TB 9-2320-364-13&P-1

TECHNICAL BULLETIN

OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL, INSTALLATION INSTRUCTIONS, AND REPAIR PARTS AND SPECIAL TOOLS LISTS

FOR

AIR CONDITIONING SYSTEM

NSN 4120-01-526-9158
P/N 3528349

FOR

TRUCK, TRACTOR
M1074/M1075 PALLETIZED LOAD SYSTEM (PLS)



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

HEADQUARTERS, DEPARTMENT OF THE ARMY

JANUARY 2006

This list summarizes critical warnings in this technical bulletin. They are repeated here to let you know how important they are. Study these warnings carefully. They can save your life and the lives of personnel you work with. If there is any doubt about handling tools, materials, equipment, and procedures, see TB 43-0216, Safety and Hazard Warnings for Operation and Maintenance of TACOM Equipment.

FOR INFORMATION ON FIRST AID, REFER TO FM 4-25.11.

WARNING

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

WARNING

Ensure engine is cool prior to checking AC compressor belts. Failure to comply may result in injury to personnel.

WARNING

Dry cleaning solvent is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and DO NOT breathe vapors. Keep away from heat or flame. Never smoke when using dry cleaning solvent; the flashpoint for Type II is 140° (60°C), and for Type III it is 200°F (93°C). Failure to follow this warning may result in death or injury to personnel.

WARNING

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 them with water and get immediate medical attention.

WARNING

Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.

WARNING

Refrigerant R-134a air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134a may form, resulting in fire or explosion, which could cause personnel injury or death.

WARNING

Ensure engine is cool before performing maintenance. Failure to comply may result in severe burns.

WARNING

Do not work in an area where refrigerant may contact an open flame or any burning material, such as a cigarette. When it contacts extreme heat, refrigerant breaks down into poisonous phosgene gas. Which if breathed, causes severe respiratory irritation. Do not breathe fumes from an open flame leak detector.

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

WARNING

Circuit breakers CB5, CB6, CB12, CB20, CB22, CB23, and relays R3, R13 - R19, R26, R28, R32, R33 are always electrically live and can cause severe injury to personnel. Care must be exercised when working under the ECB cover.

WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.

WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.

WARNING

AC condenser and AC condenser output hose can get extremely hot. Use caution when checking temperature of AC condenser output hose. Place hand near hose to check for heat, but do not touch hose. Failure to comply may cause serious burns to personnel.

WARNING

Use extreme care when moving condenser to access dryer. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Use extreme care when moving condenser to access solenoid. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Condenser mounting bracket is heavy. Do not remove condenser mounting bracket without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Condenser mounting bracket is heavy. Do not install condenser mounting bracket without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Do not remove heater hoses when engine is hot; steam and hot coolant can escape and burn personnel.

WARNING

Use clean wipe rags or like material to remove heater hoses. Avoid using gloves. If hot water soaks through gloves, personnel could be burned.

WARNING

Coolant is slippery and can cause falls and injury. Clean up spilled coolant immediately.

WARNING

Do not remove heater/evaporator without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Do not install heater/evaporator without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Use extreme care when moving condenser to access AC hose. Failure to comply may result in injury to personnel and/or damage to equipment.

WARNING

Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited by hot engine. Failure to comply may result in injury or death to personnel.

INSERT LATEST CHANGED PAGES/WORK PACKAGES, DESTROY SUPERSEDED DATA.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE

The portion of text or illustration effected by the update is indicated by a vertical line in the outer margin of the page.

Dates of issue for original and changed pages/work packages are:

Original . . . . . 0 . . . . . 14 January 2006

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 632 AND TOTAL NUMBER OF WORK PACKAGES IN THIS PUBLICATION IS 61 CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.	Page/WP No.	*Change No.
Cover	0		
a thru c	0		
d blank	0		
i thru iv	0		
WP 0001 thru WP 0061	0		
INDEX-1 thru INDEX-3	0		
INDEX-4 blank	0		

*Zero in this column indicates an original page or work package.

TECHNICAL BULLETIN
No. 9-2320-364-13&P-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *14 January 2006*

TECHNICAL BULLETIN

OPERATOR'S, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL, INSTALLATION INSTRUCTIONS, AND REPAIR PARTS AND SPECIAL TOOLS LISTS

FOR

AIR CONDITIONING SYSTEM

NSN 4120-01-526-9158
P/N 3528349

FOR

TRUCK, TRACTOR
M1074/M1075 PALLETIZED LOAD SYSTEM (PLS)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS
You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is https://aeps.ria.army.mil. The DA Form 2028 is located under the Public Applications section in the AEPS Public Home Page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or E-mail your letter or DA Form 2028 direct to: AMSTA-LC-LMIT/ TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The email address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

TABLE OF CONTENTS

	Work Package		Page
CHAPTER 1	**GENERAL INFORMATION AND DATA**		
	0001	General Information	0001-1
CHAPTER 2	**OPERATOR'S INSTRUCTIONS**		
	0002	Operator's Controls and Indicators	0002-1
	0003	Operator's Preventive Maintenance Checks and Services (PMCS)	0003-1
	0004	System Operation	0004-1

TABLE OF CONTENTS (Continued)

Work Package			Page
CHAPTER 3	**OPERATOR'S TROUBLESHOOTING**		
	0005	Operator's Troubleshooting Introduction	0005-1
	0006	AC Heater/Evaporator Blower Does Not Operate	0006-1
	0007	AC Heater/Evaporator Blower Operates But No Cold Air From AC Ducts During AC Operations	0007-1
CHAPTER 4	**FIELD LEVEL PMCS**		
	0008	Field Level Preventive Maintenance Checks and Services (PMCS)	0008-1
CHAPTER 5	**FIELD LEVEL TROUBLESHOOTING**		
	0009	Field Level Troubleshooting Introduction	0009-1
	0010	AC Heater/Evaporator Blower Does Not Operate	0010-1
	0011	AC Heater/Evaporator Blower Does Not Operate In All Speeds (Low, Medium, and High)	0011-1
	0012	AC Heater/Evaporator Blower Operates But No Cold Air From Ducts During AC Operations	0012-1
	0013	AC Compressor Excessively Noisy	0013-1
	0014	AC Compressor Does Not Shut Off or Cycles Constantly	0014-1
	0015	AC Does Not Cool or Cools Inadequately	0015-1
	0016	AC Heater Control Panel Lights Do Not Operate	0016-1
CHAPTER 6	**FIELD LEVEL MAINTENANCE**		
	0017	Field Level Maintenance Introduction	0017-1
	0018	AC 20 AMP Circuit Breaker Replacement	0018-1
	0019	AC Cable Replacement	0019-1
	0020	AC Compressor Drive Belts Replacement/Adjustment	0020-1
	0021	AC Compressor Mounting Bracket Replacement	0021-1
	0022	AC Compressor Replacement	0022-1
	0023	AC Condenser Core Replacement	0023-1
	0024	AC Condenser Dryer Replacement	0024-1
	0025	AC Condenser Fan Motor Replacement	0025-1
	0026	AC Condenser Fan Motor Solenoid Replacement	0026-1
	0027	AC Condenser Mounting Bracket Replacement	0027-1
	0028	AC Condenser Replacement	0028-1

TABLE OF CONTENTS (Continued)

Work Package		Page
0029	AC Defrost Cable Replacement	0029-1
0030	AC Evaporator Core and Expansion Valve Replacement	0030-1
0031	AC Fan Control Switch Replacement	0031-1
0032	AC Heater Cable Replacement	0032-1
0033	AC Heater Core Replacement	0033-1
0034	AC Heater/Evaporator Blower Motor Assembly Replacement	0034-1
0035	AC Heater/Evaporator Blower Motor Resistor Replacement	0035-1
0036	AC Heater/Evaporator Blower Motor Resistor Harness Replacement	0036-1
0037	AC Heater/Evaporator Replacement	0037-1
0038	AC High Pressure Switch Replacement	0038-1
0039	AC Hoses Replacement	0039-1
0040	AC Low Pressure Switch Replacement	0040-1
0041	AC Optic Ribbon Replacement	0041-1
0042	AC Optic Ribbon Light Source Replacement	0042-1
0043	AC Optic Ribbon Light Source Wire Harness Replacement	0043-1
0044	AC Temperature Control Switch Replacement	0044-1
0045	AC Wire 1082 Harness Replacement	0045-1
0046	AC Wire 1156 Harness Replacement	0046-1
0047	AC Wire 1280A Harness Replacement	0047-1
0048	AC Wiring Harness Replacement	0048-1
0049	Engine Accessory Drive Assembly Replacement	0049-1
0050	Fuel Line Extension Replacement	0050-1
0051	Left Side Noise Panel and Rubber Flap Replacement	0051-1
0052	Air Conditioning Leak Test	0052-1
0053	AC System Refrigerant (R-134a) Maintenance	0053-1

APPENDIX A INSTALLATION DRAWINGS AND SCHEMATICS

0054	Installation Drawings and Schematics	0054-1

APPENDIX B INITIAL INSTALLATION INSTRUCTIONS OF AC KIT

0055	Initial Installation Instructions of AC Kit	0055-1

TABLE OF CONTENTS (Continued)

Work Package			Page
APPENDIX C	**REFERENCES**		
	0056	References	0056-1
APPENDIX D	**MAINTENANCE ALLOCATION CHART (MAC)**		
	0057	Maintenance Allocation Chart (MAC)	0057-1
APPENDIX E	**EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST**		
	0058	Expendable and Durable Supplies and Materials List	0058-1
APPENDIX F	**COMMON TOOLS AND SPECIAL TOOLS LIST**		
	0059	Common Tools and Special Tools List	0059-1
APPENDIX G	**ILLUSTRATED PARTS LIST (RPSTL)**		
	0060	Illustrated Parts List (RPSTL)	0060-1
APPENDIX H	**ADDITIONAL AUTHORIZATION LIST (AAL)**		
	0061	Additional Authorization List (AAL)	0061-1

CHAPTER 1

GENERAL INFORMATION AND DATA

GENERAL INFORMATION

GENERAL INFORMATION INDEX

CONTENTS	WP PAGE NO.
Scope	0001-1
Maintenance Forms and Procedures	0001-1
Reporting Equipment Improvement Recommendations (EIR)	0001-1
Material and Workmanship Warranty	0001-2
Nomenclature Cross-Reference List	0001-2
List of Abbreviations	0001-3
Principles of Operation	0001-4

SCOPE

a. Type of Manual. This Technical Bulletin provides instructions for the installation, operation, and maintenance of the Air Conditioner kit for the PLS.

b. Name. PLS Air Conditioner Kit.

c. Purpose of Equipment. The PLS AC kit is a Field Level Maintenance-installed cab air conditioning system for the PLS. Under the new regulations, shops not having the required recovery and recycling equipment (and properly trained and certified personnel) will not be allowed to do any of this service work. Once installed, the air conditioning system provides cooled air for the PLS cab compartment during normal operations.

MAINTENANCE FORMS AND PROCEDURES

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

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your PLS needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don’t like about your equipment. Let us know why you don’t like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Tank-Automotive and Armament Command, ATTN: AMSTA-TR-E\MPA, Warren, MI 48397-5000, DOD AAC:W81D19. We’ll send you a reply.

GENERAL INFORMATION - Continued

MATERIAL AND WORKMANSHIP WARRANTY

Regardless of Government inspections and product acceptance, the contractor shall warrant the supplies and services are free from defects in material and workmanship, and conform to the specifications and other requirements of the contract. The contractor shall be liable for the costs of correction of all defects resulting from breach of this warranty as set forth below:

The basic warranty shall be effective for 6 months from the date of shipment. The date of shipment shall be as shown on the Requisition and Invoice/Shipping Document (DD Form 1149). The contractor shall provide greater warranty coverage on components, to the extent that the contractor's suppliers customarily provide such greater coverage to their commercial customers.

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	Official Nomenclature
AC	Air Conditioner
Engine Coolant	Antifreeze, Ethylene Glycol Mixture
PLS	Palletized Load System
R-134a	AC Refrigerant

GENERAL INFORMATION - Continued

LIST OF ABBREVIATIONS

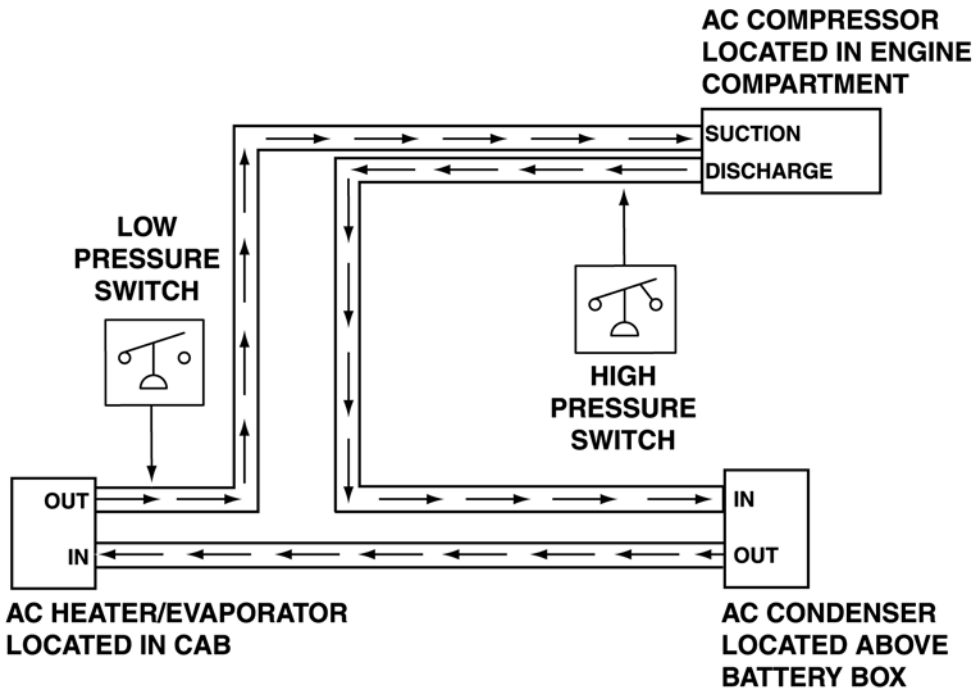
AC	Air Conditioner
AAL	Additional Authorization List
amp	Amperes
Bll	Basic Issue Item
°C	Degree Celsius
cm	Centimeter
DA	Department of the Army
EIR	Equipment Improvement Recommendation
°F	Degree Fahrenheit
ft	Foot
ft-lbs.	Foot Pounds
in.	Inch
JTA	Joint Tables of Allowances
kPa	Kilopascal
lb	Pound
m	Meter
mm	Millimeter
MTOE	Modification Table of Organization and Equipment
N•m	Newton Meter
PLS	Palletized Load System
PMCS	Preventive Maintenance Checks and Services
psi	Pound-Force Per Square Inch
TAMMS	The Army Maintenance Management System
TDA	Tables of Distribution and Allowance
TM	Technical Manual
vdc	Volts Direct Current

GENERAL INFORMATION - Continued

PRINCIPLES OF OPERATION

The PLS AC kit is a Field Level Maintenance-installed cab air conditioning system for the PLS. The kit consists of an engine driven AC compressor, AC condenser, AC dryer, AC heater/evaporator, AC blower, and AC hoses.

In the PLS AC system, the engine driven AC compressor pressurizes R-134a refrigerant gas. The pressurized R-134a gas is then passed through the AC condenser, where it is cooled and converted to a high-pressure liquid. The liquid R-134a is then passed through the AC dryer, where moisture is removed and the liquid R-134a is stored until it is required by the system. When cooling is required, the high-pressure R-134a liquid is passed through the AC expansion valve and AC evaporator, where it is converted to a low-pressure gas. This process cools the R-134a refrigerant and AC evaporator coil. Cab air is then passed across the cooled AC evaporator coil by the AC blower, which cools and dehumidifies the air. The cooled air is then passed back into the cab, cooling the cab. The R-134a gas from the AC evaporator is then passed back to the AC compressor, to complete the refrigerant cycle.



PLS AC SYSTEM SCHEMATIC

END OF WORK PACKAGE

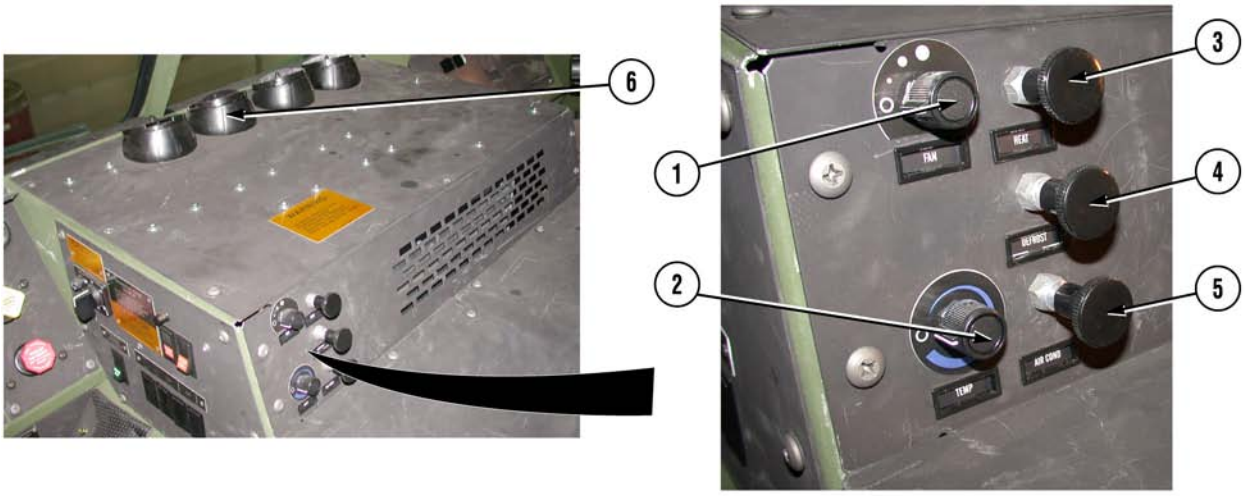
CHAPTER 2

OPERATOR'S INSTRUCTIONS

OPERATOR'S CONTROLS AND INDICATORS

This work package shows location and describes use of controls and indicators used to operate the PLS AC system. Operator/crew must become thoroughly familiar with contents of this work package before attempting to operate the PLS AC system.

Know the location and proper use of every control and indicator before operating the PLS AC system.



1. **Fan Control Switch.** Four-position switch used to turn the blower motor ON and OFF, and control blower motor speed. When switch is in fully counter-clockwise position, the blower motor is OFF. As the switch is rotated clockwise, blower motor is turned on, and blower motor speed increases.

2. **Temperature Control Switch.** Controls temperature of cold air entering cab. Temperature control switch is OFF when in O position. As temperature control switch is turned clockwise, temperature of cold air entering cab decreases.

3. **Heater Cable.** Controls amount of hot air entering cab. Amount of hot air entering cab increases as heater cable is pulled out and decreases as heater cable is pushed in.

4. **AC Defrost Cable.** Controls amount of hot air blown on windshield. Amount of air blown on windshield increases as AC defrost cable is pulled out and decreases as AC defrost cable is pushed in.

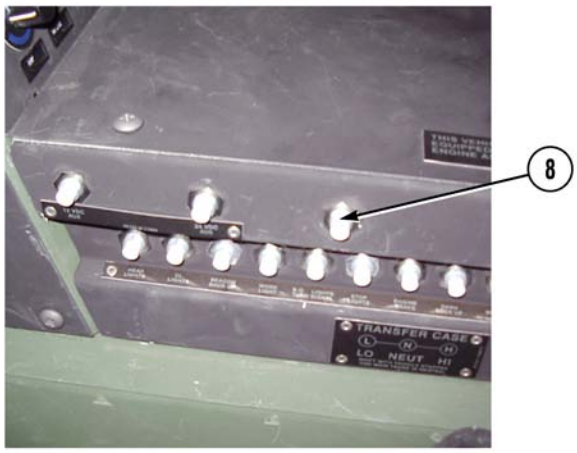
5. **AC Cable.** Controls amount of cold air entering cab. Amount of cold air entering cab increases as AC cable is pulled out and decreases as AC cable is pushed in.

6. **Louvers.** Louvers are used to direct airflow. Adjust louvers for desired airflow.

OPERATOR'S CONTROLS AND INDICATORS - Continued



7. **Air Diffuser Balls.** Air diffuser balls are used to direct airflow to cab floor. Adjust air diffuser balls for desired airflow.



8. **AC 20 AMP Circuit Breaker.** Circuit breaker opens automatically to protect PLS from electrical overload. Push circuit breaker button to reset.

END OF WORK PACKAGE

OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INTRODUCTION

This work package contains Operator's PMCS requirements for the PLS AC system. The PMCS table in this work package contains checks and services necessary to ensure that the AC system is ready for operation. Using PMCS tables, perform maintenance at specified intervals. Perform PMCS listed in TM 9-2320-364-10, before performing these PMCS checks.

GENERAL MAINTENANCE PROCEDURES

a. Cleanliness. Dirt, grease, oil, and debris may cause or cover a serious problem. Clean all metal surfaces.

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

c. Welds. Look for loose or chipped paint, rust, or gaps on welds. If a bad weld is found, notify Field Level Maintenance.

d. Electrical wires and connectors. Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and make sure wires are in good shape. If a wire or connector is bad, notify Field Level Maintenance.

e. AC system leaks. Look for air conditioner lubrication leakage and corrosion, and damage to fittings, hoses, and other components. Inspect lowest points of fittings, and hoses for indication of lubrication leakage. If lubrication leakage is found, notify Field Level Maintenance.

NOTE

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

EXPLANATION OF TABLE ENTRIES

a. "Item No." Column. Items in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do the checks and services for the intervals listed.

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

1. Perform the (Before) CHECKS before operating AC system.

2. Perform the (During) CHECKS while operating AC system. During operation means to monitor AC system and its related components while being operated.

OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

3. Perform the (After) CHECKS right after operating AC system.

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

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

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

e. "Not Fully Mission Capable If:" Column. This column contains the criteria that causes the equipment to be classified as NOT READY/NOT AVAILABLE because of inability to perform its primary mission. An entry in this column will:

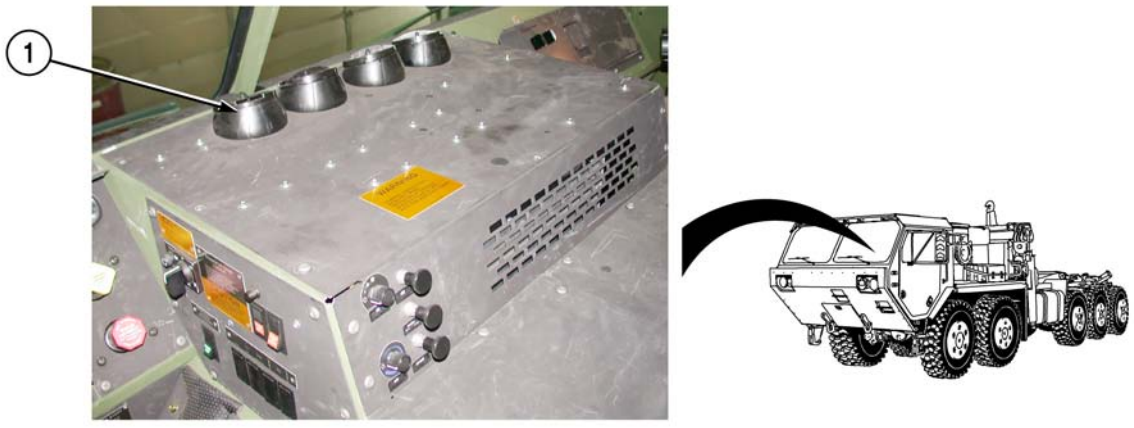
Identify conditions that will make the equipment not ready/available for readiness reporting purposes.

OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) TABLES

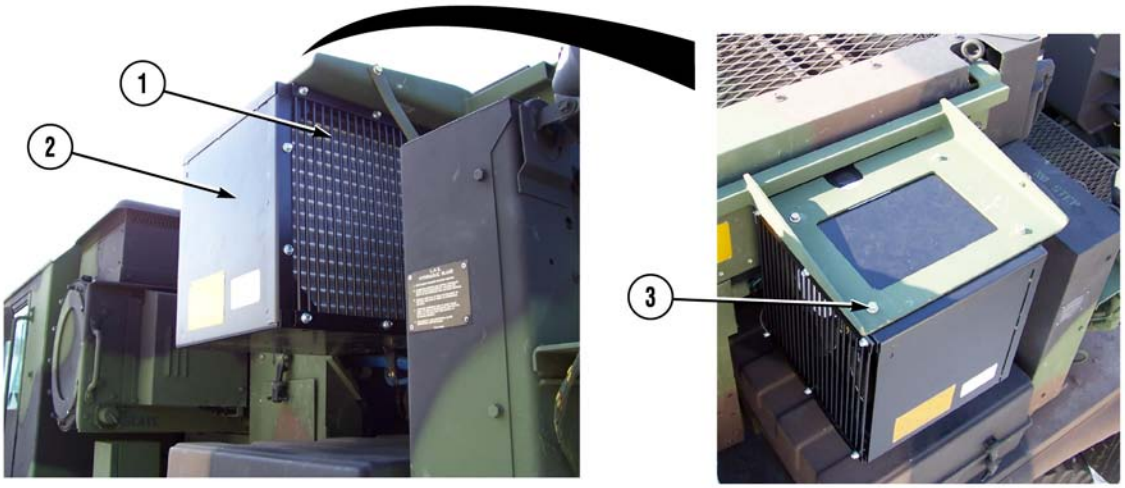
Refer to Tables 2-1 and 2-2 for Operator's Preventive Maintenance Checks and Services (PMCS) for the PLS AC System.

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

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
1	During	AC System	**NOTE** Perform the following inspection only if air conditioner is required due to climate conditions. (a) Turn AC on (WP 0004). (b) Wait 5 minutes to allow AC temperature to stabilize. (c) Check for cool air with hand. (d) Turn AC off (WP 0004).	

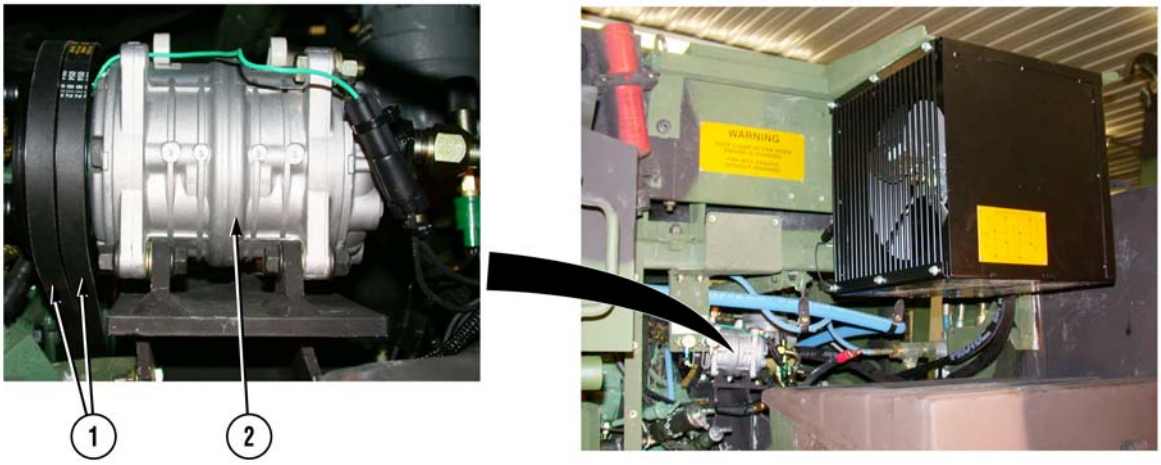
OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

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

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
2	Weekly	AC Condenser	(a) Check AC condenser core (1) for debris, dirt, sand, and damage. Clean any debris, dirt, or sand from AC condenser core (1). (b) Check AC condenser core (1) for corrosion, bent fins, oil leakage, and damage. (c) Check AC condenser (2) mounting hardware for loose or missing screws (3).	

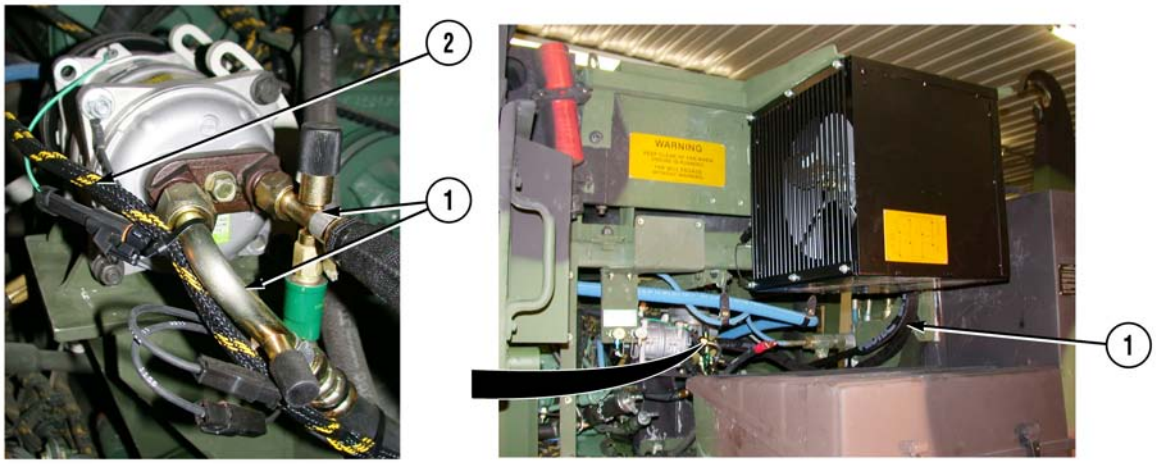
OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 2-2. Operator's Preventive Maintenance Checks and Services (Weekly) (Continued)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
3 4	Weekly	AC Compressor Belts and Compressor	(a) Left side noise panel and rubber flap removed (WP 0051). **WARNING** **Ensure engine is cool prior to checking AC compressor belts. Failure to comply may result in injury to personnel.** (a) Check two AC compressor belts (1) for cracking, glazing, fraying, and breaks. (b) Check two AC compressor belts (1) for tightness. There should be approximately 1/2 in. (1.27 cm) of play when pushing on AC compressor belts (1) in center between two pulleys. If tightness appears incorrect, notify Field Level Maintenance. (c) Check AC compressor (2) mounting hardware for loose or missing screws or locknuts.	

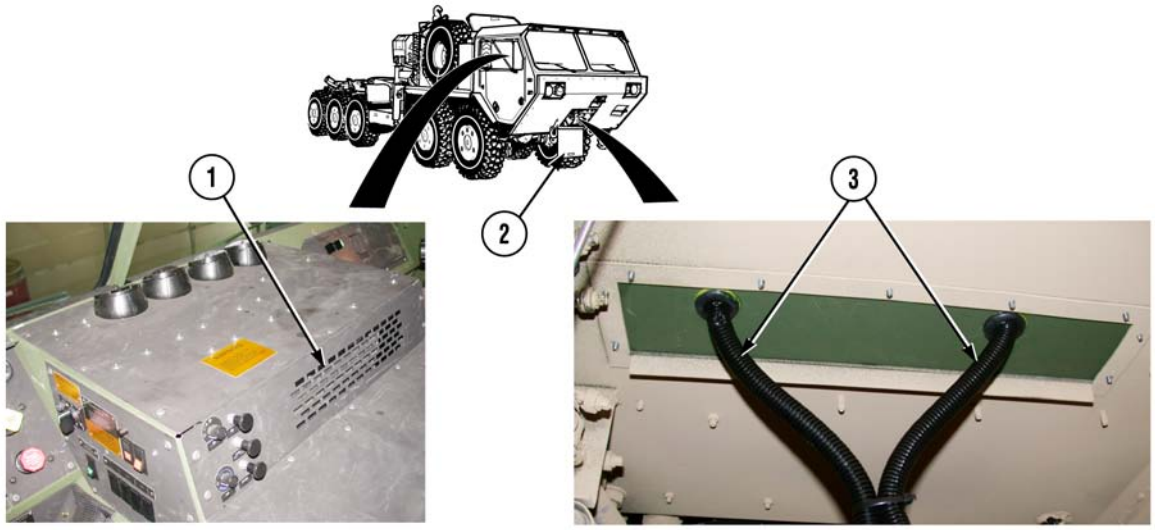
OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 2-2. Operator's Preventive Maintenance Checks and Services (Weekly) (Continued)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
5	Weekly	AC Hoses, Fittings, and Wire Harness	(a) Left side noise panel and rubber flap removed (WP 0051). (b) Electronic control box (ECB) right side panel removed (TM 9-2320-364-20). (c) Check three AC hoses (1) for looseness or damage. Notify Field Level Maintenance if AC hoses (1) are loose or damaged. (d) Check three AC hoses (1) at connections for oil leakage, cracking, and chafing. Notify Field Level Maintenance if leaks, cracks, or chafing are found on AC hoses (1). (e) Check AC wire harness (2) for corrosion, breakage, fraying, and loose connections. Notify Field Level Maintenance if wire harness (2) is damaged.	

OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 2-2. Operator's Preventive Maintenance Checks and Services (Weekly) (Continued)

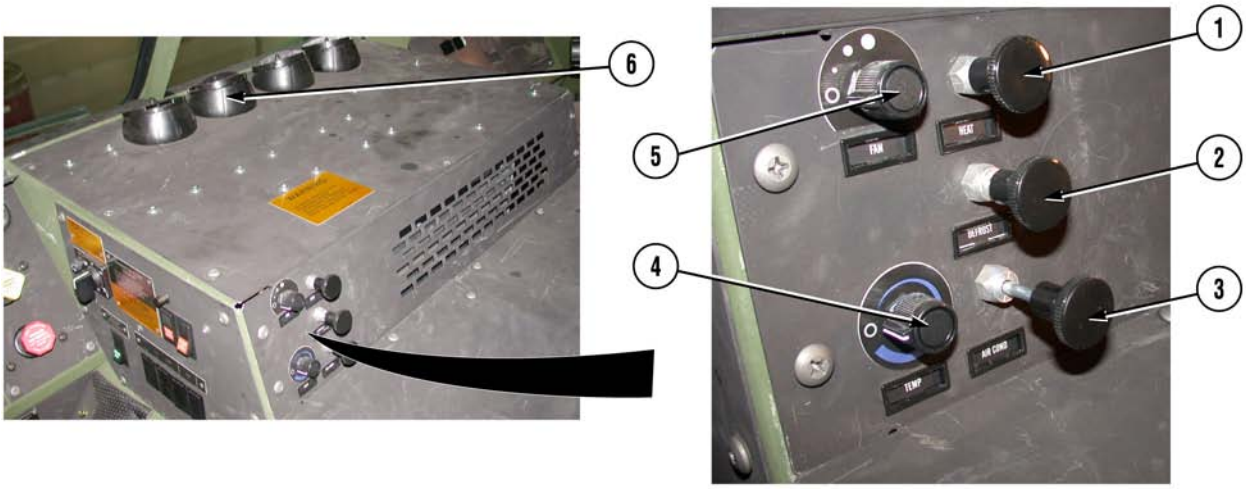
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
6	Weekly	AC Heater/ Evaporator and Drain Hoses	(a) Check AC evaporator core (1) for debris, dirt, damage, and oil residue. (b) Open front access cover (2) in front of truck. (c) Check two AC evaporator drain hoses (3) underneath cab. Notify Field Level Maintenance if drain hoses are clogged or kinked.	

END OF WORK PACKAGE

SYSTEM OPERATION

This work package provides all instructions necessary to operate the PLS AC system.

TO TURN AC ON



1. Start engine (TM 9-2320-364-10).
2. Push in heater cable (1).

NOTE

Defrost cable can be pushed in or pulled out for AC operation. Airflow to upper louvers will be increased as defrost cable is pulled out. Airflow to lower louvers will be increased as defrost cable is pushed in.

3. Push in or pull out AC defrost control cable (2) for desired airflow.
4. Pull out AC cable (3).

NOTE

AC temperature is controlled by position of temperature control switch. When temperature control switch is in the O position, the AC compressor is off. The AC compressor is turned ON, and the temperature entering cab decreases as the temperature control switch is turned clockwise.

5. Turn temperature control switch (4) clockwise to desired temperature.
6. Turn fan control switch (5) clockwise to desired fan speed.
7. Adjust four louvers (6) to desired airflow.
8. As soon as cool air is flowing from four louvers (6), close cab windows.

SYSTEM OPERATION - Continued

TO TURN AC OFF



1. Turn fan control switch (5) to O (fully counter-clockwise) position.
2. Turn temperature control switch (4) to O (fully counter-clockwise) position.
3. Push in AC cable (3).
4. Push in AC defrost cable (2).

END OF WORK PACKAGE

CHAPTER 3

OPERATOR'S TROUBLESHOOTING

OPERATOR'S TROUBLESHOOTING INTRODUCTION

This chapter lists common malfunctions that you may find with the PLS AC system. Perform the tests, inspections, and corrective actions in the order they appear in the table. This chapter cannot list all malfunctions that may occur, all tests or inspections needed to find the fault, or all corrective actions needed to correct the fault. If a malfunction is not listed or actions listed do not correct the fault, notify your supervisor.

TROUBLESHOOTING SYMPTOMS

To quickly find a troubleshooting procedure, use the Malfunction Index. Work packages 0006 and 0007 contain the operator's troubleshooting steps.

MALFUNCTION INDEX

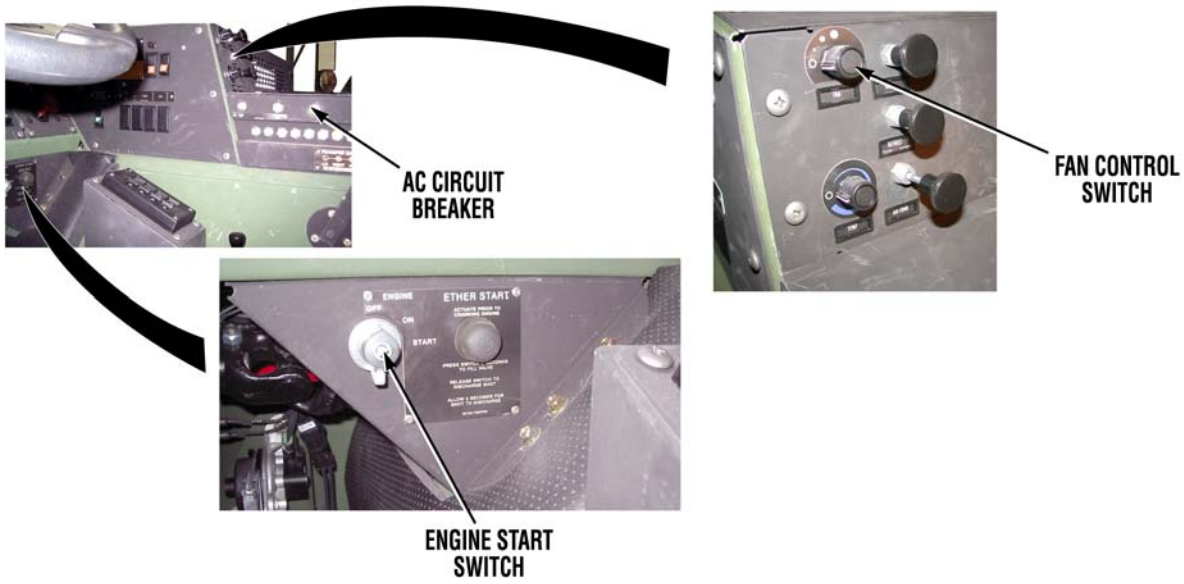
Troubleshooting Procedure		WP Page No.
0006	AC Heater/Evaporator Blower Does Not Operate	0006-1
0007	AC Heater/Evaporator Blower Operates But No Cold Air From AC Ducts During AC Operations	0007-1

END OF WORK PACKAGE

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE

Table 3-1. Operator's Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	WP SEQUENCE NO.
AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE.	**0006**



Step 1. Check if engine start switch is positioned to ON (TM 9-2320-364-10).

Position engine start switch to ON.

Step 2. Check if AC circuit breaker is tripped.

If AC circuit breaker is tripped, reset circuit breaker. If circuit breaker trips after resetting, notify Field Level Maintenance.

Step 3. Check if fan control switch is set to the correct operating position (WP 0004).

Place fan control switch in the correct operating position.

If fan control switch is in the correct operating position and AC heater/evaporator blower does not operate, notify Field Level Maintenance.

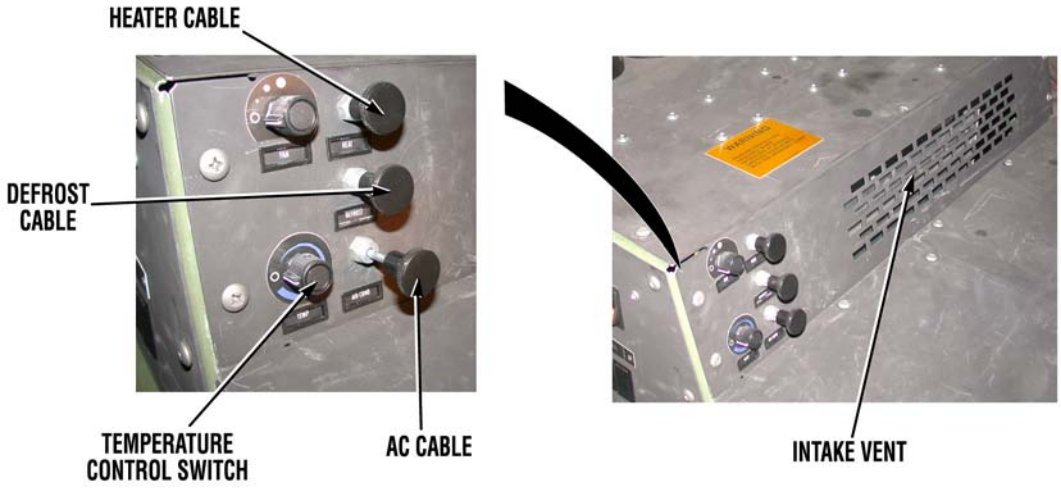
END OF WORK PACKAGE

0007

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM AC DUCTS DURING AC OPERATIONS

Table 3-2. Operator's Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	WP SEQUENCE NO.
AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM AC DUCTS DURING AC OPERATIONS.	**0007**



Step 1. Inspect intake vent for dust and debris that may restrict airflow.

Clear dust and debris from intake vent.

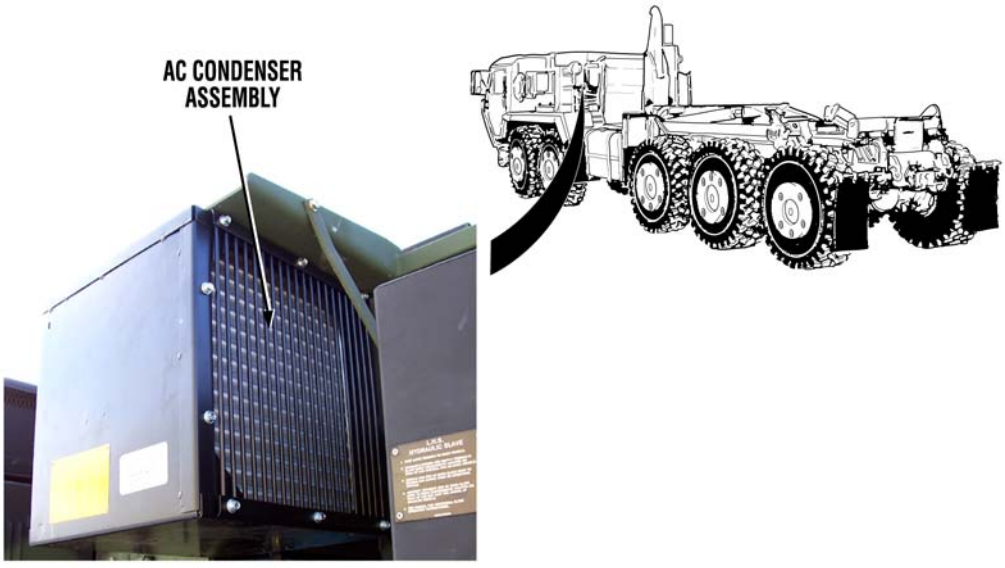
Step 2. Check if temperature control switch is set to the desired operating position (WP 0004).

Place temperature control switch in the desired operating position.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM AC DUCTS DURING AC OPERATIONS - Continued

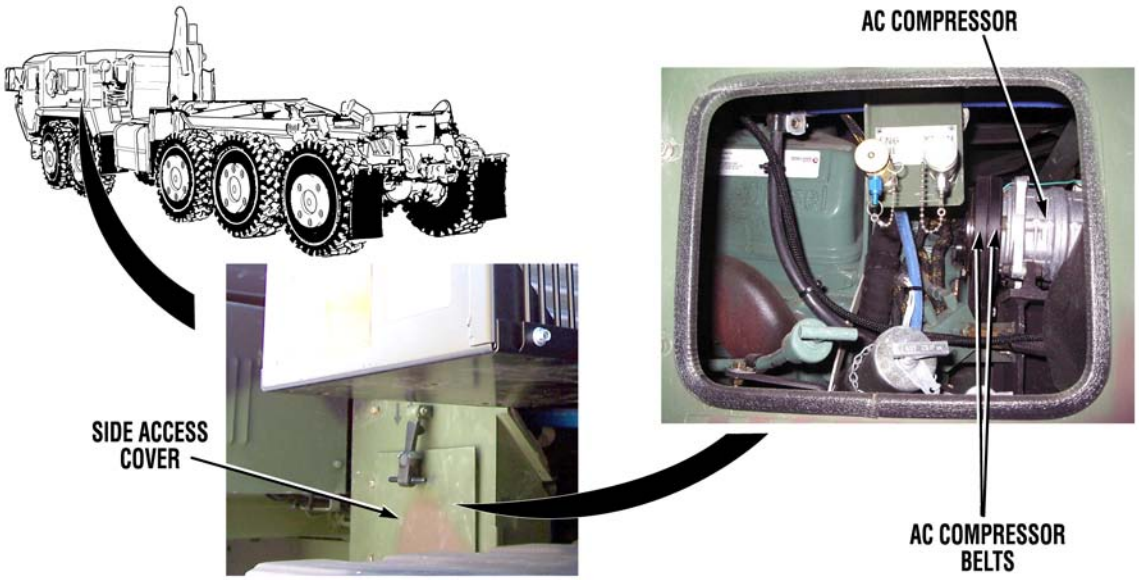
Table 3-2. Operator's Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	WP SEQUENCE NO.
NOTE Defrost cable can be pushed in or pulled out for AC operation. Airflow to upper air duct will be increased when defrost cable is pulled out. Step 3. Check if heater cable is pushed in (WP 0004). Push in heater cable. Step 4. Check if AC cable is pulled out (WP 0004). Pull out AC cable. Step 5. If engine is on, turn engine OFF (TM 9-2320-364-10). Step 6. Inspect AC condenser assembly for debris and damage. Clean debris from AC condenser assembly. If AC condenser is damaged, notify Field Level Maintenance.	



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM AC DUCTS DURING AC OPERATIONS - Continued

Table 3-2. Operator's Troubleshooting (Continued)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION	WP SEQUENCE NO.
Step 7. Open side access cover (TM 9-2320-364-10).	
	
Step 8. Inspect AC compressor belts for looseness and damage. If AC compressor belts are loose, damaged, or missing, notify Field Level Maintenance. Step 9. Close side access cover (TM 9-2320-364-10). Step 10. Start engine and operate AC system (WP 0004). If AC system fails to provide cold air, or stops providing cold air during normal operations, notify Field Level Maintenance.	

END OF WORK PACKAGE

CHAPTER 4

FIELD LEVEL PMCS

FIELD LEVEL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INTRODUCTION

This work package contains Field Level Maintenance PMCS requirements for the PLS AC system. These PMCS requirements are in addition to those listed in TM 9-2320-364-20. The PMCS tables contain checks and services necessary to ensure that the AC system is ready for operation. Using PMCS listed tables, perform maintenance at specified intervals. Perform PMCS listed in TM 9-2320-364-10, TM 9-2320-364-20, and Chapter 2 before performing these PMCS checks.

GENERAL MAINTENANCE PROCEDURES

WARNING

- **Dry cleaning solvent is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and DO NOT breathe vapors. Keep away from heat or flame. Never smoke when using dry cleaning solvent; the flashpoint for Type II is 140° (60°C), and for Type III it is 200°F (93°C). Failure to follow this warning may result in death or injury 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 them with water and get immediate medical attention.**
- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134a air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134a may form, resulting in fire or explosion, which could cause personnel injury or death.**

a. Cleanliness. Dirt, grease, oil, and debris may cause or cover a serious problem. Use dry cleaning solvent (Item 9, Appendix E) on metal surfaces and soapy water on rubber items.

b. Bolts, nuts, and screws. Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition and tighten or replace as necessary. If they cannot be checked with a tool, look for chipped paint, bare metal, or rust around boltheads.

c. Welds. Look for loose or chipped paint, rust, or gaps on welds. If a bad weld is found, notify supervisor.

d. Electrical wires and connectors. Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and ensure wires are in good shape.

e. AC system leaks. Look for air conditioner lubrication leakage and corrosion, and damage to fittings, hoses, and other components. Inspect lowest points of fittings and hoses for indication of lubrication leakage.

f. Damage. Damage is defined as any condition that affects safety or would make the AC system unserviceable for mission requirements.

FIELD LEVEL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

EXPLANATION OF TABLE ENTRIES

a. Do the SEMI-ANNUAL PREVENTIVE MAINTENANCE (Table 4-1) once every 6 months and/or every 3,000 miles (4,828 km) whichever comes first.

b. If anything looks wrong and is not fixed, write a DA Form 2404 and notify Supervisor.

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

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

2. ***"Interval" Column.*** The column identifies when the PMCS should be performed.

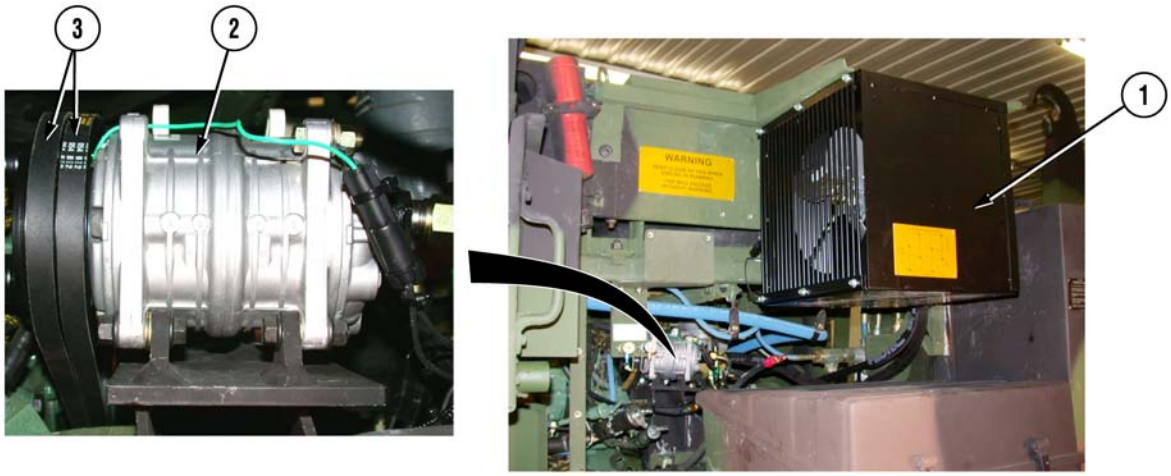
3. ***"Location Item To Check/Service" Column.*** This column identifies the item to be inspected.

4. ***"Procedure" Column.*** This column contains all the information required to do the check/inspection. Art is integrated into the column to aid the user in identifying items. Whenever replacement or repair is recommended, reference is made to the applicable work package.

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

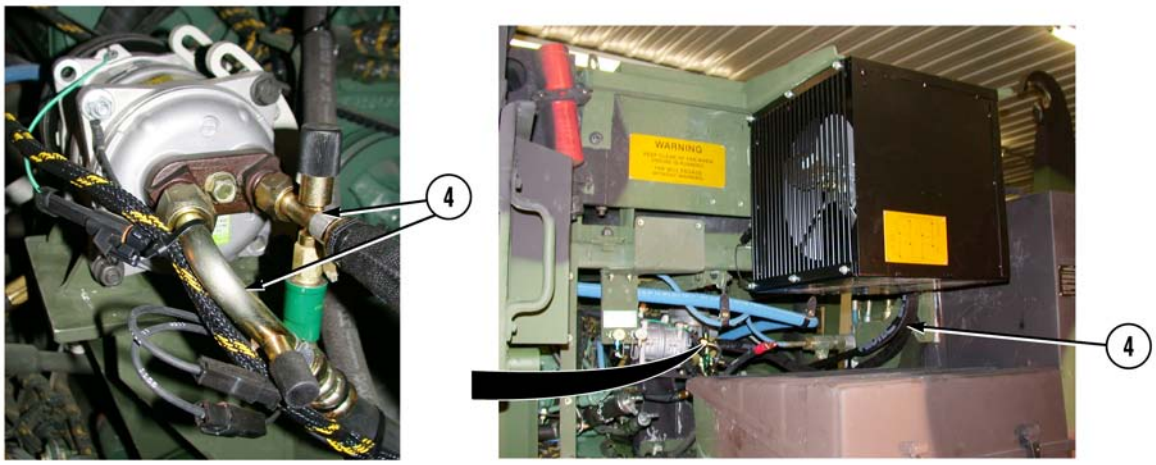
FIELD LEVEL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 4-1. Field Level Preventive Maintenance Checks and Services (Semi-Annual)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
1	Semi-Annual	AC System (Engine Compartment)	**WARNING** **Ensure engine is cool before performing maintenance. Failure to comply may result in severe burns.** **NOTE** Ensure operator/crew has performed Operator's PMCS listed in Chapter 2 of this technical bulletin, before continuing. (a) Left side noise panel and rubber flap removed (WP 0051). (b) Check AC condenser (1) and AC compressor (2) for damage and missing or loose mounting hardware. (c) Check two AC compressor drive belts (3) for damage and proper tension. Belt tension gage reading should be 90-100 lbs. (400-445 N). If gage reading is not correct, adjust drive belt tension (WP 0020).	

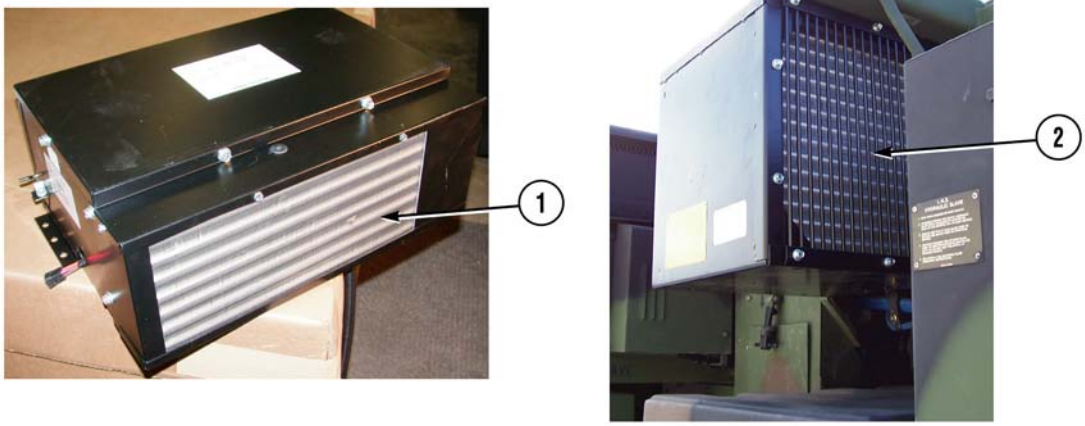
FIELD LEVEL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 4-1. Field Level Preventive Maintenance Checks and Services (Semi-Annual) (Continued)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
			(d) Electronic control box (ECB) right side panel removed (TM 9-2320-364-20). (e) Check three AC hoses (4) for cracks and damage. (f) Perform AC system leak test (WP 0052). (g) Install left side noise panel and rubber flap (WP 0051).	

FIELD LEVEL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Table 4-1. Field Level Preventive Maintenance Checks and Services (Semi-Annual) (Continued)

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
				
2	Semi-Annual	AC System	**NOTE** Heater/evaporator shown removed for clarity. (a) Clean AC evaporator core (1); check for damage. (b) Clean AC condenser core (2); check for damage.	

END OF WORK PACKAGE

CHAPTER 5

FIELD LEVEL TROUBLESHOOTING

FIELD LEVEL TROUBLESHOOTING INTRODUCTION

This chapter contains step-by-step procedures for identifying, locating, isolating, and repairing the PLS AC system equipment malfunctions.

This technical bulletin cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify Supervisor.

a. Page Layout. Troubleshooting procedures are divided into logic tree pages and test pages.

1. A logic tree page is always a left-hand page, facing the test page on the right. The logic tree page provides the sequence of steps required to isolate a fault to a failed component. All critical information for decision making is on the left-hand page. Each logic tree page contains the following information:

   (a) **INITIAL SETUP** – This box is located only on the first logic tree page of a fault. INITIAL SETUP lists tools, materials, references, personnel, and equipment needed to troubleshoot the fault.

   (b) **KNOWN INFO** – This box is located in the top left-hand column. KNOWN INFO lists conditions and information that will eliminate specific components as the cause of the fault.

   (c) **POSSIBLE PROBLEMS** – This box is located directly below KNOWN INFO. All of the system components that could cause a fault are listed in the POSSIBLE PROBLEMS box. The first component listed in the POSSIBLE PROBLEMS box is the one that will be tested at that step in the logic sequence. When one of the components is tested and found to be operational, it is entered at the bottom of the KNOWN INFO box as OK.

   (d) **QUESTION** – Each question, located in the middle column, refers to the first possible problem listed in POSSIBLE PROBLEMS. If the answer to the question is YES, proceed to the next step. If the answer is NO, follow the NO arrow to obtain directions for correcting the problem. If the step contains a WARNING or CAUTION message, a small shadow box is printed above the question. Text for WARNINGS and CAUTIONS is on the following right-hand page.

   (e) **TEST OPTIONS** – This box is located in the top right-hand column. TEST OPTIONS lists tests available for testing parts suspected of failing.

   (f) **REASON FOR QUESTION** – This box is located directly below TEST OPTIONS. It explains the purpose for the question in the middle column.

2. A test page is always a right-hand page, facing the logic tree page on the left. The test provides detailed instructions for testing the first component listed in the POSSIBLE PROBLEMS box. This test will also provide an answer for the question in the middle column. Note the arrow connecting the test on the right-hand page to the REASON FOR QUESTION. When possible, illustrations are included to provide visual details. Warnings, cautions, and notes contain additional information for testing.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

b. How to Begin Troubleshooting.

