position two clamps (12) on hoses (13).

(8) Install two hoses (13) on fittings (2) with clamps (12).

End of Task.

20-49. M1079 HEATER FUEL PUMP POWER CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
LH and RH doors opened (115 degrees) (TM 9-2320-365-10).

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (18) (Item 84, Appendix G)
Lockwasher (Item 83, Appendix G)

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

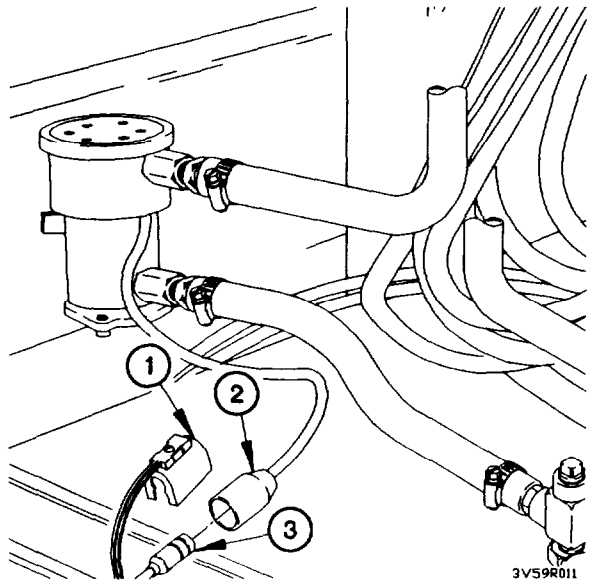
a. Removal.

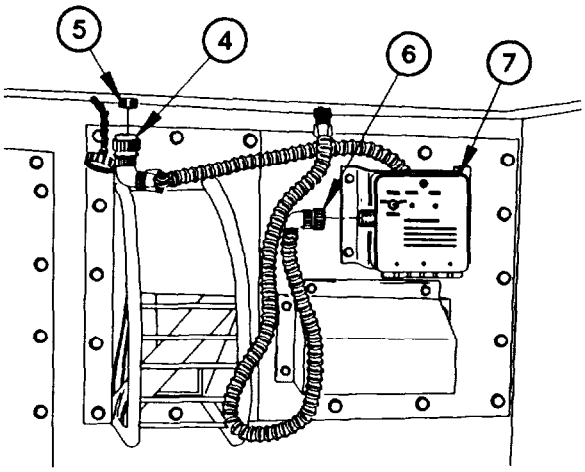
NOTE

Tag connectors and connection points prior to disconnecting.

(1) Disconnect connector clamp (1) from heater fuel pump connector (2).

(2) Disconnect heater fuel pump connector (2) from connector P310 (3).



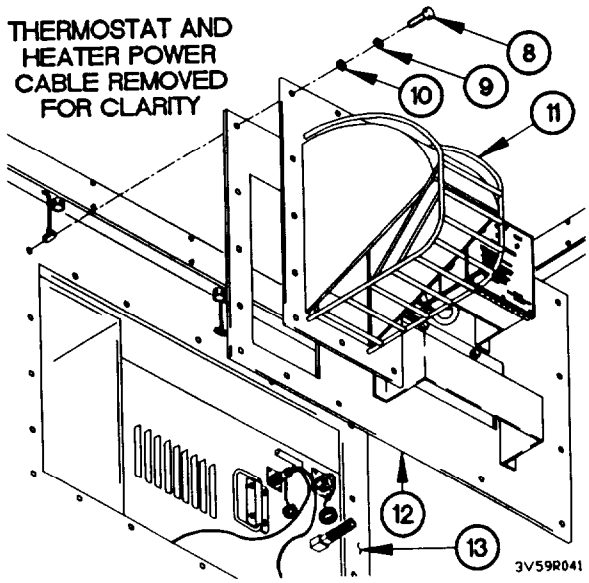


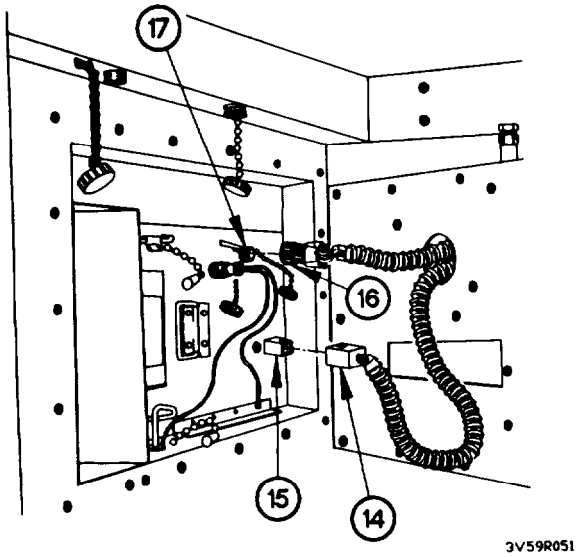
(3) Disconnect connector P244 (4) from heater connector (5).

(4) Disconnect connector P245A (6) from heater control unit (7).

20-49. M1079 HEATER FUEL PUMP POWER CABLE REPLACEMENT (CONT)

(5) Remove 18 screws (8), lockwashers (9), washers (10), heater deflector (11), and heater cover (12) from van body wall (13). Discard lockwashers.



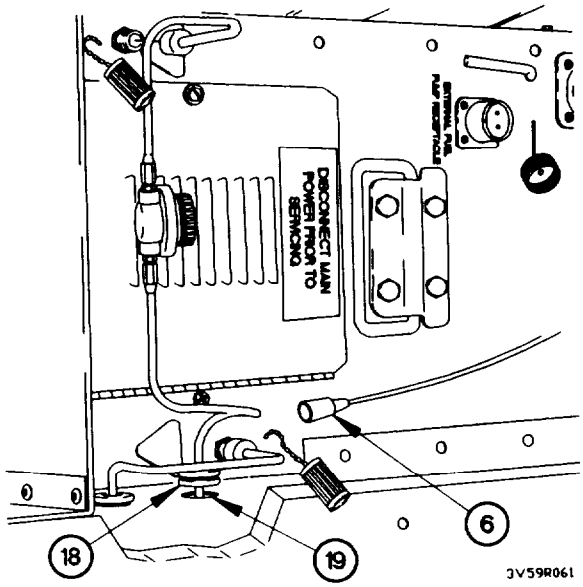


(6) Disconnect connector P4A (14) from connector J4 (15).

(7) Disconnect connector J244A (16) from heater power connector (17).

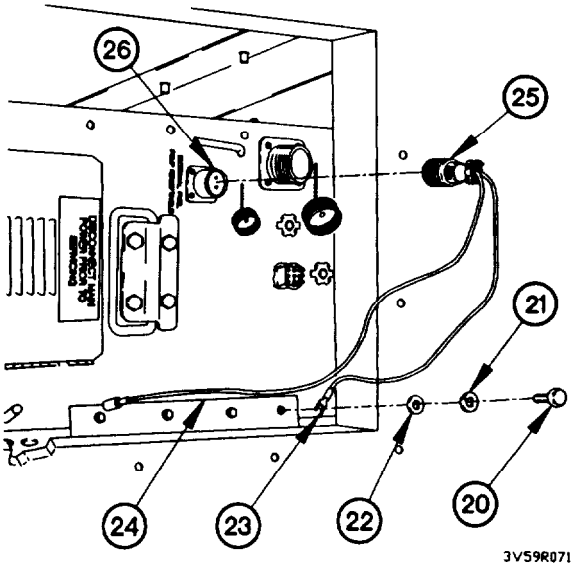
(8) Remove grommet (18) from pod panel (19).

(9) Remove heater fuel pump power cable (6) through hole in pod panel (19).

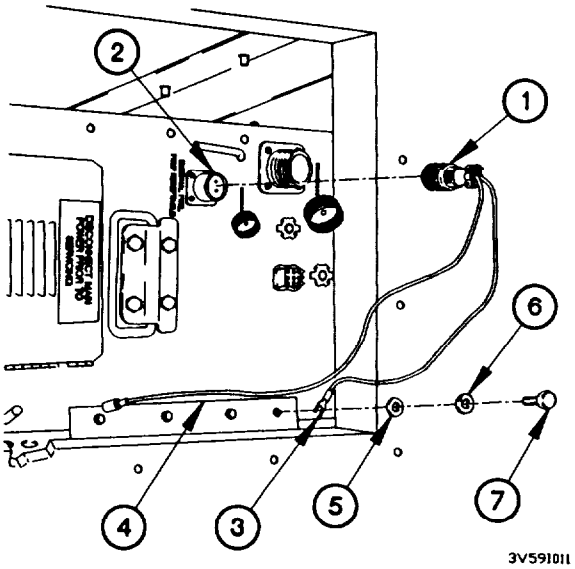


(10) Remove screw (20), lockwasher (21), washer (22), and terminal lug TL191 (23) from bracket (24). Discard lockwasher.

(11) Disconnect connector J314 (25) from heater fuel pump power cable connector (26).



b. Installation.

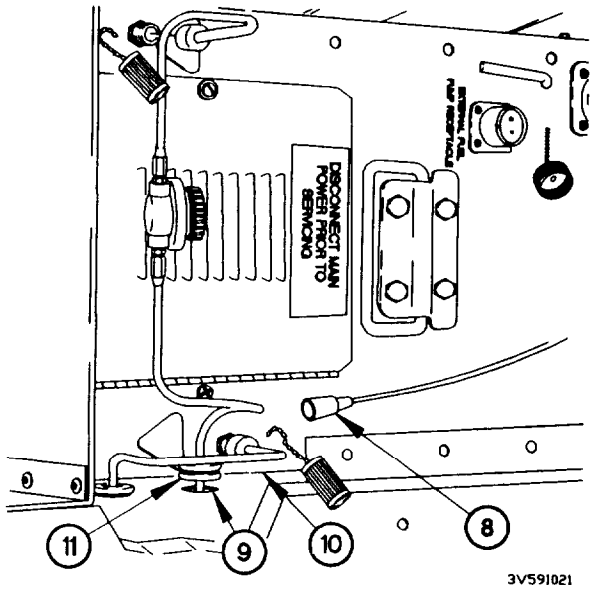


(1) Connect connector J314 (1) to heater fuel pump power cable connector (2).

(2) Install terminal lug TL191 (3) on bracket (4) with washer (5), lockwasher (6), and screw (7).

(3) Route heater fuel pump cable (8) through hole (9) in pod panel (10).

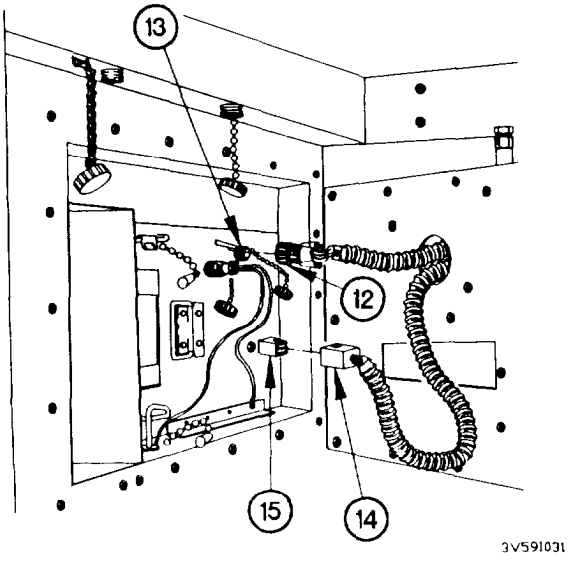
(4) Install grommet (11) in hole (9) on pod panel (10).

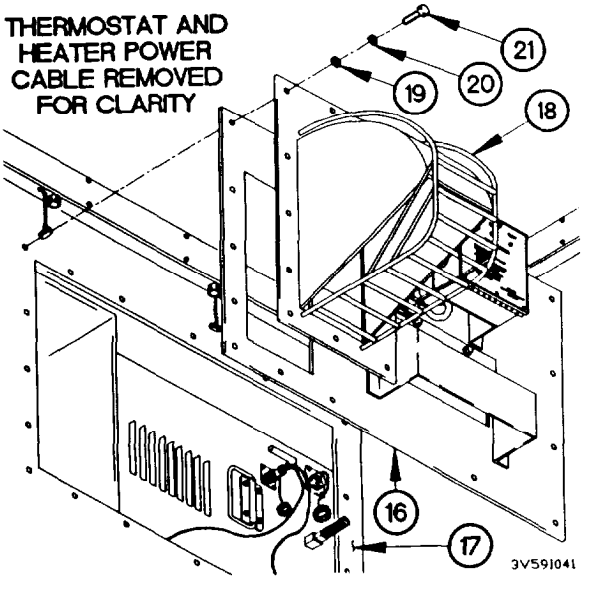


20-49. M1079 HEATER FUEL PUMP POWER CABLE REPLACEMENT (CONT)

(5) Connect connector J244A (12) to heater power connector (13).

(6) Connect connector P4A (14) to connector J4 (15).

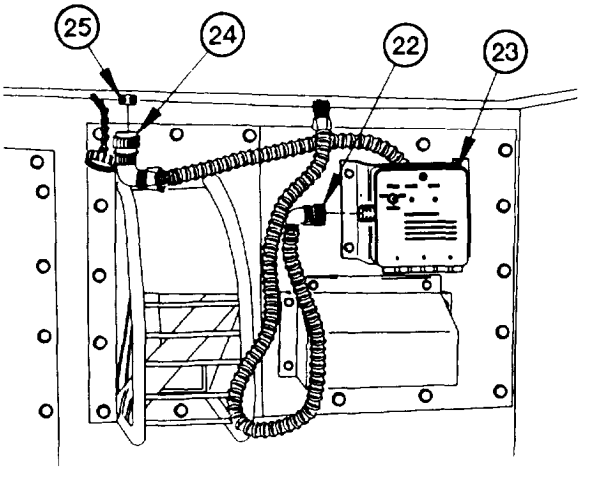


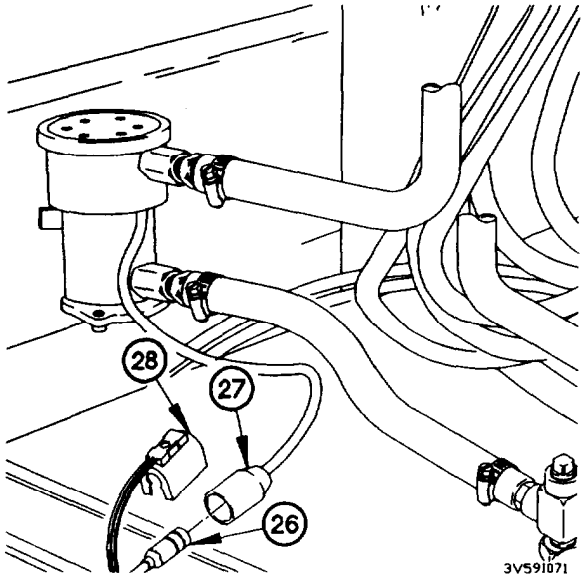


(7) Install heater cover (16) on van body wall (17) with heater deflector (18), 18 washers (19), lockwashers (20), and screws (21).

(8) Connect connector P245A (22) to heater control unit (23).

(9) Connect connector P244 (24) to heater connector (25).





NOTE

Install plastic cable ties as required.

(10) Connect connector P310 (26) to heater fuel pump connector (27).

(11) Connect connector clamp (28) on heater fuel pump connector (27).

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Check heater for proper operation (TM 9-2320-365-10).

(3) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT

This task covers:

a. Heater Deflector Removal
b. Heater Deflector Installation
c. Heater Duct Removal
d. Heater Duct Installation
e. Follow-On Maintenance

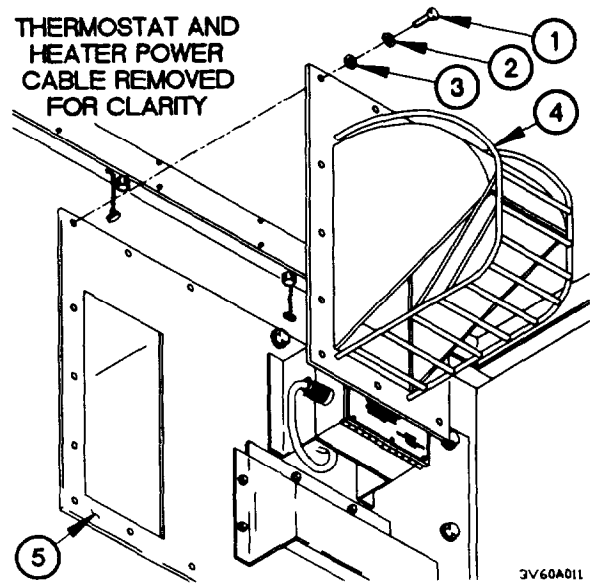
INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
LH and RH doors opened (115-degrees) (TM 9-2320-365-10).
M1079 heater fuel pump power cable removed (for heater duct) (para 20-49).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Sealant, Pipe, Teflon (Item 58, Appendix D)
Lockwasher (9) (for heater deflector) (Item 84, Appendix G)
Lockwasher (40) (Item 82, Appendix G)
Lockwasher (19) (Item 83, Appendix G)
Nut, Self-Locking (4) (Item 126, Appendix G)

Personnel Required
(2)



a. Heater Deflector Removal.

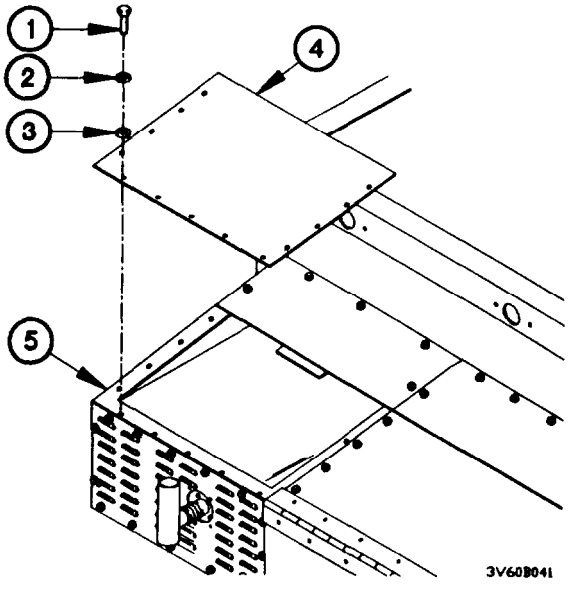
Remove nine screws (1), lockwashers (2), washers (3), and heater deflector (4) from heater cover (5). Discard lockwashers.

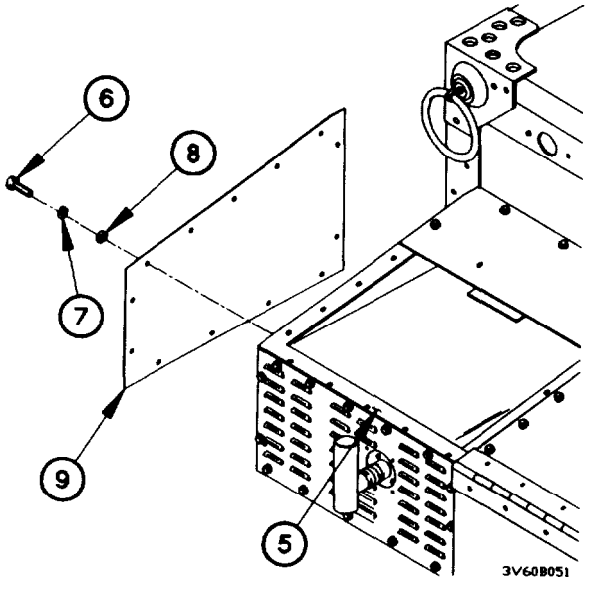
b. Heater Deflector Installation.

Install heater deflector (4) on heater cover (5) with nine washers (3), lockwashers (2), and screws (1).

c. Heater Duct Removal.

(1) Remove 13 screws (1), lockwashers (2), washers (3), and curbside top front panel (4) from pod frame (5). Discard lockwashers.



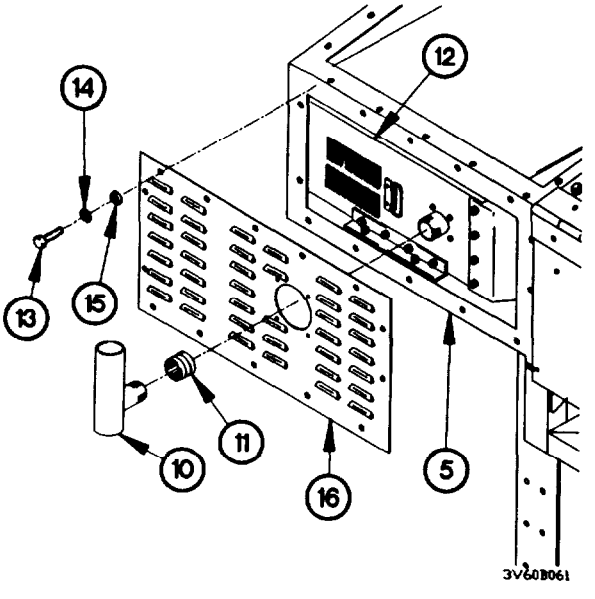


(2) Remove 13 screws (6), lockwashers (7), washers (8), and curbside panel (9) from pod frame (5). Discard lockwashers.

(3) Remove exhaust pipe (10) from coupling (11).

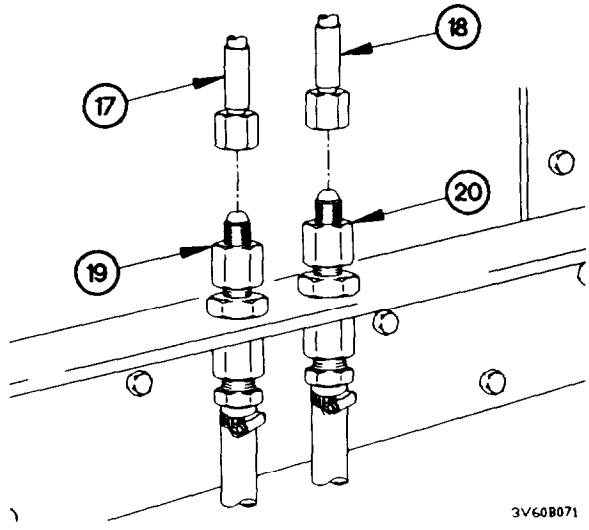
(4) Remove coupling (11) from heater (12).

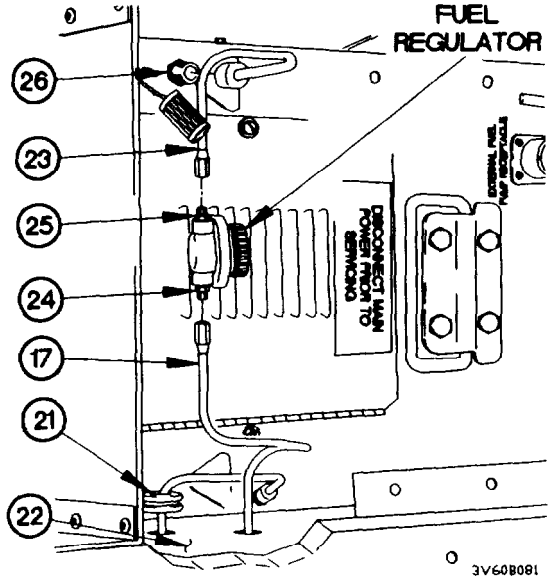
(5) Remove 14 screws (13), lockwashers (14), washers (15), and curbside front panel (16) from pod frame (5). Discard lockwashers.



20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT (CONT)

(6) Remove fuel tubes (17 and 18) from adapters (19 and 20).





(7) Remove grommet (21) from pod panel (22).

NOTE

Note position of fuel regulator prior to removal.

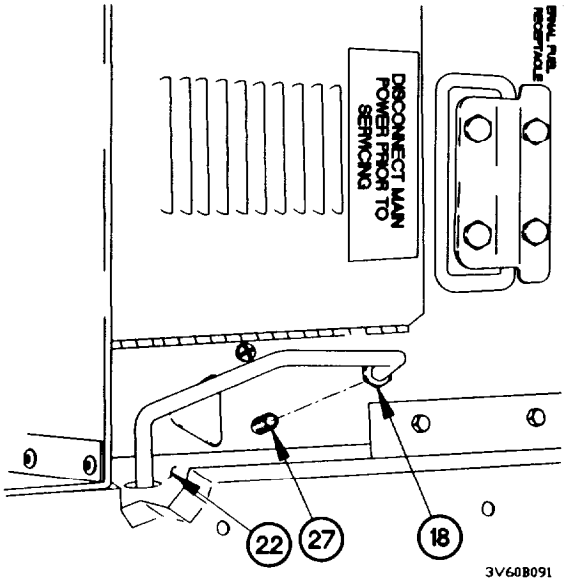
(8) Remove fuel tubes (17 and 23) from fittings (24 and 25).

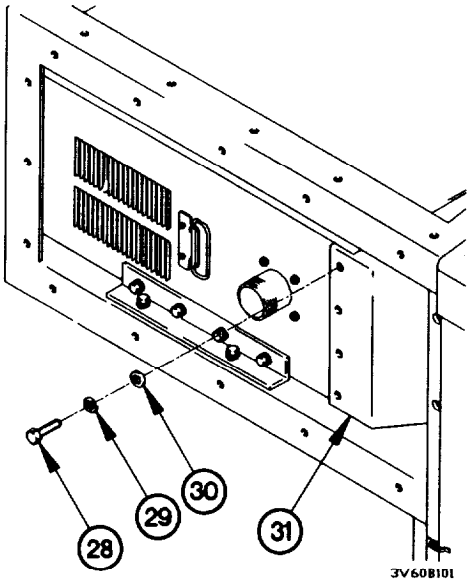
(9) Remove fuel tube (23) from fuel inlet port (26).

(10) Remove fuel tube (17) from pod panel (22).

(11) Remove fuel tube (18) from overflow port (27).

(12) Remove fuel tube (18) from pod panel (22).





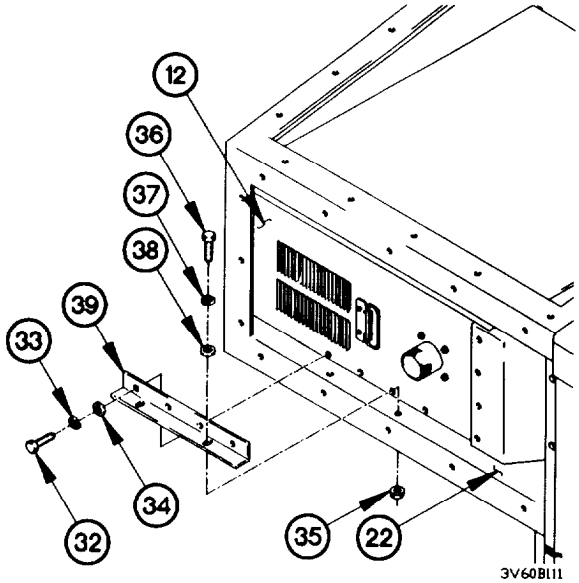
(13) Remove four screws (28), lockwashers (29), and washers (30) from heater duct (31). Discard lockwashers.

NOTE

Steps (14) and (15) require the aid of an assistant.

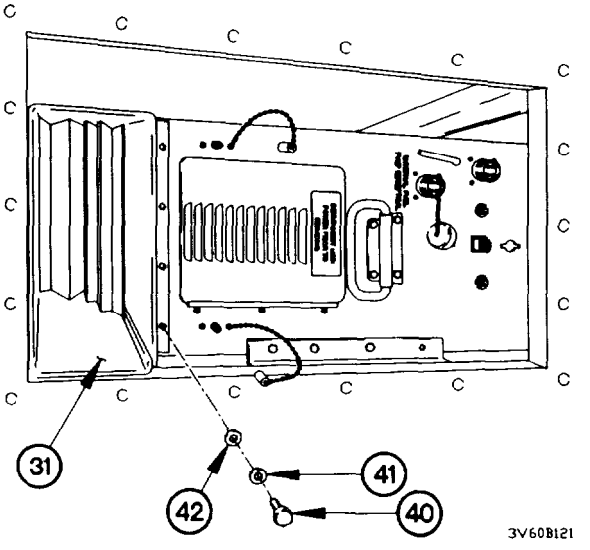
(14) Remove four screws (32), lockwashers (33), and washers (34) from heater (12). Discard lockwashers.

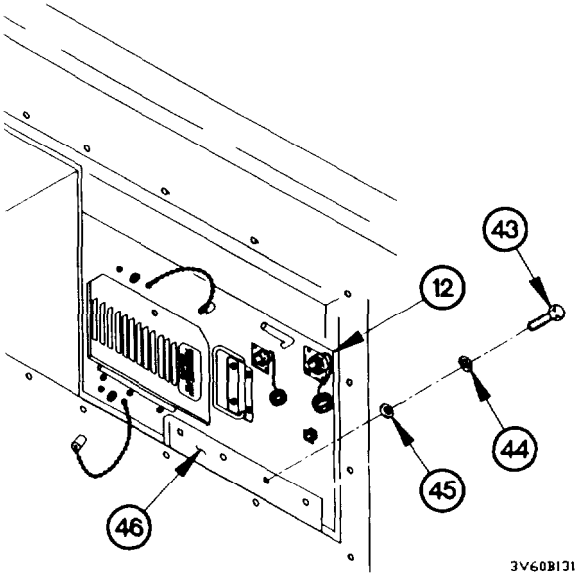
(15) Remove two self-locking nuts (35), screws (36), lockwashers (37), washers (38), and bracket (39) from pod panel (22). Discard lockwashers and self-locking nuts.



20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT (CONT)

(16) Remove four screws (40), lockwashers (41), and washers (42) from heater duct (31). Discard lockwashers.



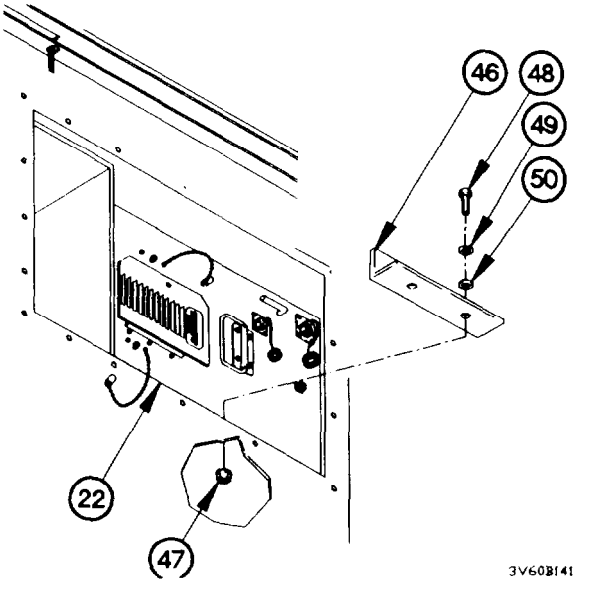


NOTE

Steps (17) and (18) require the aid of an assistant.

(17) Remove three screws (43), lockwashers (44), washers (45), and bracket (46) from heater (12). Discard lockwashers.

(18) Remove two self-locking nuts (47), screws (48), lockwashers (49), washers (50), and bracket (46) from pod panel (22). Discard lockwashers and self-locking nuts.

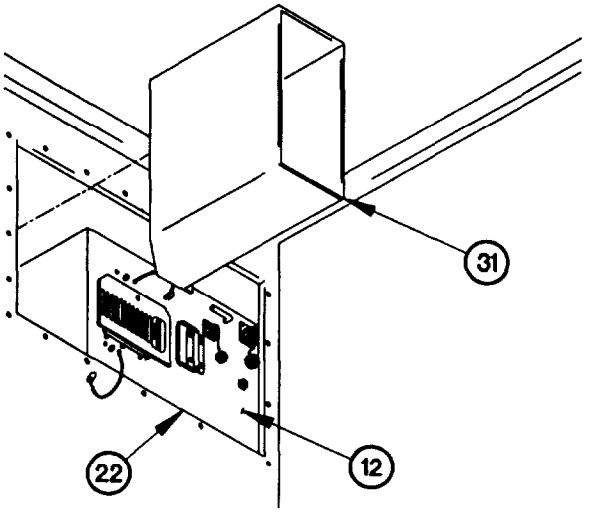


NOTE

Step (19) requires the aid of an assistant.

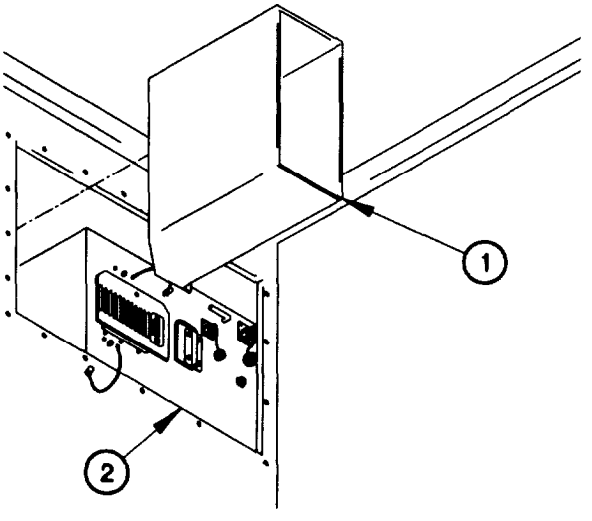
(19) Position heater (12) to access heater duct (31).

(20) Remove heater duct (31) from pod panel (22).



3V60D151

d. Heater Duct Installation.



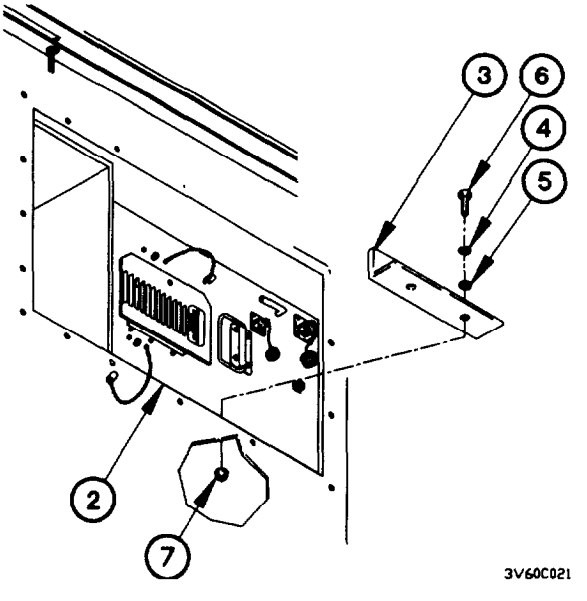
3V60C011

(1) Position heater duct (1) on pod panel (2).

NOTE

Steps (2) and (3) require the aid of an assistant.

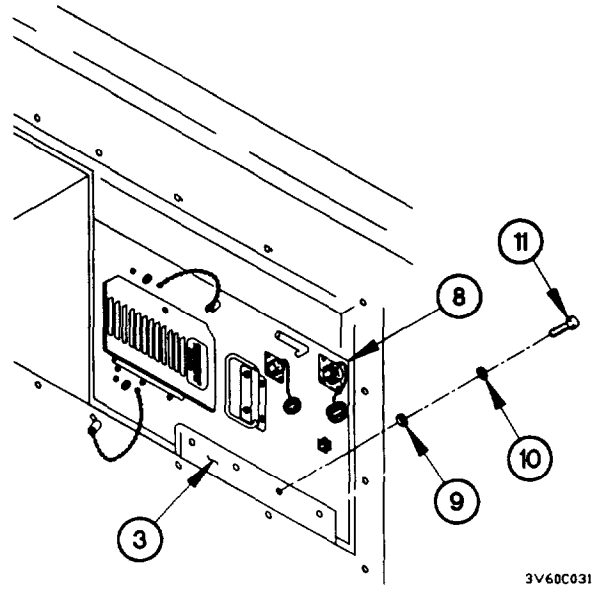
(2) Position bracket (3) on pod panel (2) with two washers (4), lockwashers (5), screws (6), and self-locking nuts (7).

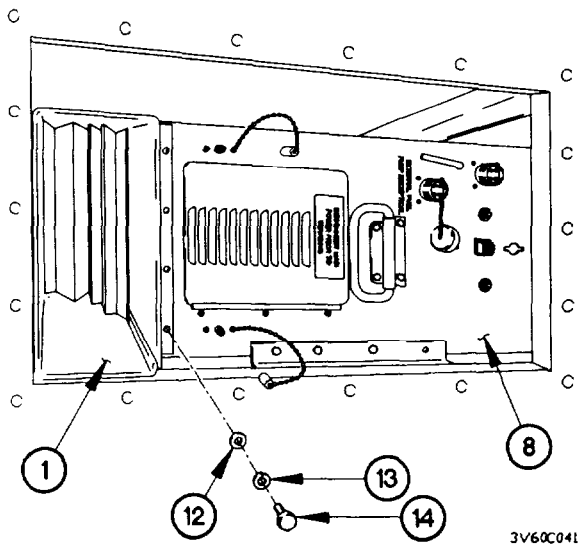


3V60C021

20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT (CONT)

(3) Install bracket (3) on heater (8) with three washers (9), lockwashers (10), and screws (11).





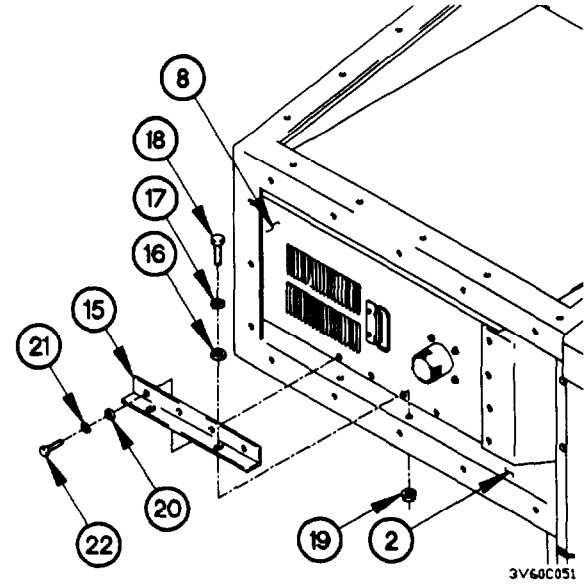
(4) Install heater duct (1) on heater (8) with four washers (12), lockwashers (13), and screws (14).

NOTE

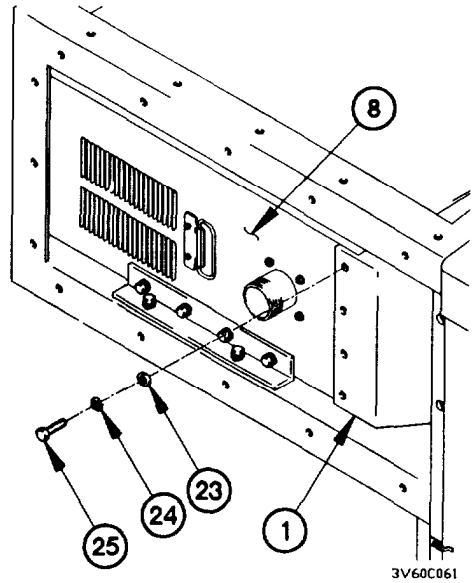
Steps (5) and (6) require the aid of an assistant.

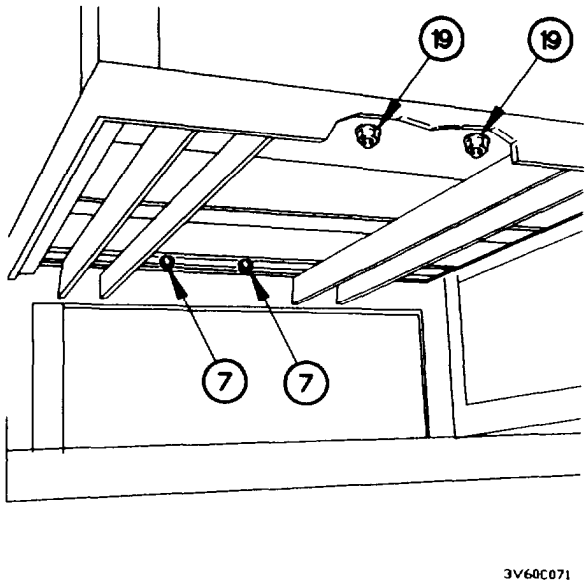
(5) Position bracket (15) on pod panel (2) with two washers (16), lockwashers (17), screws (18), and self-locking nuts (19).

(6) Install bracket (15) on heater (8) with four washers (20), lockwashers (21), and screws (22).



(7) Install heater duct (1) on heater (8) with four washers (23), lockwashers (24), and screws (25).

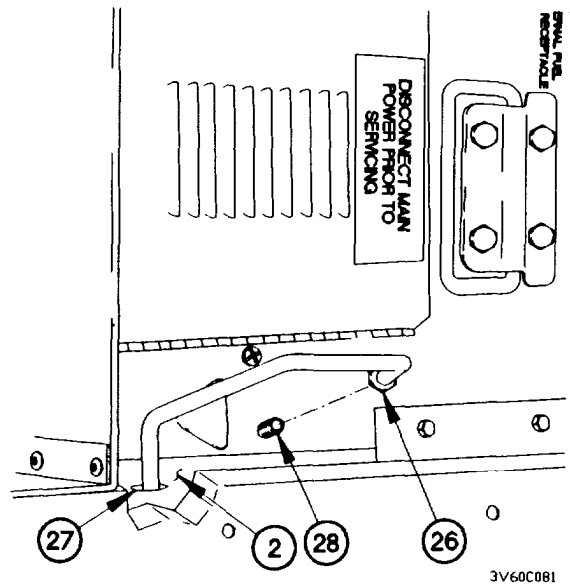




(8) Tighten two self-locking nuts (7 and 19).

(9) Route fuel tube (26) through hole (27) in pod panel (2).

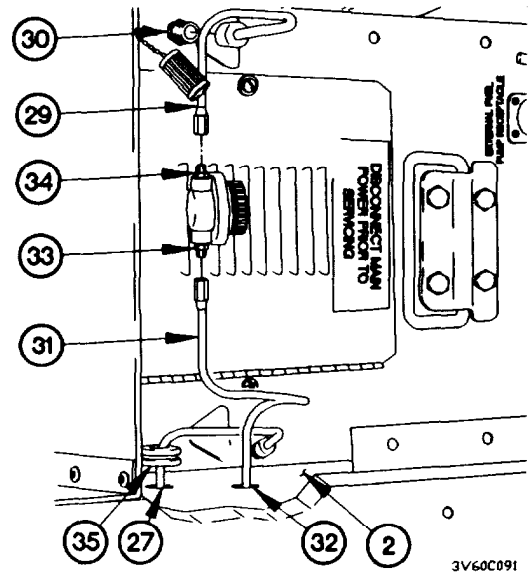
(10) Install fuel tube (26) on fuel overflow port (28).



20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT (CONT)

(11) Install fuel tube (29) on fuel inlet port (30).

(12) Route fuel tube (31) through hole (32) on pod panel (2).



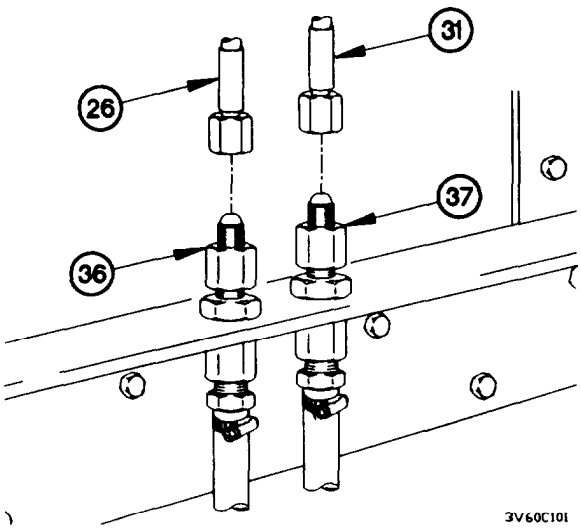
WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(13) Apply sealing compound to threads of fittings (33 and 34).

(14) Install fuel tubes (31 and 29) on fittings (33 and 34).

(15) Install grommet (35) in hole (27) on pod panel (2).

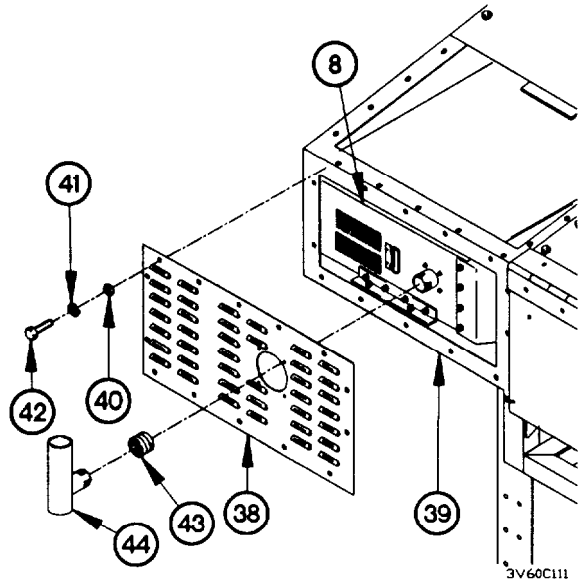


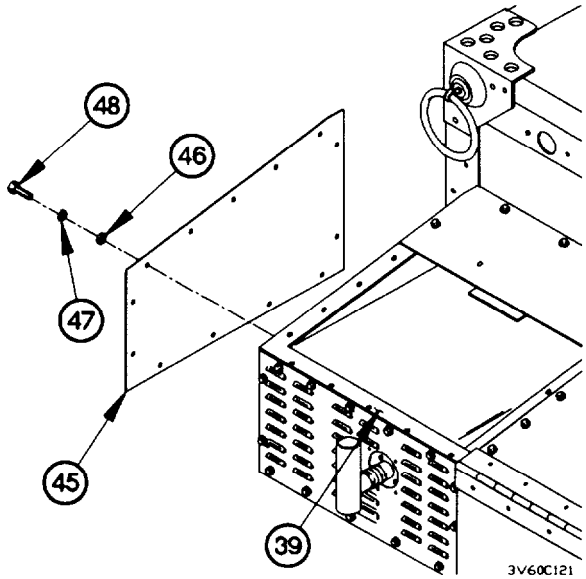
(16) Install fuel tubes (26 and 31) on adapters (36 and 37).

(17) Install curbside front panel (38) on pod frame (39) with 14 washers (40), lockwashers (41), and screws (42).

(18) Install coupling (43) on heater (8).

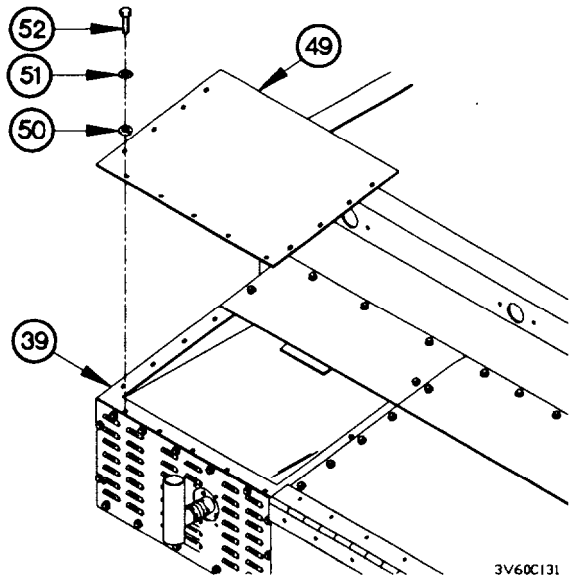
(19) Install exhaust pipe (44) on coupling (43).





(20) Install curbside panel (45) on pod frame (39) with 13 washers (46), lockwashers (47), and screws (48).

(21) Install curbside top front panel (49) on pod frame (39) with 13 washers (50), lockwashers (51), and screws (52).



20-50. M1079 HEATER DEFLECTOR/DUCT REPLACEMENT (CONT)

e. Follow-On Maintenance.

(1) Lower cab (TM 9-2320-365-10).

(2) Install M1079 heater fuel pump power cable (para 20-49).

(3) Connect AC power (TM 9-2320-365-10).

(4) Check heater for proper operation (TM 9-2320-365-10).

(5) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-51. M1079 HEATER REPLACEMENT

This task covers:

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

INITIAL SETUP

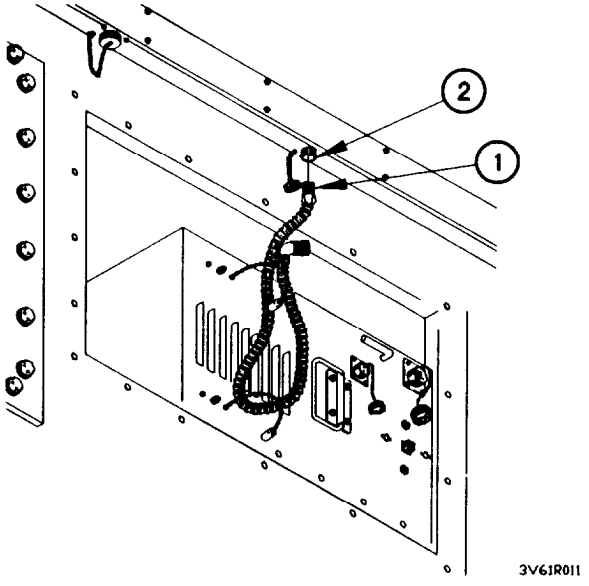
Equipment Conditions
M1079 heater duct removed (para 20-50).

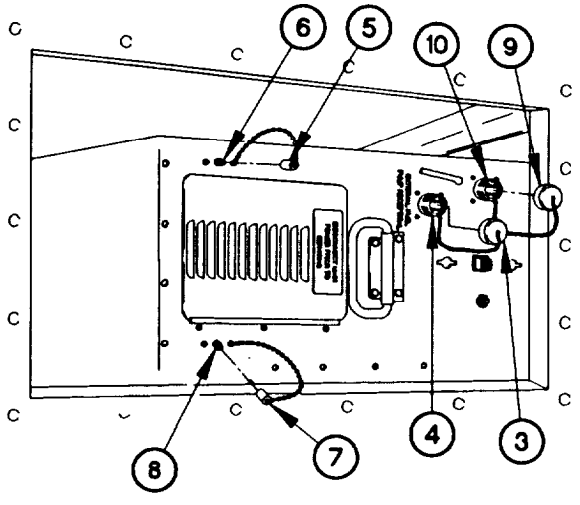
Tools and Special Tools
Tool Kit. Genl Mech (Item 44, Appendix C)

Personnel Required
(2)

a. Removal.

(1) Disconnect connector J245 (1) from thermostat connector (2).





(2) Install dust cap (3) on heater fuel pump power connector (4).

(3) Install dust cap (5) on fuel inlet port (6).

(4) Install dust cap (7) on fuel overflow port (8).

(5) Install dust cap (9) on heater power connector (10).

20-51. M1079 HEATER REPLACEMENT (CONT)

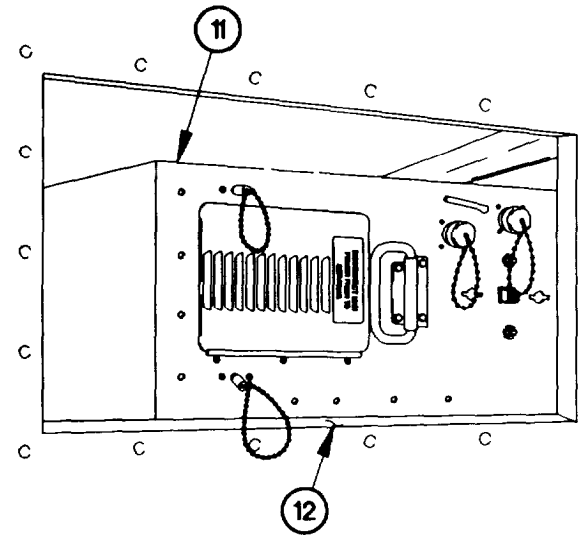
WARNING

Heater weighs approximately 120 lbs (54 kgs). Use the aid of an assistant when lifting. Failure to comply may result in injury to personnel.

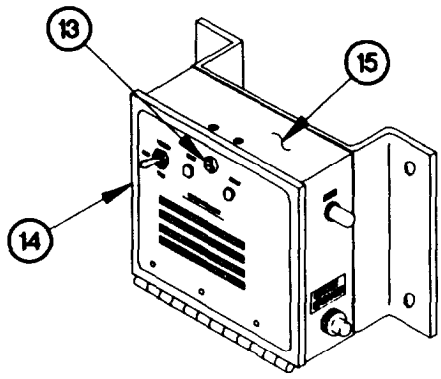
NOTE

Step (6) requires the aid of an assistant.

(6) Remove heater (11) from pod panel (12).



3V61R031



3V61R041

(7) Unlatch screw (13) on door (14).

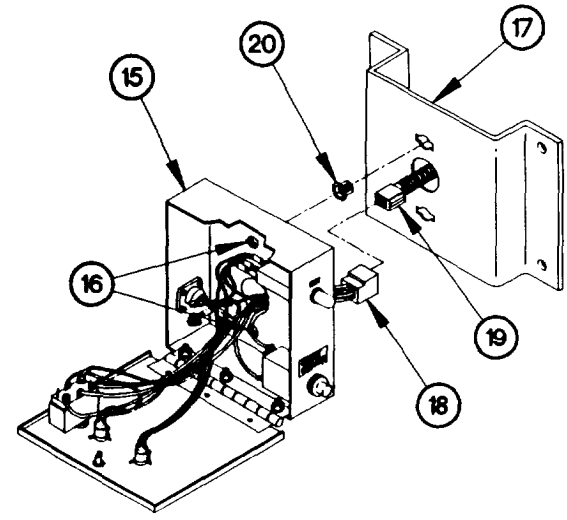
(8) Open door (14) on heater control unit (15).

(9) Unlatch two screws (16) on heater control unit (15).

(10) Remove heater control unit (15) from bracket (17).

(11) Disconnect connector P4 (18) from connector J4A (19).

(12) Remove two twist locks (20) from bracket (17).



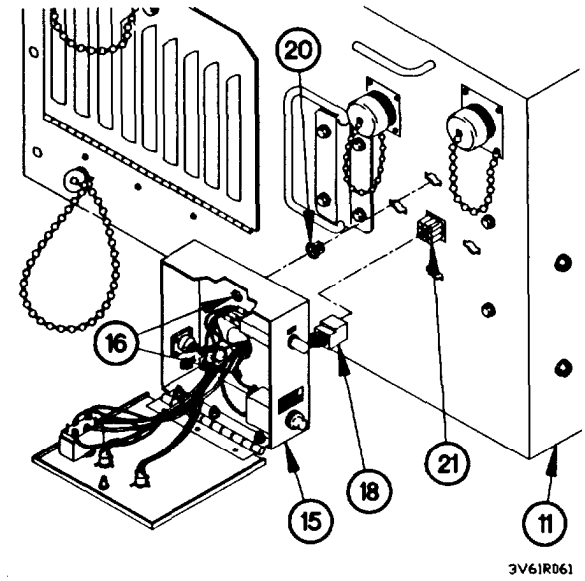
3V61R051

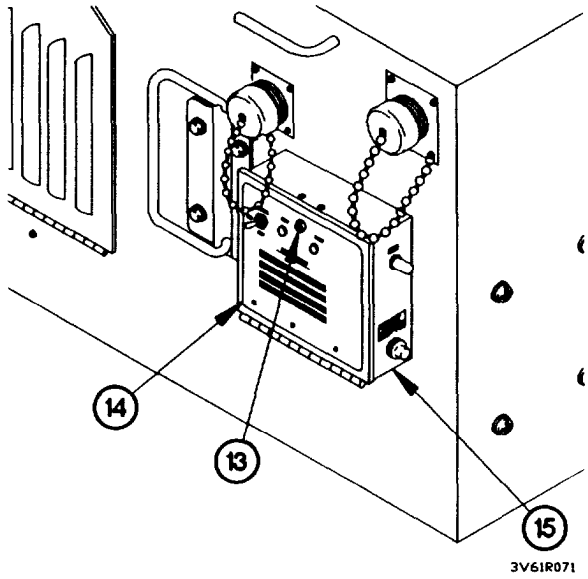
(13) Install two twist locks (20) on heater (11).

(14) Connect connector P4 (18) to connector J4 (21).

(15) Position heater control unit (15) on heater (11).

(16) Latch two screws (16) on heater control unit (15).



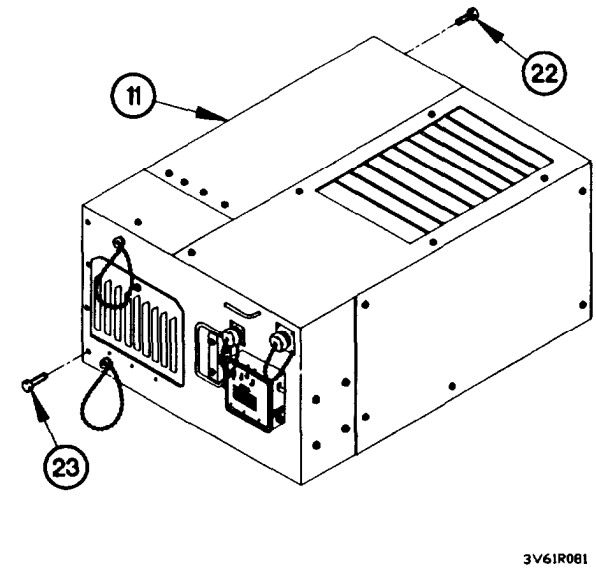


(17) Close door (14) on heater control unit (15).

(18) Latch screw (13) on door (14).

(19) Install eight screws (22) in heater (11).

(20) Install eight screws (23) in heater (11).



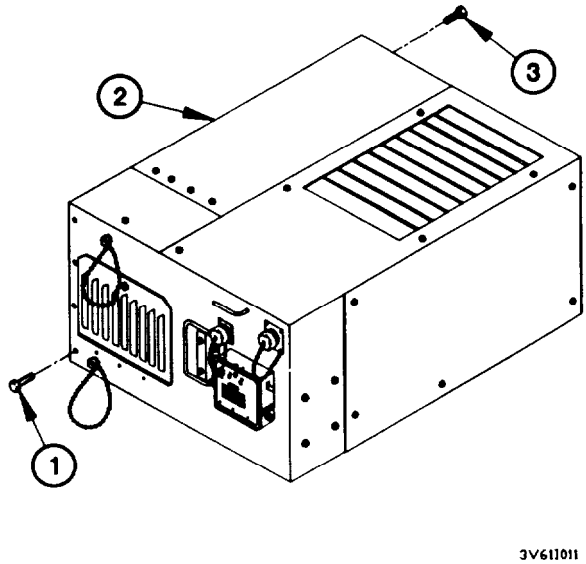
20-51. M1079 HEATER REPLACEMENT (CONT)

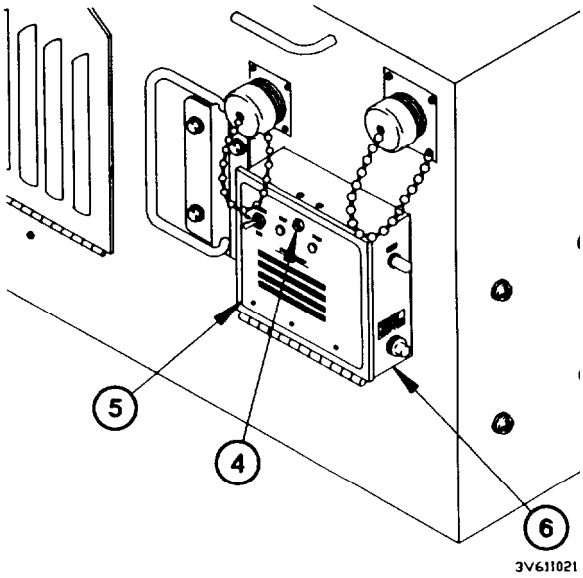
b. Installation.

(1) Remove eight screws (1) from heater (2).

(2) Remove eight screws (3) from heater (2).

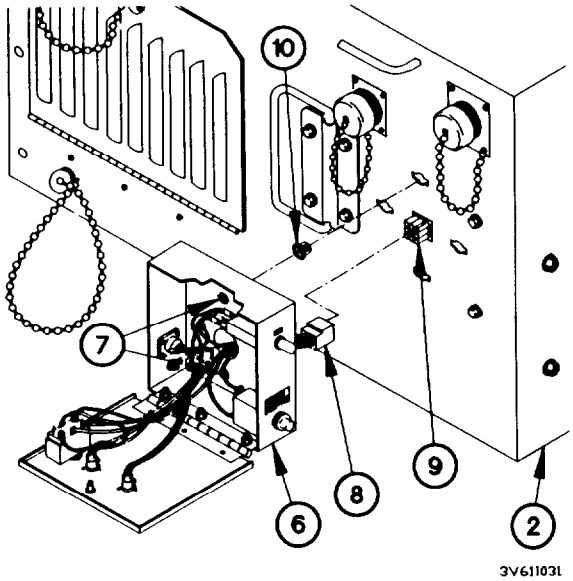
(3) Retain eight screws (1 and 3) for future use.





(4) Unlatch screw (4) on door (5).

(5) Open door (5) on heater control unit (6).



(6) Unlatch two screws (7) on heater control unit (6).

(7) Remove heater control unit (6) from heater (2).

(8) Disconnect connector P4 (8) from connector J4 (9).

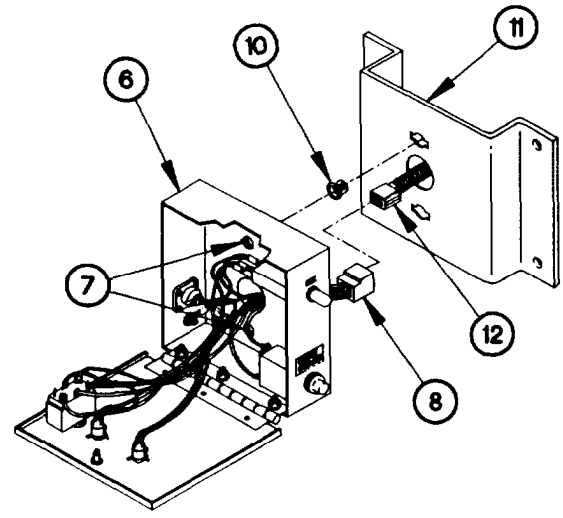
(9) Remove two twist locks (10) from heater (2).

(10) Install two twist locks (10) on bracket (11).

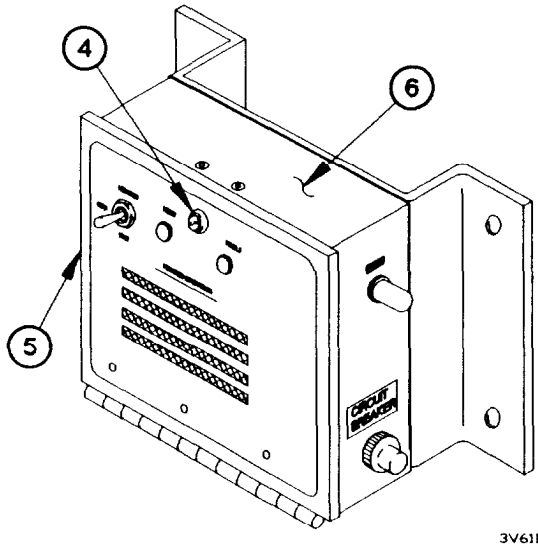
(11) Connect connector P4 (8) to connector J4A (12).

(12) Position heater control unit (6) on bracket (11).

(13) Latch two screws (7) on heater control unit (6).



3V611041



3V611051

(14) Close door (5) on heater control unit (6).

(15) Latch screw (4) on door (5).

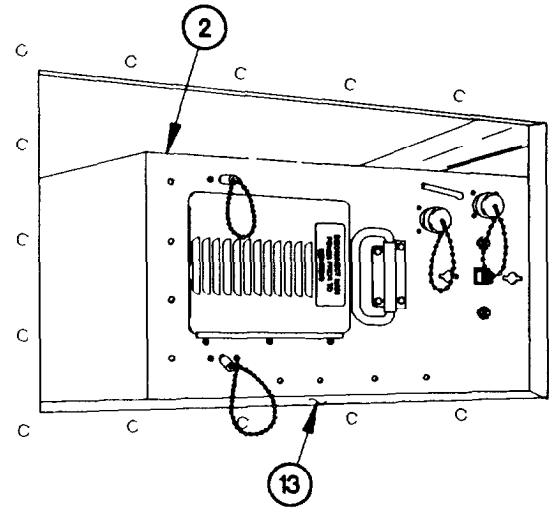
WARNING

Heater weighs approximately 120 lbs (54 kgs). Use the aid of an assistant when lifting. Failure to comply may result in injury to personnel.

NOTE

Step (16) requires the aid of an assistant.

(16) Install heater (2) on pod panel (13).



3V611061

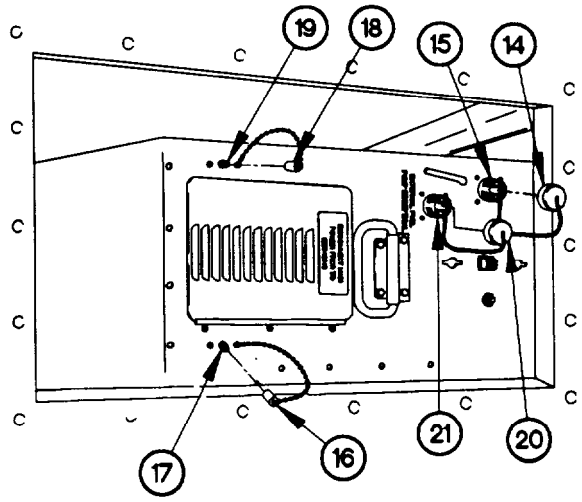
20-51. M1079 HEATER REPLACEMENT (CONT)

(17) Remove dust cap (14) from heater power connector (15).

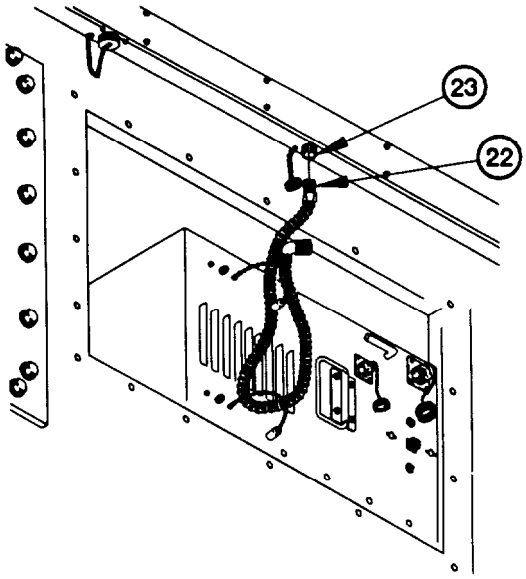
(18) Remove dust cap (16) from fuel overflow port (17).

(19) Remove dust cap (18) from fuel inlet port (19).

(20) Remove dust cap (20) from heater fuel pump power connector (21).



3V611071



3V611081

(21) Connect connector J245 (22) to thermostat connector (23).

c. Follow-On Maintenance.

Install M1079 heater duct (para 20-50).

End of Task.

20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION

This task covers:

a. Installation

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (5) (Item 138, Appendix G)
Nut, Self-Locking (Item 119, Appendix G)
Nut, Self-Locking (2) (Item 136, Appendix G)

Personnel Required
(2)

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

a. Installation.

WARNING

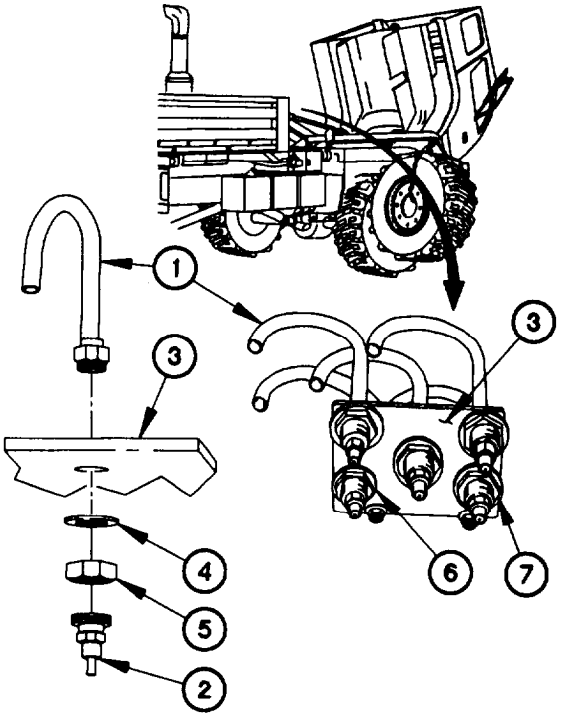
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(1) Apply antiseize compound to threads of five breather tubes (1).

(2) Install five fittings (2) on bracket (3) with five washers (4) and nuts (5).

(3) Apply antiseize compound to threads of four reducers (6) and one reducer (7).

(4) Install four reducers (6) and reducer (7) on fittings (2).

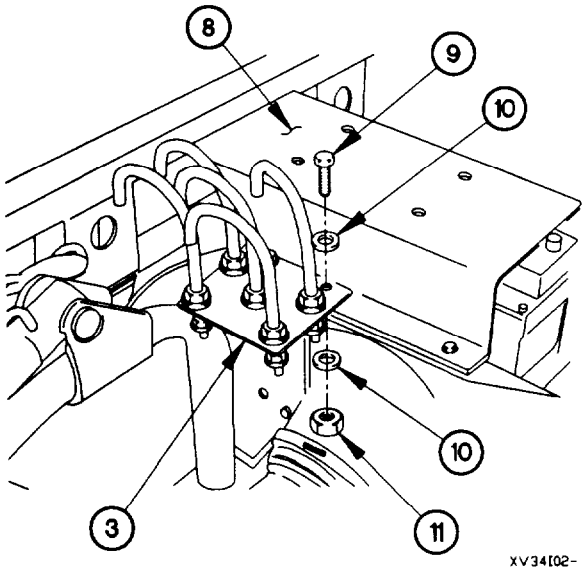


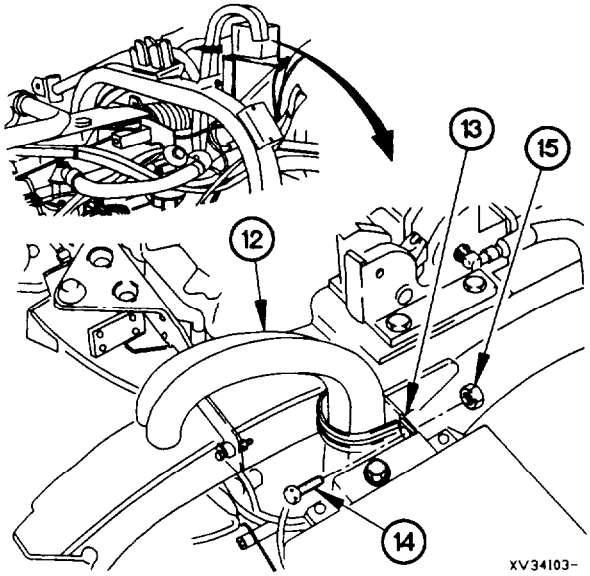
XV34101B

20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

(5) Position bracket (3) on guard (8) with two screws (9), four washers (10), and two self-locking nuts (11).

(6) Tighten two self-locking nuts (11) to 13-16 lb-ft (18-22 N•m).

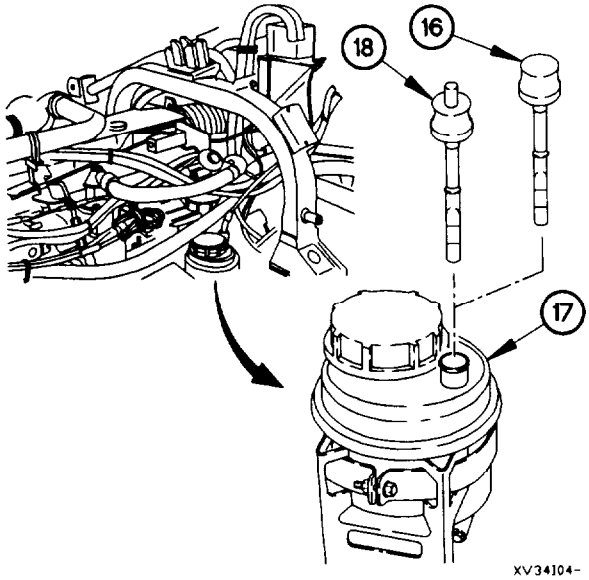




(7) Install breather tube assembly (12) on spare tire retainer (13) with two screws (14) and self-locking nuts (15).

(8) Remove dipstick (16) from power steering reservoir (17). Retain dipstick for future use.

(9) Install fording dipstick (18) in power steering reservoir (17).

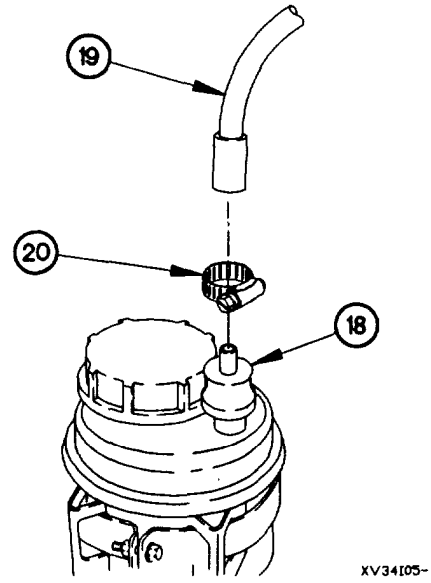


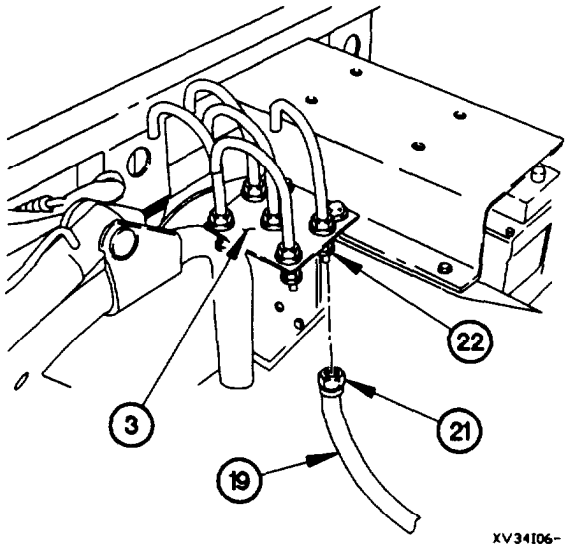
NOTE

Perform steps (10) through (14) on vehicles not equipped with PTO.

(10) Cut hose (19) to length of three feet.

(11) Install three foot hose (19) on fording dipstick (18) with clamp (20).





(12) Route three foot hose (19) to bracket (3).

(13) Install concave fitting (21) on three foot hose (19).

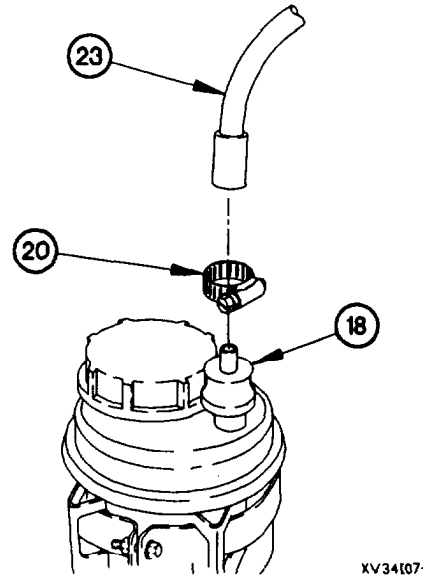
(14) Install concave fitting (21) on breather tube fitting (22).

NOTE

Perform steps (15) through (24) on vehicles equipped with PTO.

(15) Cut hose (23) to length of 25 inches.

(16) Install clamp (20) and 25 inch hose (23) on fording dipstick (18).



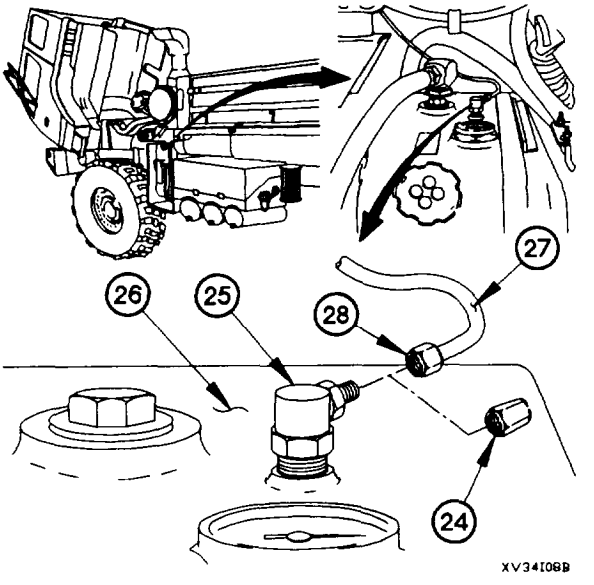
20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

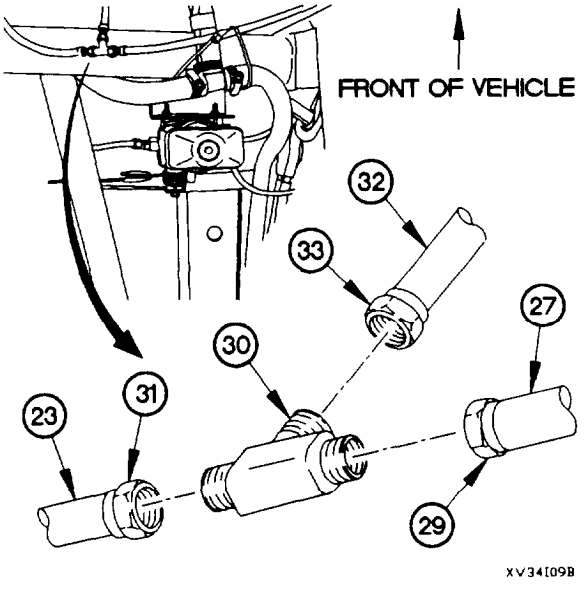
(17) Remove vent plug cap (24) from vent plug fitting (25) on hydraulic reservoir (26). Retain vent plug cap for future use.

(18) Cut hose (27) to length of 22 inches.

(19) Install convex fitting (28) on 22 inch hose (27).

(20) Install convex fitting (28) on vent plug fitting (25).





(21) Install concave fitting (29) on 22 inch hose (27).

(22) Install concave fitting (29) on tee (30).

(23) Install concave fitting (31) on 25 inch hose (23).

(24) Install concave fitting (31) on tee (30).

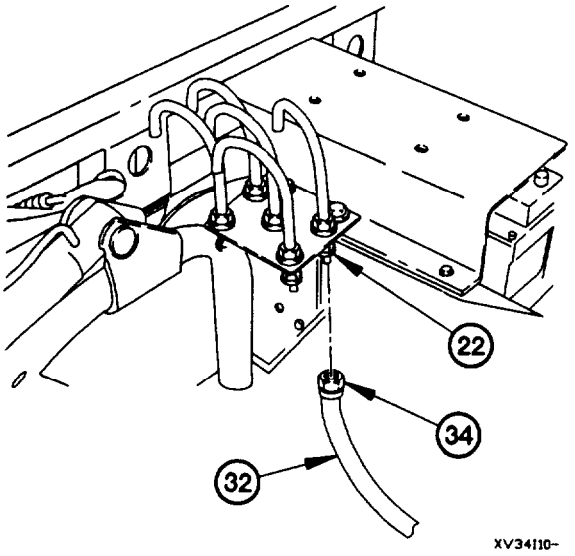
(25) Cut hose (32) to length of 22 inches.

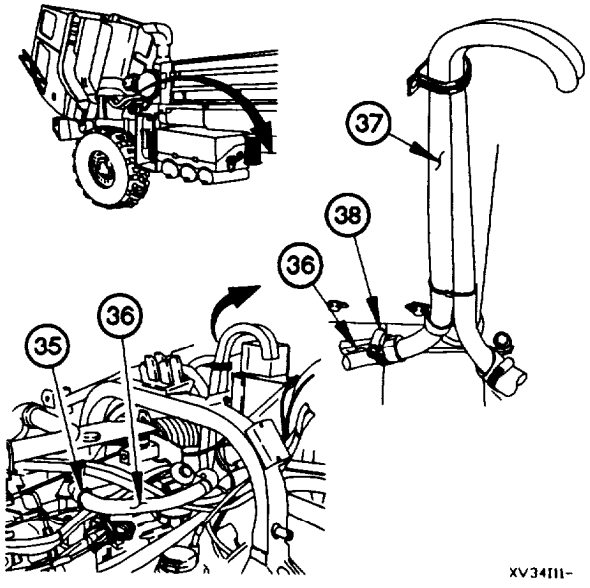
(26) Install concave fitting (33) on 22 inch hose (32).

(27) Install concave fitting (33) on tee (30).

(28) Install concave fitting (34) on 22 inch hose (32).

(29) Install concave fitting (34) on breather tube fitting (22).





(30) Loosen clamp (35) on breather hose (36).

(31) Position breather hose (36) for routing to breather tube (37).

(32) Tighten clamp (35) on breather hose (36).

(33) Install breather hose (36) on breather tube (37) with clamp (38).

20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

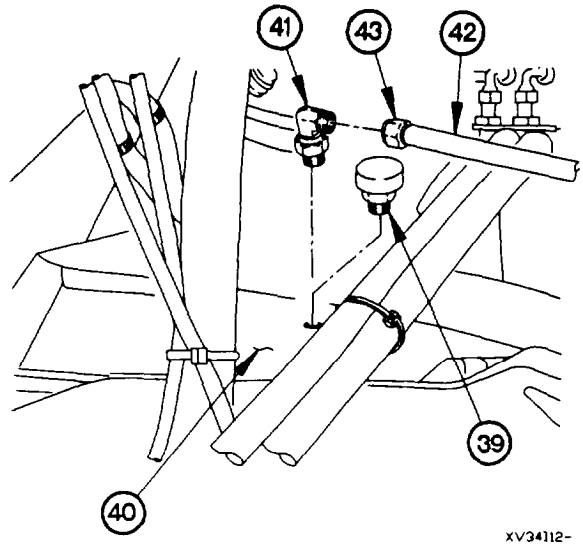
(34) Remove vent plug (39) from transmission (40). Retain vent plug for future use.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

NOTE

Install 90-degree fitting in transmission with threads facing towards front of vehicle.



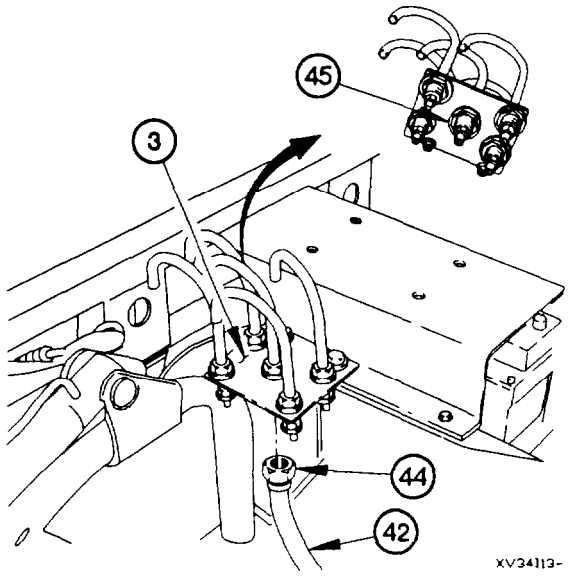
(35) Apply antiseize compound to threads of 90-degree fitting (41).

(36) Install 90-degree fitting (41) in transmission (40).

(37) Cut hose (42) to length of two feet.

(38) Install concave fitting (43) on two foot hose (42).

(39) Install concave fitting (43) on 90-degree fitting (41).



(40) Route two foot hose (42) to bracket (3).

(41) Install concave fitting (44) on two foot hose (42).

(42) Install concave fitting (44) on breather tube fitting (45).

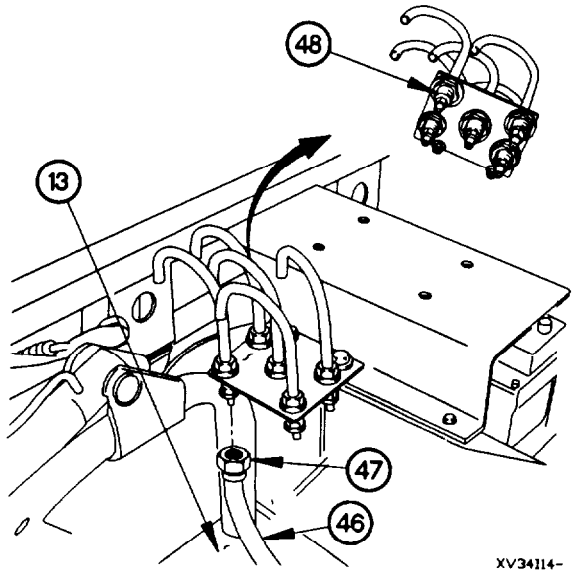
NOTE

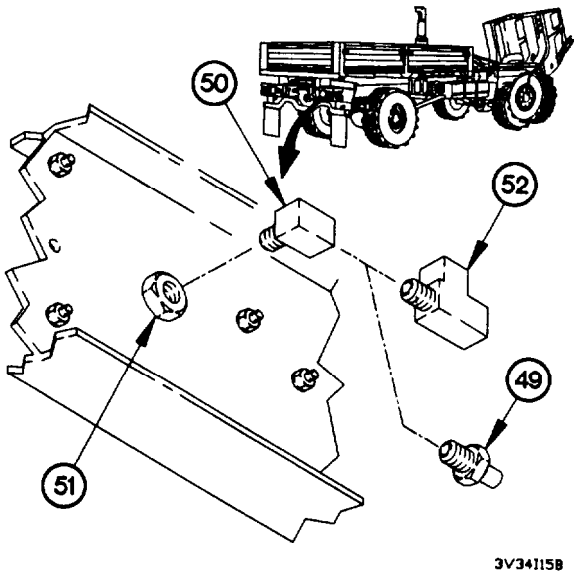
Remove plastic cable ties as required.

(43) Remove five foot fuel hose (46) from spare tire retainer (13).

(44) Install concave fitting (47) on five foot fuel hose (46).

(45) Install concave fitting (47) on breather tube fitting (48).





(46) Remove the rear axle bulkhead fitting (49) from 90-degree fitting (50). Retain bulkhead fitting with vent plug for future use.

(47) Remove 90-degree fitting (50) from bulkhead fitting (51).

(48) Apply antiseize compound to threads of tee (52).

(49) install tee (52) in 90-degree fitting (50).

20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

NOTE

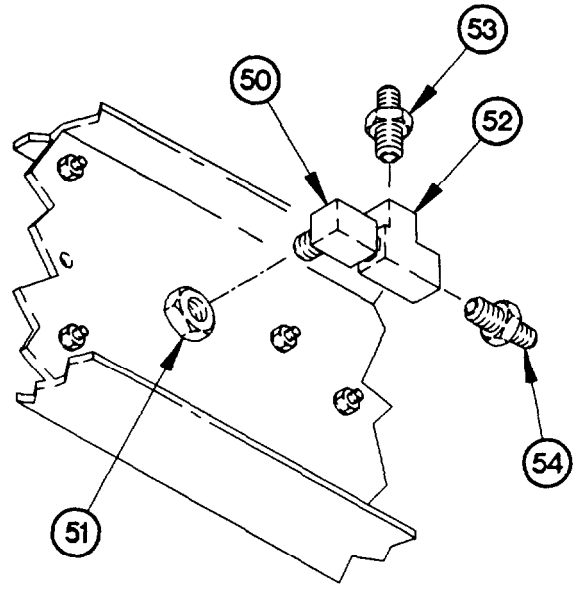
Install 90-degree fitting in bulkhead fitting with 90-degree fitting pointing upward and to the right.

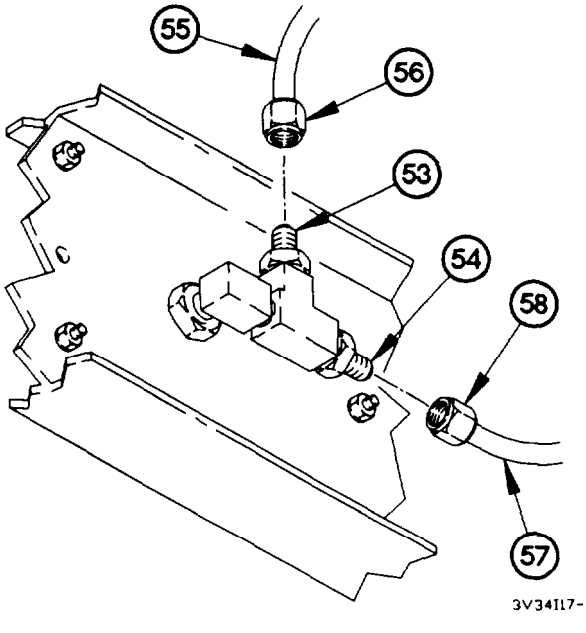
(50) Apply antiseize compound to threads of 90-degree fitting (50).

(51) Install 90-degree fitting (50) in bulkhead fitting (51).

(52) Apply antiseize compound to threads of fittings (53 and 54).

(53) Install fittings (53 and 54) in tee (52).





(54) Cut hose (55) to length of one foot.

(55) Install concave fitting (56) on one foot hose (55).

(56) Install concave fitting (56) on fitting (53).

(57) Cut hose (57) to length of 17 feet.

(58) Install concave fitting (58) on 17 foot hose (57).

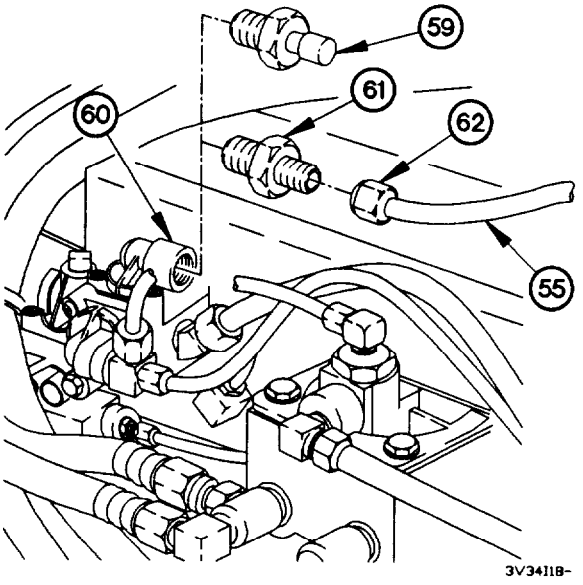
(59) Install concave fitting (58) on fitting (54).

NOTE

Install plastic cable ties as required.

(60) Route 17 foot hose (57) along inside of right frame rail towards front of vehicle.

(61) Remove vent valve (59) from air brake protecting valve (60). Retain vent valve for future use.



WARNING

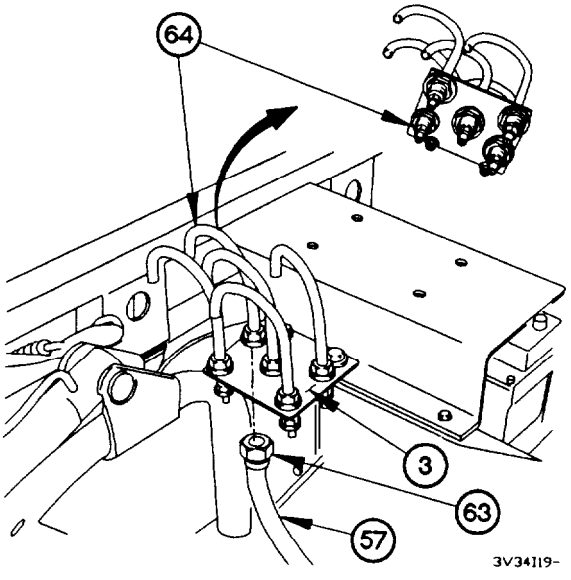
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(62) Apply antiseize compound to threads of fitting (61).

(63) Install fitting (61) in air brake protecting valve (60).

(64) Install concave fitting (62) on one foot hose (55).

(65) Install concave fitting (62) on fitting (61).



(66) Route loose end of 17 foot hose (57) to bracket (3).

(67) Install concave fitting (63) on 17 foot hose (57).

(68) Install concave fitting (63) on breather tube fitting (64) on bracket (3).

20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

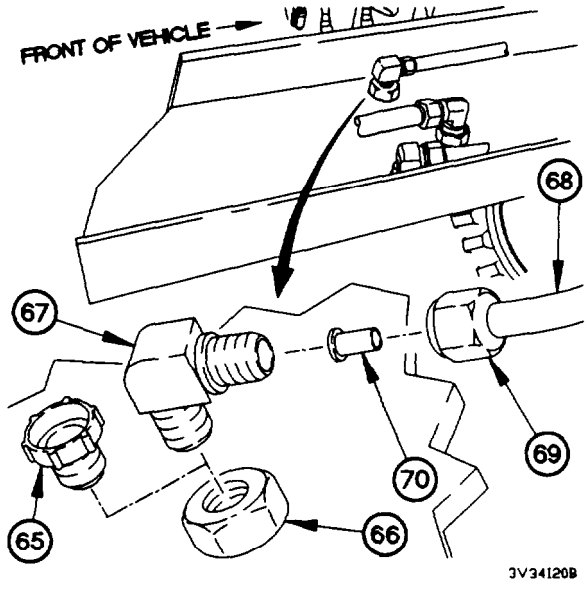
NOTE

Air brake fittings referenced in the following steps are preassembled with the following parts: nut (a), ferrule (b), and tee (c).

(69) Remove vent plug (65) from left front brake exhaust port (66). Retain vent plug for future use.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



(70) Apply antiseize compound to threads of 90-degree fitting (67).

(71) Install 90-degree fitting (67) in left front brake exhaust port (66).

(72) Cut hose (68) to length of 12 feet.

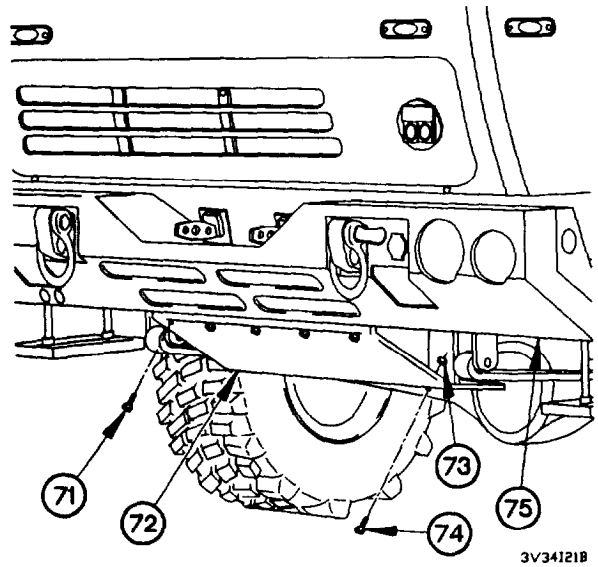
(73) Position nut (69) and ferrule (70) on 12 foot hose (68)

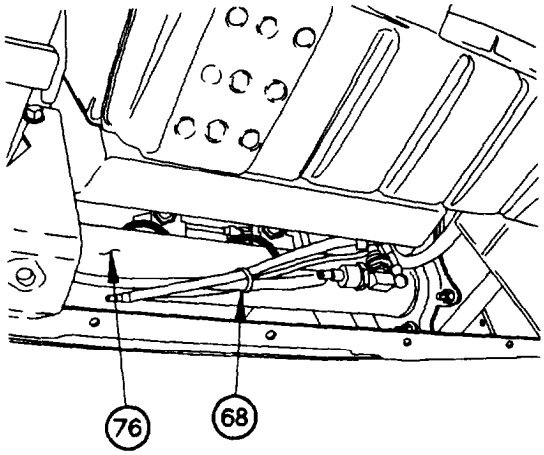
(74) Install 12 foot hose (68) on 90-degree fitting (67) with nut (69).

(75) Route 12 foot hose (68) forward along left side frame rail.

(76) Remove five screws (71) from gravel deflector (72).

(77) Remove five self-locking nuts (73), five screws (74), and gravel deflector (72) from front bumper (75). Discard self-locking nuts.

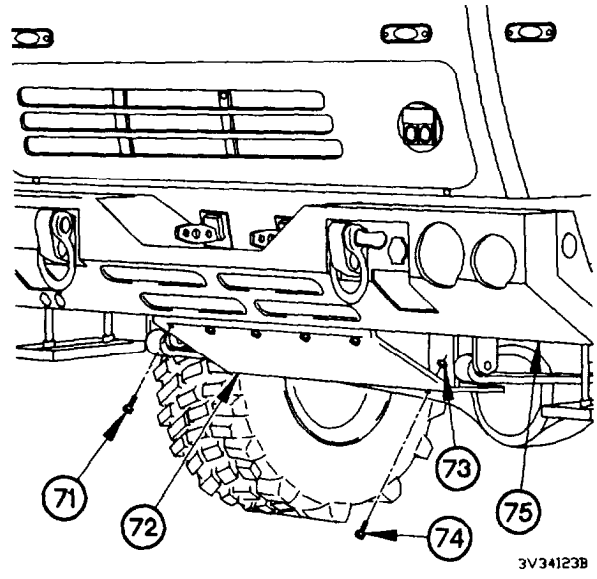




(78) Route 12 foot hose (68) forward to front crossmember (76).

(79) Route 12 foot hose (68) across front crossmember (76).

(80) Install gravel deflector (72) on front bumper (75) with five screws (71), five screws (74), and five self-locking nuts (73).



20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

(81) Route 12 foot hose (68) along the right frame rail to the right front brake exhaust port (77).

(82) Remove vent plug (78) from right front brake exhaust port (77). Retain vent plug for future use.

WARNING

Adhesives, solvents, and sealing compounds can bum easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(83) Apply antiseize compound to threads of tee (79).

(84) Install tee (79) in right front brake exhaust port (77).

(85) Position nut (80) and ferrule (81) on 12 foot hose (68).

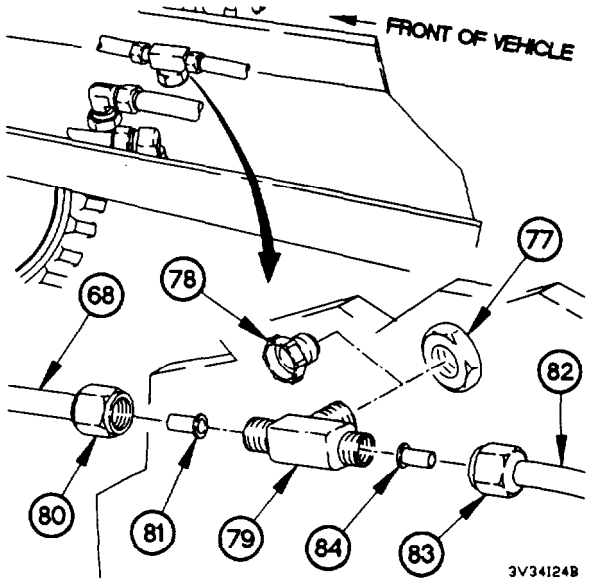
(86) Install 12 foot hose (68) on tee (79) with nut (80).

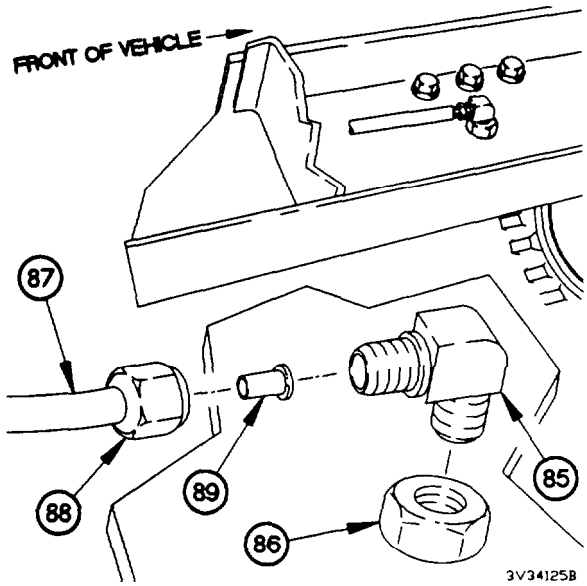
(87) Cut hose (82) to length of three feet.

(88) Position nut (83) and ferrule (84) on three foot hose (82).

(89) Install three foot hose (82) on tee (79) with nut (83).

(90) Route three foot hose (82) along the right frame rail.





(91) Apply antiseize compound to threads of 90-degree fitting (85).

(92) Install 90-degree fitting (85) in left rear brake exhaust port (86).

(93) Cut hose (87) to length of four feet.

(94) Position nut (88) and ferrule (89) on four foot hose (87).

(95) Install four foot hose (87) on 90-degree fitting (85) with nut (88).

(96) Route four foot hose (87) to right rear brake exhaust port (90).

WARNING

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(97) Apply antiseize compound to threads of tee (91).

(98) Install tee (91) in right rear brake exhaust port (90).

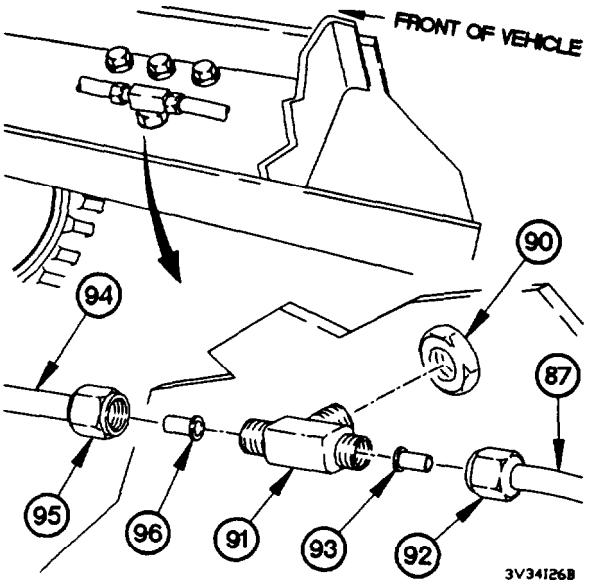
(99) Position nut (92) and ferrule (93) on four foot hose (87).

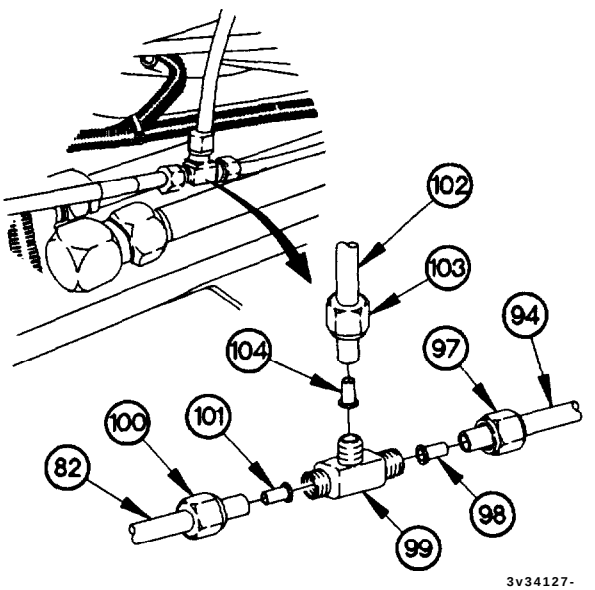
(100) Install four foot hose (87) on tee (91) with nut (92).

(101) Cut hose (94) to length of 10 feet six inches.

(102) Position nut (95) and ferrule (96) on 10 foot six inch hose (94).

(103) Install 10 foot six inch hose (94) on tee (91) with nut (95).





(104) Route 10 foot six inch hose (94) along right frame rail.

(105) Position nut (97) and ferrule (98) on 10 foot six inch hose (94).

(106) Install 10 foot six inch hose (94) on tee (99) with nut (97).

(107) Position nut (100) and ferrule (101) on three foot hose (82).

(108) Install three foot hose (82) on tee (99) with nut (100).

(109) Cut hose (102) to length of five feet.

(110) Position nut (103) and ferrule (104) on five foot hose (102).

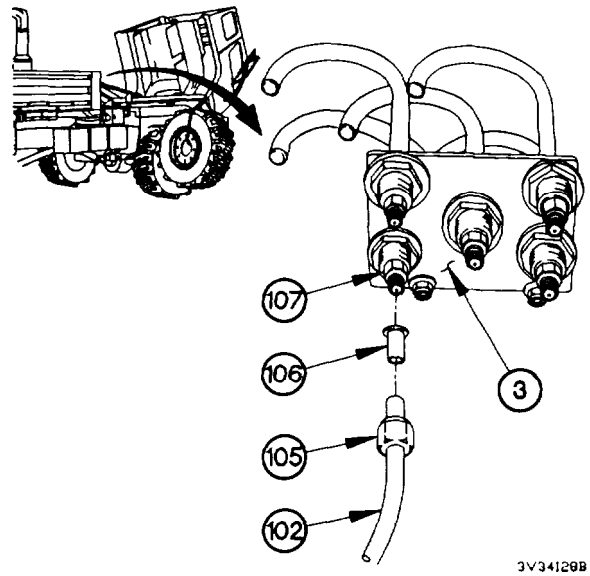
(111) Install five foot hose (102) on tee (99) with nut (103).

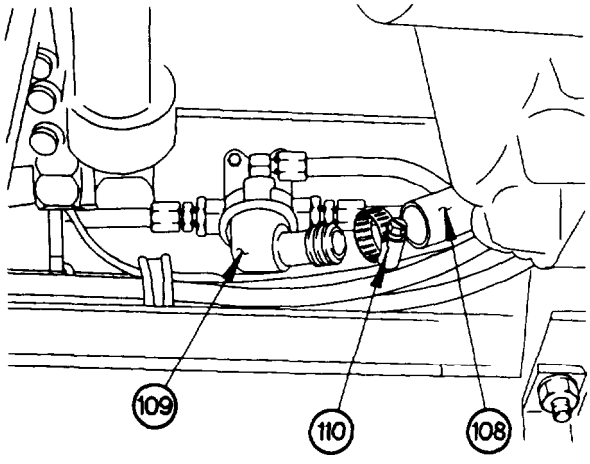
20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

(112) Route five foot hose (102) to bracket (3).

(113) Position nut (105) and ferrule (106) on five foot hose (102).

(114) Install five foot hose (102) on breather tube fitting (107) with nut (105).





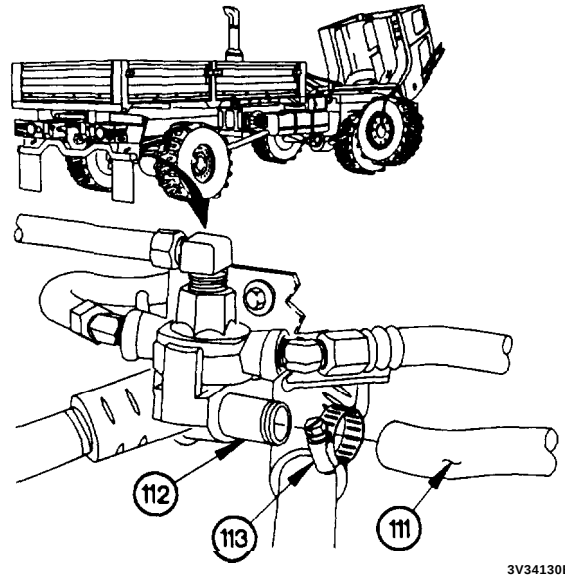
(115) Cut hose (108) to length of 17 inches.

(116) Install 17 inch hose (108) on front axle quick release valve (109) with clamp (110).

(117) Cut hose (111) to length of 10 feet.

(118) Install 10 foot hose (111) on rear axle quick release valve (112) with clamp (113).

(119) Route 10 foot hose (111) forward along right frame rail.

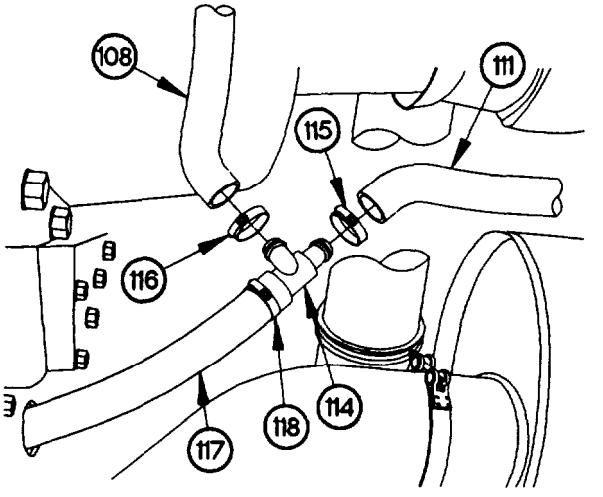


(120) Install 10 foot hose (111) on tee (114) with clamp (115).

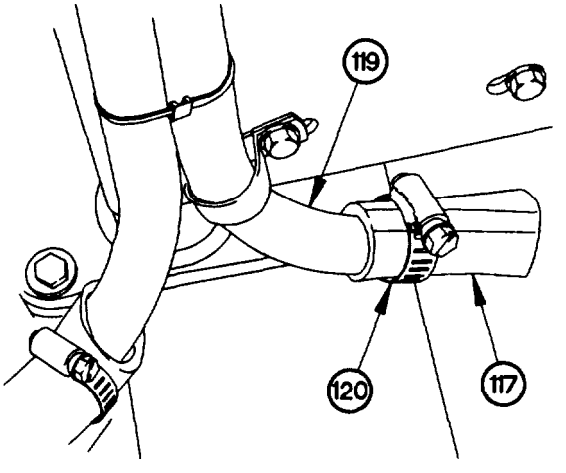
(121) Install 17 inch hose (108) on tee (114) with clamp (116).

(122) Cut hose (117) to length of five feet.

(123) Install five foot hose (117) on tee (114) with clamp (118).



3V34[3]-



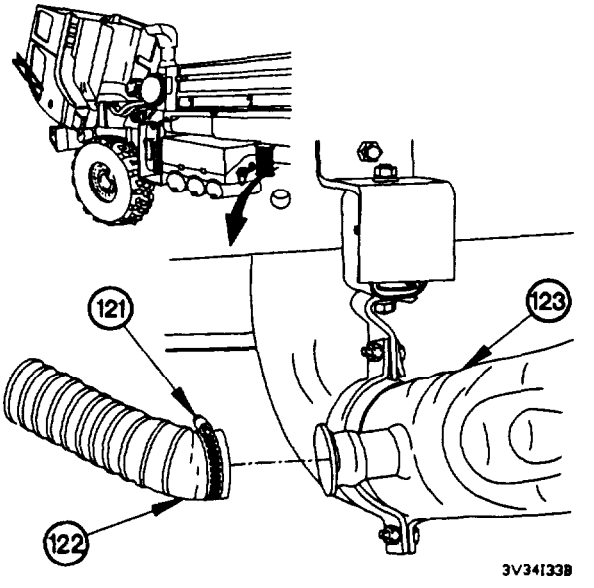
3v3413i!-

(124) Route five foot hose (117) to breather tube (119).

(125) Install five foot hose (117) on breather tube (119) with clamp (120).

(126) Loosen clamp (121) on particle extraction hose (122).

(127) Remove particle extraction hose (122) from tail pipe (123).



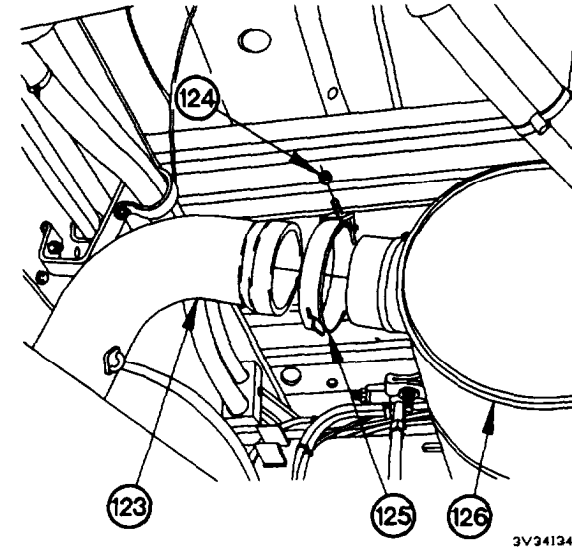
3V34[33B

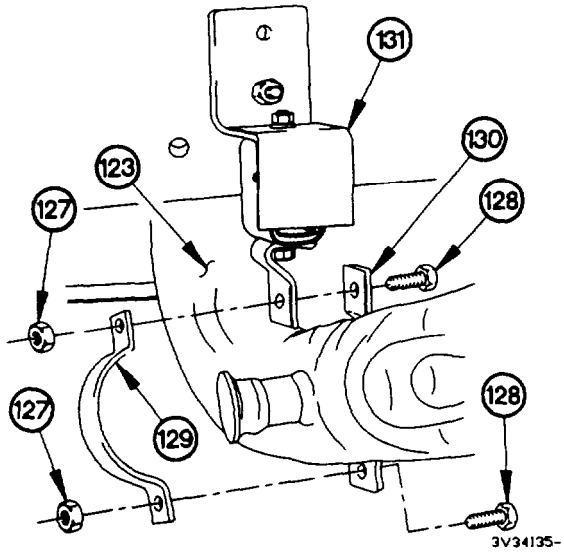
20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

(128) Remove self-locking nut (124) from clamp (125). Discard self-locking nut.

(129) Disconnect tailpipe (123) from muffler (126).

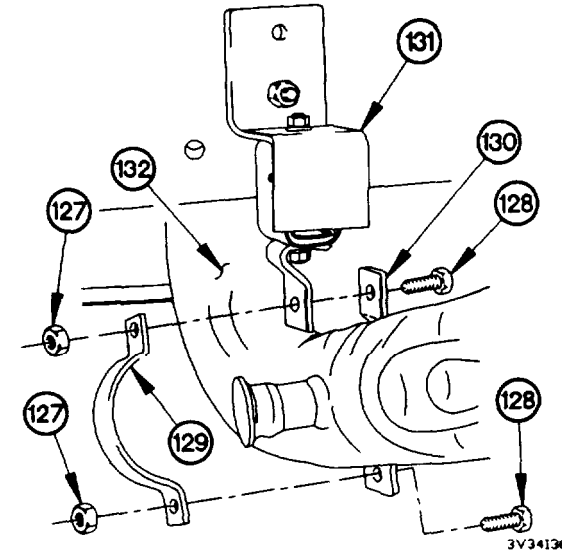
(130) Remove clamp (125) from tailpipe (123).





(131) Remove two self-locking nuts (127), screws (128), loop clamp halves (129 and 130), and tailpipe (123) from tailpipe bracket (131). Discard self-locking nuts.

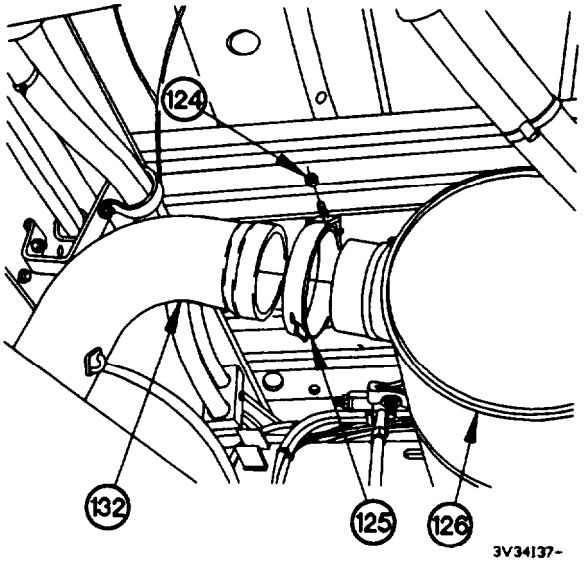
(132) Position loop clamp half (130), fording tailpipe (132), and loop clamp half (129) on tailpipe bracket (131) with two screws (128) and self-locking nuts (127).

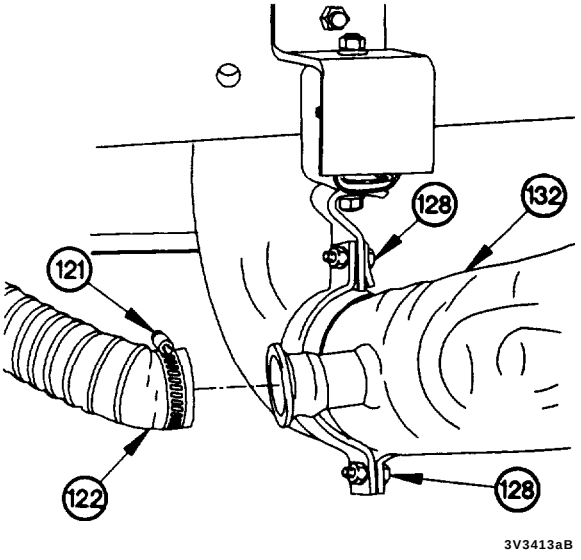


(133) Position clamp (125) and fording tailpipe (132) on muffler (128).

(134) Position self-locking (124) on clamp (125).

(135) Tighten self-locking nut (124) to 72-120 lb-in. (8-14 (N•m).





(136) Tighten two screws (128) to 26-32 lb-ft (35-43 N•m).

(137) Install particle extraction hose (122) on fording tailpipe (132) with clamp (121).

(138) Install deflection tube (133) on tailpipe extension (134) with clamp (135).

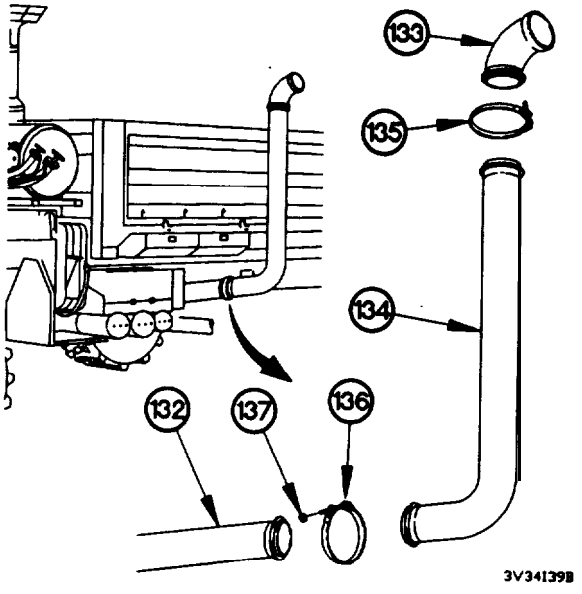
NOTE

Steps (139) and (140) require the aid of an assistant.

(139) Position tailpipe extension (134) and clamp (136) on fording tailpipe (132).

(140) Position self-locking nut (137) on clamp (136).

(141) Tighten self-locking nut (137) to 72-120 lb-in. (8-14 N•m).



20-52. DEEP WATER FORDING KIT INITIAL INSTALLATION (CONT)

b. Follow-On Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Lower cab (TM 9-2320-365-10).

End of Task.

20-53. DEEP WATER FORDING KIT REMOVAL

This task covers:

a. Removal

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (2) (Item 145, Appendix G)
Nut, Self-Locking (2) (Item 119, Appendix G)
Nut, Self-Locking (2) (Item 136, Appendix G)
Nut, Self-Locking (2) (Item 134, Appendix G)
Nut, Self-Locking (5) (Item 138, Appendix G)
Nut, Self-Locking (2) (Item 143. Appendix G)

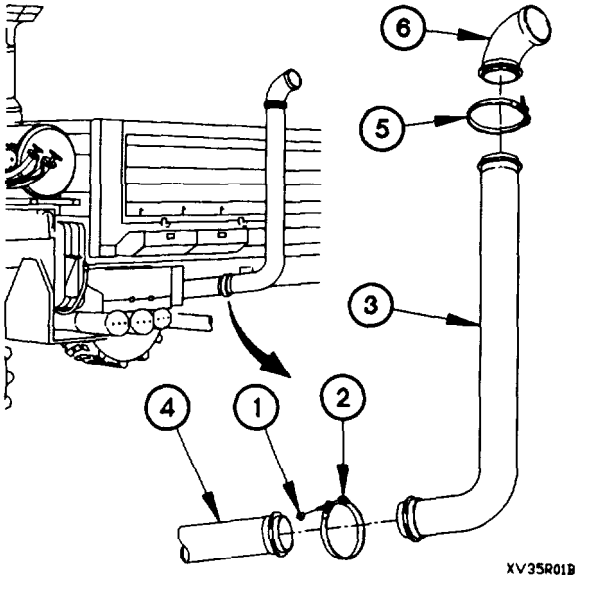
WARNING

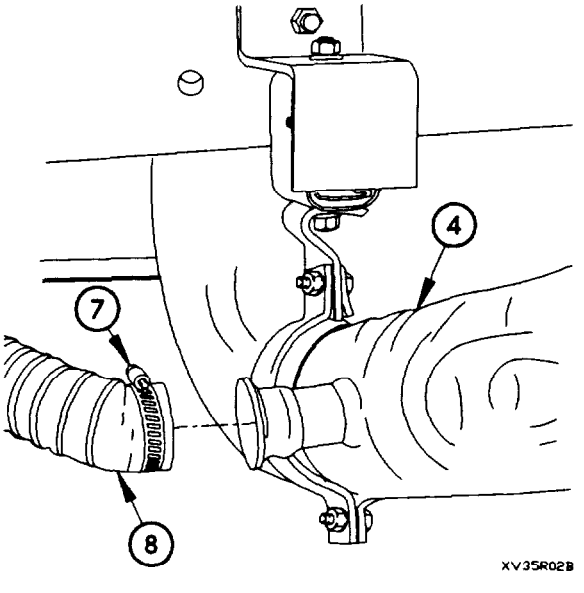
Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

a. Removal.

(1) Remove self-locking nut (1), clamp (2), and tailpipe extension (3) from fording tailpipe (4). Discard self-locking nut.

(2) Remove clamp (5) and deflection tube (6) from tailpipe extension (3).





(3) Loosen clamp (7) on particle extraction hose (8).

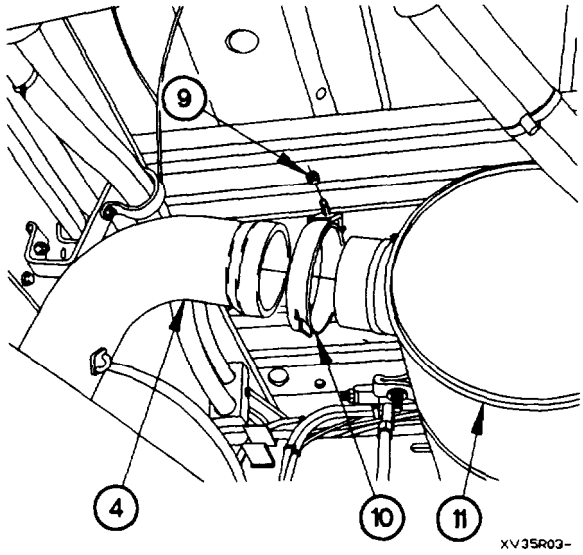
(4) Remove particle extraction hose (8) from fording tailpipe (4).

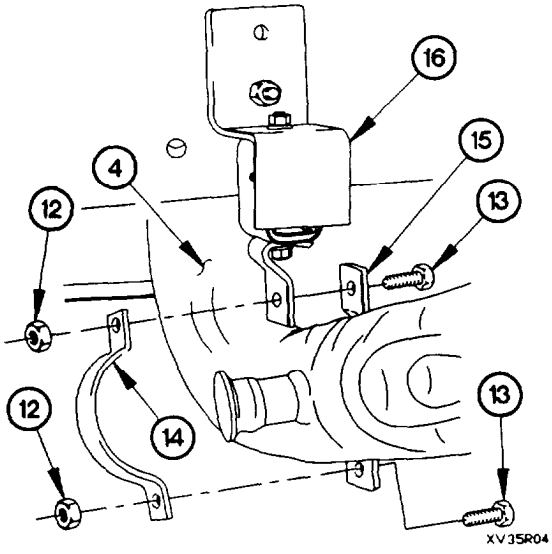
20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

(5) Remove self-locking nut (9) from clamp (10). Discard self-locking nut.

(6) Disconnect fording tailpipe (4) from muffler (11).

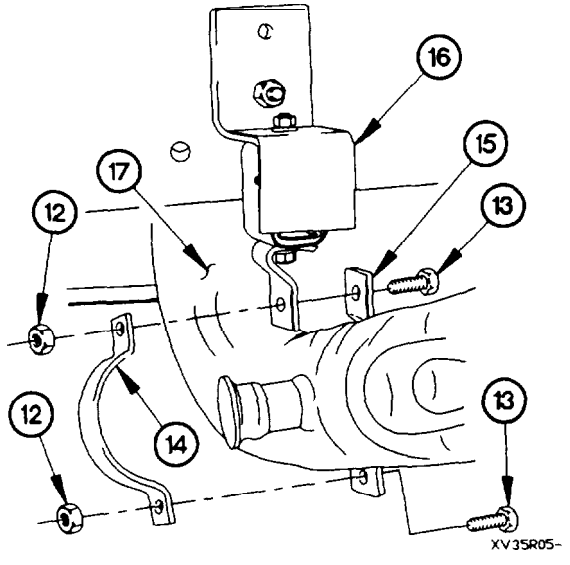
(7) Remove clamp (10) from fording tailpipe (4).





(8) Remove two self-locking nuts (12), screws (13), loop clamp halves (14 and 15), and fording tailpipe (4) from tailpipe bracket (16). Discard self-locking nuts.

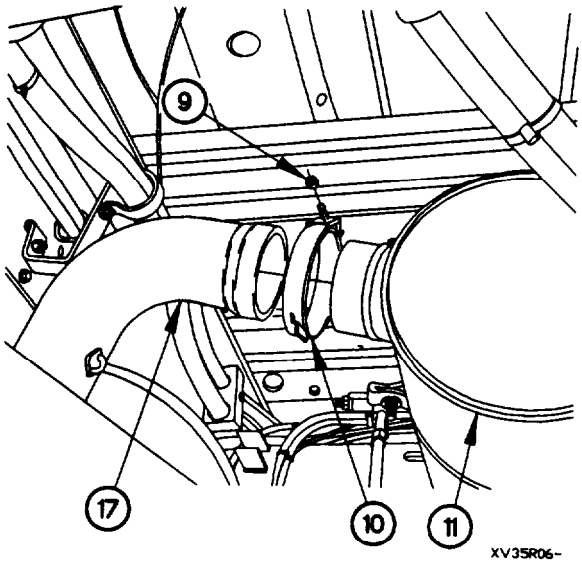
(9) Position loop clamp half (15), tailpipe (17), and loop clamp half (14) on tailpipe bracket (16) with two screws (13) and self-locking nuts (12).

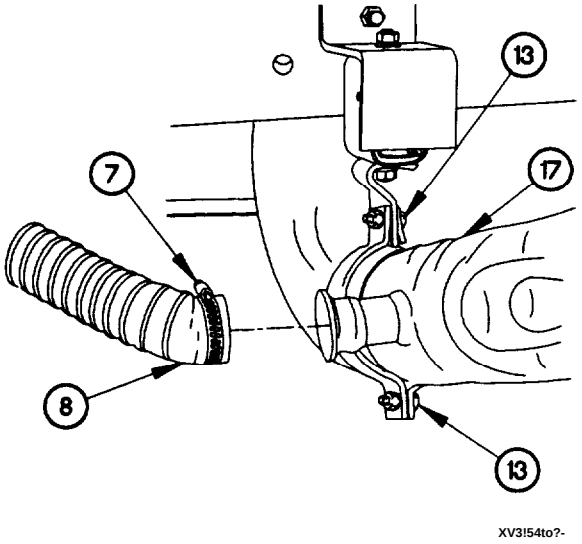


(10) Position clamp (10) and tailpipe (17) on muffler (11).

(11) Position self-locking nut (9) on clamp (10).

(12) Tighten self-locking nut (9) to 72-120 lb-in. (8-14 (N•m).





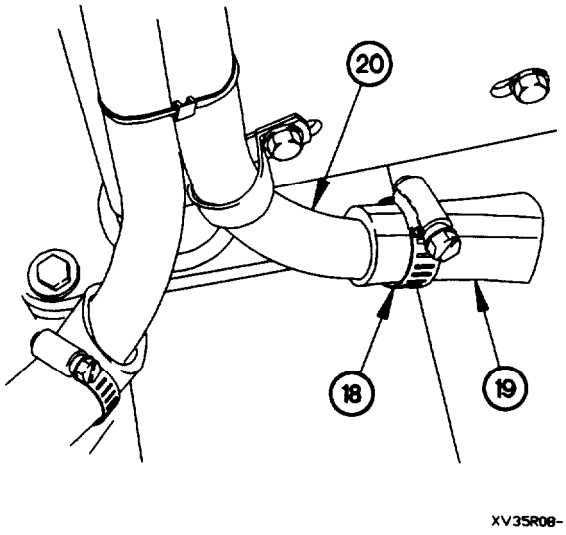
(13) Tighten two screws (13) to 26-32 lb-ft (35-43 N•m).

(14) Install Particle extraction hose (8) on tailpipe (17) with clamp (7).

NOTE

Remove plastic cable ties as required.

(15) Remove clamp (18) and five foot hose (19) from breather tube (20).

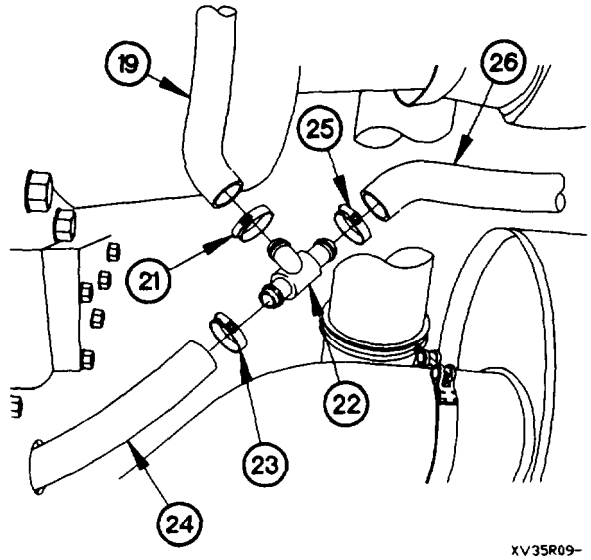


20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

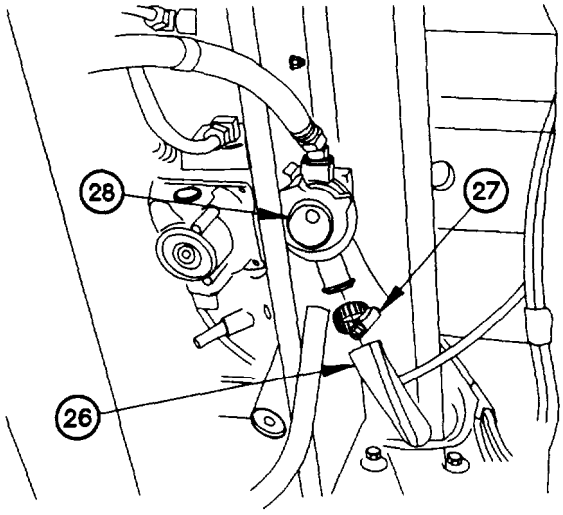
(16) Remove clamp (21) and five foot hose (19) from tee (22).

(17) Remove clamp (23) and 17 inch hose (24) from tee (22).

(18) Remove clamp (25) and 10 foot hose (26) from tee (22)



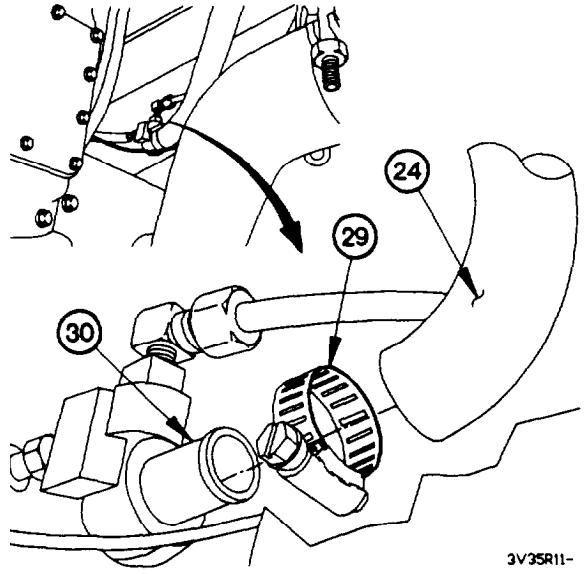
XV35R09-



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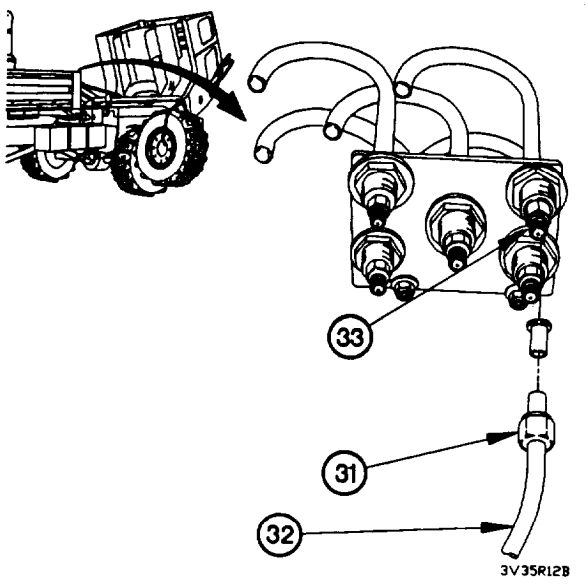
(19) Remove clamp (27) and 10 foot hose (26) from rear axle quick release valve (28).

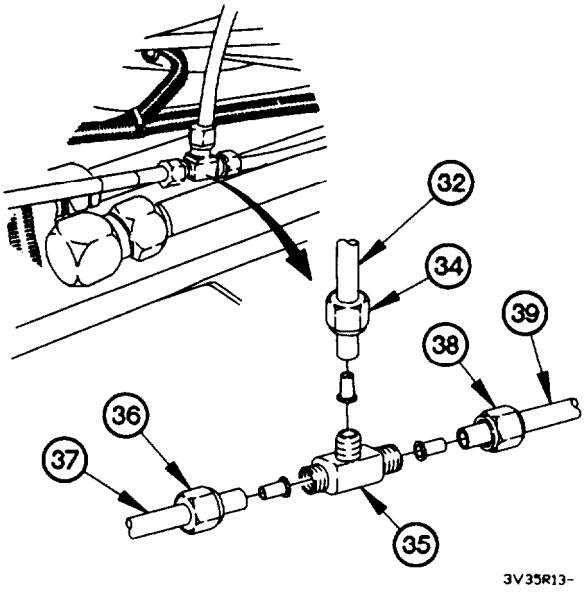
(20) Remove clamp (29) and 17 inch hose (24) from front axle quick release valve (30).



3V35R11-

(21) Loosen nut (31) and remove five foot hose (32) from breather tube fitting (33).





(22) Loosen nut (34) and remove five foot hose (32) from tee (35).

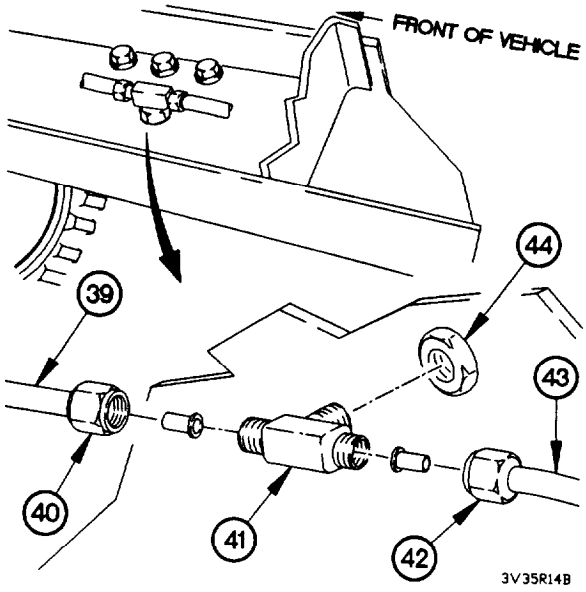
(23) Loosen nut (36) and remove three foot hose (37) from tee (35).

(24) Loosen nut (38) and remove 10 foot six inch hose (39) from tee (35).

(25) Loosen nut (40) and remove 10 foot six inch hose (39) from tee (41).

(26) Loosen nut (42) and remove four foot hose (43) from tee (41).

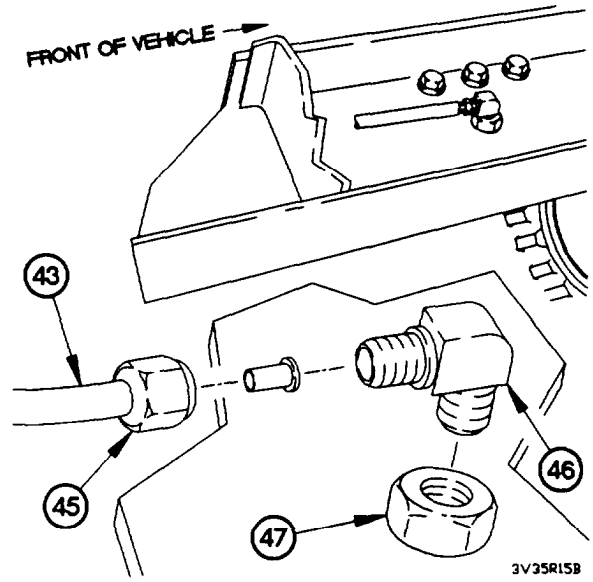
(27) Remove tee (41) from right rear brake exhaust port (44).

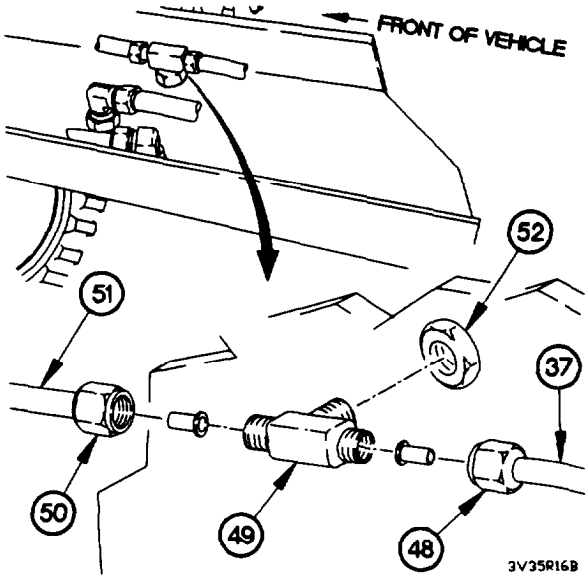


20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

(28) Loosen nut (45) and remove four foot hose (43) from 90-degree fitting (46).

(29) Remove 90-degree fitting (46) from left rear brake exhaust port (47).

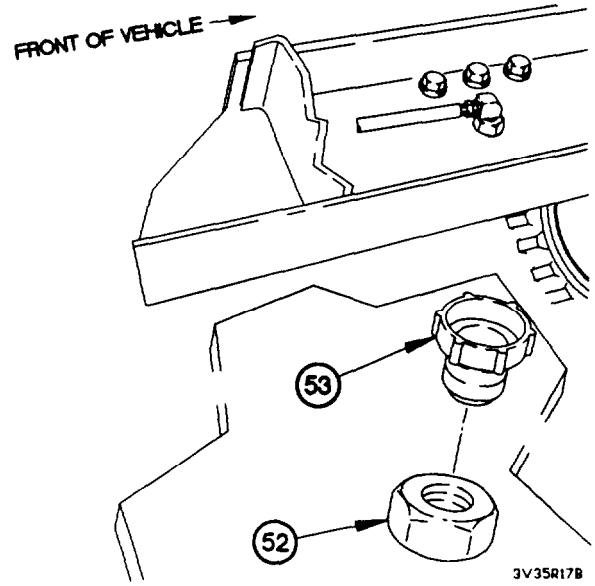




(30) Loosen nut (48) and remove three foot hose (37) from tee (49).

(31) Loosen nut (50) and remove 12 foot hose (51) from tee (49).

(32) Remove tee (49) from right front brake exhaust port (52).



WARNING

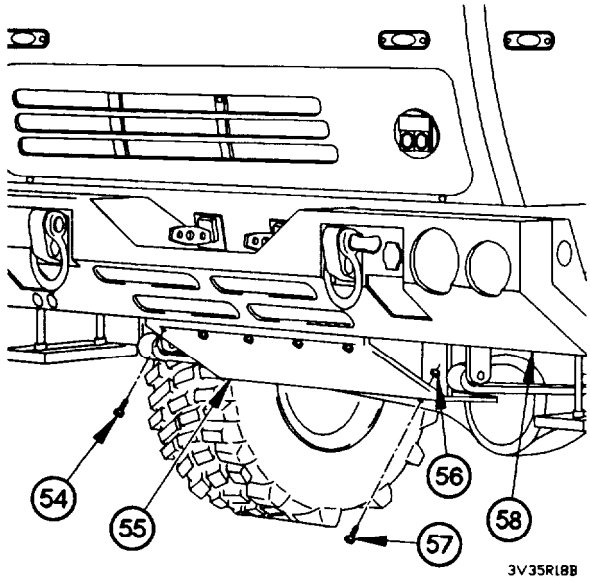
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to ski and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

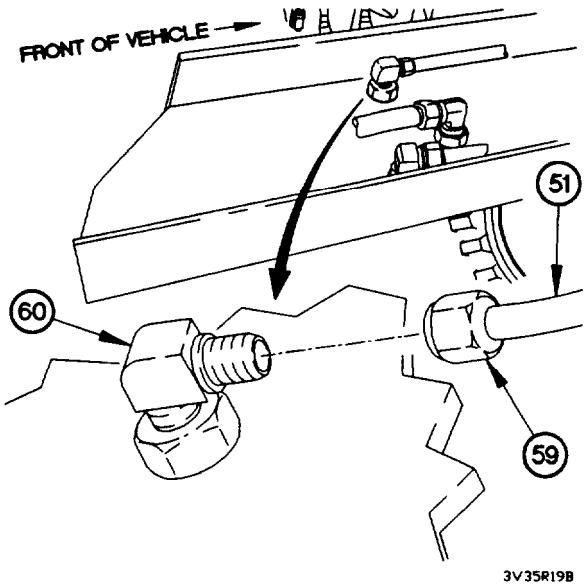
(33) Apply antiseize compound to threads of vent plug (53).

(34) Install vent plug (53) in right front brake exhaust port (52).

(35) Remove five screws (54) from gravel deflector (55).

(36) Remove five self-locking nuts (56), screws (57), and gravel deflector (55) from front bumper (58). Discard self-locking nuts.





(37) Loosen nut (59) and remove 12 foot hose (51) from 90-degree fitting (60).

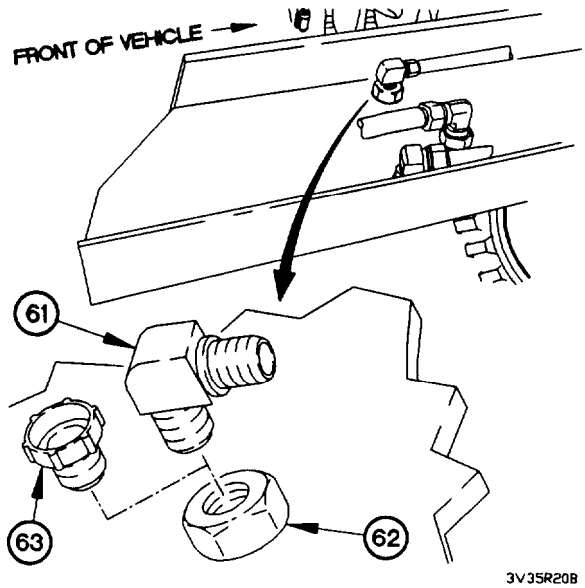
(38) Remove 90-degree fitting (61) from left front brake exhaust port (62).

WARNING

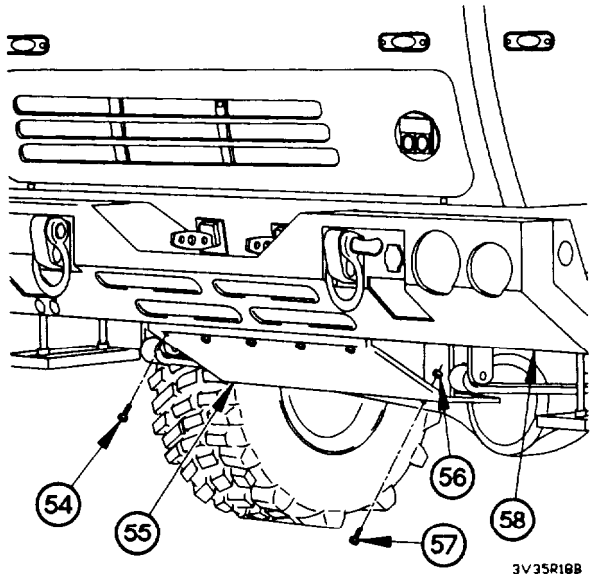
Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(39) Apply antiseize compound to threads of vent plug (63).

(40) Install vent plug (63) in left front brake exhaust port (62).

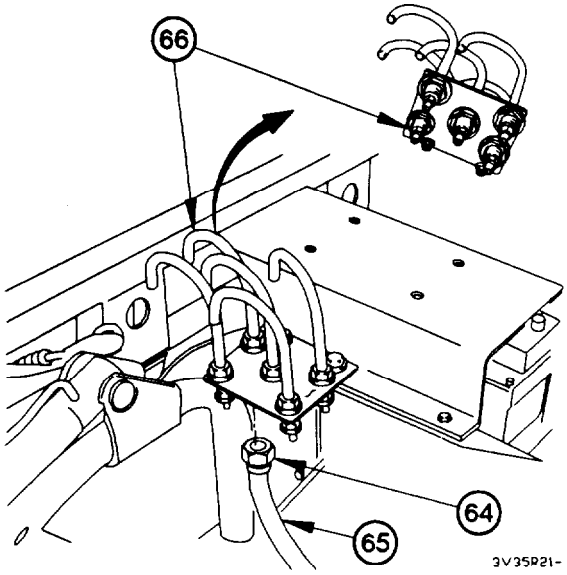


20-53. DEEP WATER FORDING KIT REMOVAL (CONT)



(41) Install gravel deflector (55) on front bumper with five screws (57) and self-locking nuts (56).

(42) Install five screws (54) in gravel deflector (55).



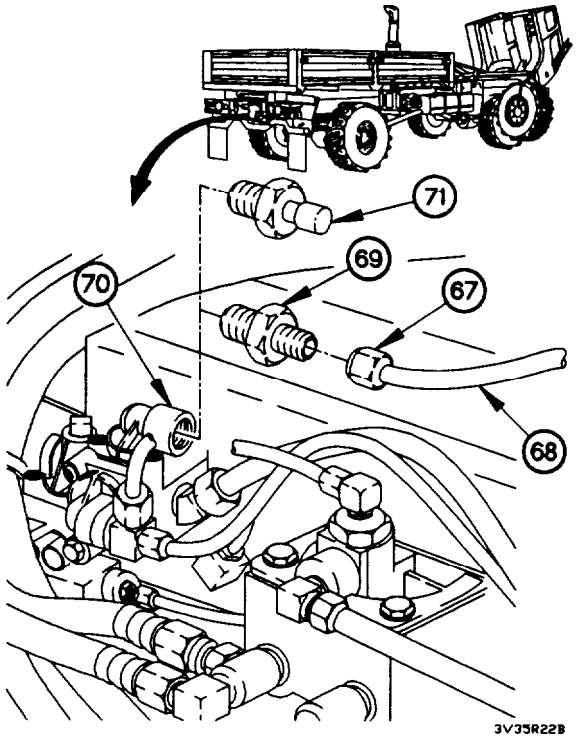
(43) Loosen concave fitting (64) and remove 17 foot hose (65) from breather tube fitting (66).

(44) Remove concave fitting (64) from 17 foot hose (65).

(45) Loosen concave fitting (67) and remove one foot hose (68) from fitting (69).

(46) Remove concave fitting (67) from one foot hose (68).

(47) Remove fitting (69) from air brake protecting valve (70).

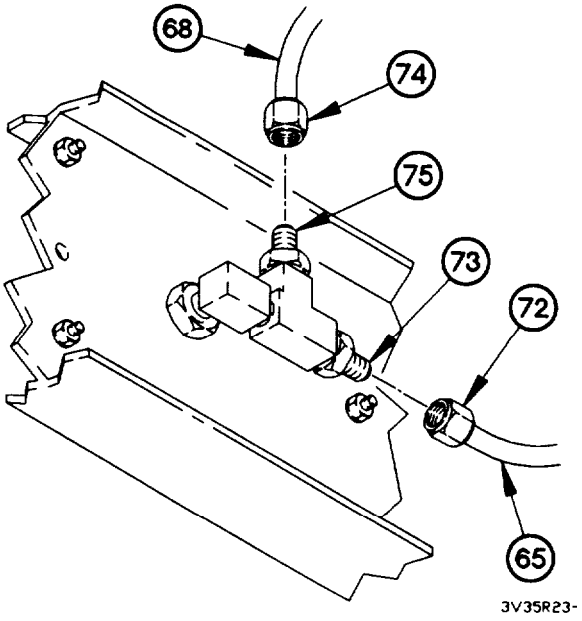


WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(48) Apply antiseize compound to threads of vent valve (71).

(49) Install vent valve (71) in air brake protecting valve (70).



(50) Loosen concave fitting (72) and remove 17 foot hose (65) from fitting (73).

(51) Remove concave fitting (72) from 17 foot hose (65).

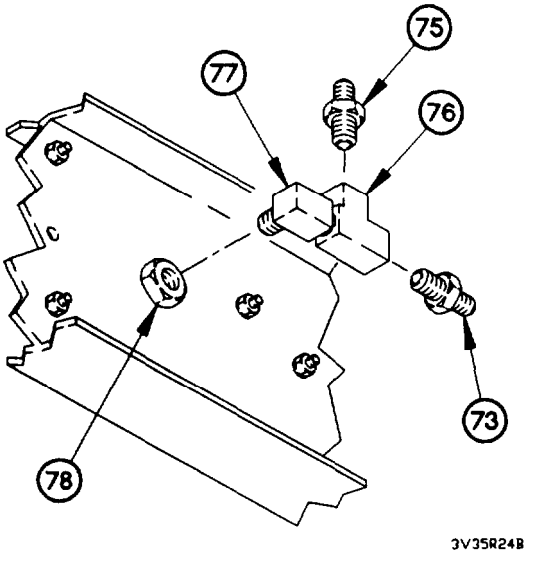
(52) Loosen concave fitting (74) and remove one foot hose (68) from fitting (75).

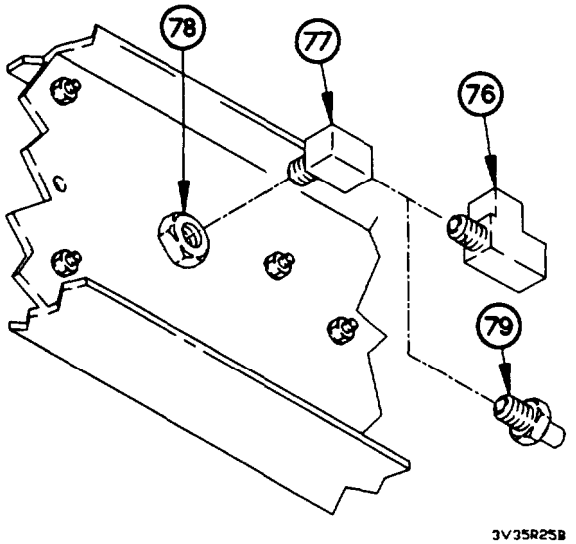
(53) Remove concave fitting (74) from one foot hose (68).

20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

(54) Remove fittings (73 and 75) from tee (76).

(55) Remove 90-degree fitting (77) from bulkhead fitting (78).





(56) Remove tee (76) from 90-degree fitting (77).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(57) Apply antiseize compound to threads of 90-degree fitting (77).

(58) Install 90-degree fitting (77) in bulkhead fitting (78).

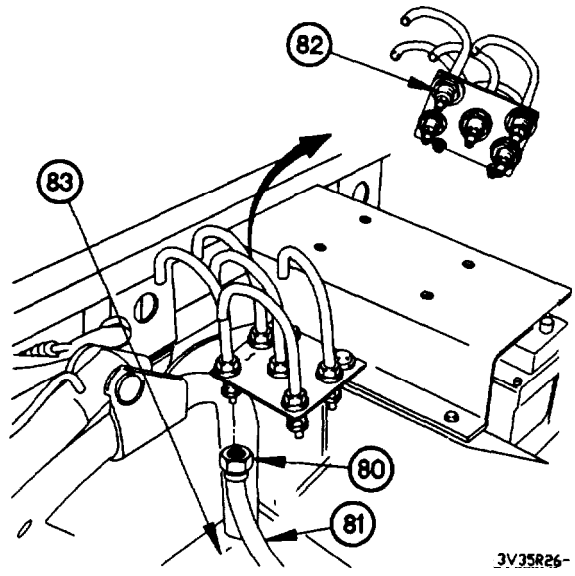
(59) Apply antiseize compound to threads of rear axle bulkhead fitting (79).

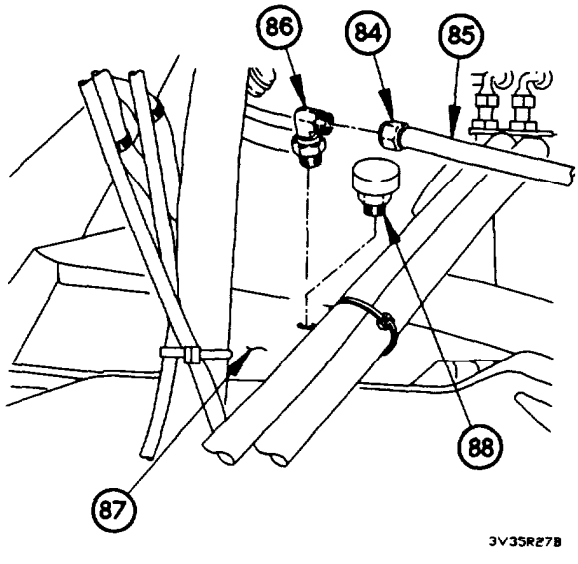
(60) Install rear axle bulkhead fitting (79) in 90-degree fitting (77).

(61) Loosen concave fitting (80) and remove five foot hose (81) from breather tube fitting (82).

(62) Remove concave fitting (80) from five hose (81).

(63) Install five foot hose (81) on spare tire retainer (83).





(64) Loosen concave fitting (84) and remove two foot hose (85) from 90-degree fitting (86).

(65) Remove concave fitting (84) from two foot hose (85).

(66) Remove 90-degree fitting (86) from transmission (87).

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to ski and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(67) Apply antiseize compound to threads of vent plug (88).

(68) Install vent plug (88) in transmission (87).