1. Determine the symptom or condition that indicates a problem or failure. Troubleshooting is divided into symptoms peculiar to a component, for example: AC heater/evaporator blower or AC compressor. Refer to the Troubleshooting Fault Index on page 0009-8.

2. Go to the referenced page to begin troubleshooting. Open the technical bulletin flat so both the left-hand and right-hand pages are displayed before you. The information on both pages is important to resolve the problem or failure. However, the experienced technician can follow the left-hand page instructions and refer to the right-hand page when necessary.

3. Follow the diagnostic procedure. Answer question No. 1 on the left-hand page and follow the YES or NO path to either the remedy or the next question. If necessary, look on the right-hand page for test instructions and illustrations.

4. Observe warnings, cautions, and notes. The formatting and symbols used in this manual for warnings, cautions, and notes are as follows:

WARNING

This is the symbol for a warning statement. If you see the word WARNING above a question on the left-hand page, look on the right-hand page for the text of the message. WARNINGs describe a situation which could cause severe injury or death to personnel.

CAUTION

This is the symbol for a caution statement. If you see the word CAUTION above a question on the left-hand page, look on the right-hand page for the text of the message. CAUTIONs describe a situation which could cause damage to equipment.

NOTE

This is the symbol for a note. Notes are located directly above the test to which they refer. Notes provide additional information for performing a test.

c. Measurements Required for Troubleshooting.

CAUTION

Use proper-sized test leads and ensure care is used when checking for resistance, continuity, or voltage at connectors, or damage to equipment may result.

1. **Resistance measurements.**

   (a) Connect red test lead to volt-ohm input connector and black lead to COM input connector on meter.

   (b) Set the function/range switch to the desired ohm position. If the magnitude of the resistance is not known, set the switch to the highest range, then reduce until a satisfactory reading is obtained.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

(c) If the resistance being measured is connected to a circuit, turn ENGINE switch OFF.

(d) Connect test leads to the circuit being measured. When measuring high resistance, be careful not to contact adjacent points, even if they are insulated. Some insulators have a relatively low insulation resistance which can affect the resulting measurement.

(e) Read the resistance value on the digital display.

2. **Continuity checks.**

(a) Place the function/range switch in any ohm range.

NOTE

Some meters show “l+m”, or simply “l” when functioning/range switch is in any ohm position.

(b) Connect the red test lead to the volt-ohm connector and black lead to COM input connector on the meter. When the test leads are separated or measuring an out-of-range resistance, the digital display will indicate “OL” (Over Limit).

(c) Put one test probe at one end of the wire or circuit to be tested. Use the other test lead to trace the circuit. When continuity is established, an ohm symbol will appear in the upper left corner of the digital display. If contact in the wire is maintained long enough (about 1/4 of a second), the OL display will disappear and the resistance value of the wire or circuit will appear next to the symbol. A resistance value of 200 ohms or less indicates continuity is being measured.

(d) If your multimeter does not work in this manner, learn how it operates before performing troubleshooting.

3. **Voltage measurements.** The PLS truck is equipped with both 12 vdc and 24 vdc circuits. Troubleshooting procedures will reference 12 vdc and 24 vdc measurements, however these values can vary. When the batteries are fully charged, 12.6 vdc can be measured on an open 12 volt circuit and 14.5 vdc can be measured when the engine is running at 1000 rpm. When the batteries are fully charged, 25.2 vdc can be measured on an open 24 volt circuit and 29 vdc can be measured when the engine is running at 1000 rpm. The PLS AC system circuits are 24 vdc circuits.

(a) Connect the red test lead to the volt-ohm input connector and the black lead to the COM input on the meter. If a DC-AC switch is present, make sure it is set to the DC position.

(b) Set the function/range switch to the desired volts position. If the magnitude of the voltage is not known, set the switch to a range which will be able to read most voltages seen on the truck (typically, a 200V range will do). Then reduce the range until a satisfactory reading is obtained.

(c) Connect the test leads to the circuit being measured. Following the voltage measurement point, the color test lead tube used is given in parenthesis (red is volt-ohm connection and black is the COM connection).

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

4. **AC system performance checks.** Troubleshooting procedure for the PLS AC system includes system performance checks. A properly functioning AC system will have the following characteristics:

   (a) The fan control switch is set to the desired AC heater/evaporator blower speed position (low, medium, or high).

   (b) The temperature control switch is set to the desired temperature position.

   (c) The AC low and high pressure switches are closed.

   (d) The AC condenser fan motor cycles with AC evaporator temperature.

   (e) The AC compressor clutch engages and cycles with AC evaporator temperature.

   (f) The AC compressor suction line is cool.

   (g) The AC compressor discharge line is hot.

   (h) The AC condenser core is hot/warm.

   (i) The AC hose between the AC condenser core and AC condenser receiver/dryer is warm.

   (j) The AC condenser dryer is at outside temperature.

   (k) The inlet to the AC expansion valve is warm.

   (l) The AC evaporator core is cold.

   (m) The AC discharge air temperature is approximately 20°F cooler than the ambient air temperature.

   (n) Condensation water may drain from the AC evaporator core.

5. **AC system fault symptoms.** The following is a brief description of some of the symptoms or conditions that may exist if a component fails in the refrigerant circuit of the AC system:

   (a) If moisture, air, or other contaminates enter the refrigerant circuit, the AC system will not cool properly. The refrigerant and AC condenser dryer must be replaced after locating and correcting the cause of the contamination.

   (b) AC compressor failure will show up as abnormal noise, seizure, leakage, or low suction and discharge pressures.

   (c) A faulty or improperly installed temperature control switch temperature probe may cause quick or delayed AC compressor cycling.

   (d) A blockage in the AC condenser core will cause high system high-side pressure. Frost may form at the location of the blockage.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

(e) The AC condenser dryer is normally at outside temperature. If the AC condenser dryer is cool or cool spots form, a blockage has formed in the AC condenser dryer.

(f) A blockage at the inlet of the AC condenser dryer will cause high system high-side pressure.

(g) A blockage at the outlet of the AC condenser dryer will cause low system high-side pressure and little or no cooling.

(h) If the AC expansion valve is stuck closed, the AC expansion valve and AC evaporator core will be at outside temperature.

(i) If the AC expansion valve is stuck open, the AC expansion valve and AC evaporator core will be extremely cold and frost or ice buildup may occur.

(j) If ice is forming in the AC expansion valve, the system may stop cooling when the ice forms, and start cooling when the expansion valve warms up enough to melt the ice, causing the system to appear to cycle ON and OFF.

(k) A blockage in the AC evaporator core will cause low system low-side pressure and little or no cooling.

(l) A leak in the AC evaporator core or AC expansion valve fittings may not be detectable with leak detector.

(m) A restriction in a low system side AC hose will cause low system low-side pressure and little or no cooling. Cool spots and frost may form at location of restriction.

(n) A restriction in a high system side AC hose will cause high system high-side and low system low-side pressure and insufficient cooling. Cool spots and frost may form at location of restriction.

6. **AC system pressure checks.** In addition to the performance checks noted above, the troubleshooting procedures for the PLS AC system will also include system pressure checks, using standard AC test set recovery/recycling manifold gages. Before using the manifold gages to measure AC system pressure, ensure that the system is fully charged, and stabilize the system by ensuring that all cab windows and vents are closed, personnel heater is OFF, and by running the system at high AC heater/evaporator blower speed for 5 to 10 minutes.

d. Wire Repair. Refer to TM 9-2320-364-20 for the repair of wire harness connectors. Wire harness repair is limited to splicing and taping of wires at Field Level Maintenance. If a wire harness cannot be repaired, notify Supervisor.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

e. AC System Leak Repair. The majority of all AC system services will consist of locating and repairing AC system leaks. Many leaks will be located at points of connections, and are caused by vibration. Occasionally, an AC hose will rub on a structural part or deteriorate, creating a leak. Or, an AC system component will develop a leak. These leaks can be repaired in the following manner.

1. **Minor leaks at connectors.** Most minor leaks at connectors can be repaired by tightening the connectors or replacing the preformed packing. Use two wrenches when loosening or tightening connectors to avoid strain on AC hoses. Recover refrigerant before tightening connectors or replacing preformed packing. See work package 0053 for refrigerant recovery.

2. **Defective AC hoses.** Damaged or deteriorated AC hoses must be replaced. See work package 0039 for AC hose replacement.

3. **AC component leaks.** If an AC component develops a leak, which cannot be repaired by tightening fittings or replacing preformed packing, the component may have to be replaced. See the associated work package for component replacement.

f. Safety Precautions.

1. Whenever repairs are made to any AC part that holds refrigerant, you must recover, purge or flush (if contaminated), evacuate, charge, and leak test the system. In a good system, refrigerant lines are always under pressure and you should disconnect them only after the refrigerant has been recovered with an AC test set recovery/recycling unit through service valves. See work package 0053.

WARNING

Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.

2. Refrigerants are safe when used under the right conditions. Always wear safety goggles and nonleather gloves while discharging, purging, flushing, evacuating, charging, and leak testing the system. Do not wear leather gloves. When refrigerant gas or liquid contacts leather, the leather will stick to your skin.

3. Refrigerant splashed in the eyes should be treated with a few drops of sterile mineral oil in the eyes, then rinsed with a weak boric acid solution. Do not rub the eyes. Call a doctor immediately.

4. Refrigerant splashed on the skin should be treated the same as for frostbite. Gently pour cool water on the area, but do not rub the skin. Keep the skin warm with layers of soft, sterile cloth. Call a doctor immediately.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

WARNING

Do not work in an area where refrigerant may contact an open flame or any burning material, such as a cigarette. When it contacts extreme heat, refrigerant breaks down into poisonous phosgene gas. Which if breathed, causes severe respiratory irritation. Do not breathe fumes from an open flame leak detector.

5. Even though refrigerant does not burn, when it contacts extreme heat or flame, a poisonous phosgene gas is created. This gas is also produced when an open flame leak detector is used. Phosgene gas fumes have an acrid (bitter) smell.

6. You must work in a well ventilated area when the AC system is discharged, purged, flushed, evacuated, charged, and leak tested using an open flame leak detector.

7. Under current federal laws, refrigerant must be recovered and recycled by all users to protect the environment. Many service operations not directly involving the air conditioning system, require the release of the refrigerant charge. Under new regulations, shops not having the required recovery and recycling equipment (and properly trained and certified personnel) will not be allowed to do any of this service work.

8. Because of its very low boiling point, refrigerant must be stored under pressure. To prevent the refrigerant cans from exploding, never expose them to temperatures higher than 125°F (52°C). Never leave refrigerant cans in the sun, or store them in sun-exposed areas where heat can build up, such as in gloveboxes, automobile trunks, etc.

g. Abbreviations and Commonly Used Terms.

1. AC - Air Conditioner: either component, subsystem, or system.

2. BAT - Battery.

3. CKT - Circuit.

4. COM - Common.

5. R-134a - AC refrigerant.

6. System - A collection of devices which are related to each other because they depend on each other to do some function or job.

7. Test Chain - A series of tests to be followed in a particular order or sequence (numbered).

8. Troubleshooting - The process of making measurements and observing the operation of the vehicle to find out if, and where any problems exist.

FIELD LEVEL TROUBLESHOOTING INTRODUCTION - Continued

TROUBLESHOOTING FAULT INDEX

	Troubleshooting Procedure	WP Page No.
0010	AC Heater/Evaporator Blower Does Not Operate	0010-1
0011	AC Heater/Evaporator Blower Does Not Operate In All Speeds (Low, Medium, and High)	0011-1
0012	AC Heater/Evaporator Blower Operates But No Cold Air From Ducts During AC Operations	0012-1
0013	AC Compressor Excessively Noisy	0013-1
0014	AC Compressor Does Not Shut Off or Cycles Constantly	0014-1
0015	AC Does Not Cool or Cools Inadequately	0015-1
0016	AC Heater Control Panel Lights Do Not Operate	0016-1

END OF WORK PACKAGE

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

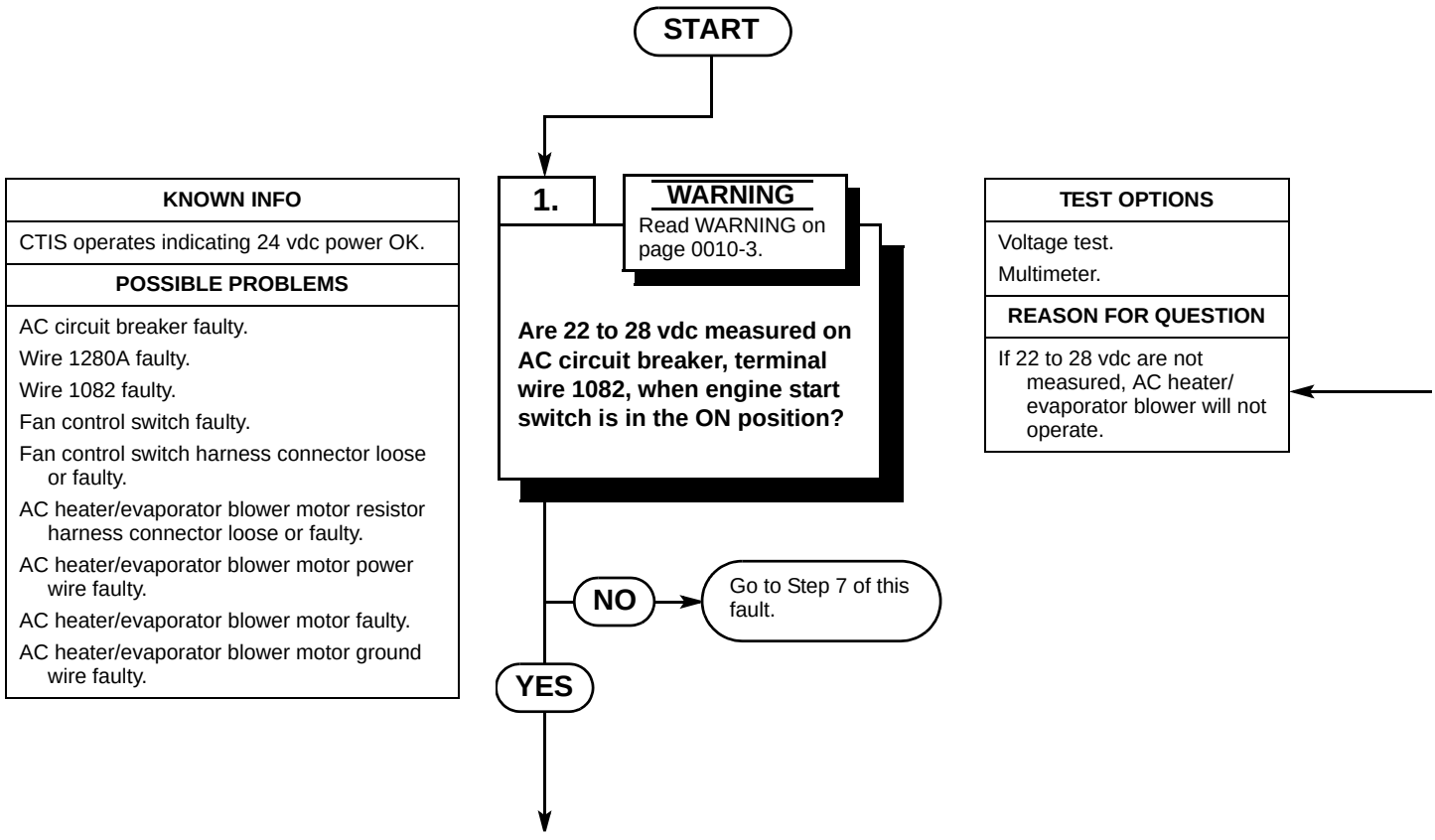
Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Multimeter (Item 2, Appendix F)

Materials/Parts
None

Personnel Required
One

References
TM 9-2320-364-10
TM 9-2320-364-20

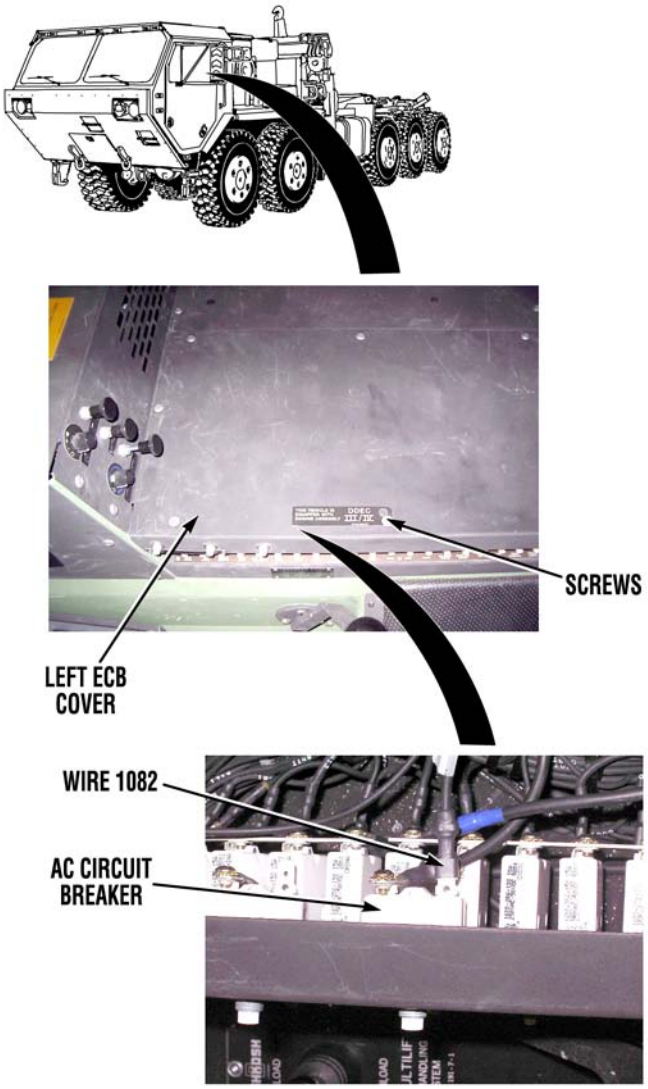


AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Circuit breakers CB5, CB6, CB12, CB20, CB22, CB23, and relays R3, R13 - R19, R26, R28, R32, R33 are always electrically live and can cause severe injury to personnel. Care must be exercised when working under the ECB cover.**

VOLTAGE TEST
(1) Remove eight screws and left ECB cover (TM 9-2320-364-20).
(2) Turn engine start switch ON (TM 9-2320-364-10).
(3) Place positive (+) probe of multimeter on AC circuit breaker at terminal wire 1082.
(4) Place negative (-) probe of multimeter on a known good ground.
(a) If 22 to 28 vdc are not measured, go to Step 7 of this fault.
(b) If 22 to 28 vdc are measured, turn engine start switch OFF and go to Step 2 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
POSSIBLE PROBLEMS
Wire 1082 faulty.
Fan control switch faulty.
Fan control switch harness connector loose or faulty.
AC heater/evaporator blower motor resistor harness connector loose or faulty.
AC heater/evaporator blower motor power wire faulty.
AC heater/evaporator blower motor faulty.
AC heater/evaporator blower motor ground wire faulty.

2. **WARNING**
Read WARNING on page 0010-5.

Are 22 to 28 vdc measured on wire 1082 at fan control switch, when engine start switch is in the ON position?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, wire 1082 is faulty.

NO → Repair wire 1082 (see Appendix A) or notify Supervisor. Verify repair, go to Step 8 of this fault.

YES

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
Wire 1082 OK.
POSSIBLE PROBLEMS
Fan control switch faulty.
Fan control switch harness connector loose or faulty.
AC heater/evaporator blower motor resistor harness connector loose or faulty.
AC heater/evaporator blower motor power wire faulty.
AC heater/evaporator blower motor faulty.
AC heater/evaporator blower motor ground wire faulty.

3. **WARNING**
Read WARNING on page 0010-5.

Is continuity measured across fan control switch from terminal wire 1082 to terminal orange wire, when switch is in high speed (fully clockwise) position?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, fan control switch is faulty.

NO → Replace fan control switch (WP 0031). Verify repair, go to Step 8 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

(2) Turn engine start switch ON (TM 9-2320-364-10).

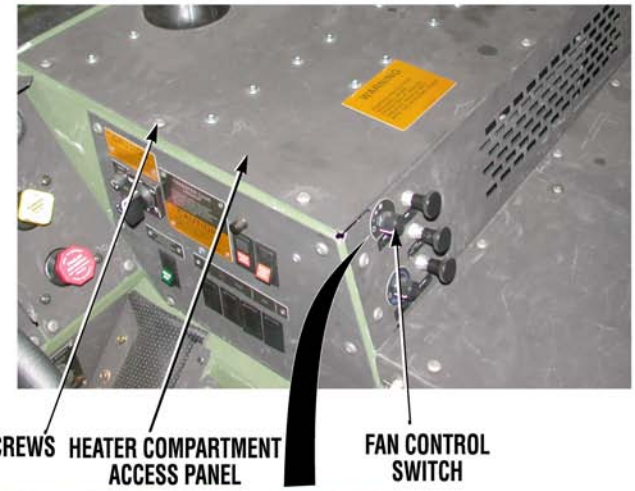
(3) Place positive (+) probe of multimeter on wire 1082 at fan control switch.

(4) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair wire 1082 (see Appendix A) or notify Supervisor. Verify repair, go to Step 8 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF and go to Step 3 of this fault.





CONTINUITY TEST

(1) Disconnect wire 1082 from fan control switch (WP 0031).

(2) Turn fan control switch to high speed (fully clockwise) position (WP 0004).

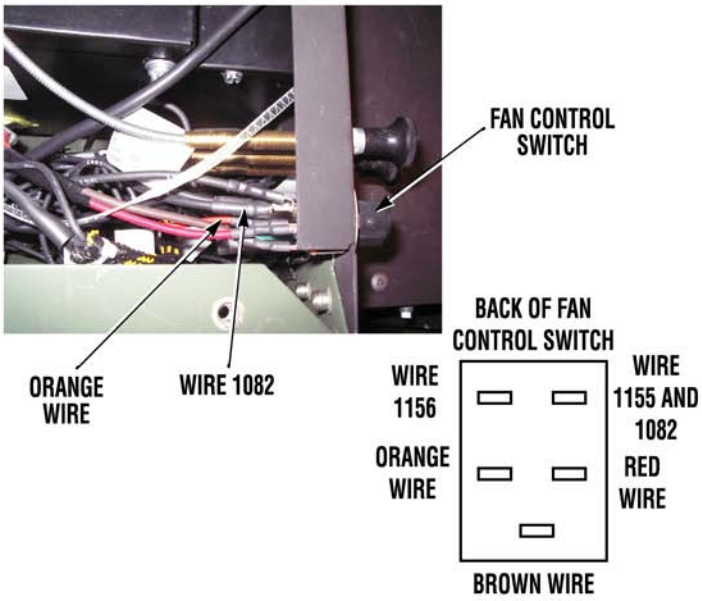
(3) Set multimeter switch to ohms.

(4) Place positive (+) probe of multimeter on fan control switch at terminal wire 1082.

(5) Place negative (-) probe of multimeter on fan control switch at terminal orange wire.

(a) If there is no continuity, replace fan control switch (WP 0031). Verify repair, go to Step 8 of this fault.

(b) If there is continuity, connect wire 1082 on fan control switch and go to Step 4 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
Wire 1082 OK.
Fan control switch OK.
POSSIBLE PROBLEMS
Fan control switch harness connector loose or faulty.
AC heater/evaporator blower motor resistor harness connector loose or faulty.
AC heater/evaporator blower motor power wire faulty.
AC heater/evaporator blower motor faulty.
AC heater/evaporator blower motor ground wire faulty.

4. **WARNING**
Read WARNING on page 0010-7.

Are fan control switch and AC heater/evaporator blower motor resistor harness wires free from damage and loose connectors?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If connectors are loose or wires are damaged, AC heater/evaporator blower will not operate.

NO → Repair wires (see Appendix A) or replace fan control switch harness (WP 0031) or AC heater/evaporator blower motor resistor harness (WP 0036) as required. Verify repair, go to Step 8 of this fault.

YES

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
Wire 1082 OK.
Fan control switch OK.
Fan control switch harness connector OK.
AC heater/evaporator blower motor resistor harness connector OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower motor power wire faulty.
AC heater/evaporator blower motor faulty.
AC heater/evaporator blower motor ground wire faulty.

5. **WARNING**
Read WARNING on page 0010-7.

Is continuity measured across AC heater/evaporator blower power wire from AC heater/evaporator blower motor resistor to blower motor power wire splice?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, AC heater/evaporator blower power wire is faulty.

NO → Repair AC heater/evaporator blower motor power wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 8 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION

(1) Remove two upper plenums (TM 9-2320-364-20).

(2) Remove four screws, washers, lockwashers, and cover from AC heater/evaporator assembly blower motor (WP 0034).

(3) Check fan control switch and AC heater/evaporator blower motor resistor harness for damaged wires and loose connection.

(a) If wires are damaged, repair wires (see Appendix A) or replace fan control switch harness (WP 0031) or AC heater/evaporator blower motor resistor harness (WP 0036) as required. Verify repair, go to Step 8 of this fault.

(b) If harness connector is loose, connect connector. Verify repair, go to Step 8 of this fault.

(c) If harness is free from damage and loose connections, go to Step 5 of this fault.

CONTINUITY TEST

(1) Disconnect AC heater/evaporator blower motor power wire at splice (WP 0034).

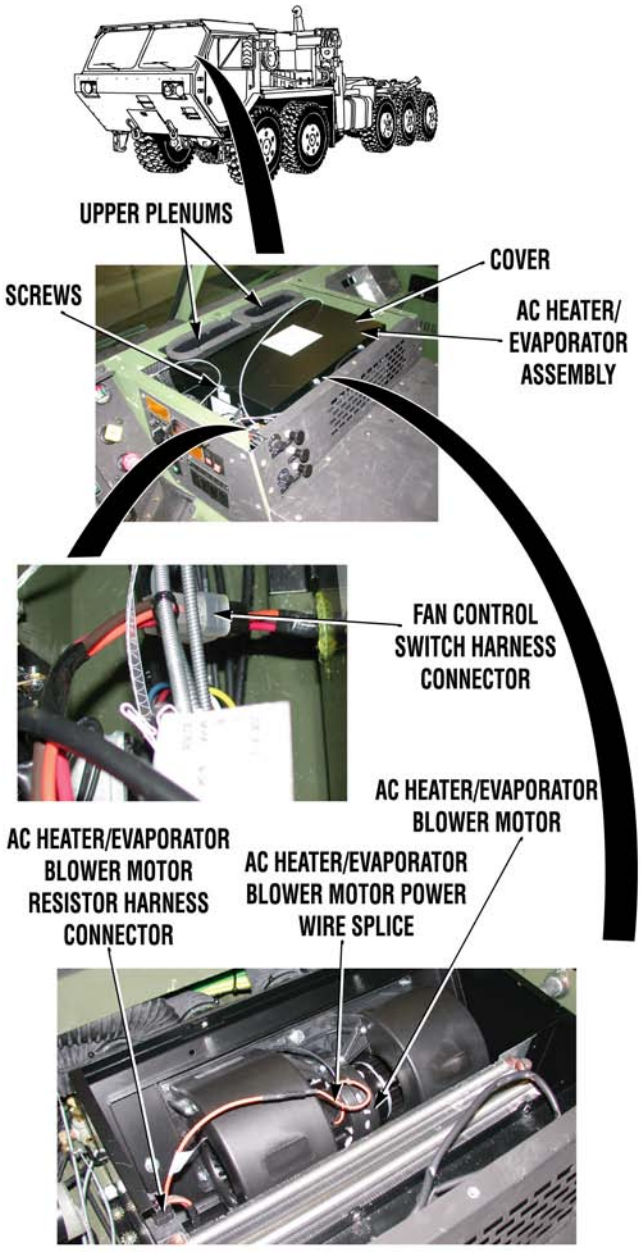
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on AC heater/evaporator blower motor power wire at AC heater/evaporator blower motor resistor.

(4) Place negative (-) probe of multimeter on AC heater/evaporator blower motor power wire at splice.

(a) If there is no continuity, repair AC heater/evaporator blower motor power wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 8 of this fault.

(b) If there is continuity, connect AC heater/evaporator blower power wire at splice and go to Step 6 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
Wire 1082 OK.
Fan control switch OK.
Fan control switch harness connector OK.
AC heater/evaporator blower motor resistor harness connector OK.
AC heater/evaporator blower motor power wire OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower motor faulty.
AC heater/evaporator blower motor ground wire faulty.

6. **WARNING**
Read WARNING on page 0010-9.

Is continuity measured across AC heater/evaporator blower motor ground wire from blower motor case to ground?

NO → Repair AC heater/evaporator blower motor ground wire (see Appendix A) or replace AC heater/evaporator blower motor (WP 0034). Verify repair, go to Step 8 of this fault.

YES → Replace AC heater/evaporator blower motor assembly (WP 0034). Verify repair, go to Step 8 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC heater/evaporator blower motor is faulty. If not, AC heater/evaporator blower motor ground wire is faulty.

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
Wire 1082 OK.
Fan control switch OK.
Fan control switch harness connector OK.
AC heater/evaporator blower motor resistor harness connector OK.
AC heater/evaporator blower motor power wire OK.
AC heater/evaporator blower motor OK.
AC heater/evaporator blower motor ground wire OK.
POSSIBLE PROBLEMS
AC circuit breaker faulty.
Wire 1280A faulty.

7. **WARNING**
Read WARNING on page 0010-9.

Are 22 to 28 vdc measured on wire 1280A at AC circuit breaker, when engine start switch is in the ON position?

NO → Repair wire 1280A (see Appendix A) or replace wire 1280A harness (WP 0047). Verify repair, go to Step 8 of this fault.

YES → Replace AC 20 AMP circuit breaker (WP 0018). Verify repair, go to Step 8 of this

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are measured, AC circuit breaker is faulty. If not, wire 1280A harness is faulty.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Circuit breakers CB5, CB6, CB12, CB20, CB22, CB23, and relays R3, R13 - R19, R26, R28, R32, R33 are always electrically live and can cause severe injury to personnel. Care must be exercised when working under the ECB cover.**

CONTINUITY TEST

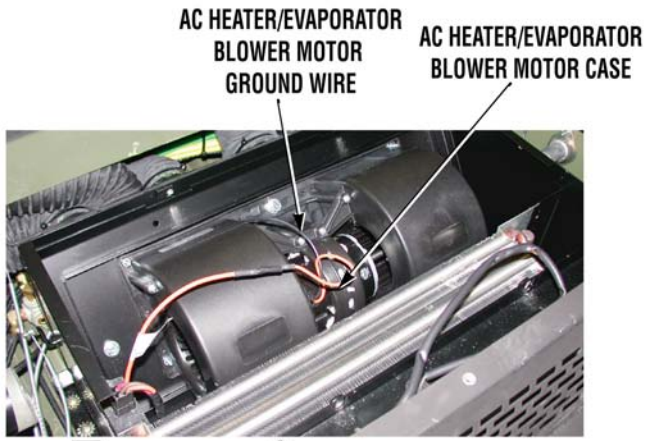
(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on AC heater/evaporator blower motor case.

(3) Place negative (-) probe of multimeter on a known good ground.

(a) If there is no continuity, repair AC heater/evaporator blower motor ground wire (see Appendix A) or replace AC heater/evaporator blower motor (WP 0034). Verify repair, go to Step 8 of this fault.

(b) If there is continuity, replace AC heater/evaporator blower motor assembly (WP 0034). Verify repair, go to Step 8 of this fault.



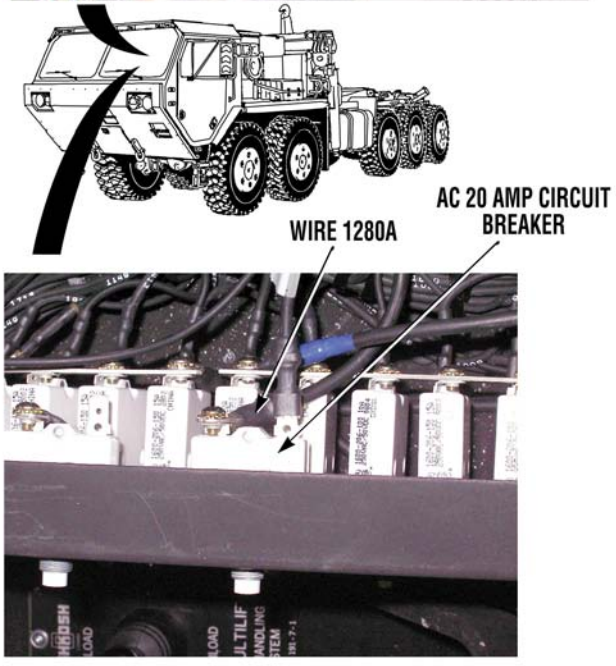
VOLTAGE TEST

(1) Place positive (+) probe of multimeter on wire 1280A at AC 20 AMP circuit breaker.

(2) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, repair wire 1280A (see Appendix A) or replace wire 1280A harness (WP 0047). Verify repair, go to Step 8 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF and replace AC 20 AMP circuit breaker (WP 0018). Verify repair, go to Step 8 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

KNOWN INFO
CTIS operates indicating 24 vdc power OK.
AC circuit breaker OK.
Wire 1280A OK.
Wire 1082 OK.
Fan control switch OK.
Fan control switch harness connector OK.
AC heater/evaporator blower motor resistor harness connector OK.
AC heater/evaporator blower motor power wire OK.
AC heater/evaporator blower motor OK.
AC heater/evaporator blower motor ground wire OK.
POSSIBLE PROBLEMS
None

8.

WARNING
Read WARNING on page 0010-11/ (0010-12 blank).

Does AC heater/evaporator blower operate?

NO → Fault not corrected. Notify Supervisor.

YES → Fault corrected.

TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC heater/evaporator blower operates, fault has been corrected.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VERIFY REPAIR

(1) If removed, install cover and four screws, washers, and lockwashers on AC heater/evaporator assembly (WP 0034).

(2) If removed, install two upper plenums (TM 9-2320-364-20).

(3) If removed, install heater compartment access panel and eight screws (TM 9-2320-364-20).

(4) If removed, install left ECB cover and six screws (TM 9-2320-364-20).

(5) Turn engine start switch ON (TM 9-2320-364-10).

(6) Verify AC heater/evaporator blower operation (WP 0004).

(a) If AC heater/evaporator blower does not operate, fault is not corrected. Turn fan control and engine start switch OFF and notify Supervisor.

(b) If AC heater/evaporator blower operates, fault has been corrected.



END OF WORK PACKAGE

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH)

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

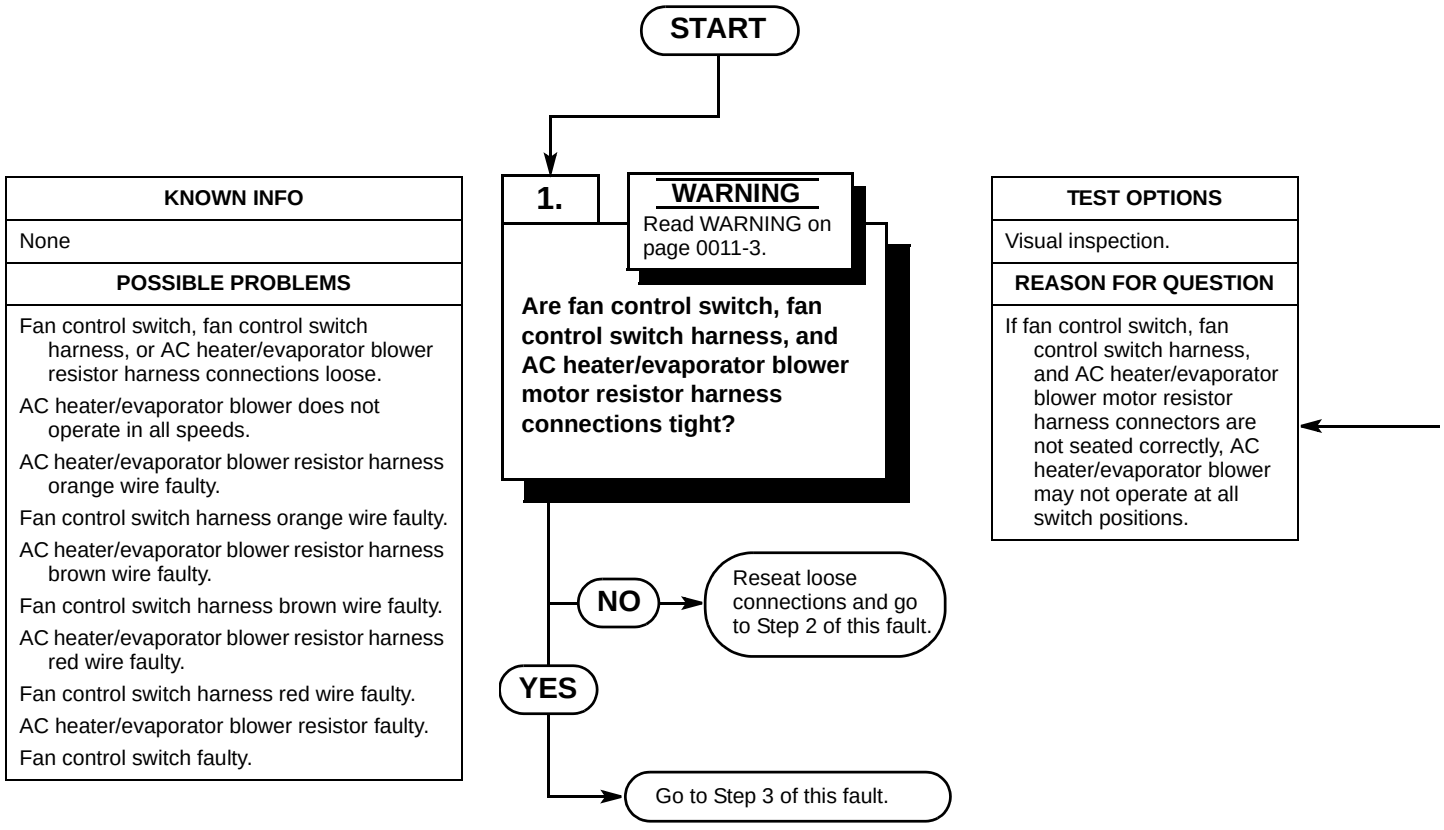
Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Multimeter (Item 2, Appendix F)

Materials/Parts
None

Personnel Required
One

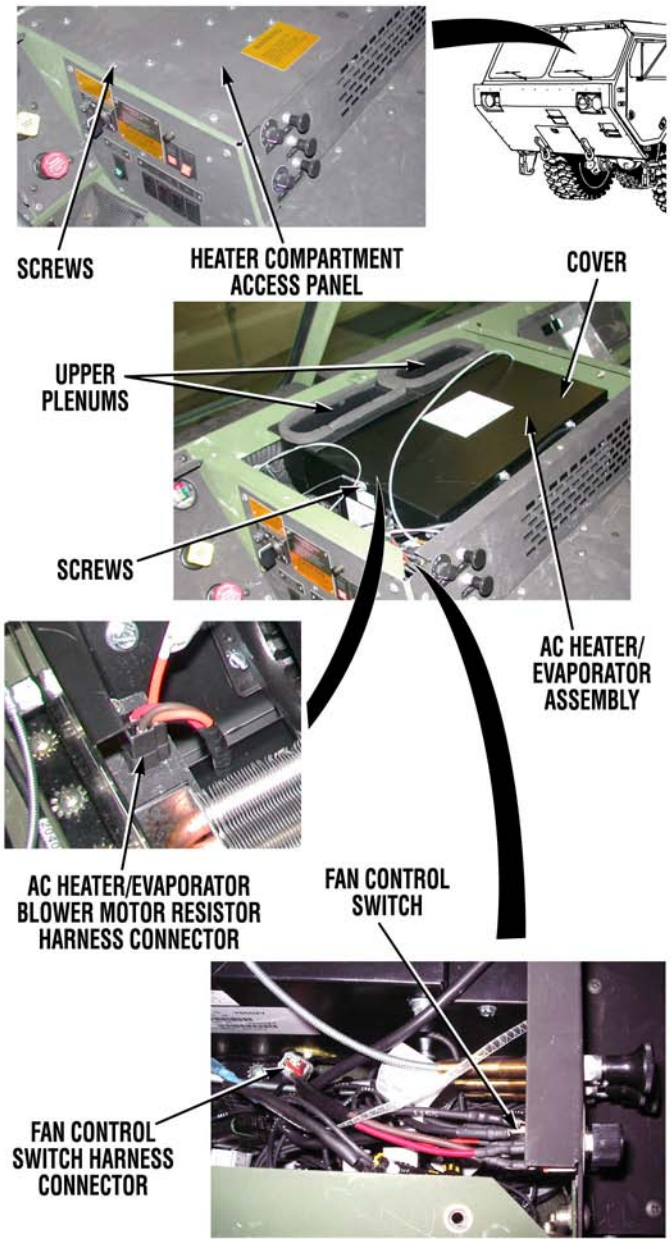
References
TM 9-2320-364-10
TM 9-2320-364-20



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.



VISUAL INSPECTION

(1) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

(2) Remove two upper plenums (TM 9-2320-364-20).

(3) Remove four screws, washers, lockwashers, and cover from AC heater/evaporator blower motor resistor harness assembly (WP 0036).

(4) Inspect fan control switch, fan control switch harness, and AC heater/evaporator blower motor resistor harness for loose connections.

(a) If fan control switch harness connections are loose, connect connections (WP 0031) and go to Step 2 of this fault.

(b) If AC heater/evaporator blower motor resistor harness connections are loose, connect connections (WP 0036) and go to Step 2 of this fault.

(c) If connections are tight, go to Step 3 of this fault.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower does not operate in all speeds.
AC heater/evaporator blower resistor harness orange wire faulty.
Fan control switch harness orange wire faulty.
AC heater/evaporator blower resistor harness brown wire faulty.
Fan control switch harness brown wire faulty.
AC heater/evaporator blower resistor harness red wire faulty.
Fan control switch harness red wire faulty.
AC heater/evaporator blower resistor faulty.
Fan control switch faulty.

2.

Does AC heater/evaporator blower motor operate in low, medium, and high fan control switch positions after reseating loose connections?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC heater/evaporator blower operates in all blower speed switch positions, problem has been corrected.

NO → Go to Step 3 of this fault.

YES → Go to Step 15 of this fault.

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower does not operate in all speeds.
AC heater/evaporator blower resistor harness orange wire faulty.
Fan control switch harness orange wire faulty.
AC heater/evaporator blower resistor harness brown wire faulty.
Fan control switch harness brown wire faulty.
AC heater/evaporator blower resistor harness red wire faulty.
Fan control switch harness red wire faulty.
AC heater/evaporator blower resistor faulty.
Fan control switch faulty.

3.

Does AC heater/evaporator blower motor operate in at least one fan control switch position (low, medium or high)?

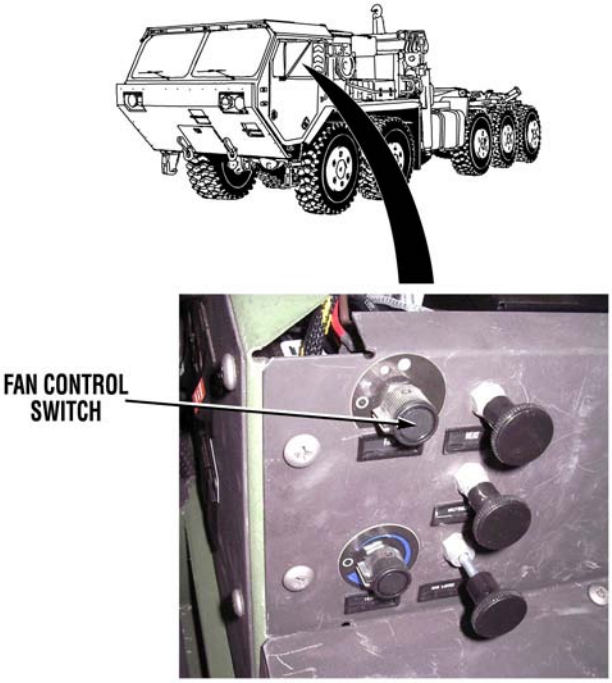
TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC heater/evaporator blower operates in at least one speed, power to fan control switch and AC heater/evaporator blower motor circuit is OK.

NO → Go to work package 0010 (AC Heater/ Evaporator Blower Does Not Operate).

YES

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

VISUAL INSPECTION
(1) Turn engine start switch ON (TM 9-2320-364-10). (2) Turn fan control switch to low, medium, and high speed positions (WP 0004). Verify AC heater/ evaporator blower operation in all positions. (a) If AC heater/evaporator blower does not operate in all positions, go to Step 3 of this fault. (b) If AC heater/evaporator blower operates at all positions, turn engine start switch OFF and go to Step 15 of this fault.



VISUAL INSPECTION
(1) If OFF, turn engine start switch ON (TM 9-2320-364-10). (2) Turn fan control switch to low, medium, and high speed positions (WP 0004). Verify AC heater/ evaporator blower operation in all positions. (a) If AC heater/evaporator blower does not operate in at least one switch position, go to work package 0010 (AC Heater/Evaporator Blower Does Not Operate). (b) If AC heater/evaporator blower operates in at least one fan control switch position, go to Step 4 of this fault.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
POSSIBLE PROBLEMS
AC heater/evaporator blower resistor harness orange wire faulty.
Fan control switch harness orange wire faulty.
AC heater/evaporator blower resistor harness brown wire faulty.
Fan control switch harness brown wire faulty.
AC heater/evaporator blower resistor harness red wire faulty.
Fan control switch harness red wire faulty.
AC heater/evaporator blower resistor faulty.
Fan control switch faulty.

4. **Does AC heater/evaporator blower motor operate when fan control switch is in the high speed position?**

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC heater/evaporator blower operates at high speed, high speed blower circuit is OK.

NO → Go to Step 12 of this fault.

YES

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower resistor harness brown wire faulty.
Fan control switch harness brown wire faulty.
AC heater/evaporator blower resistor harness red wire faulty.
Fan control switch harness red wire faulty.
AC heater/evaporator blower resistor faulty.
Fan control switch faulty.

5. **Does AC heater/evaporator blower motor operate when fan control switch is in the medium speed position?**

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC heater/evaporator blower operates at medium speed, medium speed blower circuit is OK.

NO → Go to Step 9 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

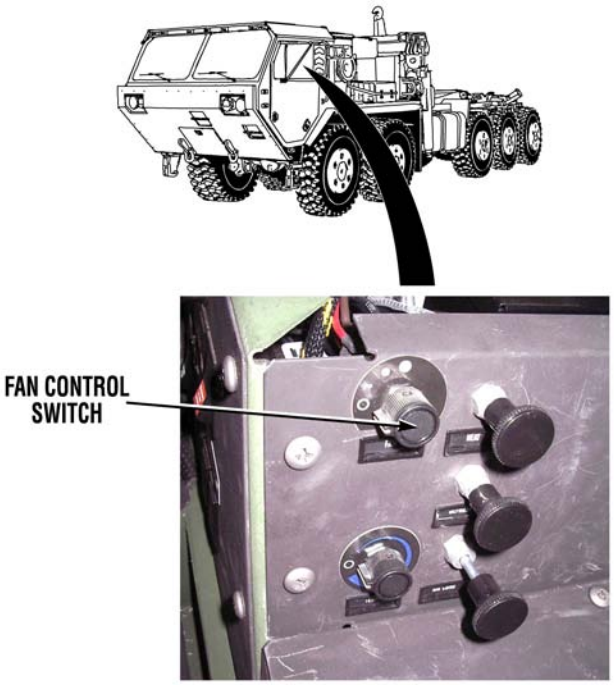
VISUAL INSPECTION

(1) If OFF, turn engine start switch ON (TM 9-2320-364-10).

(2) Turn fan control switch to high speed position (WP 0004). Verify AC heater/evaporator blower operation.

(a) If AC heater/evaporator blower does not operate when the fan control switch is in the high speed position, go to Step 12 of this fault.

(b) If AC heater/evaporator blower operates when the fan control switch is in the high speed position, go to Step 5 of this fault.



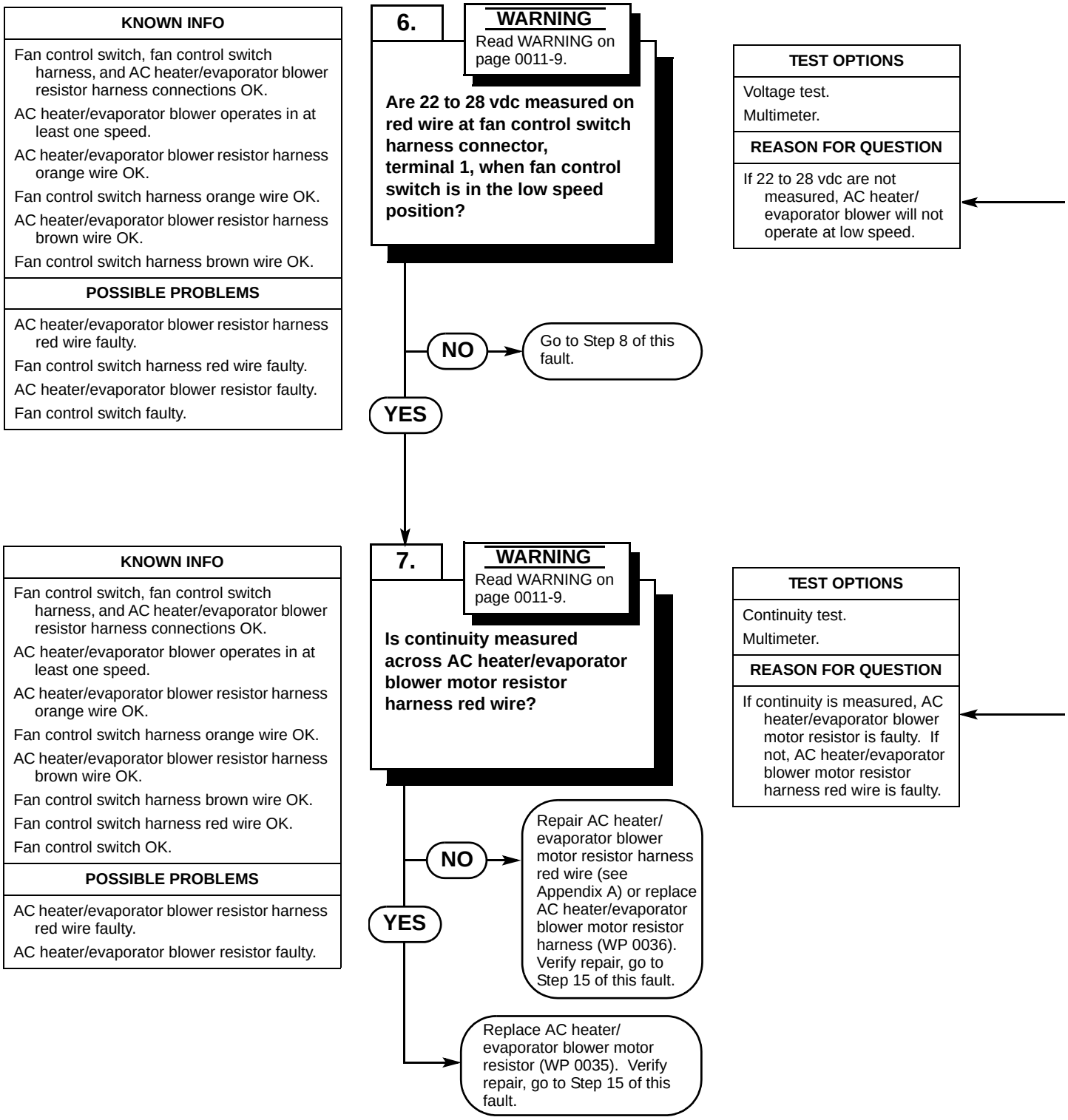
VISUAL INSPECTION

Turn fan control switch to medium speed position (WP 0004). Verify AC heater/evaporator blower operation.

(a) If AC heater/evaporator blower does not operate when the fan control switch is in the medium speed position, go to Step 9 of this fault.

(b) If AC heater/evaporator blower operates when the fan control switch is in the medium speed position, turn engine start switch OFF and go to Step 6 of this fault.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Disconnect fan control switch harness connector (WP 0031).

(2) Turn engine start switch ON (TM 9-2320-364-10).

(3) Turn fan control switch to low speed position (WP 0004).

(4) Place positive (+) probe of multimeter on red wire at fan control switch harness connector, terminal 1.

(5) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and go to Step 8 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF and go to Step 7 of this fault.

CONTINUITY TEST

(1) Disconnect AC heater/evaporator blower motor resistor harness connector from AC heater/evaporator blower motor resistor (WP 0036).

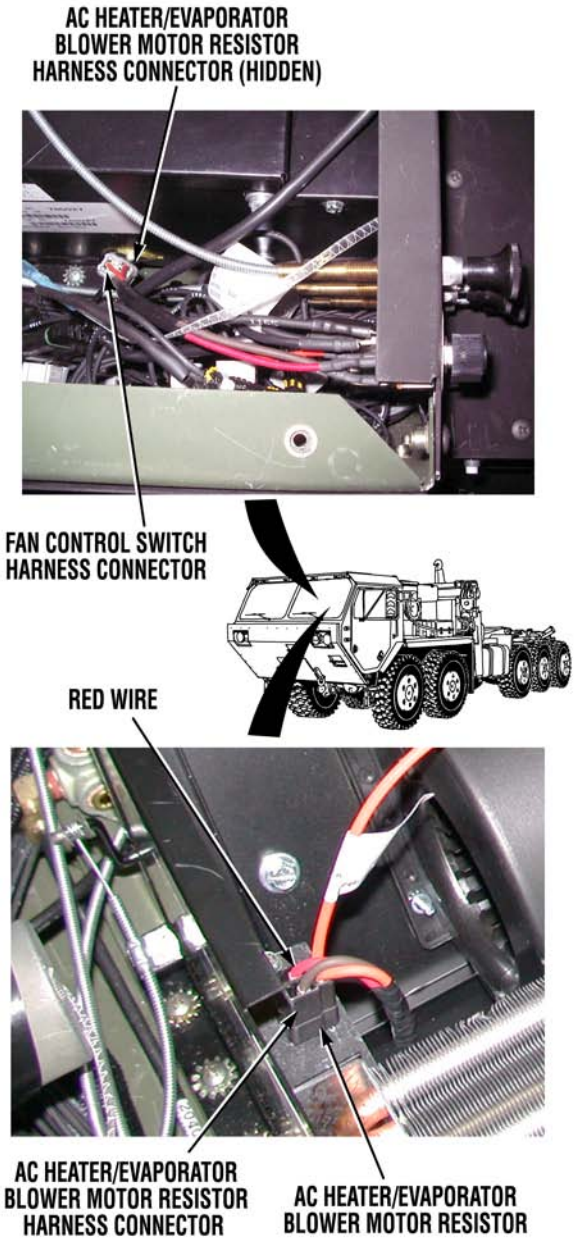
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on AC heater/evaporator blower motor resistor harness red wire at AC heater/evaporator blower motor resistor connector.

(4) Place negative (-) probe of multimeter on AC heater/evaporator blower motor resistor harness red wire at fan control switch harness connector, terminal 1.

(a) If there is no continuity, repair AC heater/evaporator blower motor resistor harness red wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace AC heater/evaporator blower motor resistor (WP 0035). Verify repair, go to Step 15 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
AC heater/evaporator blower resistor harness brown wire OK.
Fan control switch harness brown wire OK.
AC heater/evaporator blower resistor harness red wire OK.
AC heater/evaporator blower resistor OK.
POSSIBLE PROBLEMS
Fan control switch harness red wire faulty.
Fan control switch faulty.

8. **WARNING** Read WARNING on page 0011-11.

Is continuity measured across fan control switch harness red wire?

NO → Repair fan control switch harness red wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.

YES → Replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, fan control switch is faulty. If not, fan control switch harness red wire is faulty.

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
AC heater/evaporator blower resistor harness red wire OK.
Fan control switch harness red wire OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower resistor harness brown wire faulty.
Fan control switch harness brown wire faulty.
AC heater/evaporator blower resistor faulty.
Fan control switch faulty.

9. **WARNING** Read WARNING on page 0011-11.

Are 22 to 28 vdc measured on brown wire at fan control switch harness connector, terminal 2, when fan control switch is in the medium speed position?

NO → Go to Step 11 of this fault.

YES →

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC heater/evaporator blower will not operate at medium speed.

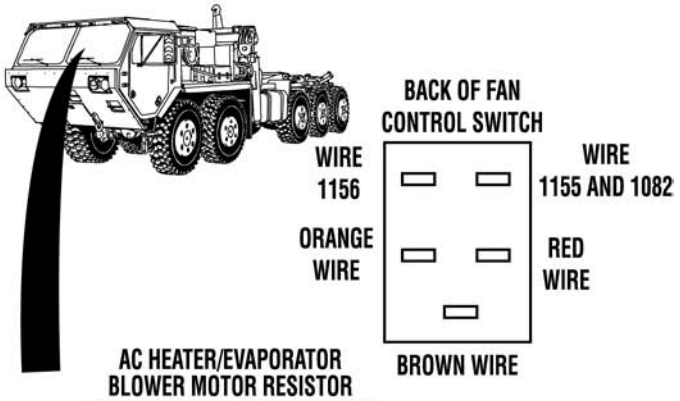
AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

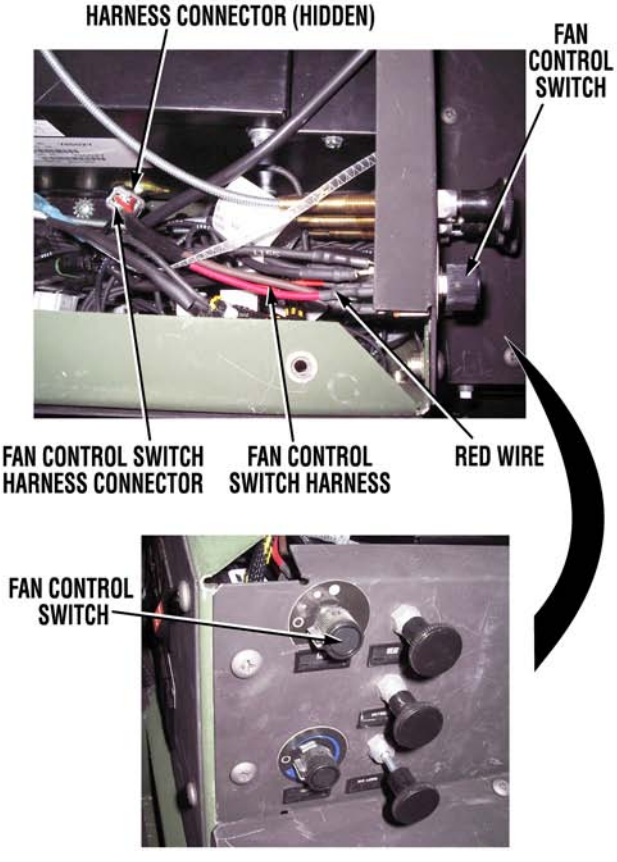
WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Disconnect fan control switch harness red wire from fan control switch (WP 0031).
(2) Set multimeter switch to ohms.
(3) Place positive (+) probe of multimeter on fan control switch harness red wire at AC heater/evaporator blower motor resistor harness connector, terminal 1.
(4) Place negative (-) probe of multimeter on fan control switch harness red wire at fan control switch.
    (a) If there is no continuity, repair fan control switch harness red wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.
    (b) If there is continuity, replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.