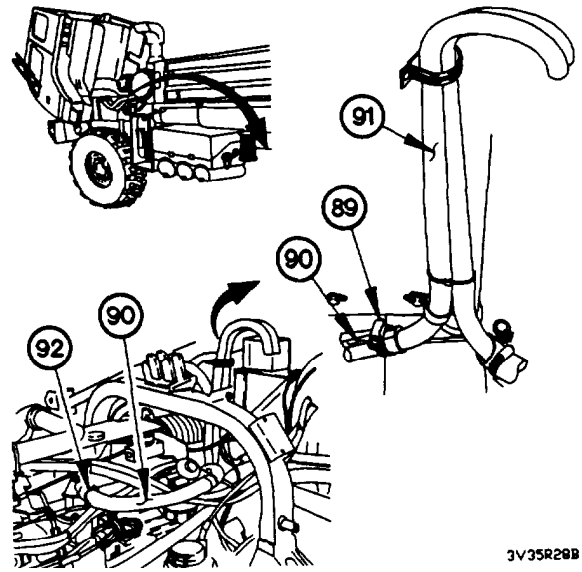
20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

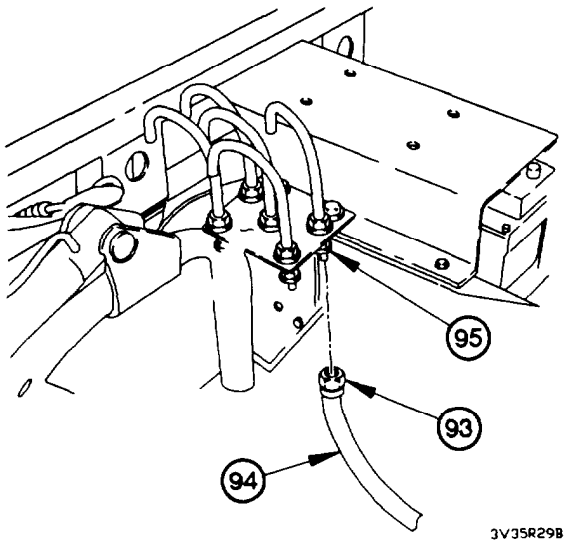
(69) Remove clamp (89) and breather hose (90) from breather tube (91).

(70) Loosen clamp (92) on breather hose (90).

(71) Position breather hose (90) pointing downwards.

(72) Tighten clamp (92) on breather hose (90).





(73) Loosen concave fitting (93) and remove 22 in. hose (94) from breather tube fitting (95).

(74) Remove concave fitting (93) from 22 in. hose (94).

(75) Loosen concave fitting (96) and remove 22 in. hose (94) from tee (97).

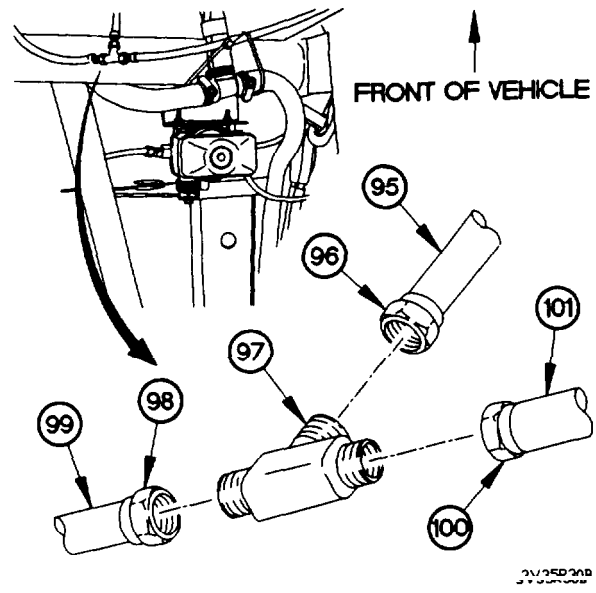
(76) Remove concave fitting (96) from 22 in. hose (94).

(77) Loosen concave fitting (98) and remove 25 in. hose (99) from tee (97).

(78) Remove concave fitting (98) from 25 in. hose (99).

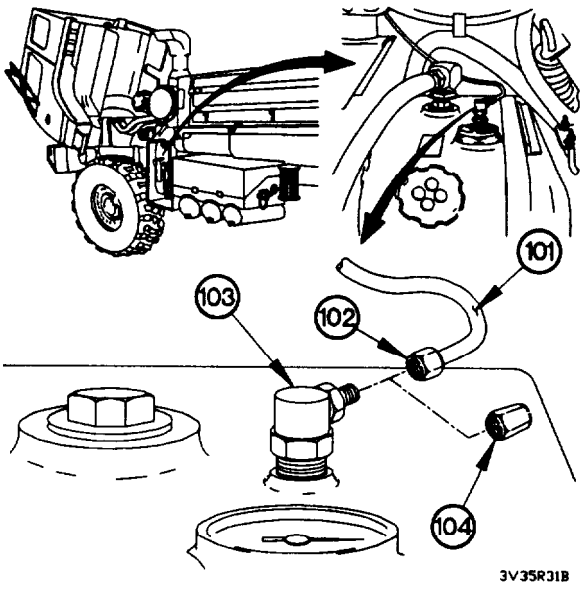
(79) Loosen concave fitting (100) and remove 22 in. hose (101) from tee (97).

(80) Remove concave fitting (100) from 22 in. hose (101).



(81) Loosen convex fitting (102) and remove 22 in. hose (101) from vent plug fitting (103).

(82) Remove convex fitting (102) from 22 in. hose (101).

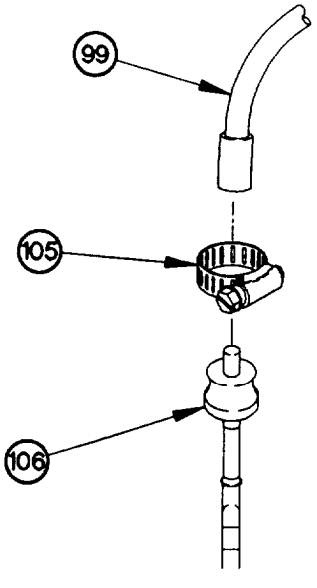


WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(83) Apply antiseize compound to threads of vent plug cap (104).

(84) Install vent plug cap (104) on vent plug fitting (103).



(85) Remove clamp (105) and 25 in. hose (99) from fording dipstick (106).

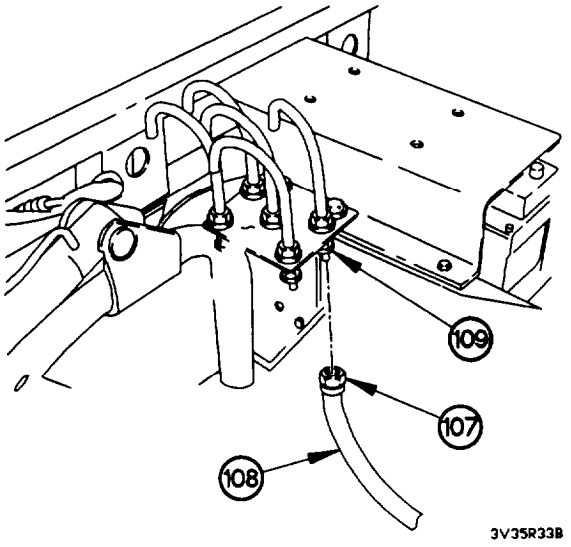
20-53. DEEP WATER FORDING KIT REMOVAL (CONT)

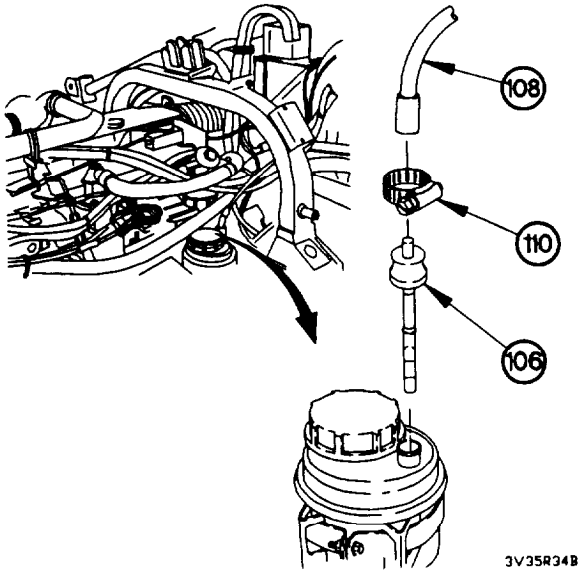
NOTE

Perform steps (86) through (88) on vehicles not equipped with PTO.

(86) Loosen concave fitting (107) and remove three foot hose (108) from breather tube fitting (109).

(87) Remove concave fitting (107) from three foot hose (108).

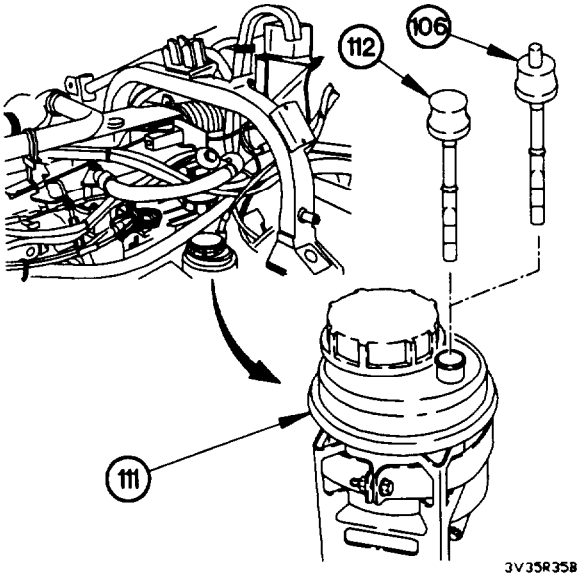




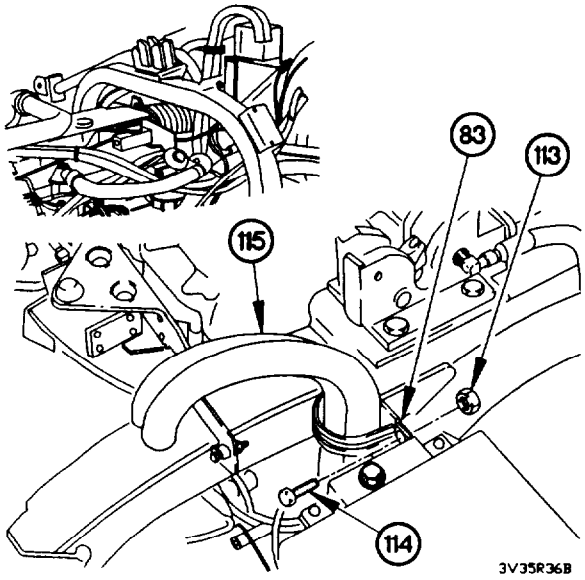
(88) Remove clamp (110) and three foot hose (108) from fording dipstick (106).

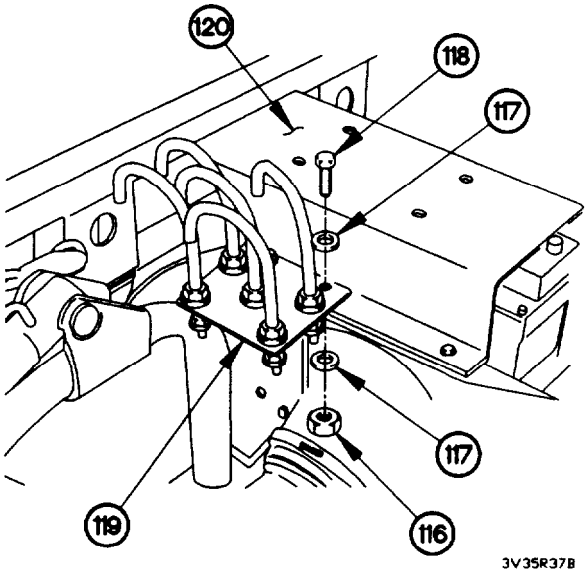
(89) Remove fording dipstick (106) from power steering reservoir (111).

(90) Install dipstick (112) in power steering reservoir (111).



(91) Remove two self-locking nuts (113), screws (114), and breather tube assembly (115) from spare tire retainer (83). Discard self-locking nuts.

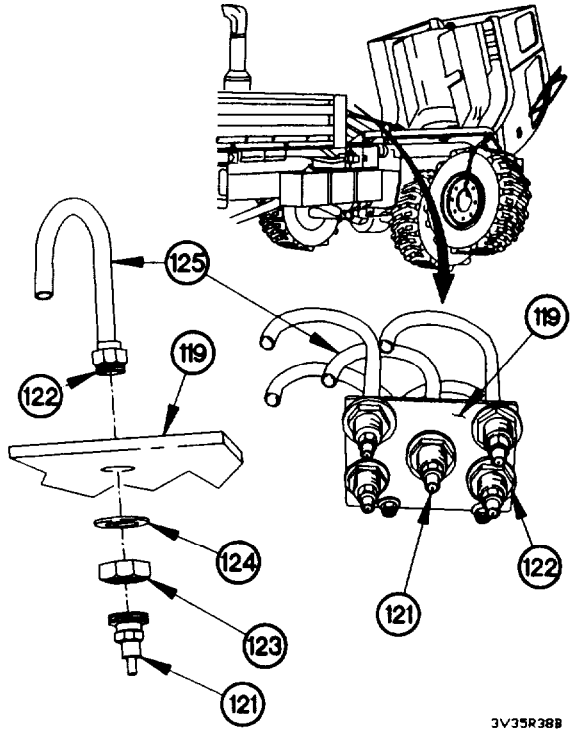




(92) Remove two nuts (116), four washers (117), two screws (118), and bracket (119) from guard (120).

(93) Remove five reducers (121) from fittings (122).

(94) Remove five nuts (123), washers (124), fittings (122), and breather tubes (125) from bracket (119).



b. Follow-On Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Lower cab (TM 9-2320-365-10).

End of Task.

20-54. 200 AMP ALTERNATOR KIT INSTALLATION

This task covers:

a. Installation

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
100 amp alternator removed (para 7-2).
100 amp reverse polarity relay removed (para 7-27).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)
Caps, Vise Jaw (Item 4, Appendix C)
Vise, Machinist (Item 46, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (3) (Item 149, Appendix G)
Nut, Self-Locking (Item 137, Appendix G)
Nut, Self-Locking (M1081 only) (2) (Item 140, Appendix G)
Washer, Spring (M1081 only) (2) (Item 280, Appendix G)

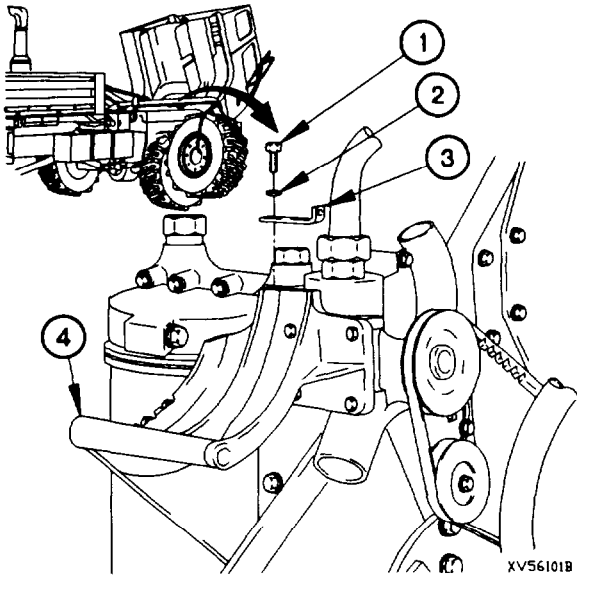
Personnel Required
(2)

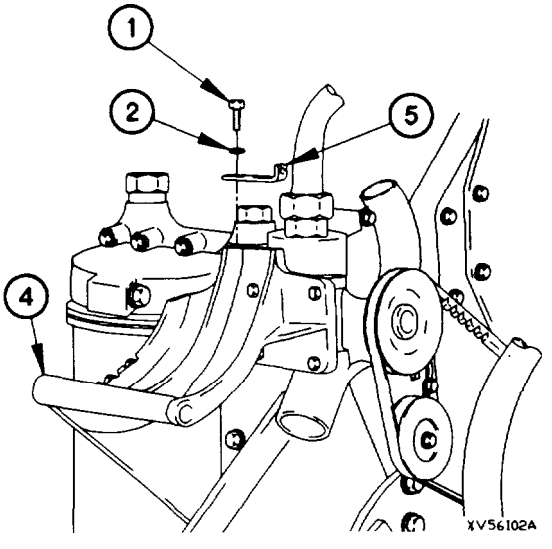
a. Installation.

NOTE

Retain belt adjusting arm for future installation.

(1) Remove two screws (1), washers (2), and belt adjusting arm (3) from alternator bracket (4).

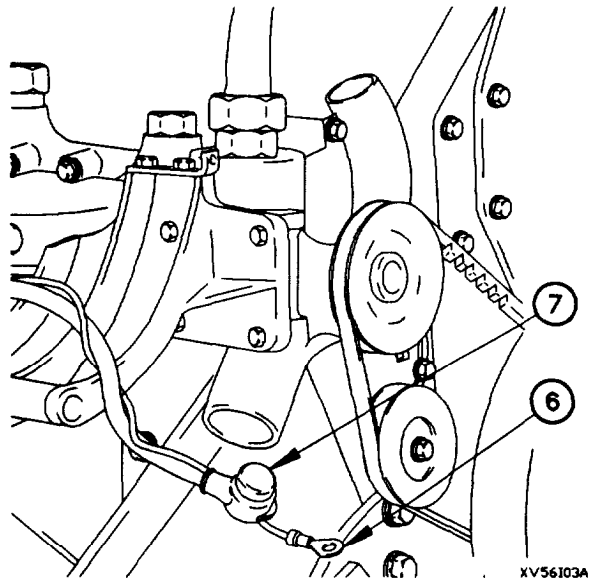


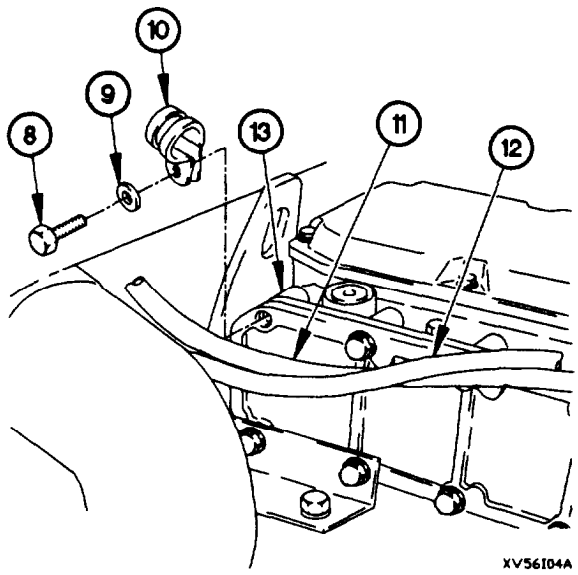


(2) Position belt adjusting arm (5) on alternator bracket (4) with two washers (2) and screws (1).

(3) Tighten two screws (1) to 22-27 lb-ft (30-37 N•m).

(4) Remove terminal lug TL6 (6) from dust boot (7).





NOTE

Retain 24vdc and 12vdc cable assemblies for future installation.

(5) Remove three screws (8), washers (9), clamps (10), 24vdc cable (11), and 12vdc cable (12) from air inlet manifold (13).

(6) Remove three clamps (10) from 24 vdc cable (11) and 12 vdc cable (12).

(7) Remove self-locking nut (14) and washer (15) from alternator (16).

CAUTION

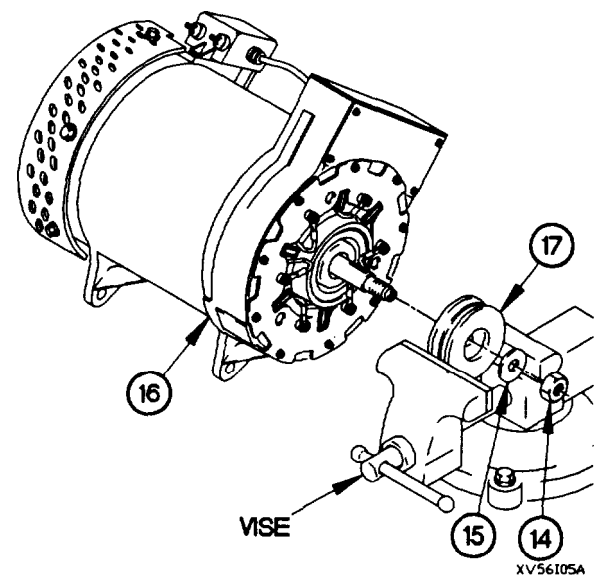
Ensure pulley does not contact wires, terminal lugs, or terminal screws on front of alternator. Failure to comply may result in damage to equipment.

(8) Position pulley (17) on alternator (16) with washer (15) and self-locking nut (14).

(9) Position pulley (17) in vise.

(10) Tighten self-locking nut (14) to 100-110 lb-ft (136-150 N•m).

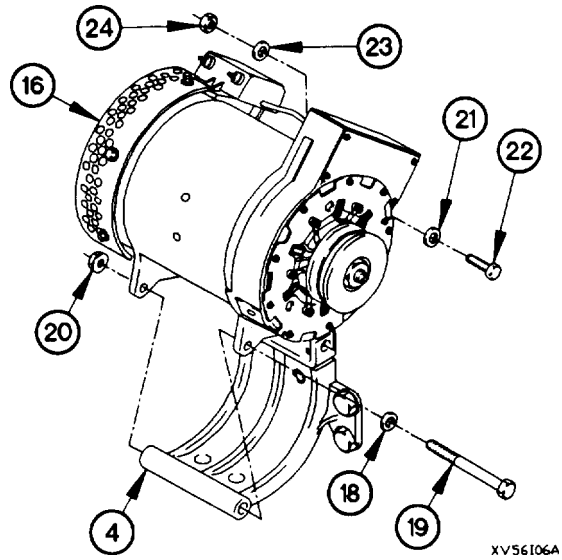
(11) Remove pulley (17) from vise.



20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

WARNING

200 amp alternator weighs approximately 70 lbs (32 kgs). The aid of an assistant is required to install 200 amp alternator. Failure to comply may result in injury to personnel.



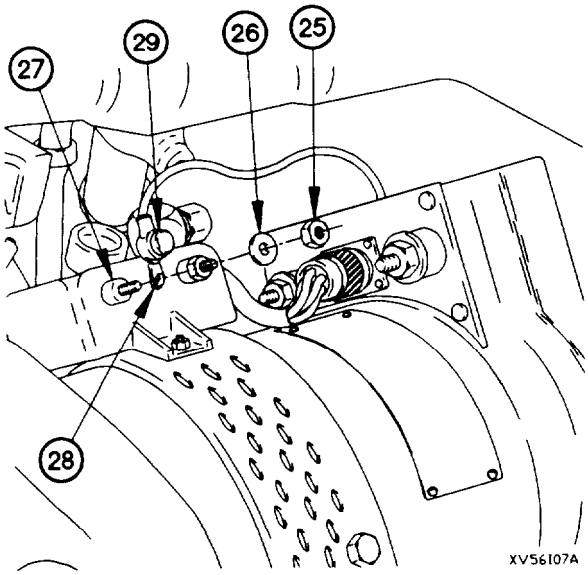
NOTE

Step (12) requires the aid of an assistant.

(12) Position alternator (16) on alternator bracket (4) with washer (18), screw (19), and self-locking nut (20).

(13) Position washer (21), screw (22), washer (23), and nut (24) through alternator (16) and belt adjusting arm (5).

(14) Tighten self-locking nut (20) and nut (24) to 20 lb-ft (27 N•m).



(15) Remove self-locking nut (25) and washer (26) from voltage regulator terminal (27).

(16) Position terminal lug TL110 (28) on voltage regulator terminal (27) with washer (26) and self-locking nut (25).

(17) Tighten self-locking nut (25) to 23-27 lb-in. (3 N•m).

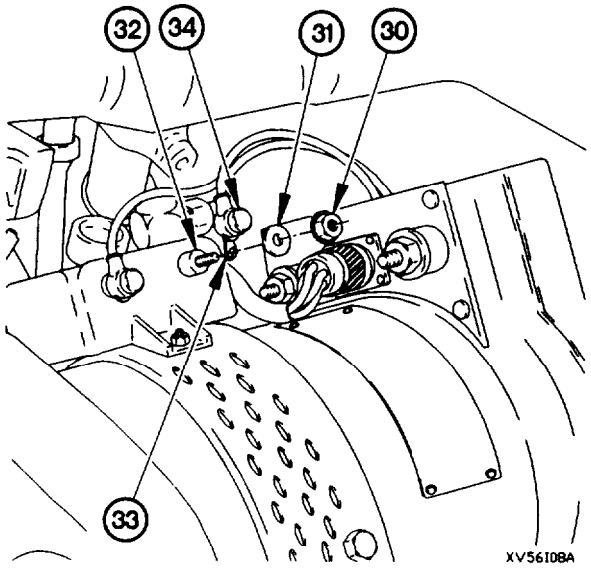
(18) Position dust boot (29) on terminal lug TL110 (28).

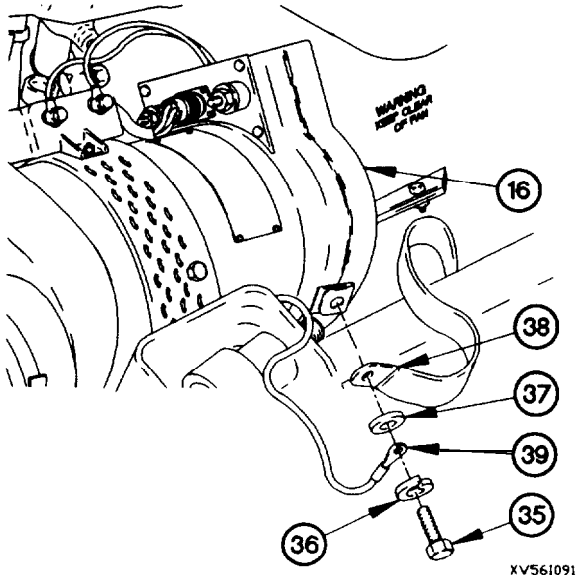
(19) Remove self-locking nut (30), and washer (31) from voltage regulator terminal (32).

(20) Position terminal lug TL35 (33) on voltage regulator terminal (32) with washer (31), and self-locking nut (30).

(21) Tighten self-locking nut (30) to 23-27 lb-in. (3 N•m).

(22) Position dust boot (34) on terminal lug TL35 (33).





(23) Remove screw (35), lockwasher (36), and washer (37) from alternator (16).

(24) Position ground strap (38), washer (37), and terminal lug TL5 (39) on alternator (16) with lockwasher (36) and screw (35).

(25) Tighten screw (35) to 40 lb-in. (5 N•m).

(26) Position 12vdc cable (40) and 24vdc cable (41) in engine compartment with terminal lugs TL2 (42) and TL60 (43) located next to alternator (16).

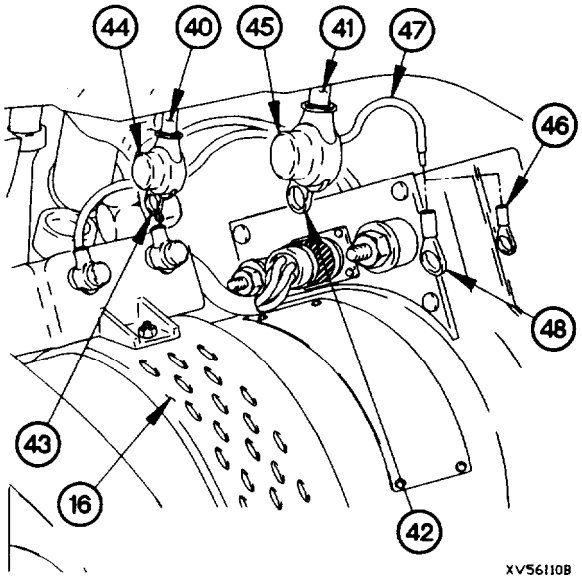
(27) Install dust boot (44) on 12vdc cable (40).

(28) Install dust boot (45) on 24vdc cable (41).

(29) Remove terminal lug TL6 (46) from wire (47). Discard terminal lug.

(30) Position wire (47) in dust boot (45) with terminal lug TL2 (42).

(31) Install terminal lug TL6 (48) dn wire (47).



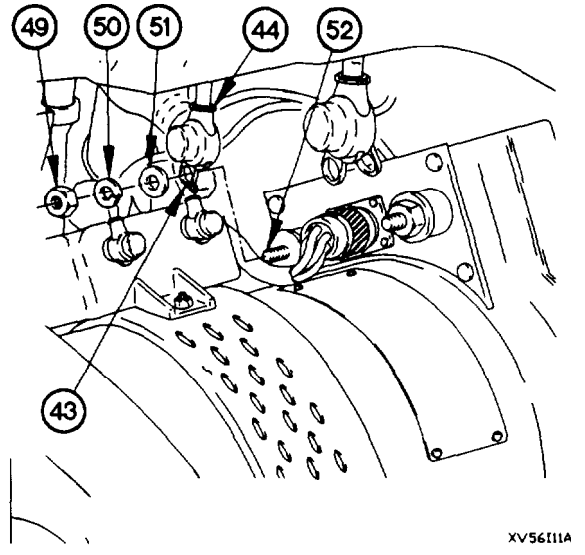
20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

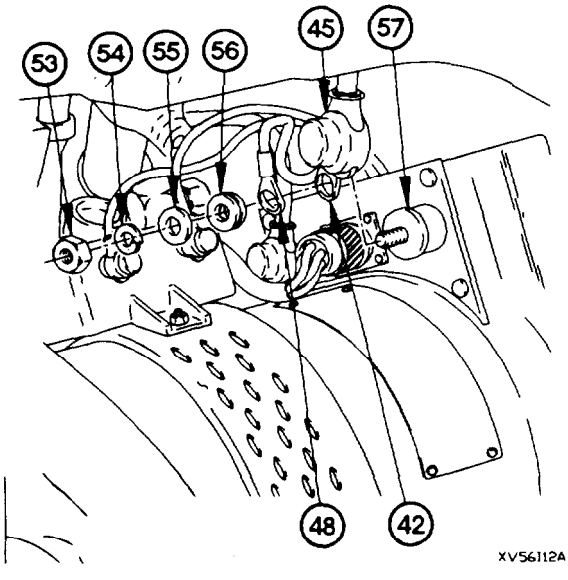
(32) Remove nut (49), lockwasher (50), and washer (51) from alternator terminal (52).

(33) Position terminal lug TL60 (43) on alternator terminal (52) with washer (51), lockwasher (50), and nut (49).

(34) Tighten nut (49) to 156-180 lb-in. (17-21 N•m).

(35) Position dust boot (44) on terminal lug TL60 (43).





(36) Remove nut (53), lockwasher (54), washer (55), and fuse (56) from alternator terminal (57).

(37) Position terminal lugs TL2 (42) and TL6 (48) on alternator terminal (57) with fuse (56), washer (55), lockwasher (54), and nut (53).

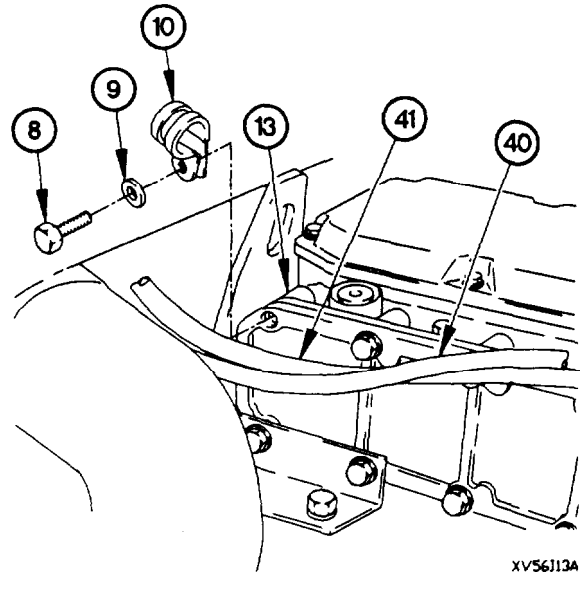
(38) Tighten nut (53) to 156-180 lb-in. (17-21 N•m).

(39) Position dust boot (45) on terminal lugs TL2 (42) and TL6 (48).

(40) Position three clamps (10) on 12vdc cable (40) and 24vdc cable (41).

(41) Position three clamps (10) on air inlet manifold (13) three with washers (9) and screws (8).

(42) Tighten three screws (8) to 22-27 lb-ft (31-37 N•m).

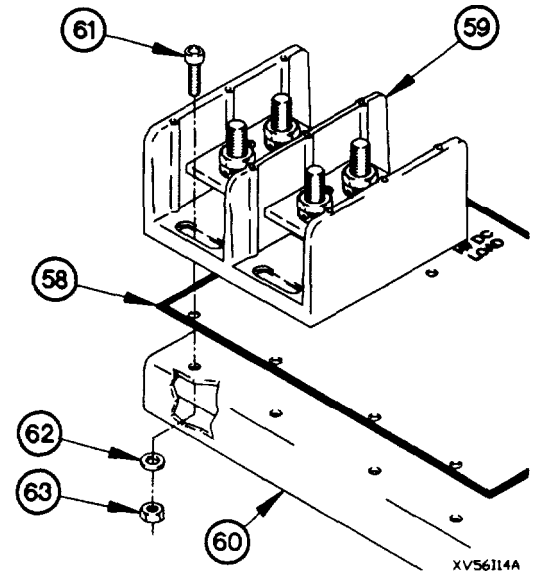


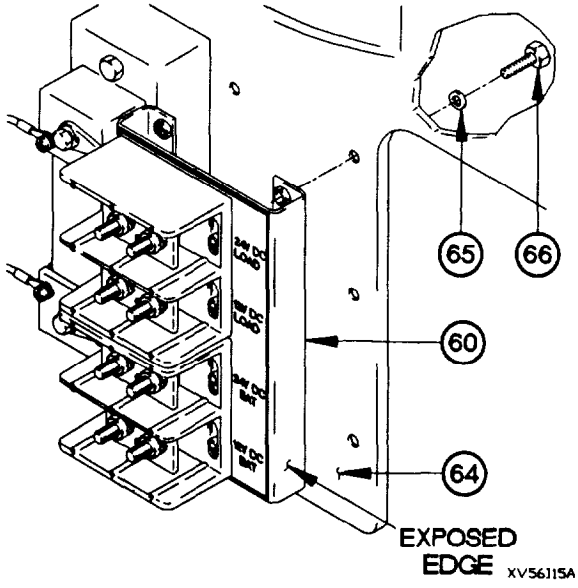
CAUTION

Position both terminal blocks loosely on mounting bracket and align correctly before tightening nuts. Failure to comply may result in damage to equipment.

(43) Position identification plate (58) and two terminal blocks (59) on bracket (60) with eight screws (61), washers (62), and self-locking nuts (63).

(44) Tighten eight self-locking nuts (63) to 48 lb-in. (5 N•m).





NOTE

- Terminal blocks are not centered on bracket. Position bracket on spare tire retainer with exposed edge of ident-ification plate toward cab.
- Step (45) requires the aid of an assistant.

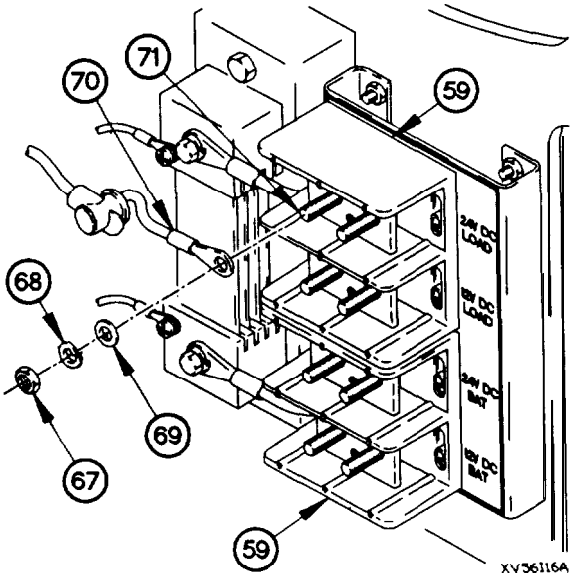
(45) Position bracket (60) on spare tire retainer (64) with four washers (65) and screws (66).

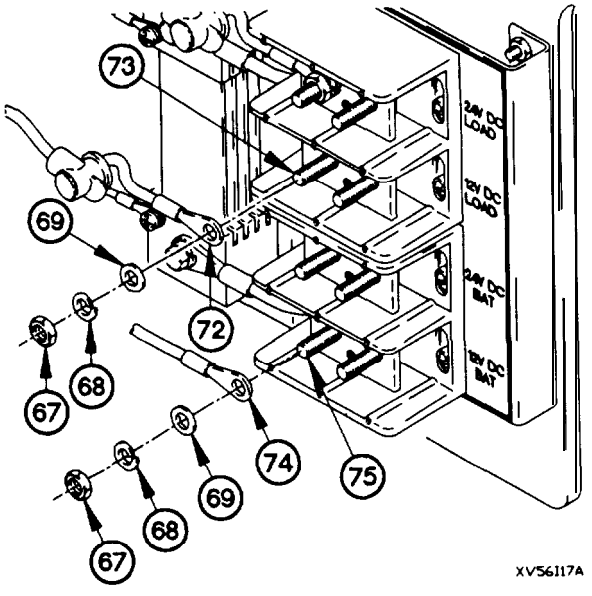
(46) Tighten four screws (66) to 48 lb-in. (5 N•m).

20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

(47) Remove eight nuts (67), lockwashers (68), and washers (69) from two terminal blocks (59).

(48) position terminal lug TL44 (70) on terminal block terminal (71) with washer (69), lockwasher (68), and nut (67).

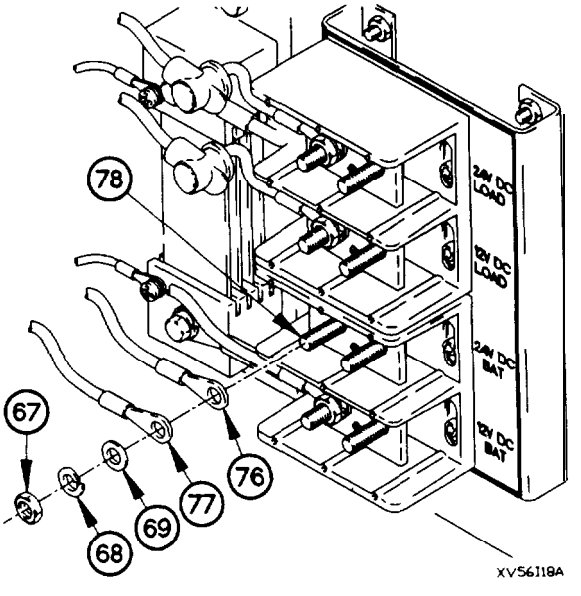




(49) Position terminal lug TL80 (72) on terminal block terminal (73) with washer (69), lockwasher (68), and nut (67).

(50) Position terminal lug TL47 (74) on terminal block terminal (75) with washer (69), lockwasher (68), and nut (67).

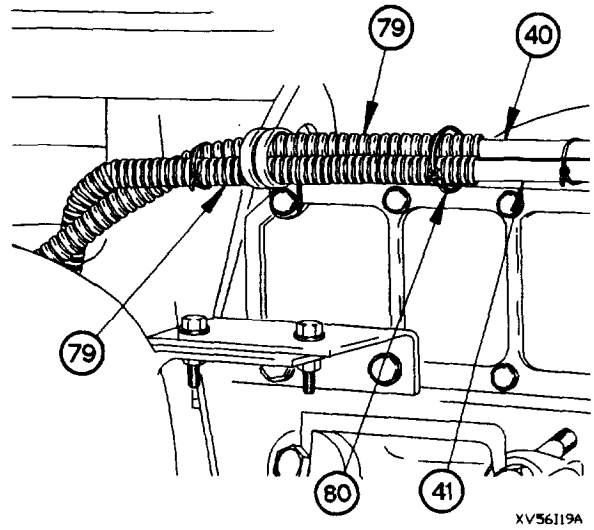
(51) Position terminal lugs TL36 (76) and TL37 (77) on terminal block terminal (78) with washer (69), lockwasher (68), and nut (67).

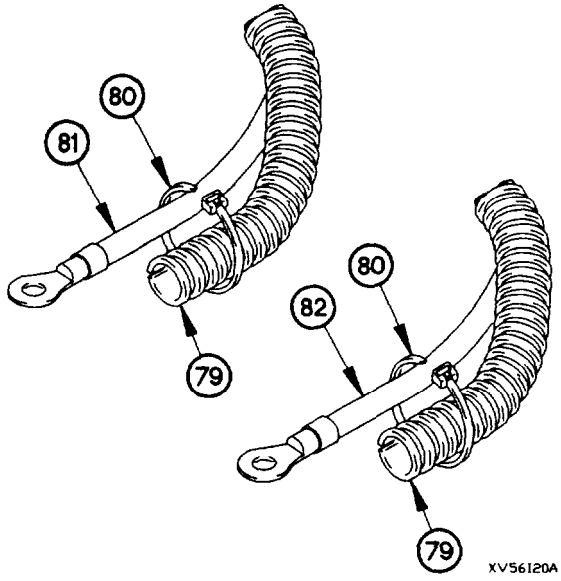


(52) Install 17.7 in. (45.0 cm) of convoluted tubing (79) on 12vdc cable (40).

(53) Install 19.6 in. (50.0 cm) of convoluted tubing (79) on 24vdc cable (41).

(54) Install three plastic cable ties (80) on convoluted tubing (79).





NOTE

24 vdc load cable terminates with terminal lugs TL167 and TL169. 24 vdc battery cable terminates with terminal lugs TL166 and TL168.

(55) Install 21.6 in. (55.5 cm) of convoluted tubing (79) on 24vdc load cable (81).

(56) Install 21.5 in. (55.0 cm) of convoluted tubing (79) on 24vdc battery cable (82).

(57) Install plastic cable ties (80) on convoluted tubing (79).

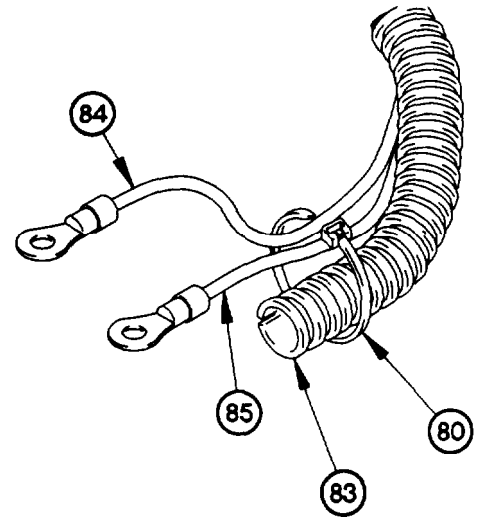
20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

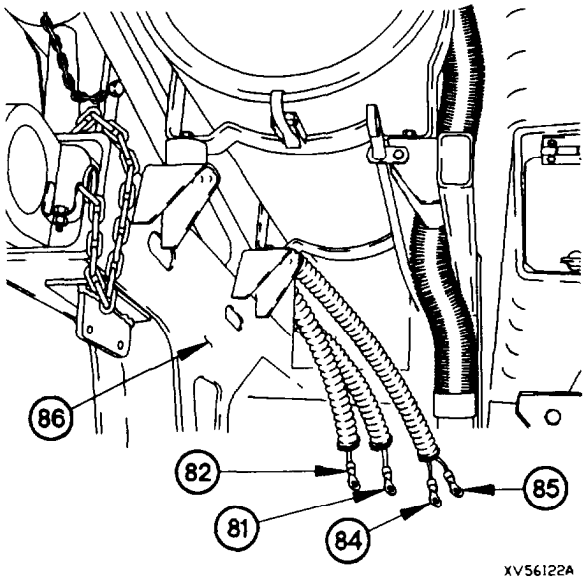
NOTE

- 12 vdc load cable terminates with terminal lugs TL172 and TL174. 12 vdc battery cable terminates with terminal lugs TL171 and TL173.
- Position terminal lugs TL171 and TL172 at the same end.

(58) Install 21.6 in. (55.0 cm) of convoluted tubing (83) on 12 vdc load cable (84) and 12vdc battery cable (85).

(59) Install plastic cable ties (80) on convoluted tubing (83).





NOTE

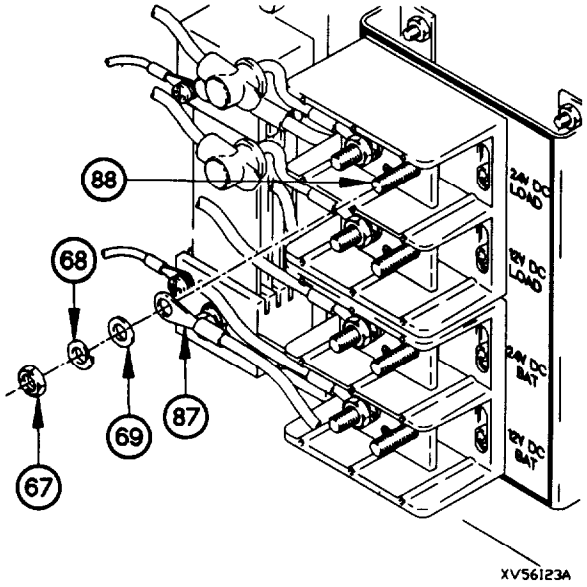
Position 24vdc load cable, 24vdc battery cable, 12vdc load cable, and 12vdc battery cable with terminal lugs TL167, TL172, TL166, and TL171 at terminal block.

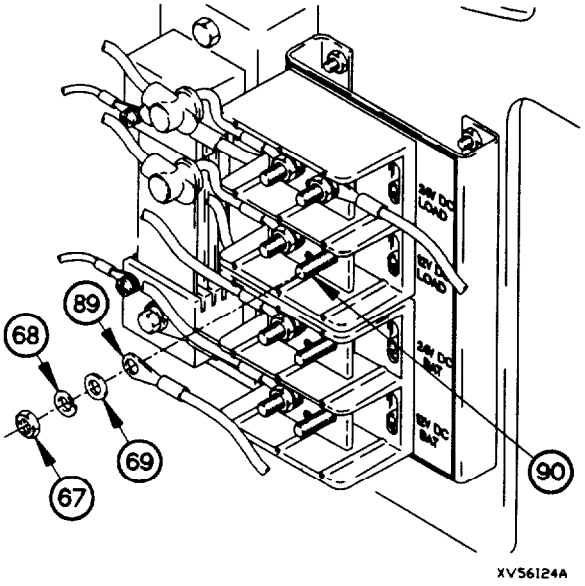
(60) Position 24vdc load cable (81) on rear side of front lifting beam (86).

(61) Position 24vdc battery cable (82) on rear side of front lifting beam (86).

(62) Position 12vdc load cable (84) and 12vdc battery cable (85) on rear side of front lifting beam (86).

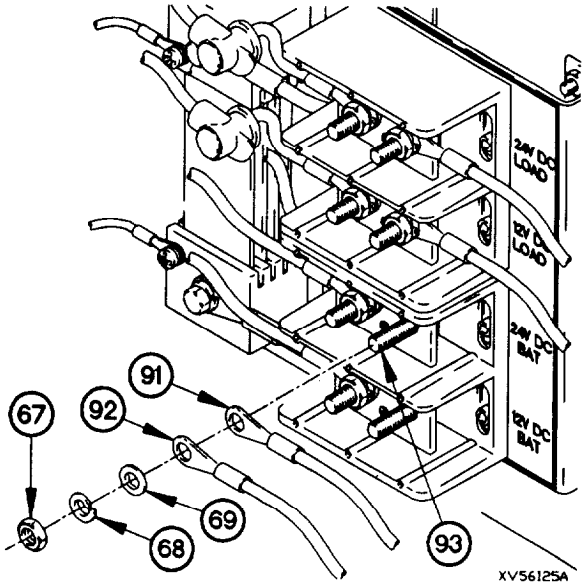
(63) Position terminal lug TL167 (87) on terminal block terminal (88) with washer (69), lockwasher (68), and nut (67).





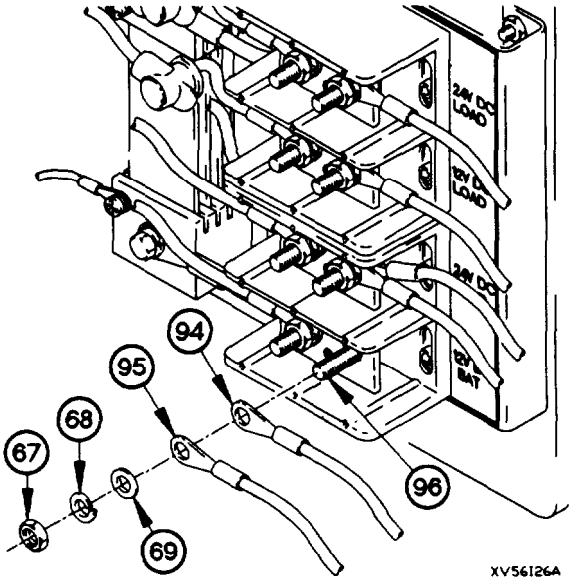
(64) Position terminal lug TL172 (89) on terminal block terminal (90) with washer (69), lockwasher (68), and nut (67).

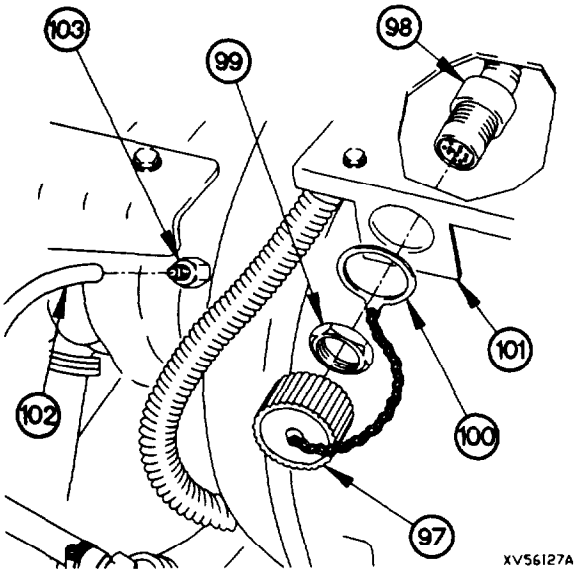
(65) Position terminal lugs TL1 (91) and TL166 (92) on terminal block terminal (93) with washer (69), lockwasher (68), and nut (67).



20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

(66) Position terminal lugs TL61 (94) and TL171 (95) on terminal block terminal (96) with washer (69), lockwasher (68), and nut (67).





(67) Remove dust cap (97) from connector J106 (98).

(68) Remove nut (99), dust cap lanyard (100), and connector J108 (98) from chemical detection unit mounting bracket (101).

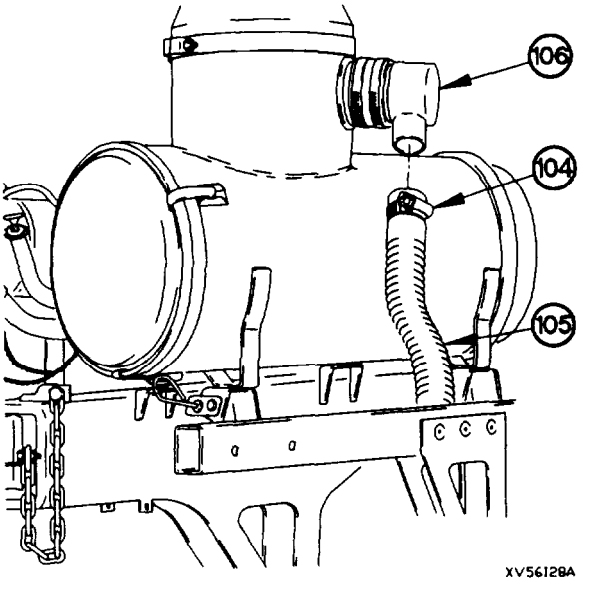
(69) Disconnect air filter restriction gauge hose (102) from air flow sensor (103).

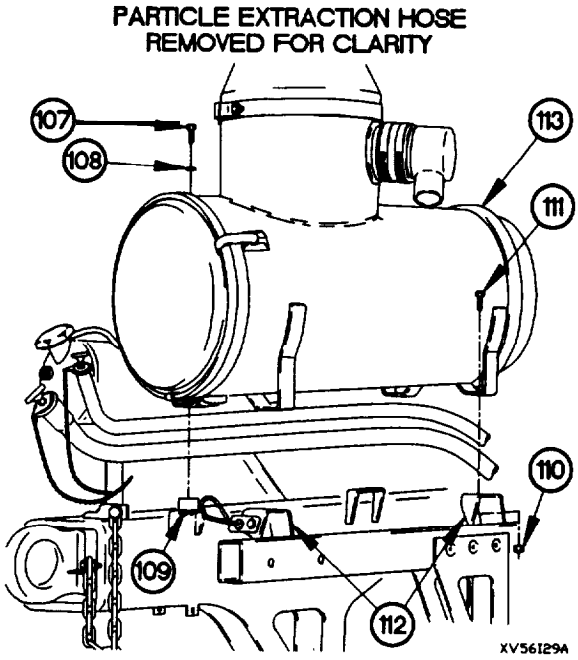
NOTE

Perform steps (70) through (104) on all models except M1081.

(70) Loosen clamp (104) on particle extraction hose (105).

(71) Remove particle extraction hose (105) from adapter (106).

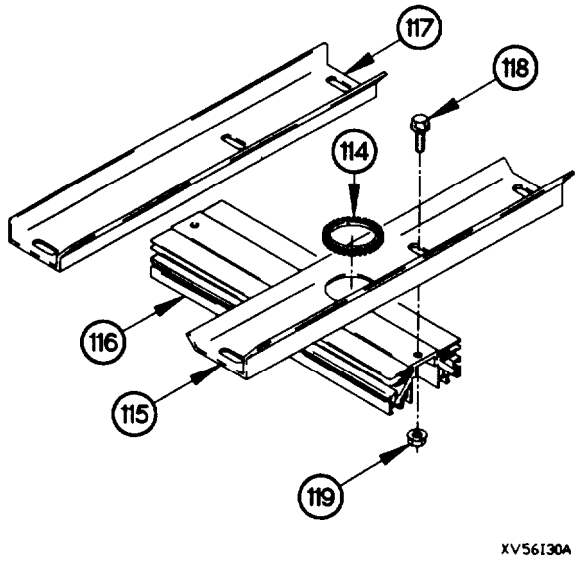




(72) Remove screw (107) and washer (108) from resilient mount (109).

(73) Remove three self-locking nuts (110) and screws (111) from mounting brackets (112). Discard self-locking nuts.

(74) Remove intake air cleaner housing (113) from mounting brackets (112) and resilient mount (109).



(75) Cut grommet (114) to 8 1/4 in. (210 mm).

(76) Install grommet (114) in bracket (115).

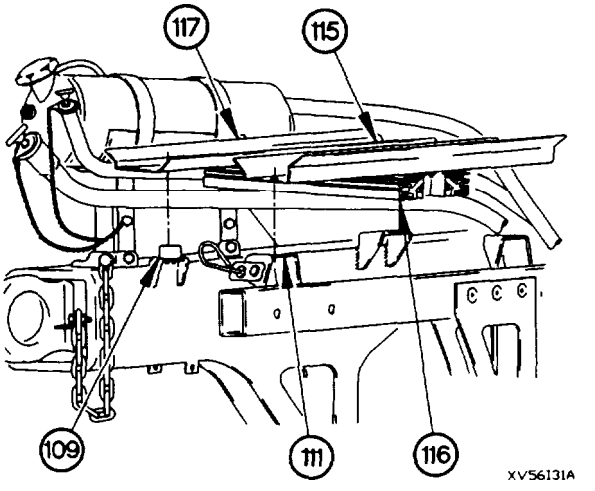
NOTE

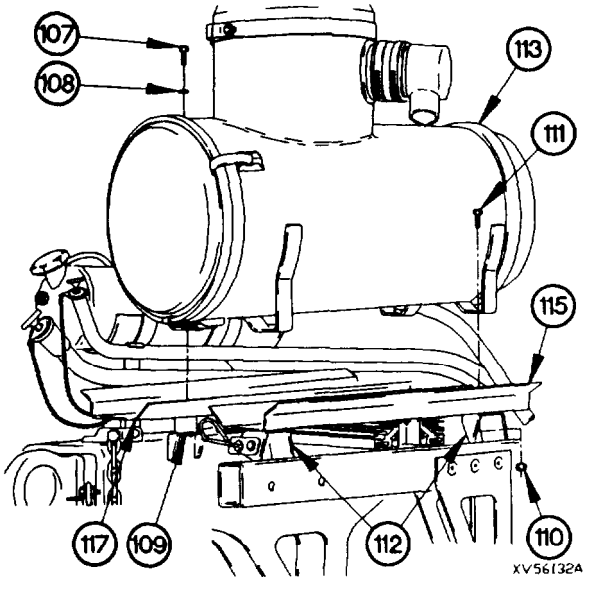
Position reverse polarity relay 24V terminals toward front of vehicle.

(77) Position reverse polarity relay (116) on brackets (115 and 117) with two screws (118) and self-locking nuts (119).

20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

(78) Position reverse polarity relay (116) and brackets (115 and 117) on mounting brackets (112) and resilient mount (109) with bracket (115) toward rear of vehicle.





(79) Position intake air cleaner housing (113) on brackets (115 and 117).

(80) Position washer (108) and screw (107) in resilient mount (109).

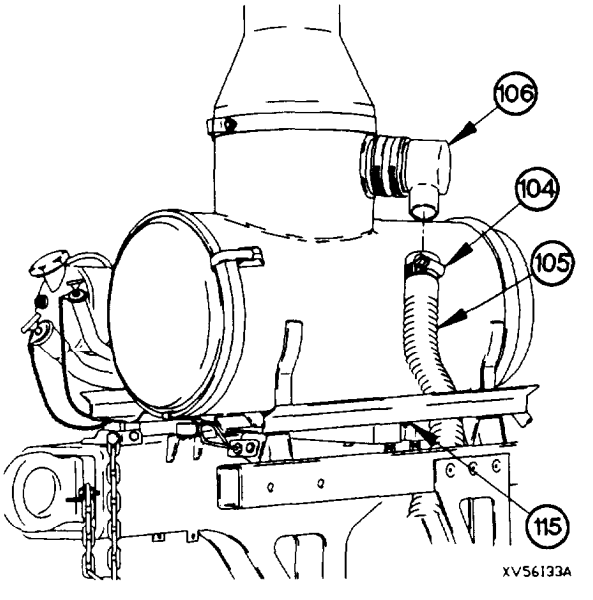
(81) Position three screws (111) and self-locking nuts (110) in mounting brackets (112).

(82) Tighten screw (107) to 26-31 lb-ft (35-42 N•m).

(83) Tighten three self-locking nuts (110) to 35-51 lb-ft (47-69 N•m).

(84) Position particle extraction hose (105) through bracket (115).

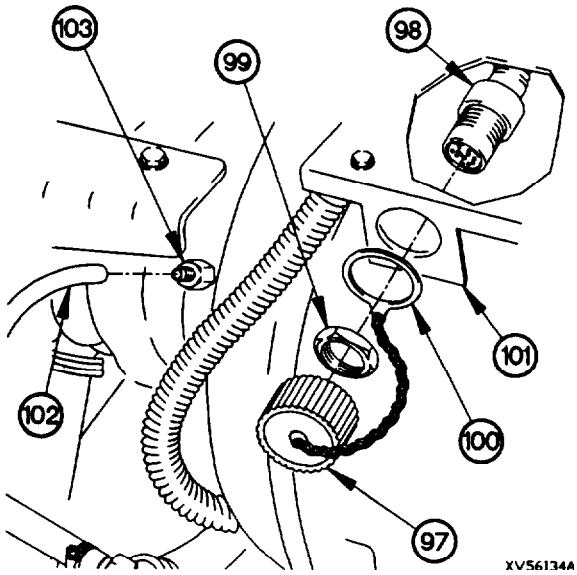
(85) Install particle extraction hose (105) on adapter (106) with clamp (104).

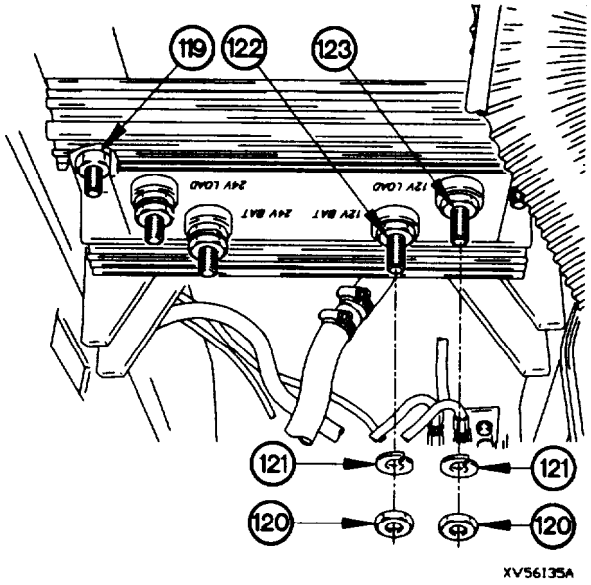


(86) Connect air filter restriction gauge hose (102) to air flow sensor (103).

(87) Install connector J106 (98) and dust cap lanyard (100) on chemical detection unit mounting bracket (101) with nut (99).

(88) Install dust cap (97) on connector J106 (98).



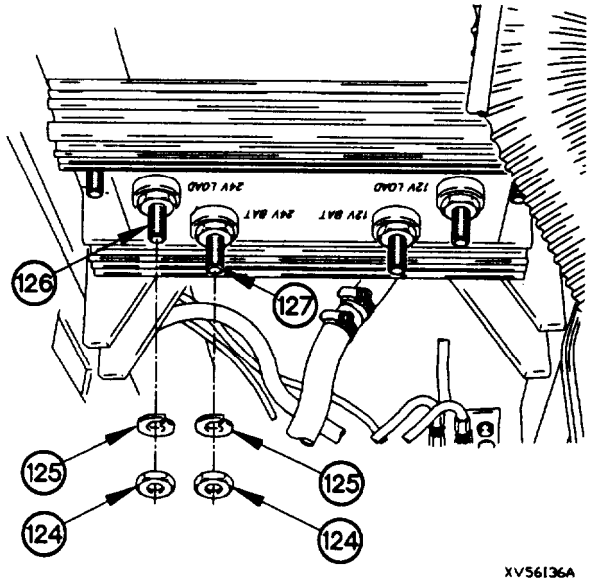


NOTE

Step (89) requires the aid of an assistant.

(89) Tighten two self-locking nuts (119) to 22-27 lb-ft (31-37 N•m).

(90) Remove two nuts (120) and lockwashers (121) from reverse polarity relay 12V BAT terminal (122) and 12V LOAD terminal (123).



(91) Remove two nuts (124) and lockwashers (125) from reverse polarity relay 24V LOAD terminal (126) and 24V BAT terminal (127).

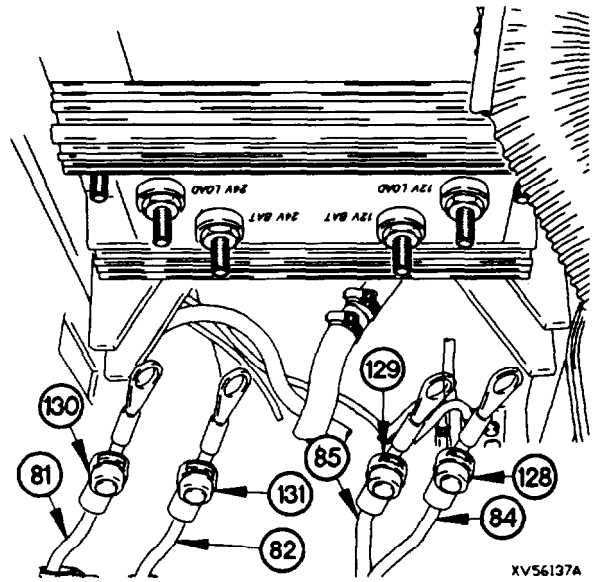
20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

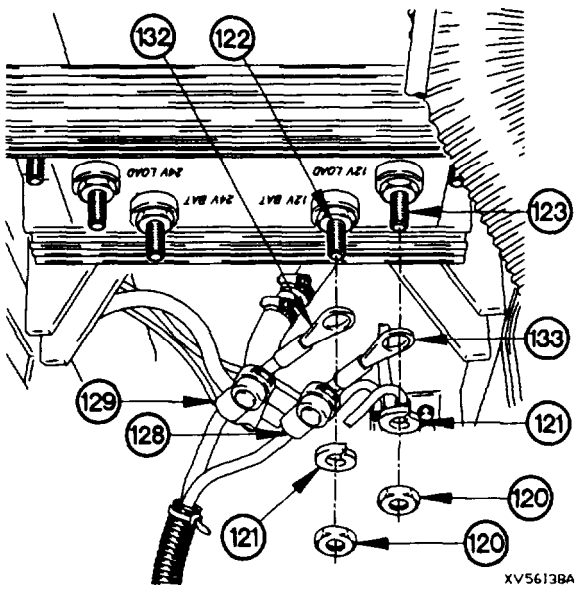
(92) Install dust boot (128) on 12vdc load cable (84).

(93) Install dust boot (129) on 12vdc battery cable (85).

(94) Install dust boot (130) on 24vdc load cable (81).

(95) Install dust boot (131) on 24vdc battery cable (82).





NOTE

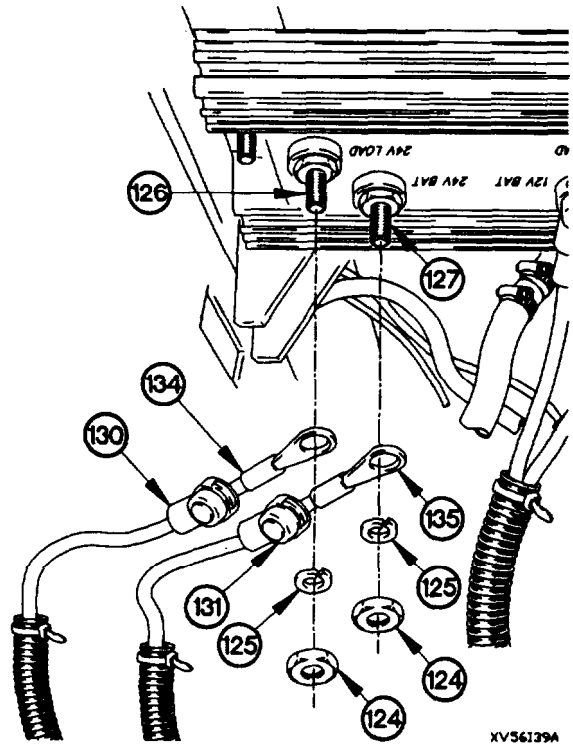
Steps (96) through (101) require the aid of an assistant.

(96) Position terminal lug TL173 (132) on reverse polarity relay 12V BAT terminal (122) with lockwasher (121) and nut (120).

(97) Position terminal lug TL174 (133) on reverse polarity relay 12V LOAD terminal (123) with lockwasher (121) and nut (120).

(98) Tighten two nuts (120) to 120 lb-in. (14 N•m).

(99) Position dust boots (128 and 129) on terminal lugs TL173 (132) and TL174 (133).

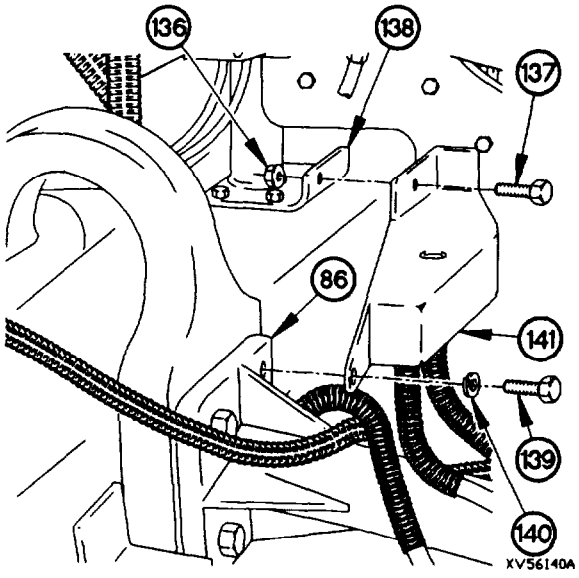


(100) Position terminal lug TL169 (134) on reverse polarity relay 24V LOAD terminal (126) with lockwasher (125) and nut (124).

(101) Position terminal lug TL168 (135) on reverse polarity relay 24V BAT terminal (127) with lockwasher (125) and nut (124).

(102) Tighten two nuts (124) to 30 lb-ft (41 N•m).

(103) Install dust boots (130 and 131) on terminal lugs TL169 (134) and TL188 (135).



NOTE

Perform steps (104) through (131) on M1081 only.

(104) Remove self-locking nut (136) and screw (137) from spare tire retainer (138). Discard self-locking nut.

(105) Remove screw (139) and spring washer (140) from front lifting beam (86). Discard spring washer.

(106) Position bracket (141) on spare tire retainer (138) with screw (137) and self-locking nut (136).

(107) Position bracket (141) on front lifting beam (86) with spring washer (140) and screw (139).

(108) Tighten self-locking nut (136) to 43-51 lb-ft (58-69 N•m).

(109) Tighten screw (139) to 43-51 lb-ft (58-69 N•m).

20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

(110) Remove self-locking nut (142) and screw (143) from spare tire retainer (138). Discard self-locking nut.

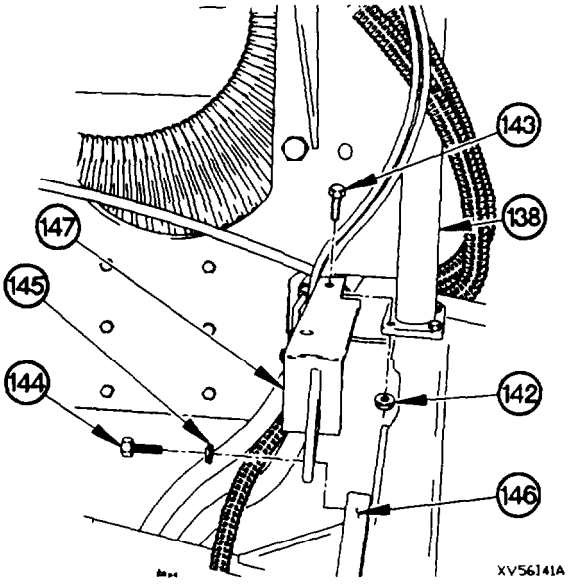
(111) Remove screw (144) and spring washer (145) from rear support brace (146). Discard spring washer.

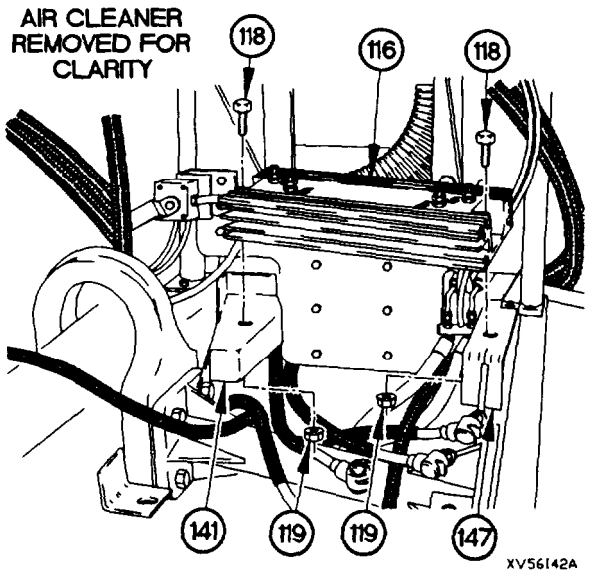
(112) Position bracket (147) on spare tire retainer (138) with screw (143) and self-locking nut (142).

(113) Position bracket (147) on rear support brace (146) with spring washer (145) and screw (144).

(114) Tighten self-locking nut (142) to 43-51 lb-ft (58-69 N•m).

(115) Tighten screw (144) to 43-51 lb-ft (58-69 N•m).





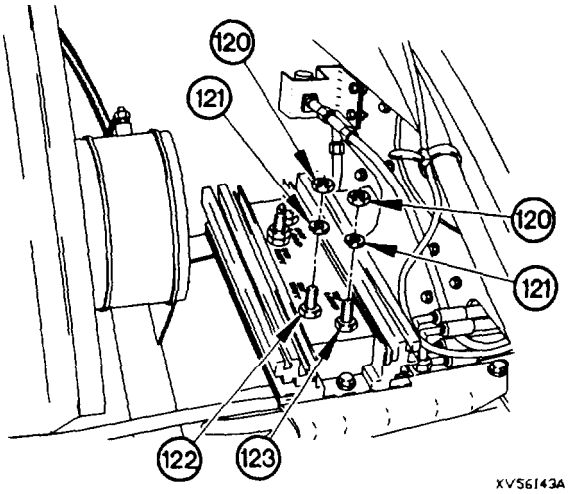
NOTE

Position reverse polarity relay 24V terminals toward front of vehicle.

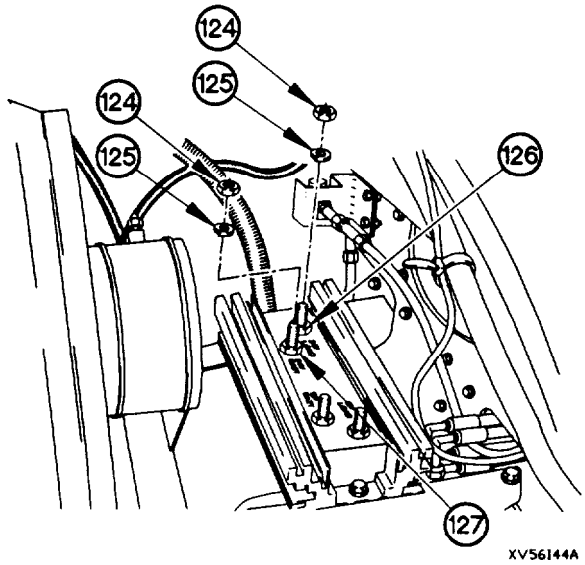
(116) Position reverse polarity relay (116) on brackets (141 and 147) with two screws (118) and self-locking nuts (119).

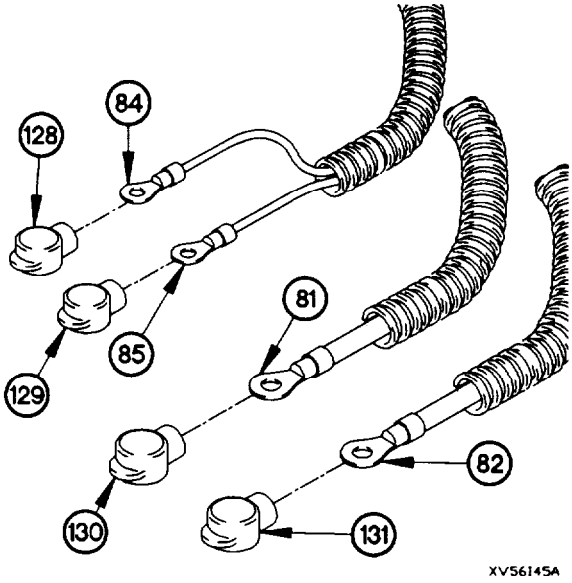
(117) Tighten two self-locking nuts (119) to 22-27 lb-ft (31-37 N•m).

(118) Remove two nuts (120) and lockwashers (121) from reverse polarity relay 12V BAT terminal (122) and 12V LOAD terminal (123).



(119) Remove two nuts (124) and lockwashers (125) from reverse polarity relay 24V LOAD terminal (126) and 24V BAT terminal (127).





(120) Install dust boot (128) on 12vdc load cable (84).

(121) Install dust boot (129) on 12vdc battery cable (85).

(122) Install dust boot (130) on 24vdc load cable (81).

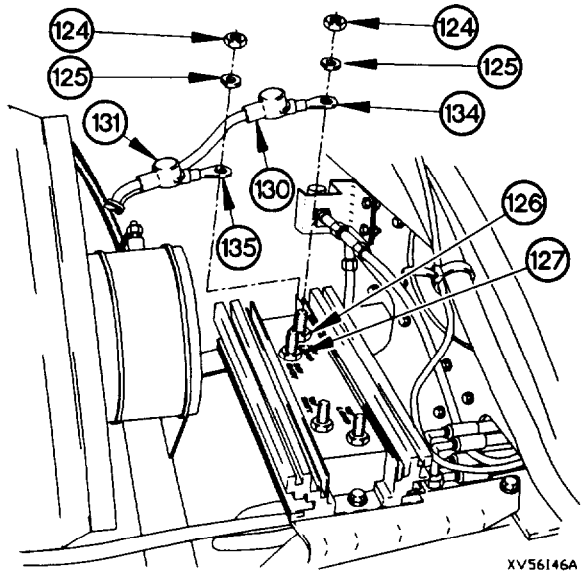
(123) Install dust boot (131) on 24vdc battery cable (82).

(124) Position terminal lug TL169 (134) on reverse polarity relay 24V LOAD terminal (126) with lockwasher (125) and nut (124).

(125) Position terminal lug TL168 (135) on reverse polarity relay 24V BAT terminal (127) with lockwasher (125) and nut (124).

(126) Tighten two nuts (124) to 30 lb-ft (41 N•m).

(127) Position dust boots (130 and 131) on terminal lugs TL169 (134) and TL168 (135).



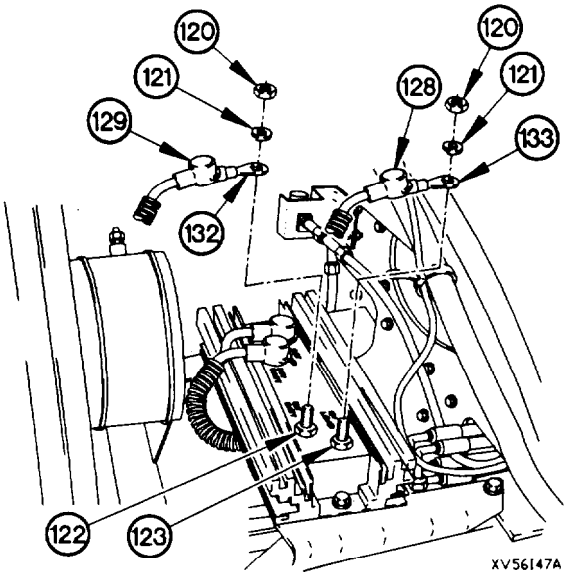
20-54. 200 AMP ALTERNATOR KIT INSTALLATION (CONT)

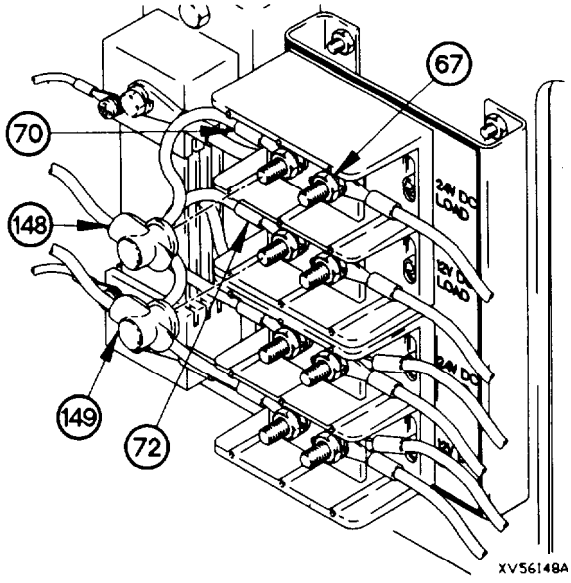
(128) Position terminal lug TL173 (132) on reverse polarity relay 12V BAT terminal (122) with lockwasher (121) and nut (120).

(129) Position terminal lug TL174 (133) on reverse polarity relay 12V LOAD terminal (123) with lockwasher (121) and nut (120).

(130) Tighten two nuts (120) to 120 lb-in. (14 N•m).

(131) Position dust boots (128 and 129) on terminal lugs TL173 (132) and TL174 (133).





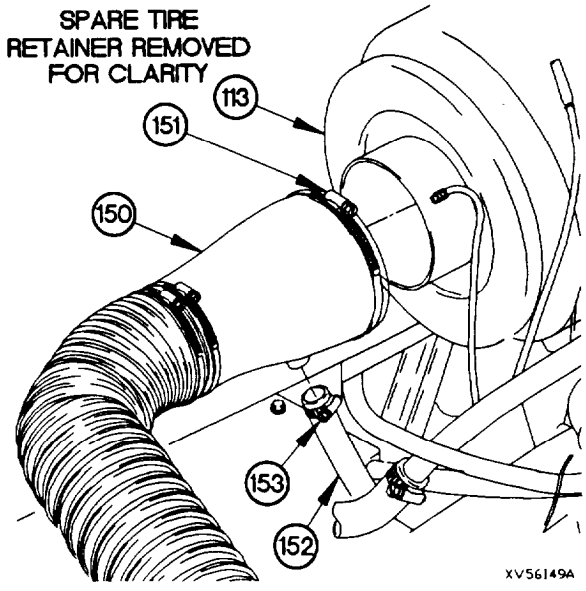
(132) Tighten eight nuts (67) to 15-19 lb-ft (21-25 N•m).

(133) Position dust boots (148 and 149) on terminal lugs TL44 (70) and TL80 (72).

(134) Position intake air cleaner boot (150) on intake air cleaner housing (113) with clamp (151).

(135) Position air compressor intake hose (152) on intake air cleaner boot (150) with clamp (153).

(136) Tighten clamps (151 and 153) to 36-48 lb-in. (4-5 N•m).



b. Follow-On Maintenance.

(1) Install alternator belts (para 7-3).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Connect batteries (para 7-48).

(4) Start engine (TM 9-2320-365-10).

(5) Check alternator operation (TM 9-2320-365-10).

(6) Shut down engine (TM 9-2320-365-10).

End of Task.

20-55. 200 AMP ALTERNATOR KIT REMOVAL

This task covers:

a. Removal

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Vise, Machinist (Item 46, Appendix C)
Caps, Vise Jaw (Item 4, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (2) (Item 66, Appendix G)
Lockwasher (2) (Item 65, Appendix G)
Nut, Self-Locking (2) (Item 139, Appendix G)
Nut, Self-Locking (M1081) (2) (Item 140, Appendix G)

Materials/Parts
Washer, Spring (M1081) (2) (Item 280, Appendix G)
Nut, Self-Locking (all models except M1081) (3) (Item 140, Appendix G)
Lockwasher (8) (Item 92, Appendix G)
Nut, Self-Locking (8) (Item 146, Appendix G)
Lockwasher (2) (Item 101, Appendix G)
Terminal, Lug (Item 265, Appendix G)
Terminal, Lug (Item 264, Appendix G)
Lockwasher (Item 98, Appendix G)
Nut, Self-Locking (Item 130, Appendix G)
Nut, Self-Locking (Item 131, Appendix G)
Nut, Self-Locking (Item 129, Appendix G)

Personnel Required
(2)

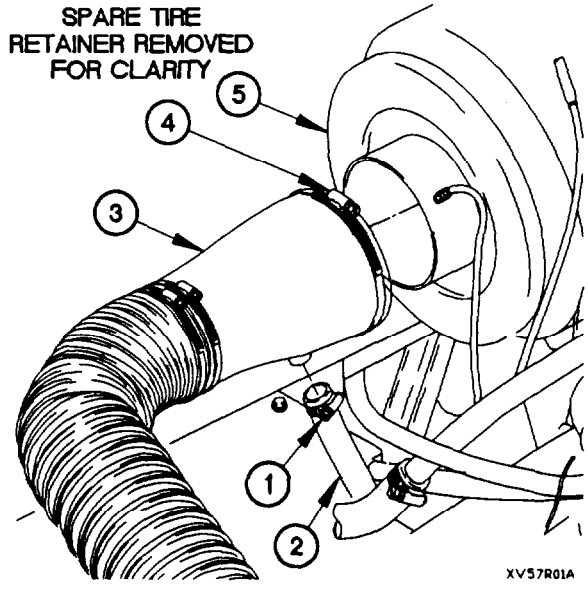
a. Removal.

(1) Loosen clamp (1) on air compressor intake hose (2).

(2) Remove air compressor intake hose (2) from intake air cleaner boot (3).

(3) Loosen clamp (4) on intake air cleaner boot (3).

(4) Remove intake air cleaner boot (3) from intake air cleaner housing (5).



NOTE

- Perform steps (5) through (27) on M1081.
- Remove plastic cable ties as required.

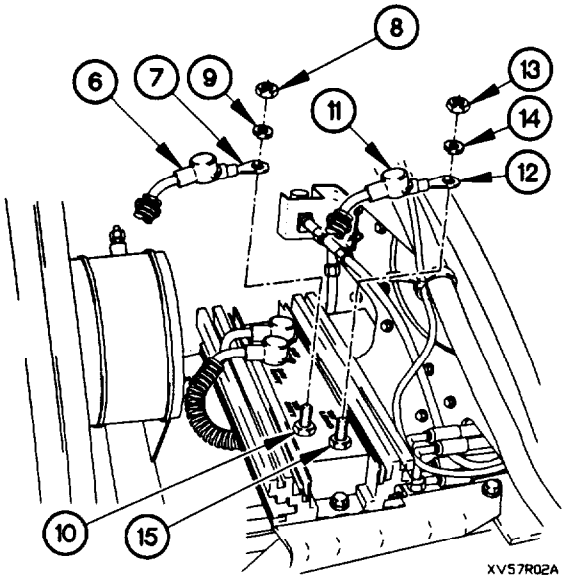
(5) Lift dust boot (6) on terminal lug TL173 (7).

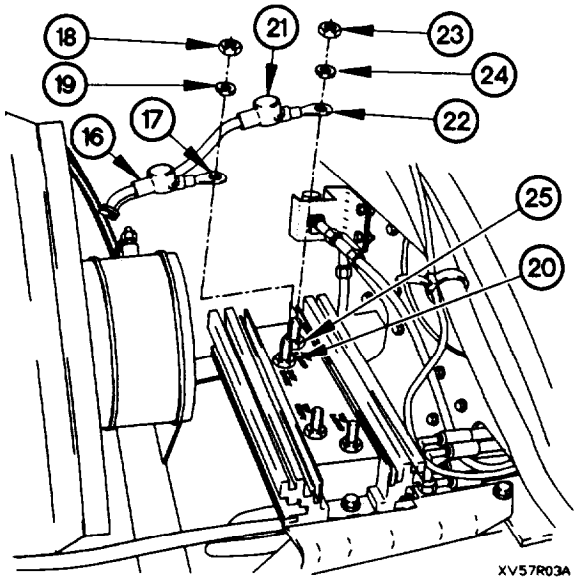
(6) Remove nut (8), lockwasher (9), and terminal lug TL173 (7) from reverse polarity relay 12V BAT terminal (10). Discard lockwasher.

(7) Lift dust boot (11) on terminal lug TL174 (12).

(8) Remove nut (13), lockwasher (14), and terminal lug TL174 (12) from reverse polarity relay 12V LOAD terminal (15). Discard lockwasher.

(9) Position lockwashers (9 and 14) and nuts (8 and 13) on reverse polarity relay 12V BAT terminal (10) and 12V LOAD terminal (15).





(10) Lift dust boot (18) on terminal lug TL168 (17).

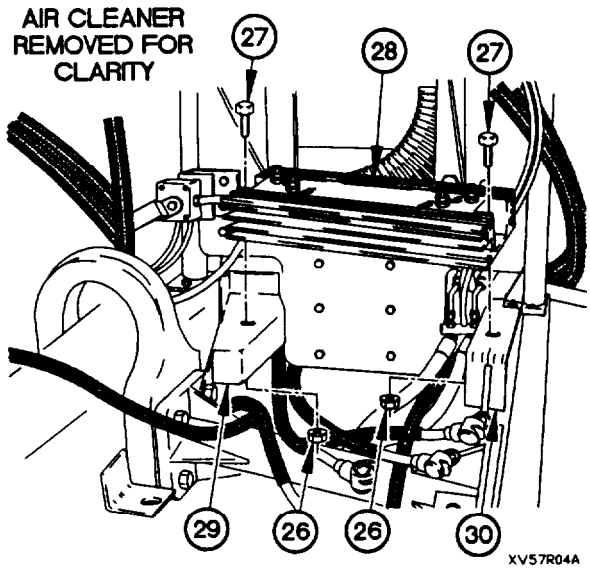
(11) Remove nut (18), lockwasher (19), and terminal lug TL168 (17) from reverse polarity relay 24V BAT terminal (20). Discard lockwasher.

(12) Lift dust boot (21) on terminal lug TL169 (22).

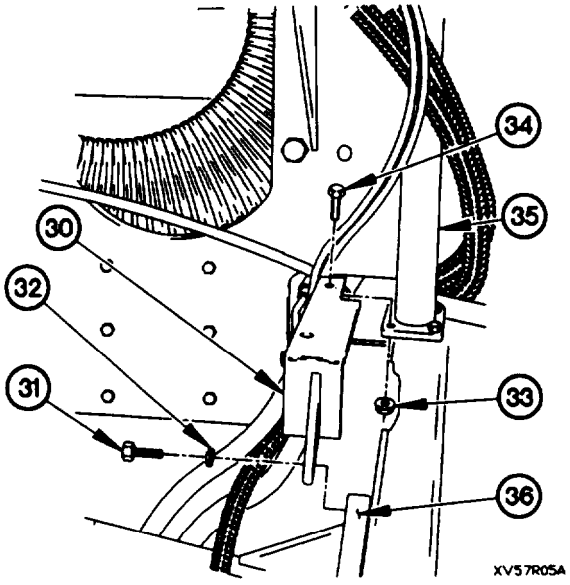
(13) Remove nut (23), lockwasher (24), and terminal lug TL169 (22) from reverse polarity relay 24V LOAD terminal (25). Discard lockwasher.

(14) Position lockwashers (19 and 24) and nuts (18 and 23) on reverse polarity relay 24V BAT terminal (20) and 24V LOAD terminal (25).

20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)



(15) Remove two self-locking nuts (26), screws (27), and reverse polarity relay (28) from brackets (29 and 30). Discard self-locking nuts.



(18) Remove screw (31) and lockwasher (32) from bracket (30). Discard lockwasher.

(17) Remove self-locking nut (33), screw (34), and bracket (30) from spare tire retainer (35). Discard self-locking nut.

(18) Position screw (34) and self-locking nut (33) in spare tire retainer (35).

(19) Tighten self-locking nut (33) to 43-51 lb-ft (58-69 N•m).

(20) Position lockwasher (32) and screw (31) in rear support brace (36).

(21) Tighten screw (31) to 43-51 lb-ft (58-69 N•m).

(22) Remove screw (37) and lockwasher (38) from bracket (29). Discard lockwasher.

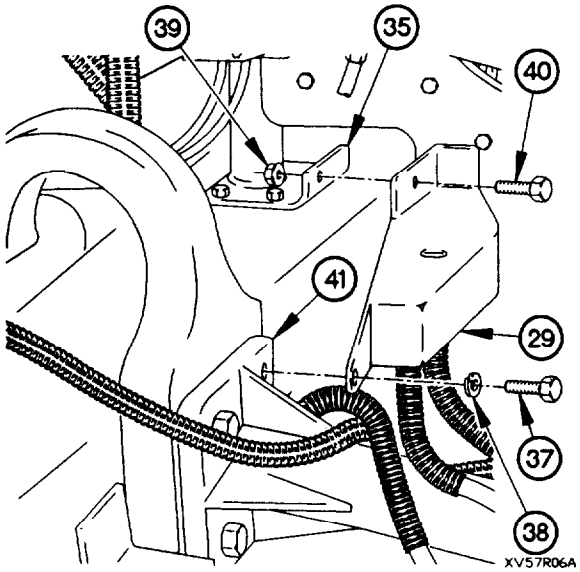
(23) Remove self-locking nut (39), screw (40), and bracket (29) from spare tire retainer (35). Discard self-locking nut.

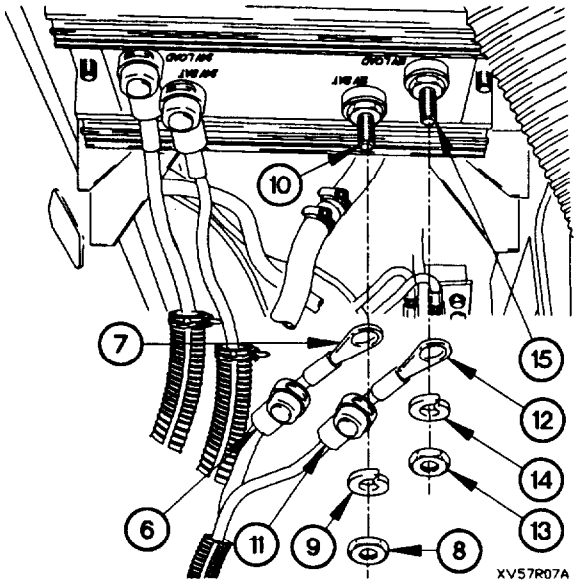
(24) Position screw (40) and self-locking nut (39) in spare tire retainer (35).

(25) Tighten self-locking nut (39) to 43-51 lb-ft (58-69 N•m).

(26) Position lockwasher (38) and screw (37) in front lifting beam (41).

(27) Tighten screw (37) to 43-51 lb-ft (58-69 N•m).





NOTE

- Perform steps (28) through (56) on all models except M1081.
- Remove plastic cable ties as required.

(28) Lift dust boot (6) on terminal lug TL173 (7).

(29) Remove nut (8), lockwasher (9), and terminal lug TL173 (7) from reverse polarity relay 12V BAT terminal (10). Discard lockwasher.

(30) Lift dust boot (11) on terminal lug TL174 (12).

(31) Remove nut (13), lockwasher (14), and terminal lug TL174 (12) from reverse polarity relay 12V LOAD terminal (15). Discard lockwasher.

(32) Position lockwashers (9 and 14) and nuts (8 and 13) on reverse polarity relay 12V BAT terminal (10) and 12V LOAD terminal (15).

20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

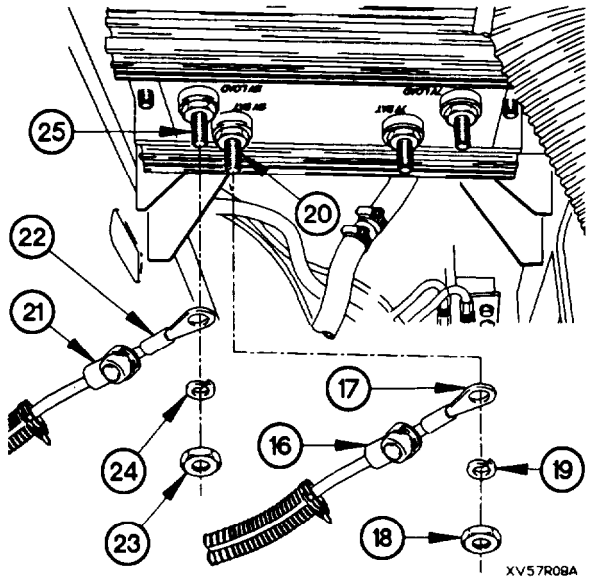
(33) Lift dust boot (16) on terminal lug TL168 (17).

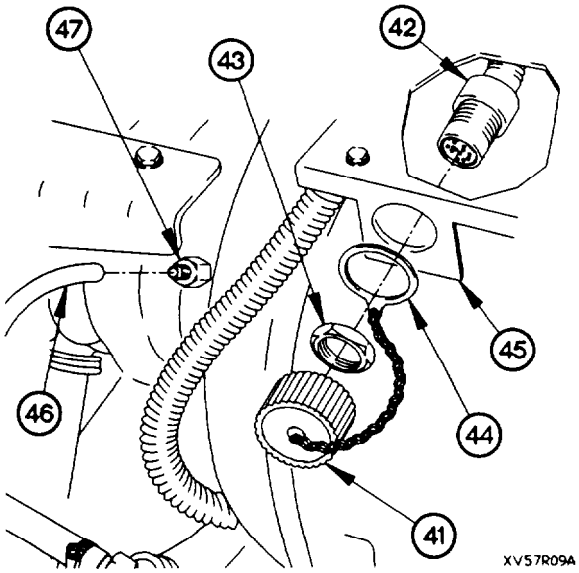
(34) Remove nut (18), lockwasher (19), and terminal lug TL168 (17) from reverse polarity relay 24V BAT terminal (20). Discard lockwasher.

(35) Lift dust boot (21) on terminal lug TL169 (22).

(36) Remove nut (23), lockwasher (24), and terminal lug TL169 (22) from reverse polarity relay 24V LOAD terminal (25). Discard lockwasher.

(37) Position lockwashers (19 and 24) and nuts (18 and 23) on reverse polarity relay 24V BAT terminal (20) and 24V LOAD terminal (25).

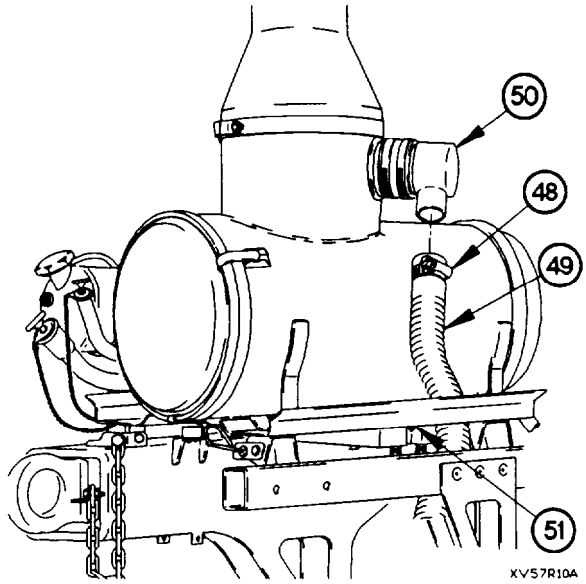




(38) Remove dust cap (41) from connector J106 (42).

(39) Remove nut (43), dust cap lanyard (44), and connector J106 (42) from chemical detection unit mounting bracket (45).

(40) Disconnect air filter restriction gauge hose (46) from air flow sensor (47).



(41) Loosen clamp (48) on particle extraction hose (49).

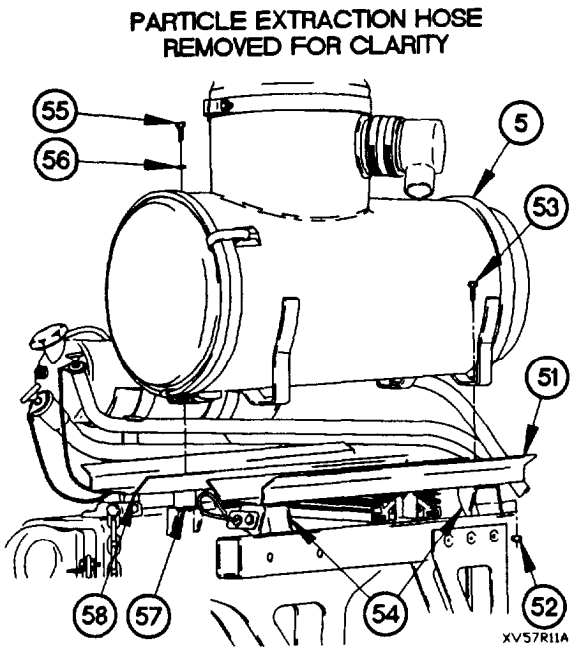
(42) Disconnect particle extraction hose (49) from adapter (50).

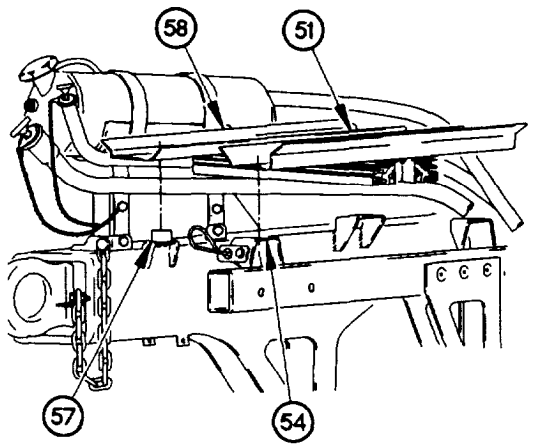
(43) Remove particle extraction hose (49) from bracket (51).

(44) Remove three self-locking nuts (52) and screws (53) from mounting brackets (54). Discard self-locking nuts.

(45) Remove screw (55) and washer (56) from resilient mount (57).

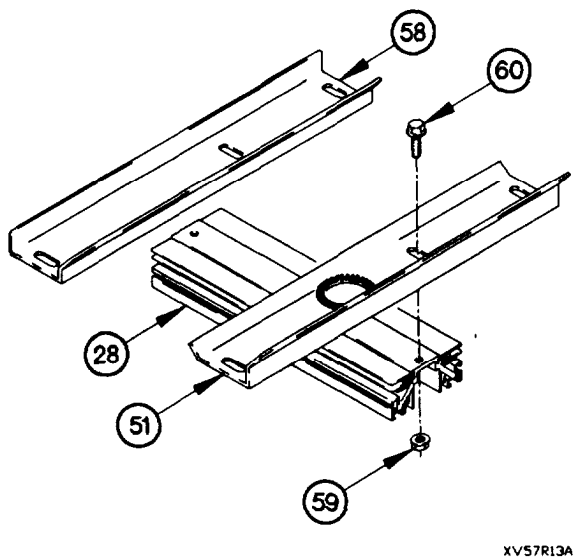
(46) Remove intake air cleaner housing (5) from brackets (51 and 58).





(47) Remove brackets (51 and 58) from three mounting brackets (54) and resilient mount (57).

(48) Remove two self-locking nuts (59), screws (60), and reverse polarity relay (28) from brackets (51 and 58). Discard self-locking nuts.



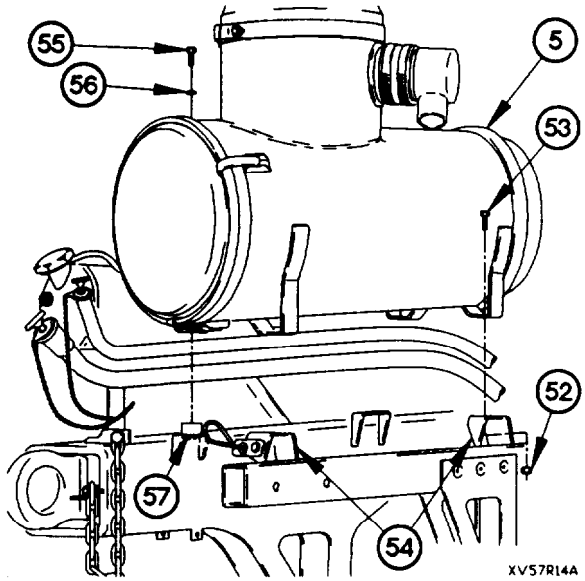
20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

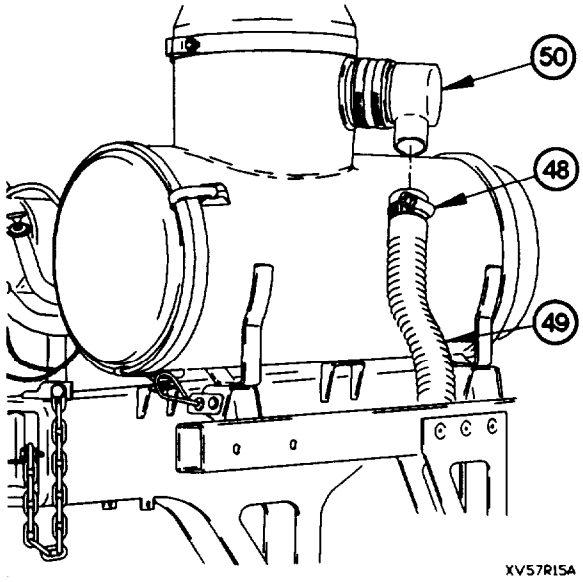
(49) Position intake air cleaner housing (5) on three mounting brackets (54) with three screws (53) and self-locking nuts (52).

(50) Position washer (56) and screw (55) in resilient mount (57).

(51) Tighten screw (55) to 26-31 lb-ft (35-42 N•m).

(52) Tighten three self-locking nuts (52) to 35-51 lb-ft (47-69 N•m).



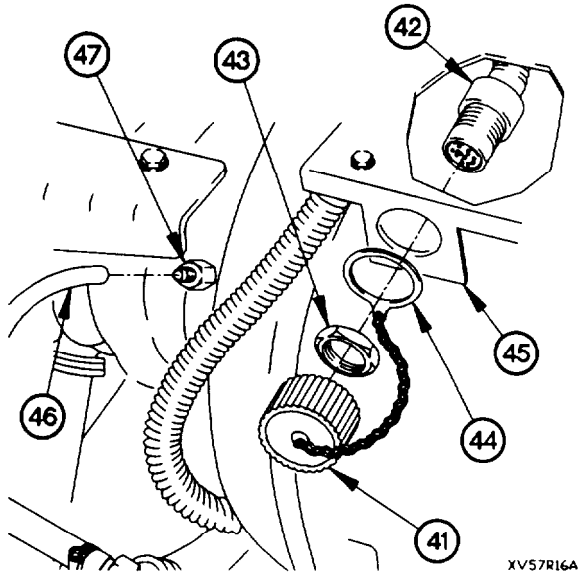


(53) Install particle extraction hose (49) on adapter (50) with clamp (48).

(54) Connect air filter restriction gauge hose (46) to air flow sensor (47).

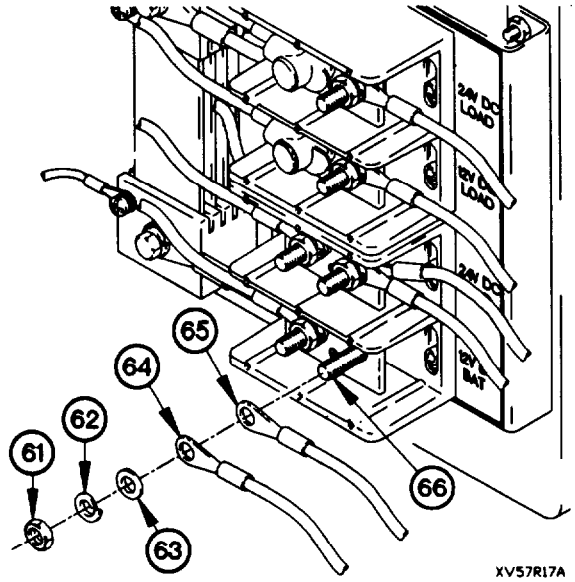
(55) Install connector J106 (42) and dust cap lanyard (44) on chemical detection unit mounting bracket (45) with nut (43).

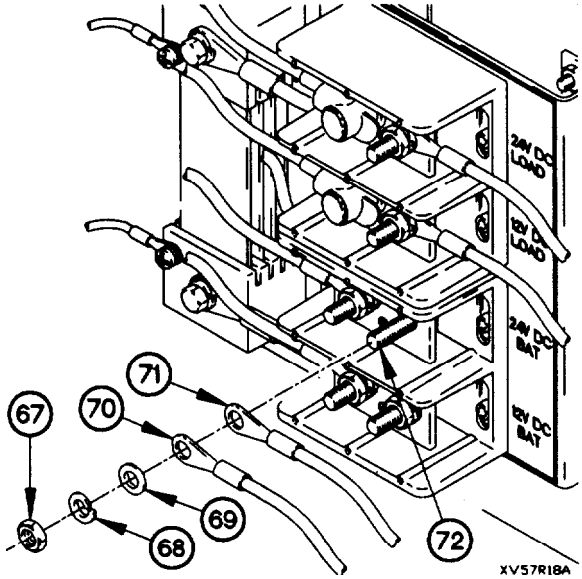
(56) Install dust cap (41) on connector J106 (42).



(57) Remove nut (61), lockwasher (62), washer (63), and terminal lugs TL171 (64) and TL61 (65) from terminal block terminal (68). Discard lockwasher.

(58) Position washer (63). lockwasher (62), and nut (61) on terminal block terminal (66).



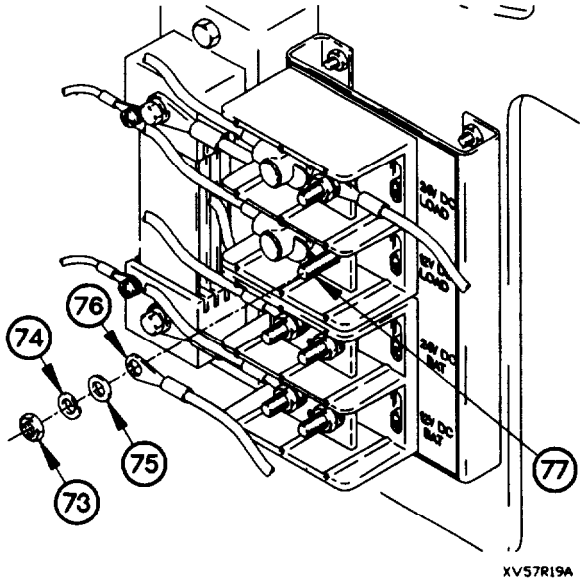


(59) Remove nut (67), lockwasher (68), washer (69), and terminal lugs TL1 (70) and TL166 (71) from terminal block terminal (72). Discard lockwasher.

(60) Position washer (69). lockwasher (68), and nut (67) on terminal block terminal (72).

(61) Remove nut (73), lockwasher (74), washer (75), and terminal lug TL172 (76) from terminal block terminal (77). Discard lockwasher.

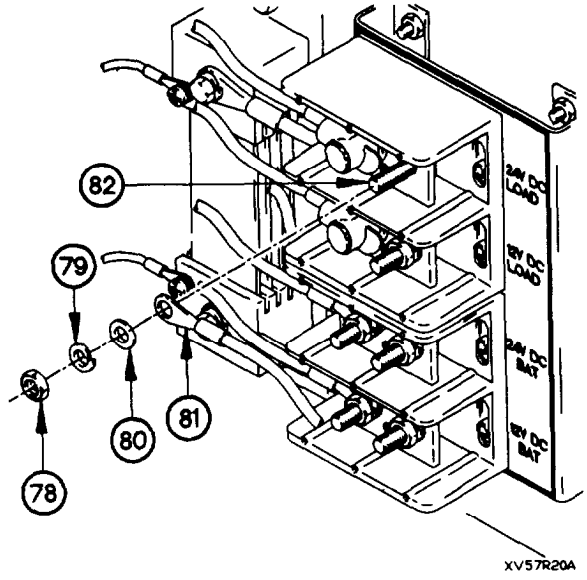
(62) Position washer (75), lockwasher (74), and nut (73) on terminal block terminal (77).

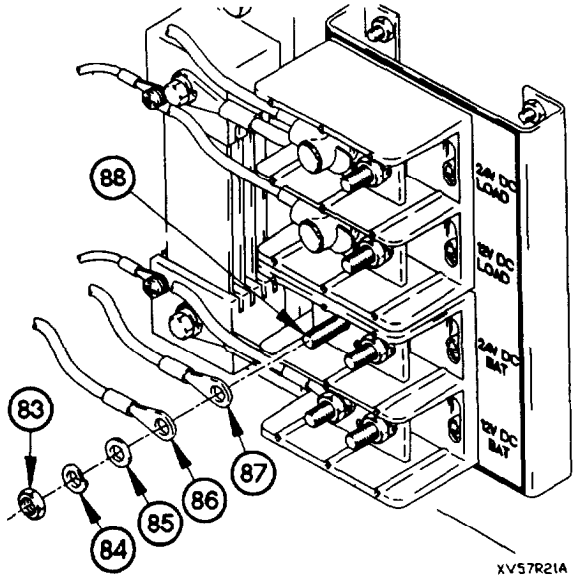


20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

(63) Remove nut (78), lockwasher (79), washer (80), and terminal lug TL167 (81) from terminal block terminal (82). Discard lockwasher.

(64) Position washer (80), lockwasher (79), and nut (78) on terminal block terminal (82).



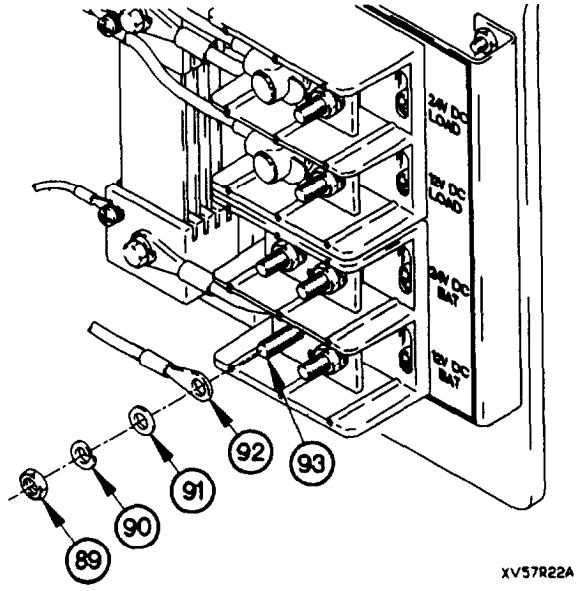


(65) Remove nut (83), lockwasher (84), washer (85), and terminal lugs TL37 (86) and TL36 (87) from terminal block terminal (88). Discard lockwasher.

(66) Position washer (85), lockwasher (84), and nut (83) on terminal block terminal (88).

(67) Remove nut (89), lockwasher (90), washer (91), and terminal lug TL47 (92) from terminal block terminal (93). Discard lockwasher.

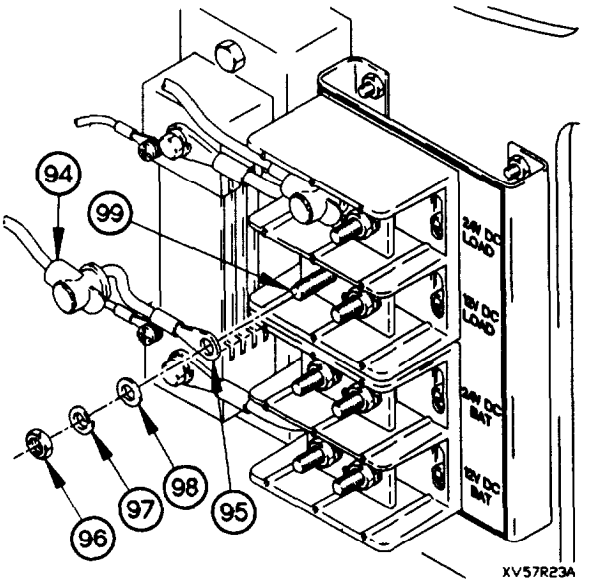
(68) Position washer (91). lockwasher (90), and nut (89) on terminal block terminal (93).

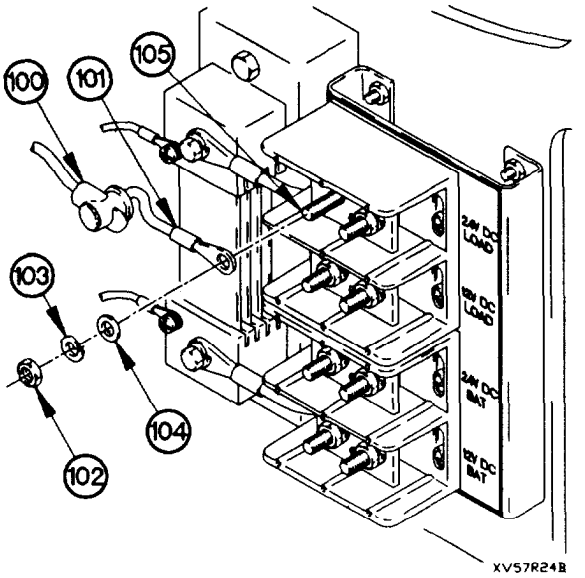


(69) Lift dust boot (94) on terminal lug TL80 (95).

(70) Remove nut (961, lockwasher (97), washer (98), and terminal lug TL80 (95) from terminal block terminal (99). Discard lockwasher.

(71) Position washer (98), lockwasher (97), and nut (96) on terminal block terminal (99).



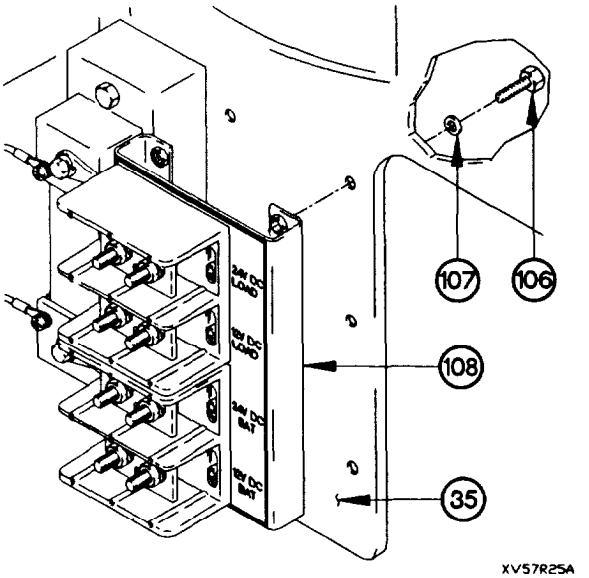


(72) Lift dust boot (100) on terminal lug TL44 (101).

(73) Remove nut (102), lockwasher (103), washer (104), and terminal lug TL44 (101) from terminal block terminal (105). Discard lockwasher.

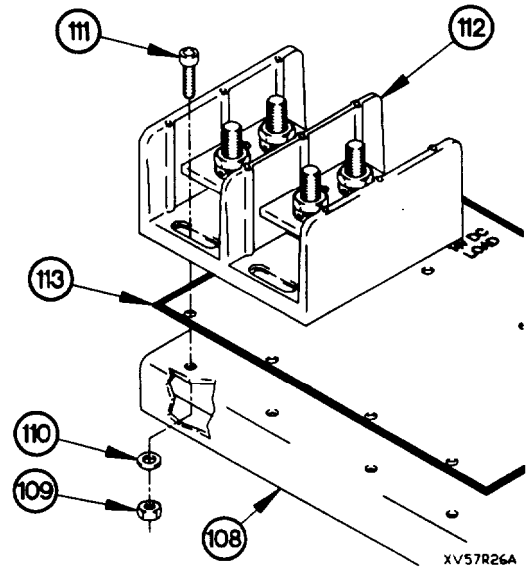
(74) Position washer (104), lockwasher (103), and nut (102) on terminal block terminal (105).

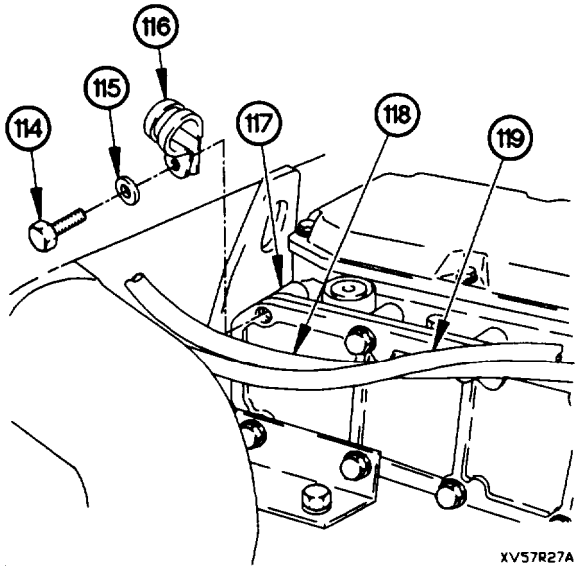
(75) Remove four screws (106), washers (107), and bracket (108) from spare tire retainer (35).



20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

(76) Remove eight self-locking nuts (109), washers (110), screws (111), two terminal blocks (112) and identification plate (113) from bracket (108). Discard self-locking nuts.





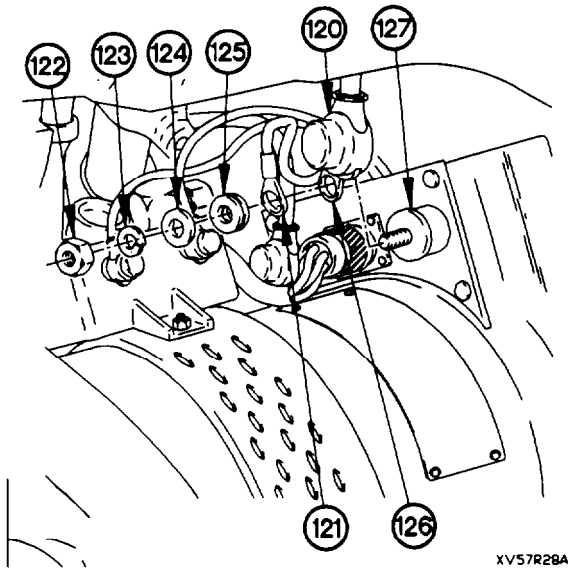
(77) Remove three screws (114), washers (115), and clamps (116) from air inlet manifold (117).

(78) Remove three clamps (116) from 12vdc cable (118) and 24vdc cable (119).

(79) Lift dust boot (120) on terminal lug TL6 (121).

(80) Remove nut (122), lockwasher (123), washer (124) fuse (125), and terminal lugs TL6 (121), and TL2 (126) from alternator terminal (127). Discard lockwasher.

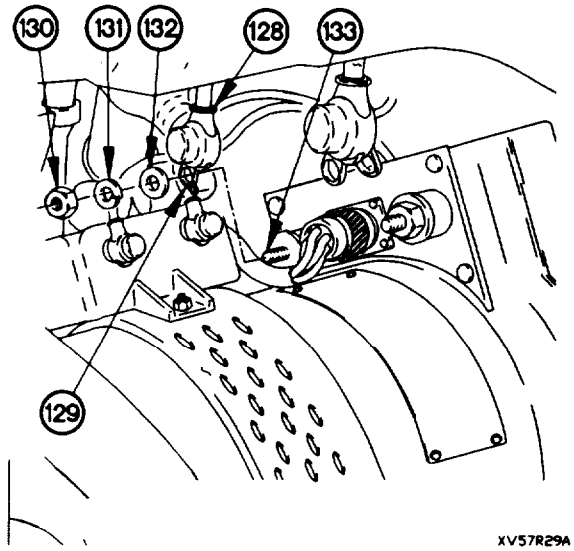
(81) Position fuse (125), washer (124), lockwasher (123), and nut (122) on alternator terminal (127).

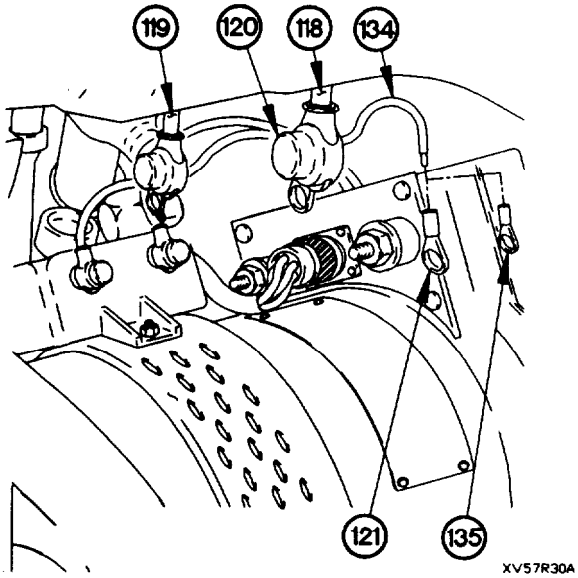


(82) Lift dust boot (128) on terminal lug TL60 (129).

(83) Remove nut (130), lockwasher (131), washer (132), and terminal lug TL60 (129) from alternator terminal (133). Discard lockwasher.

(84) Position washer (132), lockwasher (131), and nut (130) on alternator terminal (133).





(85) Remove terminal lug TL6 (121) from wire (134). Discard terminal lug.

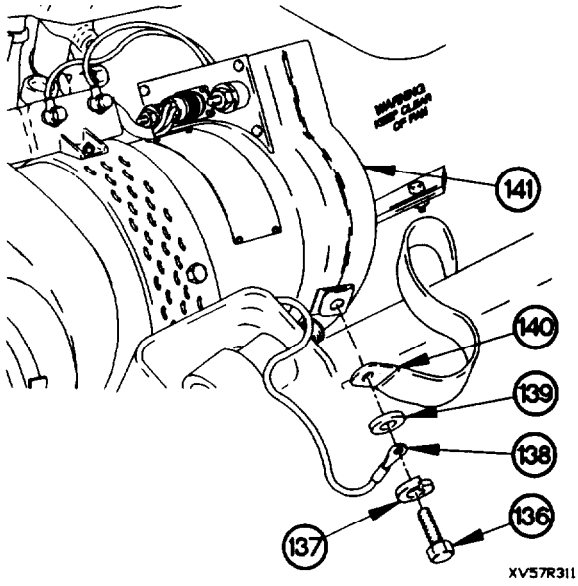
(86) Remove wire (134) from dust boot (120).

(87) Install terminal lug TL6 (135) on wire (134).

(88) Remove 12vdc cable (118) and 24vdc cable (119) from vehicle.

(89) Remove screw (136), lockwasher (137), terminal lug TL5 (138), washer (139), and ground strap (140) from alternator (141). Discard lockwasher.

(90) Position washer (139), lockwasher (137), and screw (136) in alternator (141).

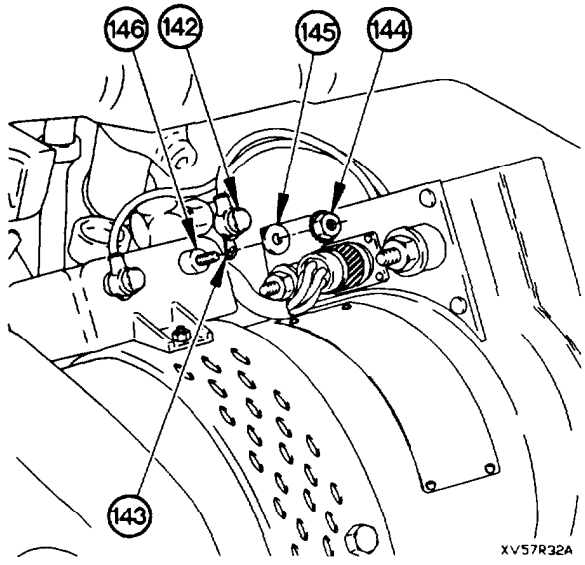


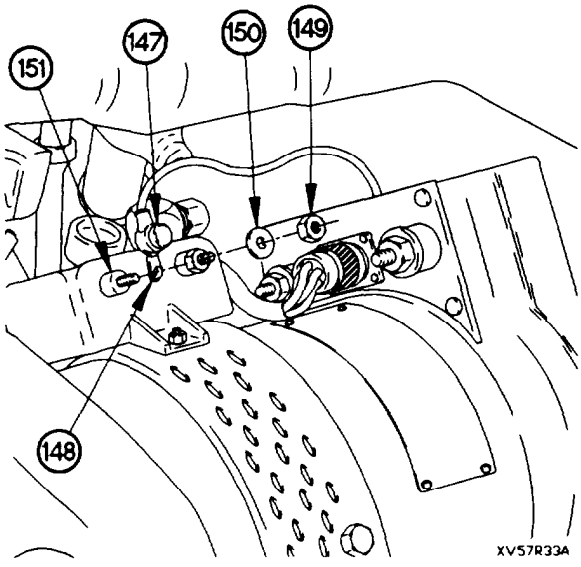
20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

(91) Lift dust boot (142) on terminal lug TL35 (143).

(92) Remove self-locking nut (144), washer (145), and terminal lug TL35 (143) from voltage regulator terminal (146). Discard self-locking nut.

(93) Position washer (145) and self-locking nut (144) on voltage regulator terminal (146).





(94) Lift dust boot (147) on terminal lug TL110 (148).

(95) Remove self-locking nut (149), washer (150), and terminal lug TL110 (148) from voltage regulator terminal (151). Discard self-locking nut.

(96) Position washer (150) and self-locking nut (149) on voltage regulator terminal (151).

(97) Remove nut (152), washer (153), screw (154), and washer (155) from alternator (141).

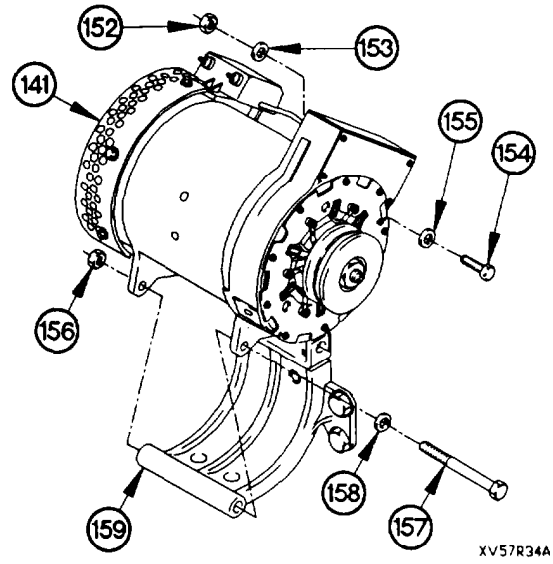
WARNING

200 amp alternator weighs approximately 70 lbs (32 kgs). The aid of an assistant is required to remove 200 amp alternator. Failure to comply may result in injury to personnel.

NOTE

Step (98) requires the aid of an assistant.

(98) Remove nut (156), screw (157), washer (158), and alternator (141) from alternator bracket (159).



CAUTION

Alternator pulley must be positioned in a vise equipped with vise jaw caps when loosening self-locking nut. Failure to comply may result in damage to equipment.

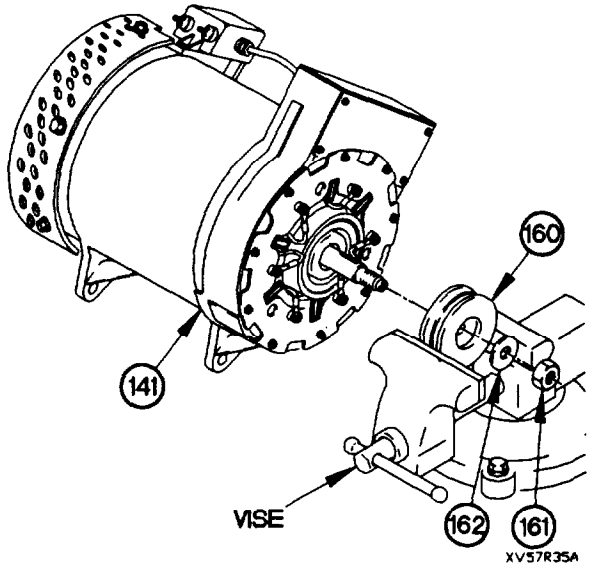
(99) Position pulley (160) in vise.

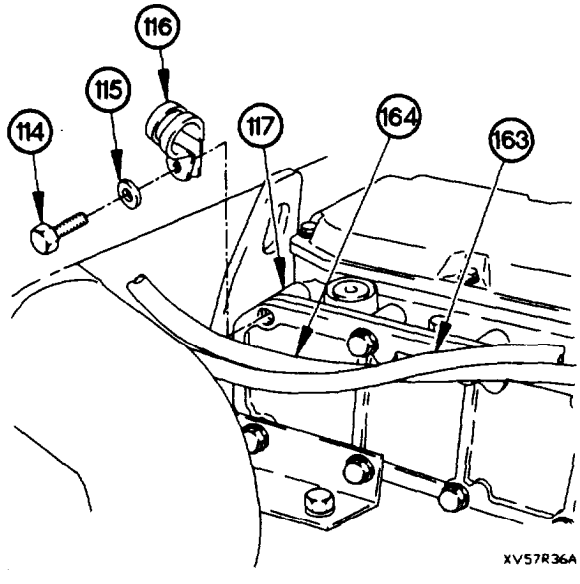
(100) Loosen self-locking nut (161).

(101) Remove pulley (160) from vise.

(102) Remove self-locking nut (161), washer (162), and pulley (160) from alternator (141). Discard self-locking nut.

(103) Position washer (162) and self-locking nut (161) on alternator (141).





(104) Position three clamps (116) on 12vdc cable (163) and 24vdc cable (164).

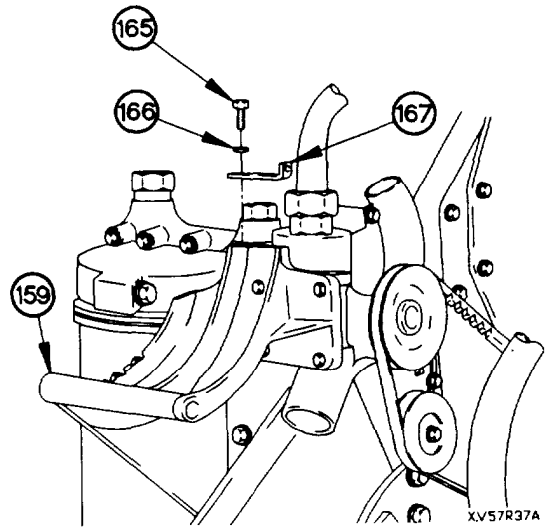
(105) Position three clamps (116) on air inlet manifold (117) with three washers (115) and screws (114).

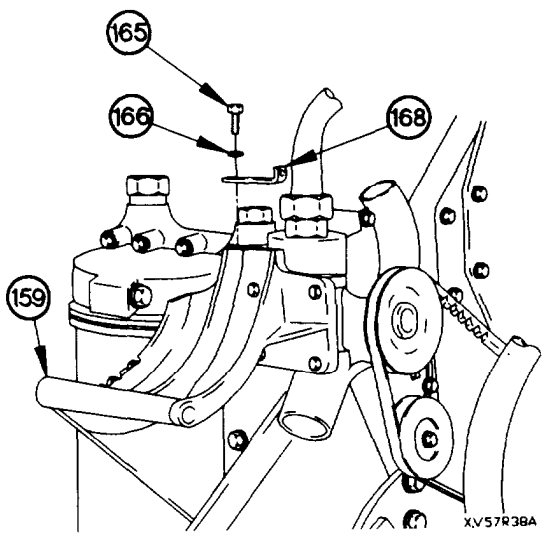
(106) Tighten three screws (114) to 22-27 lb-ft (31-37 N•m).

(107) Position 12vdc cable (163) and 24vdc cable (164) on vehicle.

20-55. 200 AMP ALTERNATOR KIT REMOVAL (CONT)

(108) Remove two screws (165), washers (166), and belt adjusting arm (167) from alternator bracket (159).





(109) Position belt adjusting arm (168) on alternator bracket (159) with two washers (166) and screws (165).

(110) Tighten two screws (165) to 22-27 lb-ft (30-37 N•m).

b. Follow-On Maintenance.

(1) Install 100 amp reverse polarity relay (para 7-27).

(2) Install 100 amp alternator (para 7-2).

(3) Raise spare tire (TM 9-2320-365-10).

(4) Lower cab (TM 9-2320-365-10).

(5) Connect batteries (para 7-48).

(6) Start engine (TM 9-2320-365-10).

(7) Check alternator operation (TM 9-2320-365-10).

(8) Shut down engine (TM 9-2320-365-10).

End of Task.

20-56. 200 AMP ALTERNATOR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Alternator belts removed (para 7-3).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Sling, Cargo (Item 31, Appendix C)
Vise, Machinist (Item 46, Appendix C)
Caps, Vise Jaw (Item 4, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Nut, Self-Locking (Item 137, Appendix G)

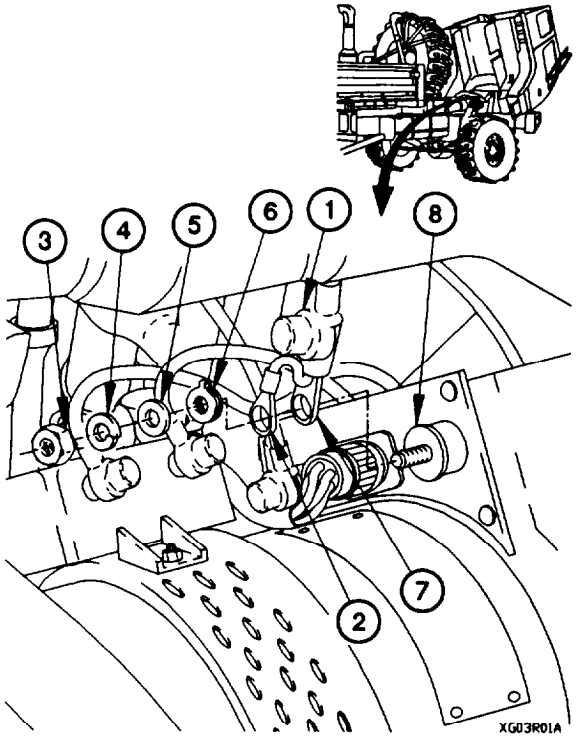
Personnel Required
(2)

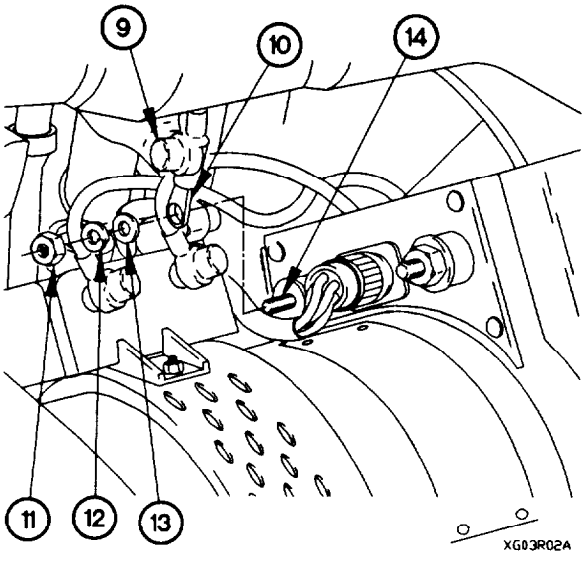
a. Removal.

(1) Lift dust boot (1) on terminal lug TL6 (2).

(2) Remove nut (3), lockwasher (4), washer (5), fuse (6), and terminal lugs TL6 (2) and TL2 (7) from alternator terminal (8).

(3) Position fuse (6), washer (5), lockwasher (4), and nut (3) on alternator terminal (8).





(4) Lift dust boot (9) on terminal lug TL60 (10).

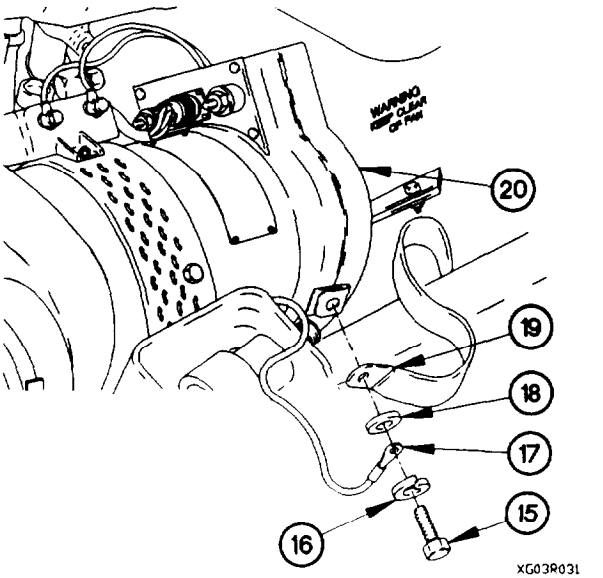
(5) Remove nut (11), lockwasher (12), washer (13), and terminal lug TL60 (10) from alternator terminal (14).

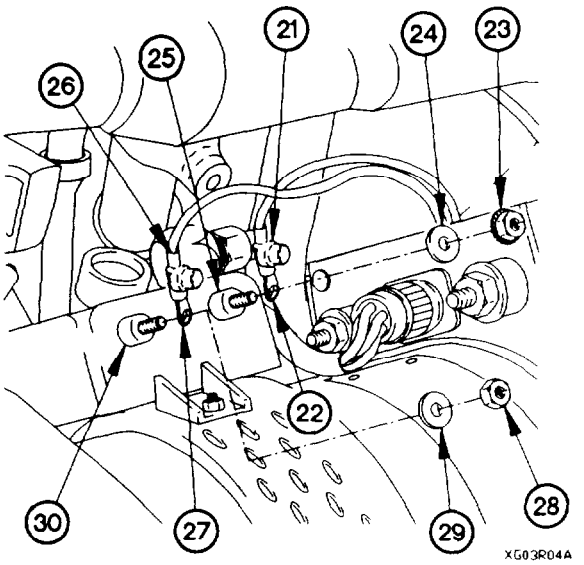
(6) Position washer (13), lockwasher (12) and nut (11) on alternator terminal (14).

20-56. 200 AMP ALTERNATOR REPLACEMENT (CONT)

(7) Remove screw (15), lockwasher (16), terminal lug TL5 (17), washer (18), and ground strap (19) from alternator (20).

(8) Position washer (18), lockwasher (16), and screw (15) on alternator (20).





(9) Lift dust boot (21) on terminal lug TL35 (22).

(10) Remove self-locking nut (23), washer (24), and terminal lug TL35 (22) from voltage regulator terminal (25).

(11) Position washer (24) and self-locking nut (23) on voltage regulator terminal (25).

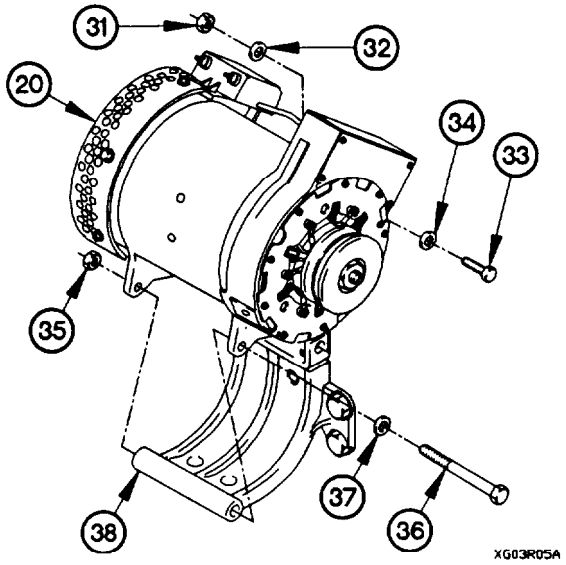
(12) Lift dust boot (26) on terminal lug TL110 (27).

(13) Remove self-locking nut (28), washer (29), and terminal lug TL110 (27) from voltage regulator terminal (30).

(14) Position washer (29) and self-locking nut (28) on voltage regulator terminal (30).

(15) Remove nut (31), washer (32), screw (33), and washer (34) from alternator (20).

(16) Remove self-locking nut (35), screw (36), and washer (37) from alternator (20)



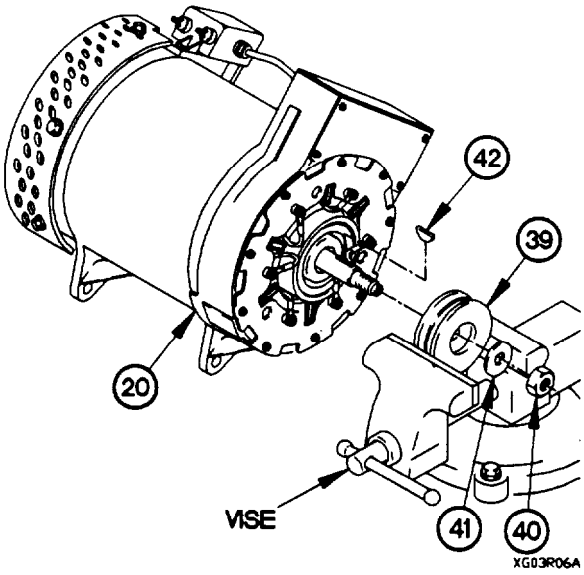
WARNING

Alternator weighs approximately 70 lbs (32 kgs Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel.

NOTE

Step (17) requires the aid of an assistant.

(17) Remove alternator (20) from alternator support bracket



CAUTION

Alternator pulley must be positioned in a vise equipped with vise jaw caps when loosening self-locking nut. Failure to comply may result in damage to equipment.

(18) Position pulley (39) in vise.

(19) Loosen self-locking nut (40).

(20) Remove pulley (39) from vise.

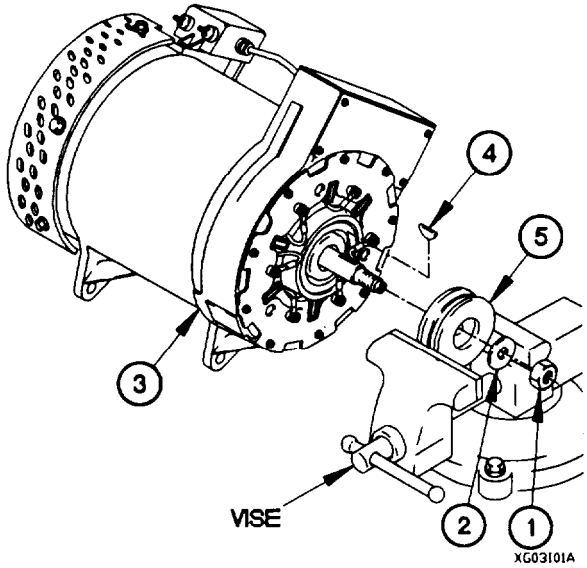
(21) Remove self-locking nut (40), washer (41), pulley (39), and key (42) from alternator (20).

(22) Position washer (41) and self-locking nut (40) on alternator (20).

20-56. 200 AMP ALTERNATOR REPLACEMENT (CONT)

b. Installation.

(1) Remove self-locking nut (1) and washer (2) from alternator (3).



CAUTION

Ensure pulley does not contact wires, terminal lugs, or terminal screws on front of alternator. Failure to comply will result in damage to equipment.

(2) Position key (4) and pulley (5) on alternator (3) with washer (2) and self-locking nut (1).

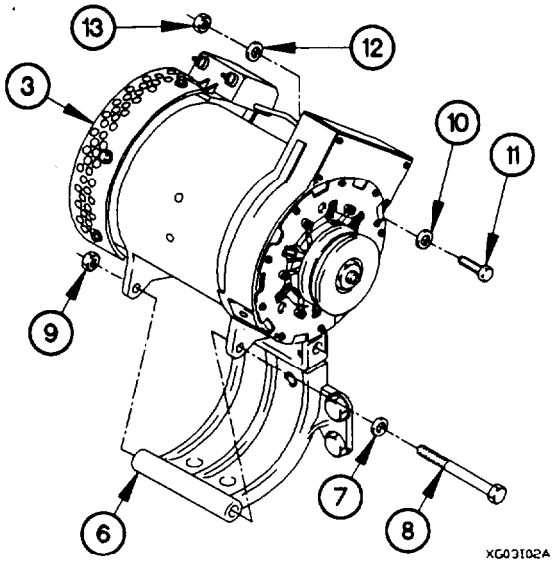
CAUTION

Alternator pulley must be positioned in a vise equipped with vise jaw caps when tightening self-locking nut. Failure to comply may result in damage to equipment.

(3) Position pulley (5) in vise.

(4) Tighten self-locking nut (1) to 100-110 lb-ft (136-150 N•m).

(5) Remove pulley (5) from vise.



WARNING

Alternator weighs approximately 70 lbs (32 kgs). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel.

NOTE

Step (6) requires the aid of an assistant.

(6) Position alternator (3) on alternator support bracket (6) with washer (7), screw (8), and self-locking nut (9).

(7) Position washer (10), screw (11), washer (12), and nut (13) in alternator (3).

(8) Tighten nut (13) to 18-22 lb-ft (24-30 N•m)

(9) Tighten self-locking nut (9) to 44-56 lb-ft (60-76 N•m).

(10) Remove self-locking nut (14) and washer (15) from voltage regulator terminal (16).

(11) Position terminal lug TL110 (17) on voltage regulator terminal (16) with washer (15) and self-locking nut (14).

(12) Tighten self-locking nut (14) to 23-27 lb-in. (3 N•m).

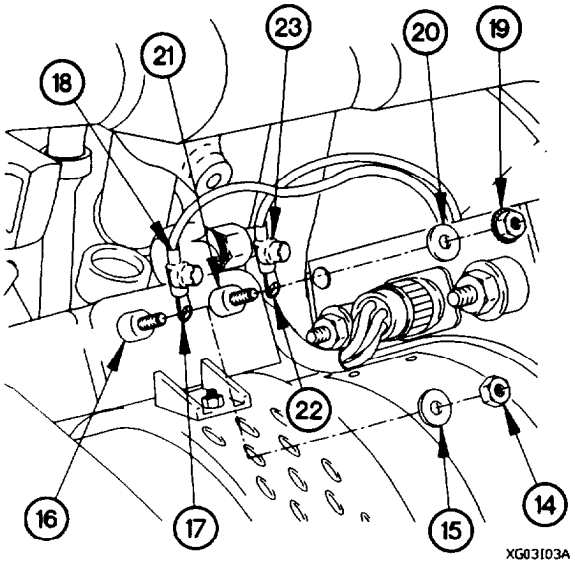
(13) Position dust boot (18) on terminal lug TL110 (17).

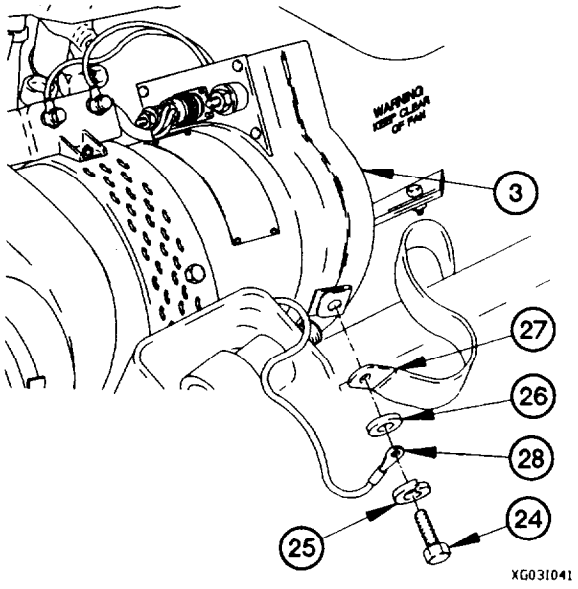
(14) Remove self-locking nut (19) and washer (20) from voltage regulator terminal (21).

(15) Position terminal lug TL35 (22) on voltage regulator terminal (21) with washer (20) and self-locking nut (19).

(16) Tighten self-locking nut (19) to 23-27 lb-in. (3 N•m).

(17) Position dust boot (23) on terminal lug TL35 (22).



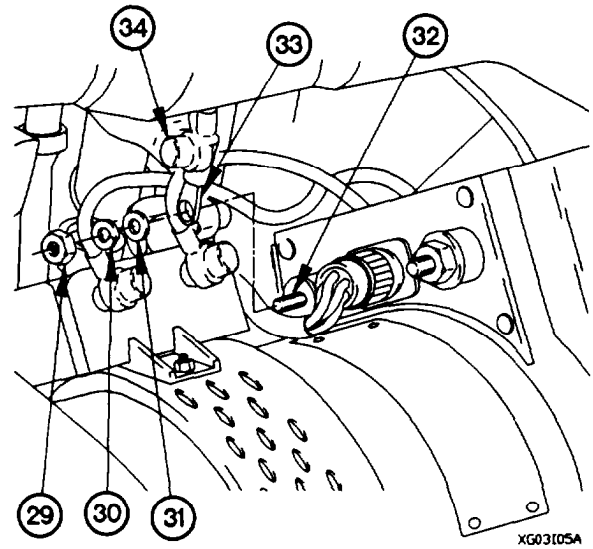


(18) Remove screw (24), lockwasher (25), and washer (26) from alternator (3).

(19) Position ground strap (27), washer (26), and terminal lug TL5 (28) on alternator (3) with washer (26), lockwasher (25), and screw (24).

(20) Tighten screw (24) to 40 lb-in. (5 N•m).

20-56. 200 AMP ALTERNATOR REPLACEMENT (CONT)

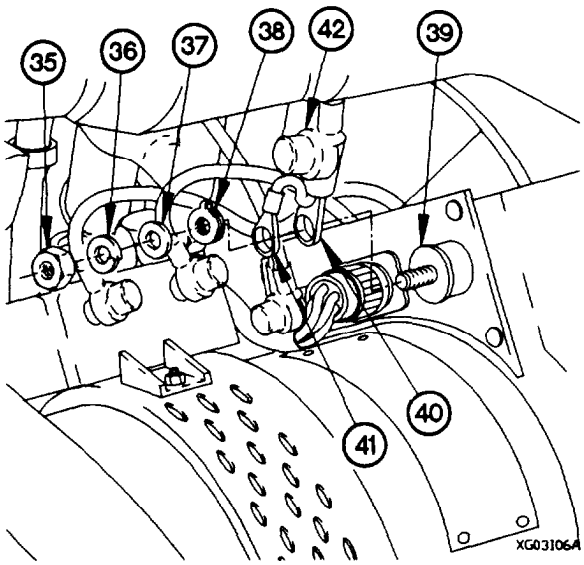


(21) Remove nut (29), lockwasher (30), and washer (31) from alternator terminal (32).

(22) Position terminal lug TL60 (33) on alternator terminal (32) with washer (31), lockwasher (30), and nut (29).

(23) Tighten nut (29) to 144-192 lb-in. (16-22 N•m).

(24) Position dust boot (34) on terminal lug TL60 (33).



(25) Remove nut (35), lockwasher (36), washer (37), and fuse (38) from alternator terminal (39).

(26) Position terminal lugs TL2 (40) and TL6 (41) on alternator terminal (39) with fuse (38), washer (37), lockwasher (36), and nut (35).

(27) Tighten nut (35) to 144-192 lb-in. (16-22 N•m).

(28) Position dust boot (42) on terminal lug TL6 (41).

c. Follow-On Maintenance

(1) Install alternator belts (para 7-3).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Check alternator operation (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-57. 200 AMP VOLTAGE REGULATOR REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

Materials/Parts
Lockwasher (2) (Item 100, Appendix G)
Nut, Self-Locking (Item 130, Appendix G)
Nut, Self-Locking (Item 131, Appendix G)
Sealing Compound (Item 64, Appendix D)

a. Removal.

NOTE

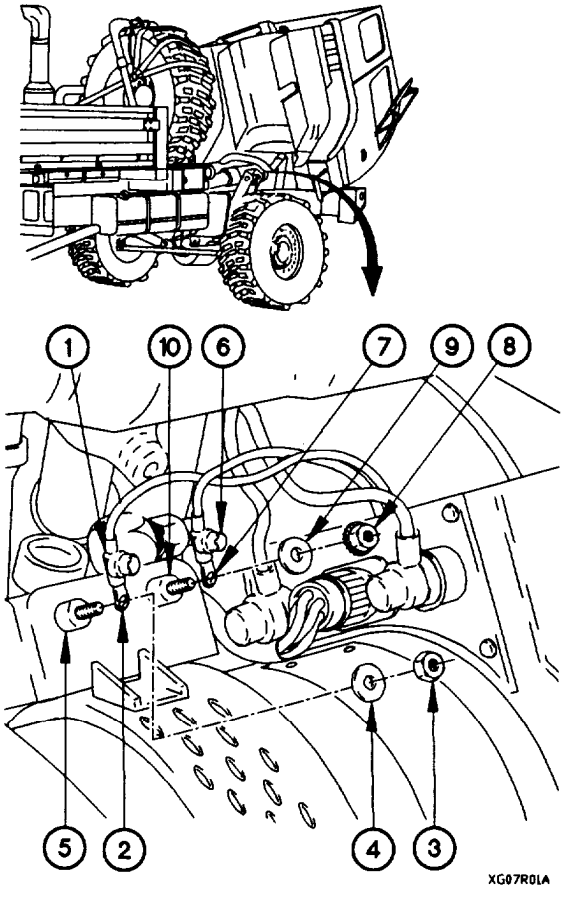
Tag terminal lugs and connection points prior to removal.

(1) Lift dust boot (1) on terminal lug TL110 (2).

(2) Remove self-locking nut (3), washer (4), and terminal lug TL110 (2) from voltage regulator terminal (5). Discard self-locking nut.

(3) Lift dust boot (6) on terminal lug TL35 (7).