VOLTAGE TEST

(1) Disconnect fan control switch harness connector (WP 0031).
(2) Turn engine start switch ON (TM 9-2320-364-10).
(3) Turn fan control switch to medium speed position (WP 0004).
(4) Place positive (+) probe of multimeter on brown wire at fan control switch harness connector, terminal 2.
(5) Place negative (-) probe of multimeter on a known good ground.
    (a) If 22 to 28 vdc are not measured, turn engine start switch OFF, and go to Step 11 of this fault.
    (b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 10 of this fault.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
AC heater/evaporator blower resistor harness red wire OK.
Fan control switch harness red wire OK.
Fan control switch harness brown wire OK.
Fan control switch OK.
POSSIBLE PROBLEMS
AC heater/evaporator blower resistor harness brown wire faulty.
AC heater/evaporator blower resistor faulty.

10.

WARNING
Read WARNING on page 0011-13.

Is continuity measured across AC heater/evaporator blower motor resistor harness brown wire?

NO → Repair AC heater/evaporator blower motor resistor harness brown wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 15 of this fault.

YES → Replace AC heater/evaporator blower motor resistor (WP 0035). Verify repair, go to Step 15 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC heater/evaporator blower motor resistor is faulty. If not, AC heater/evaporator blower motor resistor harness brown wire is faulty.

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
Fan control switch harness red wire OK.
AC heater/evaporator blower resistor harness red wire OK.
AC heater/evaporator blower resistor harness brown wire OK.
AC heater/evaporator blower resistor OK.
POSSIBLE PROBLEMS
Fan control switch harness brown wire faulty.
Fan control switch faulty.

11.

WARNING
Read WARNING on page 0011-13.

Is continuity measured across fan control switch harness brown wire?

NO → Repair fan control switch harness brown wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.

YES → Replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, fan control switch is faulty. If not, fan control switch harness brown wire is faulty.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Disconnect AC heater/evaporator blower motor resistor harness connector from AC heater/evaporator blower motor resistor (WP 0036).

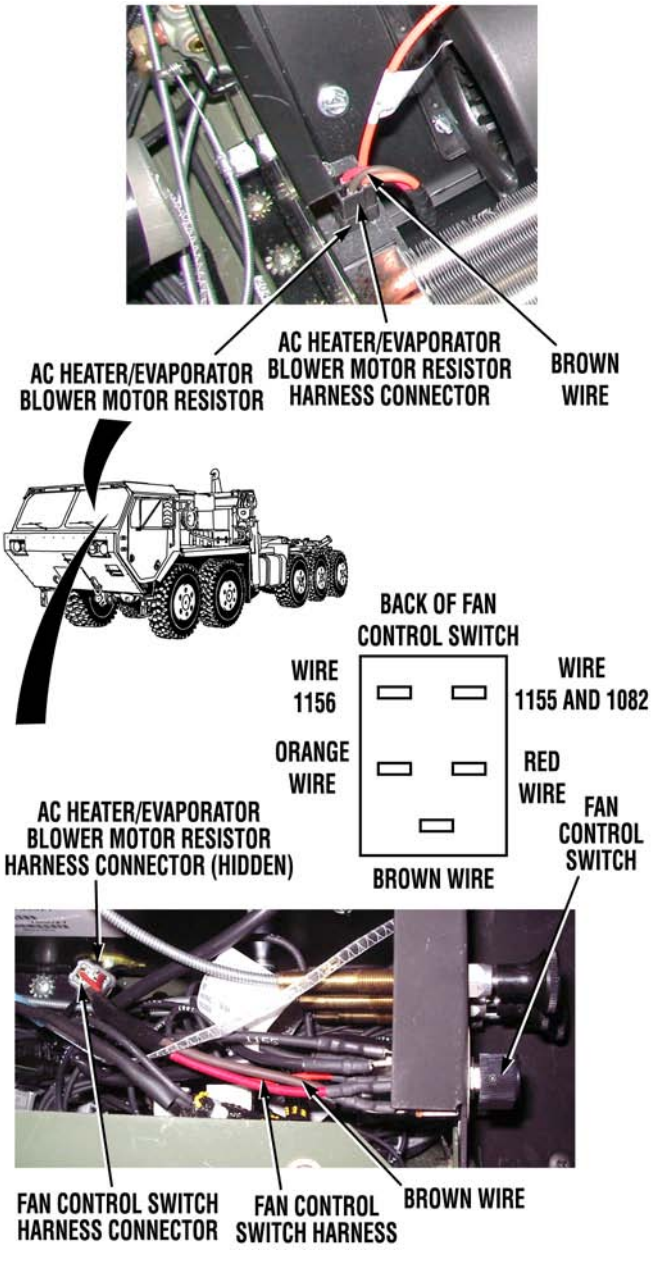
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on AC heater/evaporator blower motor resistor harness brown wire at AC heater/evaporator blower motor resistor connector.

(4) Place negative (-) probe of multimeter on AC heater/evaporator blower motor resistor harness brown wire at fan control switch harness connector, terminal 2.

(a) If there is no continuity, repair AC heater/evaporator blower motor resistor harness brown wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace AC heater/evaporator blower motor resistor (WP 0035). Verify repair, go to Step 15 of this fault.



CONTINUITY TEST

(1) Disconnect fan control switch harness brown wire from fan control switch (WP 0031).

(2) Set multimeter switch to ohms.

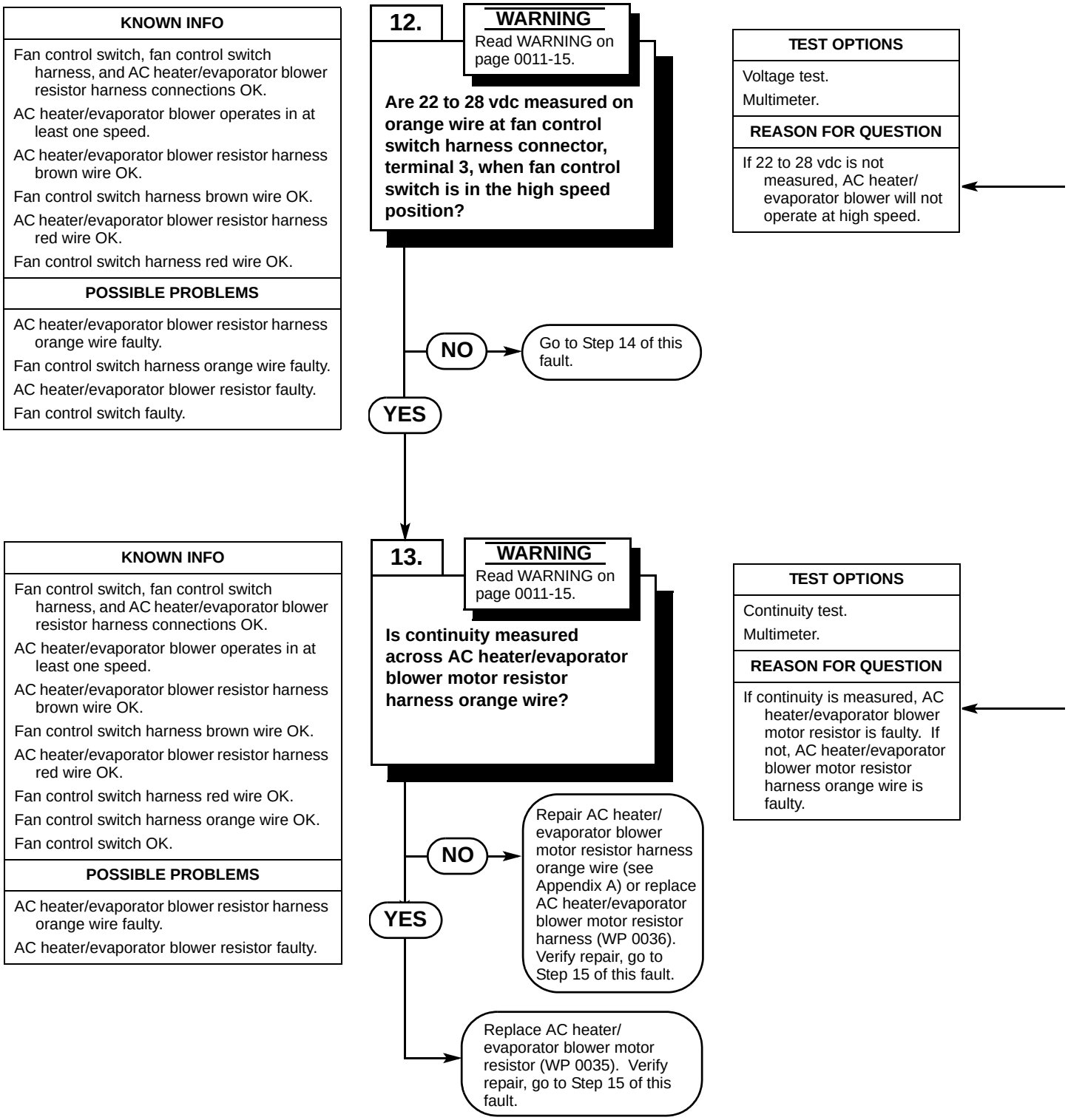
(3) Place positive (+) probe of multimeter on fan control switch harness brown wire at AC heater/evaporator blower resistor harness connector, terminal 2.

(4) Place negative (-) probe of multimeter on fan control switch harness brown wire at fan control switch.

(a) If there is no continuity, repair fan control switch harness brown wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

WARNING

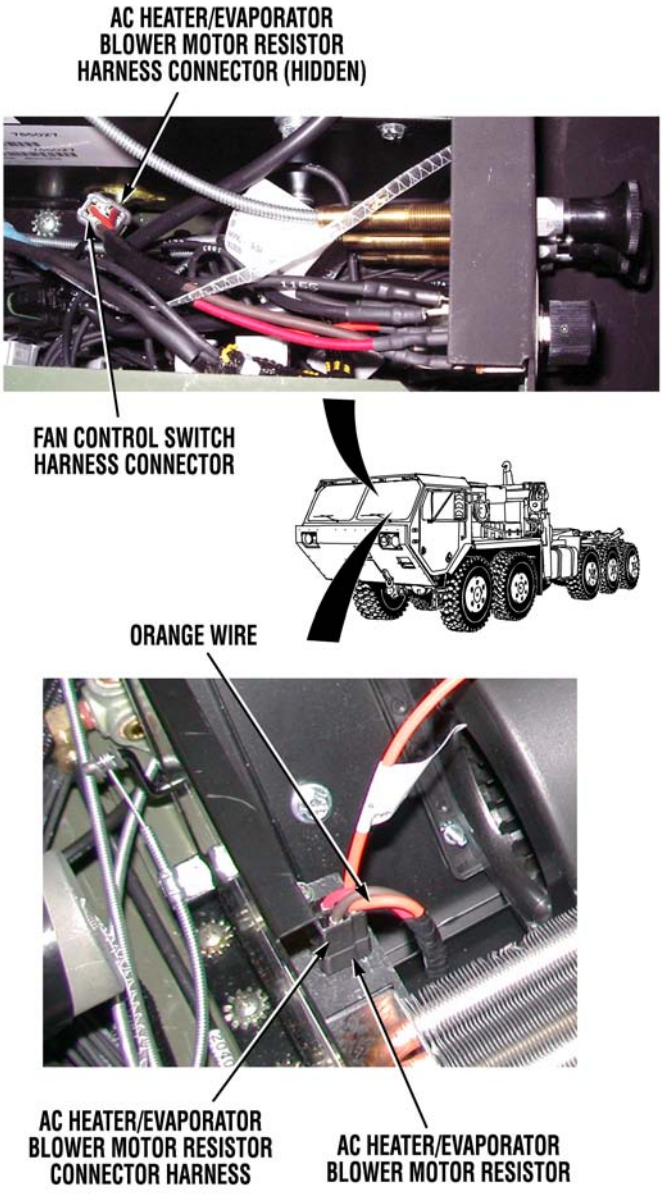
Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Disconnect fan control switch harness connector (WP 0031).
(2) Turn engine start switch ON (TM 9-2320-364-10).
(3) Turn fan control switch to high speed position (WP 0004).
(4) Place positive (+) probe of multimeter on orange wire at fan control switch harness connector, terminal 3.
(5) Place negative (-) probe of multimeter on a known good ground.
    (a) If 22 to 28 vdc are not measured, turn engine start switch OFF and go to Step 14 of this fault.
    (b) If 22 to 28 vdc are measured, turn engine start switch OFF and go to Step 13 of this fault.

CONTINUITY TEST

(1) Disconnect AC heater/evaporator blower motor resistor harness connector from AC heater/evaporator blower motor resistor (WP 0036).
(2) Set multimeter switch to ohms.
(3) Place positive (+) probe of multimeter on AC heater/evaporator blower motor resistor harness orange wire at AC heater/evaporator blower motor resistor connector.
(4) Place negative (-) probe of multimeter on AC heater/evaporator blower motor resistor harness orange wire at fan control switch harness connector, terminal 3.
    (a) If there is no continuity, repair AC heater/evaporator blower motor resistor harness orange wire (see Appendix A) or replace AC heater/evaporator blower motor resistor harness (WP 0036). Verify repair, go to Step 15 of this fault.
    (b) If there is continuity, replace AC heater/evaporator blower motor resistor (WP 0035). Verify repair, go to Step 15 of this fault.



AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness brown wire OK.
Fan control switch harness brown wire OK.
AC heater/evaporator blower resistor harness red wire OK.
Fan control switch harness red wire OK.
AC heater/evaporator blower resistor harness orange wire OK.
AC heater/evaporator blower resistor OK.
POSSIBLE PROBLEMS
Fan control switch harness orange wire faulty.
Fan control switch faulty.

14.

WARNING
Read WARNING on page 0011-17/ (0011-18 blank).

Is continuity measured across fan control switch harness orange wire?

NO → Repair fan control switch harness orange wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.

YES → Replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, fan control switch is faulty. If not, fan control switch harness orange wire is faulty.

KNOWN INFO
Fan control switch, fan control switch harness, and AC heater/evaporator blower resistor harness connections OK.
AC heater/evaporator blower operates in at least one speed.
AC heater/evaporator blower resistor harness orange wire OK.
Fan control switch harness orange wire OK.
AC heater/evaporator blower resistor harness brown wire OK.
Fan control switch harness brown wire OK.
AC heater/evaporator blower resistor harness red wire OK.
Fan control switch harness red wire OK.
AC heater/evaporator blower resistor OK.
Fan control switch OK.
POSSIBLE PROBLEMS
None

15.

WARNING
Read WARNING on page 0011-17/ (0011-18 blank).

Does AC heater/evaporator blower operate at low, medium, and high speeds?

NO → Fault not corrected, notify Supervisor.

YES → Fault corrected.

TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC heater/evaporator blower operates at low, medium, and high speeds, fault has been corrected.

AC HEATER/EVAPORATOR BLOWER DOES NOT OPERATE IN ALL SPEEDS (LOW, MEDIUM, AND HIGH) - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Disconnect fan control switch harness orange wire from fan control switch (WP 0031).

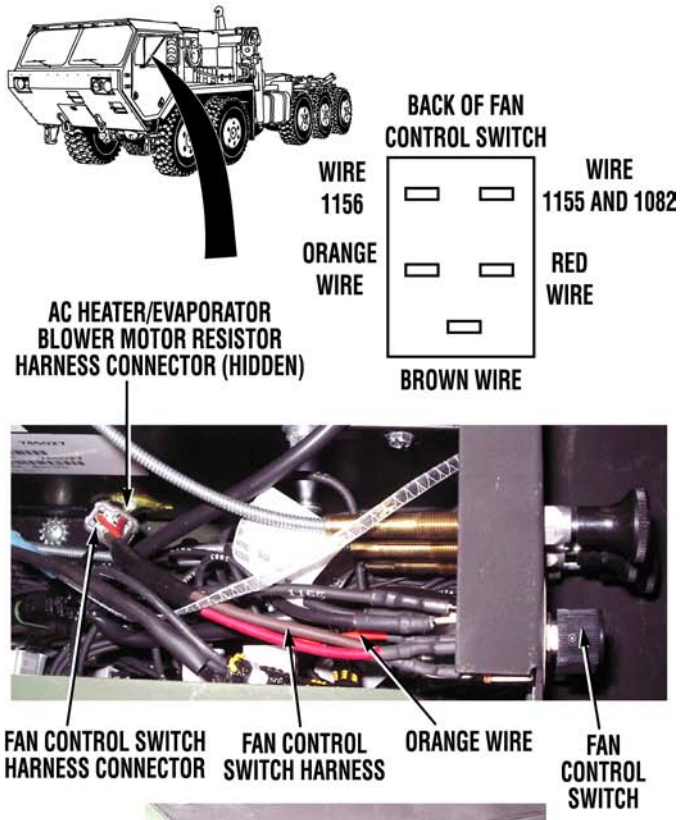
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on fan control switch harness orange wire at AC heater/evaporator blower motor resistor harness connector, terminal 3.

(4) Place negative (-) probe of multimeter on fan control switch harness orange wire at fan control switch.

(a) If there is no continuity, repair fan control switch harness orange wire (see Appendix A) or replace fan control switch harness (WP 0031). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace fan control switch (WP 0031). Verify repair, go to Step 15 of this fault.



VERIFY REPAIR

(1) If disconnected, connect fan control switch harness connector (WP 0031).

(2) If disconnected, connect AC heater/evaporator blower motor resistor harness connector (WP 0036).

(3) If disconnected, connect red, brown, and orange wires on fan control switch (WP 0031).

(4) Install cover and four screws, washers, and lockwashers on AC heater/evaporator assembly (WP 0036).

(5) Install two upper plenums (TM 9-2320-364-20).

(6) Install heater compartment access panel and eight screws (TM 9-2320-364-20).

(7) Turn engine start switch ON (TM 9-2320-364-10).

(8) Turn fan control switch to low, medium, and high speed positions (WP 0004). Verify AC heater/evaporator blower operation in all positions.

(a) If AC heater/evaporator blower does not operate in all positions, fault is not corrected. Turn fan control switch and engine start switch to OFF and notify Supervisor.

(b) If AC heater/evaporator blower operates at all positions, fault has been corrected.



END OF WORK PACKAGE

0012

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

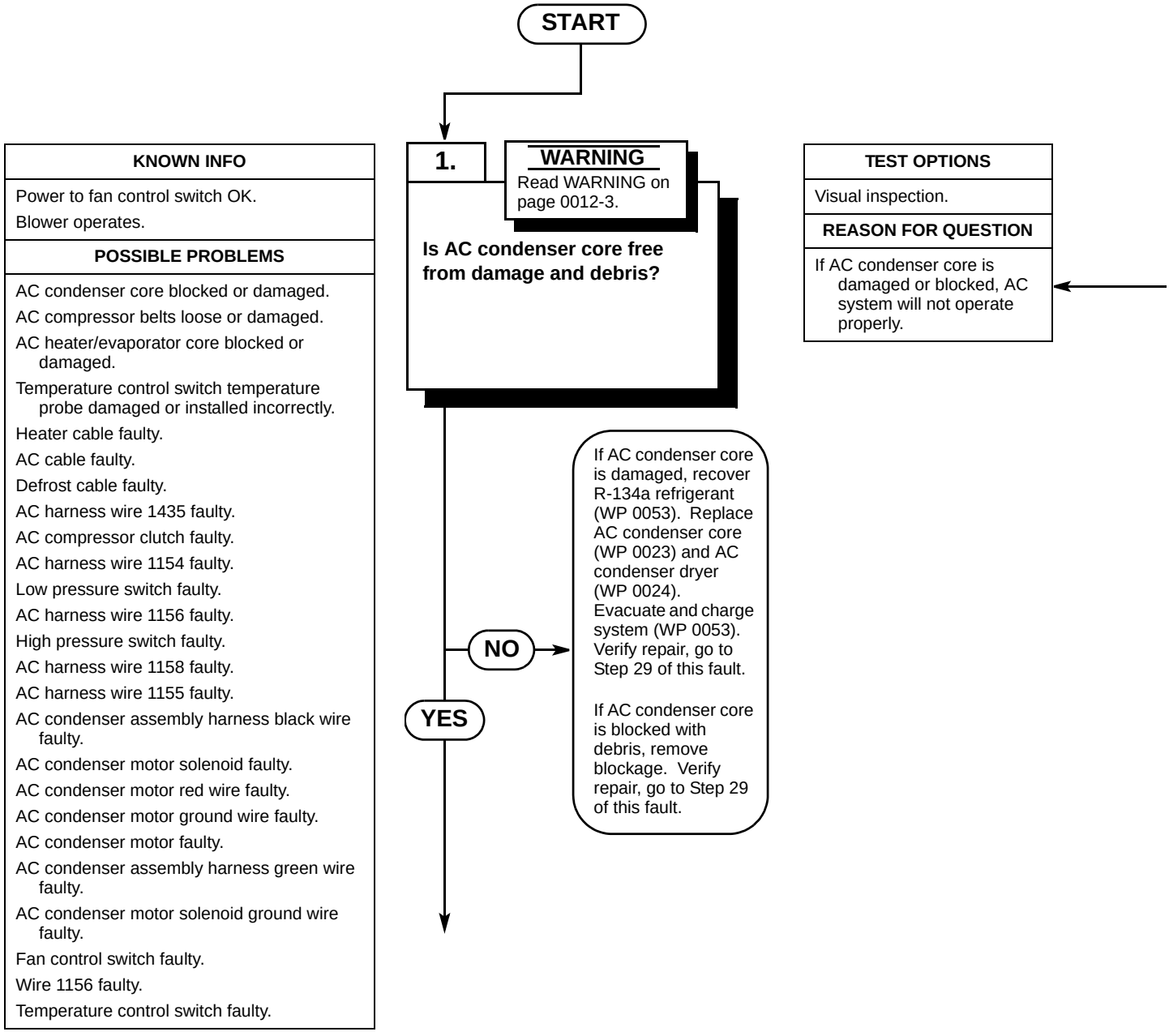
Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Multimeter (Item 2, Appendix F)

Materials/Parts
None

Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20

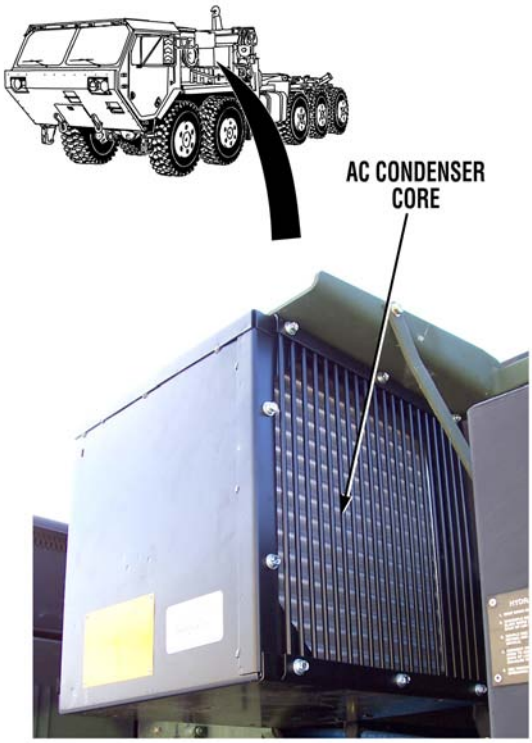
AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.



VISUAL INSPECTION
Inspect AC condenser core for damage and blockage from debris. (a) If AC condenser core is damaged: 1. Recover R-134a refrigerant (WP 0053). 2. Replace AC condenser core (WP 0023). 3. Replace AC condenser dryer (WP 0024). 4. Evacuate and charge system (WP 0053). 5. Verify repair, go to Step 29 of this fault. (b) If AC condenser core is blocked with debris, remove blockage. Verify repair, go to Step 29 of this fault. (c) If AC condenser core is free from damage and blockage, go to Step 2 of this fault.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
POSSIBLE PROBLEMS
AC compressor belts loose or damaged.
AC heater/evaporator core blocked or damaged.
Temperature control switch temperature probe damaged or installed incorrectly.
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
High pressure switch faulty.
AC harness wire 1158 faulty.
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.

2.

Are AC compressor belts tight and free from damage?

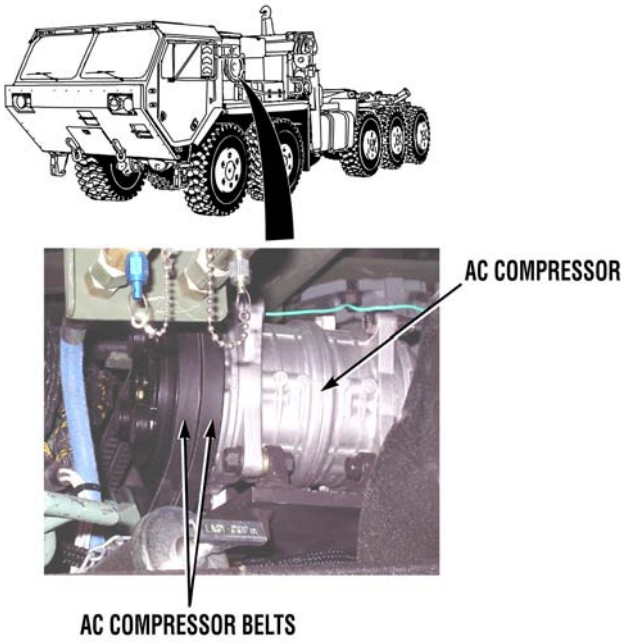
TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC compressor belts are missing, loose, or damaged, AC compressor will not operate properly.

NO → Replace or tighten AC compressor belts as required (WP 0020). Verify repair, go to Step 29 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

VISUAL INSPECTION
(1) Remove driver side noise panel (WP 0051). (2) Inspect AC compressor belts for looseness and damage. (a) If AC compressor belts are missing, damaged, or loose, replace or tighten belts as required (WP 0020). Verify repair, go to Step 29 of this fault. (b) If AC compressor belts are tight and free from damage, go to Step 3 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
POSSIBLE PROBLEMS
AC heater/evaporator core blocked or damaged.
Temperature control switch temperature probe damaged or installed incorrectly.
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
High pressure switch faulty.
AC harness wire 1158 faulty.
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.

3.

WARNING

Read WARNING on page 0012-7.

Is AC heater/evaporator core free from damage and debris?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC heater/evaporator core is damaged or blocked, AC system will not operate properly.

NO

If AC heater/evaporator core is damaged, recover R-134a refrigerant (WP 0053). Replace AC heater/evaporator core (WP 0030) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 29 of this fault.

If AC heater/evaporator core is blocked with debris, remove blockage. Verify repair, go to Step 29 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**
- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**

VISUAL INSPECTION

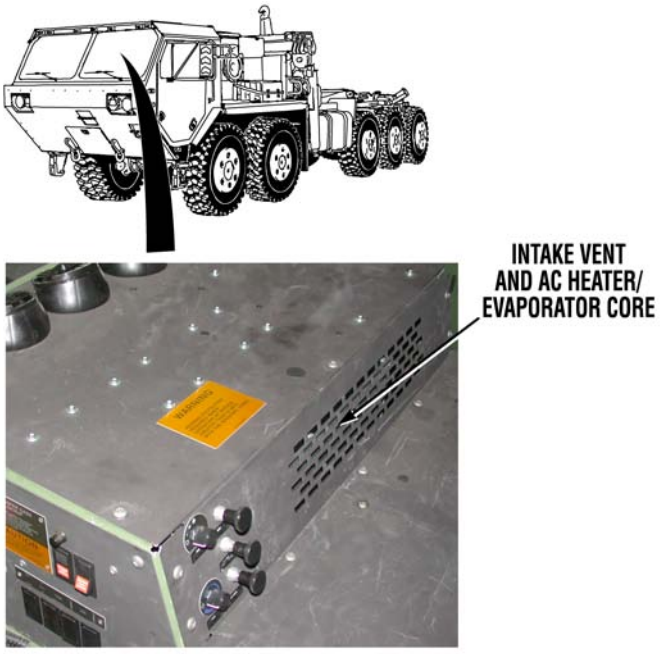
Inspect AC heater/evaporator core for damage and blockage from debris.

(a) If AC heater/evaporator core is damaged:

1. Recover R-134a refrigerant (WP 0053).
2. Replace AC heater/evaporator core (WP 0030).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and charge system (WP 0053).
5. Verify repair, go to Step 29 of this fault.

(b) If AC heater/evaporator core is blocked with debris, remove eight screws and heater compartment access panel (TM 9-2320-364-20), loosen four screws and pull heater compartment front cover aside (WP 0037), and remove blockage. Verify repair, go to Step 29 of this fault.

(c) If AC heater/evaporator core is free from damage and blockage, go to Step 4 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
POSSIBLE PROBLEMS
Temperature control switch temperature probe damaged or installed incorrectly.
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
High pressure switch faulty.
AC harness wire 1158 faulty.
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.

4.

WARNING

Read WARNING on page 0012-9.

Is temperature control switch temperature probe free from damage and installed correctly in AC heater/ evaporator core?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If temperature control switch temperature probe is damaged or installed incorrectly, AC system will not operate properly.

NO →

If temperature control switch temperature probe is damaged, replace temperature control switch (WP 0044). Verify repair, go to Step 29 of this fault.

If temperature control switch temperature probe is installed incorrectly, reinstall temperature control switch temperature probe (WP 0044). Verify repair, go to Step 29 of this fault.

YES ↓

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION

NOTE: Temperature control switch temperature probe is installed correctly when it is inserted into the AC evaporator core until it touches the bottom of the insertion hole.

(1) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

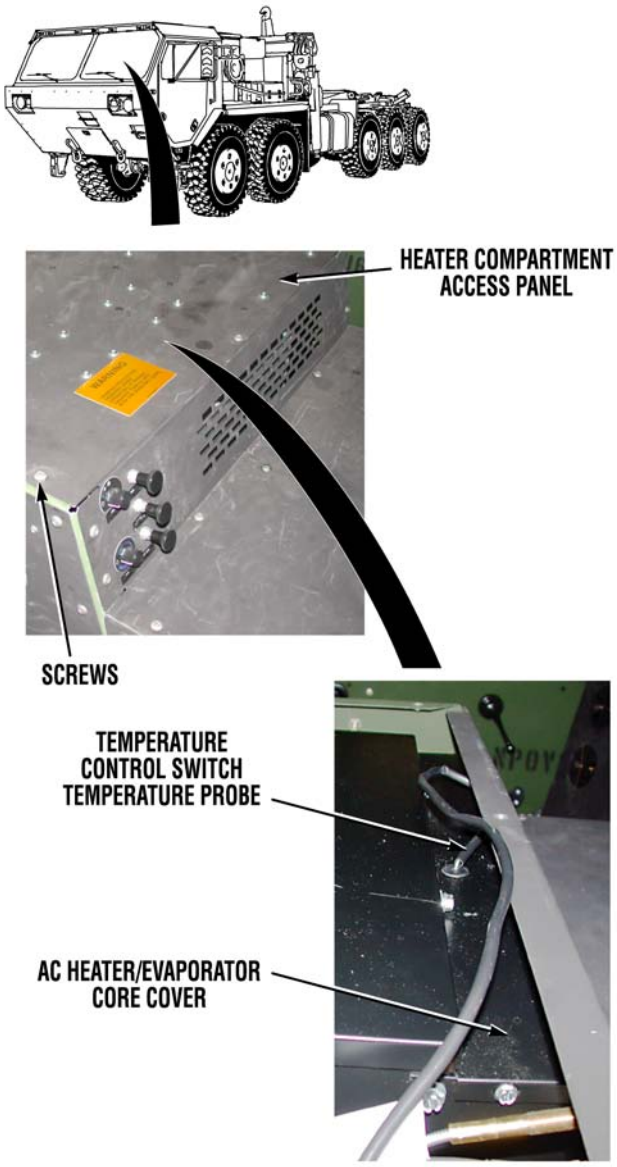
(2) Inspect temperature control switch temperature probe for damage.

  (a) If temperature control switch temperature probe is damaged, replace temperature control switch (WP 0044). Verify repair, go to Step 29 of this fault.

(3) Check if temperature control switch temperature probe is installed correctly.

  (a) If temperature control switch temperature probe is installed incorrectly, reinstall temperature control switch temperature probe (WP 0044). Verify repair, go to Step 29 of this fault.

  (b) If temperature control switch temperature probe is installed correctly, go to Step 5 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.

POSSIBLE PROBLEMS
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
High pressure switch faulty.
AC harness wire 1158 faulty.
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.

5.

Does AC condenser fan operate when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

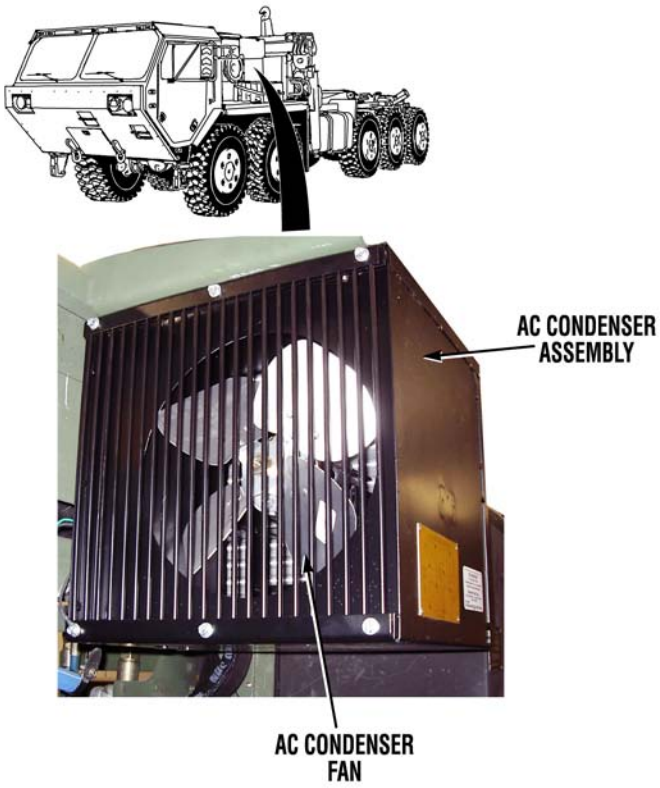
NO → Go to Step 16 of this fault.

YES

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC condenser fan does not operate, AC system will not operate properly.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

VISUAL INSPECTION
(1) Turn engine start switch ON (TM 9-2320-364-10).
(2) Turn fan control switch to an on position (low, medium, or high) (WP 0004).
(3) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).
(4) Verify operation of AC condenser fan.
(a) If AC condenser fan does not operate, turn engine start switch OFF and go to Step 16 of this fault.
(b) If AC condenser fan operates, turn engine start switch OFF and go to Step 6 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.

POSSIBLE PROBLEMS
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
AC harness wire 1158 faulty.
High pressure switch faulty.

6.

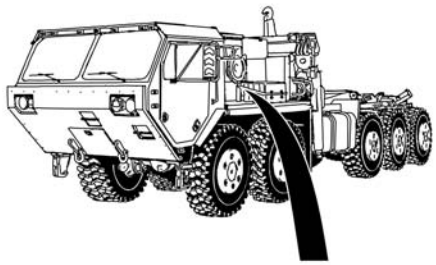
Does AC compressor clutch engage when engine start switch is turned on, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

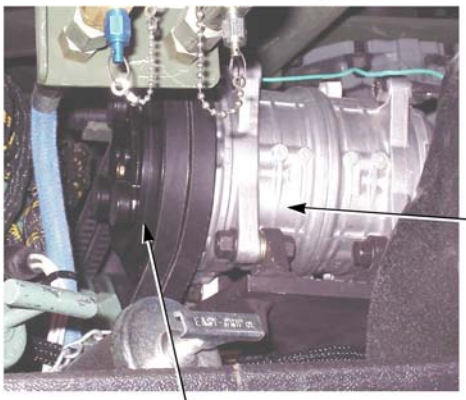
NO → Go to Step 10 of this fault.

YES

TEST OPTIONS
Audible test.
REASON FOR QUESTION
If AC compressor clutch does not engage, AC compressor will not operate.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued





AUDIBLE TEST

NOTE: Do not start engine during this procedure. AC compressor clutch operation will be checked by listening for a clicking sound from the AC compressor when the engine start switch is turned to ON position.

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(3) While assistant turns engine start switch ON (TM 9-2320-364-10), verify operation of AC compressor clutch by listening for a click when engine start switch is turned ON.

(a) If AC compressor clutch does not engage, turn engine start switch OFF and go to Step 10 of this fault.

(b) If AC compressor clutch engages, turn engine start switch OFF and go to Step 7 of this fault.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
AC harness wire 1158 OK.
High pressure switch OK.

POSSIBLE PROBLEMS
Heater cable faulty.
AC cable faulty.
Defrost cable faulty.

7. **WARNING**
Read WARNING on page 0012-15.

Is heater cable free from damage and binding?

NO → Replace heater cable (WP 0032). Verify repair, go to Step 29 of this fault.

YES

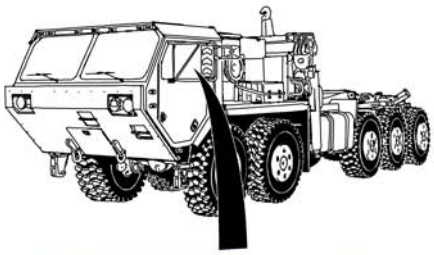
TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If heater cable is binding or damaged, the heater control valve may not be closed completely during AC operations.

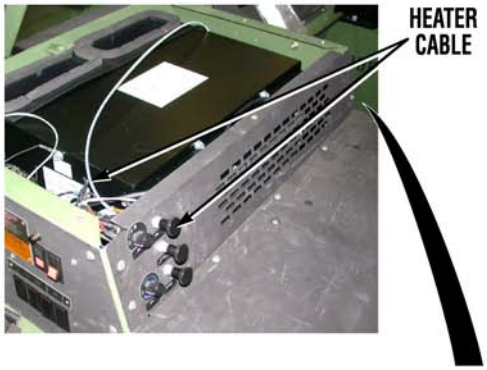
AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

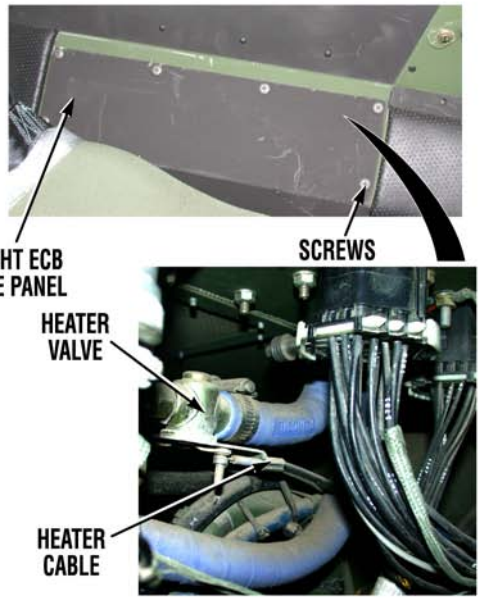
WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION
(1) Remove ten screws and right ECB side panel (TM 9-2320-364-20).
(2) Inspect heater cable for binding and damage.
(a) If heater cable is binding or damaged, replace heater cable (WP 0032). Verify repair, go to Step 29 of this fault.
(b) If heater cable is free from binding and damage, go to Step 8 of this fault.







AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
AC harness wire 1158 OK.
High pressure switch OK.
Heater cable OK.
POSSIBLE PROBLEMS
AC cable faulty.
Defrost cable faulty.

8.

WARNING

Read WARNING on page 0012-17.

Is AC cable free from damage and binding?

NO → Replace AC cable (WP 0019). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC cable is binding or damaged, the AC louver may not be positioned correctly for AC operations.

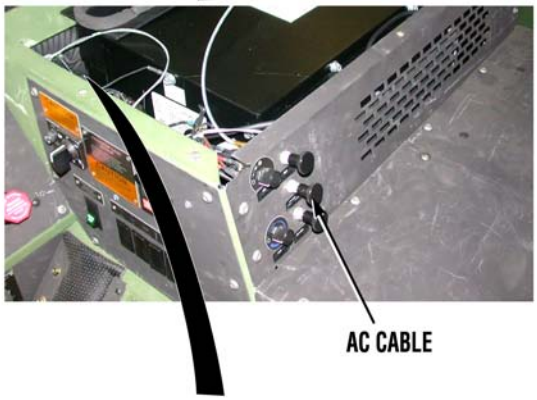
AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

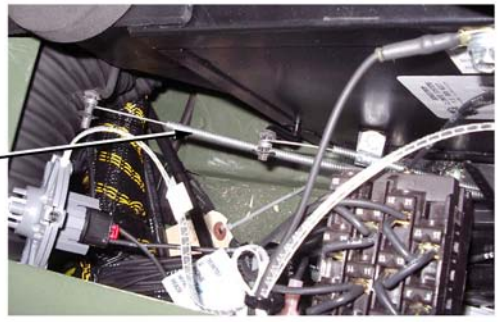
WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION
Inspect AC cable for binding and damage. (a) If AC cable is binding or damaged, replace AC cable (WP 0019). Verify repair, go to Step 29 of this fault. (b) If AC cable is free from binding and damage, go to Step 9 of this fault.







AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
AC harness wire 1158 OK.
High pressure switch OK.
Heater cable OK.
AC cable OK.
POSSIBLE PROBLEMS
Defrost cable faulty.

9. **WARNING**
Read WARNING on page 0012-19.

Is defrost cable free from damage and binding?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If defrost cable is binding or damaged, the defrost louver may not be positioned correctly for AC operations.

NO → Replace defrost cable (WP 0029). Verify repair, go to Step 29 of this fault.

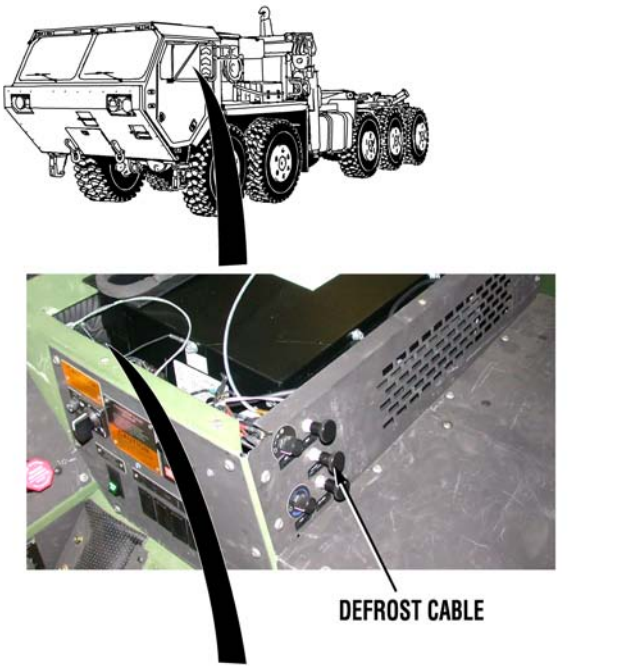
YES → Go to work package 0015 (AC Does Not Cool or Cools Inadequately).

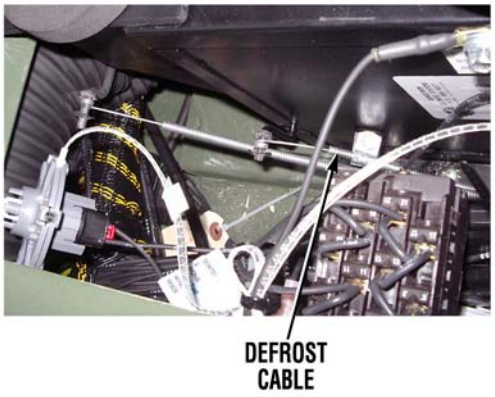
AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION
Inspect defrost cable for binding and damage. (a) If defrost cable is binding or damaged, replace defrost cable (WP 0029). Verify repair, go to Step 29 of this fault. (b) If defrost cable is free from binding and damage, go to work package 0015 (AC Does Not Cool or Cools Inadequately).





AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.

POSSIBLE PROBLEMS
AC harness wire 1435 faulty.
AC compressor clutch faulty.
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
AC harness wire 1158 faulty.
High pressure switch faulty.

10.

WARNING
Read WARNING on page 0012-21.

Are 22 to 28 vdc measured on AC harness wire 1154 at AC compressor clutch connector, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Connect AC harness wire 1154 connector to AC compressor clutch connector, and go to Step 12 of this fault.

YES

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC compressor clutch will not operate.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Disconnect AC harness wire 1154 from AC compressor clutch connector (WP 0022).

(2) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(3) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

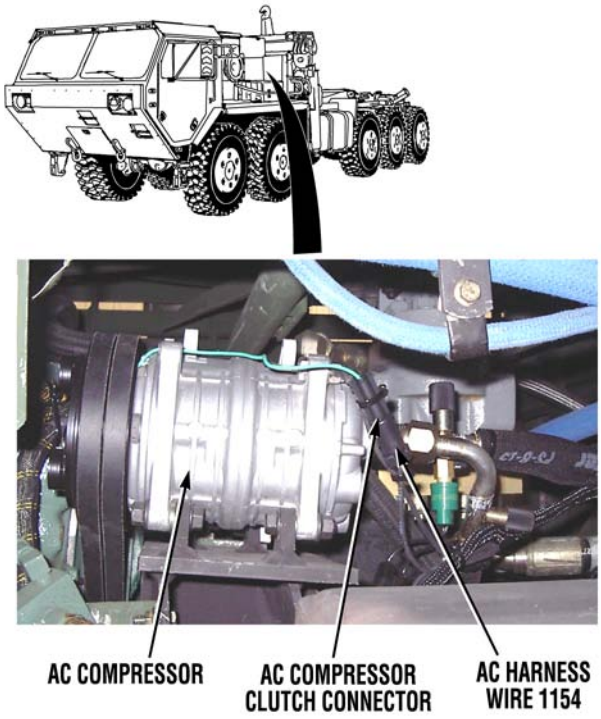
(4) Turn engine start switch ON (TM 9-2320-364-10).

(5) Place positive (+) probe of multimeter on AC harness wire 1154 at AC compressor clutch connector.

(6) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF, connect AC harness wire 1154 to AC compressor clutch connector and go to Step 12 of this fault.

(b) If 22 to 28 vdc are measured turn engine start switch OFF (TM 9-2320-364-10), and go to Step 11 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
AC harness wire 1158 OK.
High pressure switch OK.
POSSIBLE PROBLEMS
AC harness wire 1435 faulty.
AC compressor clutch faulty.

11.

WARNING
Read WARNING on page 0012-23.

Is continuity measured across AC harness wire 1435 from AC compressor connection to a known good ground?

NO → Repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Replace AC compressor (WP 0022) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 27 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC compressor clutch is faulty. If not, AC harness wire 1435 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

CONTINUITY TEST

(1) Set multimeter switch to ohms.

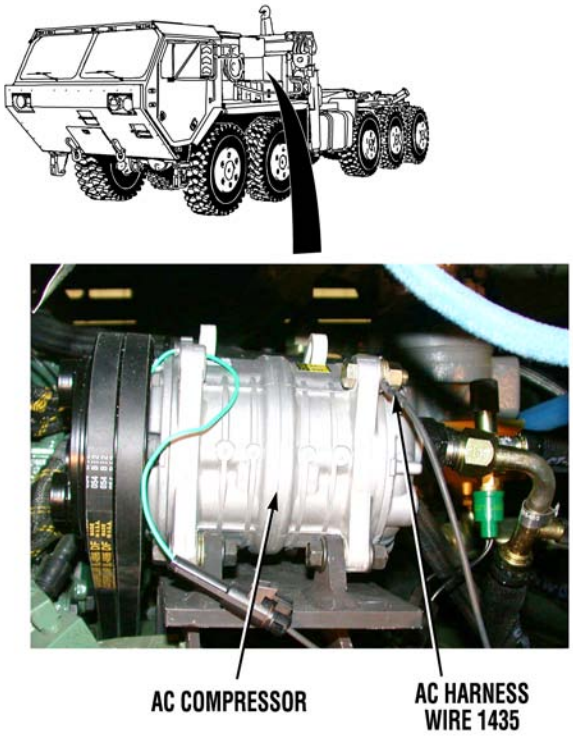
(2) Place positive (+) probe of multimeter on AC harness wire 1435 at AC compressor ground connection.

(3) Place negative (-) probe of multimeter on a known good ground.

(a) If there is no continuity, repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

(b) If there is continuity:

1. Recover R-134a refrigerant (WP 0053).
2. Replace AC compressor (WP 0022).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and charge system (WP 0053).
5. Verify repair, go to Step 29 of the fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1435 OK.
AC compressor clutch OK.

POSSIBLE PROBLEMS
AC harness wire 1154 faulty.
Low pressure switch faulty.
AC harness wire 1156 faulty.
AC harness wire 1158 faulty.
High pressure switch faulty.

12.

WARNING
Read WARNING on page 0012-25.

Are 22 to 28 vdc measured on AC harness wire 1158 at low pressure switch connector, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Connect AC harness pressure switch connector, and go to Step 14 of this fault.

YES

TEST OPTIONS
Voltage test. Multimeter.
REASON FOR QUESTION
To isolate system fault.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Remove ten screws and right ECB side panel (TM 9-2320-364-20).

(2) Disconnect AC harness wire 1158 from low pressure switch connector (WP 0040).

(3) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(4) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

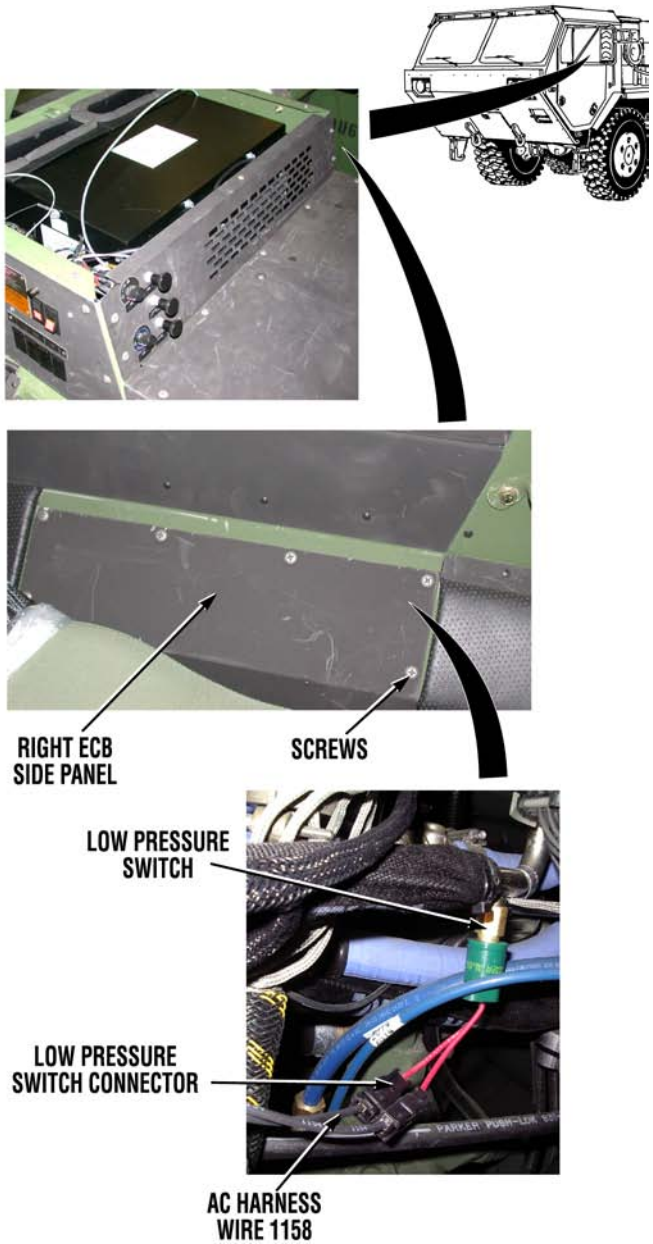
(5) Turn engine start switch ON (TM 9-2320-364-10).

(6) Place positive (+) probe of multimeter on AC harness wire 1158 at low pressure switch connector.

(7) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF, connect AC harness wire 1158 to low pressure switch connector and go to Step 14 of this fault.

(b) If 22 to 28 vdc are measured, turn engine switch OFF and go to Step 13 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1156 OK.
AC harness wire 1158 OK.
High pressure switch OK.
POSSIBLE PROBLEMS
AC harness wire 1154 faulty.
Low pressure switch faulty.

13. **WARNING**
Read WARNING on page 0012-27.

Is continuity measured across low pressure switch?

NO → Connect AC harness low pressure switch connectors and go to work package 0015 (AC Does Not Cool or Cools Inadequately).

YES → Repair AC harness wire 1154 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC harness wire 1154 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Disconnect AC harness wire 1154 from low pressure switch connector (WP 0040).

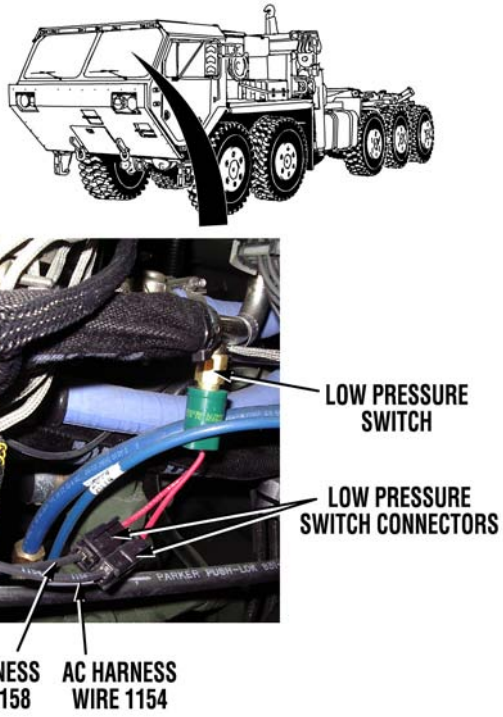
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on low pressure switch wire 1158 connector.

(4) Place negative (-) probe of multimeter on low pressure switch wire 1154 connector.

(a) If there is no continuity, connect AC harness low pressure switch connectors and go to work package 0015 (AC Does Not Cool or Cools Inadequately).

(b) If there is continuity, repair AC harness wire 1154 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.

POSSIBLE PROBLEMS
AC harness wire 1156 faulty.
AC harness wire 1158 faulty.
High pressure switch faulty.

14. **WARNING**
Read WARNING on page 0012-29.

Are 22 to 28 vdc measured on AC harness wire 1156 at high pressure switch connector, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC harness wire 1156 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Disconnect AC harness wire 1156 from high pressure switch connector (WP 0038).

(2) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(3) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

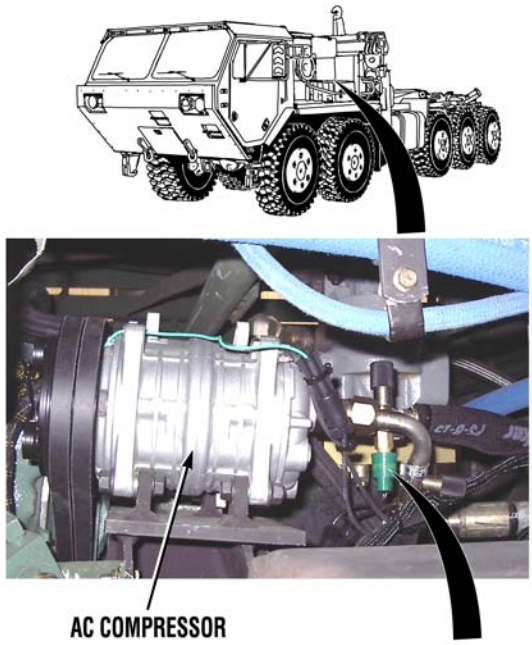
(4) Turn engine start switch ON (TM 9-2320-364-10).

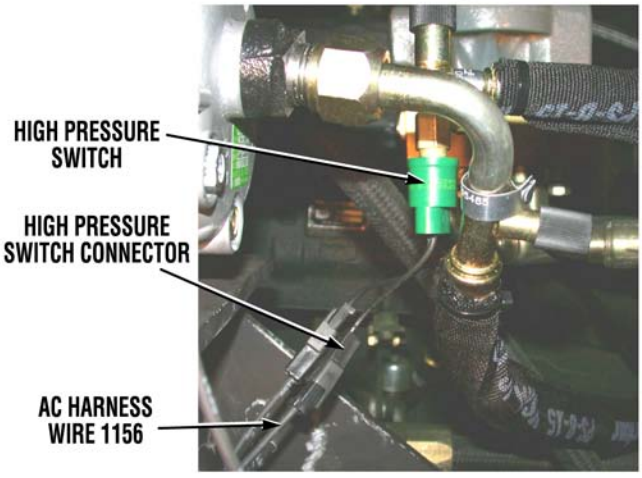
(5) Place positive (+) probe of multimeter on AC harness wire 1156 at high pressure switch connector.

(6) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

(b) If 22 to 28 vdc are measured, turn engine switch OFF, and go to Step 15 of this fault.





AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
POSSIBLE PROBLEMS
AC harness wire 1158 faulty.
High pressure switch faulty.

15. **WARNING**
Read WARNING on page 0012-31.

Is continuity measured across high pressure switch?

NO → Replace high pressure switch (WP 0038). Verify repair, go to Step 29 of this fault.

YES → Repair AC harness wire 1158 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC harness wire 1158 is faulty. If not, high pressure switch is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Disconnect AC harness wire 1158 from high pressure switch connector (WP 0038).

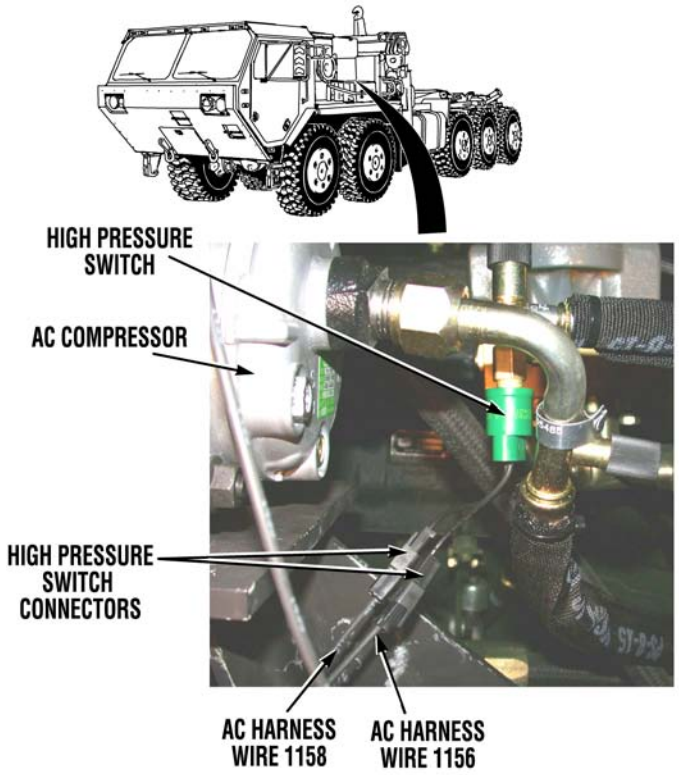
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on high pressure switch wire 1156 connector.

(4) Place negative (-) probe of multimeter on high pressure switch wire 1158 connector.

(a) If there is no continuity, replace high pressure switch (WP 0038). Verify repair, go to Step 29 of this fault.

(b) If there is continuity, repair AC harness wire 1158 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.

POSSIBLE PROBLEMS
AC harness wire 1435 faulty.
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.
AC harness wire 1156 faulty.

16.

WARNING

Read WARNING on page 0012-33.

Is continuity measured across AC harness wire 1435 from AC condenser assembly connection to a known good ground?

NO → Repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, AC harness wire 1435 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

NOTE: If screw attaching AC harness wire 1435 to AC condenser is painted, remove paint from ground connection, or disconnect wire 1435 before performing this procedure.

(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on AC harness wire 1435 at AC condenser assembly ground connection.

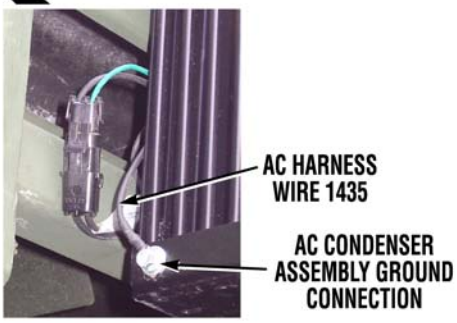
(3) Place negative (-) probe of multimeter on a known good ground.

(a) If there is no continuity, repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

(b) If there is continuity, go to Step 17 of this fault.







AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.

POSSIBLE PROBLEMS
AC harness wire 1155 faulty.
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.
AC harness wire 1156 faulty.

17.

WARNING

Read WARNING on page 0012-35.

Are 22 to 28 vdc measured on AC harness wire 1155 at AC condenser assembly connector, terminal A?

NO → Repair AC harness wire 1155 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

YES

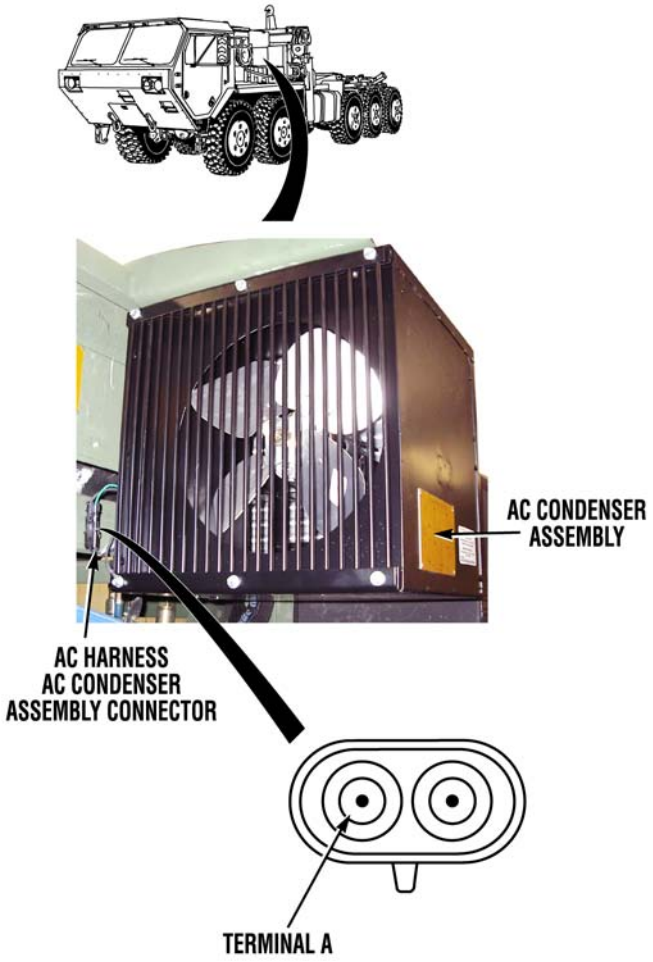
TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC harness wire 1155 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST
(1) Disconnect AC harness AC condenser assembly connector (WP 0028).
(2) Turn engine start switch ON (TM 9-2320-364-10).
(3) Place positive (+) probe of multimeter on AC harness wire 1155 at AC condenser assembly connector, terminal A.
(4) Place negative (-) probe of multimeter on a known good ground.
(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC harness wire 1155 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.
(b) If 22 to 28 vdc are measured, go to Step 18 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.

POSSIBLE PROBLEMS
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.
AC harness wire 1156 faulty.

18.

WARNING

Read WARNING on page 0012-37.

Are 22 to 28 vdc measured on AC harness wire 1156 at AC condenser assembly connector, terminal B when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Go to Step 26 of this fault.

YES

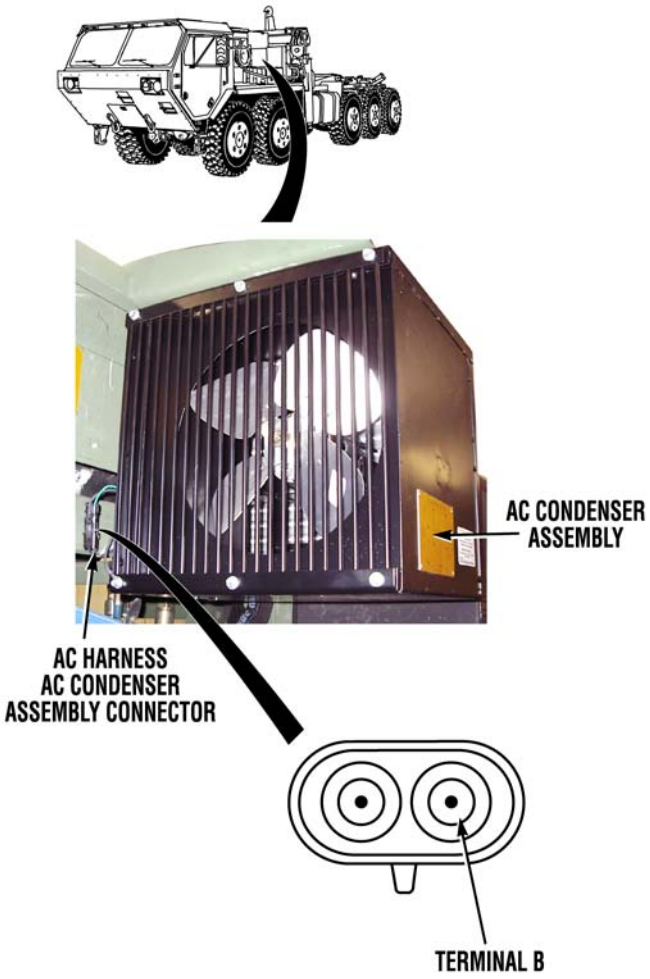
TEST OPTIONS
Voltage test. Multimeter.
REASON FOR QUESTION
To isolate system fault.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST
(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).
(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).
(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).
(4) Place positive (+) probe of multimeter on AC harness wire 1156 at AC condenser assembly connector, terminal B.
(5) Place negative (-) probe of multimeter on a known good ground.
(a) If 22 to 28 vdc are not measured, turn engine start switch OFF, connect AC harness AC condenser assembly connector and go to Step 26 of this fault.
(b) If 22 to 28 vdc are measured, turn engine start switch OFF and go to Step 19 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.

POSSIBLE PROBLEMS
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

19.

WARNING

Read WARNING on page 0012-39.

Is AC condenser motor solenoid energized when engine start switch is turned on, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

TEST OPTIONS
Audible test.
REASON FOR QUESTION
To isolate system fault.

NO → Go to Step 24 of this fault.

YES

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**

AUDIBLE TEST

NOTE: Wheel chocks and wooden blocks are placed on top of battery box to aid in the removal of condenser.

NOTE: If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

(1) Turn engine switch OFF (TM 9-2320-364-10).

(2) Position two wheel chocks on top of battery box.

(3) Place two 2 by 4 by 16 in. wooden blocks on top of wheel chocks.

(4) Loosen locknut on cushion clip.

NOTE: Do not loosen or disconnect AC hoses in Step 5.

(5) With the aid of an assistant, remove four screws and lower condenser assembly onto wooden blocks (WP 0028).

NOTE: AC harness wire 1435 must be connected to AC condenser assembly or system will not operate in Step 12.

(6) If disconnected, connect AC harness wire 1435 to AC condenser assembly.

(7) Connect AC harness AC condenser assembly connector.

(8) Rotate AC condenser assembly to gain access to cover on AC condenser assembly.

(9) Remove four screws, lockwashers, washers, and cover from AC condenser assembly (WP 0026).

(10) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

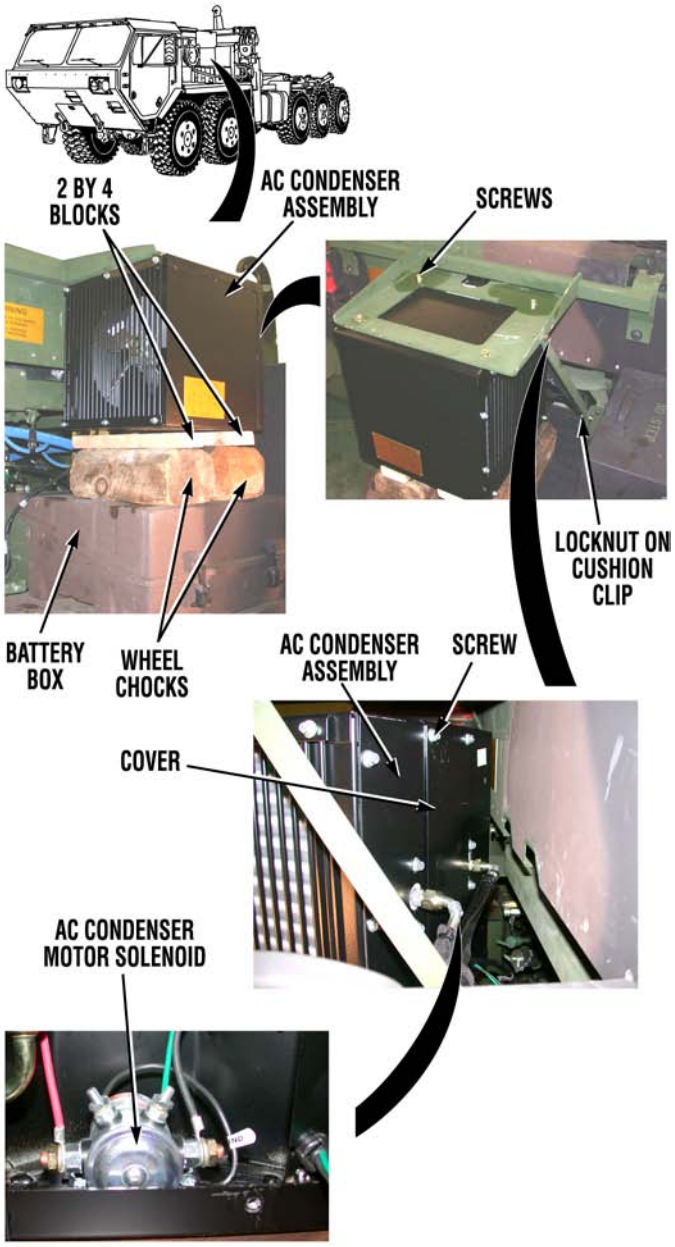
(11) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

NOTE: Do not start engine in Step 12. AC condenser motor solenoid operation will be checked by listening for a clicking sound from the AC condenser motor solenoid when the engine start switch is turned to ON position.

(12) While assistant turns engine start switch ON (TM 9-2320-364-10), check operation of AC condenser motor solenoid by listening for a click when engine start switch is turned ON.

(a) If AC condenser motor solenoid is not energized, go to Step 24 of this fault.

(b) If AC condenser motor solenoid is energized, go to Step 20 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.

POSSIBLE PROBLEMS
AC condenser assembly harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

20.

WARNING
Read WARNING on page 0012-41.

Are 22 to 28 vdc measured on AC condenser assembly harness black wire at AC condenser motor solenoid?

NO → Repair AC condenser assembly harness black wire (see Appendix A). Verify repair, go to Step 29 of this fault.

YES

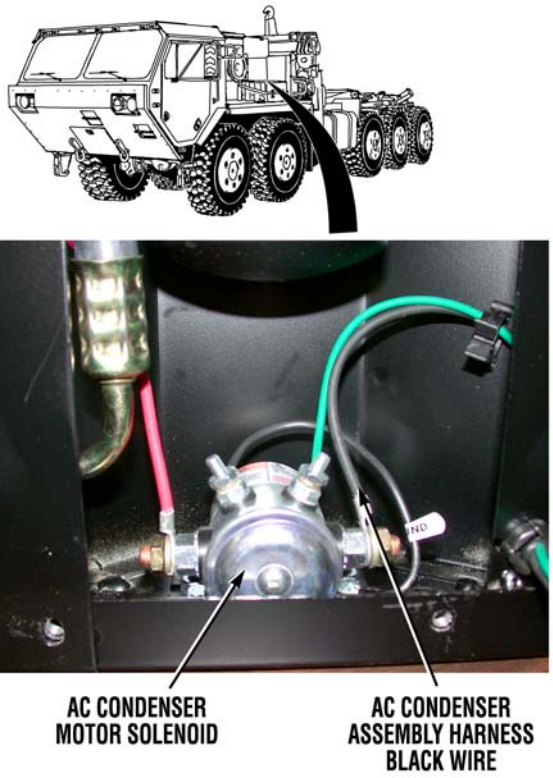
TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser assembly harness black wire is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST
(1) If OFF, turn engine start switch ON (TM 9-2320-364-10).
(2) Place positive (+) probe of multimeter on AC condenser assembly harness black wire at AC condenser motor solenoid terminal.
(3) Place negative (-) probe of multimeter on a known good ground.
(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC condenser assembly harness black wire (see Appendix A). Verify repair, go to Step 29 of this fault.
(b) If 22 to 28 vdc are measured, go to Step 21 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.
AC condenser assembly harness black wire OK.

POSSIBLE PROBLEMS
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

21.

WARNING

Read WARNING on page 0012-43.

Are 22 to 28 vdc measured on AC condenser motor solenoid, terminal red wire, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser motor solenoid is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

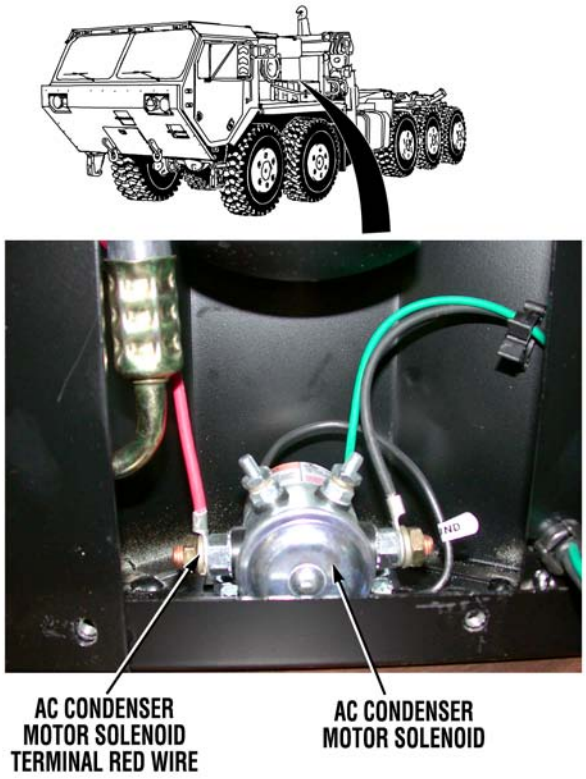
(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).

(4) Place positive (+) probe of multimeter on AC condenser motor solenoid, terminal red wire.

(5) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 29 of this fault.

(b) If 22 to 28 vdc are measured, turn engine switch OFF, and go to Step 22 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.

POSSIBLE PROBLEMS
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

22.

WARNING

Read WARNING on page 0012-45.

Is continuity measured across AC condenser motor red wire?

NO → Repair AC condenser motor red wire (see Appendix A). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, AC condenser motor red wire is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

NOTE: Do not disconnect wires from AC condenser motor.

(1) Remove AC condenser motor (WP 0025).

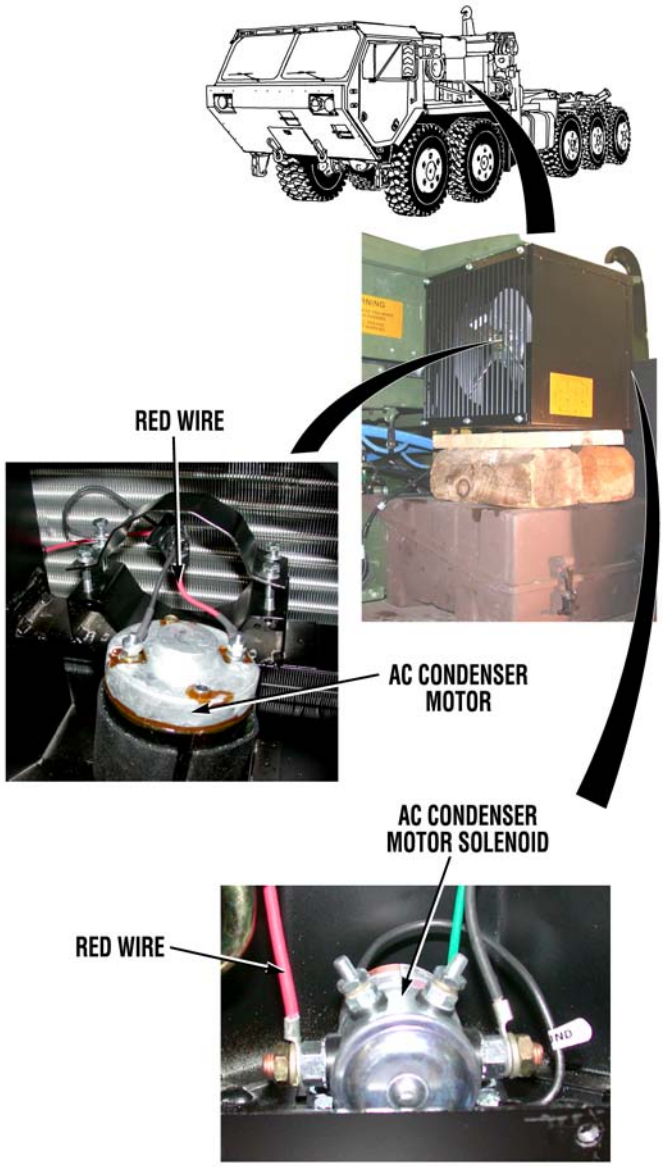
(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on red wire at AC condenser motor terminal.

(4) Place negative (-) probe of multimeter on red wire at AC condenser motor solenoid terminal.

(a) If there is no continuity, repair AC condenser motor red wire (see Appendix A). Verify repair, go to Step 29 of this fault.

(b) If there is continuity, go to Step 23 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
POSSIBLE PROBLEMS
AC condenser motor ground wire faulty.
AC condenser motor faulty.

23.

WARNING
Read WARNING on page 0012-47.

Is continuity measured across AC condenser motor ground wire?

NO → Repair AC condenser motor ground wire (see Appendix A). Verify repair, go to Step 29 of this fault.

YES → Replace AC condenser motor (WP 0025). Verify repair, go to Step 29 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC condenser motor is faulty. If not, AC condenser motor ground wire is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Set multimeter switch to ohms.

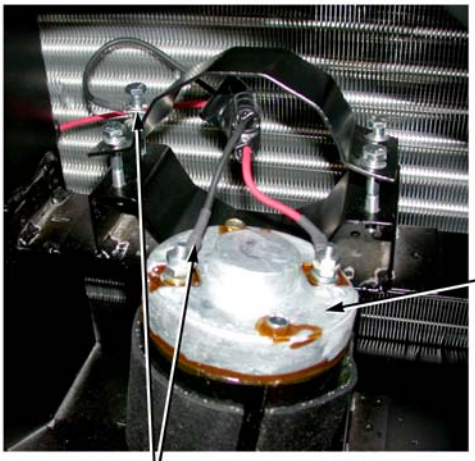
(2) Place positive (+) probe of multimeter on ground wire at AC condenser motor terminal.

(3) Place negative (-) probe of multimeter on ground wire at other end.

(a) If there is no continuity, repair AC condenser motor ground wire (see Appendix A). Verify repair, go to Step 29 of this fault.

(b) If there is continuity, replace AC condenser motor (WP 0025). Verify repair, go to Step 29 of this fault.





AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.
AC condenser assembly harness black wire OK.
AC condenser motor red wire OK.
AC condenser motor solenoid ground wire OK.
AC condenser motor OK.

POSSIBLE PROBLEMS
AC condenser assembly harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
AC condenser motor solenoid faulty.

24.

WARNING

Read WARNING on page 0012-49.

Are 22 to 28 vdc measured on AC condenser assembly harness green wire at AC condenser fan motor solenoid terminal, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Repair AC condenser assembly harness green wire (see Appendix A). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser assembly harness green wire is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).

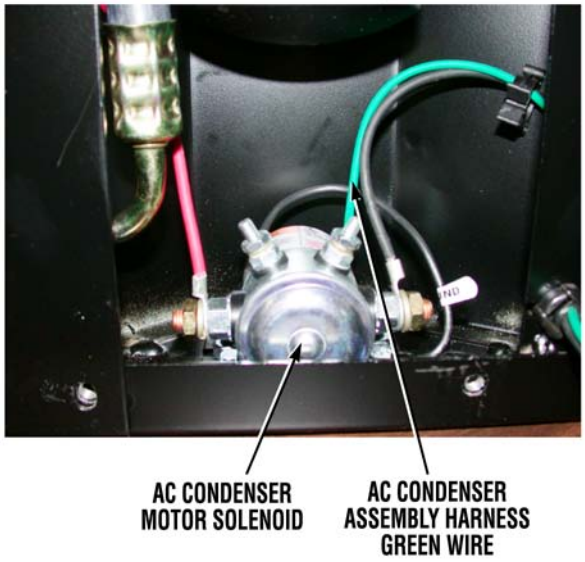
(4) Place positive (+) probe of multimeter on green wire at AC condenser fan motor solenoid terminal.

(5) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC condenser assembly harness green wire (see Appendix A). Verify repair, go to Step 29 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 25 of this fault.





AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
AC harness wire 1156 OK.
AC condenser assembly harness black wire OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
POSSIBLE PROBLEMS
AC condenser motor solenoid ground wire faulty.
AC condenser motor solenoid faulty.

25. **WARNING**
Read WARNING on page 0012-51.

Is continuity measured across AC condenser motor solenoid ground wire?

NO → Repair AC condenser motor solenoid ground wire (see Appendix A). Verify repair, go to Step 29 of this fault.

YES → Replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 29 of this fault.

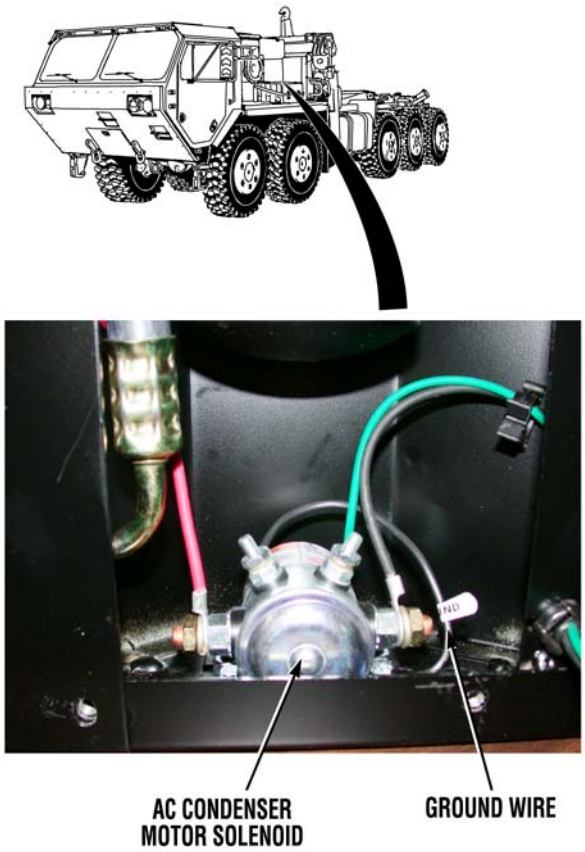
TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC condenser motor solenoid is faulty. If not, AC condenser motor solenoid ground wire is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST
(1) Set multimeter switch to ohms.
(2) Place positive (+) probe of multimeter on ground wire at AC condenser motor solenoid terminal.
(3) Place negative (-) probe of multimeter on a known good ground.
(a) If there is no continuity, repair AC condenser motor solenoid ground wire (see Appendix A). Verify repair, go to Step 29 of this fault.
(b) If there is continuity, replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 29 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.

POSSIBLE PROBLEMS
Fan control switch faulty.
Wire 1156 faulty.
Temperature control switch faulty.
AC harness wire 1156 faulty.

26.

WARNING

Read WARNING on page 0012-53.

Are 22 to 28 vdc measured on fan control switch, terminal C (wire 1156), when fan control switch is set to an on position?

NO → Replace fan control switch (WP 0031). Verify repair, go to Step 27 of this fault.

YES

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, fan control switch is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

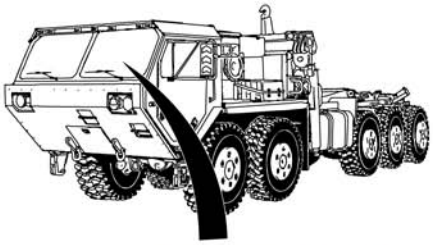
(2) Turn engine start switch ON (TM 9-2320-364-10).

(3) Place positive (+) probe of multimeter on AC fan control switch, terminal C (wire 1156).

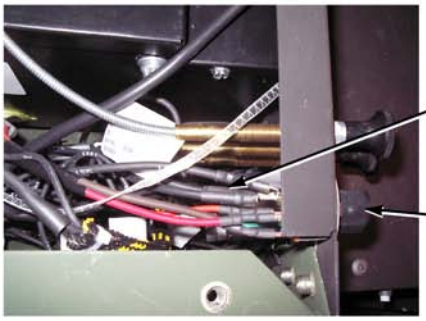
(4) Place negative (-) probe of multimeter on a known good ground.

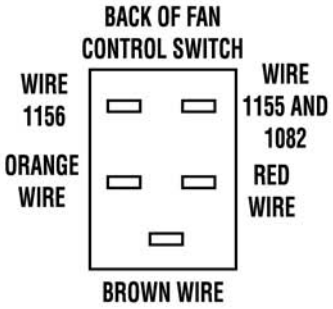
(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and replace fan control switch (WP 0031). Verify repair, go to Step 29 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 27 of this fault.









AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.

POSSIBLE PROBLEMS
Wire 1156 faulty.
Temperature control switch faulty.
AC harness wire 1156 faulty.

27.

WARNING

Read WARNING on page 0012-55.

Is continuity measured across wire 1156 from fan control switch to temperature control switch?

NO → Repair wire 1156 (see Appendix A) or replace wire 1156 (WP 0046). Verify repair, go to Step 29 of this fault.

YES

TEST OPTIONS
Continuity test. Multimeter.
REASON FOR QUESTION
If continuity is not measured, wire 1156 is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

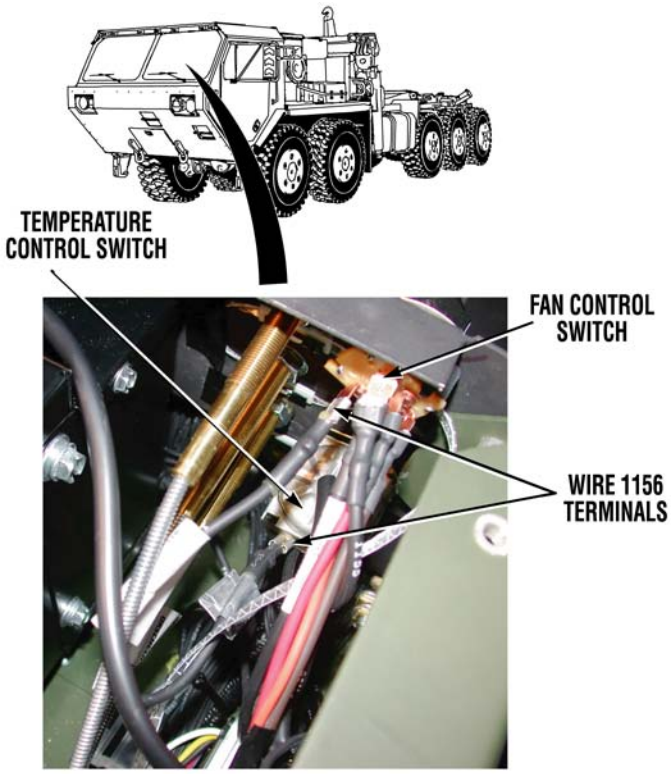
(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on wire 1156 at fan control switch, terminal C.

(3) Place negative (-) probe of multimeter on wire 1156 at temperature control switch input terminal.

  (a) If there is no continuity, repair wire 1156 (see Appendix A) or replace wire 1156 (WP 0046). Verify repair, go to Step 29 of this fault.

  (b) If there is continuity, go to Step 28 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
POSSIBLE PROBLEMS
Temperature control switch faulty.
AC harness wire 1156 faulty.

28. **WARNING**
Read WARNING on page 0012-57.

Is continuity measured across temperature control switch when switch is set to the coldest position?

NO → Replace temperature control switch (WP 0044). Verify repair, go to Step 29 of this fault.

YES → Repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC harness wire 1156 is faulty. If not, temperature control switch is faulty.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

(1) Set multimeter switch to ohms.

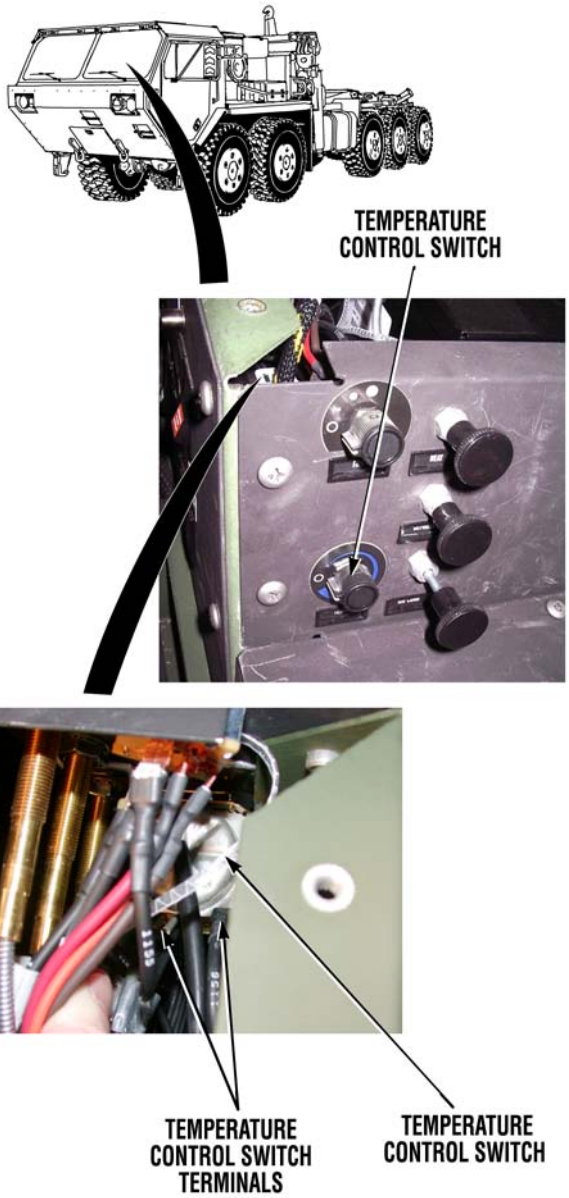
(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(3) Place positive (+) probe of multimeter on temperature control switch, input terminal.

(4) Place negative (-) probe of multimeter on temperature control switch, output terminal.

(a) If there is no continuity, replace temperature control switch (WP 0044). Verify repair, go to Step 29 of this fault.

(b) If there is continuity, repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 29 of this fault.



AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

KNOWN INFO
Power to fan control switch OK.
Blower operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC heater/evaporator core not blocked or damaged.
Temperature control switch temperature probe OK.
Heater cable OK.
AC cable OK.
Defrost cable OK.
AC harness wire 1435 OK.
AC compressor clutch OK.
AC harness wire 1154 OK.
Low pressure switch OK.
AC harness wire 1156 OK.
High pressure switch OK.
AC harness wire 1158 OK.
AC harness wire 1155 OK.
AC condenser assembly harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser assembly harness green wire OK.
AC condenser motor solenoid ground wire OK.
Fan control switch OK.
Wire 1156 OK.
Temperature control switch OK.
POSSIBLE PROBLEMS
None

29.

WARNING
Read WARNING on page 0012-59/ (0012-60 blank).

Does AC system provide cold air through ducts?

NO → Fault not corrected, notify Supervisor.

YES → Fault corrected.

TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC system does not provide cold air, fault has not been corrected.

AC HEATER/EVAPORATOR BLOWER OPERATES BUT NO COLD AIR FROM DUCTS DURING AC OPERATIONS - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**

VERIFY REPAIR

(1) If disconnected, connect AC harness wires 1154 and 1158 to low pressure switch connectors (WP 0040).
(2) If removed, install right ECB side panel and ten screws (TM 9-2320-364-20).
(3) If removed, install AC condenser motor (WP 0025).
(4) If removed, install cover and four washers, lockwashers, and screws on AC condenser assembly (WP 0026).
(5) If removed, install AC condenser assembly and four screws (WP 0028).
(6) If loose, tighten locknut on cushion clip (WP 0028).
(7) If disconnected, connect AC harness AC condenser assembly connector (WP 0028).
(8) If disconnected, connect AC harness wire 1435 to AC connector assembly (WP 0028).
(9) If disconnected, connect AC harness wire 1156 and 1158 to high pressure switch connectors (WP 0038).
(10) If removed, install driver side noise panel (WP 0051).
(11) If removed, install heater compartment front cover and four screws (WP 0037).
(12) If removed, install heater compartment access panel and eight screws (TM 9-2320-364-20).
(13) Start engine (TM 9-2320-364-10).
(14) Operate AC system for 10 minutes at high blower speed (WP 0004).
    (a) If AC system does not provide cold air through ducts, fault has not been corrected. Shut off engine, turn fan control switch and temperature control switch to off position, and notify Supervisor.
    (b) If AC system provides cold air through ducts, fault has been corrected.



AC COMPRESSOR EXCESSIVELY NOISY

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

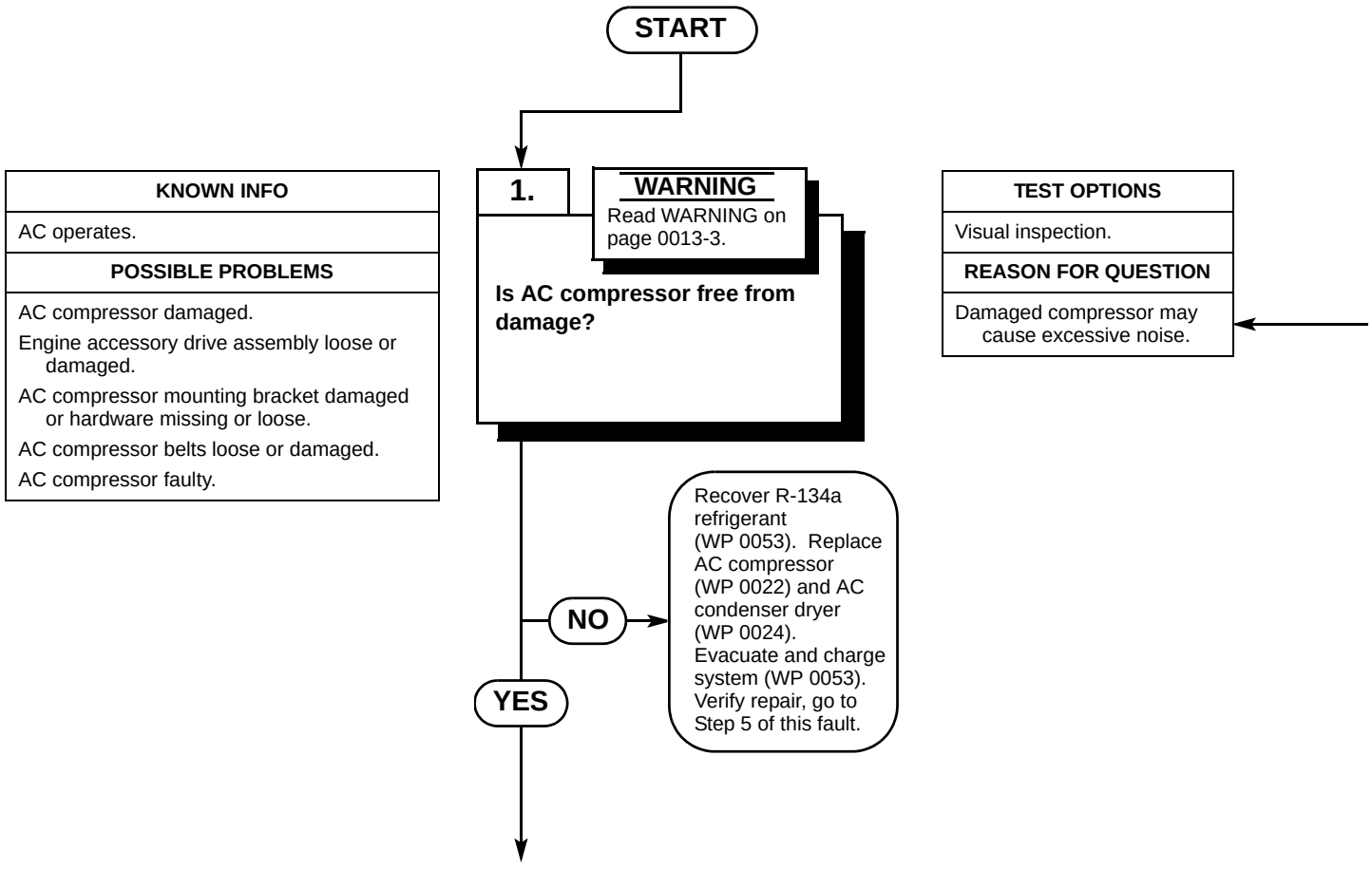
Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
None

Personnel Required
MOS 52C, Utilities equipment repairer

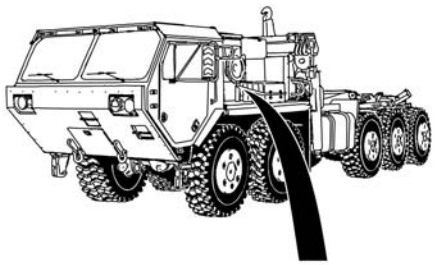
References
TM 9-2320-364-10
TM 9-2320-364-20

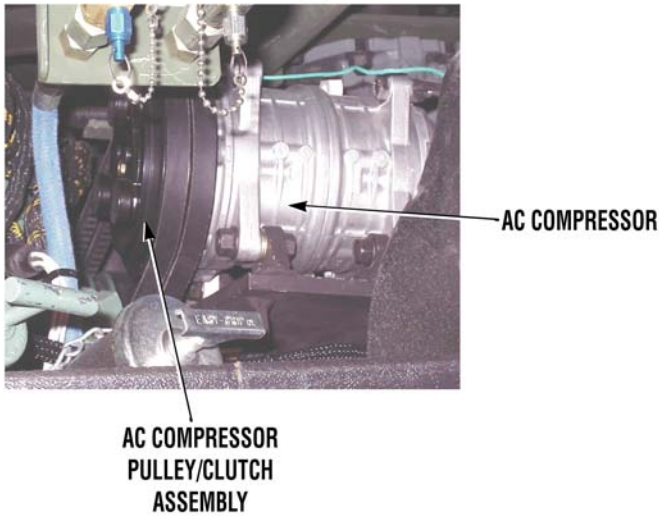


AC COMPRESSOR EXCESSIVELY NOISY - Continued

WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.





VISUAL INSPECTION

(1) Remove driver side noise panel (WP 0051).

(2) Inspect AC compressor and AC compressor pulley/clutch assembly for damage.

  (a) If AC compressor or AC compressor pulley/clutch assembly is damaged:

    1. Recover R-134a refrigerant (WP 0053).
    2. Replace AC compressor (WP 0022).
    3. Replace AC condenser dryer (WP 0024).
    4. Evacuate and charge system (WP 0053).
    5. Verify repair, go to Step 5 of this fault.

  (b) If AC compressor or AC compressor pulley/clutch assembly are free from damage, go to Step 2 of this fault.

AC COMPRESSOR EXCESSIVELY NOISY - Continued

KNOWN INFO
AC operates.
AC compressor not damaged.
POSSIBLE PROBLEMS
Engine accessory drive assembly loose or damaged.
AC compressor mounting bracket damaged or hardware missing or loose.
AC compressor belts loose or damaged.
AC compressor faulty.

2. **Is engine accessory drive assembly secure and free from damage?**

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If engine accessory drive assembly is loose or damaged, AC compressor may be excessively noisy.

NO → Tighten or replace engine accessory drive assembly (WP 0049). Verify repair, go to Step 5 of this fault.

YES

KNOWN INFO
AC operates.
AC compressor not damaged.
Engine accessory drive assembly OK.
POSSIBLE PROBLEMS
AC compressor mounting bracket damaged or hardware missing or loose.
AC compressor belts loose or damaged.
AC compressor faulty.

3. **WARNING**
Read WARNING on page 0013-5.

Is AC compressor mounting bracket hardware secure and free from damage?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC compressor mounting bracket hardware is damaged, loose, or missing, AC compressor may be excessively noisy.

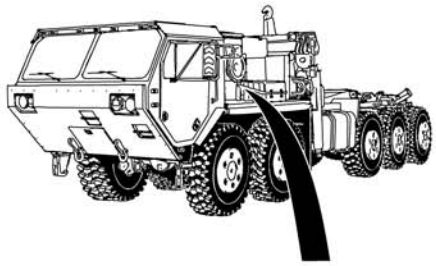
NO → Tighten or replace loose, missing, or damaged hardware (WP 0021). Verify repair, go to Step 4 of this fault.

YES

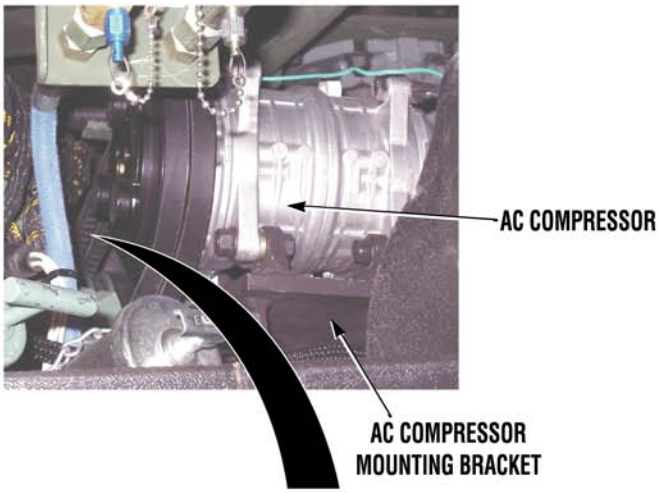
AC COMPRESSOR EXCESSIVELY NOISY - Continued

WARNING

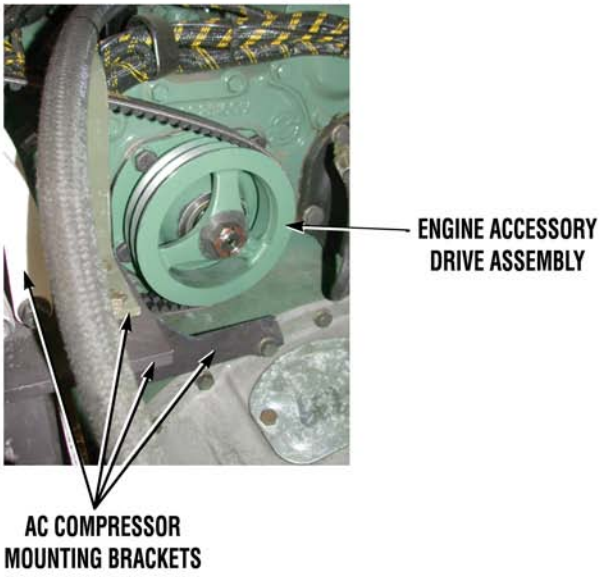
Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.



VISUAL INSPECTION
Inspect engine accessory drive assembly for looseness and damage. (a) If engine accessory drive assembly is loose or damaged, tighten or replace engine accessory drive assembly (WP 0049). Verify repair, go to Step 5 of this fault. (b) If engine accessory drive assembly is secure and free from damage, go to Step 3 of this fault.



VISUAL INSPECTION
NOTE: Do not disconnect AC hoses from AC compressor during repairs unless required. If AC hoses need to be disconnected during repair, recover R-134a refrigerant (WP 0053) before disconnecting AC hoses. Then replace AC condenser dryer (WP 0024) and evacuate and charge system (WP 0053) after repairs are completed. Inspect AC compressor mounting bracket for damage and missing or loose hardware. (a) If AC compressor mounting bracket is damaged or hardware is missing or loose, replace or tighten damaged missing or loose mounting hardware (WP 0021). Verify repair, go to Step 5 of this fault. (b) If AC compressor mounting bracket is secure and free from damage and missing hardware go to Step 4 of this fault.



AC COMPRESSOR EXCESSIVELY NOISY - Continued

KNOWN INFO
AC operates.
AC compressor not damaged.
Engine accessory drive assembly OK.
AC compressor mounting brackets OK.
POSSIBLE PROBLEMS
AC compressor belts loose or damaged.
AC compressor faulty.

4. **Is AC compressor belts tight and free from damage?**

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC compressor belts are loose or damaged, or AC compressor is damaged internally, AC compressor may be excessively noisy.

NO → Tighten or replace AC compressor belts as required (WP 0020). Verify repair, go to Step 5 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Flush system (WP 0053). Then replace AC compressor (WP 0022) and AC condenser dryer (WP 0024). Evacuate and charge system with new R-134a refrigerant (WP 0053). Verify repair, go to Step 5 of this fault.

KNOWN INFO
AC operates.
AC compressor not damaged.
Engine accessory drive assembly OK.
AC compressor mounting brackets OK.
AC compressor belts OK.
AC compressor OK.
POSSIBLE PROBLEMS
None

5.

WARNING

Read WARNING on page 0013-7/ (0013-8 blank).

Is AC compressor free from excessive noise?

TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC compressor is excessively noisy, fault was not corrected.

NO → Fault not corrected, notify Supervisor.

YES → Fault corrected.

AC COMPRESSOR EXCESSIVELY NOISY - Continued

WARNING

- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**
- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**

VISUAL INSPECTION

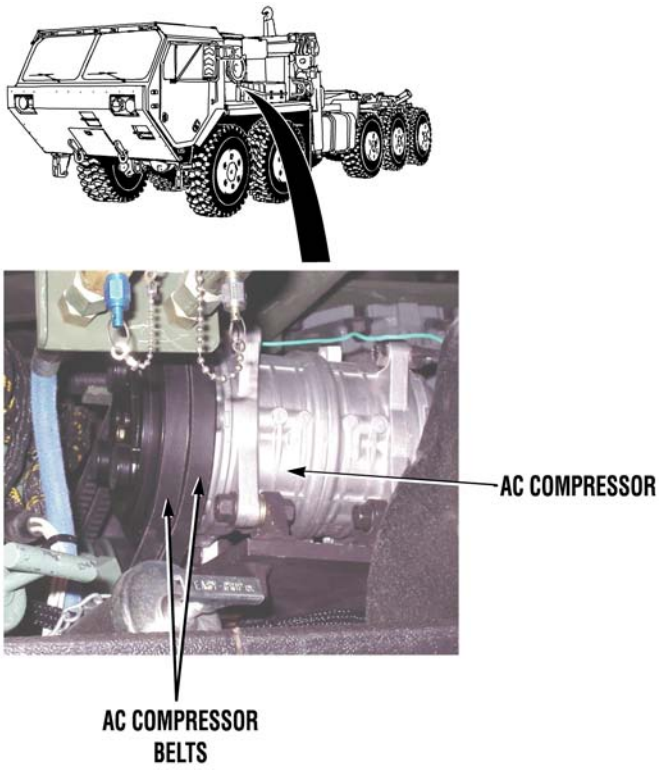
Inspect AC compressor belts for looseness and damage.

(a) If AC compressor belts are missing, damaged, or loose, replace or tighten belts as required (WP 0020). Verify repair, go to Step 5 of this fault.

CAUTION: Do not flush AC condenser dryer, AC compressor, or AC expansion valve. After flushing system, add required refrigerant oil or damage to equipment may result.

(b) If AC compressor belts are tight and free from damage:

1. Recover R-134a refrigerant (WP 0053).
2. Flush system (WP 0053).
3. Replace AC compressor (WP 0022).
4. Replace AC condenser dryer (WP 0024).
5. Evacuate and charge system with new R-134a refrigerant (WP 0053).
6. Verify repair, go to Step 5 of this fault.



VERIFY REPAIR

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

(2) Operate AC system (WP 0004).

(3) Inspect AC compressor for excessive noise.

(a) If AC compressor is excessively noisy, fault has not been corrected. Shut off engine, turn fan control switch and temperature control switch to off, and notify Supervisor.

(b) If AC compressor is free from excessive noise, fault has been corrected.

(4) Install driver side noise panel (WP 0051).

END OF WORK PACKAGE

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

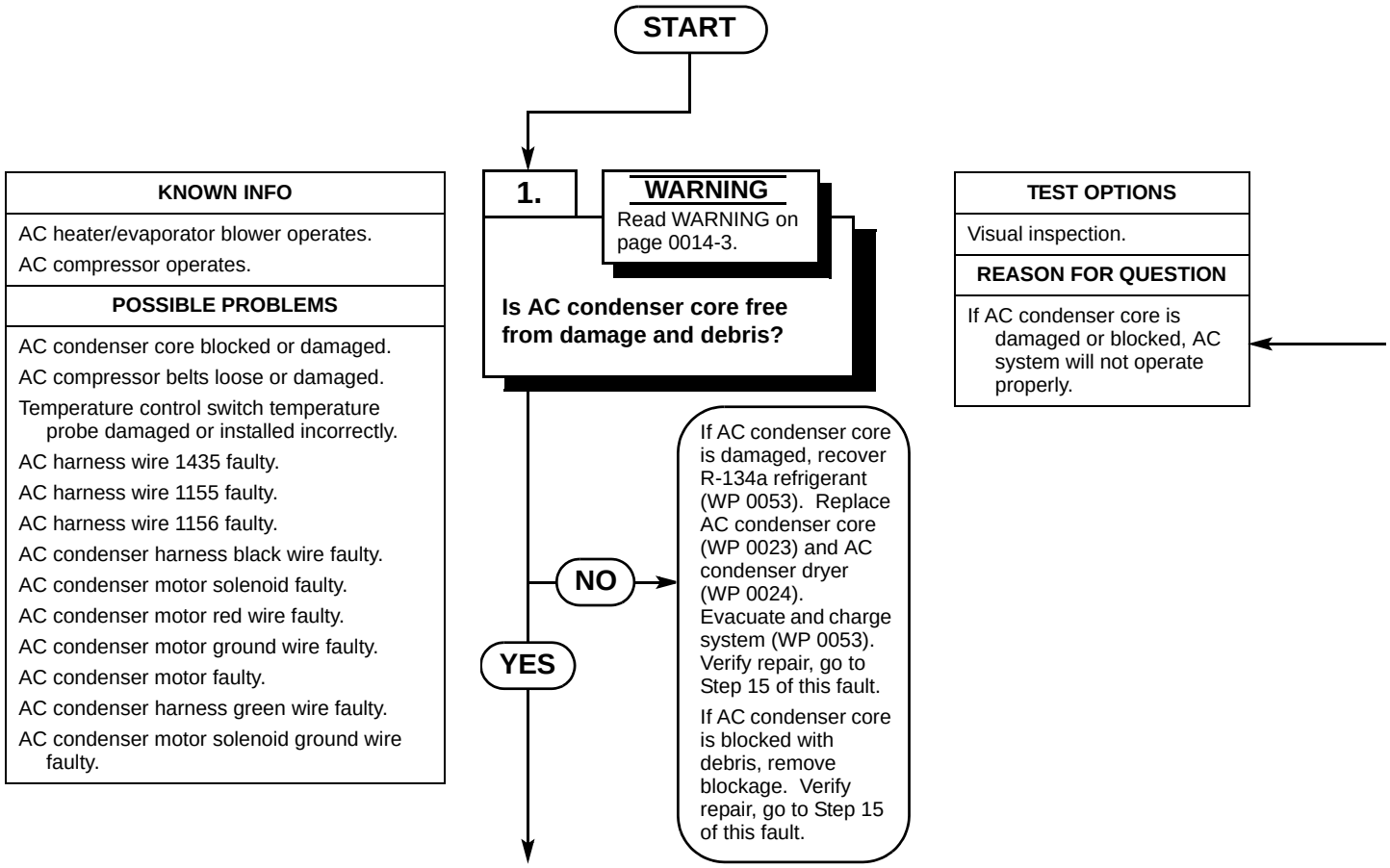
Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Multimeter (Item 2, Appendix F)

Materials/Parts
None

Personnel Required
MOS 52C, Utilities equipment repairer (2)

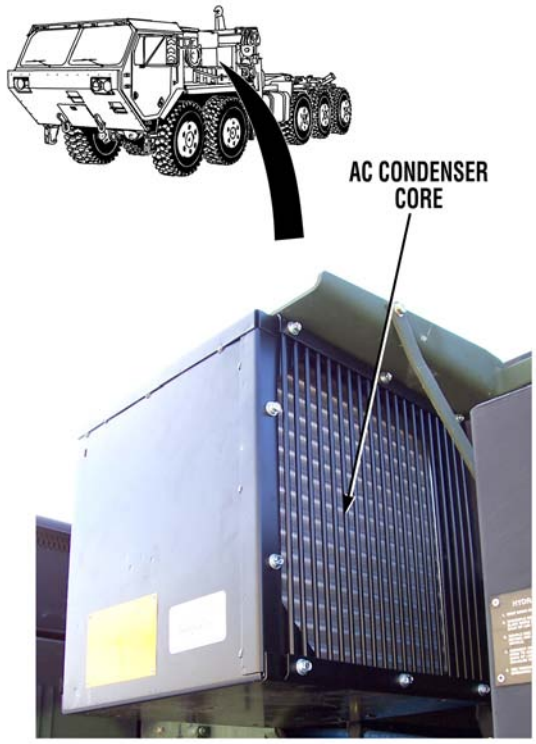
References
TM 9-2320-364-10
TM 9-2320-364-20



AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.



VISUAL INSPECTION
Inspect AC condenser core for damage and blockage from debris. (1) If AC condenser core is damaged: (a) Recover R-134a refrigerant (WP 0053). (b) Replace AC condenser core (WP 0023). (c) Replace AC condenser dryer (WP 0024). (d) Evacuate and charge system (WP 0053). (e) Verify repair, go to Step 15 of this fault. (2) If AC condenser core is blocked with debris, remove blockage. Verify repair, go to Step 15 of this fault. (3) If AC condenser core is free from damage and blockage, go to Step 2 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
POSSIBLE PROBLEMS
AC compressor belts loose or damaged.
Temperature control switch temperature probe damaged or installed incorrectly.
AC harness wire 1435 faulty.
AC harness wire 1155 faulty.
AC harness wire 1156 faulty.
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

2.

Are AC compressor belts tight and free from damage?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC compressor belts are missing, loose, or damaged, AC compressor will not operate properly.

NO → Replace or tighten AC compressor belts as required (WP 0020). Verify repair, go to Step 15 of this fault.

YES

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
POSSIBLE PROBLEMS
Temperature control switch temperature probe damaged or installed incorrectly.
AC harness wire 1435 faulty.
AC harness wire 1155 faulty.
AC harness wire 1156 faulty.
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

3.

Does AC condenser fan operate when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

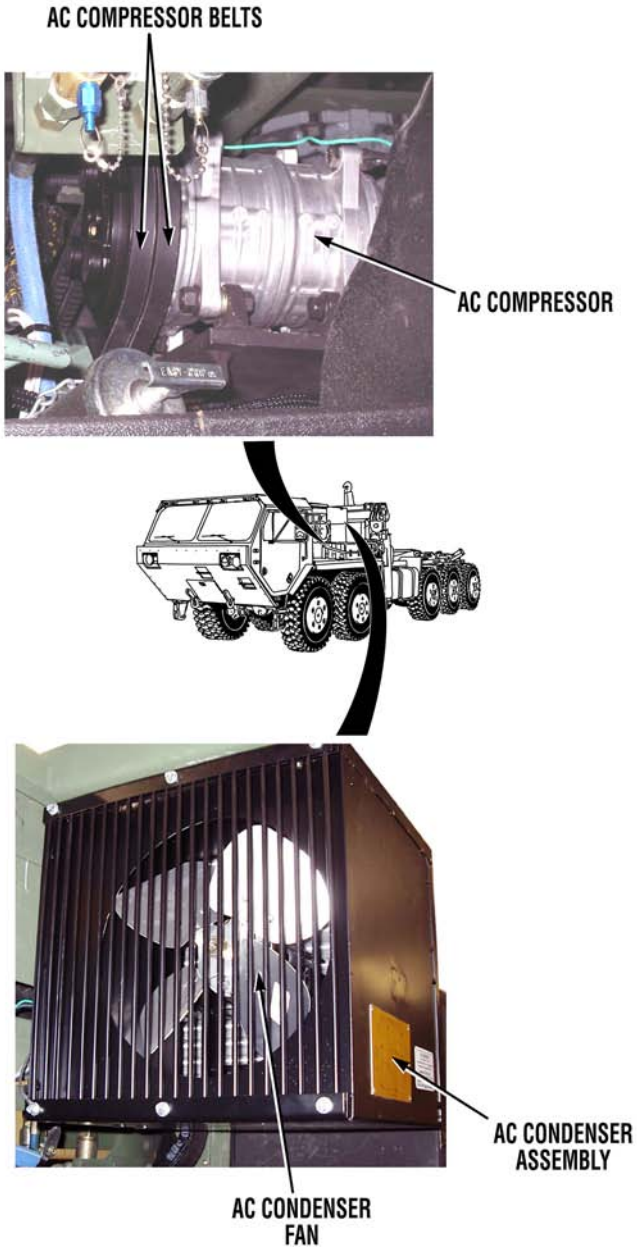
TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC condenser fan does not operate, AC system will not operate properly.