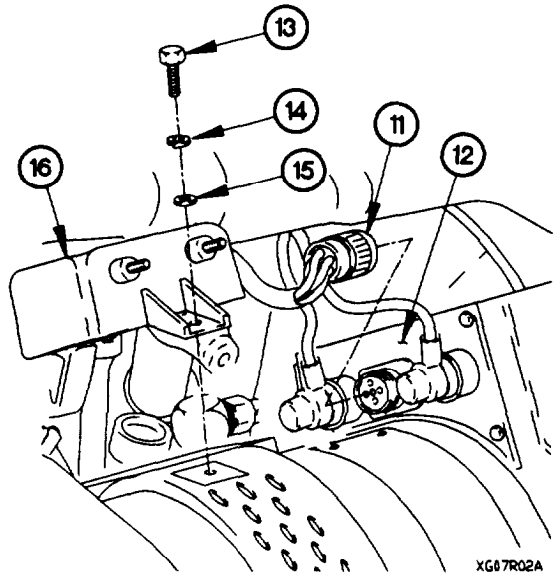
(4) Remove self-locking nut (8), washer (9), and terminal lug TL35 (7) from voltage regulator terminal (10). Discard self-locking nut.



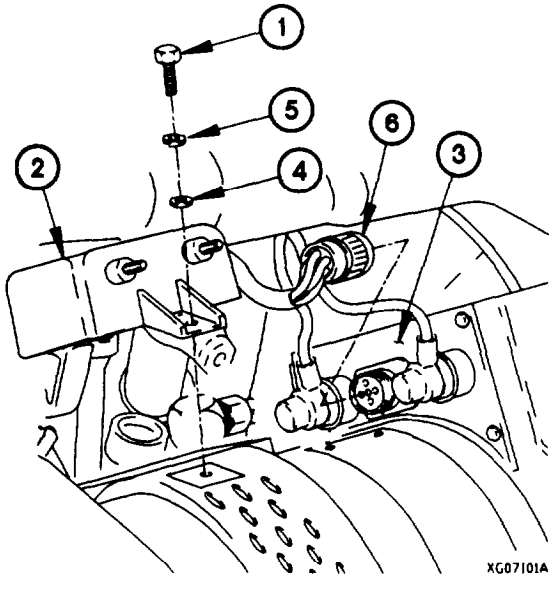
20-57. 200 AMP VOLTAGE REGULATOR REPLACEMENT (CONT)

(5) Disconnect voltage regulator connector (11) from alternator (12).

(6) Remove two screws (13), lockwashers (14), washers (15) and voltage regulator (16) from alternator (12). Discard lockwashers.



b. Installation



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(1) Apply sealing compound to threads of two screws (1).

(2) Position voltage regulator (2) on alternator (3) with two washers (4), lockwashers (5), and screws (1).

(3) Tighten two screws (1) to 75 lb-in. (8 N•m).

(4) Connect voltage regulator connector (6) to alternator (3).

(5) Position terminal lug TL35 (7) on voltage regulator terminal (8) with washer (9) and self-locking nut (10).

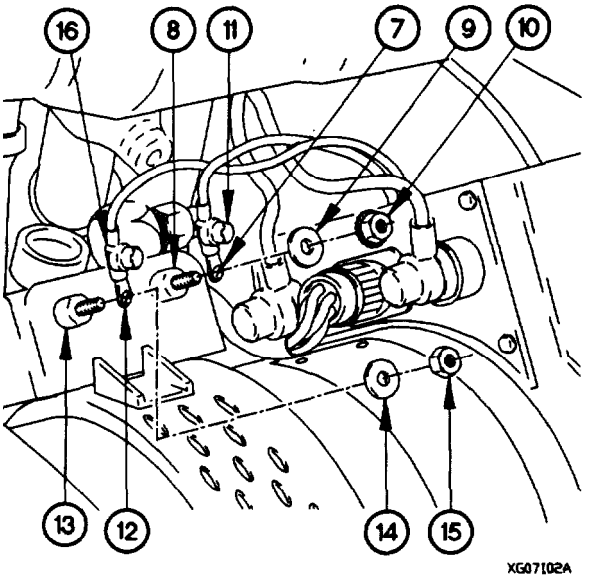
(6) Tighten self-locking nut (10) to 25 lb-in. (3 N•m).

(7) Position dust boot (11) on terminal lug TL35 (7).

(8) Position terminal lug TL110 (12) on voltage regulator terminal (13) with washer (14) and self-locking nut (15).

(9) Tighten self-locking nut (15) to 25 lb-in. (3 Nom).

(10) Position dust boot (16) on terminal lug TL110 (12).



c. Follow-On Maintenance

(1) Lower cab (TM 9-2320-365-10).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10.

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-58. 200 AMP REVERSE POLARITY RELAY REPLACEMENT

This task covers:

a. Removal (All Models Except M1081)
b. Installation (All Models Except M1081)
c. Removal (M1081)
d. Installation (M1081)
e. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

Material/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (2) (Item 65, Appendix G)
Lockwasher (2) (Item 66, Appendix G)
Nut, Self-Locking (2) (Item 135, Appendix G)

a. Removal (All Models Except M1081).

NOTE

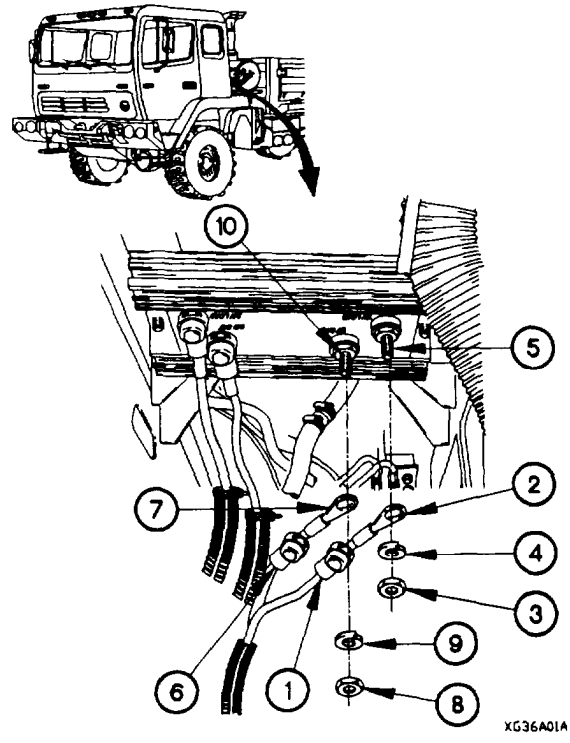
- Tag cables and connection points prior to disconnecting.
- Remove plastic cable ties as required.

(1) Lift dust boot (1) on terminal lug TL174 (2).

(2) Remove nut (3), lockwasher (4), and terminal lug TL174 (2) from reverse polarity relay 12V LOAD terminal (5). Discard lockwasher.

(3) Lift dust boot (6) on terminal lug TL173 (7).

(4) Remove nut (8), lockwasher (9), and terminal lug TL173 (7) from reverse polarity relay 12V BAT terminal (10). Discard lockwasher.

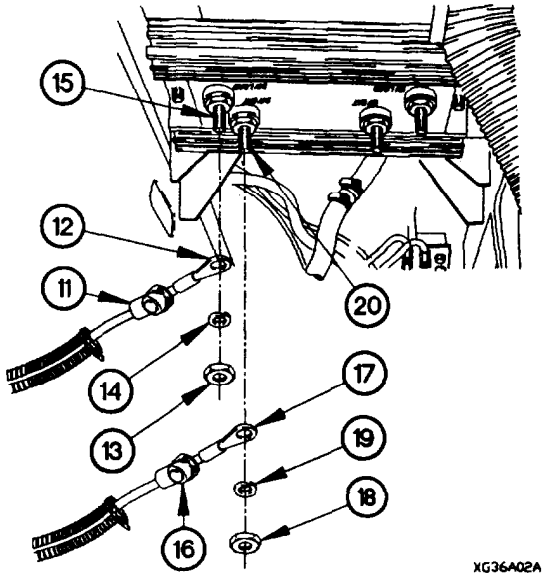


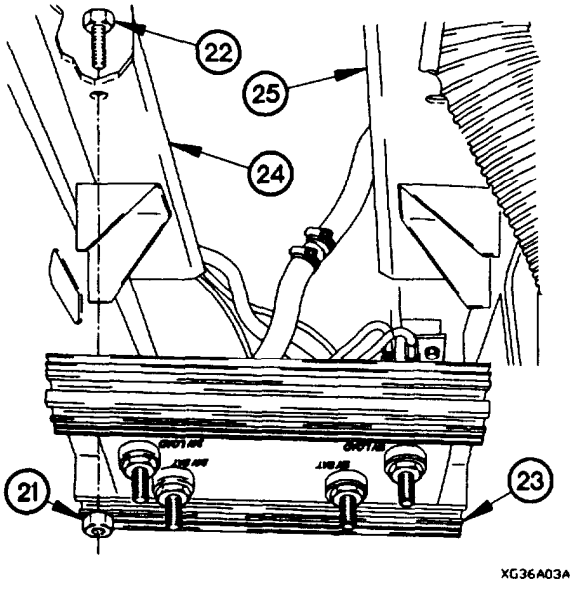
(5) Lift dust boot (11) on terminal lug TL169 (12).

(6) Remove nut (13), lockwasher (14), and terminal lug TL169 (12) from reverse polarity relay 24V LOAD terminal (15). Discard lockwasher.

(7) Lift dust boot (16) on terminal lug TL168 (17).

(8) Remove nut (18), lockwasher (19), and terminal lug TL168 (17) from reverse polarity relay 24V BAT terminal (20). Discard lockwasher.





NOTE

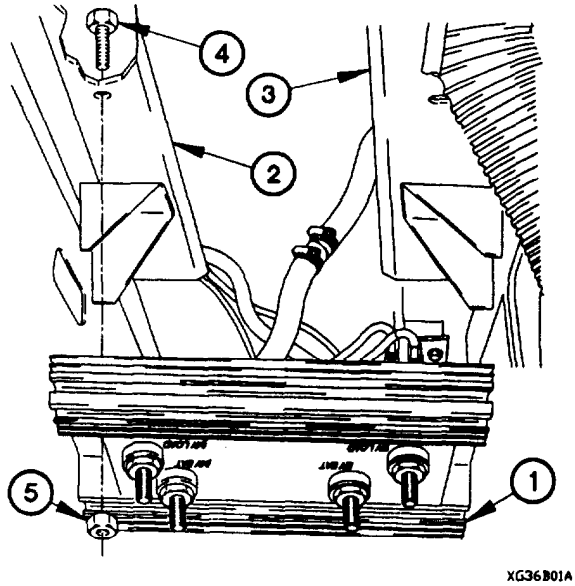
Note orientation of reverse polarity relay prior to removal.

(9) Remove two self-locking nuts (21), screws (22), and reverse polarity relay (23) from brackets (24 and 25). Discard self-locking nuts.

b. Installation (All Models Except M1081).

(1) Position reverse polarity relay (1) on brackets (2 and 3) with two screws (4) and self-locking nuts (5).

(2) Tighten two self-locking nuts (5) to 22-27 lb-ft (31-37 N•m).



20-58. 200 AMP REVERSE POLARITY RELAY REPLACEMENT (CONT)

NOTE

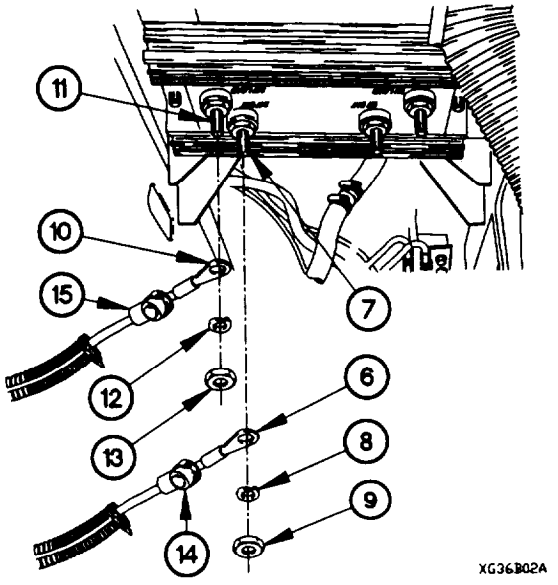
Install plastic cable ties as required.

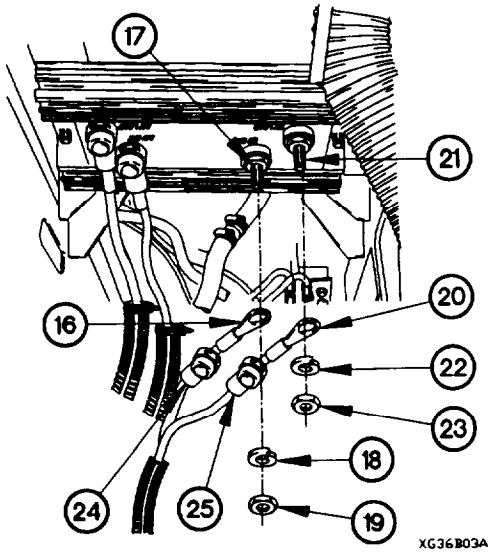
(3) Position terminal lug TL168 (6) on reverse polarity relay 24V BAT terminal (7) with lockwasher (8) and nut (9).

(4) Position terminal lug TL169 (10) on reverse polarity relay 24V LOAD terminal (11) with lockwasher (12) and nut (13).

(5) Tighten nuts (9 and 13) to 27-33 lb-ft (37-45 N•m).

(6) Position dust boots (14 and 15) on terminal lugs TL168 (6) and TL169 (10).





(7) Position terminal lug TL173 (16) on reverse polarity relay 12V BAT terminal (17) with lockwasher (18) and nut (19).

(8) Position terminal lug TL174 (20) on reverse polarity relay 12V LOAD terminal (21) with lockwasher (22) and nut (23).

(9) Tighten nuts (19 and 23) to 108-132 lb-in. (12-15 N•m).

(10) Position dust boots (24 and 25) on terminal lugs TL173 (16) and TL174 (20).

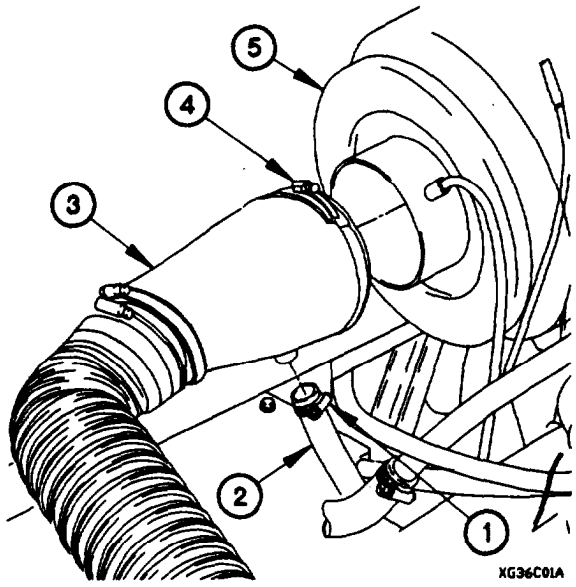
c. Removal (M1081).

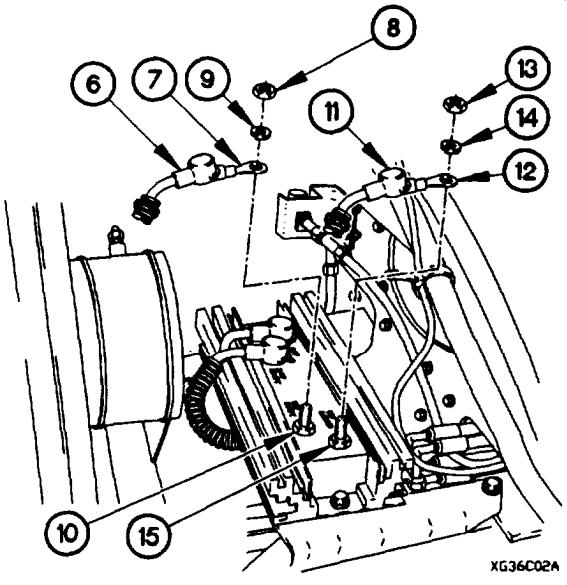
(1) Loosen clamp (1) on air compressor intake hose (2).

(2) Remove air compressor intake hose (2) from intake air cleaner boot (3).

(3) Loosen clamp (4) on intake air cleaner boot (3).

(4) Remove intake air cleaner boot (4) from intake air cleaner housing (5).





NOTE

- Tag cables and connection points prior to disconnecting.
- Remove plastic cable ties as required.

(5) Lift dust boot (6) on terminal lug TL173 (7).

(6) Remove nut (8), lockwasher (9), and terminal lug TL173 (7) from reverse polarity relay 12V BAT terminal (10). Discard lockwasher.

(7) Lift dust boot (11) on terminal lug TL174 (12).

(8) Remove nut (13), lockwasher (14), and terminal lug TL174 (12) from reverse polarity relay 12V LOAD terminal (15). Discard lockwasher.

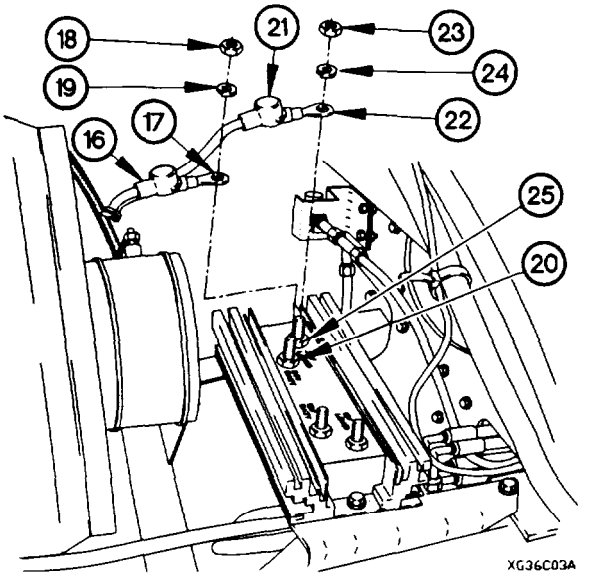
20-58. 200 AMP REVERSE POLARITY RELAY REPLACEMENT (CONT)

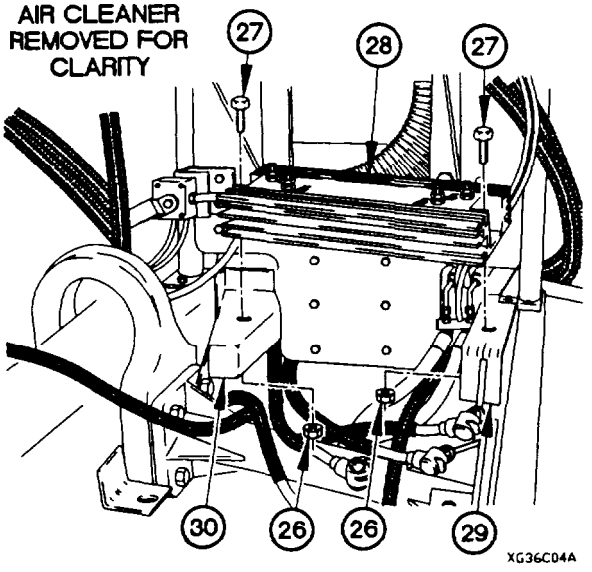
(9) Lift dust boot (16) on terminal lug TL168 (17).

(10) Remove nut (18), lockwasher (19), and terminal lug TL168 (17) from reverse polarity relay 24V BAT terminal (20). Discard lockwasher.

(11) Lift dust boot (21) on terminal lug TL169 (22).

(12) Remove nut (23), lockwasher (24), and terminal lug TL169 (22) from reverse polarity relay 24V LOAD terminal (25). Discard lockwasher.

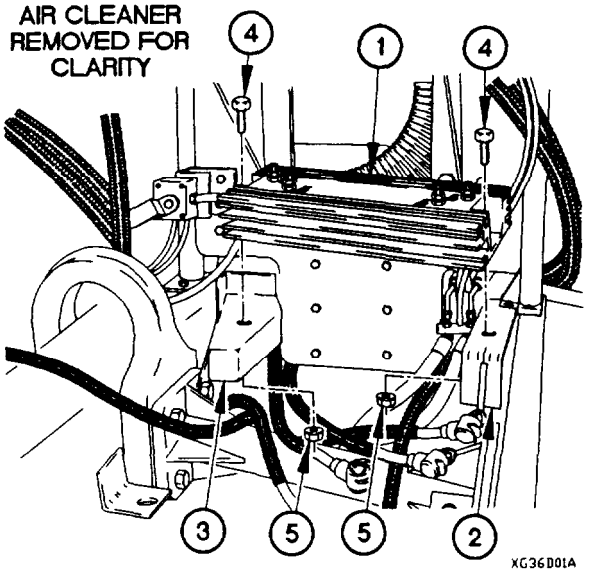




NOTE

Note orientation of reverse polarity relay prior to removal.

(13) Remove two self-locking nuts (26), screws (27), and reverse polarity relay (28) from brackets (29 and 30). Discard self-locking nuts.



d. Installation (M1081).

(1) Position reverse polarity relay (1) on brackets (2 and 3) with two screws (4) and self-locking nuts (5).

(2) Tighten two self-locking nuts (5) to 22-27 lb-ft (31-37 N•m).

NOTE

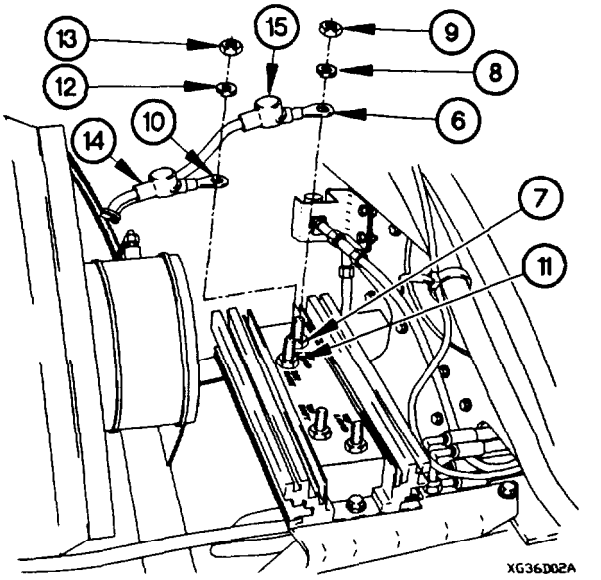
Install plastic cable ties as required.

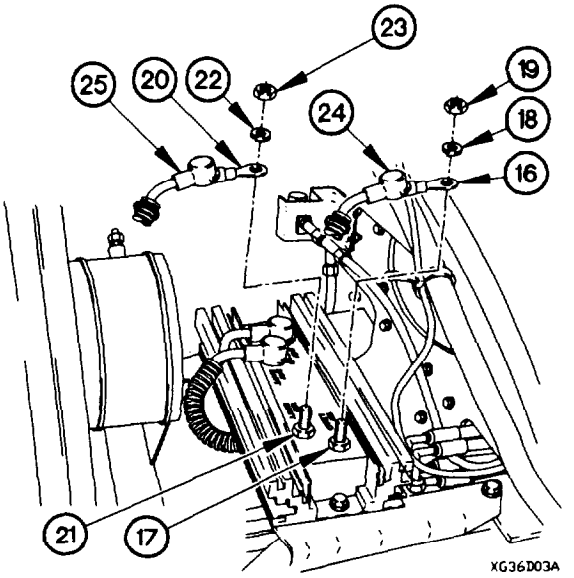
(3) Position terminal lug TL169 (6) on reverse polarity relay 24V LOAD terminal (7) with lockwasher (8) and nut (9).

(4) Position terminal lug TL168 (10) on reverse polarity relay 24V BAT terminal (11) with lockwasher (12) and nut (13).

(5) Tighten nuts (9 and 13) to 27-33 lb-ft (37-45 N•m).

(6) Position dust boots (14 and 15) on terminal lugs TL169 (6) and TL168 (10).





(7) Position terminal lug TL174 (16) on reverse polarity relay 12V LOAD terminal (17) with lockwasher (18) and nut (19).

(8) Position terminal lug TL173 (20) on reverse polarity relay 12V BAT terminal (21) with lockwasher (22) and nut (23).

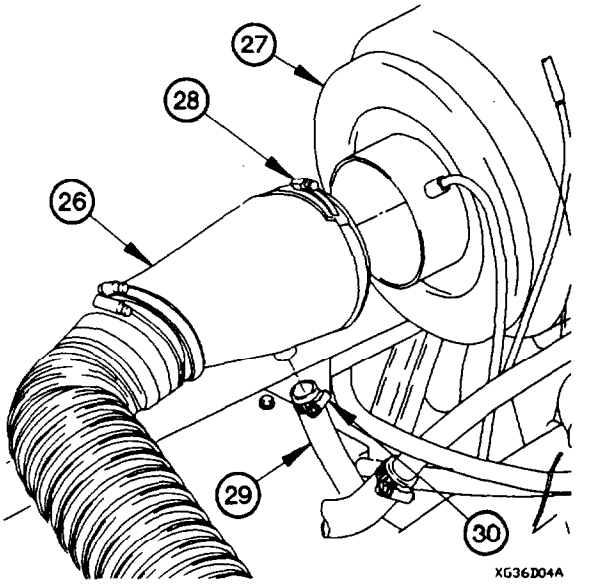
(9) Tighten nuts (19 and 23) to 108-132 lb-in. (12-15 N•m).

(10) Position dust boots (24 and 25) on terminal lugs TL174 (16) and TL173 (20).

(11) Position intake air cleaner boot (26) on intake air cleaner housing (27) with clamp (28).

(12) Position air compressor intake hose (29) on intake air cleaner boot (26) with clamp (30).

(13) Tighten clamps (28 and 30) to 36-48 lb-in. (4-5 N•m).



20-58. 200 AMP REVERSE POLARITY RELAY REPLACEMENT (CONT)

e. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-59. 200 AMP ALTERNATOR TO TERMINAL BLOCK 12 VDC CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 96, Appendix G)
Lockwasher (Item 89, Appendix G)

a. Removal.

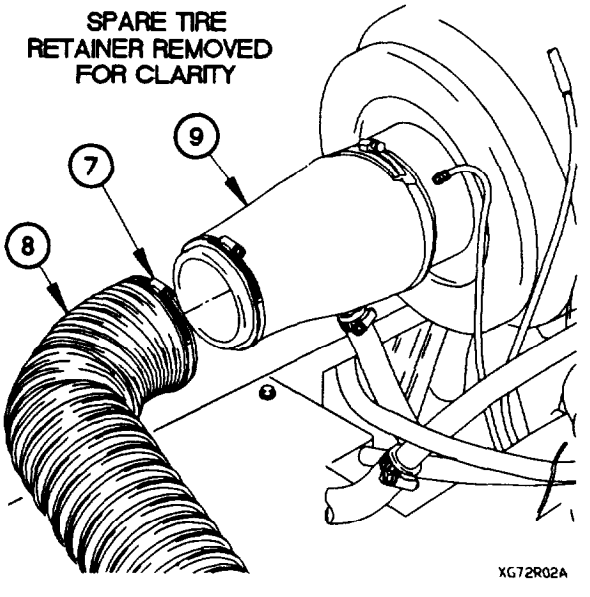
NOTE

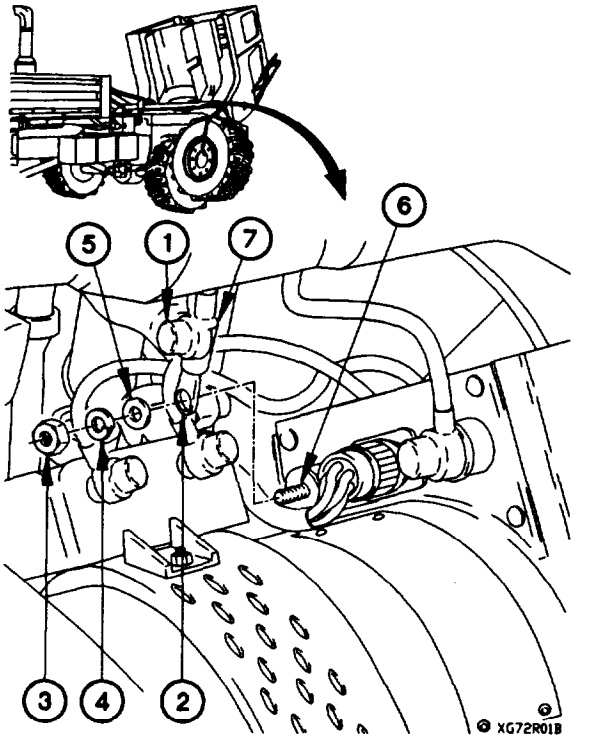
Remove plastic cable ties as required.

(1) Lift dust boot (1) on terminal lug TL60 (2).

(2) Remove nut (3), lockwasher (4), washer (5), and terminal lug TL60 (2) from alternator terminal (6). Discard lockwasher.

(3) Remove dust boot (1) from terminal lug TL60 (2).



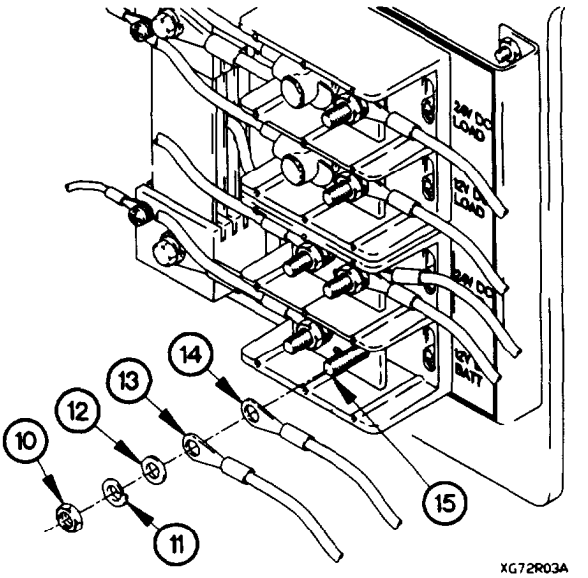


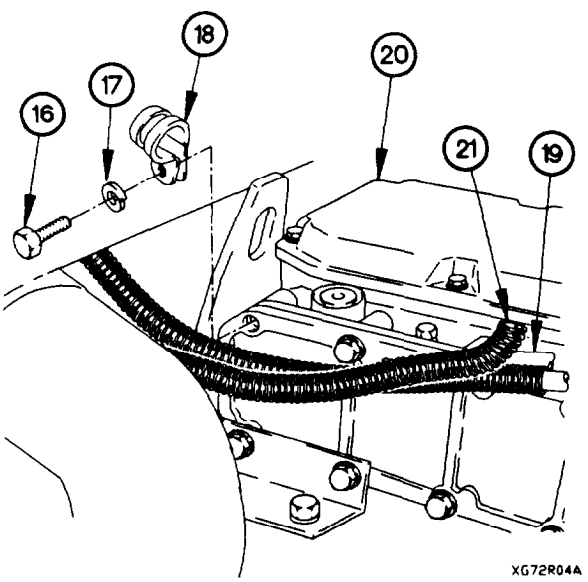
(4) Loosen clamp (7) on turbocharger intake hose (8).

(5) Remove turbocharger intake hose (8) from intake air cleaner boot (9).

20-59. 200 AMP ALTERNATOR TO TERMINAL BLOCK 12 VDC CABLE REPLACEMENT (CONT)

(6) Remove nut (10), lockwasher (11), washer (12), and terminal lugs TL61 (13) and TL171 (14) from terminal block terminal (15). Discard lockwasher.





(7) Remove three screws (16), washers (17), clamps (18), and 200 amp alternator to terminal block 12 vdc cable (19) from engine (20).

(8) Remove convoluted tubing (21) from 200 amp alternator to terminal block 12 vdc cable (19).

b. Installation.

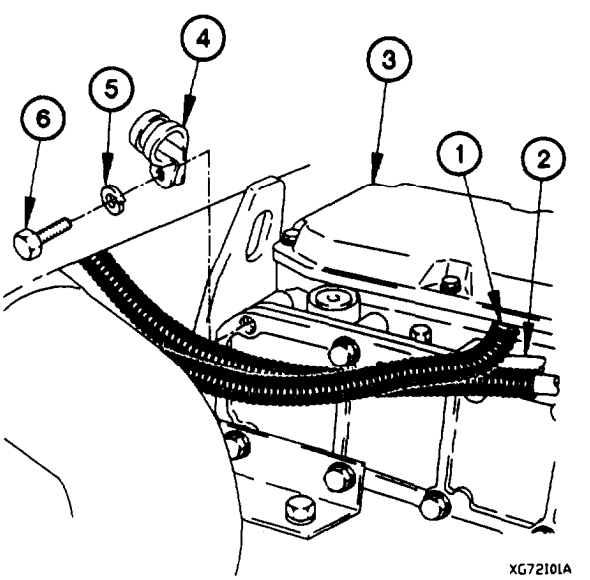
NOTE

Install plastic cable ties as required.

(1) Install convoluted tubing (1) on 200 amp alternator to terminal block 12 vdc cable (2).

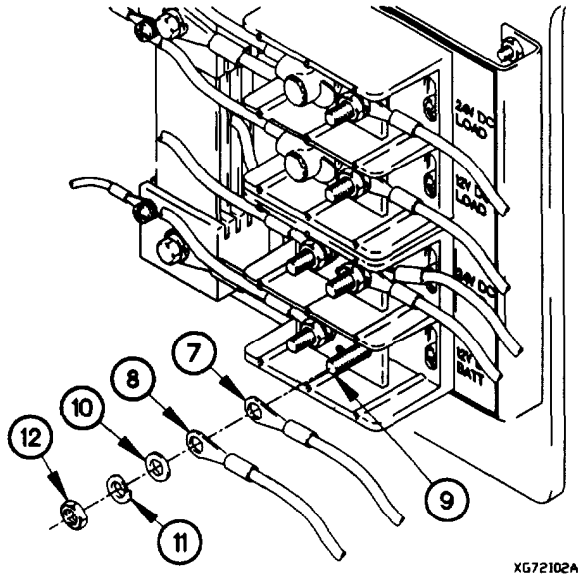
(2) Position 200 amp alternator to terminal block 12 vdc cable (2) on engine (3) with three clamps (4), washers (5), and screws (6).

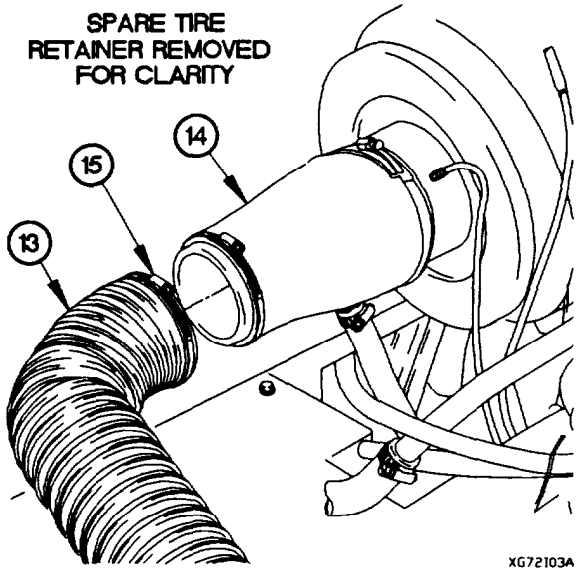
(3) Tighten three screws (6) to 22-27 lb-ft (31-37 N•m).



(4) Position terminal lugs TL171 (7) and TL61 (8) on terminal block terminal (9) with washer (10), lockwasher (11), and nut (12).

(5) Tighten nut (12) to 15-19 lb-ft (21-25 N•m).





(6) Position turbocharger intake hose (13) on intake air cleaner boot (14) with clamp (15).

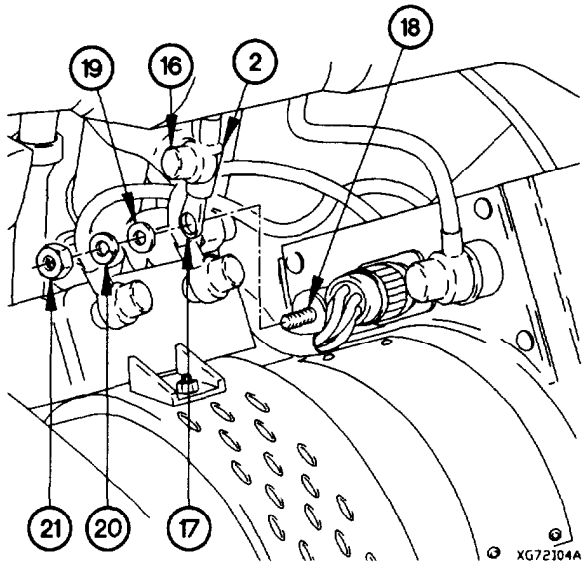
(7) Tighten clamp (15) to 36-48 lb-in. (4-5 N•m).

(8) Install dust boot (16) on terminal tug TL60 (17).

(9) Position terminal lug TL60 (17) on alternator terminal (18) with washer (19), lockwasher (20), and nut (21).

(10) Tighten nut (21) to 144-192 lb-in. (17-21 N•m).

(11) Position dust boot (16) on terminal lug TL60 (17).



20-59. 200 AMP ALTERNATOR TO TERMINAL BLOCK 12 VDC CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Lower cab (TM 9-2320-365-10).

(4) Stan engine (TM 9-2320-365-10).

(5) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(6) Shut down engine (TM 9-2320-365-10).

End of Task.

20-60. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 VDC LOAD CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

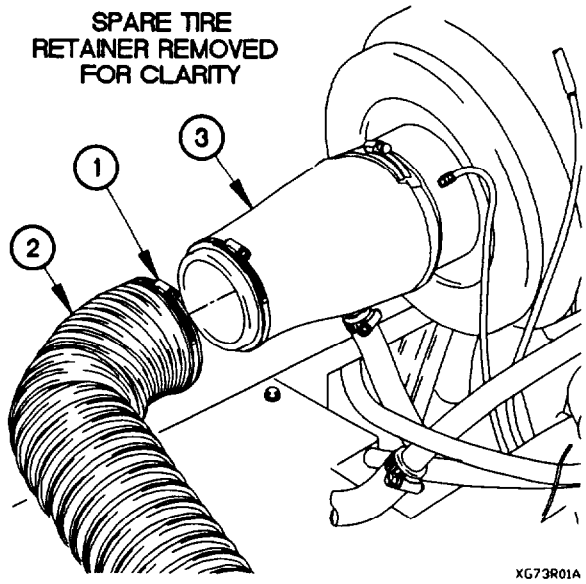
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 65, Appendix G)
Lockwasher (Item 89, Appendix G)

a. Removal.

(1) Loosen clamp (1) on turbocharger intake hose (2).

(2) Remove turbocharger intake hose (2) from intake air cleaner boot (3).



20-60. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 VDC LOAD CABLE REPLACEMENT (CONT)

NOTE

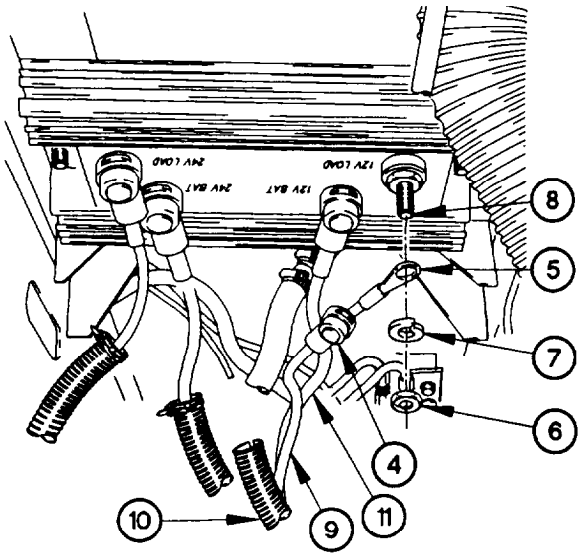
Remove plastic cable ties as required.

(3) Lift dust boot (4) on terminal lug TL174 (5).

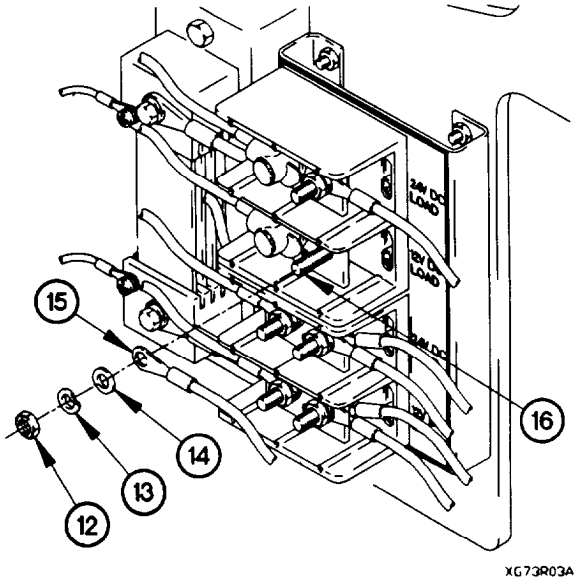
(4) Remove nut (6), lockwasher (7), and terminal lug TL174 (5) from reverse polarity relay (8). Discard lockwasher.

(5) Remove dust boot (4) from 200 amp terminal block to reverse polarity relay 12 vdc load cable (9).

(6) Remove convoluted tubing (10) from 200 amp terminal block to reverse polarity relay 12 vdc load cable (9) and 200 amp terminal block to reverse polarity relay 12 vdc battery cable (11).



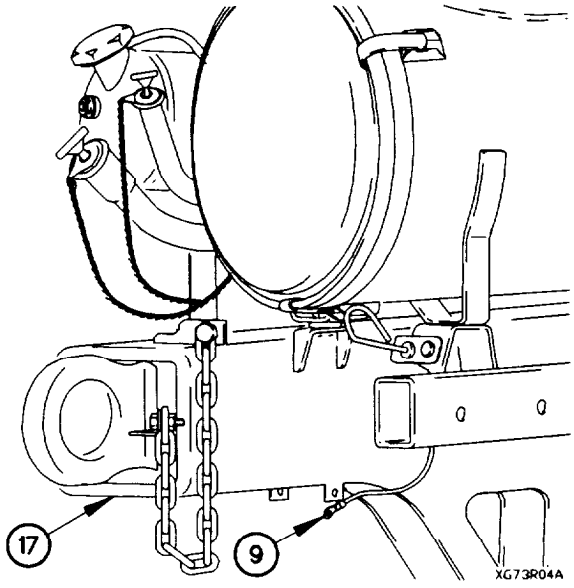
XG73R02A



XG73R03A

(7) Remove nut (12), lockwasher (13), washer (14), and terminal lug TL172 (15) from terminal block terminal (16). Discard lockwasher.

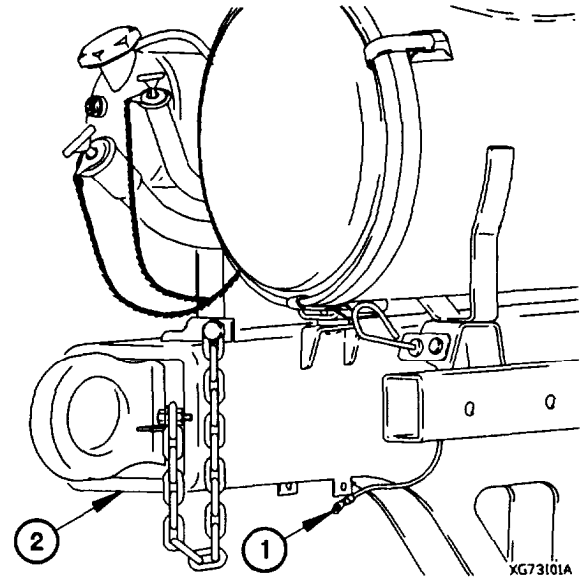
(8) Remove 200 amp terminal block to reverse polarity relay 12 vdc load cable (9) from rear side of front lifting beam (17).

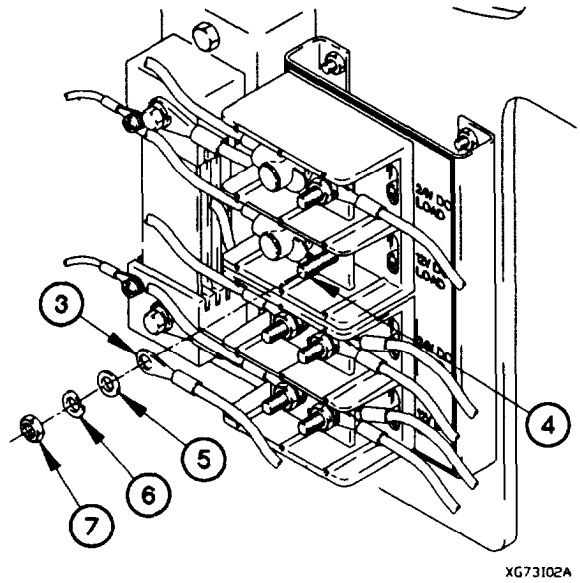


XG73R04A

b. Installation.

(1) Position 200 amp terminal block to reverse polarity relay 12 vdc load cable (1) on rear side of front lifting beam (2).





(2) Position terminal lug TL172 (3) on terminal block terminal (4) with washer (5), lockwasher (6), and nut (7).

(3) Tighten nut (7) to 15-19 lb-ft (21-25 Nom).

NOTE

Install plastic cable ties as required.

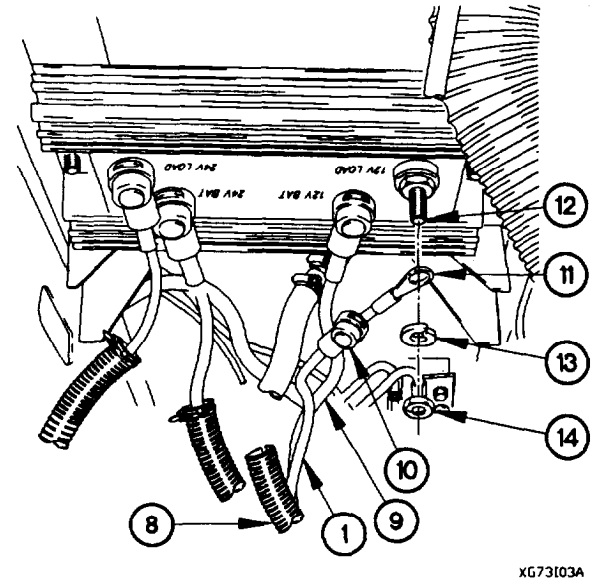
(4) Install convoluted tubing (8) on 200 amp terminal block to reverse polarity relay 12 vdc load cable (1) and 200 amp terminal block to reverse polarity relay 12 vdc battery cable (9).

(5) Install dust boot (10) on 200 amp terminal block to reverse polarity relay 12 vdc load cable (1).

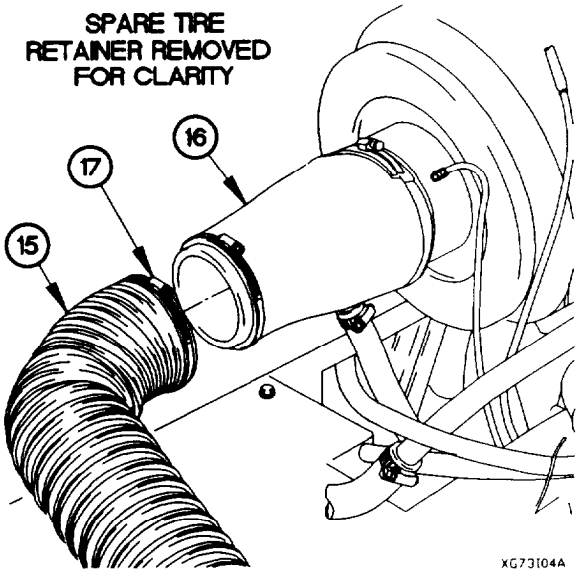
(6) Position terminal lug TL174 (11) on reverse polarity relay (12) with lockwasher (13), and nut (14).

(7) Tighten nut (14) to 108-132 lb-in. (12-15 N•m).

(8) Position dust boot (10) on terminal lug TL174 (11).



20-60. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 VDC LOAD CABLE REPLACEMENT (CONT)



(9) Position turbocharger intake hose (15) on intake air cleaner boot (16) with clamp (17).

(10) Tighten clamp (17) to 36-48 lb-in. (4-5 Nom).

c. Follow-On Maintenance

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Lower cab (TM 9-2320-365-10).

(4) Start engine (TM 9-2320-365-10).

(5) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(6) Shut down engine (TM 9-2320-365-10).

End of Task.

20-61. 200 AMP ALTERNATOR TO TERMINAL BLOCK 24 VDC CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 96, Appendix G)
Lockwasher (Item 89, Appendix G)

a. Removal.

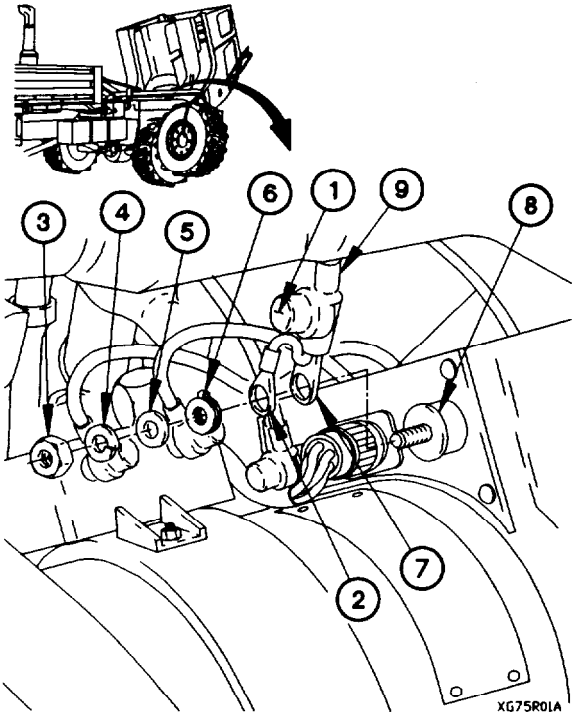
(1) Lift dust boot (1) on terminal lug TL2 (2).

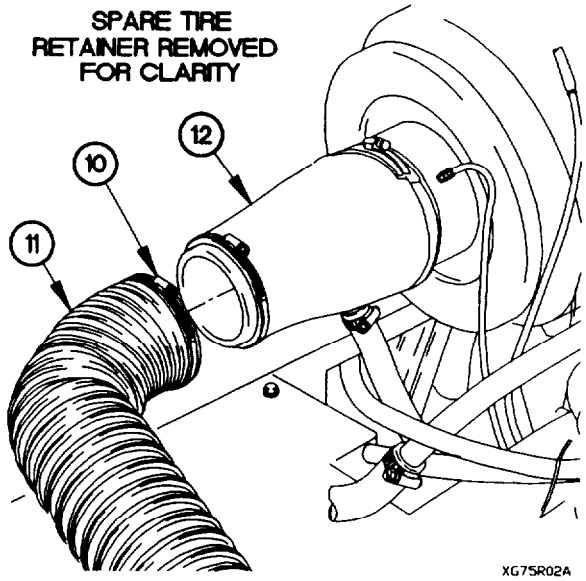
NOTE

Remove plastic cable ties as required.

(2) Remove nut (3), lockwasher (4), washer (5), fuse (6), and terminal lugs TL2 (2) and TL8 (7) from alternator terminal (8). Discard lockwasher.

(3) Remove alternator to terminal block 24 vdc cable (9) from dust boot (1).



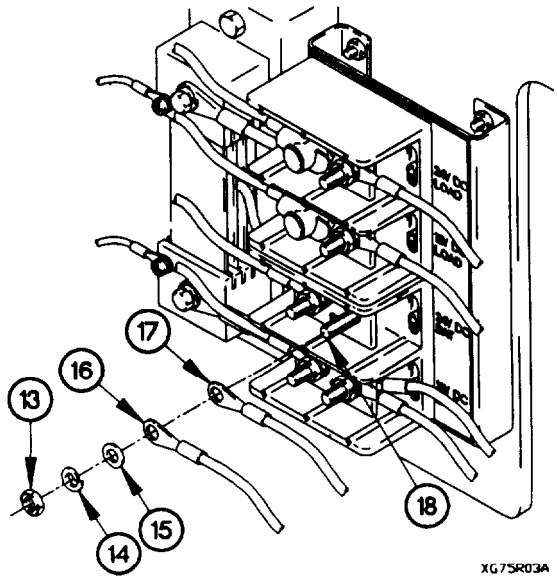


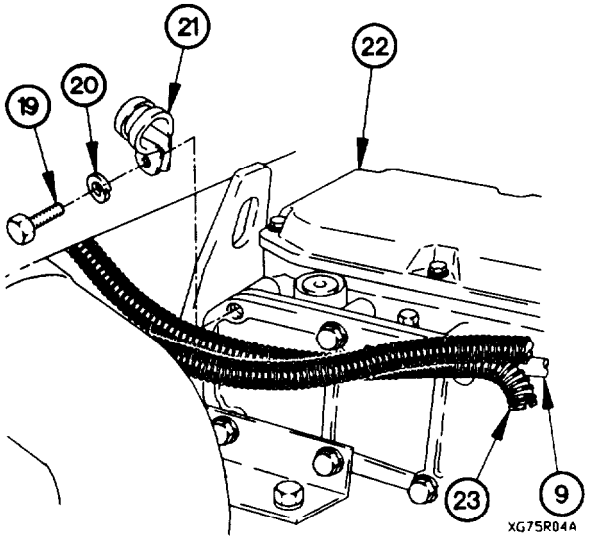
(4) Loosen clamp (10) on turbocharger intake hose (11).

(5) Remove turbocharger intake hose (11) from intake air cleaner boot (12).

20-61. 200 AMP ALTERNATOR TO TERMINAL BLOCK 24 VDC CABLE REPLACEMENT (CONT)

(6) Remove nut (13), lockwasher (14), washer (15), and terminal lugs TL1 (16) and TL166 (17) from terminal block terminal (18). Discard lockwasher.





(7) Remove three screws (19). washers (20), clamps (21), and 200 amp alternator to terminal block 24 vdc cable (9) from engine (22).

(8) Remove convoluted tubing (23) from 200 amp alternator to terminal block 24 vdc cable (9).

b. Installation.

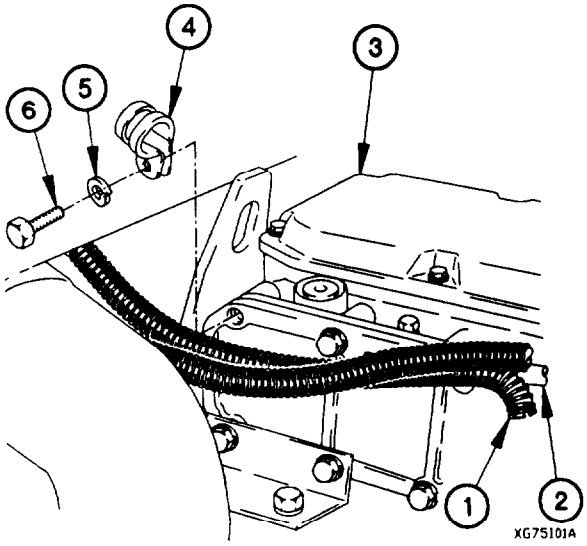
NOTE

Install plastic cable ties as required.

(1) Install convoluted tubing (1) on 200 amp alternator to terminal block 24 vdc cable (2).

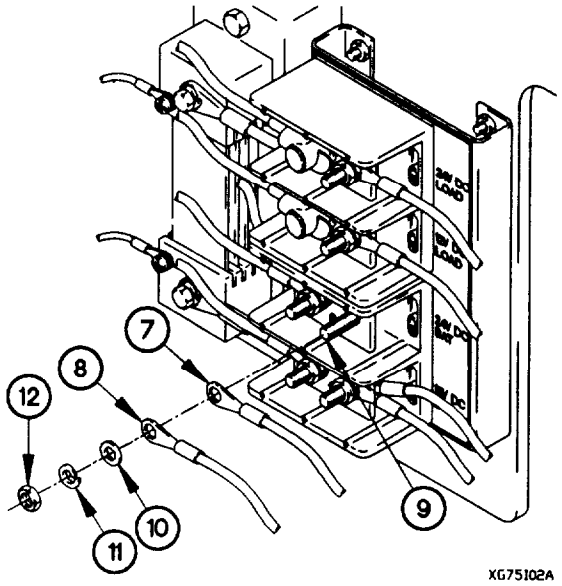
(2) Position 200 amp alternator to terminal block 24 vdc cable (2) on engine (3) with three clamps (4), washers (5), and screws (6).

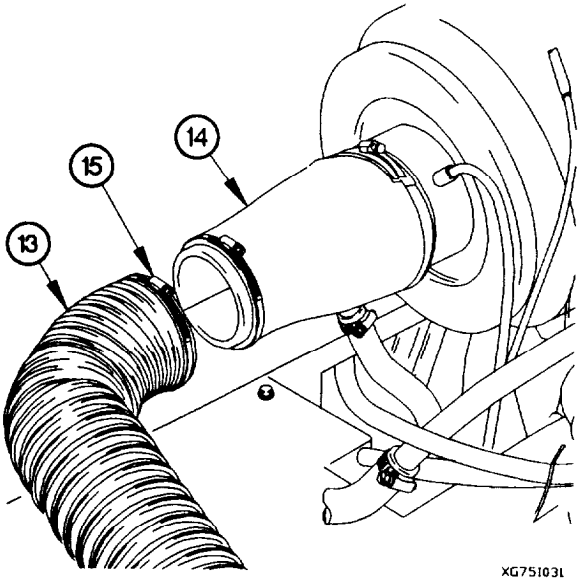
(3) Tighten three screws (6) to 22-27 lb-ft (31-37 N•m).



(4) Position terminal lugs TL166 (7) and TL1 (8) on terminal block terminal (9) with washer (10), lockwasher (11), and nut (12).

(5) Tighten nut (12) to 15-19 lb-ft (21-25 N•m).





(6) Position turbocharger intake hose (13) on intake air cleaner boot (14) with clamp (15).

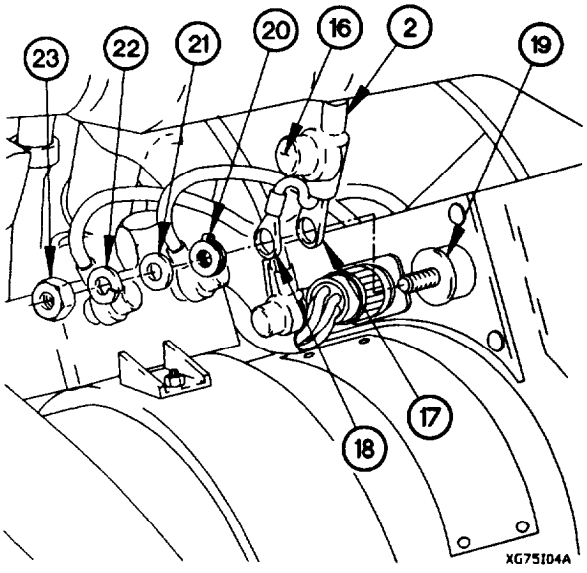
(7) Tighten clamp (15) to 36-48 lb-in. (4-5 N•m).

(8) Install 200 amp alternator to terminal block 24 vdc cable (2) in dust boot (16).

(9) Position terminal lugs TL8 (17) and TL2 (18) on alternator terminal (19) with fuse (20), washer (21), lockwasher (22), and nut (23).

(101 Tighten nut (23) to 144-192 lb-in. (17-21 N•m).

(11) Install dust boot (16) on terminal lug TL2 (18).



20-61. 200 AMP ALTERNATOR TO TERMINAL BLOCK 24 VDC CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-385-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-62. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC LOAD CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

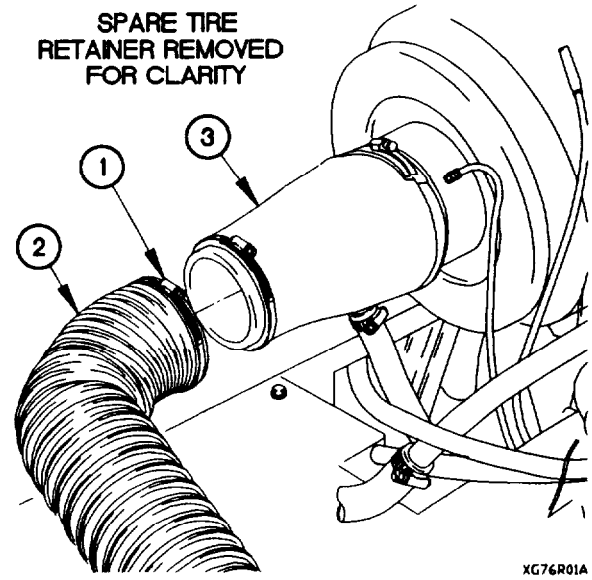
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

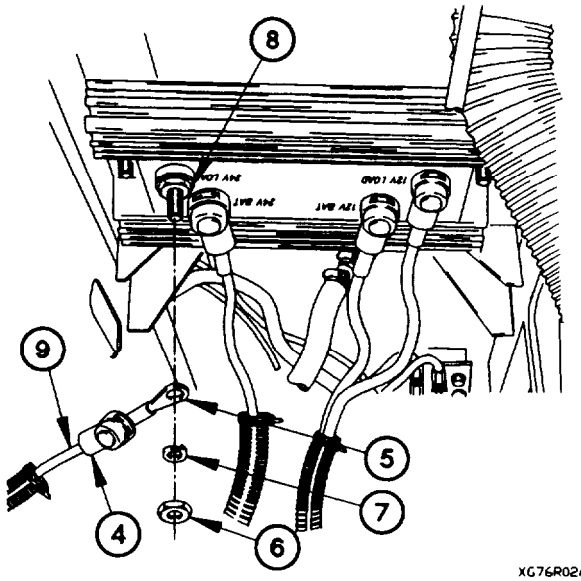
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 89, Appendix G)
Lockwasher (Item 66, Appendix G)

a. Removal.

(1) Loosen clamp (1) on turbocharger intake hose (2).

(2) Remove turbocharger intake hose (2) from intake air cleaner boot (3).





(3) Lift dust boot (4) on terminal lug TL168 (5).

NOTE

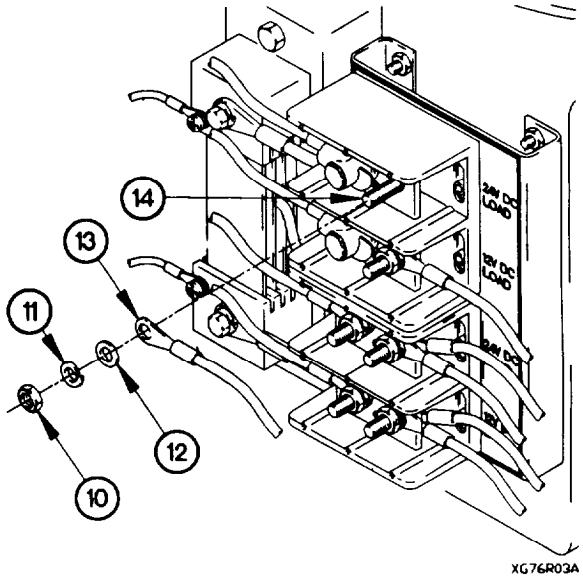
Remove plastic cable ties as required.

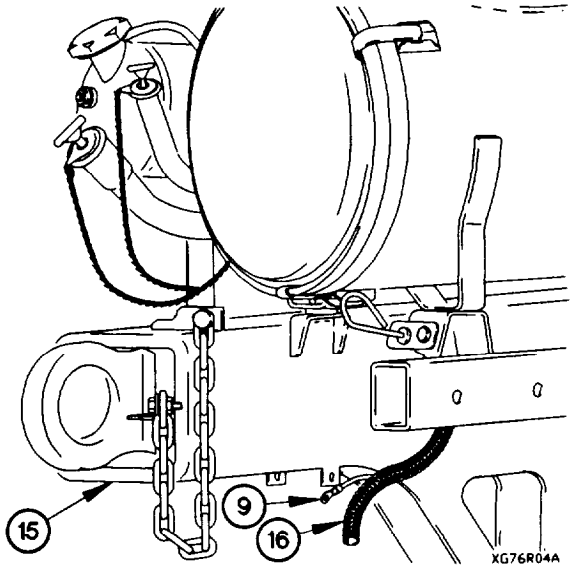
(4) Remove nut (6), lockwasher (7), and terminal lug TL168 (5) from reverse polarity relay 24 VDC LOAD terminal (8). Discard lockwasher.

(5) Remove dust boot (4) from 200 amp terminal block to reverse polarity relay 24 vdc load cable (9).

20-62. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC LOAD CABLE REPLACEMENT (CONT)

(6) Remove nut (10), lockwasher (11), washer (12), and terminal lug TL167 (13) from terminal block terminal (14). Discard lockwasher.





(7) Remove 200 amp terminal block to reverse polarity relay 24 vdc load cable (9) from rear side of front lifting beam (15).

(8) Remove convoluted tubing (16) from 200 amp terminal block to reverse polarity relay 24 vdc load cable (9).

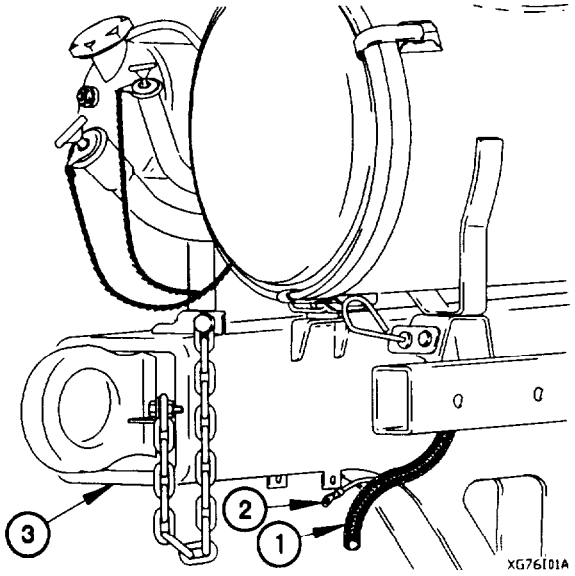
b. Installation.

NOTE

Install plastic cable ties as required.

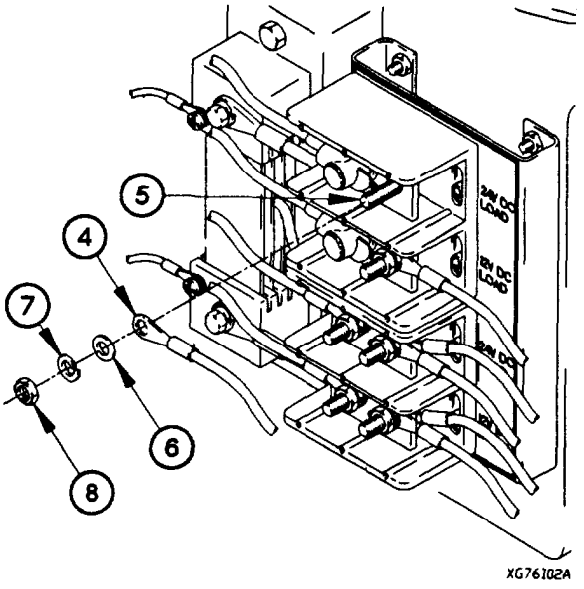
(1) Install convoluted tubing (1) on 200 amp terminal block to reverse polarity relay 24 vdc load cable (2).

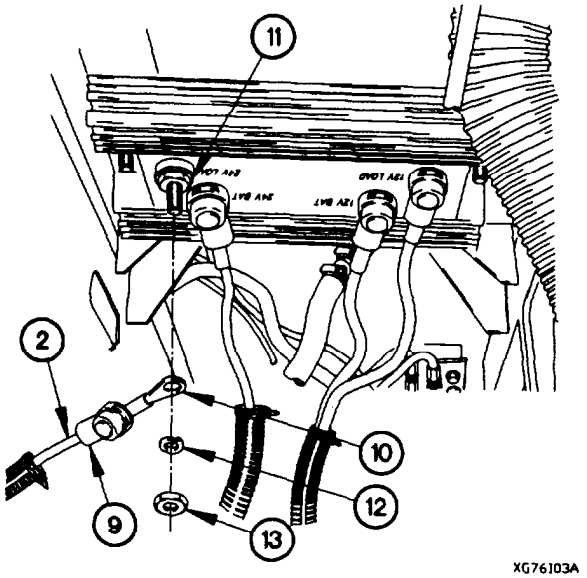
(2) Route 200 amp terminal block to reverse polarity relay 24 vdc load cable (2) on rear side of front lifting beam (3).



(3) Position terminal lug TL167 (4) on terminal block terminal (5) with washer (6) lockwasher (7) and nut (8).

(4) Tighten nut (8) to 15-19 lb-ft (21-25 N•m).





(5) Install dust boot (9) on 200 amp terminal block to reverse polarity relay 24 vdc load cable (2).

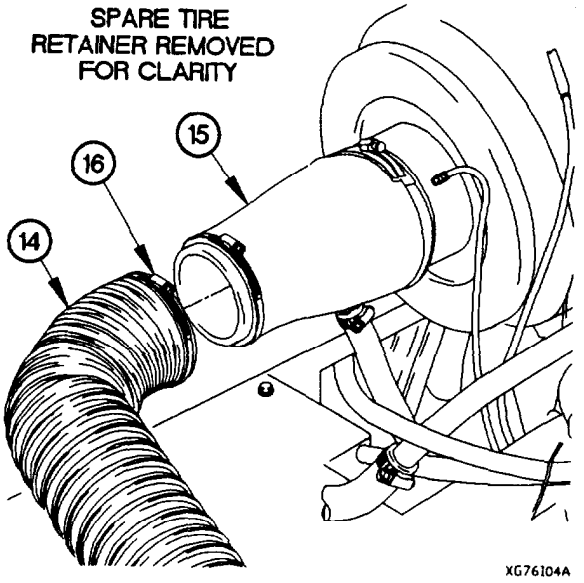
(6) Position terminal lug TL168 (10) on reverse polarity relay 24 VDC LOAD terminal (11) with lockwasher (12) and nut (13).

(7) Tighten nut (13) to 27-33 lb-ft (37-45 N•m).

(8) Position dust boot (9) on terminal lug TL168 (10).

(9) Position turbocharger intake hose (14) on intake air cleaner boot (15) with clamp (16).

(10) Tighten clamp (16) to 36-48 lb-in. (4-5 N•m).



20-62. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC LOAD CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-63. BATTERY TO 200 AMP TERMINAL BLOCK 12 VDC CABLE ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

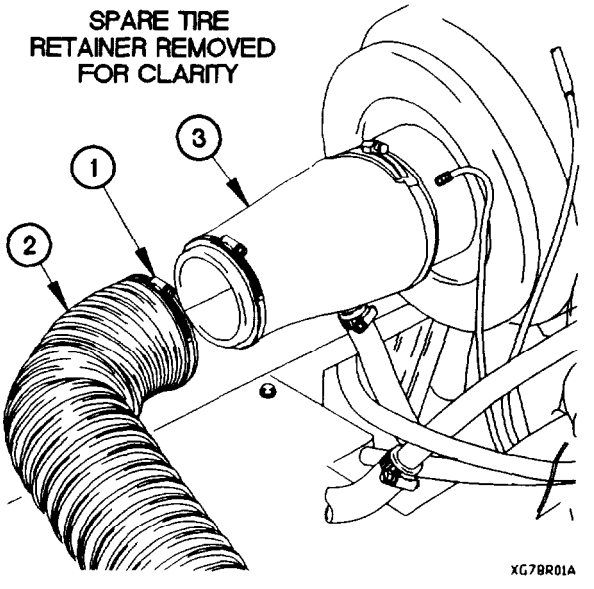
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34. Appendix C)

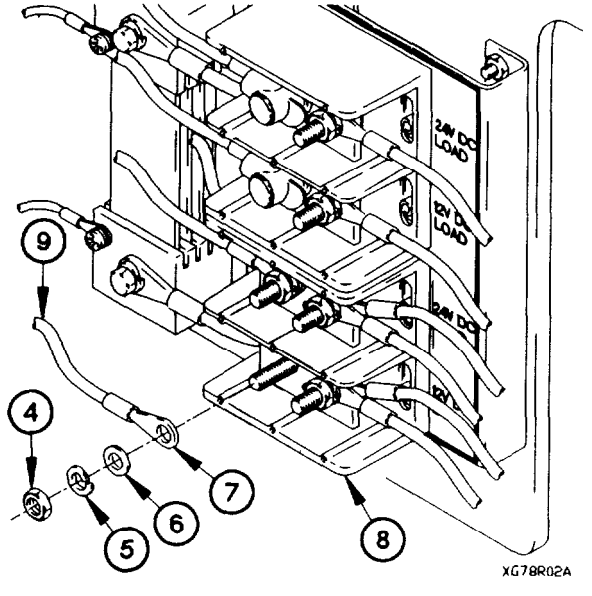
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 89, Appendix G)

a. Removal.

(1) Loosen clamp (1) on turbocharger intake hose (2).

(2) Remove turbocharger intake hose (2) from intake air cleaner boot (3).





(3) Remove nut (4), lockwasher (5), washer (6), and terminal lug TL47 (7) from terminal block (8). Discard lockwasher.

NOTE

Note routing of battery to 200 amp terminal block 12 vdc cable prior to removal.

Remove plastic cable ties as required.

(4) Remove battery to 200 amp terminal block 12 vdc cable (9) from vehicle.

20-63. BATTERY TO 200 AMP TERMINAL BLOCK 12 VDC CABLE ASSEMBLY REPLACEMENT (CONT)

b. Installation.

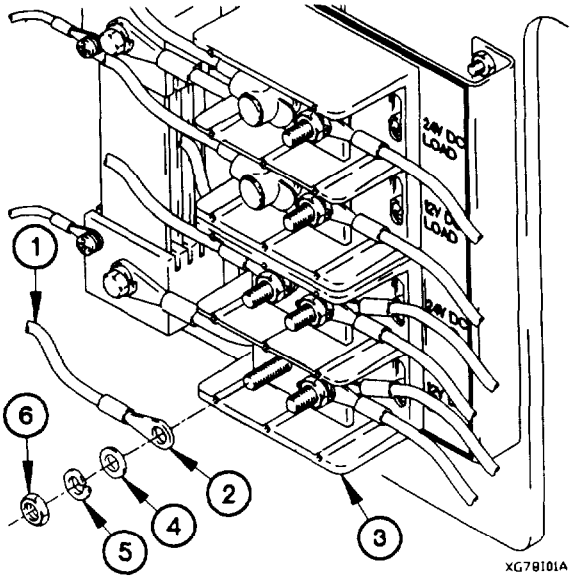
NOTE

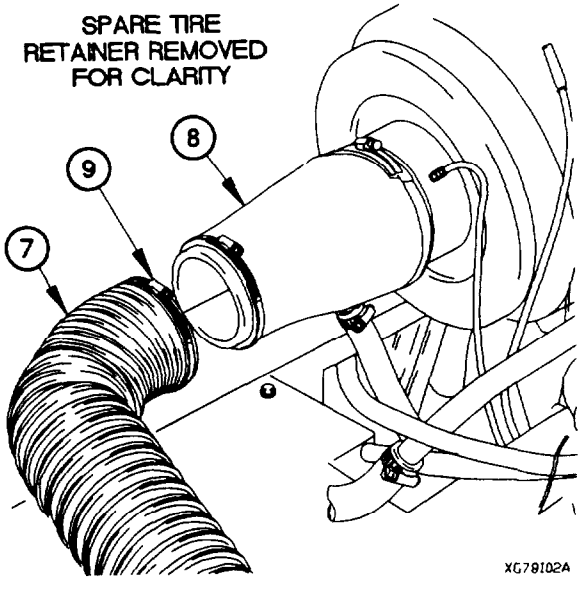
Install plastic cable ties as required.

(1) Position battery to 200 amp terminal block 12 vdc cable (1) on vehicle.

(2) Position terminal lug TL47 (2) on terminal block (3) with washer (4), lockwasher (5), and nut (6).

(3) Tighten nut (6) to 15-19 lb-ft (21-25 N•m).





(4) Position turbocharger intake hose (7) on intake air cleaner boot (8) with clamp (9).

(5) Tighten clamp (9) to 36-48 lb-in. (4-5 N•m).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-64. BATTERY TO 200 AMP TERMINAL BLOCK 24 VDC CABLE ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

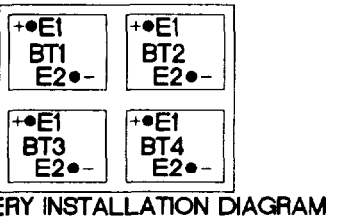
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 89, Appendix G)

a. Removal.

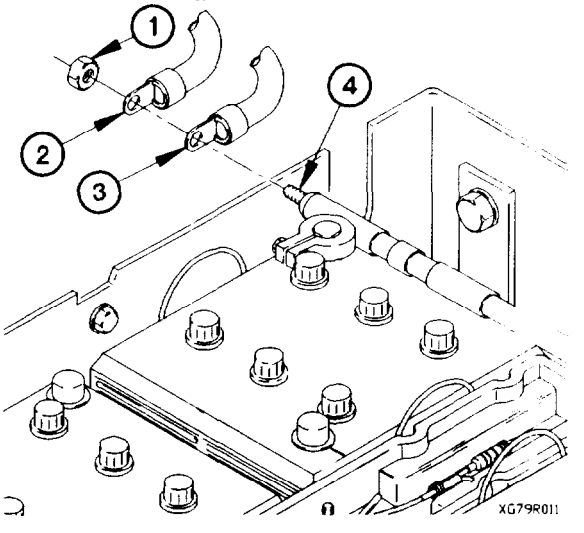
WARNING

Remove rings, bracelets, watches, necklaces, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause injury or short across electrical circuit and cause severe burns or electrical shock. Batteries can explode from a spark. Battery acid is harmful to skin and eyes. Always wear eye protection when working with batteries. Failure to comply may result in injury to personnel.

(1) Remove nut (1) and terminal lugs TL10 (2) and TL39 (3) from battery cable BT1 E1 (4).



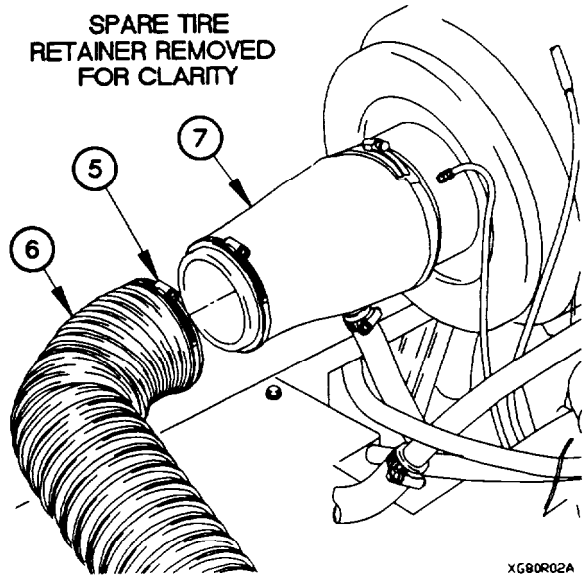
BATTERY INSTALLATION DIAGRAM

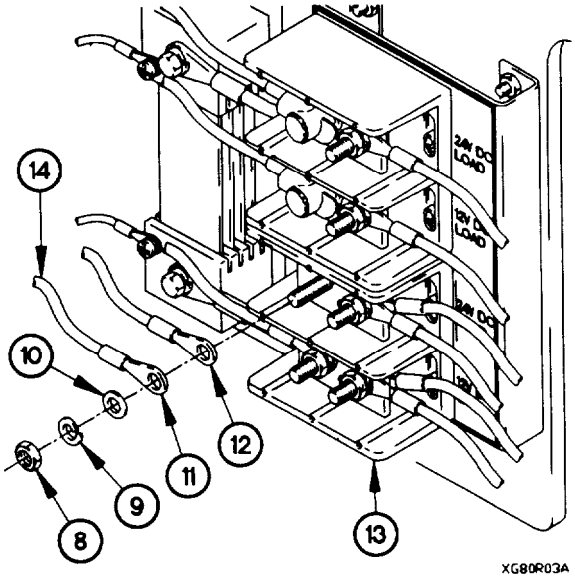


20-64. BATTERY TO 200 AMP TERMINAL BLOCK 24 VDC CABLE ASSEMBLY REPLACEMENT (CONT)

(2) Loosen clamp (5) on turbocharger intake hose (6).

(3) Remove turbocharger intake hose (6) from intake air cleaner boot (7).





(4) Remove nut (8), lockwasher (9), washer (10). and two terminal lugs TL37 (11) and TL36 (12) from terminal block (13). Discard lockwasher.

NOTE

Remove plastic cable ties as required.

(5) Remove battery to 200 amp terminal block 24 vdc cable (14) from vehicle.

b. Installation

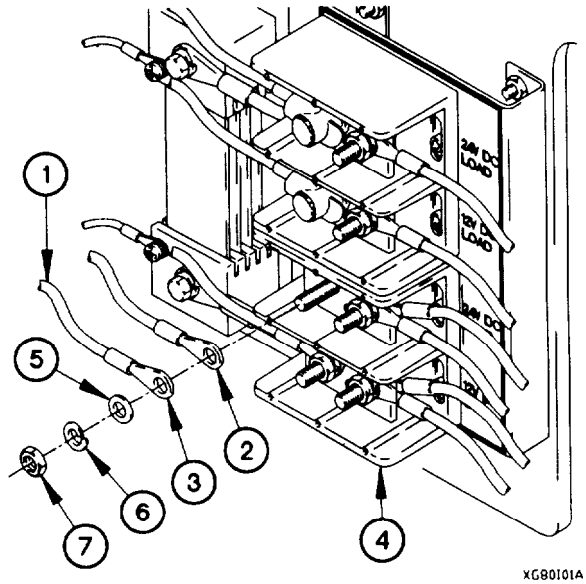
NOTE

Install plastic cable ties as required.

(1) Position battery to 200 amp terminal block 24 vdc cable assembly (1) on vehicle.

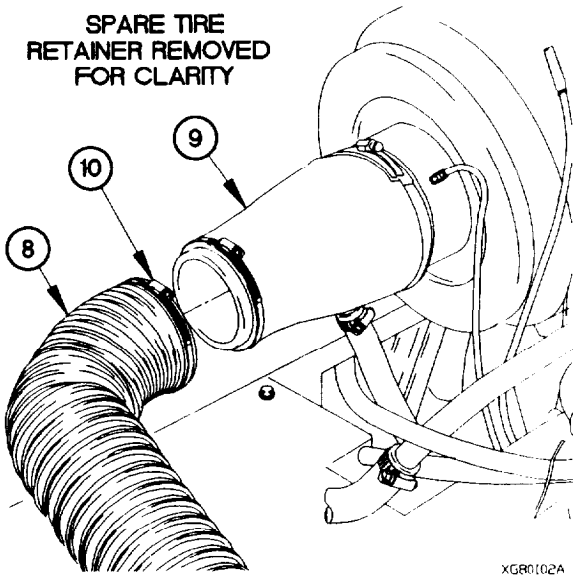
(2) Position terminal lugs TL36 (2) and TL37 (3) on terminal block (4) with washer (5), lockwasher (6), and nut (7).

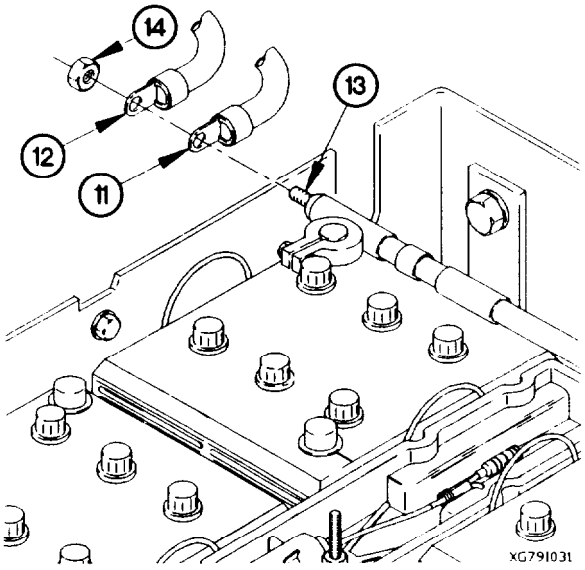
(3) Tighten nut (7) to 15-19 lb-ft (21-25 N•m).



(4) Position turbocharger intake hose (8) on intake air cleaner boot (9) with clamp (10).

(5) Tighten clamp (10) to 36-48 lb-in. 14-5 N•m).





(6) Install terminal lugs TL39 (11) and TL10 (12) on battery cable BT1 E1 (13) with nut (14).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for 24 vdc (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-65. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 12 VDC CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
PDP cover removed (para 16-2).
Spare tire lowered (TM 9-2320-365-10).
Lower radiator fan shroud removed (para 6-4).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

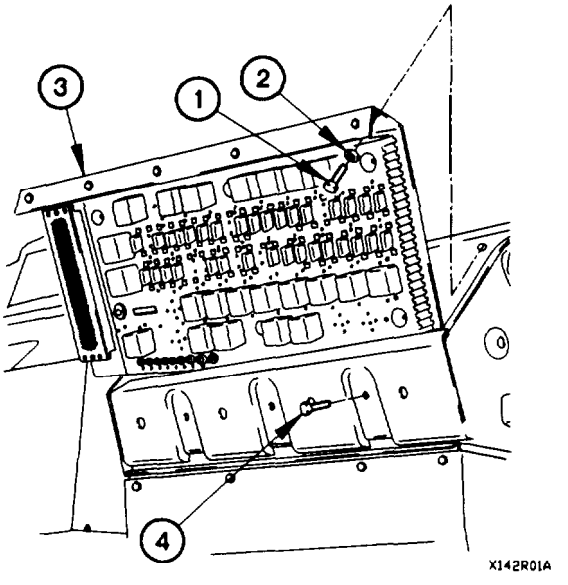
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (2) (Item 137, Appendix G)
Lockwasher (Item 92, Appendix G)
Lockwasher (Item 74, Appendix G)

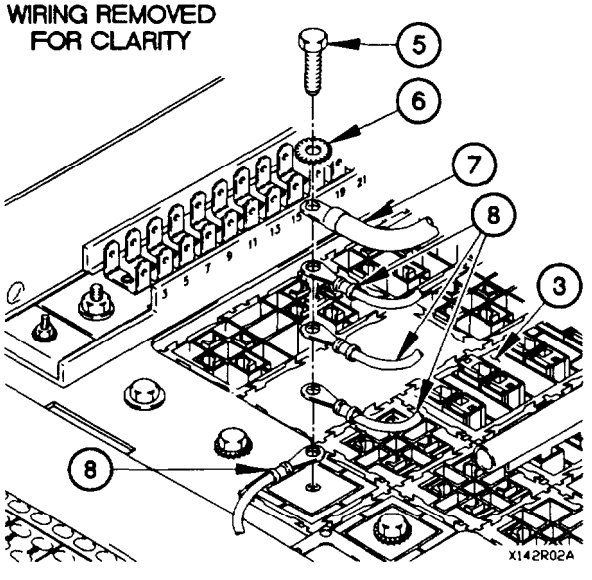
a. Removal.

(1) Remove three screws (1) and washers (2) from PDP (3).

(2) Remove three screws (4) from PDP (3).

(3) Lift PDP (3) outward to gain access.





NOTE

Remove plastic cable ties as required.

(4) Remove screw (5), lockwasher (6), terminal lug TL41 (7), and four terminal lugs (8) from PDP (3). Discard lockwasher.

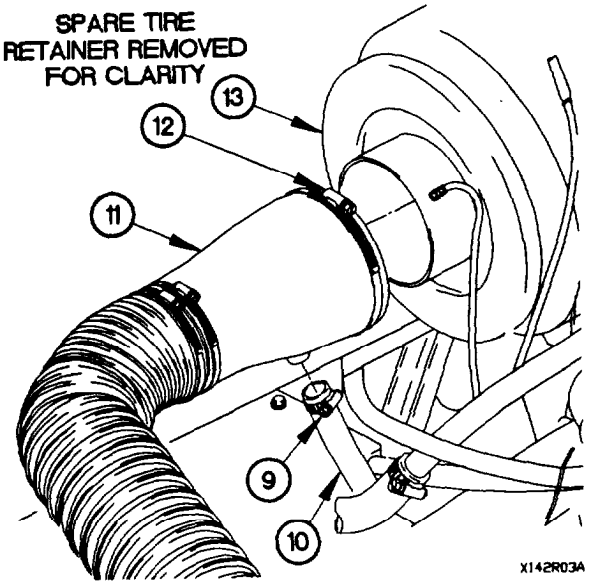
(5) Position four terminal lugs (8) on PDP (3) with screw (5).

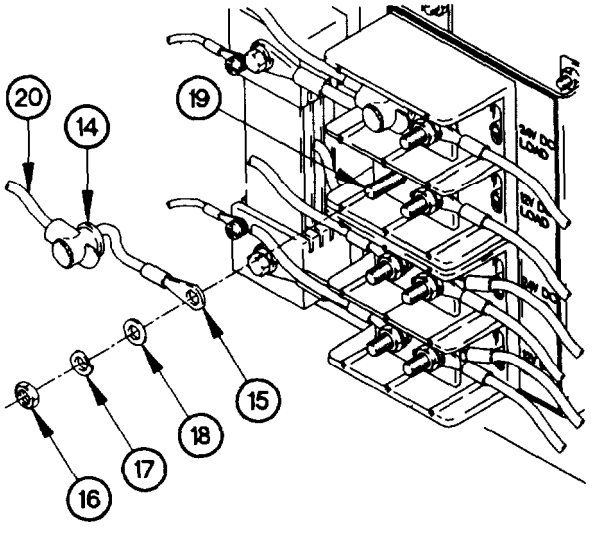
(6) Loosen clamp (9) on air compressor intake hose (10).

(7) Remove air compressor intake hose (10) from intake air cleaner boot (11).

(8) Loosen clamp (12) on intake air cleaner boot (11).

(9) Remove intake air cleaner boot (11) from intake air cleaner housing (13).



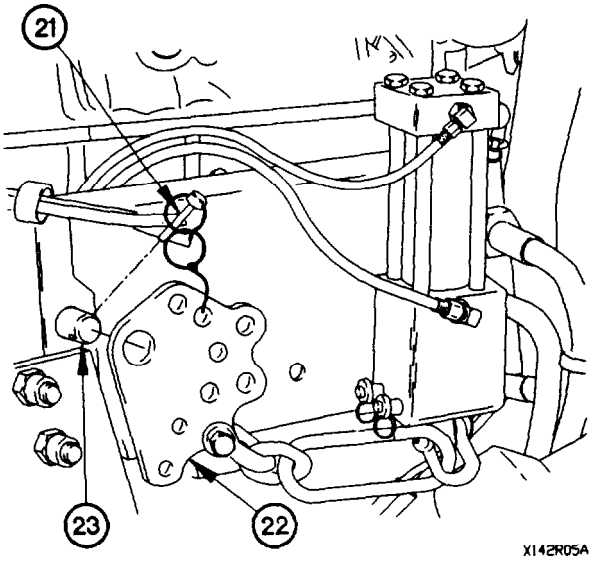


(10) Lift dust boot (14) on terminal lug TL80 (15).

(11) Remove nut (16), lockwasher (17), washer (18) and terminal lug TL80 (15) from terminal block terminal (19). Discard lockwasher.

(12) Remove dust boot (14) from 200 amp terminal block to PDP 12 vdc cable (20).

(13) Remove spring pin (21) and suspension compression plate (22) from suspension compression plate stud (23).



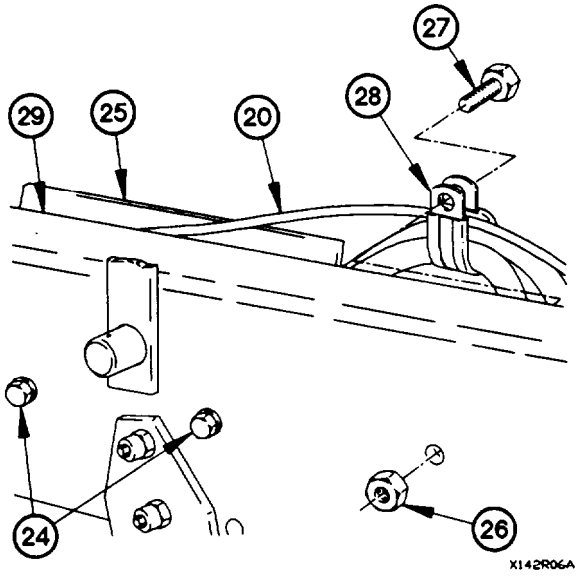
20-65. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 12 VDC CABLE REPLACEMENT (CONT)

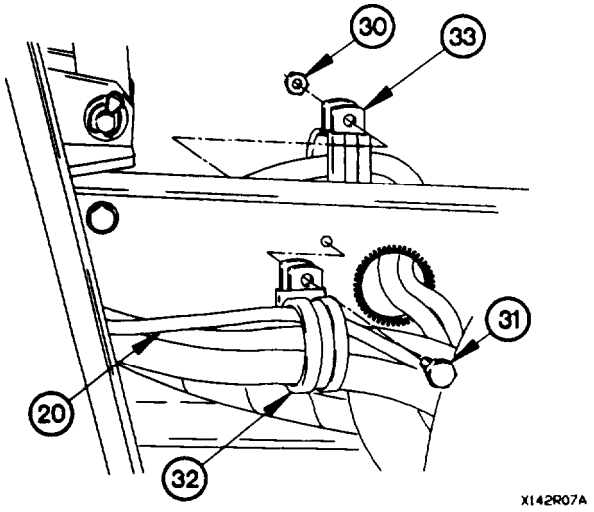
(14) Loosen two screws (24) in heat shield assembly (25).

(15) Remove 200 amp terminal block to PDP 12 vdc cable (20) from heat shield assembly (25).

(16) Remove self-locking nut (26). screw (27), clamp (28), and 200 amp terminal block to PDP 12 vdc cable (20) from frame rail (29). Discard self-locking nut.

(17) Remove 200 amp terminal block to PDP 12 vdc cable (20) from clamp (28).

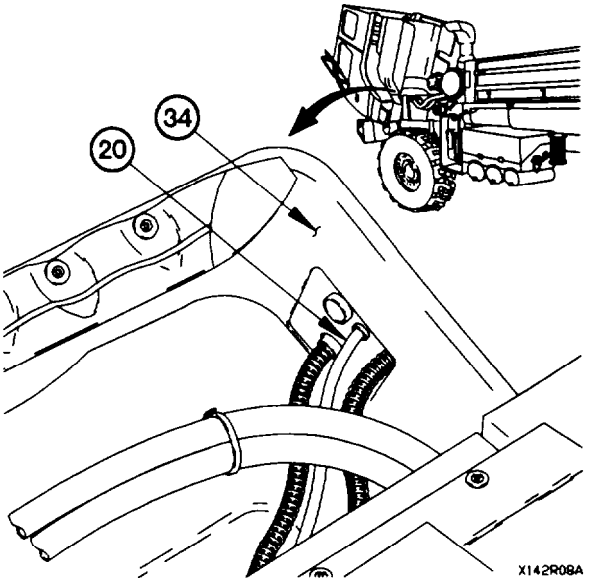




(18) Remove self-locking nut (30) and screw (31) from clamps (32 and 33). Discard self-locking nut.

(19) Remove 200 amp terminal block to PDP 12 vdc cable (20) from clamp (32).

(20) Remove 200 amp terminal block to PDP 12 vdc cable (20) from cab (34).

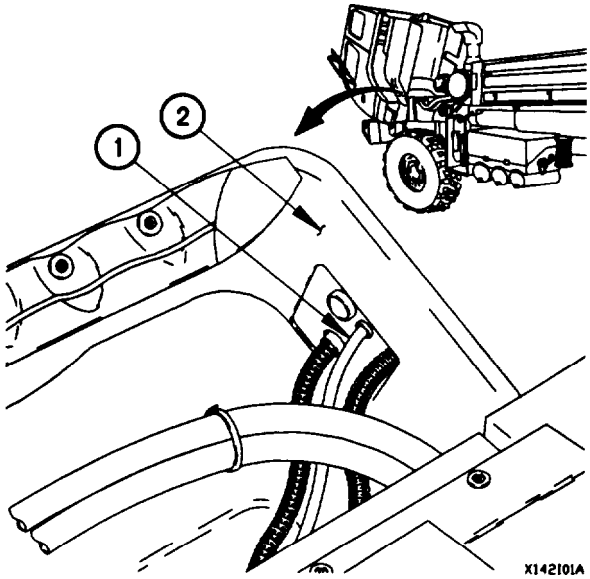


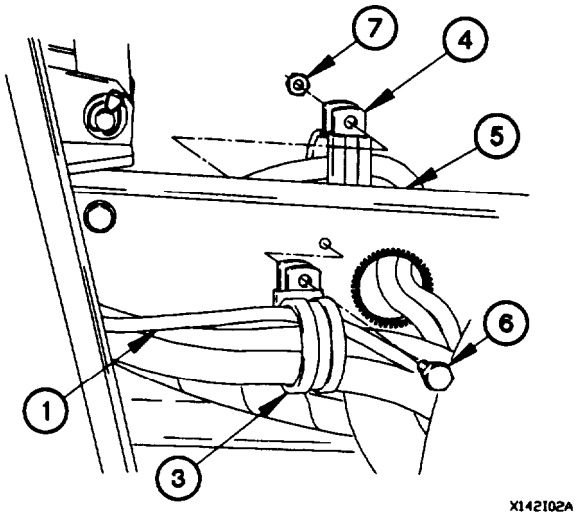
b. Installation.

NOTE

Install plastic cable ties as required.

(1) Route 200 amp terminal block to PDP 12 vdc cable (1) through bottom of cab (2).





(2) Position 200 amp terminal block to PDP 12 vdc cable (1) in clamp (3).

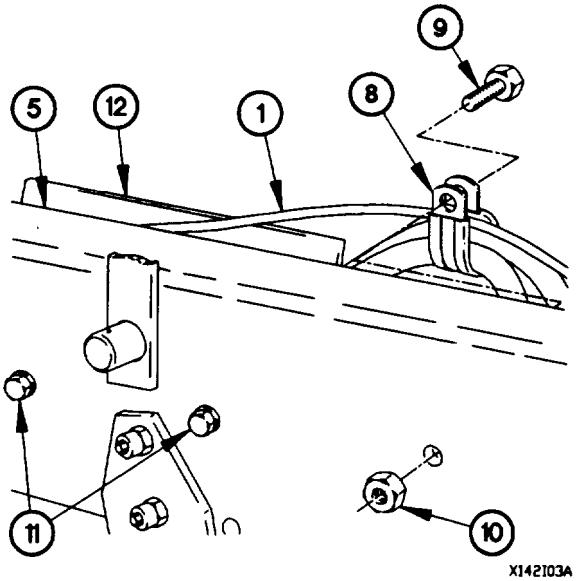
(3) Install clamps (3 and 4) on frame rail (5) with screw (6) and self-locking nut (7).

(4) Position 200 amp terminal block to PDP 12 vdc cable (1) in clamp (8).

(5) Position clamp (8) on frame rail (5) with screw (9), and self-locking nut (10).

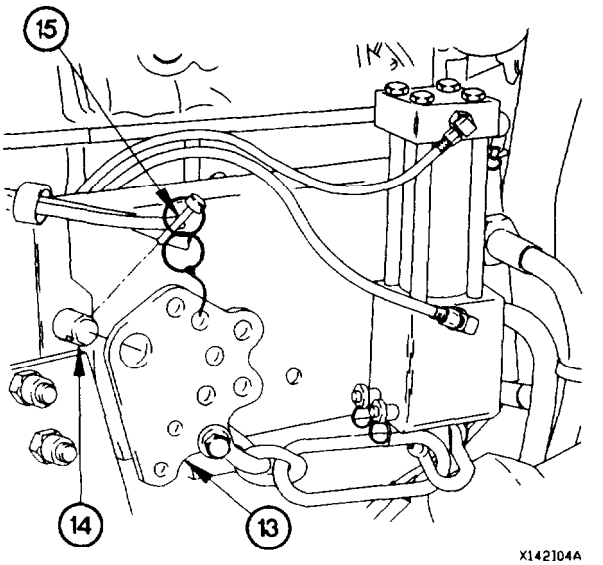
(6) Tighten self-locking nut (10) to 84-108 lb-in. (10-12 N•m).

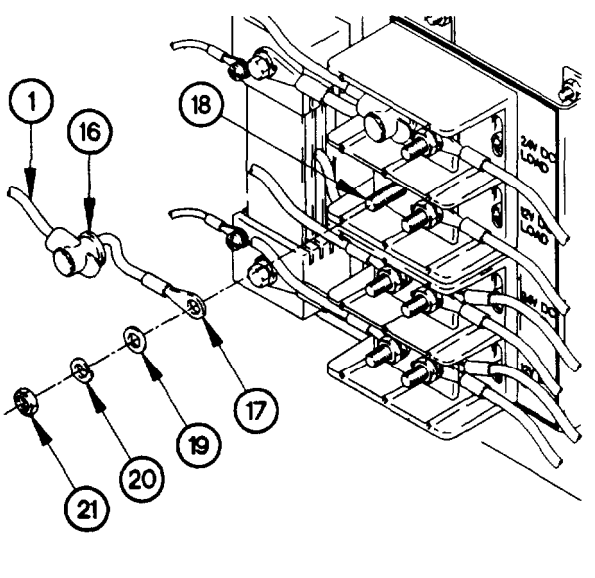
(7) Tighten two screws (11) in heat shield assembly (12).



20-65. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 12 VDC CABLE REPLACEMENT (CONT)

(8) Install suspension compression plate (13) on suspension compression plate stud (14) with spring pin (15).



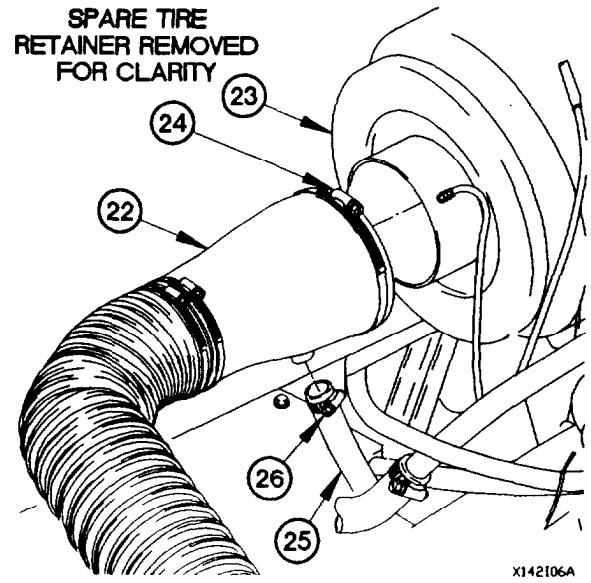


(9) Install dust boot (16) on 200 amp terminal block to PDP 12 vdc cable (1).

(10) Position terminal lug TL80 (17) on terminal block terminal (18) with washer (19), lockwasher (20), and nut (21).

(11) Tighten nut (21) to 15-19 lb-ft (21-25 N•m).

(12) Position dust boot (16) on terminal lug TL80 (17).

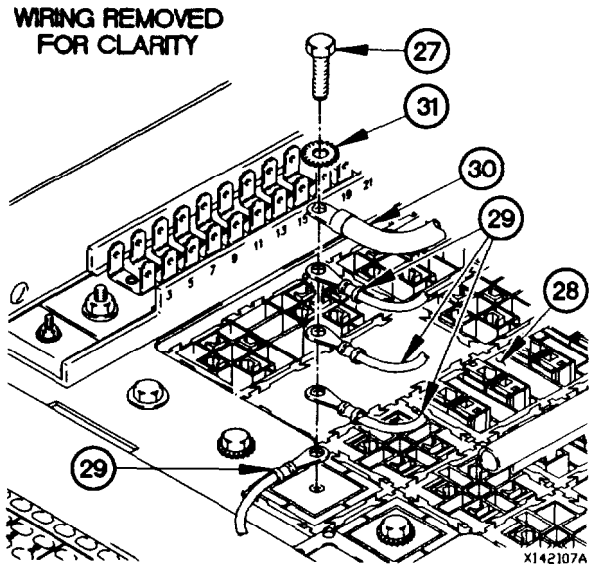


(13) Position intake air cleaner boot (22) on intake air cleaner housing (23) with clamp (24).

(14) Position air compressor intake hose (25) on intake air cleaner boot (22) with clamp (26).

(15) Tighten clamps (24 and 26) to 36-48 lb-in. (4-5 N•m).

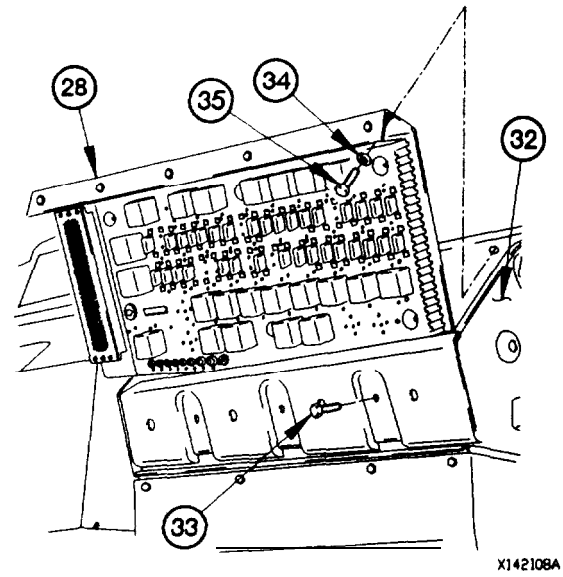
(16) Lower cab (TM 9-2320-365-10).



(17) Remove screw (27) from PDP (28).

(18) Position four terminal lugs (29) and terminal lug TL41 (30) on PDP (28) with lockwasher (31) and screw (27).

(19) Tighten screw (27) to 35-45 lb-in. (4-5 N•m).



(20) Install PDP (28) on dashboard (32) with three screws (33).

(21) Install three washers (34) and screws (35) in PDP (28).

20-65. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 12 VDC CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Install PDP cover (para 16-2).

(2) Install lower radiator fan shroud (para 6-4).

(3) Connect batteries (para 7-48).

(4) Raise spare tire (TM 9-2320-365-10).

(5) Start engine (TM 9-2320-365-10).

(6) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(7) Shut down engine (TM 9-2320-365-10).

End of Task.

20-66. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 WC BATTERY CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

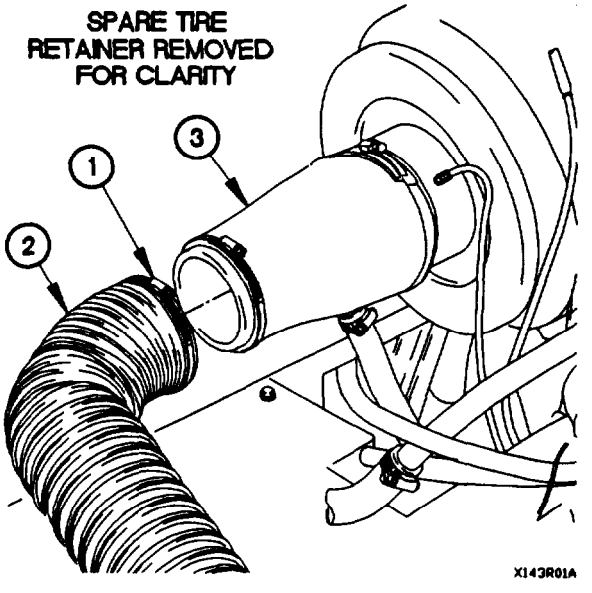
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 92, Appendix G)
Lockwasher (Item 65, Appendix G)

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

a. Removal

(1) Loosen clamp (1) on turbocharger intake hose (2).

(2) Remove turbocharger intake hose (2) from intake air cleaner boot (3).



20-66. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 VDC BATTERY CABLE REPLACEMENT (CONT)

(3) Lift dust boot (4) on terminal lug TL173 (5).

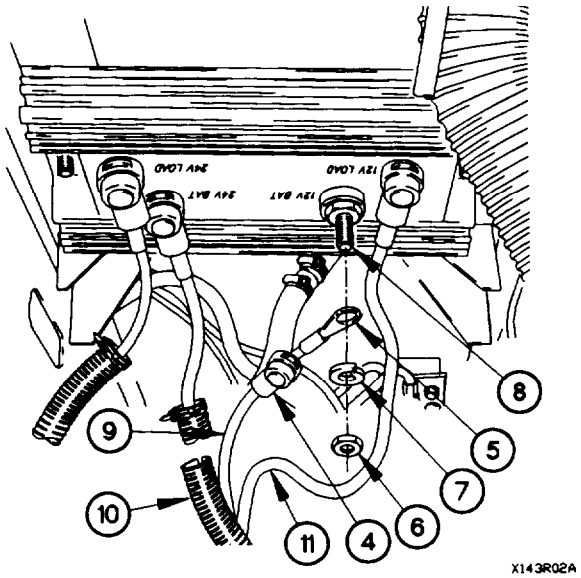
NOTE

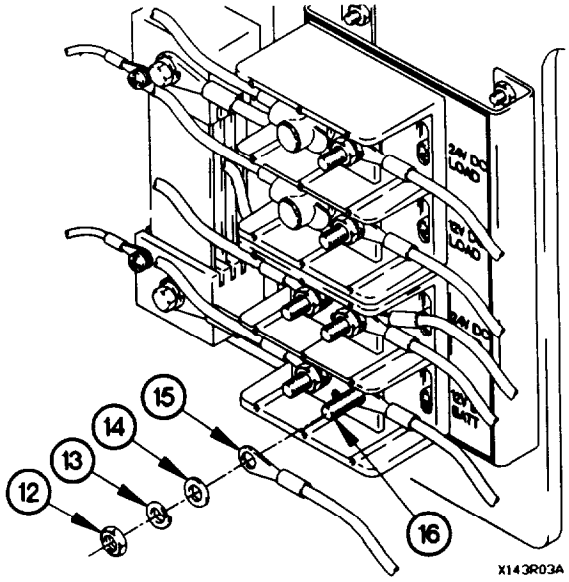
Remove plastic cable ties as required.

(4) Remove nut (6), lockwasher (7), and terminal lug TL173 (5) from reverse polarity relay 12 VDC BAT terminal (8). Discard lockwasher.

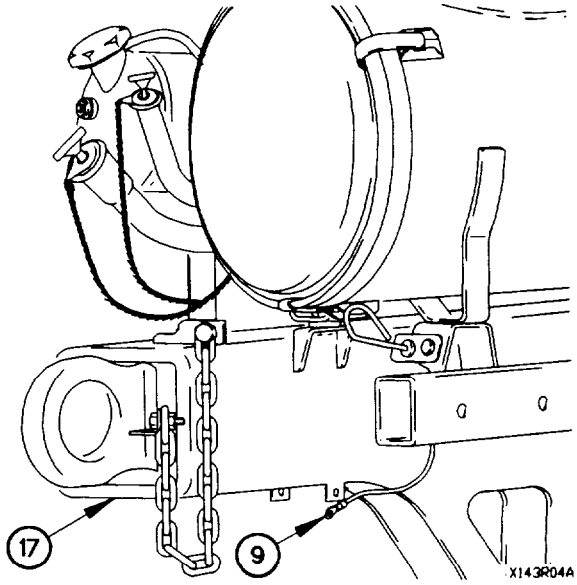
(5) Remove dust boot (4) from 200 amp terminal block to reverse polarity relay 12 vdc battery cable (9).

(6) Remove convoluted tubing (10) from 200 amp terminal block to reverse polarity relay 12 vdc battery cable (9) and 200 amp terminal block to reverse polarity relay 12 vdc load cable (11).





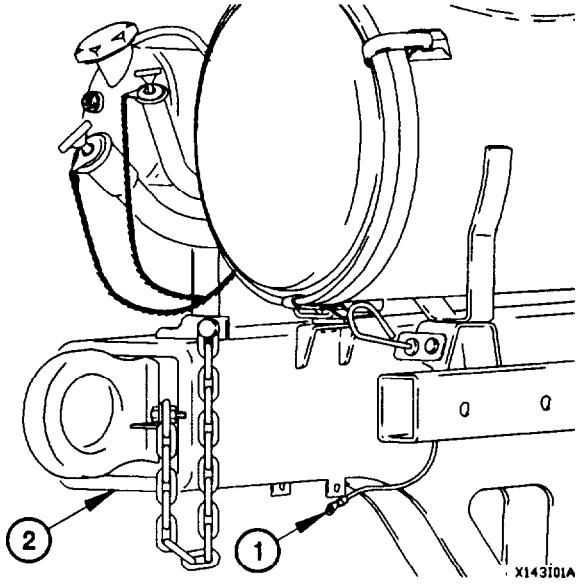
(7) Remove nut (12), lockwasher (13), washer (14), and terminal lug TL171 (15) from terminal block terminal (16). Discard lockwasher.

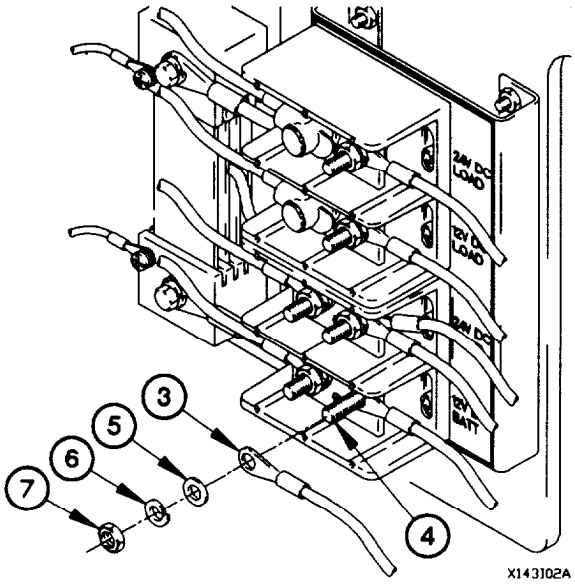


(8) Remove 200 amp terminal block to reverse polarity relay 12 vdc battery cable (9) from rear side of front lifting beam (17).

b. Installation.

(1) Route 200 amp terminal block to reverse polarity relay 12 vdc battery cable (1) to rear side of front lifting beam (2).





(2) Position terminal lug TL171 (3) on terminal block terminal (4) with washer (5), lockwasher (6), and nut (7).

(3) Tighten nut (7) to 15-19 lb-ft (21-25 N•m).

NOTE

Install plastic cable ties as required.

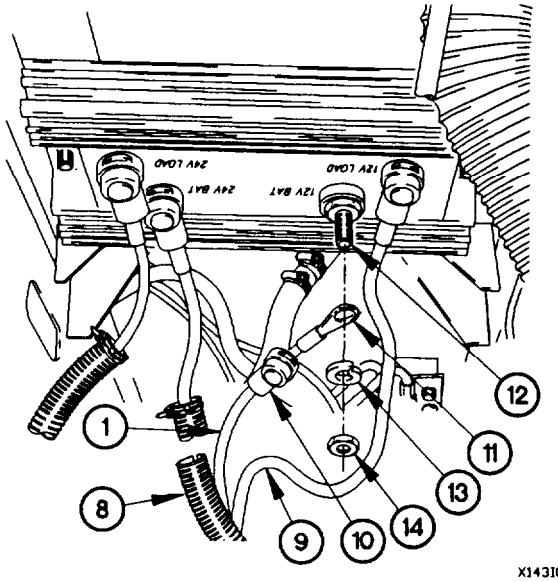
(4) Install convoluted tubing (8) on 200 amp terminal block to reverse polarity relay 12 vdc battery cable (1) and 200 amp terminal block to reverse polarity relay 12 vdc load cable (9).

(5) Install dust boot (10) on 200 amp terminal block to reverse polarity relay 12 vdc battery cable (1).

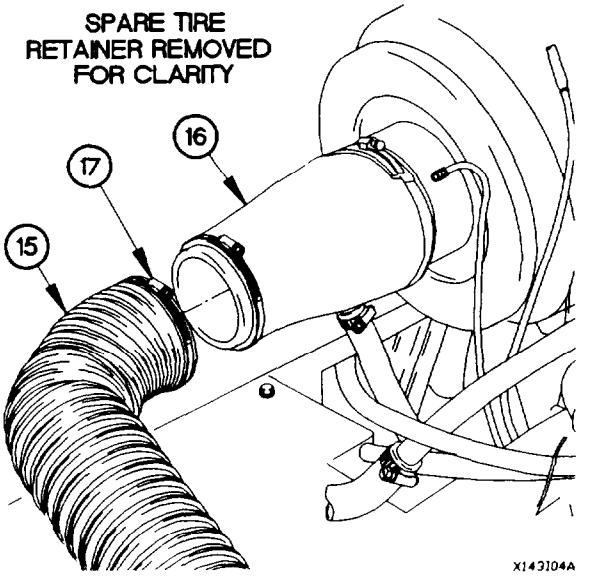
(6) Position terminal lug TL173 (11) on reverse polarity relay 12 VDC BAT terminal (12) with lockwasher (13), and nut (14).

(7) Tighten nut (14) to 120 lb-in. (14 N•m).

(8) Position dust boot (10) on terminal lug TL173 (11).



20-66. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 12 VDC



(9) Position turbocharger intake hose (15) on intake air cleaner boot (16) with clamp (17).

(10) Tighten clamp (17) to 36-48 lb-in. (4-5 N•m).

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-365-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-67. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC BATTERY CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

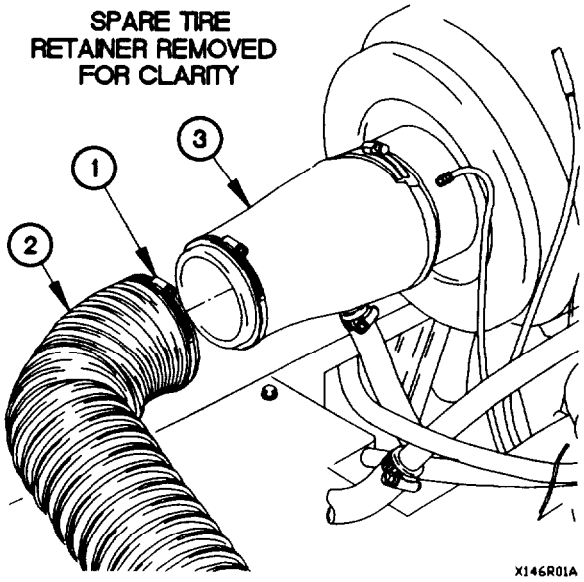
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

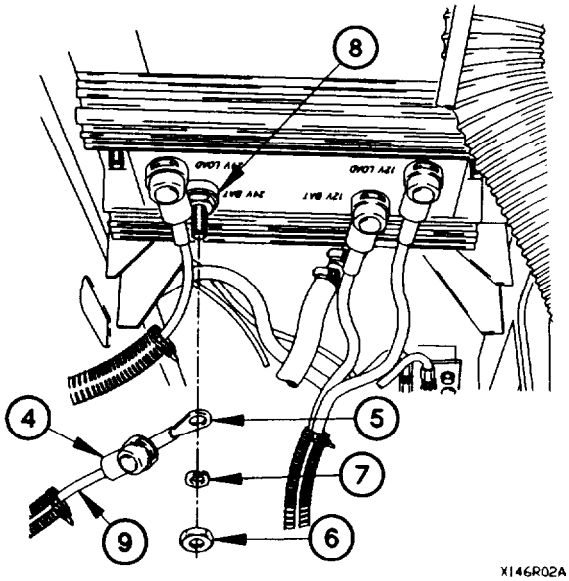
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (Item 92, Appendix G)
Lockwasher (Item 66, Appendix G)

a. Removal.

(1) Loosen clamp (1) on turbocharger intake hose (2).

(2) Remove turbocharger intake hose (2) from intake air cleaner boot (3).





(3) Lift dust boot (4) on terminal lug TL189 (5).

NOTE

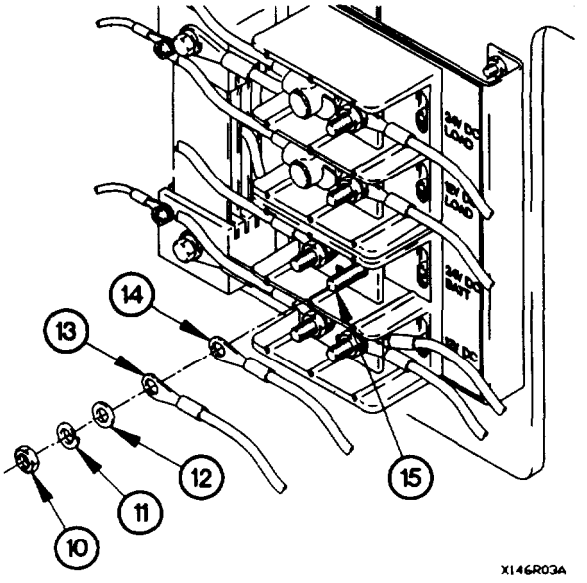
Remove plastic cable ties as required.

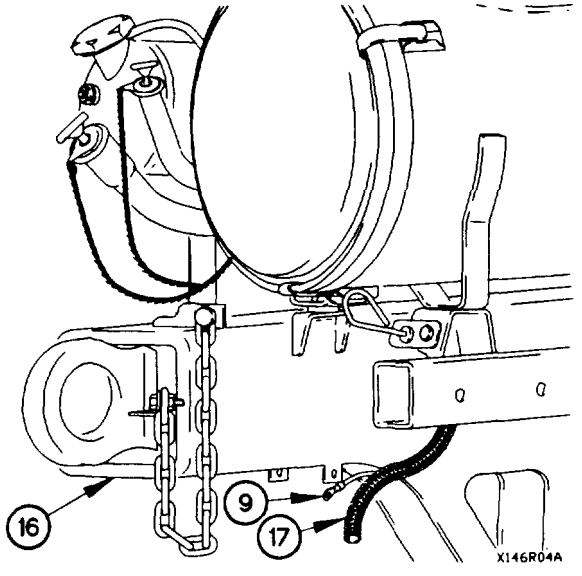
(4) Remove nut (6), lockwasher (7), and terminal lug TL169 (5) from reverse polarity relay 24 VDC BAT terminal (8). Discard lockwasher.

(5) Remove dust boot (4) from 200 amp terminal block to reverse polarity relay 24 vdc battery cable (9).

20-67. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC BATTERY CABLE REPLACEMENT (CONT)

(6) Remove nut (10), lockwasher (11), washer (12), and terminal lugs TL1 (13) and TL166 (14) from terminal block terminal (15). Discard lockwasher.





(7) Remove 200 amp terminal block to reverse polarity relay 24 vdc battery cable (9) from rear side of front lifting beam (16).

(8) Remove convoluted tubing (17) from 200 amp terminal block to reverse polarity relay 24 vdc battery cable (9).

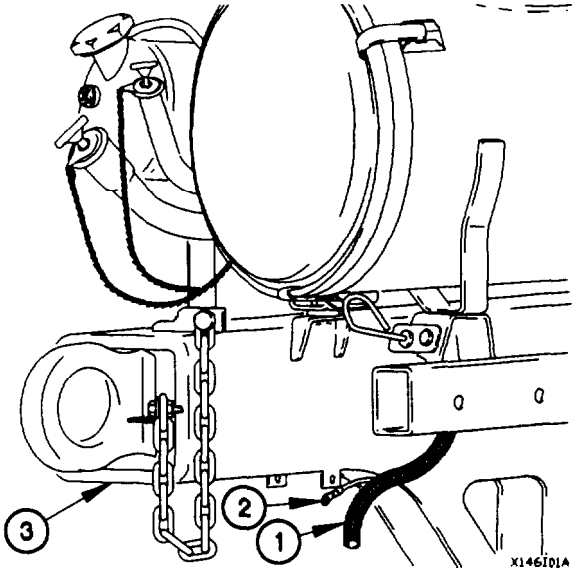
b. Installation.

NOTE

Install plastic cable ties as required.

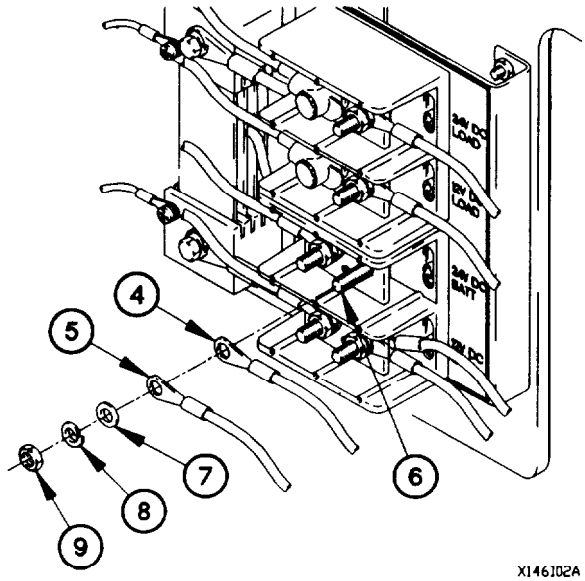
(1) Install convoluted tubing (1) on 200 amp terminal block to reverse polarity relay 24 vdc battery cable (2).

(2) Position 200 amp terminal block to reverse polarity relay 24 vdc battery cable (2) on rear side of front lifting beam (3).

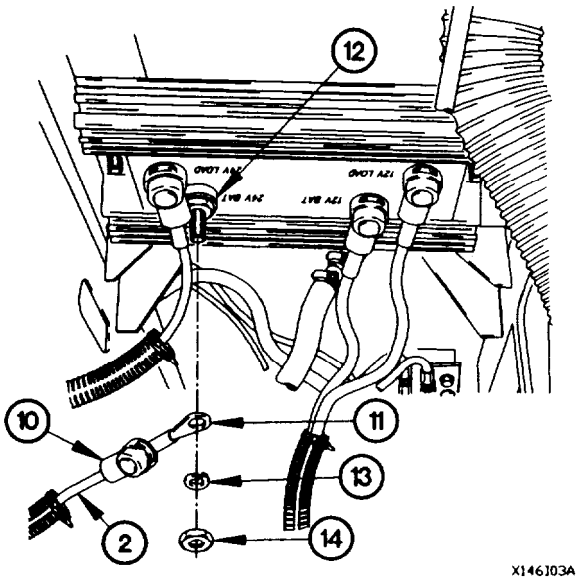


(3) Position terminal lugs TL166 (4) and TL1 (5) on terminal block terminal (6) with washer (7), lockwasher (8), and nut (9).

(4) Tighten nut (9) to 15-19 lb-ft (21-25 N•m).



X1461102A



X1461103A

(5) Install dust boot (10) on 200 amp terminal block to reverse polarity relay 24 vdc battery cable (2).

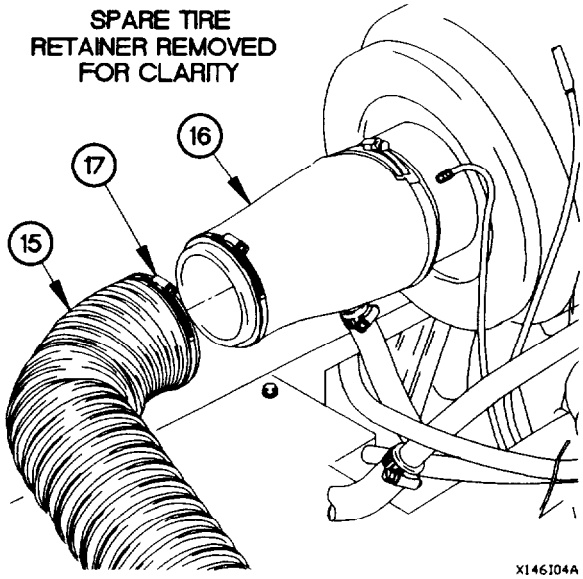
(6) Position terminal lug TL169 (11) on reverse polarity relay 24 VDC BAT terminal (12) with lockwasher (13) and nut (14).

(7) Tighten nut (14) to 30 lb-ft (41 N•m).

(8) Position dust boot (10) on terminal lug TL169 (11).

(9) Position turbocharger intake hose (15) on intake air cleaner boot (18) with clamp (17).

(10) Tighten clamp (17) to 36-48 lb-in. (4-5 N•m).



X1461104A

20-67. 200 AMP TERMINAL BLOCK TO REVERSE POLARITY RELAY 24 VDC BATTERY CABLE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Raise spare tire (TM 9-2320-365-10).

(3) Start engine (TM 9-2320-385-10).

(4) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-68. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 24 VDC CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
PDP cover removed (para 18-2).
Spare tire lowered (TM 9-2320-365-10).
Bottom radiator fan shroud removed (para 8-4).
Cab lowered (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

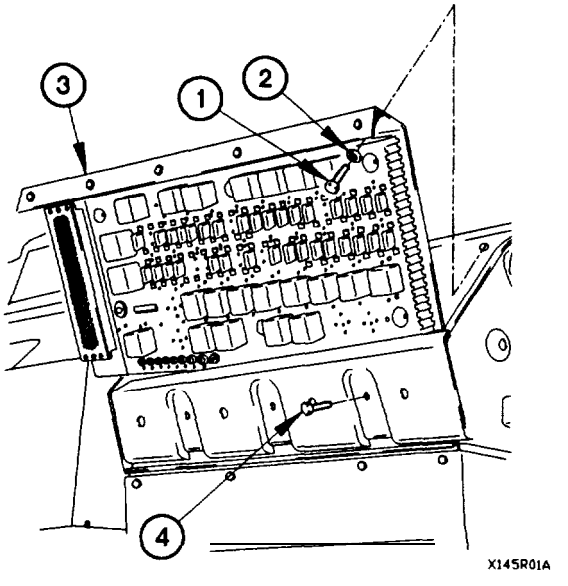
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Nut, Self-Locking (2) (Item 133, Appendix G)
Lockwasher (Item 89, Appendix G)
Lockwasher (Item 70, Appendix G)

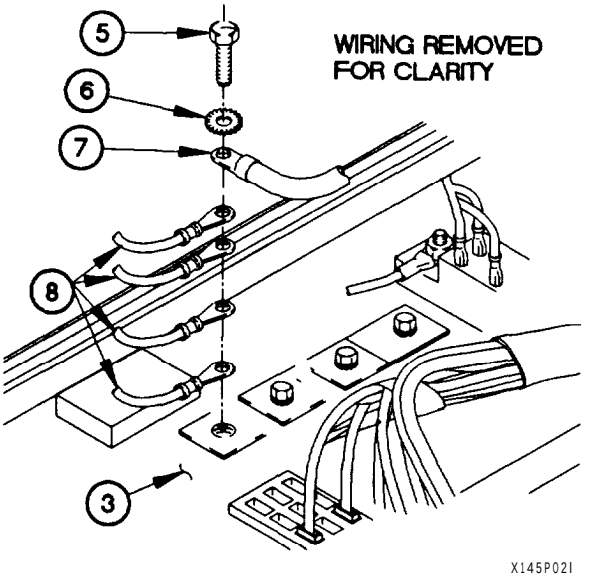
a. Removal.

(1) Remove three screws (1) and washers (2) from PDP (3).

(2) Remove three screws (4) from PDP (3).

(3) Lift PDP (3) outward to gain access.





NOTE

Remove plastic cable ties as required.

(4) Remove screw (5), lockwasher (6), terminal lug TL42 (7), and four terminal lugs (8) from PDP (3). Discard lockwasher.

(5) Position four terminal lugs (8) on PDP (3) with screw (5).

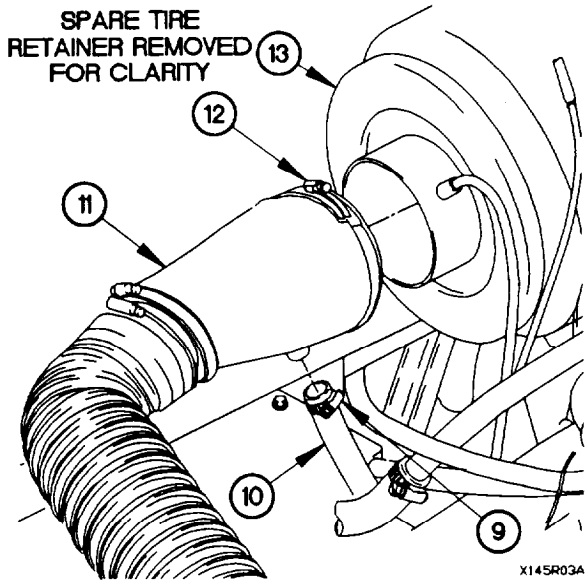
20-68. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 24 VDC CABLE REPLACEMENT (CONT)

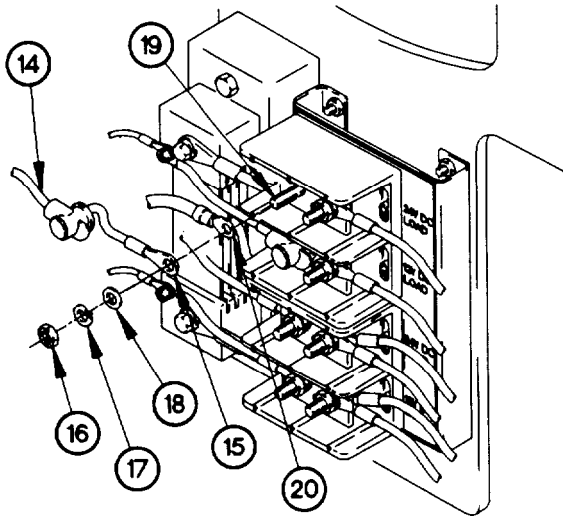
(6) Loosen clamp (9) on air compressor intake hose (10).

(7) Remove air compressor intake hose (10) from intake air cleaner boot (11).

(8) Loosen clamp (12) on intake air cleaner boot (11).

(9) Remove intake air cleaner boot (11) from intake air cleaner housing (13).





3G92R041

(10) Lift dust boot (14) on terminal lug TL44 (15).

(11) Remove nut (16), lockwasher (17), washer (18), and terminal lug TL44 (15) from terminal block terminal (19). Discard lockwasher.

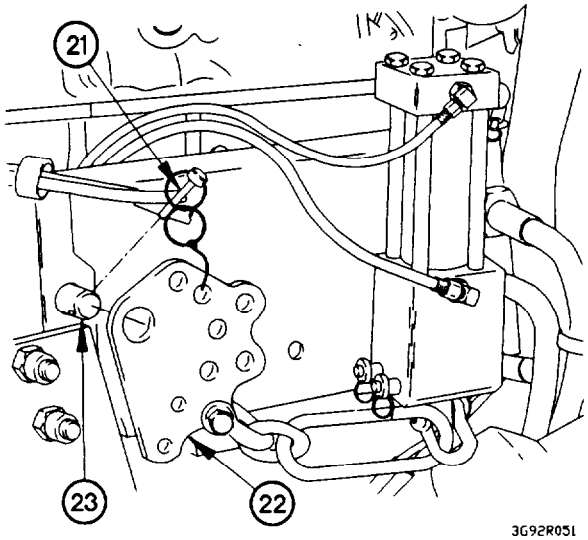
NOTE

Perform step (12) on M1079.

(12) Remove terminal lug TL100 (20) from terminal block terminal (19).

(13) Raise cab (TM 9-2320-365-10).

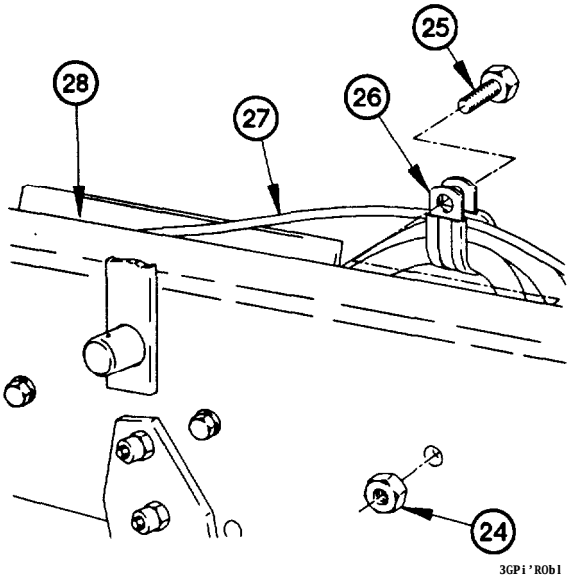
(14) Remove spring pin (21) and suspension compression plate (22) from suspension compression plate stud (23).

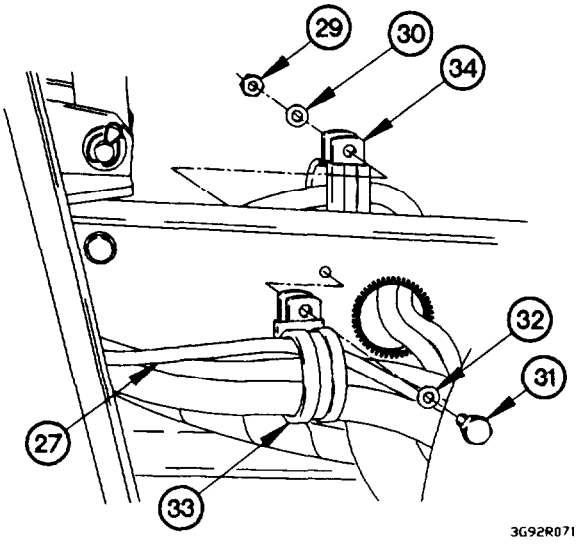


3G92R051

(15) Remove self-locking nut (24), screw (25), clamp (28), and 200 amp terminal block to PDP 24 vdc cable (27) from frame rail (28).

(16) Remove 200 amp terminal block to PDP 24 vdc cable (27) from clamp (26).

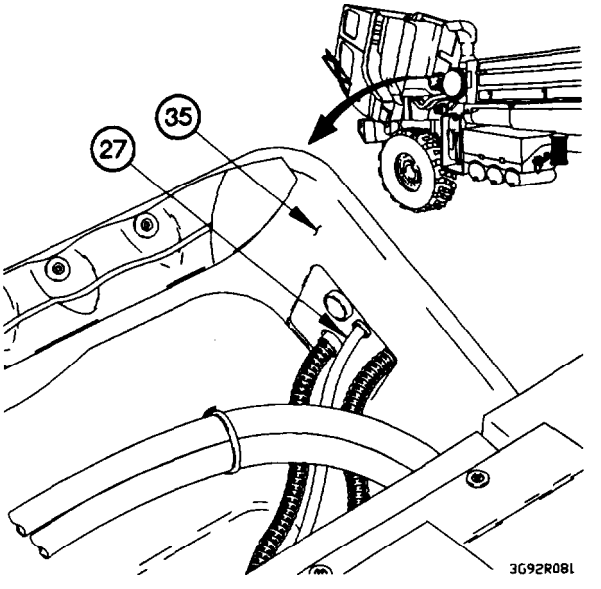




(17) Remove self-locking nut (29), washer (30), screw (31), and washer (32) from clamps (33 and 34). Discard self-locking nut.

(18) Remove 200 amp terminal block to PDP 24 vdc cable (27) from clamp (33).

(19) Remove 200 amp terminal block to PDP 24 vdc cable (27) from cab (35).



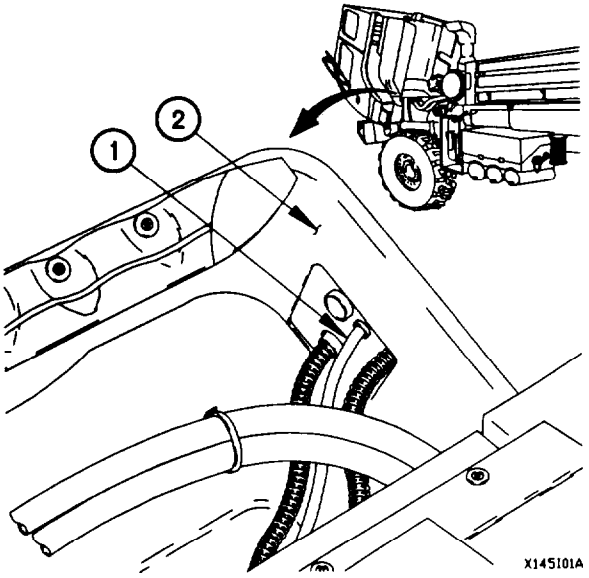
20-68. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 24 VDC CABLE REPLACEMENT (CONT)

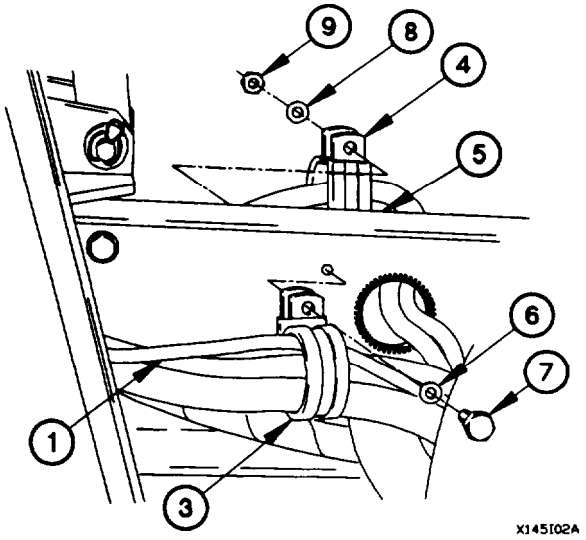
b. Installation.

NOTE

Install plastic cable ties as required.

(1) Route 200 amp terminal block to PDP 24 vdc cable (1) through bottom of cab (2).

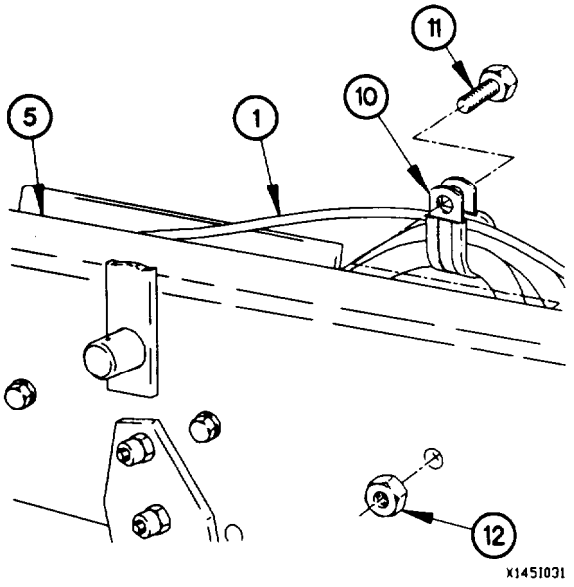




(2) Position 200 amp terminal block to PDP 24 vdc cable (1) in clamp (3).

(3) Position clamps (3 and 4) on frame rail (5) with washer (6), screw (7), washer (8), and self-locking nut (9).

(4) Tighten self-locking nut (9) to 97-120 lb-in. (11-14 N•m).

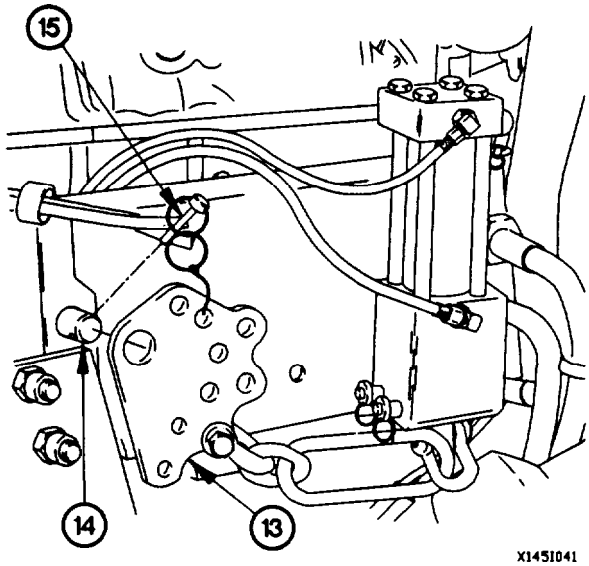


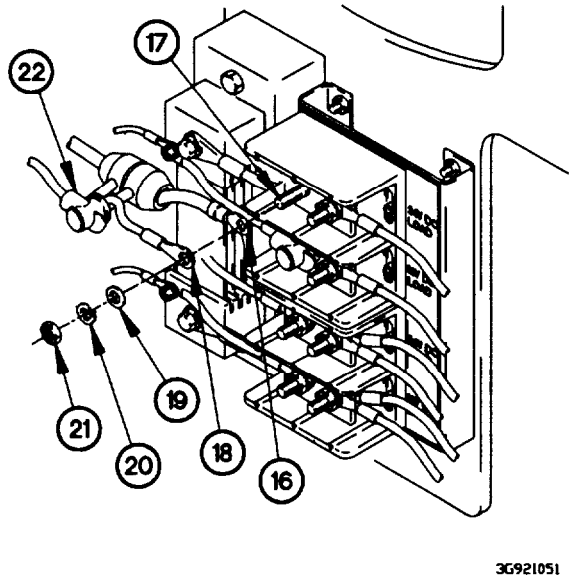
(5) Position 200 amp terminal block to PDP 24 vdc cable (1) in clamp (10).

(6) Position clamp (10) on frame rail (5) with screw (11) and self-locking nut (12).

(7) Tighten self-locking nut (12) to 97-120 lb-in. (11-14 N•m).

(8) Install suspension compression plate (13) on suspension compression plate stud (14) with spring pin (15).





NOTE

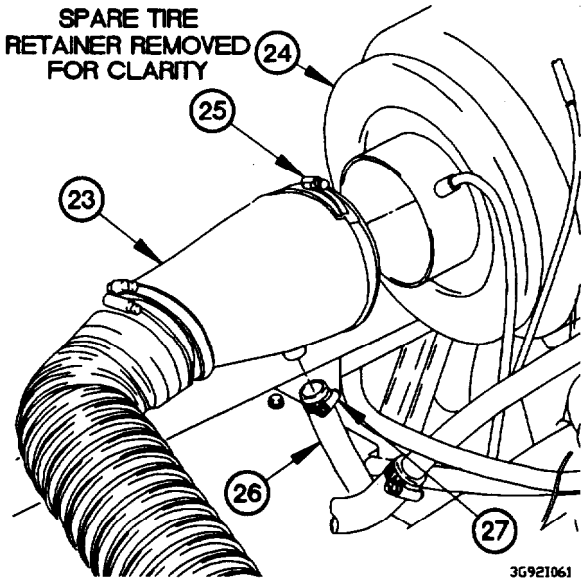
Perform step (9) on M1089.

(9) Position terminal lug TL100 (16) on terminal block terminal (17).

(10) Position terminal lug TL44 (18) on terminal block terminal (17) with washer (19), lockwasher (20) and nut (21).

(11) Tighten nut (21) to 15-19 lb-ft (21-25 N•m).

(12) Position dust boot (22) on terminal lug TL44 (18).



(13) Position intake air cleaner boot (23) on intake air cleaner housing (24) with clamp (25).

(14) Position air compressor intake hose (26) on intake air cleaner boot (23) with clamp (27).

(15) Tighten clamps (25 and 27) to 36-48 lb-in. (4-5 N•m).

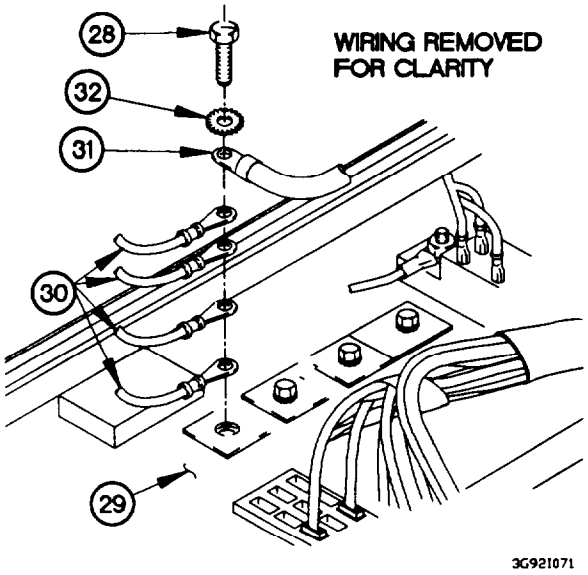
(16) Lower cab (TM 9-2320-365-10).

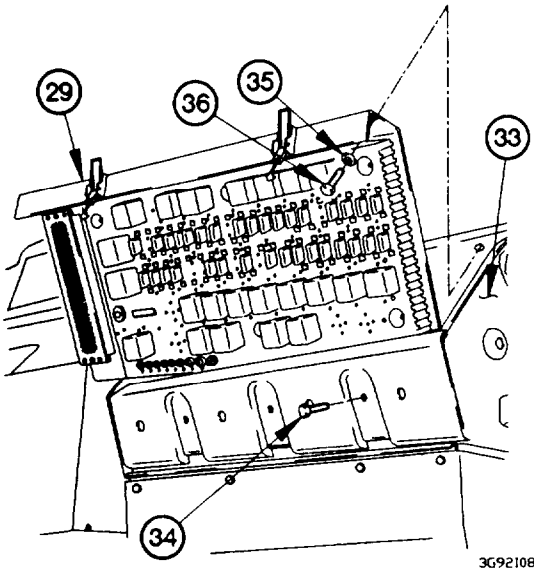
20-68. 200 AMP TERMINAL BLOCK TO POWER DISTRIBUTION PANEL (PDP) 24 VDC CABLE REPLACEMENT (CONT)

(17) Remove screw (28) from PDP (29).

(18) Position four terminal lugs (30) and terminal lug TL42 (31) on PDP (29) with lockwasher (32) and screw (28).

(19) Tighten screw (28) to 35-45 lb-in. (4-5 N•m).





(20) Install PDP (29) on dashboard (33) with three screws (34).

(21) Install three washers (35) and screws (36) in PDP (29).

c. Follow-On Maintenance.

(1) Raise cab (TM 9-2320-365-10).

(2) Install bottom radiator fan shroud (para 6-4).

(3) Raise spare tire (TM 9-2320-365-10).

(4) Install PDP cover (para 16-2).

(5) Connect batteries (para 7-48).

(6) Start engine (TM 9-2320-365-10).

(7) Check VOLTS gage for charge indication (TM 9-2320-365-10).

(8) Shut down engine (TM 9-2320-365-10).

End of Task.

20-69. 200 AMP TERMINAL BLOCK REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Spare tire lowered (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 34, Appendix C)

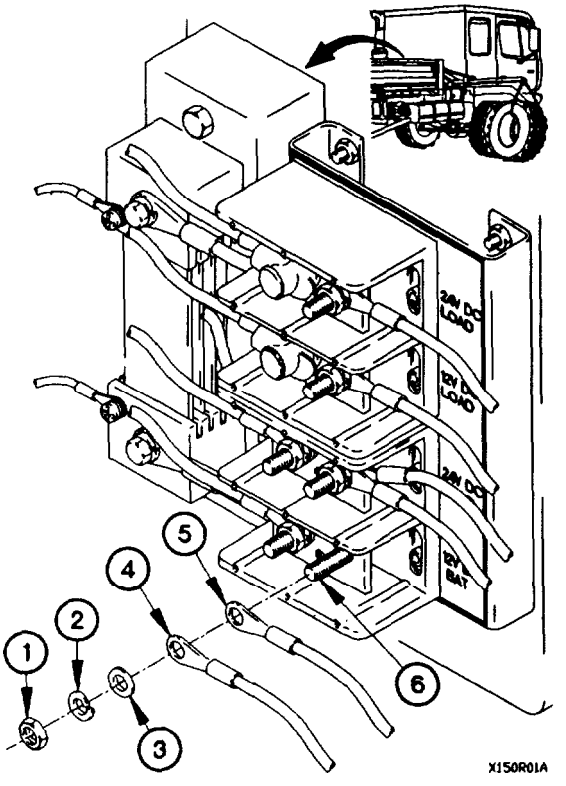
Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)
Lockwasher (8) (Item 89, Appendix G)
Nut, Self-Locking (8) (Item 143, Appendix G)

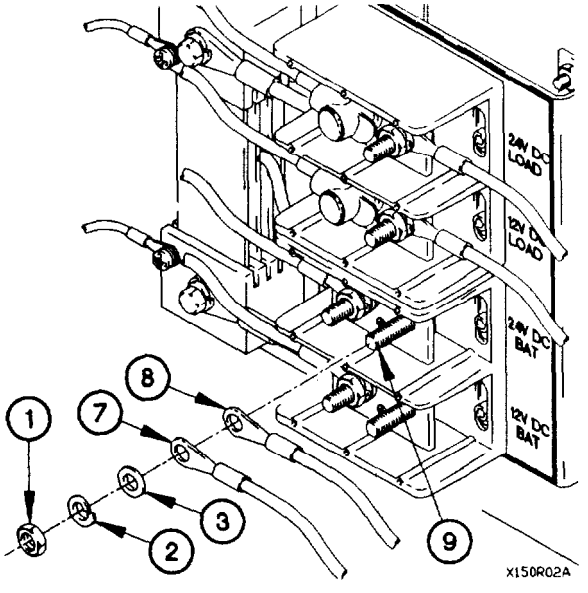
a. Removal.

NOTE

- Tag wires and connection points prior to disconnecting.
- Remove plastic cable ties as required.

(1) Remove nut (1), lockwasher (2), washer (3), and terminal lugs TL171 (4) and TL61 (5) from terminal block terminal (6). Discard lockwasher.

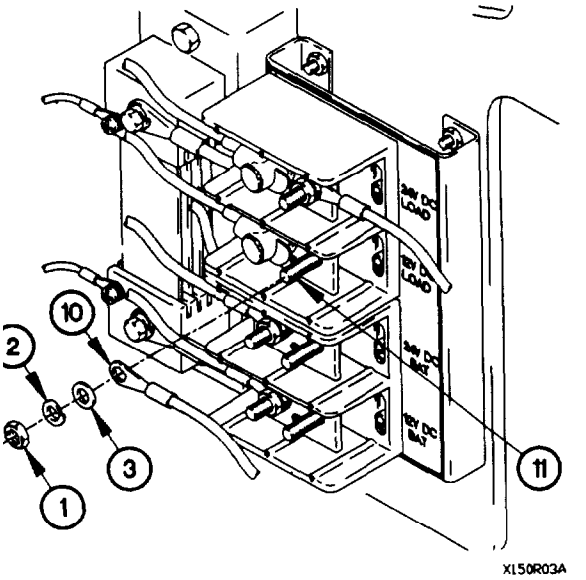


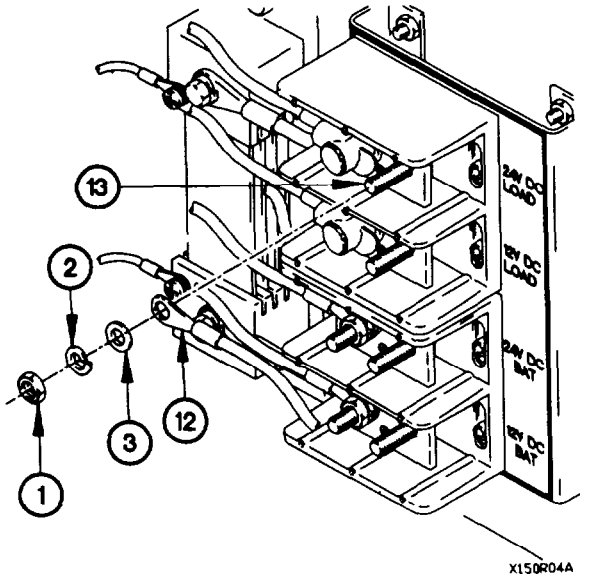


(2) Remove nut (1), lockwasher (2) washer (3), and terminal lugs TL166 (7) and TL1 (8) from terminal block terminal (9). Discard lockwasher.

20-69. 200 AMP TERMINAL BLOCK REPLACEMENT (CONT)

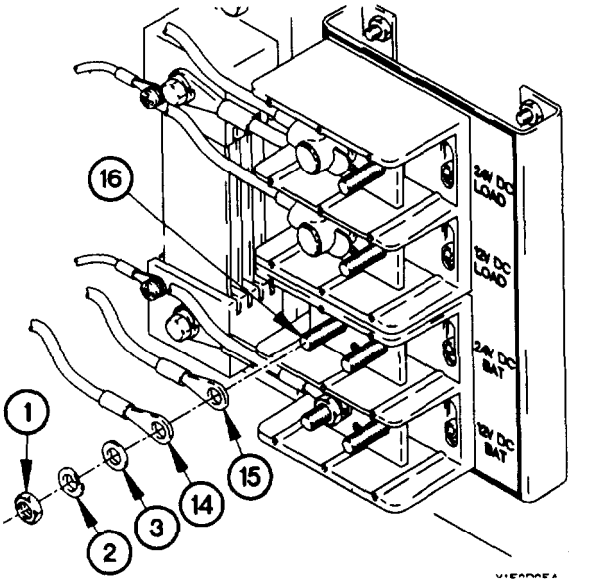
(3) Remove nut (1), lockwasher (2), washer (3), and terminal lug TL172 (10) from terminal block terminal (11). Discard lockwasher.