NO → Go to Step 5 of this fault.

YES

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

VISUAL INSPECTION
(1) Remove driver side noise panel (WP 0051). (2) Inspect AC compressor belts for looseness and damage. (a) If AC compressor belts are missing, damaged, or loose, replace or tighten belts as required (WP 0020). Verify repair, go to Step 15 of this fault. (b) If AC compressor belts are tight and free from damage, go to Step 3 of this fault.



VISUAL INSPECTION
(1) Turn engine start switch ON (TM 9-2320-364-10). (2) Turn fan control switch to an on position (low, medium, or high) (WP 0004). (3) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004). (4) Verify operation of AC condenser fan. (a) If AC condenser fan does not operate, turn engine start switch OFF, and go to Step 5 of this fault. (b) If AC condenser fan operates, turn engine start switch OFF, and go to Step 4 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
POSSIBLE PROBLEMS
Temperature control switch temperature probe damaged or installed incorrectly.

4.

WARNING
Read WARNING on page 0014-7.

Is temperature control switch temperature probe free from damage and installed correctly in AC heater evaporator core?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If temperature control switch temperature probe is damaged or installed incorrectly, AC system will not operate properly.

NO → If temperature control switch temperature probe is damaged, replace temperature control switch (WP 0044). Verify repair, go to Step 15 of this fault.

If temperature control switch temperature probe is installed incorrectly, reinstall temperature control switch temperature probe (WP 0044). Verify repair, go to Step 15 of this fault.

YES → Go to work package 0015 (AC Does Not Cool or Cools Inadequately).

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
POSSIBLE PROBLEMS
AC harness wire 1435 faulty.
AC harness wire 1155 faulty.
AC harness wire 1156 faulty.
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

5.

WARNING
Read WARNING on page 0014-7.

Is continuity measured across AC harness wire 1435 from AC condenser assembly connection to a known good ground?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, AC harness wire 1435 is faulty.

NO → Repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.

YES →

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION

NOTE: Temperature control switch temperature probe is installed correctly when it is inserted into the AC evaporator core until it touches the bottom of the insertion hole.

(1) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

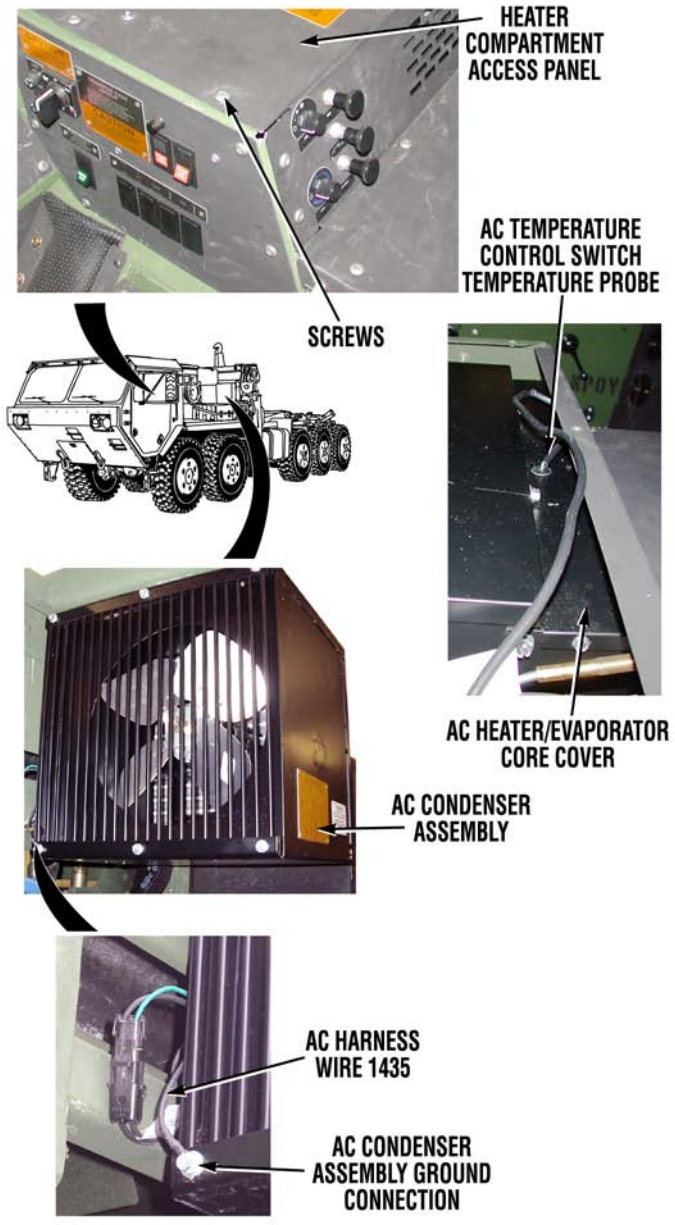
(2) Inspect temperature control switch temperature probe for damage.

  (a) If temperature control switch temperature probe is damaged, replace temperature control switch (WP 0044). Verify repair, go to Step 15 of this fault.

(3) Check if temperature control switch temperature probe is installed correctly.

  (a) If temperature control switch temperature probe is installed incorrectly, reinstall temperature control switch temperature probe (WP 0044). Verify repair, go to Step 15 of this fault.

  (b) If temperature control switch temperature probe is installed correctly, go to work package 0015 (AC Does Not Cool or Cools Inadequately).



CONTINUITY TEST

NOTE: If screw attaching AC harness wire 1435 to AC condenser is painted, remove paint from ground connection, or disconnect wire 1435 before performing this procedure.

(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on AC harness wire 1435 at AC condenser assembly ground connection.

(3) Place negative (-) probe of multimeter on a known good ground.

  (a) If there is no continuity, repair AC harness wire 1435 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.

  (b) If there is continuity, go to Step 6 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
POSSIBLE PROBLEMS
AC harness wire 1155 faulty.
AC harness wire 1156 faulty.
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

6.

WARNING
Read WARNING on page 0014-9.

Are 22 to 28 vdc measured on AC harness wire 1155 at AC condenser assembly connector, terminal A?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC harness wire 1155 is faulty.

NO → Repair AC harness wire 1155 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.

YES

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
POSSIBLE PROBLEMS
AC harness wire 1156 faulty.
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

7.

WARNING
Read WARNING on page 0014-9.

Are 22 to 28 vdc measured on AC harness wire 1156 at AC condenser assembly connector, terminal B when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC harness wire 1156 is faulty.

NO → Repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.

YES

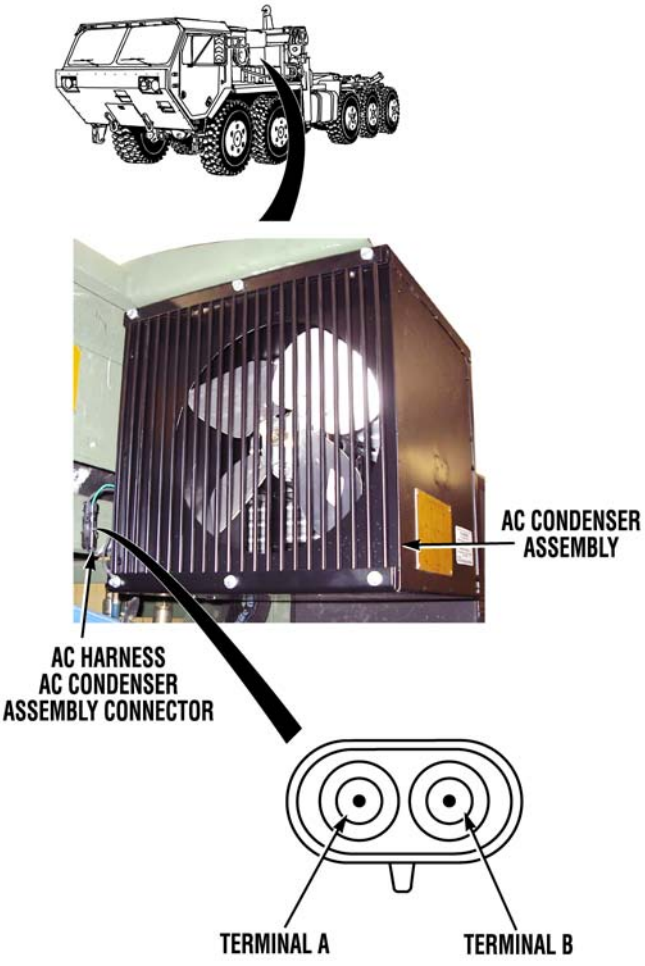
AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Disconnect AC harness AC condenser assembly connector (WP 0028).
(2) Turn engine start switch ON (TM 9-2320-364-10).
(3) Place positive (+) probe of multimeter on AC harness wire 1155 at AC condenser assembly connector, terminal A.
(4) Place negative (-) probe of multimeter on a known good ground.
    (a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC harness wire 1155 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.
    (b) If 22 to 28 vdc are measured, go to Step 7 of this fault.



VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).
(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).
(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).
(4) Place positive (+) probe of multimeter on AC harness wire 1156 at AC condenser assembly connector, terminal B.
(5) Place negative (-) probe of multimeter on a known good ground.
    (a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC harness wire 1156 (see Appendix A) or replace AC wiring harness (WP 0048). Verify repair, go to Step 15 of this fault.
    (b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 8 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.

POSSIBLE PROBLEMS
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.

8.

WARNING

Read WARNING on page 0014-11.

Is AC condenser motor solenoid energized when engine start switch is set to on position and temperature control switch is set to the coldest temperature position?

NO → Go to Step 13 of this fault.

YES

TEST OPTIONS
Audible test.
REASON FOR QUESTION
To isolate system fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**

AUDIBLE TEST

NOTE: Wheel chocks and wooden blocks are placed on top of battery box to aid in the removal of condenser.

NOTE: If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

(1) Turn engine switch OFF (TM 9-2320-364-10).

(2) Position two wheel chocks on top of battery box.

(3) Place two 2 by 4 by 16 in. wooden blocks on top of wheel chocks.

(4) Loosen locknut on cushion clip.

NOTE: Do not loosen or disconnect AC hoses in Step 5.

(5) With the aid of an assistant, remove four screws and lower condenser assembly onto wooden blocks (WP 0028).

NOTE: AC harness wire 1435 must be connected to AC condenser assembly or system will not operate in Step 12.

(6) If disconnected, connect AC harness wire 1435 to AC condenser assembly.

(7) Connect AC harness AC condenser assembly connector.

(8) Rotate AC condenser assembly to gain access to cover on AC condenser assembly.

(9) Remove four screws, lockwashers, washers, and cover from AC condenser fan motor solenoid assembly (WP 0026).

(10) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

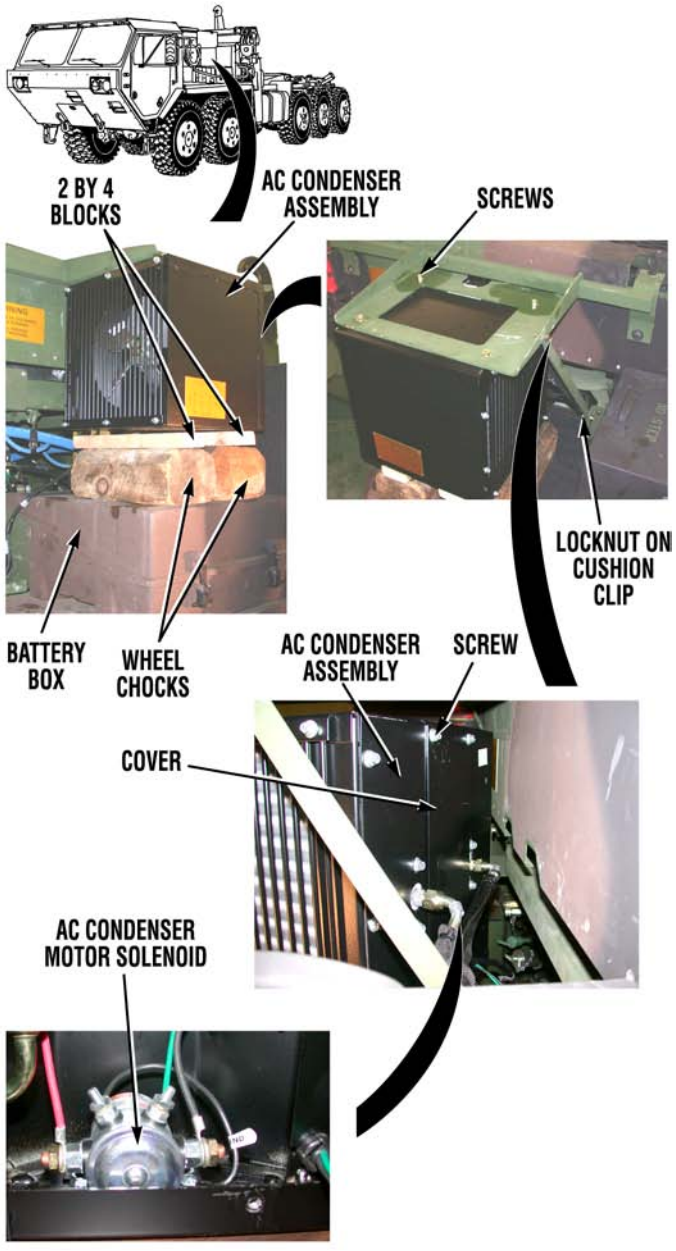
(11) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

NOTE: Do not start engine in Step 12. AC condenser motor solenoid operation will be checked by listening for a clicking sound from the AC condenser motor solenoid when the engine start switch is turned to ON position.

(12) While assistant turns engine start switch ON (TM 9-2320-364-10), check operation of AC condenser motor solenoid by listening for a click when engine start switch is turned ON.

(a) If AC condenser motor solenoid is not energized, go to Step 13 of this fault.

(b) If AC condenser motor solenoid is energized, go to Step 9 of this fault.



AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
POSSIBLE PROBLEMS
AC condenser harness black wire faulty.
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

9.

WARNING
Read WARNING on page 0014-13.

Are 22 to 28 vdc measured on AC condenser assembly harness black wire at AC condenser motor solenoid?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser assembly harness black wire is faulty.

NO → Repair AC condenser assembly harness black wire (see Appendix A). Verify repair, go to Step 15 of this fault.

YES

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
AC condenser harness black wire OK.
POSSIBLE PROBLEMS
AC condenser motor solenoid faulty.
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

10.

WARNING
Read WARNING on page 0014-13.

Are 22 to 28 vdc measured on AC condenser motor solenoid, terminal red wire, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser motor solenoid is faulty.

NO → Replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 15 of this fault.

YES

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) If OFF, turn engine start switch ON (TM 9-2320-364-34).

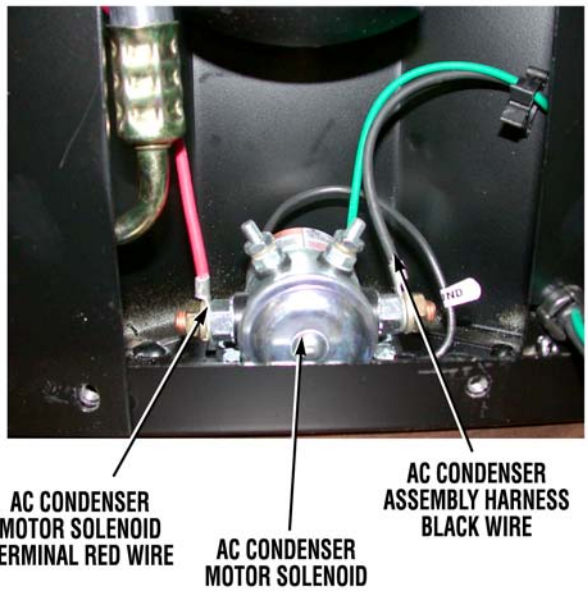
(2) Place positive (+) probe of multimeter on AC condenser assembly harness black wire at AC condenser motor solenoid terminal.

(3) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC condenser assembly harness black wire (see Appendix A). Verify repair, go to Step 15 of this fault.

(b) If 22 to 28 vdc are measured, go to Step 10 of this fault.





VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).

(4) Place positive (+) probe of multimeter on AC condenser motor solenoid, terminal red wire.

(5) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 15 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 11 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
AC condenser harness black wire OK.
AC condenser motor solenoid OK.
POSSIBLE PROBLEMS
AC condenser motor red wire faulty.
AC condenser motor ground wire faulty.
AC condenser motor faulty.

11. **WARNING** Read WARNING on page 0014-15.

Is continuity measured across AC condenser motor red wire?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is not measured, AC condenser motor red wire is faulty.

NO → Repair AC condenser motor red wire (see Appendix A). Verify repair, go to Step 15 of this fault.

YES

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
AC condenser harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
POSSIBLE PROBLEMS
AC condenser motor ground wire faulty.
AC condenser motor faulty.

12. **WARNING** Read WARNING on page 0014-15.

Is continuity measured across AC condenser motor ground wire?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC condenser motor is faulty. If not, AC condenser motor ground wire is faulty.

NO → Repair AC condenser motor ground wire (see Appendix A). Verify repair, go to Step 15 of this fault.

YES → Replace AC condenser motor (WP 0025). Verify repair, go to Step 15 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

NOTE: Do not disconnect wires from AC condenser motor.

(1) Remove AC condenser motor (WP 0025).

(2) Set multimeter switch to ohms.

(3) Place positive (+) probe of multimeter on red wire at AC condenser motor terminal.

(4) Place negative (-) probe of multimeter on red wire at AC condenser motor solenoid terminal.

(a) If there is no continuity, repair AC condenser motor red wire (see Appendix A). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, go to Step 12 of this fault.

CONTINUITY TEST

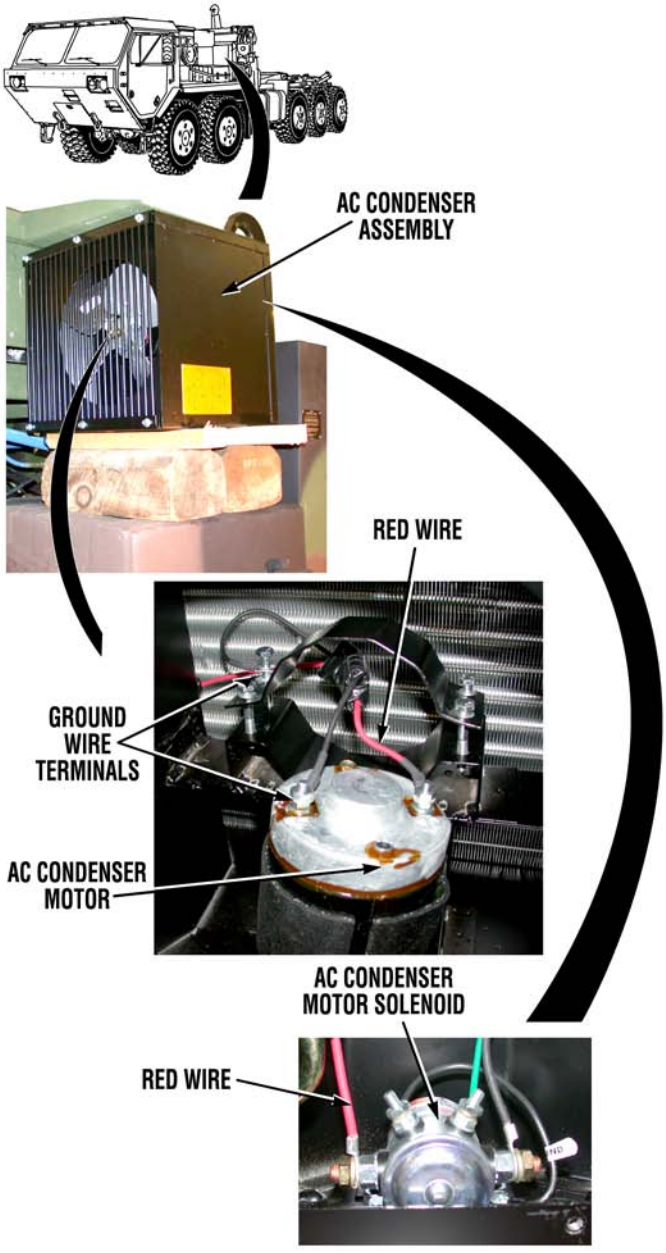
(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on ground wire at AC condenser motor terminal.

(3) Place negative (-) probe of multimeter on ground wire at other end.

(a) If there is no continuity, repair AC condenser motor ground wire (see Appendix A). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace AC condenser motor (WP 0025). Verify repair, go to Step 15 of this fault.



AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness black wire OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
POSSIBLE PROBLEMS
AC condenser harness green wire faulty.
AC condenser motor solenoid ground wire faulty.
AC condenser motor solenoid faulty.

13. **WARNING** Read WARNING on page 0014-17.

Are 22 to 28 vdc measured on AC condenser assembly harness green wire at AC condenser fan motor solenoid terminal, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 22 to 28 vdc are not measured, AC condenser assembly harness green wire is faulty.

NO → Repair AC condenser assembly harness green wire (see Appendix A). Verify repair, go to Step 15 of this fault.

YES

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness black wire OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
AC condenser harness green wire OK.
POSSIBLE PROBLEMS
AC condenser motor solenoid ground wire faulty.
AC condenser motor solenoid faulty.

14. **WARNING** Read WARNING on page 0014-17.

Is continuity measured across AC condenser motor solenoid ground wire?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, AC condenser motor solenoid is faulty. If not, AC condenser motor solenoid ground wire is faulty.

NO → Repair AC condenser motor solenoid ground wire (see Appendix A). Verify repair, go to Step 15 of this fault.

YES → Replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 15 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VOLTAGE TEST

(1) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

(2) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

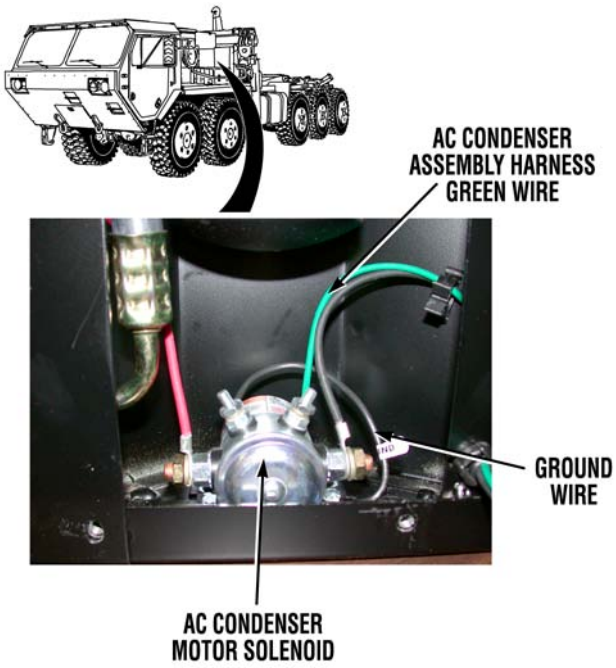
(3) If OFF, turn engine start switch ON (TM 9-2320-364-10).

(4) Place positive (+) probe of multimeter on green wire at AC condenser fan motor solenoid terminal.

(5) Place negative (-) probe of multimeter on a known good ground.

(a) If 22 to 28 vdc are not measured, turn engine start switch OFF and repair AC condenser assembly harness green wire (see Appendix A). Verify repair, go to Step 15 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 14 of this fault.



CONTINUITY TEST

(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on ground wire at AC condenser motor solenoid terminal.

(3) Place negative (-) probe of multimeter on a known good ground.

(a) If there is no continuity, repair AC condenser motor solenoid ground wire (see Appendix A). Verify repair, go to Step 15 of this fault.

(b) If there is continuity, replace AC condenser motor solenoid (WP 0026). Verify repair, go to Step 15 of this fault.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

KNOWN INFO
AC heater/evaporator blower operates.
AC compressor operates.
AC condenser core not blocked or damaged.
AC compressor belts OK.
Temperature control switch temperature probe OK.
AC harness wire 1435 OK.
AC harness wire 1155 OK.
AC harness wire 1156 OK.
AC condenser harness green wire OK.
AC condenser motor solenoid ground wire OK.
AC condenser harness black wire OK.
AC condenser motor solenoid OK.
AC condenser motor red wire OK.
AC condenser motor ground wire OK.
AC condenser motor OK.
POSSIBLE PROBLEMS
None

15. **WARNING**
Read WARNING on page 0014-19/ (0014-20 blank).

Does AC compressor operate correctly?

NO → Fault not corrected, notify Supervisor.

YES → Fault corrected.

TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC compressor does not shut off or is cycling constantly, fault has not been corrected.

AC COMPRESSOR DOES NOT SHUT OFF OR CYCLES CONSTANTLY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**

VERIFY REPAIR

(1) If removed, install AC condenser motor (WP 0025).
(2) If removed, install cover and four washers, lockwashers, and screws on AC condenser fan motor solenoid assembly (WP 0026).
(3) If removed, install AC condenser assembly and four screws (WP 0028).
(4) If loose, tighten locknut on cushion clip (WP 0028).
(5) If disconnected, connect AC harness AC condenser assembly connector (WP 0028).
(6) If disconnected, connect AC harness wire 1435 to AC condenser assembly (WP 0028).
(7) If removed, install heater compartment access panel and eight screws (TM 9-2320-364-20).
(8) If installed, remove driver side noise panel (WP 0051).
(9) Turn engine start switch ON (TM 9-2320-364-10).
(10) Operate AC system for 10 minutes at high blower speed (WP 0004).
  (a) If AC compressor does not shut off or cycles constantly, fault has not been corrected. Shut off engine, turn fan control switch and temperature control switch to off position, and notify Supervisor.
  (b) If AC compressor operates correctly, fault has been corrected.
(11) Install driver side noise panel (WP 0051).



END OF WORK PACKAGE

AC DOES NOT COOL OR COOLS INADEQUATELY

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Goggles (Item 1, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Leak Detector, Refrigerant (Item 1, Appendix H)
Reclaimer, Refrigerant (Item 2, Appendix H)

Materials/Parts
Gloves, Rubber (Item 2, Appendix E)

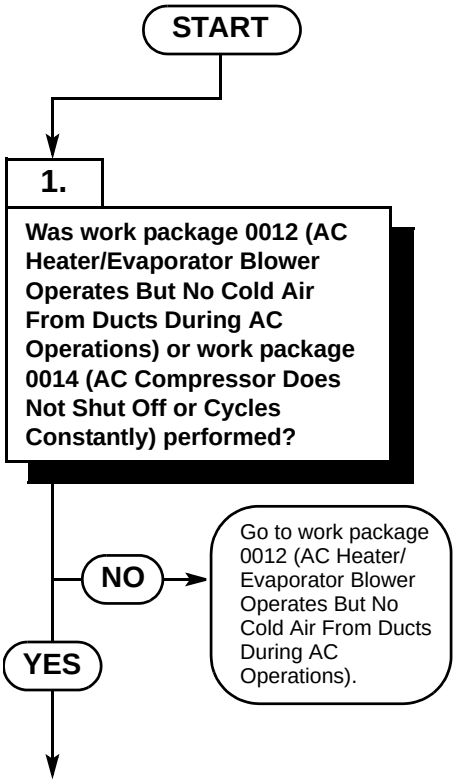
Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20

NOTE

- Work package 0012 or 0014 must be performed before performing this work package.
- AC condenser dryer must be replaced whenever system R-134a refrigerant is recovered.

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
POSSIBLE PROBLEMS
AC control circuit faulty.
AC condenser dryer desiccant contaminant in AC refrigerant system.
AC refrigerant oil contaminant in AC refrigerant system.
AC system charge low.
AC system leaking.
Restricted AC hoses.
AC compressor faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.
Low pressure switch faulty.



TEST OPTIONS
Verify preliminary tests.
REASON FOR QUESTION
If work package 0012 or 0014 is not performed before performing this work package, preliminary checks have not been completed and inaccurate results may occur.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

VERIFY PRELIMINARY TESTS
Verify that either work package 0012 (AC Heater/ Evaporator Blower Operates But No Cold Air From Ducts During AC Operations) or work package 0014 (AC Compressor Does Not Shut Off or Cycles Constantly) was performed. (a) If neither work package was performed, go to work package 0012 (AC Heater/Evaporator Blower Operates But No Cold Air From Ducts During AC Operations). (b) If one of the work packages was performed and you were directed to this work package, go to Step 2 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
POSSIBLE PROBLEMS
AC condenser dryer desiccant contaminant in AC refrigerant system.
AC refrigerant oil contaminant in AC refrigerant system.
AC system charge low.
AC system leaking.
Restricted AC hoses.
AC compressor faulty.
Temperature control switch faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.
Low pressure switch faulty.

2.

Does AC compressor clutch engage when engine start switch is turned on, when fan control switch is set to an on position and temperature control switch is set to the coldest temperature position?

NO → Go to Step 21 of this fault.

YES

TEST OPTIONS
Audible test.
REASON FOR QUESTION
If AC compressor clutch does not engage, AC compressor will not operate.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

AUDIBLE TEST

NOTE: Do not start engine during this procedure. AC compressor clutch operation will be checked by listening for a clicking sound from the AC compressor when the engine start switch is turned to ON position.

(1) Remove driver side noise panel (WP 0051).

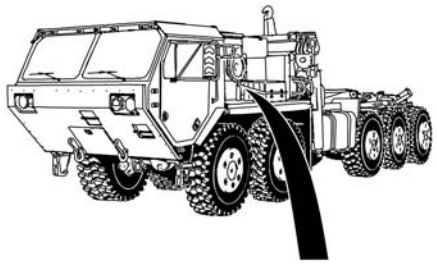
(2) Turn fan control switch to an on position (low, medium, or high) (WP 0004).

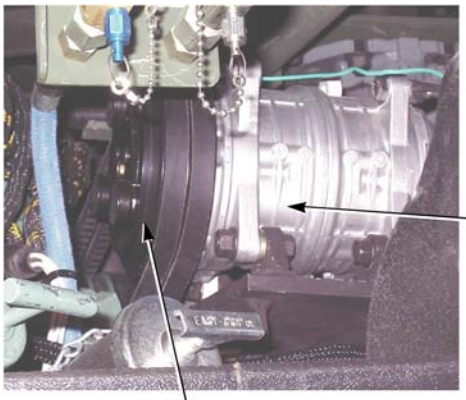
(3) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(4) While assistant turns engine start switch ON (TM 9-2320-364-10), check operation of AC compressor clutch by listening for a click when engine start switch is turned ON.

(a) If AC compressor clutch does not engage, turn engine start switch OFF, and go to Step 21 of this fault.

(b) If AC compressor clutch engages, turn engine start switch OFF, and go to Step 3 of this fault.





AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
POSSIBLE PROBLEMS
AC condenser dryer desiccant contaminant in AC refrigerant system.
AC refrigerant oil contaminant in AC refrigerant system.
AC system charge low.
AC system leaking.
Restricted AC hoses.
AC compressor faulty.
Temperature control switch faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.

3.

WARNING

Read WARNING on page 0015-7.

Does AC condenser dryer sight glass indicate system is free from desiccant breakdown and oil?

NO → Perform leak test (WP 0052). Recover R-134a refrigerant (WP 0053). Repair any leaks found. Flush system (WP 0053). Replace AC condenser dryer (WP 0024). Evacuate and charge system with new R-134a refrigerant (WP 0053). Go to Step 4 of this fault.

YES

TEST OPTIONS
Visual inspection.
AC test set manifold gages.
REASON FOR QUESTION
If AC condenser dryer sight glass indicates desiccant breakdown or oil in system, system must be flushed.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

(1) Connect AC test set recovery/recycling manifold gages to AC service valves (WP 0053). Ensure test set valves are closed.

(2) Remove AC condenser dryer sight glass access hole cover.

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

(4) Operate AC system for 5 to 10 minutes at high blower speed (WP 0004).

(5) Inspect AC condenser dryer sight glass.

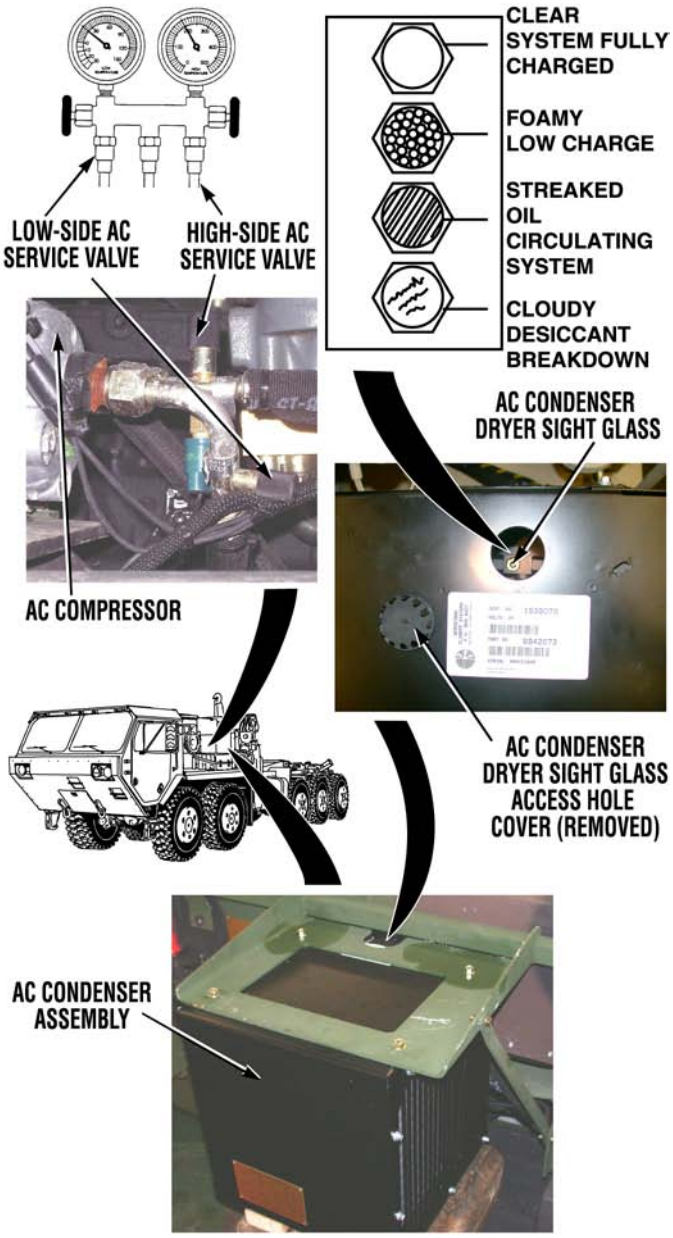
(a) If AC condenser dryer sight glass indicates desiccant breakdown or oil in system:

1. Shut off engine (TM 9-2320-364-10).
2. Perform leak test (WP 0052).
3. Recover R-134a refrigerant (WP 0053).
4. Repair leaks found.

CAUTION: Do not flush AC condenser dryer, AC compressor, or AC expansion valve. After flushing system, add required refrigerant oil or damage to equipment may result.

5. Flush system (WP 0053).
6. Replace AC condenser dryer (WP 0024).
7. Evacuate and charge system with new R-134a refrigerant (WP 0053).
8. Start engine (TM 9-2320-364-10).
9. Operate AC system for 5 to 10 minutes at high blower speed (WP 0004).
10. Go to Step 4 of this fault.

(b) If AC condenser dryer sight glass does not indicate desiccant breakdown or oil in system, go to Step 4 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.

POSSIBLE PROBLEMS
AC system charge low.
AC system leaking.
Restricted AC hoses.
AC compressor faulty.
Temperature control switch faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.

4.

WARNING

Read WARNING on page 0015-9.

Does AC condenser dryer sight glass indicate system is fully charged?

NO → Perform leak test (WP 0052). If leaks are found, recover R-134a refrigerant (WP 0053), repair leaks, and replace AC dryer (WP 0024). Charge system to full charge (WP 0053) and go to Step 5 of this fault.

YES

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If system is not fully charged, system may not cool properly.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

Inspect AC condenser dryer sight glass.

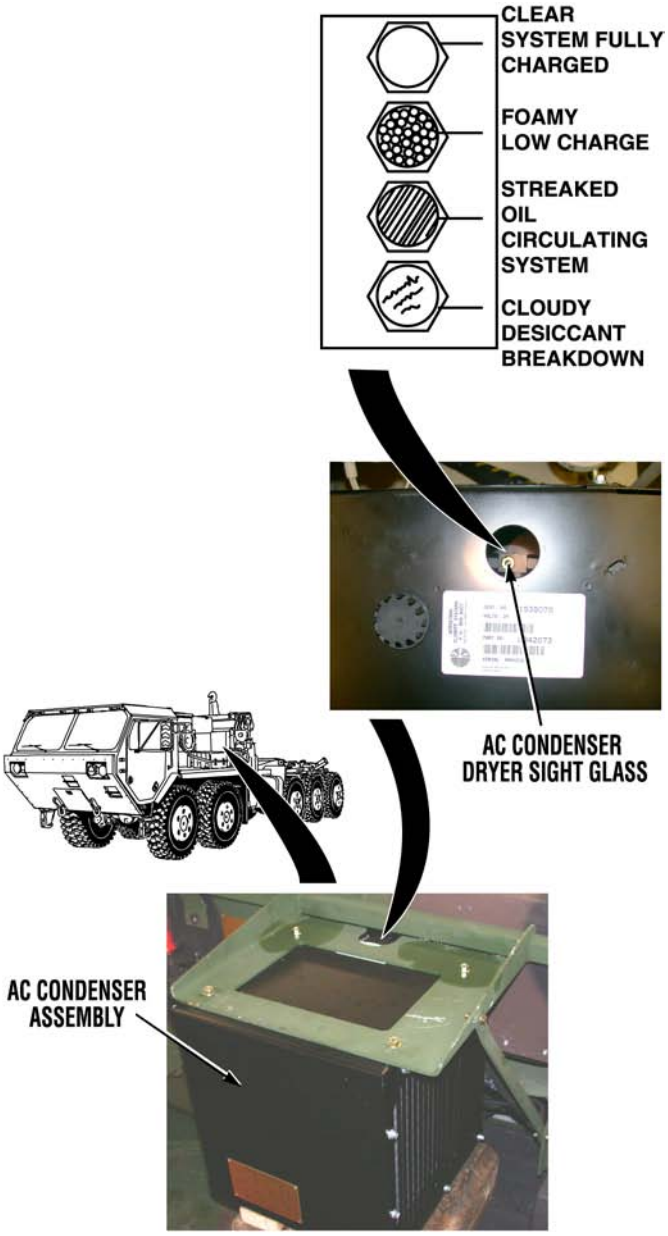
(a) If AC condenser dryer sight glass indicates a low charge:

1. Shut off engine (TM 9-2320-364-10).
2. Perform leak test (WP 0052).

NOTE: Perform Steps 3 through 6 only if leaks are found.

3. Recover R-134a refrigerant (WP 0053).
4. Repair leaks found.
5. Replace AC condenser dryer (WP 0024).
6. Evacuate system (WP 0053).
7. Charge system (WP 0053).
8. Start engine (TM 9-2320-364-10).
9. Operate AC system for 5 to 10 minutes at high blower speed (WP 0004).
10. Go to Step 5 of this fault.

(b) If AC condenser dryer sight glass indicates system is fully charged, go to Step 5 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.

POSSIBLE PROBLEMS
Restricted AC hoses.
AC compressor faulty.
Temperature control switch faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.

5.

WARNING

Read WARNING on page 0015-11.

Does AC test set recovery/ recycling manifold gage indicate normal system low-side pressure?

NO → Go to Step 10 of this fault.

YES

TEST OPTIONS
Pressure test.
AC test set manifold gages.
REASON FOR QUESTION
To isolate system fault.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

Pressure Temperature Chart

°F	°C	HFC-134a (PSI)	°F	°C	HFC-134a (PSI)
0	-17.8	6.5	85	29.4	94.9
5	-15.0	9.0	90	32.2	103.9
10	-12.2	12.0	95	35.0	113.5
15	-9.4	15.0	100	37.8	123.6
20	-6.7	18.4	105	40.6	134.3
25	-3.9	22.1	110	43.3	145.3
30	-1.1	26.1	115	46.1	157.6
35	1.7	30.4	120	48.9	170.3
40	4.4	35.0	125	51.7	183.6
45	7.2	40.0	130	54.4	197.6
50	10.0	45.3	135	57.2	212.4
55	12.8	51.1	140	60.0	227.9
60	15.6	57.3	145	62.8	244.3
65	18.3	63.9	150	65.6	261.4
70	21.1	70.9	155	68.3	279.5
75	23.8	78.4	160	71.1	298.4
80	26.7	88.4	165	73.9	318.3

NOTE

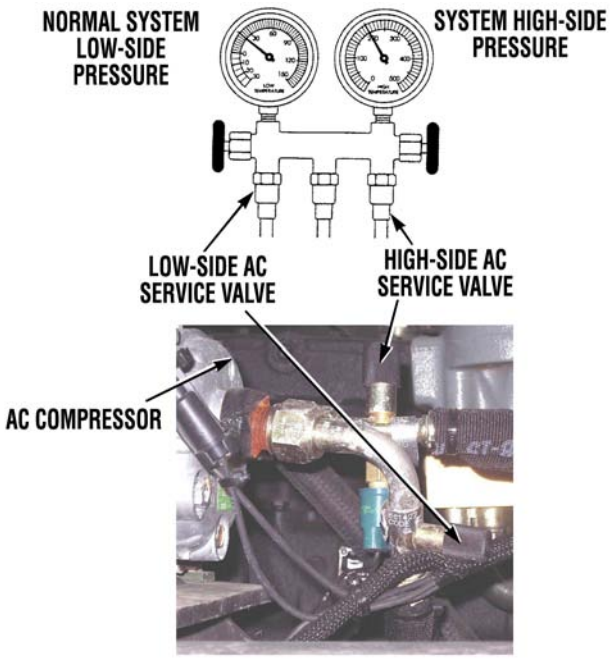
- System low-side pressure is determined by the temperature of the R-134a refrigerant at the low-side service valve.
- System high-side pressure is determined by the ambient temperature of the air surrounding the AC condenser. The ambient temperature is determined by measuring the temperature 2 in. (5 cm) in front of the AC condenser.

PRESSURE TEST

Inspect AC test set recovery/recycling manifold low-side gage reading.

(a) If gage reading is not within the range indicated in the chart shown above for normal low-side pressure, go to Step 10 of this fault.

(b) If gage reading is within the range indicated in the chart shown above for normal low-side pressure, go to Step 6 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
AC expansion valve OK.
POSSIBLE PROBLEMS
Restricted AC hoses.
AC compressor faulty.
Temperature control switch faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.

6. **WARNING** Read WARNING on page 0015-13.

Does AC test set recovery/ recycling manifold gage indicate low system high-side pressure?

TEST OPTIONS
Pressure test.
AC test set manifold gages.
REASON FOR QUESTION
To isolate system fault.

NO → Go to Step 8 of this fault.

YES

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
AC expansion valve OK.
Temperature control switch OK.
No moisture in AC refrigerant system.
No air or other contaminant in AC refrigerant system.
POSSIBLE PROBLEMS
Restricted AC hose.
AC compressor faulty.

7. **WARNING** Read WARNING on page 0015-13.

Are AC hoses from low-side AC service valve to high-side AC service valve free from frost and cool spots?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If frost or cool spots are forming on AC hoses, AC hoses are restricting R-134a refrigerant flow. If not, AC compressor is faulty.

NO → Recover R-134a refrigerant (WP 0053). Replace restricted AC hose (WP 0039) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Flush system (WP 0053). Replace AC compressor (WP 0022) and AC condenser dryer (WP 0024). Evacuate and charge system with new R-134a (WP 0053). Verify repair, go to Step 22 of this fault.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

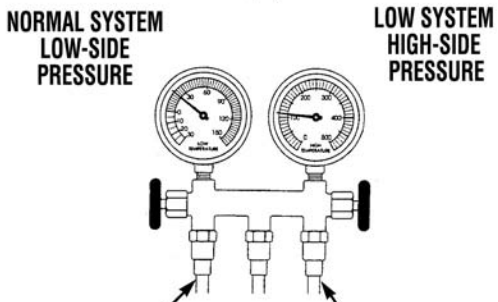
PRESSURE TEST

Inspect AC test set recovery/recycling manifold high-side gage reading.

(a) If gage reading is not lower than the range for the ambient temperature indicated in the chart shown on page 0015-11 for normal high-side pressure, go to Step 8 of this fault.

(b) If gage reading is lower than the range for the ambient temperature indicated in the chart shown on page 0015-11 for normal high-side pressure, go to Step 7 of this fault.





VISUAL INSPECTION

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

(2) Inspect AC hoses from system low-side AC service valve to system high-side AC service valve for frost and cool spots.

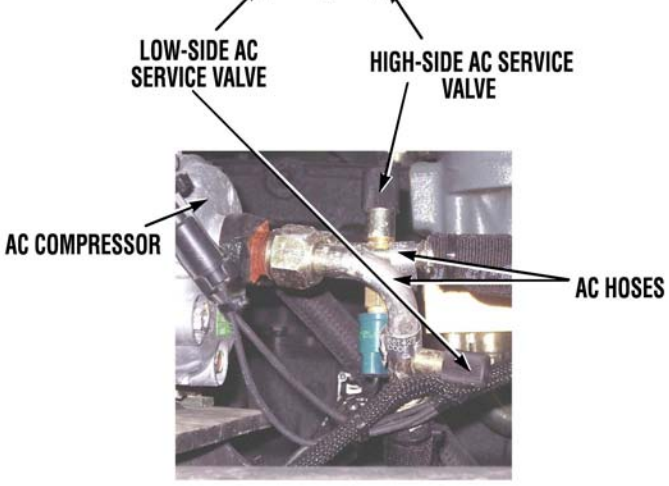
(a) If hoses are not free from frost and cool spots:

1. Recover R-134a refrigerant (WP 0053).
2. Replace restricted AC hose (WP 0039).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and recharge system (WP 0053).
5. Verify repair, go to Step 22 of this fault.

CAUTION: Do not flush AC condenser dryer, AC compressor, or AC expansion valve. After flushing system, add required refrigerant oil or damage to equipment may result.

(b) If hoses are free from frost and cool spots:

1. Recover R-134a refrigerant (WP 0053).
2. Purge and flush system (WP 0053).
3. Replace AC compressor (WP 0022).
4. Replace AC condenser dryer (WP 0024).
5. Evacuate and recharge system with new R-134a refrigerant (WP 0053).
6. Verify repair, go to Step 22 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
AC expansion valve OK.
No restricted AC hoses.
AC compressor OK.
POSSIBLE PROBLEMS
Temperature control switch faulty.
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.

8. **WARNING**
Read WARNING on page 0015-15.

Does AC condenser fan motor on/off cycle vary as the temperature control switch is adjusted from coldest position to off position?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC condenser fan motor on/off cycle does not vary as the temperature control switch is adjusted, temperature control switch is faulty.

NO → Replace temperature control switch (WP 0044). Verify repair, go to Step 22 of this fault.

YES

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
AC expansion valve OK.
No restricted AC hoses.
AC compressor OK.
Temperature control switch OK.
POSSIBLE PROBLEMS
Moisture in AC refrigerant system.
Air or other contaminant in AC refrigerant system.

9. **WARNING**
Read WARNING on page 0015-15.

Does AC system provide adequate cooling?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC system does not cool adequately, air or other contaminant may have entered system.

NO → Perform leak test (WP 0052). Recover R-134a refrigerant (WP 0053). Replace AC dryer (WP 0024). Evacuate and charge system with new R-134a refrigerant (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Go to Step 22 of this fault.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

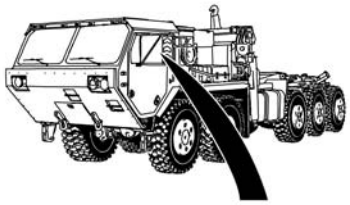
VISUAL INSPECTION

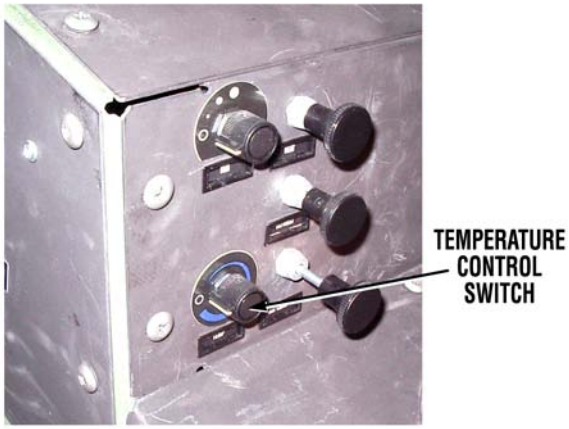
NOTE: AC condenser fan may not turn on in extremely cold, or off in extremely hot ambient temperatures.

While assistant slowly adjusts temperature control switch from its coldest position to off position (WP 0004), verify that the on/off cycle for the AC condenser fan motor varies as the temperature control switch is adjusted.

(a) If the AC condenser on/off cycle does not vary when the temperature control switch is adjusted, turn engine switch OFF (TM 9-2320-364-10) and replace temperature control switch (WP 0044). Verify repair, go to Step 22 of this fault.

(b) If the AC condenser on/off cycle varies when the temperature control switch is adjusted, go to Step 9 of this fault.





VISUAL INSPECTION

(1) Turn temperature control switch to the coldest position (fully clockwise) (WP 0004).

(2) Inspect AC system operation. System output should be 20ºF (11.1ºC) cooler than ambient temperature of cab.

(a) If AC system is not providing adequate cooling.

1. Shut off engine (TM 9-2320-364-10).
2. Perform leak test (WP 0052).
3. Recover R-134a refrigerant (WP 0053).
4. Repair leaks found.
5. Replace AC condenser dryer (WP 0024).
6. Evacuate and charge system with new R-134a refrigerant (WP 0053).
7. Verify repair, go to Step 22 of this fault.

(b) If AC system is providing adequate cooling, go to Step 22 of this fault.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.

POSSIBLE PROBLEMS
Restricted AC hoses.
AC compressor faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.
AC condenser dryer faulty.
AC evaporator core faulty.

10. **WARNING**
Read WARNING on page 0015-17.

Does AC test set recovery/ recycling manifold gages indicate high system low-side pressure?

TEST OPTIONS
Pressure test.
AC test set manifold gage.
REASON FOR QUESTION
To isolate system fault.

NO → Go to Step 16 of this fault.

YES

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.
AC condenser dryer OK.
AC evaporator core OK.

POSSIBLE PROBLEMS
Restricted AC hoses.
AC compressor faulty.
AC expansion valve faulty.
Moisture in AC refrigerant system.
AC condenser core faulty.
AC system overcharged.

11. **WARNING**
Read WARNING on page 0015-17.

Does AC test set recovery/ recycling manifold gages indicate high system high-side pressure?

TEST OPTIONS
Pressure test.
AC test set manifold gage.
REASON FOR QUESTION
To isolate system fault.

NO → Go to Step 14 of this fault.

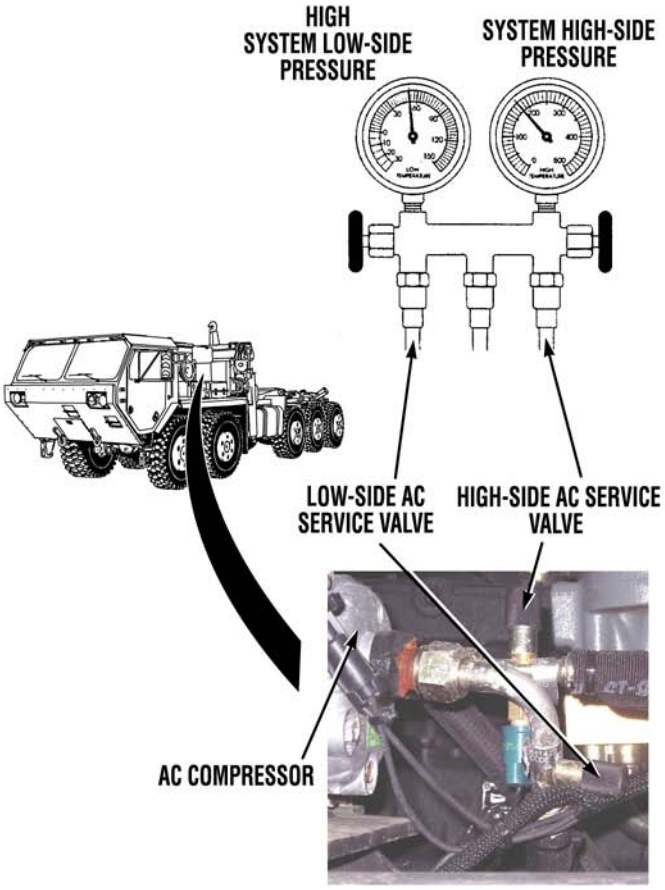
YES

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

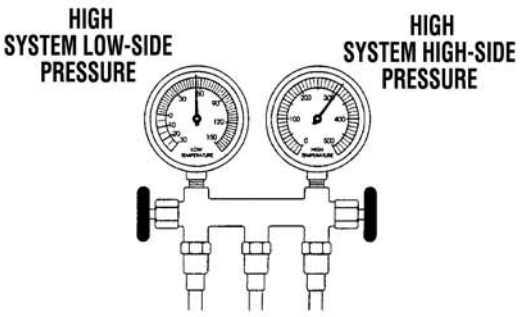
WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

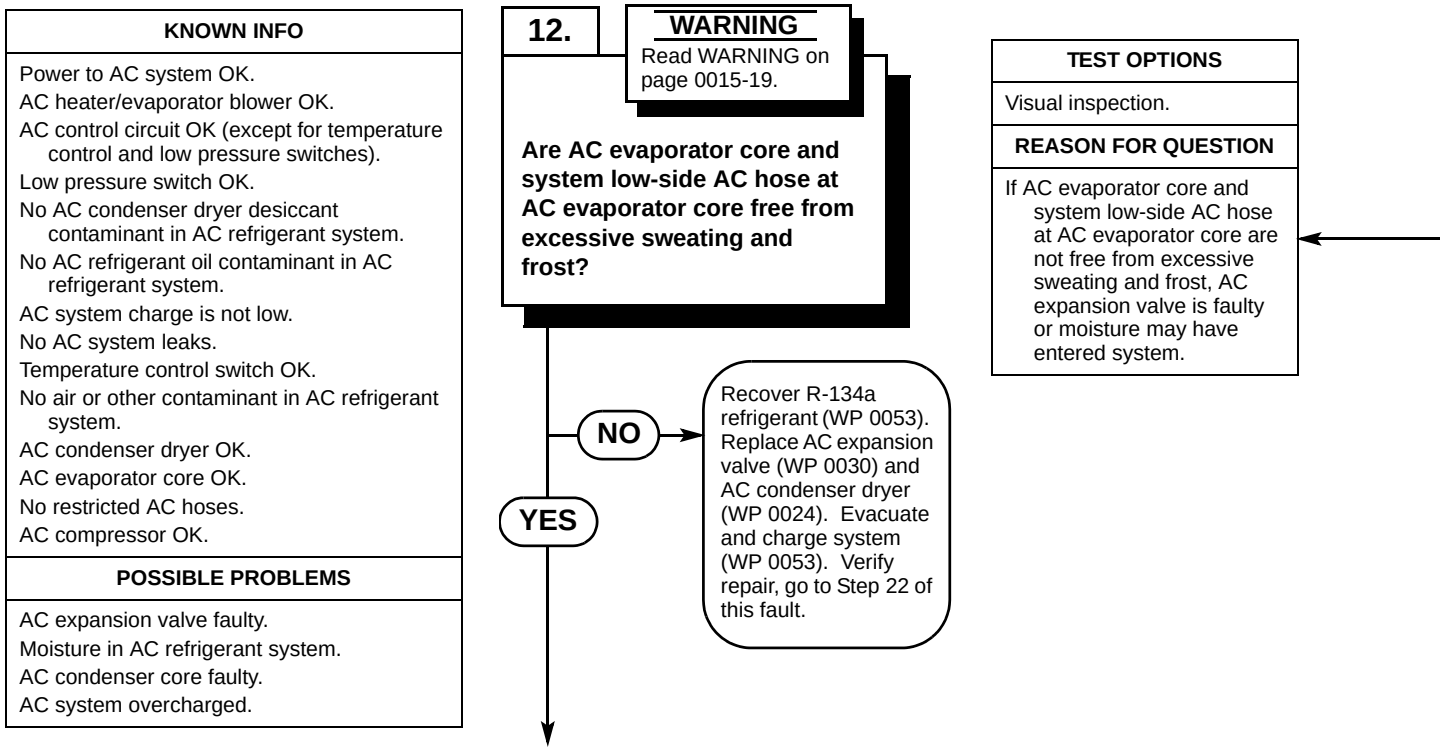
PRESSURE TEST
Inspect AC test set recovery/recycling manifold low-side gage reading. (a) If gage reading is not indicating a high system low-side pressure as indicated in the chart shown on page 0015-11 (less than 30 psi), go to Step 16 of this fault. (b) If gage reading is indicating a high system low-side pressure as indicated in the chart shown on page 0015-11 (greater than 30 psi), go to Step 11 of this fault.



PRESSURE TEST
Inspect AC test set recovery/recycling manifold high-side gage reading. (a) If gage reading is not indicating a high system high-side pressure for the ambient temperature indicated in the chart shown on page 0015-11, go to Step 14 of this fault. (b) If gage reading is indicating a high system high-side pressure for the ambient temperature indicated in the chart shown on page 0015-11, go to Step 12 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

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

(2) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

(3) Remove two upper plenums (TM 9-2320-364-20).

(4) Remove four screws, lockwashers, washers, and cover from AC heater/evaporator assembly (WP 0030).

CAUTION: Slide temperature probe slowly from evaporator core. Failure to comply may result in damage to equipment.

(5) Remove temperature control switch temperature probe from evaporator core (WP 0044).

(6) Remove four screws and pull heater compartment front panel aside (WP 0037).

(7) Remove four screws and evaporator core cover from AC heater/evaporator assembly (WP 0030).

(8) Remove ten screws and right ECB side panel (TM 9-2320-364-20).

(9) Inspect AC evaporator core and system low-side AC hose at AC evaporator core for excessive sweating and frost.

(a) If AC evaporator core and system low-side AC hose are not free from excessive sweating and frost:

1. Recover R-134a refrigerant (WP 0053).
2. Replace AC expansion valve (WP 0030).
3. Replace AC condenser dryer (WP 0024).
4. Perform Steps 10 through 15 below.

(b) If AC evaporator core and system low-side AC hose are free from excessive sweating and frost, perform Steps 10 through 16 below.

(10) If removed, install evaporator core cover and four screws on AC heater/evaporator assembly (WP 0030).

(11) If removed, install heater compartment front panel and four screws (WP 0037).

(12) If removed, install cover and four washers, lockwashers, and screws on AC heater/evaporator assembly (WP 0030).

(13) Install two upper plenums (TM 9-2320-364-20).

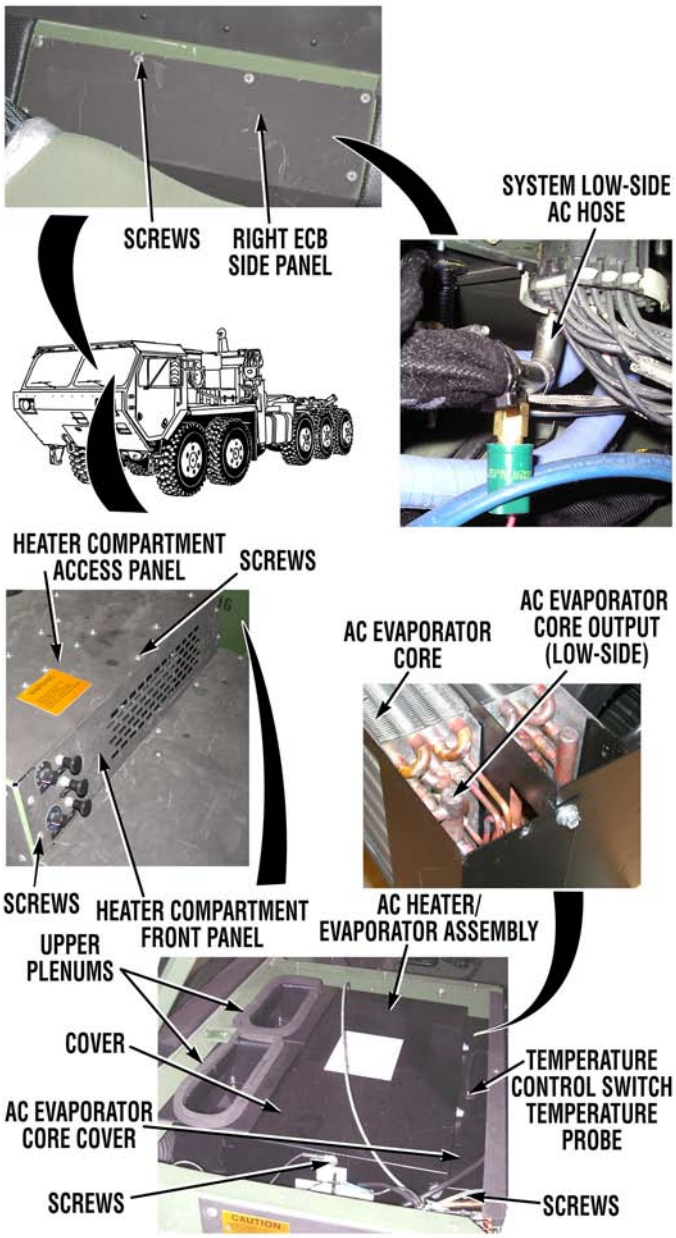
CAUTION: Do not puncture temperature probe. Failure to comply will cause gas to leak out.

NOTE: Slide temperature probe in evaporator core slowly. Temperature probe must be slid into AC evaporator core until it touches the bottom of insertion hole.

(14) Install temperature control switch temperature probe in AC evaporator core (WP 0044).

(15) If expansion valve was replaced in Step 9 above, evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

(16) If expansion valve was not replaced in Step 9 above, go to Step 13 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.
AC condenser dryer OK.
AC evaporator core OK.
No restricted AC hoses.
AC compressor OK.
AC expansion valve OK.
No moisture is AC refrigerant system.
POSSIBLE PROBLEMS
AC condenser core faulty.
AC system overcharged.

13.

WARNING

Read WARNING on page 0015-21.

Is AC condenser output hose hot?

NO → Recover R-134a refrigerant (WP 0053). Replace AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Replace AC condenser core (WP 0023) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC condenser output hose is hot, AC condenser core is faulty. If not, AC system may be overcharged.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser and AC condenser output hose can get extremely hot. Use caution when checking temperature of AC condenser output hose. Place hand near hose to check for heat, but do not touch hose. Failure to comply may cause serious burns to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

NOTE: Wheel chocks and wooden blocks are placed on top of battery box to aid in the removal of condenser.

NOTE: If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

(1) Position two wheel chocks on top of battery box.

(2) Place two 2 by 4 by 16 in. wooden blocks on top of wheel chocks.

(3) Loosen locknut on cushion clip.

NOTE: Do not loosen or disconnect AC hoses in Step 4.

NOTE: Do not disconnect AC harness AC condenser harness connector or wire 1435 from AC condenser assembly in Step 4.

(4) With the aid of an assistant, remove four screws and lower condenser assembly onto wooden blocks (WP 0028).

(5) Rotate AC condenser assembly to gain access to cover on AC condenser assembly.

(6) Remove four screws, lockwashers, washers, and cover from AC condenser assembly (WP 0026).

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

(8) Operate AC system for 5 to 10 minutes at high blower speed (WP 0004).

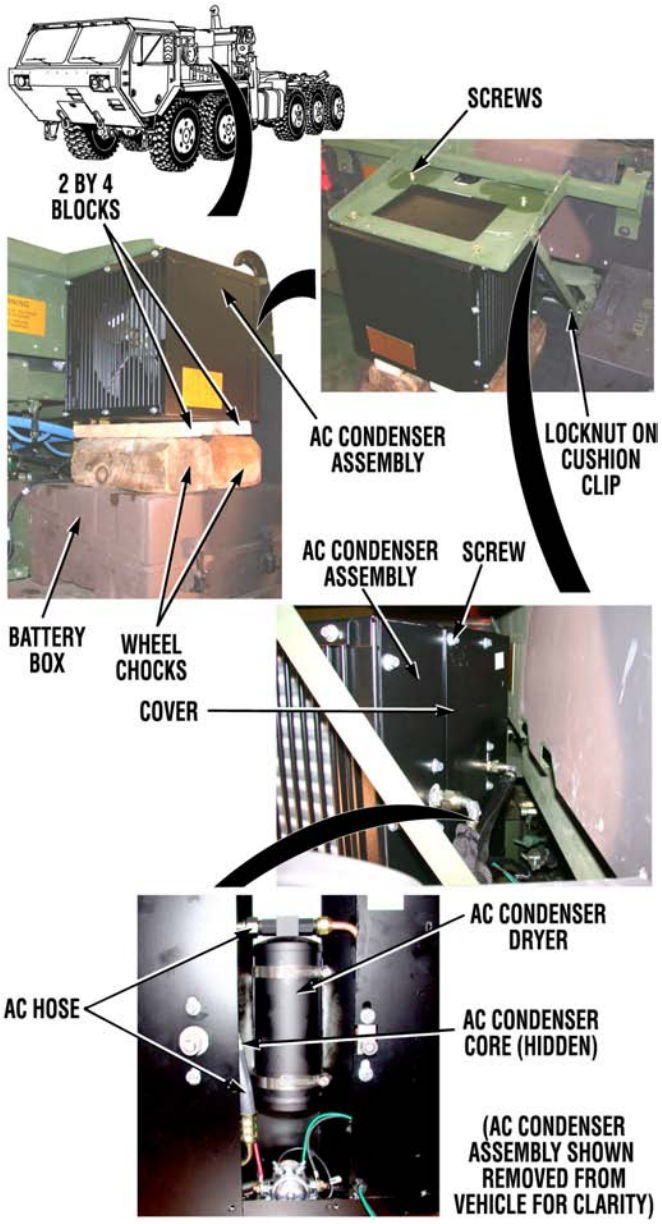
(9) Inspect AC hose between AC condenser core and AC condenser dryer.

(a) If AC hose is not hot:

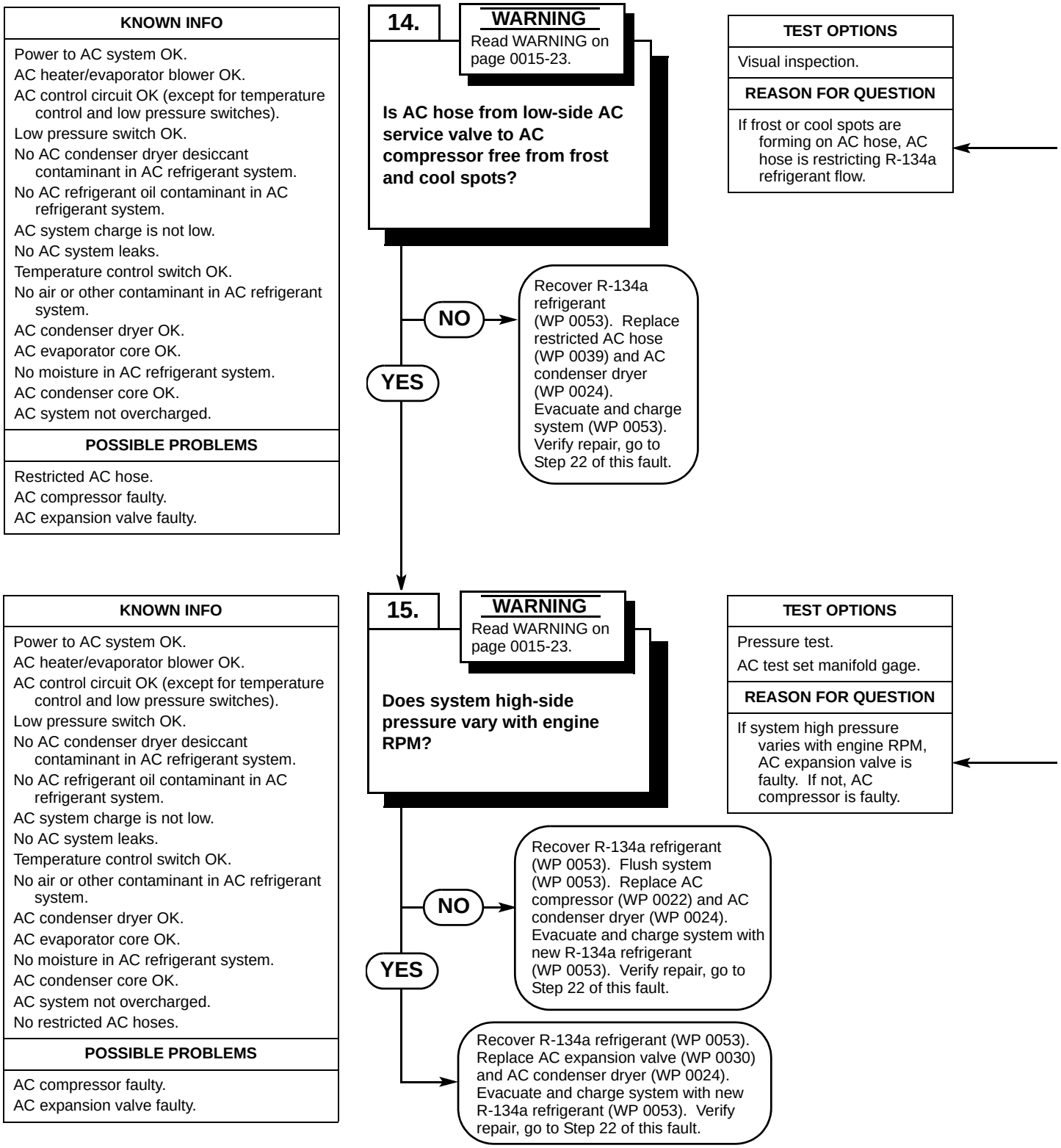
1. Shut off engine (TM 9-2320-364-10).
2. Recover R-134a refrigerant (WP 0053).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and charge system (WP 0053).
5. Verify repair, go to Step 22 of this fault.

(b) If AC hose is hot:

1. Shut off engine (TM 9-2320-364-10).
2. Recover R-134a refrigerant (WP 0053).
3. Replace AC condenser core (WP 0023).
4. Replace AC condenser dryer (WP 0024).
5. Evacuate and charge system (WP 0053).
6. Verify repair, go to Step 22 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

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

(2) Inspect AC hose from system low-side AC service valve to AC compressor for frost and cool spots.

(a) If hoses are not free from frost and cool spots:

1. Recover R-134a refrigerant (WP 0053).
2. Replace restricted AC hose (WP 0039).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and charge system (WP 0053).
5. Verify repair, go to Step 22 of this fault.

(b) If hoses are free from frost and cool spots, go to Step 15 of this fault.

PRESSURE TEST

NOTE: System high-side pressure should vary as engine RPM varies.

(1) While assistant varies engine RPM with accelerator pedal (TM 9-2320-364-10), monitor AC test set recovery/recycling manifold high-side pressure gage. Note whether system high-side pressure varies with engine RPM.

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

(3) Recover R-134a refrigerant (WP 0053).

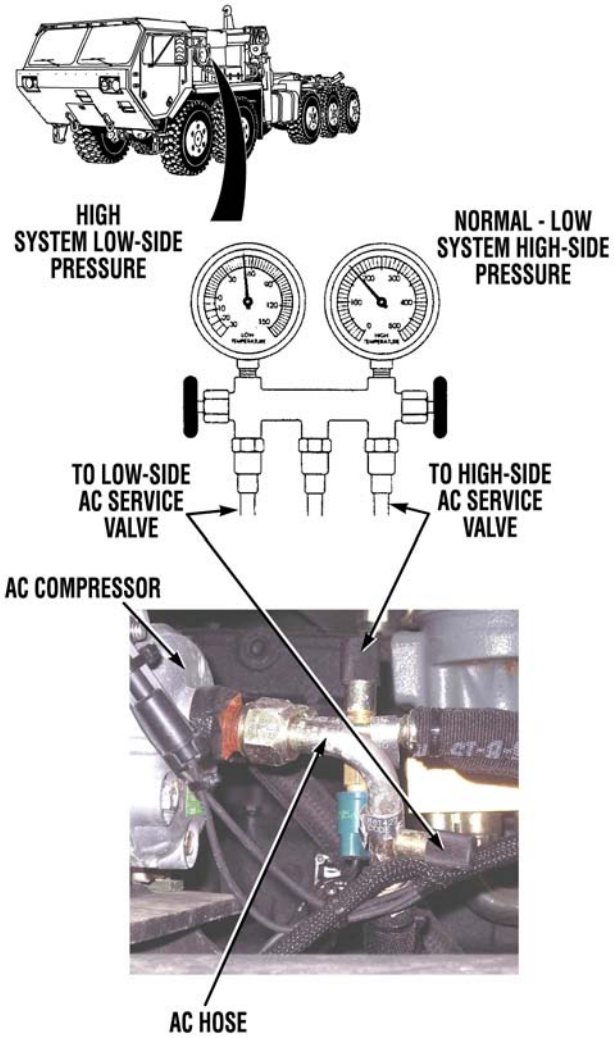
CAUTION: Do not flush AC condenser dryer, AC compressor, or AC expansion valve. After flushing system, add required refrigerant oil or damage to equipment may result.

(4) If system high-side pressure did not vary with engine RPM in Step (1) above:

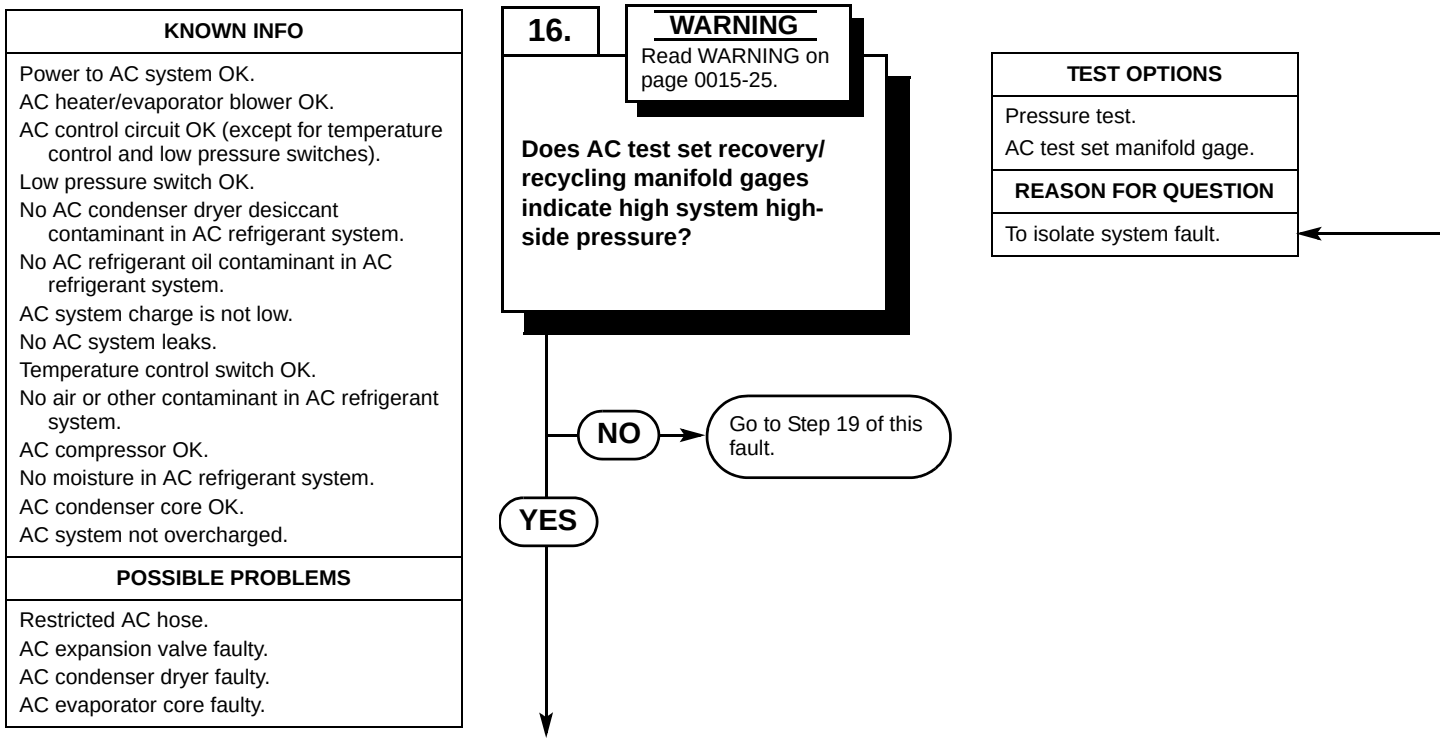
1. Purge and flush system (WP 0053).
2. Replace AC compressor (WP 0022).
3. Replace AC condenser dryer (WP 0024).
4. Evacuate and charge system with new R-134a refrigerant (WP 0053).
5. Verify repair, go to Step 22 of this fault.

(5) If system high-side pressure varied with engine RPM in Step (1) above:

1. Replace AC expansion valve (WP 0030).
2. Replace AC condenser dryer (WP 0024).
3. Evacuate and charge system with new R-134a refrigerant (WP 0053).
4. Verify repair, go to Step 22 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

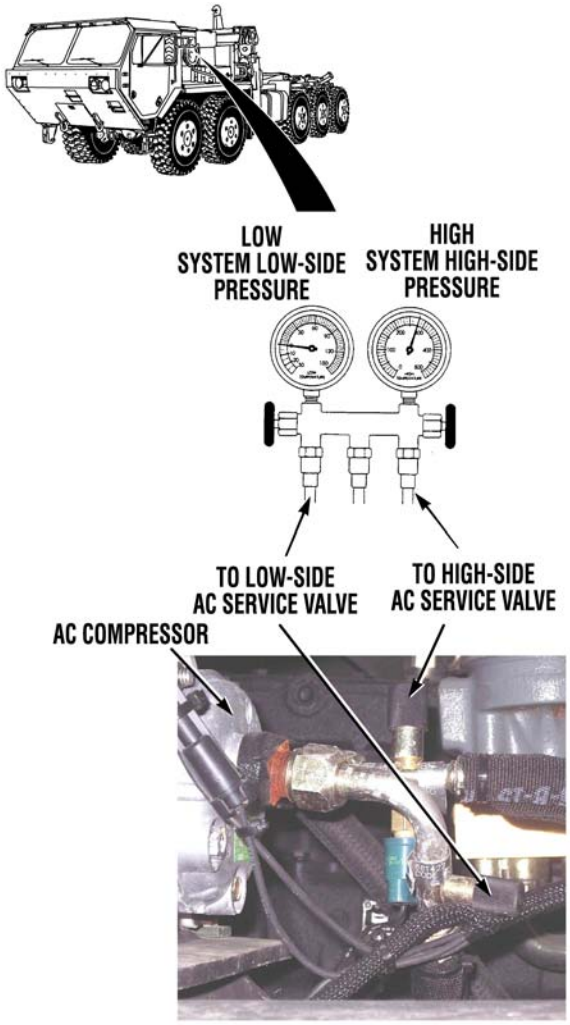


AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

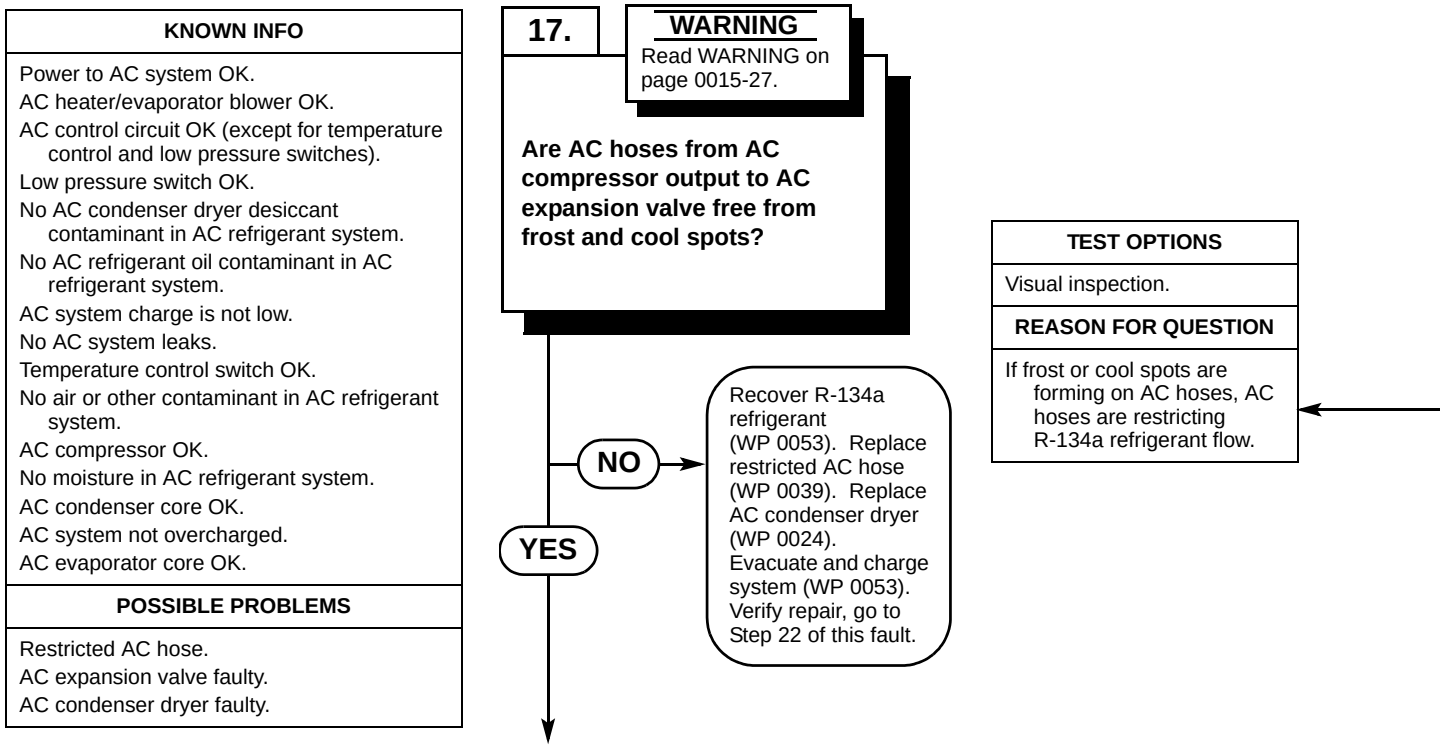
WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

PRESSURE TEST
Inspect AC test set recovery/recycling manifold high-side gage reading. (a) If gage reading is not indicating a high system high-side pressure for the ambient temperature indicated in the chart shown on page 0015-11, go to Step 19 of this fault. (b) If gage reading is indicating a high system high-side pressure for the ambient temperature indicated in the chart shown on page 0015-11, go to Step 17 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

NOTE: Wheel chocks and wooden blocks are placed on top of battery box to aid in the removal of condenser.

NOTE: If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

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

(2) Position two wheel chocks on top of battery box.

(3) Place two 2 by 4 by 16 in. wooden blocks on top of wheel chocks.

(4) Loosen locknut on cushion clip.

NOTE: Do not loosen or disconnect AC hoses in Step 5.

NOTE: Do not disconnect AC harness AC condenser harness connector or wire 1435 from AC condenser assembly in Step 5.

(5) With the aid of an assistant, remove four screws and lower condenser assembly onto wooden blocks (WP 0028).

(6) Rotate AC condenser assembly to gain access to cover on AC condenser assembly.

(7) Remove four screws, lockwashers, washers, and cover from AC condenser fan motor solenoid assembly (WP 0026).

(8) Remove ten screws and right ECB side panel (TM 9-2320-364-20).

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

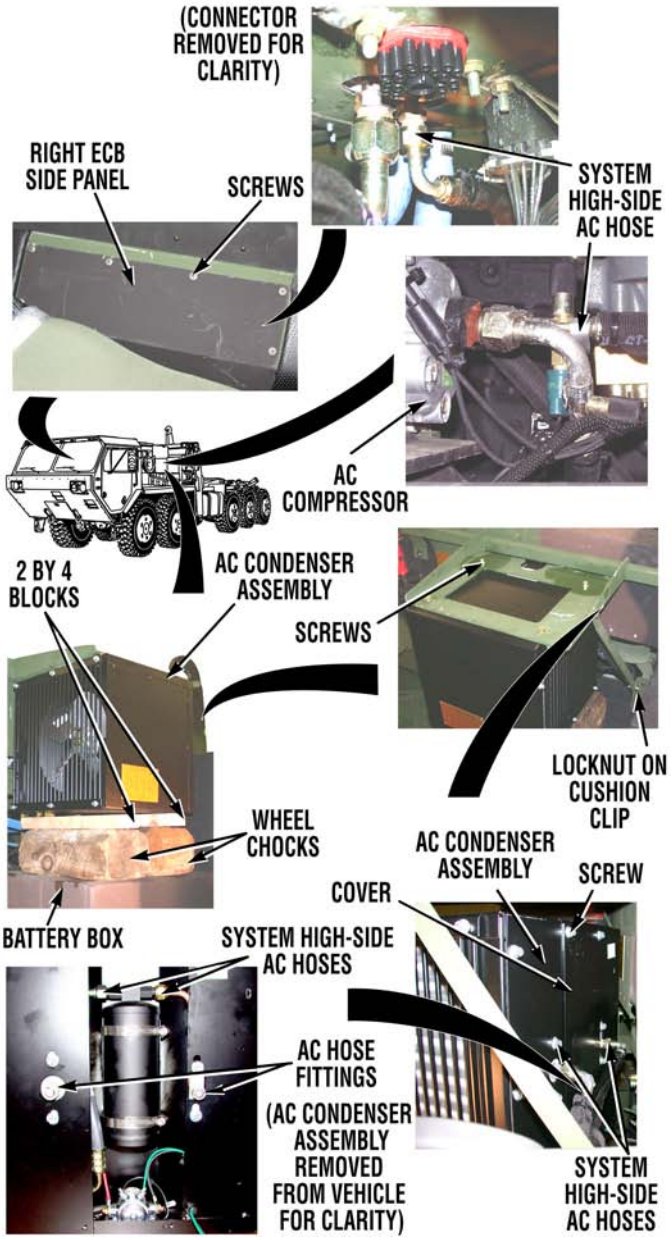
(10) Operate AC system for 5 to 10 minutes at high blower speed (WP 0004).

(11) Inspect system high-side AC hose between AC heater/evaporator for frost and cool spots.

(a) If AC hoses are not free from frost and cool spots:

1. Shut off engine (TM 9-2320-364-10).
2. Recover R-134a refrigerant (WP 0053).
3. Replace restricted AC hose (WP 0039).
4. Replace AC condenser dryer (WP 0024).
5. Evacuate and charge system (WP 0053).
6. Verify repair, go to Step 22 of this fault.

(b) If AC hoses are free from frost and cool spots, go to Step 18 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.
AC compressor OK.
No moisture in AC refrigerant system.
AC condenser core OK.
AC system not overcharged.
AC evaporator core OK.
No restricted AC hoses.
POSSIBLE PROBLEMS
AC expansion valve faulty.
AC condenser dryer faulty.

18.

WARNING
Read WARNING on page 0015-29.

Is AC condenser dryer free from frost, sweating, and cool spots?

NO → Recover R-134a refrigerant (WP 0053). Replace AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Replace AC expansion valve (WP 0030) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC condenser dryer is free from frost and cool spots, AC expansion valve is faulty. If not, AC condenser dryer is faulty.

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.
AC compressor OK.
No moisture in AC refrigerant system.
AC condenser core OK.
AC system not overcharged.
AC evaporator core OK.
POSSIBLE PROBLEMS
Restricted AC hose.
AC expansion valve faulty.
AC condenser dryer faulty.

19.

WARNING
Read WARNING on page 0015-29.

Is AC hose from AC evaporator core to AC compressor free from frost and cool spots?

NO → Recover R-134a refrigerant (WP 0053). Replace restricted AC hose (WP 0039) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

YES →

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If frost or cool spots are forming on AC hose, AC hose is restricting R-134a refrigerant flow.

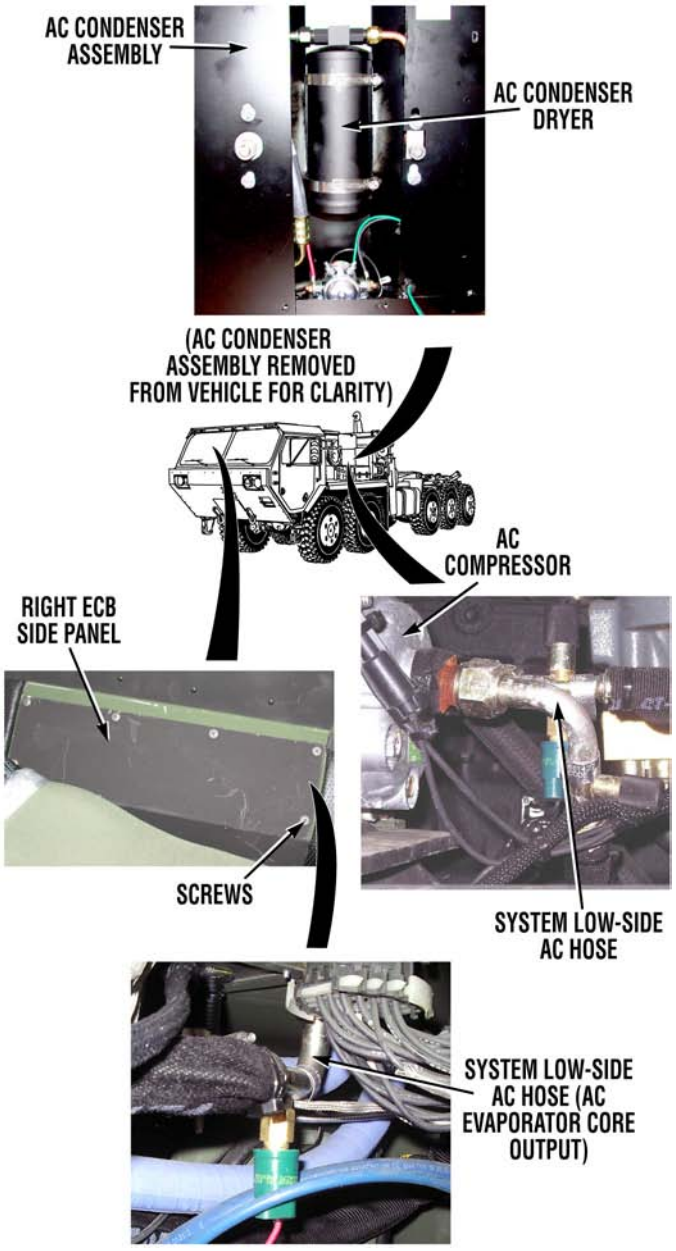
AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Moving engine components can cause severe injury. Keep away from fan, belts, and pulleys while engine is running.**
- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION
(1) Inspect AC condenser dryer. Note if frost or cool spots are forming on AC condenser dryer.
(2) Shut off engine (TM 9-2320-364-10).
(3) Recover R-134a refrigerant (WP 0053).
(4) If AC condenser dryer was free from frost and cool spots in Step (1) above, replace AC expansion valve (WP 0030).
(5) Replace AC condenser dryer (WP 0024).
(6) Evacuate and charge system (WP 0053).
(7) Verify repair, go to Step 22 of this fault.

VISUAL INSPECTION
(1) Remove ten screws and right ECB side panel (TM 9-2320-364-20).
(2) Inspect system low-side AC hose from AC evaporator core to AC compressor for frost and cool spots.
(a) If hose is not free from frost and cool spots:
1. Shut off engine (TM 9-2320-364-10).
2. Recover R-134a refrigerant (WP 0053).
3. Replace restricted AC hose (WP 0039).
4. Replace AC condenser dryer (WP 0024).
5. Evacuate and charge system (WP 0053).
6. Verify repair, go to Step 22 of this fault.
(b) If hose is free from frost and cool spots, go to Step 20 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
Temperature control switch OK.
No air or other contaminant in AC refrigerant system.
AC compressor OK.
No moisture in AC refrigerant system.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
No restricted AC hoses.
POSSIBLE PROBLEMS
AC expansion valve faulty.
AC evaporator core faulty.

20.

WARNING

Read WARNING on page 0015-31.

Is AC expansion valve free from excessive sweating and frost?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If AC expansion valve is free from excessive sweating and frost, AC evaporator core is faulty. If not, AC expansion valve is faulty.

NO → Recover R-134a refrigerant (WP 0053). Replace AC expansion valve (WP 0030) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Recover R-134a refrigerant (WP 0053). Replace AC evaporator core (WP 0030) and AC condenser dryer (WP 0024). Evacuate and charge system (WP 0053). Verify repair, go to Step 22 of this fault.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

VISUAL INSPECTION

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

(2) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

(3) Remove two upper plenums (TM 9-2320-364-20).

(4) Remove four screws, lockwashers, washers, and cover from AC heater/evaporator assembly (WP 0030).

CAUTION: Slide temperature probe slowly from evaporator core. Failure to comply may result in damage to equipment.

(5) Remove temperature control switch temperature probe from evaporator core (WP 0044).

(6) Remove four screws and pull heater compartment front panel aside (WP 0037).

(7) Remove four screws and evaporator core cover from AC heater/evaporator assembly (WP 0030).

(8) Inspect AC expansion valve for excessive sweating and frost.

(a) If AC expansion valve is not free from excessive sweating and frost:

1. Recover R-134a refrigerant (WP 0053).
2. Replace AC expansion valve (WP 0030).

(b) If AC expansion valve is free from excessive sweating and frost:

1. Recover R-134a refrigerant (WP 0053).
2. Replace AC evaporator core (WP 0030).

(9) If removed, install evaporator core cover and four screws on AC heater/evaporator assembly (WP 0030).

(10) If removed, install heater compartment front panel and four screws (WP 0037).

(11) If removed, install cover and four washers, lockwashers, and screws on AC heater/evaporator assembly (WP 0030).

(12) Install two upper plenums (TM 9-2320-364-20).

CAUTION: Do not puncture temperature probe. Failure to comply will cause gas to leak out.

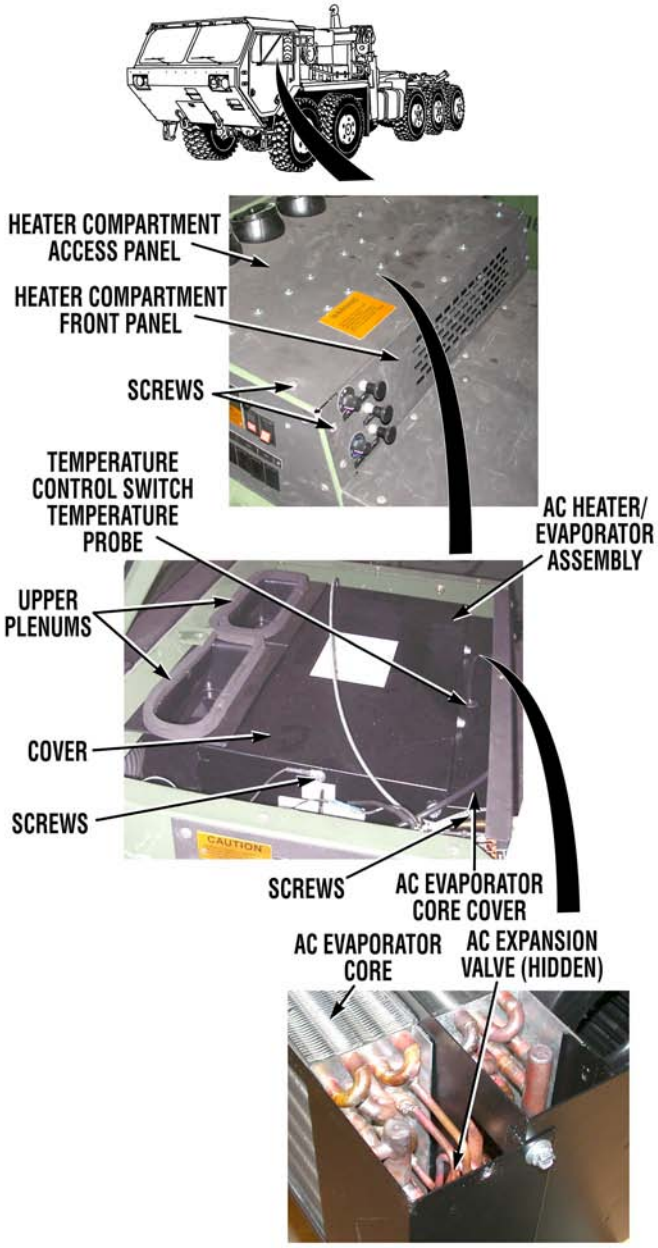
NOTE: Slide temperature probe in evaporator core slowly. Temperature probe must slide into AC evaporator core until it touches the bottom of insertion hole.

(13) Install temperature control switch temperature probe in AC evaporator core (WP 0044).

(14) Replace AC condenser dryer (WP 0024).

(15) Evacuate and charge system (WP 0053).

(16) Verify repair, go to Step 22 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
Low pressure switch OK.
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
No restricted AC hoses.
AC compressor OK.
Temperature control switch OK.
AC expansion valve OK.
No moisture in AC refrigerant system.
No air or other contaminant in AC refrigerant system.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
POSSIBLE PROBLEMS
AC system charge low.
AC system leaking.
Low pressure switch faulty.

21.

WARNING

Read WARNING on page 0015-33.

Does AC test set recovery/ recycling manifold system low-side gage indicate a pressure of at least 30 psi?

NO → Check system for loose fittings and damage. Tighten loose fittings and repair damage. Perform leak test (WP 0052). Repair any leaks found and replace AC dryer (WP 0024). Evacuate and charge system with new R-134a refrigerant (WP 0053). Verify repair, go to Step 22 of this fault.

YES → Replace AC low pressure switch (WP 0040). Verify repair, go to Step 22 of this fault.

TEST OPTIONS
Pressure test.
AC test set manifold gage.
REASON FOR QUESTION
If at least 30 psi pressure is measured, AC low pressure switch is faulty. If not, AC system charge is low.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.

PRESSURE TEST

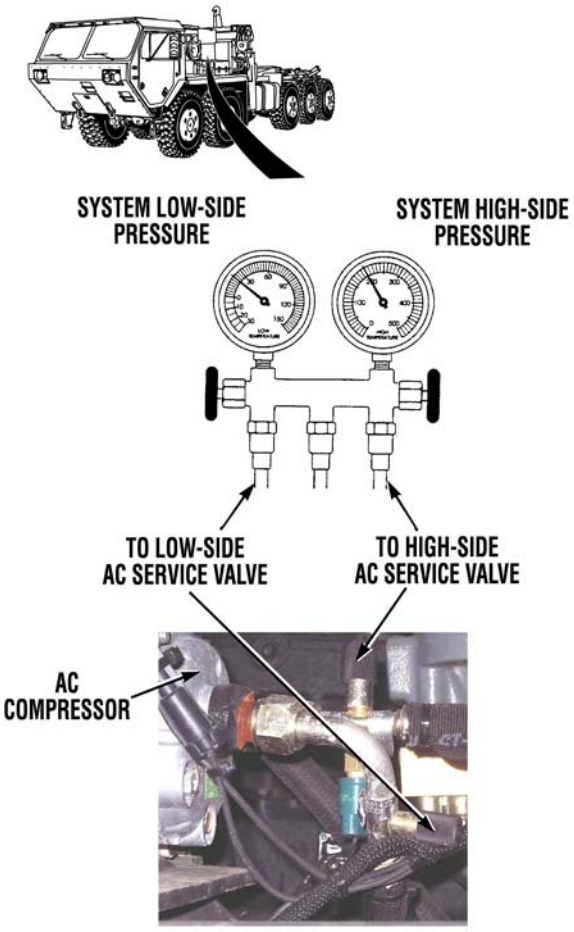
(1) Connect AC test set recovery/recycling manifold gages to AC service valves (WP 0053). Ensure test set valves are closed.

(2) Inspect AC test set recovery/recycling manifold low-side gage reading.

(a) If gage reading does not indicate at least 30 psi pressure:

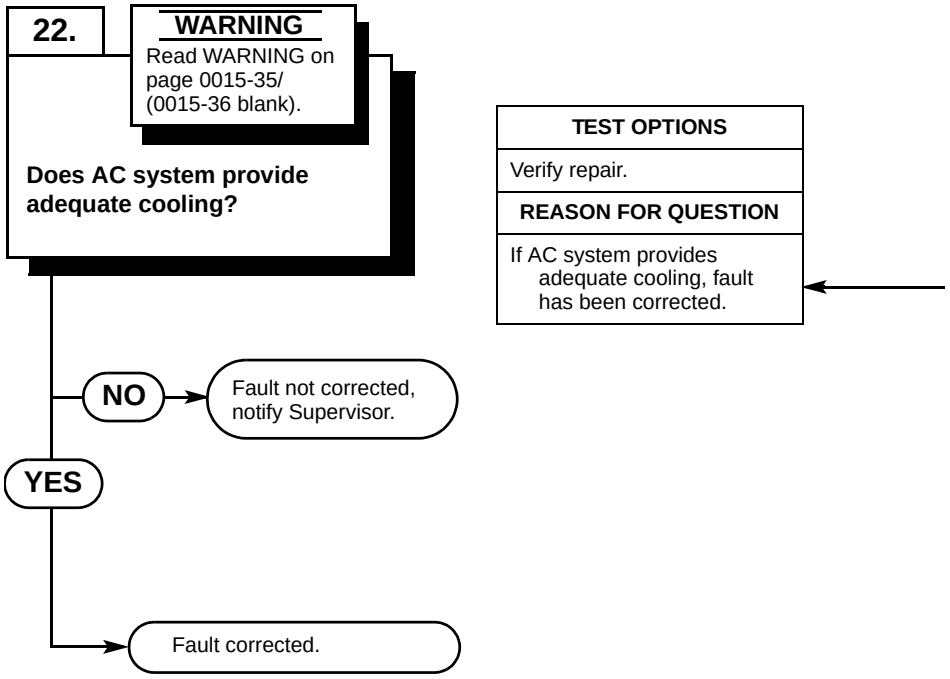
1. Inspect system for damage. Repair any damage found.
2. Inspect system for loose fittings. Tighten fittings as required.
3. Perform leak test (WP 0052). Add R-134a refrigerant if required to perform test (WP 0053).
4. Recover R-134a refrigerant (WP 0053).
5. Repair leaks found.
6. Replace AC condenser dryer (WP 0024).
7. Evacuate and charge system with new R-134a refrigerant (WP 0053).
8. Verify repair, go to Step 22 of this fault.

(b) If gage reading indicates at least 30 psi pressure, replace low pressure switch (WP 0040). Verify repair, go to Step 22 of this fault.



AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

KNOWN INFO
Power to AC system OK.
AC heater/evaporator blower OK.
AC control circuit OK (except for temperature control and low pressure switches).
No AC condenser dryer desiccant contaminant in AC refrigerant system.
No AC refrigerant oil contaminant in AC refrigerant system.
AC system charge is not low.
No AC system leaks.
No restricted AC hoses.
AC compressor OK.
Temperature control switch OK.
AC expansion valve OK.
No moisture in AC refrigerant system.
No air or other contaminant in AC refrigerant system.
AC condenser core OK.
AC system not overcharged.
AC condenser dryer OK.
AC evaporator core OK.
Low pressure switch OK.
POSSIBLE PROBLEMS
None



TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC system provides adequate cooling, fault has been corrected.

AC DOES NOT COOL OR COOLS INADEQUATELY - Continued

WARNING

- **Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.**
- **AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.**

VERIFY REPAIR

(1) If running, shut off engine (TM 9-2320-364-10).
(2) If removed, install heater access panel and eight screws (TM 9-2320-364-20).
(3) If removed, install right ECB side panel and ten screws (TM 9-2320-364-20).
(4) Install AC condenser dryer sight glass access hole cover.
(5) If removed, install cover and four washers, lockwashers, and screws on AC condenser assembly (WP 0028).
(6) If removed, install AC condenser assembly and four screws (WP 0028).
(7) Remove AC test set recovery/recycling gages (WP 0053).
(8) Perform leak test (WP 0052). Concentrate on AC system service valves.
(9) Repair any leaks found.
(10) Install driver side noise panel (WP 0051).
(11) Start engine (TM 9-2320-364-10).
(12) Operate AC system for 10 minutes at high blower speed (WP 0004).
    (a) If AC system does not provide adequate cooling, fault has not been corrected. Shut off engine, turn fan control switch and temperature control switch to off position, and notify Supervisor.
    (b) If AC system provides adequate cooling, fault has been corrected.



END OF WORK PACKAGE

AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

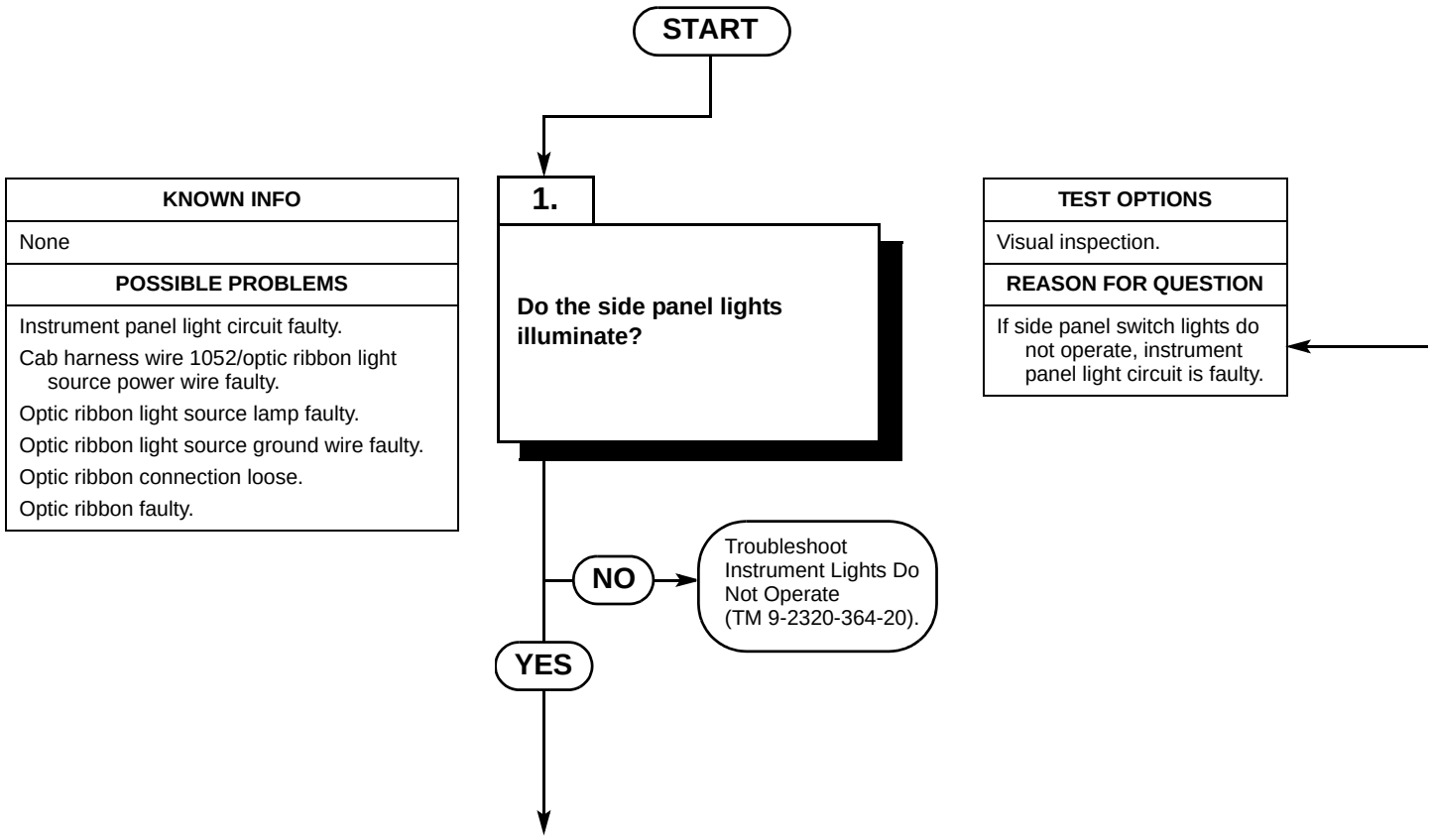
Equipment Condition
Shut off engine (TM 9-2320-364-10).
Parking brake applied (TM 9-2320-364-10).
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Multimeter, Digital (Item 2, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
None

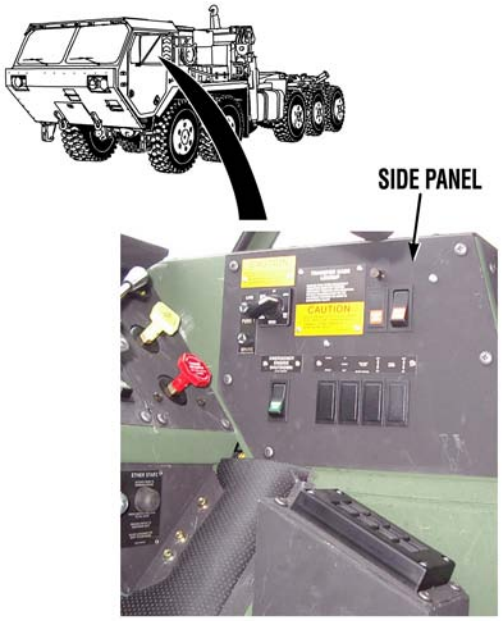
Personnel Required
One

References
TM 9-2320-364-10
TM 9-2320-364-20



AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

VISUAL INSPECTION
NOTE: Panel lights are low intensity lights. Close observation may be required to determine if the panel lights are illuminated. (1) Turn engine start switch ON (TM 9-2320-364-10). (2) Turn rheostat switch to full brightness (TM 9-2320-364-10). (3) Verify operation of side panel lights. (a) If side panel lights do not illuminate, troubleshoot Instrument Lights Do Not Operate (TM 9-2320-364-20). (b) If side panel lights illuminate, go to Step 2 of this fault.



AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

KNOWN INFO
Instrument panel light circuit OK.
POSSIBLE PROBLEMS
Cab harness wire 1052/optic ribbon light source power wire faulty.
Optic ribbon light source lamp faulty.
Optic ribbon light source ground wire faulty.
Optic ribbon connection loose.
Optic ribbon faulty.

2. **WARNING**
Read WARNING on page 0016-5.

Does optic ribbon light source operate?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
To isolate system fault.

NO → Go to Step 3 of this fault.

YES → Go to Step 5 of this fault.

KNOWN INFO
Instrument panel light circuit OK.
Optic ribbon connection OK.
Optic ribbon OK.
POSSIBLE PROBLEMS
Cab harness wire 1052/optic ribbon light source power wire faulty.
Optic ribbon light source lamp faulty.
Optic ribbon light source ground wire faulty.

3. **WARNING**
Read WARNING on page 0016-5.

Are 10 to 14 vdc measured on cab harness wire 1052/optic ribbon light source power wire at optic ribbon light source lamp socket?

TEST OPTIONS
Voltage test.
Multimeter.
REASON FOR QUESTION
If 10 to 14 vdc are not measured, cab harness wire 1052/optic ribbon light source power wire is faulty.

NO → Repair cab harness wire 1052/optic ribbon light source power wire (see Appendix A) or notify Supervisor. Verify repair, go to Step 6 of this fault.

YES

AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VISUAL INSPECTION

(1) Turn engine start switch OFF (TM 9-2320-364-10).

(2) Remove eight screws and heater compartment access panel (TM 9-2320-364-20).

(3) Turn engine start switch ON (TM 9-2320-364-10).

NOTE: Optic ribbon light source operation is verified by looking for light at the optic ribbon light source ports.

(4) Verify operation of optic ribbon light source.

(a) If optic ribbon light source does not illuminate, go to Step 3 of this fault.

(b) If optic ribbon light source illuminates, go to Step 5 of this fault.

VOLTAGE TEST

(1) Turn engine start switch OFF (TM 9-2320-364-10).

NOTE: Do not disconnect wire or optic ribbon from optic ribbon light source in Step 2.

(2) Remove optic ribbon light source (WP 0042).

(3) Remove lamp socket and lamp from optic ribbon light source (WP 0043).

CAUTION: Do not twist lamp while removing it from lamp socket. Pull lamp straight out. Failure to comply may cause damage to equipment.

(4) Remove lamp from lamp socket (WP 0043).

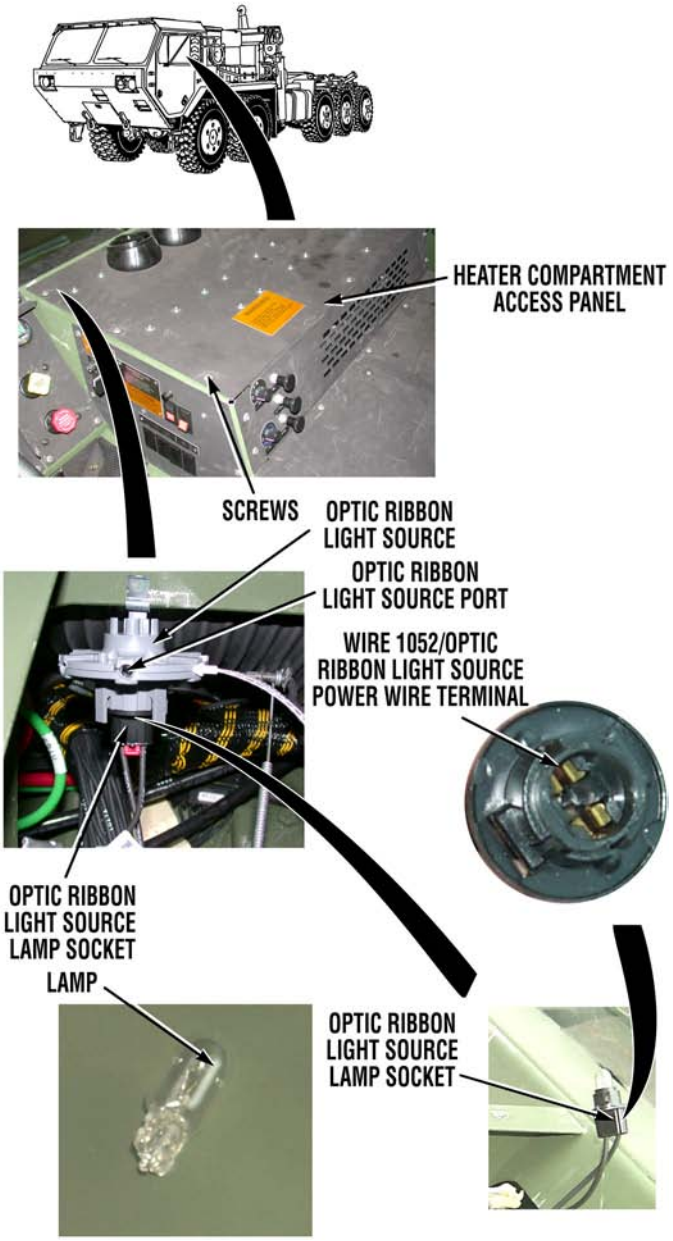
(5) Turn engine start switch ON (TM 9-2320-364-10).

(6) Place positive (+) probe of multimeter on cab harness wire 1052/optic ribbon light source power wire at optic ribbon light source lamp socket.

(7) Place negative (-) probe of multimeter on a known good ground.

(a) If 12 to 14 vdc are not measured, turn engine start switch OFF and repair cab harness wire 1052/optic ribbon light source power wire (see Appendix A) or notify Supervisor. Verify repair, go to Step 6 of this fault.

(b) If 22 to 28 vdc are measured, turn engine start switch OFF, and go to Step 4 of this fault.



AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

KNOWN INFO
Instrument panel light circuit OK.
Optic ribbon connection OK.
Optic ribbon OK.
Cab harness wire 1052/optic ribbon light source power wire OK.
POSSIBLE PROBLEMS
Optic ribbon light source lamp faulty.
Optic ribbon light source ground wire faulty.

4.

WARNING

Read WARNING on page 0016-7.

Is continuity measured across optic ribbon light source ground wire from optic ribbon light source lamp socket to a known good ground?

TEST OPTIONS
Continuity test.
Multimeter.
REASON FOR QUESTION
If continuity is measured, optic ribbon light source lamp is faulty. If not, optic ribbon light source ground wire is faulty.

NO → Repair optic ribbon light source ground wire (see Appendix A) or replace optic ribbon light source wire harness (WP 0043). Verify repair, go to Step 6 of this fault.

YES → Replace optic ribbon light source lamp (WP 0043). Verify repair, go to Step 6 of this fault.

KNOWN INFO
Instrument panel light circuit OK.
Cab harness wire 1052/optic ribbon light source power wire OK.
Optic ribbon light source lamp OK.
Optic ribbon light source ground wire OK.
POSSIBLE PROBLEMS
Optic ribbon connection loose.
Optic ribbon faulty.