(4) Remove nut (1), lockwasher (2), washer (3), and terminal lug TL167 (12) from terminal block terminal (13). Discard lockwasher.

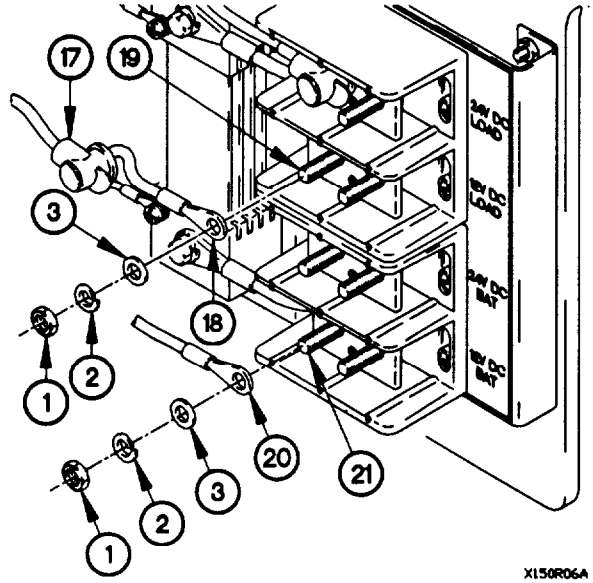
(5) Remove nut (1), lockwasher (2), washer (3), and terminal lugs TL37 (14) and TL36 (15) from terminal block terminal (16). Discard lockwasher.

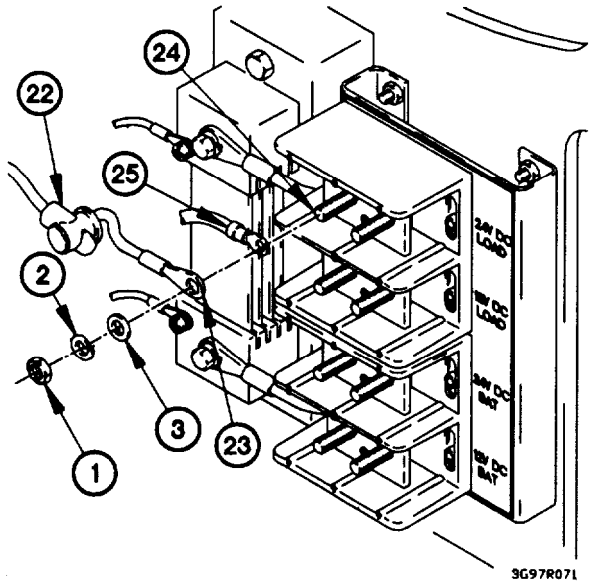


(6) Lift dust boot (17) on terminal lug TL80 (18).

(7) Remove nut (1), lockwasher (2), washer (3), and terminal lug TL80 (18) from terminal block terminal (19). Discard lockwasher.

(8) Remove nut (1), lockwasher (2), washer (3), and terminal lug TL47 (20) from terminal block terminal (21). Discard lockwasher.





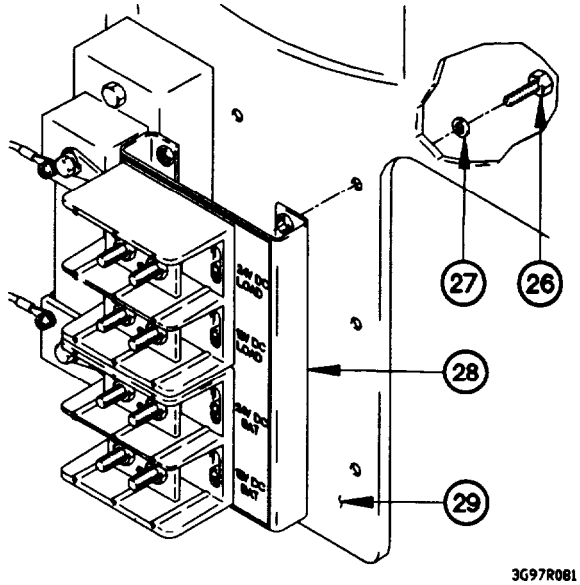
(9) Lift dust boot (22) on terminal lug TL44 (23).

(10) Remove nut (1), lockwasher (2), washer (3), and terminal lug TL44 (23) from terminal block terminal (24). Discard lockwasher.

NOTE

Perform step (11) on M1079.

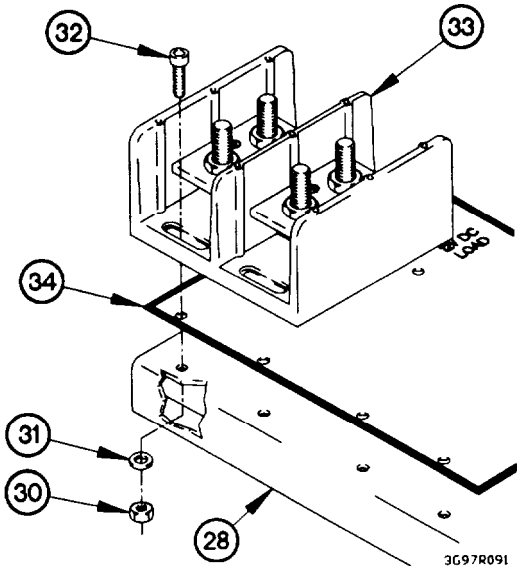
(11) Remove terminal lug TL100 (25) from terminal block terminal (24).



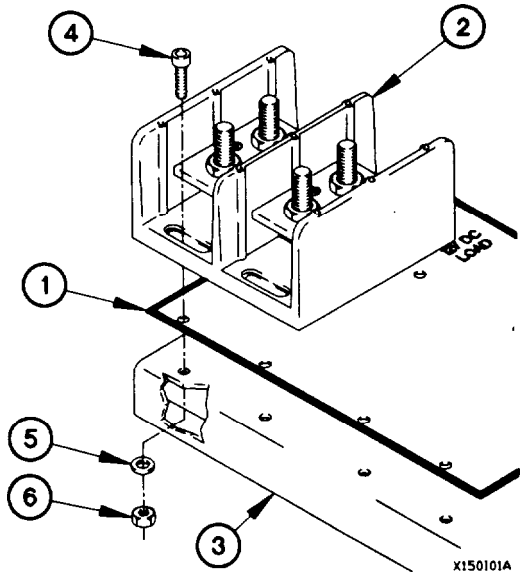
(12) Remove four screws (26), washers (27), and bracket (28) from spare tire retainer (29).

20-69. 200 AMP TERMINAL BLOCK REPLACEMENT (CONT)

(13) Remove eight self-locking nuts (30), washers (31), screws (32), two terminal blocks (33), and identification plate (34) from bracket (28). Discard self-locking nuts.



b. Installation.



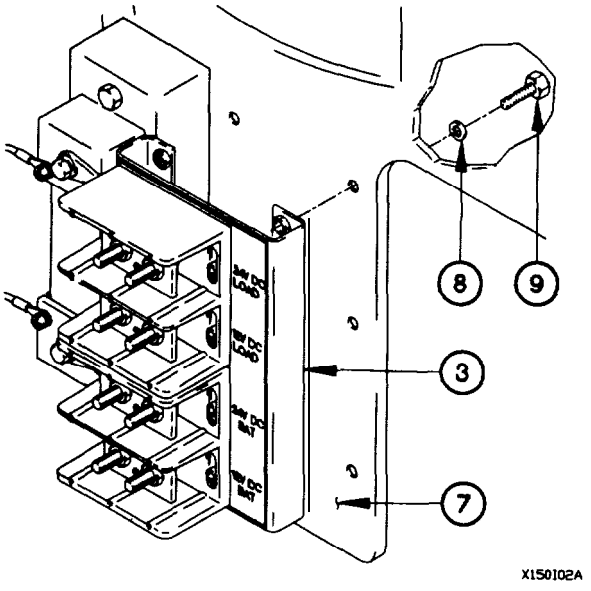
CAUTION

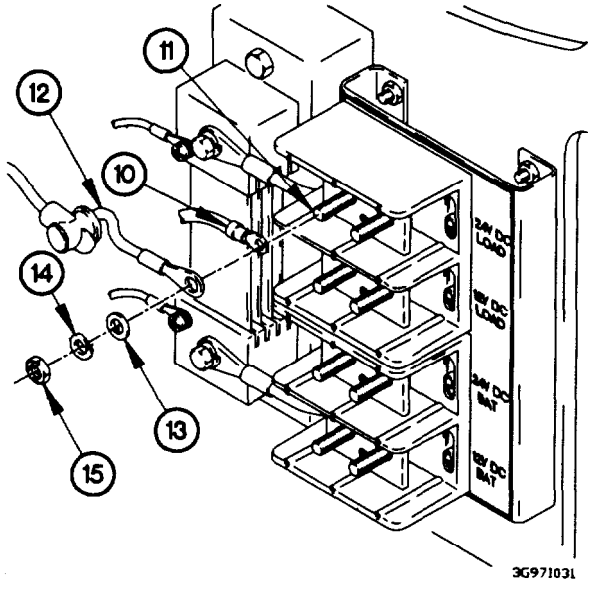
Both terminal blocks must be positioned loosely to align correctly on mounting bracket before tightening hardware. Failure to comply may result in damage to equipment.

(1) Position identification plate (1) and two terminal blocks (2) on bracket (3) with eight screws (4), washers (5), and self-locking nuts (6).

(2) Tighten eight self-locking nuts (6) to 48 lb-in. (5 N•m).

(3) Install bracket (3) on spare tire retainer (7) with four washers (8) and screws (9).





NOTE

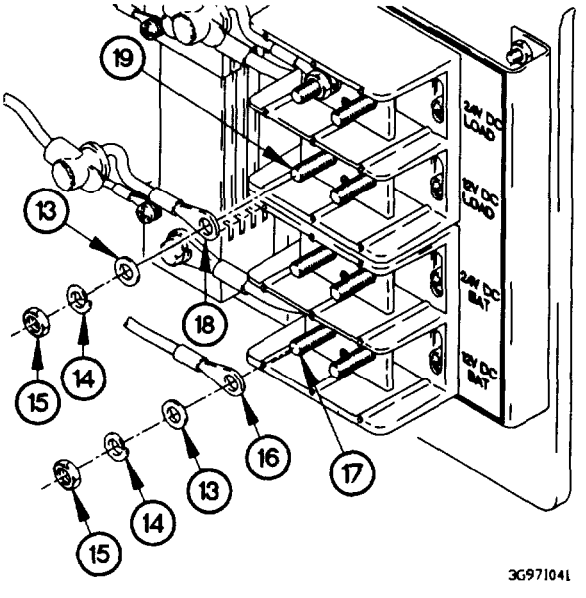
Perform step (4) on M1079.

(4) Position terminal lug TL100 (10) on terminal block terminal (11).

(5) Position terminal lug TL44 (12) on terminal block terminal (11) with washer (13), lockwasher (14), and nut (15).

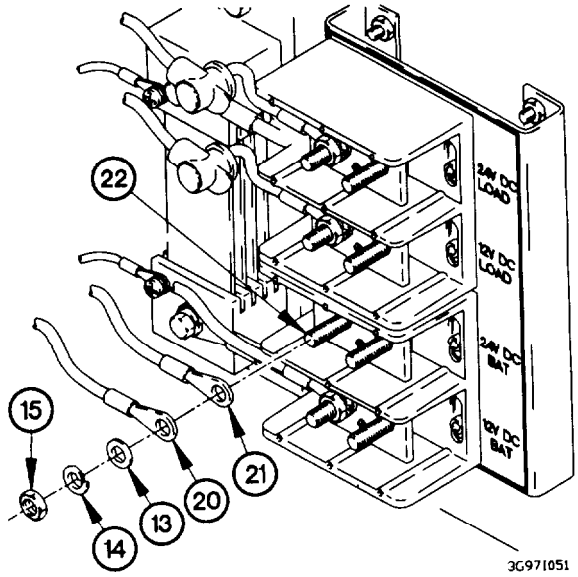
(6) Position terminal lug TL47 (16) on terminal block terminal (17) with washer (13), lockwasher (14).,. and nut (15).

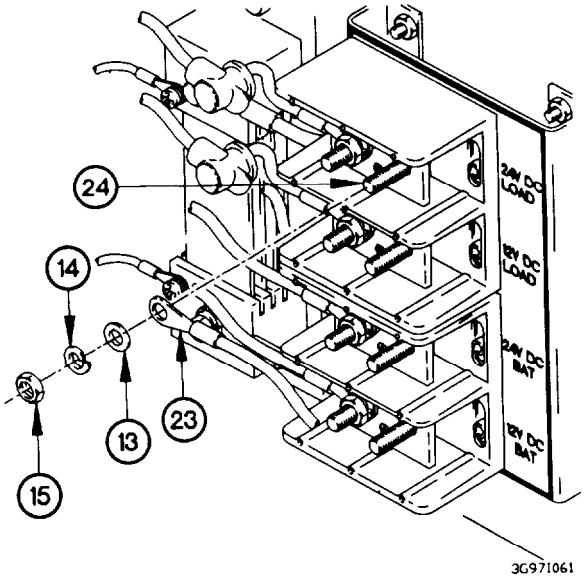
(7) Position terminal lug TL80 (18) on terminal block terminal (19) with washer (13), lockwasher (14), and nut (15).



20-69. 200 AMP TERMINAL BLOCK REPLACEMENT (CONT)

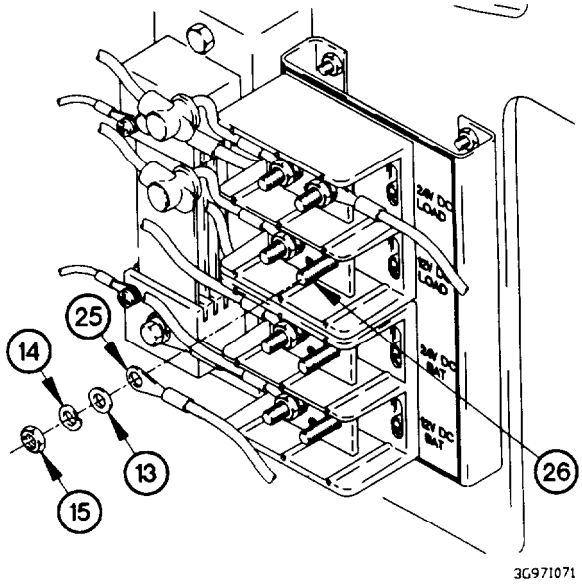
(6) position terminal lugs TL37 (20) and TL36 (21) on terminal block terminal (22) with washer (13), lockwasher (14), and nut (15).



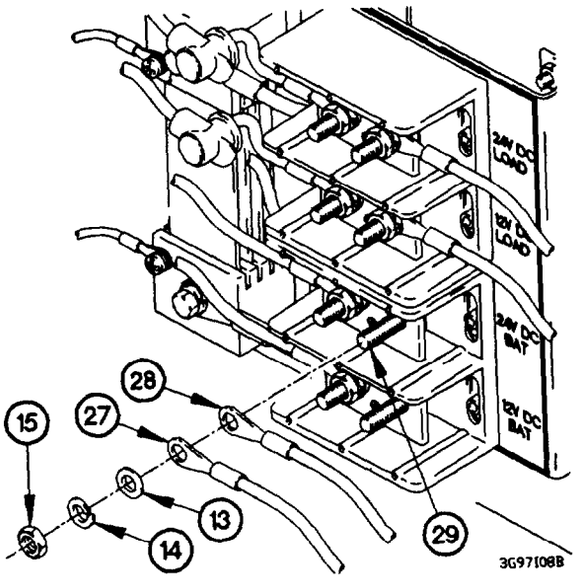


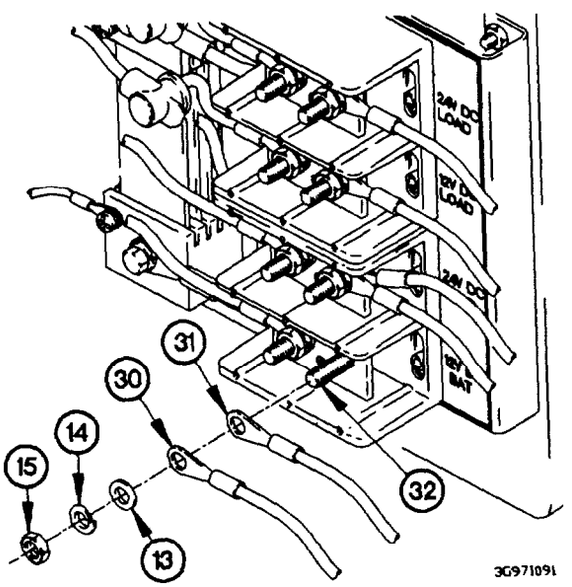
(9) position terminal lug TL167 (23) on terminal block terminal (24) with washer (13), lockwasher (14), and nut (15).

(10) Position terminal lug TL172 (25) on terminal block terminal (26) with washer (13), lockwasher (14), and nut (15).

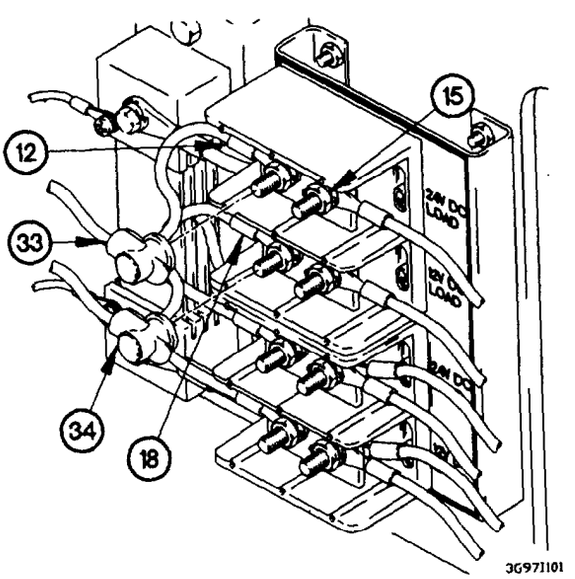


(11) Position terminal lugs TL166 (27) and TL1 (28) on terminal block terminal (29) with washer (13), lockwasher (14), and nut (15).





(12) Position terminal lugs TL171 (30) and TL61 (31) on terminal block terminal (32) with washer (13), lockwasher (14) and nut (15).



(13) Tighten eight nuts (15) to 15-19 lb-ft (21-25 N•m).

(14) position dust boot (33) on terminal lug TL44 (12).

(15) position dust boot (34) on terminal lug TL80 (18).

20-69. 200 AMP TERMINAL BLOCK REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Connect batteries (7-48).

(3) Stan engine (TM 9-2320-365-10).

(4) Check alternator operation (TM 9-2320-365-10).

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

20-70. LIGHT MATERIAL HANDLING CRANE (LMHC) ASSEMBLY/DISASSEMBLY

This task covers:

a. Assembly

b. Disassembly

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Sling, Cargo (Item 31, Appendix C)

Materials/Parts
Lockwasher (2) (Item 104, Appendix **G)**

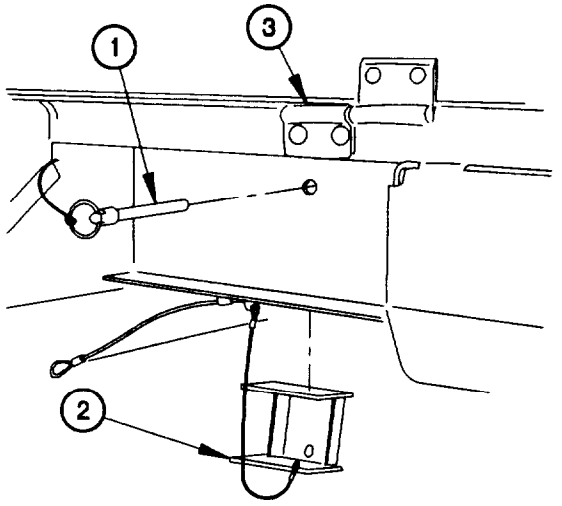
Personnel Required
(2)

a. Assembly.

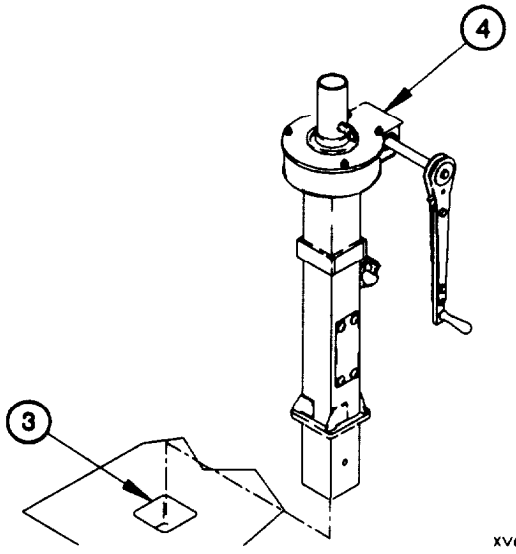
NOTE

LMHC may be installed in any of the four cargo bed pockets. Left front cargo bed pocket shown.

(1) Remove quick release pin (1) and plug (2) from cargo bed pocket (3).



XV61A011



XV61A021

WARNING

LMHC mast weighs approximately 110 lbs (50 kgs). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel or damage to equipment.

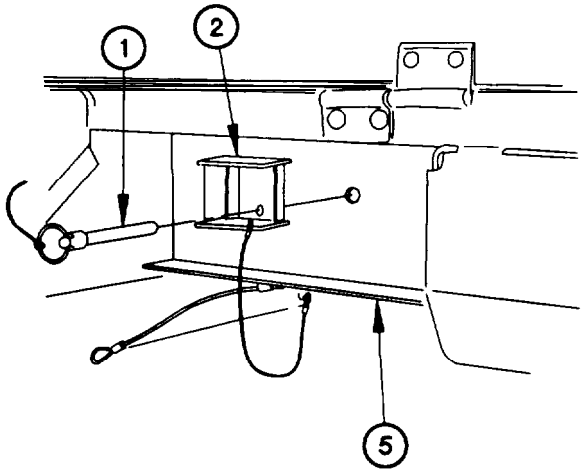
NOTE

- Step (2) requires the aid of an assistant.
- Position mast in cargo bed so handle does not extend over front or rear edge of cargo bed.

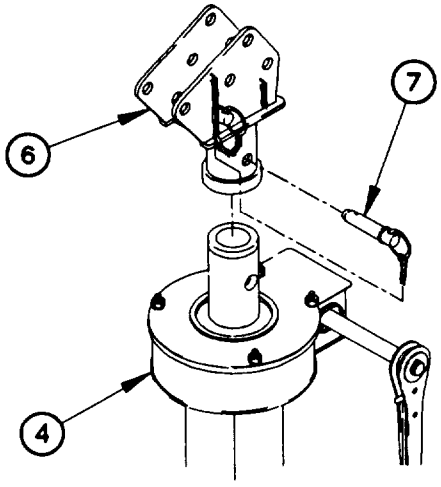
(2) Install mast (4) in cargo bed pocket (3).

20-70. LIGHT MATERIAL HANDLING CRANE (LMHC) ASSEMBLY/DISASSEMBLY (CONT)

(3) Install plug (2) on cargo bed frame (5) with quick release pin (1).



XV61A031



XV61A041

(4) Position turret (6) on mast (4).

(5) Install quick release pin (7) in turret (6).

WARNING

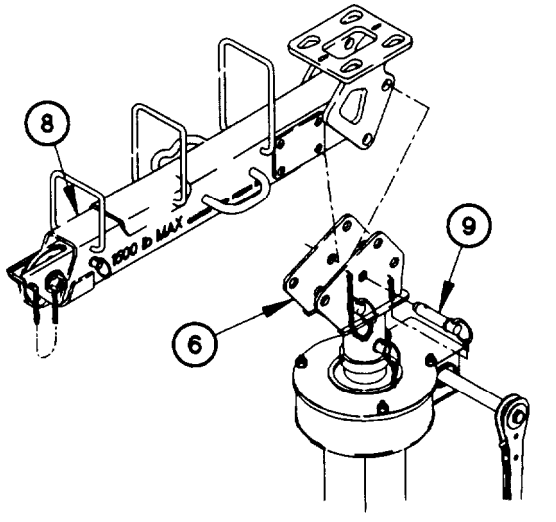
LMHC boom weighs approximately 60 lbs (27 kgs). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel or damage to equipment.

NOTE

Step (6) requires the aid of an assistant.

(6) Position boom (8) in turret (6).

(7) Install two quick release pins (9) in turret (6).

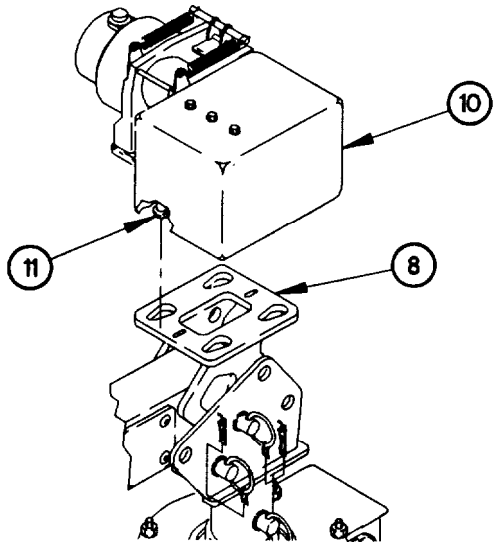


XV61A051

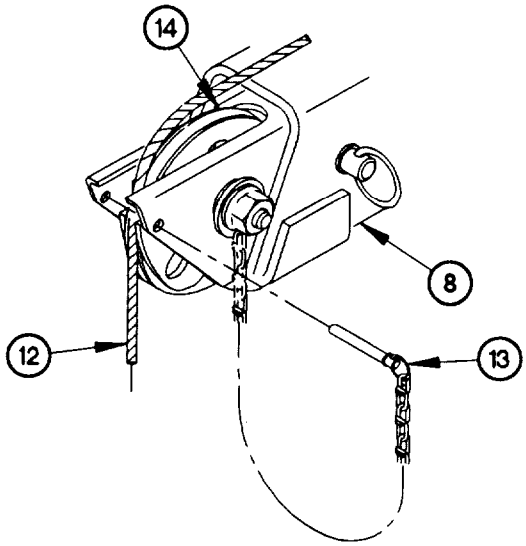
(8) Position winch (10) on boom (8).

(9) Slide winch (10) to front of boom (8).

(10) Tighten four screws (11) on winch (10).



X"CIAO61



XV61A071

(11) Connect power and remote control cables (TM 9-2320-365-10).

(12) Extend winch cable (12) approximately 6 feet (1.8 m).

(13) Remove quick release pin (13) from boom (8).

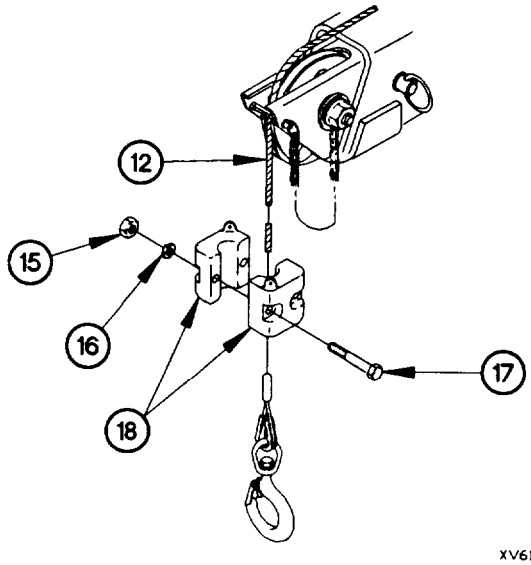
(14) Position winch cable (12) on boom sheave (14).

(15) Install quick release pin (13) in boom (8).

(16) Remove two nuts (15), lockwashers (16), and screws (17) from weight blocks (18). Discard lockwashers.

(17) Install two weight blocks (18) on winch cable (12) with two screws (17), lockwashers (16), and nuts (15).

(18) Position boom in stowed position (TM 9-2320-365-10).



XV61A081

20-70. LIGHT MATERIAL HANDLING CRANE (LMHC) ASSEMBLY/DISASSEMBLY (CONT)

b. Disassembly.

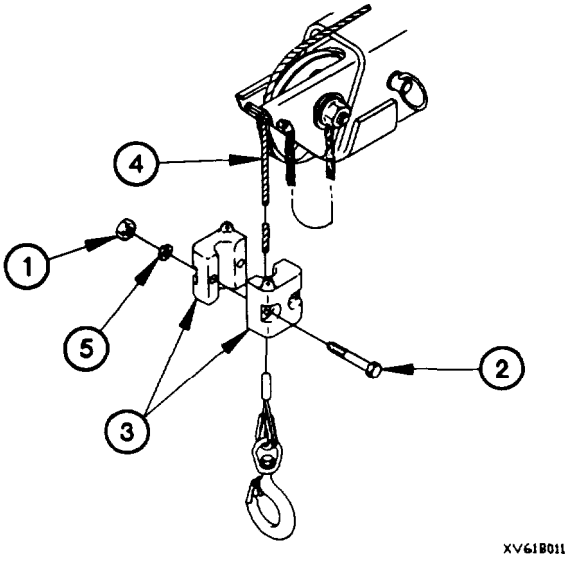
(1) Position boom in the 0-degree position (TM 9-2320-365-10).

(2) Remove two nuts (1), screws (2), lockwashers (5), and weight blocks (3) from winch cable (4). Discard lockwashers.

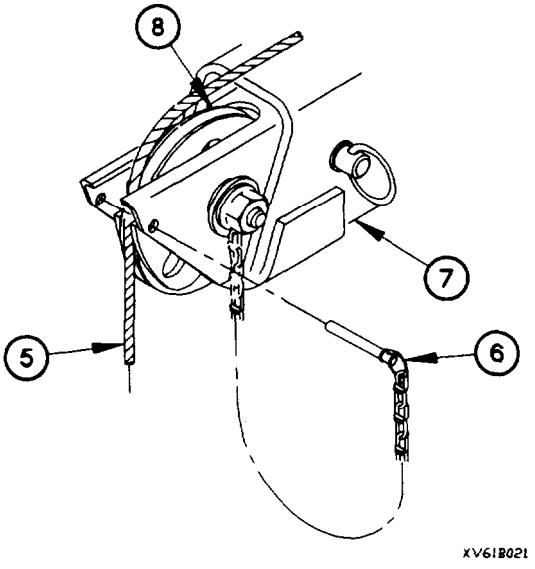
NOTE

Perform step (3) for stowage of weight block.

(3) Install two screws (2) in weight blocks (3) with lockwashers (5) and nuts (1).



XV618011



XV618021

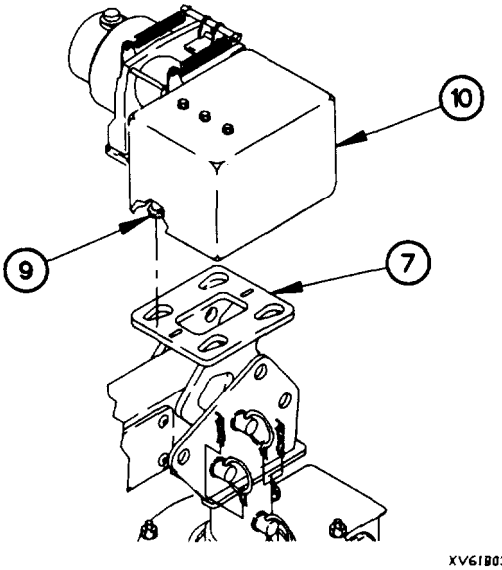
(4) Remove quick release pin (6) from boom (7).

(5) Remove winch cable (5) from boom sheave (8).

(6) Install quick release pin (6) in boom (7).

(7) Retract winch cable approximately 6 feet (1.8 m).

(8) Disconnect remote control and power cables (TM 9-2320-365-10).



XV618031

(9) Loosen four screws (9) on winch (10).

(10) Slide winch (10) to rear of boom (7).

(11) Remove winch (10) from boom (7).

WARNING

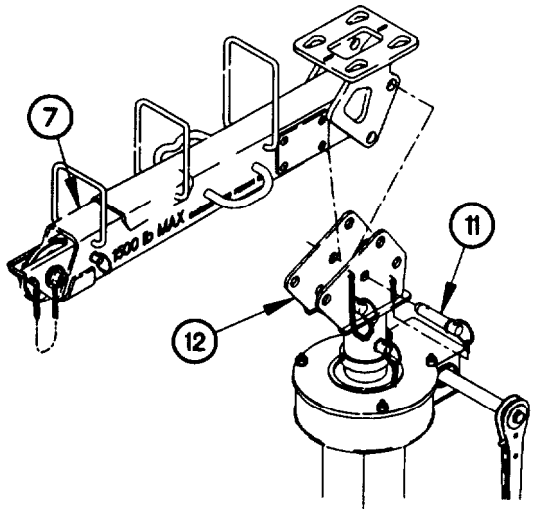
LMHC boom weighs approximately 60 lbs (27 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

NOTE

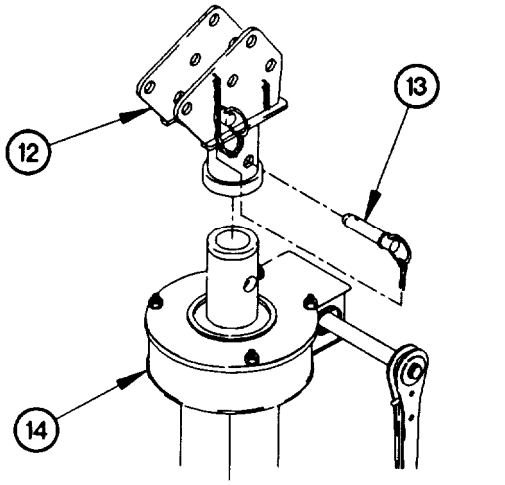
Steps (12) and (13) require the aid of an assistant.

(12) Remove two quick release pins (11) from turret (12).

(13) Remove boom (7) from turret (12).



XV61B041



XV61B051

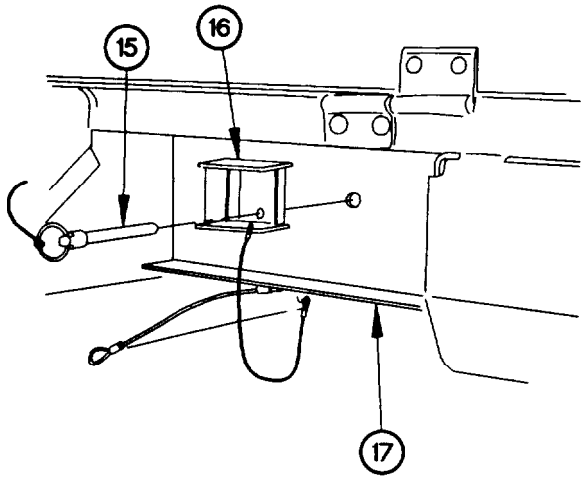
(14) Remove quick release pin (13) from turret (12).

(15) Remove turret (12) from mast (14).

NOTE

LMHC may be installed in any of the four cargo bed pockets. Left front cargo bed pocket shown.

(16) Remove quick release pin (15) and plug (16) from cargo bed frame (17).



XV61B061

20-70. LIGHT MATERIAL HANDLING CRANE (LMHC) ASSEMBLY/DISASSEMBLY (CONT)

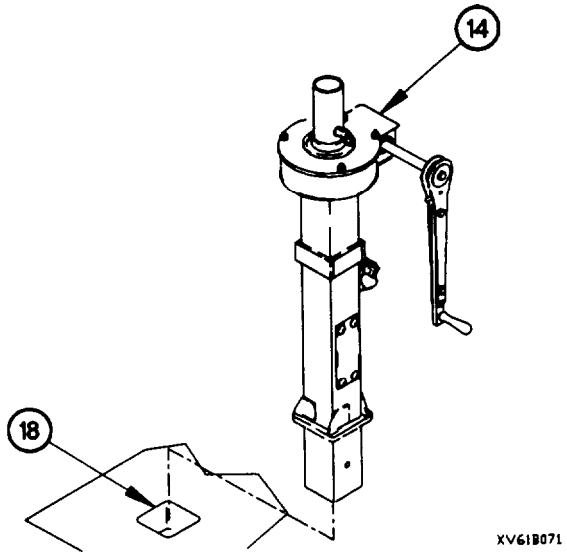
WARNING

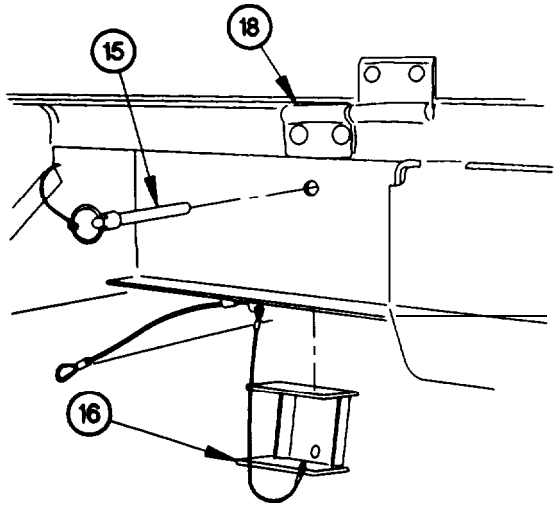
LMHC mast weighs approximately 110 lbs (50 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

NOTE

Step (17) requires the aid of an assistant.

(17) Remove mast (14) from cargo bed pocket (18).





(18) Install plug (16) in cargo bed pocket (18) with quick release pin (15).

End of Task.

20-71. LIGHT MATERIAL HANDLING CRANE (LMHC) REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
LMHC power cable removed (TM 9-2320-385-10).
LMHC remote control cable removed (TM 9-2320-365-10).

Tools and Special Tools
Sling, Cargo (2) (Item 31, Appendix C)

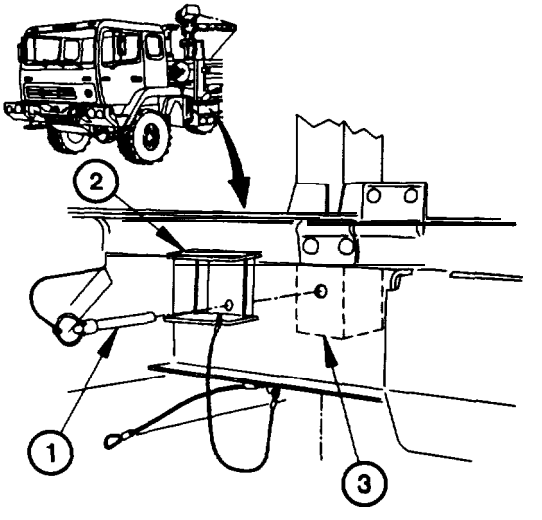
Personnel Required
(2)

a. Removal.

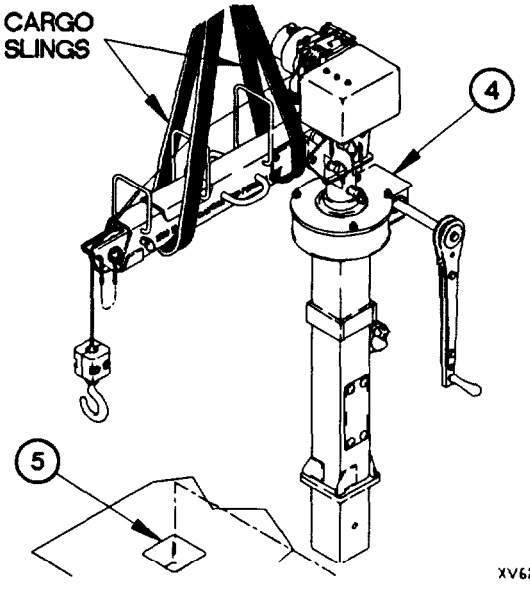
NOTE

LMHC may be installed in any of the four cargo bed pockets. Left front cargo bed pocket shown.

(1) Remove quick release pin (1) and plug (2) from cargo bed frame (3).



XV6PR011



XV62R021

WARNING

LMHC weighs approximately 250 lbs. (114 kg). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel.

NOTE

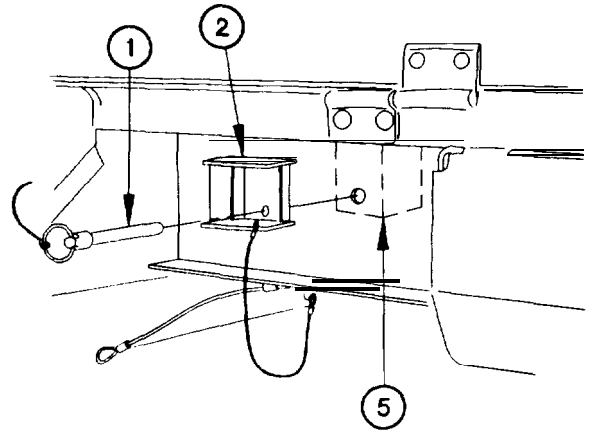
Step (2) requires the aid of an assistant.

(2) Remove LMHC (4) from cargo bed pocket (5).

20-71. LIGHT MATERIAL HANDLING CRANE (LMHC) REPLACEMENT (CONT)

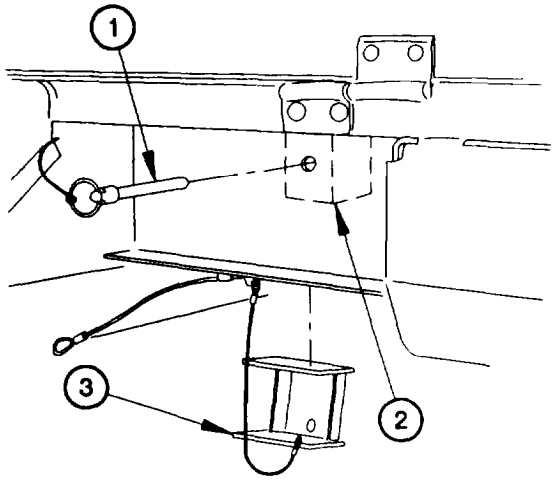
(3) Install plug (2) in cargo bed pocket (5).

(4) Install quick release pin (1) in cargo bed pocket (5).



XV62R031

b. Installation.



XV621011

WARNING

LMHC weighs approximately 250 lbs (114 kg). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel.

NOTE

Step (3) requires the aid of an assistant.

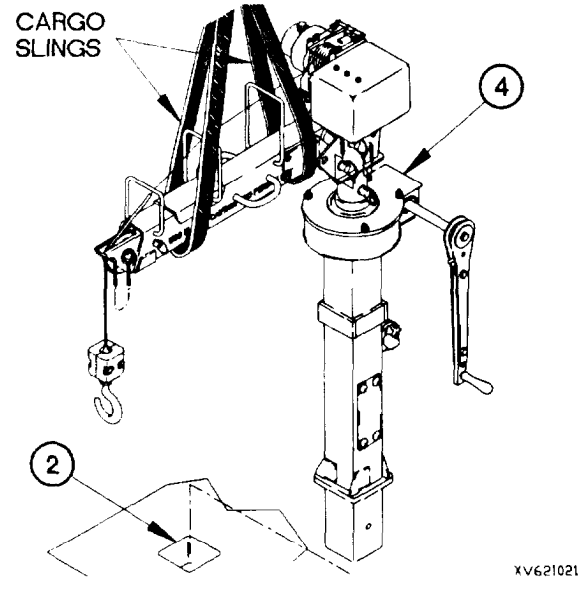
(3) Position LMHC (4) in cargo bed pocket (2).

NOTE

LMHC may be installed in any of the four cargo bed pockets. Left front cargo bed pocket shown.

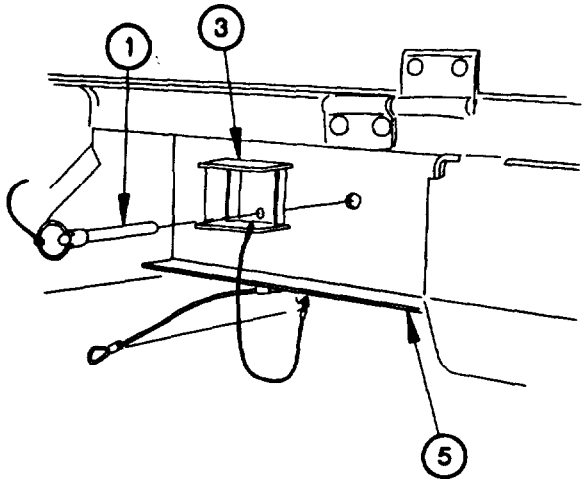
(1) Remove quick release pin (1) from cargo bed pocket (2).

(2) Remove plug (3) from cargo bed pocket (2).



XV621021

(4) Install plug (3) on cargo bed frame (5) with quick release pin (1).



XV621031

c. Follow-On Maintenance.

Operate LMHC and check for proper operation (TM 9-2320-365-10).

End of Task.

20-72. LIGHT MATERIAL HANDLING CRANE (LMHC) WEIGHT BLOCK AND WIRE ROPE REPLACEMENT/REPAIR

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
LMHC circuit breaker positioned to ON (TM 9 2320-365-10).
LMHC power cable installed (TM 9-2320-365-10).
LMHC remote control cable installed (TM 9-2320-365-10).
LMHC wire rope assembly fully extended (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Gloves, Welders (Item 14, Appendix C)

Materials/Parts
Lockwasher (2) (Item 104, Appendix G)

Personnel Required
(2)

a. Removal.

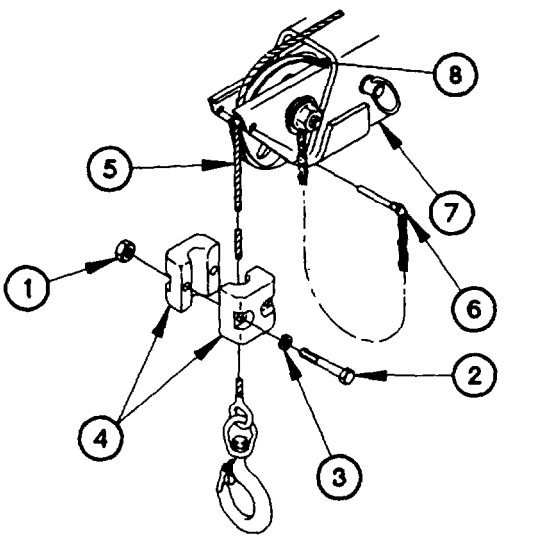
NOTE

Perform step (1) if replacing weight block.

(1) Remove two nuts (1), screws (2), lockwashers (3), and weight blocks (4) from wire rope (5). Discard lockwashers.

(2) Remove quick release pin (6) from boom (7).

(3) Remove wire rope (5) from sheave (8).



XV44ROII

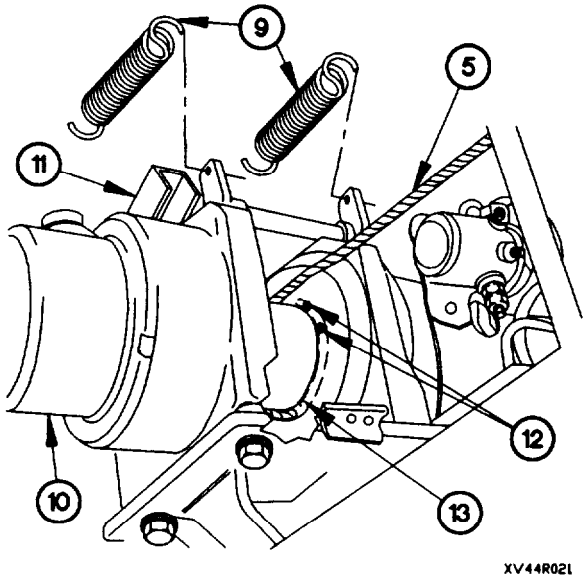
WARNING

Use care when removing springs. Springs are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(4) Remove two springs (9) from winch assembly (10).

(5) Position tensioner (11) for access.

(6) Loosen two set screws (12) on drum (13).



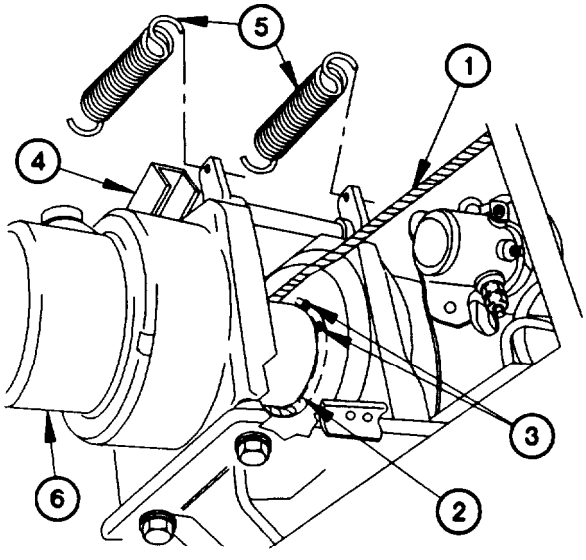
XV44R021

WARNING

- **Wire rope can become frayed or contain broken wires. Wear heavy leather-palmed work gloves when handling wire rope. Failure to comply may result in injury to personnel.**
- **Never let moving wire rope slide through hands, even when wearing gloves. A broken wire could pierce through glove and cut hands. Failure to comply may result in injury to personnel.**

(7) Remove wire rope (5) from drum (13).

b. Installation.



XV441011

(1) Position wire rope (1) in drum (2).

(2) Tighten two set screws (3) on drum (2).

(3) Position tensioner (4) on drum (2).

WARNING

Use care when installing springs. Springs are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(4) Install two springs (5) on winch assembly (8).

20-72. LIGHT MATERIAL HANDLING CRANE (LMHC) WEIGHT BLOCK AND WIRE ROPE REPLACEMENT/REPAIR.

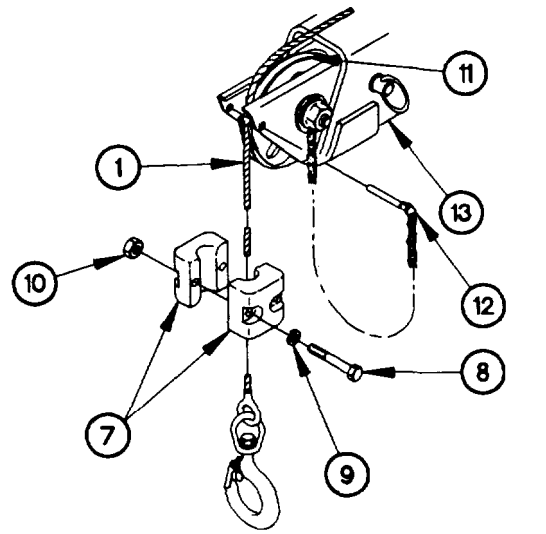
NOTE

Perform step (5) if weight block was replaced.

(5) Install two weight blocks (7) on wire rope (1) with two screws (8), lockwashers (9), and nuts (10).

(6) Position wire rope (1) in sheave (11).

(7) Install quick release pin (12) in boom (13).



XV441021

c. Follow-On Maintenance.

(1) Retract LMHC wire rope assembly (TM 9-2320-365-10).

(2) Extend and retract LMHC wire rope assembly to check for proper function (TM 9-2320-365-10).

(3) Remove LMHC remote control cable (TM 9-2320-365-10).

(4) Remove LMHC power cable (TM 9-2320-365-10).

(5) Notify DS maintenance to perform LMHC load test.

End of Task.

20-73. LIGHT MATERIAL HANDLING CRANE (LMHC) WINCH REPLACEMENT/REPAIR

This task covers:

a. Removal
b. Base Plate Disassembly
c. Winch Disassembly
d. Cleaning/Inspection
e. Winch Assembly
f. Base Plate Assembly
g. Installation
h. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
LMHC weight block and wire rope removed (para 20-72).
LMHC power cable removed (TM 9-2320-365-10).
LMHC remote control cable removed (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Gloves, Rubber (Item 13, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Gasket (3) (Item 30, Appendix G)
Grease, Molybdenum Disulfide (Item 25, Appendix D)
Rag, Wiping (Item 51, Appendix D)
Solvent, Dry Cleaning (Item 71, Appendix D)

Personnel Required
(2)

a. Removal.

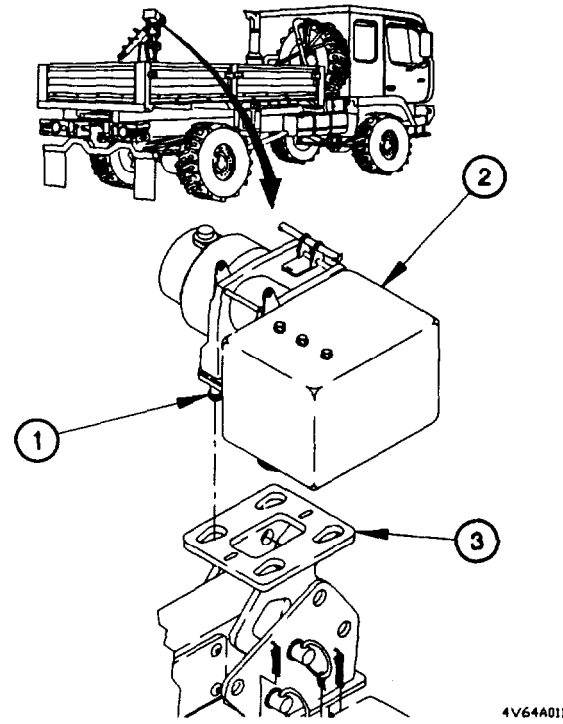
(1) Loosen four screws (1) on winch (2).

NOTE

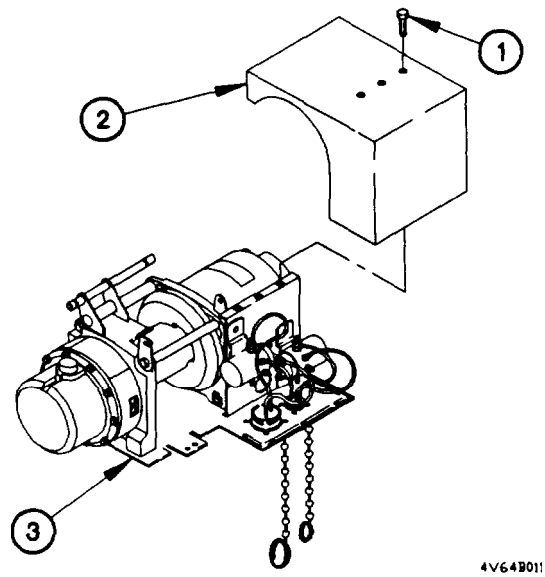
Step (2) and (3) require the aid of an assistant.

(2) Slide winch (2) to rear of boom (3).

(3) Remove winch (2) from boom (3)

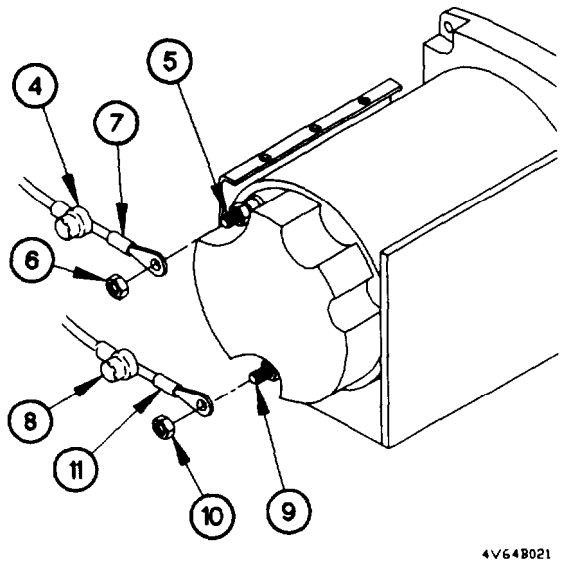


20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)



b. Base Plate Disassembly.

(1) Remove 18 screws (1) and cover (2) from base Plate (3).



NOTE

- Tag wires and connection points prior to disconnecting.
- Note position of wires prior to removal.

(2) Remove rubber boot (4) from negative terminal (5).

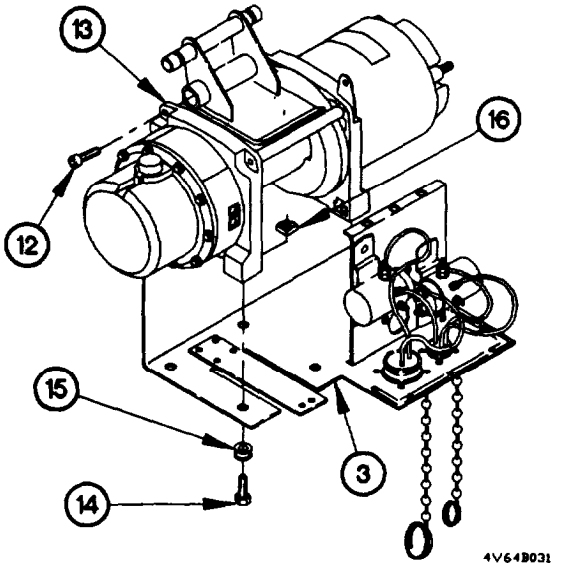
(3) Remove nut (6) and terminal lug (7) from negative terminal (5).

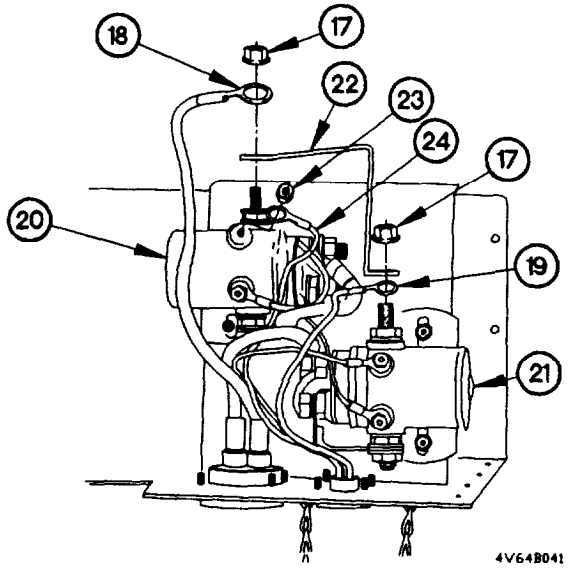
(4) Remove rubber boot (8) from positive terminal (9).

(5) Remove nut (10) and terminal lug (11) from positive terminal (9).

(6) Remove two screws (12) from winch assembly (13).

(7) Remove four screws (14). mounting feet (15), nuts (16), and winch assembly (13) from base plate (3).





(8) Remove two nuts (17) and terminal lugs (18 and 19) from solenoids (20 and 21).

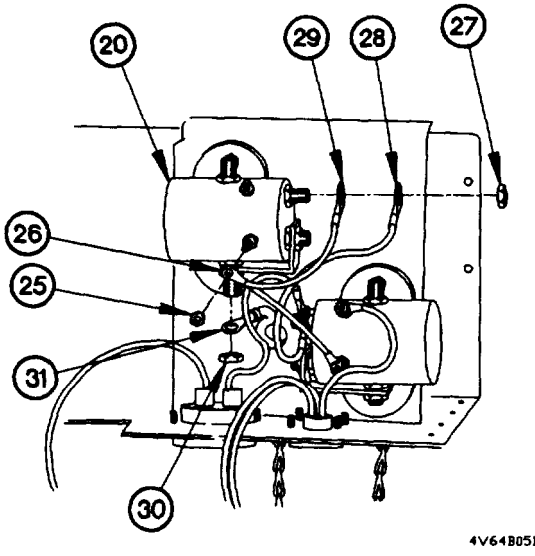
(9) Remove strap (22) from solenoids (20 and 21).

(10) Remove nut (23) and terminal lug (24) from solenoid (20).

(11) Remove nut (25) and terminal lug (26) from solenoid (20).

(12) Remove nut (27) and two terminal lugs (28 and 29) from solenoid (20).

(13) Remove nut (30) and terminal lug (31) from solenoid (20).

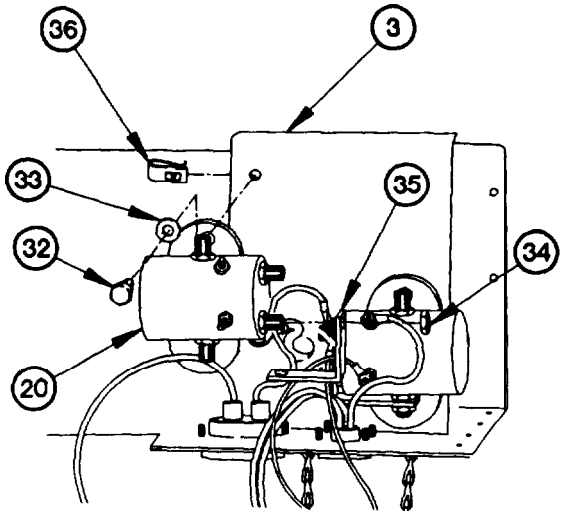


20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

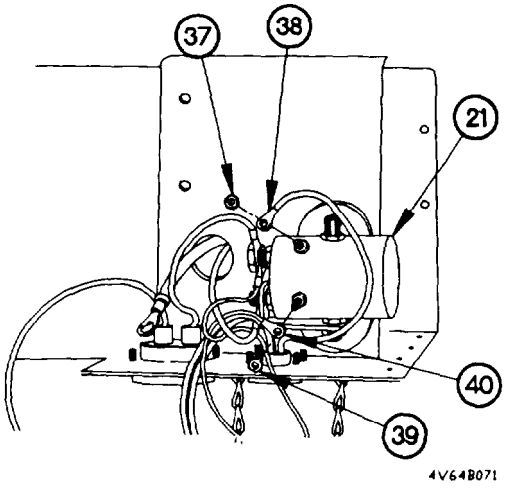
(14) Remove two screws (32), washers (33), and solenoid (20) from base plate (3).

(15) Remove nut (34) and strap (35) from solenoid (20).

(16) Remove two clip nuts (36) from base plate (3).



4V649061



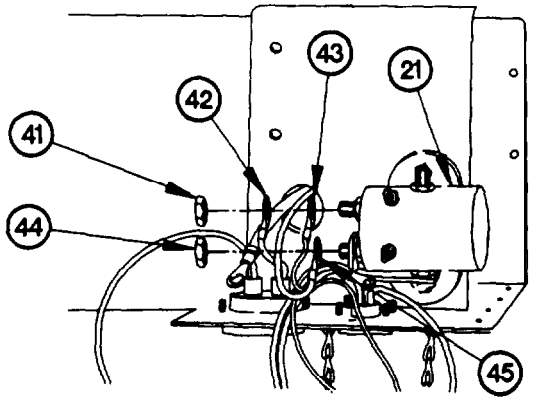
4V64B071

(17) Remove nut (37) and terminal lug (38) from solenoid (21).

(18) Remove nut (39) and terminal lug (40) from solenoid (21).

(19) Remove nut (41) and two terminal lugs (42 and 43) from solenoid (21).

(20) Remove nut (44) and terminal lug (45) from solenoid (21).

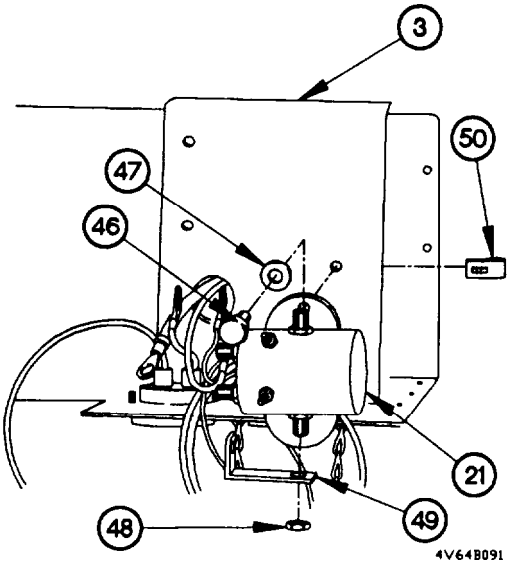


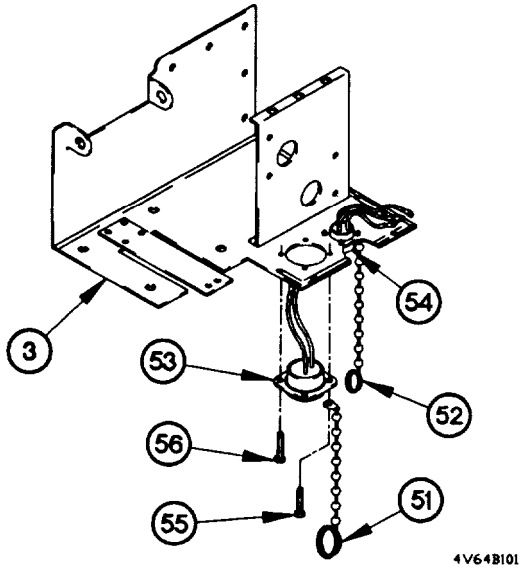
4V64B0E1

(21) Remove two screws (46), washers (47) and solenoid (21) from base plate (3).

(22) Remove nut (48) and strap (49) from solenoid (21).

(23) Remove two clip nuts (50) from base plate (3).

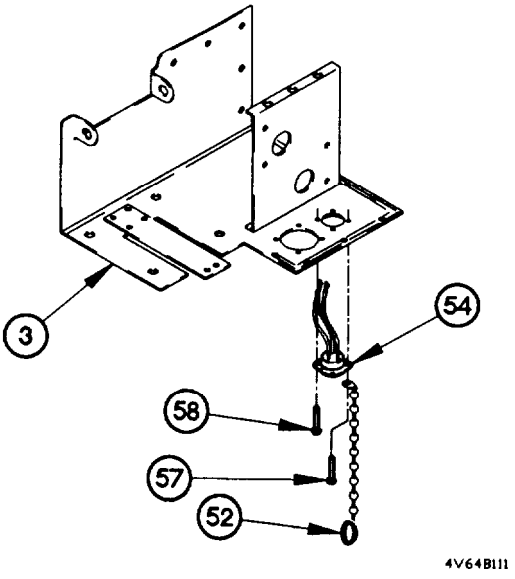




(24) Remove dust caps (51 and 52) from power connector (53) and remote control connector (54).

(25) Remove screw (55) and dust cap (51) from power connector (53).

(26) Remove three screws (56) and power connector (53) from base plate (3).



(27) Remove screw (57) and dust cap (52) from remote control connector (54).

(28) Remove three screws (58) and remote control connector (54) from base plate (3).

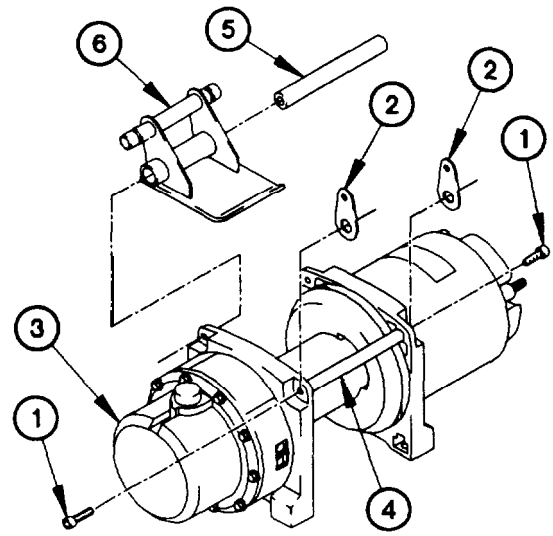
20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

c. Winch Disassembly.

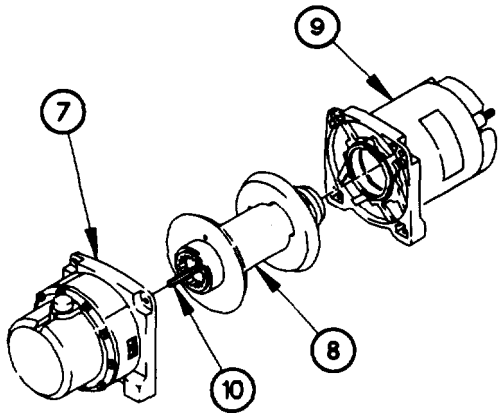
(1) Remove two screws (1) and brackets (2) from winch assembly (3).

(2) Remove tie rods (4 and 5) from winch assembly (3).

(3) Remove tensioner (6) from tie rod (5).



1V64C011



4V64C021

(4) Remove housing assembly (7) from drum assembly (8).

(5) Remove drum assembly (8) from 24 vdc motor assembly (9).

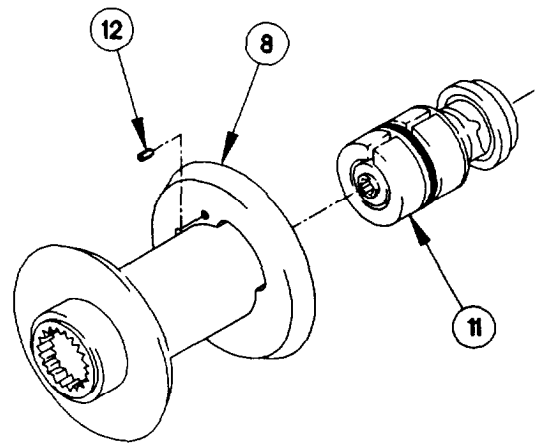
(6) Remove hex shaft (10) from drum assembly (8).

NOTE

Note position of break in drum assembly prior to removal.

(7) Remove brake (11) from drum assembly (8).

(8) Remove two screws (12) from drum assembly (8).

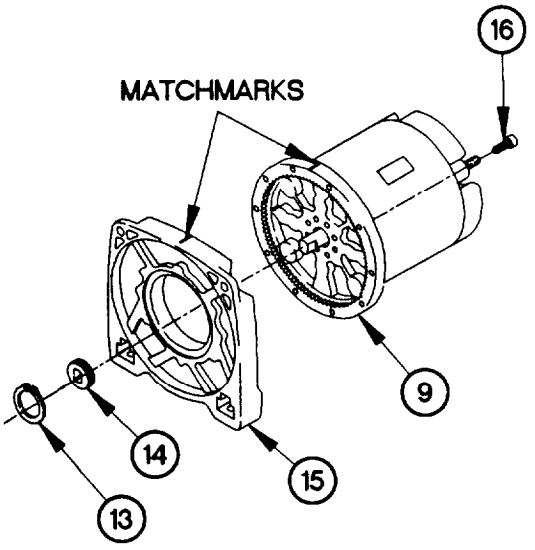


4V64C031

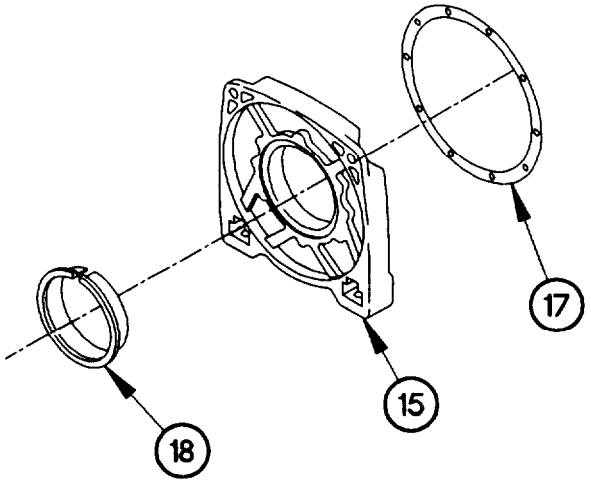
(9) Remove circlip (13) and gear (14) from 24 vdc motor assembly (9).

(10) Match mark drum support (15) and 24 vdc motor assembly (9).

(11) Remove 10 screws (16) and drum support (15) from 24 vdc motor assembly (9).



4V64C041



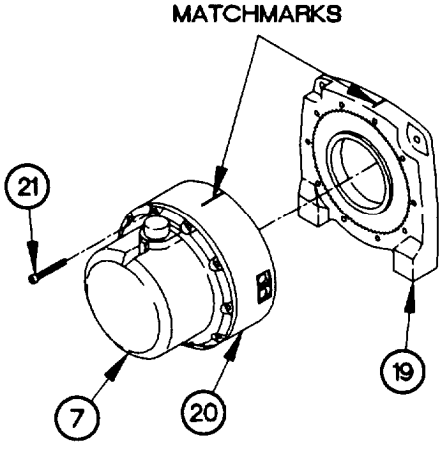
4V64C051

(12) Remove gasket (17) from drum support (15). Discard gasket.

(13) Remove sleeve bushing (18) from drum support (15).

(14) Match mark drum support (19) spur gear (20) and housing assembly (7).

(15) Remove 10 screws (21) and drum support (19) from spur gear (20).

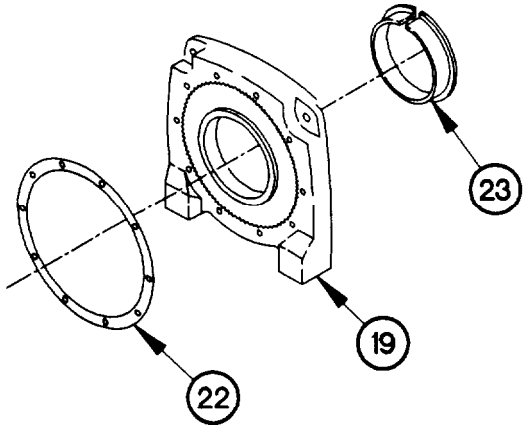


4V64C06,

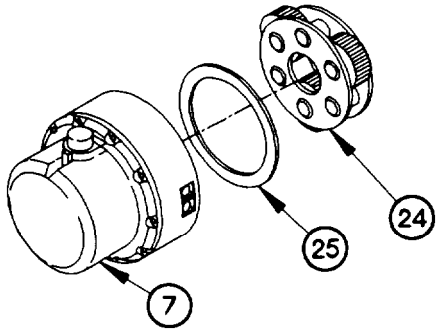
20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

(16) Remove gasket (22) from drum support (19). Discard gasket.

(17) Remove sleeve bushing (23) from drum support (19).



4V64C071



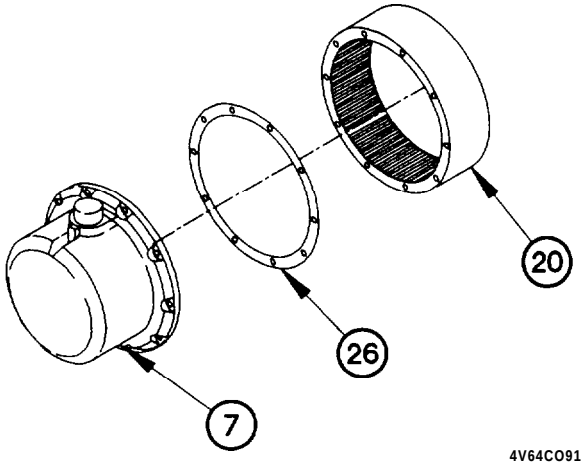
4V64COEI

NOTE

Note position of stage 3 carrier in housing assembly prior to removal.

(18) Remove stage 3 carrier (24) from housing assembly (7).

(19) Remove washer (25) from stage 3 carrier (24).



4V64CO91

(20) Remove spur gear (20) from housing assembly (7).

(21) Remove gasket (26) from spur gear (20). Discard gasket.

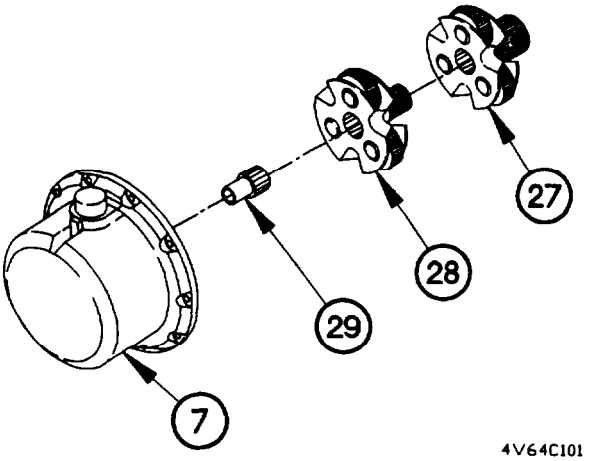
NOTE

Note position of stage 2 carrier, WI carrier, and spur gear in housing assembly prior to removal.

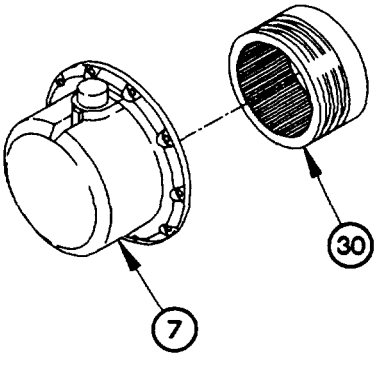
(22) Remove stage 2 carrier (27) from housing assembly

(23) Remove WI carrier (28) from housing assembly (7).

(24) Remove spur gear (29) from housing assembly (7).



4V64C101



4V64C121

NOTE

Note position of internal gear in housing assembly prior to removal.

(25) Remove internal gear (30) from housing assembly (7).

20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

d. Cleaning/Inspection.

WARNING

- **Dry Cleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in well ventilated area; avoid contact with skin, eyes, end clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type I Dry Cleaning Solvent is 100oF (38°C) and for Type II is 130°F (50°C). Failure to comply may result in serious injury or death to personnel.**
- **If personnel become dizzy while using dry 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 end get immediate medical attention. Failure to comply may result in injury to personnel.**

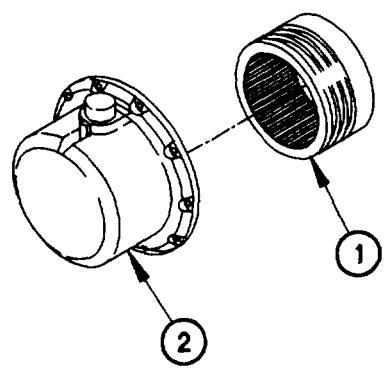
(1) Clean all metal parts thoroughly with dry cleaning solvent.

NOTE

Replace any part that fails visual inspection.

(2) Inspect all parts for visible cracks or damage.

e. Winch Assembly.



4V64E011

(1) Position internal gear (1) in housing assembly (2).

(2) Apply grease to spur gear (3).

(3) Install spur gear (3) in housing assembly (2).

(4) Apply grease to WI carrier (4).

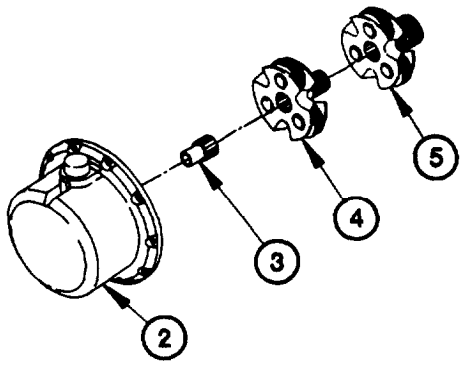
NOTE

Hex shaft may be used to align WI carrier with spur gear.

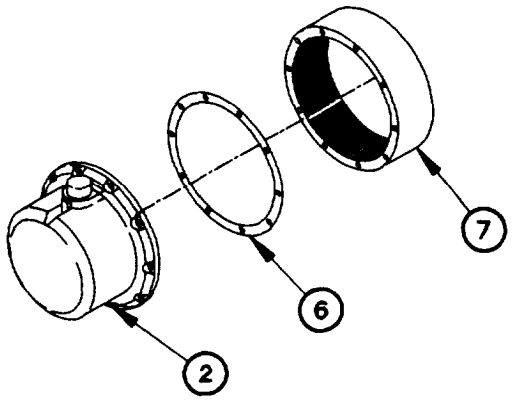
(5) Install WI carrier (4) in housing assembly (2).

(6) Apply grease to stage 2 carrier (5).

(7) Install stage 2 carrier (5) in housing assembly (2).



4V64E031

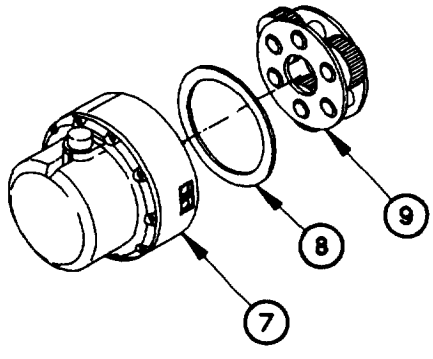


4V64E041

(8) Position gasket (6) and spur gear (7) on housing assembly (2).

(9) Apply grease to washer (8) and stage 3 carrier (9).

(10) Position washer (8) and stage 3 carrier (9) in spur gear (7).



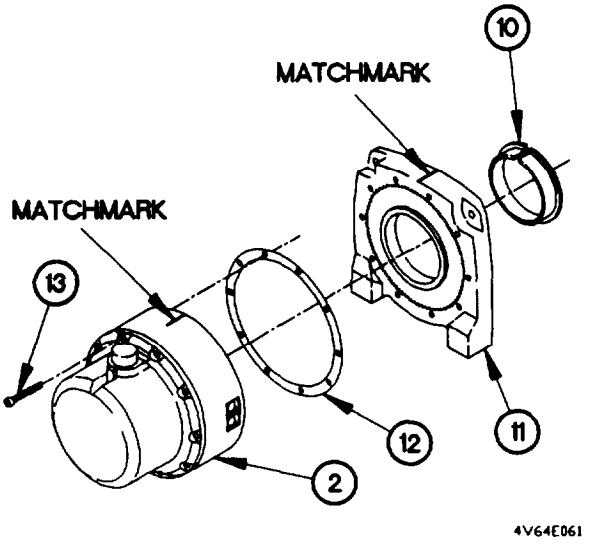
4V64E051

20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

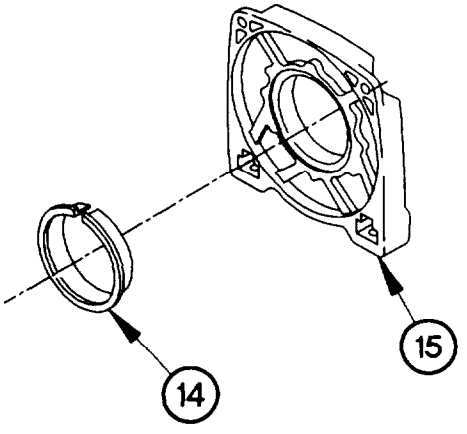
(11) Install sleeve bushing (10) in drum support (11).

(12) Install gasket (12) and drum support (11) on housing assembly (2) with matchmarks aligned.

(13) Install 10 screws (13) in housing assembly (2).

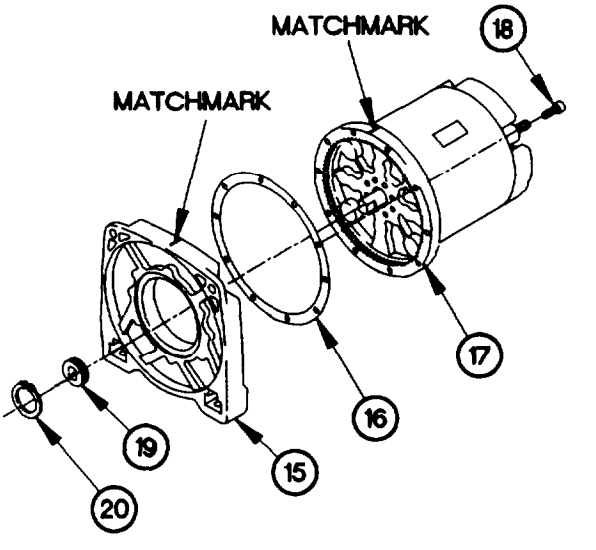


4V64E061



(14) Install sleeve bushing (14) in drum support (15).

4V64E071



4V64E081

(15) Install gasket (18) and drum support (15) on 24 vdc motor assembly (17) with matchmarks aligned.

(16) Install 10 screws (18) in 24 vdc motor assembly (17).

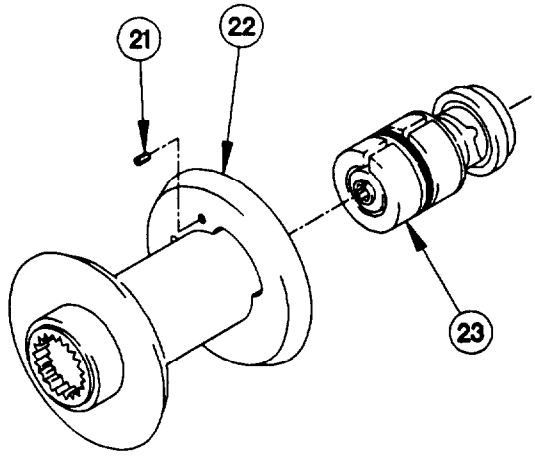
(17) Apply grease to gear (19).

(18) Install gear (19) on 24 vdc motor assembly (17) with circlip (20).

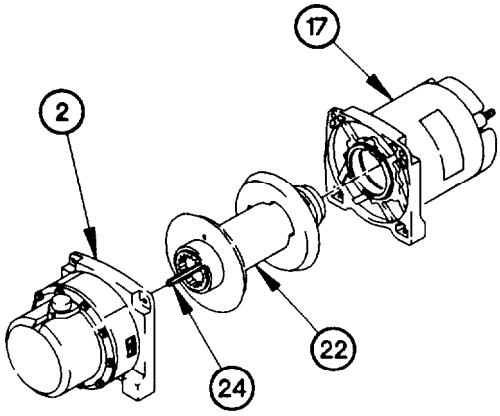
(19) Position two screws (21) in drum assembly (22).

(20) Apply grease to brake (23).

(21) Install brake (23) in drum assembly (22).



4V64E091



4V64E101

(22) Apply grease to hex shaft (24).

(23) Install hex shaft (24) in drum assembly (22).

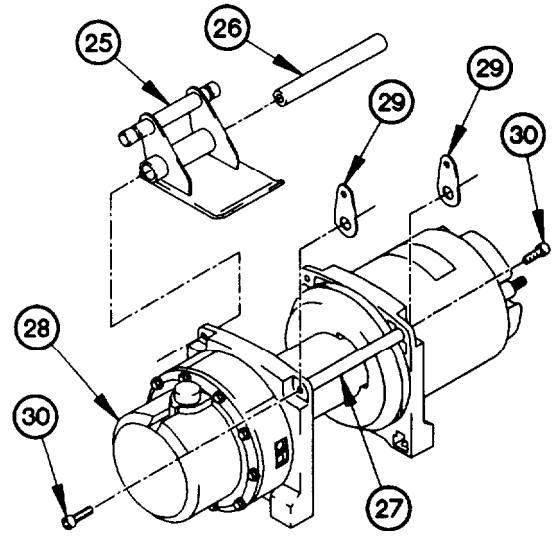
(24) Position drum assembly (22) on 24 vdc motor assembly (17).

(25) Position housing assembly (2) on drum assembly (22).

(26) Position tensioner (25) on tie rod (26).

(27) Position tie rods (26 and 27) in winch assembly (28).

(28) Install two brackets (29) on winch assembly (28) with two screws (30).



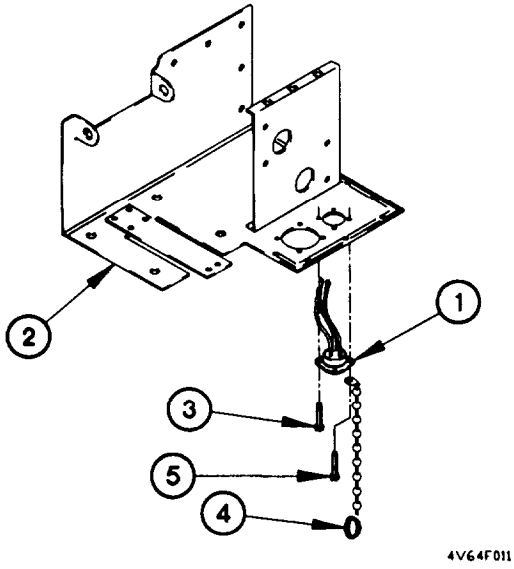
4V64E111

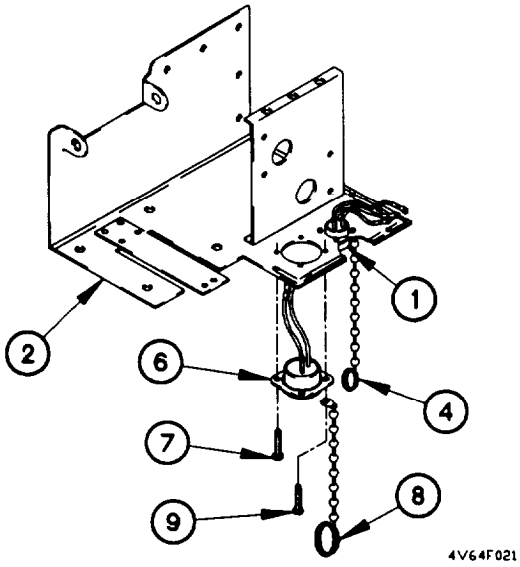
20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

f. Base Plate Assembly.

(1) Install remote control connector (1) on base plate (2) with three screws (3).

(2) Install dust cap (4) on remote control connector (1) with screw (5).





(3) Install power connector (6) on base plate (2) with three screws (7).

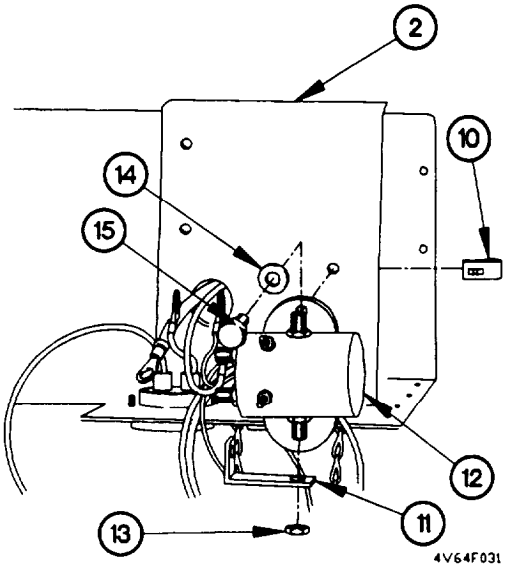
(4) Install dust cap (8) on power connector (6) with screw (9).

(5) Install dust caps (4 and 8) on remote control connector (1) and remote control connector (8).

(6) Install two clip nuts (10) on base plate (2).

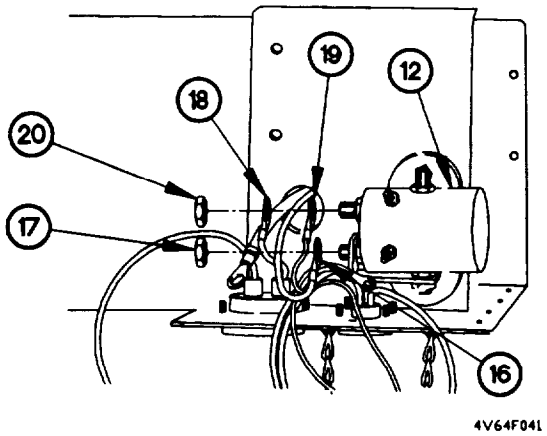
(7) Install strap (11) on solenoid (12) with nut (13).

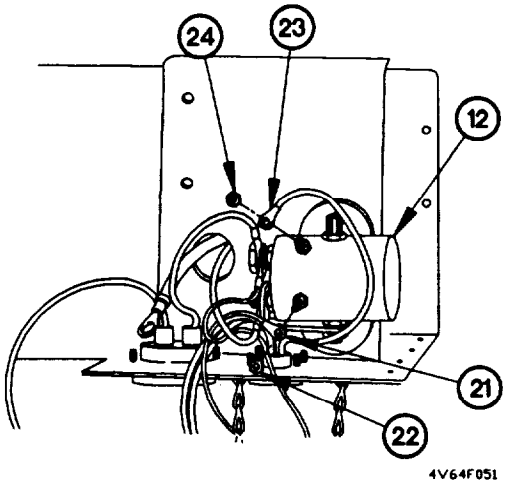
(8) Install solenoid (12) on base plate (2) with two washers (14) and screws (15).



(9) Install terminal lug (16) on solenoid (12) with nut (17).

(10) Install terminal lugs (18 and 19) on solenoid (12) with nut (20).





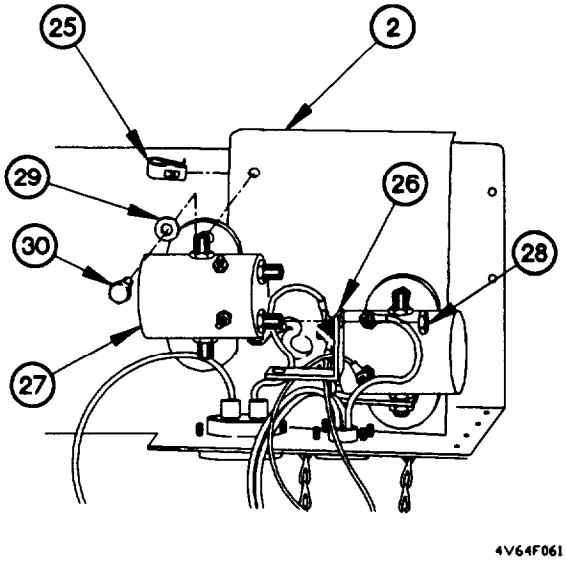
(11) Install terminal lug (21) on solenoid (12) with nut (22).

(12) Install terminal lug (23) on solenoid (12) with nut (24).

(13) Install two clip nuts (25) on base plate (2).

(14) Install strap (26) on solenoid (27) with nut (28).

(15) Install solenoid (27) on base plate (2) with two washers (29) and screws (30).

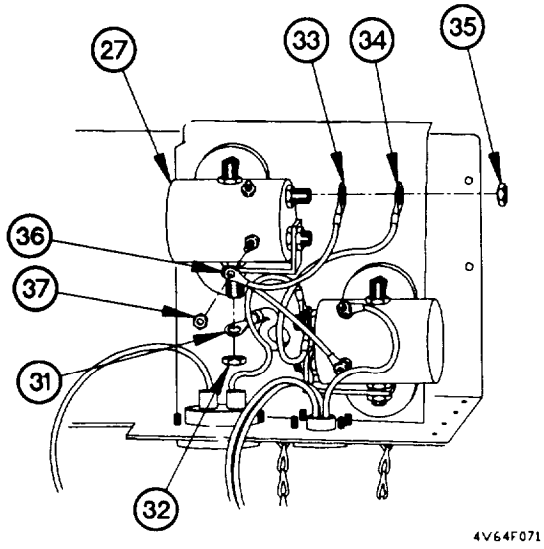


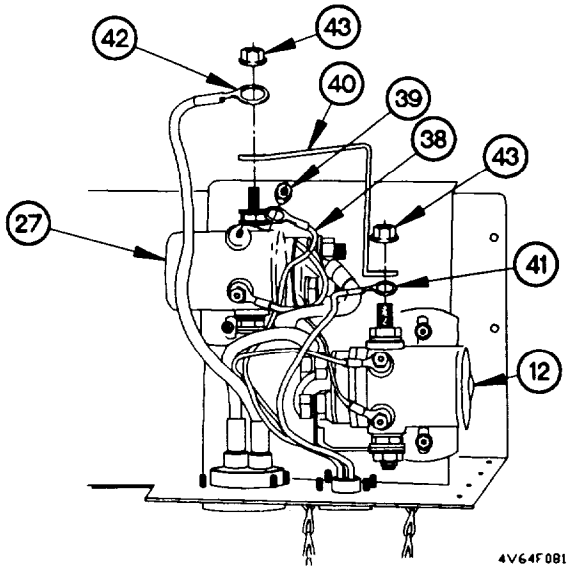
20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

(16) Install terminal lug (31) on solenoid (27) with nut (32).

(17) Install terminal lugs (33 and 34) on solenoid (27) with nut (35).

(18) Install terminal lug (36) on solenoid (27) with nut (37).





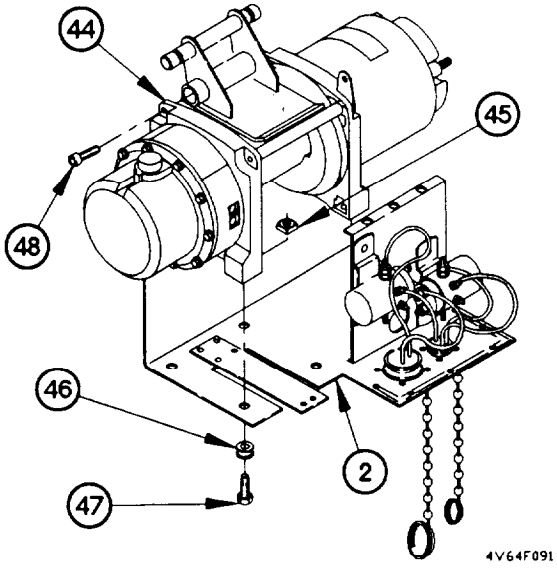
(19) Install terminal lug (38) on solenoid (27) with nut (39).

(20) Install strap (40) on solenoids (12 and 27).

(21) Install terminal lugs (41 and 42) on solenoids (12 and 27) with nuts (43).

(22) Install winch assembly (44) on base plate (2) with four nuts (45), mounting feet (46), and screws (47).

(23) Install two screws (48) in winch assembly (44).

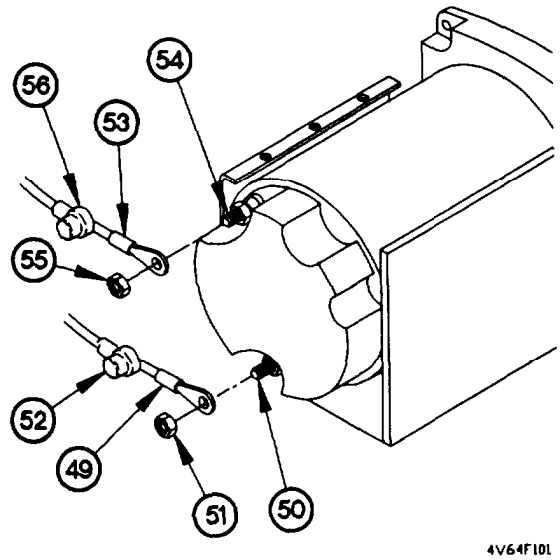


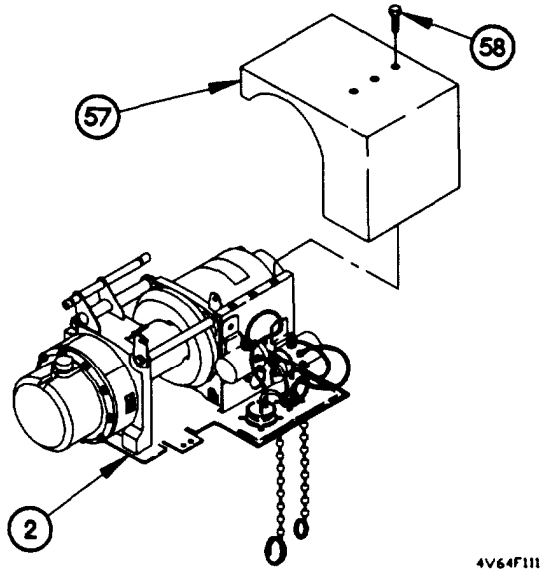
(24) Install terminal lug (49) on positive terminal (50) with nut (51).

(25) Install rubber boot (52) on positive terminal (50).

(28) Install terminal lug (53) on negative terminal (54) with nut (55).

(27) Install rubber boot (56) on negative terminal (54).





(28) Install cover (57) on base plate (2) with 18 screws (58).

g. Installation.

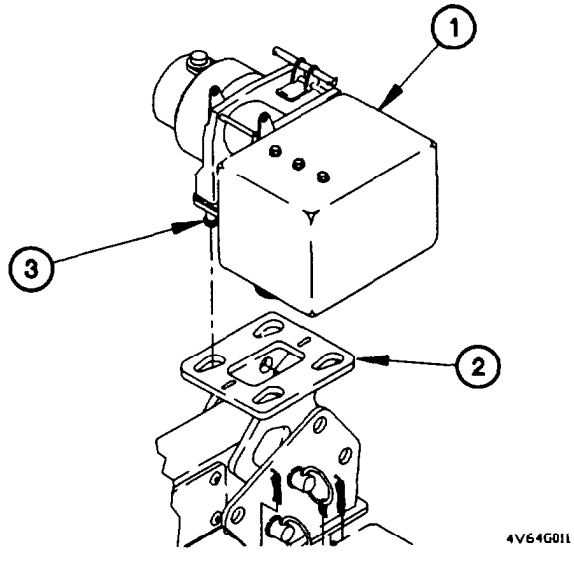
NOTE

Steps (1) and (2) require the aid of an assistant.

(1) Position winch (1) on boom (2).

(2) Slide winch (1) toward front of boom (2).

(3) Tighten four screws (3).



20-73. LIGHT MATERIAL HANDLING CRANE WINCH (LMHC) REPLACEMENT/REPAIR (CONT)

h. Follow-On Maintenance.

(1) Install LMHC remote control cable (TM 9-2320-365-10).

(2) Install LMHC power cable (TM 9-2320-365-10).

(3) Install LMHC weight block and wire rope (para 20-72).

End of Task.

20-74. LIGHT MATERIAL HANDLING CRANE (LMHC) BOOM REPLACEMENT

This task covers:

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

INITIAL SETUP

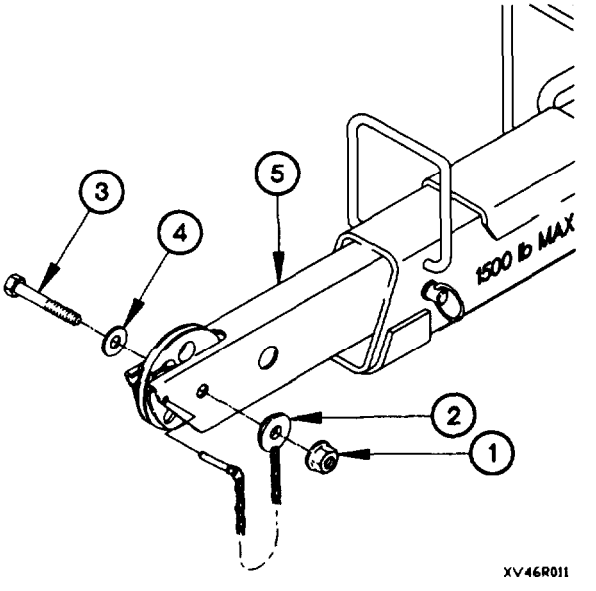
Equipment Conditions
Engine shut down (TM 9-2320-385-10).
LMHC winch removed (para 20-73).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Gloves, Welders (Item 14, Appendix C)

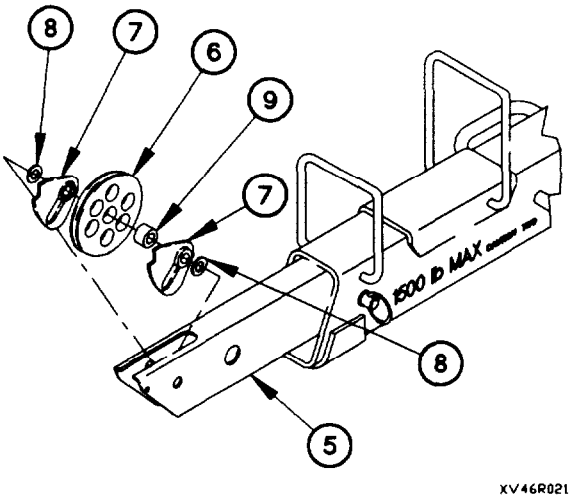
Materials/Parts
Nut, Self-Locking (Item 151, Appendix G)
Bushing, Sleeve (Item 5, Appendix G)

a. Removal.

(1) Remove self-locking nut (1), chain assembly (2), screw (3), and washer (4) from fly section (5). Discard self-locking nut.



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(2) Remove sheave (6), two detent plates (7), and washers (8) from fly section (5).

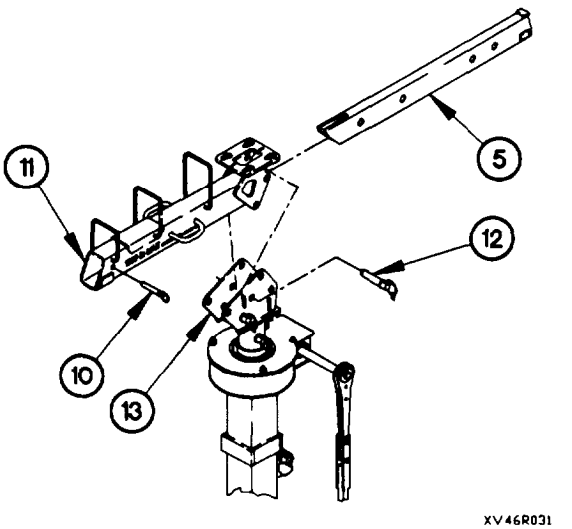
(3) Remove bushing (9) from sheave (6). Discard bushing.

20-74. LIGHT MATERIAL HANDLING CRANE (LMHC) BOOM REPLACEMENT (CONT)

(4) Remove quick release pin (10) from base weld (11) and fly section (5).

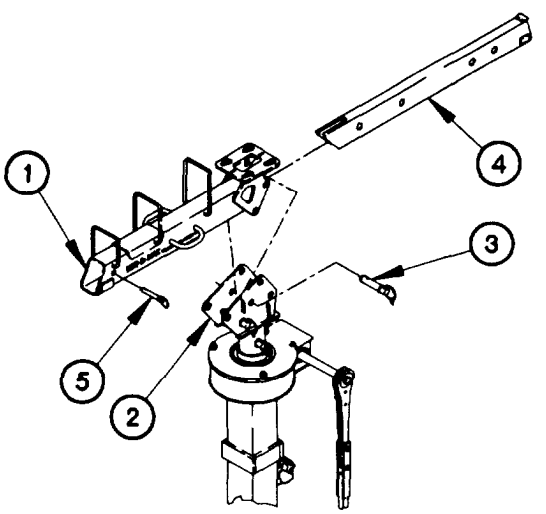
(5) Remove fly section (5) from base weld (11).

(6) Remove quick release pin (12) and base weld (11) from turret (13).



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b. Installation.



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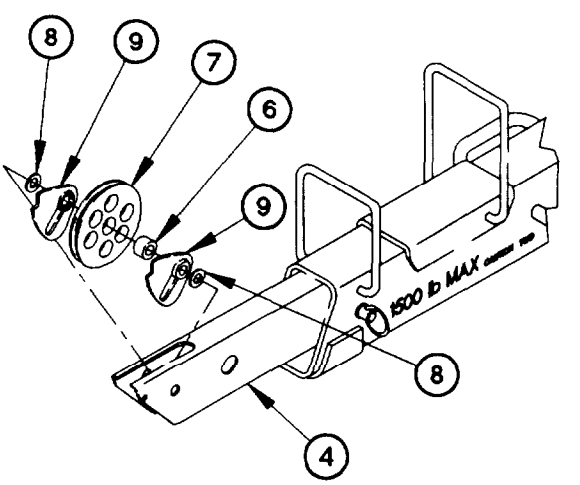
(1) Install base weld (1) in turret (2) with quick release pin (3).

(2) Position fly section (4) in base weld (1).

(3) Install quick release pin (5) through base weld (1) and fly section (4).

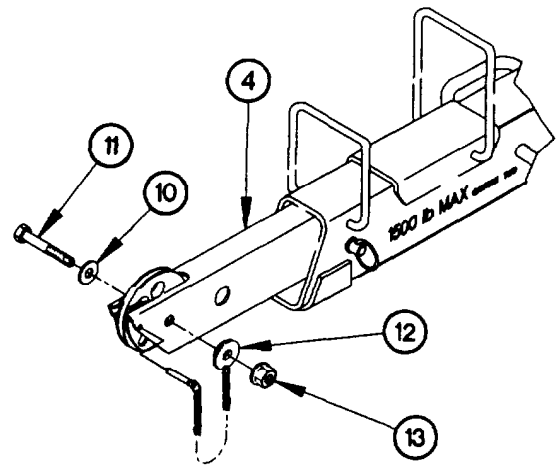
(4) Install bushing (6) in sheave (7).

(5) Position two washers (8), detent plates (9), and sheave (7) in fly section (4)



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(6) Install washer (10), screw (11), chain assembly (12), and self-locking nut (13) in fly section (4).



c. Follow-On Maintenance.

Install LMHC winch (para 20-73).

End of Task.

20-75. LIGHT MATERIAL HANDLING CRANE (LMHC) BOOM SHEAVE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
LMHC power cable removed (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Gloves, Welders (Item 14, Appendix C)

Materials/Parts
Nut, Self-Locking (Item 151, Appendix G)
Bushing, Sleeve (Item 5, Appendix G)

a. Removal.

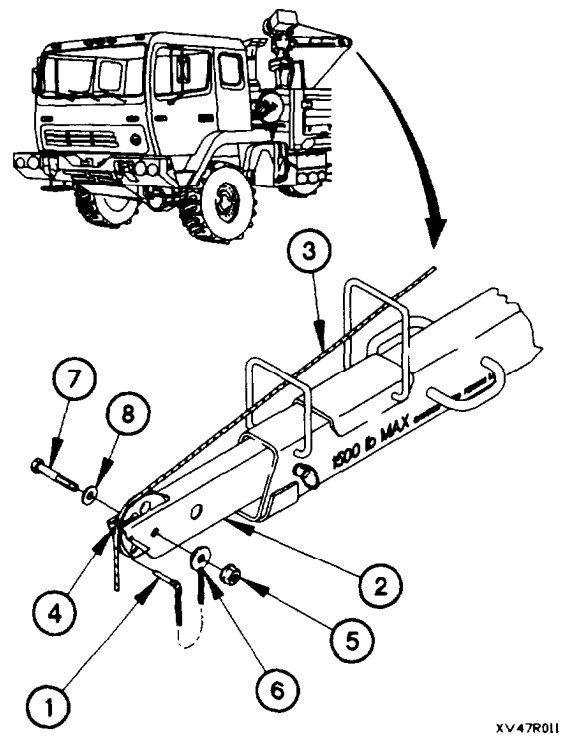
(1) Remove quick release pin (1) from fly section (2).

WARNING

Wear leather gloves at all times when handling winch cable. Do not allow cable to slide through hands even with gloves on. Broken wires may cause injury to personnel. Failure to comply may result in injury to personnel.

(2) Remove wire rope (3) from sheave (4).

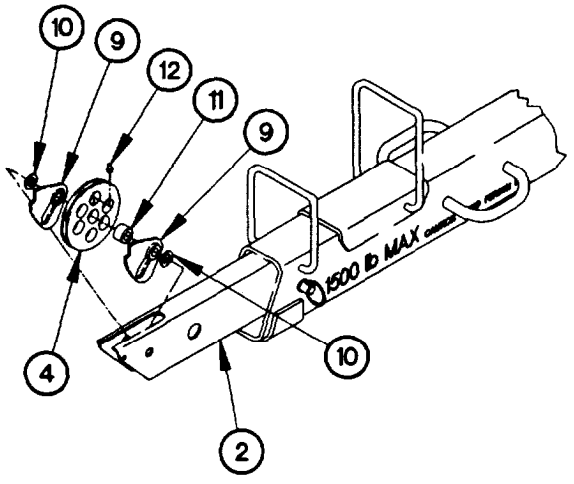
(3) Remove self-locking nut (5), chain assembly (6), screw (7), and washer (8) from fly section (2). Discard self-locking nut.



(4) Remove sheave (4), two detent plates (9), and washers (10) from fly section (2).

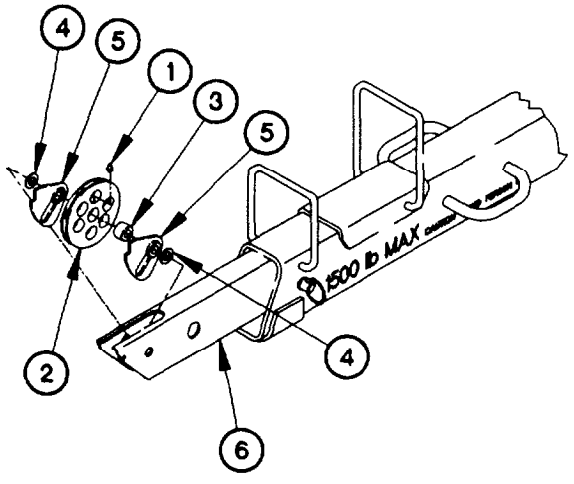
(5) Remove bushing (11) from sheave (4). Discard bushing.

(6) Remove fitting (12) from sheave (4).



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b. Installation.



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(1) Install fitting (1) in sheave (2).

(2) Install bushing (3) in sheave (2).

(3) Position sheave (2), two washers (4), and detent plates (5) in fly section (6).

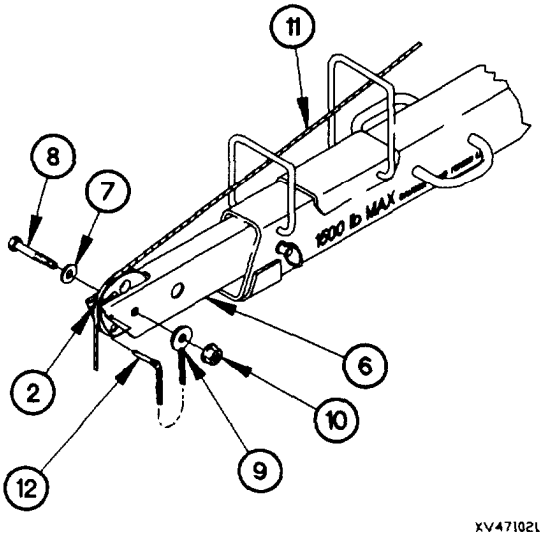
(4) Install washer (7), screw (8), chain assembly (9), and self-locking nut (10) in fly section (6).

WARNING

Wear leather gloves at all times when handling winch cable. Do not allow cable to slide through hands even with gloves on. Broken wires may cause injury to personnel. Failure to comply may result in injury to personnel.

(5) Install wire rope (11) in sheave (2).

(6) Install quick release pin (12) in fly section (6).



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20-75. LIGHT MATERIAL HANDLING CRANE (LMHC) BOOM SHEAVE REPLACEMENT (CONT)

c. Follow-On Maintenance.

(1) Install LMHC power cable (TM 9-2320-365-10).

(2) Extend and retract LMHC wire rope assembly to check for proper function (TM 9-2320-365-10).

End of Task.

20-76. LIGHT MATERIAL HANDLING CRANE (LMHC) TURRET REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
LMHC power cable removed (TM 9-2320-365-10).
LMHC remote control cable removed (TM 9-2320-365-10).

Personnel Required
(2)

a. Removal.

WARNING

Boom assembly weighs approximately 150 lb (68 kg). Use an assistant when removing boom assembly. Failure to comply may result in injury to personnel.

NOTE

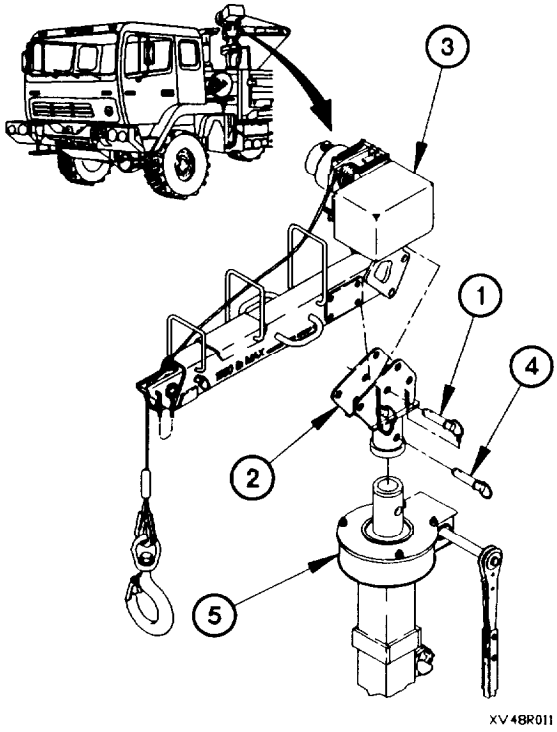
Steps (1) and (2) require the aid of an assistant.

(1) Remove quick release pin (1) from turret (2).

(2) Remove boom assembly (3) from turret (2).

(3) Remove quick release pin (4) from turret (2).

(4) Remove turret (2) from mast (5).



20-76. LIGHT MATERIAL HANDLING CRANE (LMHC) TURRET REPLACEMENT (CONT)

b. Installation.

(1) Position turret (1) on mast (2).

(2) Install quick release pin (3) in turret (1).

WARNING

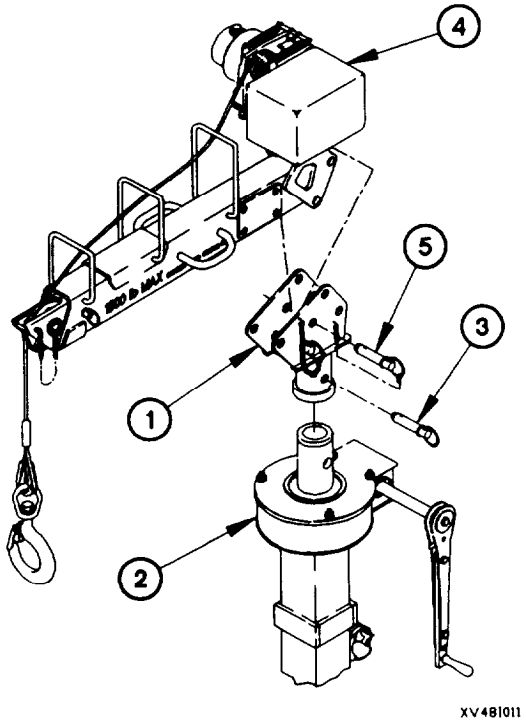
Boom assembly weighs approximately 150 lb (68 kg). Use the aid of assistants when installing boom assembly. Failure to comply may result in injury to personnel.

NOTE

Steps (3) and (4) require the aid of an assistant.

(3) Install boom assembly (4) on turret (1).

(4) Install quick release pin (5) in boom assembly (4).



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c. Follow-On Maintenance.

(1) Install LMHC remote control unit cable (TM 9-2320-365-10).

(2) Install LMHC power cable (TM 9-2320-365-10).

(3) Operate LMHC and check for proper operation (TM 9-2320-365-10).

End of Task.

20-77. LIGHT MATERIAL HANDLING CRANE (LMHC) CONTROL BOX REPAIR

This task covers:

a. Disassembly
b. Assembly
c. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
LMHC control box power cable removed (TM 9-2320-365-10).
LMHC control box removed (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Tool Kit, Auto Fuel and Electrical Systems Repair (Item 43, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Lockwasher (2) (Item 85, Appendix G)
Lockwasher (2) (Item 96, Appendix G)
Lockwasher (4) (Item 95, Appendix G)
Gasket (Item 26, Appendix G)
Terminal, Lug (2) (Item 267, Appendix G)

a. Disassembly.

(1) Remove eight screws (1), cover (2), and retainer (3) from NATO plug (4).

NOTE

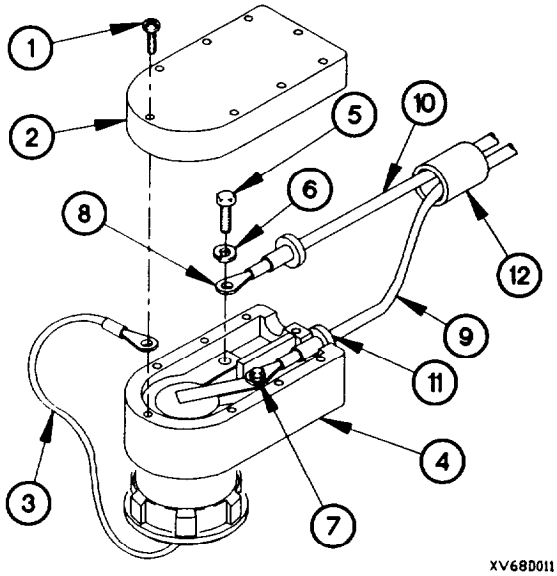
Tag wires and connection points prior to disconnecting.

(2) Remove two screws (5), lockwashers (6), and terminal lugs (7 and 8) from NATO plug (4). Discard lockwashers.

(3) Remove terminal lugs (7 and 8) from wires (9 and 10). Discard terminal lugs.

(4) Remove two grommets (11) from wires (9 and 10).

(5) Remove sleeve (12) from wires (9 and 10).



20-77. LIGHT MATERIAL HANDLING CRANE (LMHC) CONTROL BOX REPAIR (CONT)

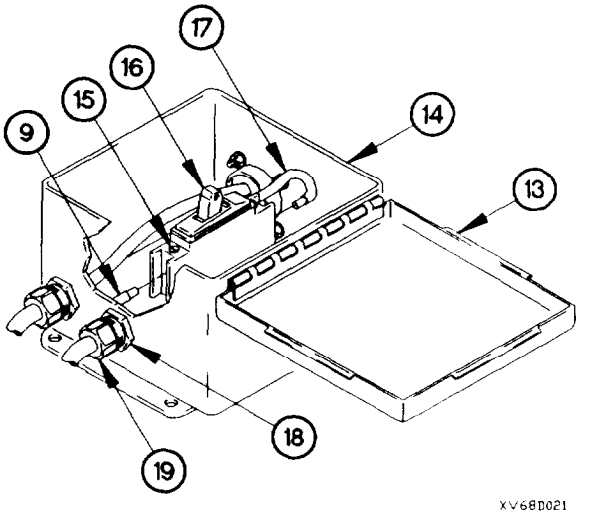
(6) Open cover (13) on control box (14).

(7) Loosen two screws (15) on circuit breaker (16).

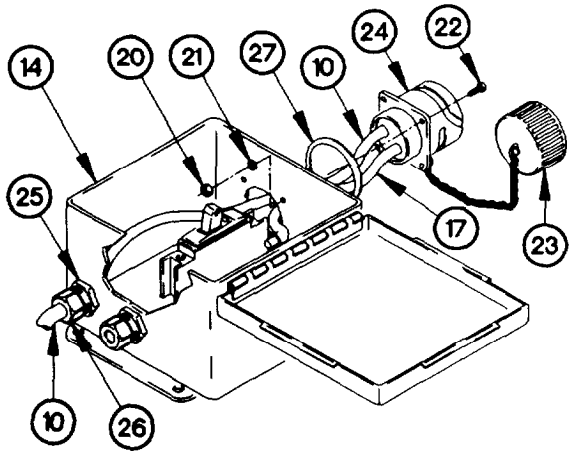
(8) Disconnect wires (17 and 9) from circuit breaker (16).

(9) Loosen nut (18) on box connector (19).

(10) Remove wire (9) from control box (14).



XV68D021



XV68D031

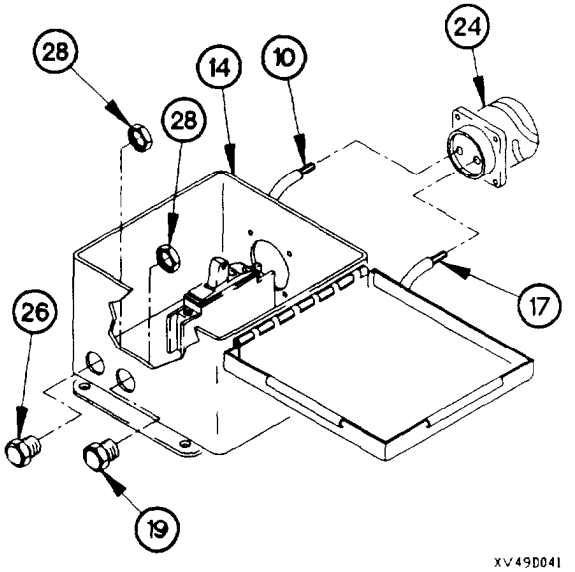
(11) Remove four nuts (20), lockwashers (21), screws (22), and cap (23) from receptacle (24). Discard lockwashers.

(12) Loosen nut (25) on box connector (26).

(13) Remove receptacle (24), wires (17 and 10), and gasket (27) from control box (14). Discard gasket.

(14) Remove wires (17 and 10) from receptacle (24).

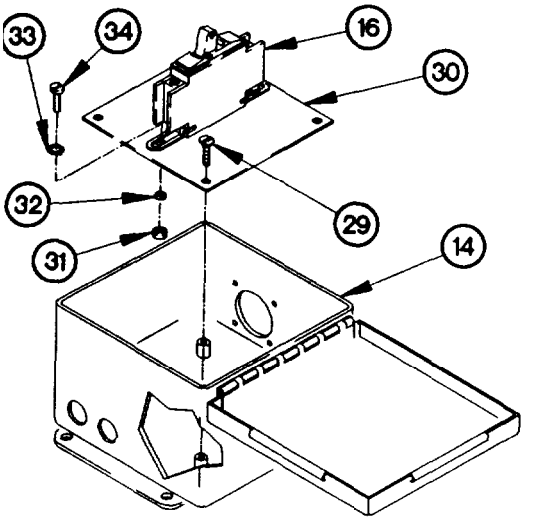
(15) Remove two nuts (28) and box connectors (19 and 26) from control box (14).



XV49D041

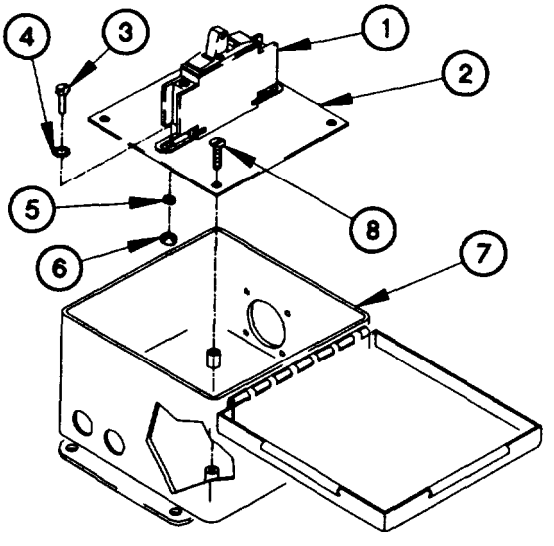
(16) Remove four screws (29) and plate (30) from control box (14).

(17) Remove two nuts (31), lockwashers (32), washers (33), screws (34), and circuit breaker (16) from plate (30). Discard lockwashers.



XV49D051

b. Assembly.



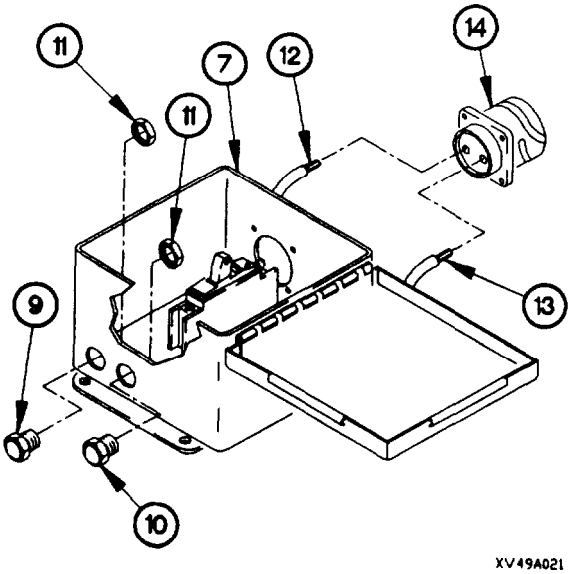
XV49A01-

(1) Install circuit breaker (1) on plate (2) with two screws (3), washers (4), lockwashers (5), and nuts (6).

(2) Install plate (2) in control box (7) with four screws (8).

(3) Install box connectors (9 and 10) in control box (7) with nuts (11).

(4) Install wires (12 and 13) in receptacle (14).



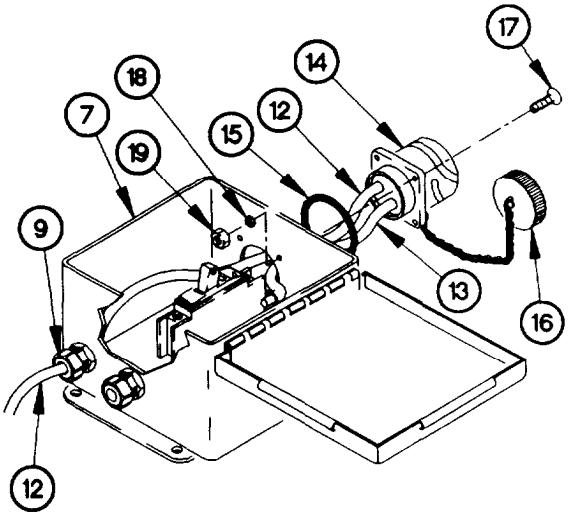
XV49A021

20-77. LIGHT MATERIAL HANDLING CRANE (LMHC) CONTROL BOX REPAIR (CONT)

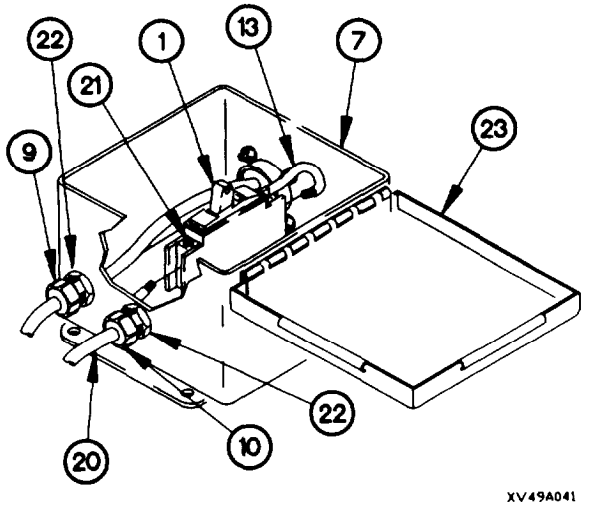
(5) Install wires (12 and 13), gasket (15) and receptacle (14) in control box (7).

(6) Position wire (12) through box connector (9).

(7) Install cap (16), four screws (17), lockwashers (16), and nuts (19) in receptacle (14).



XV49A031



XV49A041

(8) Position wire (20) through box connector (10).

(9) Install wires (13 and 20) in circuit breaker (1) with two screws (21).

(10) Tighten two nuts (22) on box connectors (9 and 10).

(11) Close cover (23) on control box (7).

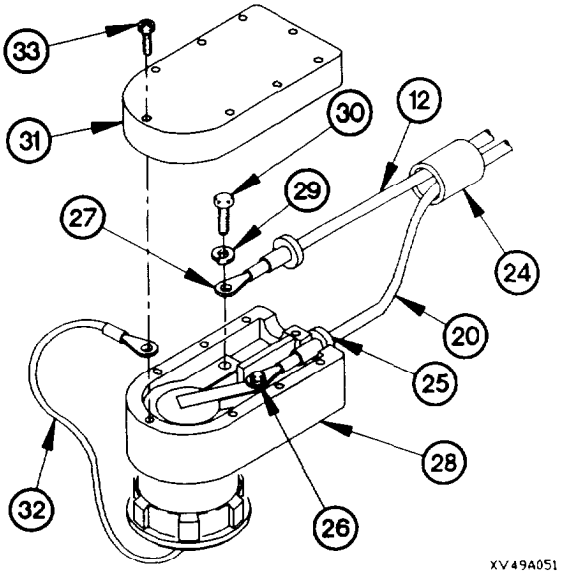
(12) Install sleeve (24) on wires (12 and 20).

(13) Install two grommets (25) on wires (12 and 20).

(14) Install terminal lugs (26 and 27) on wires (12 and 20).

(15) Install wires (12 and 20) on NATO plug (28) with two lockwashers (29) and screws (30).

(16) Install cover (31) and retainer (32) on NATO plug (28) with eight screws (33).



XV49A051

c. Follow-On Maintenance.

Operate LMHC and check for proper operation (TM 9-2320-365-10).

End of Task.

20-78. LIGHT MATERIAL HANDLING CRANE (LMHC) MAST AND SWING ASSEMBLY REPAIR

This task covers:

a. Disassembly
b. Cleaning
c. Assembly
d. Follow-on Maintenance

INITIAL SETUP

Equipment Condition
LMHC disassembled (para 20-70).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)
Gloves, Rubber (Item 13, Appendix C)

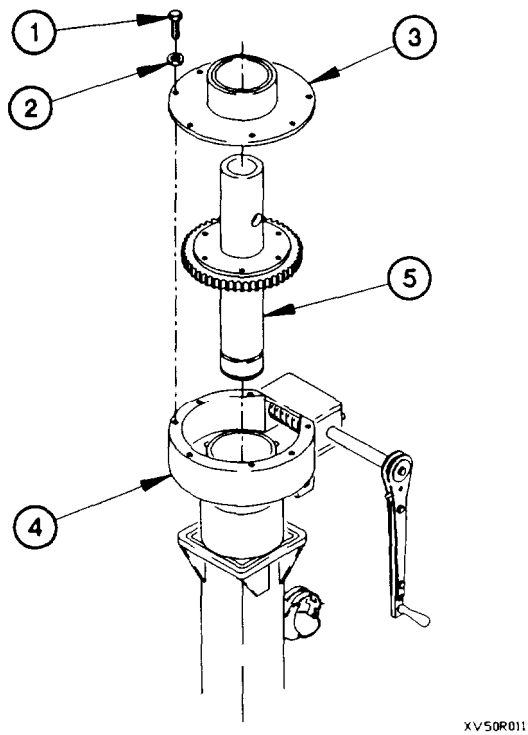
Materials/Parts
Solvent, Dry Cleaning (Item 71, Appendix D)
Rag, Wiping (Item 51, Appendix D)
Lockwasher (3) (Item 90, Appendix G)
Lockwasher (2) (Item 91, Appendix G)

a. Disassembly.

(1) Remove seven screws (1) and washers (2) from top plate (3).

(2) Remove top plate (3) from housing (4).

(3) Remove rotator (5) from housing (4).



WARNING

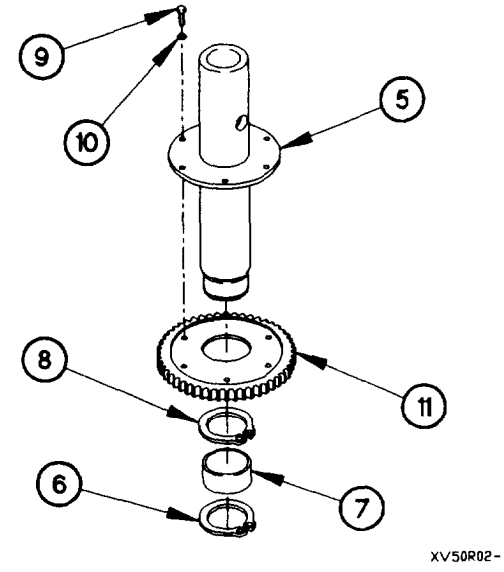
Use care when removing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

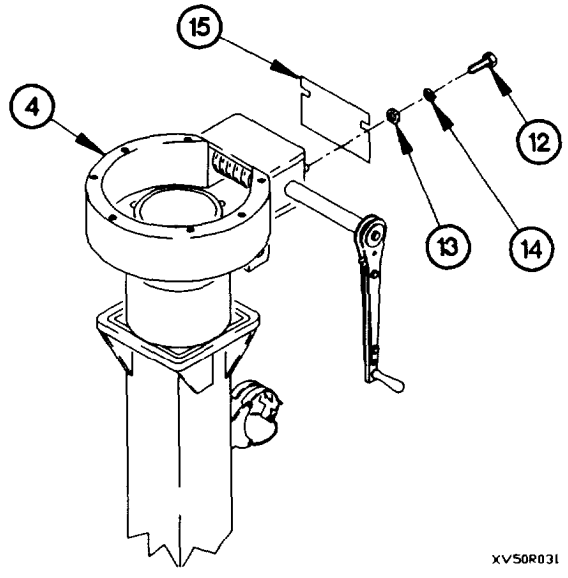
(4) Remove retaining ring (6) from rotator (5).

(5) Remove bearing (7) from rotator (5).

(6) Remove retaining ring (8) from rotator (5).

(7) Remove six screws (9), washers (10), and gear (11) from rotator (5).

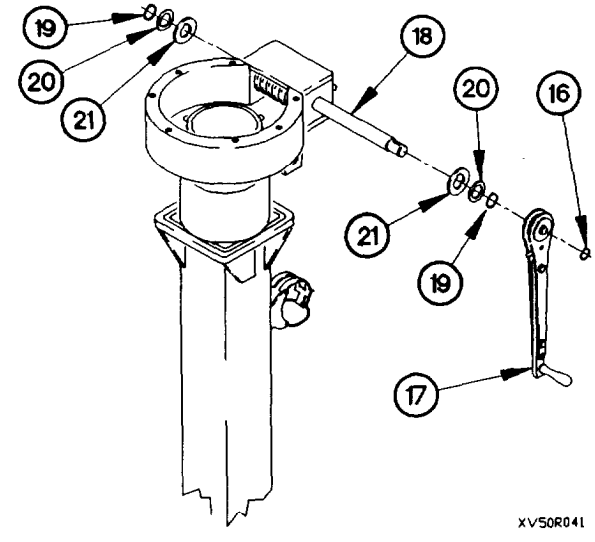




(8) Remove two screws (12), washers (13), lockwashers (14), and plate (15) from housing (4). Discard lockwashers.

(9) Remove retaining ring (16) and handle (17) from shaft (18).

(10) Remove two retaining rings (19), washers (20), and washers (21) from shaft (18).

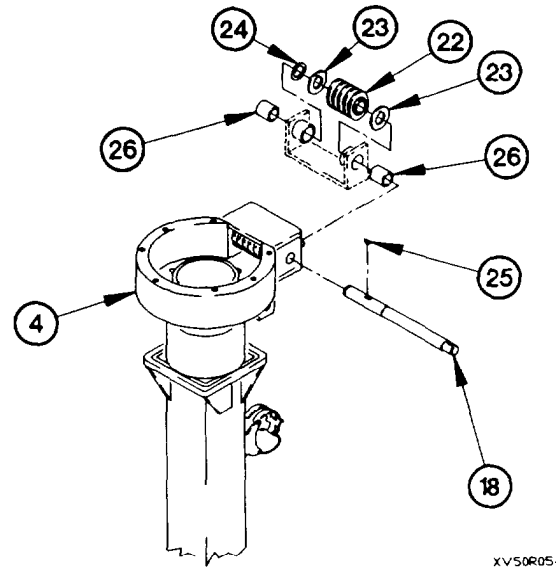


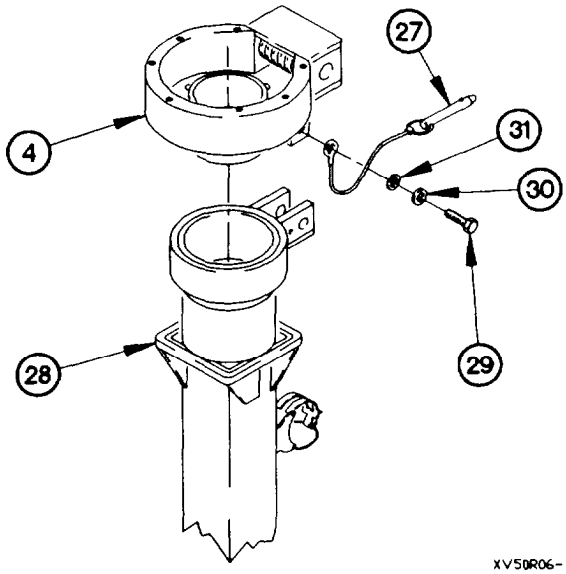
20-78. LIGHT MATERIAL HANDLING CRANE (LMHC) MAST AND SWING ASSEMBLY REPAIR (CONT)

(11) Remove shaft (18), worm gear (22), two washers (23), and washer (24) from housing (4).

(12) Remove woodruff key (25) from shaft (18).

(13) Remove two bearings (26) from housing (4).



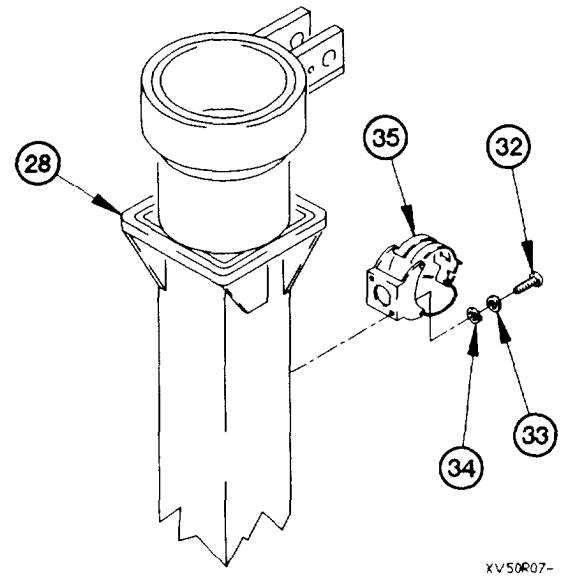


(14) Remove quick release pin (27) from housing (4).

(15) Remove housing (4) from mast (28).

(16) Remove screw (29), washer (30), lockwasher (31), and quick release pin (27) from housing (4). Discard lockwasher.

(17) Remove two screws (32), washers (33), lockwashers (34), and clamp (35) from mast (28). Discard lockwashers.



b. Cleaning.

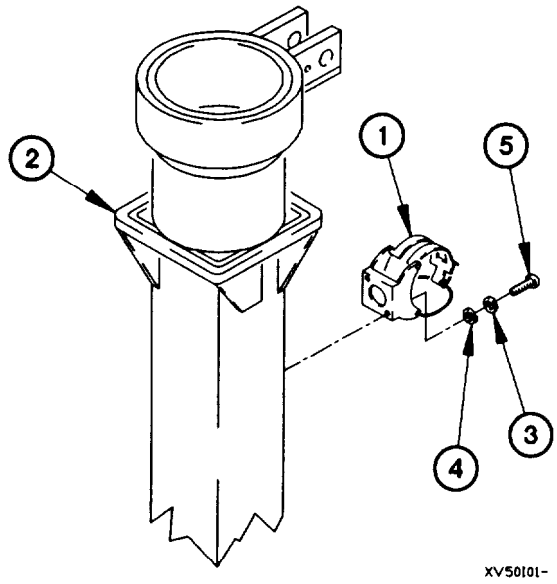
WARNING

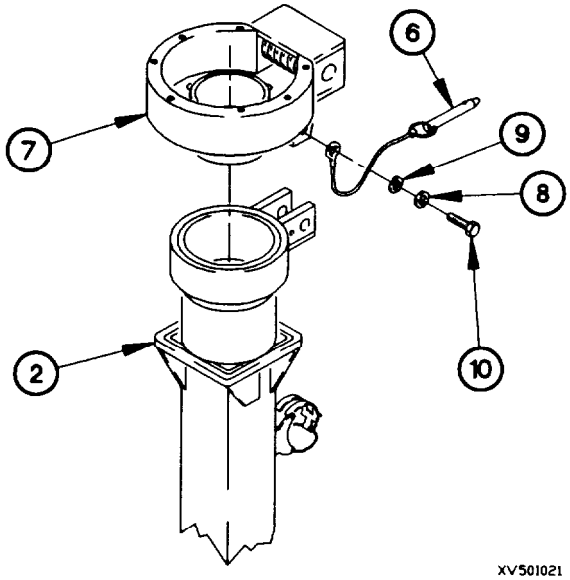
- **Dry Cleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in well ventilated area; avoid contact with skin, eyes, and clothes, and do breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint or Type I dry cleaning solvent is 100°F (38°C) and for Type II is 130°F (50°C). Failure to comply may result in injury or death to personnel.**
- **If personnel become dizzy while using 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. Failure to comply may result in injury to personnel.**

Clean all metal parts with dry cleaning solvent.

c. Assembly.

(1) Install clamp (1) on mast (2) with two lockwashers (3), washers (4), and screws (5).





(2) Install quick release pin (6) on housing (7) with lockwasher (8), washer (9), and screw (10).

(3) Position housing (7) on mast (2).

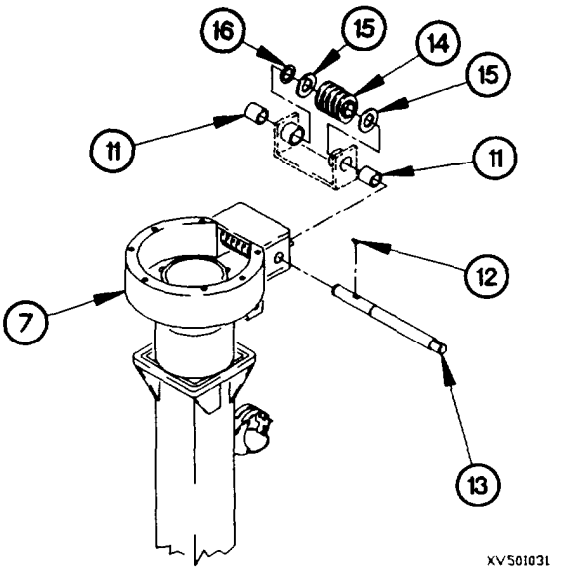
(4) Install quick release pin (6) in housing (7).

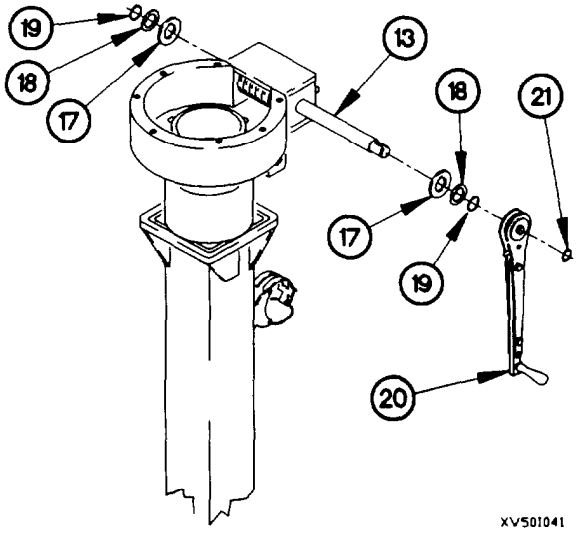
20-78. LIGHT MATERIAL HANDLING CRANE (LMHC) MAST AND SWING ASSEMBLY REPAIR (CONT)

(5) Install two bearings (11) in housing (7).

(6) Install woodruff key (12) on shaft (13).

(7) Install worm gear (14), two washers (15), washer (16), and shaft (13) in housing (7).





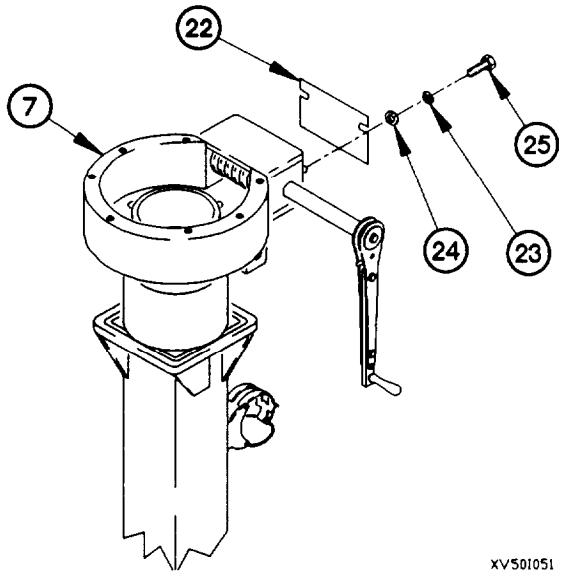
WARNING

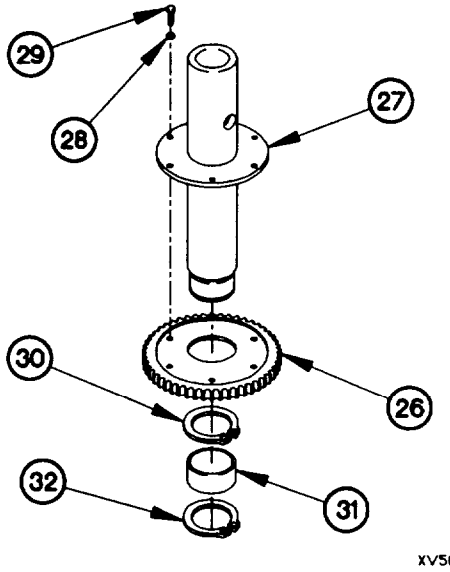
Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(8) Install two washers (17), washers (18), and retaining rings (19) on shaft (13).

(9) Install handle (20) on shaft (13) with retaining ring (21).

(10) Install plate (22) on housing (7) with two lockwashers (23), washers (24), and screws (25).





(11) Install gear (26) on rotator (27) with six washers (28) and screws (29).

WARNING

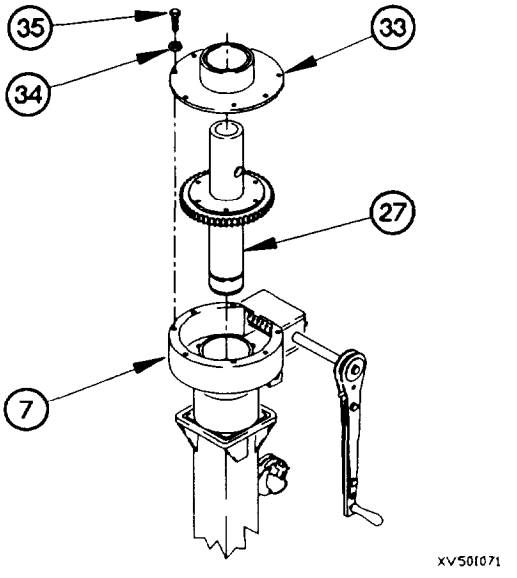
Use care when installing retaining rings. Retaining rings are under tension and can act as projectiles when released. Failure to comply may result in injury to personnel.

(12) Install retaining ring (30) on rotator (27).

(13) Install bearing (31) on rotator (27).

(14) Install retaining ring (32) on rotator (27).

20-78. LIGHT MATERIAL HANDLING CRANE (LMHC) MAST AND SWING ASSEMBLY REPAIR (CONT)



(15) Install rotator (27) in housing (7).

(16) Install top plate (33) on housing (7) with seven washers (34) and screws (35).

d. Follow-On Maintenance.

Assemble LMHC (para 20-70).

End of Task.

20-79. TROOP TRANSPORT ALARM CABLE ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Ties, Cable, Plastic (Item 76, Appendix D)

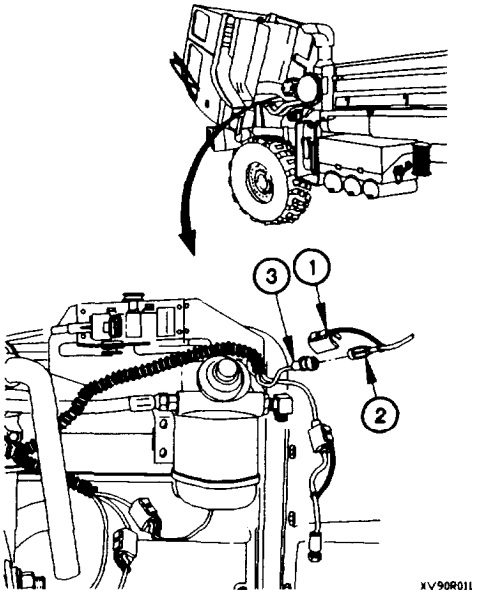
a. Removal.

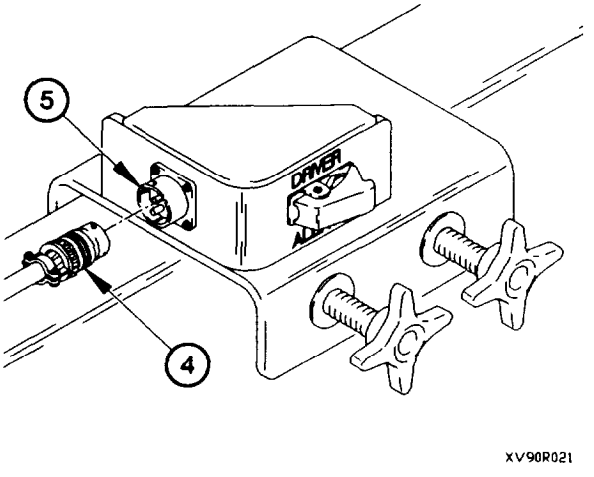
NOTE

Remove plastic cable ties as required.

(1) Disconnect connector clamp (1) from connector J39 (2).

(2) Disconnect connector J39 (2) from connector P39 (3).





(3) Disconnect connector P921 (4) from connector J921 (5).

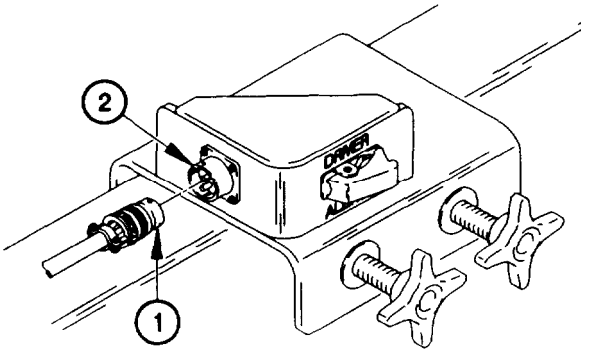
20-79. TROOP TRANSPORT ALARM CABLE ASSEMBLY REPLACEMENT (CONT)

b. Installation.

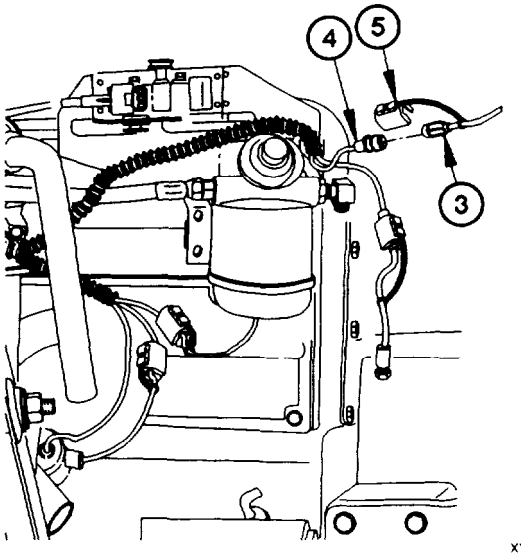
NOTE

Install plastic cable ties as required.

(1) Connect connector P921 (1) to connector J921 (2).



XV901011



XV901021

(2) Connect connector J39 (3) to connector P39 (4).

(3) Connect connector clamp (5) to connector J39 (3).

c. Follow-On Maintenance.

(1) Lower cab (TM 9-2320-365-10).

(2) Operate troop transport alarm and check for proper operation (TM 9-2320-365-10).

End of Task.