5.

WARNING

Read WARNING on page 0016-7.

Is optic ribbon securely connected to optic ribbon light source?

TEST OPTIONS
Visual inspection.
REASON FOR QUESTION
If optic ribbon is not securely connected or faulty, AC heater control panel lights will not illuminate.

NO → Reconnect optic ribbon (WP 0041). Verify repair, go to Step 6 of this fault.

YES → Replace optic ribbon (WP 0041). Verify repair, go to Step 6 of this fault.

AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

CONTINUITY TEST

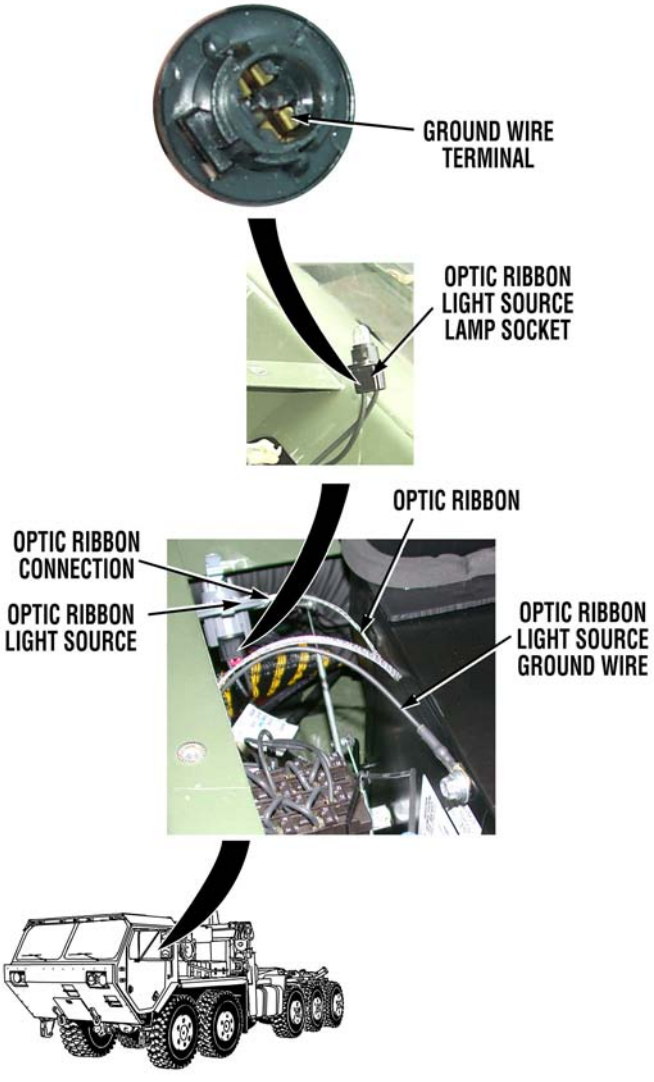
(1) Set multimeter switch to ohms.

(2) Place positive (+) probe of multimeter on optic ribbon light source ground wire at optic ribbon light source lamp socket.

(3) Place negative (-) probe of multimeter on a known good ground.

(a) If there is no continuity, repair optic ribbon light source ground wire (see Appendix A) or replace optic ribbon light source wire harness (WP 0043). Verify repair, go to Step 6 of this fault.

(b) If there is continuity, replace optic ribbon light source lamp (WP 0043). Verify repair, go to Step 6 of this fault.



VISUAL INSPECTION

(1) Turn engine start switch OFF (TM 9-2320-364-10).

(2) Inspect optic ribbon at optic ribbon light source for loose connection.

(a) If optic ribbon is not securely connected to optic ribbon light source, reconnect optic ribbon (WP 0041). Verify repair, go to Step 6 of this fault.

(b) If optic ribbon is securely connected to optic ribbon light source, replace optic ribbon (WP 0041). Verify repair, go to Step 6 of this fault.

AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

KNOWN INFO
Instrument panel light circuit OK.
Cab harness wire 1052/optic ribbon light source power wire OK.
Optic ribbon light source lamp OK.
Optic ribbon light source ground wire OK.
Optic ribbon connection OK.
Optic ribbon OK.
POSSIBLE PROBLEMS
None

6.

WARNING

Read WARNING on page 0016-09/ (0016-10 blank).

Do all AC heater control panel lights illuminate?

NO → Fault not corrected, notify Supervisor.

YES → Fault corrected.

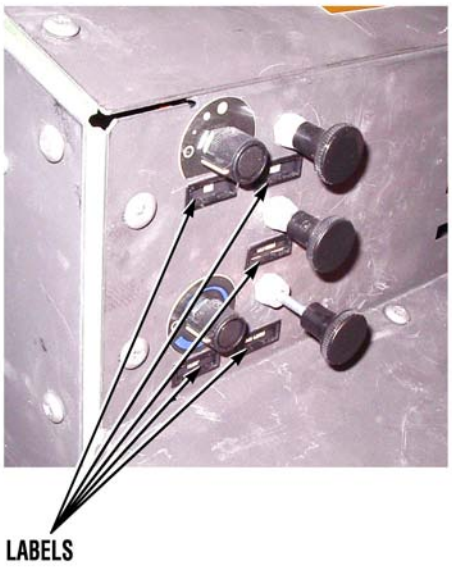
TEST OPTIONS
Verify repair.
REASON FOR QUESTION
If AC heater control panel lights do not illuminate, fault has not been corrected.

AC HEATER CONTROL PANEL LIGHTS DO NOT OPERATE - Continued

WARNING

Remove rings, bracelets, wristwatches, neck chains, and any other jewelry before working around vehicle. Jewelry can catch on equipment and cause serious injury. Jewelry or tools may short across electrical circuits or terminals and cause damage to equipment or severe burns or electrical shock to personnel.

VERIFY REPAIR
(1) If ON, turn engine start switch OFF (TM 9-2320-364-10).
(2) If removed, install optic ribbon light source lamp (WP 0043).
(3) If removed, install optic ribbon light source lamp socket in optic ribbon light source (WP 0043).
(4) If removed, install optic ribbon light source (WP 0042).
(5) Install heater compartment access panel and eight screws (TM 9-2320-364-20).
(6) Turn engine start switch ON (TM 9-2320-364-10).
(7) Inspect fan control switch, heater cable, defrost cable, AC cable, and temperature control switch labels for illumination.
(a) If all five labels do not illuminate, fault has not been corrected. Turn engine switch OFF and notify Supervisor.
(b) If all five labels illuminate, fault has been corrected.



END OF WORK PACKAGE

CHAPTER 6

FIELD LEVEL MAINTENANCE

FIELD LEVEL MAINTENANCE INTRODUCTION

This chapter contains instructions for replacement of air conditioning components at the Field Level Maintenance. Some subassemblies and parts must be removed before air conditioning components can be accessed. They are referenced to other paragraphs of this manual or other technical manuals.

FIELD LEVEL MAINTENANCE INDEX

MAINTENANCE PROCEDURE	WP PAGE NO.
AC 20 AMP Circuit Breaker Replacement	0018-1
AC Cable Replacement	0019-1
AC Compressor Drive Belts Replacement/Adjustment	0020-1
AC Compressor Mounting Bracket Replacement	0021-1
AC Compressor Replacement	0022-1
AC Condenser Core Replacement	0023-1
AC Condenser Dryer Replacement	0024-1
AC Condenser Fan Motor Replacement	0025-1
AC Condenser Fan Motor Solenoid Replacement	0026-1
AC Condenser Mounting Bracket Replacement	0027-1
AC Condenser Replacement	0028-1
AC Defrost Cable Replacement	0029-1
AC Evaporator Core and Expansion Valve Replacement	0030-1
AC Fan Control Switch Replacement	0031-1
AC Heater Cable Replacement	0032-1
AC Heater Core Replacement	0033-1
AC Heater/Evaporator Blower Motor Assembly Replacement	0034-1
AC Heater/Evaporator Blower Motor Resistor Replacement	0035-1
AC Heater/Evaporator Blower Motor Resistor Harness Replacement	0036-1
AC Heater/Evaporator Replacement	0037-1
AC High Pressure Switch Replacement	0038-1
AC Hoses Replacement	0039-1
AC Low Pressure Switch Replacement	0040-1
AC Optic Ribbon Replacement	0041-1
AC Optic Ribbon Light Source Replacement	0042-1
AC Optic Ribbon Light Source Wire Harness Replacement	0043-1

FIELD LEVEL MAINTENANCE INTRODUCTION - Continued

MAINTENANCE PROCEDURE	WP PAGE NO.
AC Temperature Control Switch Replacement	0044-1
AC Wire 1082 Harness Replacement	0045-1
AC Wire 1156 Harness Replacement	0046-1
AC Wire 1280A Harness Replacement	0047-1
AC Wiring Harness Replacement	0048-1
Engine Accessory Drive Assembly Replacement	0049-1
Fuel Line Extension Replacement	0050-1
Left Side Noise Panel and Rubber Flap Replacement	0051-1
Air Conditioning Leak Test	0052-1
AC System Refrigerant (R-134a) Maintenance	0053-1

END OF WORK PACKAGE

0018

AC 20 AMP CIRCUIT BREAKER REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Electronic control box (ECB) cover removed (TM 9-2320-364-20).

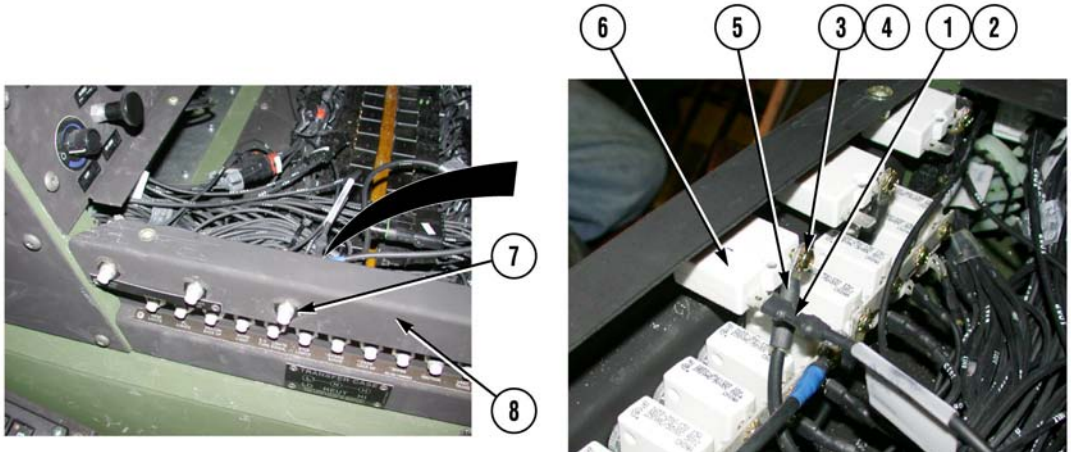
Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwasher (Item 25, Figure 4, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



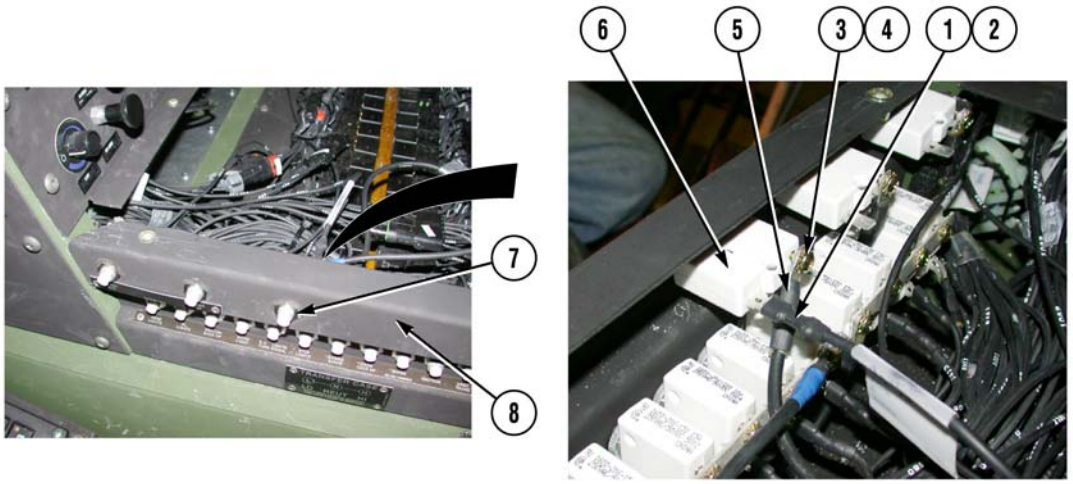
NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove wire 1082 (1) from terminal (2).
2. Remove screw (3), lockwasher (4), and wire 1280A (5) from AC circuit breaker (6). Discard lockwasher.
3. Remove nut (7) and AC circuit breaker (6) from console (8).

AC 20 AMP CIRCUIT BREAKER REPLACEMENT - Continued

INSTALLATION



1. Install AC circuit breaker (6) on console (8) with nut (7).
2. Install wire 1280A (5) on AC circuit breaker (6) with lockwasher (4) and screw (3).
3. Install wire 1082 (1) on terminal (2).

FOLLOW-ON MAINTENANCE

1. Install electronic control box (ECB) cover (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC CABLE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Electronic control box (ECB) cover removed (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

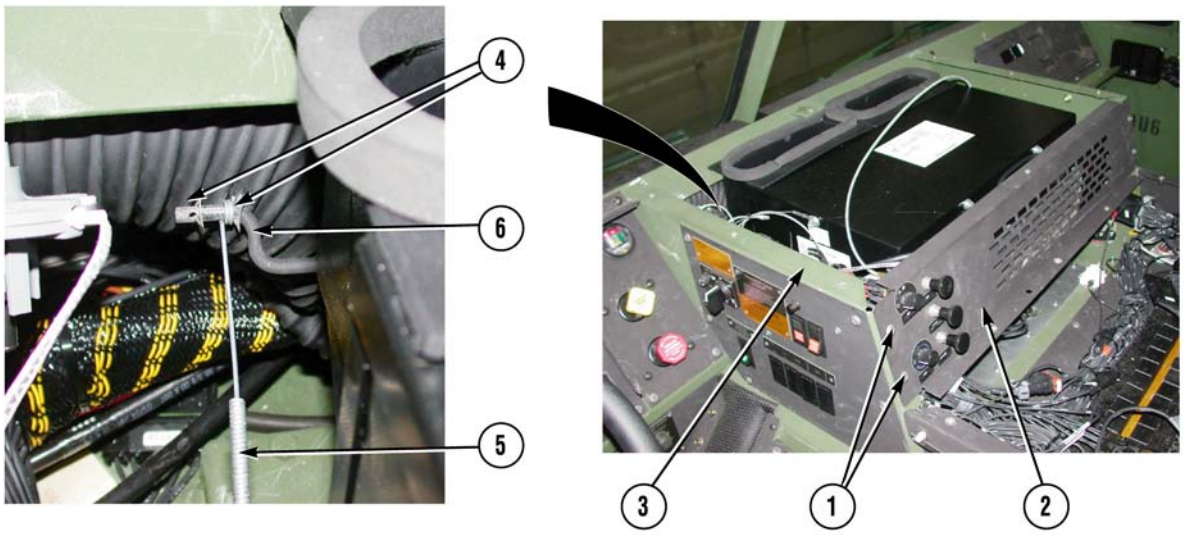
Materials/Parts
None

Personnel Required
One

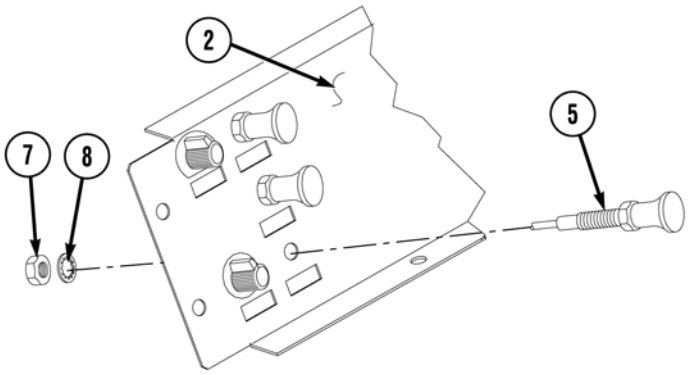
References
TM 9-2320-364-20

AC CABLE REPLACEMENT - Continued

REMOVAL



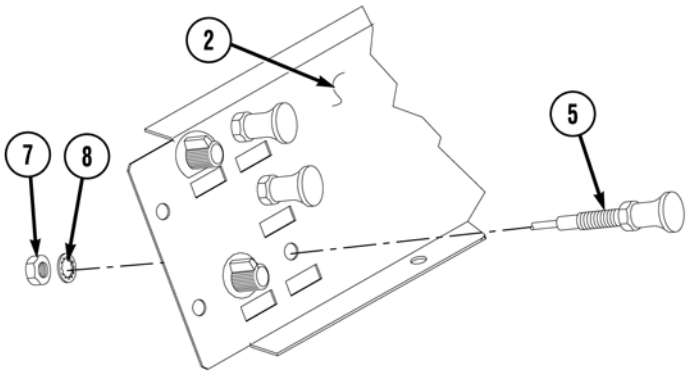
1. Remove four screws (1) and center cover (2) from console (3).
2. Remove two speed nuts (4) and AC cable (5) from damper control arm (6).



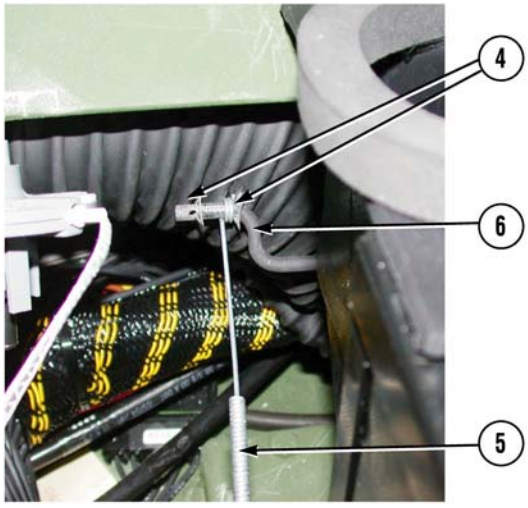
3. Remove nut (7), lockwasher (8), and AC cable (5) from center cover (2).

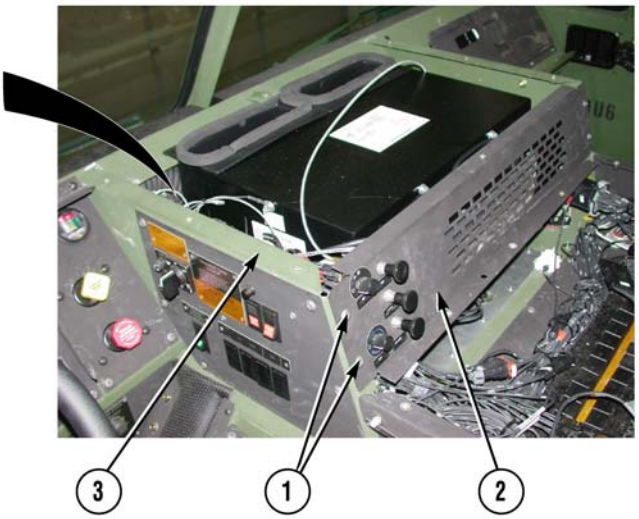
AC CABLE REPLACEMENT - Continued

INSTALLATION



1. Install AC cable (5) on center cover (2) with lockwasher (8) and nut (7).





2. Install AC cable (5) on damper control arm (6) with two speed nuts (4).
3. Install center cover (2) on console (3) with four screws (1).

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Install electronic control box (ECB) cover (TM 9-2320-364-20).

END OF WORK PACKAGE

AC COMPRESSOR DRIVE BELTS REPLACEMENT/ADJUSTMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Adjustment

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Left side noise panel and rubber flap removed (WP 0051).

Tools and Special Tools
Tensiometer, Dial In (Item 7, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

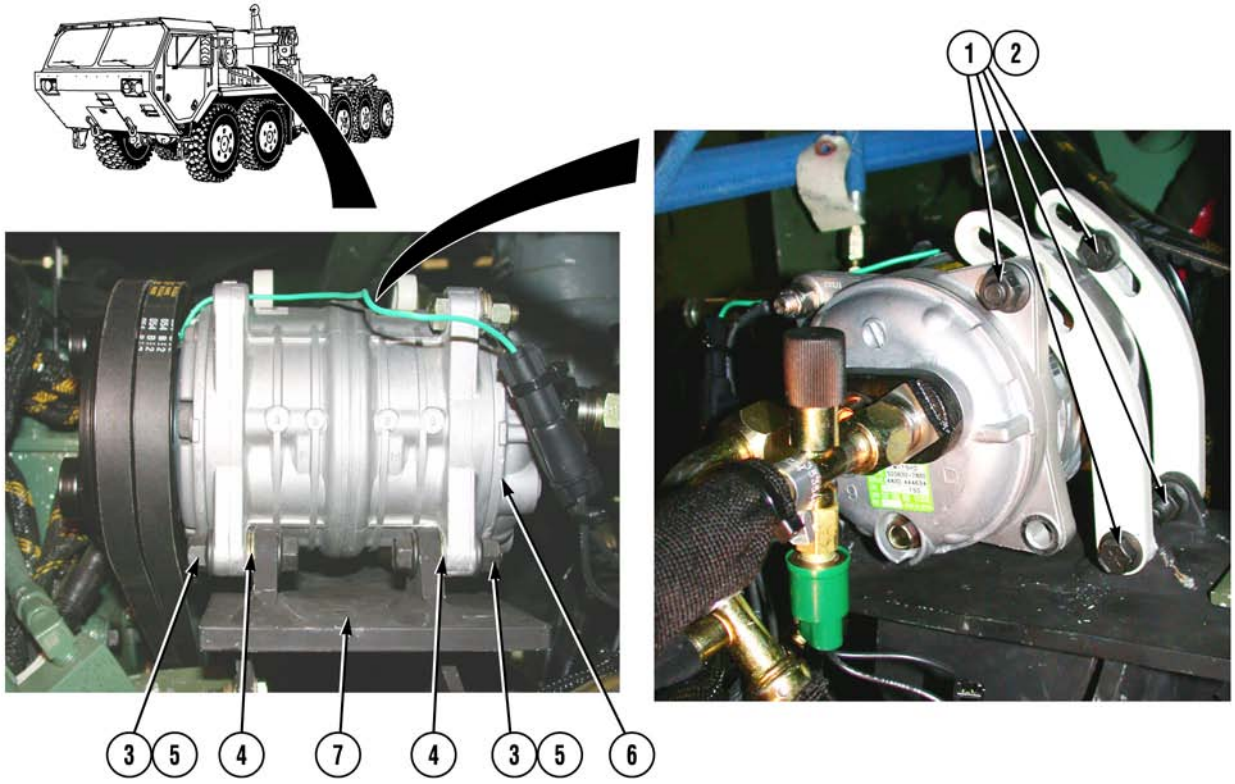
Materials/Parts
Tie, Cable (Item 13, Appendix E)
Locknuts (2) (Item 4, Figure 2, Appendix G)

Personnel Required
Two

References
TM 9-2320-364-20

AC COMPRESSOR DRIVE BELTS REPLACEMENT/ADJUSTMENT - Continued

REMOVAL



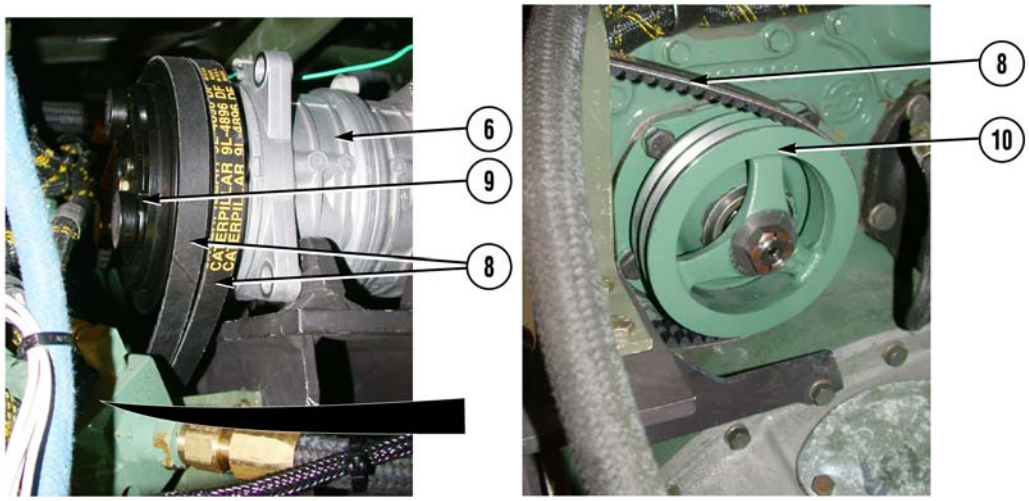
1. Loosen four locknuts (1) and screws (2).

NOTE

- Note position of washer(s) prior to removal to ensure proper installation.
- Number of washers may vary.

2. Remove two locknuts (3), washer(s) (4), and two screws (5) from compressor (6) and compressor mounting bracket (7). Discard locknuts.

AC COMPRESSOR DRIVE BELTS REPLACEMENT/ADJUSTMENT - Continued

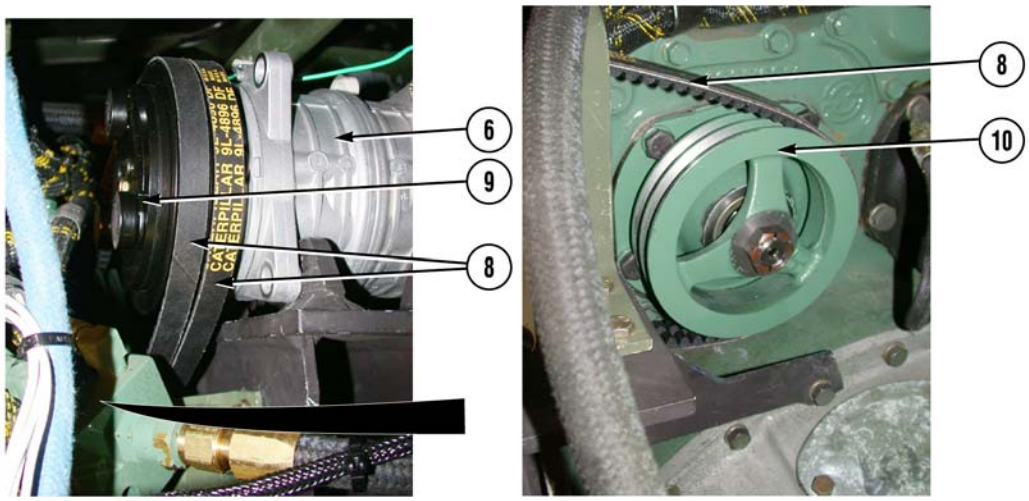


NOTE

Remove cable ties as required.

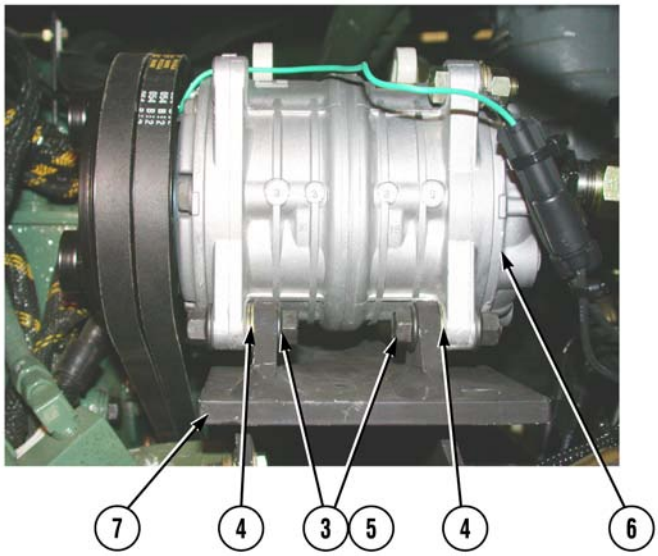
3. Pivot compressor (6) back and remove two belts (8) from compressor pulley (9) and engine accessory drive pulley (10).

INSTALLATION



1. Install two belts (8) on engine accessory drive pulley (10) and compressor pulley (9).

AC COMPRESSOR DRIVE BELTS REPLACEMENT/ADJUSTMENT - Continued



CAUTION

A washer(s) may need to be installed as a shim between outside of mounting bracket flange and inside of compressor flange. Failure to comply may result in compressor flange breaking off if there is space between mounting bracket flange and compressor flange when locknut is tightened.

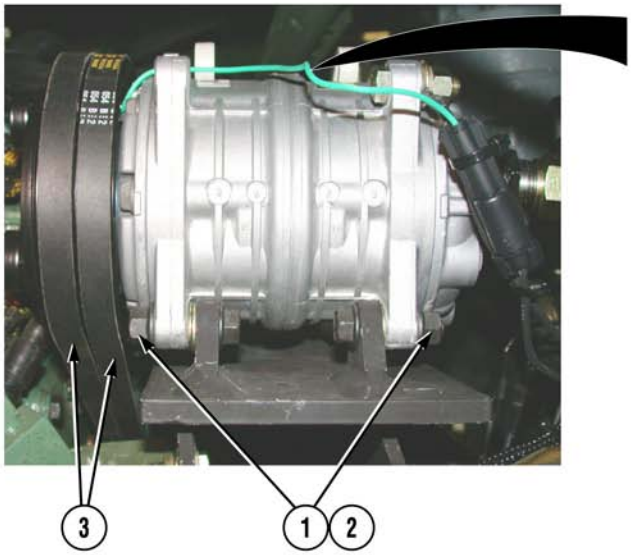
NOTE

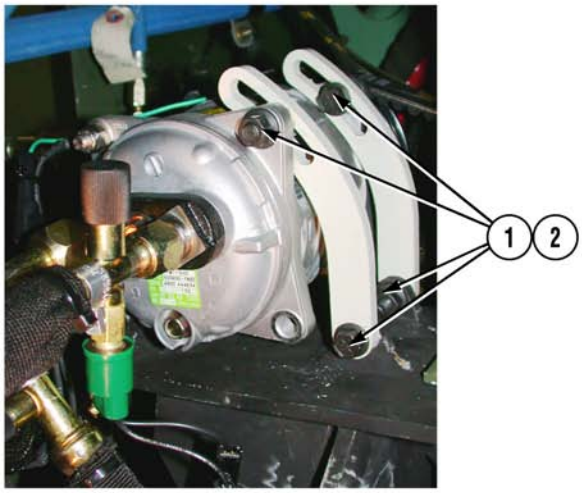
Install washer(s) as noted prior to removal.

2. Install compressor (6) on compressor mounting bracket (7) with two screws (5), washer(s) (4), and two locknuts (3). Do not tighten locknuts (3).

AC COMPRESSOR DRIVE BELTS REPLACEMENT/ADJUSTMENT - Continued

ADJUSTMENT





NOTE

Perform Step 1 if compressor belts were not removed.

1. Loosen six locknuts (1) and screws (2).

CAUTION

Do not over tighten belts. Failure to comply may result in damage to equipment.

2. With the aid of an assistant and using a belt tension gage, tighten two belts (3) to 90-100 lbs. (400-445 N), and tighten six locknuts (1) and screws (2).

FOLLOW-ON MAINTENANCE

1. Install left side noise panel and rubber flap (WP 0051).

END OF WORK PACKAGE

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
AC compressor removed (WP 0022).

Tools and Special Tools
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

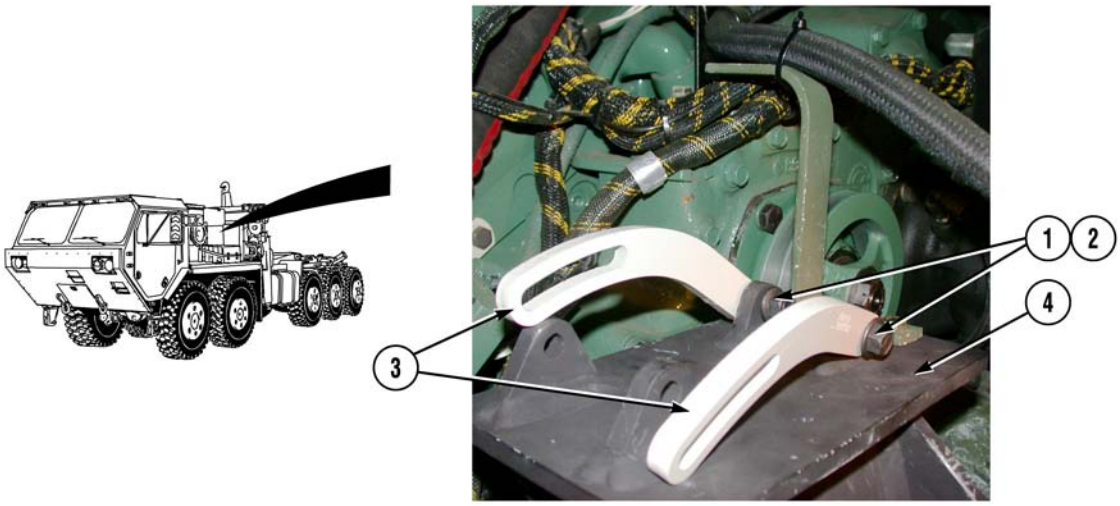
Materials/Parts
Tie, Cable (Item 13, Appendix E)
Sealant, Loctite 242 (Item 6, Appendix E)
Locknuts (2) (Item 4, Figure 2, Appendix G)
Locknuts (4) (Item 16, Figure 1, Appendix G)
Locknut (Item 2, Figure 12, Appendix G)
Lockwasher (Item 19, Figure 1, Appendix G)
Locknuts (2) (Item 24, Figure 1, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

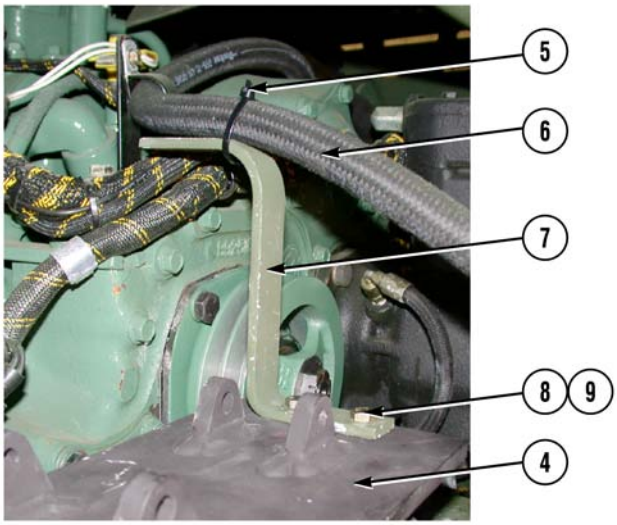
References
TM 9-2320-364-20

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT - Continued

REMOVAL



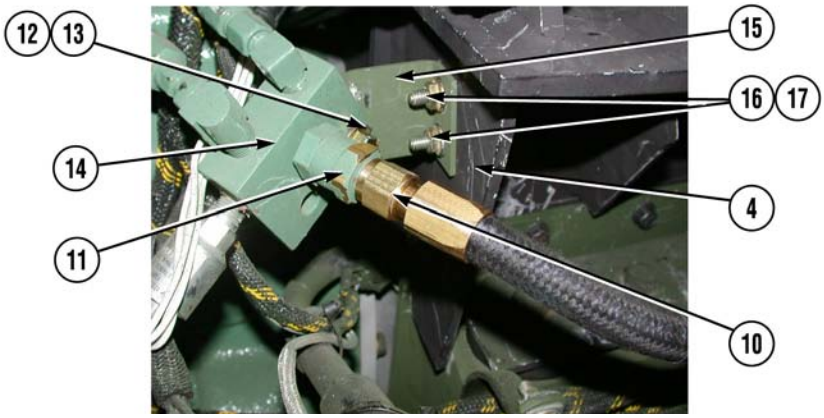
1. Remove two locknuts (1), screws (2), and compressor straps (3) from compressor mounting bracket (4). Discard locknuts.



2. Remove cable tie (5) and fuel supply line (6) from bracket (7).

3. Remove two locknuts (8), screws (9), and bracket (7) from compressor mounting bracket (4). Discard locknuts.

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT - Continued



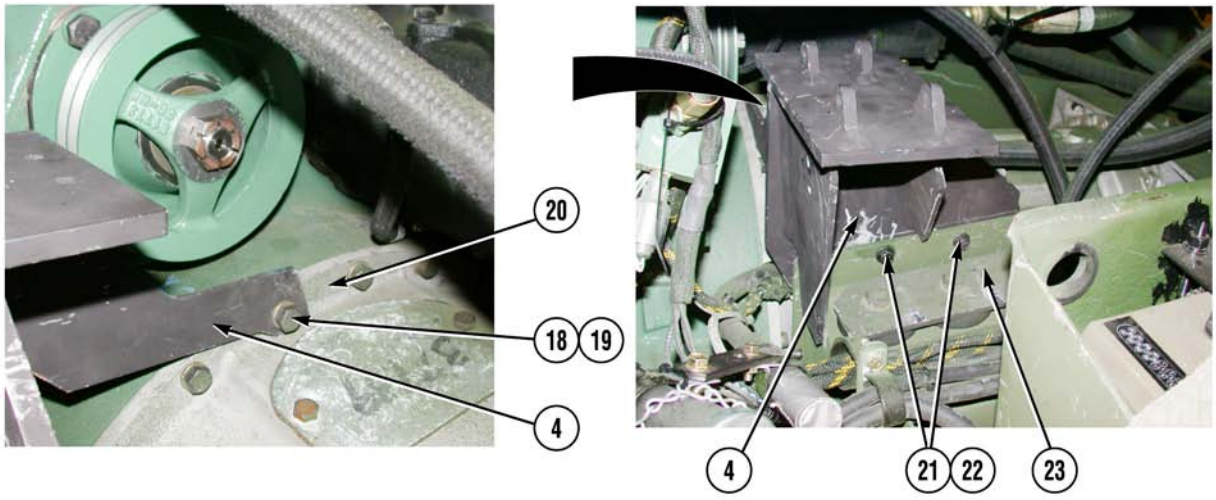
NOTE

Remove cable ties as required.

4. Remove fuel line extension (10) from fitting (11).

5. Remove locknut (12), screw (13), and fuel block (14) from bracket (15). Discard locknut.

6. Remove two locknuts (16), screws (17), and bracket (15) from compressor mounting bracket (4). Discard locknuts.



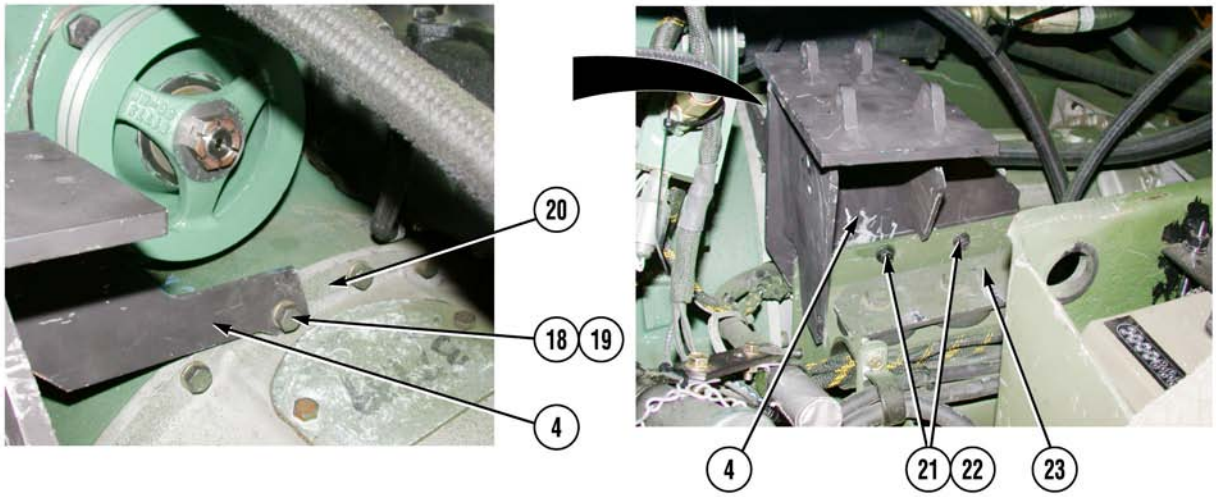
7. Remove screw (18) and lockwasher (19) from compressor mounting bracket (4) and transmission (20). Discard lockwasher.

8. Remove two locknuts (21), screws (22), and compressor mounting bracket (4) from cradle support (23). Discard locknuts.

9. Remove compressor mounting bracket (4) from vehicle.

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT - Continued

INSTALLATION



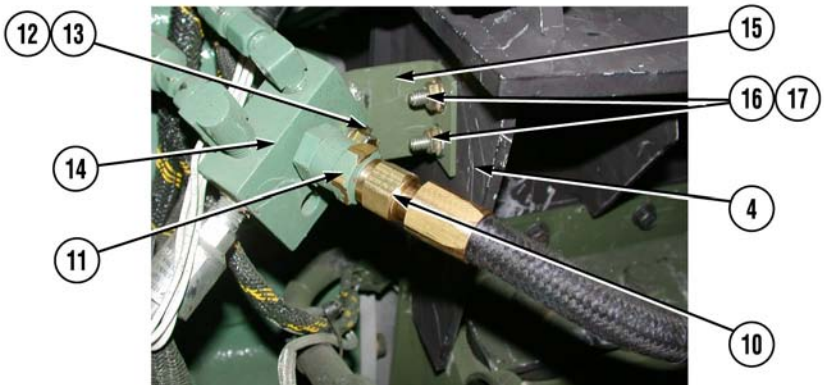
1. Position compressor mounting bracket (4) on cradle support (23).
2. Install compressor mounting bracket (4) on cradle support (23) with two screws (22) and locknuts (21).

WARNING

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

3. Apply sealing compound to threads of screw (18).
4. Install compressor mounting bracket (4) on transmission (20) with lockwasher (19) and screw (18). Tighten screw (18) to 54-65 ft-lbs. (73-88 N•m).

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT - Continued



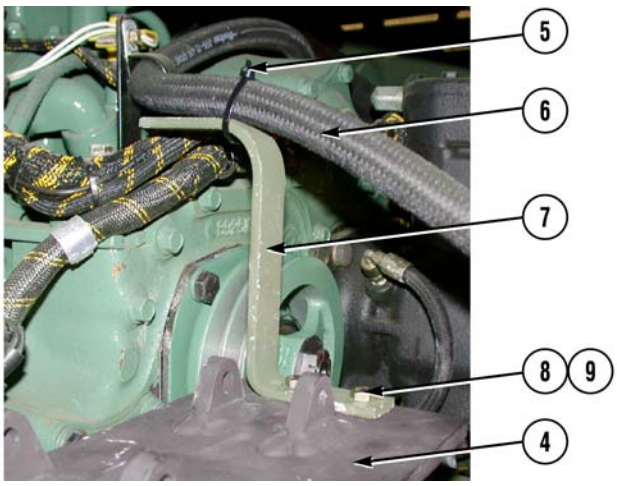
5. Install bracket (15) on compressor mounting bracket (4) with two screws (17) and locknuts (16).

CAUTION

Fuel block must be mounted on bracket so that fuel lines do not come in contact with two compressor drive belts. Failure to comply may result in damage to equipment.

6. Install fuel block (14) on bracket (15) with screw (13) and locknut (12).

7. Install fuel line extension (10) on fitting (11).



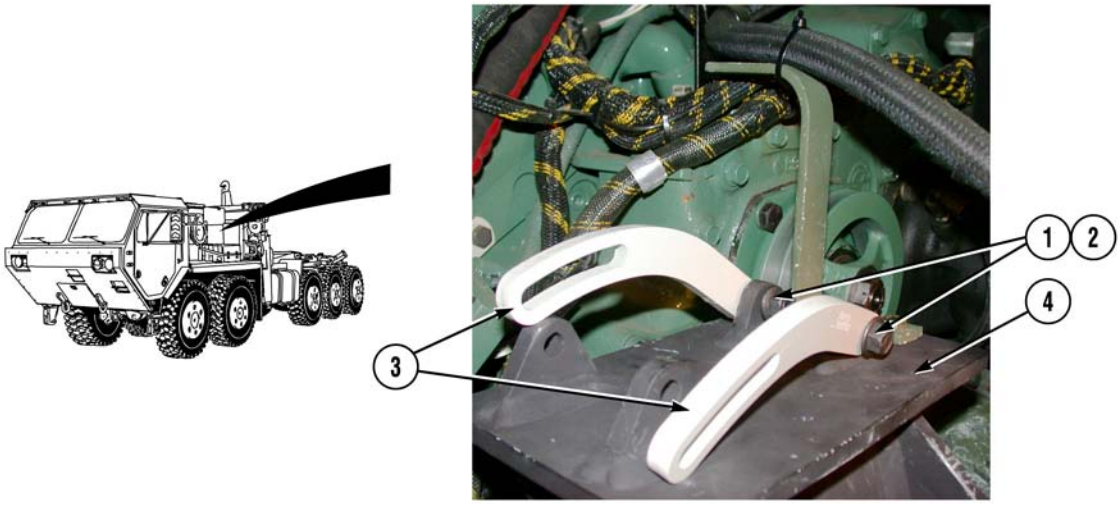
NOTE

Install cable ties as required.

8. Install bracket (7) on compressor mounting bracket (4) with two screws (9) and locknuts (8).

9. Install fuel supply line (6) on bracket (7) with cable tie (5).

AC COMPRESSOR MOUNTING BRACKET REPLACEMENT - Continued



10. Install two compressor straps (3) on compressor mounting bracket (4) with two screws (2) and locknuts (1). Do not tighten locknuts (1).

FOLLOW-ON MAINTENANCE

1. Install AC compressor (WP 0022).

END OF WORK PACKAGE

AC COMPRESSOR REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Refrigerant recovered (WP 0053).
Batteries disconnected (TM 9-2320-364-20).
AC compressor drive belts removed (WP 0020).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

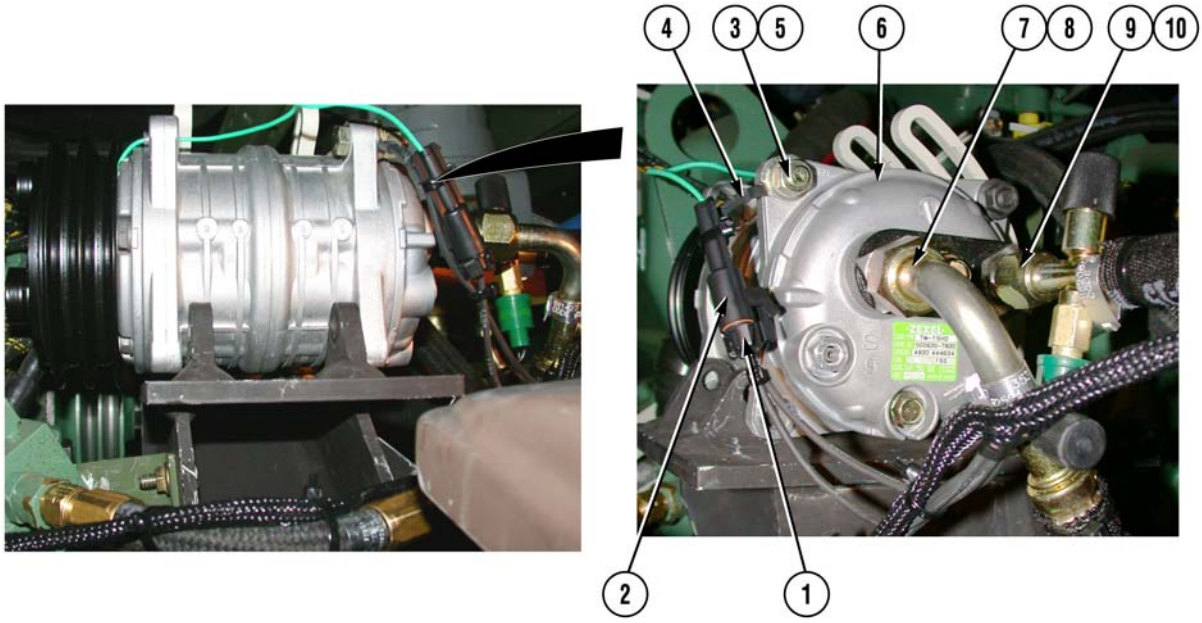
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 13, Appendix E)
Locknut (Item 14, Figure 4, Appendix G)
Preformed Packing (Item 4, Figure 3, Appendix G)
Preformed Packing (Item 10, Figure 3, Appendix G)
Locknuts (2) (Item 4, Figure 2, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

References
TM 9-2320-364-20

AC COMPRESSOR REPLACEMENT - Continued

REMOVAL



NOTE

- Tag and mark hoses, connectors, and wires prior to removal to ensure proper installation.
- Remove cable ties as required.

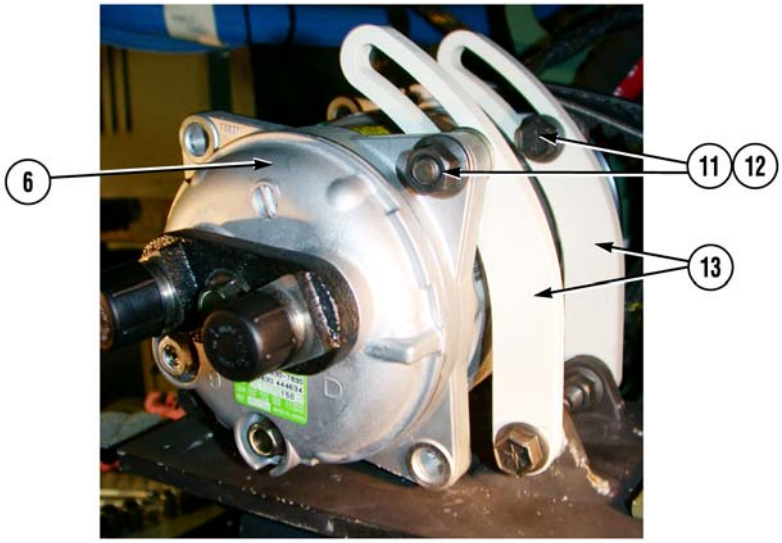
1. Disconnect connector (1) from connector (2).
2. Remove locknut (3), wire 1435 (4), and screw (5) from compressor (6). Discard locknut.

NOTE

Cap and plug hoses upon removal.

3. Remove hose 2522 (7) and preformed packing (8) from compressor (6). Discard preformed packing.
4. Remove hose 2521 (9) and preformed packing (10) from compressor (6). Discard preformed packing.

AC COMPRESSOR REPLACEMENT - Continued



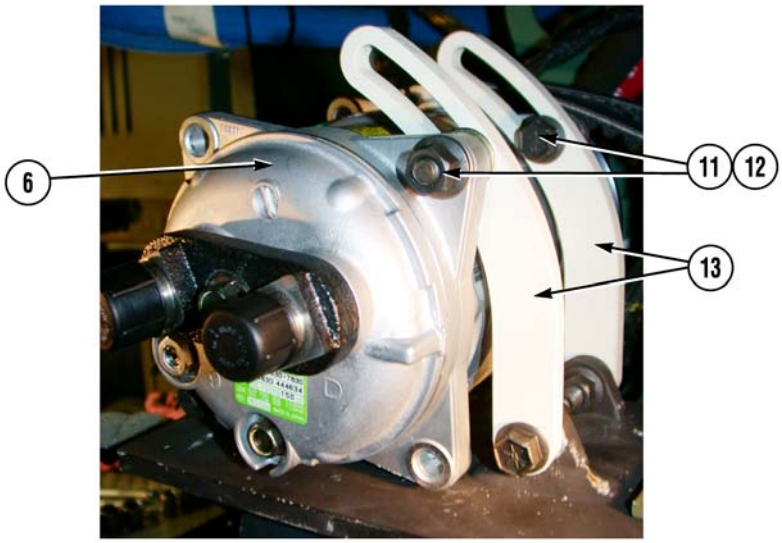
NOTE

Note position of screws prior to removal to ensure proper installation.

5. Remove two locknuts (11), screws (12), and compressor (6) from two compressor straps (13) and vehicle. Discard locknuts.

AC COMPRESSOR REPLACEMENT - Continued

INSTALLATION



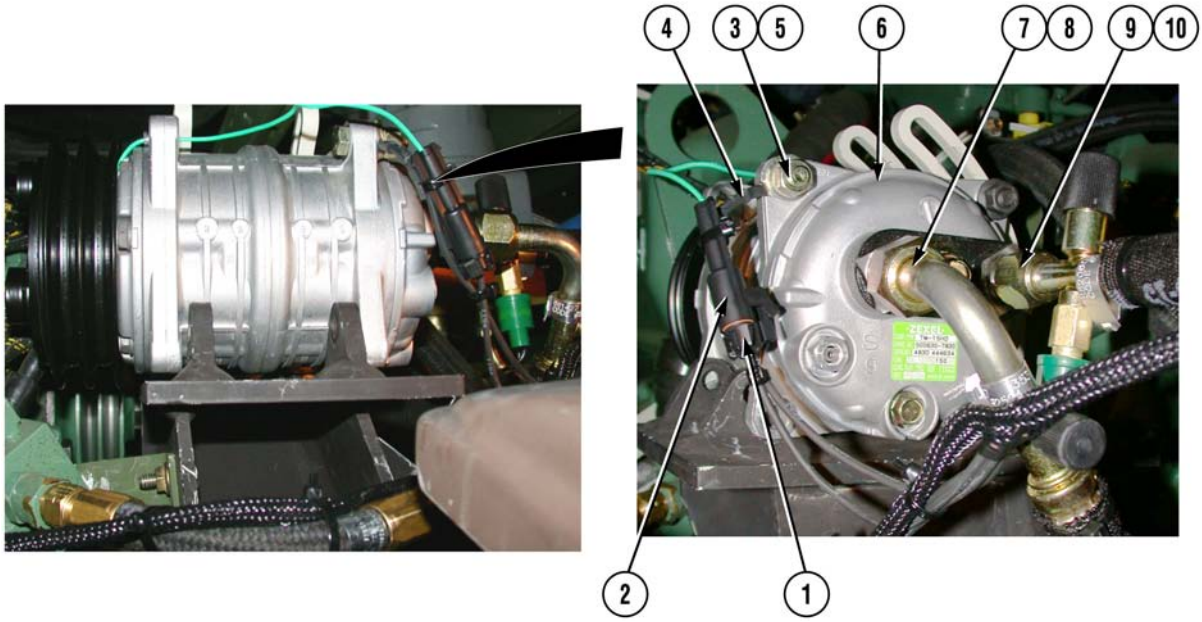
1. Position compressor (6) in vehicle.

NOTE

Install screws as noted prior to removal.

2. Install two compressor straps (13) on compressor (6) with two screws (12) and locknuts (11). Do not tighten locknuts (11).

AC COMPRESSOR REPLACEMENT - Continued



NOTE

- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

3. Install preformed packing (10) and hose 2521 (9) on compressor (6). Torque hose (9) to 15-18 ft-lbs. (20-24 N•m).

4. Install preformed packing (8) and hose 2522 (7) on compressor (6). Torque hose (7) to 18-22 ft-lbs. (24-30 N•m).

5. Install wire 1435 (4) on compressor (6) with screw (5) and locknut (3).

NOTE

Install cable ties as required.

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

AC COMPRESSOR REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install AC compressor drive belts (WP 0020).
2. Connect batteries (TM 9-2320-364-20).
3. Charge AC system (WP 0053).
4. Perform leak test inspection (WP 0052).

END OF WORK PACKAGE

AC CONDENSER CORE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
AC condenser removed (WP 0028).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

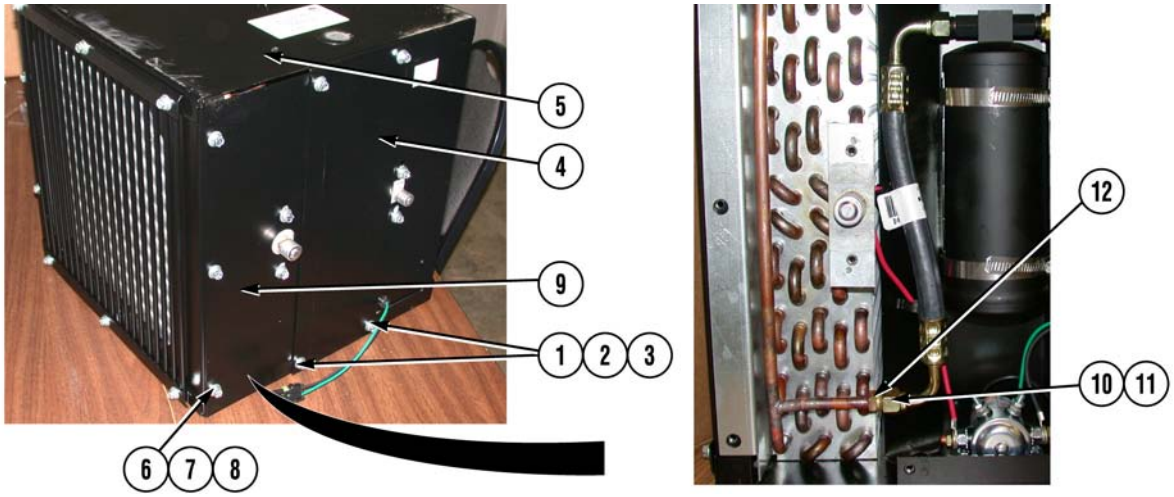
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Lockwashers (11) (Item 8, Figure 6, Appendix G)
Preformed Packing (Item 25, Figure 6, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

References
None

AC CONDENSER CORE REPLACEMENT - Continued

REMOVAL



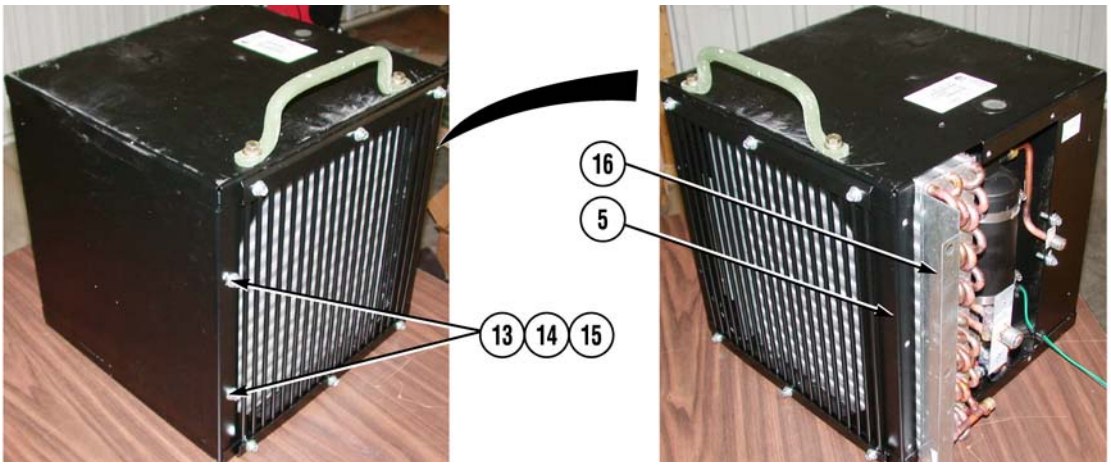
1. Remove four screws (1), lockwashers (2), washers (3), and cover (4) from condenser (5). Discard lockwashers.