20-80. TROOP TRANSPORT ALARM SWITCH, CONNECTOR, AND BRACKET REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Vise, Machinist (Item 46, Appendix C)

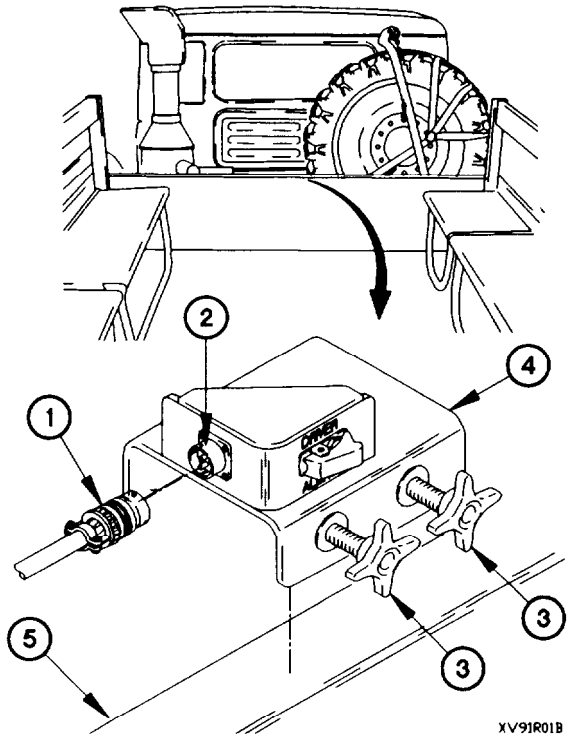
Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Adhesive (Item 8, Appendix D)
Sealing Compound (Item 64, Appendix D)
Nut, Self-Locking (4) (Item 120, Appendix G)

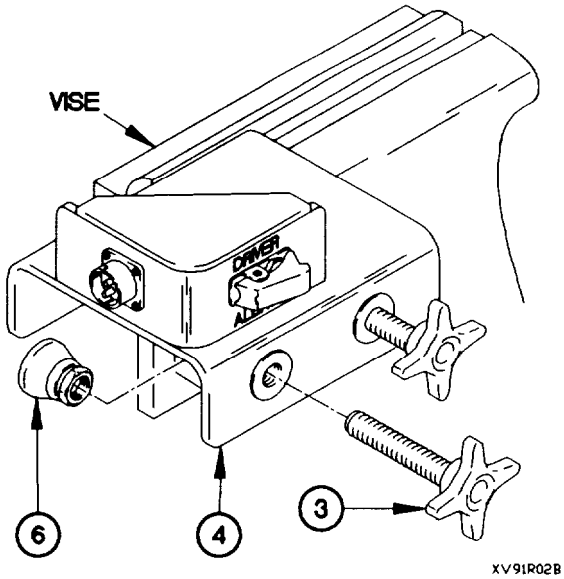
a. Removal.

(1) Disconnect connector P921 (1) from connector J921 (2).

(2) Loosen two knobs (3) on bracket (4).

(3) Remove bracket (4) from cargo bed (5).



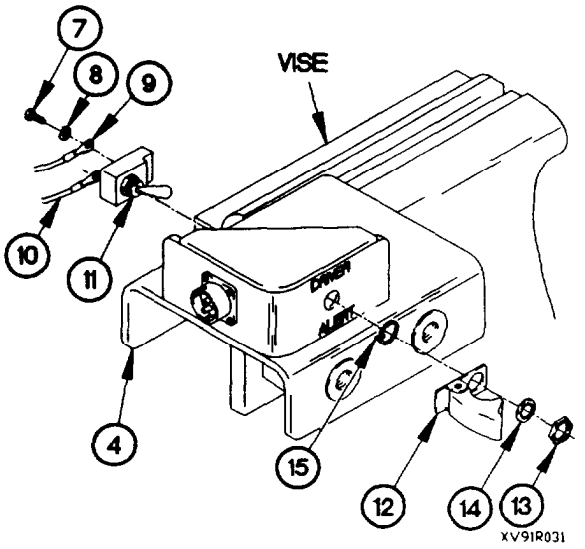


(4) Position bracket (4) in vise.

(5) Remove two mounts (6) from knobs (3).

(6) Remove two knobs (3) from bracket (4).

20-80. TROOP TRANSPORT ALARM SWITCH, CONNECTOR, AND BRACKET REPLACEMENT (CONT)



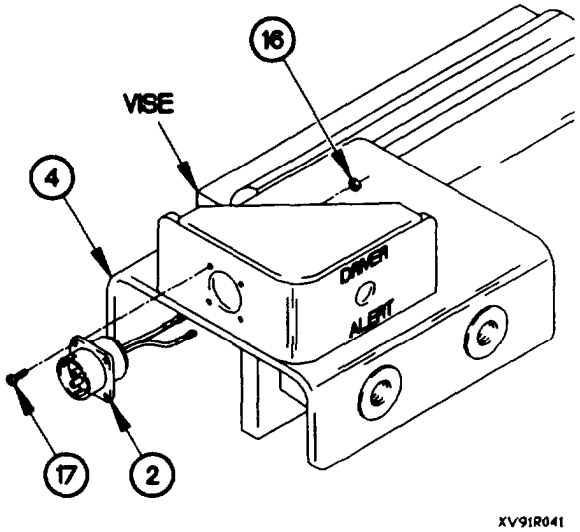
NOTE

Tag wires and connection points prior to disconnecting.

(7) Remove two screws (7), lockwashers (8), and terminal lugs TL164 (9) and TL165 (10) from switch (11).

(8) Lift switch cover (12) on switch (11).

(9) Remove nut (13), lockwasher (14), switch cover (12), locking ring (15), and switch (11) from bracket (4).



(10) Remove four self-locking nuts (16), screws (17), and connector J921 (2) from bracket (4). Discard self-locking nuts.

(11) Remove bracket (4) from vise.

b. Installation.

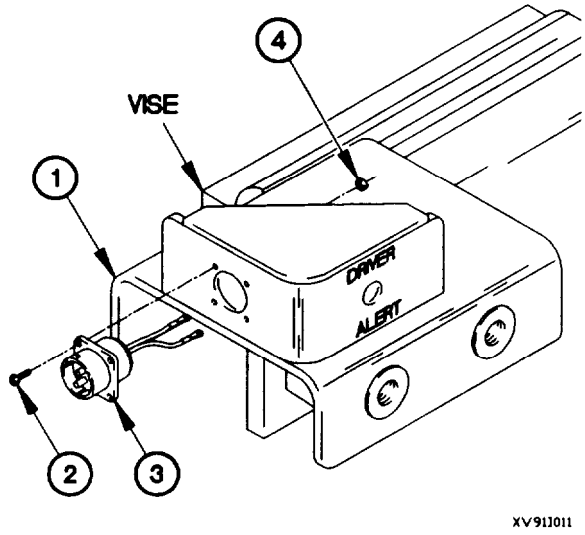
(1) Position bracket (1) in vise.

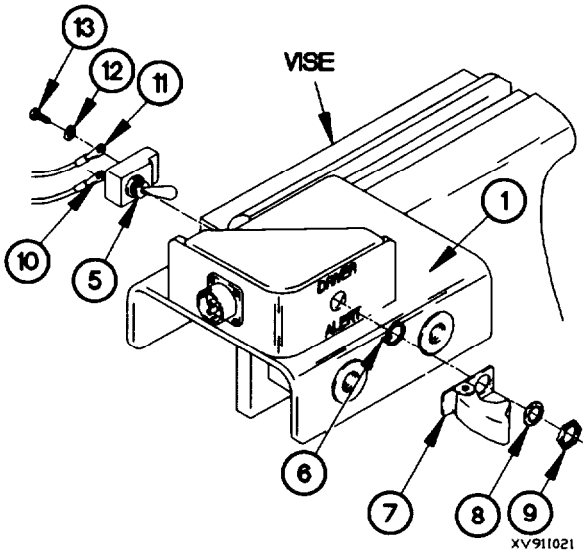
WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

(2) Apply sealing compound to threads of four screws (2).

(3) Install connector J921 (3) on bracket (1) with four screws (2) and self-locking nuts (4).





(4) Install switch (5) on bracket (1) with locking ring (6), switch cover (7), lockwasher (8) and nut (9).

(5) Close switch cover (7) on switch (5).

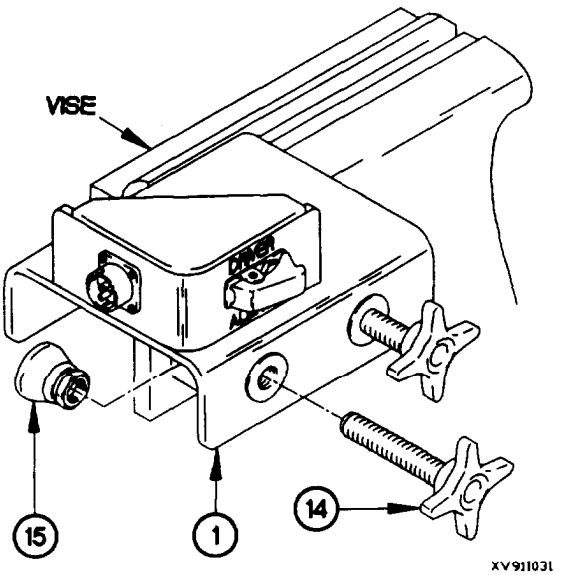
(6) Install terminal lugs TL164 (10) and TL165 (11) on switch (5) with two lockwashers (12) and screws (13).

(7) Apply adhesive to two screws (13), lockwashers (12), and terminal lugs TL164 (10) and TL165 (11).

20-80. TROOP TRANSPORT ALARM SWITCH, CONNECTOR, AND BRACKET REPLACEMENT (CONT)

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

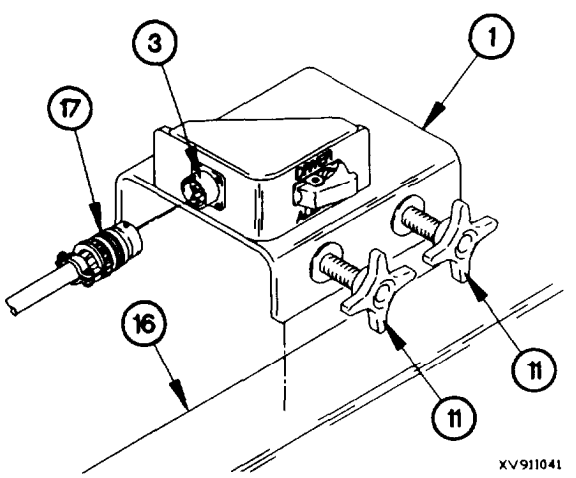


(8) Apply sealing compound to threads of two knobs (14).

(9) Install two knobs (14) on bracket (1).

(10) Install two mounts (15) on knobs (14).

(11) Remove bracket (1) from vise.



(12) Install bracket (1) on cargo bed (16) with two knobs (11).

(13) Connect connector P921 (17) to connector J921 (3).

c. Follow-On Maintenance.

Operate troop transport alarm and check for proper operation (TM 9-2320-365-10).

End of Task.

20-81. M1079 AIR CONDITIONER KIT INSTALLATION/REMOVAL

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-385-10).
Batteries disconnected (para 7-48).
Cab raised (TM 9-2320-365-10).
Spare tire lowered (TM 9-2320-385-10).
LH and RH doors opened (115 degrees) (TM 9-2320-385-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Sling, Endless (Item 32, Appendix C)

Materials/Parts
Lockwasher (30) (Item 84, Appendix G)
Lockwasher (8) (Item 82, Appendix G)
Seal, Nonmetallic (2) (Item 254, Appendix G)

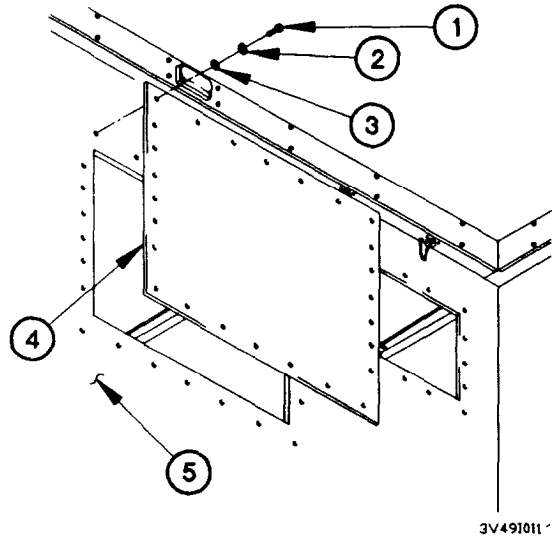
Personnel Required
(4)

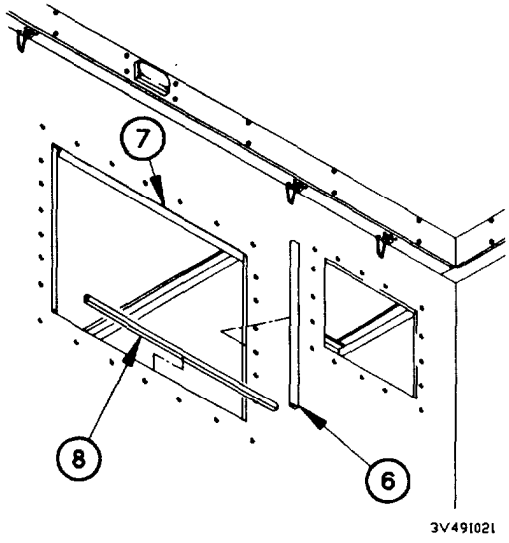
a. Installation.

NOTE

Retain cover and hardware for future use.

(1) Remove 30 screws (1), lockwashers (2), washers (3), and cover (4) from van wall (5). Discard lockwashers.

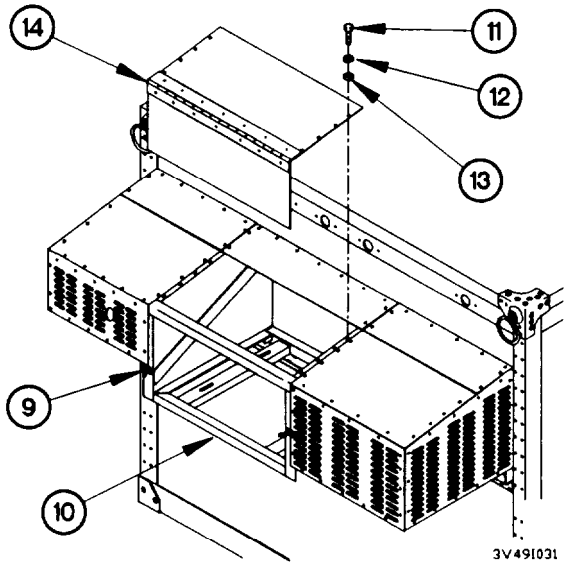




(2) Install seal (6) on left and right side of opening (7).

(3) Install seal (8) on top and bottom of opening (7).

20-81. M1079 AIR CONDITIONER KIT INSTALLATION/REMOVAL (CONT)

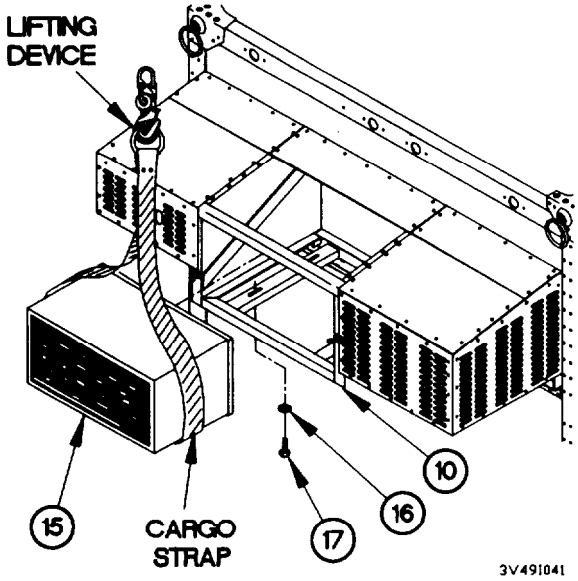


(4) Release two latches (9) on pod (10).

(5) Remove eight screws (11), lockwashers (12), washers (13), and center top front cover (14) from pod (10). Discard lockwashers.

WARNING

Air conditioner weighs approximately 300 lbs (136 kg). Attach a suitable lifting device prior to installation. Failure to comply may result in injury to personnel.



CAUTION

Use care when positioning air conditioner in van pod. Failure to comply may result in damage to air conditioner, pod panel, or seals.

NOTE

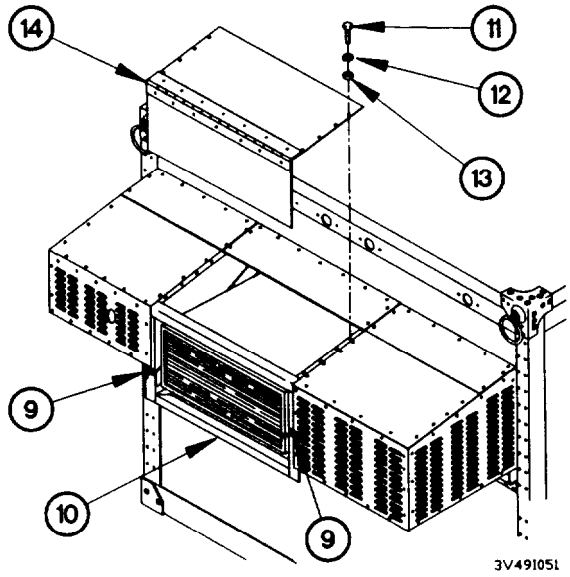
Step (6) requires the aid of three assistants.

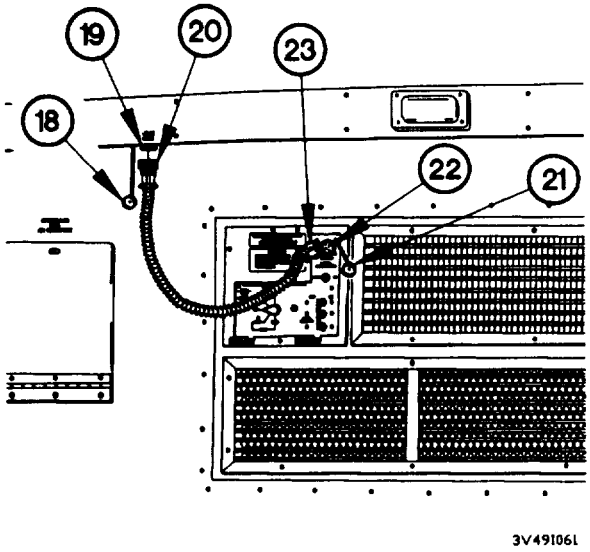
(6) Position air conditioner (15) in pod (10) with four washers (16) and screws (17).

(7) Tighten four screws (17) to 27-29 lb-ft (N•M).

(8) Install center top front cover (14) on pod (10) with eight washers (13), lockwashers (12), and screws (11).

(9) Latch two latches (9) on pod (10).





(10) Remove dust cap (18) from connector J242 (19).

(11) Connect connector P242 (20) to connector J242 (19).

(12) Remove dust cap (21) from power input connector (22).

(13) Connect connector J242A (23) to power input connector (22).

b. Removal.

(1) Disconnect connector J242A (1) from power input connector (2).

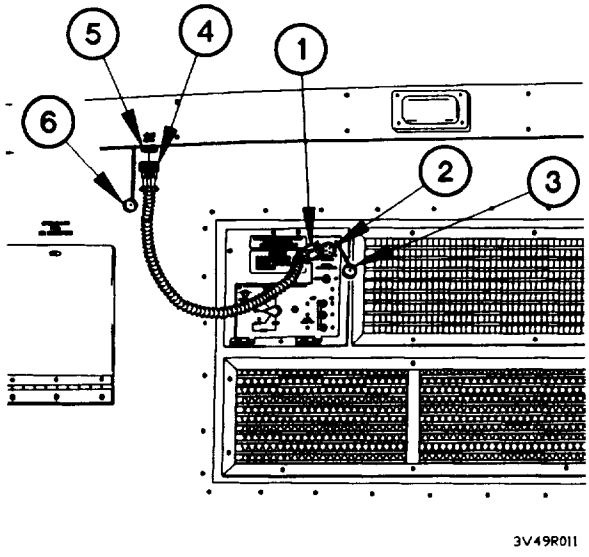
(2) Install dust cap (3) on power input connector (2).

NOTE

Retain air conditioner power cable for future use.

(3) Disconnect connector P242 (4) from connector J242 (5).

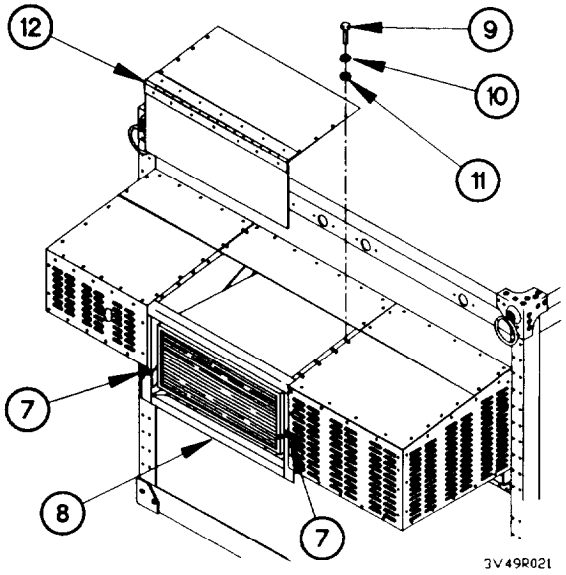
(4) Install dust cap (6) on connector J242 (5).



20-81. M1079 AIR CONDITIONER KIT INSTALLATION/REMOVAL (CONT)

(5) Release two latches (7) on pod (8).

(6) Remove eight screws (9), lockwashers (10), washers (11), and center top front cover (12) from pod (8). Discard lockwashers.



(7) Remove four screws (13) and washers (14) from pod (8).

WARNING

Air conditioner weighs approximately 300 lbs (136 kg). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel.

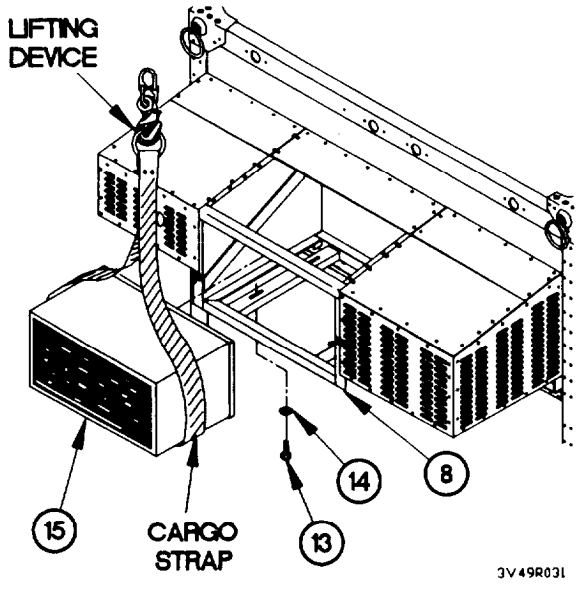
CAUTION

Use care when removing air conditioner from van pod. Failure to comply may result in damage to equipment.

NOTE

Step (8) requires the aid of three assistants.

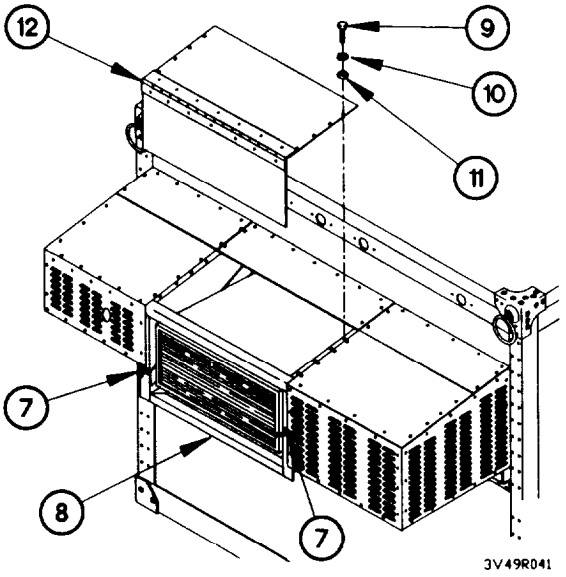
Retain air conditioner and hardware for future use.

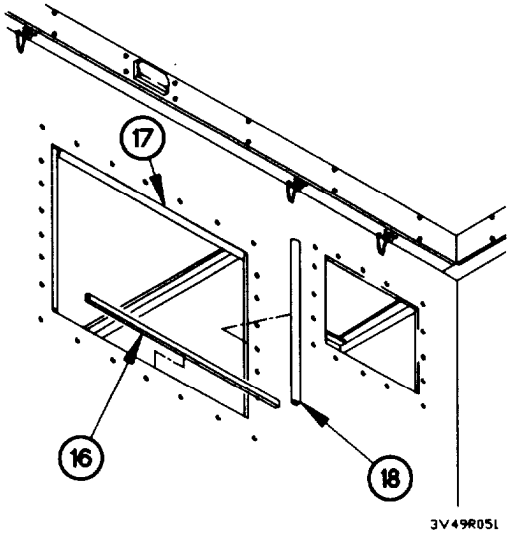


(8) Remove air conditioner (15) from pod (8).

(9) Install center top front cover (12) on pod (8) with eight washers (11), lockwashers (10), and screws (9).

(10) Latch two latches (7) on pod (8).

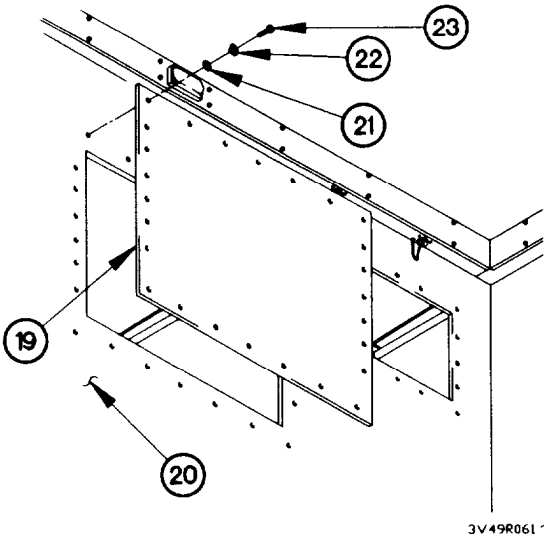




(11) Remove seals (18) from top and bottom of opening (17). Discard seals.

(12) Remove seals (18) from left and right side of opening (17). Discard seals.

(13) Install cover (19) on van wall (20) with 30 washers (21), lockwashers (22), and screws (23).



20-81. M1079 AIR CONDITIONER KIT INSTALLATION/REMOVAL (CONT)

c. Follow-On Maintenance.

(1) Raise spare tire (TM 9-2320-365-10).

(2) Lower cab (TM 9-2320-365-10).

(3) Connect batteries (para 7-48).

(4) Connect AC power (TM 9-2320-365-10).

(5) Operate air conditioner and check for proper operation (TM 9-2320-385-10).

(8) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-82. M1079 A/C POWER CABLE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
AC power disconnected (TM 9-2320-385-10).
LH and RH doors opened (115 degrees) (TM 9-2320-385-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)

a. Removal.

(1) Disconnect connector P242 (1) from connector J242 (2).

(2) Disconnect connector J242A (3) from A/C power connector (4).

b. Installation

(1) Connect connector J242A (3) to A/C power connector (4).

(2) Connect connector P242 (1) to connector J242 (2).

c. Follow-On Maintenance.

(1) Connect AC power (TM 9-2320-365-10).

(2) Close LH and RH doors (TM 9-2320-365-10).

End of Task.

20-83. AMBER WARNING LIGHT ASSEMBLY REPAIR

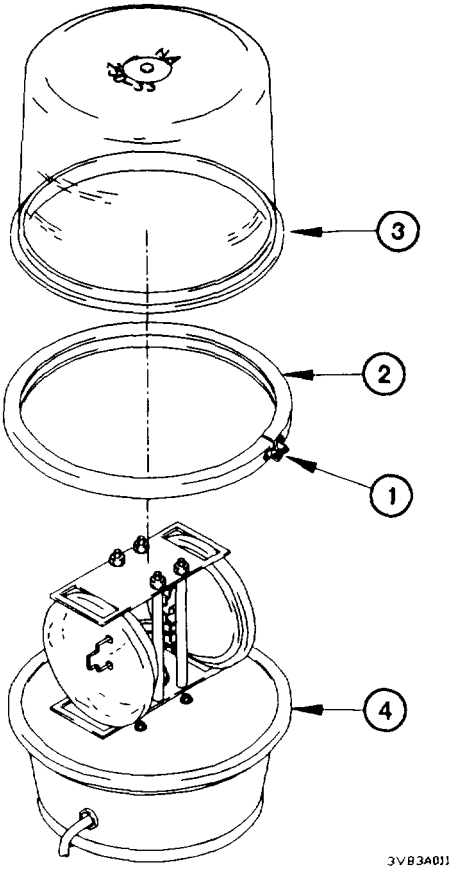
This task covers:

a. Disassembly
b. Assembly
c. Follow-On Maintenance

INITIAL SETUP

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Lockwasher (4) (Item 68, Appendix G)



a. Disassembly.

(1) Loosen screw (1) on clamp (2).

(2) Remove lens (3) from lamp housing (4).

(3) Remove clamp (2) from lamp housing (4).

NOTE

Perform step (4) on amber warning lights equipped with nuts containing a captive lockwasher.

(4) Remove four self-locking nuts (5) and lamp mounting plate (8) from mounting studs (7). Discard self-locking nuts.

NOTE

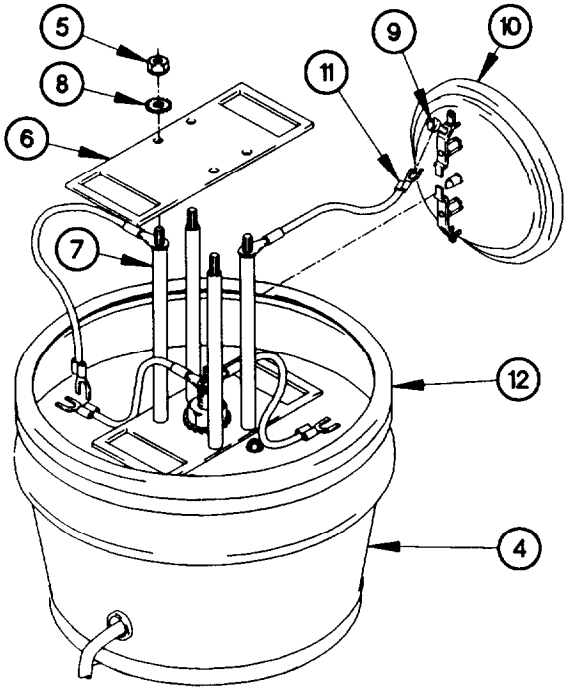
Perform step (5) on amber warning lights equipped with nuts and lockwashers.

(5) Remove four nuts (5), lockwashers (8), and lamp mounting plate (6) from mounting studs (7). Discard lockwashers.

(6) Loosen four screws (9) on two lamps (10).

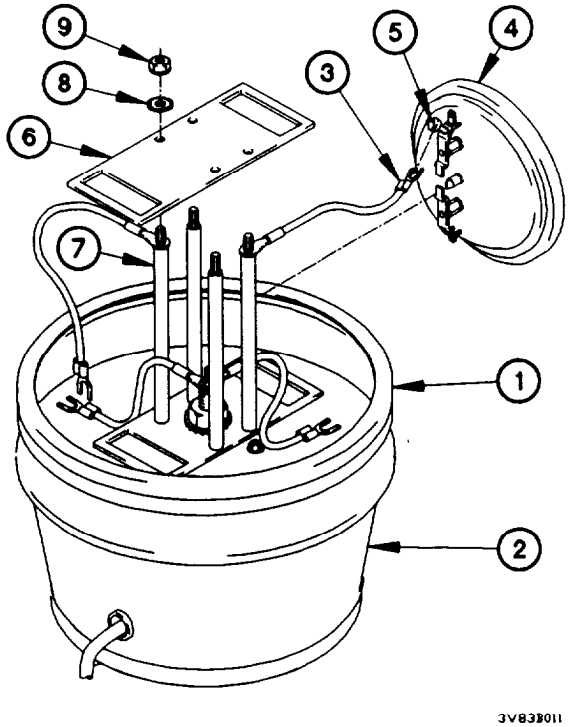
(7) Remove four terminal lugs (11) from two lamps (10).

(8) Remove seal (12) from lamp housing (4).



3V83A021

b. Assembly.



3V83B011

(1) Install seal (1) on lamp housing (2).

(2) Install four terminal lugs (3) on two lamps (4) with four screws (5).

(3) Install lamp mounting plate (6) on four mounting studs (7) with lockwashers (8) and nuts (9).

20-83. AMBER WARNING LIGHT ASSEMBLY REPAIR (CONT)

(4) Position clamp (10) on lamp housing (2).

(5) Install lens (11) on lamp housing (2).

(6) Tighten screw (12) in clamp (10).

c. Follow-On Maintenance.

Operate amber warning light and check for proper operation (TM 9-2320-365-10).

End of Task.

20-84. M1078/M1081 S-280 SHELTER MODELS A, B, OR C TIEDOWN KIT INSTALLATION/REMOVAL

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Cargo side panels removed (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Sling, Cargo (2) (Item 31, Appendix C)

Materials/Parts
2x4x48 in. (122 cm) wooden piece (S-280 shelter models A or B only)

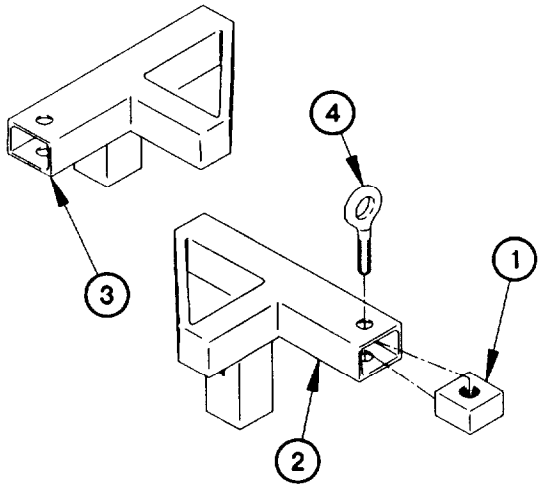
Personnel Required
(2)

NOTE

This paragraph is for shelter models A, B, or C with an overall height of 83 1/2 to 89 in. (214 to 226 cm). If shelter height is below 83 1/2 in. (214 cm), shorten cable for proper removal of slack in turnbuckle assembly.

a. Installation.

(1) Install four threaded blocks (1) in two tiedowns (2 and 3) with four eyebolts (4).



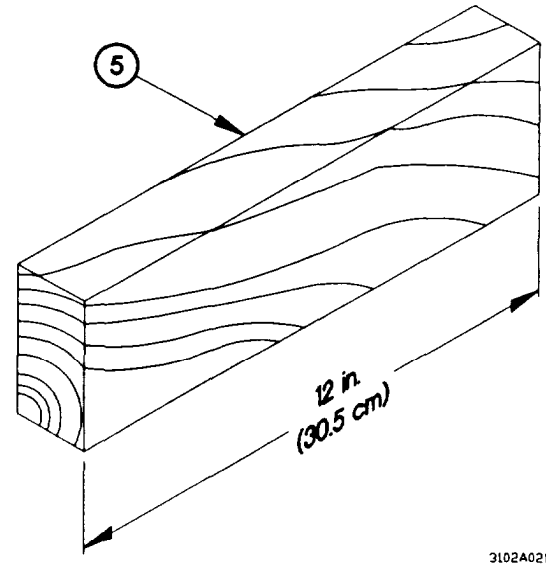
3102A011

20-84. M1078/M1081 S-280 SHELTER MODELS A, B, OR C TIEDOWN KIT INSTALLATION/REMOVAL (CONT)

NOTE

Perform step (2) on S-280 shelter models A or B.

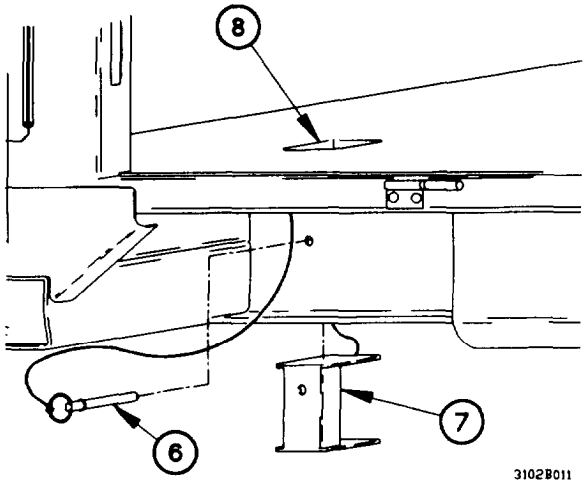
(2) Cut 2x4 (5) into four 12 in. (30.5 cm) pieces.



WARNING

Ensure cargo bed is free of equipment and debris and is not warped or damaged in any way. Failure to comply may result in serious injury or death to personnel or damage to equipment.

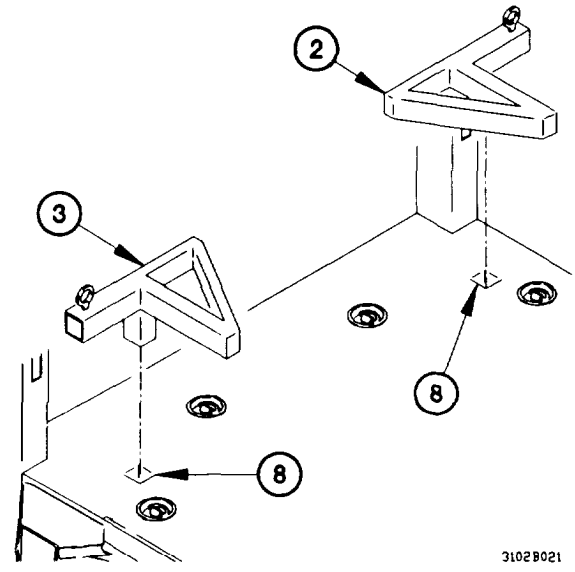
(3) Remove four quick release pins (6) and plugs (7) from cargo bed pockets (8).



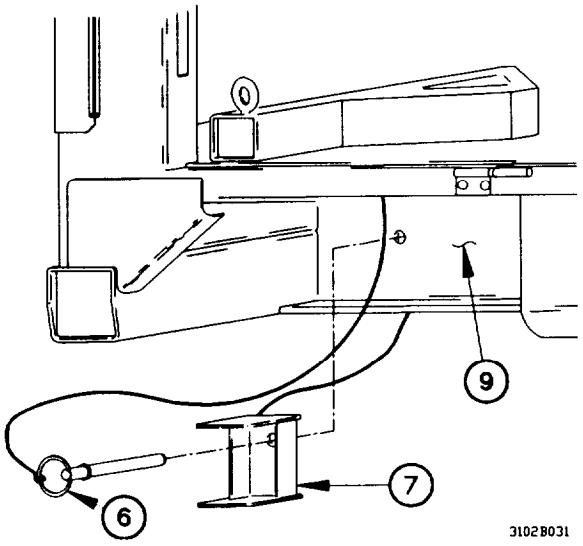
NOTE

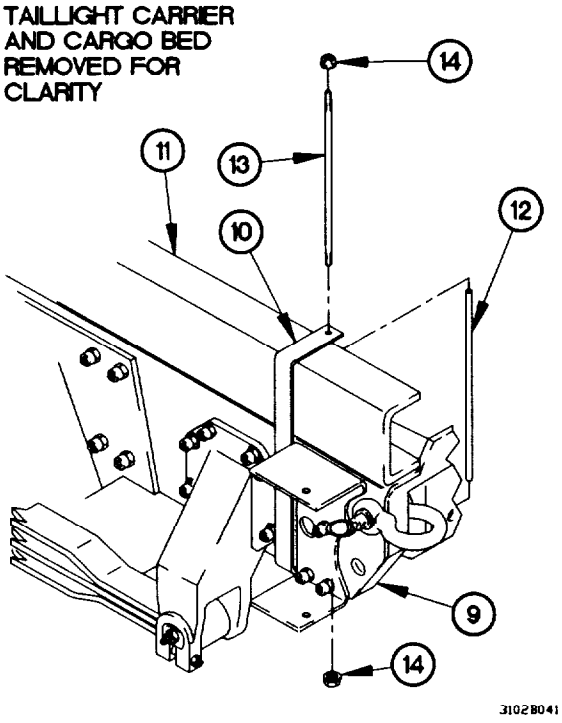
Tiedowns are positioned with eyebolts toward four corners of cargo bed.

(4) Install two tiedowns (2 and 3) in four cargo bed pockets (8).



(5) Install four plugs (7) in cargo bed frame (9) with four quick release pins (6).





CAUTION

Ensure at least two whole threads are showing past nuts after installation. Failure to comply may result in damage to equipment.

NOTE

- Left and right clamps are installed the same way. Left clamp shown.
- Perform steps (6) and (7) on M1078.

(6) Install clamp (10) on frame rail (9) and subframe rail (11) with spacer (12), tie-rod (13), and two self-locking nuts (14).

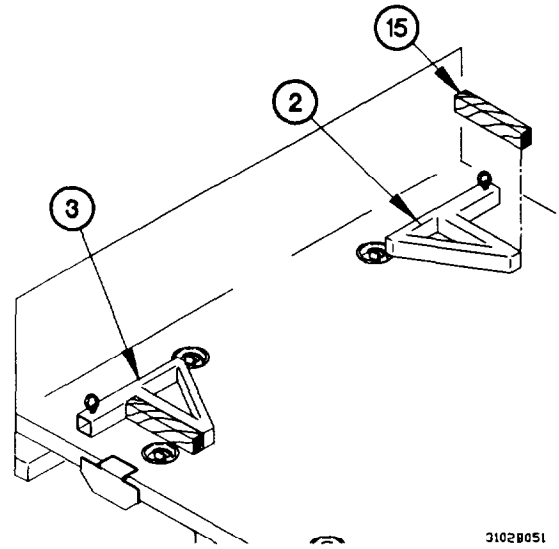
(7) Perform step (6) on right clamp.

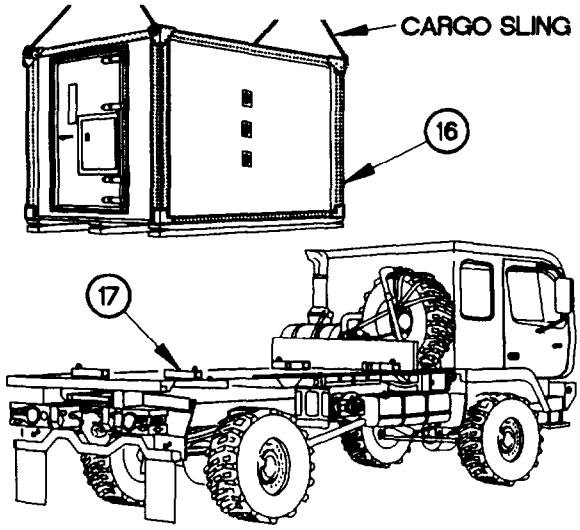
20-84. M1078/M1081 S-280 SHELTER MODELS A, B, OR C TIEDOWN KIT INSTALLATION/REMOVAL (CONT)

NOTE

Perform step (8) on S-280 shelter models A or B.

(8) Install four 12 in. wooden pieces (15) on two tiedowns (2 and 3).





WARNING

S-280 shelter weighs approximately 1500 lbs (680 kgs) empty. Attach a suitable lifting device prior to installation. Failure to comply may result in serious injury or death to personnel or damage to equipment.

NOTE

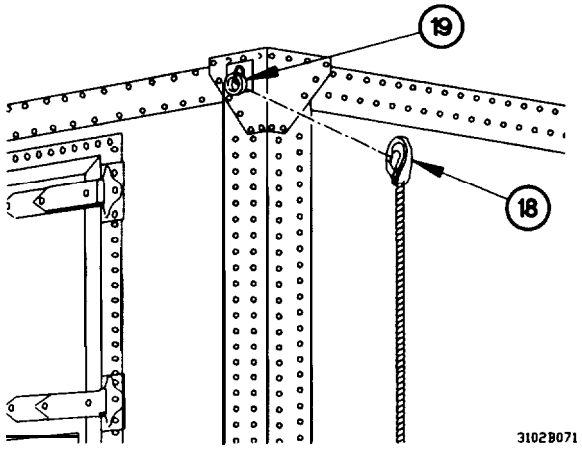
Steps (9) through (13) require the aid of an assistant.

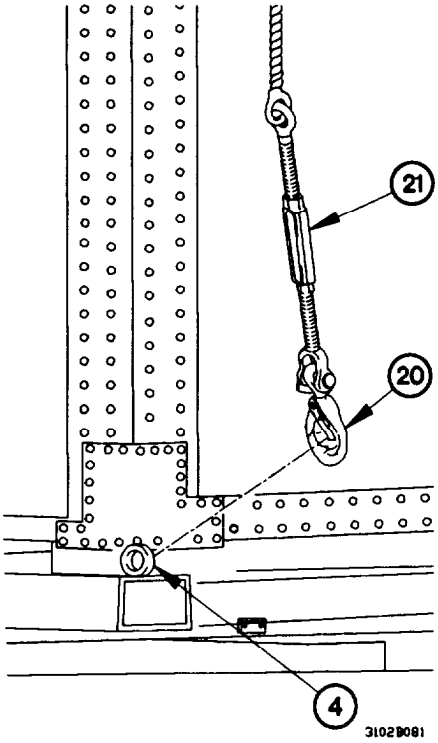
(9) Position S-280 shelter (16) on cargo bed (17).

NOTE

- All four tiedown cable assemblies are installed the same way. One shown.
- Large end of S-280 shelter tiedown ring points toward cargo bed.

(10) Install hook (18) on upper S-280 shelter tiedown ring (19).

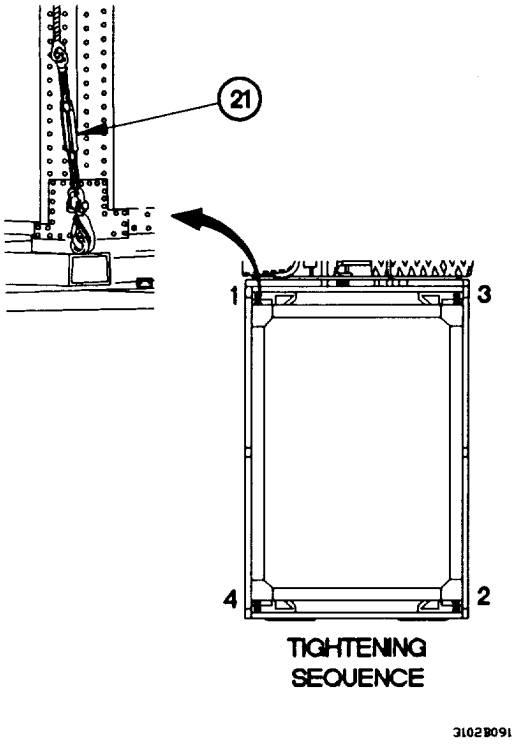




(11) Install hook (20) on eyebolt (4).

(12) Perform steps (10) and (11) on remaining tiedown cable assemblies.

(13) Remove slack from four turnbuckles (21).



(14) Tighten four turnbuckles (21) 1/2 turn in sequence shown.

(15) Perform step (14) four more times.

20-84. M1078/M1081 S-280 SHELTER MODELS A, B, OR C TIEDOWN KIT INSTALLATION/REMOVAL (CONT)

b. Removal.

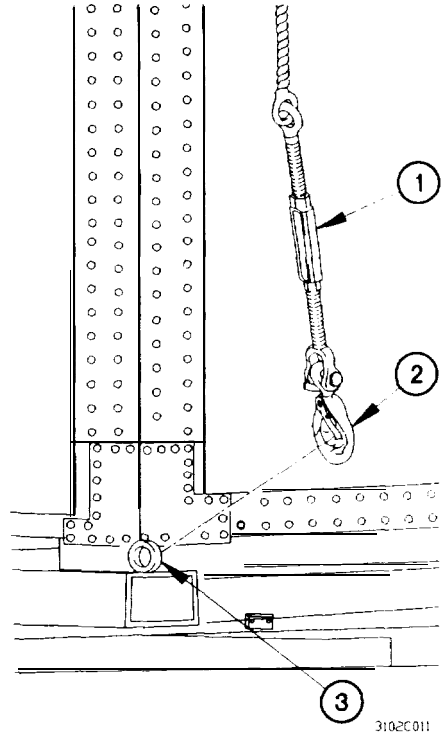
(1) Lower ladder (TM 9-2320-365-10).

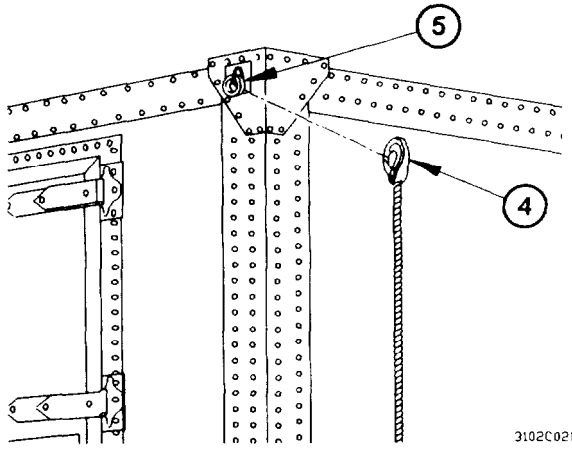
(2) Loosen four turnbuckles (1).

NOTE

All four tiedown cable assemblies are removed the same way. One shown.

(3) Remove hook (2) from eyebolt (3).





WARNING

S-280 shelter weighs approximately 1500 lbs (680 kgs) empty. Attach a suitable lifting device prior to removal. Failure to comply may result in serious injury or death to personnel or damage to equipment.

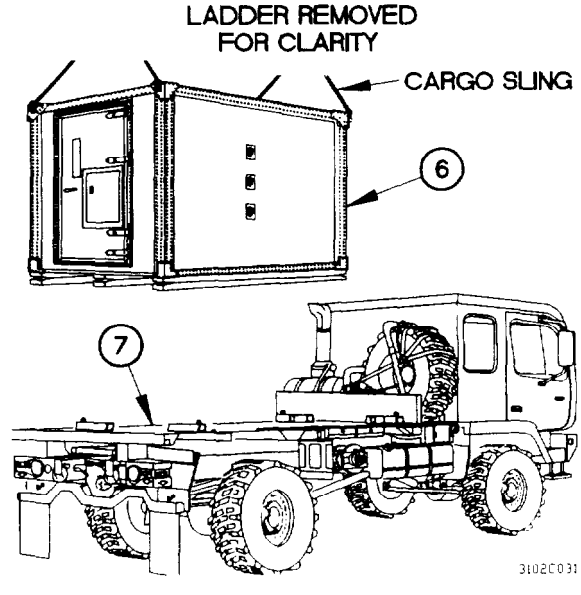
NOTE

Step (6) requires the aid of an assistant.

(6) Remove S-280 shelter (6) from cargo bed (7).

(4) Remove hook (4) from upper S-280 shelter tiedown ring (5).

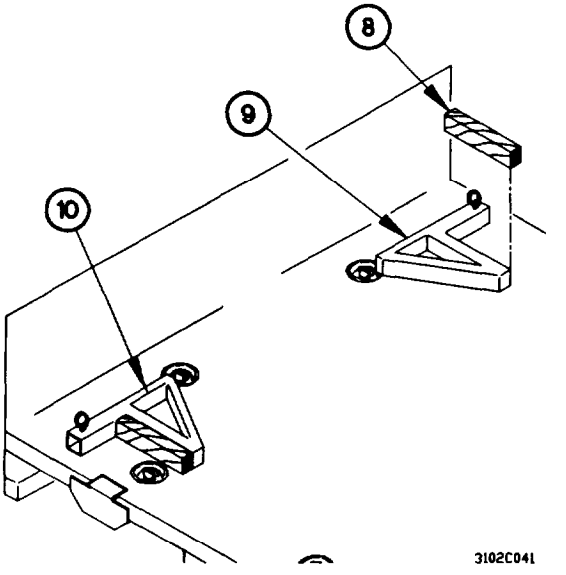
(5) Perform steps (3) and (4) on remaining tiedown cable assemblies.

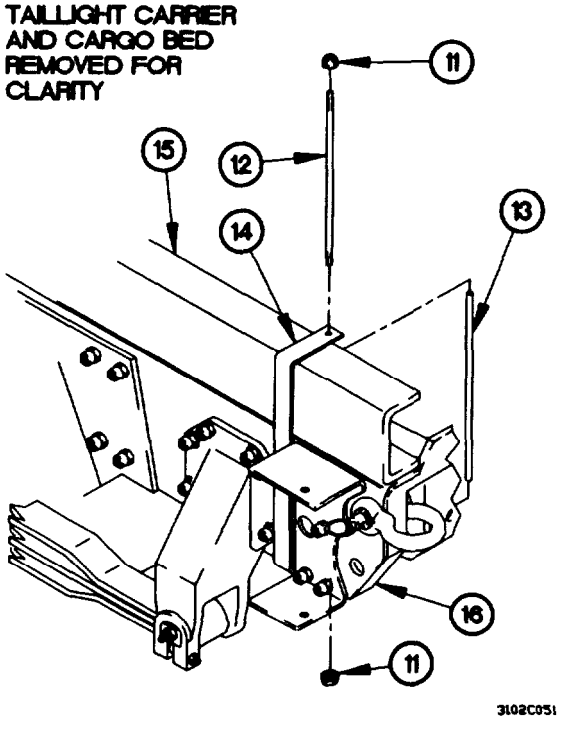


NOTE

Perform step (6) on S-280 shelter models A or B.

(6) Remove four 12 in. wooden pieces (8) from two tiedowns (9 and 10).





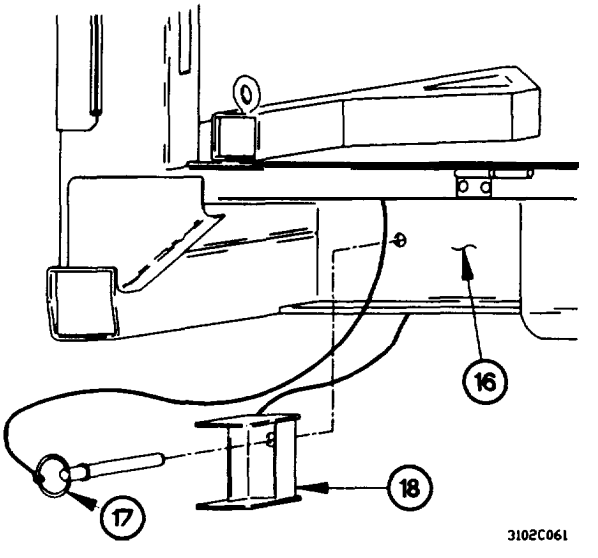
NOTE

- Left and right clamps are removed the same way. Left clamp shown.
- Perform step (7) and (8) on M1078.

(7) Remove two self-locking nuts (11), tie-rod (12), spacer (13), and clamp (14) from subframe rail (15) and frame rail (16).

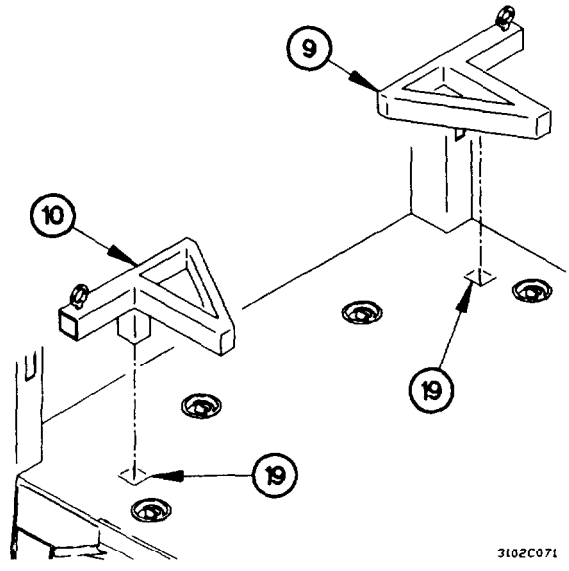
(8) Perform step (7) on right clamp.

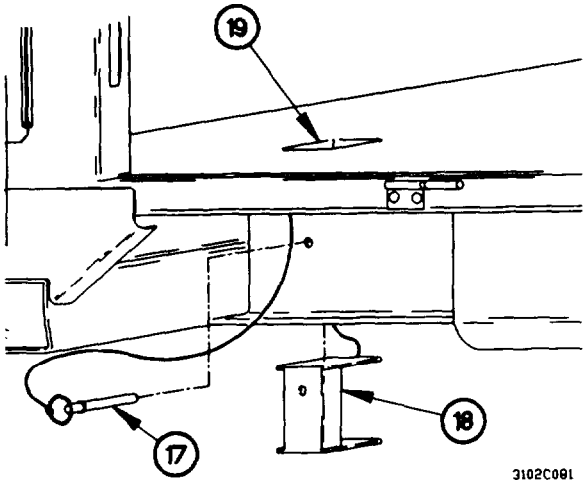
(9) Remove four quick release pins (17) and plugs (18) from cargo bed frame (16).



20-84. M1078/M1081 S-280 SHELTER MODELS A, B, OR C TIEDOWN KIT INSTALLATION/REMOVAL (CONT)

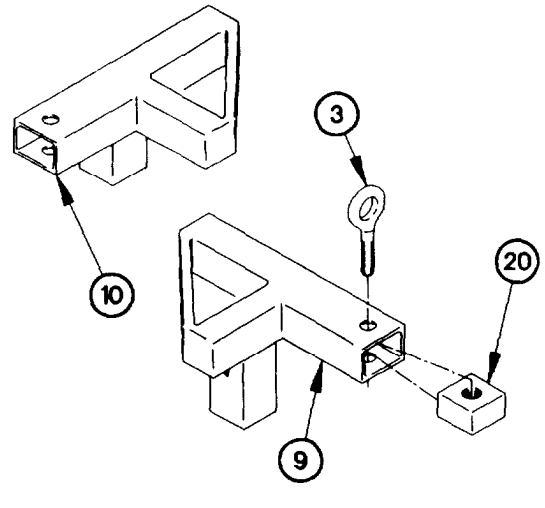
(10) Remove two tiedowns (9 and 10) from four cargo bed pockets (19).





(11) Install four plugs (18) in cargo bed pockets (19) with quick release pins (17).

(12) Remove four eyebolts (3) and threaded blocks (20) from two tiedowns (9 and 10).



c. Follow-On Maintenance.

Install cargo side panels (TM 9-2320-365-10).

End of Task.

CHAPTER 21
ARMAMENT/SIGHTING AND FIRE CONTROL MATERIEL MAINTENANCE

Section I. INTRODUCTION 21-1
21-1. INTRODUCTION 21-1

Section II. MAINTENANCE PROCEDURES 21-2
21-2. MACHINE GUN RING REPLACEMENT 21-2
21-3. MACHINE GUN RING LOWER PLATFORM REPLACEMENT 21-5
21-4. MACHINE GUN RING TOP PLATFORM REPLACEMENT 21-7
21-5. MACHINE GUN RING CENTER SEAT REPLACEMENT 21-8
21-6. MACHINE GUN RING ROOF SUPPORT REPLACEMENT 21-10
21-7. SMALL ARMS MOUNTREPLACEMENT 21-12

Section I. INTRODUCTION

21-1. INTRODUCTION

This chapter contains maintenance instructions for replacing armament/sighting and fire control materiel components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

Section II. MAINTENANCE PROCEDURES

21-2. MACHINE GUN RING REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Crowfoot Attachment, Socket Wrench (Item 10, Appendix B)

a. Removal.

(1) Remove 12 mounting screws (1) and washers (2) from machine gun ring (3).

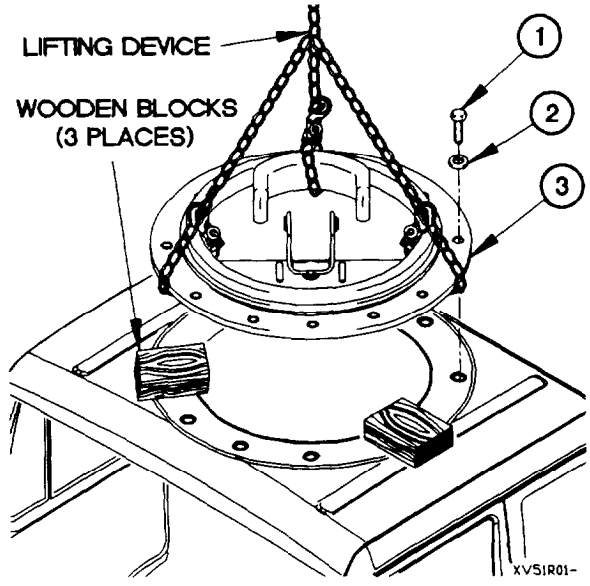
(2) Place wooden blocks on cab roof.

WARNING

Machine gun ring assembly weighs approximately 350 pounds (159 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

(3) Place machine gun ring (3) on wooden blocks on cab roof.

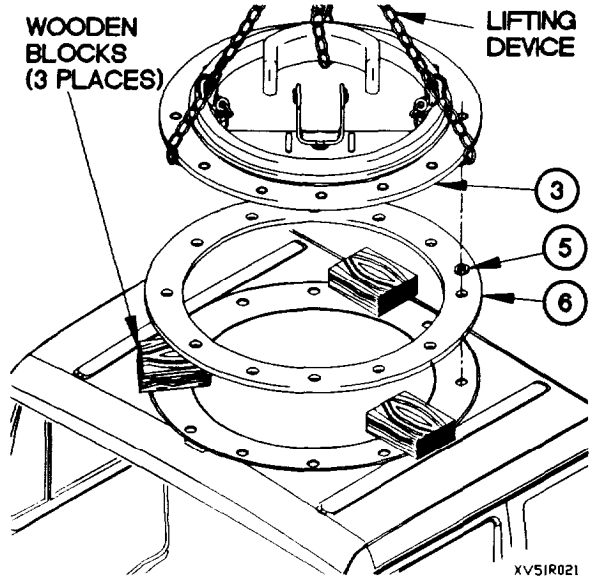
(4) Reposition lifting device on machine gun ring (3).



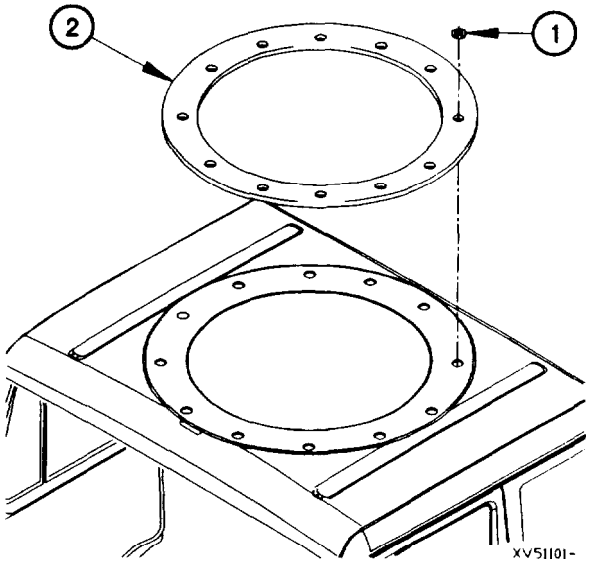
(5) Remove machine gun ring (3) from cab roof.

(6) Remove three wooden blocks from cab roof.

(7) Remove 12 washers (4) and gasket (5) from cab roof.



b. Installation.



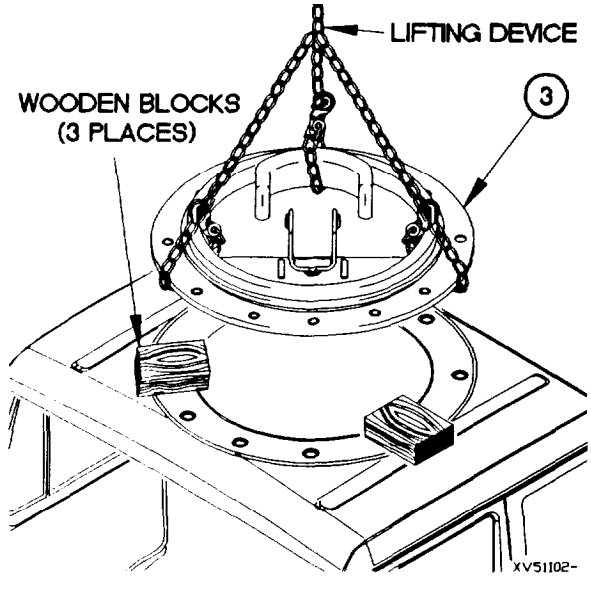
(1) Position 12 washers (1) and gasket (2) on cab roof.

WARNING

Machine gun ring assembly weighs approximately 350 pounds (159 kgs). Attach a suitable lifting device prior to removal. Failure to comply may result in injury to personnel or damage to equipment.

(2) Place wooden blocks on cab roof.

(3) Position machine gun ring (3) on cab roof on wooden blocks.



21-2. MACHINE GUN RING REPLACEMENT (CONT)

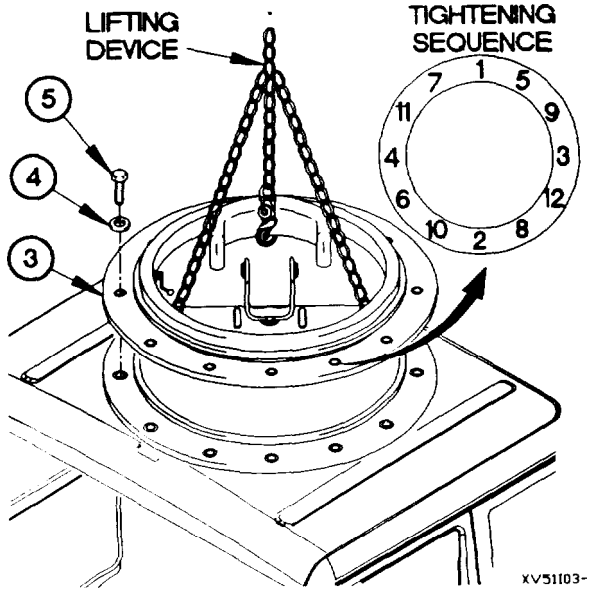
(4) Reposition lifting device on machine gun ring (3).

(5) Remove three wooden blocks from cab roof.

(6) Position machine gun ring (3) on cab roof.

(7) Position 12 mounting washers (4) and screws (5) in machine gun ring (3).

(8) Tighten mounting screws (5) to 49-60 lb-ft (66-81 N•m).



End of Task.

21-3. MACHINE GUN RING LOWER PLATFORM REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Materials/Parts
Pin, Cotter (2) (Item 204, Appendix G)

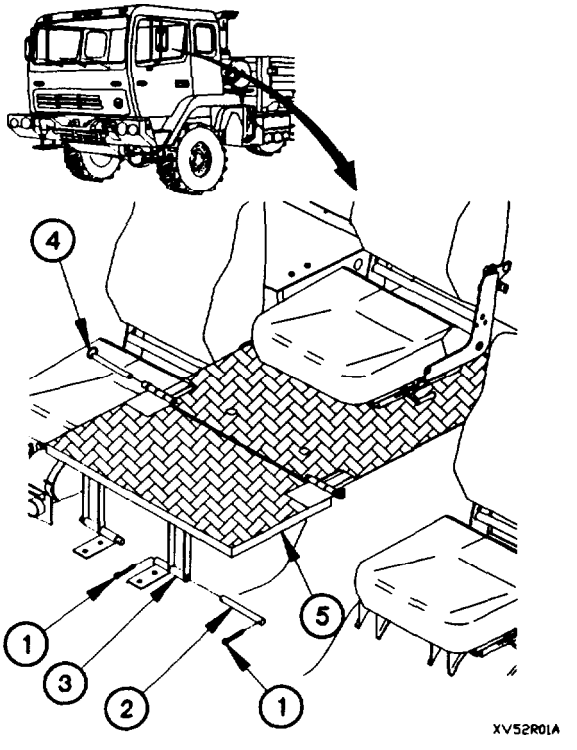
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

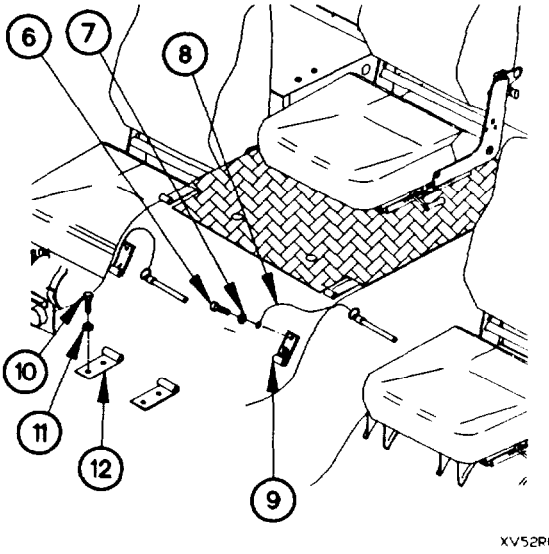
a. Removal.

(1) Remove four cotter pins (1) and straight pins (2) from two legs (3). Discard cotter pins.

(2) Remove two quick-release pins (4) from platform (5).

(3) Remove platform (5) from cab.





(4) Remove four screws (6), washers (7), and two lanyards (8) from two brackets (9).

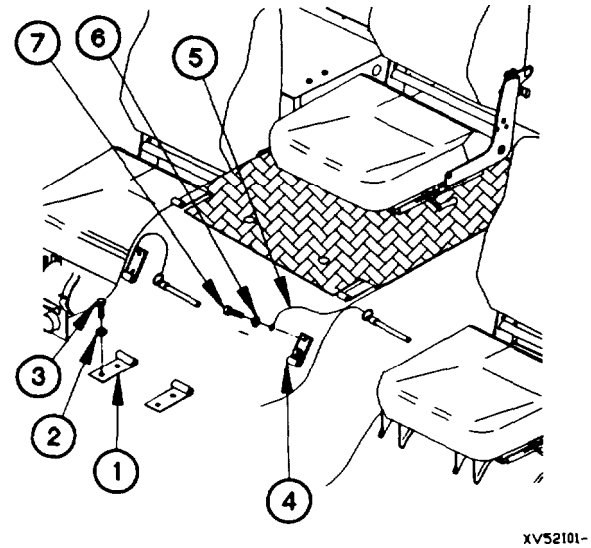
(5) Remove four screws (10), washers (11), and two brackets (12) from cab floor.

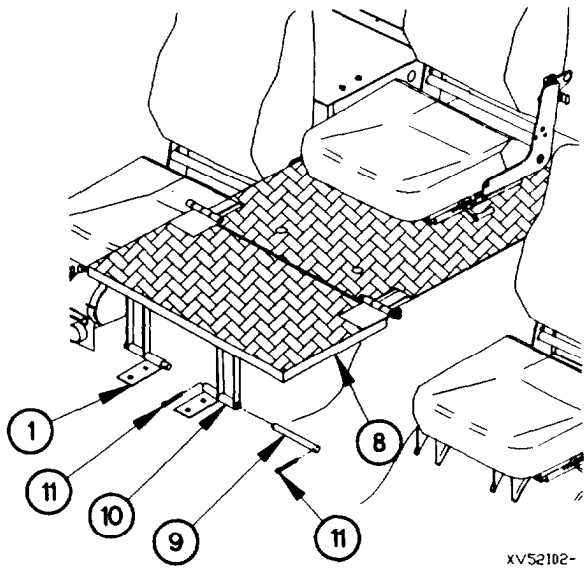
21-3. MACHINE GUN RING LOWER PLATFORM REPLACEMENT (CONT)

b. Installation.

(1) Install two brackets (1) with four washers (2) and screws (3).

(2) Install two brackets (4) and lanyards (5) with four washers (6) and screws (7).





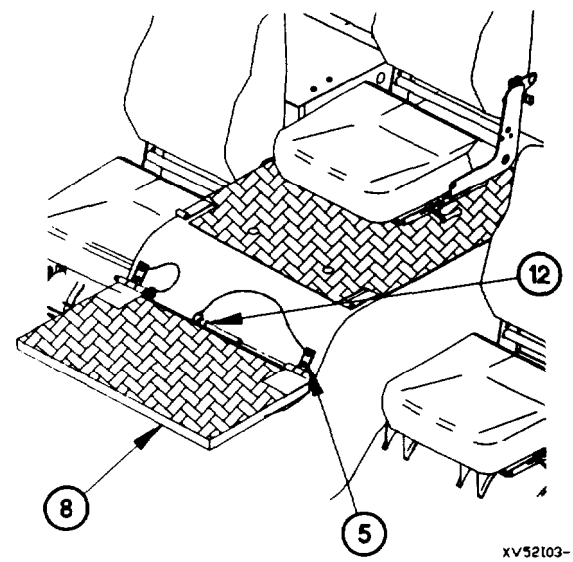
(3) Position platform (8) on two brackets (1).

(4) Install two straight pins (9) in legs (10).

(5) Install four cotter pins (11) in two straight pins (9).

(6) Place platform (8) in storage position.

(7) Install two quick-release pins (12) in platform (8) and two brackets (4).



End of Task.

21-4. MACHINE GUN RING TOP PLATFORM REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Machine gun ring, center seat removed (para 21-5).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

a. Removal.

(1) Remove two screws (1) and washers (2), from platform (3).

(2) Remove platform (3) from cab.

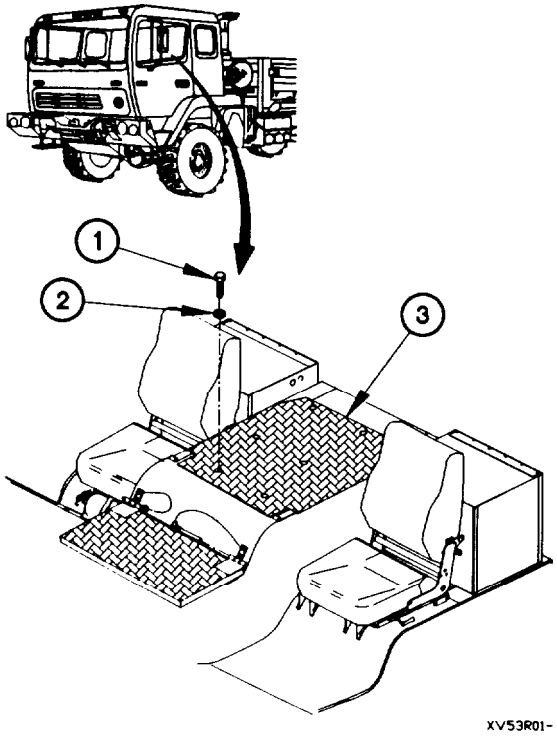
b. Installation.

Install platform (3) in cab with two washers (2) and screws (1).

c. Follow-On Maintenance.

Install machine gun ring center seat (para 21-5).

End of Task.



21-5. MACHINE GUN RING CENTER SEAT REPLACEMENT

This task covers:

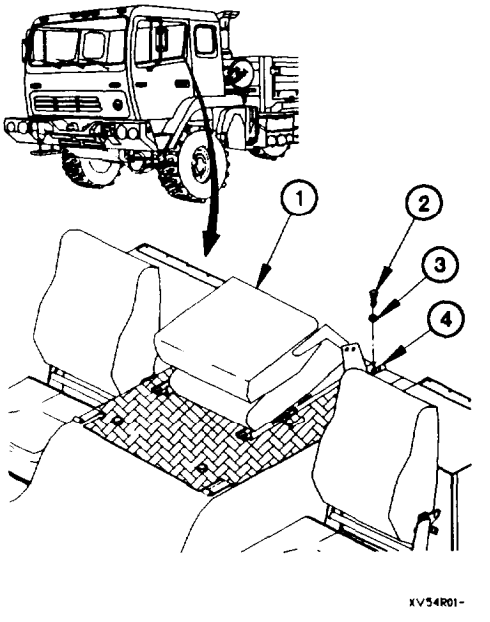
a. Removal

b. Installation

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

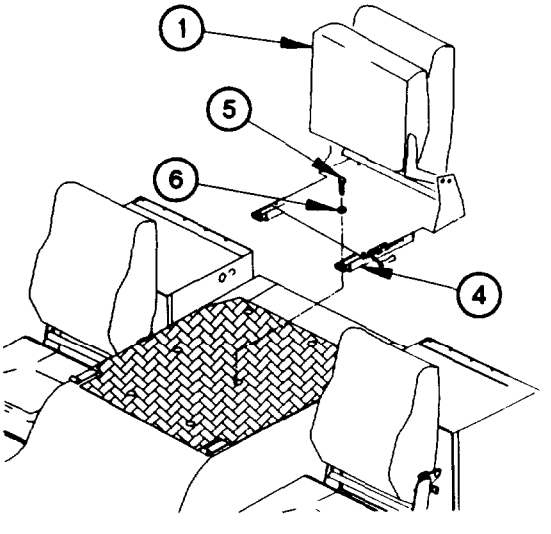


XV54R01-

a. Removal.

(1) Fold back of seat (1) down and slide fully forward.

(2) Remove two screws (2) and washers (3) from seat mount (4).



XV54R02-

(3) Slide seat (1) fully rearward.

(4) Remove two screws (5) and washers (6) from seat mount (4).

(5) Remove seat (1) from cab.

b. Installation.

NOTE

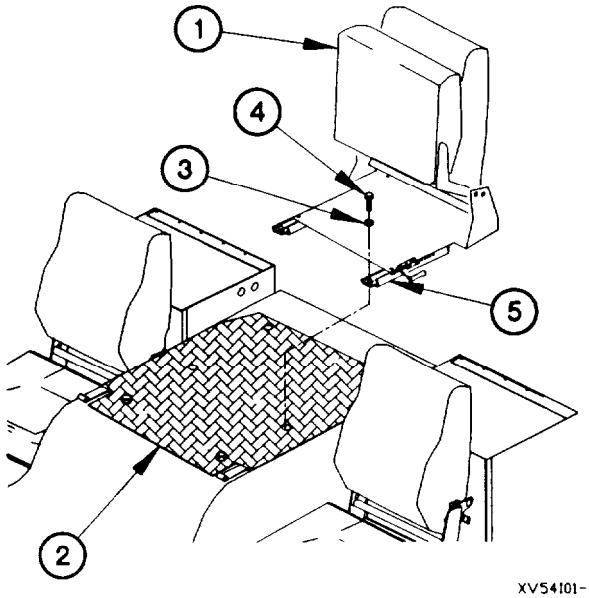
Install center seat in folded and raised position with seat rails in the forward position.

(1) Position seat (1) on platform (2).

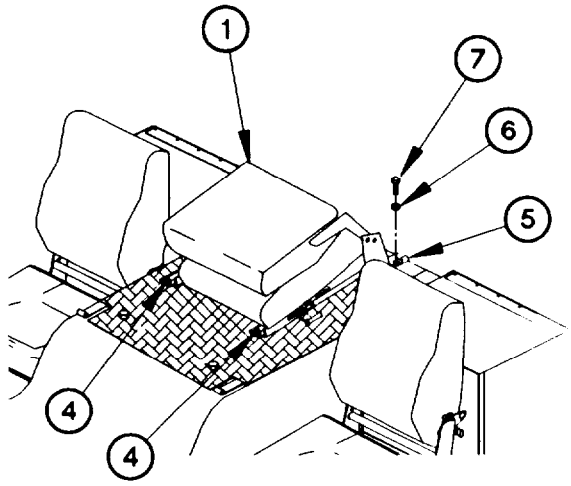
NOTE

Install screws with flat sides of screw in line with seat tracks.

(2) Position two washers (3) and screws (4) in seat mount (5).



XV54101-



XV54102-

(3) Slide seat (1) fully forward.

(4) Fold seat (1) down.

(5) Position two washers (6) and screws (7) in seat mount (5).

NOTE

When tightening screws, ensure flat sides of screws are in line with track sides.

(6) Tighten four screws (4) and (7) and recheck movement.

End of Task.

21-6. MACHINE GUN RING ROOF SUPPORT REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

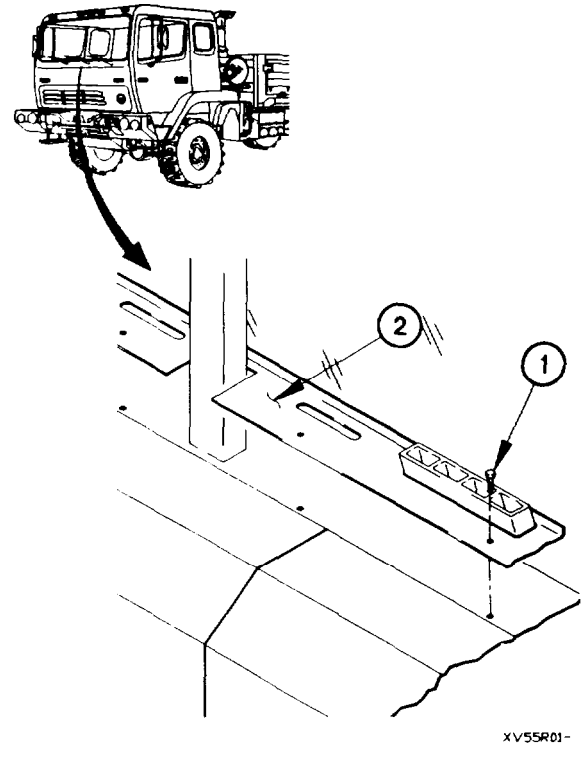
Equipment Conditions
Engine shut down (TM 9-2320-365-10).

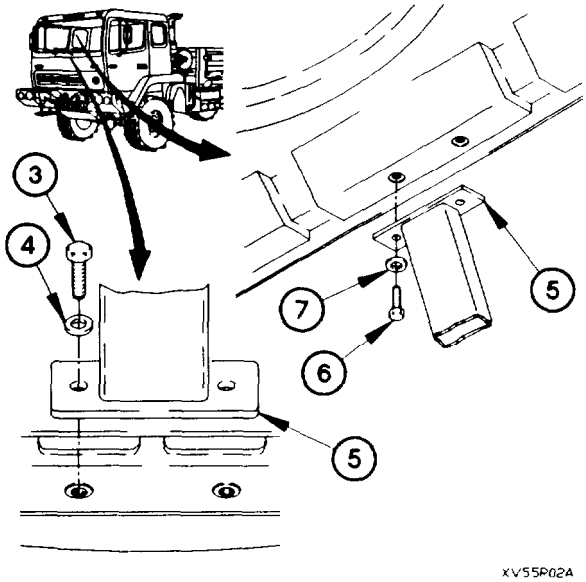
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)

Materials/Parts
Sealing Compound (Item 62, Appendix D)

a. Removal.

(1) Remove six screws (1) and defrost panel (2) from cab.





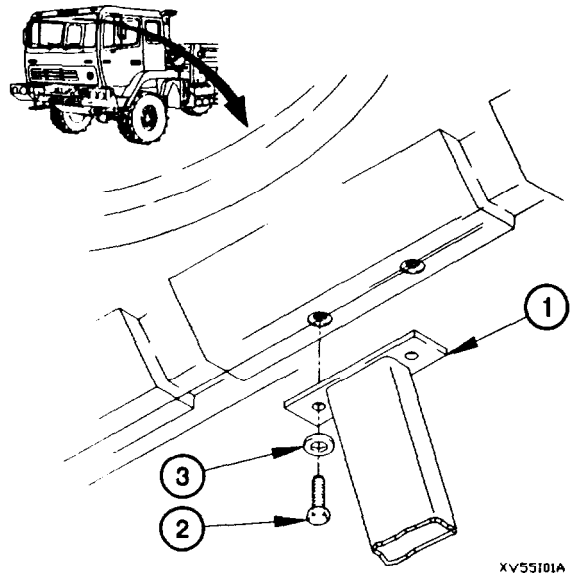
(2) Remove two screws (3) and washers (4) from roof support (5).

(3) Remove two screws (6) and washers (7) from roof support (5).

(4) Remove roof support (5) from cab.

b. Installation.

(1) Position roof support (1) in cab.

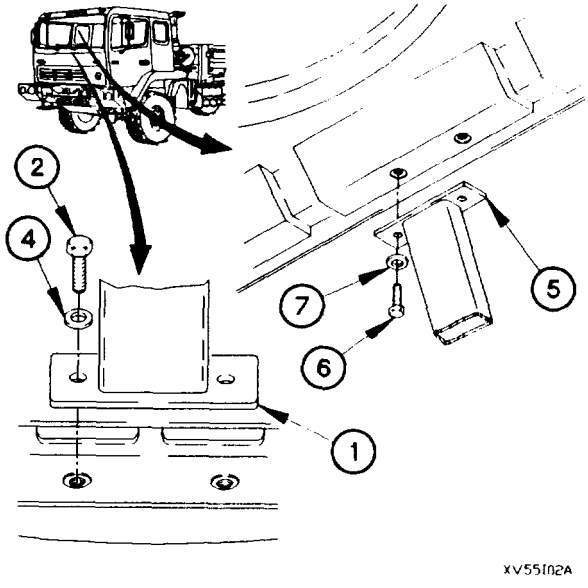


WARNING

Adhesive sealant MIL-S-46163 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. Failure to comply may result in injury to personnel.

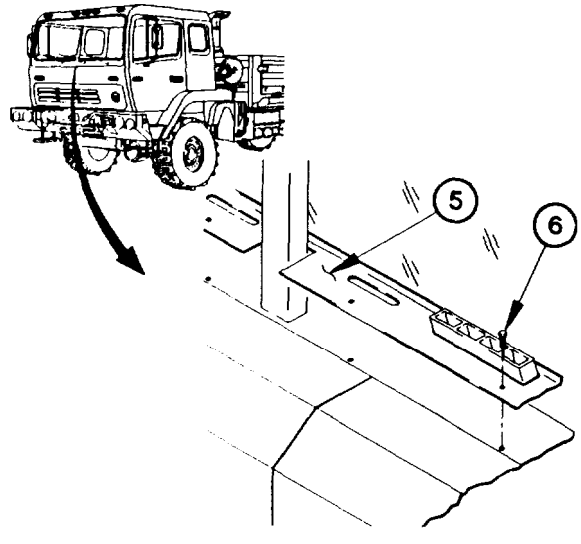
(2) Apply adhesive sealant to threads of four screws (2).

(3) Position two washers (3) and screws (2) in roof support (1).



(4) Position two washers (4) and screws (2) in roof support (1).

(5) Tighten four screws (2) to 21-23 lb-ft (28-31 N•m).



(6) Install defrost panel (5) with six screws (6).

End of Task.

21-7. SMALL ARMS MOUNT REPLACEMENT

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).

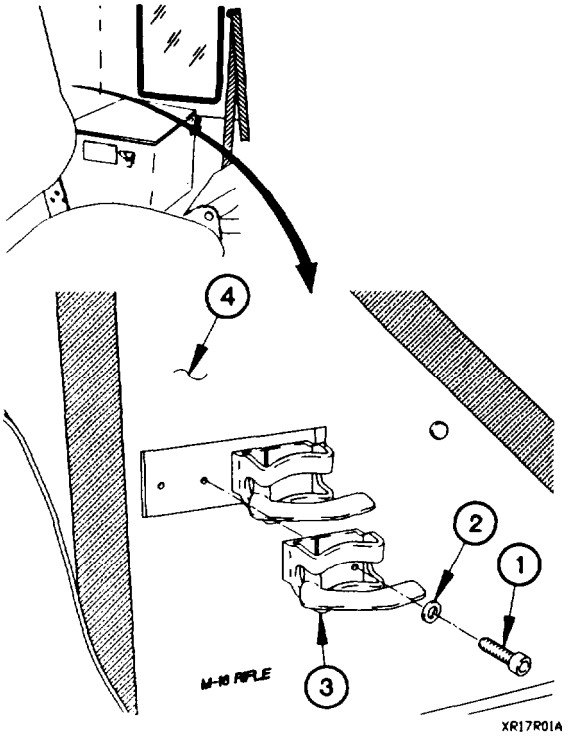
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Socket Set, Socket Wrench (Item 35, Appendix C)

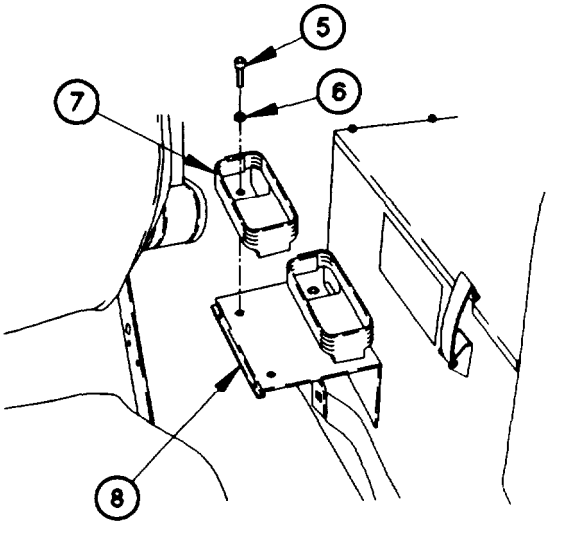
a. Removal.

NOTE

All three small arms mounts are removed the same way. Driver's side shown.

(1) Remove two screws (1), washers (2), and storage rack (3) from back wall of cab (4).





(2) Remove two screws (5), washers (6), and weapon support (7) from support (8).

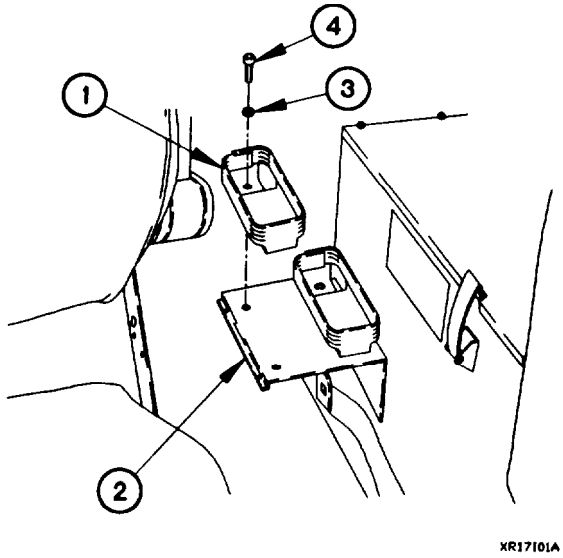
b. Installation.

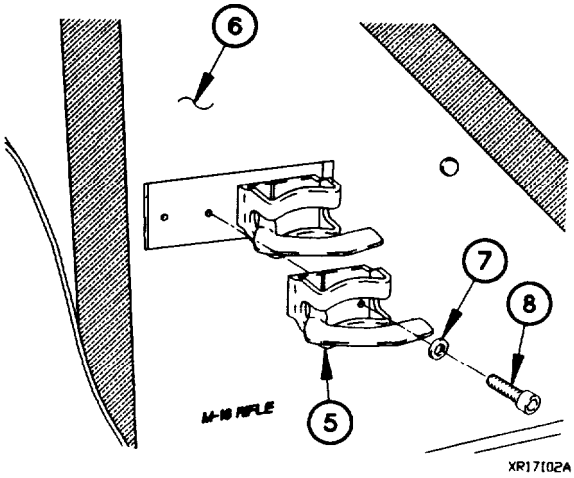
NOTE

All three small arms mounts are installed the same way. Driver's side shown.

(1) Position weapon support (1) on support (2) with two washers (3) and screws (4).

(2) Tighten two screws (4) to 36-44 lb-in. (4-5 N•m).





(3) Position storage rack (5) on back wall of cab (6) with two washers (7) and screws (8).

(4) Tighten two screws (8) to 36-44 lb-in. (4-5 N•m).

End of Task.

CHAPTER 22
ELECTRICAL ILLUMINATING EQUIPMENT MAINTENANCE

Section I. INTRODUCTION 22-1
22-1. INTRODUCTION 22-1

Section II. MAINTENANCE PROCEDURES 22-2
22-2. WARNING LIGHT CABLE ASSEMBLY REPLACEMENT 22-2

Section I. INTRODUCTION

22-1. INTRODUCTION

This chapter contains maintenance instructions for replacing electrical illuminating equipment authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

Section II. MAINTENANCE PROCEDURES

22-2. WARNING LIGHT CABLE ASSEMBLY REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Rear cab liner removed (para 16-13).
Kick panel removed (para 16-3).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

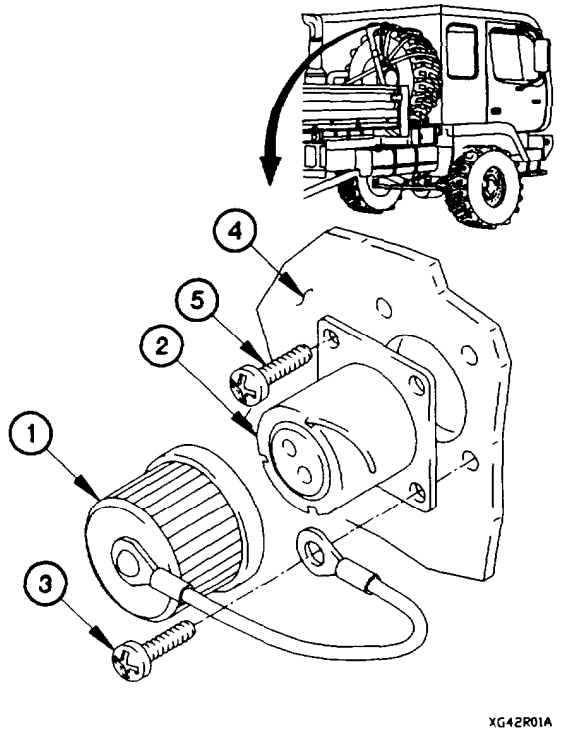
Material/Parts
Ties, Cable, Plastic (Item 76, Appendix D)

a. Removal.

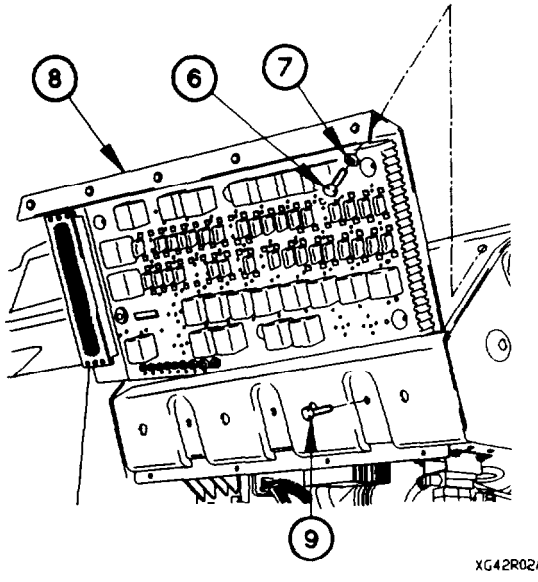
(1) Remove dustcap (1) from connector J62 (2).

(2) Remove screw (3) and dustcap (1) from cab (4).

(3) Remove three screws (5) and connector J62 (2) from cab (4).



XG42R01A



XG42R02A

(4) Remove three screws (6) and washers (7) from PDP (8).

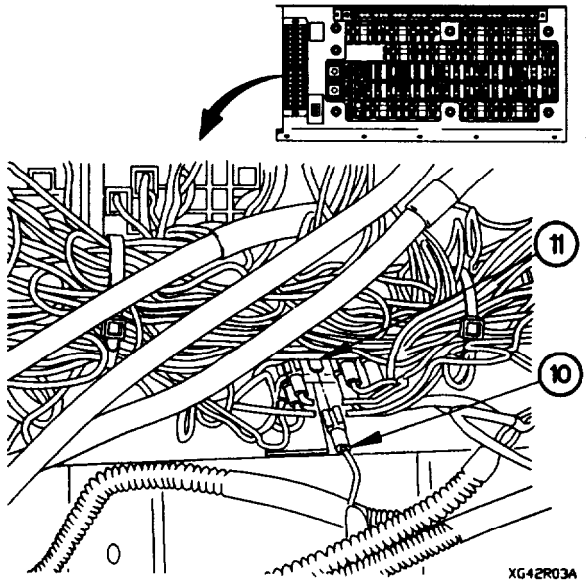
(5) Remove three screws (9) from PDP (8).

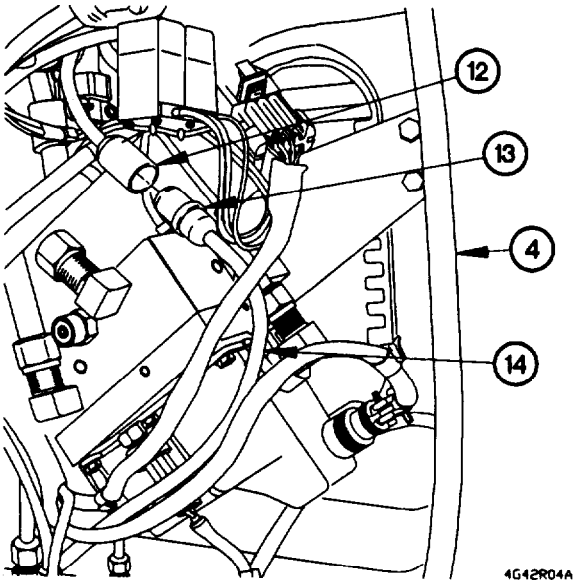
(6) Lift PDP (8) outward to gain access.

NOTE

Remove plastic cable ties as required.

(7) Disconnect terminal lug TL14 (10) from terminal board TB2 (11) position 12.



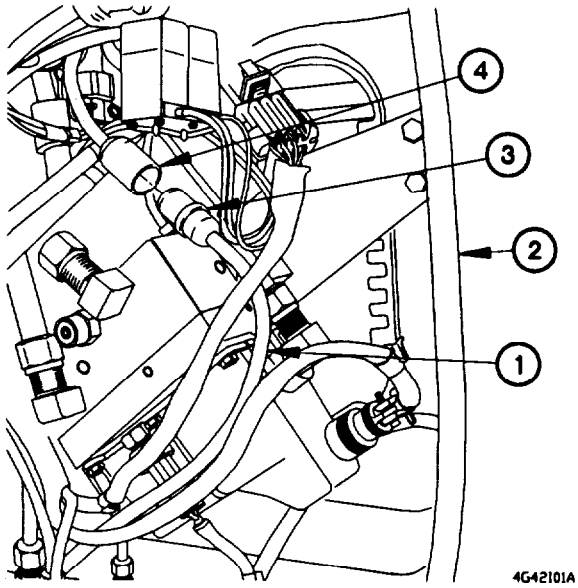


(8) Disconnect connector J65 (12) from connector P65 (13).

NOTE

Note routing of warning light cable assembly prior to removal.

(9) Remove warning light cable assembly (14) from cab (4).

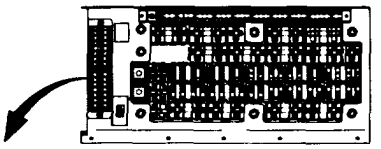


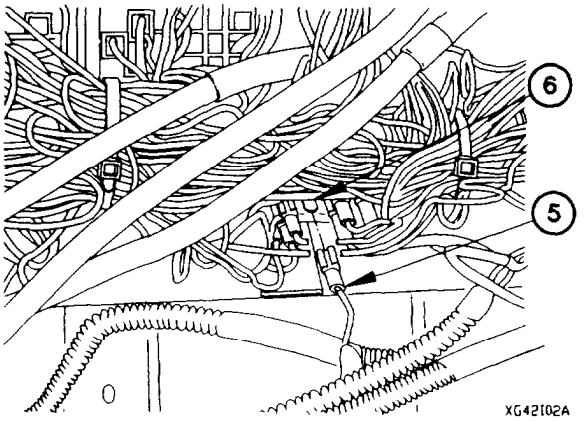
b. Installation.

(1) Position warning light cable assembly (1) in cab (2).

(2) Connect connector P65 (3) to connector J65 (4).

22-2. WARNING LIGHT CABLE ASSEMBLY REPLACEMENT (CONT)

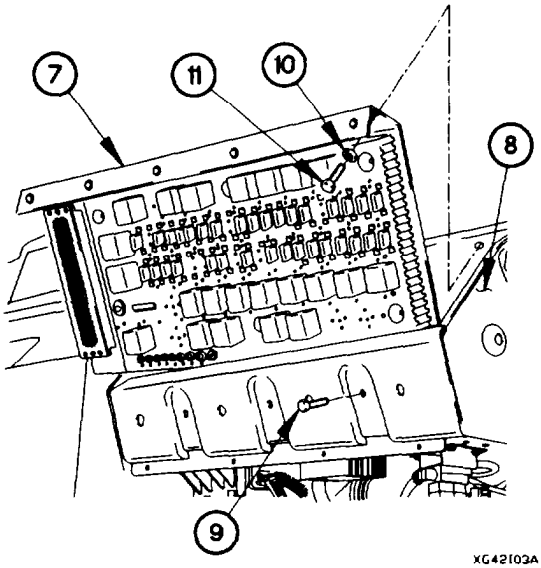




NOTE

Install plastic cable ties as required.

(3) Connect terminal lug TL14 (5) to terminal board TB2 (6) position 12.



(4) Position PDP (7) on dashboard (8).

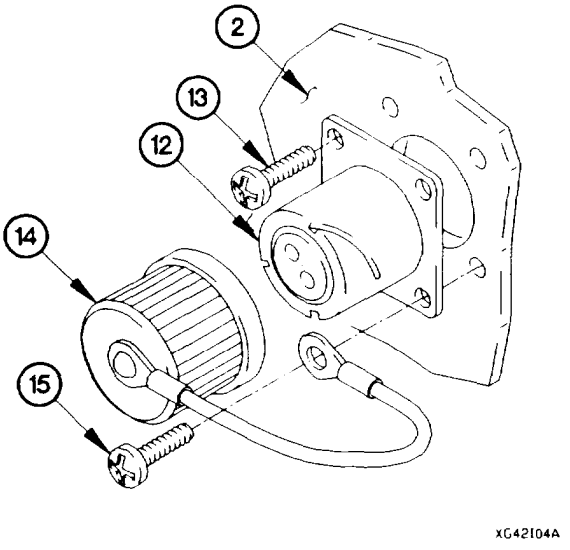
(5) Install three screws (9) in PDP (7).

(6) Install three washers (10) and screws (11) in PDP (7).

(7) Install connector J62 (12) in cab (2) with three screws (13).

(8) Install dustcap (14) on cab (2) with screw (15).

(9) Install dustcap (14) on connector J62 (12).



c. Follow-On Maintenance.

(1) Install rear cab liner (para 16-13).

(2) Install kick panel (para 16-3).

(3) Connect batteries (para 7-48).

(4) Operate warning lights and check for proper operation (TM 9-2320-365-10).

End of Task.

CHAPTER 23
AIR SYSTEM MAINTENANCE

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23-4. INVERSION VALVE REPLACEMENT 23-11
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Section I. INTRODUCTION

23-1. INTRODUCTION

This chapter contains maintenance instructions for replacing, repairing, and adjusting air system components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

Section II. MAINTENANCE PROCEDURES

23-2. PRIMARY AND CENTRAL TIRE INFLATION SYSTEM (CTIS) AIR HOSES REPLACEMENT

This task covers:

a. Hose Locations

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Air tanks drained (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Cap and Plug Set (Item 15, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)

a. Hose Locations.

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

CAUTION

Cap or plug hose connections to prevent contamination. Failure to comply may result in damage to equipment.

NOTE

- This task shows locations of primary air supply and CTIS air hoses on the vehicle. It may not be necessary to remove all hoses at one time.
- Tag hoses and connection points prior to removal.
- Note location of plastic cable ties prior to removal.
- Remove plastic cable ties as required.
- Inspect air hoses and fittings for cracks, kinks, nicks, stripped threads, and cuts. Replace damaged parts.

Figure 23-1. Primary Air Supply Hose Locations

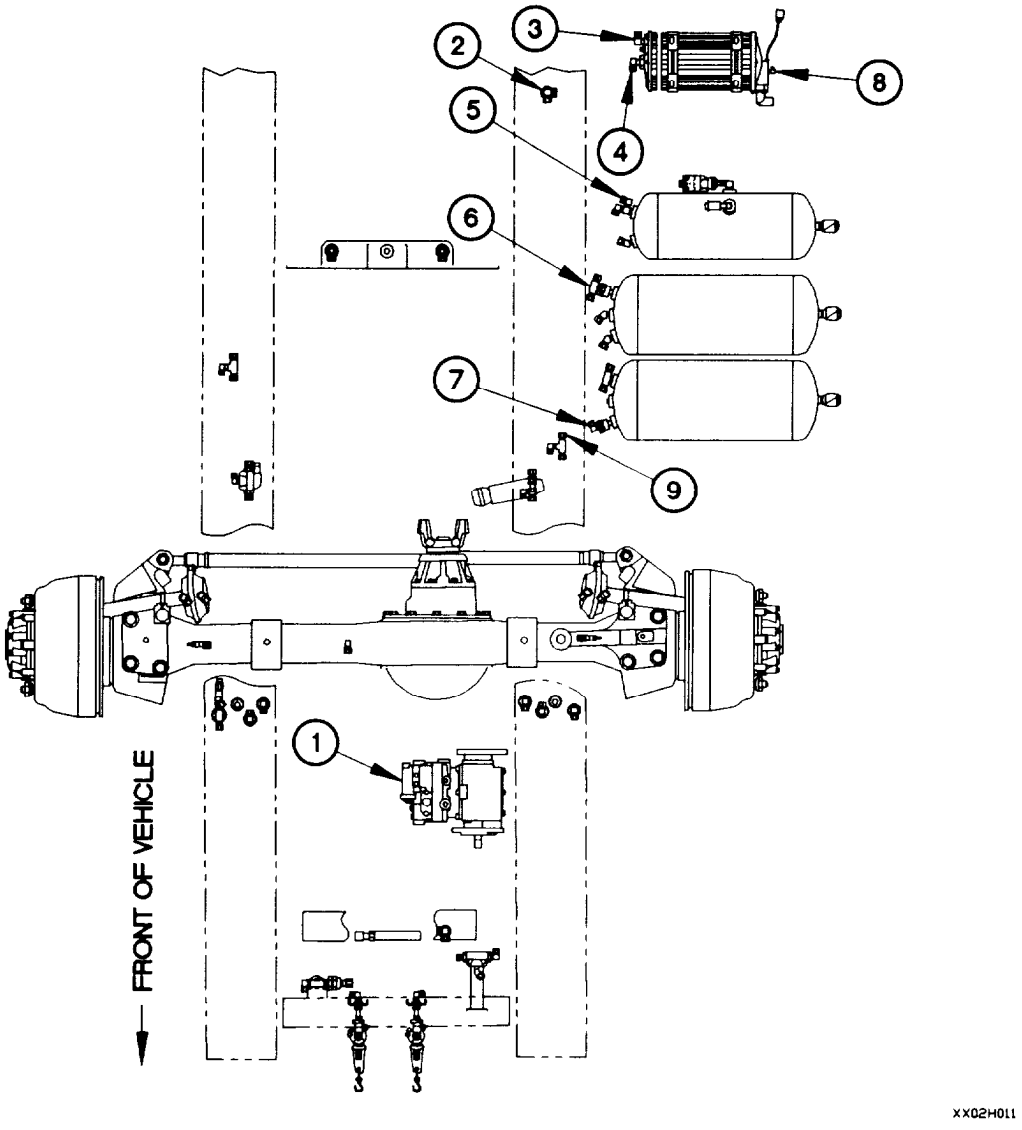


Table 23-1. Primary Air Supply Hose Locations

HOSE NAME	FROM	TO
Primary supply	Air compressor output fitting (1)	Bulkhead fitting (2)
Primary supply tie	Bulkhead fitting (2)	Air dryer input fitting (3)
Wet tank supply	Air dryer output fitting (4)	Wet tank supply fitting (5)
Primary tank supply	Wet tank supply fitting (5)	Primary tank supply fitting (6)
Secondary tank supply	Primary tank supply fitting (6)	Secondary tank supply fitting (7)
Air dryer pressure	Air dryer bottom fitting (8)	Hose fitting (9)

23-2. PRIMARY AND CENTRAL TIRE INFLATION SYSTEM (CTIS) AIR HOSES REPLACEMENT (CONT)

Figure 23-1. Primary Air Supply Hose Locations (Cont)

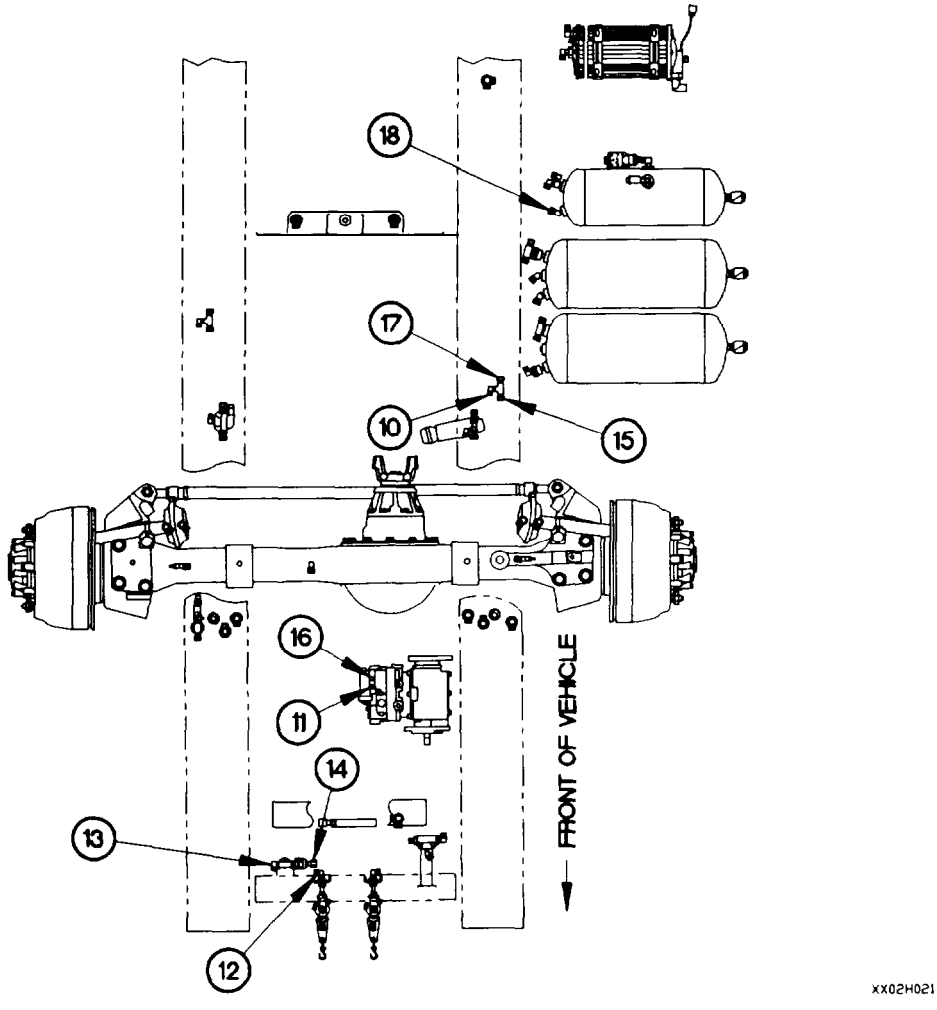


Table 23-1. Primary Air Supply Hose Locations (Cont)

HOSE NAME	FROM	TO
Governor input #1	Hose fitting (10)	Governor input #1 fitting (11)
Emergency supply	Emergency supply fitting (12)	Hose fitting (13)
Emergency supply tie #1	Gladhand check valve fitting (14)	Hose fitting (15)
Governor input #2	Hose fitting (15)	Governor input #2 fitting (16)
Emergency supply tie #2	Hose fitting (17)	Wet tank fitting (18)

Figure 23-2. Central Tire Inflation System (CTIS) Air Hose Locations

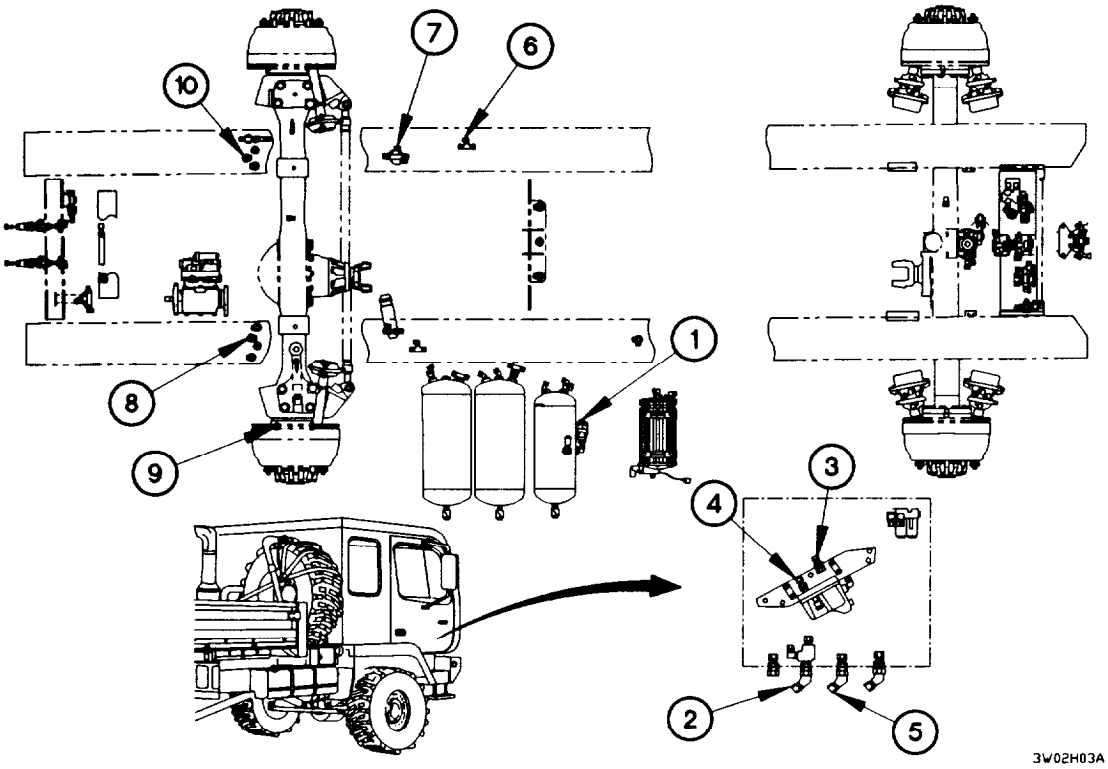


Table 23-2. Central Tire Inflation System (CTIS) Air Hose Locations

HOSE NAME	FROM	TO
Main air supply	Tank pressure valve fitting (1)	Cab bulkhead fitting (2)
CTIS manifold input	Cab bulkhead fitting (2)	CTIS manifold valve input fitting (3)
CTIS manifold output	CTIS manifold output fitting (4)	Cab bulkhead fitting (5)
CTIS air supply	Cab bulkhead fitting (5)	Two way splitter (6)
Supply tie	Two way splitter fitting (6)	Front quick release valve fitting (7)
Left front supply hose	Front quick release valve fitting (7)	Left front bulkhead fitting (8)
Left front drum supply	Left front bulkhead fitting (8)	Left front drum fitting (9)
Right front supply hose	Front quick release valve fitting (7)	Right front bulkhead fitting (10)

23.2 PRIMARY AND CENTRAL TIRE INFLATION SYSTEM (CTIS) AIR HOSES REPLACEMENT (CONT)

Figure 23-2. Central Tire Inflation System (CTIS) Air Hose Locations (Cont)

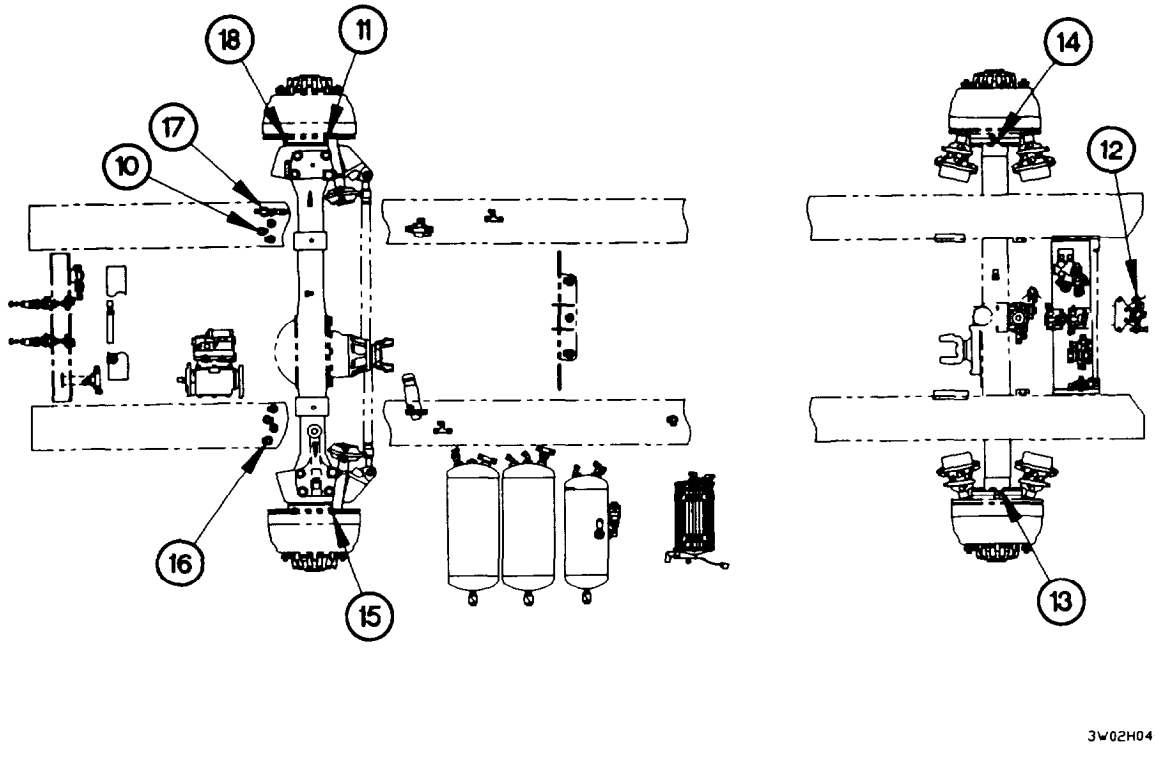


Table 23-2. Central Tire Inflation System (CTIS) Air Hose Locations (Cont)

HOSE NAME	FROM	TO
Right front drum supply	Right front bulkhead fitting (10)	Left front drum fitting (11)
Rear main supply	Two way splitter fitting (6)	Rear quick release valve (12)
Left rear drum supply	Rear quick release valve fitting (12)	Left rear drum fitting (13)
Right rear drum supply	Rear quick release valve fitting (12)	Right rear drum fitting (14)
Left front drum vent	Left front drum fitting (15)	Bulkhead fitting (16)
Vent tie	Bulkhead fitting (16)	Bulkhead fitting (17)
Right front drum vent	Bulkhead fitting (17)	Right front brake fitting (18)

Figure 23-2. Central Tire Inflation System (CTIS) Air Hose Locations (Cont)

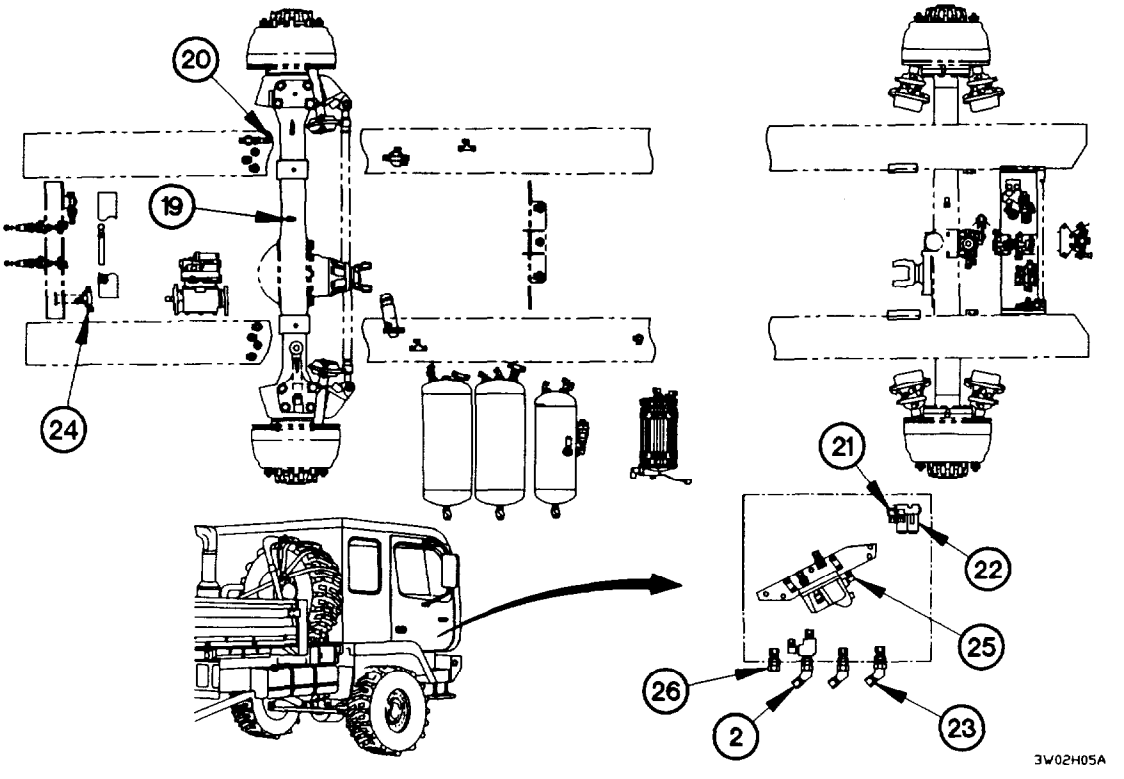


Table 23-2. Central Tire Inflation System (CTIS) Air Hose Locations (Cont)

HOSE NAME	FROM	TO
Axle vent	Axle vent fitting (19)	Vent fitting (20)
Fan supply	Bulkhead fitting (2)	Solenoid valve fitting (21)
Fan supply tie #1	Solenoid valve fitting (22)	Bulkhead fitting (23)
Fan supply tie #2	Bulkhead fitting (23)	Fan input fitting (24)
Manifold vent	Manifold fitting (25)	Bulkhead fitting (26)

b. Follow-On Maintenance.

(1) Start engine (TM 9-2320-365-10).

(2) Check around air hoses and fittings for air leaks.

(3) Shut down engine (TM 9-2320-365-10).

End of Task.

23-3. AIR TRANSPORTABILITY AIR HOSES REPLACEMENT

This task covers:

a. Hose Locations

b. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Air tanks drained (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)

Materials/Parts
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)
Cap and Plug Set (Item 15, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)

a. Hose Locations.

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

CAUTION

Cap or plug hose connections to prevent contamination. Failure to comply may result in damage to equipment.

NOTE

- This task shows locations of air transportability air hoses on the vehicle. It may not be necessary to remove all hoses at one time.
- Tag hoses and connection points prior to removal.
- Note location of plastic cable ties prior to removal.
- Remove plastic cable ties as required.
- Inspect air hoses and fittings for cracks, kinks, nicks, stripped threads and cuts. Replace damaged parts.

Figure 23-3. Air Transportability Air Hose Locations

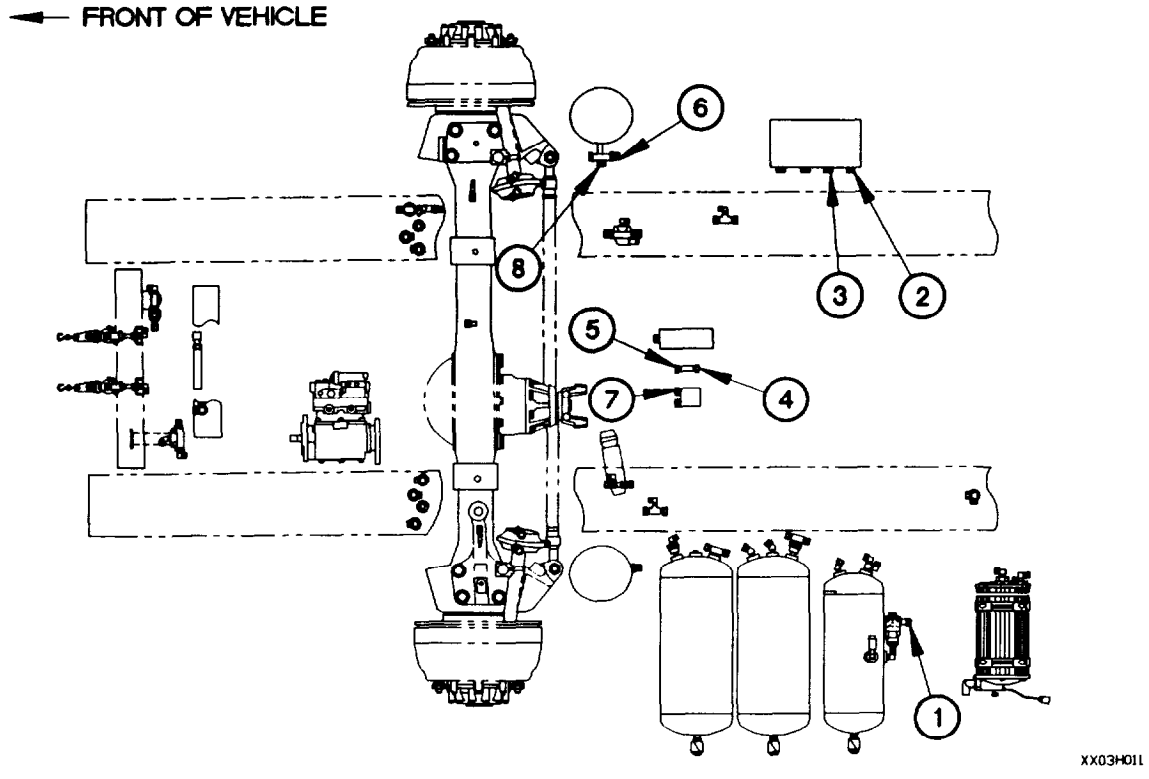


Table 23-3. Air Transportability Air Hose Locations

HOSE NAME	FROM	TO
Wet tank supply	Wet tank pressure valve fitting (1)	Manifold input (2)
Height control valve supply	Manifold output (3)	Height control valve tee fitting (4)
Check valve tie	Height control valve tee fitting (5)	Check valve output fitting (6)
Passenger cylinder	Height control valve fitting (7)	Passenger cylinder fitting (8)

23-3. AIR TRANSPORTABILITY AIR HOSES REPLACEMENT (CONT)

Figure 23-3. Air Transportability Air Hose Locations (Cont)

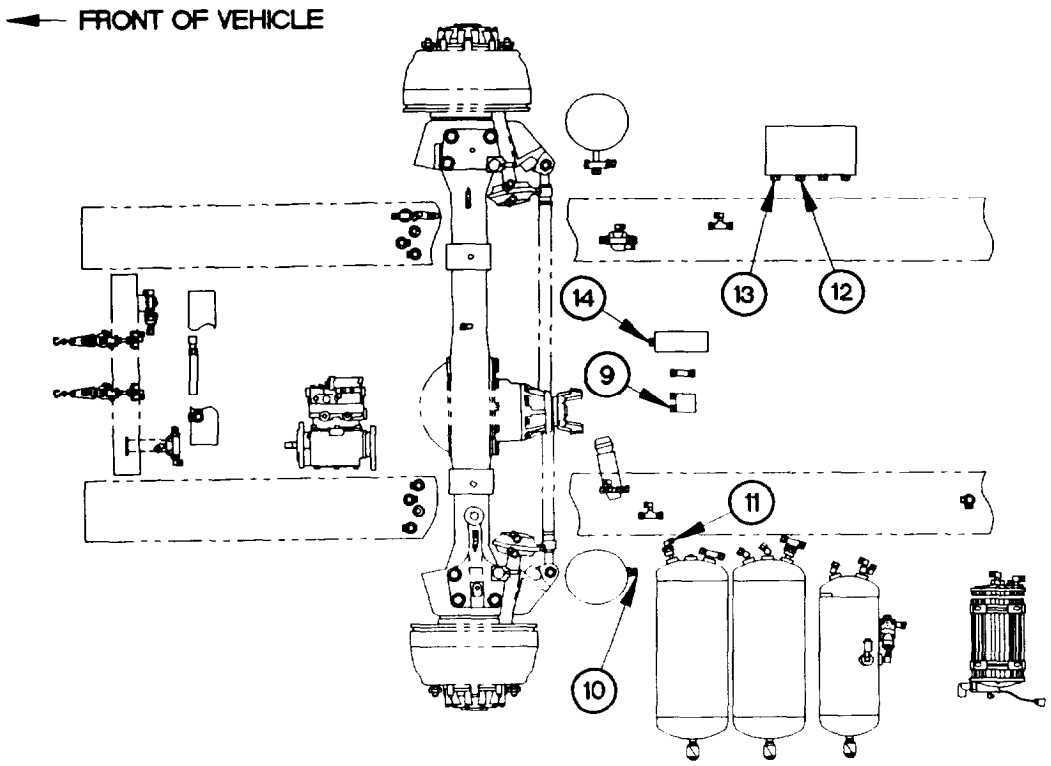


Table 23-3. Air Transportability Air Hose Locations (Cont)

HOSE NAME	FROM	TO
Driver cylinder	Height control valve fitting (9)	Driver cylinder fitting (10)
Inversion valve supply	Inversion valve fitting (11)	Manifold input (12)
Air/hydraulic supply	Manifold output fitting (13)	Air/hyd power unit fitting (14)

b. Follow-On Maintenance.

(1) Start engine (TM 9-2320-365-10).

(2) Check around air hoses and fittings for air leaks.

(3) Shut down engine (TM 9-2320-365-10).

End of Task.

23-4. INVERSION VALVE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-365-10).
Cab raised (TM 9-2320-365-10).
Air tanks drained (TM 9-2320-365-10).

Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)
Goggles, Industrial (Item 15, Appendix C)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)

a. Removal.

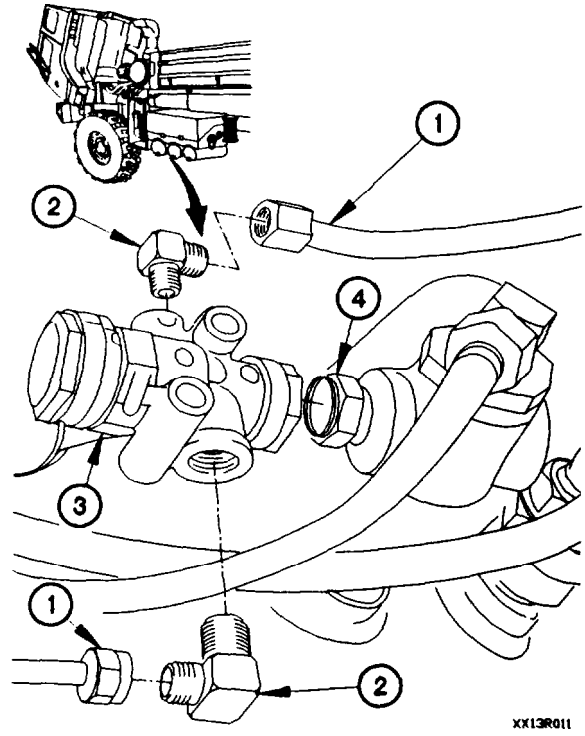
WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

(1) Disconnect two air hoses (1) from 90-degree fittings (2).

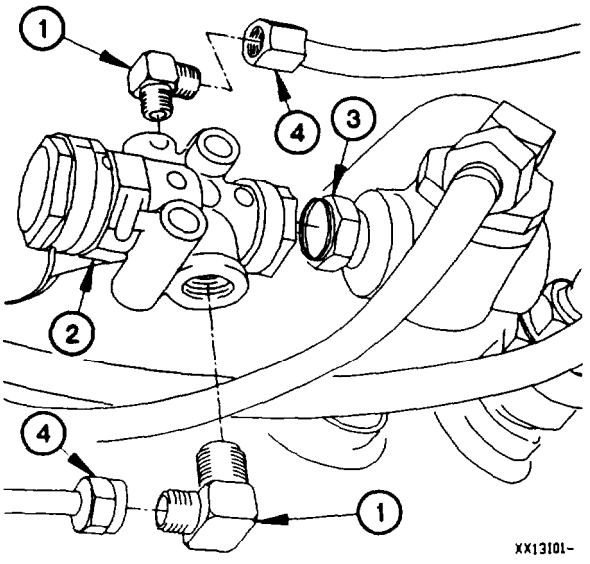
(2) Remove inversion valve (3) from fitting (4).

(3) Remove two 90-degree fittings (2) from inversion valve (3).



23-4. INVERSION VALVE REPLACEMENT (CONT)

b. Installation.



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap or water. Failure to comply may result in injury to personnel.

(1) Apply antiseize compound to threads of two 90-degree fittings (1).

(2) Install two 90-degree fittings (1) on inversion valve (2).

(3) Install inversion valve (2) on fitting (3).

(4) Connect two air hoses (4) to 90-degree fittings (1).

c. Follow-On Maintenance.

(1) Start engine (TM 9-2320-365-10).

(2) Check for air leaks around inversion valve.

(3) Shut down engine (TM 9-2320-365-10).

End of Task.

23-5. SHUTTLE VALVE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Inversion valve removed (para 23-4).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)

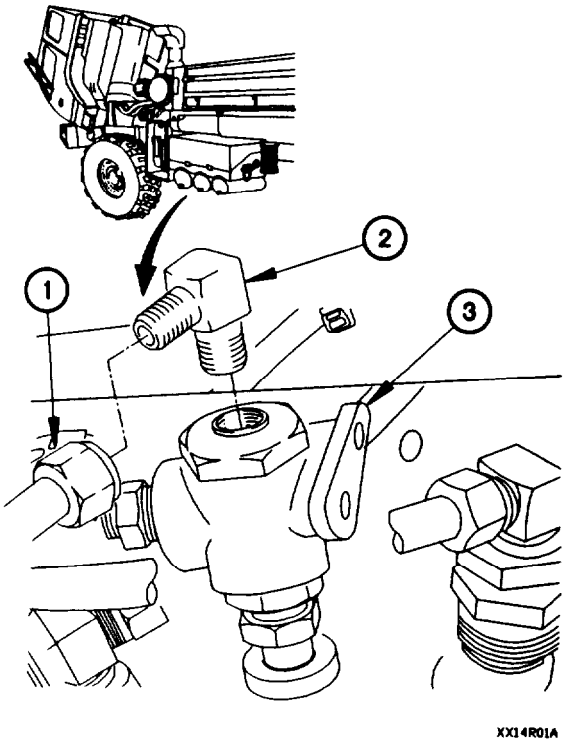
WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

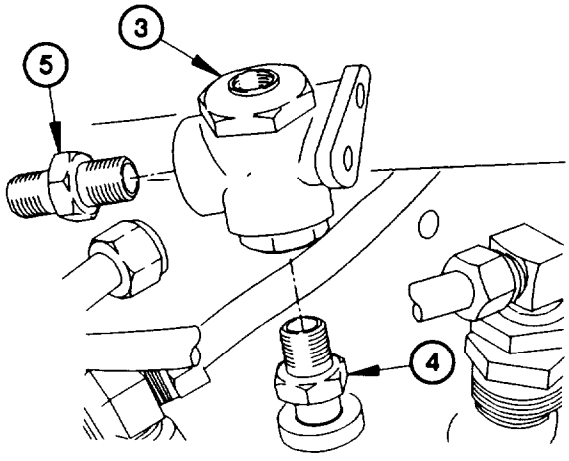
a. Removal.

(1) Disconnect air hose (1) from 90-degree fitting (2).

(2) Remove 90-degree fitting (2) from shuttle valve (3).



XX14R01A



XX14R02-

(3) Remove shuttle valve (3) from adapter (4).

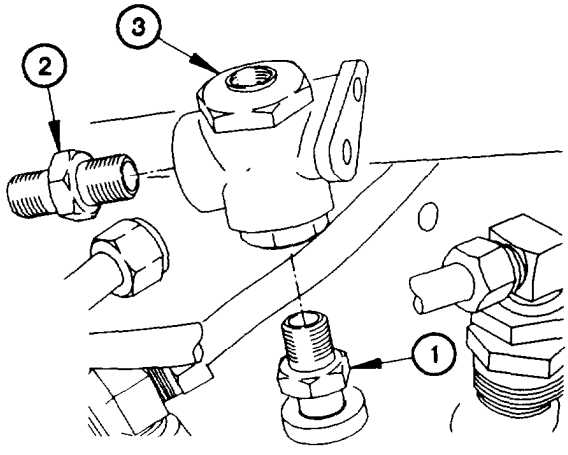
(4) Remove adapter (5) from shuttle valve (3).

23-5. SHUTTLE VALVE REPLACEMENT (CONT)

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.

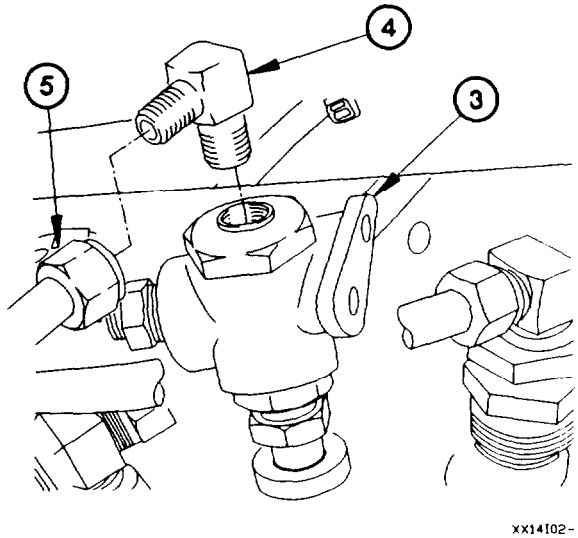


XX14101-

(1) Apply antiseize compound to threads of adapter (1) and adapter (2).

(2) Install shuttle valve (3) on adapter (1).

(3) Install adapter (2) in shuttle valve (3).



XX14102-

(4) Apply antiseize compound to threads of 90-degree fitting (4).

(5) Install 90-degree fitting (4) on shuttle valve (3).

(6) Connect air hose (5) to 90-degree fitting (4).

c. Follow-On Maintenance.

(1) Install inversion valve (para 23-4).

(2) Start engine (TM 9-2320-365-10).

(3) Check for air leaks around shuttle valve and inversion valve.

(4) Shut down engine (TM 9-2320-365-10).

End of Task.

23-6. AIR DRYER REPLACEMENT/REPAIR

This task covers:

a. Removal
b. Disassembly
c. Assembly
d. Installation
e. Follow-On Maintenance

INITIAL SETUP

Equipment Conditions
Air tanks drained (TM 9-2320-365-10).
Batteries disconnected (para 7-48).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)
Wrench, Torque, 0-175 lb-ft (Item 57, Appendix C)
Wrench, Torque, 0-200 lb-in. (Item 58, Appendix C)
Wrench Set, Socket (Item 48, Appendix C)
Hammer, Hand (Item 18, Appendix C)

Materials/Parts
Nut, Plain, Hex (Item 36, Appendix D)
Ties, Cable, Plastic (Item 76, Appendix D)
Parts Kit, Dehydrator (Item 196, Appendix G)
Nut, Self-Locking (4) (Item 149, Appendix G)
Boot Kit, Exhaust (Item 3, Appendix G)
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)

Personnel Required
(2)

a. Removal.

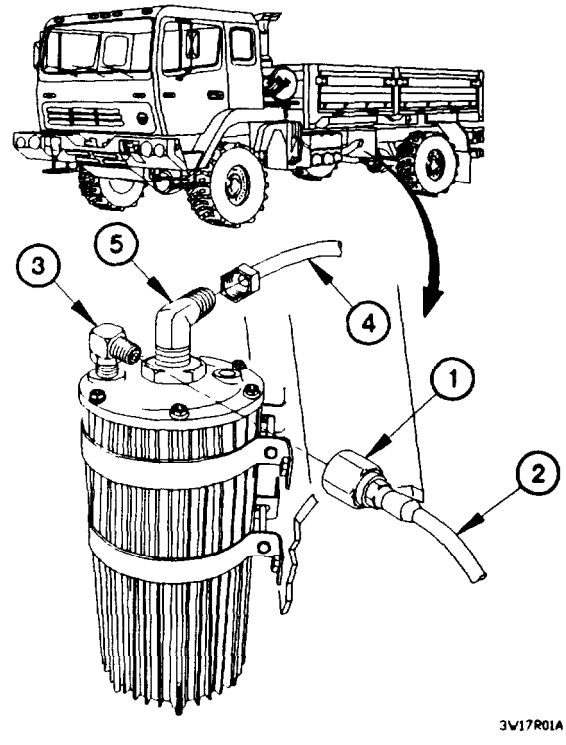
WARNING

- **Air dryer may contain air pressure. Loosen input air hose connector slowly to vent off air pressure. Failure to comply may cause injury to personnel.**
- **Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.**

(1) Loosen input air hose nut (1).

(2) Disconnect input air hose (2) from 90-degree fitting (3).

(3) Disconnect outlet air hose (4) from 90-degree fitting (5).



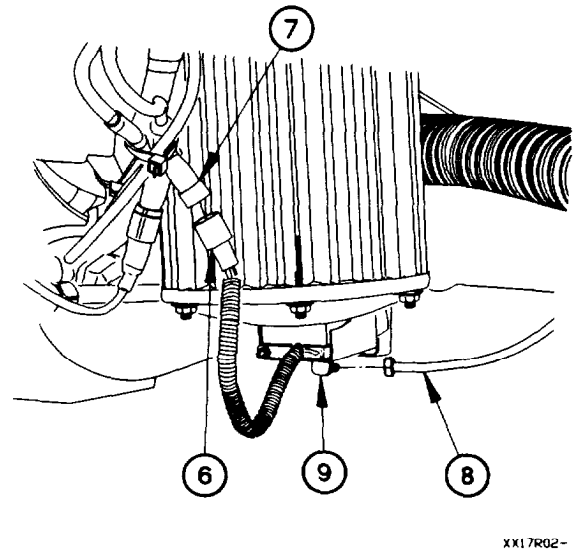
23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

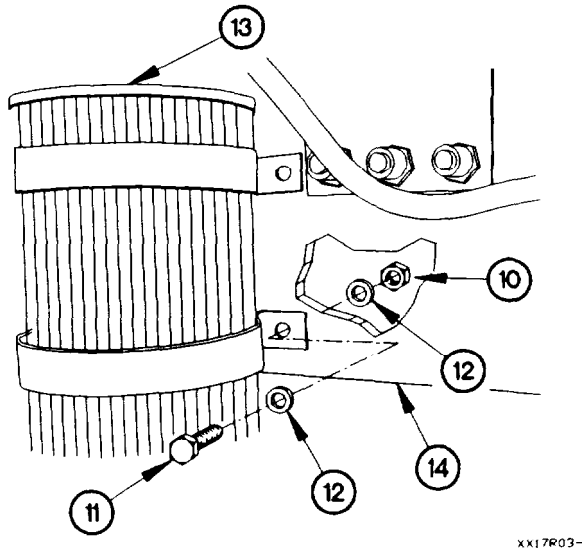
NOTE

Remove plastic cable ties as required.

(4) Disconnect air dryer electrical connector (6) from connector P80 (7).

(5) Disconnect air hose (8) from 90-degree fitting (9).





NOTE

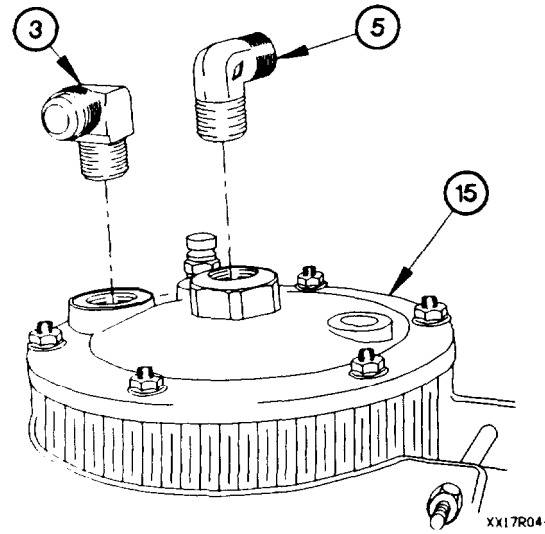
Step (6) requires the aid of an assistant.

(6) Remove four self-locking nuts (10), screws (11), eight washers (12), and air dryer (13) from frame (14). Discard self-locking nuts.

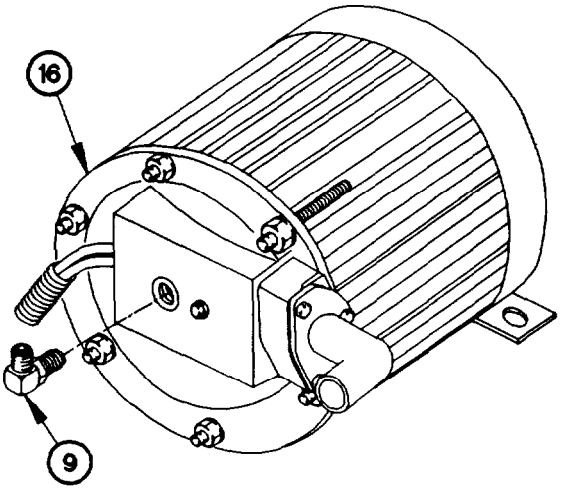
NOTE

Tag fittings and connection points prior to removal.

(7) Remove 90-degree fittings (3 and 5) from top cover (15).

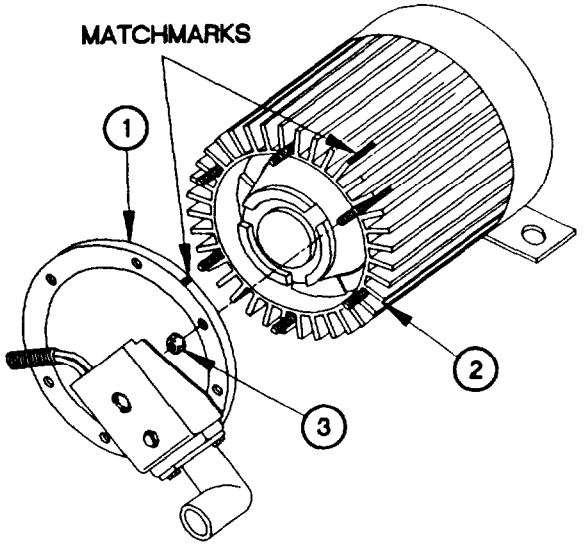


(8) Remove 90-degree fitting (9) from lower cover (16).



XX17R05-

b. Disassembly.



XX17D01A

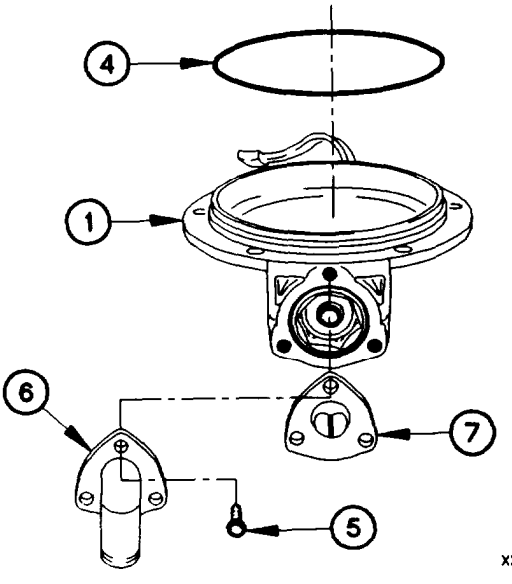
(1) Match mark lower cover (1) to air dryer housing (2).

(2) Remove six flange nuts (3) from lower cover (1).

(3) Remove lower cover (1) from air dryer housing (2).

(4) Remove preformed packing (4) from lower cover (1). Discard preformed packing.

(5) Remove three screws (5), purge exhaust fitting (6), and exhaust boot (7) from lower cover (1). Discard exhaust boot.



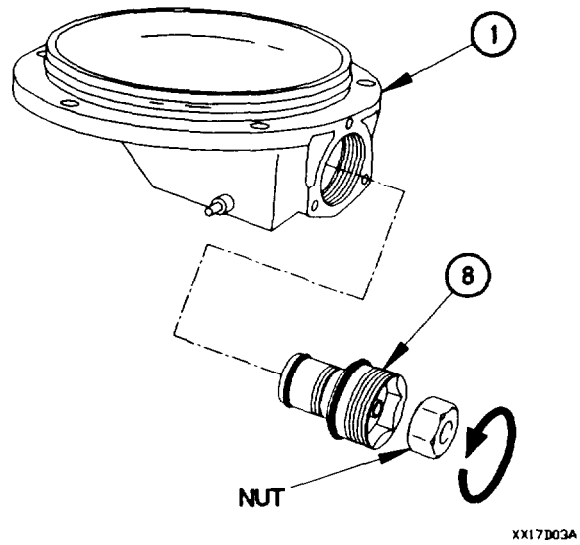
XX17D02A

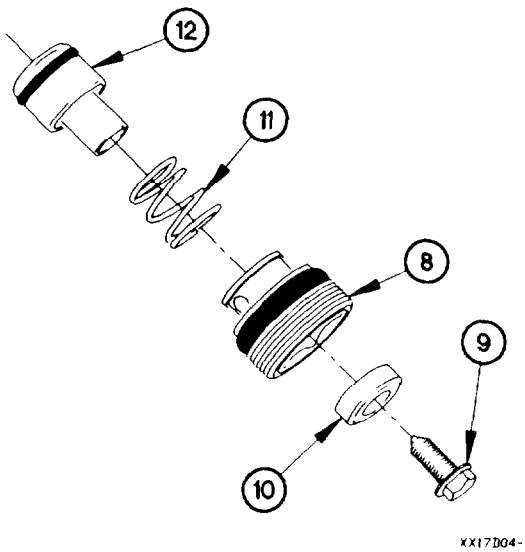
23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

(6) Insert nut in purge valve (8).

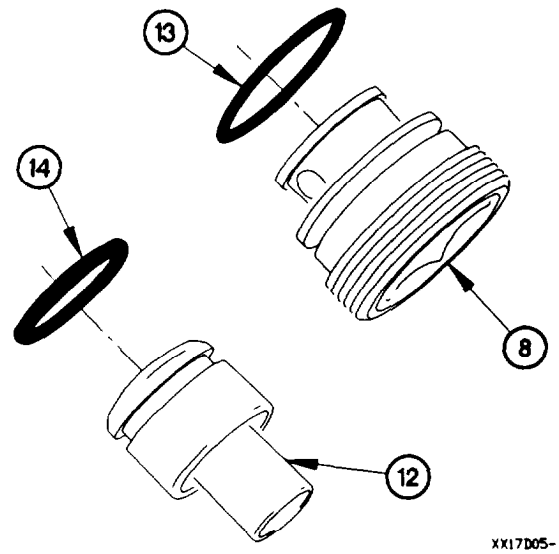
(7) Turn purge valve (8) to the left until removed from lower cover (1).

(8) Remove nut from purge valve (8).





(9) Remove screw (9), purge valve seat (10), spring (11), and purge piston (12) from purge valve (8). Discard purge valve seat.

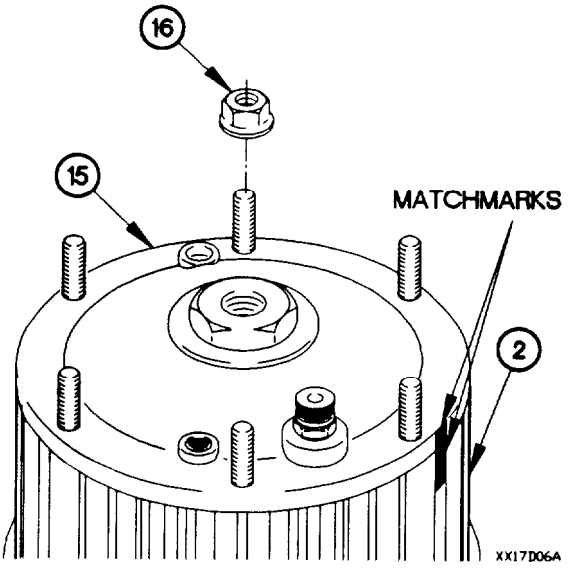


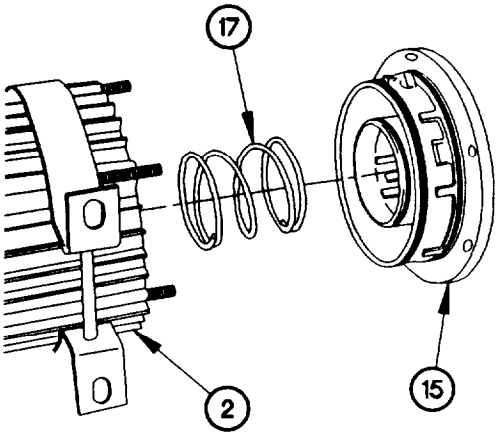
(10) Remove preformed packing (13) from purge valve (8). Discard preformed packing.

(11) Remove preformed packing (14) from purge piston (12). Discard preformed packing.

(12) Match mark top cover (15) to air dryer housing (2).

(13) Remove six flange nuts (16) from top cover (15).



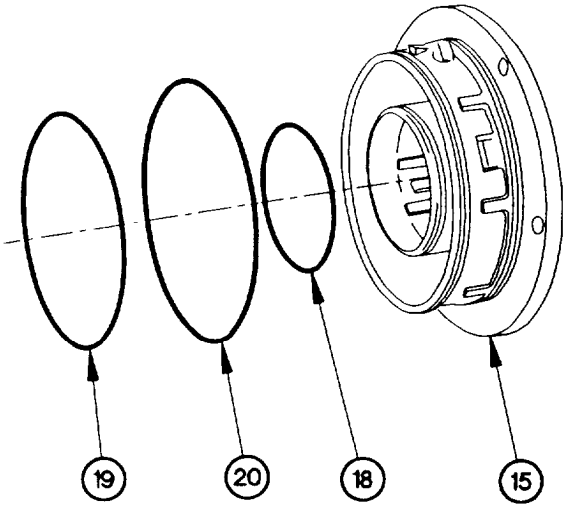


NOTE

It may be necessary to tap on top cover to loosen.

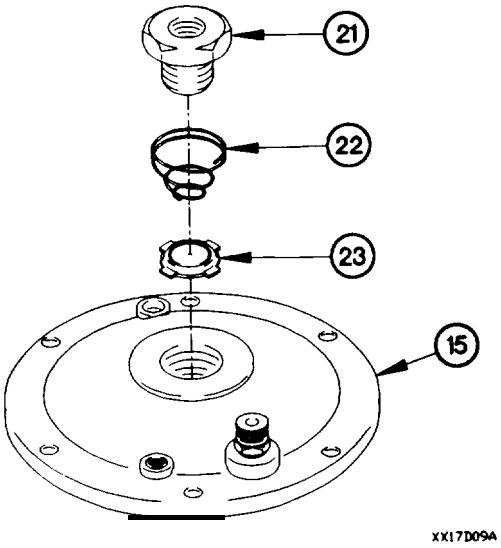
(14) Remove top cover (15) and spring (17) from air dryer housing (2).

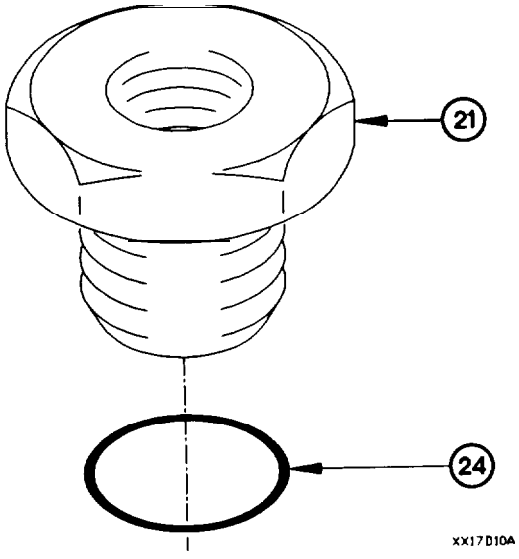
(15) Remove preformed packings (18, 19 and 20) from top cover (15). Discard preformed packings.



23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

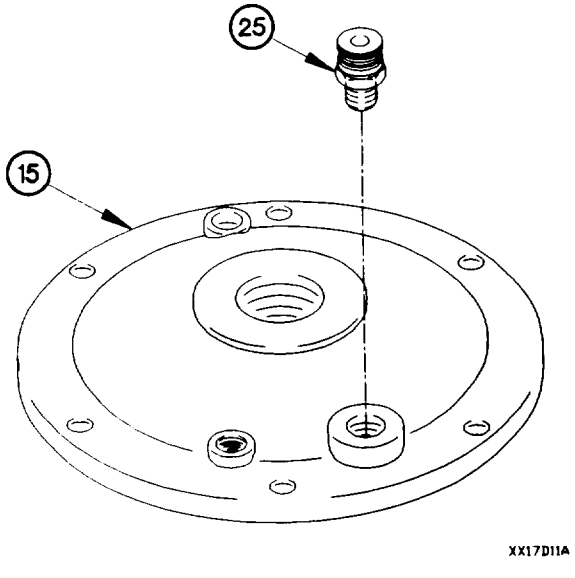
(16) Remove check valve end cap (21), spring (22), and valve disc (23) from top cover (15).





(17) Remove preformed packing (24) from check valve end cap (21). Discard preformed packing.

(18) Remove relief valve (25) from top cover (15).

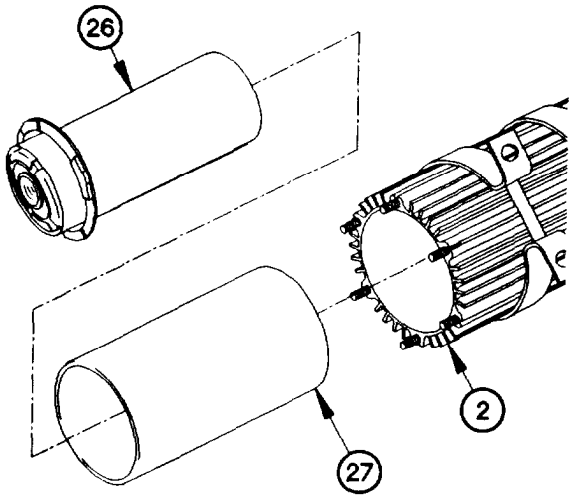


NOTE

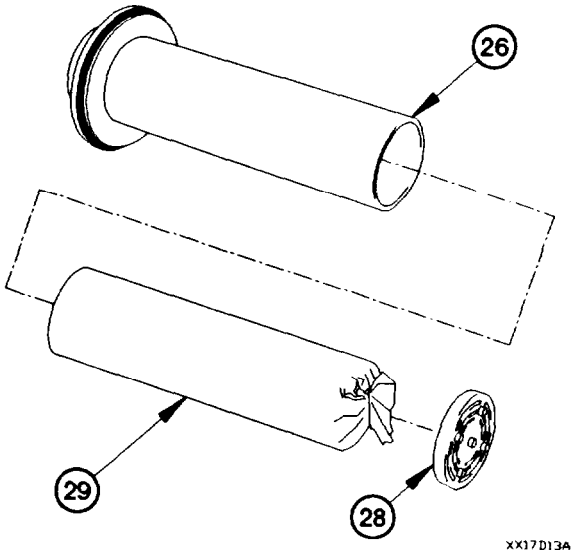
Desiccant canister and inner aluminum shell can be removed as one unit.

(19) Remove desiccant canister (26) and inner aluminum shell (27) from air dryer housing (2).

(20) Remove desiccant canister (26) from inner aluminum shell (27).



XX17D12A



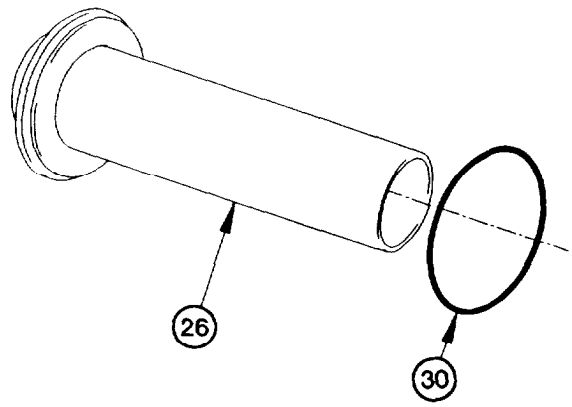
XX17D13A

NOTE

Desiccant follower will come out with desiccant. Retrieve for reuse.

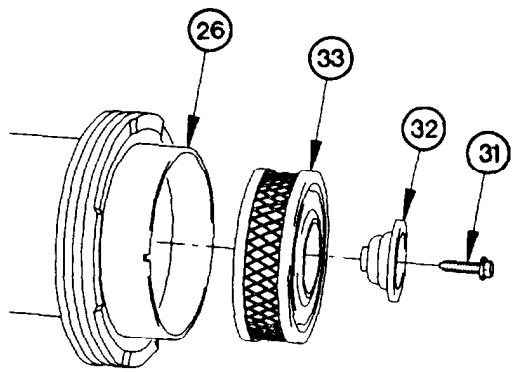
(21) Remove desiccant follower (28) and desiccant cartridge (29) from desiccant canister (26). Discard desiccant cartridge.

(22) Remove preformed packing (30) from desiccant canister (26). Discard preformed packing.



XX17D14A

23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

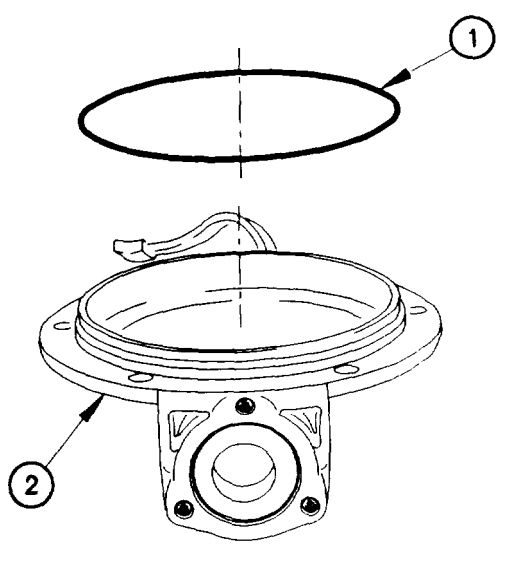


(23) Remove screw (31) and filter retainer (32) from filter element (33).

(24) Remove filter element (33) from desiccant canister (26). Discard filter element.

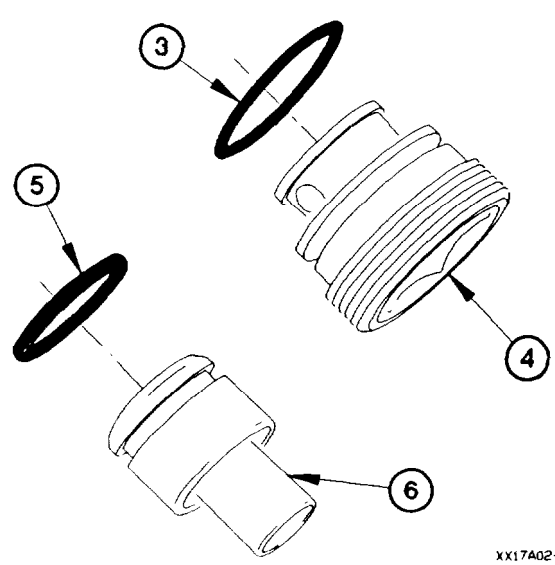
c. Assembly.

XX17D15A



XX17A01-

(1) Install preformed packing (1) on lower cover (2).



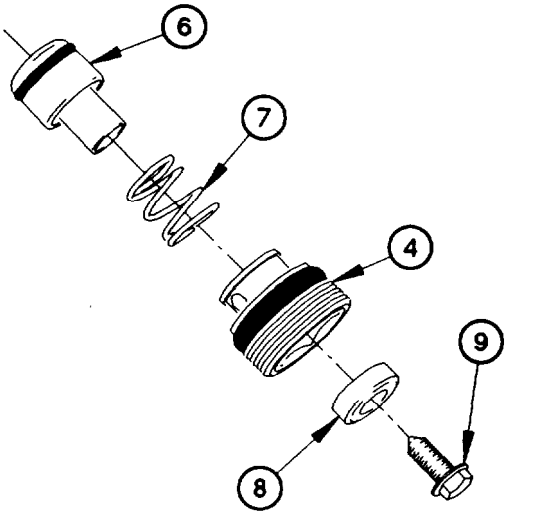
XX17A02-

(2) Install preformed packing (3) on purge valve (4).

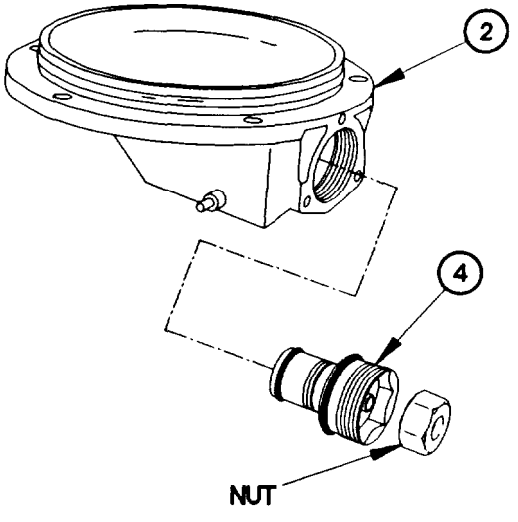
(3) Install preformed packing (5) on purge piston (6).

(4) Position spring (7), purge piston (6), purge valve seat (8), and screw (9) on purge valve (4).

(5) Tighten screw (9) to 50-80 lb-in. (6-9 N•m).



XX17A03-



XX17A04A

(6) Position purge valve (4) in lower cover (2).

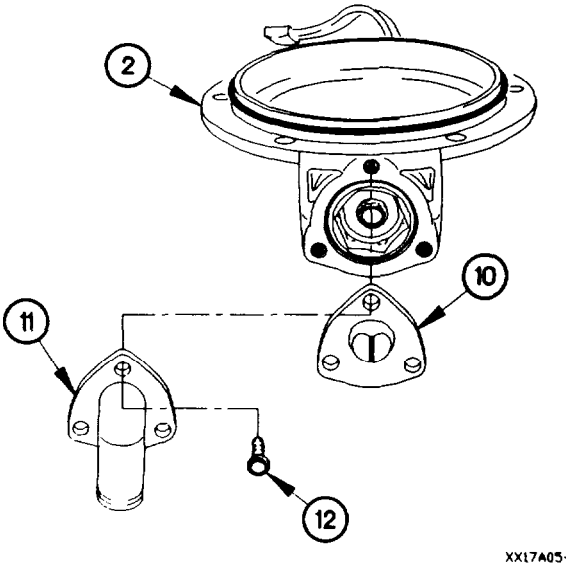
(7) Install nut in purge valve (4).

(8) Tighten purge valve (4) to 35-50 lb-in. (4-6 N•m).

(9) Remove nut from purge valve (4).

(10) Position exhaust boot (10) and purge exhaust fitting (11) on lower cover (2) with three screws (12).

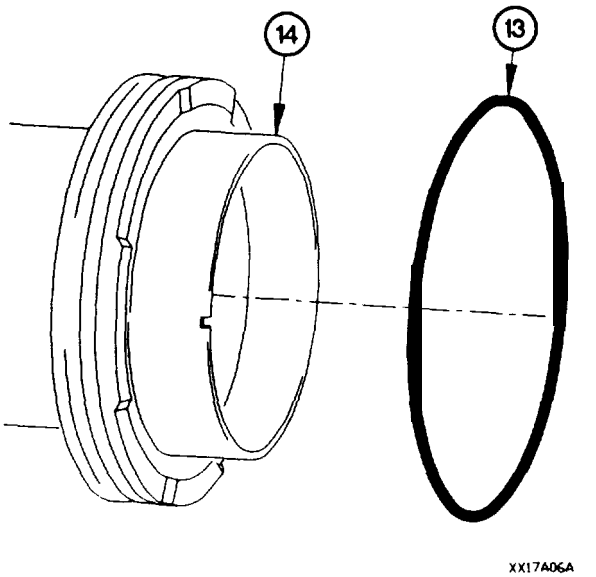
(11) Tighten three screws (12) to 50-70 lb-in. (6-8 N•m).

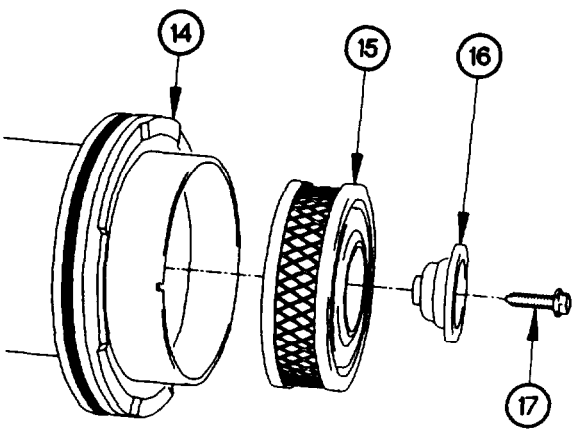


XX17A05-

23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

(12) Install preformed packing (13) on desiccant canister (14).





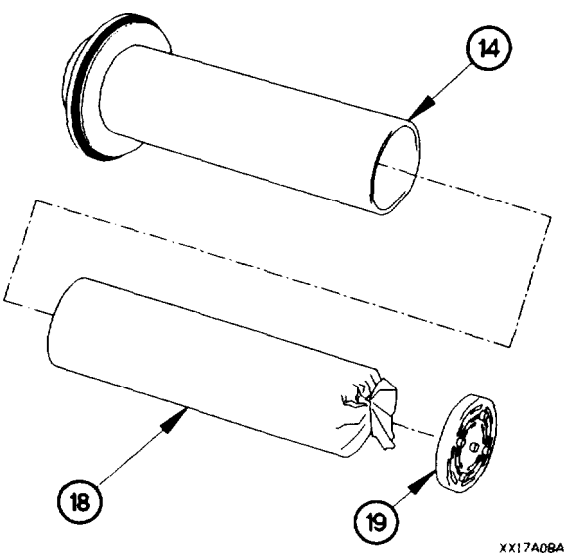
(13) Position filter element (15) on desiccant canister (14).

(14) Position filter retainer (16) and screw (17) in desiccant canister (14).

(15) Tighten screw (17) to 60-90 lb-in. (7-10 N•m).

(16) Slide desiccant cartridge (18) in desiccant canister (14).

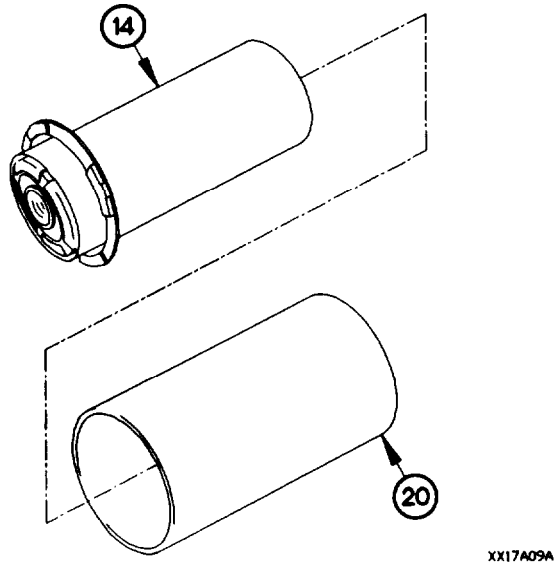
(17) Install desiccant follower (19) in desiccant canister (14).



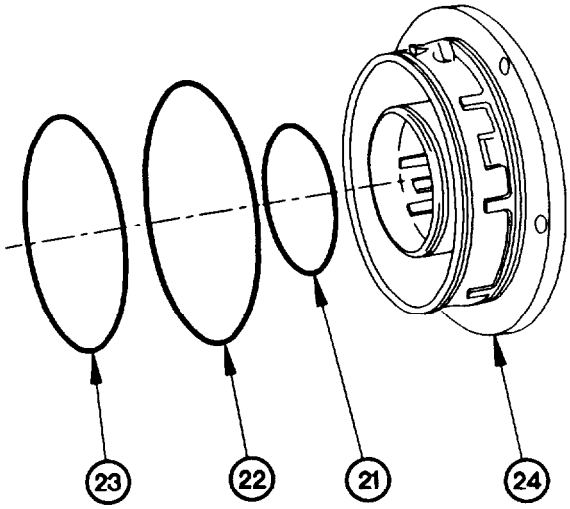
CAUTION

Use caution when installing desiccant canister in inner aluminum shell. Preformed packing can easily be damaged. Failure to comply may result in damage to equipment.

(18) Install desiccant canister (14) in inner aluminum shell (20).



XX17A09A



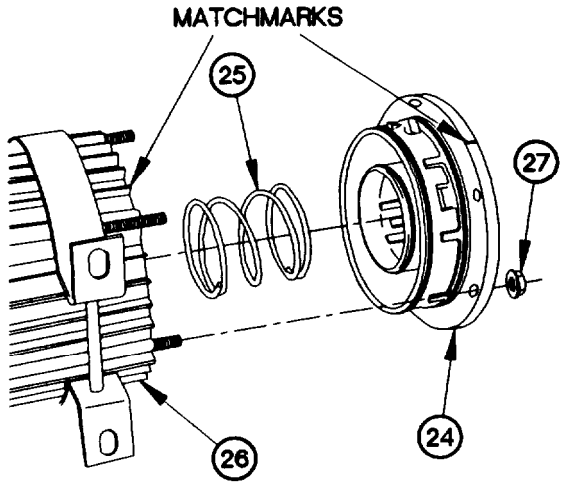
XX17A10-

(19) Install preformed packings (21, 22 and 23) on top cover (24).

(20) Position spring (25) and top cover (24) on air dryer housing (26) with matchmarks aligned.

(21) Position six flange nuts (27) on top cover (24).

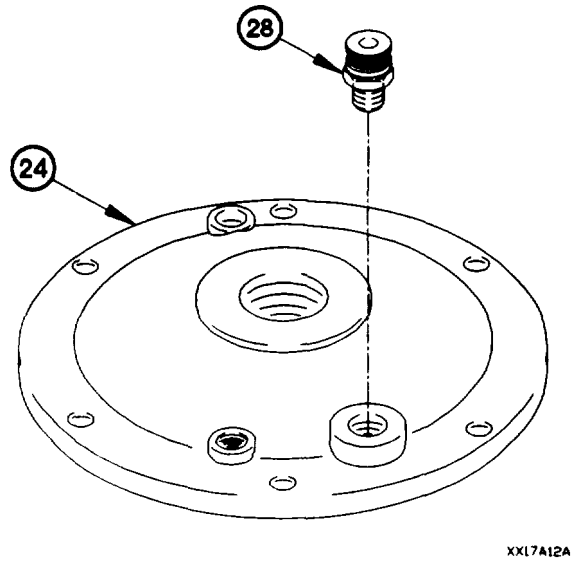
(22) Tighten six flange nuts (27) to 150-200 lb-in. (17-23 N•m).



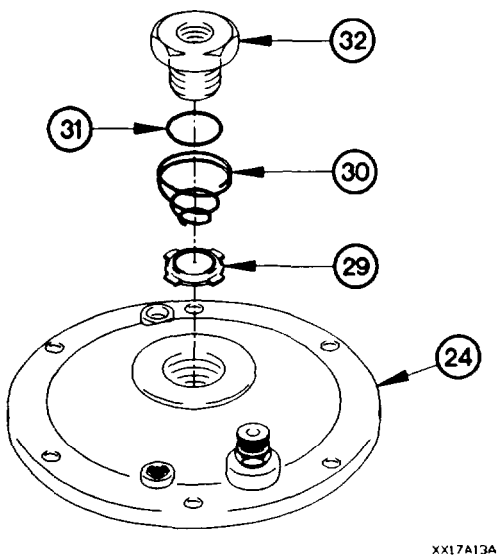
XX17A11A

23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

(23) Install relief valve (28) in top cover (24).



XX17A12A



XX17A13A

NOTE

Install valve disc with rubber side down.

(24) Install valve disc (29) in top cover (24).

NOTE

Install spring with small end toward valve disc.

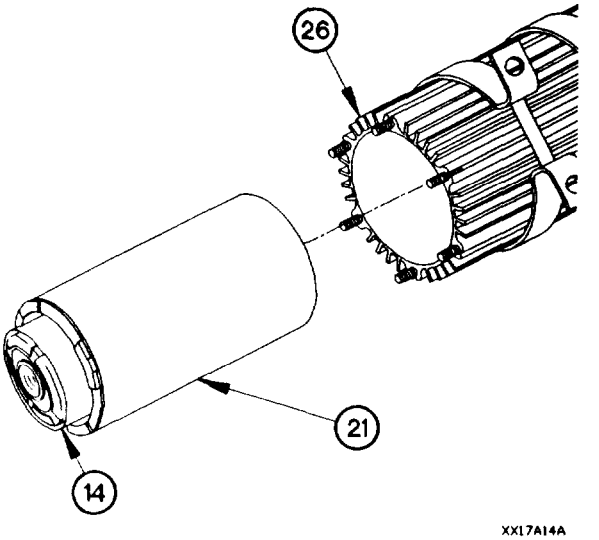
(25) Install spring (30) in top cover (24).

(26) Install preformed packing (31) on check valve end cap (32).

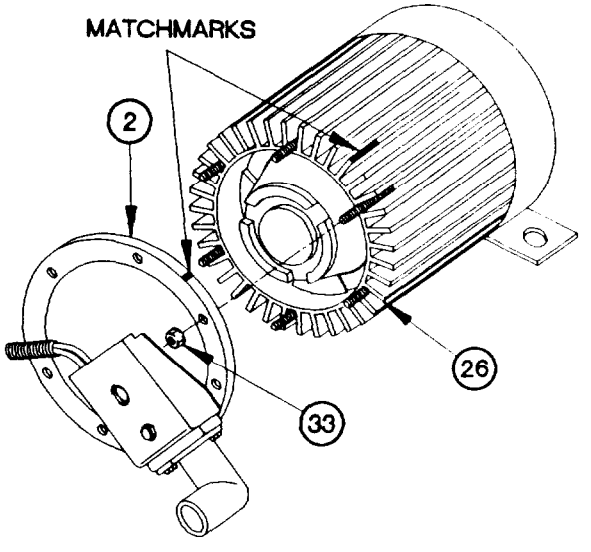
(27) Position check valve end cap (32) on top cover (24).

(28) Tighten check valve end cap (32) to 35-50 lb-ft (47-68 N•m).

(29) Install desiccant canister (14) and inner aluminum shell (21) in air dryer housing (26).



XX17A14A



XX17A15A

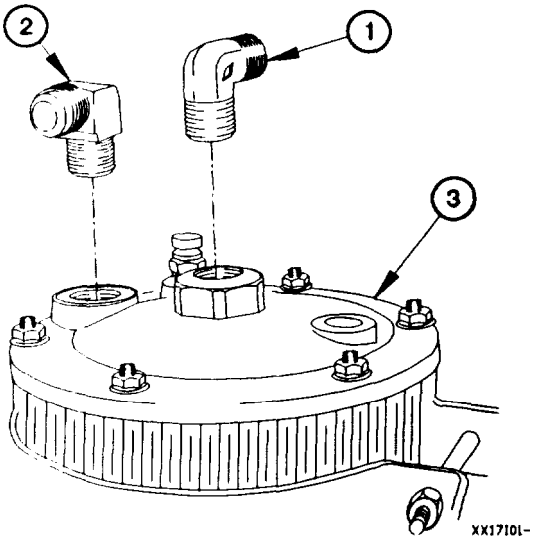
(30) Position lower cover (2) on air dryer housing (26) with matchmarks aligned.

(31) Position six flange nuts (33) on lower cover (2).

(32) Tighten six flange nuts (33) to 150-200 lb-in. (17-23 N•m).

d. Installation.

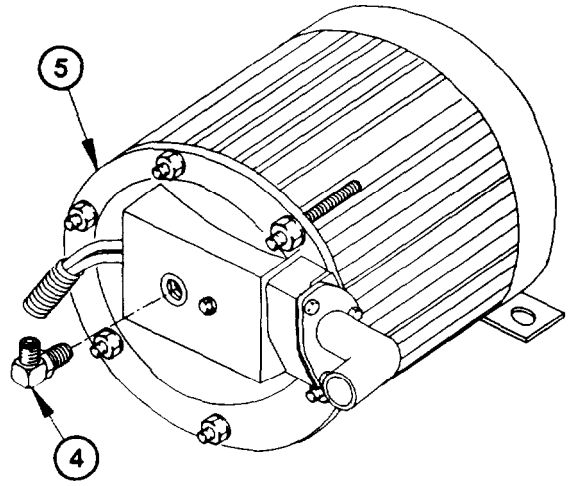
(1) Install 90-degree fittings (1 and 2) in top cover (3).



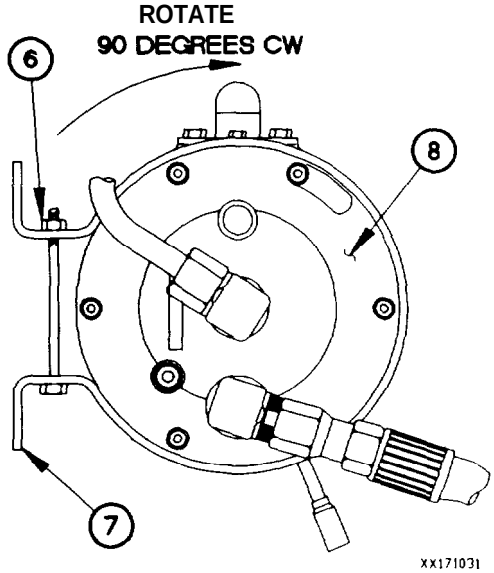
XX17101-

23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

(2) Install 90-degree fitting (4) in lower cover (5).



XX171021



XX171031

CAUTION

When installing a new air dryer, it is necessary to change the orientation of the retaining bands. Failure to comply may result in damage to equipment.

NOTE

Perform steps (3) through (5) if installing a new air dryer.

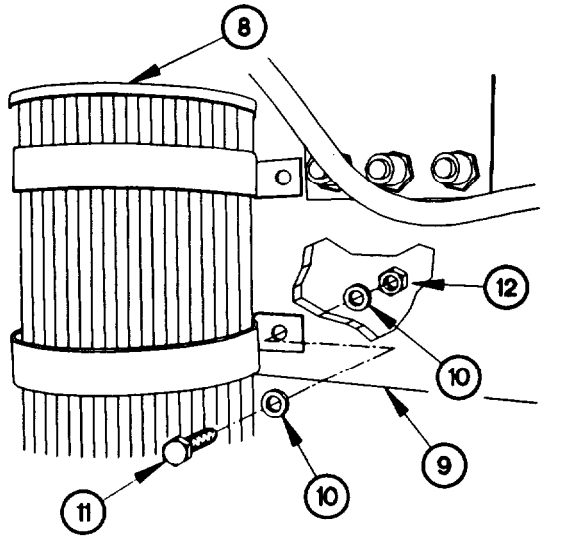
(3) Loosen two nuts (6) on retaining bands (7).

(4) Rotate two retaining bands (7) 90-degrees clockwise as viewed from top of air dryer (8).

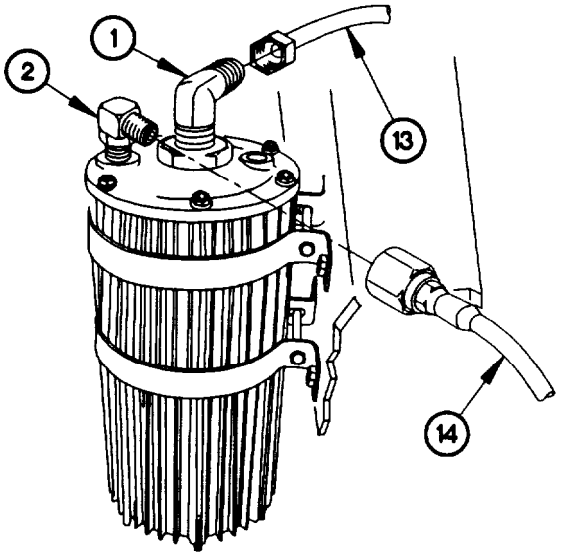
(5) Tighten two nuts (6) on retaining bands (7).

(6) Position air dryer (8) on frame (9) with eight washers (10), four screws (11), and self-locking nuts (12).

(7) Tighten self-locking nuts (12) to 34-42 lb-ft (47-N•m).



XX171041



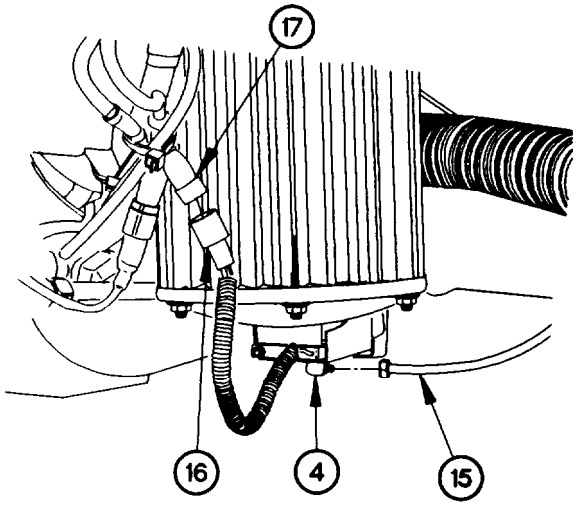
XX171051

(8) Connect output air hose (13) to 90-degree fitting (1).

(9) Connect input air hose (14) to 90-degree fitting (2).

(10) Connect air hose (15) to 90-degree fitting (4).

(11) Connect air dryer electrical connector (161 to connector P80 (17).



XX171061

23-6. AIR DRYER REPLACEMENT/REPAIR (CONT)

e. Follow-On Maintenance.

(1) Connect batteries (para 7-48).

(2) Stan engine (TM 9-2320-365-10) and allow air pressure to build up to normal pressure.

(3) Check air dryer and air hoses for air leaks.

(4) Shut down engine (TM 9-2320-365-10).

End of Task.

23-7. WET TANK REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Engine shut down (TM 9-2320-385-10).
Air tanks drained (TM 9-2320-365-10).

Tools and Special Tools
Goggles, Industrial (Item 15, Appendix C)
Tool Kit, Genl Mech (Item 44, Appendix C)

Materials/Parts
Antiseize Compound (Item 14, Appendix D)
Dispenser, Pressure Sensitive Adhesive Tape (Item 21, Appendix D)

WARNING

Wear appropriate eye protection when working under vehicle due to the possibility of falling debris. Failure to comply may result in injury to personnel.

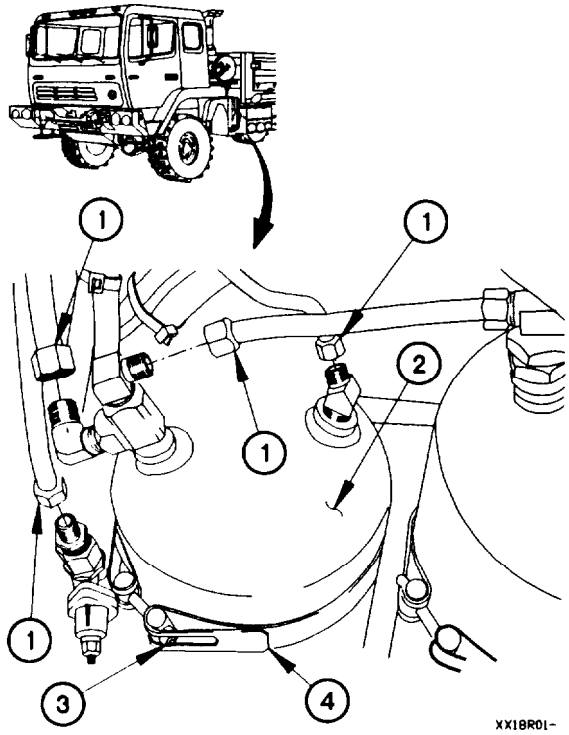
a. Removal.

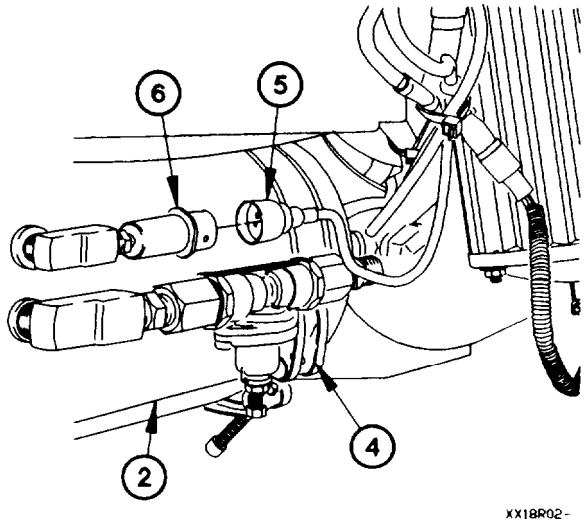
NOTE

Tag hoses and connectors prior to removal.

(1) Disconnect four air hoses (1) from wet tank (2).

(2) Loosen two clamp screws (3) until clamps (4) open.



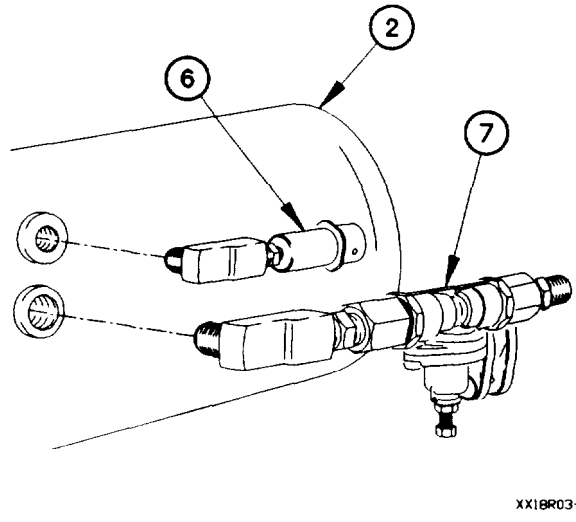


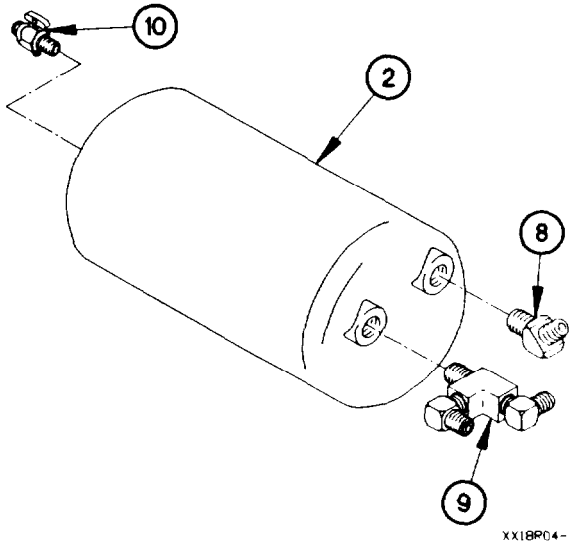
(3) Disconnect connector P84 (5) from pressure switch (6).

(4) Remove wet tank (2) from two clamps (4).

(5) Remove pressure switch (6) from wet tank (2).

(6) Remove pressure protection valve (7) from wet tank (2).





(7) Remove 45-degree fitting (8) from wet tank (2).

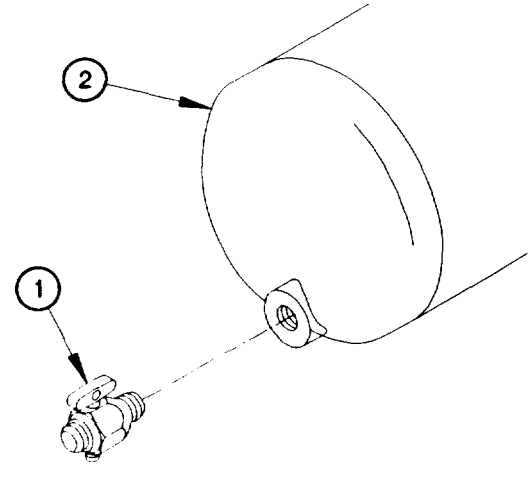
(8) Remove branch tee fitting (9) from wet tank (2).

(9) Remove drain valve (10) from wet tank (2).

b. Installation.

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



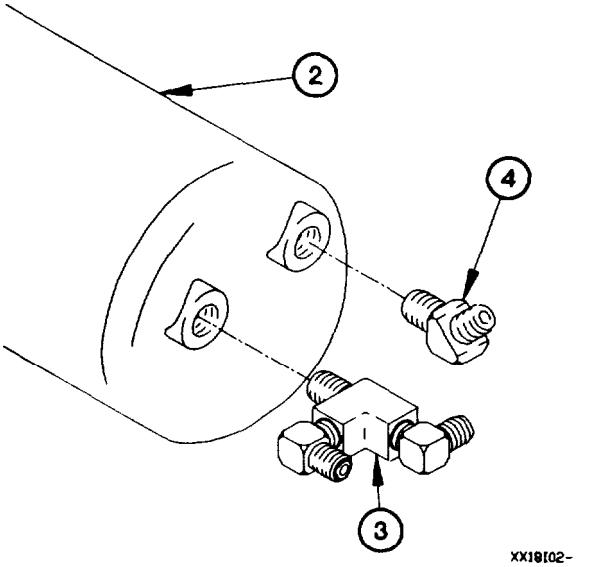
(1) Apply antiseize compound to threads of drain valve (1).

(2) Install drain valve (1) in wet tank (2).

23-7. WET TANK REPLACEMENT (CONT)

WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury to personnel.



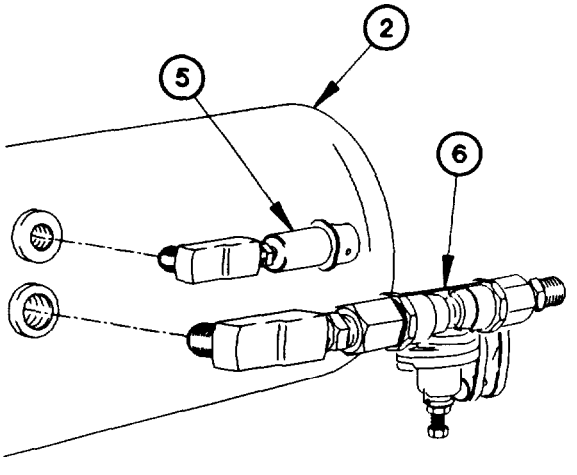
XX18102-

(3) Apply antiseize compound to threads of branch tee fitting (3).

(4) Install branch tee fitting (3) in wet tank (2).

(5) Apply antiseize compound to threads of 45-degree fitting (4).

(6) Install 45-degree fitting (4) in wet tank (2).



XX18103-

(7) Apply antiseize compound to threads of pressure switch (5).

(8) Install pressure switch (5) in wet tank (2).

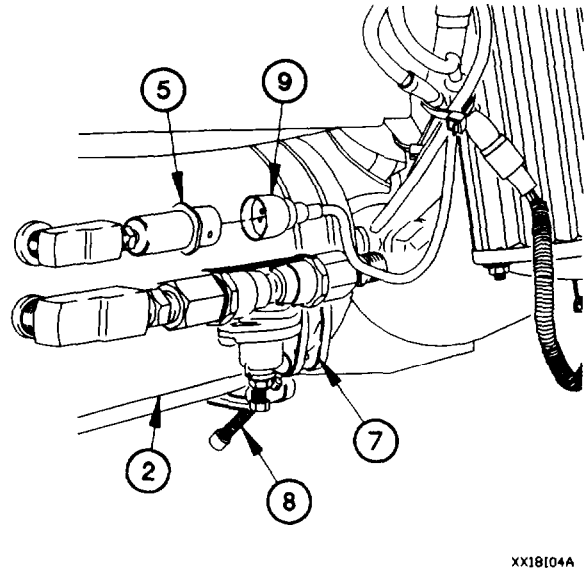
(9) Apply antiseize compound to threads of pressure protection valve (6).

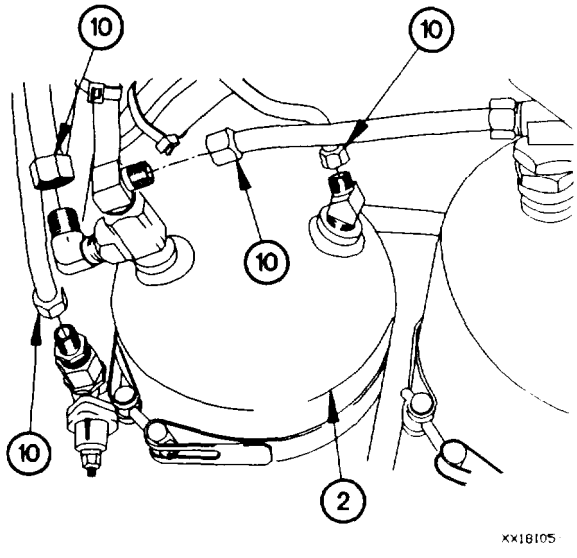
(10) Install pressure protection valve (6) in wet tank (2).

(11) Position wet tank (2) in two clamps (7).

(12) Tighten two clamp screws (8).

(13) Connect connector P84 (9) to pressure switch (5).





(14) Connect four air hoses (10) to wet tank (2).

c. Follow-on Maintenance.

(1) Start engine (TM 9-2320-365-10).

(2) Check air hoses and wet tank fittings for air leaks.

(3) Shut down engine (TM 9-2320-365-10).

End of Task.

CHAPTER 24
GAGES (NON-ELECTRICAL) MAINTENANCE

Section I. INTRODUCTION 24-1
24-1. INTRODUCTION 24-1

Section II. MAINTENANCE PROCEDURES 24-2
24-2. AIR FILTER RESTRICTION GAUGE REPLACEMENT 24-2

Section I. INTRODUCTION

24-1. INTRODUCTION

This chapter contains maintenance instructions for replacing non-electrical gages authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

Section II. MAINTENANCE PROCEDURES

24-2. AIR FILTER RESTRICTION GAUGE REPLACEMENT

This task covers:

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

INITIAL SETUP

Equipment Conditions
Batteries disconnected (para 7-48).
Instrument panel assembly removed for access (para 7-15).

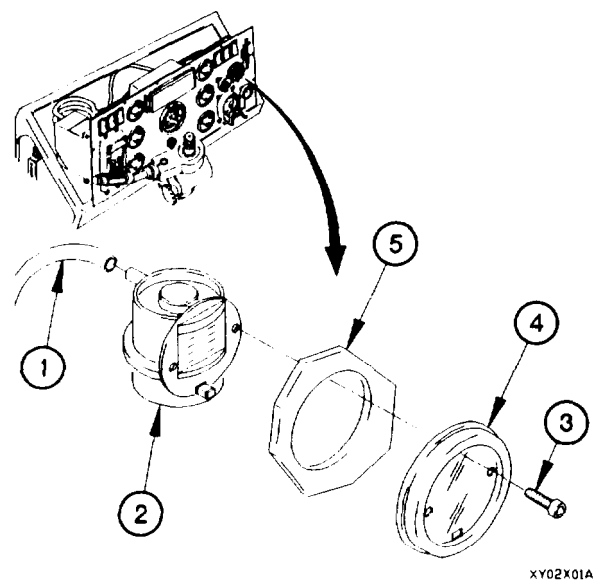
Tools and Special Tools
Tool Kit, Genl Mech (Item 44, Appendix C)

a. Removal.

(1) Disconnect vacuum hose (1) from AIR FILTER RESTRICTION GAUGE (2).

(2) Remove two screws (3) and AIR FILTER RESTRICTION GAUGE faceplate (4) from instrument panel assembly (5).

(3) Remove AIR FILTER RESTRICTION GAUGE (2) from instrument panel assembly (5).



b. Installation.

(1) Position AIR FILTER RESTRICTION GAUGE (2) in instrument panel assembly (5).

(2) Install AIR FILTER RESTRICTION GAUGE faceplate (4) on instrument panel assembly (5) with two screws (3).

(3) Connect vacuum hose (1) to AIR FILTER RESTRICTION GAUGE (2).

c. Follow-On Maintenance.

(1) Install instrument panel assembly (para 7-15).

(2) Connect batteries (para 7-48).

(3) Start engine (TM 9-2320-365-10).

(4) Check operation of AIR FILTER RESTRICTION GAUGE.

(5) Shut down engine (TM 9-2320-365-10).

End of Task.

APPENDIX A
REFERENCES

A-1. SCOPE

This appendix lists all forms, field manuals, technical manuals, and other publications referenced in this manual. Those publications that should be consulted for additional information about vehicle operations are also listed.

A-2. PUBLICATIONS INDEX

The following index should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this technical manual.

Consolidated Index of Army Publications and Blank Forms . . . . . DA Pam 25-30

A-3. FORMS

The following forms pertain to this manual. See DA Pam 25-30 for index of blank forms. See DA Pam 738-750, The Army Maintenance Management System (TAMMS), for instructions on the use of maintenance forms pertaining to this material.

Equipment Control Record . . . . . DA Form 2408-9
Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404
Maintenance Request . . . . . DA Form 2407
Packaging Improvement Report . . . . . DD Form 6
Processing and Deprocessing Record of Shipping, Storage, and Issue of Vehicles and Spare Engines.. . . . . DD Form 1397
Product Quality Deficiency Report . . . . . SF 368
Recommended Changes to DA Publications and Blank Forms . . . . . DA Form 2028-2
Report of Item Discrepancy (ROID) . . . . . SF 364

A-4. OTHER PUBLICATIONS

The following publications contain information pertinent to the LMTV and associated equipment.

a. Safety.

First Aid for Soldiers . . . . . FM 21-11
Security of Tactical Wheeled Vehicles . . . . . TB 9-2300-422-20
Safety Inspection and Testing of Lifting Devices . . . . . TB 43-0142

A-4. OTHER PUBLICATIONS (CONT)

b. LMTV.

Direct Support and General Support Maintenance Manual for M1078 Series, 2 1/2-Ton, 4x4, Light Medium Tactical Vehicle (LMTV) . . . . . TM 9-2320-365-34
Hand Receipt Covering Contents of Components of End Item (COEI), Basic Issue Items (BII), and Additional Authorization List (AAL), for M1078 Series, 2 1/2-Ton, 4x4, Light Medium Tactical Vehicles (LMTV) . . . . . TM 9-2320-365-10-HR
Operator's Manual for M1078 Series, 2 1/2-Ton, 4x4, Light Medium Tactical Vehicle (LMTV) . . . . . TM 9-2320-365-10
Unit, Direct Support, and General Support Repair Parts and Special Tools List for M1078 Series, 2 1/2-Ton, 4x4, Light Medium Tactical Vehicle (LMTV) . . . . . TM 9-2320-365-34P
Warranty Program for M1078 Series, 2 1/2-Ton, 4x4, Light Medium Tactical Vehicle (LMTV) . . . . . TB 9-2300-365-15

c. General Vehicle Operation.

Army Motor Transport Units and Operations . . . . . FM 55-30
Deepwater Fording of Ordnance Material . . . . . TM 9-238
Manual for the Wheeled Vehicle Driver . . . . . FM 21-305
Safety Prevention of Motor Vehicle Accidents AR 385-55
Vehicle Recovery Operations . . . . . FM 20-20

d. General Maintenance and Repair.

Army Oil Analysis Program . . . . . TB 43-0211
Camouflage Pattern Painting . . . . . FM 5-20
Charging System Troubleshooting . . . . . DA Pam 750-33
Color, Marking, and Camouflage Painting of Military Vehicles . . . . . TB 43-0209
Cooling Systems: Tactical Vehicles . . . . . TM 750-254
Corrosion Prevention and Control Including Rustproofing Procedures for Tactical Vehicles and Trailers . . . . . TB 43-0213
Description, Use, Bonding Techniques, and Properties of Adhesives . . . . . TB ORD 1032
Equipment Improvement Report and Maintenance Digest: TACOM Equipment . . . . . TB 43-0001-39-1
Equipment Improvement Report and Maintenance Summary . . . . . TM 43-0143
Installation Instructions for Installation Kit, Electronic Equipment, MK-2700/VRC (NSN 5895-01-421-0814) (EIC: N/A) to Permit Installation of Radio Set AN/VRC-87/88/90 Series into M1078, M1080, M1081, M1083-M1086, M1088-M1094 and M1096 Family of Medium Tactical Vehicles . . . . . TB 11-5820-890-20-101
Installation Instructions for Installation Kit, Electronic Equipment, MK-2715/VRC (NSN 5895-01-421-0812) (EIC: N/A) to Permit Installation of Radio Set AN/VRC-89/91/92 Series into M1078, M1080, M1081, M1083-M1086, M1088-M1094 and M1096 Family of Medium Tactical Vehicles . . . . . TB 11-5820-890-20-92
Metal Body Repair and Related Operations . . . . . FM 43-2
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materials Including Chemicals . . . . . TM 9-247
Operator's and Organizational Maintenance Manual for Radio Sets . . . . . TM 11-5820-498-12
Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools List Simplified Test Equipment for Internal Combustion Engines Reprogrammable (STE/ICE-R) (NSN 4910-01-222-6589) . . . . . TM 9-4910-571-12&P
Operator's Manual, Radio Set, AN/VRC-46 . . . . . TM 11-5820-401-10-1

Operator's Manual, Radio Set, AN/VRC-90A . . . . . TM 11-5820-890-10-1
Operator's, Unit, Direct Support, and General Support Maintenance Manual for Lead-Acid Storage Batteries . . . . . TM 9-6140-200-14
Ordnance Tracked and Wheeled Vehicle Hull and Chassis Wiring, Repair of . . . . . TB ORD 650
Organizational Care, Maintenance, and Repair of Pneumatic Tires and Inner Tubes . . . . . TM 9-2810-200-14
Painting Instructions for Field Use . . . . . TM 43-0139
Purging, Cleaning, and Coating Interior Ferrous and Terne Sheet Vehicle Fuel Tanks . . . . . TB 43-0212
Repair of Tents, Canvas, and Webbing . . . . . FM 10-16
Rigging.. . . . . FM 5-125
Use and Care of Hand Tools and Measuring Tools . . . . . TM 9-243
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems . . . . . TB 750-651
Welding Theory and Application . . . . . FM 9-237

e. Cold Weather Operation.

Basic Cold Weather Manual . . . . . FM 31-70
Northern Operations . . . . . FM 31-71
Operation and Maintenance of Ordnance Materiel in Cold Weather (0° to -65°F) . . . . . FM 9-207

f. Decontamination.

Decontamination Operations Facilities & Equipment . . . . . TB 700-4
NBC Protection . . . . . FM 3-4
NBC Decontamination . . . . . FM 3-5

g. Maintenance of Special Purpose Kits.

Operator and Organizational Maintenance Manual for Chemical Alarm . . . . . TM 3-6665-225-12
Operator's and Unit Maintenance Manual Including Repair Parts and Special Tools List for Decontaminating Apparatus: M13 . . . . . TM 3-4230-214-12&P
Operator's, Organizational, Direct Support, and General Support Maintenance Manual Including Repair Parts and Special Tools List for Various Machine Gun Mounts . . . . . TM 9-1005-245-14
Operator's, Organizational, Direct Support, and General Support Maintenance Manual, Air Conditioner, Horizontal Compact, 18,000 BTU/HR, 208 Volt, 3 Phase, 50/60 Hertz, Model F18H-3S . . . . . TM 5-4120-384-14
Unit and Direct Support Maintenance, Repair Parts and Special Tools List for Heater, Space, Multifuel with Blower, 60,000 BTU/HR, 120V, Model UH-68G, NSN 4520-01-203-4410, and Model UH-88GI, NSN 4520-01-297-6803 . . . . . TM 5-4520-253-23P

h. General.

Operator's Manual (M998 Series) . . . . . TM 9-2320-280-10
Operator's Manual (M1008 Series) . . . . . TM 9-2320-289-10
Operator's Manual (M35 Series) . . . . . TM 9-2320-361-10
Operator's Manual (M939 Series) . . . . . TM 9-2320-272-10
Principles of Automotive Vehicles . . . . . TM 9-8000
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use (US Army Tank-automotive and Armaments Command) . . . . . TM 750-244-6
Route Reconnaissance and Classification . . . . . FM 5-36
Soldier's Manual MOS 88M Motor Transport Operator, Skill Levels 1/2 . . . . . STP 55-88-M12-SM

A-4. OTHER PUBLICATIONS (CONT)

i. Land, Sea, and Air Shipment.

Airdrop of Supplies and Equipment: Rigging 2 1/2-Ton Trucks . . . . . FM 10-520
Containerization of Military Vehicles . . . . . MTMCTEA Ref 95-55-23
Lifting and Tiedown of U.S. Military Helicopters . . . . . MTMCTEA Ref 95-55-21
Marine Lifting and Lashing Handbook . . . . . MTMCTEA Ref 95-55-22
Marine Terminal Lifting Guidance . . . . . MTMCTEA Pam 56-1
Multiservice Helicopter External Air Transport: Basic Operations and Equipment . . . . . FM 55-450-3
Multiservice Helicopter External Air Transport: Dual-Point Load Rigging Procedures . . . . . FM 55-450-5
Multiservice Helicopter External Air Transport: Single-Point Load Rigging Procedures . . . . . FM 55-450-4
Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment (in TOE Line Sequence) . . . . . TB 55-46-1
Tiedown Handbook for Rail Movements . . . . . MTMCTEA Pam 55-19
Tiedown Handbook for Truck Movements . . . . . MTMCTEA Ref 92-55-20

APPENDIX B
MAINTENANCE ALLOCATION CHART (MAC)

SECTION I

INTRODUCTION

B-1. The Army Maintenance System MAC.

a. This introduction (Section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (Operator/Crew) and O (Unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. Maintenance Functions. Maintenance functions 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. Operations required periodically to keep an item in proper operating condition; e.g. to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemicals fluids, or gases.

d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or Test, Measurement, and Diagnostic Equipment (TMDE) used in precision measurement. Consists of comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the 3d position code of the SMR code.

i. Repair. The application of maintenance services[1] including fault location/troubleshooting[2], removal/installation, and disassembly/assembly[3] procedures, and maintenance actions[4] 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. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

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.

b. Column 2, Component/Assembly. Column 2 contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the items listed in Column 2. (For detailed explanation of these functions, see Paragraph B-2.)

d. Column 4, Maintenance Level. Column 4 specifies each level of maintenance authorized to perform each function listed in Column 3, by indicating work time required (expressed in man-hours in whole hours or decimals) in the appropriate subcolumn. This work-time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate work-time figures are to be shown for each level. The work-time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions.

---

[1]Services - Inspect, test, service, adjust, align calibrate, and/or replace.

[2]Fault location/troubleshooting - The process of investigating and detecting the cause of equipment malfunction; the act of isolating a fault within a system or Unit Under Test (UUT).

[3]Disassembly/assembly - The step-by-step breakdown (taking apart) of a spare/functional group coded item, to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

[4]Actions - Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C . . . . . Operator or crew maintenance
O . . . . . Unit maintenance
F . . . . . Direct Support maintenance
L . . . . . Specialized Repair Activity (SRA)[5]
H . . . . . General Support maintenance
D . . . . . Depot maintenance

e. Column 5, Tools and Test Equipment Reference Code. Column 5 specifies, by code, those common tools sets (not individual tools), common TMDE, and special tools, special TMDE, and special support equipment required to perform the designated functions. Codes are keyed to tools and test equipment in Section Ill.

f. Column 6, Remarks. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in Section IV.

B-4. Explanation of Columns in Tool and Test Equipment Requirements, Section Ill.

a. Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II column 5.

b. Column 2, Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

c. Column 3, Nomenclature. Name or identification of the tool or test equipment.

d. Column 4, National Stock Number. The National Stock Number of tool or test equipment.

e. Column 5, Tool Number. The manufacturer's part number, model number, or type number.

B-5. Explanation of Columns in Remarks, Section IV.

a. Column 1, Remarks Code. The code recorded in column 6. Section II.

b. Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

[5]This maintenance level is not included in Section II, Column (4) of the Maintenance Allocation Chart. Functions to this level of maintenance are identified by a work-time figure in the "H" column of Section II, Column (4), and an associated reference code is used in the Remarks column (6). This code is keyed to Section IV, Remarks, and the SRA complete repair application is explained there.

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	Remarks
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Code
0100	ENGINE ASSEMBLY	Inspect		0.1				78	
		Test		1.5	0.3			78,79	
		Adjust			3.0			56,60,78,80	
		Service		0.8				57,59,78	
		Replace			7.0			16,56,59,61,78,79	
		Repair		0.4	1.6	3.3		16,31,32,44,56,59,60,61,78,79	
0101	CYLINDER HEAD ASSEMBLY	Inspect			0.1			78	
		Replace			2.0			44,56,59,60,78	
		Repair				2.5		56,59,60,61,62,78,81	
0102	CRANKSHAFT	Replace				16.0		56,57,60,71,78	
		Repair			3.8	16.0		16,31,32 56,59,60,61,78	
0103	FLEXPLATE,ENGINE	Replace			6.5			56,59,78	
		Repair			1.0			56,49,78	
0104	PISTON ASSEMBLY	Replace				9.0		56,57,59,60,62,78,79	
		Repair				0.6		78	
0105	CAMSHAFT ASSEMBLY	Replace				3.1		14,56,57,49,60,78	
		Repair				1.2		56,78	
0105	ROCKER ARM AND PUSH RODS	Replace			2.0			44,59,60,61,78	
		Repair			0.3			44,78	
0106	COOLER, ENGINE OIL	Replace			1.3			56,78	
		Repair			0.3			56,78	
0108	MANIFOLDS, INLET AND EXHAUST	Replace			1.5			56,60,61,78,79	
0301	INJECTOR,ASSEMBLY,FUEL	Replace			2.1			44,57,78,80	
		Adjust			1.6			56,78,79,80	
0304	AIR INTAKE SYSTEM	Service		0.3					
		Repair		0.3				46,57	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
0304	INTAKE AIR CLEANER	Service		0.2					
		Replace		0.8				6,46,57, 78	
		Repair		0.4				57,78	
0305	TURBOCHARGER	Replace			0.8			56,51,78, 79	
0306	FUEL TANK	Inspect	0.1						
		Replace		1.5				57,59,78	
0308	GOVERNOR,ENGINE SPEED	Replace			1.0			57,60,76, 78,79	
		Repair		0.5	0.7			57,78	
0309	FILTER,FUEL/WATER SEPARATOR	Inspect	0.2						
		Service	0.2	0.3				78	
		Replace		0.5				57,78	
0311	ETHER STARTING AID	Replace		0.6				57,59,78	
0312	ACCELERATOR/HAND THROTTLE	Replace		0.5				57,78	
		Adjust		0.2				57,78	
0401	EXHAUST MUFFLER/PIPES	Inspect	0.1	0.2					
		Replace		0.9				57,59,78	
0501	RADIATOR/CHARGE AIR COOLER	Inspect	0.1						
		Replace		2.5				2,27,53, 59,78	
		Service		1.5				59,79	
		Repair		0.6	2.0			2,27,53, 59,78	
0501	RADIATIOR OVERFLOW TANK	Replace		0.5				46,57,78	
		Repair		0.3				78	
0502	SHROUD,FAN	Replace		1.0				57,59,78, 86	
0503	HOSES,WATER	Replace		0.5				57,59,78, 86	
0504	PUMP,WATER	Replace		0.8				15,57,59, 78,86	
0505	CLUTCH,ENGINE FAN	Inspect		1.0				57	
		Service		0.2				59	
		Replace		1.5				2,53,57, 78	
		Repair			1.2			56,59,60, 61,78,79	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
0601	ALTERNATOR, 100 AMP	Inspect		0.2					
		Test		0.5	1.5			59,63,78	
		Replace		1.0				59,78	
		Repair		0.2	0.5			38,56,57, 59,63,78, 79	
0603	STARTING MOTOR,ENGINE	Inspect		0.1					
		Test		0.5	0.5			57,63	
		Replace		1.5				2,9,57, 59,78	
		Repair			2.1			52,56,59, 60,76,78	
0606	SOLENOID,FUEL SHUTOFF	Replace			1.0			60,78,80	
0607	CABLE ASSEMBLY, DASHBOARD	Test		0.5				56	
		Replace		2.9				57,59,76, 78	
		Repair		1.0	0.6			56,57,61, 78	
0607	DISPLAY,LIGHTED INDICATOR	Test		0.3					
		Replace		0.5				78,86	
		Repair		0.3				78	
0609	LIGHT ASSEMBLY,BACKUP	Inspect	0.1						
		Replace		0.8				57,78	
				0.3				78	
0609	LIGHT,BLACKOUT DRIVE	Inspect	0.1						
		Replace		0.8				57,59,78	
		Repair		0.5				78	
0609	TAILLIGHT ASSEMBLY, COMPOSITE	Inspect	0.1						
		Replace		0.8				57,59,78	
		Repair		0.5				78	
0609	LIGHT ASSEMBLY,FRONT TURN SIGNAL AND PARK	Inspect	0.1						
		Replace		0.8				57,59,78	
		Repair		0.5				78	
0609	HEADLIGHT	Inspect	0.1						
		Adjust		0.4				78	
		Replace		1.0				57,59,78	
0610	AUDIBLE ALARM	Inspect	0.1						
		Replace		0.6				78	
0611	HORN,CAB	Inspect	0.1						

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Replace		0.4				57,78	
0612	BOX ASSEMBLY,BATTERY	Inspect	0.1						
		Test		0.5				57,78	
		Service		0.3				57	A
		Replace		1.0				57,59,78	
		Repair		0.2				63	
0613	CABLE ASSEMBLY,LOWER, CAB AND DOOR MARKER LIGHTS	Inspect	0.1						
		Replace		0.8				78	
		Repair		0.7				63	
0613	CABLE ASSEMBLY,LOWER, CAB MARKER LIGHTS, M1081	Inspect	0.1						
		Replace		0.6				78,86	
		Repair		0.5				63	
0613	CABLE ASSEMBLY,UPPER, CAB CLEARANCE AND MARKER LIGHTS,M1081	Inspect	1.0						
		Replace		0.8				78,86	
		Repair		0.5				63	
0613	CABLE ASSEMBLY, STE/ICE-R	Replace		1.0				78	
		Repair		0.5	0.8			63	
0613	CABLE ASSEMBLY,CAB CLEARANCE AND MARKER LIGHTS	Inspect	0.1						
		Replace		1.2				57,78	
		Repair		0.5	0.8			63	
0613	CABLE ASSEMBLY, WARNING LIGHT	Replace		0.5				48,78,86	
		Repair		0.3	0.5			63	
0613	CABLE ASSEMBLY, WINDSHIELD WASHER PUMP/EMI	Replace		0.5				78	
		Repair			0.3			63	
0613	CABLE ASSEMBLY,ENGINE CONTROL	Inspect		0.1					
		Replace		2.3				57,78	
		Repair		0.5	0.5			63	
0613	CABLE ASSEMBLY,FRONT INTERVEHICULAR,12 VDC	Replace		0.8				59,78	
		Repair		0.2	1.3			63	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
0613	CABLE ASSEMBLY,FRONT LIGHTS	Replace		2.0				57,59,78, 86	
		Repair		0.5	0.5			63	
0613	CABLE ASSEMBLY,REAR LIGHTS	Replace		2.8				57,59,78	
		Repair		0.5	0.5			63	
0613	CABLE ASSEMBLY,PTO	Replace		1.6				57,59,78	
		Repair		0.5	0.8			63	
0613	CABLE ASSEMBLY,REAR INTERVEHICULAR,24 VDC	Replace		0.6				59,78	
		Repair		0.5	0.8			63	
0613	CABLE ASSEMBLY,START AND CHARGING	Replace		2.0				57,78	
		Repair		0.5	0.8			63	
0613	CABLE ASSEMBLY,WINCH CONTROL VALVE	Replace		1.8				57,59,78	
		Repair		0.5	0.8			63	
0705	WTEC II VEHICLE INTERFACE MODULE (VIM)	Replace		0.6				78	
		Repair		0.8				78	
0708	TORQUE CONVERTER	Adjust			0.9			18,59,60, 78	
		Remove/ Install			0.8			56,59,60, 61,78	
		Repair			1.3			30,56,59, 60,62,78	
0710	TRANSMISSION	Inspect		0.4				78	
		Service		1.5				57,59,78	
		Replace			7.0			56,59,60, 61,78,79, 84	
		Repair		0.4	2.7	1.9		3,18,19, 24,25,27, 41,56,57, 59,60,61, 78,79,84	
0710	MODULE,FRONT SUPPORT	Remove/ Install				2.0		56,57,59, 60,61,78	
		Repair				7.0		30,56,57, 59,60,61, 78	
0710	MODULE,PLANETARY GEAR (P1)	Remove/ Install				2.0		59,60,71, 78	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Repair				1.5		59,60,71, 78	
0710	MODULE,PLANETARY (P2)	Remove/ Install				2.0		3,56,59, 60,61,78	
		Repair				1.9		3,19,56, 59,60,61, 71,78	
0710	PLANETARY CARRIER (P3)	Remove/ Install				2.0		3,56,60, 78	
		Repair				1.9		3,27,56, 60,78	
0710	MODULE,MAIN SHAFT	Remove/ Install				2.0		59,60,78	
		Repair				0.4		59,60,78	
0710	MODULE,CONVERTER HOUSING	Remove/ Install				4.3		3,56,57, 59,60,78	
		Repair				2.0		3,19,25, 56,57,59, 60,78	
0713	CLUTCH ASSEMBLY, C3/C4/C5,TRANSMISSION	Remove/ Install				2.0		56,57,59, 60,78	
		Repair				1.0		41,56,57, 59,60,78	
0713	MODULE,ROTATING CLUTCH	Remove/ Install				2.0		3,56,59, 60,78	
		Repair				2.4		3,19,24, 56,59,60, 78	
0714	VALVE ASSEMBLY, CONTROL MODULE	Remove/ Install			2.0			56,59,60, 61,78,79	
		Repair		1.0	2.5			59,61,78, 79	
0714	BODY ASSEMBLY,MAIN VALVE	Service		1.5				57,59,78	
		Remove/ Install			2.0			56,59,60, 61,78,79	
		Repair		1.5	2.5			56,59,60, 61,78,79	
0801	MODULE,TRANSFER CASE	Adjust				1.0			
		Remove/ Install				2.0		21,56,57, 59,60,61, 71,74,78, 79	
		Repair				1.1		23,27,33, 50,56,57, 60,78	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
0802	HOUSING ASSEMBLY,C6 AND C7 CLUTCH	Remove/ Install				2.0		56,59,60, 61,78	
		Repair				0.8		19,23,26, 27,28,29, 56,59,60, 61,62,71, 78	
0802	CONTROL VALVE ASSEMBLY	Remove/ Install				2.0		56,59,62, 78,79	
		Repair				1.0		56,59,61, 78,79	
								56,59,61, 78,79	
0804	PUMP ASSEMBLY,OIL	Replace				1.0		79	
		Repair				0.8		79	
0900	PROPELLER SHAFT	Inspect							
		Service		0.1					
		Repair		0.5				59	
		Replace		0.6				57,59,78	
1000	AXLE ASSEMBLY,FRONT	Inspect		0.5				57,59,78	
		Adjust	0.1	0.3	0.7			78	
		Service			1.0			57,79	
		Replace		0.5				59,78	
					4.5			56,57,59, 60,61,70, 78	
		Repair		2.3	2.2	6.0		56,57,59, 60,61,78	
1002	CARRIER ASSEMBLY, DIFFERENTIAL	Inspect		0.1	0.1	0.1		78,79	
		Service			0.3			78	
		Replace				4.6		21,56,57, 59,60,78, 79	
		Repair				2.7		56,57,59, 60,78,79	
1004	STEERING KNUCKLE,AXLE	Inspect			0.2				
		Adjust			2.5			79	
		Service			0.3			79	
		Replace			5.1			56,57,59, 60,71,78	
1100	AXLE ASSEMBLY,REAR	Inspect	0.1	0.4	0.7				
		Service		0.8				57,59,78	
		Replace			4.5			34,56,57, 59,60,78, 84	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Repair			0.9	6.0		21,56,57, 59,60,78 84,85,	
1102	CARRIER ASSEMBLY, DIFFERENTIAL	Inspect		0.1	0.1	1.0		78,79	
		Service			0.3			78	
		Replace				4.6		21,56,57 59,60,78, 79,85	
		Repair				2.7		21,37,56, 57,59,60, 71,73,78	
1202	BRAKE ASSEMBLY, FRONT AXLE	Inspect		0.1	1.0			59,78,79	
		Adjust		0.4				57,59,78	
		Repair		1.5	0.5			57,59,78, 83	
1202	BRAKE ASSEMBLY, REAR AXLE	Inspect		0.1	1.0			59,78,79	
		Adjust		0.4				57,59,78	
		Repair		1.5	0.5			57,59,78, 83	
1208	BRAKE AIR CHAMBER	Inspect		0.1					
		Replace		0.5				57,59,78	
1209	AIR COMPRESSOR	Adjust		0.6				59,78	
		Replace			1.2			56,60,61, 78,79	
1311	WHEEL ASSEMBLY, PNEUMATIC TIRE	Inspect	0.1					57	B
		Replace	1.0	1.2				57,59	
		Repair		2.0				57,59	
1313	TIRE, PNEUMATIC	Replace		2.0				57,59	
1401	STEERING SYSTEM	Inspect		0.2					
		Adjust			1.0			56,60,78	
		Repair		1.0	1.5			54,56,57, 59,60,61, 78,79	
1407	STEERING GEAR ASSEMBLY	Replace			4.0			56,60,78	
1410	PUMP, POWER STEERING	Replace			1.5			47,56,59, 60,78	
1411	HOSES, POWER STEERING	Replace		0.3				57,59,78, 88	
1413	HYDRAULIC RESERVIOR, POWER STEERING	Service	0.1	0.5				78	
		Replace		0.8				59,78,86	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
1501	FRAME ASSEMBLY	Inspect	0.1	0.3					
		Repair		0.8	14.0			56,57,59, 60,61,78, 79	
1504	RETAINER, SPARE TIRE	Inspect	0.1	0.1					
		Replace		3.0				57,59,78	
		Repair		0.6				57,59,78	
1601	LEAF SPRING ASSEMBLIES	Inspect	0.1	0.2					
				0.3				57	
		Replace			2.7			56,57,59, 60,78,79	
1604	SHOCK ABSORBERS	Inspect	0.1	0.3					
		Replace		0.5				57,59,78	
1605	STABILIZER BAR, REAR	Inspect		0.2					
		Replace		2.0				57,59,68, 78	
		Repair		1.5				57,78	
1801	CAB BODY, STANDARD	Inspect	0.1						
		Replace			60.0			56,57,60, 61,78,79	
		Repair		0.6				57,59,78	
1801	CAB BODY, AIR DROP	Inspect	0.1						
		Replace			60.0			56,57,60, 61,78,79	
		Repair		0.6				57,59,78	
1801	CAB DOORS, STANDARD	Inspect	0.1						
		Replace			1.0			55,59,78	
		Repair		2.7				49,57,78	
1801	CAB DOORS, AIR DROP	Inspect	0.1						
		Replace			1.0			55,59,78	
		Repair		2.7				49,57,78	
1801	SUPPORT ASSEMBLY, CAB FRONT	Inspect	0.1						
		Repair		1.1				57,59,78	
		Replace			3.0			8,13,57, 59,60,78, 79	
1801	SUPPORT ASSEMBLY, CAB REAR	Inspect	0.1						
		Replace		1.0				57,59,78	
		Repair		0.8				57,78	
1802	WINDSHIELD	Replace			0.6			55,59,78	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
1802	FENDER, VEHICULAR, FRONT	Inspect	0.1						
		Replace		2.0				57,59,78	
		Repair		0.5				57,78	
1803	ROOF, CAB, M1081	Replace		1.0				45,50,57, 59,78	
1805	FLOOR COVERING, CAB	Replace		1.0				57,78	
1806	SEATS	Replace							
1808	TOOL BOX ASSEMBLY	Inspect	0.1						
		Replace		0.5				47,57,59, 78	
		Repair		0.5				57,59,78	
1808	STOWAGE BOX, CAB	Replace		0.8				57,78	
		Repair		0.5				57,78	
1810	BODY, CARGO	Inspect	0.1						
		Replace			4.0			56,57,59, 60,78	
		Repair		0.5				57,59,78	
1812	BODY ASSEMBLY, VAN	Inspect	0.1	0.1					
		Repair		0.5				20,35,36, 42,43,47, 57,59,64, 72,76,78	
		Replace		1.9				36,64,78	
1812	DOOR, ACCESS, LEFT	Inspect	0.1						
		Replace		2.3				78	
		Repair		0.1				57,59-78	
1812	DOOR, ACCESS, RIGHT	Inspect	0.1						
		Replace		1.4				78	
		Repair		0.4				57,59,78	
1812	WINDOW SASH ASSEMBLY	Inspect	0.1						
		Replace		0.2				78	
		Repair		0.4				57,59,78	
1812	BOX ASSEMBLY, RELAY	Inspect	0.1	0.1					
		Replace		0.6				78	
		Repair		0.1				78	
		Test	0.1	0.5				59,78	
1812	FAN ASSEMBLY	Inspect	0.1						
		Replace		1.8				20,76,78	
		Repair		0.5				78	
2001	WINCH, 11K SELF-RECOVERY (SRW)	Inspect	0.1	4.0					

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Service		0.2				59	
		Replace			1.0			59,60,78	
		Repair			0.9			59,60,78	
2004	POWER TAKEOFF ASSEMBLY (PTO)	Inspect	0.1						
		Replace			1.0			56,57,59, 60,78	
		Repair			0.8			56,57,59, 60,78	
2202	MOTOR, WIPER, WINDSHIELD	Test		0.5					
		Replace		1.0				78	
2207	HEATER ASSEMBLY, PERSONNEL	Replace		2.0				57,59,78	
		Repair		1.0				57,59,78	
2210	DECALS	Inspect	0.1						
		Replace		1.0				78	
2401	POWER UNIT, AIR/HYDRAULIC	Inspect	0.1						
		Test		0.2					
		Service		1.0					
		Replace		3.0				57,59,78	
		Repair			2.0			57,59,60, 69,78,79	
2402	MANIFOLD, HYDRAULIC	Inspect	0.1						
		Test		0.2					
		Replace		1.5				51,57,59, 78	
		Repair		1.0				51,57,59, 78	
2402	LATCH, HYDRAULIC, CAB	Inspect	0.1						
		Adjust		0.5				57,59,78	
		Replace		0.5				57,59,78	
2404	SUSPENSION CYLINDER	Inspect							
		Replace							
2406	FILTER, HYDRAULIC	Service		0.3				59,78	
		Replace		0.2				59,78	
2408	RESERVIOR, HYDRAULIC	Replace		1.0				57,59,78	
		Repair		0.5				57,59,78	
3303	CAB ARCTIC KIT	Inspect	0.2						
		Test		1.0					

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Remove/ Install			6.0			56,57,59, 60,78,79, 86	
		Replace		1.0				57,59,78, 86	
		Repair		1.7				57,59,78, 86	
3303	CABLE ASSEMBLY, ARCTIC KIT WITH PTO	Replace		1.8				57,59,78	
		Repair		0.5	0.5			63	
3303	CARGO ARCTIC KIT	Inspect	0.2						
		Test		1.0					
		Remove/ Install			12.0			56,57,59, 60,78,79, 86	
		Replace		1.0				57,59,78, 86	
		Repair		1.7				57,59,78, 86	
3303	FURNACE ASSEMBLY, CARGO	Replace		3.0				57,59,78, 86	
		Repair		0.5				57,59,78, 86	
3303	CABLE ASSEMBLY, FURNACE, CARGO	Inspect	0.1						
		Replace		0.5				57,59,78	
		Repair		0.7				57,59,78	
3303	CONTROL UNIT ASSEMBLY, FURNACE	Replace		1.5				57,59,78	
		Repair		0.5				4,20,22, 39,57,78	
3303	HEATER ASSEMBLY, VEHICULAR	Inspect	0.1						
		Test		0.5					
		Service		0.5				59,78	
		Replace		1.5				57,78,86	
		Repair		1.5				57,78,86	
3303	SWINGFIRE ADAPTER KIT	Inspect	0.2						
		Test		1.0					
		Remove/ Install		3.0	7.0			57,59,78, 86	
		Replace		1.0				57,59,78, 86	
		Repair		1.7				57,59,78, 86	

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
3303	HEATER KIT, M1079	Inspect	0.1						
		Remove/ Install		2.5				78	
3305	FORDING KIT, DEEP WATER	Inspect	0.1						
		Remove/ Install		4.0				57,59,78	
3307	ALTERNATOR KIT, 200 AMP	Inspect	0.1	0.2					
		Test		0.5				59	
		Remove/ Install		2.0				57,59,78	
		Replace		1.0				57,59,78	
		Repair				0.5		56,57,60,	
3307	ALTERNATOR, 200 AMP	Inspect		0.2				62,78	
		Test		0.5	1.5			59,63,78	
		Replace		1.0				57,59,78	
		Repair		0.2	0.5			56,57,60, 61,63,78	
3307	CRANE (LMHC), MATERIAL HANDLING, LIGHT	Inspect	0.1	0.1					
		Repair		0.5				59,76,78	
		Replace		0.5					
		Test		0.5					
3307	WEIGHT BLOCK AND WIRE ROPE, LMHC	Inspect	1.0						
		Replace		0.1				59,78	
		Repair		0.5				59,78	
		Test			0.5				
3307	WINCH, LMHC	Inspect	0.1						
		Replace			0.5			59,78	
		Repair			1.0			59,78	
		Test		0.5					
3307	MAST/SWING ASSEMBLY, LMHC	Inspect	0.1						
		Repair		1.0				59,78	
		Test		0.5					
3307	CONTROL BOX, LMHC	Inspect	0.1						
		Replace		0.1					
		Repair		0.5					
		Test	1.0	0.5				76,78	
3307	TROOPSEAT KIT	Remove/ Install	1.0						

Section II. MAINTENANCE ALLOCATION CHART FOR THE LMTV VEHICLE (CONT)

(1)	(2)	(3)	(4) Maintenance Level					(5)	(6)
			Unit		Direct Support	General Support	Depot	Tools and Equipment	
Group Number	Component/Assembly	Maintenance Function	C	O	F	H	D	Ref Code	Remarks Code
		Inspect	0.1						
		Replace		1.0					
		Repair		0.5				78	
3307	COVER KIT, CARGO SOFT TOP	Remove/ Install	1.5						
		Inspect	0.1						
		Replace		2.0					
		Repair		0.5					
3307	AIR CONDITIONER KIT, M1079	Inspect	0.1						
		Remove/ Install		1.5				59,78	
3307	WARNING LIGHT ASSEMBLY, AMBER	Inspect	0.1						
		Repair		0.4				78	
		Test		0.2					
3401	MACHINE GUN RING KIT	Inspect	0.1						
		Remove/ Install			4.0			56,57,60, 78,79,84	
		Repair		1.1				10,57,78	
3402	MOUNT, SMALL ARMS	Inspect	0.1						
		Replace		0.3				78	
3909	CABLE ASSEMBLY, WARNING LIGHT	Inspect	0.1						
		Replace		0.5				78	
4316	AIR HOSE, CTIS	Inspect	0.1						
		Replace		0.4				59,78	
4317	VALVE, INVERSION	Replace		0.5				59,78	
4321	AIR DRYER	Inspect	0.1	0.1					
		Replace		1.0				57,59,78	
		Repair		0.6				57,59,78	
4702	GAUGE, AIR FILTER RESTRICTION	Replace		0.5				78	

Section III. TOOLS AND TEST EQUIPMENT FOR LMTV VEHICLES

Tool or Test Equipment REF Code	Maintenance Level	Nomenclature	National Stock Number	Tool Number
1	O,F	ADAPTER, RADIATOR	4910-01-170-4928	J29003-A
2	O	ADAPTER, SOCKET WRENCH	5120-00-240-8702	11655788-2
3	H	BUSHING DRIVER SET	5120-01-391-3541	J35922
4	O	CRIMPING TOOL, TERMINAL, HAND	5120-00-165-3912	M22520/1-01
5	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-00-078-3809	10935497
6	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-00-293-1010	5120-293-1282
7	F	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-00-181-6754	GGG-C-1507
8	F	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-074-7557	FCOM19
9	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-236-9996	FCOM15
10	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-335-1091	FC032
11	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-335-1119	SCO34
12	O	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-335-1122	SCO40
13	F	CROWFOOT ATTACHMENT, SOCKET WRENCH	5120-01-348-9473	AN8508--19A
14	H	DRIVER KIT, BEARING	4910-01-032-3128	8S0602
15	O	GAGE, BELT TENSION	6635-01-092-7462	0755-0101
16	O,F	GAGE, BELT TENSION	6635-01-143-2237	GA-424
17	O,F	GAGE, PRESSURE, 0-150 psi	6685-00-474-5721	111T1D05A01
18	F,H	GAGE, PROFILE	5220-01-388-1460	J-38548-1
19	H	HANDLE DRIVE	5120-00-377-2259	J8092
20	O	HEATER, GUN TYPE, ELECTRIC	4940-00-561-1002	500A
21	F,H	HOLDING BAR, PINION	5120-01-166-0573	J3453
22	O	INSERTER AND REMOVER, ELECTRICAL CONTACT	5120-00-915-4588	MS3447-16
23	H	INSERTER AND REMOVER, SPRING	5120-01-388-3660	J38573
24	H	INSERTER AND REMOVER SPRING	5120-01-388-4436	J35923
25	H	INSERTER, BEARING AND BUSHING	5120-01-388-7841	J-38565
26	H	INSERTER, BEARING AND BUSHING	5120-01-389-0658	J35921-1
27	H	INSERTER, BEARING AND BUSHING	5120-01-390-1104	J 38569
28	H	INSERTER, BEARING AND BUSHING	5120-01-390-1105	J 38568-3
29	H	INSERTER, BEARING AND BUSHING	5120-01-391-5133	J38579
30	F,H	INSERTER, BEARING AND BUSHING	5120-01-414-7398	J38566
31	F	INSERTER, SEAL	5120-01-362-2026	1U7430
32	F	INSERTER, SEAL	5120-01-362-2027	1U7598
33	F	INSTALLER, SEAL	N/A	J38574

Section III. TOOLS AND TEST EQUIPMENT FOR LMTV VEHICLES

Tool or Test Equipment REF Code	Maintenance Level	Nomenclature	National Stock Number	Tool Number
34	F	JACK, LEVELING SUPPORT VEHICLE	2590-00-231-7418	10876244
35	O	KEY,SOCKET HEAD SCREW	5120-00-984-0247	58010
36	O	LINK,CHAIN,END	4010-00-932-5013	NAS1049-16
37	H	PULLER KIT, UNIVERSAL	5180-00-089-3660	A57QB
38	F	PULLER KIT, UNIVERSAL	5180-01-124-1903	1P3075
39	O	REMOVER, ELECTRICAL CONTACT	5120-00-148-9844	MS3448-001B
40	F	RIVETER, BLIND, HAND	5120-01-289-4310	HP-2
41	H	RIVETER, YOKE, HAND	5120-01-415-3558	J-39354
42	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-00-180-0881	5120-00-180-0881
43	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-053-4158	FAM5A
44	O,F,H	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-055-1308	ANSIB18.3.2M
45	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-079-8032	SAM8A
46	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-160-8862	S 6 HBS
47	O,F	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3462	SA10A
48	O,F	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3497	TMP12A
49	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3519	F23D
50	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3526	FP24
51	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3527	FP32A
52	F,H	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3536	FTX40A
53	O	SCREWDRIVER ATTACHMENT, SOCKET WRENCH	5120-01-367-3574	GFA8A
54	O	SEPARATOR, BALL JOINT	5120-01-255-8238	2287
55	F	SETTING TOOL,WINDSHIELD	5120-01-316-4995	CRL216
56	O,F	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-348-7696	SC4910-95CLA02
57	O,F,H	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0650	SC4910-95CLA72
58	O	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0653	SC4910-95CLA73
59	O,F,H	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0654	SC4910-95CLA74
60	F,H	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0705	SC4910-95CLA31
61	F,H	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0706	SC4910-95CLA62

Section III. TOOLS AND TEST EQUIPMENT FOR LMTV VEHICLES

Tool or Test Equipment REF Code	Maintenance Level	Nomenclature	National Stock Number	Tool Number
62	O,F,H	SHOP EQUIPMENT, AUTOMOTIVE VEHICLE	4910-00-754-0707	SC 4910-95CLA63
63	O,F	SHOP EQUIPMENT, FUEL AND ELECTRICAL	4910-00-754-0714	SC 4910-95CLA01
64	O	SLING, EYE	3940-01-334-0749	EE1-202
65	F	SLING, MULTIPLE LEG	3940-00-777-5744	A170
66	H	SOCKET SET, SOCKET WRENCH	5120-01-195-0640	208FA
67	F,H	SOCKET, SOCKET WRENCH	5120-01-068-5643	5555M
68	O	SOCKET, SOCKET WRENCH	5120-01-161-5907	GLDH382
69	F	SOCKET, SOCKET WRENCH	5120-01-335-0784	TW321
70	O	SOCKET, SOCKET WRENCH	5120-01-359-9521	TV940009
71	F	SOLDERING AND BRAZING OUTFIT, RESISTANCE HEATING	3439-00-460-7198	SC4940-95-CLB20
72	O	SOLDERING IRON, ELECTRIC	3439-01-036-3308	3112-S3-40W
73	H	STAND, DIFFERENTIAL CARRIER REPAIR	4910-01-085-7729	J3409-D
74	H	STAND, MAINTENANCE AUTOMOTIVE ENGINE	4910-00-808-3372	J29109
75	O	TESTING APPARATUS	4910-01-426-3974	440.28
76	O,F	TOOL KIT, AUTO FUEL AND ELECTRICAL SYSTEM REPAIR	5180-00-754-0655	SC4910-95CLA50
77	F	TOOL KIT, BODY AND FENDER	5180-00-754-0643	SC5180-90-N34
78	O,F,H	TOOL KIT, GENERAL MECHANIC'S	5180-00-177-7033	SC5180-90-CL-N26
79	F,H	TOOL KIT, GENERAL MECHANIC'S	5180-00-699-5273	SC5180-90-CL-N05
80	F	TOOL KIT, INTERNAL COMBUSTION ENGINE	5180-01-356-8155	1U6680
81	H	TOOL KIT, SLEEVE REPAIR	5180-01-415-5896	4C4462
82	F	TOOL OUTFIT, HYDRAULIC	4940-01-036-5784	SC4940-95-CL-B07
83	O	TOOL, SPRING REMOVAL	5120-01-360-1918	TV940010
84	F	WRENCH SET, CROWFOOT, RATCHETING	5120-00-293-0013	GGG-W-646
85	F	WRENCH SET, SOCKET	5120-00-148-3706	ANSI-B107.5
86	O	WRENCH, TORQUE, 0-75 LB-IN.	5120-01-112-9532	TQSC6A

Section IV. REMARKS FOR THE LMTV VEHICLE

Remarks Code	Remarks
A	Battery service will be in accordance with TM 9-6140-200-14.
B	Repair of tires will be in accordance with TM 9-2610-200-14.

APPENDIX C
TOOLS IDENTIFICATION LIST

Section I. INTRODUCTION

C-1. INTRODUCTION

This appendix lists common tools, supplements, and special tools/fixtures that are suggested for maintenance tasks performed at the Unit Maintenance level.

C-2. EXPLANATION OF COLUMNS

a. Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item, e.g., "Bar, Pry (Item 1, Appendix C)."

b. Column (2) - Item Name. This column contains the nomenclature for the item.

c. Column (3) - National Stock Number. This is the national stock number assigned to the item which you can use to requisition it.

d. Column (4) - Part Number. This provides the Government, manufacturer, or vendor part number for the item.

e. Column (6) - Reference. This column contains the shop catalog (SC), technical manual, or other publication which provides an illustration and description of the item, or lists whether the item is fabricated.

APPENDIX C
Section II. TOOLS IDENTIFICATION LIST

(1) ITEM NUMBER	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER	(5) REFERENCE
1	ADAPTER, SOCKET WRENCH	5120-00-227-8088	A-A-2172	SC 4910-95-CL-A74
2	ADJUSTING TOOL, BRAKE SHOE	5120-00-154-3029	J34061	SC 4910-95-CL-A74
3	APRON, RUBBER	8145-00-082-6108	MIL-A-41829	SC 4910-95-CL-A74
4	CAPS, VISE JAW	5120-00-221-1506	GGG-C-137	SC 4910-95CL-A74
5	DISPENSING PUMP, HAND DRIVEN	4930-00-263-9886	43D15069	SC 4910-95-CL-A74
6	DRILL SET, TWIST	5130-00-293-0983	58	SC 4910-95-CL-A74
7	DRILL, PORTABLE, ELECTRIC	5130-00-293-1849	W-D-661	SC 4910-95-CL-A74
8	DRILL, TWIST	5133-01-120-3519		SC 4910-95-CL-A74

Section II. TOOLS IDENTIFICATION LIST (CONT)

(1) Item Number	(2) Item Name	(3) National Stock Number	(4) Part Number	(5) Reference
9	FISHING TOOL,PNEUMATIC TIRE VALVE	5120-00-516-4220	991	SC 4910-95-CL-A74
10	GAGE,DEPTH, MICROMETER	5210-00-619-4045	445BZ-6RL	CTA 50-909
11	GAGE,TIRE PRESSURE	4910-01-117-2994	955	SC 4910-95-CL-A72
12	GAGE,WHEEL ALIGNMENT	5210-00-529-1205	WA361	SC 4910-95-CL-A72
13	GLOVES,RUBBER	8415-00-641-4601	ZZ-G-381	SC 4910-95-CL-A74
14	GLOVES,WELDER'S	8415-00-268-7859	A-A-50022	SC 4910-95-CL-A72
15	GOGGLES,INDUSTRIAL	4240-00-052-3776	A-A-1110	SC 4910-95-CL-A74
16	GUN,LUBRICATING	4930-00-253-2478	1142	SC 4910-95-CL-A74
17	HAMMER,HAND	5120-00-224-4130	A-A-1292	SC 4910-95-CL-A74
18	HAMMER,HAND	5120-01-065-9037	57-533	SC 4910-95-CL-A72
19	HOSE ASSEMBLY, NONMETALLIC	4720-00-356-8557	ZZ-H-461	SC 4910-95-CL-A74
20	IRON,TIRE	5120-00-765-8536	T48A	SC 4910-95-CL-A74
21	JACK,HYDRAULIC,HAND	5120-00-224-7330	D120	SC 4910-95-CL-A74
22	MULTIMETER,DIGITAL	6625-01-139-2512	T00377	SC 4910-95-CL-A74
23	MULTIPLIER,TORQUE WRENCH	5120-00-574-9318	292	SC 4910-95-CL-A72
24	PAN,DRAIN	4910-00-387-9592	450	SC 4910-95-CL-A72
25	PAN,WASH	4940-00-617-9859	5582281	SC 4910-95-CL-A72
26	PRESSURE TESTER,	4910-01-170-4929	J24460-01	SC 4910-95-CL-A74
27	PULLER KIT,MECHANICAL	5120-00-313-9496	1178	SC 4910-95-CL-A74
28	PULLER,BATTERY TERMINAL	5120-00-944-4268	21	SC 4910-95-CL-A74
29	RESPIRATOR,AIR FILTER	4240-00-022-2524	GGG-M-125/6	SC 4910-95-CL-A72
30	SCALE,WEIGHING	6670-00-254-4634	AAA-5-133	SC 4910-95-CL-A72
31	SLING,CARGO	1670-00-823-5043	63J4261-13	CTA 50-970
32	SLING,ENDLESS	3940-00-675-5003	PD101-96	CTA 50-970
33	SOCKET SET,IMPACT	5120-01-117-0466	4151MMY	SC 4910-95-CL-A74
34	SOCKET SET,SOCKET WRENCH	5120-01-073-2821	217FMY	SC 4910-95-CL-A72

Section II. TOOLS IDENTIFICATION LIST (CONT)

(1) Item Number	(2) Item Name	(3) National Stock Number	(4) Part Number	(5) Reference
35	SOCKET SET,SOCKET WRENCH	5120-01-117-3876	221FSMY	SC 4910-95-CL-A02
36	SOCKET,SOCKET WRENCH	5120-00-181-6813	5530	SC 4910-95-CL-A74
37	SOCKET,SOCKET WRENCH	5120-00-232-5681	1242	SC 4910-95-CL-A74
38	SOCKET,SOCKET WRENCH	5120-01-112-0581	SIMM190	SC 4910-95-CL-A74
39	STE/ICE-R	4910-01-222-6589	12259266	SC 4910-95-CL-A74
40	TAPE,MEASURING	5210-00-081-4719	GA508A	CTA 50-970
41	TESTER,ANTIFREEZE AND BATTERY	6630-00-105-1418	10425	SC 4910-95-CL-A74
42	TOOL KIT,AUTO FUEL	5780-00-754-0655		SC 5180-95-CL-A50
43	TOOL KIT,BLIND RIVET	5780-01-201-4978	D-100-MIL-1	SC 4910-95-CL-A72
44	TOOL KIT,GENERAL MECHANIC'S	5180-00-177-7033		SC 5180-90-N26
45	TRESTLE,MOTOR VEHICLE MAINTENANCE	4910-00-251-8013	306	SC 4910-95-CL-A72
46	VISE,MACHINIST	5120-00-293-1439	504M2	SC 4910-95-CL-A74
47	WRENCH SET,SOCKET	5120-00-081-2305	GGG-W-641	SC 4910-95-CL-A74
48	WRENCH SET,SOCKET	5120-00-204-1999	GGG-W-641	SC 4910-95-CL-A74
49	WRENCH SET,SOCKET	5120-00-322-6231	51200017510	SC 4910-95-CL-A74
50	WRENCH,ADJUSTABLE	5120-00-264-3793	2117080	SC 4910-95-CL-A72
51	WRENCH,ADJUSTABLE AUTOMOTIVE	5120-00-449-8083	1B7536	SC 4910-95-CL-A74
52	WRENCH,BOX AND OPEN END	5120-00-277-8833	1244	SC 4910-95-CL-A74
53	WRENCH,BOX AND OPEN END	5120-00-277-8834	GGG-W-636	SC 4910-95-CL-A74
54	WRENCH,PIPE	5120-00-277-1461		SC 4910-95-CL-A74
55	WRENCH,PIPE	5120-00-2771485		SC 4910-95-CL-A74
56	WRENCH,STRAP, ADJUSTABLE	5120-00-020-2947	A91C	SC 4910-95-CL-A74
57	WRENCH,TORQUE,0-175 lb-ft	5120-00-640-6364	1753LDF	SC 4910-95-CL-A72
58	WRENCH,TORQUE,0-200 lb-in.	5120-00-853-4538	F2001	SC 4910-95-CL-A72

Section II. TOOLS IDENTIFICATION LIST (CONT)

(1) Item Number	(2) Item Name	(3) National Stock Number	(4) Part Number	(5) Reference
59	WRENCH,TORQUE,0-600 lb-ft	5120-00-221-7983	SW130-301	SC 4910-95-CL-A72

APPENDIX D
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE

This appendix lists expendable and durable items that you will need to operate and maintain the LMTV vehicle. This listing is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (except medical, class V repair parts, and heraldic items), 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 narrative instructions to identify the item, e.g., "Oil, Lubricating (Item 25, Appendix D).

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the item.

c. Column (3) - National Stock Number. This is the national stock number assigned to the item which you can use to requisition it.

d. Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number. This provides the other information you need to identify the item.

e. Column (5)- Unit of Measure. This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	0	4730-00-248-9340	Adapter, Pipe to Tube (81343) 4-4 010103B	ea
2	0	8040-00-273-8717	Adhesive (81348) MMM-A-121	pt
3	0	8040-00-152-0063	Adhesive (81348) MMM-A-1617 TY 3	bt
4	0	8040-01-250-3969	Adhesive (05972) 242	ea
5	0	8040-01-117-7872	Adhesive (04963) 08031	tu
6	0	8040-00-117-8510	Adhesive (71984) 3145 RTV Clear	tu
7	0	8040-00-776-9602	Adhesive (73168) 80055-31	kt
8	0	8040-00-118-2695	Adhesive (72799) RTV162	kt
9	0	8040-01-239-6828	Adhesive (01139) RTV123	tu
10	0	8040-01-331-7473	Adhesive (81349) (MIL-A-46106 GP3TY1)	tu
11	0	8040-01-331-7470	Adhesive (81349) (MIL-A-46106 GP1TY1)	tu

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST (CONT)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
12	C	6850-00-174-1806	Antifreeze,Arctic Type (81349) (MIL-A-11755) 55 gl drum	dr
13	C	6850-00-181-7940	Antifreeze,Ethylene Glycol,Permanent (81349) (MIL-A-46153) 55 gl drum	dr
14	O	8030-00-597-5367	Antiseize Compound (81349) (MIL-A-907)	lb
15	O	5340-00-450-5718	Cap and Plug Set 10935405	ea
16	O	6850-00-926-2275	Cleaning Compound, Windshield (81349) O-C 1901 16 0z bottle	bt
17	O	7920-00-044-9281	Cloth,Cleaning (81349) (MIL-C-85043)	bx
18	O		Corrosion Preventive Compound (81349) (MIL-C-16173)	
		8030-00-062-6950	Grade 1-1 qt can	qt
		9030-01-149-1731	Grade 2-1 qt can	qt
		8030-00-837-6557	Grade 3-1 qt can	pt
		8030-00-903-0931	Grade 4-1 qt can	pt
19	O	8030-00-033-4291	Corrosion Preventive Compound (MIL-C-82594) 8 oz can	bt
20	C	9150-00-664-0047	Damping Fluid (81348) VV-D-1078 1 lb can	lb
21	O	7520-01-209-1152	Dispenser,Pressure Sensitive Adhesive Tape (75037) STD-0-9	ea
22	O	5330-01-325-6993	Gasket Forming Compound (05972) 515	ea
23	C		Grease,Automotive and Artillery (GAA) (81349) (MIL-G-10924)	
		9150-01-197-7688	2-1/4 oz tube	tu
		9150-01-197-7690	1.75 lb can	cn
		9150-01-197-7689	6.5 lb can	cn
		9150-01-197-7692	35 lb can	cn
24		9150-00-530-6814	Grease,Wire Rope-Exposed Gear 981349) (MIL-G-18458) 35 lb can	cn
25		9150-00-935-4018	Grease,Molybenum Disulfide (81349) (MIL-G-21164) 14 oz cartridge	ca
26	C		Hydraulic Fluid A (MIL-H-5606)	
		9150-00-252-6383	1 qt can	cn
		9150-00-223-4134	1 gl can	cn
27	O	7510-00-145-0559	Ink,Marking Stencil (MIL-I-43553)	oz
28	O	7510-01-386-0787	Inking Pad,Rubber Stamp	ea

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS (CONT)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
29	O	9150-01-360-1905	Insulating Compound,Electrical	tu
30	O	5970-00-838-5951	Insulation Sleeving,Electrical (06090) CRN3-16BLACK	ft
31	O	5970-01-422-3579	Insulation Sleeving,Electrical (06090) ATUM 1/2 4ft length	lg
32	O	1650-00-166-4834	Lockwire (90166) 68A32	ea
33	O	9150-01-360-1905	Lubricant,Solid Film (MIL-_46147) 16 oz can	cn
34	O	4730-00-019-0608	Nipple,Pipe	ea
35	O	4730-00-825-7304	Nipple, Tube MS51501B4	ea
36	O	5310-00-059-4265	Nut,Plain,Hex	ea
37	C		Oil,Fuel Diesel, DF-A, Arctic (VV-F-800) (81348)	
		9140-00-286-5283	Bulk	gl
		9140-00-286-5284	55 gl drum, 16 gauge	dr
		9140-00-286-5285	55 gl drum, 18 gauge	dr
38	C		Oil,Fuel Diesel, DF-1, Winter (VV-F-800) (81348)	
		9140-00-286-5286	Bulk	gl
		9140-00-286-5288	55 gl drum, 16 gauge	dr
		9140-00-286-5289	55 gl drum, 18 gauge	dr
39	C		Oil,Fuel Diesel,DF-2,Regular (VV-F-800) (81348)	
		9140-00-2868294	Bulk	gl
		9140-00-286-5296	55 gl drum, 16 gauge	dr
		9140-00-286-5297	55 gl drum, 18 gauge	dr
40	C		Oil,Lubricating,Arctic (MIL-L-46167)	
		9150-00-402-2372	5 gl can	cn
		9150-00-491-7197	55 gl drum	dr
41	C		Oil,Lubricating,Gear, GO 75W (MIL-L-2105C)	
		9150-00-035-5390	1 qt can	cn
		9150-00-035-5391	5 gl can	cn
42	C		Oil,Lubricating,Gewar, 80W-90 (MIL-L-2105C)	
		9150-00-035-5392	1 qt can	qt
		9150-00-035-5393	5 gl can	cn
		9150-00-035-5394	55 gl drum, 16 gauge	dr
43	C		Oil,Lubricating,OE/HDO 10 (MIL-L-2104)	
		9150-00-183-7807	Bulk	gl
		9150-00-186-6668	5 gl can	cn
		9150-00-191-2772	55 gl drum	dr
44	C		Oil,Lubricating,OE/HDO 10W (MIL-L-2104)	
		9150-00-189-6727	1 qt can	cn

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS (CONT)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
45	C		Oil,Lubricating,OE/HDO 15W-40 (MIL-L-2104)	
		9150-01-152-4117	1 qt can	cn
		9150-01-152-4118	5 gl can	cn
		9150-01-152-4119	55 gl drum	dr
46	C		Oil,Lubricating,OE/HDO 30 (SAE 30) (MIL-L-2104)	
		9150-00-183-7808	Bulk	gl
		9150-00-186-6681	1 qt can	cn
		9150-00-188-9858	5 gl can	cn
		9150-00-189-6729	55 gl drum, 18 gauge	dr
47	C		Oil,Lubricating,OE/HDO 40 (MIL-L-2104)	
		9150-00-405-2987	Bulk	gl
		9150-00-189-6730	1 qt can	cn
		9150-00-188-9862	55 gl can	cn
48	O	5350-00-067-7639	Paper,Abrasive (28124) 02347 pg contains 100 sheets	pg
49	O	8010-01-146-2650	Polyurethane Coating (MIL-C-46168)	kt
50	O	8030-00-181-8372	Primer,Sealing Compound (05972) 747-56	cn
51	C	7920-00-205-1711	Rag,Wiping A-A-531	be
52	O	4730-00-021-1788	Reducer,Boss 4-6F50G5	ea
53	O	4020-00-855-2767	Rope,Fibrous (MIL-R-17343) 75 ft	cl
54	O	7520-00-634-2442	Rubber Stamp Set,Fixed Type	ea
55	O	5330-01-337-1108	Rubber Strip (12624) V4062	ft
56	O	5330-01-181-6482	Rubber Strip (19207) 12328583-3	ft
57	O	5305-01-286-0019	Screw,Cap,Socket Head (06888) SHCM75275 50 ct box	bx
58	O	1015-01-255-4144	Sealant,Pipe,Teflon (19207) 12297953 50 ml tube	tu
59	O	8030-00-081-2327	Sealing Compound (05972) 079-21	bx
60	O	8030-00-011-2762	Sealing Compound (05972) 290-31	bt
61	O	8030-00-133-3164	Sealing Compound (05972) 571-31	bt
62	O	8030-00-148-9833	Sealing Compound (05972) 271-21	bx
63	O	8030-00-204-9149	Sealing Compound (05972) 592-41	tu
64	O	8030-00-656-1426	Sealing Compound (81349) (MIL-S-45180)	pt
65	O	8030-01-025-1692	Sealing Compound (05972) 242-41	bt
66	O	8030-01-088-8140	Sealing Compound (52571) 9001512-0011	bt

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS (CONT)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
67	O		Sealing Compound (81349) (MIL-S-8802TY2CLB-2)	
		8030-00-753-5006	2 oz cartridge	ca
		8030-00-753-4599	6 oz can	kt
		8030-00-723-2746	12 oz can	kt
		8030-00-685-0915	24 oz can	kt
68	O	8030-01-155-3238	Sealing Compound (11083) 6V6640	ml
69	C	7930-00-634-3935	Soap,Laundry (81348) P-S-1792	lb
70	O	3439-00-006-7764	Solder, Tin Alloy (81348) SN63WRAP3	sl
71	C		Solvent,Dry Cleaning SD (P-D-680)	
		6850-00-281-1985	1 gl can	cn
		6850-00-664-5685	1 qt can	cn
72	O		Tape,Adhesive (0SHR6) 70P00002	ea
73	O	8030-00-889-3534	Tape, Antiseizing (81349) MIL-T-27730)	ea
74	O	5640-00-103-2254	Tape,Duct (39428) 1791K70	ea
75	O	5970-00-644-3167	Tape, Insulation,Electrical (80063) TL83	ro
76	O	5975-01-379-4997	Ties,Cable,Plastic (06383) PLT 35-C-O	hd
77	O	6145-01-148-2263	Wire,Electrical (80009) 175-0825-00 50 ft	ft

APPENDIX E
ILLUSTRATED LIST OF MANUFACTURED ITEMS

Section I. INTRODUCTION

E-1. INTRODUCTION

This appendix includes complete instructions for manufacturing or fabricating authorized items locally. All bulk materials needed to manufacture an item are listed by part number or specification number. Figures are provided as needed. See standards and specifications DoD-Std-00100D(AR) and ANSI Y14.5M1982 for required details.

Section II. MANUFACTURED ITEMS INDEX

ITEM NAME/PART NUMBER	ITEM DESCRIPTION	PARA NO.
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Brake Plunger Seal Driver		E-3
Cab Support Tool		E-4
Headlight Adjustment Screen		E-5
M1079 Blackout Shield Seals		E-6
M1079 Door Gaskets		E-7
M1079 Window Sash Glazing Seals		E-8
Relay Test Wire		E-9
Wheel Bearing Shim Tool Rest		E-10
12414690-001	Pneumatic Tube	E-11
12414690-002	Pneumatic Tube	E-11
12414690-004	Pneumatic Tube	E-11
12414690-005	Pneumatic Tube	E-11
12414690-010	Pneumatic Tube	E-11
12414690-101	Pneumatic Tube	E-11
12414690-102	Pneumatic Tube	E-11
12414690-103	Pneumatic Tube	E-11
12414690-104	Pneumatic Tube	E-11
12414690-105	Pneumatic Tube	E-11
12414690-106	Pneumatic Tube	E-11
12414690-107	Pneumatic Tube	E-11
12414690-108	Pneumatic Tube	E-11
12414690-109	Pneumatic Tube	E-11
12414690-112	Pneumatic Tube	E-11
12414690-113	Pneumatic Tube	E-11
12414690-115	Pneumatic Tube	E-11
12414690-117	Pneumatic Tube	E-11
12414690-118	Pneumatic Tube	E-11
12414690-119	Pneumatic Tube	E-11
12414690-120	Pneumatic Tube	E-11
12414690-121	Pneumatic Tube	E-11
12414690-122	Pneumatic Tube	E-11
12414690-123	Pneumatic Tube	E-11
12414690-124	Pneumatic Tube	E-11
12414690-125	Pneumatic Tube	E-11
12414690-126	Pneumatic Tube	E-11
12414690-127	Pneumatic Tube	E-11
12414690-201	Pneumatic Tube	E-11
12414690-202	Pneumatic Tube	E-11

Section II. MANUFACTURED ITEMS INDEX (CONT)

ITEM NAME/PART NUMBER	ITEM DESCRIPTION	PARA NO.
12414690-203	Pneumatic Tube	E-11
12414690-205	Pneumatic Tube	E-11
12414690-206	Pneumatic Tube	E-11
12414690-207	Pneumatic Tube	E-11
12414690-208	Pneumatic Tube	E-11
12414690-209	Pneumatic Tube	E-11
12414690-210	Pneumatic Tube	E-11
12414690-211	Pneumatic Tube	E-11
12414690-212	Pneumatic Tube	E-11
12414690-213	Pneumatic Tube	E-11
12414690-214	Pneumatic Tube	E-11
12414690-215	Pneumatic Tube	E-11
12414690-216	Pneumatic Tube	E-11
12414690-217	Pneumatic Tube	E-11
12414690-218	Pneumatic Tube	E-11
12414690-219	Pneumatic Tube	E-11
12414690-220	Pneumatic Tube	E-11
12414690-221	Pneumatic Tube	E-11
12414690-222	Pneumatic Tube	E-11
12414690-223	Pneumatic Tube	E-11
12414690-224	Pneumatic Tube	E-11
12414690-225	Pneumatic Tube	E-11
12414690-226	Pneumatic Tube	E-11
12414690-227	Pneumatic Tube	E-11
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12414690-231	Pneumatic Tube	E-11
12414690-301	Pneumatic Tube	E-11
12414690-302	Pneumatic Tube	E-11
12414690-303	Pneumatic Tube	E-11
12416381-P1	Non-Metallic Electrical Cable Conduit	E-12
12416381P10	Non-Metallic Electrical Cable Conduit	E-12
12416381P11	Non-Metallic Electrical Cable Conduit	E-12
12416381P12	Non-Metallic Electrical Cable Conduit	E-12
12416381P13	Non-Metallic Electrical Cable Conduit	E-12
12416381P14	Non-Metallic Electrical Cable Conduit	E-12
12416381P15	Non-Metallic Electrical Cable Conduit	E-12
12416381P16	Non-Metallic Electrical Cable Conduit	E-12
12416381P17	Non-Metallic Electrical Cable Conduit	E-12
12416381P2	Non-Metallic Electrical Cable Conduit	E-12
12416381P20	Non-Metallic Electrical Cable Conduit	E-12
12416381P21	Non-Metallic Electrical Cable Conduit	E-12
12416381P22	Non-Metallic Electrical Cable Conduit	E-12
12416381P23	Non-Metallic Electrical Cable Conduit	E-12
12416381P26	Non-Metallic Electrical Cable Conduit	E-12
12416381P3	Non-Metallic Electrical Cable Conduit	E-12
12416381P30	Non-Metallic Electrical Cable Conduit	E-12
12416381P32	Non-Metallic Electrical Cable Conduit	E-12
12416381P34	Non-Metallic Electrical Cable Conduit	E-12
12416381P35	Non-Metallic Electrical Cable Conduit	E-12

ITEM NAME/PART NUMBER	ITEM DESCRIPTION	PARA NO.
12416381P36	Non-Metallic Electrical Cable Conduit	E-12
12416381P37	Non-Metallic Electrical Cable Conduit	E-12
12416381P38	Non-Metallic Electrical Cable Conduit	E-12
12416381P4	Non-Metallic Electrical Cable Conduit	E-12
12416381P5	Non-Metallic Electrical Cable Conduit	E-12
12416381P6	Non-Metallic Electrical Cable Conduit	E-12
12416381P7	Non-Metallic Electrical Cable Conduit	E-12
12416381P8	Non-Metallic Electrical Cable Conduit	E-12
12416381P9	Non-Metallic Electrical Cable Conduit	E-12
12418037	Steering Gear Return Hose	E-13
12418460-001	Transmission Oil Cooler Hose	E-13
12418460-002	Transmission Oil Cooler Hose	E-13
12418763	Lanyard Assembly	E-14
12420196	Lanyard Assembly	E-14
12420197-001	Non-Metallic Vent Air Hose	E-15
12420197-002	Non-Metallic Vent Air Hose	E-15
12420197-003	Non-Metallic Vent Air Hose	E-15
12420197-004	Non-Metallic Vent Air Hose	E-15
12420197-005	Non-Metallic Vent Air Hose	E-15
12420197-006	Non-Metallic Vent Air Hose	E-15
12420198-001	Non-Metallic Vent Air Hose	E-15
12420198-002	Non-Metallic Vent Air Hose	E-15
12420308-457	Personnel Heater Air Duct Hose	E-16
12420308-760	Personnel Heater Air Duct Hose	E-16
12420489	Block Seal	E-17
3556-H-1048	CTIS Seal Driver	E-18
3256-K-1051	Wheel Hub Grease Seal Driver	E-19

Section III. MANUFACTURED ITEMS

E-2. BRAKE ADJUSTING TOOL SUPPORT

Make the brake adjusting tool support from 0.134 in. (3.4 mm) flat steel stock according to the following instructions. Refer to the parts list and **Figure E-1. Brake Adjusting Tool Support** for details.

Item	Part Number	Material Description	Size	Qty
1	N/A	Steel, ASTM A569 Sheet, Hot Rolled	6.0 in. (152.4 mm) x 6.0 in. (152.4 mm) x 0.134 in. (3.4 cm)	2

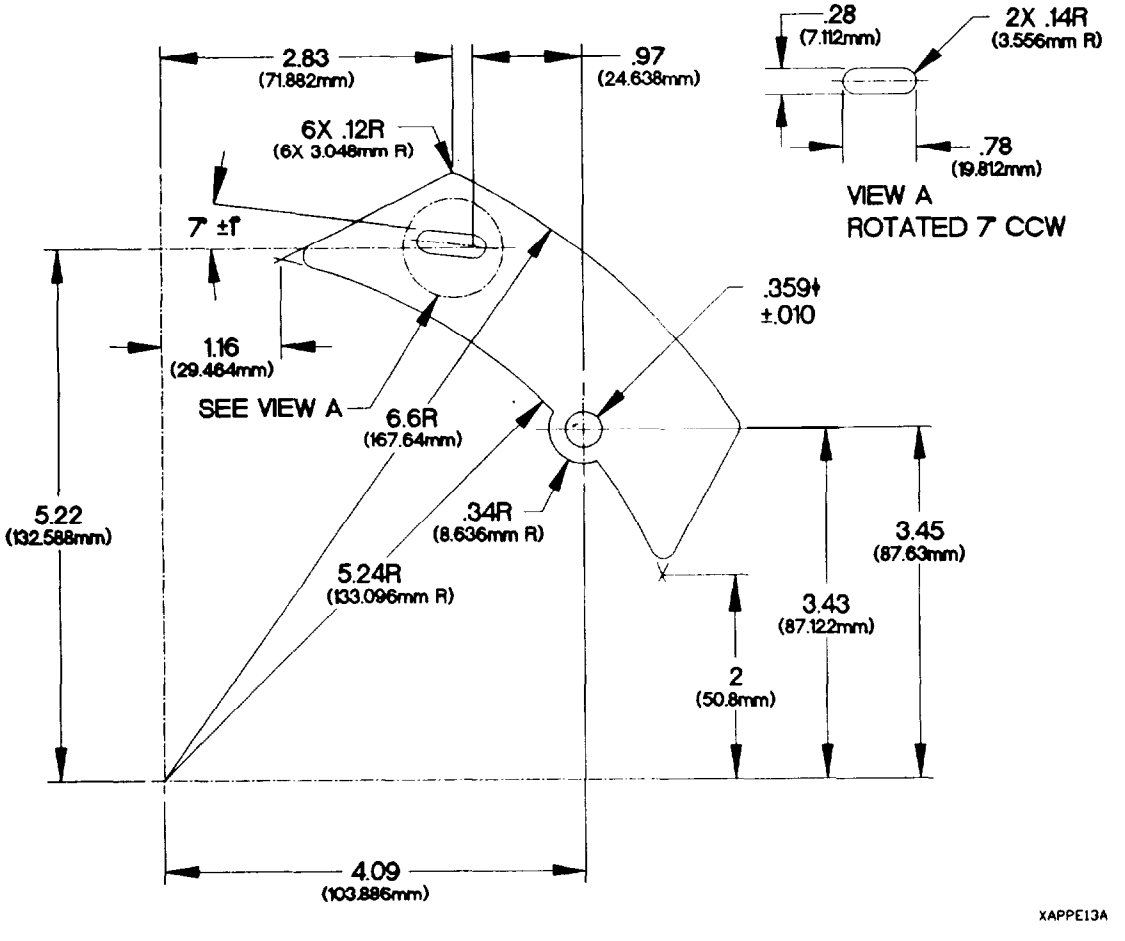


Figure E-1. Brake Adjusting Tool Support

a. All dimensions are in inches (millimeters).
b. Cut steel sheet as shown by dimensions on **Figure E-1. Brake Adjusting Tool Support.**
c. De-burr and remove sharp edges.

E-3. BRAKE PLUNGER SEAL DRIVER

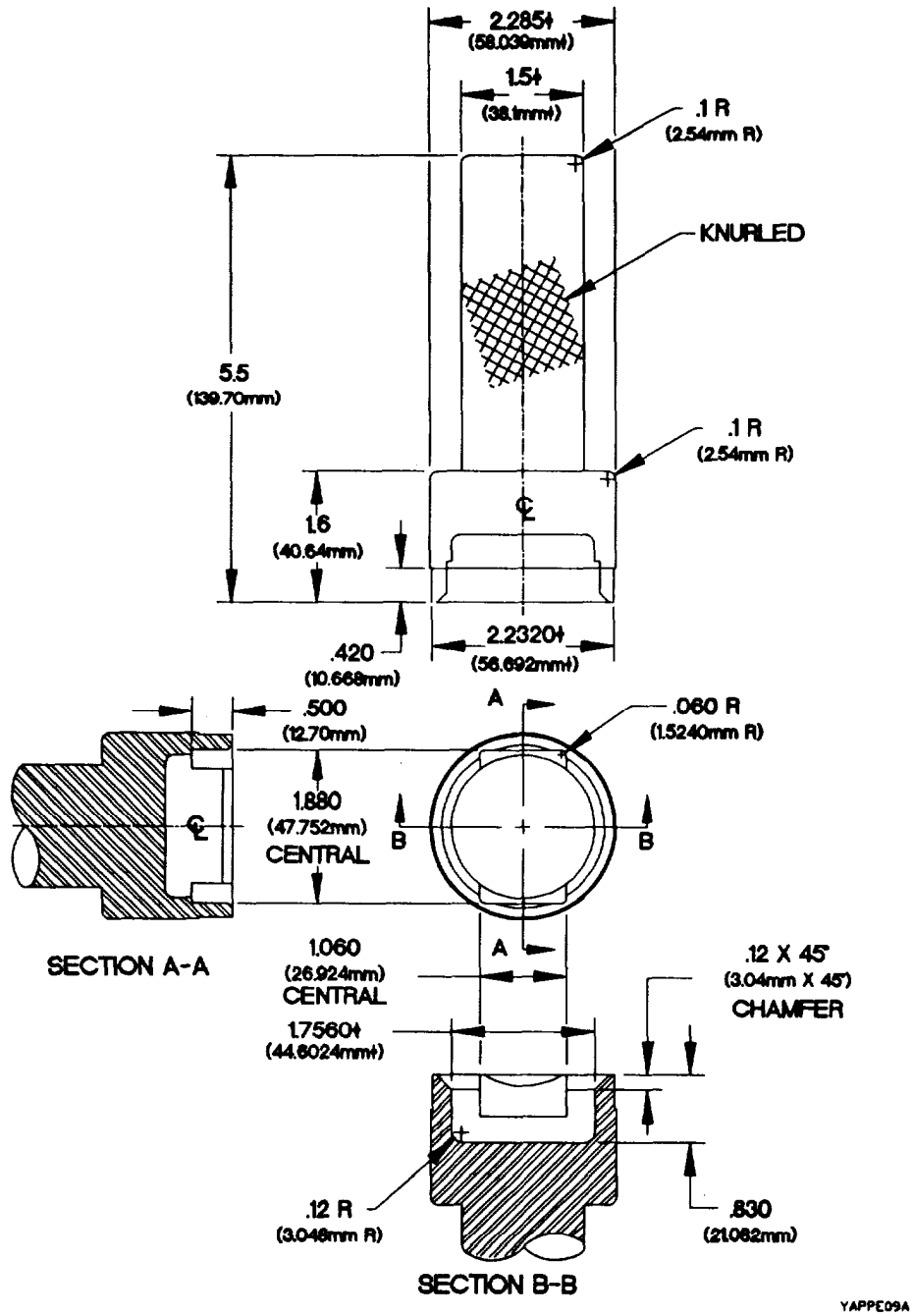


Figure E-2. Brake Plunger Seal Driver

a. All dimensions are in inches (millimeters).
b. Manufacture from round steel stock.
c. De-burr and remove sharp edges.

E-4. CAB SUPPORT TOOL

Make the cab support tool from .38 inch (.96 cm) flat steel stock and angle iron stock according to the following instructions. Refer to the parts list and **Figure E-3. Cab Support Tool Strut and Cab Rest** for details.

Item	Part Number	Material Description	Size	Qty
1	N/A	Steel, Flat Bar	4.0 in. (10.2 cm) X 33.38 in. X (84.8 cm) X 0.38 in. (0.96 cm)	1
2	N/A	Steel, Flat Bar	4.0 in. (10.2 cm) X 12.0 in. (30.5 cm) X 0.38 in. (0.96 cm)	1
3	N/A	Angle Iron	2.0 in. (5.1 cm) X 2.0 in. (5.1 cm) X 3.5 in. (8.9 cm)	2
4	H.S. 105VW-1	Insulgrip, CSA 105 C		

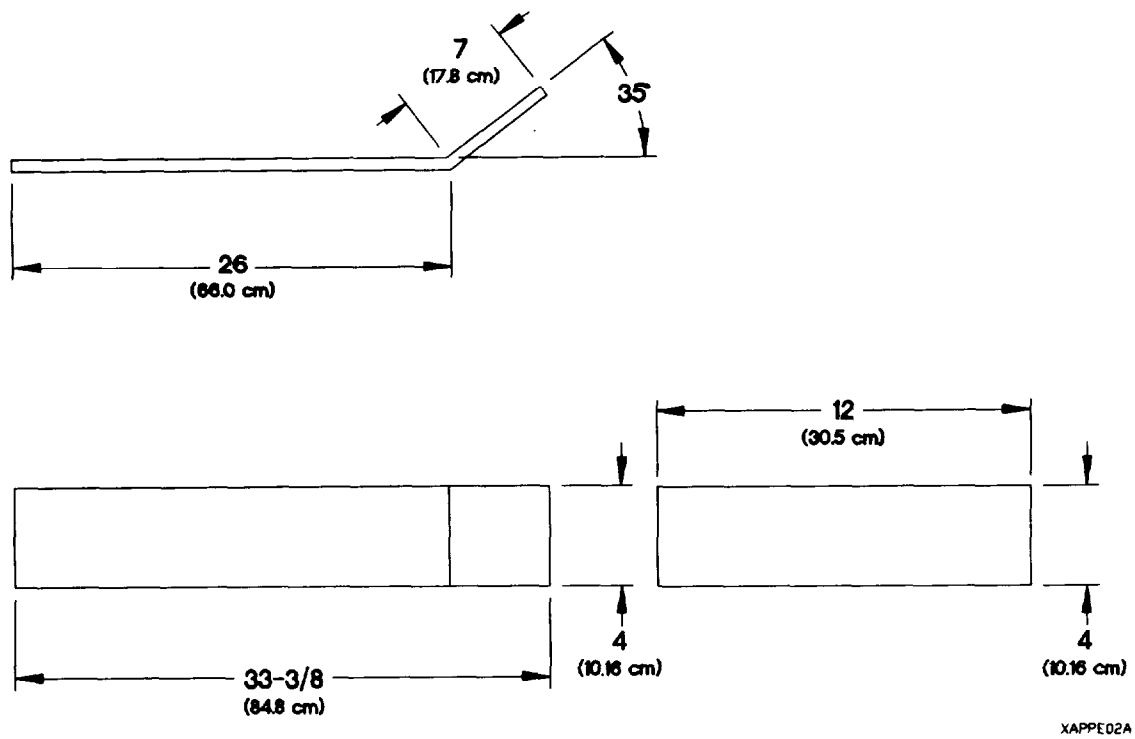


Figure E-3. Cab Support Tool Strut and Cab Rest

a. All dimensions are in inches (centimeters).
b. Cut cab support tool strut (1) from steel flat bar and bend to shape as shown in **Figure E-3. Cab Support Tool Strut and Cab Rest.**
c. Cut cab support tool cab rest (2) from steel flat bar.
d. De-burr and remove sharp edges.

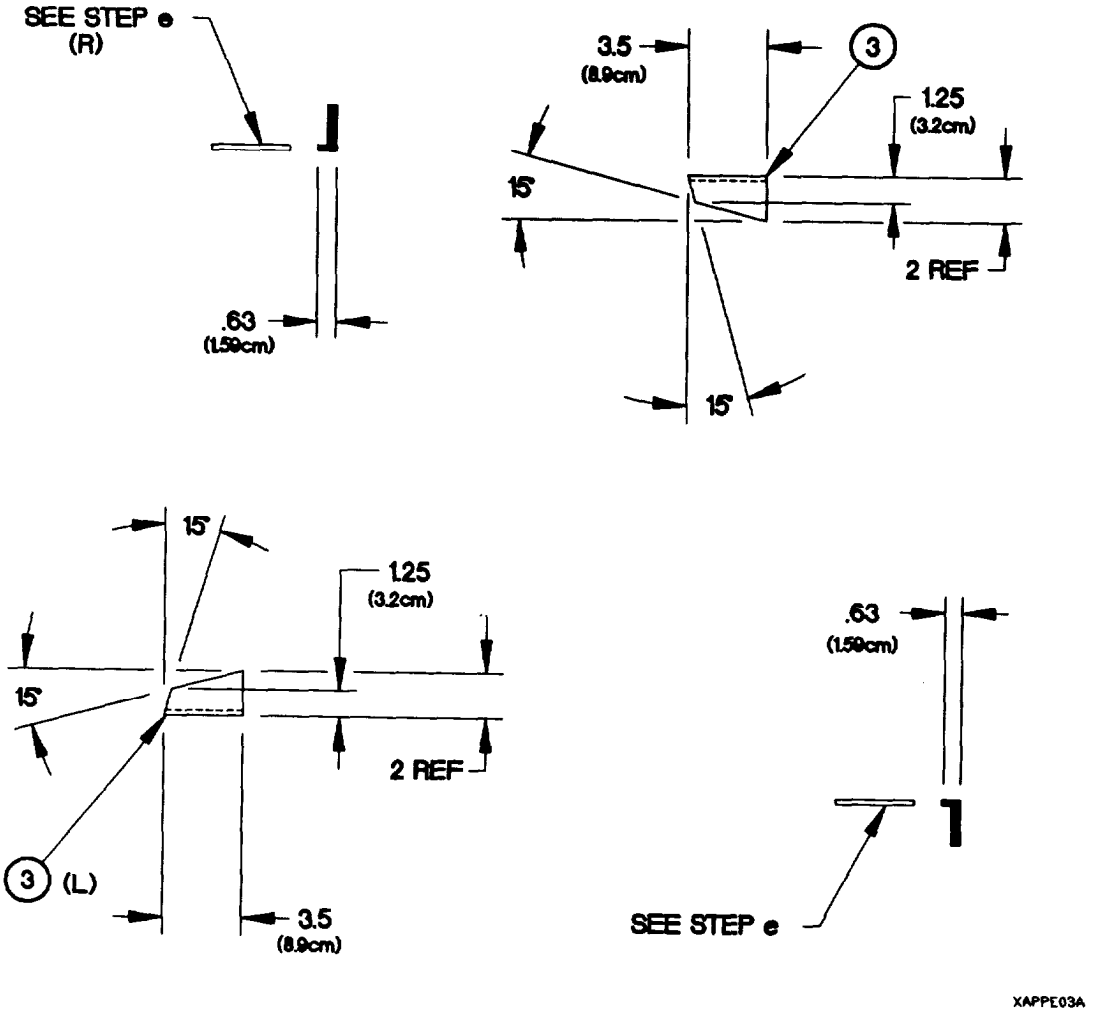


Figure E-4. Cab Support Tool Seat

e. Remove flange side of cab support tool seats (3) as shown in **Figure E-4. Cab Support Tool Seat.**
f. Cut cab support tool seats (3) L and (3) R according to dimensions and left\right orientation shown on **Figure E4. Cab Support Tool Seat.**
g. De-burr and remove sharp edges.

E-4. CAB SUPPORT TOOL (CONT)

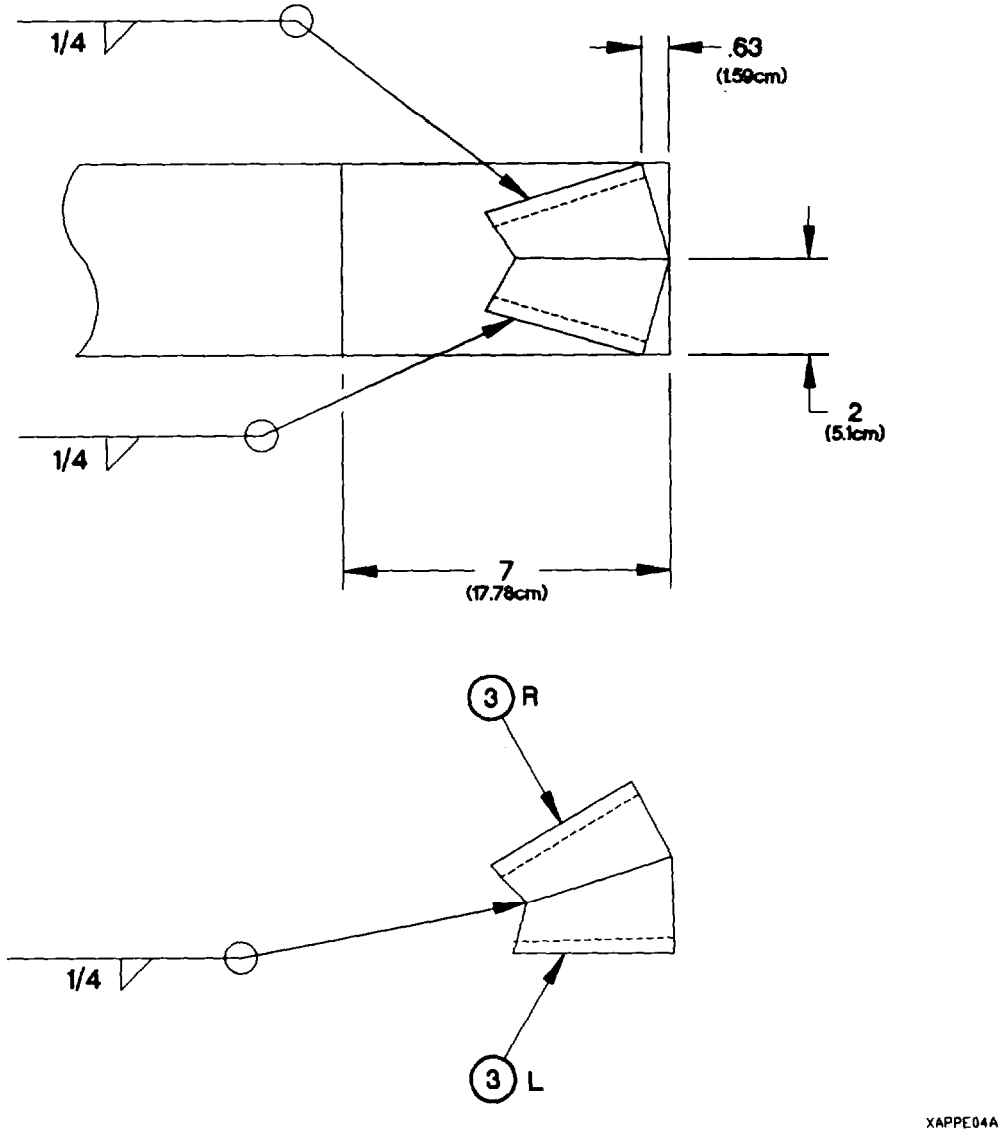


Figure E-5. Cab Support Tool Seat Layout

h. Position and clamp cab support tool seats (3) L and (3) R together as shown by dimensions on **Figure E-5. Cab Support Tool Seat Layout.**
i. Weld cab support tool seat (3) L to cab support tool seat (3) R as identified on assembly table and **Figure E-5. Cab Support Tool Seat Layout.**
j. Position and clamp cab support tool seats (3) L and (3) R to cab support tool strut (1) as shown by dimensions on **Figure E-5. Cab Support Tool Seat Layout.**
k. Weld items clamped in step (f) as shown in Figure E-5. Cab Support Tool Seat Layout.
I. De-burr and remove sharp edges.

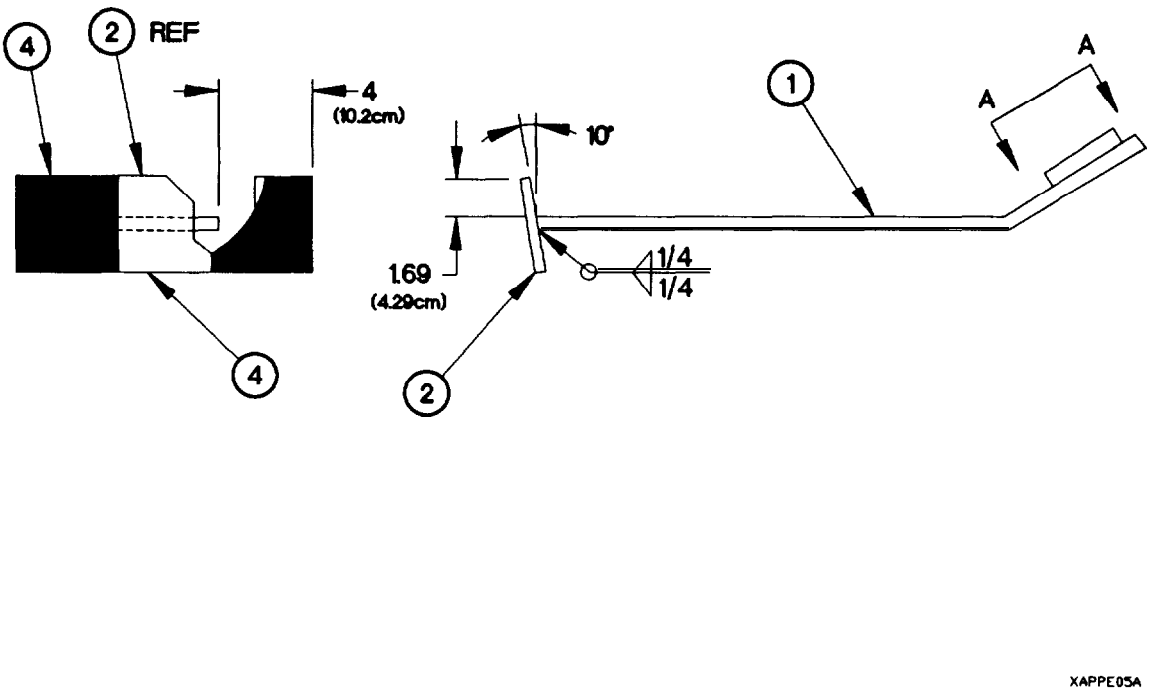


Figure E-6. Cab Support Tool Assembly

m. Position and clamp cab support tool strut (1) to cab support tool cab rest (2) as shown by dimensions on **Figure E-6. Cab Support Tool Assembly,** before insulgrip (4) is applied.
n. Weld cab support tool strut (1) to cab support tool cab rest (2).
o. Apply Insulgrip (4) to cab support tool cab rest (2) as described on material container.

E-5. HEADLIGHT ADJUSTMENT SCREEN

The headlight adjustment screen may be drawn on any vertical surface at least 50 in. (127 cm) high and 100 in. (254 cm) wide.

a. Draw two vertical lines (1) 50 in. (127 cm) high and 90.6 in. (230 cm) apart (centered on headlight adjustment screen).

b. Locate two points 40 in. (101.6 cm) from floor and 13 in. (33 cm) toward the center from each vertical line (1).

c. Draw vertical line (2) about 3-5 in. (8-13 cm) centered on each of the two points.

d. Draw horizontal line (3) about 3-5 in. (8-13 cm) centered on each of the two points.

e. Measure out 4 in. (10 cm) along each vertical line (2) and horizontal line (3) from each of the two points to make 8 in. (20 cm) squares (4).

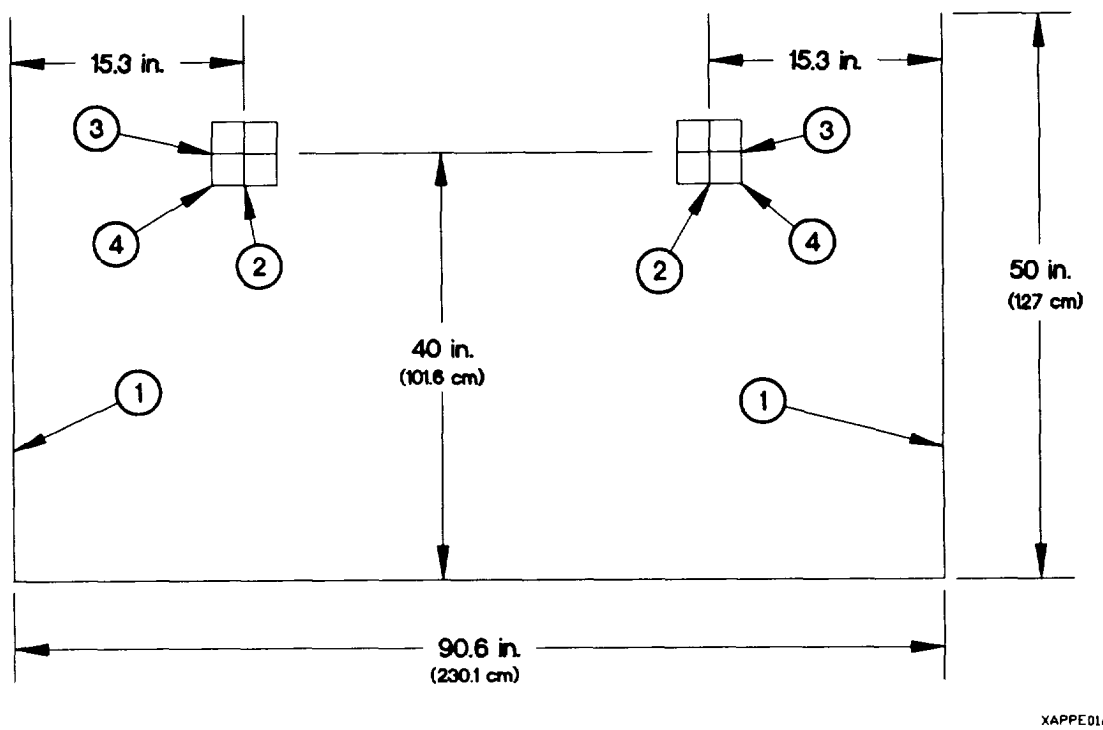


Figure E-7. Headlight Adjustment Screen

E-6. M1079 BLACKOUT SHIELD SEALS

Fabricate the M1079 blackout shield seals according to the following steps. Refer to the following parts list for materials.

Description	Material Part Number	CAGE Code	Cut Length
Blackout Shield Header Seal	942P00001	OSHR6	28-3/4 in. (730 mm)
Blackout Shield Jamb Seal Wan body serial numbers 001 through 190)	942P00001	OSHR6	63-3/8 in. (1810 mm)
Blackout Shield Jamb Seal (van body serial number 191 and higher)	942P00001	OSHR6	33 in. (838 mm)

a. Dimensions are in inches (millimeters).
b. Cut seal material to the specified length using a fine-toothed hacksaw or other suitable cutting tool.

E-7. M1079 DOOR GASKETS

Fabricate the M1079 door gaskets according to the following steps. Refer to the following parts list for materials.

Description	Material Part Number	CAGE Code	Cut Length
LH Door Gasket	12416417	19207	214 in. (5435 mm)
RH Door Gasket	12416417	19207	197 in. (5004 mm)

a. Dimensions are in inches (millimeters).
b. Cut seal material to the specified length using a fine-toothed hacksaw or other suitable cutting tool.
c. Glue ends of gasket to each other using adhesive MIL-A-46106 GP1TY1 (Item 11, Appendix D).

E-8. M1079 WINDOW SASH GLAZING SEALS

Fabricate the M1079 window sash glazing seals according to the following steps. Refer to the following parts list for materials.

Description	Materiel Part Number	CAGE Code	Cut Length
Window Sash Top/Bottom Seal	941P00001	OSHR6	26-13/16 in. (681 mm)
Window Sash Side Seal (van body serial numbers 001 through 190)	941P00001	OSHR6	28-1/2 in. (724 mm)
Window Sash Side Seal (van body serial number 191 and higher)	941P00001	OSHR6	12-11/16 in. (322 mm)

a. Dimensions are in inches (millimeters).
b. Cut seal material to the specified length using a fine-toothed hacksaw or other suitable cutting tool.

NOTE

Cut miters so that short side of seal faces toward glass.

c. Cut 45-degree miters on ends of window sash seals.

E-9. RELAY TEST WIRE

Fabricate the relay test wire according to the following steps. Refer to the following parts list for materials.

Material Description	National Stock Number	Cut Length
Wire, Electrical (MIL-W-16878)	6145-00-330-3318	6 in. (152 mm)

a. Dimensions are in inches (millimeters).
b. Cut a length of wire six inches (152 mm) long.
c. Remove approximately 3/4 in. (19 mm) of electrical insulation from each end of wire.

E-10. WHEEL BEARING SHIM TOOL REST

Fabricate the wheel bearing shim tool rest according to the following steps. Refer to the following parts list for materials.

Part Number	National Stock Number	Description
QQ-T-570	9510-00-866-1037	Bar, Metal

a. Dimensions are in inches (millimeters).
b. Cut metal bar to 9.0 inches (228.6 mm) long.
c. De-burr and remove sharp edges from ends of metal bar.

E-11. PNEUMATIC TUBES FABRICATION

Cut pneumatic tubes from bulk tubing stock listed **Table E-1. Pneumatic Tube Lengths.** Use a fine-toothed hacksaw or suitable cutting device and cut tubing to required length.

Table E-1. Pneumatic Tube Length

Tube Part Number	Bulk Tubing Part Number	Cut Length	
		inches	cm
12414690-001	NT-100-4 (79470)	18.1	46.0
12414690-002	NT-100-4 (79470)	16.0	40.6
12414690-004	NT-100-4 (79470)	74.8	190.0
12414690-005	NT-100-4 (79470)	69.7	177.0
12414690-010	NT-100-4 (79470)	180.0	457.2
12414690-101	J844TYBSIZE 3/8 (81343)	18.0	45.7
12414690-102	J844TYBSIZE 3/8 (81343)	35.4	90.0
12414690-103	J844TYBSIZE 3/8 (81343)	20.9	53.0
12414690-104	J844TYBSIZE 3/8 (81343)	13.8	35.0
12414690-105	J844TYBSIZE 3/8 (81343)	11.8	30.0
12414690-106	J844TYBSIZE 3/8 (81343)	20.5	52.0
12414690-107	J844TYBSIZE 3/8 (81343)	39.0	99.0
12414690-108	J844TYBSIZE 3/8 (81343)	15.4	39.0
12414690-109	J844TYBSIZE 3/8 (81343)	23.0	58.4
12414690-112	J844TYBSIZE 3/8 (81343)	80.0	198.0
12414690-113	J844TYBSIZE 3/8 (81343)	11.4	29.0
12414690-115	J844TYBSIZE 3/8 (81343)	82.8	210.2
12414690-117	J844TYBSIZE 3/8 (81343)	156.5	397.5
12414690-118	J844TYBSIZE 3/8 (81343)	11.8	30.0
12414690-119	J844TYBSIZE 3/8 (81343)	269.5	684.5
12414690-120	J844TYBSIZE 3/8 (81343)	11.9	30.2
12414690-121	J844TYBSIZE 3/8 (81343)	43.0	109.2
12414690-122	J844TYBSIZE 3/8 (81343)	44.1	112.0
12414690-123	J844TYBSIZE 3/8 (81343)	259.4	659.0
12414690-124	J844TYBSIZE 3/8 (81343)	288.2	732.0
12414690-125	J844TYBSIZE 3/8 (81343)	10.8	27.3
12414690-126	J844TYBSIZE 3/8 (81343)	17.0	43.2
12414690-127	J844TYBSIZE 3/8 (81343)	17.0	43.2

E-11. PNEUMATIC TUBES FABRICATION (CONT)

Table E-1. Pneumatic Tube Lengths (Cont)

Tube Part Number	Bulk Tubing Part Number	Cut Length	
		inches	cm
12414690-201	C608-100BLK (13174)	14.8	37.5
12414690-202	C608-100BLK (13174)	14.0	35.7
12414690-203	C608-100BLK (13174)	6.5	16.5
12414690-205	C608-100BLK (13174)	14.5	36.8
12414690-206	C608-100BLK (13174)	14.9	37.7
12414690-207	C608-100BLK (13174)	15.5	39.5
12414690-208	C608-100BLK (13174)	6.7	17.0
12414690-209	C608-100BLK (13174)	19.5	49.5
12414690-210	C608-100BLK (13174)	15.5	39.3
12414690-211	C608-100BLK (13174)	8.0	20.3
12414690-212	C608-100BLK (13174)	16.9	43.0
12414690-213	C608-100BLK (13174)	118.5	301.0
12414690-214	C608-100BLK (13174)	124.0	315.0
12414690-215	C608-100BLK (13174)	163.0	414.0
12414690-216	C608-100BLK (13174)	160.0	406.4
12414690-217	C608-100BLK (13174)	62.6	159.0
12414690-218	C608-100BLK (13174)	119.8	304.2
12414690-219	C608-100BLK (13174)	69.0	175.3
12414690-220	C608-100BLK (13174)	45.5	115.6
12414690-221	C608-100BLK (13174)	12.6	32.0
12414690-222	C608-100BLK (13174)	5.5	14.0
12414690-223	C608-100BLK (13174)	14.6	37.1
12414690-224	C608-100BLK (13174)	170.0	431.8
12414690-225	C608-100BLK (13174)	174.0	442.0
12414690-226	C608-100BLK (13174)	103.5	263.0
12414690-227	C608-100BLK (13174)	32.8	83.2
12414690-228	C608-100BLK (13174)	3.5	8.9
12414690-229	C608-100BLK (13174)	62.2	158.1
12414690-230	C608-100BLK (13174)	14.6	37.0
12414690-231	C608-100BLK (13174)	60.5	153.7
12414690-301	PFT-10B-BLK-100 (61424)	19.0	48.3
12414690-302	PFT-10B-BLK-100 (61424)	56.0	142.2
12414690-303	PFT-10B-BLK-100 (61424)	118.1	300.0

E-12. NON-METALLIC ELECTRICAL CABLE CONDUIT FABRICATION

Make conduit to cover electrical cables described on 1241638 from bulk tube stock listed in Table E-2. Non-Metallic Electrical Cable Conduit Lengths. Use a fine-toothed hacksaw or suitable cutting device and cut hose/tube to required length.

Table E-2. Non-Metallic Electrical Cable Conduit Lengths

Tube Part Number	Bulk Tube Part Number	Cut Length	
		inch	cm
12416381P1	49008	8.9	22.6
12416381P10	49008	17.8	45.2
12416381P11	49008	29.9	75.9
12416381P12	49008	33.0	83.8
12416381P13	49008	13.9	35.3
12416381P14	49008	4.0	10.2
12416381P15	49008	17.4	44.2
12416381P16	49008	3.2	8.1
12416381P17	49008	4.5	11.4
12416381P2	49008	16.2	41.1
12416381P20	27413	32.8	83.3
12416381P21	27413	9.2	23.4
12416381P22	27413	8.0	20.3
12416361P23	27413	23.3	59.2
12416381P26	49008	2.5	6.4
12416381P3	27413	7.3	18.5
12416381P30	49007	17.0	43.2
12416381P32	49005	1.7	4.3
12416381P34	49005	20.7	52.6
12416381P35	49005	21.8	55.4
12416381P36	49005	5.5	14.0
12416381P37	49005	8.0	20.3
12416381P38	49008	3.7	9.4
12416381P4	49008	12.0	30.5
12416381P5	49008	26.0	66.0
12416381P6	49008	7.7	19.6
12416361P7	49008	26.7	67.8
12416381P8	49008	5.2	13.2
12416381P9	49008	16.8	42.7

E-13. STEERING GEAR RETURN HOSE AND TRANSMISSION OIL COOLER HOSES FABRICATION

Cut the following hoses from bulk hose using a fine-toothed hacksaw or suitable cutting device.

Hose Part Number	Bulk Hose Part Number	Cut Length	
		inches	cm
12418037	A110 (30327)	75.5	191.7
12418460-001	MS521302B110360 (96906)	17.5	44.4
12418460-002	MS521301A206R (96906)	16.0	40.6

E-14. LANYARD ASSEMBLIES P/N 12418763 AND 12420196 FABRICATION

Make the following lanyard assemblies from bulk cable material, sleeves, and tab material and assemble according to **Figure E-8. Lanyard Assembly.** The following parts list identifies part numbers and lengths of cut pieces.

Item	Part Number	Material Description	Size	Qty
1	MIL-W-83420 Type 1, Comp B	1/16 in. stranded wire cable	4 in. (102 mm)	1
2	MS51844-22	Sleeve		2
3	N/A	Tab, Stainless Steel ASTM A617	.06 in. (16 cm) X .37 in. (9.5 mm) X 1.25 in. (32 mm)	1

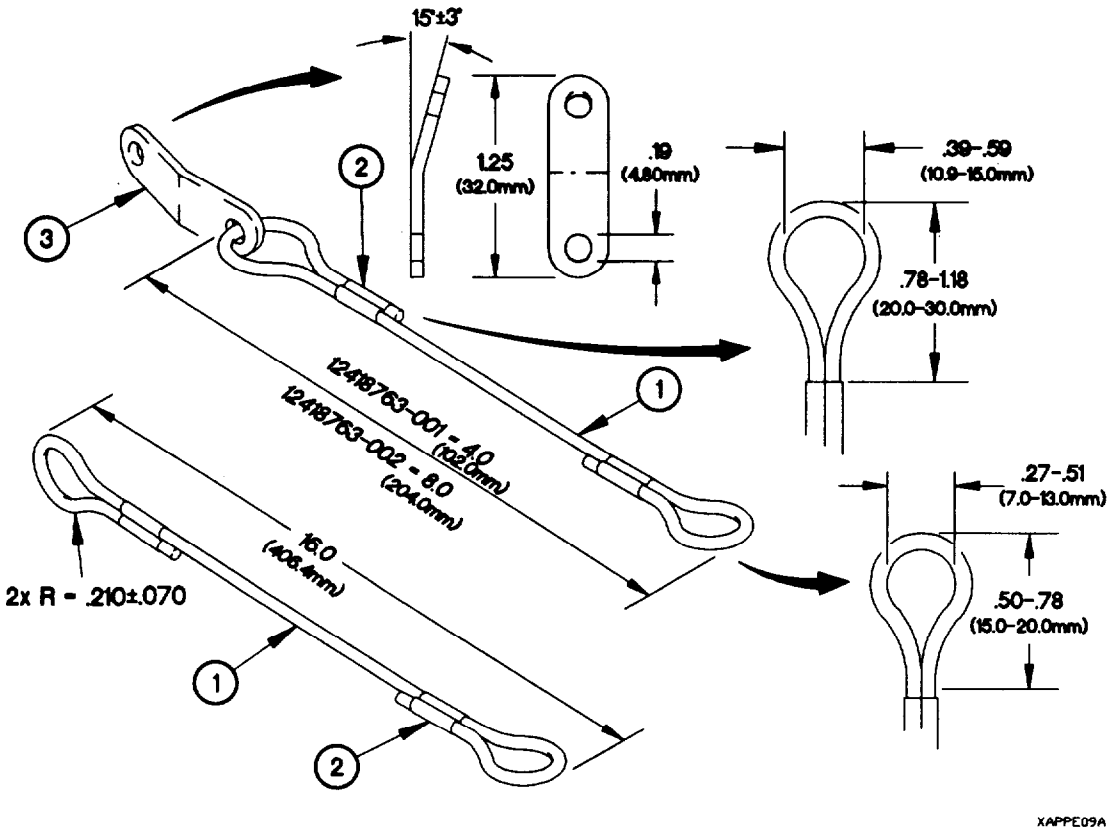


Figure E-8. Lanyard Assembly

a. All dimensions are in inches (millimeters).
b. Make from bulk cable and flat steel material as identified in parts list.
c. Drill two 0.19 in. (4.8 mm) diameter holes through tab material as shown on **Figure E-14. Lanyard Assembly.**
d. De-burr and remove sharp edges.
e. Bend tab as shown on **Figure E-14. Lanyard Assembly.**
f. Form loops on cable ends and insert sleeve material over cable on one end of cable and over cable and through sleeve at other end of cable as shown in **Figure E-14. Lanyard Assembly.**
g. Crimp two sleeves over cable ends.

E-15. NON-METALLIC VENT AIR HOSES FABRICATION

Cut the following vent air hoses from bulk hose using a fine-toothed hacksaw or suitable cutting device.

Hose Part Number	Bulk Hose Part Number	Cut Length	
		inches	cm
12420197-001	483666 (02280)	180.0	457.2
12420197-002	483666 (02280)	120.0	304.8
12420197-003	483666 (02280)	96.0	243.8
12420197-004	483666 (02280)	36.0	91.4
12420197-005	483666 (02280)	156.0	396.2
12420197-406	483666 (02280)	72.0	182.9
12420198-001	881-16 (98441)	120.0	304.8
12420198-002	11657469	36.0	91.4

E-16. PERSONNEL HEATER AIR DUCT HOSE FABRICATION

Cut the following hoses from bulk hose using a fine-toothed hacksaw or suitable cutting device.

Hose Part Number	Bulk Hose Part Number	Cut Length	
		inches	cm
12420308-457	8711054 (19207)	18.3	46.4
12420308-760	8711054 (19207)	30.4	77.2

E-17. BLOCK SEAL 12420489 FABRICATION

Make block seal from P/N (0VXY8) STN2.38X.5. Use a suitable cutting tool to cut seal to 0.52 inch (1.3 cm) long.

E-18. CTIS SEAL DRIVER 3256-H-1048

Used on Front and Rear Axle CTIS Seals.

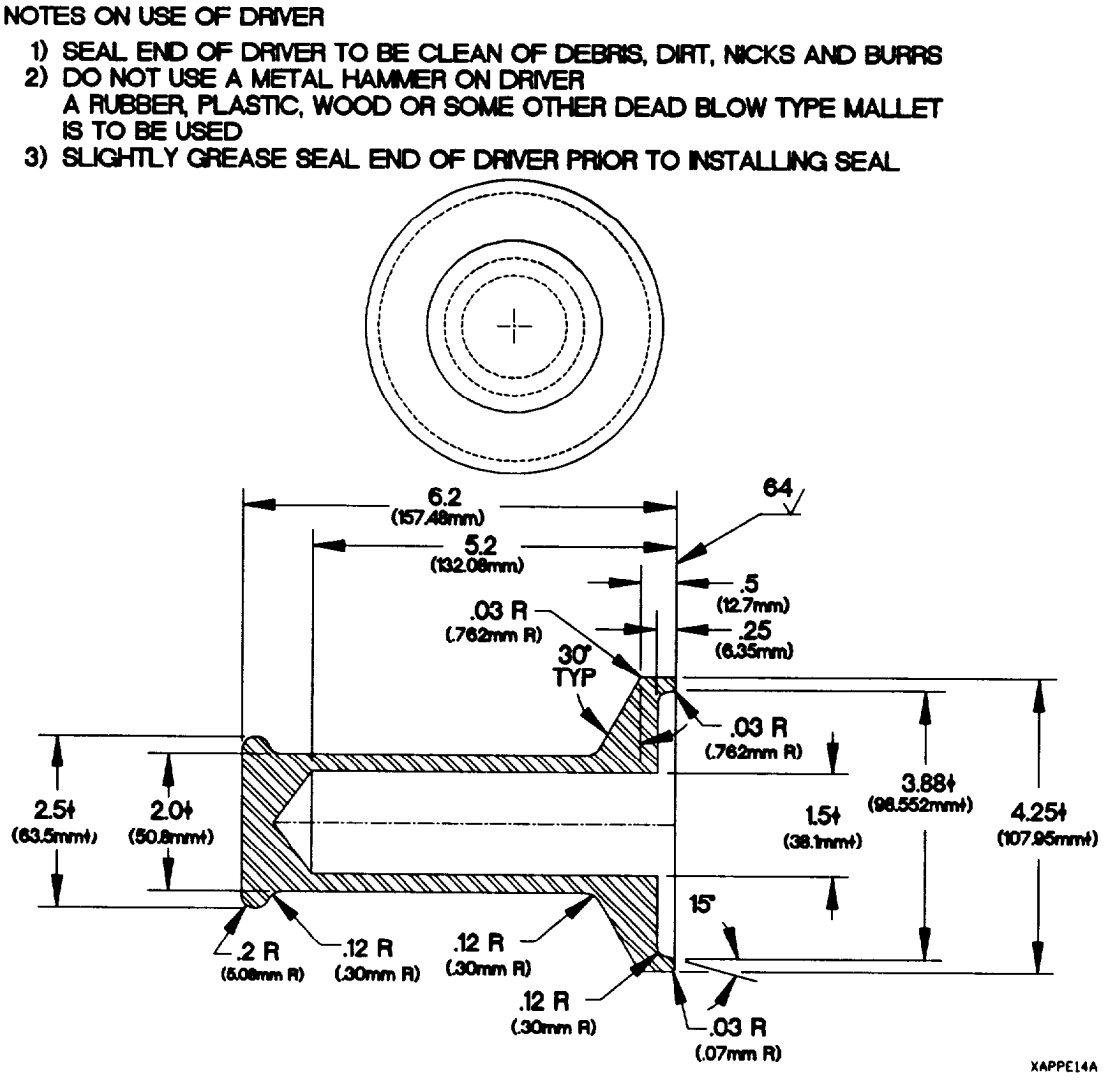


Figure E-9. CTIS Seal Driver

a. All dimensions are in inches (millimeters).
b. Manufacture from round steel stock.
c. De-burr and remove sharp edges.

E-19. WHEEL HUB GREASE SEAL DRIVER 3256-K-1051

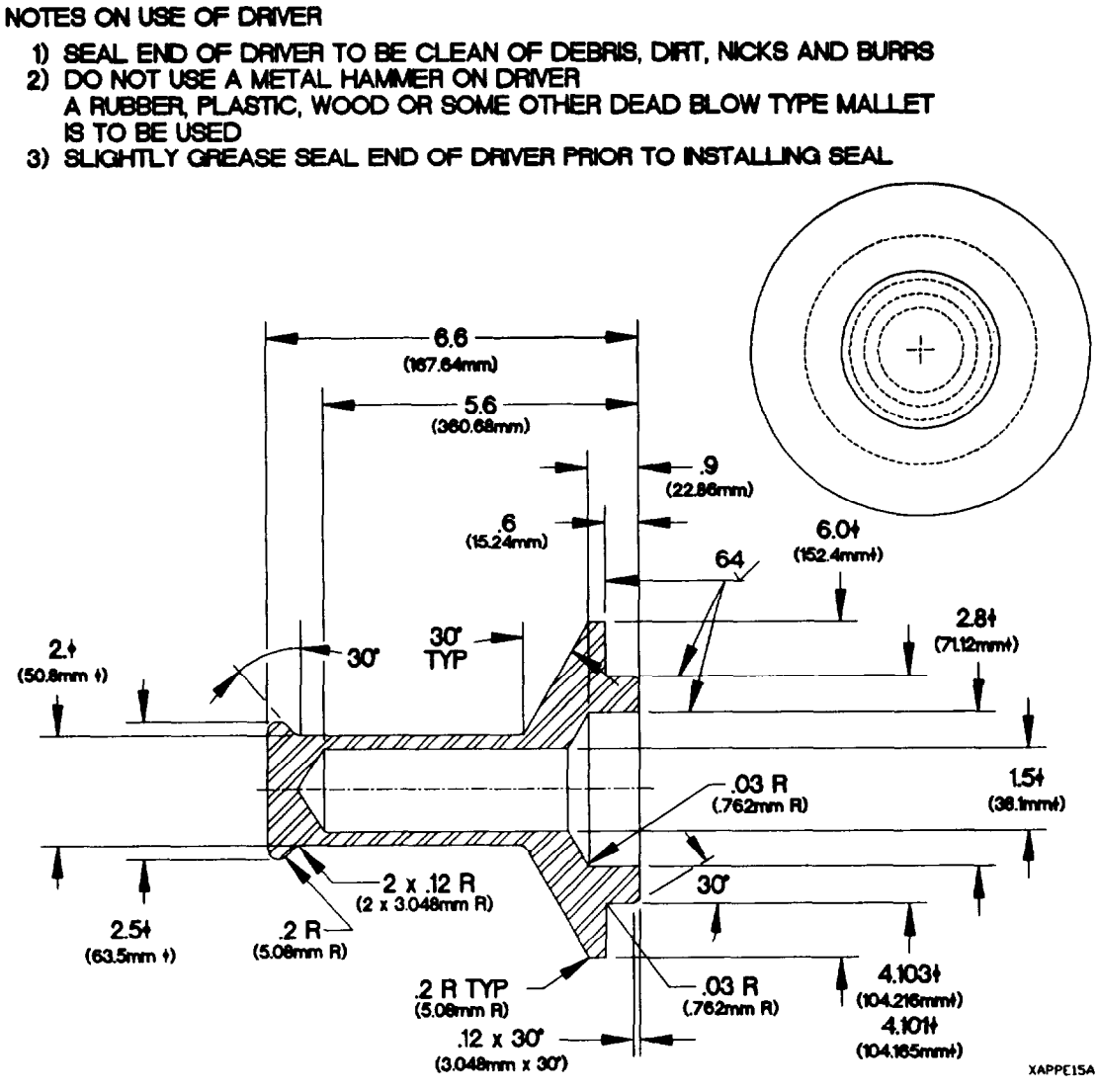


Figure E-10. Wheel Hub Grease Seal Driver

a. All dimensions are in inches (millimeters).
b. Manufacture from round steel stock.
c. De-burr and remove sharp edges.

APPENDIX F
TORQUE LIMITS

F-1. GENERAL

This appendix provides general torque limits for screws and nuts used on the vehicle. Special torque limits are shown in the maintenance procedures for applicable components. Use the general torque limit given in this appendix when specific torque limits are not given in the maintenance procedure. These general torque limits can not be applied to screws that retain rubber components. The rubber components will be damaged before the torque limit is reached. If a special torque limit is not given in the maintenance instructions for a fastener which retains a rubber component, tighten the screw or nut until it touches metal, then tighten one more turn. Whenever possible, the tightening force (torque) should be applied to the nut side of the fastener group.

F-2. TORQUE LIMITS

Refer to **Table F-1. Torque Limits for SAE and ANSI Fasteners** for torque limits on standard (SAE and ANSI) screws and free spinning nuts. Refer to **Table F-2. Torque Limits for SAE and ANSI Prevailing Torque Nuts** for torque limits on standard (SAE and ANSI) self-locking nuts. Refer to **Table F-3. Torque Limits for Metric Screws and Free Spinning Nuts** for torque limits on metric screws and free spinning nuts. Refer to **Table F4. Torque Limits for Metric Prevailing Torque Nuts** for torque limits on metric self-locking nuts.

F-3. USE OF TORQUE TABLES

(1) Measure the diameter of the screw to be installed.

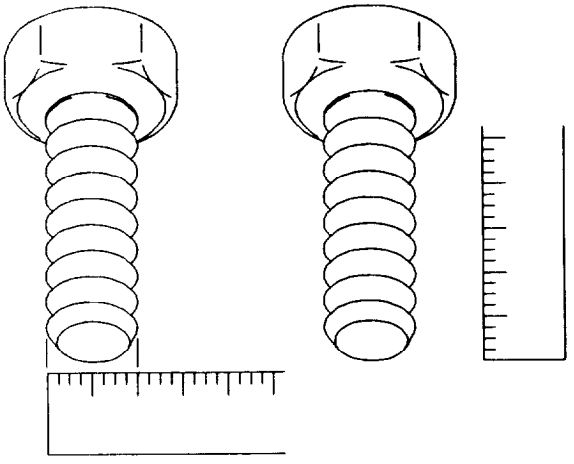
(2) Count the number of threads per inch.

(3) Under the heading DIAMETER look down the column until the diameter of the screw is found. (There are usually two lines beginning with the same diameter.)

(4) Under the heading THREADS PER INCH (SAE and ANSI) or THREAD PITCH (metric), find the number of threads per inch that matches the number counted in step (2).

(5) To find the grade of the screw, match the markings on the head to the correct picture under CAPSCREW HEAD MARKINGS on the torque table.

(6) Look down the column under the picture found in step (5) until the torque limit (lb-ft or N•m) for the diameter and threads per inch (or thread pitch, in the case of metric fasteners) of the screw are located.



XAPPF01A

APPENDIX F
TORQUE LIMITS

Table F-1. Dry Torque Limits for SAE and ANSI Screws and Free Spinning Nuts

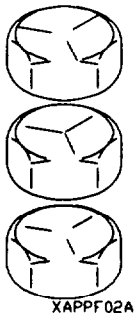
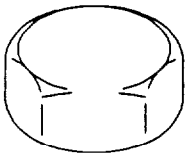
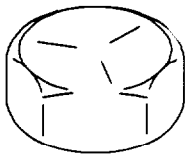
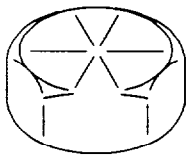
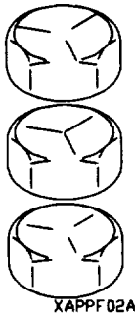
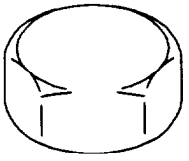
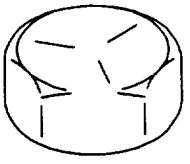
 XAPPF02A **NOTE** Manufacturer's marks may vary. These are all SAE Grade 5.		Material Grade Markings					
		 XAPPF03A SAE Grade 2		 XAPPF04A SAE Grade 5		 XAPPF06A SAE Grade 8	
Diameter	Threads per inch	Torque					
inch		lb-ft	N•m	lb-ft	N•m	lb-ft	N•m
1/4	20	3-5	5-7	5-7	8-10	8-10	10-14
1/4	28	4-6	5-7	6-8	9-11	8-12	12-16
1/4	32	4-6	5-7	7-9	9-11	9-13	12-16
5/16	18	7-9	9-13	11-15	15-21	15-21	21-29
5/16	24	8-10	11-15	12-16	17-23	17-23	24-32
5/16	32	9-11	12-16	14-18	18-24	19-25	27-34
3/8	16	13-17	17-23	20-26	27-35	28-38	38-50
3/8	24	15-19	20-26	22-30	31-41	32-42	43-57
3/8	32	15-21	21-27	24-32	33-43	33-45	55-61
7/16	14	20-28	28-38	32-42	43-57	44-60	61-81
7/16	20	23-31	31-41	35-47	48-64	49-67	68-90
7/16	28	25-33	33-45	37-51	51-69	54-72	73-97
1/2	13	32-42	43-57	49-65	66-88	68-92	93-123
1/2	20	35-47	48-64	55-73	74-98	77-103	105-139
1/2	28	38-50	51-67	58-78	79-105	82-110	111-149
9/16	12	55-61	62-82	70-94	95-127	98-132	134-178
9/16	18	50-68	69-91	78-104	105-141	109-147	149-199
9/16	24	53-71	72-96	82-110	111-149	115-155	158-210
5/8	11	62-84	85-113	95-129	131-175	136-182	184-246
5/8	18	70-94	96-128	108-146	148-198	154-206	209-279
5/8	24	73-99	100-134	114-154	155-207	161-217	219-293

Table F-1. Dry Torque Limits for SAE and ANSI Screws and Free Spinning Nuts (Cont)

 XAPPF02A Manufacturer's marks may vary. These are all SAE Grade 5		Material Grade Markings					
		 XAPPF03A SAE Grade 2		 XAPPF04A SAE Grade 5		 XAPPF06A SAE Grade 8	
Diameter	Threads per inch	Torque					
Inch		lb-ft	N•m	lb-ft	N•m	lb-ft	N•m
11/16	24	99-133	135-181	153-207	209-279	217-291	296-394
3/4	10	110-148	150-200	171-229	232-310	240-324	328-438
3/4	16	123-165	168-224	190-256	259-345	269-361	366-488
3/4	20	127-171	174-232	197-265	268-358	278-374	379-505
13/16	20			252-340	345-459	357-481	487-649
7/8	9			275-369	374-498	387-521	528-704
7/8	14			303-407	413-551	427-575	583-777
7/8	20			319-429	435-579	450-606	614-818
15/16	20			395-531	538-718	558-750	760-1014
1	8			411-553	560-748	581-781	792-1056
1	12			450-606	614-818	636-856	867-1155
1	20			483-649	658-878	681-917	929-1239
1-1/16	18			576-776	782-1044	813-1095	1109-1479
1-1/8	7			507-683	693-923	824-1108	1123-1497
1-1/8	12			570-766	776-1034	923-1241	1258-1678
1-1/8	18			600-806	817-1089	971-1307	1324-1766
1-3/16	18			709-953	966-1288	1149-1545	1566-2088
1-1/4	7			716-964	976-1302	1161-1563	1584-2112
1-1/4	12			793-1067	1081-1441	1286-1730	1754-2338
1-1/4	18			831-1117	1132-1510	1346-1812	1835-2447
1-5/16	18			965-1299	1316-1754	1565-2105	2134-2846
1-3/8	6			939-1263	1281-1707	1523-2049	2076-2768

APPENDIX F
TORQUE LIMITS

Table F-2. Dry Torque Limits for SAE and ANSI Prevailing Torque Nuts

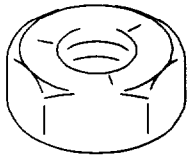
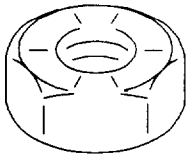
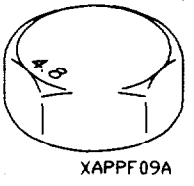
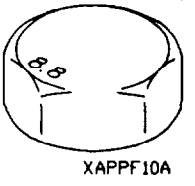
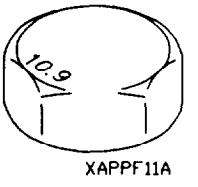
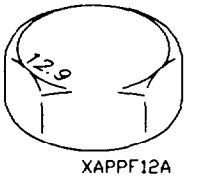
		Material Grade Markings			
		 XAPPF07A		 XAPPF08A	
		SAE Grade 5		SAE Grade 8	
Hole Diameter	Threads per inch	Torque			
inch		lb-ft	N•m	lb-ft	N•m
1/4	20	10-12	14-16	15-17	20-24
1/4	28	12-14	16-18	14-18	21-25
5/16	18	20-24	27-33	26-32	36-44
5/16	24	22-26	30-36	29-35	40-48
3/8	16	35-41	47-55	48-58	65-77
3/8	24	38-46	53-63	53-63	72-86
7/16	14	55-65	74-88	75-91	103-123
7/16	20	60-70	81-97	80-98	110-132
1/2	13	86-102	116-138	113-137	154-184
1/2	20	92-110	125-149	127-153	177-207
9/16	12	120-144	162-194	168-202	229-273
9/16	18	135-161	183-219	179-217	244-294
5/8	11	165-199	226-270	226-272	306-368
5/8	18	181-219	246-296	244-296	331-401
3/4	10	296-354	402-480	395-479	538-648
3/4	16	310-376	422-508	424-516	576-698
7/8	9	460-554	625-749	612-746	833-1009
7/8	14	503-607	684-822	652-800	888-1082
1	8	686-828	933-1121	941-1141	1280-1544

Table F-3. Dry Torque Limits for Metric Screws and Free Spinning Nuts

		Material Grade Markings							
		 XAPPF09A		 XAPPF10A		 XAPPF11A		 XAPPF12A	
		Metric Grade 4.8		Metric Grade 8.8		Metric Grade 10.9		Metric Grade 12.9	
Diameter	Thread Pitch	Torque							
mm		lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m
6	1	3	4-5	5-7	7-9	7-9	10-13	8-11	11-15
8	1.25	7-9	9-11	13-17	17-23	17-23	23-31	21-27	27-37
8	1	7-9	9-13	14-18	18-24	19-25	25-33	21-29	29-39
10	1.5	13-17	17-23	25-33	33-45	34-46	46-62	40-54	54-72
10	1.25	14-18	18-24	26-34	35-47	36-48	49-65	42-56	57-77
10	0.75	15-19	21-27	29-39	39-53	40-54	54-72	47-63	63-85
12	1.75	22-30	30-40	43-57	58-78	60-80	81-107	69-93	94-126
12	1.5	23-31	32-42	46-60	61-81	63-83	85-113	73-97	99-131
12	1.25	24-32	33-45	47-63	65-85	65-87	88-118	76-102	104-138
12	1	26-34	34-46	49-65	67-89	68-90	93-123	80-106	108-144
14	2	36-48	48-74	69-91	93-125	95-127	129-173	112-148	151-201
14	1.5	39-51	52-70	75-99	99-135	103-137	140-186	120-160	163-217
16	1	51-69	69-93	100-132	135-179	137-183	187-249	160-214	218-290
16	2	55-73	75-99	107-143	145-193	148-198	201-267	173-231	235-313
16	1.5	59-79	80-106	114-152	155-207	158-210	214-286	184-246	250-334
18	1.5			166-222	225-301	230-306	311-415	268-358	364-486
20	2.5			209-279	283-377	289-385	392-522	338-450	458-610
20	1.5			232-308	315-419	321-427	435-579	375-499	508-678
20	1			244-324	330-440	337-449	457-609	394-524	534-712
22	2.5			285-379	387-515	394-524	534-712	461-613	624-832
22	1.5			313-417	424-566	432-576	586-782	664-884	900-1200
24	3			361-481	489-653	499-665	677-903	584-778	791-1055
24	2			394-524	534-712	545-725	738-984	725-965	982-1310
25	1.5			467-621	633-843	645-859	875-1167	754-1004	1023-1363

APPENDIX F
TORQUE LIMITS

Table F-4. Dry Torque Limits for Metric Prevailing Torque Nuts

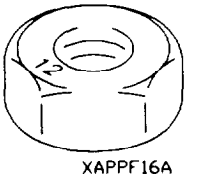
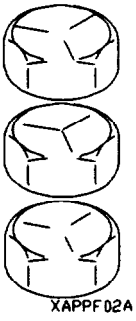
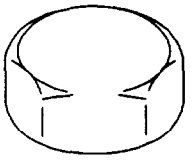
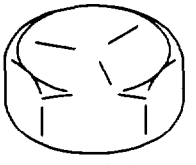
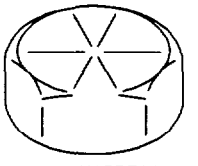
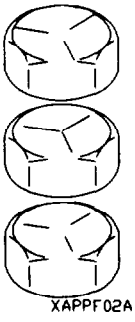
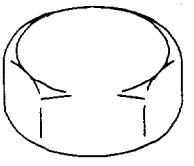
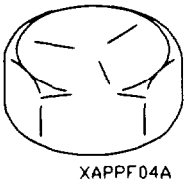
		Material Grade Markings							
		 XAPPF13A		 XAPPF14A		 XAPPF15A		 XAPPF16A	
		Metric Grade 4.8		Metric Grade 8.8		Metric Grade 10.9		Metric Grade 12.9	
Diameter	Thread Pitch	Torque							
mm		lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m
6	1	5-6	7-8	7-9	10-12	10-12	14-17	11-14	15-19
8	1.25	12-14	16-18	18-22	24-30	24-30	32-40	27-33	36-46
8	1	12-14	16-20	19-23	25-31	25-31	34-42	28-36	38-48
10	1.5	21-25	28-34	33-41	44-56	44-56	60-76	50-64	68-86
10	1.25	21-25	29-35	34-42	46-58	46-58	63-79	53-67	71-91
10	0.75	23-27	31-37	37-47	49-63	50-64	68-86	57-73	77-99
12	1.75	33-41	46-56	55-69	74-94	75-95	102-128	85-109	115-147
12	1.5	35-43	47-57	56-72	77-97	78-98	106-134	89-113	120-152
12	1.25	36-44	48-60	58-74	79-101	81-103	109-139	91-117	125-159
12	1	37-45	50-62	61-77	82-104	84-106	114-144	95-121	129-165
14	2	53-65	72-88	87-109	117-149	118-150	160-204	134-172	182-232
14	1.5	57-69	76-94	92-116	125-159	126-160	171-217	143-183	194-248
16	2	79-97	107-131	130-166	177-225	178-228	243-309	204-262	277-355
16	1.5	82-102	112-138	138-176	187-239	189-241	256-328	215-277	292-376
18	1.5			197-253	267-343	271-347	367-471	309-399	420-542
20	2.5			248-318	337-431	342-438	464-594	391-503	530-682
20	1.5			271-349	369-473	374-480	507-651	428-552	580-750
20	1			283-365	384-494	390-502	529-681	447-577	606-784
22	2.5			335-429	455-583	460-592	624-802	526-680	714-922
22	1.5			363-467	492-634	499-643	676-872	730-950	990-1290
24	3			420-540	569-733	577-743	783-1009	662-856	897-1161
24	2			453-583	614-792	622-804	844-1090	803-1043	1088-1416

Table F-5. Wet Torque limits for SAE and ANSI Screws and Free Spinning Nuts

 XAPPF02A **NOTE** Manufacturer's marks may vary. These are all SAE Grade 5.		Material Grade Markings					
		 XAPPF03A **SAE Grade 2**		 XAPPF04A **SAE Grade 5**		 XAPPF06A **SAE Grade 8**	
Diameter	**Threads per inch**	**Torque**					
inch		**lb-ft**	**N•m**	**lb-ft**	**N•m**	**lb-ft**	**N•m**
1/4	20	4	6	6	8	9	12
1/4	28	5	7	7	9	10	14
5/16	18	8	11	13	18	18	24
5/16	24	9	12	14	19	20	27
3/8	16	15	20	23	31	35	47
3/8	24	17	23	25	34	35	47
7/16	14	24	33	35	47	55	75
7/16	20	25	34	40	54	60	81
1/2	13	35	47	55	75	80	108
1/2	20	40	54	65	88	90	122
9/16	12	50	68	80	108	110	149
9/16	18	55	75	90	122	130	176
5/8	11	70	95	110	149	170	231
5/8	18	80	108	130	176	180	244
3/4	10	120	163	200	271	280	380
3/4	16	140	190	220	298	320	434
7/8	9	110	149	300	407	460	624
7/8	14	120	163	320	434	500	678
1	8	160	217	440	597	680	922
1	12	170	231	480	651	740	1003
1-1/8	7	220	298	600	814	960	1302
1-1/8	12	260	353	660	895	1080	1464

APPENDIX F
TORQUE LIMITS

Table F-5. Wet Torque Limits for SAE and ANSI Screws and Free Spinning Nuts (Cont)

 XAPPF02A **Manufacturer's marks may vary. These are all SAE Grade 5**	**Material Grade Markings**					
	 XAPPF03A **SAE Grade 2**		 XAPPF04A **SAE Grade 5**		 XAPPF06A **SAE Grade 8**	
Diameter	**Threads per inch**	**Torque**					
inch		**lb-ft**	**N•m**	**lb-ft**	**N•m**	**lb-ft**	**N•m**
1-1/4	7	320	434	840	1139	1360	1844
1-1/4	12	360	488	920	1248	1500	2034
1-3/8	6	420	570	1100	1492	1780	2414
1-3/8	12	460	624	1260	1709	2040	2766

APPENDIX G
MANDATORY REPLACEMENT PARTS

Section I. INTRODUCTION

G-1. SCOPE

This appendix lists mandatory replacement parts You will need to maintain the LMTV vehicle.

G-2. EXPLANATION OF COLUMNS

a. Column (1) - Item Number. This number is assigned to each entry in the listing and is referenced in the Initial Setup of the applicable task under Materials/Parts.

b. Column (2) - Nomenclature. Name or identification of the part.

c. Column (3) - Part Number. The manufacturer's part number.

d. Column (4) - National Stock Number. The National stock number of the part.

Section II. MANDATORY REPLACEMENT PARTS LIST

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
1	BLADE, WINDSHIELD WIPER	105.384	2540-01-364-1621
2	BOLT, MACHINE	12414307-065	5306-01-382-5054
3	BOOT KIT, EXHAUST	DQ6025	4730-01-417-3197
4	BUMPER, RUBBER	12419182	5340-01-410-8397
5	BUSHING, SLEEVE	7-199-002668	3120-01-367-6894
6	CHANNEL, RUBBER	ZZR765/2-001A7	9390-01-420-4560
7	CLAMP	024S9	
8	CLAMP	032S9	
9	DECAL	12340917	7690-01-256-4909
10	FASTENER TAPE	MIL-F-21840	8315-00-006-9855
11	FASTENER TAPE	50-534718-19	8315-00-935-6762
12	FILTER ASSEMBLY	75223-11	2940-01-417-9333
13	FILTER ELEMENT	1048011	2940-01-385-8931
14	FILTER ELEMENT, FLUID	R22146	2910-01-360-6366
15	FILTER ELEMENT, FLUID	29507750	2940-01-361-2406
16	FILTER ELEMENT, FLUID	599791	4460-01-284-2344
17	FILTER ELEMENT, FLUID	931558	2940-01-363-4377

SECTION II. MANDATORY REPLACEMENT PARTS (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
18	FILTER ELEMENT, INTAKE AIR CLEANER	P52-7750	2940-01-361-2407
19	FILTER, AIR	12416539	
20	FILTER, AIR	12416563	
21	FILTER, FUEL	7E9763	2940-01-363-3089
22	FILTER, OIL	1R0739	2940-00-029-0388
23	GASKET	F337576M6	
24	GASKET	M28840/24HA	5935-01-421-9754
25	GASKET	QS-1181	5330-01-058-3788
26	GASKET	10-36675-18	5330-00-298-0190
27	GASKET	119-2940	5330-01-424-7905
28	GASKET	12421469	
29	GASKET	12422254	
30	GASKET	13848	5330-01-211-0717
31	GASKET	350700	5330-01-295-3053
32	GASKET	350903	5330-00-576-4626
33	GASKET	352200	5330-01-421-6105
34	GASKET	352302	5330-01-421-6107
35	GASKET	353400	5330-01-421-6102
36	GASKET	353806	5330-01-421-6103
37	GASKET	353810	
38	GASKET	355148	5330-01-423-0596
39	GASKET	355175	5330-01-423-0623
40	GASKET	3K3257	5330-01-305-6550
41	GASKET	4P1624	5330-01-360-5934
42	GASKET	9Y8103	5330-01-360-5931
43	GASKET, FUEL FILTER	7C1159	5330-01-360-5941
44	GASKET, RING	331.406	5330-01-395-4645
45	GASKET, THERMOSTAT	2W7212	5330-01-347-3206
46	GROMMET, NONMETALLIC	MS35489-6	5325-00-263-6632
47	GROMMET, NONMETALLIC	12417598	5325-01-375-1299
48	GROMMET, NONMETALLIC	12421402	5325-01-440-2178

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
49	GROMMET, NONMETALLIC	4082-37634-01	5325-01-194-3076
50	GROMMET, NONMETALLIC	50S12-1-1AA	5325-01-145-0105
51	GROMMET, NONMETALLIC	8741442	5325-00-088-6147
52	INSULATOR, TANK	A1394J	5970-01-385-7317
53	INSULATOR, TANK	A1394K	5970-01-385-7262
54	KIT, FILTER	29503829	
55	KIT, FILTER	29426899	
56	KIT, PROPELLER SHAFT	KT-16SB	2520-01-370-1360
57	LAMP, INCANDESCENT	CM7-7373	6240-00-270-6824
58	LAMP, INCANDESCENT	CM7376	6240-00-499-6278
59	LATCH, BAIL HEAD	68-20-101-10	2540-01-232-2470
60	LOCKNUT	0770-023-003	5310-01-423-3725
61	LOCKWASHER	ABCH207-LW-1/2	
62	LOCKWASHER	ABCH207-LW-3/8	
63	LOCKWASHER	B7949000161	
64	LOCKWASHER	D70336/1-20	5310-01-110-7933
65	LOCKWASHER	D70336/3-50	5310-01-439-2542
66	LOCKWASHER	D70336/3-52	5310-01-439-2543
67	LOCKWASHER	MS35335-30	5310-00-209-0788
68	LOCKWASHER	MS35335-31	5310-00-596-7693
69	LOCKWASHER	MS35335-33	5310-00-209-0786
70	LOCKWASHER	MS35335-36	5310-00-550-3503
71	LOCKWASHER	MS35335-38	5310-00-616-6354
72	LOCKWASHER	MS35335-58	5310-00-209-1366
73	LOCKWASHER	MS35335-61	5310-00-527-3634
74	LOCKWASHER	MS35335-62	5310-00-184-9562
75	LOCKWASHER	MS35337-25	5310-00-013-8502
76	LOCKWASHER	MS35338-100	5310-00-261-8278
77	LOCKWASHER	MS35338-102	5310-00-167-0671
78	LOCKWASHER	MS35338-103	5310-00-184-8971
79	LOCKWASHER	MS35338-135	5310-00-933-8118

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
80	LOCKWASHER	MS35338-136	5310-00-929-6395
81	LOCKWASHER	MS35338-137	5310-00-933-8119
82	LOCKWASHER	MS35338-138	5310-00-933-8120
83	LOCKWASHER	MS35338-139	5310-00-933-8121
84	LOCKWASHER	MS35338-140	5310-00-974-6623
85	LOCKWASHER	MS35338-141	5310-00-984-7042
86	LOCKWASHER	MS35338-143	5310-00-933-8778
87	LOCKWASHER	MS35338-158	5310-00-883-9417
88	LOCKWASHER	MS35338-171	5310-01-130-9066
89	LOCKWASHER	MS35338-42	5310-00-045-3299
90	LOCKWASHER	MS35338-43	5310-00-045-3296
91	LOCKWASHER	MS35338-45	5310-00-407-9566
92	LOCKWASHER	MS35338-46	5310-01-334-4710
93	LOCKWASHER	MS35338-51	5310-00-584-7888
94	LOCKWASHER	MS35340-44	5310-00-682-5930
95	LOCKWASHER	MS51414-1	5310-01-235-2057
96	LOCKWASHER	MS51414-2	5310-01-310-1098
97	LOCKWASHER	MS51848-50	5310-01-033-8615
98	LOCKWASHER	N9015	5310-01-369-6073
99	LOCKWASHER	N9018	5310-01-032-4827
100	LOCKWASHER	N9459	5310-01-348-8393
101	LOCKWASHER	N9461	5310-01-348-8392
102	LOCKWASHER	1229-S-513C	5310-01-062-3384
103	LOCKWASHER	12414570-015	5310-01-388-2043
104	LOCKWASHER	12414570-021	5310-01-374-4516
105	LOCKWASHER	152.269	5310-01-407-4764
106	LOCKWASHER	152.522	
107	LOCKWASHER	152.544	5310-01-395-0823
108	LOCKWASHER	1729B262	5310-00-964-7811
109	LOCKWASHER	488.671	
110	NUT, BLIND RIVET	MS27130-S136	5310-01-409-4435

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
111	NUT, BLIND RIVET	MS27130-S148	5310-01-370-5548
112	NUT, BLIND RIVET	12421403-060	
113	NUT, BLIND RIVET	12421403-065	
114	NUT, BLIND RIVET	12421634-017	
115	NUT, BLIND RIVET	12442158-5	
116	NUT, SELF-LOCKING	DIN-934STM6	5310-01-342-2739
117	NUT, SELF-LOCKING	MS16228-10C	5310-00-245-8826
118	NUT, SELF-LOCKING	MS16228-5C	5310-00-584-7992
119	NUT, SELF-LOCKING	MS20500-524	5310-00-208-4023
120	NUT, SELF-LOCKING	MS21042-04	5310-00-811-6419
121	NUT, SELF-LOCKING	MS21042-5	5310-00-807-1469
122	NUT, SELF-LOCKING	MS21044C08	5310-00-982-6814
123	NUT, SELF-LOCKING	MS21083N08	5310-00-941-6019
124	NUT, SELF-LOCKING	MS21083N6	5310-00-926-1852
125	NUT, SELF-LOCKING	MS51922-1	5310-00-088-1251
126	NUT, SELF-LOCKING	MS51922-2	5310-00-929-1807
127	NUT, SELF-LOCKING	MS51922-33	5310-00-225-6993
128	NUT, SELF-LOCKING	MS51922-5	5310-00-959-7600
129	NUT, SELF-LOCKING	N9406	5310-01-362-6171
130	NUT, SELF-LOCKING	N9410	5310-01-348-8398
131	NUT, SELF-LOCKING	N9467	5310-01-350-4257
132	NUT, SELF-LOCKING	12301125	5310-01-210-0199
133	NUT, SELF-LOCKING	12412476-04	
134	NUT, SELF-LOCKING	12414308-002	5310-01-381-2819
135	NUT, SELF-LOCKING	12414308-003	5310-01-377-1549
136	NUT, SELF-LOCKING	12414308-004	5310-01-369-5703
137	NUT, SELF-LOCKING	12414308-007	5310-01-046-0186
138	NUT, SELF-LOCKING	12414308-017	5310-01-381-9830
139	NUT, SELF-LOCKING	12414308-018	5310-01-369-3337
140	NUT, SELF-LOCKING	12414308-019	5310-01-369-9522
141	NUT, SELF-LOCKING	12414308-020	5310-01-381-9849

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
142	NUT, SELF-LOCKING	12414308-021	5310-01-369-3338
143	NUT, SELF-LOCKING	12414308-022	5310-01-417-1262
144	NUT, SELF-LOCKING	12414308-025	5310-01-367-6706
145	NUT, SELF-LOCKING	12414308-027	5310-01-369-3339
146	NUT, SELF-LOCKING	12414315-003	5310-01-374-1382
147	NUT, SELF-LOCKING	12414315-005	5310-01-372-3023
148	NUT, SELF-LOCKING	12414315-006	5310-01-369-3332
149	NUT, SELF-LOCKING	12414315-009	5310-01-365-7236
150	NUT, SELF-LOCKING	12414315-012	5310-01-369-3331
151	NUT, SELF-LOCKING	12414315-017	5310-01-368-8065
152	NUT, SELF-LOCKING	12414420-004	5310-01-370-0010
153	NUT, SELF-LOCKING	12419003	5310-01-376-0773
154	NUT, SELF-LOCKING	270W10000	
155	NUT, SELF-LOCKING	29514660	
156	NUT, SELF-LOCKING	7951286	5310-00-789-0398
157	PACKING, PREFORMED	A82777	5330-00-579-6495
158	PACKING, PREFORMED	F4001-16	
159	PACKING, PREFORMED	J515-8-1	5330-00-292-8171
160	PACKING, PREFORMED	MK0012510	
161	PACKING, PREFORMED	MS28775-011	5330-00-582-2133
162	PACKING, PREFORMED	MS28775-227	5330-00-576-9731
163	PACKING, PREFORMED	MS28778-10	5330-00-285-9842
164	PACKING, PREFORMED	MS28778-12	5330-00-251-8839
165	PACKING, PREFORMED	MS28778-16	5330-00-816-3546
166	PACKING, PREFORMED	MS28778-4	5330-00-805-2966
167	PACKING, PREFORMED	MS9955-113	5330-01-374-2325
168	PACKING, PREFORMED	M25988/1-246	5330-01-189-6351
169	PACKING, PREFORMED	OR42OA	5330-01-389-6028
170	PACKING, PREFORMED	11639519-1	5330-00-463-0200
171	PACKING, PREFORMED	1509	5330-00-172-1919
172	PACKING, PREFORMED	2M4453	5330-00-074-3768

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
173	PACKING, PREFORMED	22617-16	5330-01-168-0885
174	PACKING, PREFORMED	23043446	5330-01-424-6629
175	PACKING, PREFORMED	29500969	5330-01-360-7852
176	PACKING, PREFORMED	29503383	5330-01-360-6017
177	PACKING, PREFORMED	3-906N522-90	5330-01-104-1093
178	PACKING, PREFORMED	3-908N522-90	5330-00-929-8171
179	PACKING, PREFORMED	3D2824	5330-00-944-8281
180	PACKING, PREFORMED	3J1907	5330-01-333-6444
181	PACKING, PREFORMED	3J7354	5330-00-954-8008
182	PACKING, PREFORMED	3K0360	5330-00-948-6482
183	PACKING, PREFORMED	4J5477	5330-00-855-8059
184	PACKING, PREFORMED	4L9564	5330-00-828-8639
185	PACKING, PREFORMED	5-X-1155	5330-01-392-1637
186	PACKING, PREFORMED	5F7054	5330-00-339-6224
187	PACKING, PREFORMED	5P7813	5330-01-335-0042
188	PACKING, PREFORMED	6V8397	5330-00-579-6495
189	PACKING, PREFORMED	673268	
190	PACKING, PREFORMED	673269	5330-01-395-1252
191	PACKING, PREFORMED	7F8267	5330-01-291-7353
192	PACKING, PREFORMED	7320658	5330-00-297-7106
193	PACKING, PREFORMED	9604792-001	5330-01-429-3089
194	PAD, CUSHIONING	12416479-001	2590-01-397-7844
195	PAD, CUSHIONING	12416479-002	2590-01-412-2663
196	PARTS KIT, DEHYDRATOR	RN-60-A	4440-01-337-7324
197	PARTS KIT, SEAL REPLACEMENT	SK10-2	5330-01-350-4474
198	PARTS KIT, SEAL REPLACEMENT	SK10-3	5330-01-350-4472
199	PARTS KIT, SEAL REPLACEMENT	SK10-4	5330-01-343-2745
200	PIN, COTTER	K-2412-Z	5315-01-179-9882
201	PIN, COTTER	MS171659	5315-00-846-8337
202	PIN, COTTER	MS24665-151	5315-00-815-1405
203	PIN, COTTER	MS24665-298	5315-00-234-1861

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
204	PIN, COTTER	MS24665-385	5315-00-187-9382
205	PIN, COTTER	MS24665-423	5315-00-013-7228
206	PIN, COTTER	MS24665-457	5315-00-187-9393
207	PIN, COTTER	MS24665-459	5315-00-187-9394
208	PIN, COTTER	MS24665-69	5315-00-828-8190
209	PIN, COTTER	352.497	5315-01-394-3546
210	PIN, SPRING	MS16562-142	5315-00-058-6115
211	PIN, SPRING	MS16552-146	5315-00-853-3814
212	PLASTIC STRIP	352700	5330-01-296-2109
213	RECEPTACLE	50R4-1-1AA	5325-01-049-2049
214	RING, BUSHING	152.157	
215	RIVET, BLIND	AK42H	5320-00-874-4477
216	RIVET, BLIND	AK43H	5320-00-143-6149
217	RIVET, BLIND	MS20600AD5W12	5320-01-047-0467
218	RIVET, BLIND	MS20604B3W2	5320-00-721-9075
219	RIVET, BLIND	M24243/1-A806	5320-00-850-3256
220	RIVET, BLIND	M24243/1-B302	5320-00-999-0397
221	RIVET, BLIND	M24243/1-D502	5320-00-850-3248
222	RIVET, BLIND	M24243/1-D608	5320-00-850-3246
223	RIVET, BLIND	M24243/1-F402	5320-00-129-9706
224	RIVET, BLIND	M24243/6-A403H	5320-00-882-8388
225	RIVET, BLIND	M24243/6-A405H	5320-01-291-9121
226	RIVET, BLIND	M24243/6-A406H	5320-01-421-0484
227	RIVET, BLIND	M24243/6-A602H	5320-00-956-7362
228	RIVET, BLIND	M24243/6-A604H	5320-00-956-7355
229	RIVET, BLIND	M24243/6-A606H	5320-00-882-8385
230	RIVET, BLIND	M24243/6-A608H	5320-01-032-6534
231	RIVET, BLIND	M24243/7-A402H	5320-00-874-4477
232	RIVET, BLIND	M24243/7-A403H	5320-00-143-6149
233	RIVET, BLIND	M24243/7-A604H	5320-00-420-2165
234	RIVET, BLIND	M24243/7-A606H	5320-00-490-5523

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
235	RIVET, BLIND	SD64BSLF	5320-01-397-3347
236	RIVET, BLIND	206057	5320-01-411-0081
237	RIVET, COMPRESSION	12418469	5320-01-376-0699
238	SCREW, CAP	12414475-131	5303-01-363-0703
239	SCREW, CAP	6V-2315	5306-01-433-4753
240	SCREW, MACHINE	MS24693-144	
241	SCREW, MACHINE	MS51958-83	5305-00-071-2095
242	SCREW, SELF-LOCKING	MS16998-61L	5305-01-211-3097
243	SEAL	VC08G1R0B	5330-01-389-6109
244	SEAL	12421431	
245	SEAL	125128-5	
246	SEAL	125128-6	
247	SEAL	355150	5330-01-423-0689
248	SEAL ASSEMBLY, CTIS	A1205-Q-2435	5330-01-360-7753
249	SEAL ASSEMBLY, HUB	A1205-R-2254	5330-01-360-5252
250	SEAL, DOOR	12416467	5330-01-385-3769
251	SEAL RING, METAL	29505809	5330-01-360-5329
252	SEAL, NONMETALLIC	CC3550	
253	SEAL, NONMETALLIC	12417725	5330-01-375-2908
254	SEAL, NONMETALLIC	2418974-1	5330-01-257-1709
255	SEAL, NONMETALLIC	673267	5330-01-395-1251
256	SEAL, URETHANE FOAM	12420420-001	
257	SEAL, URETHANE FOAM	12420420-002	
258	SEAL, URETHANE FOAM	12420420-003	
259	SEAL, WEATHER	147P00039	
260	SPACER, RING	4P2987	5365-01-433-8407
261	SPLICE, CONDUCTOR	12420927-001	
262	SPLICE, CONDUCTOR	12420927-002	5940-01-421-6955
263	STRAIN RELIEF	10280870-3	5975-00-376-1585
264	TERMINAL, LUG	MS20659-163	5940-00-113-3145
265	TERMINAL, LUG	MS20659-164	5940-00-113-3148

SECTION II. MANDATORY REPLACEMENT PARTS LIST (CONT)

(1) ITEM NO.	(2) NOMENCLATURE	(3) PART NUMBER	(4) NATIONAL STOCK NUMBER
266	TERMINAL, LUG	MS25036-108	5940-00-143-4780
267	TERMINAL, LUG	MS25036-122	5940-00-113-8190
268	TERMINAL, LUG	12414275-001	
269	TERMINAL, LUG	12416409-006	
270	WASHER, FLAT	MS27183-10	5310-00-809-4058
271	WASHER, FLAT	12417948-004	5365-01-436-8308
272	WASHER, FLAT RUBBER	900.032	5330-01-378-7541
273	WASHER, NYLON	MS51859-16	5310-00-964-7811
274	WASHER, SPRING	D63474/1-30	5310-01-413-8475
275	WASHER, SPRING	WW579S18	
276	WASHER, SPRING	110 7289	5310-01-246-1387
277	WASHER, SPRING	12414559-021	5310-01-374-4517
278	WASHER, SPRING	12414560-017	5310-01-395-0820
279	WASHER, SPRING	12414560-018	5310-01-381-3281
280	WASHER, SPRING	12414560-019	5310-01-369-6074
281	WASHER, SPRING	12417503	5310-01-406-6326
282	WASHER, SPRING	12418220	5310-01-372-3495

APPENDIX H
LUBRICATION ORDER

SECTION I. INTRODUCTION

H-1. GENERAL

The information contained in this appendix provides the lubrication requirements for the LMTV vehicle.

a. Adherence. Intervals (on-condition or hardtime) and the related man-hour times are based on normal operation. The man-hour time specified is the time needed to do all the services prescribed for a particular interval. On-condition (OC) oil sample intervals will be applied unless changed by the Army Oil Analysis Program (AOAP) laboratory. Change the hardtime interval if the lubricants are contaminated or if operating the equipment under adverse operating conditions, including longer-than-usual operating hours. The calendar interval may be extended during periods of low activity. If extended, adequate preservation precautions must be taken. Hardtime intervals will be applied in the event AOAP laboratory support is not available. Hardtime intervals must be applied during the warranty period.

Intervals shown in this lubrication order are based on mileage/calendar, and in some cases mileage alone. An example of a mileage/calendar interval is: **Q,** which means every 3,000 miles (4,827 km) or quarterly (every three months). The lubrication is to be performed at whichever interval occurs first for the vehicle. An example of a mileage alone interval is: **6K,** which stands for every 6,000 miles (9,654 km). The lubrication is to be performed at the mileage indicated regardless of the calendar interval.

WARNING

- **Dry Cleaning Solvent (P-D-680) 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 breath vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type I Dry Cleaning Solvent is 100°F (38°C) and for Type II is 138°F (50°C). Failure to comply may result in serious 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 medical attention. Failure to comply may result in injury to personnel.**

b. Cleaning fittings before lubricating. Clean parts with dry cleaning solvent (SD P-D-680) (Item 71, Appendix D) or equivalent. Dry before lubricating. Dashed arrows indicate lubrication on both sides of the equipment.

c. Lubricating after fording. If fording occurs, lubricate all fittings below fording depth and check submerged gearboxes for presence of water.

d. Lubricating after high-pressure washing. After a thorough washing, lubricate all grease fittings and oil can points outside and underneath vehicle.

e. Level of Maintenance. The lowest level of maintenance authorized to lubricate a point is Operator/Unit Maintenance (O). Operator/crew (C) may lubricate points authorized for Unit Maintenance (O) when authorized by Unit Maintenance (O).

f. Localized views. A reference to the appropriate localized view is given after most lubrication entries. Localized views begin on page H-9.

H-1. GENERAL (CONT)

g. Interval Symbols. The lubrications interval symbols will be used as applicable:

Q-quarterly/3,000 mi (4,827 km) (whichever occurs first)
S-semiannually/6,000 mi (9,654 km) (whichever occurs first)
A-annually/12,000 mi (19,308 km) (whichever occurs first)
B-biannually/24,000 mi (38,616 km) (whichever occurs first)
3K-every 3,000 mi (4,827 km) (no calendar interval)
6K-every 6,000 mi (9,654 km) (no calendar interval)
12K-every 12,000 mi (19,308 km) (no calendar interval)
24K-every 24,000 mi (38,616 km) (no calendar interval)

H-2. OIL FILTERS

Oil filters shall be serviced/changed as applicable, when:

a. They are known to be contaminated, or clogged;

b. Service is recommended by AOAP laboratory analysis; or

c. At prescribed hardtime intervals while vehicle is under warranty, or if AOAP is not available/used as required.

H-3. AOAP SAMPLING INTERVAL

WARNING

- **Engine oil is hot end under pressure. The oil sampling valve releases oil proportionally to the amount of pressure applied to valve. Activate oil sampling valve by pressing in slowly to prevent injury to personnel. Failure to comply may result in injury to personnel.**
- **Wear safety goggles when taking oil sample. Oil is under pressure and could cause injury to personnel. Failure to comply may result in injury to personnel.**

Engine/transmission oil must be sampled every 90 days as prescribed by DA Pam 738-750. Hydraulic fluids must be sampled annually as prescribed by DA Pam 738-750.

H-4. WARRANTY HARDTIME STATEMENT

“For equipment under manufacturer’s warranty, hardtime oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions (such as longer than usual operating hours, extended idling periods, extreme dust).”

SECTION II. LUBRICATION CHART

H-5. LUBRICATION KEY

LUBRICANTS	
Specification	**Type**
MIL-L-2104 (OE/HDO)	Lubricating Oil, Internal Combustion Engine, Combat/Tactical Service
MIL-L-46167 (OEA)	Lubricating Oil, Internal Combustion Engine, Arctic
MIL-L-2105 (GO)	Lubricating Oil, Gear, Multipurpose
MIL-G-10924 (GAA)	Grease, Automotive and Artillery
MIL-G-18458 (GW)	Grease, Wire-Rope and Exposed Gear
MIL-H-5606 (OHA)	Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance

DESCRIPTION	CAPACITY	EXPECTED TEMPERATURES		
		Above +40°F (Above +4°C)	+40°F to -15°F (+4°C to -26°C)	-15°F to -50°F (-26°C to -46°C)
Engine crankcase	25 qt (24 L)	OE/HDO-15/40	SAE 10W30 OR OE/HDO-10	OEA
Transmission (total system)	43.3 qt (41 L)	OE/HDO-15/40	OE/HDO-10	OEA
Transmission (at oil change)	31.8 qt (30.0 L)	OE/HDO-15/40	OE/HDO-10	OEA
Transmission (after overhaul)	39.0 qt (37.0 L)	OE/HDO-15/40	OE/HDO-10	OEA
Steering system	5 qt (4.8 L)	OE/HDO-10	OE/HDO-10	OEA
Hydraulic reservoir	27 gal (102.2 L)	OE/HDO-10	OE/HDO-10	OEA
Front axle differential (maximum capacity)	9.5 qt (9.0 L)	GO-80/90	GO-80/90	SAE 75W90 OR GO-75
Rear axle differential (maximum capacity)	18.05 qt (17.1 L)	GO-80/90	GO-80/90	SAE 75W90 OR GO-75
Front axle planetary hubs	11-13 oz (0.33-0.38 L)	GO-80/90	GO-80/90	SAE 75W90 OR GO-75
11K Self-Recovery Winch (SRW)	As Required	GO-85/140	GO-80/90	GO-75
Propeller shaft universal and slip joints	As Required	GAA	GAA	GAA
Tie rod ends	As Required	GAA	GAA	GAA
Towing pintle assembly	As Required	GAA	GAA	GAA
Spring bolts and spring shackles	As Required	GAA	GAA	GAA
Front axle shaft U-joints and steering knuckles	As Required	GAA	GAA	GAA

H-5. LUBRICATION KEY (CONT)

DESCRIPTION	CAPACITY	EXPECTED TEMPERATURES		
		Above +40°F (Above +4°C)	+40°F to -15°F (+4°C to -26°C)	-15°F to -50°F (-26°C to -46°C)
Front axle inner wheel bearing	As Required	GAA	GAA	GAA
Rear axle inner wheel bearing	As Required	GAA	GAA	GAA
Front lifting beam	As Required	GAA	GAA	GAA
11K Self-Recovery Winch (SRW) cable	As Required	GW	GW	GW
Air/hydraulic power unit	3 pt (1.4 L)	OHA	OHA	OHA
Backup hydraulic pump	19 oz (562 ml)	OHA	OHA	OHA

COOLANT	
Specification	Type
MIL-A-46153	Antifreeze, Ethylene Glycol, Inhibited, Heavy Duty, Single Package
MIL-A-11755	Antifreeze, Arctic-Type

DESCRIPTION	CAPACITY	EXPECTED TEMPERATURES		
		Above +40°F (Above +4°C)	+40°F to -15°F (+4°C to -26°C)	-15°F to -50°F (-26°C to -46°C)
Cooling system (engine only)	14 qt (13 L)	MIL-A-46153	MIL-A-46153	N/A
Cooling system (total system)	43.8 qt (41.5 L)	MIL-A-46153	MIL-A-46153	N/A
Cooling system, Arctic (total system)	58.3 qt (55.2 L)	N/A	N/A	MIL-A-11755

CLEANING AGENT	
Specification	Type
P-D-680	Dry Cleaning Solvent, SD-II
O-C-1901	Cleaning Compound, Windshield

DESCRIPTION	CAPACITY	EXPECTED TEMPERATURES		
		Above +15°F (Above -9°C)	+15°F to -15°F (-9°C to -26°C)	-15°F to -50°F (-26°C to -46°C)
All metal parts as required	N/A	SD-II (all temperatures)		
Windshield washer reservoir	7.5 qt (7.1 L)	2/3 water to 1/3 O-C-1901	1/2 water to 1/2 O-C-1901	1/3 water to 2/3 O-C-1901

For arctic operation refer to FM 9-207.

H-6. LUBRICATION INTERVALS

Intervals		Total Man-Hours
Quarterly (Q)	Lubrication performed once every three months or 3,000 mi (4,827 km).*	2.0
Semi-annually (S)	Lubrication performed once every six months or 6,000 mi (9,654 km).*	2.5
Annually (A)	Lubrication performed once every year or every 12,000 mi (19,308 km).*	1.5
Bi-annually (B)	Lubrication performed once every two years or every 24,000 mi (38,616 km).*	3.5
3K	Lubrication performed once every 3,000 mi (4,827 km).**	1.0
6K	Lubrication performed once every 6,000 mi (9,654 km).**	1.0
12K	Lubrication performed once every 12,000 mi (19,308 km).**	4.0
24K	Lubrication performed once every 24,000 mi (38,616 km).**	0.5

* Whichever occurs first.
** No calendar interval.

H-7. LUBRICATION LOCATOR VIEWS

LUBRICANT INTERVAL **INTERVAL LUBRICANT**

Engine Crankcase Breather (O)
(See note 17 and view A)

Fuel Filter (O)
(See note 6 and view A)

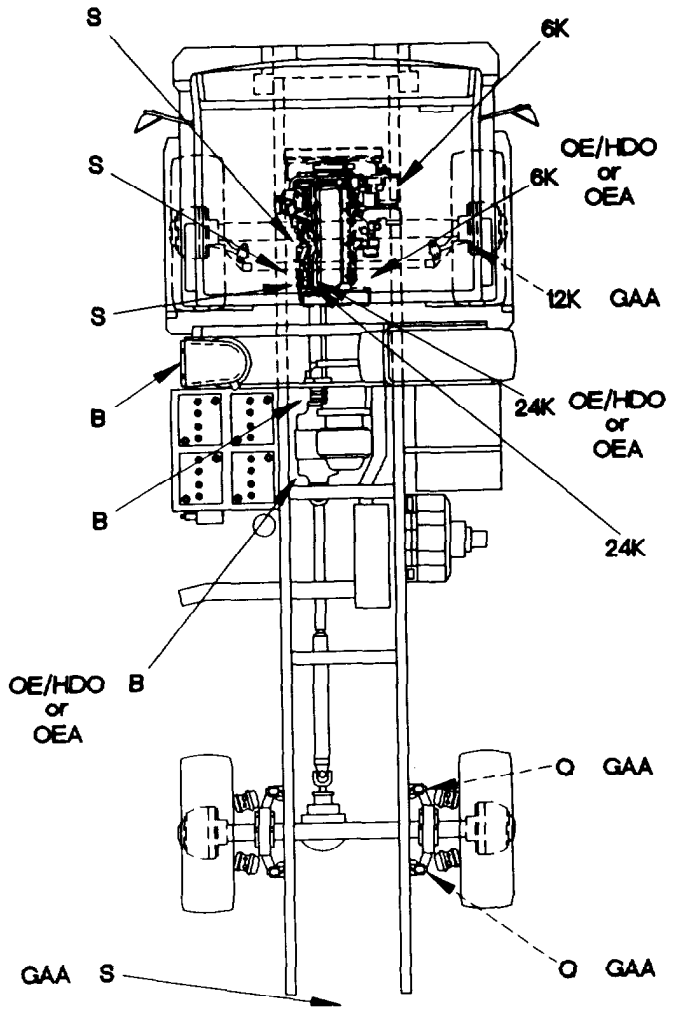
Fuel/Water Separator (O)
(See note 5 and view B)

Cooling System (O)
(See note 7)

Transmission Filter (O)
(See note 3 and view F)

Transmission Drain and Fill (O)
(See note 3 and views D, E, and F)

Towing Pintle Fill (O)
(See note 16 and views J and K)



Engine Oil Filter (O)
(See note 2 and view C)

Crankcase Drain and Fill (O)
(See note 1 and views C and D)

Front Axle Inner Wheel Bearing Repack (O)
(See note 22)

Power Steering Reservoir Drain and Fill (O)
(See note 4 and view G)

Power Steering Filter (O)
(See note 4 and view G)

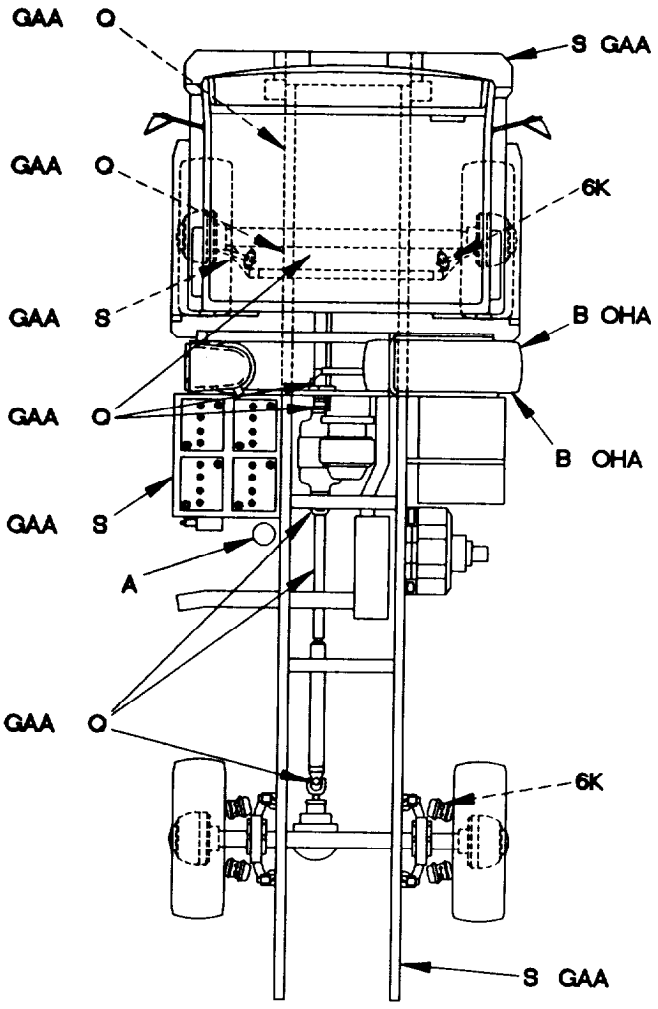
Spring Bolt Fill (O)
(See note 18 and view H)

Spring Shackle Fill (O)
(See note 18 and view AE)

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NOTE: Dashed arrows indicate lubrication on both sides of vehicle.

LUBRICANT	INTERVAL
Spring Bolt **Fill (O)** (See note 18 and view H)	**11K Self-Recovery Winch (SRW) Cable Front Roller Fairlead** **Fill (O)** (See note 23 and views Z and AA)
Spring Shackle **Fill (O)** (See note 18 and view I)	**Brake Wedge and Air Chamber (O)** (See note 21 and view L)
Tie Rod Ends **Fill (O)** (See note 13 and view N)	**Backup Hydraulic Pump Drain and Fill (O)** (See note 10 and view R)
Universal and Slip Joints **Fill (O)** (See note 9 and view P)	**Air/Hydraulic Power Unit Drain and Fill (O)** (See note 10 and view S)
Battery Posts (O) (See note 19 and view Q)	
Air Dryer (O) (See note 25 and view AF)	
Universal and Slip Joints **Fill (O)** (See note 9 and view P)	**Brake Wedge and Air Chamber (O)** (See note 21 and view M)
	11K Self-Recovery Winch (SRW) Cable Rear Roller Fairlead **Fill (O)** (See note 23 and views AB and AC)



CHASSIS

NOTE: Dashed arrows indicate lubrication on both sides of vehicle.

H-7. LUBRICATION LOCATOR VIEWS (CONT)

LUBRICANT INTERVAL **INTERVAL LUBRICANT**

Front Axle
Check and Fill (O)
(See note 11 and view T)

Axle Shaft U-Joints
Fill (O)
(See note 20 and view U)

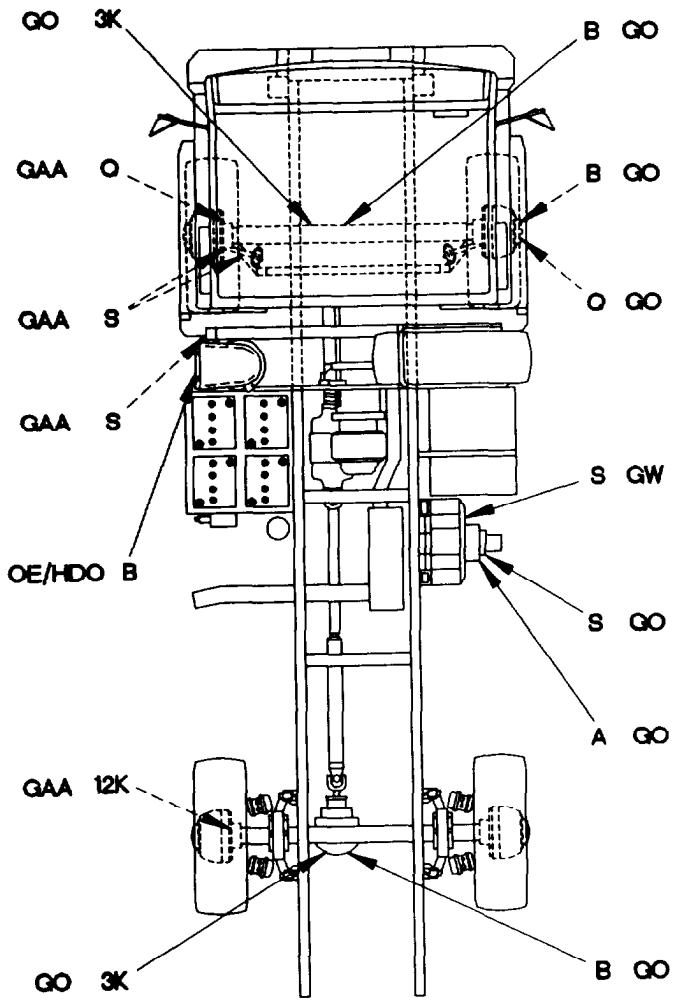
Steering Knuckles
Fill (O)
(See note 20 and view U)

Front Lifting Beam
Clean and Fill (O)
(See note 24 and view AD)

Hydraulic Reservoir and Filter
Drain and Fill (O)
(See note 8 and view X)

Rear Axle Inner Wheel Bearing Repack (O)
(See note 22)

Rear Axle
Check and Fill (O)
(See note 11 and view T)



Front Axle
Drain and Fill (O)
(See note 11 and view T)

Wheel End Planetary Hubs
Drain and Fill (O)
(See note 12 and view V)

Wheel End Planetary Hubs
Check and Fill (O)
(See note 12 and view V)

11K Self-Recovery Winch (SRW) Cable
Fill (O)
(See note 14 and view W)

11K Self-Recovery Winch (SRW)
Check and Fill (O)
(See note 15 and view Y)

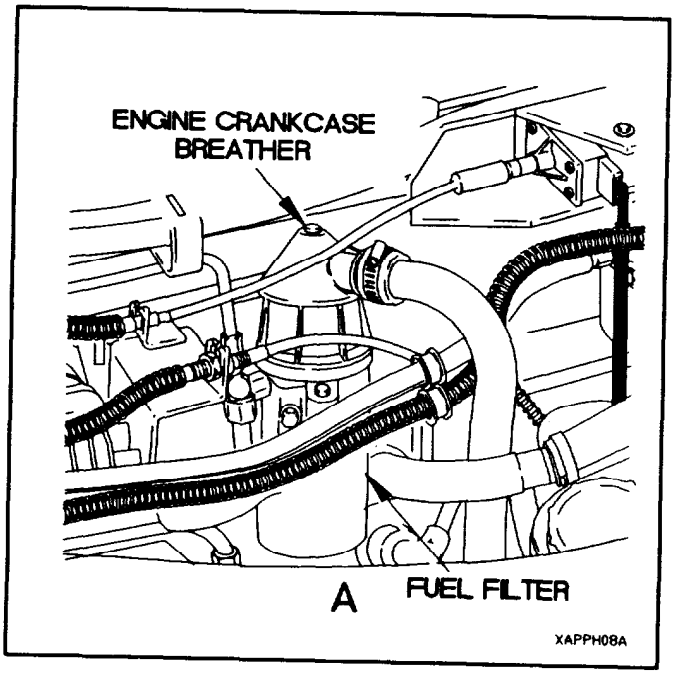
11K Self-Recovery Winch (SRW)
Drain and Fill (O)
(See note 15 and view Y)

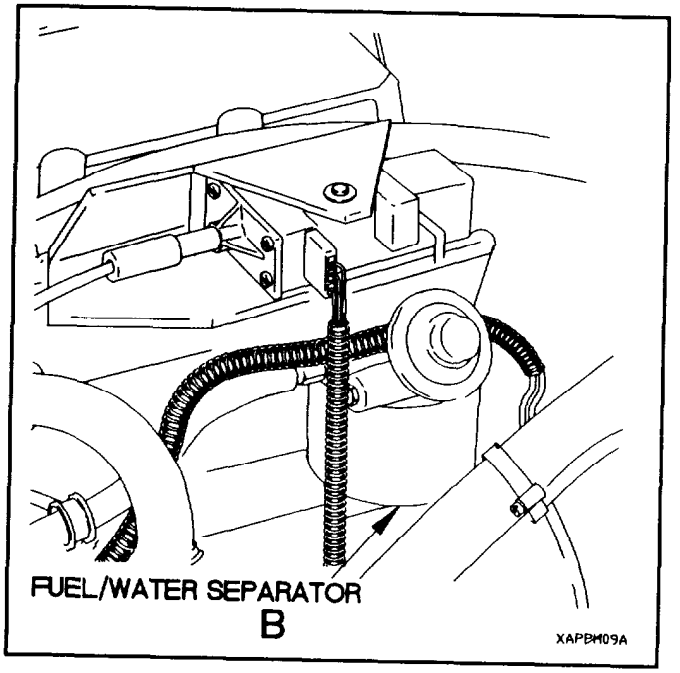
Rear Axle
Drain and Fill (O)
(See note 11 and view T)

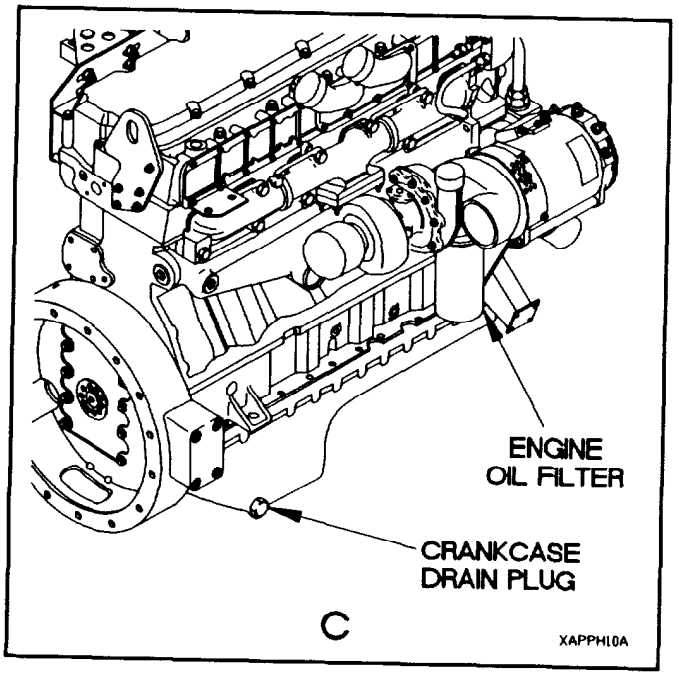
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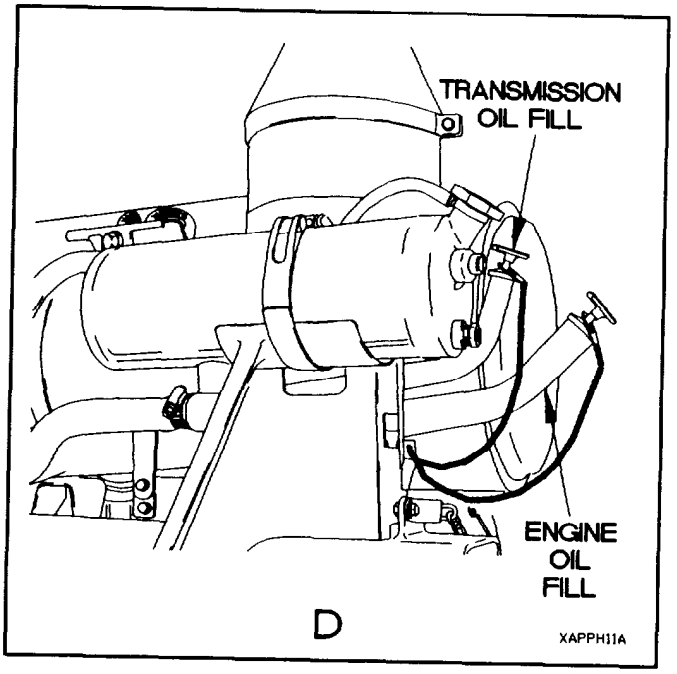
NOTE: Dashed arrows indicate lubrication on both sides of vehicle.

H-8. LUBRICATION LOCAL VIEWS

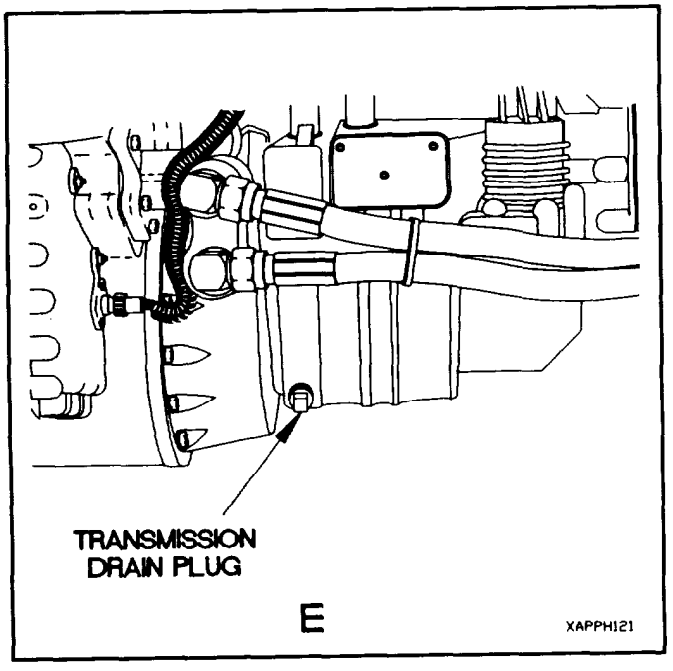


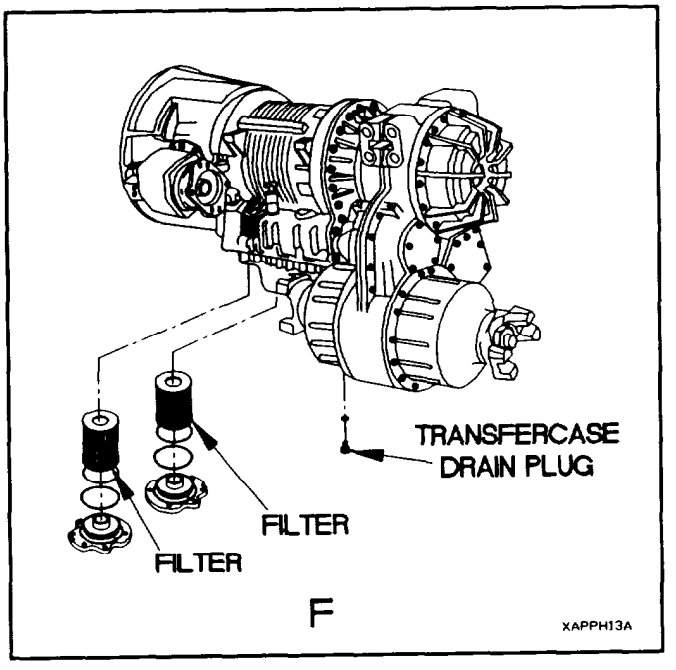


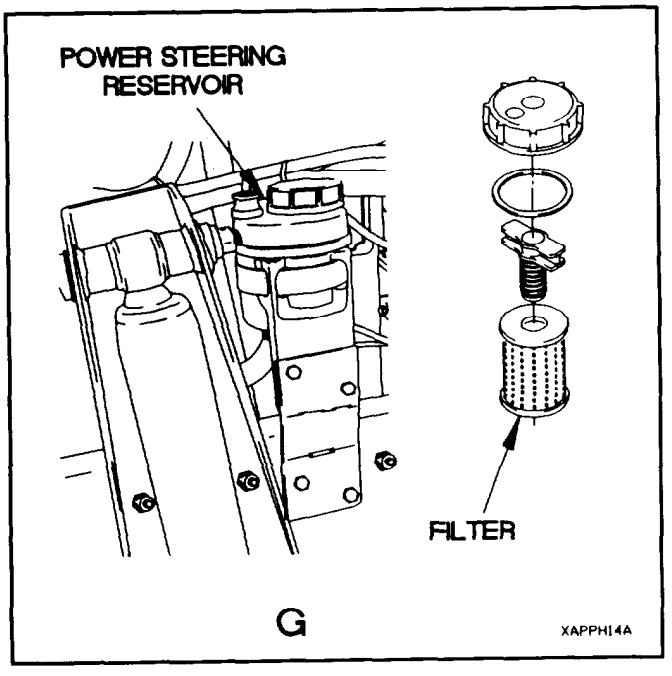


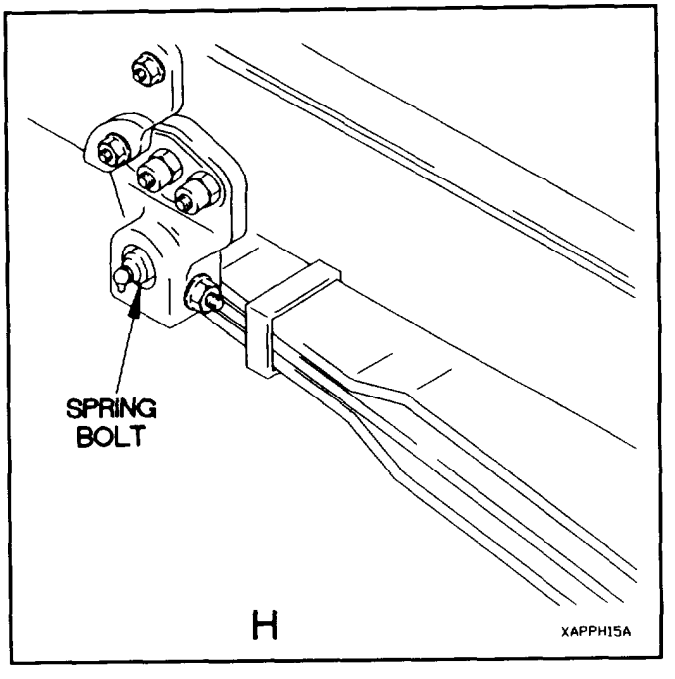


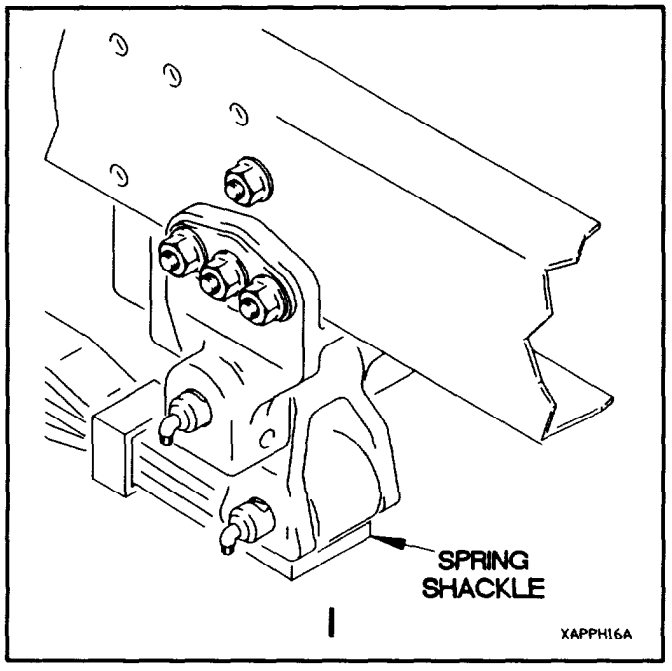
H-8. LUBRICATION LOCAL VIEWS (CONT)



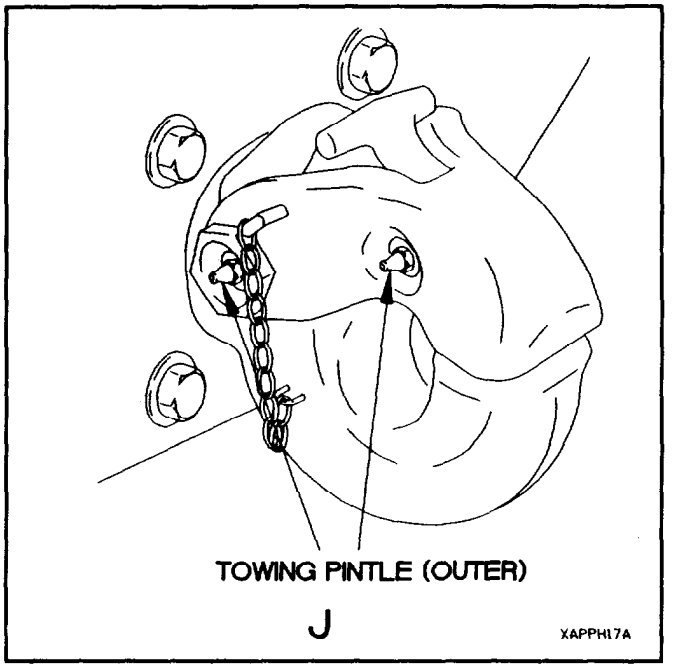




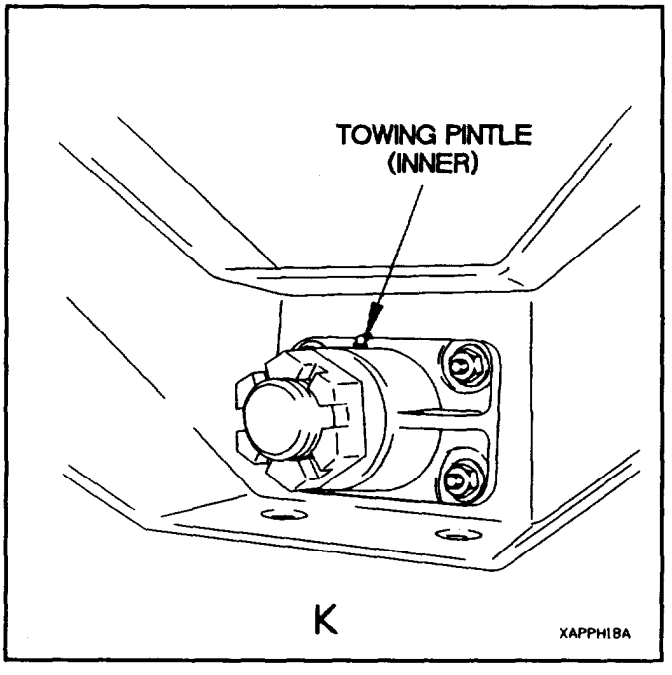



SPRING
SHACKLE
XAPPH16A

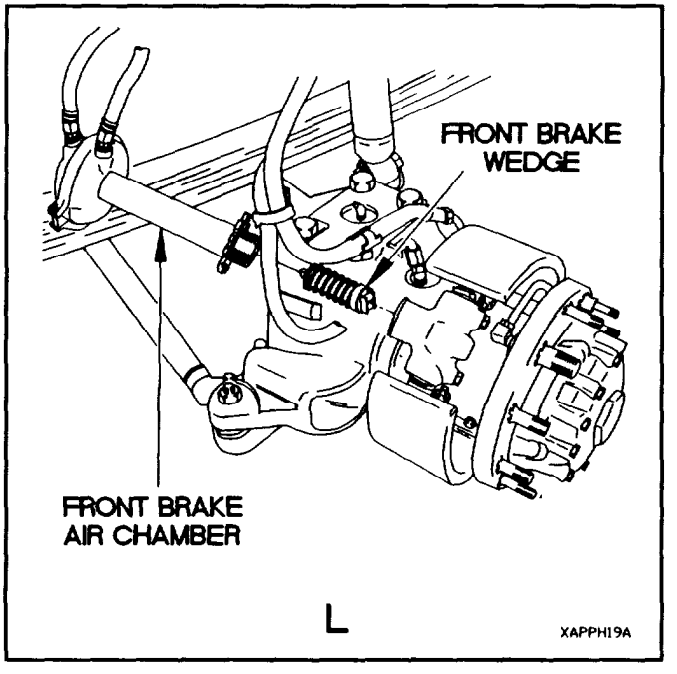
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TOWING PINTLE (OUTER)
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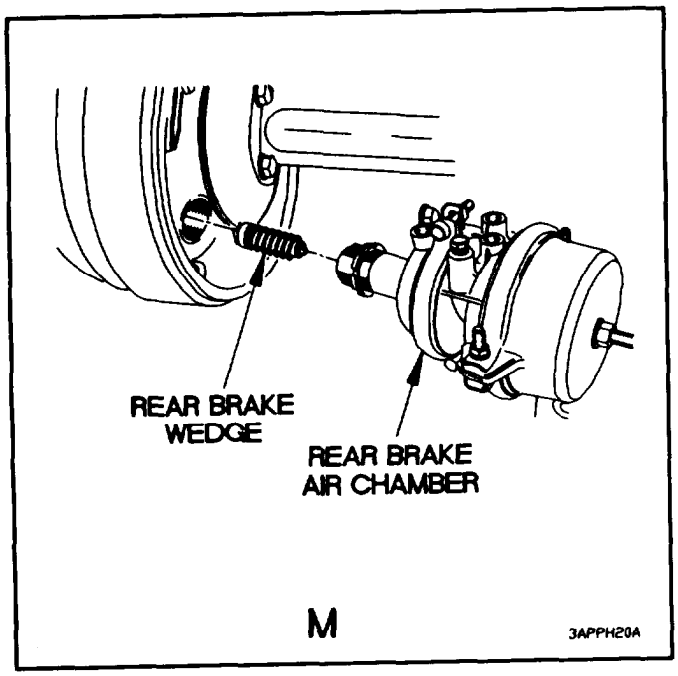

TOWING PINTLE
(INNER)
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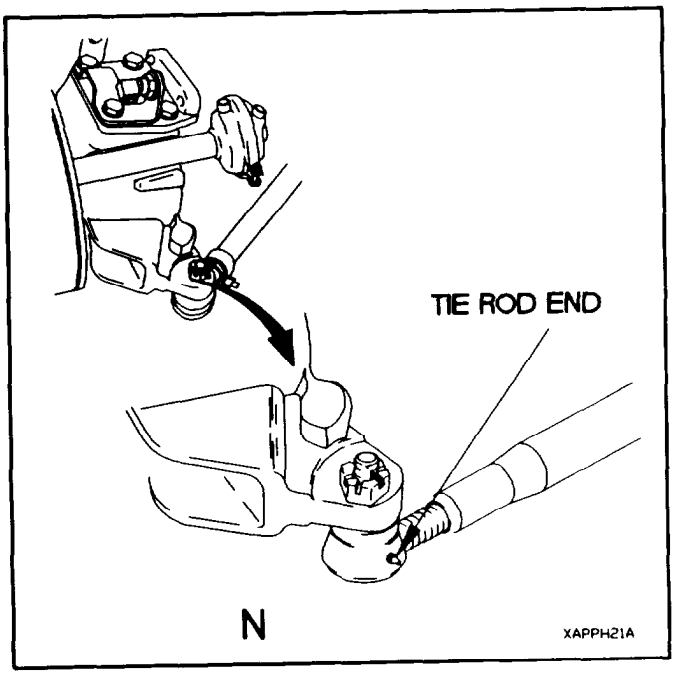
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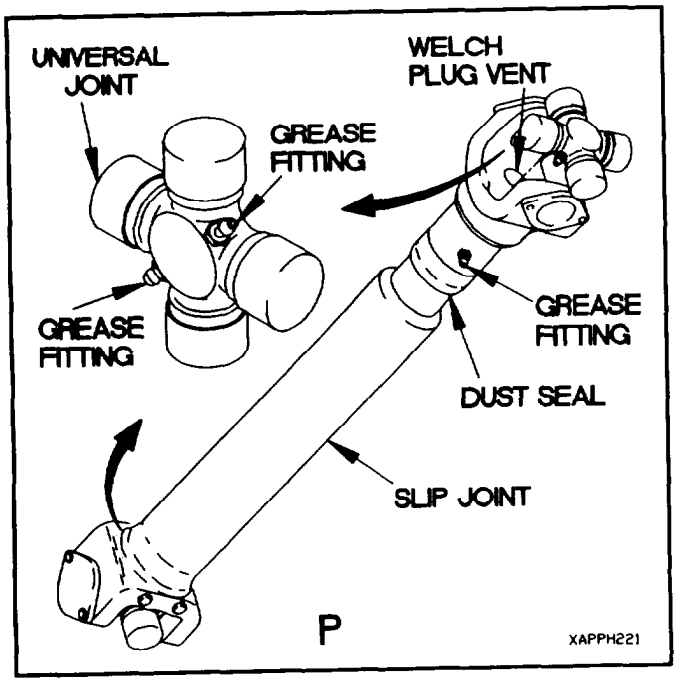

FRONT BRAKE
WEDGE
FRONT BRAKE
AIR CHAMBER
XAPPH19A

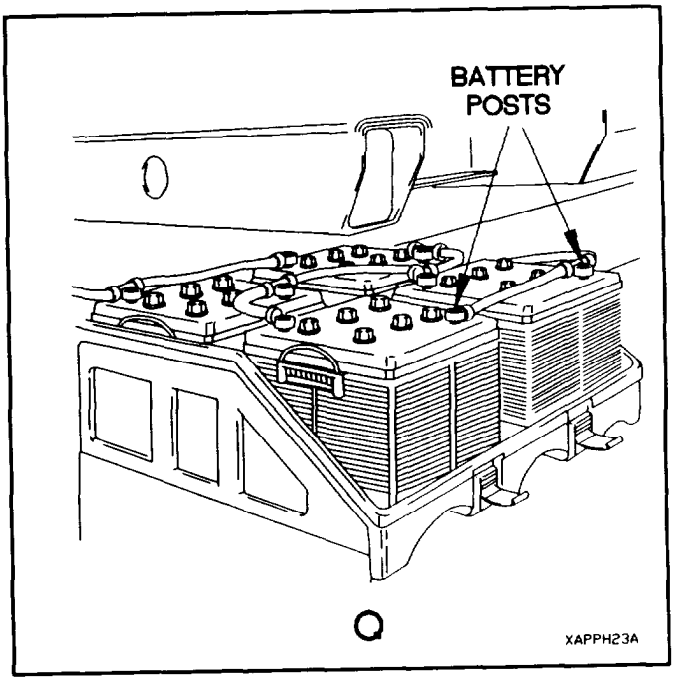
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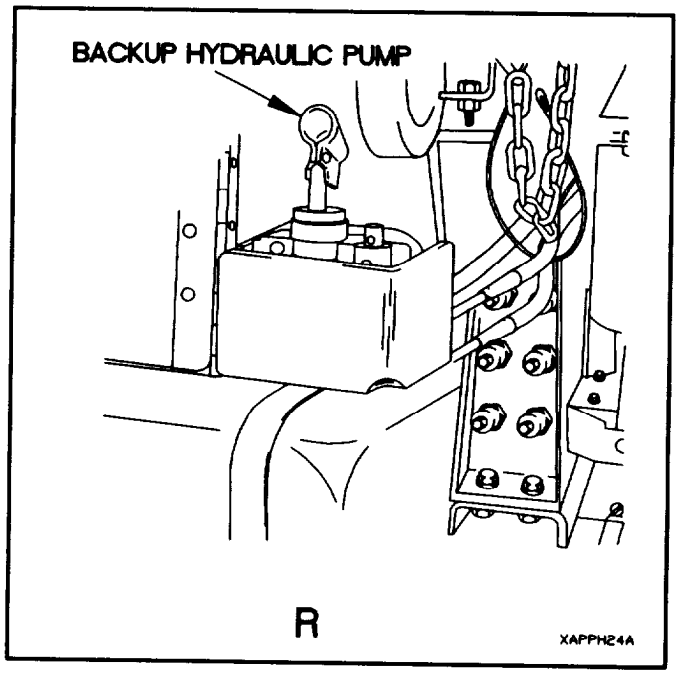
H-8. LUBRICATION LOCAL VIEWS (CONT)

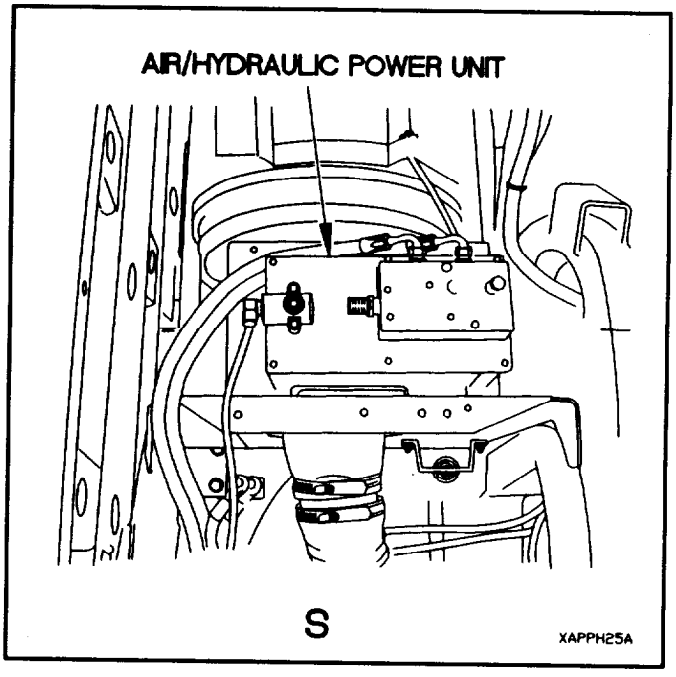


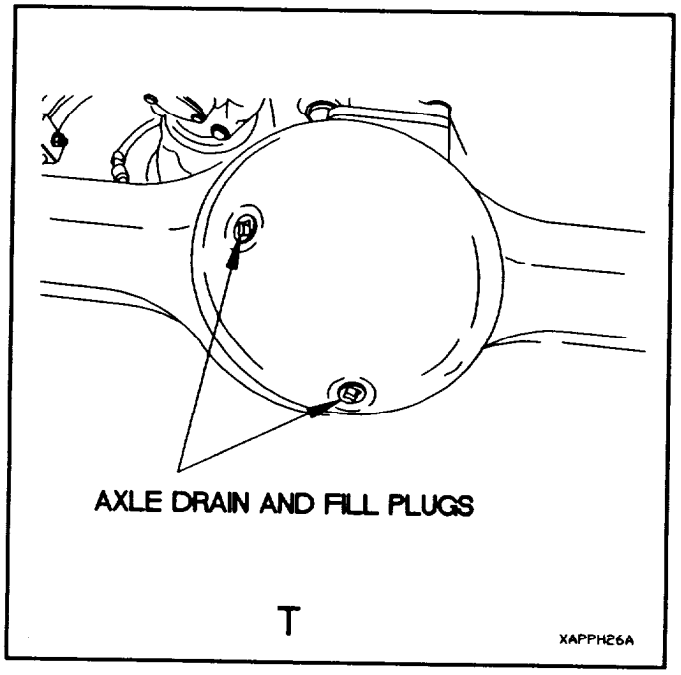


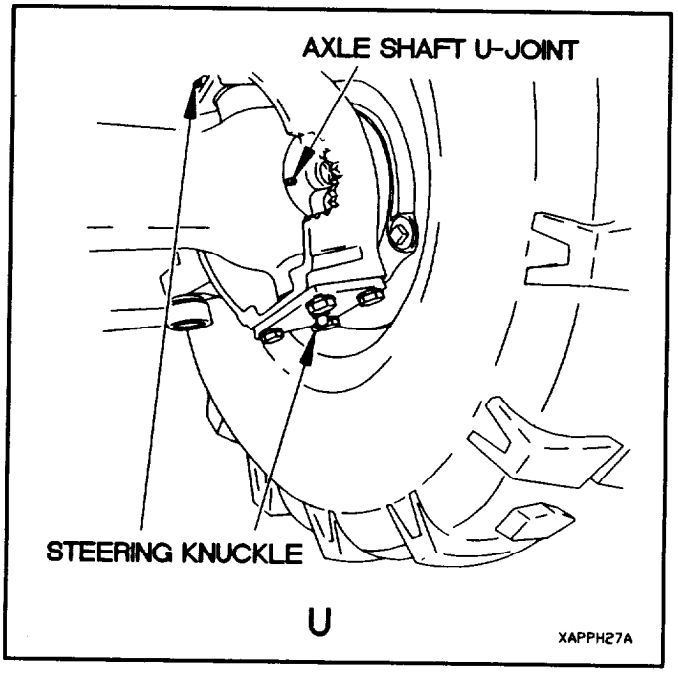




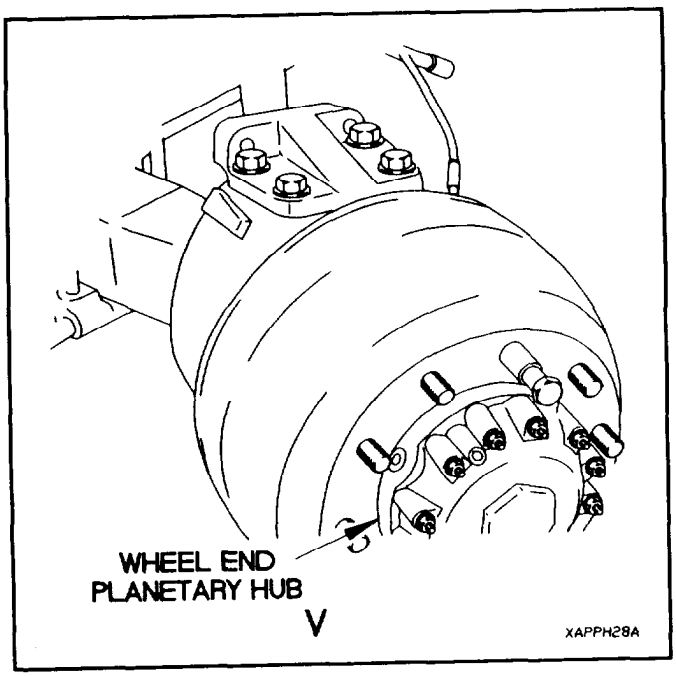

BACKUP HYDRAULIC PUMP
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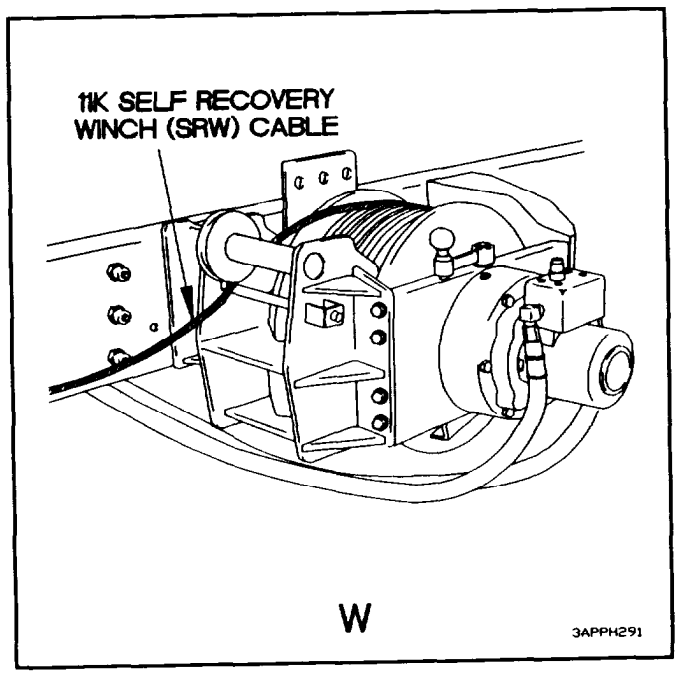

AIR/HYDRAULIC POWER UNIT
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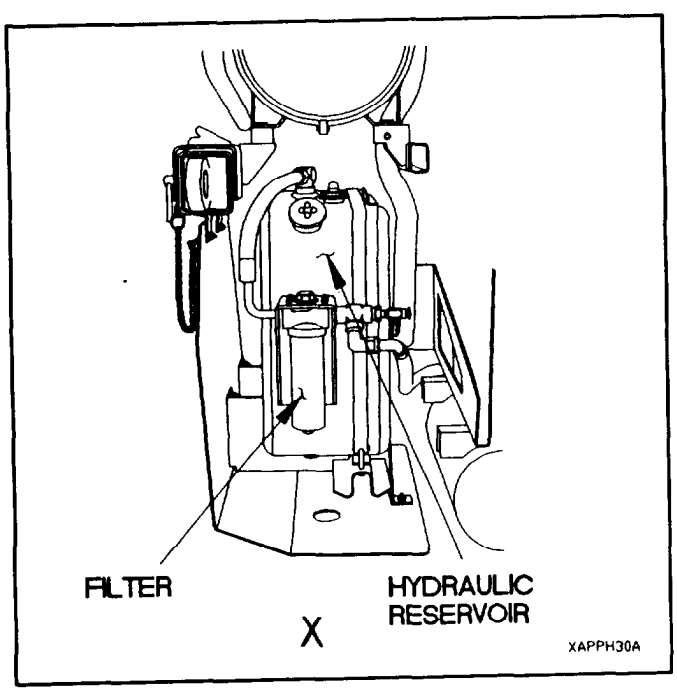

AXLE DRAIN AND FILL PLUGS
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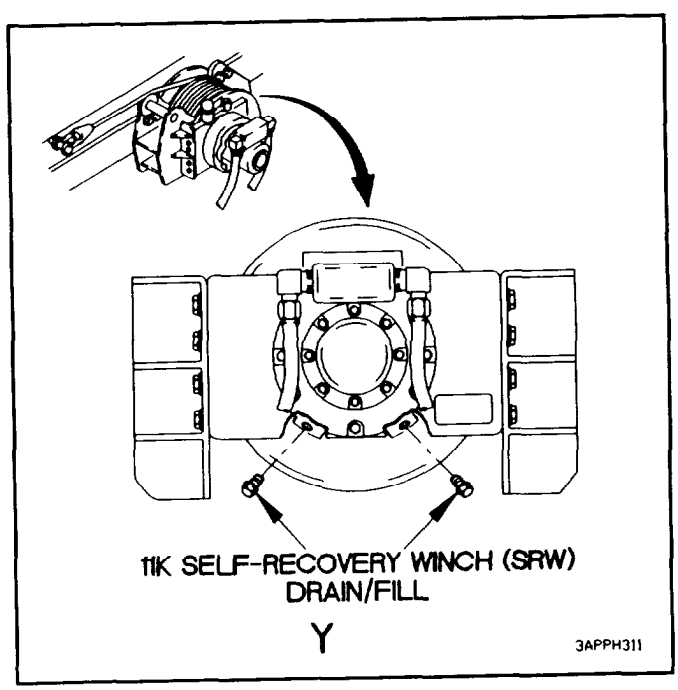

AXLE SHAFT U-JOINT
STEERING KNUCKLE
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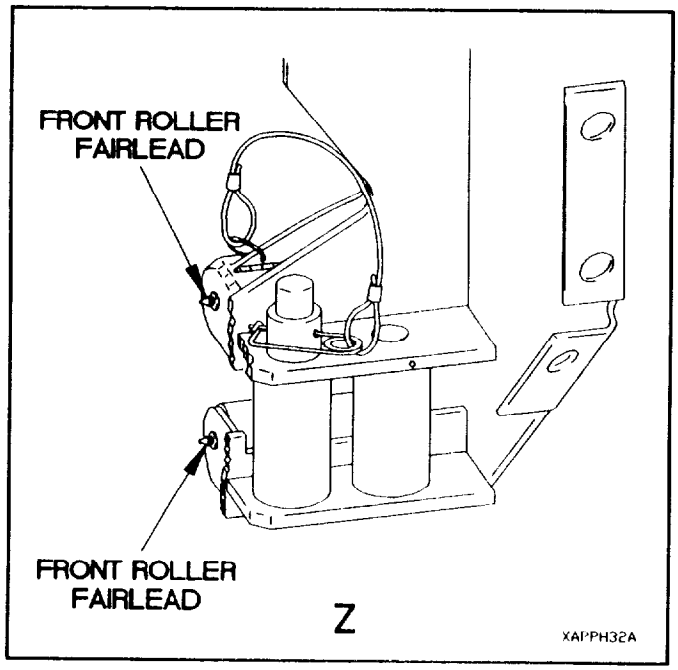
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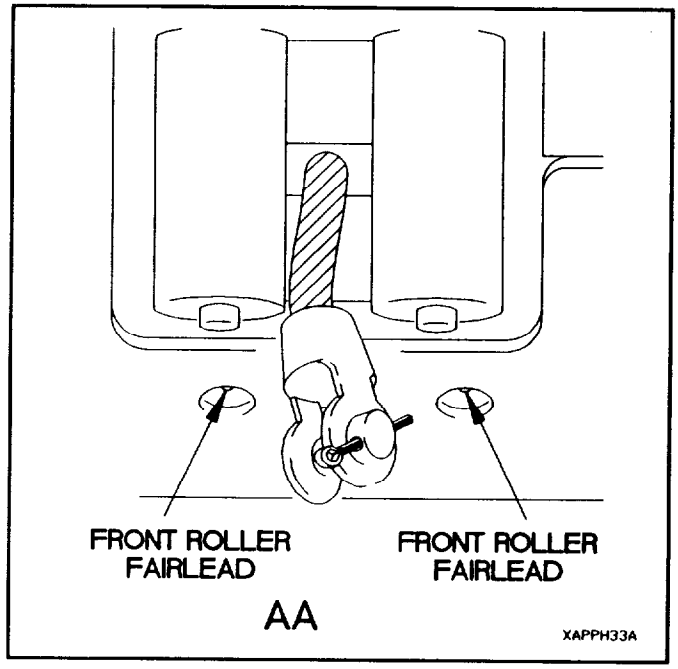


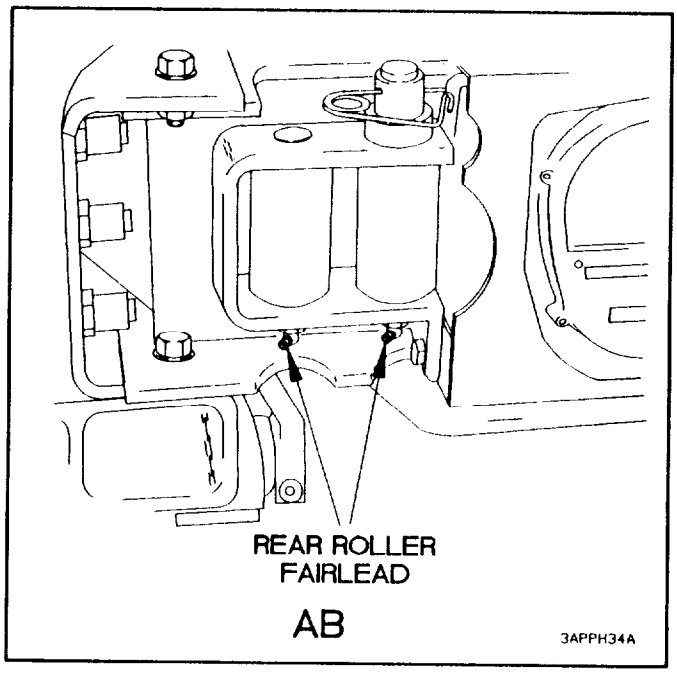


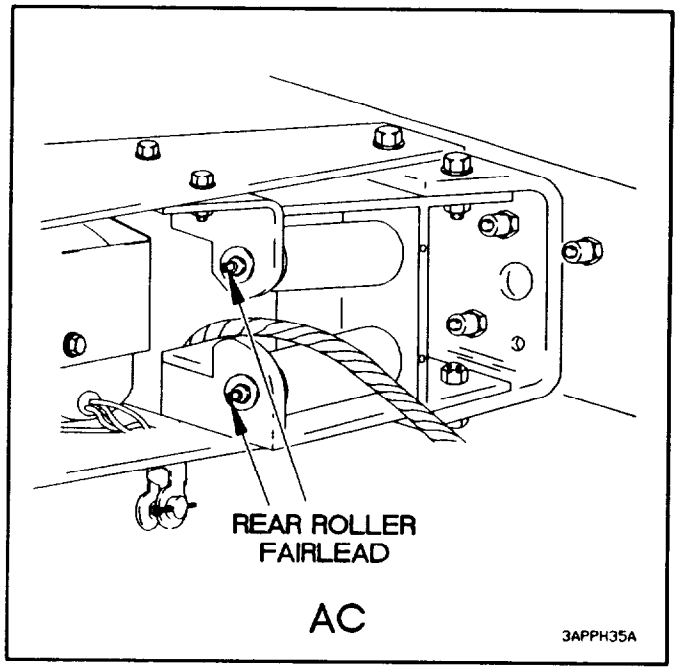




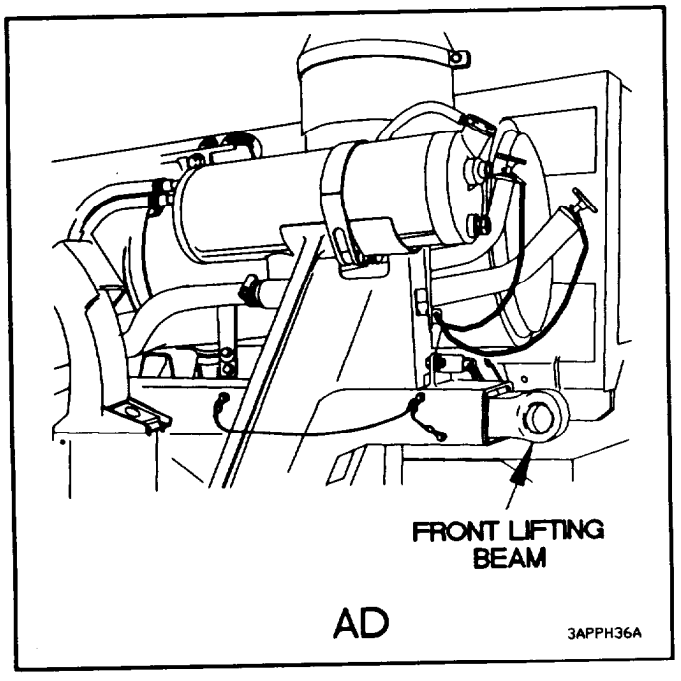

FRONT ROLLER FAIRLEAD
FRONT ROLLER FAIRLEAD
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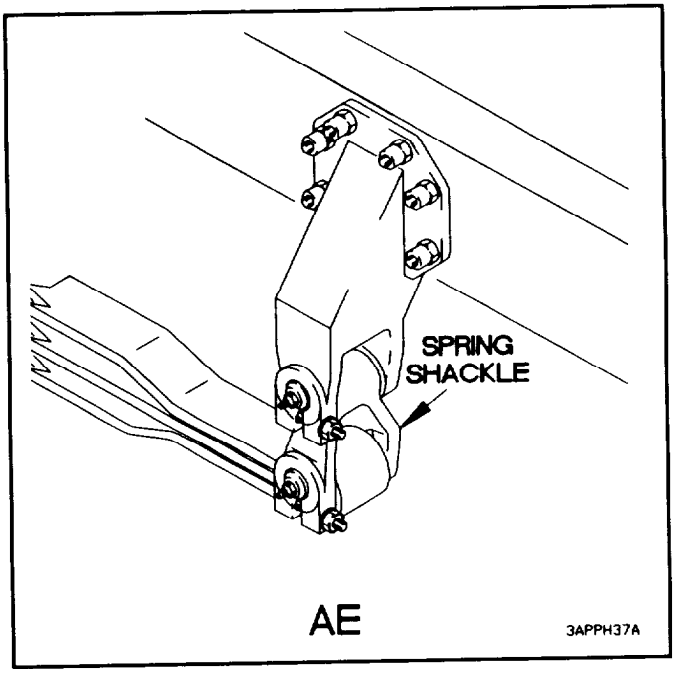

FRONT ROLLER FAIRLEAD
FRONT ROLLER FAIRLEAD
AA
XAPPH33A

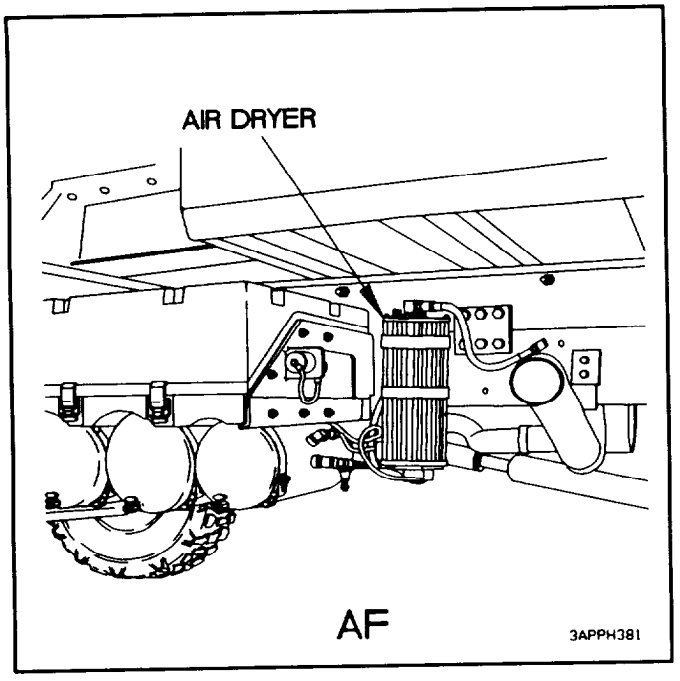

REAR ROLLER FAIRLEAD
AB
3APPH34A


REAR ROLLER FAIRLEAD
AC
3APPH35A

H-8. LUBRICATION LOCAL VIEWS (CONT)







H-9. LUBRICATION NOTES

1. ENGINE CRANKCASE. Check engine oil level daily. Change engine oil at initial 5,000 miles (8,045 km). During the remainder of the 12,000 mile (19,308 km)/18 month warranty period, Units participating in AOAP will change engine oil every 6,000 miles (9,654 km). Units not participating in AOAP, will change engine oil every 6,000 miles (9,654 km) or every six months, whichever occurs first. After expiration of engine warranty period, Units participating in AOAP will perform engine oil change as directed by AOAP. Units not participating in AOAP will change engine oil every 6,000 miles (9,654 km) or every six months, whichever occurs first, or when operating in dusty areas or under severe operating conditions, change the oil every 3,000 miles (4,827 km) or every three months, whichever occurs first. Drain engine oil when engine is warm. Refill engine crankcase with OE/HDO specified for the ambient temperature. Engine oil is full when level is within crosshatch marks on the dipstick. Do not overfill.

2. ENGINE OIL FILTER. Filter is replaced each time the crankcase is drained. If water or metal particles are detected during oil filter replacement, notify Direct Support Maintenance personnel before refilling crankcase.

3. TRANSMISSION. Check transmission oil level daily. Change transmission oil at initial 5,000 miles (8,045 km). During the remainder of the 24 month/unlimited mileage warranty, Units participating in AOAP will perform transmission oil change as directed by AOAP. Units not participating in AOAP will perform transmission oil change every 24,000 miles (38,616 km) or once every two years, whichever occurs first. Drain transmission oil when engine is warm. Refill with OE/HDO specified for ambient temperature. Add oil until the proper level is reached (TM 9-2320-365-10). Do not overfill. Replace oil filters each time transmission oil is changed.

4. POWER STEERING. Check power steering oil level weekly. Change the oil every 24,000 miles (38,616 km). Disconnect upper and lower hoses from steering gear and drain oil. Refill power steering pump reservoir with OE/HDO specified for the ambient temperature. Reservoir is full when oil is between the two marks on the dipstick. Do not overfill. Remove dipstick, wipe clean and install dipstick fully into reservoir. Remove dipstick and read oil level. Replace oil filter each time power steering oil is changed.

5. FUEL/WATER SEPARATOR. Replace filter element every 6,000 miles (9,654 km) or once every six months, whichever occurs first.

6. FUEL FILTER. The fuel particle filter is replaced when a new fuel/water separator filter element is installed. The normal replacement interval is every 6,000 miles (9,654 km) or once every six months, whichever occurs first.

7. ENGINE COOLANT. Check engine coolant level daily. Change the coolant and flush the cooling system every 24,000 miles (38,616 km) or once every two years, whichever occurs first. Fill radiator overflow tank with an Ethylene Glycol/water mixture as specified in 0-A-548D. Service the cooling system before the specified interval if:

- Coolant is heavily contaminated.
- Engine overheats.
- Oil cooler has failed allowing oil and coolant to mix.

8. HYDRAULIC RESERVOIR and FILTER. Check oil level weekly and make sure oil level gage reads F (full). Units participating in AOAP will sample oil annually and change oil and filter as directed by AOAP. Units not participating in AOAP will change oil and filter every two years. Drain oil and refill hydraulic reservoir with OE/HDO specified for ambient operating temperature. Fill hydraulic reservoir until oil level gage reads F (full). Do not overfill. Replace oil filter each time oil is changed.

H-9. LUBRICATION NOTES (CONT)

9. PROPELLER SHAFT UNIVERSAL and SLIP JOINTS.
Lubricate propeller shafts with GAA every 3,000 miles (4,827 km) or once every three months, whichever occurs first, using a low pressure lubrication gun. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

- UNIVERSAL JOINT:
  A. Apply grease to both grease fittings until new grease purges from all four bearing caps.
  B. If grease does not purge from all four bearing caps, replace the complete U-joint.

- SLIP JOINT:
  A. Apply grease until grease appears at the vent in the welch plug.
  B. Place your finger over the welch plug vent and add grease until grease purges from the dust seal.
  C. If grease does not purge from the dust seal, replace propeller shaft.

10. AIR/HYDRAULIC POWER UNIT and BACKUP HYDRAULIC PUMP. Change OHA oil every 24,000 miles (38,616 km) or once every two years, whichever occurs first. To service air/hydraulic power unit and backup hydraulic pump refer to vehicle paragraph number 19-7. Air Transportability Hydraulic System Service.

11. ALL AXLE DIFFERENTIALS. Check oil level in differentials every 3,000 miles (4,827 km). Check oil level with vehicle parked on level surface and axle differential at ambient temperature, allowing at least one hour to cool down after vehicle operation. If oil is checked when axle differential is hot, it is normal for oil to spill out of the port due to expansion from the heat, Oil level is considered full if it is within one inch of the bottom of the fill port. If oil spills from the fill port when the axle differential is cool, it is overfull. Allow oil to drain until no more drains out. If the oil level is more than one inch below the bottom of the fill port, refill axle differential with GO specified for the ambient temperature until level with bottom of fill port. Change the oil every 24,000 miles (38,616 km) or once every two years, whichever occurs first. Drain oil when hot after operation.

12. FRONT AXLE WHEEL END PLANETARY HUBS. There are two lube intervals for the front axle wheel end planetary hubs.

a. Check and fill front axle wheel end planetary hubs every 3,000 miles (4,827 km) or once every three months, whichever occurs first, as follows:

   (1) Position vehicle on a level surface. Allow 15 minutes for vehicle to cool before checking oil levels.
   (2) Position fill port at 4 o'clock position. If oil flows from fill port when plug is loosened, let oil drain to correct level. If oil level is below fill port, fill hub with GO specified for the ambient temperature until oil is level with fill port.

b. Drain and fill front axle wheel end planetary hubs every 24,000 miles (38,616 km) or once every two years, whichever occurs first, following the repacking of the inner wheel bearings or whenever wheel end assemblies are taken apart for other maintenance as follows:

   (1) Position vehicle on a level surface.
   (2) Position fill port at the 6 o'clock (down) position.
   (3) Drain hub oil (allow a minimum of 15 minutes for oil to drain down from vent tubes).
   (4) Refill hubs with 11-13 ounces of GO specified for the ambient temperature.

13. TIE ROD ENDS. Lubricate tie rod ends with GAA every 6,000 miles (9,654 km) or once every six months, whichever occurs first, using a low pressure lubrication gun, until new grease is seen purging from the boot area. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

14. 11K SELF-RECOVERY WINCH (SRW) CABLE:

CAUTION

Do not use dry cleaning solvent to clean 11K Self-Recovery Winch (SRW) cables. Use of dry cleaning solvent will remove lubricant from inner strands of 11K SRW cables. Failure to comply may result in damage to equipment.

a. After each operation:

Clean and lubricate length of 11K SRW cable reeled out with new OE/HDO 30.

b. Infrequent use or in very damp conditions:

Lubricate 11K SRW cable with GW.

c. Dry or dusty conditions:

Do not lubricate 11K SRW cable.

d. Every six months:

(1) Unwind entire length of 11K SRW cable (TM 9-2320-365-10).
(2) Soak and clean 11K SRW cable with new OE/HDO 30.
(3) Wipe off excess OE/HDO 30.
(4) Coat 11K SRW cable with GW.
(5) Rewind 11K SRW cable (TM 9-2320-365-10).

15. 11K SRW. Check 11K SRW gear oil level every 6,000 miles (9,654 km) or once every six months, whichever occurs first. Refill 11K SRW with GO specified for ambient temperature. Change oil every 12,000 miles (19,308 km) or once every year, whichever occurs first. Use procedure (a) to check and fill oil level; use procedure (b) to change oil.

a. Check and fill oil level as follows:

(1) Shift the freespool mechanism to the disengage position so the drum can be freely rotated.
(2) Rotate the drum to where either plug is near the top of the 11K SRW. Remove the plug.
(3) Rotate the drum 90 degrees in the direction that allows the other plug to be near the top of the 11K SRW. Remove the plug.

NOTE

Oil level is full if a small amount of oil runs out of lower plug.

(4) Add oil until a small amount of oil runs out of lower plug hole.
(5) Apply adhesive (Item 2, Appendix D) to plug and position plug in top hole.
(6) Rotate drum until open hole is at top.
(7) Apply adhesive (Item 2, Appendix D) to plug and position plug in top hole.
(8) Tighten plugs to 13-15 lb-ft (18-20 N•m).

H-9. LUBRICATION NOTES (CONT)

b. Change oil as follows:

(1) Shift the freespool mechanism to the disengage position so the drum can be freely rotated.
(2) Rotate the drum to where either plug is near the top of the 11K SRW. Remove the plug.
(3) Rotate the drum 90 degrees in the direction that allows the other plug to be near the top of the 11K SRW. Remove the plug.
(4) Position drain pan (Item 17, Appendix C) under 11K SRW.
(5) Rotate the drum until either hole is straight down to the bottom of the 11K SRW. Allow the oil to drain completely.
(6) Rotate the drum until either hole is at top.

NOTE

Oil level is full if a small amount of oil runs out of lower plug.

(7) Add oil until a small amount of oil runs out of lower plug hole.
(8) Apply adhesive (Item 2, Appendix D) to plug and position plug in top hole.
(9) Rotate drum until open hole is at top.
(10) Apply adhesive (Item 2, Appendix D) to plug and position plug in top hole.
(11) Tighten plugs to 13-15 lb-ft (18-20 N•m).

16. TOWING PINTLE. Lubricate towing pintle with GAA every 6,000 miles (9,654 km) or once every six months, whichever occurs first, using a low pressure lubrication gun until new grease is seen purging.

WARNING

- **Dry Cleaning Solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in wall-ventilated area; avoid contact with skin, eyes, and clothes, and do not breath vapors. Keep away from heat or flame. Never' smoke when using solvent; the flashpoint for Type I Dry Cleaning Solvent is 100°F (38°C) and for Type II is 138°F (50°C). Failure to comply may result in serious 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 medical attention. Failure to comply may result in injury to personnel.**

17. ENGINE CRANKCASE BREATHER. Remove crankcase breather and clean with Dry Cleaning Solvent (SD P-D-680) (Item 71, Appendix D) or equivalent, and replace o-ring seal every 6,000 miles (9,654 km) or once every six months, whichever occurs first.

18. FRONT and REAR AXLE SPRING BOLT and SPRING SHACKLE. Lubricate front and rear axle spring bolts and spring shackles with GAA every 3,000 miles (4,827 km) or once every three months, whichever occurs first, using a low pressure lubrication gun until grease appears between pins and bushings at both ends of spring bolt and spring shackle. If pins do not accept grease, remove pins. Clean and inspect pins and bushings, replace if necessary. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

19. BATTERY POSTS. Service batteries in accordance with TM 9-6140-200-14, every 6,000 miles (9,654 km) or once every six months, whichever occurs first.

20. FRONT AXLE SHAFT UNIVERSAL JOINTS and STEERING KNUCKLES. Lubricate universal joints every 3,000 miles (4,827 km) or once every three months, whichever occurs first. Lubricate steering knuckles with GAA every 6,000 miles (9,654 km) or once every six months, whichever occurs first, using a low pressure lubrication gun. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

21. BRAKE WEDGE end AIR CHAMBER: BRAKE SPIDER, SELF-ADJUSTER MECHANISM, AND WEDGE ASSEMBLY. Clean and lubricate (with GAA) areas of spider and hardware that contact the brake shoes. Disassemble, clean and lubricate the self-adjuster mechanism. Clean and lubricate the wedge head, rollers and ramps in the plungers. Clean and lubricate every 6,000 miles (9,654 km). If operating conditions are severe or abnormal, service at 3,000 miles (4,827 km) or once every three months, whichever occurs first, or when any of the following occur:

- Seals are replaced
- Plungers are removed
- Brakes are relined
- Grease becomes contaminated or hardened

22. FRONT and REAR AXLE INNER WHEEL BEARINGS. Repack inner wheel bearings with GAA every 12,000 miles (19,308 km), when semiannual PMCS inspection of service brakes reveals oil leak from inner hub, or whenever wheel end assemblies are taken apart for other maintenance.

23. 11K SRW CABLE ROLLER FAIRLEADS. Lubricate with GAA every 6,000 miles (9,654 km) or once every six months, whichever occurs first, using a low pressure lubrication gun. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

WARNING

- **Dry Cleaning Solvent (P-D-680) 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 breath vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for Type I Dry Cleaning Solvent is 100°F (38°C) and for Type II is 138°F (50°C). Failure to comply may result in serious 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 medical attention. Failure to comply may result in injury to personnel.**

24. FRONT LIFTING BEAM. Remove left and right lifting beams and clean with Dry Cleaning Solvent (SD P-D-680) (Item 71, Appendix D) or equivalent, every 6,000 miles (9,654 km) or once every six months, whichever occurs first. Apply a light coat of GAA to lifting beams. If operating conditions are severe or abnormal, service at 1,000 miles (1,609 km) or once every month, whichever occurs first.

25. AIR DRYER. Service air dryer (para 23-6) every 12,000 miles (19,308 km) or annually, whichever occurs first.

APPENDIX J
ADDITIONAL AUTHORIZATION LIST (AAL)

Section I. INTRODUCTION

J-1. SCOPE

This appendix lists additional items you are authorized for the support of the LMTV.

J-2. GENERAL

This list identifies items that do not have to accompany the LMTV and that do not have to be turned in with it. These items are all authorized to you by Common Tables of Allowance (CTA), Modification Table of Organization and Equipment (MTOE), Tables of Distribution and Allowances (TDA), or Joint Table of Allowance (JTA).

J-3. EXPLANATION OF LISTING

National Stock Numbers, description, and quantities are provided to help you identify and request the additional items you require to support this equipment.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description (CAGE) Part Number	(3) U/M	(4) Qty Auth
6685-01-193-1733	10,000 PSI Transducer: (19207) 12258956	EA	1

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GLOSSARY
ABBREVIATIONS

A/C	Air Conditioner
AC	Alternating Current
ANSI	American National Standards Institute
CCW	Counterclockwise
CTIS	Central Tire Inflation System
CW	Clockwise
ECU	Electronic Control Unit
EMI	Electromagnetic Interference
LED	Light Emitting Diode
LH	Left Hand
LMHC	Light Material Handling Crane
MAC	Maintenance Allocation Chart
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, or Chemical
NO/NC	Normally Open/Normally Closed
PDP	Power Distribution Panel
PMCS	Preventive Maintenance Checks and Services
PTO	Power Takeoff
RH	Right Hand
SAE	Society of Automotive Engineers
SRW	Self-Recovery Winch
STE/ICE-R	Simplified Test Equipment/Internal Combustion Engine-Reprogrammable
TEPSS	Transmission ECU Pushbutton Shift Selector
TPS	Throttle Position Sensor
TPSS	Transmission Pushbutton Shift Selector

VAC . . . . . Volts Alternating Current

VDC . . . . . Volts Direct Current

VIM . . . . . Vehicle Interface Module

WTEC II . . . . . World Transmission Electronic Controls (version 2)

WTEC III . . . . . World Transmission Electronic Controls (version 3)

HORN	BLACKOUT MARKER	LAMP	DUALBEAM LAMP	GROUND	POWER LAMP	OPEN CONTACT	BATTERY	FLOURESCENT LIGHT
TEMPERATURE SWITCH OPEN	TEMPERATURE SWITCH CLOSED	MAGNETIC PICKUP	SENSOR	NORMALLY OPEN	NORMALLY CLOSED	CONNECTOR	RECEPTACLE	ELECTRICAL OUTLET
MOTOR	SOLENOID	LEVEL SENSOR	FILTER	LED	METER OR GAUGE	CLOSED CONTACT	DIMMER MODULE	TELEPHONE RECEPTACLE
CIRCUIT BREAKER	TWO WAY SWITCH	PUSHBUTTON	CIRCULATING PUMP	DPDT SWITCH	DPST SWITCH	PHOTOCELL	FUSE	RELAY
PRESSURE SWITCH OPEN	PRESSURE SWITCH CLOSED	NORMALLY OPEN	NORMALLY CLOSED	ALTERNATOR	RESISTOR	TERMINAL LUG	ELECTRONIC IGNITION UNIT	
DIODE	SPLICE	SENSING SWITCH	MOTOR	GROUND RELAY	RELAY	CIRCUT BREAKER	FLASHER	

FIGURE FO-1 ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 1 OF 34

SIZE B | ILL. NO. 5WD01L11 | FP-1/FP-2 BLANK

CONNECTORS			
NUMBER	ZONE	SH	DESCRIPTION
A	C258	29	ELECTRONIC CONTROL UNIT
A	D265	30	ELECTRONIC CONTROL UNIT
A13	A65	8	WTEC II TRANSMISSION CONNECTOR A
A13	A70	8	WTEC II TRANSMISSION CONNECTOR B
A13	A74	9	WTEC II TRANSMISSION CONNECTOR C
B	E258	29	ELECTRONIC CONTROL UNIT
B	F265	30	ELECTRONIC CONTROL UNIT
C	E260	29	ELECTRONIC CONTROL UNIT
C	F266	29	ELECTRONIC CONTROL UNIT
J1	D285	32	VAN 110 VAC POWER ENTRY
J2	A185	21	EMI FILTER
J2	E285	32	VAN 110 VAC POWER ENTRY
J3	D205	23	AIRDROP ONLY
J5	A38	5	VEHICLE HORN
J6	A38	5	VEHICLE HORN
J7	A188	21	WTEC II TRANSMISSION DIMMER MODULE
J8	B38	5	BLACKOUT MARKER RIGHT FRONT
J9	C38	5	FRONT RIGHT TURN SIGNAL
J10	B38	5	PARKING LIGHT FRONT RIGHT
J12	D38	5	RIGHT HEADLIGHT
J13	C38	5	RIGHT HEADLIGHT
J14	C38	5	RIGHT HEADLIGHT
J17	H38	5	BLACKOUT DRIVE LIGHT
J18	D38	5	LEFT HEADLIGHT
J19	E38	5	LEFT HEADLIGHT
J19	C177	20	CAB - DASH - LEFT - UNDERDASH
J20	D38	5	LEFT HEADLIGHT
J22	G38	5	PARKING LIGHT FRONT LEFT
J23	F38	5	FRONT LEFT TURN SIGNAL
J24	H38	5	BLACKOUT MARKER LEFT FRONT
J25	G85	10	WINDSHIELD WASHER ROTARY PUMP (B3)
J27	A43	5	CHASSIS - FRONT
J31	E55	7	ENGINE
J31X	F175	20	CAB - DASH - LEFT - UNDERDASH
J39	G61	7	ENGINE
J43	G42	5	CHASSIS - FRONT
J43X	F42	5	CHASSIS - FRONT
J43X	G175	20	CAB - DASH - LEFT - UNDERDASH
J50	E85	10	CAB MARKER LIGHT FRONT UPPER LEFT
J51	D42	5	CHASSIS - FRONT
J52	E38	5	CHASSIS - FRONT BUMPER
J52	B203	23	CHASSIS - FRONT
J53	F200	23	AIRDROP ONLY
J55	C85	10	CAB MARKER LIGHT FRONT UPPER RIGHT
J57	D85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE LEFT
J59	C85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE RIGHT
J60	D85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE MIDDLE
J62	E88	10	ROTARY WARNING LIGHT CONNECTOR
J65	E186	21	ROTARY WARNING LIGHT CONNECTOR
J78	F185	21	CAB RADIO CONNECTOR
J83	B50	6	CHASSIS - SPARE TIRE
J95	E38	5	12V INTERVEHICULAR
J95	B206	23	ENGINE
J99	E187	21	CHEMICAL ALARM CONNECTOR
J106	F50	6	CHEMICAL DETECTOR RECEPTACLE
J108	B222	25	CAB DASH CENTER OPTIONS PANEL
J111	E122	14	CTIS ELECTRONIC CONTROL UNIT
J113	G186	21	CTIS PRESSURE TRANSDUCER
J114	B165	21	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J115	C154	18	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J116	C159	18	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J117	F161	18	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J117	B289	33	WTEC III DIAGNOSTIC CONNECTOR
J118	D161	18	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J119	B169	19	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
J119	C298	34	WTEC III CAB FLOOR LEFT
J129	F85	10	CAB MARKER LIGHT FRONT LOWER LEFT
J129	F85	10	CAB MARKER LIGHT LEFT DOOR
J130	F202	23	12 PIN CONNECTOR
J131	B85	10	CAB MARKER LIGHT RIGHT DOOR
J132	B85	10	CAB MARKER LIGHT FRONT LOWER RIGHT
J150	B271	31	VAN FRONT MARKER LIGHT
J151	B271	31	VAN FRONT MARKER LIGHT

CONNECTORS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
J152	B271	31	VAN FRONT MARKER LIGHT
J153	A271	31	VAN FRONT MARKER LIGHT
J154	A271	31	VAN FRONT MARKER LIGHT
J155	B267	32	VAN CURBSIDE MARKER LIGHT
J156	B287	32	VAN CURBSIDE MARKER LIGHT
J157	C287	32	VAN ROADSIDE MARKER LIGHT
J158	C287	32	VAN ROADSIDE MARKER LIGHT
J159	D287	32	VAN REAR CENTER MARKER LIGHT
J160	E287	32	VAN REAR CENTER MARKER LIGHT
J161	E287	32	VAN REAR CENTER MARKER LIGHT
J162	B273	31	VAN CURBSIDE BLACKOUT LIGHT
J163	B274	31	VAN CURBSIDE EMERGENCY LIGHT
J164	H274	31	VAN ROADSIDE BLACKOUT LIGHT
J165	H275	31	VAN ROADSIDE EMERGENCY LIGHT
J166	C271	31	VAN FRONT EMERGENCY LIGHT
J167	D287	32	VAN REAR EMERGENCY LIGHT
J173	G272	31	VAN 12/24 VDC POWER RECEPTACLE
J204	D254	29	HEATER SWITCH
J204	B254	29	TROOP HEATER
J205	D254	29	HEATER SWITCH
J205	B254	29	TROOP HEATER
J206	D253	29	HEATER SWITCH
J206	B253	29	TROOP HEATER
J207	F255	29	FURNACE ASSEMBLY
J209	C256	29	WEBASTO CONTROL UNIT
J209A	C230	26	PTO EQUIPPED
J209A	A239	27	ARCTIC KIT W/PTO EQUIPPED
J209B	D230	26	PTO EQUIPPED
J209B	B239	27	ARCTIC KIT W/PTO EQUIPPED
J210	F222	25	CAB DASH CENTER OPTIONS PANEL
J210	C255	29	FURNACE ASSEMBLY
J211	B255	29	FURNACE ASSEMBLY
J214	F246	28	SWINGFIRE HEATER
J215	E230	26	PTO EQUIPPED
J215	C239	27	ARCTIC KIT W/PTO EQUIPPED
J225	B258	29	FURNACE ASSEMBLY
J226	E258	29	WEBASTO CONTROL UNIT
J230	A282	32	VAN CURBSIDE 110 VAC OUTLET
J231	A283	32	VAN CURBSIDE 110 VAC OUTLET
J232	A284	32	VAN CURBSIDE 110 VAC OUTLET
J233	H282	32	VAN ROADSIDE 110 VAC OUTLET
J234	H283	32	VAN ROADSIDE 110 VAC OUTLET
J235	H284	32	VAN ROADSIDE 110 VAC OUTLET
J236	H275	31	VAN ROADSIDE 24 VDC OUTLET
J237	275	31	VAN CURBSIDE 24 VDC OUTLET
J242	D271	31	VAN A/C
J244	F271	31	VAN THERMOSTAT
J245	E271	31	VAN HEATER
J912	B124	14	CAB DASH CENTER HEATER / CTIS ECU
J912	D209	24	CAB DASH CENTER OPTIONS PANEL
J913	B122	14	CAB DASH CENTER HEATER / CTIS ECU
J921	G62	7	TROOP TRANSPORT ALARM
J410	E262	30	CAB ARCTIC HEATER
MT9	F66	8	WTEC II TRANSMISSION (A)
MT9	F70	8	WTEC II TRANSMISSION (B)
MT9	E74	9	WTEC II TRANSMISSION (C)
MT11	F66	8	WTEC II TRANSMISSION (A)
MT11	F70	8	WTEC II TRANSMISSION (B)
MT11	F74	9	WTEC II TRANSMISSION (C)
P2	A185	21	EMI FILTER
P2	G246	28	SWINGFIRE HEATER
P3	D204	23	AIRDROP ONLY
P5	A38	5	VEHICLE HORN
P6	A38	5	VEHICLE HORN
P8	B38	5	BLACKOUT MARKER RIGHT FRONT
P9	C38	5	FRONT RIGHT TURN SIGNAL
P10	B38	5	PARKING LIGHT FRONT RIGHT
P12	D38	5	RIGHT HEADLIGHT
P13	C38	5	RIGHT HEADLIGHT
P14	C38	5	RIGHT HEADLIGHT
P17	H38	5	BLACKOUT DRIVE LIGHT
P18	D38	5	LEFT HEADLIGHT
P16	A177	20	CAB - DASH - LEFT - UNDERDASH

CONNECTORS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
P19	E38	5	LEFT HEADLIGHT
P20	D38	5	LEFT HEADLIGHT
P22	G38	5	PARKING LIGHT FRONT LEFT
P23	F38	5	FRONT LEFT TURN SIGNAL
P24	H38	5	BLACKOUT MARKER LEFT FRONT
P25	G85	10	WINDSHIELD WASHER ROTARY PUMP (B3)
P27	A43	5	CHASSIS - FRONT
P31	E56	7	ENGINE
P31X	D56	7	ENGINE
P32	F59	7	ENGINE OIL PRESSURE SENSOR
P33	H59	7	FUEL/WATER SEPARATOR
P34	E59	7	OIL PRESSURE WARNING LIGHT SWITCH
P36	A57	7	WATER COOLER TEMPERATURE
P37	C57	7	WATER TEMPERATURE SWITCH
P38	F61	7	ENGINE SPEED MAGNETIC PICKUP
P39	G61	7	ENGINE
P41	B57	7	WATER TEMPERATURE SENSOR
P410	E240	27	ARCTIC KIT W/PTO EQUIPPED
P42	F57	7	ETHER SENSOR SWITCH
P43	G42	5	CHASSIS FRONT
P43X	F42	5	CHASSIS FRONT
P50	E85	10	CAB MARKER LIGHT FRONT UPPER LEFT
P50	F206	23	LH FRONT TOP CAB MARKER LIGHT
P51	D190	22	CAB DASH RIGHT POWER DISTRIBUTION PANEL
P52F	E38	5	CHASSIS FRONT
P52R	E196	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
P53R	D196	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
P54	D198	22	LEFT REAR MARKER
P55	C85	10	CAB MARKER LIGHT FRONT UPPER RIGHT
P55	D206	23	RH FRONT TOP CAB MARKER LIGHT
P56	E198	22	MIDDLE REAR MARKER
P57	D85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE LEFT
P57	F206	23	LH FRONT TOP CAB CLEARANCE LIGHT
P58	E198	22	RIGHT REAR MARKER
P59	C85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE RIGHT
P59	D206	23	RH FRONT TOP CAB CLEARANCE LIGHT
P60	D85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE MIDDLE
P60	E206	23	MIDDLE FRONT TOP CLEARANCE LIGHT
P61	F198	22	RH COMPOSITE LIGHT
P62	F198	22	RH COMPOSITE LIGHT
P63	G198	22	RH COMPOSITE LIGHT
P64	F198	22	RH COMPOSITE LIGHT
P65	E186	21	ROTARY WARNING LIGHT CONNECTOR
P67	D301	34	WTEC III TRANSMISSION
P69	D59	7	ENGINE
P71	H301	34	WTEC III TRANSFER CASE
P72	G301	34	WTEC III ENGINE SPEED SENSOR
P73	G300	34	WTEC III THROTTLE POSITION SENSOR
P74	B198	22	LH COMPOSITE LIGHT
P76	C198	22	LH COMPOSITE LIGHT
P77	C198	22	LH COMPOSITE LIGHT
P78	B198	22	LH COMPOSITE LIGHT
P80	G51	6	CHASSIS - REAR
P80	D78	9	AIR DRYER (EXCEPT DUMP)
P81	C47	6	CHASSIS - FRONT
P81	D62	7	STARTER THERMO SWITCH
P82	B51	6	FUEL TANK LEVEL SENSOR
P83	B172	20	CAB - DASH - LEFT - UNDERDASH
P84	F51	6	CHASSIS - REAR
P85	A198	22	LH SIDE MARKER LIGHT
P86	A198	22	LH REAR MARKER LIGHT
P87	C198	22	BACKUP LIGHT
P88	H198	22	RH SIDE MARKER LIGHT
P89	G198	22	RH REAR MARKER LIGHT
P99	F186	21	CHEMICAL ALARM CONNECTOR
P10	B38	5	PARKING LIGHT FRONT RIGHT
P110	E119	14	CTIS ELECTRONIC CONTROL UNIT
P111	E122	14	CTIS ELECTRONIC CONTROL UNIT
P112	G123	14	CAB DASH CENTER HEATER / CTIS ECU
P113	F123	14	CTIS ELECTRONIC CONTROL UNIT
P114	C296	33	WTEC III CAB DASH RIGHT KICK PANEL
P115	C290	33	WTEC III CAB DASH RIGHT KICK PANEL
P116	C185	21	CAB - DASH - RIGHT - UNDERDASH

CONNECTORS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
P118	D161	18	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
P116	E291	33	WTEC III CAB DASH RIGHT KICK PANEL
P119	A64	8	WTEC II TRANSMISSION (A)
P119	A69	8	WTEC II TRANSMISSION (SERIAL # 29517497)
P119	A73	9	WTEC II TRANSMISSION (SERIAL # 29513239)
P119	B159	19	CAB - DASH - LEFT - WTEC II TRANSMISSION HARNESS
P125	G84	10	WINDSHIELD WASHER ROTARY PUMP (B3)
P129	F85	10	CAB MARKER LIGHT FRONT LOWER LEFT
P129	F85	10	CAB MARKER LIGHT LEFT DOOR
P131	A85	10	CAB MARKER LIGHT RIGHT DOOR
P132	B85	10	CAB MARKER LIGHT FRONT LOWER RIGHT
P150	B272	31	VAN FRONT MARKER LIGHT
P151	B272	31	VAN FRONT MARKER LIGHT
P152	B272	31	VAN FRONT MARKER LIGHT
P153	A272	31	VAN FRONT MARKER LIGHT
P154	A272	31	VAN FRONT MARKER LIGHT
P155	B287	32	VAN CURBSIDE MARKER LIGHT
P156	B287	32	VAN CURBSIDE MARKER LIGHT
P157	C287	32	VAN ROADSIDE MARKER LIGHT
P158	C287	32	VAN ROADSIDE MARKER LIGHT
P159	D287	32	VAN REAR CENTER MARKER LIGHT
P160	E287	32	VAN REAR CENTER MARKER LIGHT
P161	D287	32	VAN REAR CENTER MARKER LIGHT
P162	B273	31	VAN CURBSIDE BLACKOUT LIGHT
P163	B274	31	VAN CURBSIDE EMERGENCY LIGHT
P164	G274	31	VAN ROADSIDE BLACKOUT LIGHT
P165	G275	31	VAN ROADSIDE EMERGENCY LIGHT
P166	C272	32	VAN FRONT EMERGENCY LIGHT
P167	D287	31	VAN REAR EMERGENCY LIGHT
P172	E264	30	DUMP BODY CONNECTOR
P173	G271	31	VAN 12/24 VDC POWER
P200	B255	29	TROOP HEATER
P200	C255	29	TROOP HEATER
P201	G61	7	ENGINE
P202	A240	27	ARCTIC KIT W/PTO EQUIPPED
P208	F255	29	TROOP HEATER
P209	C256	29	FURNACE ASSEMBLY
P210	F222	25	CAB DASH CENTER OPTIONS PANEL
P210	C227	26	PTO EQUIPPED
P210	A235	27	ARCTIC KIT W/PTO EQUIPPED
P211	D238	27	ARCTIC KIT W/PTO EQUIPPED
P211A	D239	27	ARCTIC KIT W/PTO EQUIPPED
P212	E238	27	ARCTIC KIT W/PTO EQUIPPED
P214	G241	27	ARCTIC KIT W/PTO EQUIPPED
P215	E230	26	PTO EQUIPPED
P215	C239	27	ARCTIC KIT W/PTO EQUIPPED
P216	E229	26	PTO EQUIPPED
P216	B238	27	ARCTIC KIT W/PTO EQUIPPED
P217	C229	26	PTO EQUIPPED
P217	B268	30	PTO EQUIPPED
P217	B238	27	ARCTIC KIT W/PTO EQUIPPED
P901	A209	24	CAB DASH CENTER OPTIONS PANEL
P902	C214	24	CAB DASH CENTER OPTIONS PANEL
P902A	D214	24	CAB DASH CENTER OPTIONS PANEL
P903	C212	24	CAB DASH CENTER OPTIONS PANEL
P903A	D212	24	CAB DASH CENTER OPTIONS PANEL
P904	C211	24	CAB DASH CENTER OPTIONS PANEL
P904A	D211	24	CAB DASH CENTER OPTIONS PANEL
P905	A211	24	CAB DASH CENTER OPTIONS PANEL
P905A	B211	24	CAB DASH CENTER OPTIONS PANEL
P906	A212	24	CAB DASH CENTER OPTIONS PANEL
P906A	B212	24	CAB DASH CENTER OPTIONS PANEL
P908	A215	24	CAB DASH CENTER OPTIONS PANEL
P908A	B215	24	CAB DASH CENTER OPTIONS PANEL
P909	A220	25	CAB DASH CENTER OPTIONS PANEL
P909A	B220	25	CAB DASH CENTER OPTIONS PANEL
P910	C215	24	CAB DASH CENTER OPTIONS PANEL
P910A	D215	24	CAB DASH CENTER OPTIONS PANEL
P911	C220	25	CAB DASH CENTER OPTIONS PANEL

FIGURE FO-1 ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 2 OF 34

SIZE B | ILL NO. 5WD01L21 | FP-3/FP-4 BLANK

CONNECTORS (CONTINUED)

NUMBER	ZONE	SH	DESCRIPTION
P911A	D220	25	CAB DASH CENTER OPTIONS PANEL
P912	B124	14	CAB DASH CENTER HEATER / CTIS ECU
P913	B122	14	CAB DASH CENTER HEATER / CTIS ECU
P913	F209	24	CAB DASH CENTER OPTIONS PANEL
P914	A214	24	CAB DASH CENTER OPTIONS PANEL
P914A	B214	24	CAB DASH CENTER OPTIONS PANEL
P921	G62	7	TROOP TRANSPORT ALARM
PESS	C93	11	WTEC II PUSHBUTTON SHIFT SELECTOR
PX1	A92	11	ENGINE FAN OFF SWITCH
PX10	D107	12	CAB DASH LEFT INSTRUMENT PANEL
PX11	G107	12	CAB DASH LEFT INSTRUMENT PANEL
PX12	C112	13	ROTATING WARNING LIGHT SWITCH
PX12A	E112	13	CAB DASH LEFT INSTRUMENT PANEL
PX13	F92	11	ETHER STARTER SWITCH
PX13A	G92	11	CAB - DASH - LEFT - INSTRUMENT PANEL
PX14	F112	13	FULL HAZARD WARNING SWITCH
PX14A	H112	13	CAB DASH LEFT INSTRUMENT PANEL
PX15	C115	13	MAIN LIGHT SWITCH
PX17	A112	13	IGNITION SWITCH
PX17A	C112	13	CAB DASH LEFT INSTRUMENT PANEL
PX1A	B92	11	CAB - DASH - LEFT - INSTRUMENT PANEL
PX2	D92	11	LAMP TEST SWITCH
PX20	C188	21	TURN SIGNAL FLASHER
PX21	A134	15	WIPER DELAY MODULE
PX22	A184	21	EMI FILTER
PX24	G115	13	INSTRUMENT PANEL LIGHTS DIMMER MODULE
PX25	C119	14	CAB DASH CENTER HEATER / CTIS ECU
PX26	B179	20	CAB - DASH - LEFT - UNDERDASH
PX2A	E92	11	CAB - DASH - LEFT - INSTRUMENT PANEL
PX33	B182	21	CAB - DASH - RIGHT - UNDERDASH
PX33	G292	33	WTEC III TRANSMISSION PUSHBUTTON SHIFT SELECTOR
PX34	E188	21	FRONT AIR PRESSURE METER
PX4	F97	11	FAN SOLENOID
PX5	B97	11	REAR AIR PRESSURE METER
PX6	B107	12	CAB DASH LEFT INSTRUMENT PANEL
PX7	A104	12	CAB DASH LEFT INSTRUMENT PANEL
PX8	G102	12	CAB DASH LEFT INSTRUMENT PANEL
PX8	F289	33	WTEC III SPEEDOMETER SIGNAL
PX9	D97	11	FUEL LEVEL METER
X1	D263	30	CAB ARCTIC HEATER
X1	A250	30	CAB ARCTIC HEATER
X2	D264	30	CAB ARCTIC HEATER
X2	B250	30	CAB ARCTIC HEATER
X3	E263	30	CAB ARCTIC HEATER
X3	C250	30	CAB ARCTIC HEATER
X4	D263	30	CAB ARCTIC HEATER
X4	C250	30	CAB ARCTIC HEATER

LIGHTS

NUMBER	ZONE	SH	DESCRIPTION
D51	B257	29	POWER LAMP
D52	B257	29	POWER LAMP
DS1	D96	11	CAB DASH LEFT INSTRUMENT PANEL
DS2	G106	12	CAB DASH LEFT INSTRUMENT PANEL
DS3	F96	11	CAB DASH LEFT INSTRUMENT PANEL
DS4	B96	11	CAB DASH LEFT INSTRUMENT PANEL
DS5	B106	12	CAB DASH LEFT INSTRUMENT PANEL
DS6	G101	12	CAB DASH LEFT INSTRUMENT PANEL
DS7	D106	12	CAB DASH LEFT INSTRUMENT PANEL
DS8	C91	11	CAB DASH LEFT INSTRUMENT PANEL
DS9	B101	12	DUMP BODY UP
DS10	E111	13	CAB DASH LEFT INSTRUMENT PANEL
DS11	G91	11	CAB DASH LEFT INSTRUMENT PANEL
DS12	H111	13	CAB DASH LEFT INSTRUMENT PANEL
DS13	C111	13	CAB DASH LEFT INSTRUMENT PANEL
DS14	B101	12	LEFT TURN SIGNAL
DS15	B101	12	RIGHT TURN SIGNAL
DS16	E101	12	HIGH BEAM
DS17	D119	14	HEATER CONTROL PANEL ILLUMINATION
DS18	A208	24	CAB DASH CENTER OPTIONS PANEL
DS19	E101	12	RADIATOR FAN OFF
DS21	C101	12	EMERGENCY BRAKE

LIGHTS (CONTINUED)

NUMBER	ZONE	SH	DESCRIPTION
DS22	D101	12	PARKING BRAKE
DS23	C101	12	PTO ON
DS24	D101	12	OIL PRESSURE
DS25	C101	12	WATER TEMPERATURE
DS27	C101	12	REAR BRAKE AIR
DS28	E101	12	FRONT AIR BRAKE
DS29	D101	12	ENGINE OIL LEVEL
DS30	F101	12	MASTER STOP
DS31	D213	24	CAB DASH CENTER OPTIONS PANEL
DS32	B101	12	CHEMICAL DETECT
DS34	C101	12	CTIS OVERSPEED
DS35	C198	22	REAR LH COMPOSITE LIGHT
DS36	G198	22	REAR RH COMPOSITE LIGHT
DS37	B198	22	REAR LH COMPOSITE LIGHT
DS38	F198	22	REAR RH COMPOSITE LIGHT
DS39	F37	5	FRONT LEFT TURN SIGNAL
DS41	D101	12	TRANSMISSION OIL TEMPERATURE
DS42	C38	5	FRONT RIGHT TURN SIGNAL
DS43	D212	24	CAB DASH CENTER OPTIONS PANEL
DS44	D37	5	RIGHT HEADLIGHT
DS45	C198	22	BACKUP LIGHT
DS46	D210	24	CAB DASH CENTER OPTIONS PANEL
DS47	G37	5	PARKING LIGHT FRONT LEFT
DS48	B38	5	PARKING LIGHT FRONT RIGHT
DS49	G37	5	BLACKOUT MARKER LEFT FRONT
DS50	B38	5	BLACKOUT MARKER RIGHT FRONT
DS51	C198	22	REAR LH COMPOSITE LIGHT
DS52	F198	22	REAR RH COMPOSITE LIGHT
DS53	H37	5	BLACKOUT DRIVE LIGHT
DS54	D84	10	CAB MARKER LIGHT FRONT UPPER MIDDLE LEFT
DS54	F206	23	LH FRONT TOP CAB CLEARANCE LIGHT
DS55	D84	10	CAB MARKER LIGHT FRONT UPPER MIDDLE MIDDLE
DS55	E206	23	MIDDLE FRONT TOP CLEARANCE LIGHT
DS56	C84	10	CAB MARKER LIGHT FRONT UPPER MIDDLE RIGHT
DS56	D206	23	RH FRONT TOP CAB CLEARANCE LIGHT
DS57	C84	10	CAB MARKER LIGHT FRONT UPPER RIGHT
DS57	D206	23	RH FRONT TOP CAB MARKER LIGHT
DS58	E84	10	CAB MARKER LIGHT FRONT UPPER LEFT
DS58	F206	23	LH FRONT TOP CAB MARKER LIGHT
DS59	B84	10	CAB MARKER LIGHT RIGHT DOOR
DS60	F84	10	CAB MARKER LIGHT FRONT LOWER LEFT
DS61	A84	10	CAB MARKER LIGHT RIGHT DOOR
DS62	F84	10	CAB MARKER LIGHT LEFT DOOR
DS63	B210	24	CAB DASH CENTER OPTIONS PANEL
DS64	B212	24	CAB DASH CENTER OPTIONS PANEL
DS65	A198	22	LH SIDE MARKER LIGHT
DS66	A198	22	LH REAR MARKER LIGHT
DS67	H198	22	RH SIDE MARKER LIGHT
DS68	G198	22	RH REAR MARKER LIGHT
DS69	D198	22	LEFT REAR MARKER
DS70	E198	22	MIDDLE REAR MARKER
DS71	E198	22	RIGHT REAR MARKER
DS72	B198	22	REAR LH COMPOSITE LIGHT
DS73	F198	22	REAR RH COMPOSITE LIGHT
DS74	D37	5	LEFT HEADLIGHT
DS75	A273	31	VAN CURBSIDE BLACKOUT LIGHT
DS76	H274	31	VAN ROADSIDE BLACKOUT LIGHT
DS78	A274	31	VAN CURBSIDE EMERGENCY LIGHT
DS79	H275	31	VAN ROADSIDE EMERGENCY LIGHT
DS80	H284	32	VAN ROADSIDE FLOURESCENT LIGHT
DS81	H286	32	VAN ROADSIDE FLOURESCENT LIGHT
DS82	A286	32	VAN CURBSIDE FLOURESCENT LIGHT
DS83	A284	32	VAN CURBSIDE FLOURESCENT LIGHT
DS84	B271	31	VAN FRONT MARKER LIGHT
DS85	B271	31	VAN FRONT MARKER LIGHT
DS86	B271	31	VAN FRONT MARKER LIGHT
DS87	A271	31	VAN FRONT MARKER LIGHT
DS88	A271	31	VAN FRONT MARKER LIGHT
DS89	B288	32	VAN CURBSIDE MARKER LIGHT
DS90	B268	32	VAN CURBSIDE MARKER LIGHT
DS91	C288	32	VAN ROADSIDE MARKER LIGHT
DS92	C288	32	VAN ROADSIDE MARKER LIGHT
DS93	D288	32	VAN REAR CENTER MARKER LIGHT

LIGHTS (CONTINUED)

NUMBER	ZONE	SH	DESCRIPTION
DS94	E288	32	VAN REAR CENTER MARKER LIGHT
DS95	E288	32	VAN REAR CENTER MARKER LIGHT
DS96	B215	24	CAB DASH CENTER OPTIONS PANEL
DS96	C271	31	VAN FRONT EMERGENCY LIGHT
DS97	B219	25	CAB DASH CENTER OPTIONS PANEL
DS97	C271	32	VAN REAR EMERGENCY LIGHT
DS100	B213	24	CAB DASH CENTER OPTIONS PANEL
DS101	D119	14	HEATER CONTROL PANEL ILLUMINATION
DS108	E91	11	CAB DASH LEFT INSTRUMENT PANEL

TERMINAL LUGS

NUMBER	ZONE	SH	DESCRIPTION
CB1	C285	32	VAN 110 VAC MAIN CIRCUIT BREAKER
CB2	C284	32	VAN A/C
CB3	D284	32	VAN 110 VAC POWER OUT
CB4	D284	32	VAN NOT USED
CB5	E284	32	VAN BLACKOUT OVERRIDE
CB6	E284	32	VAN LIGHTS
CB7	E284	32	VAN 110 VAC OUTLETS
CB8	E284	32	VAN THERMOSTAT/FAN
CB9	E284	32	VAN 110 VAC OUTLETS
CB10	D277	31	VAN BLACKOUT LIGHTS
CB11	D277	31	VAN EMERGENCY/BLACKOUT LIGHTS
CB20	C140	16	CAB RADIO
CB21	C149	17	WTEC II VIM STE/ICE
CB22	C149	17	FAN/ETHER
CB23	C147	17	HEATER BLOWER
CB30	C139	16	CHEMICAL ALARM
CB35	D149	17	WTEC II VIM POWER
CB36	C147	17	HORN POWER
CB37	C151	17	WINDSHIELD WIPER/WASHER
CB38	D147	17	ROTATING BEACON
CB39	C146	17	TRAILER BO STOP
CB40	C150	17	CTIS COOLER
CB41	C142	16	TRAILER REAR LIGHTS POWER
CB42	C142	16	BO MARKER LIGHTS POWER
CB43	C143	16	REAR COMPOSITE LIGHTS
CB43	D289	33	WTEC II ECU
CB44	C143	16	REAR COMPOSITE LIGHTS
CB45	C139	16	FUEL PREHEAT
CB48	C140	16	ARCTIC CAB/ENGINE KILL
CB49	C151	17	PTO POWER
CB50	F256	29	MAIN POWER CUIRCUIT BREAKER SWITCH
CB/50	C146	17	SWINGFIRE PUMP POWER
CB53	D140	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB54	D142	16	BO HEADLIGHT
CB61	D153	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB62	D153	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB63	D151	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB64	D151	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB65	D140	16	PARKING LIGHTS
CB66	D143	16	BO MARKER POWER
CB67	D139	16	MARKER LIGHTS
CB68	C152	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB70	D146	17	IGNITION/MAIN LIGHT SWITCH
CB71	D149	17	HAZARD/FLASHER WORKLIGHTS
CB72	D139	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB73	D150	17	BACK-UP LIGHT POWER
CB74	D150	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
CB76	D143	16	BO STOP RELAY POWER
CB77	C152	17	ENGINE INSTR POWER
CB78	D147	17	HEADLIGHTS
CB79	C150	17	WTEC II VIM POWER
CB80	D142	16	TAILLIGHTS
TL1	B54	6	POLARITY PROTECTION
TL1	E60	7	ALTERNATOR
TL1	F254	29	TROOP HEATER
TL1	D258	29	WEBASTO CONTROL UNIT
TL2	B53	6	POLARITY PROTECTION
TL2	D60	7	ALTERNATOR
TL2	F254	29	TROOP HEATER
TL2	D258	29	WEBASTO CONTROL UNIT
TL2	D53	6	POLARITY PROTECTION (P/P)

TERMINAL LUGS (CONTINUED)

NUMBER	ZONE	SH	DESCRIPTION
TL3	C85	10	CAB MARKER LIGHT FRONT UPPER RIGHT
TL3	D206	23	RH FRONT TOP CAB MARKER LIGHT
TL3	F256	29	FURNACE ASSEMBLY
TL3	D258	29	WEBASTO CONTROL UNIT
TL4	C85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE RIGHT
TL4	D206	23	RH FRONT TOP CAB CLEARANCE LIGHT
TL4	F256	29	FURNACE ASSEMBLY
TL4	D258	29	WEBASTO CONTROL UNIT
TL5	D60	7	ALTERNATOR
TL5	D258	29	WEBASTO CONTROL UNIT
TL6	D60	7	ALTERNATOR
TL6	D258	29	WEBASTO CONTROL UNIT
TL7	D258	29	WEBASTO CONTROL UNIT
TL8	D85	10	CAB MARKER LIGHT FRONT UPPER MIDDLE MIDDLE
TL8	E206	23	MIDDLE FRONT TOP CLEARANCE LIGHT
TL8	E258	29	WEBASTO CONTROL UNIT
TL9	D47	6	24V AUXILIARY STARTER SOLENOID
TL9	E258	29	WEBASTO CONTROL UNIT
TL10	C52	6	CHASSIS - REAR (REF E1)
TL10	E258	29	WEBASTO CONTROL UNIT
TL11	C258	29	WEBASTO CONTROL UNIT
TL12	C49	6	BATTERIES
TL12	C62	7	STARTER/STARTER SOLENOID
TL12	C258	29	WEBASTO CONTROL UNIT
TL13	C258	29	WEBASTO CONTROL UNIT
TL14	E88	10	ROTARY WARNING LIGHT CONNECTOR
TL14	C258	29	WEBASTO CONTROL UNIT
TL15	A198	22	LH SIDE MARKER LIGHT
TL15	C258	29	WEBASTO CONTROL UNIT
TL16	A198	22	LH REAR MARKER LIGHT
TL16	C258	29	WEBASTO CONTROL UNIT
TL17	C198	22	BACKUP LIGHT
TL17	C258	29	WEBASTO CONTROL UNIT
TL18	C198	22	LONG WHEEL BASE
TL18	C258	29	WEBASTO CONTROL UNIT
TL19	H198	22	RH SIDE MARKER LIGHT
TL19	C258	29	WEBASTO CONTROL UNIT
TL20	G198	22	RH REAR MARKER LIGHT
TL20	C258	29	WEBASTO CONTROL UNIT
TL21	G198	22	RH COMPOSITE LIGHT
TL22	D85	10	CAB MARKER LIGHTS
TL22	E206	23	LH FRONT TOP CAB CLEARANCE LIGHT
TL23	D47	6	24V AUXILIARY STARTER SOLENOID
TL24	D47	6	24V AUXILIARY STARTER SOLENOID
TL25	C47	6	CHASSIS - FRONT
TL25	C62	7	STARTER/STARTER SOLENOID
TL26	C47	6	CHASSIS - FRONT
TL26	C62	7	STARTER/STARTER SOLENOID
TL27	E85	10	CAB MARKER LIGHT FRONT UPPER RIGHT
TL27	F206	23	CAB MARKER LIGHTS FRONT UPPER RIGHT
TL28	G57	7	FUEL SOLENOID
TL29	H57	7	FUEL SOLENOID
TL30	D198	22	LEFT REAR MARKER
TL31	E198	22	MIDDLE REAR MARKER
TL32	E198	22	RIGHT REAR MARKER
TL33	E47	6	24V AUXILIARY STARTER SOLENOID
TL35	D61	7	ALTERNATOR
TL36	B54	6	POLARITY PROTECTION
TL37	F54	6	POLARITY PROTECTION
TL37	C54	6	POLARITY PROTECTION
TL38	E50	6	SHUNT
TL39	C52	6	CHASSIS - REAR (REF E1)
TL41	C53	6	POLARITY PROTECTION
TL42	B54	6	POLARITY PROTECTION
TL44	B54	6	POLARITY PROTECTION
TL44	E54	6	POLARITY PROTECTION
TL45	D50	6	SHUNT

TERMINAL LUGS (CONTINUED)

NUMBER	ZONE	SH	DESCRIPTION
TL46	D49	6	SHUNT
TL46	D62	7	STARTER/STARTER SOLENOID
TL47	C54	6	POLARITY PROTECTION
TL48	E52	6	CHASSIS - REAR (REF E2)
TL49A	D52	6	CHASSIS - REAR (REF E1)
TL49A	F52	6	NATO SLAVE RECEPTACLE
TL50	G121	14	CHASSIS GROUND
TL50A	F52	6	NATO SLAVE RECEPTACLE
TL51	E50	6	SHUNT
TL52	E50	6	SHUNT
TL53	B47	6	CHASSIS - FRONT
TL53	B62	7	STARTER/STARTER SOLENOID
TL55	B47	6	CHASSIS - FRONT
TL55	C62	7	STARTER/STARTER SOLENOID
TL56	F136	16	X3 GROUND
TL57	F136	16	CAB GROUND
TL58	D60	7	ALTERNATOR
TL59	C61	7	ALTERNATOR
TL60	C53	6	POLARITY PROTECTION
TL60	D60	7	ALTERNATOR
TL61	C54	6	POLARITY PROTECTION
TL61	E60	7	ALTERNATOR
TL62	C47	6	CHASSIS - FRONT
TL63	C47	6	CHASSIS - FRONT
TL63	B62	7	STARTER/STARTER SOLENOID
TL66	H61	7	ENGINE (REF P201)
TL68	D224	25	CAB DASH CENTER OPTIONS PANEL
TL69	E224	25	CAB DASH CENTER OPTIONS PANEL
TL70	B38	5	BLACKOUT MARKER RIGHT FRONT
TL70	B38	5	PARKING LIGHT FRONT RIGHT
TL70	B38	5	FRONT RIGHT TURN SIGNAL
TL71	A65	10	CAB MARKER LIGHT RIGHT DOOR
TL72	H38	5	BLACKOUT DRIVE LIGHT
TL73	B86	10	CAB MARKER LIGHTS
TL74	D86	10	CAB MARKER LIGHTS
TL74	E204	23	AIRDROP ONLY
TL75	F87	10	CAB MARKER LIGHTS
TL76	D229	26	PTO EQUIPPED
TL79	F38	5	FRONT LEFT TURN SIGNAL
TL79	G38	5	PARKING LIGHT FRONT LEFT
TL79	G38	5	BLACKOUT MARKER LEFT FRONT
TL80	C54	6	POLARITY PROTECTION
TL80	F54	6	200 AMP
TL81	A39	5	CHASSIS - FRONT (REF J13)
TL81	C38	5	CHASSIS - FRONT
TL82	A38	5	CHASSIS - FRONT
TL82	F38	5	FRONT LEFT TURN SIGNAL
TL83	B52	6	FUEL TANK LEVEL SENSOR
TL84	B49	6	CHASSIS - SPARE TIRE (REF J93)
TL85	G52	6	CHASSIS - REAR
TL86	C86	10	CAB MARKER LIGHTS
TL86	D204	23	AIRDROP ONLY
TL87	F86	10	CAB MARKER LIGHTS
TL92	F195	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
TL93	G194	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
TL94	G85	10	WINDSHIELD WASHER ROTARY PUMP (B3)
TL96	H271	31	VAN BODY GROUND
TL97	B88	10	CHEMICAL ALARM CONNECTOR
TL98	B88	10	CHEMICAL ALARM CONNECTOR
TL99	D52	6	CHASSIS - REAR (REF E2)
TL100	E54	6	POLARITY PROTECTION
TL101	B239	27	ARCTIC KIT W/PTO EQUIPPED
TL102	F239	27	ARCTIC KIT W/PTO EQUIPPED
TL103	G239	27	ARCTIC KIT W/PTO EQUIPPED
TL110	D61	7	ALTERNATOR
TL111	D230	26	PTO EQUIPPED
TL123	E38	5	CHASSIS - FRONT (REF J19)

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 3 OF 34

SIZE	ILL. NO.	
B	5WD01L3A	FP-5/FP-6 BLANK

28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36

TERMINAL LUGS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
TL126	G86	10	WINDSHIELD WASHER ROTARY PUMP (B3)
TL126	E126	14	PARKING BRAKE SWITCH
TL130	F85	10	CAB MARKER LIGHTS
TL131	A85	10	CAB MARKER LIGHTS
TL133	F85	10	CAB MARKER LIGHTS
TL134	B85	10	CAB MARKER LIGHTS
TL150	F177	20	SENSOR/FRONT AIR PRESSURE TRANSMITTER
TL151	G177	20	SENSOR/REAR AIR PRESSURE TRANSMITTER
TL152	C179	20	STOPLIGHT SWITCH
TL153	C179	20	STOPLIGHT SWITCH
TL154	D179	20	STOPLIGHT SWITCH
TL154	D179	20	STOPLIGHT SWITCH
TL155	D179	20	STOPLIGHT SWITCH
TL156	F177	20	SWITCH/FRONT AIR PRESSURE TRANSMITTER
TL157	G177	20	SWITCH/REAR AIR PRESSURE TRANSMITTER
TL158	E137	16	START INHIBIT PUSHBUTTON
TL159	E136	16	START INHIBIT PUSHBUTTON
TL160	H102	12	AUDIBLE ALARM
TL161	H102	12	AUDIBLE ALARM
TL162	B114	13	STARTER PUSHBUTTON
TL163	B114	13	STARTER PUSHBUTTON
TL164	G62	7	ENGINE (REF J921)
TL165	G62	7	ENGINE (REF J921)
TL166	F54	6	TERMINAL BLOCK
TL167	E54	6	TERMINAL BLOCK
TL169	D53	6	POLARITY PROTECTION (P/P)
TL170	F248	28	SWINGFIRE HEATER
TL171	F54	6	TERMINAL BLOCK
TL172	F54	6	TERMINAL BLOCK
TL173	E54	6	POLARITY PROTECTION (P/P)
TL174	D54	6	POLARITY PROTECTION (P/P)
TL190	D290	33	WTEC II PRESSURE SWITCH GROUND
TL201	E125	14	PARKING BRAKE SWITCH
TL202	E125	14	PARKING BRAKE SWITCH
TL320	E232	26	PTO EQUIPPED
TL320	C241	27	ARCTIC KIT W/PTO EQUIPPED

SWITCHES			
NUMBER	ZONE	SH	DESCRIPTION
S3	A177	20	COLUMN SWITCH
S3	C177	20	COLUMN SWITCH
S4	D114	13	MAIN LIGHT SWITCH
S5/1	B111	13	IGNITION SWITCH
S5/11	A91	11	ENGINE FAN OFF SWITCH
S5/14	C213	24	WINCH ON OFF
S5/15	B212	24	WINCH IN-OUT
S5/16	F91	11	ETHER STARTER SWITCH
S5/2	D91	11	LAMP TEST SWITCH
S5/2	D111	13	ROTATING WARNING LIGHT SWITCH
S5/22	G111	13	FULL HAZARD WARNING SWITCH
S5/25	A219	25	SWINGFIRE PUMP SWITCH
S5/6	B210	24	PTO ON/OFF SWITCH
S5/8	A213	24	BLACKOUT OVERRIDE SWITCH
S5/9	A214	24	FUEL PRE-HEAT SWITCH
S6	A114	13	STARTER PUSHBUTTON
S7	F137	16	START INHIBIT PUSHBUTTON
S10A	C179	20	STOPLIGHT SWITCH
S10B	D179	20	STOPLIGHT SWITCH
S11	A287	32	VAN CURBSIDE WINDOW BLACKOUT SWITCH
S12	A287	32	VAN CURBSIDE WINDOW BLACKOUT SWITCH
S13	G288	32	VAN ROADSIDE WINDOW BLACKOUT SWITCH
S14	G288	32	VAN ROADSIDE WINDOW BLACKOUT SWITCH
S15	G288	32	VAN ROADSIDE WINDOW BLACKOUT SWITCH
S17	G288	32	VAN DOOR WINDOW BLACKOUT SWITCH (S/N 191 AND HIGHER)
S17	G288	32	VAN CURBSIDE WINDOW BLACKOUT SWITCH (S/N 001 THROUGH 190)
S18	D269	30	PTO PRESSURE SWITCH
S20	E177	20	SWITCH/FRONT AIR PRESSURE TRANSMITTER
S23	F52	6	AIR PRESSURE SWITCH FOR CTIS
S24	E125	14	PARKING BRAKE SWITCH
S26	C57	7	WATER TEMPERATURE SENSOR

SWITCHES (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
S27	E59	7	OIL PRESSURE WARNING LIGHT SWITCH
S29	G177	20	SWITCH/REAR AIR PRESSURE TRANSMITTER
S31	A216	24	ARCTIC TROOP HEATER SWITCH
S32	F288	32	VAN LIGHTS ON/OFF SWITCH
S33	E277	31	VAN BLACKOUT SWITCH
S34	D278	31	VAN BLACKOUT SWITCH
S35	H273	31	VAN BLACKOUT OVERRIDE SWITCH
S40	F58	7	ETHER SENSOR SWITCH
S45	E62	7	TROOP ALARM SWITCH
S45	G62	31	VAN FAN ON/OFF SWITCH
S56	A57	7	WATER TEMPERATURE SWITCH
S57	G77	9	LMHC IN/OUT SWITCH

GAGES			
NUMBER	ZONE	SH	DESCRIPTION
M2	D106	12	VOLTMETER
M3	B106	12	ENGINE OIL PRESSURE METER
M4	F96	11	FRONT AIR PRESSURE METER
M5	B96	11	REAR AIR PRESSURE METER
M6	G107	12	WATER TEMPERATURE METER
M7	D96	11	FUEL LEVEL METER
M8	G102	12	SPEEDOMETER
M9	A210	24	TACHOMETER

RELAYS			
NUMBER	ZONE	SH	DESCRIPTION
K1	F256	30	GROUND RELAY
K1	F149	17	STARTER RELAY
K1	E259	29	GROUND RELAY
K1	B291	33	WTEC III STARTER RELAY
K2	D259	29	HEATER MOTOR RELAY
K2	E266	30	HEATER MOTOR RELAY
K2	B143	16	CONTROL PANEL RELAY
K3	D260	29	CONTROL THERMOSTAT RELAY
K3	E266	30	CONTROL THERMOSTAT RELAY
K4	D260	29	IGNITION RELAY
K4	E266	30	IGNITION RELAY
K5	D261	29	FLAME CONTROL RELAY
K5	E267	30	FLAME CONTROL RELAY
K6	F144	16	STOPLIGHT RELAY
K7	G153	17	HEADLIGHT RELAY
K8	G151	17	HEADLIGHT LO/HI-BEAM RELAY
K9	A142	16	HAZARD FLASHER BO OVERIDE
K10	F150	17	STOP HAZARD FLASHER RELAY
K11	F146	17	ALTERNATOR EXCITATION RELAY
K12	B139	16	WORKLIGHT RELAY
K13	B149	17	ROTATING BEACON BO OVRD RELAY
K15	B140	16	AUXILIARY COOLER RELAY
K19	B150	17	START INHIBIT RELAY
K20	H138	16	MARKER LIGHTS RELAY
K24	B151	17	CRANKING LOCKOUT RELAY
K25	B292	33	WTEC III REVERSE WARNING RELAY
K26	B290	33	WTEC III NEUTRAL START RELAY
K27	H143	16	BO STOP RELAY
K28	H142	16	TRAILER REAR LIGHTS RELAY
K29	F142	16	BO MARKER RELAY
K29	B295	33	WTEC III BLACKOUT DRIVE RELAY
K30	H147	17	REAR LEFT COMPOSITE LAMP RELAY
K31	H149	17	REAR RIGHT COMPOSITE LAMP RELAY
K32	B147	17	HORN RELAY
K35	E277	31	VAN 110 VAC OUTLETS
K36	F277	31	VAN FLOURESCENT LIGHTS
K37	B294	33	WTEC III PTO ENABLE OUTPUT RELAY
K52	H139	16	CTIS OVERSPEED INDICATION RELAY
K53	H140	16	RADIO POWER RELAY

RESISTORS			
NUMBER	ZONE	SH	DESCRIPTION
R2	E172	20	CAB - DASH - LEFT - UNDERDASH
R4	D175	20	CAB - DASH - LEFT - UNDERDASH
R5	C175	20	CAB - DASH - LEFT - UNDERDASH
R6	F172	20	CAB - DASH - LEFT - UNDERDASH

SOLENOIDS			
NUMBER	ZONE	SH	DESCRIPTION
KS	D47	6	24V AUXILIARY STARTER SOLENOID
L1	E189	21	FAN SOLENOID
L2	H57	7	FUEL SOLENOID
L3	D269	30	PTO SOLENOID
L4	E233	26	WINCH IN SOLENOID
L4	F232	26	SOLENOID
L4	C242	27	WINCH IN SOLENOID
L4	D241	27	WINCH IN SOLENOID
L5	D233	26	SOLENOID
L5	232	26	SOLENOID
L5	B242	27	WINCH OUT SOLENOID
L5	B241	27	WINCH OUT SOLENOID
L15	B51	6	CHASSIS - SPARE TIRE
L16	E239	27	WATER SOLENOID
L17	D240	27	WATER PUMP
	E80	9	LMHC IN SOLENOID
	F80	9	LMHC OUT SOLENOID
	A304	34	WTEC III A SOLENOID
	B304	34	WTEC III H SOLENOID
	C304	34	WTEC III N SOLENOID
	D304	34	WTEC III J SOLENOID
	E304	34	WTEC III G SOLENOID
	F304	34	WTEC III E SOLENOID
	F304	34	WTEC III D SOLENOID
	G304	34	WTEC III C SOLENOID
	G304	34	WTEC III B SOLENOID
	H304	34	WTEC III A SOLENOID

HORNS AND ALARMS			
NUMBER	ZONE	SH	DESCRIPTION
LS1	A37	5	VEHICLE HORN
LS2	H101	12	AUDIBLE ALARM

MOTORS			
NUMBER	ZONE	SH	DESCRIPTION
B2	A183	21	WINDSHIELD WIPER MOTOR
B4	C118	14	FAN MOTOR
	F81	9	LMHC HOIST MOTOR

BATTERYS			
NUMBER	ZONE	SH	DESCRIPTION
BT1	C52	6	BATTERY
BT2	D52	6	BATTERY
BT3	D52	6	BATTERY
BT4	E52	6	BATTERY

MISCELLANEOUS			
NUMBER	ZONE	SH	DESCRIPTION
10A	C183	21	WTECII VEHICLE INTERFACE MODULE
10A	E183	21	WTECII VEHICLE INTERFACE MODULE
A2	F118	14	CTIS ELECTRONIC CONTROL UNIT
A3	G114	13	INSTRUMENT PANEL LIGHTS DIMMER MODULE
A5	A135	15	WIPER DELAY MODULE
A7	B179	20	FREQUENCY DIVIDER
A18	A103	12	LIGHTED INDICATOR DISPLAY
A20	H59	7	FUEL/WATER SEPARATOR
B1	C53	7	STARTER/STARTER SOLENOID
B3	G83	10	WINDSHIELD WASHER ROTARY PUMP
B10	E67	8	WTEC II TRANSFER CASE (SERIAL # 29513233)
B10	E70	8	WTEC II TRANSFER CASE (SERIAL # 29513233)
B10	E66	8	WTEC II TRANSMISSION (SERIAL # 29513233)
B10	E71	8	WTEC II TRANSFER CASE (SERIAL # 29517497)
B10	E70	8	WTEC II TRANSMISSION (SERIAL # 29517497)
B10	E76	9	WTEC II TRANSFER CASE (SERIAL # 29513233)
B10	E74	9	WTEC II TRANSMISSION (SERIAL # 29513233)
BJ1	A175	20	JUNCTION BOX
BL1	F257	29	FURNACE CONTROL UNIT
BL2	F256	29	FURNACE CONTROL UNIT
BL3	F256	29	FURNACE CONTROL UNIT
D1A	C138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
D1B	C138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
D2A	D138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL

MISCELLANEOUS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
D2B	D138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
D3A	B138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
D3B	B138	16	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
E1	C52	6	BATTERY
E1	D52	6	BATTERY
E1	D52	6	BATTERY
E1	E52	6	BATTERY
E2	C43	5	CHASSIS FRONT BUMPER (REF J27)
E2	C52	6	BATTERY
E2	D52	6	BATTERY
E2	E52	6	BATTERY
E2	E52	6	BATTERY
E3	H148	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
E4	H150	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
E5	B151	17	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
E14	E194	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E15	E197	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E16	A197	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E17	G195	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E18	G194	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E19	F194	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E20	E194	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E21	D195	22	ALL MODELS EXCEPT WRECKER, TRACTOR, AND LONG WHEEL BASE
E22	B86	10	CAB MARKER LIGHTS
E23	D86	10	CAB MARKER LIGHTS
E23	D205	23	AIRDROP ONLY
E24	C85	10	CAB MARKER LIGHTS
E24	D205	23	AIRDROP ONLY
E25	F86	10	CAB MARKER LIGHTS
E60	B41	31	24 VDC VAN POWER
E65	B41	5	CHASSIS - FRONT
E66	C41	5	CHASSIS - FRONT
E66	E298	34	WTEC III TRANSMISSION HARNESS
E67	D38	5	CHASSIS - FRONT
E68	D40	5	CHASSIS - FRONT
E70	C229	26	PTO EQUIPPED
E70	A238	27	ARCTIC KIT W/PTO EQUIPPED
E71	F173	20	CAB - DASH - LEFT - UNDERDASH
E73	G238	27	ARCTIC KIT W/PTO EQUIPPED
E74	B238	27	ARCTIC KIT W/PTO EQUIPPED
E76	E239	27	ARCTIC KIT W/PTO EQUIPPED
E88	B106	12	CAB DASH LEFT INSTRUMENT PANEL
E89	C106	12	CAB DASH LEFT INSTRUMENT PANEL
E90	F298	34	WTEC III TRANSMISSION HARNESS
E91	D298	34	WTEC III TRANSMISSION HARNESS
E501	B275	31	VAN EMERGENCY/BLACKOUT LIGHT/24 VDC OUTLET
E502	G274	31	VAN EMERGENCY/BLACKOUT LIGHT
E503	B273	31	VAN MARKER LIGHT
E504	B272	31	VAN MARKER LIGHT
E505	B287	32	VAN REAR MARKER LIGHTS
E506	C287	32	VAN REAR MARKER LIGHTS
E514	C274	31	VAN EMERGENCY LIGHT
E516	H272	31	VAN 24 VDC
F1	F256	29	FURNACE CONTROL UNIT
F2	H271	31	VAN 24 VDC POWER
FL	E183	21	WTEC II VEHICLE INTERFACE MODULE
FL1	G85	10	EMI FILTER
FL2	A184	21	EMI FILTER
FL3	C118	14	FAN MOTOR

MISCELLANEOUS (CONTINUED)			
NUMBER	ZONE	SH	DESCRIPTION
F310A	E262	30	ARTIC CAB HEATER
F210A	E263	30	ARTIC CAB HEATER
F110A	E263	30	ARTIC CAB HEATER
G1	D60	7	ALTERNATOR
MPU1	F61	7	ENGINE SPEED MAGNETIC PICKUP
MT3	F60	7	ENGINE OIL PRESSURE SENSOR
MT4	E177	20	SENSOR/FRONT AIR PRESSURE TRANSMITTER
MT5	G177	20	SENSOR/REAR AIR PRESSURE TRANSMITTER
MT6	B57	7	WATER COOLER TEMPERATURE
MT7	B52	6	FUEL TANK LEVEL SENSOR
MT11	A63	7	THROTTLE POSITION SENSOR
NS	E183	21	WTEC II VEHICLE INTERFACE MODULE
NS	F183	21	WTEC II VEHICLE INTERFACE MODULE
P/P	B54	6	POLARITY PROTECTION
P/P	D54	6	POLARITY PROTECTION
R11	D50	6	SHUNT
R1	D79	9	AIR DRYER
TB1	B257	29	WEBASTO CONTROL UNIT
TB1	C128	15	CAB DASH RIGHT POWER
TB2	F130	15	CAB - DASH - RIGHT - POWER DISTRIBUTION PNL
TB2	D257	29	WEBASTO CONTROL UNIT
X1	C137	16	24 VDC
X11	F52	6	NATO SLAVE RECEPTACLE
X2	D137	16	24 VDC
X3	F137	16	GROUND
X5	D137	16	24 VDC
X7	D137	16	24 VDC
PHONE 1	A285	32	VAN PHONE 1
PHONE 2	H287	32	VAN PHONE 2
	E77	9	LIGHT MATERIAL HANDLING CRANE (LMHC)
	E77	9	LMHC REMOTE CONTROL BOX
	E77	9	LMHC POWER CABLE
	G78	9	LMHC REMOTE CONTROL IN/OUT
	G302	34	WTEC III TRANSMISSION PRESSURE SWITCH
	B304	34	WTEC III OUTPUT SPEED SENSOR
	C304	34	WTEC III ENGINE SPEED SENSOR
	E304	34	WTEC III SUMP TEMP SENSOR

TRANSMISSION			
NUMBER	ZONE	SH	DESCRIPTION
A10	B183	21	WTEC II VEHICLE INTERFACE MODULE
A13	B67	8	WTEC II TRANSMISSION A13 (SERIAL # 29513233)
A13	A72	8	WTEC II TRANSMISSION A13 (SERIAL # 29517497)
A13	A76	9	WTEC II TRANSMISSION A13 (SERIAL # 29513233)
MT9	F67	8	WTEC II ENGINE SPEED SENSOR (SERIAL # 29513233)
MT9	F72	8	WTEC II ENGINE SPEED SENSOR (SERIAL # 29517497)
MT9	E76	9	WTEC II ENGINE SPEED SENSOR (SERIAL # 29513233)
MT11	A62	7	THROTTLE POSITION SENSOR
REV	C183	21	WTEC II VEHICLE INTERFACE MODULE
RW	D183	21	WTEC II VEHICLE INTERFACE MODULE
S02	F183	21	WTEC II VEHICLE INTERFACE MODULE
S03	F183	21	WTEC II VEHICLE INTERFACE MODULE
SF01	D183	21	WTEC II VEHICLE INTERFACE MODULE
SF01	D183	21	WTEC II VEHICLE INTERFACE MODULE
SF02	C183	21	WTEC II VEHICLE INTERFACE MODULE
SF02	D183	21	WTEC II VEHICLE INTERFACE MODULE
SF04	C183	21	WTEC II VEHICLE INTERFACE MODULE
SF3	F183	21	WTEC II VEHICLE INTERFACE MODULE
SF4	D183	21	WTEC II VEHICLE INTERFACE MODULE

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 4 OF 34

SIZE B | ILL. NO. 5WD01L41 | FP-7/FP-8 BLANK

28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36

CHASSIS - FRONT BUMPER

CHASSIS - FRONT

VEHICLE HORN (LS1)

BLACKOUT MARKER RIGHT FRONT

PARKING LIGHT FRONT RIGHT

FRONT RIGHT TURN SIGNAL

RIGHT HEADLIGHT

LEFT HEADLIGHT

12V CONNECTOR INTERVEHICULAR

GROUND
MARKER LIGHTS
LEFT TURN SIGNAL
STOP LIGHTS
RIGHT TURN SIGNAL
TAIL LIGHTS
AUXILIARY

FRONT LEFT TURN SIGNAL

PARKING LIGHT FRONT LEFT

BLACKOUT MARKER LEFT FRONT

BLACKOUT DRIVE LIGHT

to P25-2 (H86)

to TL202 (E124)

to K32-87 (A148)
to TB1-24 (C127)
to TB1-52 (D129)
to PX21-5 (B133)
to K30-86 (H148)
to K8-87 (G152)
to CB54/4 (E142)
to tb1-22 (C127)
to CB65/8 (E141)
to K31-86 (H150)
to TB1-42 (F129)
to TB1-23 (C127)
to K8-87A (F151)
to TB1-47 (D128)
to TB1-28 (B128)
to PX7-11 (B105)
to PX7-22 (D105)

to K12-87 (B139)
to PX33-A1 (B181)
to CB80/2 (E141)
to K31-86 (H149)
to K30-86 (H148)
to K27-86 (G144)
to TB1-11 (E127)
to K27-87 (H144)
to K28-87 (H142)
to K29-87 (F142)
to K31-86 (H149)
to K30-86 (H148)
to TB1-31 (B127)
to K6-87 (F144)
to K30-87 (H147)
to K31-87 (H149)
to TB1-54 (C129)

to J31-15 (G55)
to J111-F (F122)
to PX9-4 (D97)
to TB2-32 (F134)
to CB30/2 (C139)
to P99-1 (F186)
to PX7-2 (A105)
to P99-2 (F186)
to K1-87 (F149)
to TB1-35 (G128)

FIGURE F0-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 5 OF 34

SIZE B | ILL. NO. 5WD0101A | FP-9/FP-10 BLANK

CHASSIS - FRONT

CHASSIS - SPARE TIRE / AIR CLEANER AREA

CHASSIS - REAR

1478 TL53
1480 TL55
14 TL26
14A TL25
93A TL63
C62
TL62
P81
93A A
93 B
D62
24V AUXILIARY STARTER SOLENOID (KS)
93 TL23
1479 TL24
14A
14 TL9
74 TL33
1471
1472
1474
1480
1479
1478
1475
1476
1477
F45
1403
1790
28
3029
1802
1803
1804
74
G44
H43 1481

TL84
ETHER STARTER SOLENOID (L15)
J93
3014 2
1403 1
C62 TL12
100 AMP B53
200 AMP D53
100 AMP B54
200 AMP F54
100 AMP C54
200 AMP F54
SHUNT R11
D62 TL46
TL45 GND
1474 TL38
1475
1476 TL51
1477
N TL52
J106
1803 A
3029 B
1804 D
1802 E
CHEMICAL DETECTOR RECEPTACLE
1403
1790
28
3029
1802
1803
1804
1481

P82
28 1
3001 2
FUEL TANK LEVEL SENSOR (MT7)
TL83
BATTERIES
TL10 E1
TL39
BT1-E1
BT1
BT1-E2 E2
BT2-E1 E1
TL49A
BT2
TL99
BT2-E2 E2
BT3-E1 E1
BT3
BT3-E2 E2
BATTERY TESTER
BT4-E1 TL136 E1
BT4-E1
BT4-E2
BT4
TL48
TL50A E2
NATO SLAVE RECEPTACLE (X11)
TL50A 1
TL49A 2
P84
1790 B
3032 A
C
AIR PRESSURE SWITCH FOR CTIS (S23)
TL85
P80
3009 1
1481 2
D78

100 AMP
POLARITY PROTECTION (P/P)
C49 1471 TL36
1472
TL37 C50
D60 TL2 TL1
24V BAT
TL100 H 271
C136 TL42 TL44 1507
24V LOAD
TL41
TL80
TL47 D50
D136
12V LOAD
D60 TL60 TL61
12V BAT

200 AMP
POLARITY PROTECTION (P/P)
TL2 TL168
24V BAT
TL169
24V LOAD
TL174
TL173 12V LOAD
12V BAT
TERMINAL BLOCK
TL100 H 271
TL167 24V LOAD TL44 1507 C136
TL172 12V LOAD TL80 D136
TL166 24V BATT. TL37 C50
E60 TL1
TL171 12V BATT. TL47 TL36 C49
E60 TL51
D50

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 6 OF 34

SIZE B | ILL. NO. 5WD01021 | FP-11/FP-12 BLANK

ENGINE

WATER COOLER TEMPERATURE (S56)

P36
1807 → 2
1805 → 1

WATER TEMPERATURE SENSOR (MT6)

P41
33 → 2
MT6

WATER TEMPERATURE SWITCH (S26)

P37
3026 → 1
35 → 2

MT11
F66 124 → C
F70 135A → A
F75 156 → B
THROTTLE POSITION SENSOR (MT11)

STARTER/STARTER SOLENOID (B1)

B47
TL63
TL53
TL55
TL26
TL25
L
B1
C49 TL12
D49 TL46

STARTER THERMO SWITCH

C47 P81 A B

P31X
F176 →
1 ← 1441
2 ← 1452
3 ← 3A
4 ← 1432
5 ← 1433
6 ← 1430
7 ← 1435
8 ← 1434
9 ← 1428
10 ← 1453

P69
1430 → 1
1435 → 4
1434 → 2
1428 → 3
Not Used

100 AMP ALTERNATOR (G1)
TL59
TL6
TL2
TL58
TL5
VOLTAGE REGULATOR
24V
GND G1
12V
TL35
TL110
TL60
1452
3A
1453
568A
TL61
TL1
F53
F53
F226

J31 P31
to K11-87A (F146) 568A 1 ← 568A
to PX13-3 (F92) 1402 2 ← 1402
to TB1-38 (F129) 1807 3 ← 1807
to PX1-1 (A92) 1806 4 ← 1805
to TB2-18 (F132) 3015 5 ← 3015
to TB2-10 (F131) 3006 7 ← 3006
to PX26-1 (B180) 1444 8 ← 1444
to TB2-36 (F135) 3028 9 ← 3028
to TB2-28 (F134) 3026 10 ← 3026
to PX6-4 (B107) 36 11 ← 36
to CB49/3 (C152) 1460 13 ← 1460
to K19-87B (B151) 54 14 ← 54
to J43-1 (G42) 1403 15 ← 1403
to PX26-4 (B180) 3083 16 ← 3083
to TL178 (D102) 32 17 ← 32
to K11-87 (F146) 1538 18 ← 1538
to PX7-1 (A105) 1523 19 ← 1523
to PX11-4 (H107) 33 20 ← 33
to K11-85 (H146) 34 21 ← 34
to PX7-12 (C106) 35 22 ← 35
to PX26-5 (B180) 1432 25 ← 1432
to PX26-2 (B180) 1433 26 ← 1433

P42
1402 → 2
1403 → 1
ETHER SENSE SWITCH (S40)

P34
34 → 2
3006 → 1
OIL PRESSURE WARNING LIGHT SWITCH (S27)

ENGINE SPEED MAGNETIC PICKUP (MPU1)
P38
3083 → 2 (-)
1444 → 1 (+)

P32
36 → 2
P
ENGINE OIL PRESSURE SENSOR (MT3)

TROOP TRANSPORT ALARM
P39 J39
3028 → 1 1 3028
32 → 2 2 32
1538 → 3
P921 J921
A A 3028 TL164 1
C C 32 TL165 2
TROOP ALARM SWITCH (S45)

1441 TL28
54
3015 TL29
3017 TL29
L
FUEL SOLENCID (L2)

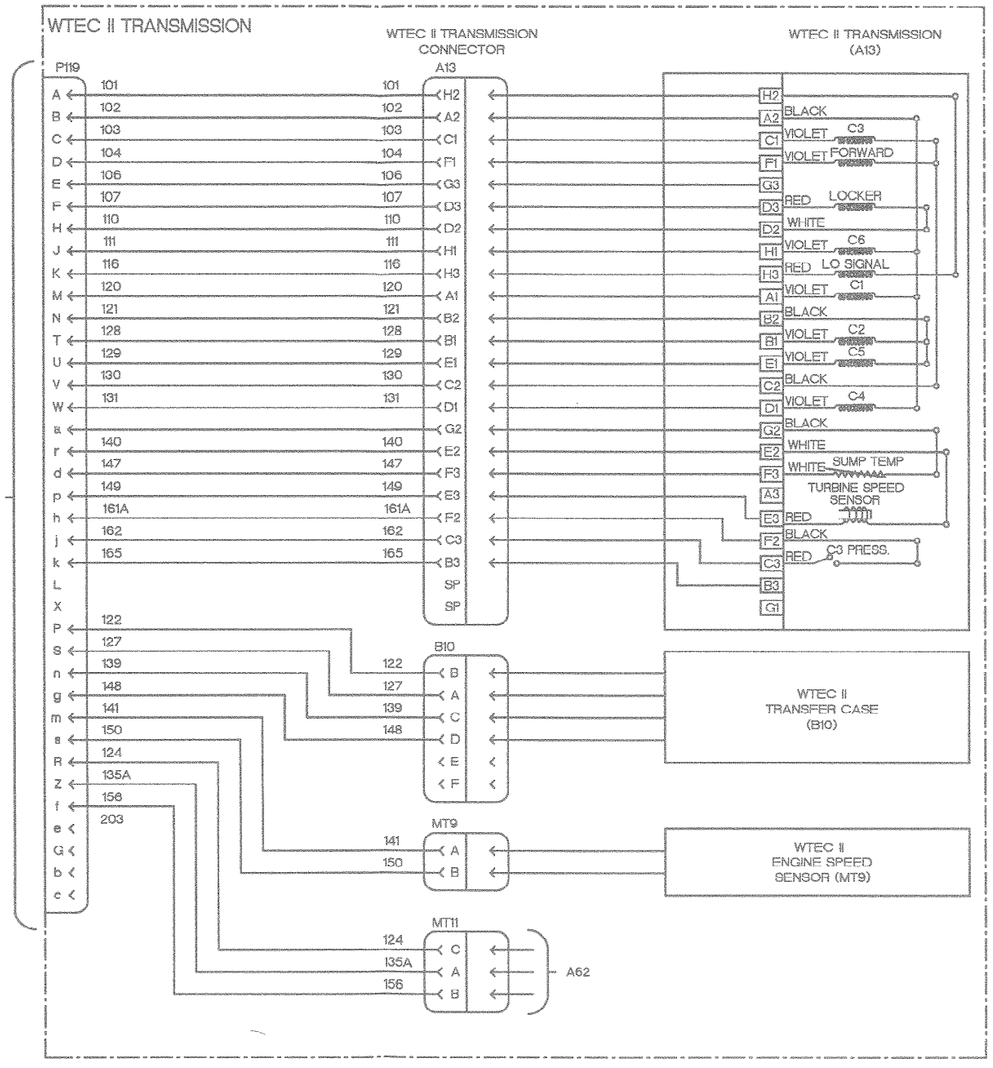
P33
1460 → 2
3017 → 1
FUEL/WATER SEPARATOR (A20)

P201
1523 → 2
TL66 3027 → 1
NOT USED

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 7 OF 34

SIZE B | ILL. NO. 5WD01031 | FP-13/FP-14 BLANK

PRIOR TO SERIAL NUMBER 6510032369



SERIAL NUMBER 6510032369 AND HIGHER

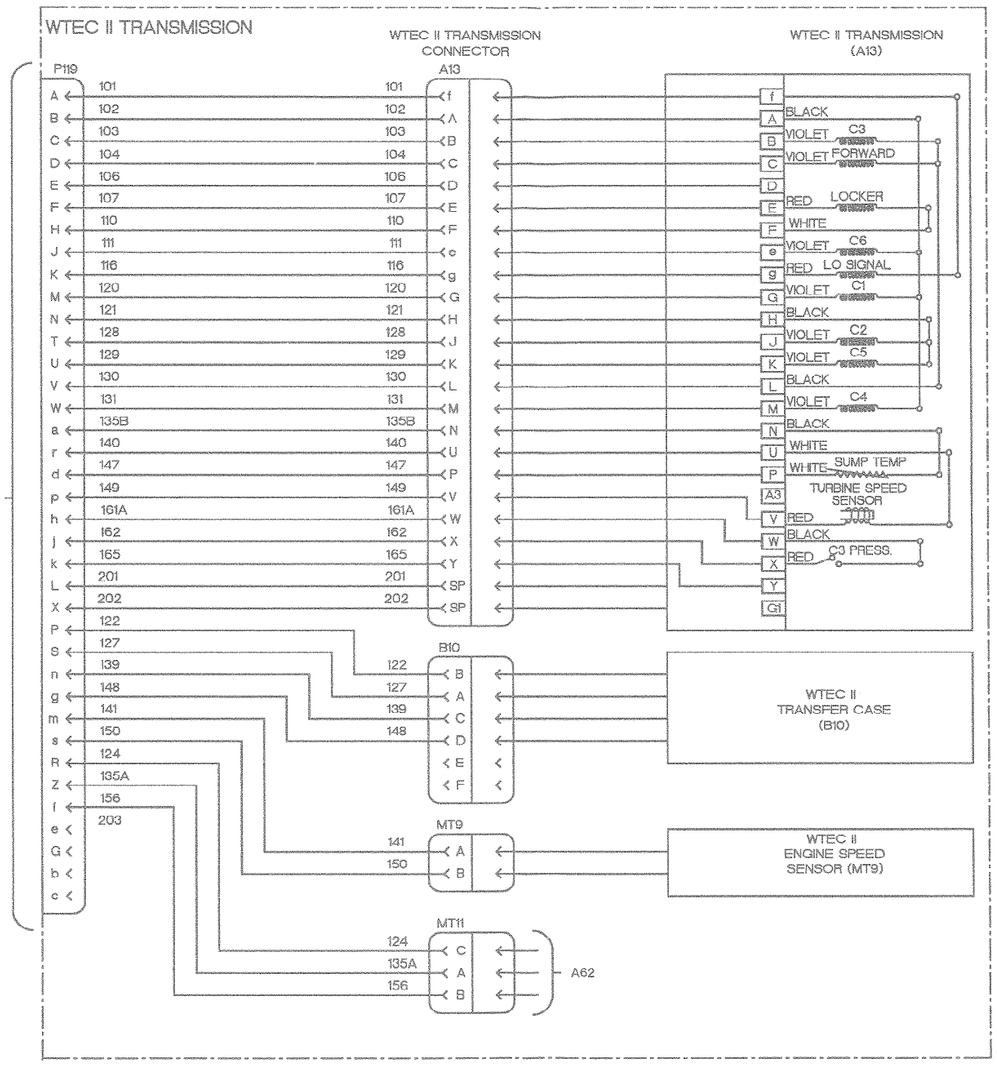
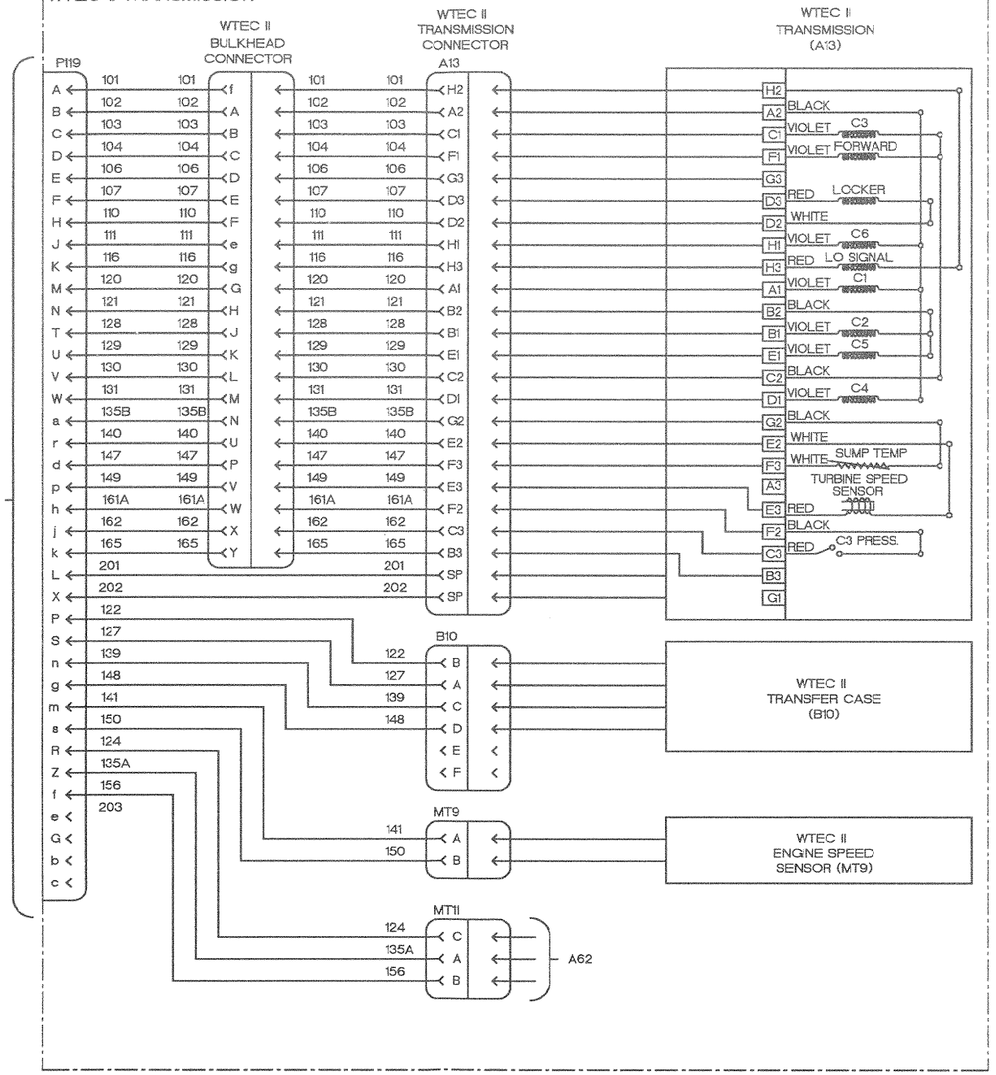


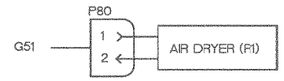
FIGURE F0-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 8 OF 34

SIZE B | ILL NO. 5WD0104A | FP-15/FP-16 BLANK

PRIOR TO SERIAL NUMBER 6510032369 WITH ADAPTER CABLE ASSEMBLY

WTEC II TRANSMISSION





LIGHT MATERIAL HANDLING CRANE (LMHC)

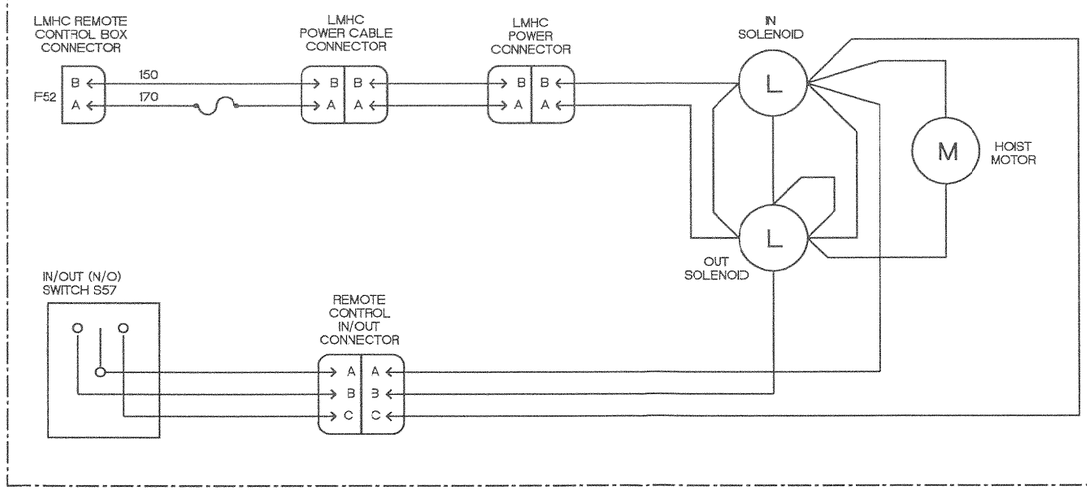


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 9 OF 34

SIZE	ILL. NO.	
B	5WD01051	FP-17/FP-18 BLANK

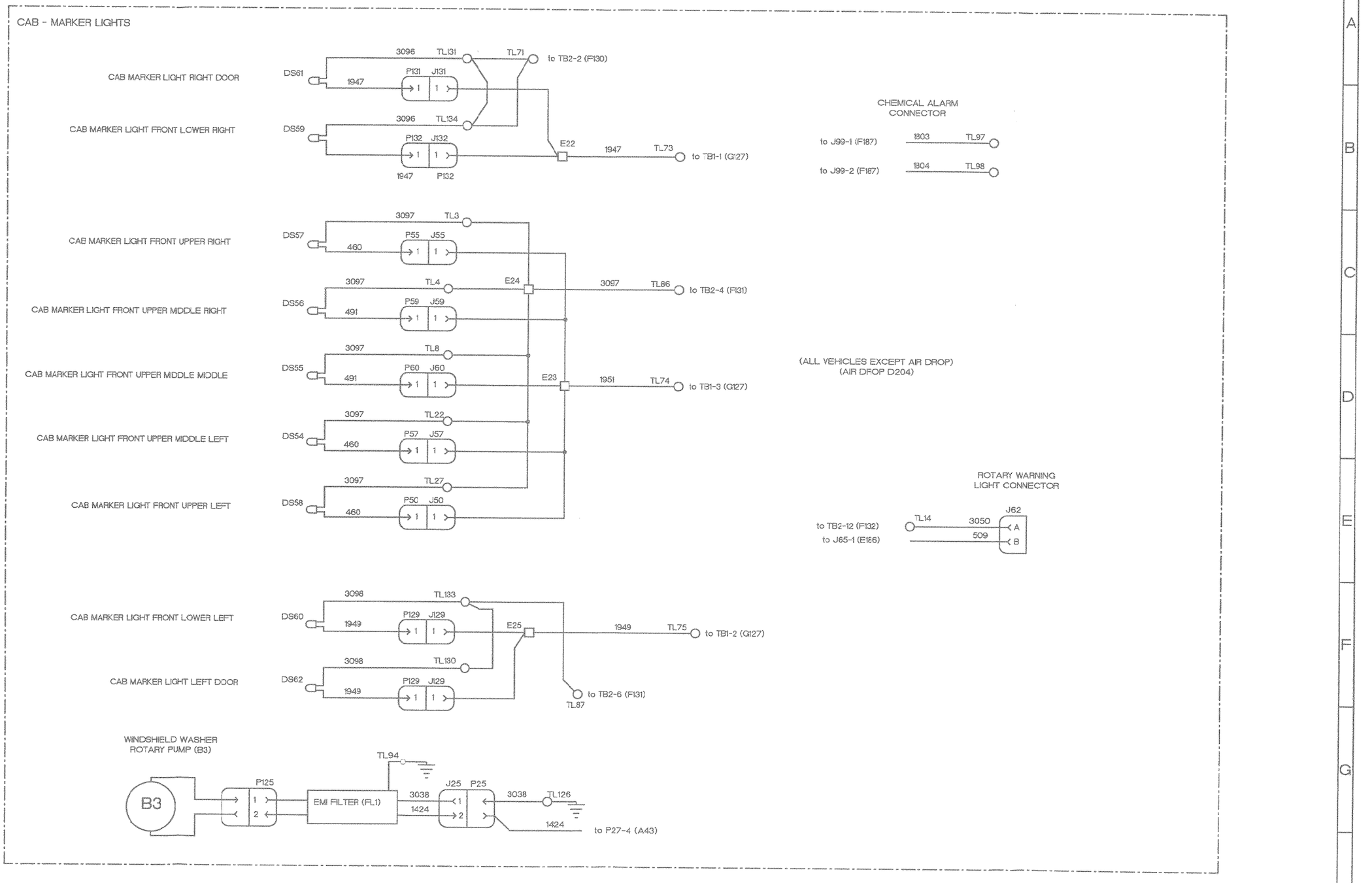


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 10 OF 34

SIZE	ILL. NO.	
B	5WD0106A	FP-19/FP-20 BLANK

91 92 93 94 95 96 97 98 99

CAB - DASH - LEFT - INSTRUMENT PANEL

A100

ENGINE FAN OFF SWITCH (S5/11)

PX1
1 1806 to PX34-1 (E188)
2 1806 to J31-4 (F55)
3 3023 to TB2-24 (F133)
4
5 1812 to TB1-40 (F129)
6 1814
7
8

PX1A
DS8 1 1908
2 1908
3020
3020

LAMP TEST SWITCH (S5/2)

PX2
1 35 to PX7-12 (C106)
2 1537 to PX7-20 (D106)
3 3020
4 3020
5
6
7
8

PX2A
DS108 1 1908
2 3020
3020

ETHER STARTER SWITCH (S5/16)

PX13
1 1401 to TB1-39 (F129)
2
3 1402 to J31-2 (E55)
4
5
6
7
8

PX13A
DS11 1 1908
2 1908
3020
3020

WTEC II PUSHBUTTON SHIFT SELECTOR

R MODE
N ⇧
D ⇩

E154

E164

REAR AIR PRESSURE METER (M5)

DS4 P
PX5
1 3020
2 3020
3 1908
4 1908
1546
1792 to TL151 (G178)

FUEL LEVEL METER (M7)

DS1 I
PX9
1 3020
2 3020
3 1908
4 1908
1546
1546
28 to J43-3 (G42)

FRONT AIR PRESSURE METER (M4)

DS3 P
PX4
1 3020
2 3020
3 1908
4 1908
1546
1546
1791 to TL150 (F178)

1546
1908
3020
F100

A B C D E F G H

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 11 OF 34

SIZE B | ILL. NO. 5WD0107A | FP-21/FP-22 BLANK

CAB - DASH - LEFT - INSTRUMENT PANEL

A99 — 1814

LIGHTED INDICATOR DISPLAY (A18)

CHEM DETECT	DS32	
RIGHT TURN SIGNAL	DS15	
LEFT TURN SIGNAL	DS14	
	DS9	
CTIS OVRSPD	DS34	
PTO ON	DS23	
EMER BRAKE	DS21	
WATER TEMPERATURE	DS25	
REAR BRAKE AIR	DS27	
TRANS OIL TEMP	DS41	
ENGINE OIL LEVEL	DS29	
PARK BRAKE	DS22	
OIL PRESSURE	DS24	
HIGH BEAM	DS16	
FRONT AIR BRAKE	DS28	
RADIATOR FAN OFF	DS19	
MASTER STOP	DS30	

PX7

1	1523	to J31-19 (G55)
2	1803	to J43-6 (H42)
3		
4	1580	to TB1-41 (F129)
5		
6	1570	
7	3021	to TB2-25 (G133)
8	2034	to P912-9 (C124)
9	1528	to J111-D (F122)
10	2021	to J913-13 (C121)
11	1616	to J27-16 (C43)
12	35	
13	1525	to TL157 (H178)
14		
15		
16	1532	
17	3030	to TB2-33 (G134)
18		
19	1536	
20	1537	
21		
22	1616	to J27-16 (C43)
23	34A	to D38-4 (A138)
24	1681	to K8-87 (F152)
25	1530	to TL156 (F178)
26	1814	
27	1658	to TB1-61 (B129)
28	2010	to P912-7 (B124)

ENGINE OIL PRESSURE METER (M3)

DS5 — OP

PX6

1	3020	
2	3020	
3	1908	
4	1908	
	1546	
	1546	
	36	to J31-11 (F55)

B109

E88 — 35 — to PX2-1 (D92)
35 — to J31-22 (H55)

E89 — 1537 — to PX2-2 (D92)
1537 — to J118-1 (D162)

VOLTMETER (M2)

DS7 — V

PX10

1	3020	
2	3020	
3	1908	
4	1908	
	1546	
	1546	to J913-9 (C121)
	3004	to TB2-9 (G131)

D109

E109

F99 — 1546, 1908, 3020

3020, 1908 — F109

SPEEDOMETER (M8)

DS6 — KM

PX8

1	3020	
2	3020	
3	1908	
4	1908	
	1546	
	1546	to PX33-H2 (E181)
	1793	
	1793	to J111-B (F122)

WATER TEMPERATURE METER (M6)

DS2 — t°

PX11

1	3020	
2	3020	
3	1908	
4	1908	
	1546	
	1546	
	33	to J31-20 (G55)

G109

AUDIBLE ALARM (LS2)

	32	TL178	32 — to J31-17 (G55)
−	1536	TL160	
+	1532	TL161	

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 12 OF 34

SIZE	ILL. NO.	
B	5WD01081	FP-23/FP-24 BLANK

CAB - DASH - LEFT - INSTRUMENT PANEL

IGNITION SWITCH (S5/1)

PX17

1 — 1548 — to K2-86 (A143)
2
3
4
5 — 1586 — to CB70/4 (E146)
6
7
8

B108: 3020, 3020, 1908, 1908, 1546, 1546

PX17A

DS13: 1908, 1908, 3020, 3020

STARTER PUSHBUTTON (S6)

TL163 — TL162 — 1405 — to K24-87 (A152)
3007 — to TB2-1 (G131)

ROTATING WARNING LIGHT SWITCH (S5/2)

PX12

1 — 1559 — to K13-86 (A149)
2
3
4
5 — 1575
6 — 1575 — to K20-86 (G138)
7
8

D108: 3020, 3020, 1908, 1908, 1546

E108: 1546

PX12A

DS10: 1908, 1908, 3020, 3020

MAIN LIGHT SWITCH (S4)

PX15

A
B — 1542
C — 22 — to D1A-2 (C138)
D — 19 — to CB54/3 (D142)
E — 1572 — to CB66/1 (D143)
F — 1586 — to CB70/4 (D146)
H — 1575
J — 1577 — to CB74/5 (D150)
K — 1404 — to K5-87 (F143)
L — 491 — to CB65/7 (D141)
M — 16 — to P18-3 (B178)
N — 23 — to K27-86 (G143)

F108: 3020, 1908

FULL HAZARD WARNING SWITCH (S5/22)

PX14

1 — 1565 — to K9-87 (B142)
2 — 1566 — to J19-5 (D177)
3 — 1566 — to K10-87A (F150)
4
5 — 1567 — to PX20-B (C188)
6 — 1568 — to J19-12 (E177)
7 — 1568 — to PX20-A (C188)
8 — 1514 — to CB74/6 (E150)

G108: 3020, 3020, 1908, 1908, 1546

PX14A

DS12: 1908, 1908, 3020, 3020 — to J913-11 (C121), to J913-10 (C121)

INSTRUMENT PANEL LIGHTS DIMMER MODULE (A3)

PX24

2 — 1908, 1908
1 — 1542

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 13 OF 34

SIZE B | ILL. NO. 5WD0109A | FP-25/FP-26 BLANK

CAB - DASH - CENTER - HEATER / CTIS ECU

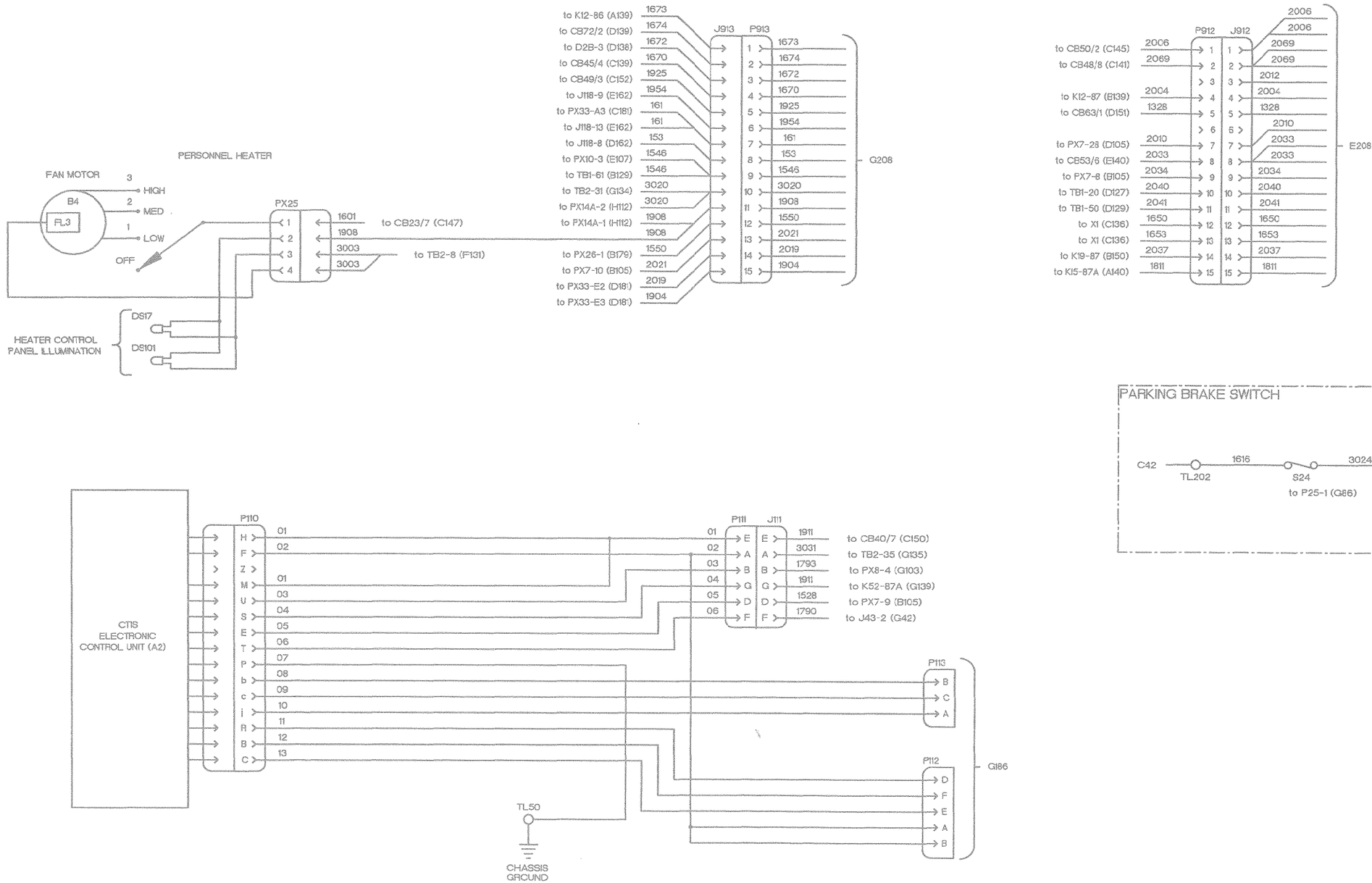


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC FOLDOUT 14 OF 34

SIZE B | ILL. NO. 5WD0110A | FP-27/FP-28 BLANK

CAB - DASH - RIGHT - POWER DISTRIBUTION PANEL

PX21

to P18-9 (B178) 1599
to CB37/1 (C152) 1569
to J2-4 (B185) 1916
to TB2-37 (G135) 3034
to P18-8 (B178) 1424
to J27-4 (A43) 1424
to P18-7 (B178) 1597

WIPER DELAY MODULE (A5)

22C J51-13 (E42) 31 32
1940 K10-87 (F150) 29 30 1940 K10-86 (F150)
22 D1A-1 (C138) 27 28 22C J27-15 (C43)
25 26 1912 CB67-4 (E139)
21A J27-12 (B43) 23 24 489G J27-2 (A43)
21 22 489F J27-8 (B43)
19 20 2040 P912-10 (C124)
17 18
15 16
13 14
489 J51-7 (D42) 11 12
1426 J7-1 (A188) 9 10
7 8
1955 K28-86 (H142) 5 6
1951 TL74 (D86) 3
1951 TL74 (E205) 4
1947 TL73 (B86) 1 2 1949 TL75 (F86)

1930 K11-86 (F146) 63 64 1929 CB77/5 (C152)
1658 K11-30 (F146)
1546 J913-9 (C122) 61
1658 PX7-27 (D105) 62 1690 CB79/5 (C150)
1462 K19-30 (A150) 59 60 1460 PX33-C1 (C181)
1463 TL159 (E136) 57 58
55 56 1572 CB66/2 (E143)
1408 K29-86 (F142) 53 54 24 J51-17 (E42)
1329 K52-86 (H139) 51 52 20 J27-3 (A43)
49 50 2041 P912-11 (C124)
461 J27-14 (B43) 47
1570 PX7-6 (B105) 48
45 46 1581 J19-1 (C177)
1524 J19-4 (D178) 43 44
1580 PX7-4 (B105) 41 42 460 J27-11 (B43)
1401 PX13-1 (F92) 39 40 1812 PX1-5 (B92)
1935 CB22/3 (C149) 37 38 1807 J31-3 (F55)
1481 J43-9 (H42) 35 36 1692 CB21/1 (C149)
1692 PX33-E1 (D181) 33 34 1692 PX33-F1 (D181)

TB1

3054 K20-85 (H136) 3036 K32-85 (A147) 3047 K30-85 (H147) 3039 K9-85 (A142) 3099 J7-3 (B188) 3046 K10-85 (F150) 3016 K19-85 (A150) 3053 K8-85 (F151) 3002 K7-85 (F152)

40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

3041 K2-85 (A143) 3043 TL153 (C180) 3048 K31-85 (G149) 3049 PX20-C (C189) 3012 K15-85 (A141) 3011 PX34-2 (E188)

1603 TB2-1 F136

1603 X3

TB2

3095 TL71 (A86) 3097 TL86 (C86) 3098 TL87 (F86) 3003 PX25-3 (C120) 3006 J31-7 (F55) 3050 TL14 (E88) 3101 PX33-K1 (F181) 3015 J31-5 (F55) 3040 K29-85 (F42) 3056 K28-85 (G142) 3023 PX1-2 (B92) 3026 J31-10 (F55) 3067 K12-85 (A139) 3029 J43-4 (H42) 3044 K27-85 (H143) 3028 J31-9 (F55)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39

3045 K52-85 (H139) 3004 PX10-4 (E108) 3007 TL153 (E115) 3102 PX33-K2 (F181) 3018 J78-2 (F185) 3019 J78-4 (F185) 3021 PX7-7 (B105) 3020 J913-10 (C121) 3030 PX7-17 (C105) 3031 J111-A (F122) 3034 PX21-4 (A133) 3037 J2-3 (A185)

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 15 OF 34

SIZE B | ILL. NO. 5WD0111A | FP-29/FP-30 BLANK

CAB - DASH - RIGHT
POWER DISTRIBUTION PANEL

34 K24-85 (A151)
34A PX7-23 (D105)
74 K24-30 (A151)
D3B
D3A
WORKLIGHT RELAY
K12
1674 CB72/2
3067 TB2-30 (F134)
2004 P912-4 (B124)
2002 J51-1 (D42)
1673 J913-1 (B121)
1808 CB68/7
1806 PX34-1 (E187)
1811 P912-15 (C134)
3039 TB2-56 (B132)
3012 TB2-77 (C135)
AUX. COOLER RELAY
K15
1566 CB71/4
1514 CB74/6
1565 D2B-4
1565 PX14-1 (F112)
HAZARD FLASHER BO OVERIDE
K9
1602 X1
1548 PX17-1 (A112)
3041 TB2-43 (C130)
1604 X6
1548 CB76/3
CONTROL PANEL RELAY
K2
1637
A145
B145
3054
1566
C145
1601
D145
1548 K2-86
1641 K6-30
1514
1808
1911
E145
1602
461B DIB-3
460B
1691
74
G145

to CB43 (C289)
to CB79 (B289)
to P912-12 (C124)
1650
to P912-13 (C124)
1653
to TL44 (E49)
to TL44 (B53)
X4 1602 K2-30
X1
+24 VDC
1602 K1-30

461B J19-2 (C178)
22 PX15-C (D115)
D1B
D1A
461B K30-86
22 TB1-27 (B127)
+24V
CHEMICAL ALARM
CB30
CB45
FUEL PREHEAT
1670 J913-4 (B121)
1802 J43-5 (H42)
CAB RADIO
CB20
CB48
ARCTIC CAB/ ENGINE KILL
1906 K53-30
2069 P912-2 (B124)
TRAILER REAR LIGHTS POWER
CB41
CB42
BO MARKER LIGHTS POWER
1957 K28-30
1958 K29-30
REAR COMPOSITE LIGHTS
CB44
CB43
1956 K31-30
1922 K30-30
1956

X7 1601
X5 1601
1565 K9-87
460B J19-3 (D178)
D2B
D2A
460B K31-86
1672 J913-3 (B121)
1674 K13-90
CB72
CB67
MARKER LIGHTS
1914 K20-87
1674 J913-2 (B121)
1912 TB1-26 (C128)
+12V
2033 P912-8 (C124)
CB53
CB65
PARKING LIGHTS
491 PX15-L (E116)
491 J27-9 (B43)
19 PX15-D (D115)
1914A K20-87
TAIL LIGHTS
CB80
CB54
BO HEADLIGHT
21 J51-3 (D42)
19 J27-7 (B43)
1572 PX15-E (D115)
BO MARKER POWER
CB66
CB76
BO STOP RELAY POWER
1572 TB1-56 (C129)

to TL41 (E49)
to TL80 (F54)
X2
+12 VDC
1601

TL159
TL158
to TB1-57 (C129)
1463
1637 K19-86
START INHIBIT PUSHBUTTON (S7)

D135
1603 TB2-1
TL57
TL56
CAB GND
X3
GROUND

1914 CB67/3
1914A CB80/1
3054 K13-85
3054 TB2-44 (B131)
1575 PX12-5 (D113)
K20
MARKER LIGHTS RELAY

1911 CB40/7
1906 CB20/6
74 K1-85
1329 TB1-51 (D129)
1911 J111-G (F123)
1906 J78-3 (F185)
3045 TB2-3 (C130)
K52
K53
CTIS OVERSPEED INDICATION RELAY
RADIO POWER RELAY

1958 CB42/4
1408 J7-2 (B188)
1408 TB1-53 (C129)
484T J51-10 (D42)
3040 TB2-20 (F133)
K29
BO MARKER RELAY
1541 CB76-4
1404 PX15-K (D115)
1404 J51-14 (E42)
1394 TL152 (C180)
K6
STOP LIGHT RELAY

1957 CB41/2
3056 TB2-22 (F133)
1955 TB1-5 (F127)
489T J51-9 (D42)
K28
TRAILER REAR LIGHTS RELAY
3044 TB2-34 (F135)
1959 CB39/4
23 PX15-N (E115)
23 J51-6 (D42)
23T J51-8 (D42)
BO STOP RELAY
K27

FIGURE F0-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 16 OF 34

SIZE B | ILL. NO. 5WD01121 | FP-31/FP-32 BLANK

CAB - DASH - RIGHT
POWER DISTRIBUTION PANEL

A144 1637
B144 1604 X6
C144
D144 1601
E144 1514 1808 1911
G145 1602 460B 1691 74 1959

3054
1566
1922
1956

+24V
SWING FIRE PUMP POWER — CB50 CB39 — TRAILER BO STOP LIGHTS
2006 P912-1 (B124)
1959 K27-30

+12V
IGNITION/MAIN LIGHT SWITCH — CB70
1586 PX15-F (D115)
1586 PX17-5 (B112)

26 CB36/5
3036 TB2-46 (B131)
25 P18-12 (C178)
26 J27-1 (A43)
K32 HORN RELAY

509 CB38/8
3054 K20-85
K13 ROTATING BEACON BO OVRD RELAY
509 P65-1 (E186)
1559 PX12-1 (D113)

1637 TL158
1462 TB1-59 (B129)
3016 TB2-62 (B133)
K19 START INHIBIT RELAY
2037 P912-14 (C124)
54 J31-14 (G55)

1658 K11-30
74 D3B-3(B137)
74 K1-85
34 K11-85
34 D3B-4 (B136)
1405 TL162 (B115)
K24 CRANKING LOCKOUT RELAY

26 K32-30
1601 PX25-1 (C120)
HORN POWER — CB36 CB23 — HEATER BLOWER

1692 TB1-36 (G129)
WTEC II VIM STE/ICE — CB21 CB22 — FAN/ETHER
1935 TB1-37 (F129)

1690 TB1-62 (B129)
1911 J111-E (E123)
1911 K52-30
WTEC II VIM POWER — CB79 CB40 — CTIS COOLER

E5
1569 J2-2 (A185)
1569 P18-4 (B177)
1569 PX21-2 (A133)
1925 J913-5 (B121)
1460 J31-13 (F55)
WINDSHIELD WIPER/WASHER — CB37 CB49 — PTO POWER
1929 TB1-64 (B129)
1808 K15-30
ENGINE INSTR POWER — CB77 CB66

+12V
HEAD LIGHTS — CB78 CB38 — ROTATING BEACON
509 K13-30

+12V
VIM POWER — CB35 CB71 — HAZARD/FLASHER WORKLIGHTS
1566 K9-30
1900 PX33-J1 (E182)
1900 PX33-J2 (E182)

1577 PX15-J (D115)
BACK-UP LIGHT POWER — CB74 CB73
1514 PX14-7 (G113)
1903 PX33-B1 (C181)
1514 K9-86

1328 P912-5 (B124)
CB63 CB64
CB61 CB62

1416 K7-30
1416
1911

34 K24-85
1658 K24-86
1658 TB1-64 (B129)
1930 TB1-63 (B129)
568A J31-1 (E55)
1538 J31-18 (G55)
34 J31-21 (G55)
K11 ALTERNATOR EXCITATION RELAY

74 K24-30
74 K53-85
16C2 X1
1691 PX33-G1 (E181)
1691 K53-86
74 J43-8 (H42)
K1 STARTER RELAY

1594 J19-6 (D178)
1940 TB1-30 (B128)
3046 TB2-60 (B133)
1940 TB1-29 (B127)
1566 PX14-2 (G113)
K10 STOP/HAZARD FLASHER RELAY

18 J27-13 (B43)
3053 TB2-70 (B134)
1417 K7-87
16A P18-2 (B178)
17 J27-6 (B43)
1681 PX7-24 (D105)
K8 HEADLIGHT LO/HI-BEAM RELAY

3002 TB2-74 (B135)
1416 CB78/6
16 P18-3 (B178)
1417 K8-30
K7 HEADLIGHT RELAY

461B D12-3

1922 CB43/8
3047 TB2-50 (B131)
461T J51-15 (E42)
461B
E13
461B J51-12 (E42)
461B J27-5 (B43)
461B J51-5 (D42)
461B D1B-3
K30 REAR LEFT COMPOSITE LAMP RELAY

1956 CB44/6
3048 TB2-53 (C132)
460T J51-16 (E42)
K31 REAR RIGHT COMPOSITE LAMP RELAY

E4
460B D2A-1
460B J51-4 (D42)
460B J51-11 (E42)
460B J27-10 (B43)

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 17 OF 34

SIZE B | ILL. NO. 5WD01131 | FP-33/FP-34 BLANK

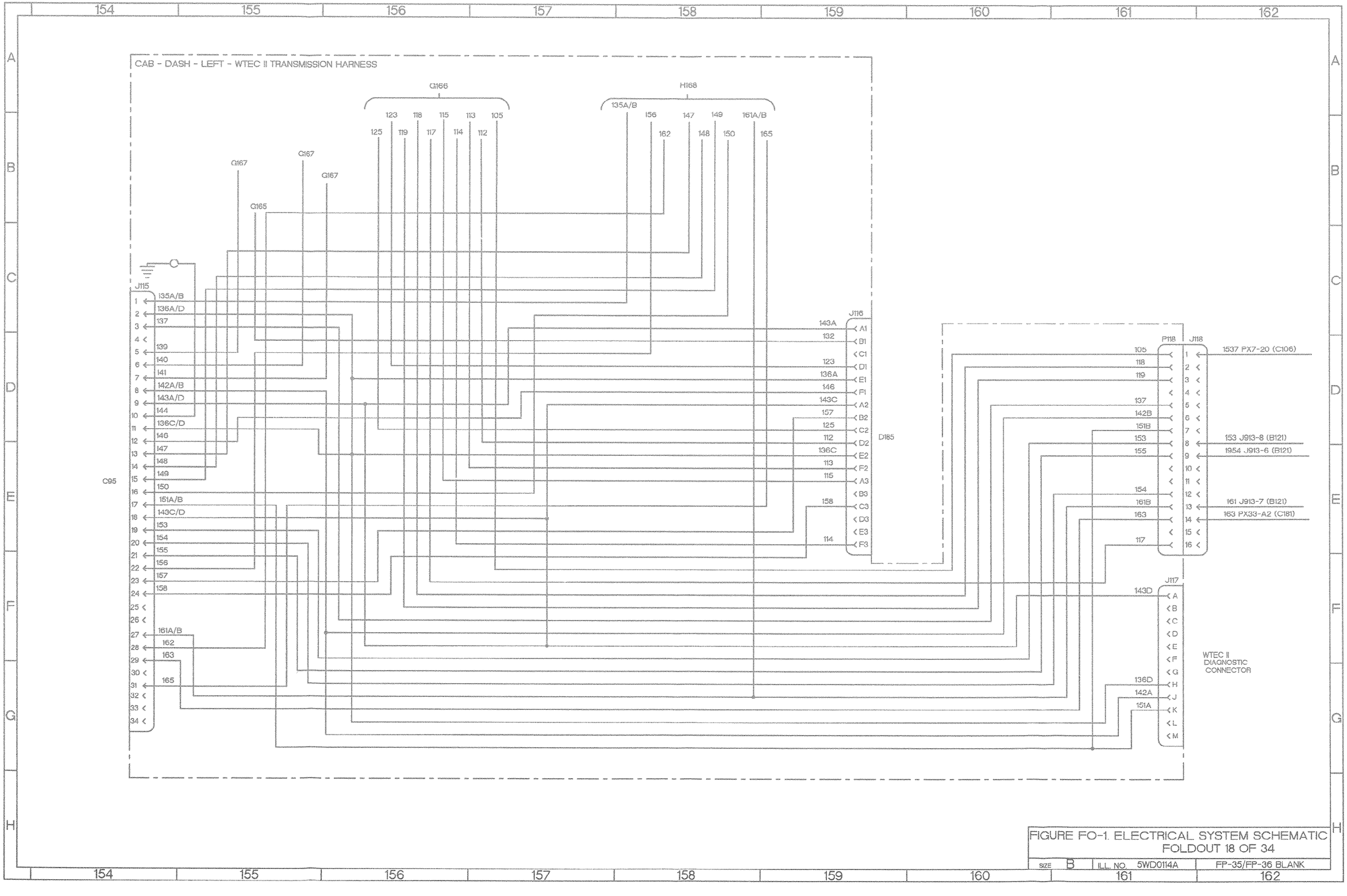


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 18 OF 34

SIZE B | ILL. NO. 5WD0114A | FP-35/FP-36 BLANK

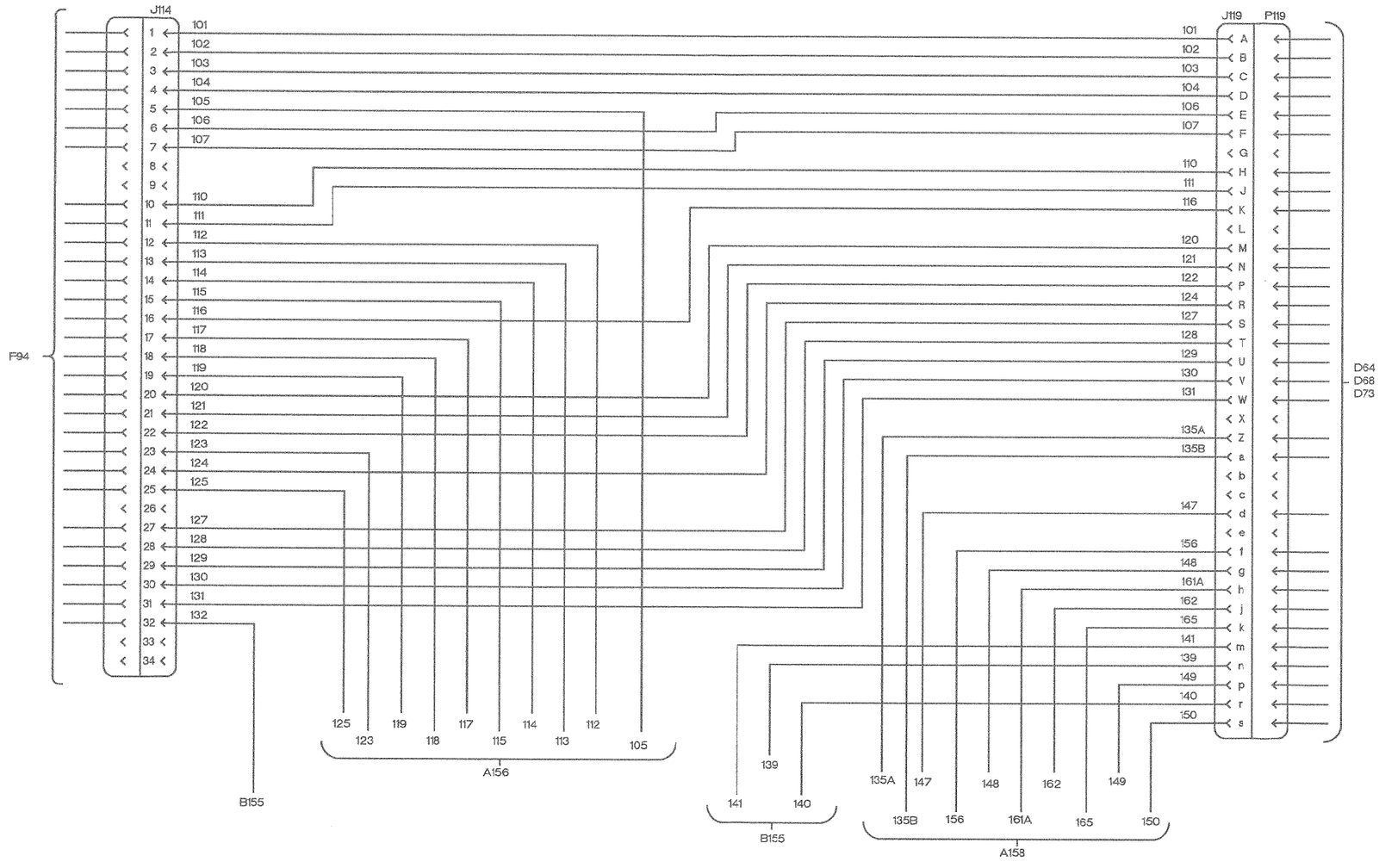


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 19 OF 34

SIZE	ILL. NO.	
B	5WD0115A	FP-37/FP-38 BLANK

CAB - DASH - LEFT - UNDERDASH

STE / ICE RECEPTACLE

P83

f 1610
AB 1437
AD 1431
z 1446
x 1427
p 1423
m 1438
AA 1436
g 1612
k 1439
n 1421
w 1425
y 1447
AC 1429
R 1441
N 1452
P 3A
d 1432
c 1433
v 1435
u 1428
O 1453
E 1471
V 1472
Y 1474
T 1480
S 1479
M 1478
F 1475
X 1476
W 1477
h — R2
j
s — R6
U 1482
Z 1482
a 1482 — E71
b 1482

JUNCTION BOX (BJ1)

1610 — BLUE
1430
R5
1437 — BROWN
1431
1446
1427
1423
1438 — GREEN
1436
1612
R4
1434 — RED
1439
1421
1425
1447 — YELLOW
1429
BLACK
WHITE

J31X

1441 1
1452 2
3A 3
1432 4
1433 5
1430 6
1435 7
1434 8
1428 9
1453 10
— D55

J43X

1471 1
1472 2
1474 3
1480 4
1479 5
1478 6
1475 7
1476 8
1477 9
— F42

COLUMN SWITCH (S3)

P18

1 — 16A — to K8-86 (F152)
2 — 16 — to K7-86 (F153)
3 — 16 — to PX15-M (E116)
4 — 1569 — to CB37/1 (B152)
5 — 1527 — to J2-5 (B186)
6 — 1590 — to J2-1 (A186)
7 — 1597 — to PX21-6 (B133)
8 — 1424 — to PX21-5 (B133)
9 — 1599 — to PX21-1 (A133)
10
11
12 — 25 — to K32-86 (A147)

COLUMN SWITCH (S3)

J19

1 — 1581 — to TB1-46 (E129)
2 — 461B — to D1B-4 (C138)
3 — 460B — to D2A-2 (D138)
4 — 1524 — to TB1-43 (E129)
5 — 1566 — to PX14-2 (G113)
6 — 1594 — to K10-30 (F150)
7
8
9
10
11
12 — 1568 — to PX14-6 (G113)

FREQUENCY DIVIDER (A7)

INPUT (+)
OUTPUT (+)
+24V POWER
INPUT (-)
OUTPUT ( )
GROUND

PX26

1 — 1550 — to J913-12 (C121)
2 — 1444 — to J31-8 (F55)
3 — 1433 — to J31-26 (H55)
4 — 1692 — to TB1-36 (G129)
5 — 3083 — to J31-16 (G55)
6 — 1432 — to J31-25 (H55)
3083 — to TB2-26 (F133)

STOP LIGHT SWITCH (S10A)

TL152 — TL153 — 3043 — 3043 — to TB2/47 (C131)
1594 — 1594 — to K6-85 (F143)

STOP LIGHT SWITCH (S10B)

TL154 — TL155 — 3043
1594

FRONT AIR PRESSURE TRANSMITTER

SENSOR (MT4) / SWITCH (S20)

TL150 — 1791 — to PX4-4 (G97)
P
TL156 — 1530 — to PX7-25 (D105)

REAR AIR PRESSURE TRANSMITTER

SENSOR (MT5) / SWITCH (S29)

TL151 — 1792 — to PX5-4 (B97)
P
TL157 — 1525 — to PX7-13 (C105)

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 20 OF 34

SIZE B | ILL. NO. 5WD0116A | FP-39/FP-40 BLANK

CAB - DASH - RIGHT - UNDERDASH

WINDSHIELD WIPER MOTOR (B2)

B2

PX22

EMI FILTER (FL2)

P2 J2

1590 to P18-6 (B178)
1569 to CB37/1 (B152)
3037 to TB2-39 (G135)
1916 to PX21-3 (A133)
1527 to P18-5 (B178)

TRANSMISSION DIMMER MODULE

J7

1426 to TB1-9 (F127)
1408 to K29-85 (F142)
3099 to TB2-53 (B132)
158

WTEC II VEHICLE INTERFACE MODULE (A10)

PX33

to J51-2 (D42) A1 490 490 REV
to J118-14 (E162) A2 163 1903
to J913-7 (B121) A3 161
to CB73/8 (E150) B1 1903
B2
B3
to TB1-60 (B129) C1 1460 1460 10A
C2
C3
D1 1697
D2
D3
to TB1-33 (G129) E1 1692 163 SF01
to J913-14 (D121) E2 2019 161
to J913-15 (D121) E3 1904 1697 SF4
to TB1-34 (G129) F1 1692 1692
F2 2019 SF02
F3 1904
to K1-86 (F149) G1 1691 1692 NS
G2 1691
G3 FL
H1 1793 157
to PX8-4 (G103) H2 1793 1900 136A
H3 1900 10A 136C
to CB35/2 (E149) J1 1900 158 158
to CB35/2 (E149) J2 1900 3101 143A
J3 158 143C
to TB2-16 (F132) K1 3101
to TB2-17 (G132) K2 3102 3102 NS 123
K3 SF3 112
115
S02
S03

SF02 132
SF04 125
146
RW 113
SF01 114

P116

143A 132 A1 143A 132
B1
C1
123 D1 123
136A E1 136A
146 F1 146
143C A2 143C
157 B2 157
125 C2 125
112 D2 112
136C E2 136C
113 F2 113
115 A3 115
B3
158 C3 158
D3
E3
114 F3 114

D159

TURN SIGNAL FLASHER (A1)

OUTPUT
INPUT
GROUND

PX20

1568 to PX14-6 (G113)
1567 to PX14-5 (G113)
3049 to TB2-55 (C132)

ROTARY WARNING LIGHTS CONNECTION

to K13-87 (B149) P65 J65 to J62-B (E88)
509 1 509

FAN SOLENOID (L1)

to K15-86 (A141) 1806
to PX1-1 (A92) 1806 PX34 1
to TB2-79 (C135) 3011 2

L

CHEMICAL ALARM CONNECTION

P99 J99

to J43-6 (H42) 1803 1 1803 to TL88 (B88)
to J43-7 (H42) 1804 2 1804 to TL98 (B88)

CAB RADIO CONNECTION

J78

to TB2-21 (G133) 3018 1
to K53-87A (H141) 1905 2
to TB2-23 (G133) 3019 3
4

J113

G123

CTIS PRESSURE TRANSDUCER

CTIS PNEUMATIC CONTROLLER

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 21 OF 34

SIZE B | ILL. NO. 5WD0117A | FP-41/FP-42 BLANK

REAR LIGHTS

CAB-DASH-RIGHT-POWER DISTRIBUTION PANEL

P51
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
490 21 460B 461B 23 489 23T 489T 484T 460B 461B 22C 1404 461T 460T 24
D43

E21
P53R
3094 489T 3094 1404 460T 23T 484T 461T 484T 484T
1 2 3 4 5 6 7 8 9 10
F200

E14
E20
P52R
21 489 3045 461B 22C 460B
1 2 3 4 5 6 7
B203
3095 TL92

E19
E18
TL93

E16
P85 489 DS65 LH SIDE MARKER LIGHT
3094 TL15
P86 489 DS66 LH REAR MARKER LIGHT
3094 TL16
P74 461B DS37
P78 21 DS72
P76 24 DS51 LH COMPOSITE LIGHT
P77 23 DS35
3094 TL18
3094 TL86
P87 490 DS545 BACKUP LIGHT
3094 TL17

E15
P54 489 DS69 LEFT REAR MARKER
3094 TL30
P56 489 DS70 MIDDLE REAR MARKER
3094 TL31
P58 489 DS71 RIGHT REAR MARKER
3094 TL32

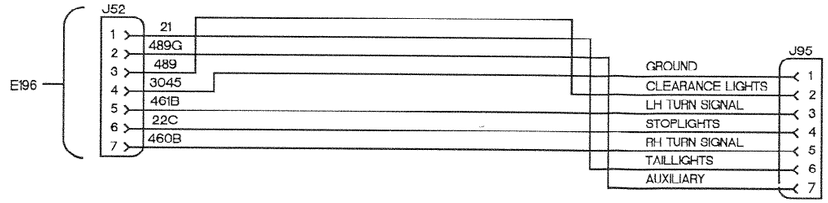
P61 460B DS38
P64 21 DS73 RH COMPOSITE LIGHT
P62 24 DS52
P63 23 DS36
3095 TL21
3095

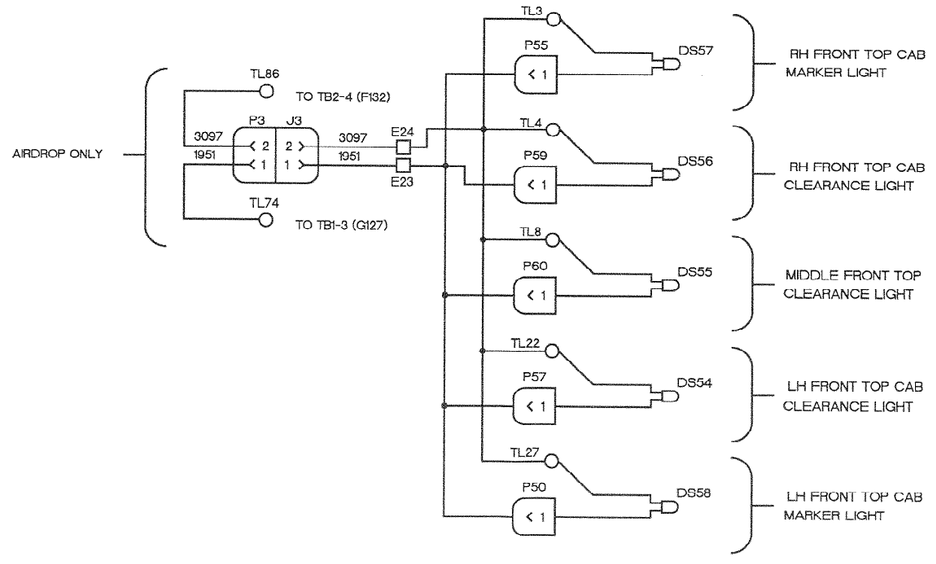
E17
P89 489 DS68 RH REAR MARKER LIGHT
3095 TL20
P88 489 DS67 RH SIDE MARKER LIGHT
3095 TL19

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 22 OF 34

SIZE B | ILL NO. 5WD0118A | FP-43/FP-44 BLANK

12 VDC INTERVEHICULAR CABLE





24 VDC INTERVEHICULAR CABLE

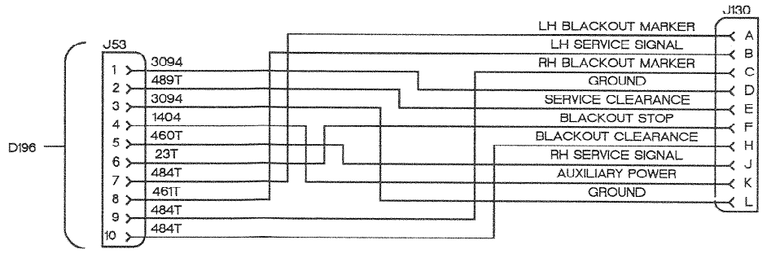


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 23 OF 34

SIZE B | ILL. NO. 5WD0119A | FP-45/FP-46 BLANK

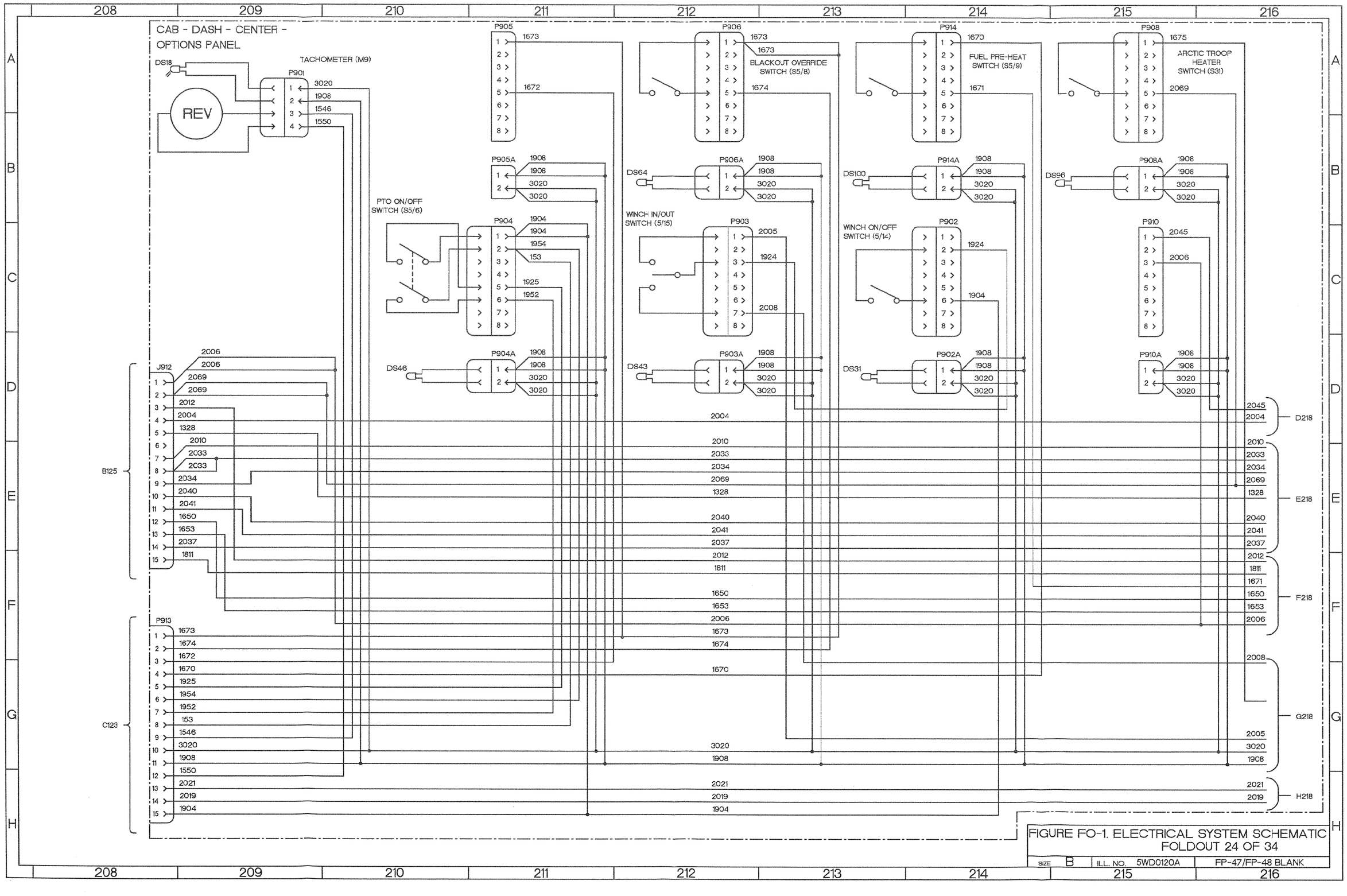


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 24 OF 34

SIZE	ILL. NO.	
B	5WD0120A	FP-47/FP-48 BLANK

CAB - DASH - CENTER - OPTIONS PANEL

SWING FIRE PUMP SWITCH (S5/25)

P909
2007
2006
2006

DS97

P909A
1908
1908
3020
3020

P911
2044
2006
2006
2043

P911A
1908
1908
3020
3020

J108 P108

1328
2040 — 4 — 2040 — H 271
2041 — 5 — 2041 — H 271
2043 — 6
2044 — 7
2045 — 8
2033 — 9
2010 — 12 — 2010 — H 271
2037 — 13
2033 — 14
2069 — 15
2006 — 16 — 2006 — H 271
2034 — 18
2004 — 19

D216 — 2045, 2004

E216 — 2010, 2033, 2034, 2069, 1328, 2040, 2041, 2037

F216 — 2012, 1811, 1671, 1650, 1653, 2006

G216 — 2008, 1675, 2005, 3020, 1908

H216 — 2021, 2019

J210 P210

1811 — 1
1671 — 2
1650 — 3
2019 — 4
2021 — 6 — MODELS W/O ARCTIC KIT C226
2008 — 8 — MODELS WITH ARCTIC KIT B235
1675 — 11
2012 — 12
1653 — 13
2005 — 14
2007 — 15

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 25 OF 34

SIZE B | ILL. NO. 5WD0121A | FP-49/FP-50 BLANK

PTO EQUIPPED

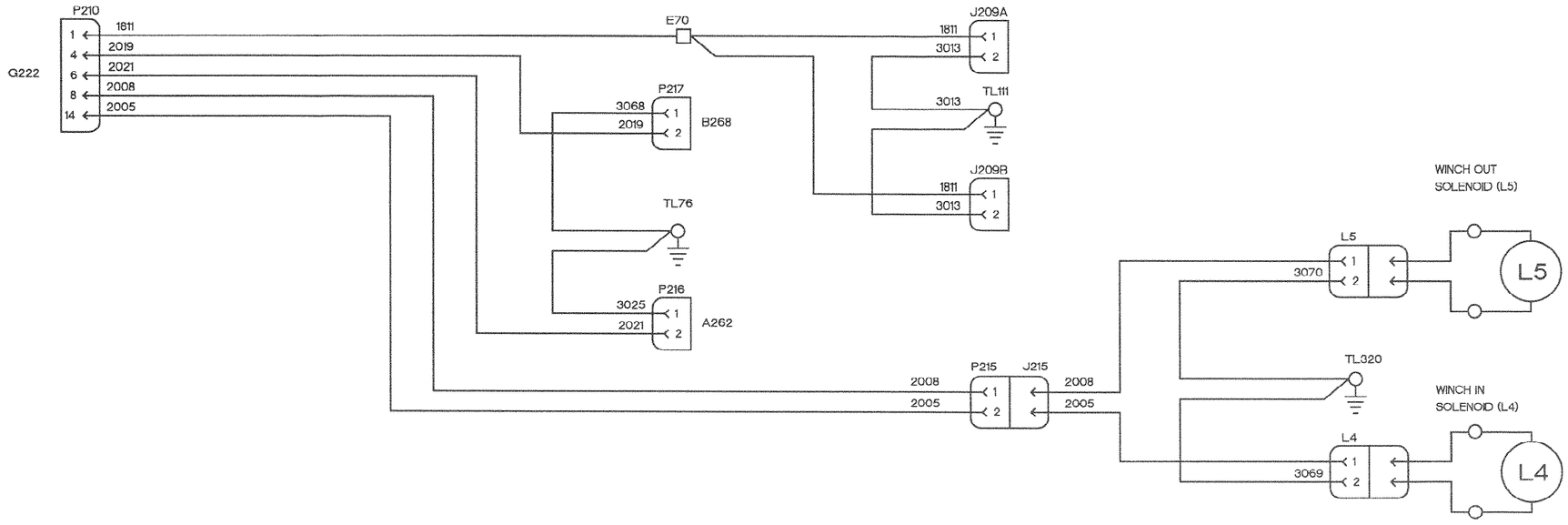


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 26 OF 34

SIZE B | ILL. NO. 5WD0122A | FP-51/FP-52 BLANK

ARCTIC KIT W/PTO EQUIPPED

P210
1 1811
2 1671
3 1650
4 2019
6 2021
8 2008
11 1675
12 2012
13 1653
14 2005
15 2007
16 2018
17 2011
G222

E70
J209A 1811 1 / 3013 2
P202 3082 1 / 1671 2
P217 3068 1 / 2019 2 E268
E74 3072 TL101
P216 3025 1 / 2021 2 D268
J209B 1811 1 / 3013 2

L5 3070 1 2
WINCH OUT SOLENOID (L5)
L5
TL320
P215 J215 2008 1 2 2008 / 2005 2 2005
WINCH IN SOLENOID (L4)
L4 3069 1 2
L4

P211 2014 1 1 / 3073 2 2
P211A 2014 1 1 / 3073 2 2
L17
ARCTIC KIT WATER PUMP

P212 2016 1 1 / 3072 2 2
E76
L16
ARCTIC KIT WATER SOLENOID

P410
1650 a
3075 b
3074 c
1675 d
2012 e
3071 f
2018 g
3076 K
2011 L
2016 N
1653 p
2014 Z
F262
TL102

E73 3074 TL103

P214 3081 1 / 2007 2 F246

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 27 OF 34

SIZE B | ILL. NO. 5WD0123A | FP-53/FP-54 BLANK

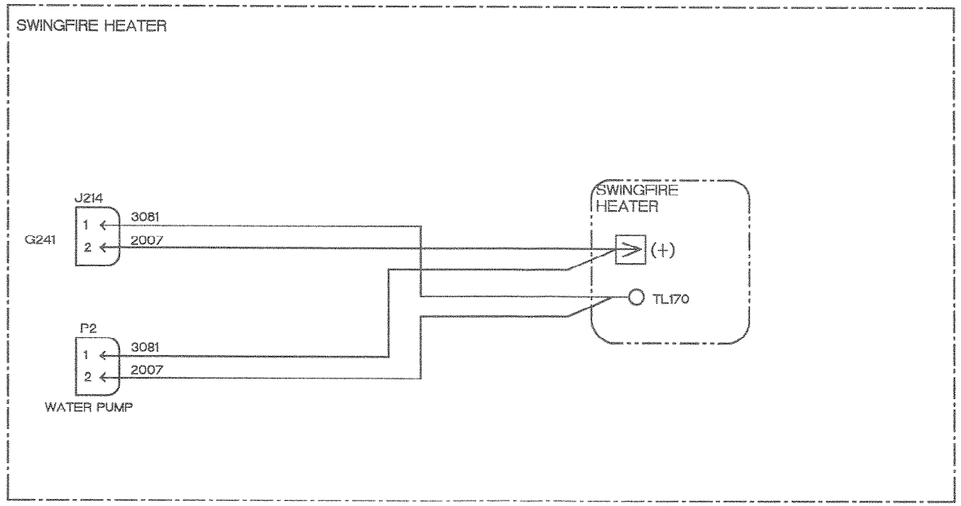


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 28 OF 34

SIZE	ILL. NO.	
B	5WD0124A	FP-55/FP-56 BLANK

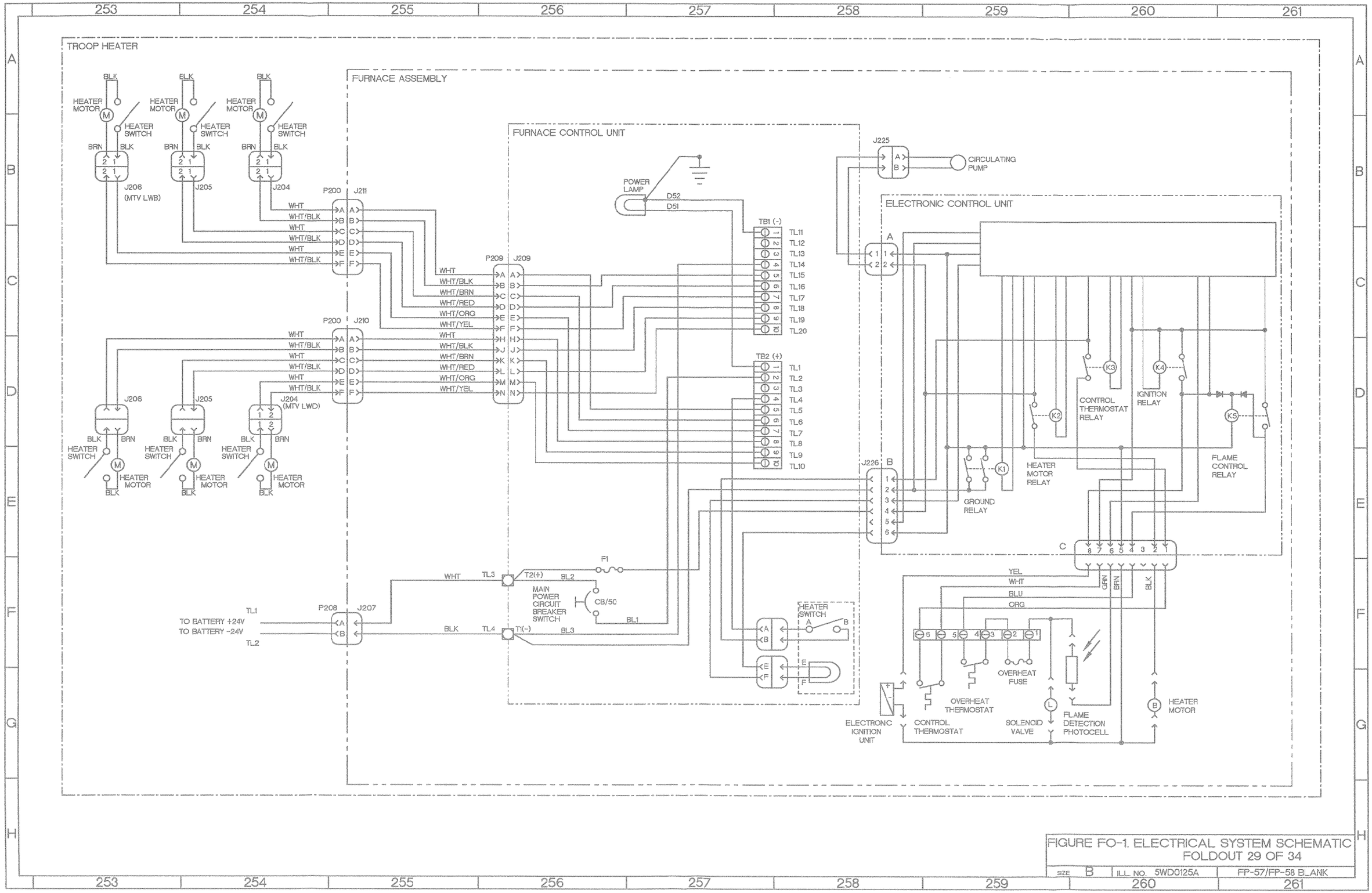


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 29 OF 34

SIZE	ILL. NO.	
B	5WD0125A	FP-57/FP-58 BLANK

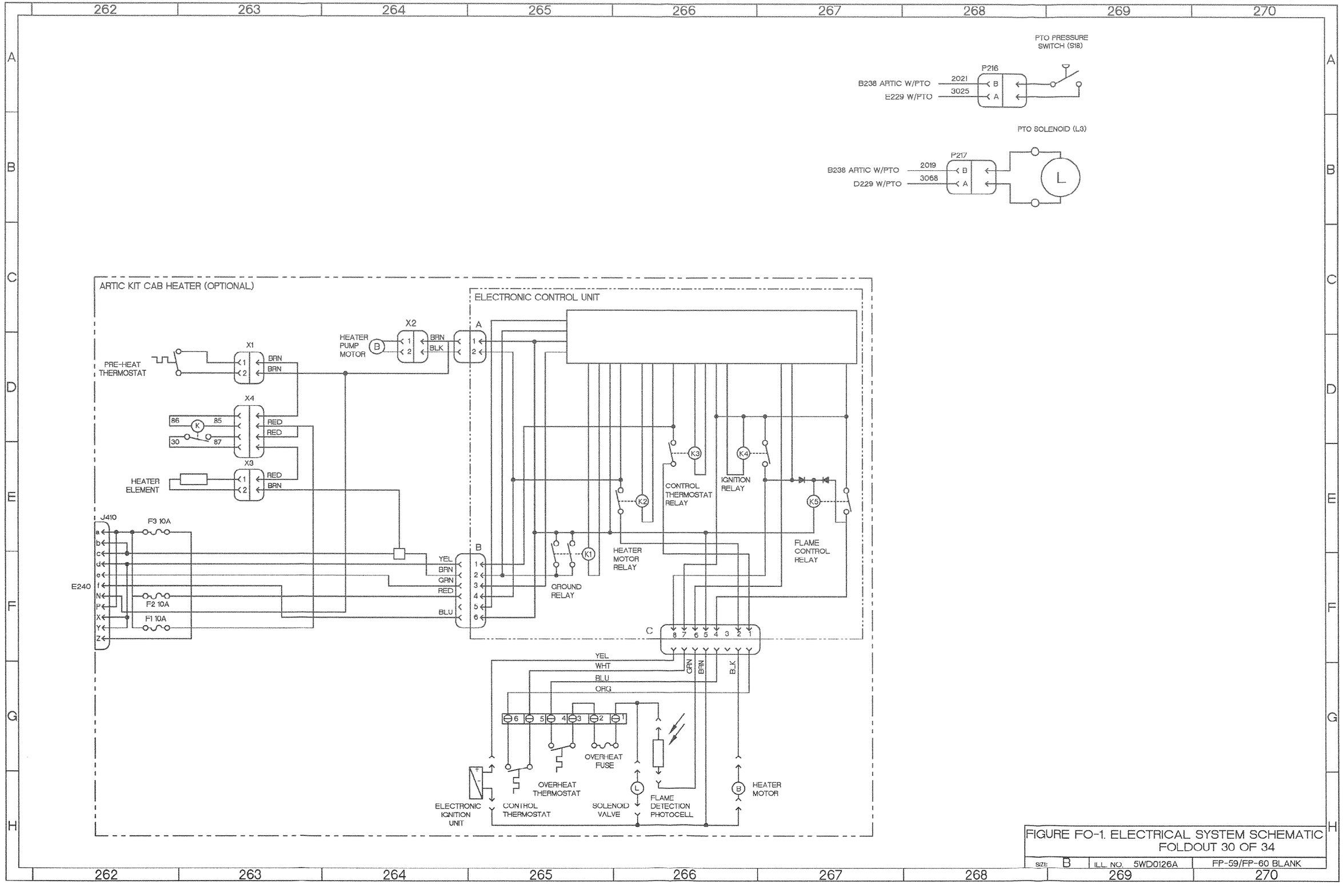


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 30 OF 34

SIZE	ILL. NO.	
B	5WD0126A	FP-59/FP-60 BLANK

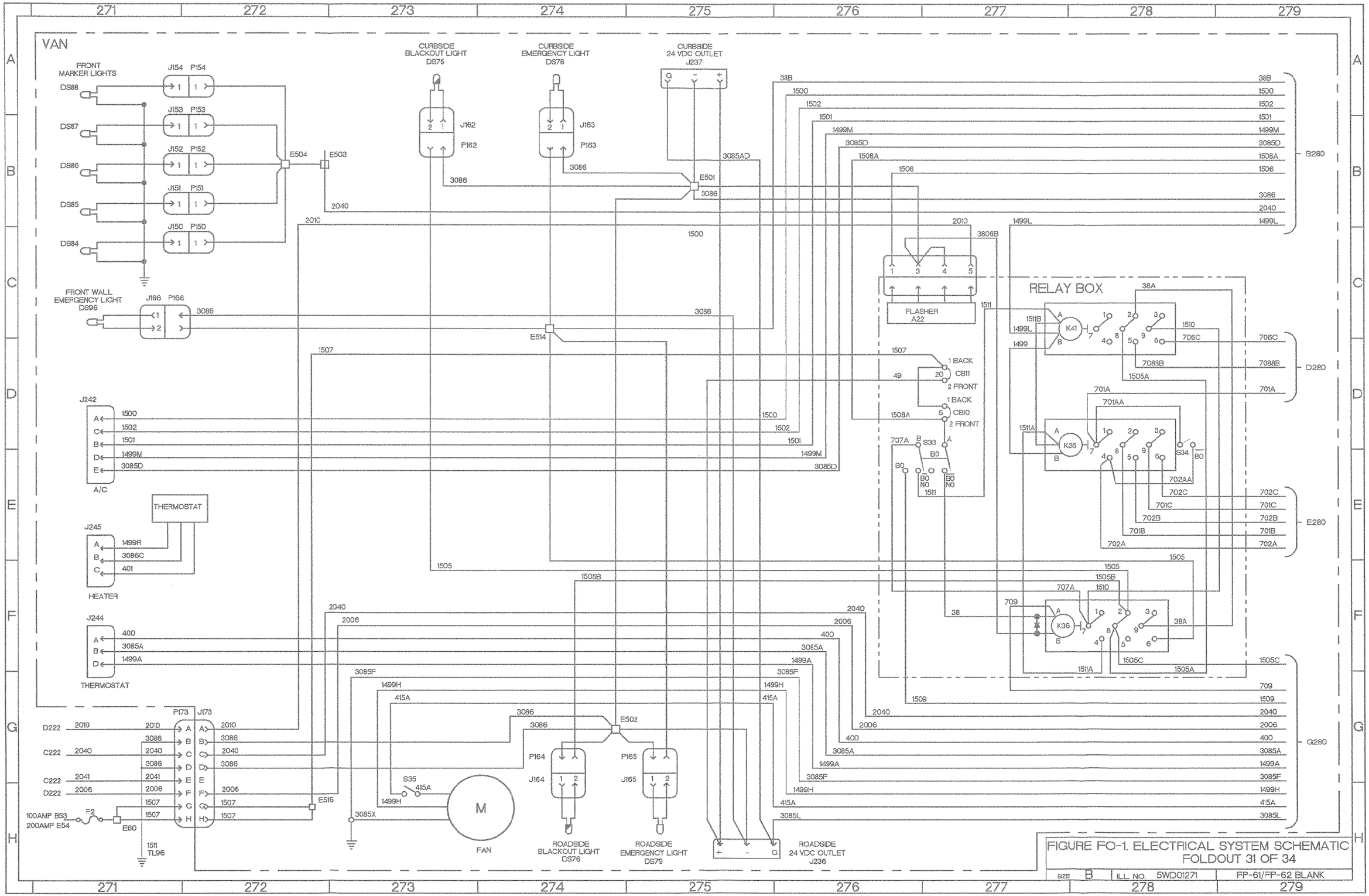


FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 31 OF 34

SIZE B | ILL. NO. 5WD01271 | FP-61/FP-62 BLANK

VAN

GURBSIDE 110VAC OUTLETS

J230 J231 J232

3085J 3085M 3085K

B279: 38B, 1500, 1502, 1501, 1499M, 3085D, 1508A, 1506, 3086, 2040, 1499L

PHONE 1: 424A, 425A

DS83 DS82

CURBSIDE WINDOW BLACKOUT SWITCHES: 1509, S11, S12, 1509B

P155 J155 DS89 / P156 J156 DS90 / P157 J157 DS91 / P158 J158 DS92 — REAR CURBSIDE MARKER LIGHTS; REAR ROADSIDE MARKER LIGHTS

E505 E506

110 VAC POWER DIST TB3

CB1 CB2 CB3 CB4 CB5 CB6 CB7 CB8 CB9

110 VAC PWR ENTRY PANEL J1 / J2

TB4

D279: 706C, 7088B, 701A

E279: 702C, 701C, 702B, 701B, 702A

Q279: 1505C, 709, 1509, 2040, 2006, 400, 3085A, 1499A, 3085F, 1499H, 415A, 3085L

J233 J234 J235

DS80 DS81

PHONE 2: 424A, 425A

P159 J159 DS93 / P160 J160 DS94 / P161 J161 DS95 — REAR CENTER MARKER LIGHTS

LIGHT SWITCH S32

ROADSIDE WINDOW BLACKOUT SWITCHES: S13, S14, S15, S17

CURBSIDE EMERGENCY LIGHT: P167 J167

ROADSIDE 110VAC OUTLETS

FIGURE FO-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 32 OF 34

SIZE B | ILL. NO. 5WD01281 | FP-63/FP-64 BLANK

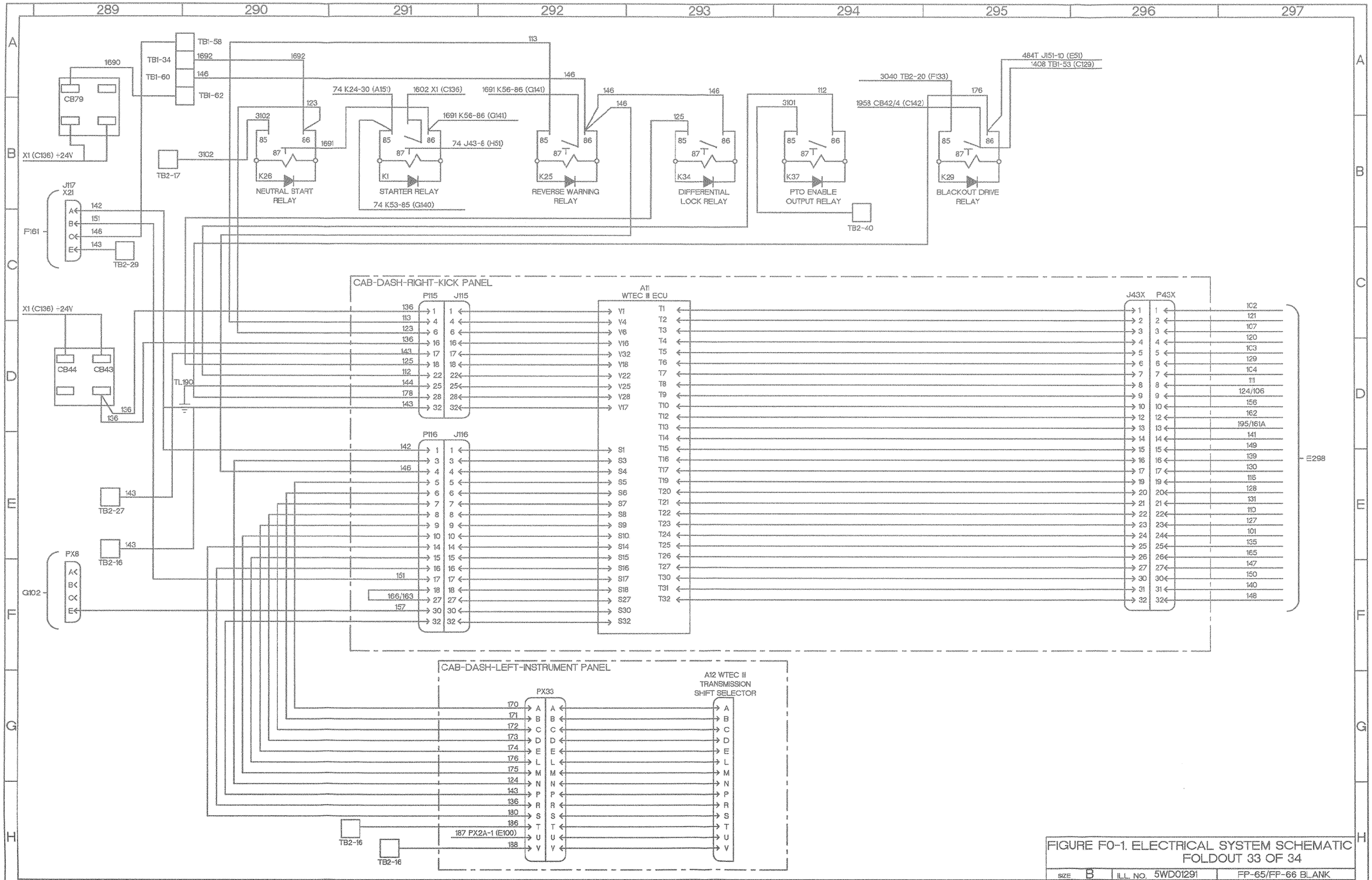


FIGURE F0-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 33 OF 34

SIZE B | ILL. NO. 5WD01291 | FP-65/FP-66 BLANK

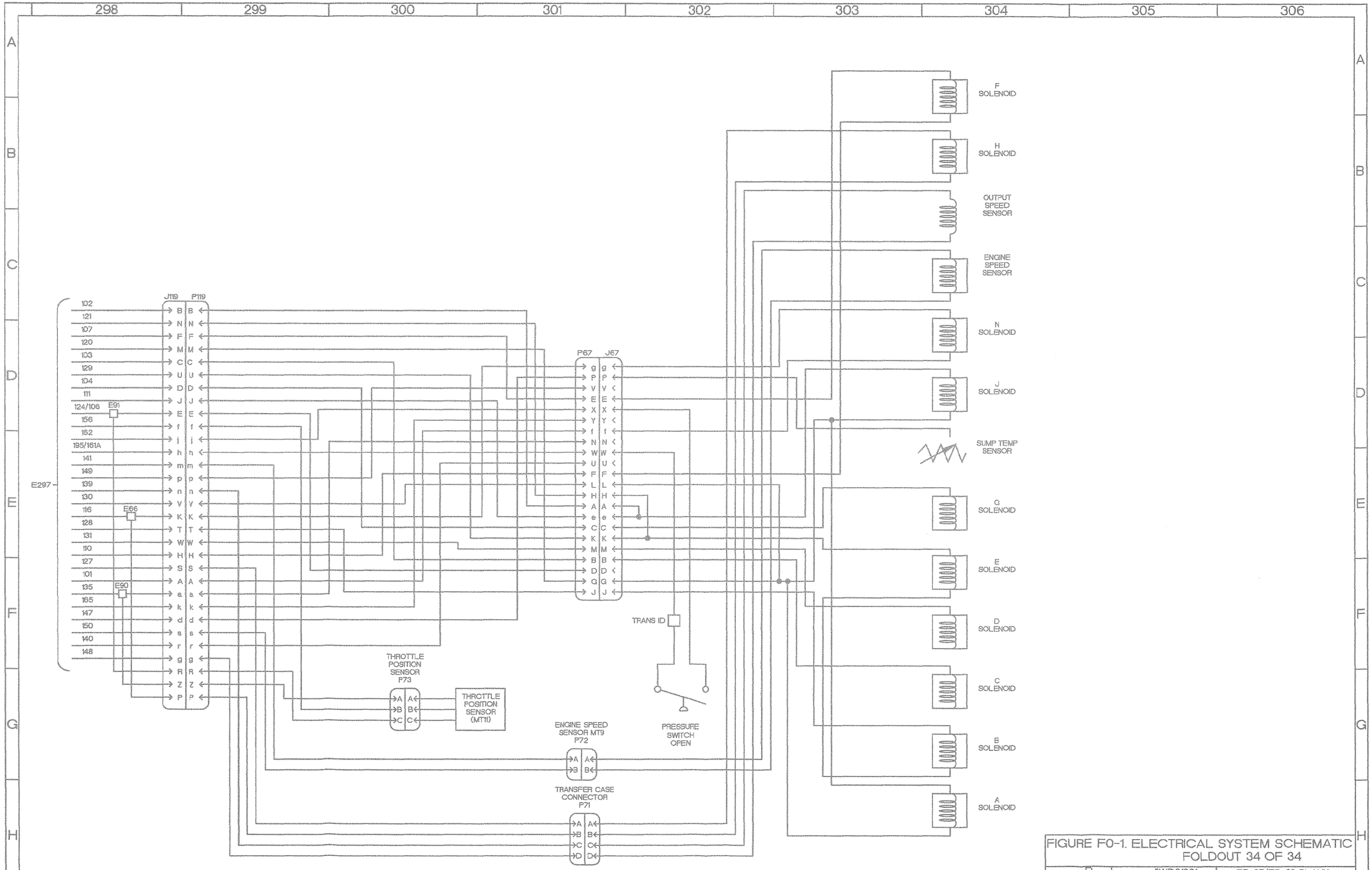


FIGURE F0-1. ELECTRICAL SYSTEM SCHEMATIC
FOLDOUT 34 OF 34

SIZE	ILL NO.	
B	5WD01301	FP-67/FP-68 BLANK

REAR AXLE BRAKE CHAMBER	FRONT AXLE BRAKE CHAMBER	COUPLER AIR BRAKE	AIR DRYER	AIR CLEANER INTAKE	AIR COMPRESSOR WITH GOVERNOR	AIR TANKS	DASH GAUGE
MANUAL VALVE	ONE WAY CHECK VALVE	FAN CLUTCH	MODULATED CONTROL VALVE	QUICK RELEASE VAVLE	TWO WAY CHECK VALVE	TIRE	PRESSURE SWITCH
PRESSURE RELIEF VALVE	FOOT CONTROL VALVE	PARK CONTROL VALVE (HAND OPERATED)	TRAILER AIR SUPPLY VALVE (HAND OPERATED)	LOAD SENSING VALVE (MECHANICALLY CONTROLLED)	DIRECTIONAL RELAY VALVE	CONTROL VALVE WITH TWO WAY CHECK VALVE	STOPLIGHT SWITCH
CONNECTION	SUPPLY AIR HOSE	NO CONNECTION	DELIVERY AIR HOSE	PARK/EMERGENCY AIR HOSE	AIR BRAKE PROTECTING VALVE	CTIS MANIFOLD VALVE	AIR BR AKE PRESSURE TRANSMITTER
EXH KNEELING VALVE	AIR/HYDRAULIC INVERSION VALVE	DELIVERY AIR HOSE NO CONNECTION	WHEEL VALVE	EXH BLEED VALVE			

FIGURE F0-2 PNEUMATIC SYSTEM SCHEMATIC
FOLDOUT 1 OF 4

SIZE B | ILL. NO. 5PD01AL1 | FP-1/FP-2 BLANK

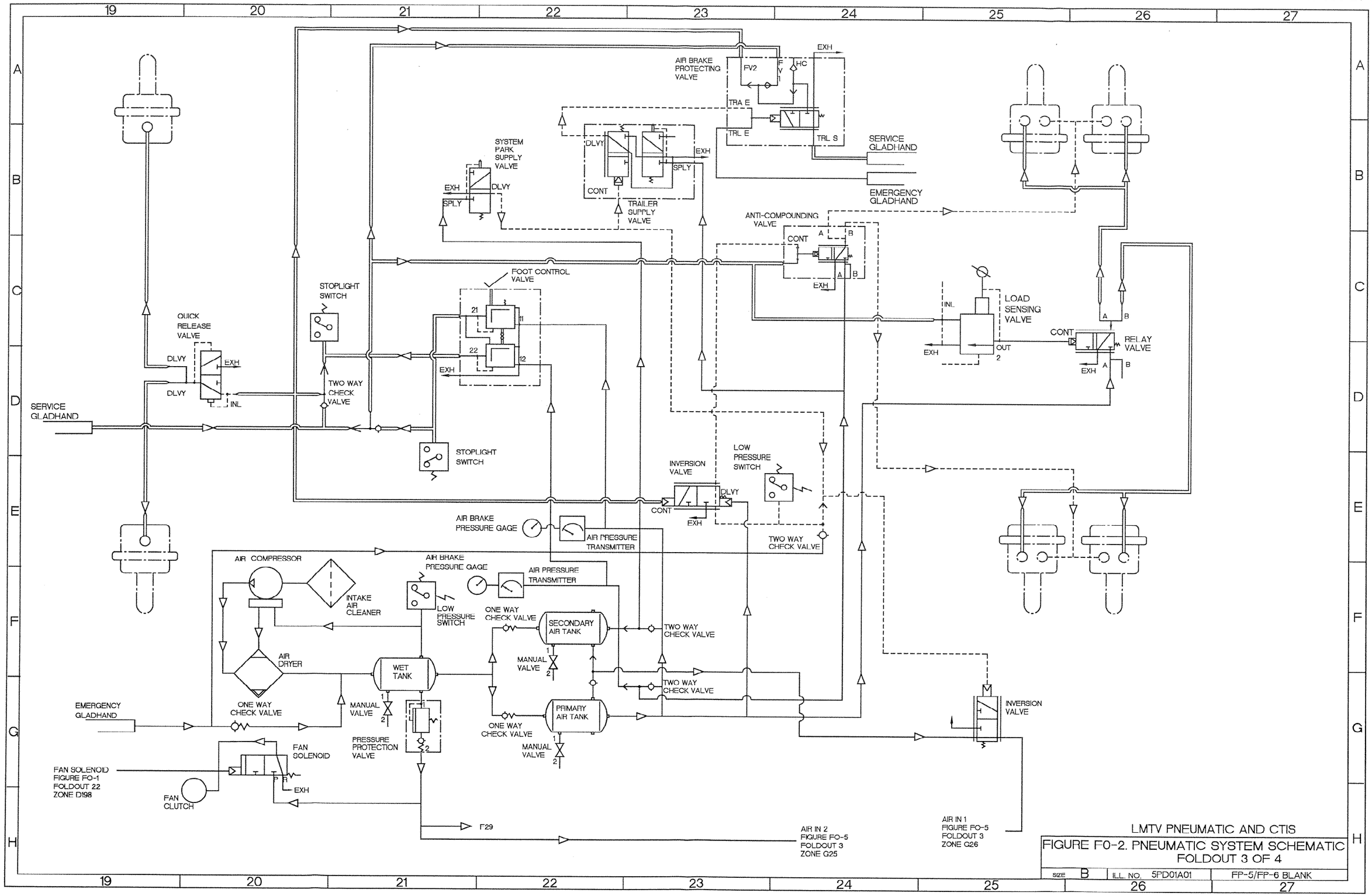
SH	ZONE	DESCRIPTION
3	E22	AIR BRAKE PRESSURE GAGE
3	F22	AIR BRAKE PRESSURE GAGE
3	A23	AIR BRAKE PROTECTING VALVE
3	F20	AIR COMPRESSOR
3	F20	AIR DRYER
3	E22	AIR PRESSURE TRANSMITTER
3	E22	AIR PRESSURE TRANSMITTER
3	C24	ANTI-COMPOUNDING VALVE
4	E31	CONTROL VALVE
4	E31	CTIS MANIFOLD VALVE
4	E32	DEFLATE VALVE
3	G19	EMERGENCY GLADHAND
3	B24	EMERGENCY GLADHAND
3	H20	FAN CLUTCH
3	G20	FAN SOLENOID
3	C22	FOOT CONTROL VALVE
3	F20	INTAKE AIR CLEANER
3	G25	INVERSION VALVE
3	E23	INVERSION VALVE
4	C28	KNEELING VALVE
4	E28	KNEELING VALVE
3	C25	LOAD SENSING VALVE
3	E23	LOW PRESSURE SWITCH
3	F21	LOW PRESSURE SWITCH
3	F22	MANUAL VALVE
3	G22	MANUAL VALVE
3	G21	MANUAL VALVE
3	F22	ONE WAY CHECK VALVE
3	G22	ONE WAY CHECK VALVE
3	G20	ONE WAY CHECK VALVE
3	G21	PRESSURE PROTECTION VALVE
3	G22	PRIMARY AIR TANK
3	C20	QUICK RELEASE VALVE
4	C34	QUICK RELEASE VALVE
4	D30	QUICK RELEASE VALVE
3	D26	RELAY VALVE
3	F22	SECONDARY AIR TANK

SH	ZONE	DESCRIPTION
3	D19	SERVICE GLADHAND
3	B24	SERVICE GLADHAND
3	C20	STOPLIGHT SWITCH
3	E21	STOPLIGHT SWITCH
4	F32	SUPPLY VALVE
3	B21	SYSTEM PARK SUPPLY VALVE
3	B22	TRAILER SUPPLY VALVE
3	D21	TWO WAY CHECK VALVE
3	E24	TWO WAY CHECK VALVE
3	F23	TWO WAY CHECK VALVE
3	G23	TWO WAY CHECK VALVE
3	F21	WET TANK
4	C29	WHEEL VALVE
4	C33	WHEEL VALVE
4	E29	WHEEL VALVE
4	E33	WHEEL VALVE

LMTV PNEUMATIC AND CTIS

FIGURE F0-2. PNEUMATIC SYSTEM SCHEMATIC FOLDOUT 2 OF 4

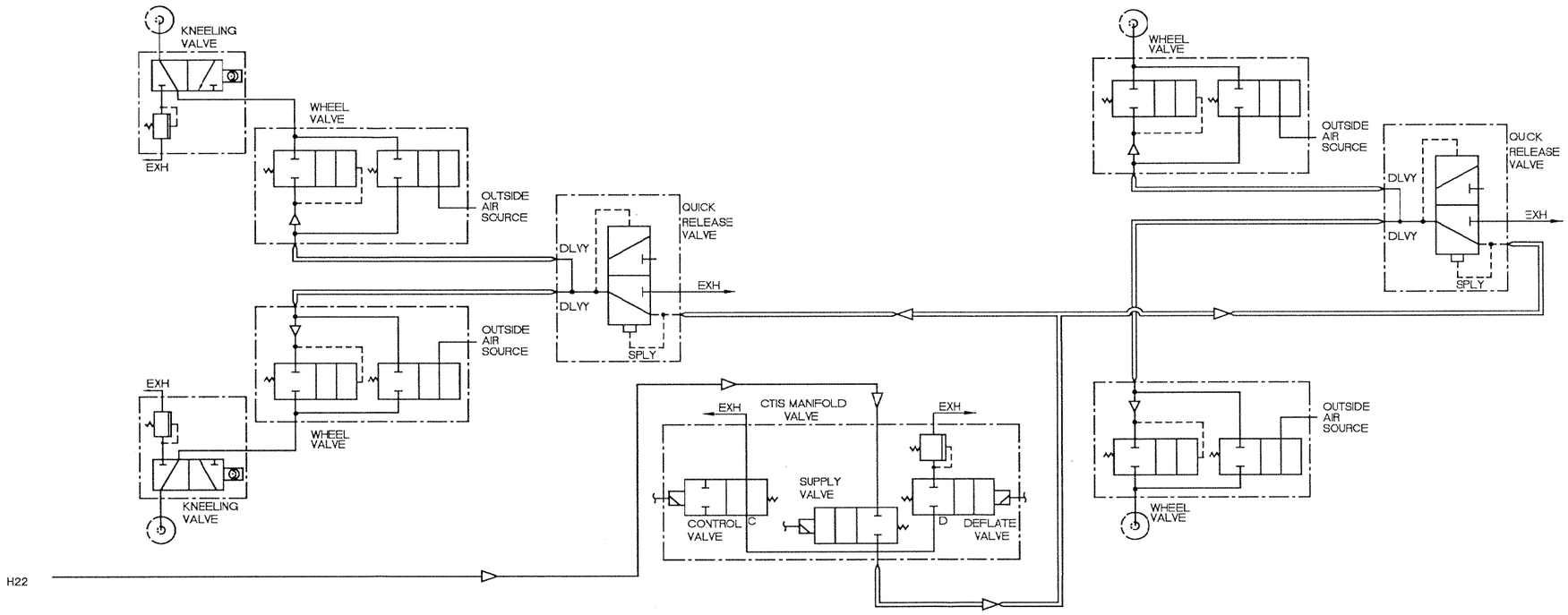
SIZE	ILL. NO.	
B	5PD01AL2	FP-3/FP-4 BLANK



LMTV PNEUMATIC AND CTIS

FIGURE FO-2. PNEUMATIC SYSTEM SCHEMATIC FOLDOUT 3 OF 4

SIZE	ILL. NO.	
B	5PD01A01	FP-5/FP-6 BLANK



LMTV PNEUMATIC AND CTIS

FIGURE F0-2. PNEUMATIC SYSTEM SCHEMATIC FOLDOUT 4 OF 4

SIZE B | ILL. NO. 5PD01A02 | FP-7/FP-8 BLANK

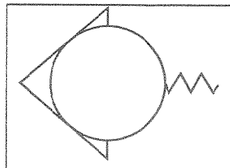
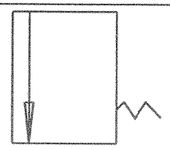
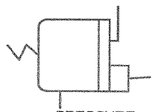
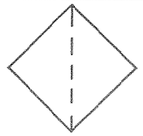
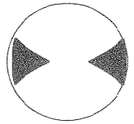
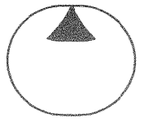
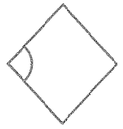
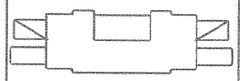
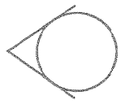
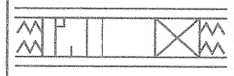
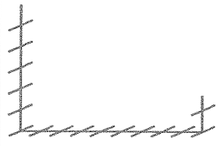
 CHECK VALVE	 BYPASS VALVE	 PRESSURE CONTROL VALVE	 AIR OR OIL FILTER	 MOTOR	 PUMP	 PTO
 AIR LINE LUBRICATOR	 CYLINDER	 CHECK VALVE	 FLOW CONTROL VALVE	 SUCTION LINE	 RESERVOIR	

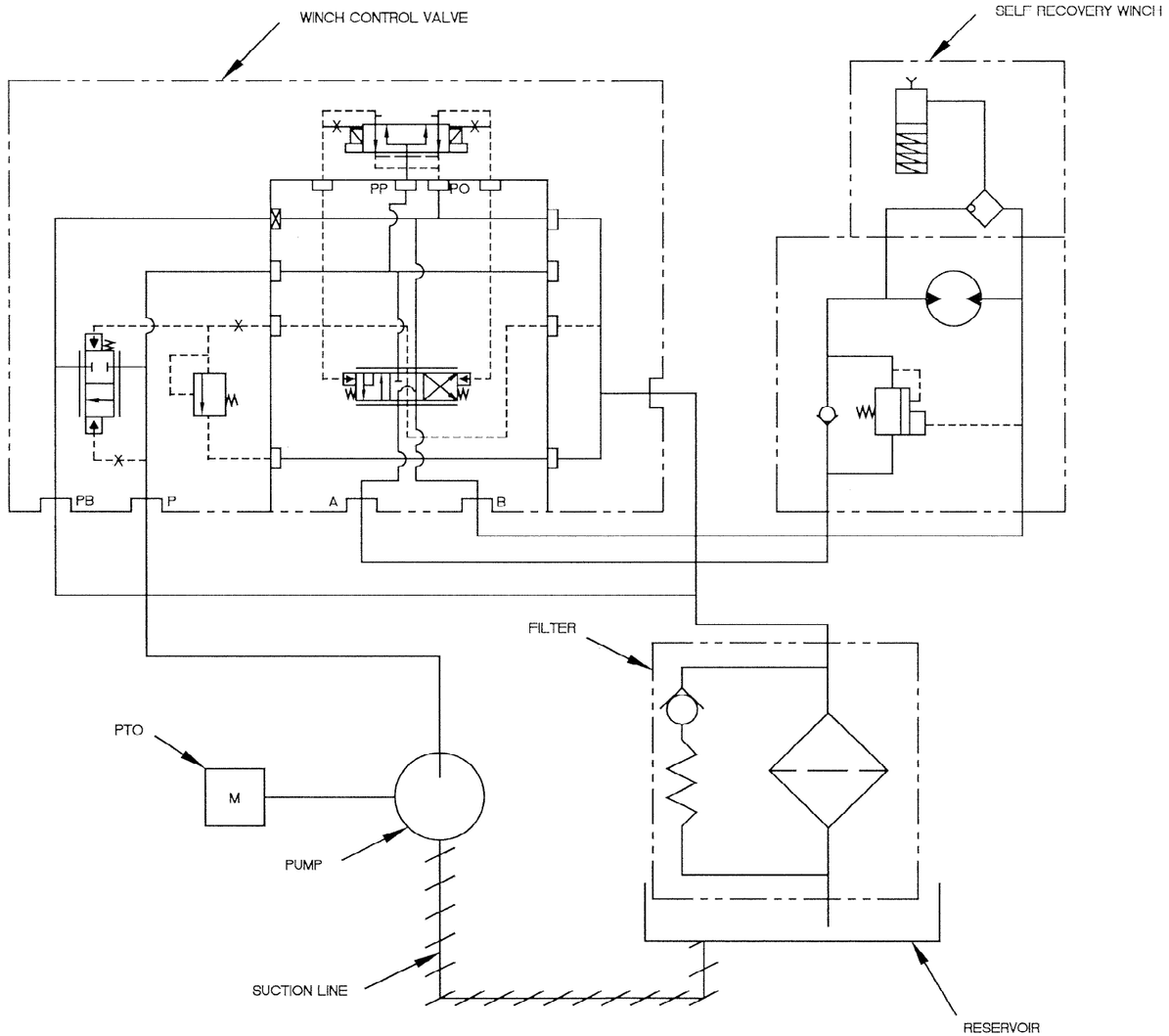
FIGURE FO-3 HYDRAULIC SYSTEM SCHEMATIC
FOLDOUT 1 OF 3

SIZE B | IL... NO. 5HD01AL1 | FP-1/FP-2 BLANK

SHEET	ZONE	DESCRIPTION
3	B21	WINCH CONTROL VALVE
3	B24	SELF RECOVERY WINCH
3	F21	PTO
3	F22	PUMP
3	E23	FILTER
3	G23	RESERVOIR
3	G22	SUCTION LINE

FIGURE FO-3 HYDRAULIC SYSTEM SCHEMATIC
FOLDOUT 2 OF 3

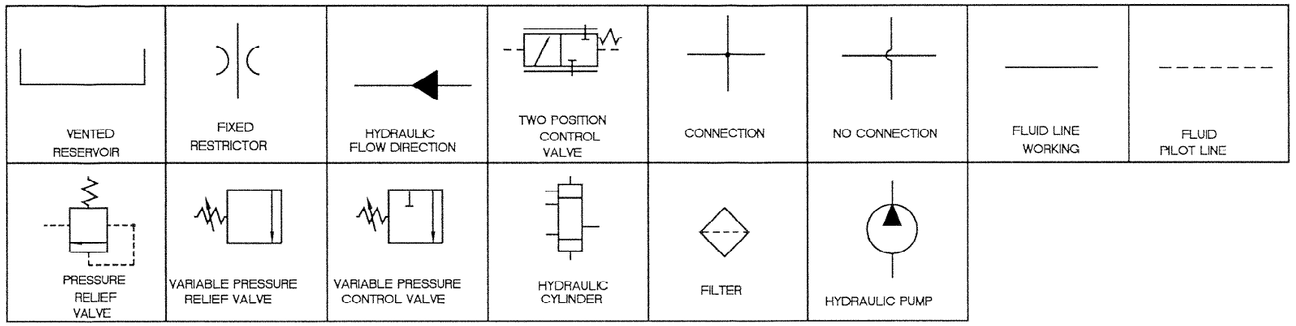
SIZE B | ILL. NO. 5HD01-L2 | FP-3/FP-4 BLANK



LMTV TRUCK W/WINCH

FIGURE F0-3. HYDRAULIC SYSTEM SCHEMATIC
FOLDOUT 3 OF 3

SIZE	ILL. NO.	
B	5HD01-01	FP-5/FP-6 BLANK



SH	ZONE	DESCRIPTION
2	D11	FILTER
2	D14	FIXED RESTRICTOR
2	E17	HYDRAULIC CYLINDER
2	E13	HYDRAULIC PUMP
2	C13	PRESSURE RELIEF VALVE
2	D13	TWO POSITION CONTROL VALVE
2	E16	VARIABLE PRESSURE CONTROL VALVE
2	E16	VARIABLE PRESSURE RELIEF VALVE
2	C11	VENTED RESERVOIR

FIGURE FO-4 HYDRAULIC STEERING SYSTEM

FOLDOUT 1 OF 2

SIZE B | ILL. NO. YSD01AL1 | FP-1/FP-2 BLANK

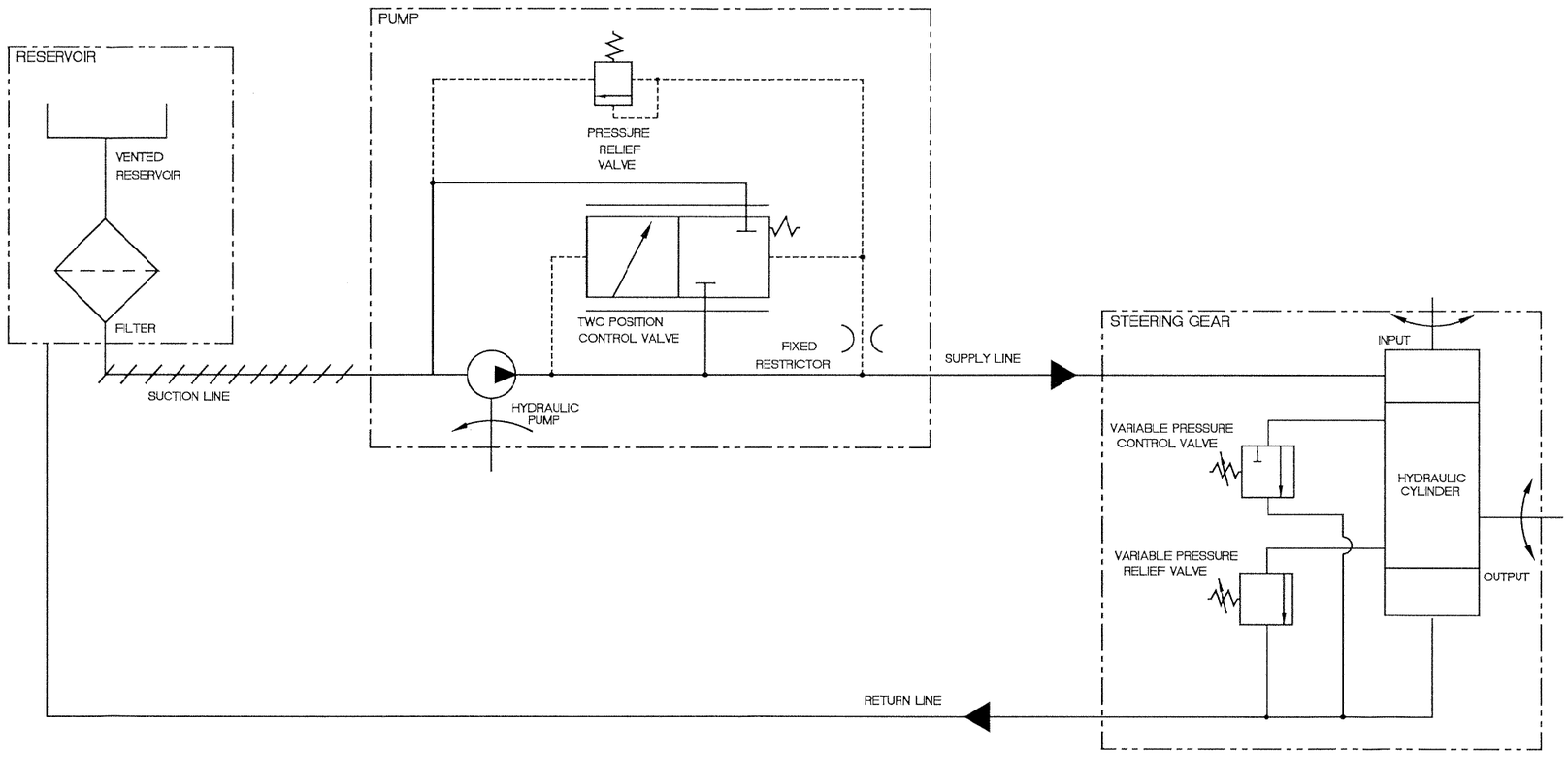


FIGURE FO-4 HYDRAULIC STEERING SYSTEM

FOLDOUT 2 OF 2

SIZE	B	ILL. NO. YSD01A01	FP-3/FP-4 BLANK

VENTED RESERVOIR	ABOVE FLUID LEVEL RESERVOIR	HYDRAULIC FLOW DIRECTION	PNEUMATIC FLOW DIRECTION	CONNECTION	NO CONNECTION	FLUID LINE WORKING	FLUID PILOT LINE
FIXED RESTRICTOR	CHECK VALVE	VARIABLE CONTROL CHECK VALVE	CHECK PILOT	PRESSURE RELIEF VALVE	FILTER	HAND PUMP	DETENT
TWO POSITION CAB SUSPENSION VALVE	MUFFLER	HYDRAULIC CYLINDER	CAB AIR SUSPENSION W/DAMPER	REAR CAB LATCH	TWO POSITION AIR PUMP VALVE	PRESSURE INTENSIFIER	HEIGHT CONTROL VALVE
TWO POSITION CAB TILT VALVE	TWO POSITION SUSPENSION VALVE	TWO POSITION SPARE TIRE VALVE	THREE POSITION SELECTION VALVE				

FIGURE F0-5 AIR TRANSPORTABILITY
HYDRAULIC/PNEUMATIC SYSTEM SCHEMATIC

FOLDOUT 1 OF 3

SIZE B | ILL. NO. YAD01AL1 | FP-1/FP-2 BLANK

SH	ZONE	DESCRIPTION
3	A25	CAB AIR SUSPENSION W/DAMPER
3	F21	CHECK PILOT
3	A22	CHECK VALVE
3	A23	CHECK VALVE
3	B22	CHECK VALVE
3	B23	CHECK VALVE
3	B25	CHECK VALVE
3	C20	CHECK VALVE
3	C21	CHECK VALVE
3	E19	CHECK VALVE
3	E24	CHECK VALVE
3	E25	CHECK VALVE
3	F19	CHECK VALVE
3	F21	CHECK VALVE
3	G21	CHECK VALVE
3	A22	FILTER
3	B22	FILTER
3	A24	FILTER
3	B24	FILTER
3	D19	FILTER
3	D20	FILTER
3	D21	FILTER
3	E19	FILTER
3	G19	FILTER
3	G21	FILTER
3	A22	FIXED RESTRICTOR
3	B22	FIXED RESTRICTOR
3	A23	FIXED RESTRICTOR
3	B23	FIXED RESTRICTOR
3	F19	HAND PUMP
3	B25	HEIGHT CONTROL VALVE
3	B22	HYDRAULIC CYLINDER
3	B23	HYDRAULIC CYLINDER
3	C21	HYDRAULIC CYLINDER
3	F20	MUFFLER
3	F21	PRESSURE INTENSIFIER
3	F19	PRESSURE RELIEF VALVE
3	A24	REAR CAB LATCH
3	E21	THREE POSITION SELECTION VALVE
3	D26	TWO POSITION AIR PUMP VALVE
3	D25	TWO POSITION CAB SUSPENSION VALVE
3	C24	TWO POSITION CAB TILT VALVE
3	C23	TWO POSITION SPARE TIRE VALVE
3	D21	TWO POSITION SUSPENSION VALVE
3	G22	VARIABLE CONTROL CHECK VALVE
3	G22	VENTED RESERVOIR

FIGURE F0-5 AIR TRANSPORTABILITY
HYDRAULIC/PNEUMATIC SYSTEM SCHEMATIC
FOLDOUT 2 OF 3

SIZE B | ILL. NO. YAD01AL2 | FP-3/FP-4 BLANK

COMPRESS SUSPENSION CYLINDERS
PASSENGER SIDE
DRIVER SIDE
HYDRAULIC CYLINDER
HYDRAULIC CYLINDER
SPARE TIRE CARRIER CYLINDER
CHECK VALVE
FIXED RESTRICTOR
FILTER
CHECK VALVE
FIXED RESTRICTOR
FILTER
HYDRAULIC CYLINDER
CAB TILT CYLINDER
CHECK VALVE
FIXED RESTRICTOR
FILTER
CHECK VALVE
FIXED RESTRICTOR
FILTER
HYDRAULIC CYLINDER
REAR CAB LATCH
CAB AIR SUSPENSION W/DAMPER
PASSENGER SIDE
DRIVER SIDE
5 PSI CHECK VALVE
HEIGHT CONTROL VALVE
RETRACT
EXTEND
LOWER
RAISE
PLUG
CHECK VALVE
FILTER
CHECK VALVE
PILOT
TWO POSITION SUSPENSION VALVE
FILTER
TWO POSITION SPARE TIRE VALVE
TWO POSITION CAB TILT VALVE
BAG SUSPENSION
TWO POSITION AIR PUMP VALVE
TWO POSITION CAB SUSPENSION VALVE
HAND DRIVEN PUMP
FILTER
T2
FILTER
P2
THREE POSITION SELECTION VALVE
1 PSI
5 PSI
CHECK VALVE
CHECK VALVE
5 PSI
CHECK VALVE
CHECK VALVE
PNEUMATIC/HYDRAULIC MANIFOLD
T1
AIR IN 2
AIR IN 1
PUMP CYLINDER
PRESSURE RELIEF VALVE
HAND PUMP
CHECK VALVE
FILTER
PLUG
AIR/HYDRAULIC POWER UNIT
MUFFLER
CHECK VALVE
CHECK PILOT
PRESSURE INTENSIFIER
CHECK VALVE
VARIABLE CONTROL CHECK VALVE
FILTER
VENT
AIR IN 2 FIGURE FO-2 FOLDOUT 3 ZONE H24
AIR IN 1 FIGURE FO-2 FOLDOUT 3 ZONE H25

FIGURE FO-5 AIR TRANSPORTABILITY
HYDRAULIC/PNEUMATIC SYSTEM SCHEMATIC
FOLDOUT 3 OF 3

SIZE	ILL. NO.	
B	YAD01A01	FP-5/FP-6 BLANK

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DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army
04996

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15-33	15-7	4	
19-6	19-2		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Item 10. Change illustration. Reason: Text calls out 90-degree fitting, art shows straight fitting. Text is correct.

Step (4) of removal says to disconnect four hydraulic hoses from manifold. The correct number of hydraulic hoses is five. Correct the text to reflect the actual quantity of hydraulic hoses. The supporting illustration is correct.

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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

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

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

CUBIC MEASURE
1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

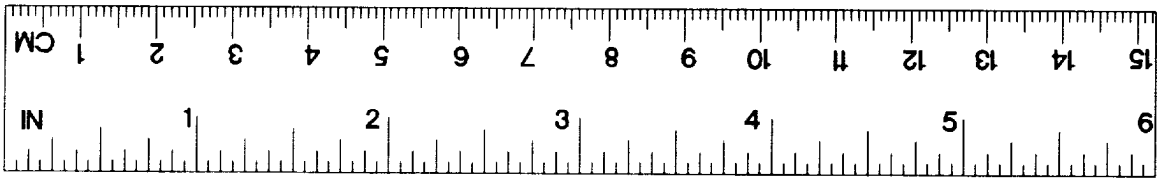
LIQUID MEASURE
1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

TEMPERATURE
5/9 (°F - 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° + 32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Inches	Millimeters	0.254
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
Pounds (force)	Newtons	4.448
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds/Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Hour	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Millimeters	Inches	3.937
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Newtons	Pounds (force)	0.2248
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Km per Liter	Miles per Gallon	2.354
Km per Hour	Miles per Hour	0.621



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