2. Remove five screws (6), lockwashers (7), washers (8), and cover (9) from condenser (5). Discard lockwashers.

NOTE

- Tag and mark hose prior to removal to ensure proper installation.
- Cap and plug hose upon removal.

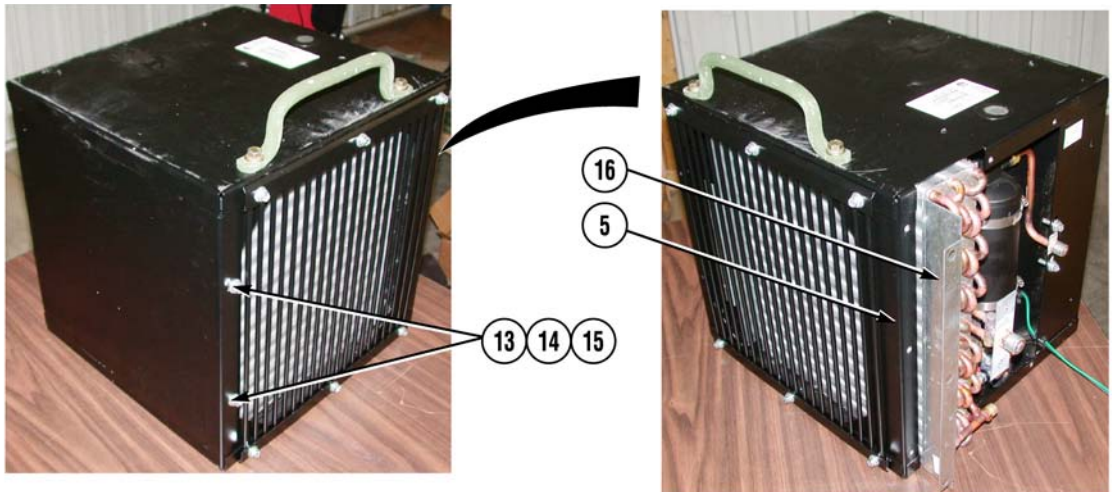
3. Remove hose (10) and preformed packing (11) from tube (12). Discard preformed packing.



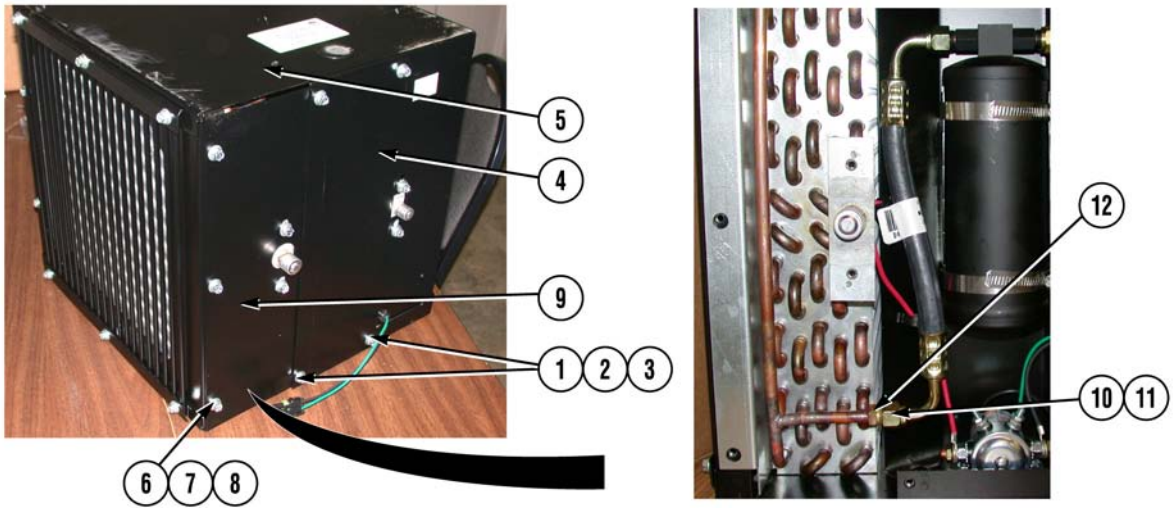
4. Remove two screws (13), lockwashers (14), washers (15), and condenser core (16) from condenser (5). Discard lockwashers.

AC CONDENSER CORE REPLACEMENT - Continued

INSTALLATION



1. Install condenser core (16) in condenser (5) with two washers (15), lockwashers (14), and screws (13).



NOTE

- Lightly lubricate preformed packing with PAG oil prior to installation.
- Ensure preformed packing is in place in hose prior to installation.

2. Install preformed packing (11) and hose (10) on tube (12).
3. Install cover (9) on condenser (5) with five washers (8), lockwashers (7), and screws (6).
4. Install cover (4) on condenser (5) with four washers (3), lockwashers (2), and screws (1).

AC CONDENSER CORE REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install AC condenser (WP 0028).

END OF WORK PACKAGE

AC CONDENSER DRYER REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Refrigerant recovered (WP 0053).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Wheel chocks (TM 9-2320-364-10)
Wooden blocks (TM 9-2320-364-34)

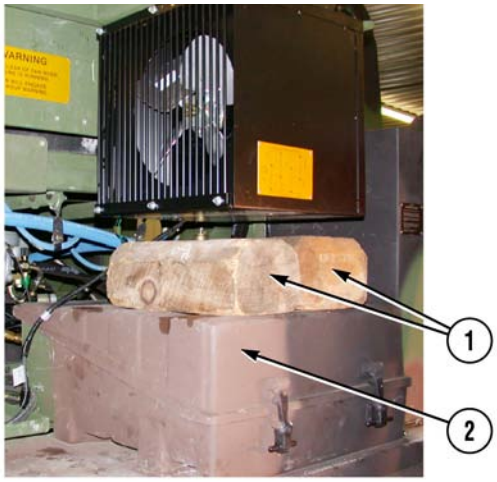
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Lockwashers (4) (Item 8, Figure 6, Appendix G)
Preformed Packings (2), (Item 25, Figure 6, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20
TM 9-2320-364-34

AC CONDENSER DRYER REPLACEMENT - Continued

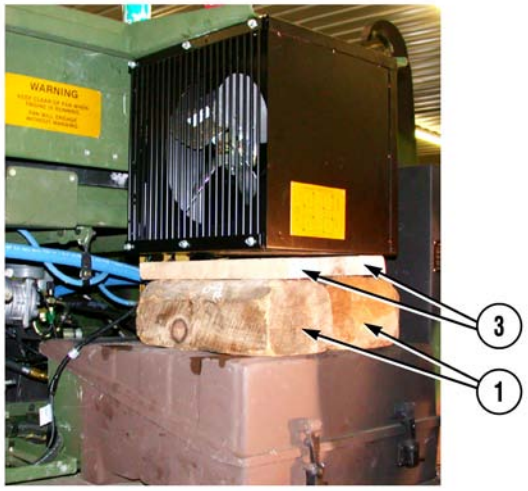
REMOVAL



NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to aid in positioning of condenser to access dryer.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

1. Position two wheel chocks (1) on top of battery box cover (2).

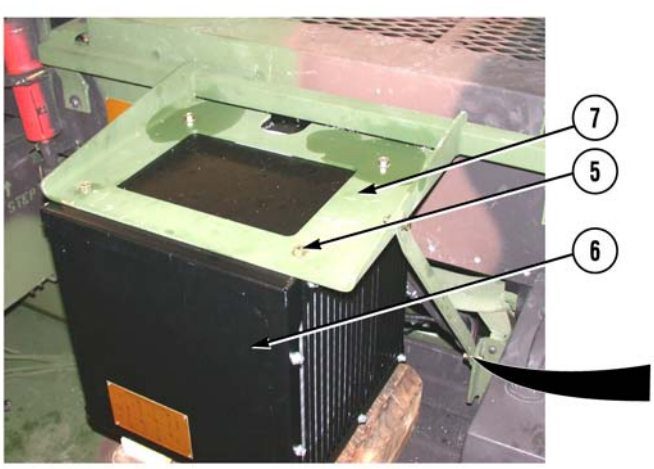


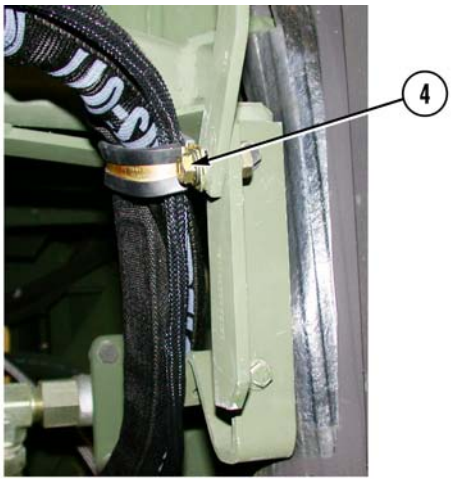
NOTE

Wooden blocks used in Step 2 should be 2 by 4 by 16 in.

2. Position two wooden blocks (3) on top of wheel chocks (1).

AC CONDENSER DRYER REPLACEMENT - Continued





3. Loosen locknut (4).

WARNING

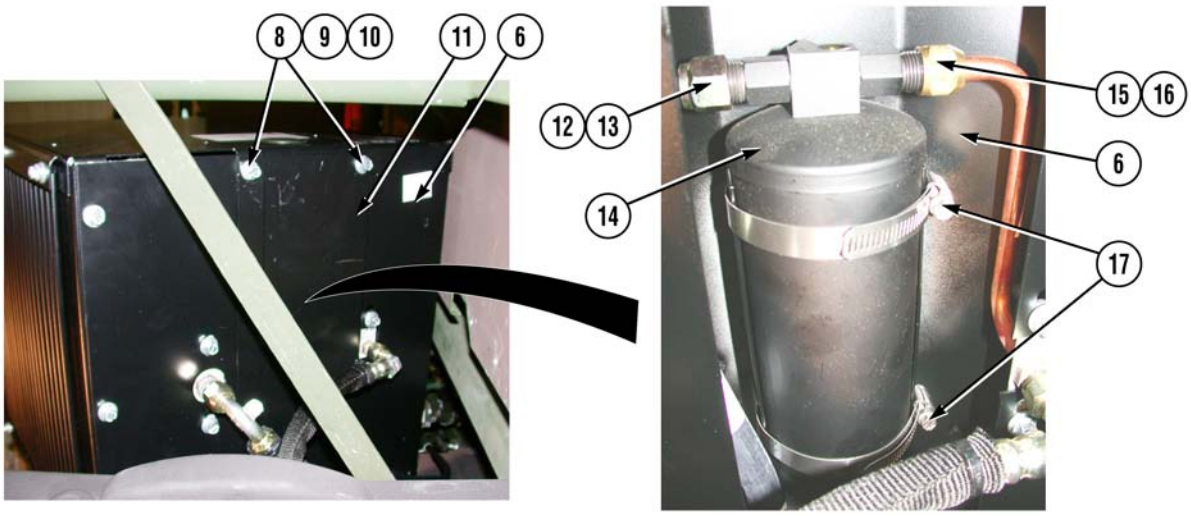
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 2.

4. With the aid of an assistant remove four screws (5) and condenser (6) from condenser mounting bracket (7).

AC CONDENSER DRYER REPLACEMENT - Continued



WARNING

Use extreme care when moving condenser to access dryer. Failure to comply may result in injury to personnel and/or damage to equipment.

5. Remove four screws (8), lockwashers (9), washers (10), and cover (11) from condenser (6). Discard lockwashers.

NOTE

- Tag and mark hoses prior to removal to ensure proper installation.
- Cap and plug hose and tube upon removal.

6. Remove hose (12) and preformed packing (13) from dryer (14). Discard preformed packing.

7. Remove tube (15) and preformed packing (16) from dryer (14). Discard preformed packing.

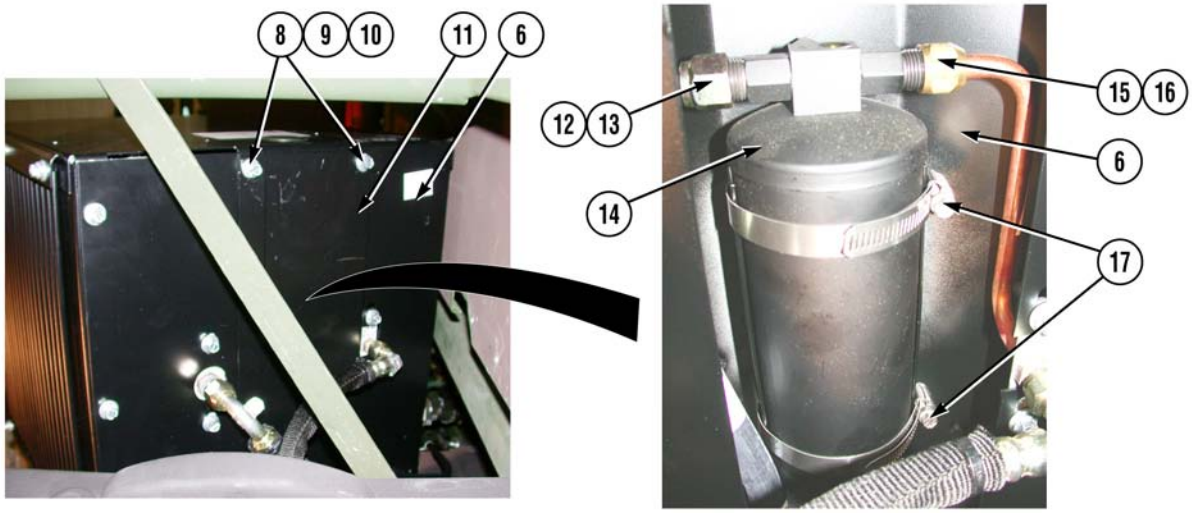
NOTE

Note position of dryer prior to removal to ensure proper installation.

8. Remove two clamps (17) and dryer (14) from condenser (6).

AC CONDENSER DRYER REPLACEMENT - Continued

INSTALLATION



NOTE

Install dryer as noted prior to removal.

1. Install dryer (14) in condenser (6) with two clamps (17). Do not tighten clamps (17).

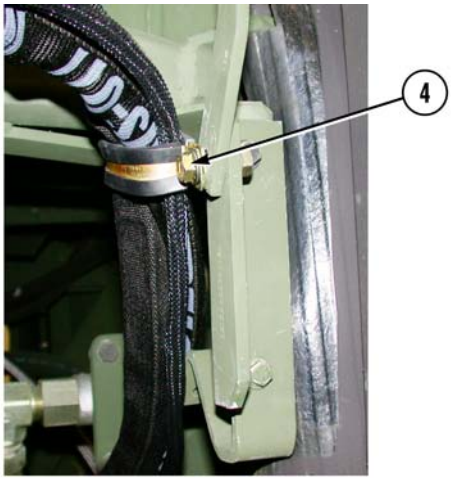
NOTE

- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hose and tube prior to installation.

2. Install preformed packing (16) and tube (15) on dryer (14).
3. Install preformed packing (13) and hose (12) on dryer (14).
4. Tighten two clamps (17).
5. Install cover (11) on condenser (6) with four washers (10), lockwashers (9), and screws (8).

AC CONDENSER DRYER REPLACEMENT - Continued





WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

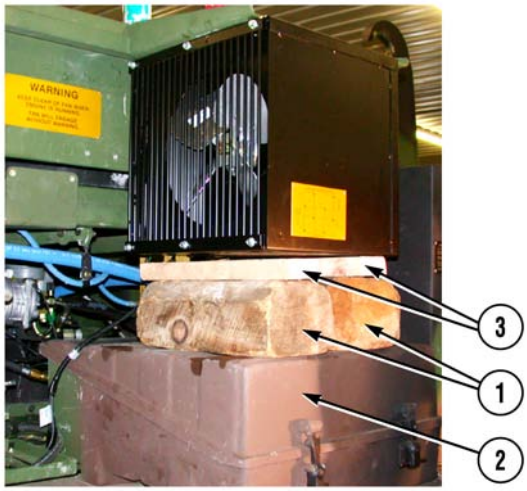
CAUTION

When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into cutouts in panel. Failure to comply may result in damage to equipment.

6. With the aid of an assistant, install condenser (6) on condenser mounting bracket (7) with four screws (5).

7. Tighten locknut (4).

AC CONDENSER DRYER REPLACEMENT - Continued



8. Remove two wooden blocks (3) and wheel chocks (1) from top of battery box cover (2).

FOLLOW-ON MAINTENANCE

1. Charge AC system (WP 0053).
2. Perform leak test inspection (WP 0052).

END OF WORK PACKAGE

AC CONDENSER FAN MOTOR REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

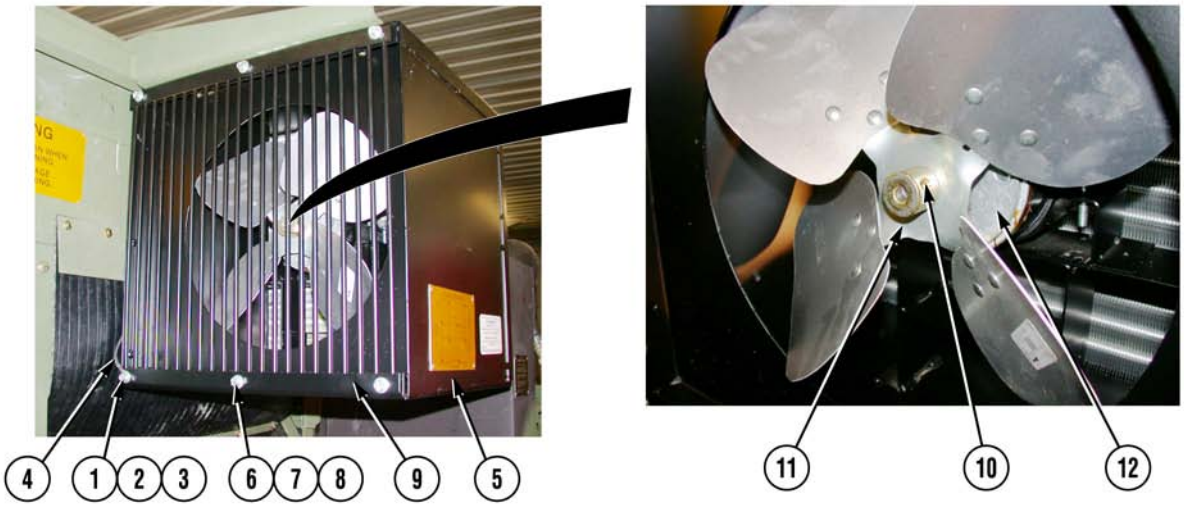
Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwashers (6) (Item 8, Figure 6, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC CONDENSER FAN MOTOR REPLACEMENT - Continued

REMOVAL



NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and 1435 wire (4) from condenser (5). Discard lockwasher.

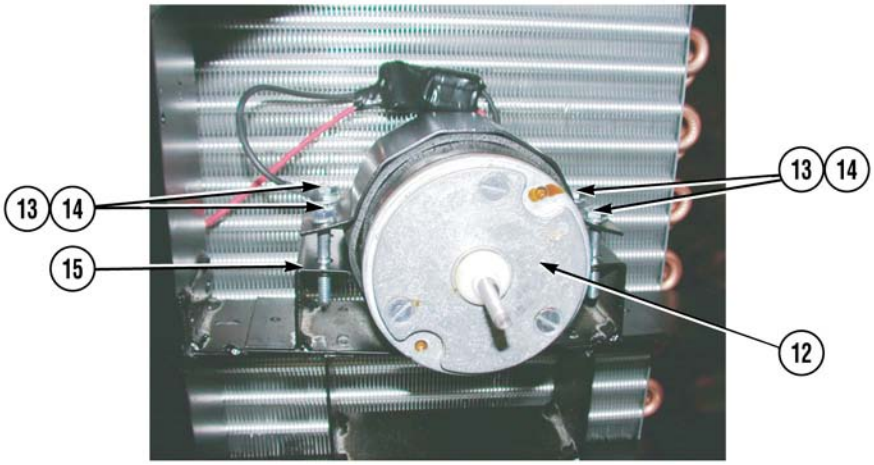
2. Remove five screws (6), lockwashers (7), washers (8), and grille (9) from condenser (5). Discard lockwashers.

NOTE

Note position of fan on motor shaft prior to removal to ensure proper installation.

3. Loosen setscrew (10) and remove fan (11) from fan motor (12).

AC CONDENSER FAN MOTOR REPLACEMENT - Continued



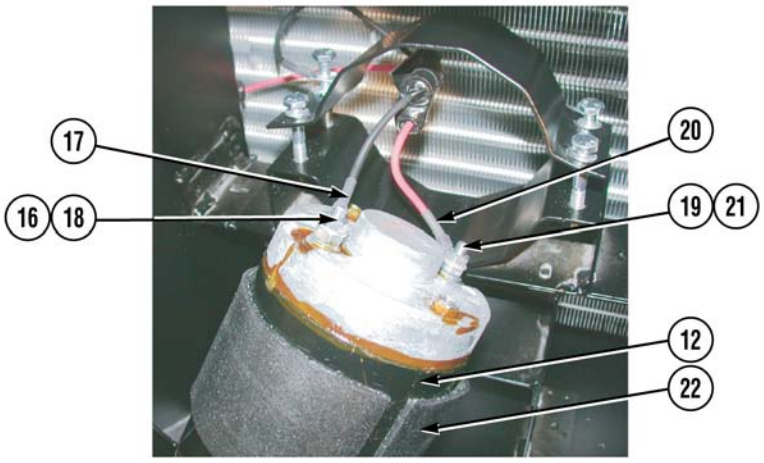
CAUTION

Use care when removing fan motor from bracket. Wires are still attached to back of fan motor and will be removed when fan motor is pulled forward. Failure to comply may result in damage to equipment.

NOTE

Note position of fan motor prior to removal to ensure proper installation.

4. Loosen four screws (13) and lockwashers (14) and remove fan motor (12) from bracket (15).



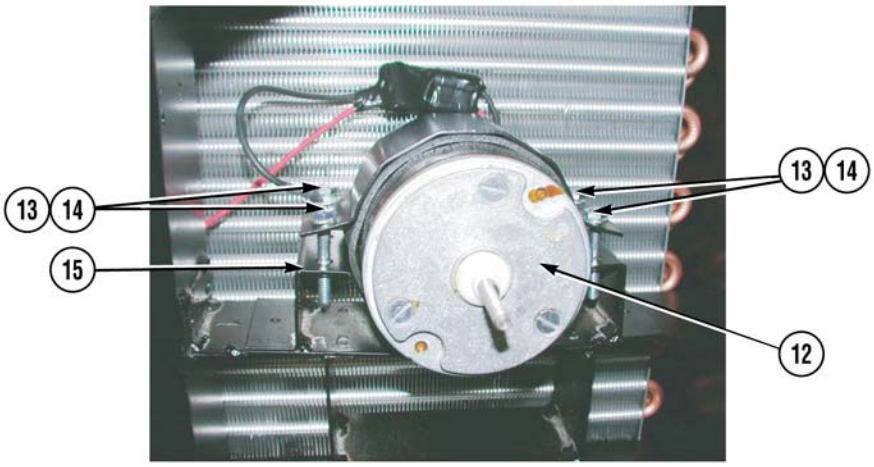
5. Remove nut (16) and black wire (17) from terminal A (18).
6. Remove nut (19) and red wire (20) from terminal B (21).
7. Remove gasket (22) from fan motor (12).

AC CONDENSER FAN MOTOR REPLACEMENT - Continued

INSTALLATION



1. Install gasket (22) on fan motor (12).
2. Install red wire (20) on terminal B (21) with nut (19).
3. Install black wire (17) on terminal A (18) with nut (16).

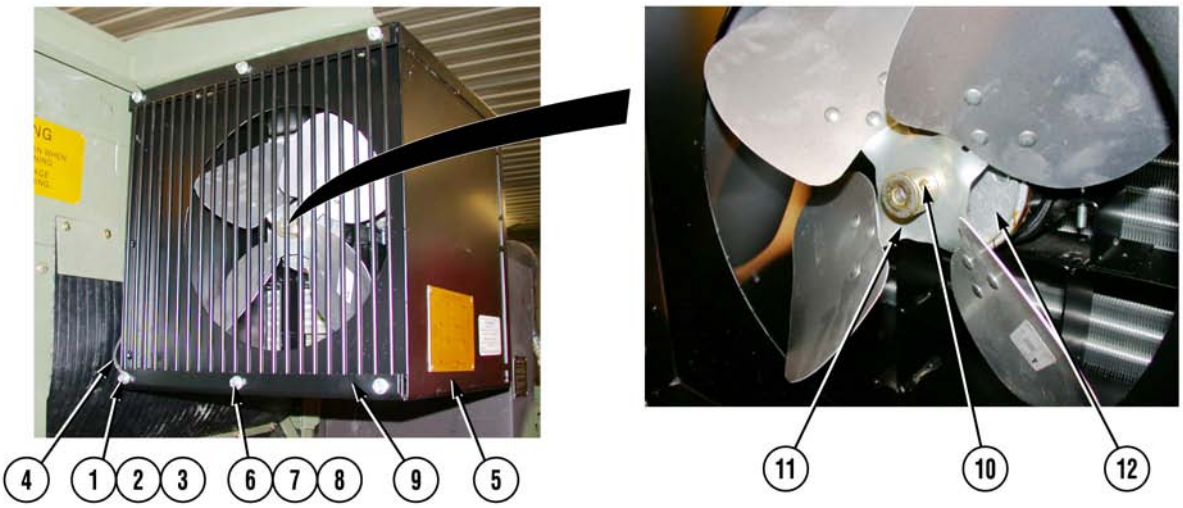


NOTE

Install fan motor as noted prior to removal.

4. Install fan motor (12) in bracket (15) and tighten four lockwashers (14) and screws (13).

AC CONDENSER FAN MOTOR REPLACEMENT - Continued



CAUTION

Fan needs to be centered on fan motor shaft. Failure to comply may result in fan blades hitting condenser when fan motor is running causing damage to equipment.

NOTE

Install fan on motor shaft as noted prior to removal.

5. Install fan (11) on fan motor (12) and tighten setscrew (10).
6. Install grille (9) on condenser (5) with five washers (8), lockwashers (7), and screws (6).
7. Install 1435 wire (4) on condenser (5) with washer (3), lockwasher (2), and screw (1).

FOLLOW-ON MAINTENANCE

1. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Rubber flap removed (WP 0051).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Wheel chocks (TM 9-2320-364-10)
Wooden blocks (TM 9-2320-364-34)

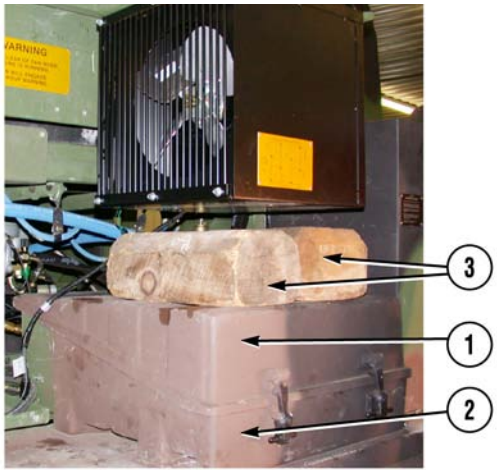
Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwashers (4) (Item 8, Figure 6, Appendix G)

Personnel Required
Two

References
TM 9-2320-364-10
TM 9-2320-364-20
TM 9-2320-364-34

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued

REMOVAL

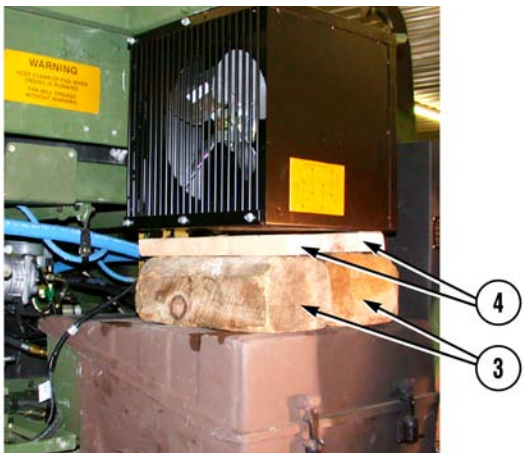


1. Install battery box cover (1) on battery box (2).

NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to aid in positioning of condenser to access solenoid.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

2. Position two wheel chocks (3) on top of battery box cover (1).

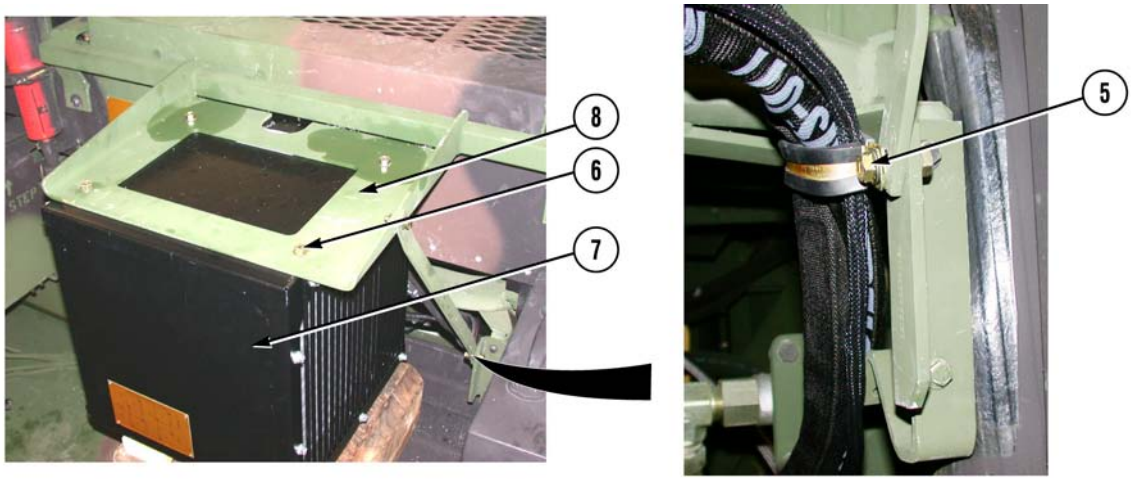


NOTE

Wooden blocks used in Step 3 should be 2 by 4 by 16 in.

3. Position two wooden blocks (4) on top of wheel chocks (3).

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued



4. Loosen locknut (5).

WARNING

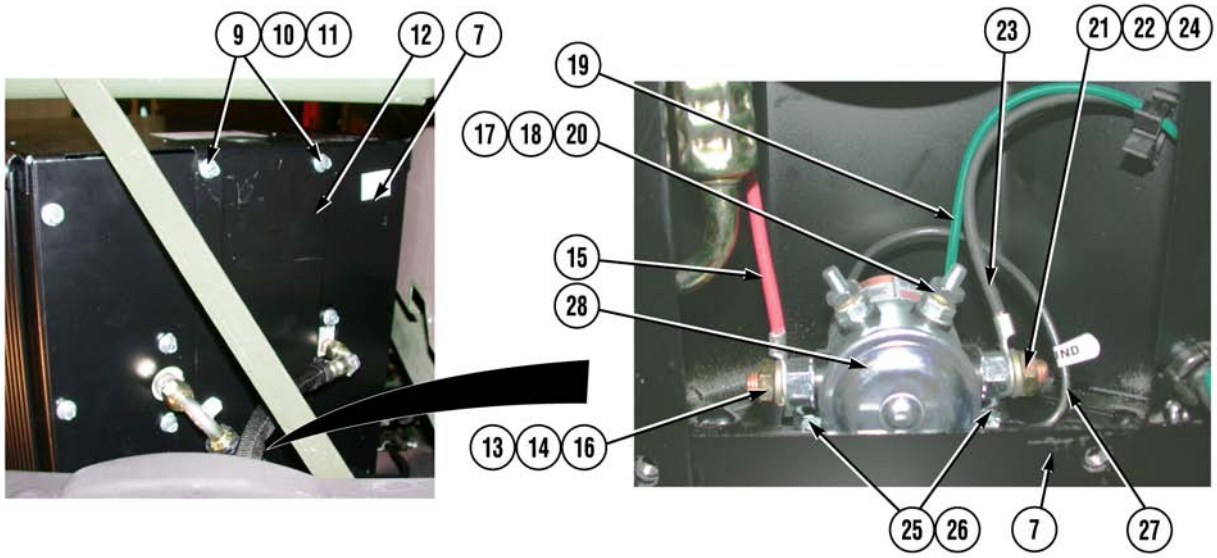
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 3.

5. With the aid of an assistant, remove four screws (6) and condenser (7) from condenser mounting bracket (8).

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued



WARNING

Use extreme care when moving condenser to access solenoid. Failure to comply may result in injury to personnel and/or damage to equipment.

6. Remove four screws (9), lockwashers (10), washers (11), and cover (12) from condenser (7). Discard lockwashers.

NOTE

Tag and mark wires prior to removal to ensure proper installation.

7. Remove nut (13), lockwasher (14), and red wire (15) from terminal (16).
8. Remove nut (17), lockwasher (18), and green wire (19) from terminal (20).
9. Remove nut (21), lockwasher (22), and black wire (23) from terminal (24).

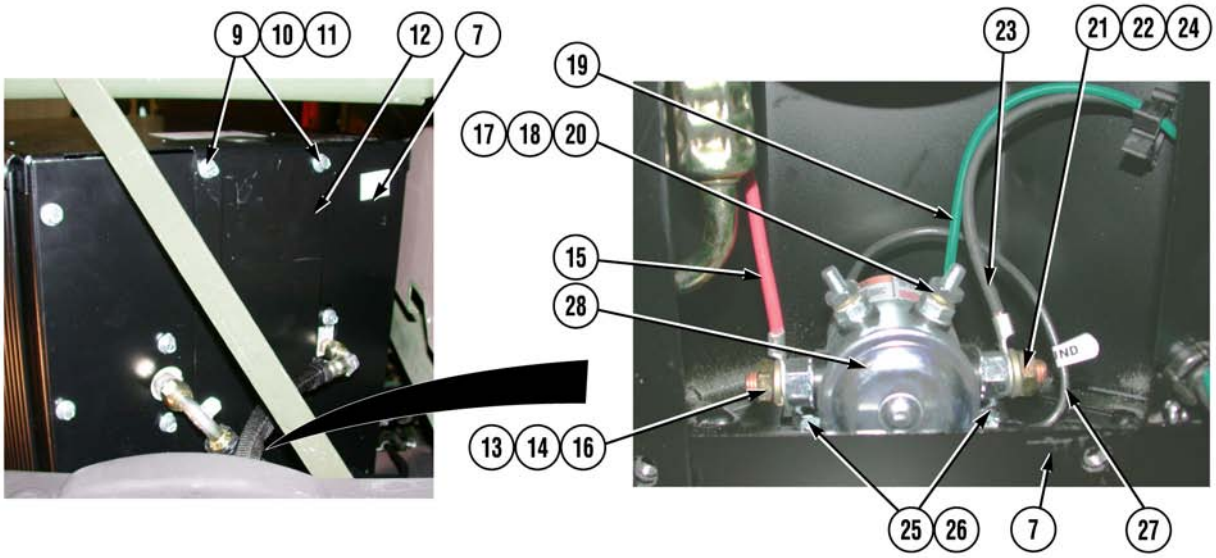
NOTE

Note position of solenoid prior to removal to ensure proper installation.

10. Remove two nuts (25), lockwashers (26), black wire (27), and solenoid (28) from condenser (7).

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued

INSTALLATION

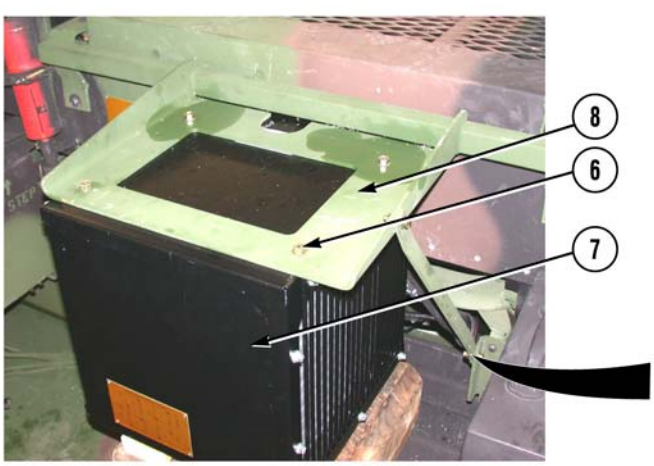


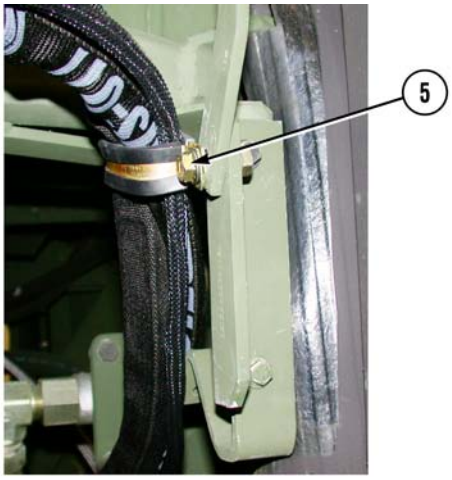
NOTE

Install solenoid as noted prior to removal.

1. Install solenoid (28) and black wire (27) on condenser (7) with two lockwashers (26) and nuts (25).
2. Install black wire (23) on terminal (24) with lockwasher (22) and nut (21).
3. Install green wire (19) on terminal (20) with lockwasher (18) and nut (17).
4. Install red wire (15) on terminal (16) with lockwasher (14) and nut (13).
5. Install cover (12) on condenser (7) with four washers (11), lockwashers (10), and screws (9).

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued





WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

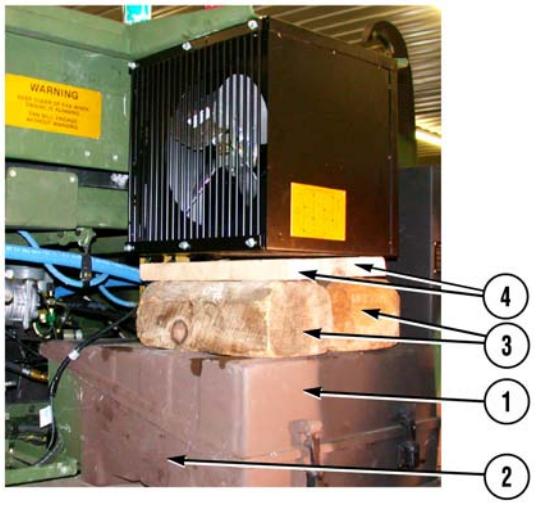
CAUTION

When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into the cutouts in panel. Failure to comply may result in damage to equipment.

6. With the aid of an assistant, install condenser (7) on condenser mounting bracket (8) with four screws (6).

7. Tighten locknut (5).

AC CONDENSER FAN MOTOR SOLENOID REPLACEMENT - Continued



8. Remove two wooden blocks (4) and wheel chocks (3) from top of battery box cover (1).
9. Remove battery box cover (1) from battery box (2).

FOLLOW-ON MAINTENANCE

1. Install rubber flap (WP 0051).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC CONDENSER MOUNTING BRACKET REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Rubber flap removed (WP 0051).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Wheel chocks (TM 9-2320-364-10)
Wooden blocks (TM 9-2320-364-34)

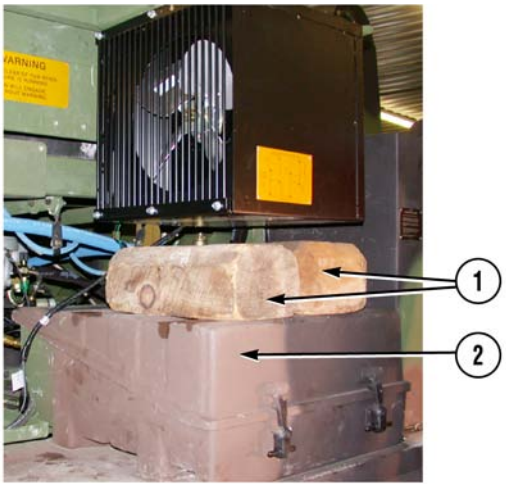
Materials/Parts
Locknut (Item 2, Figure 11, Appendix G)
Locknuts (2) (Item 6, Figure 11, Appendix G)
Locknut (Item 8, Figure 3, Appendix G)
Lockwashers (2) (Item 12, Figure 11, Appendix G)

Personnel Required
Two

References
TM 9-2320-364-10
TM 9-2320-364-20
TM 9-2320-364-34

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued

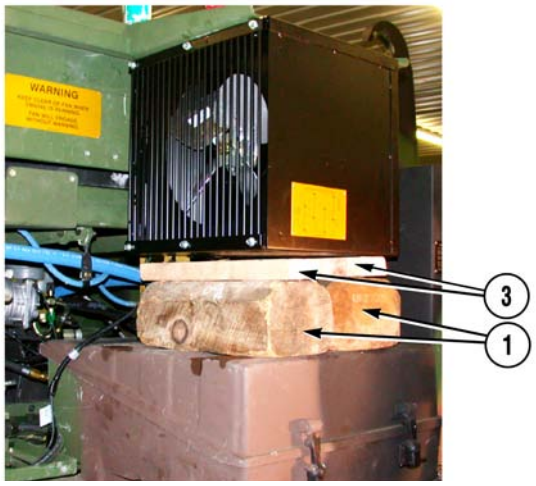
REMOVAL



NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to support condenser while condenser mounting bracket is being replaced.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

1. Position two wheel chocks (1) on top of battery box cover (2).



NOTE

Wooden blocks used in Step 2 should be 2 by 4 by 16 in.

2. Position two wooden blocks (3) on top of two wheel chocks (1).

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued



3. Loosen locknut (4).

WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 2.

4. With the aid of an assistant, remove four screws (5) and condenser (6) from condenser mounting bracket (7).

5. Remove locknut (8), screw (9), and support bar (10) from condenser mounting bracket (7). Discard locknut.

6. Remove two screws (11) and washers (12) from condenser mounting bracket (7) and panel (13).

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued



WARNING

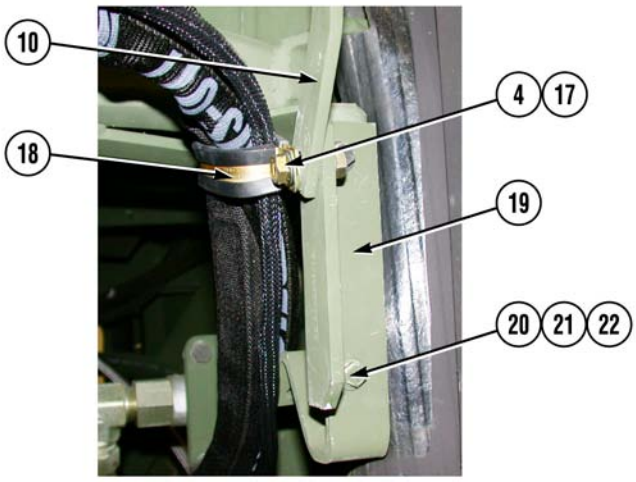
Condenser mounting bracket is heavy. Do not remove condenser mounting bracket without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

- Note position of eyebolts on radiator assembly prior to removal to ensure proper installation.
- Use care when removing eyebolts so locknuts securing eyebolts to radiator assembly are not dropped.

7. With the aid of an assistant, remove two locknuts (14), eyebolts (15), and condenser mounting bracket (7) from radiator assembly (16). Discard locknuts.

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued



NOTE

- Perform Steps 8 and 9 if support bar and stabilizer bracket need to be removed.
- Note position of support bar prior to removal to ensure proper installation.

8. Remove locknut (4), screw (17), cushion clip (18), and support bar (10) from stabilizer bracket (19). Discard locknut.

9. Remove two screws (20), lockwashers (21), washers (22), and stabilizer bracket (19) from vehicle. Discard lockwashers.

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued

INSTALLATION



NOTE

Perform Steps 1 and 2 if support bar and stabilizer bracket were removed.

1. Install stabilizer bracket (19) on vehicle with two washers (22), lockwashers (21), and screws (20).

NOTE

Install support bar as noted prior to removal.

2. Install support bar (10) and cushion clip (18) on stabilizer bracket (19) with screw (17) and locknut (4). Do not tighten locknut (4).

WARNING

Condenser mounting bracket is heavy. Do not install condenser mounting bracket without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

- Install eyebolts as noted prior to removal.
- Use care when installing eyebolts so locknuts securing eyebolts to radiator assembly are not dropped.

3. With the aid of an assistant, install condenser mounting bracket (7) on radiator assembly (16) with two eyebolts (15) and locknuts (14).

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued



4. Secure condenser mounting bracket (7) to panel (13) with two washers (12) and screws (11).

5. Install support bar (10) on condenser mounting bracket (7) with screw (9) and locknut (8).

WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

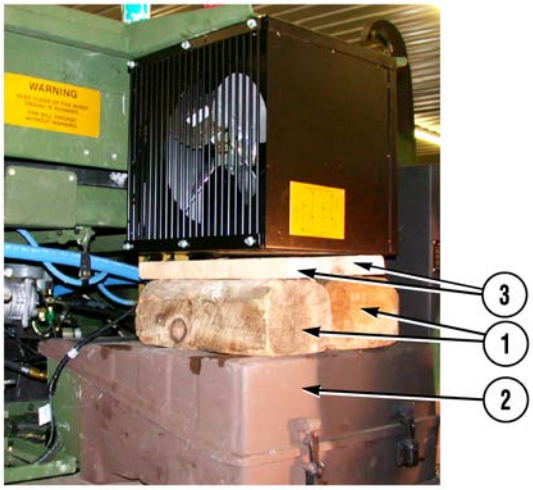
CAUTION

When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into the cutouts in panel. Failure to comply may result in damage to equipment.

6. With the aid of an assistant, install condenser (6) on condenser mounting bracket (7) with four screws (5).

7. Tighten locknut (4).

AC CONDENSER MOUNTING BRACKET REPLACEMENT - Continued



8. Remove two wooden blocks (3) and wheel chocks (1) from top of battery box cover (2).

FOLLOW-ON MAINTENANCE

1. Install rubber flap (WP 0051).

END OF WORK PACKAGE

AC CONDENSER REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Refrigerant recovered (WP 0053).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Wheel chocks (TM 9-2320-364-10)
Wooden blocks (TM 9-2320-364-34)

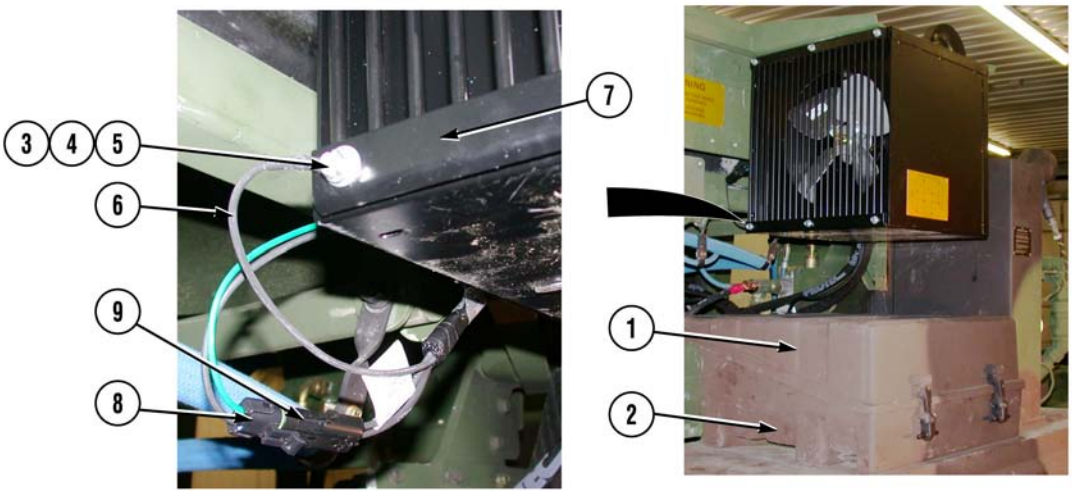
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Lockwasher (Item 8, Figure 6, Appendix G)
Preformed Packing (Item 10, Figure 3, Appendix G)
Preformed Packing (Item 2, Figure 3, Appendix G)
Rivets (4) (Item 9, Figure 11, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20
TM 9-2320-364-34

AC CONDENSER REPLACEMENT - Continued

REMOVAL



1. Install battery box cover (1) on battery box (2).

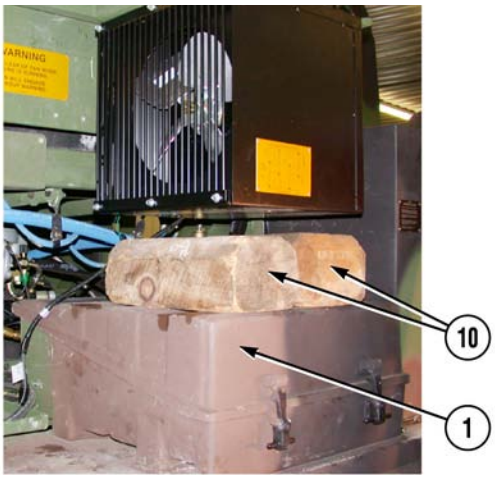
NOTE

Tag and mark connectors and wire prior to removal to ensure proper installation.

2. Remove screw (3), lockwasher (4), washer (5), and wire 1435 (6) from condenser (7). Discard lockwasher.

3. Disconnect connector (8) from connector (9).

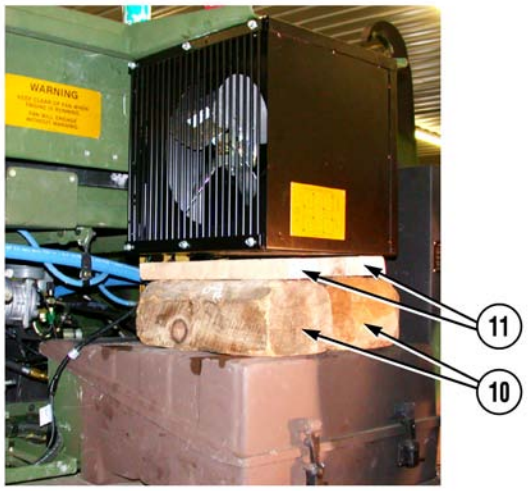
AC CONDENSER REPLACEMENT - Continued



NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to aid in the removal of condenser.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

4. Position two wheel chocks (10) on top of battery box cover (1).

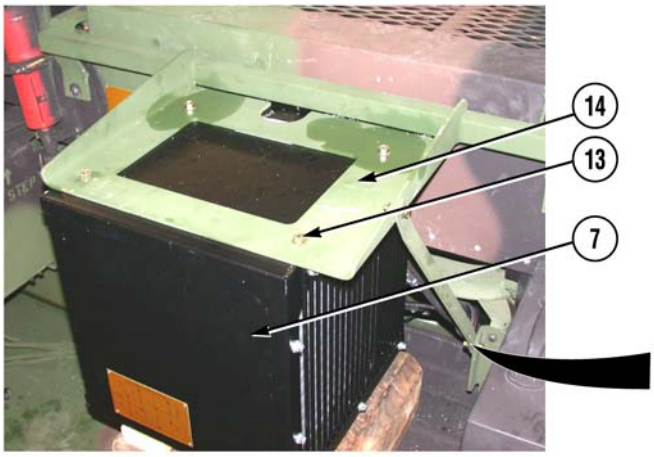


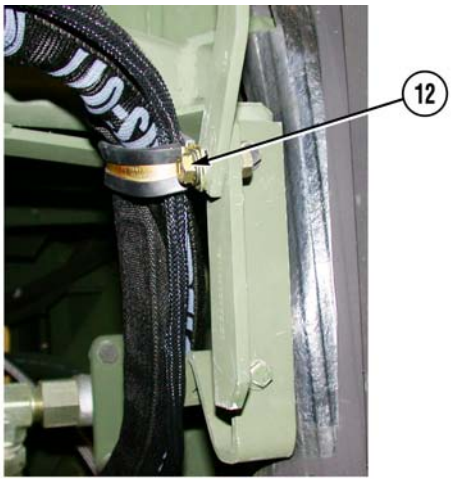
NOTE

Wooden blocks used in Step 5 should be 2 by 4 by 16 in.

5. Position two wooden blocks (11) on top of two wheel chocks (10).

AC CONDENSER REPLACEMENT - Continued





6. Loosen locknut (12).

WARNING

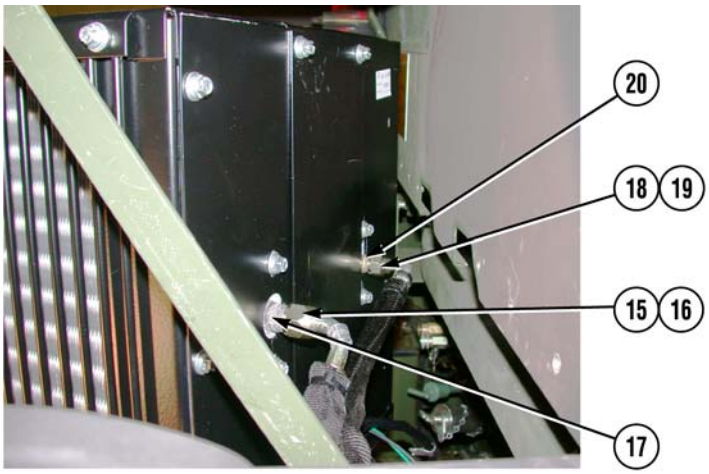
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 5.

7. With the aid of an assistant, remove four screws (13) and condenser (7) from condenser mounting bracket (14).

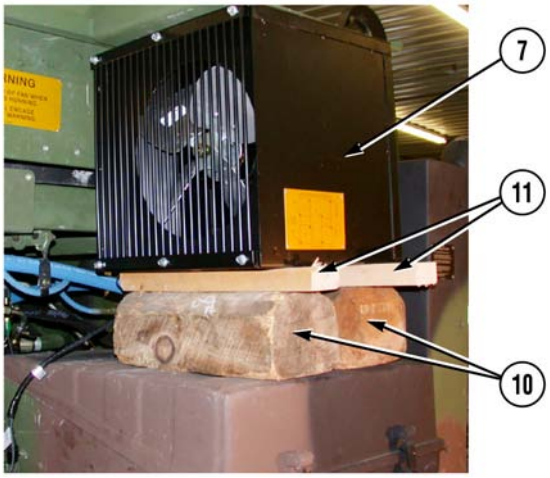
AC CONDENSER REPLACEMENT - Continued



NOTE

Cap and plug hoses upon removal.

8. Remove hose 2521 (15) and preformed packing (16) from fitting (17). Discard preformed packing.
9. Remove hose 2524 (18) and preformed packing (19) from fitting (20). Discard preformed packing.

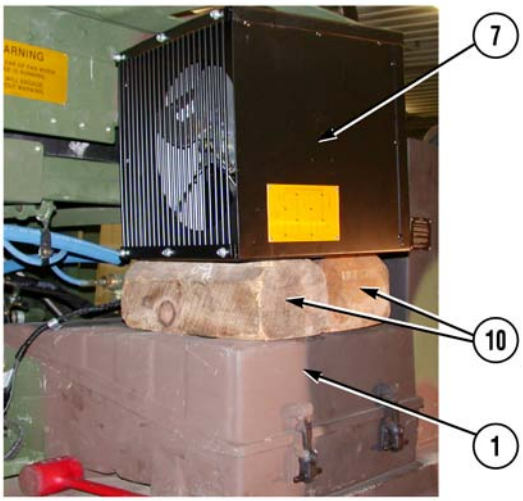


WARNING

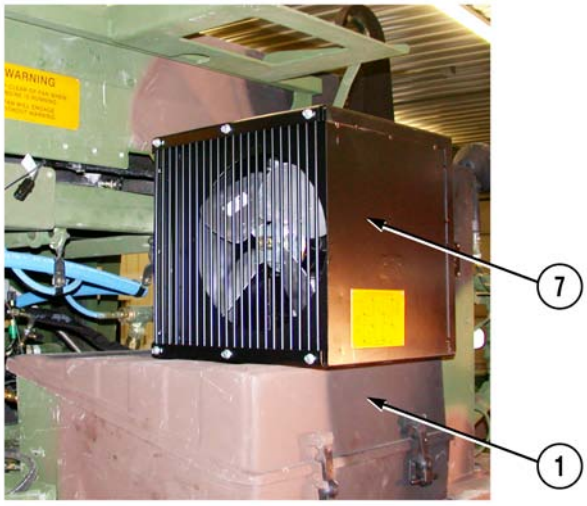
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

10. With the aid of an assistant, remove two wooden blocks (11) from between condenser (7) and two wheel chocks (10).

AC CONDENSER REPLACEMENT - Continued



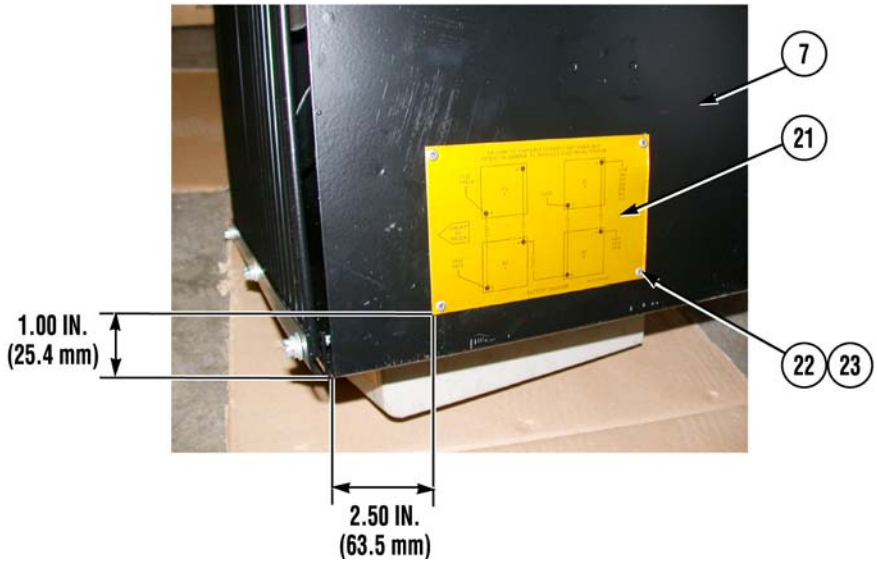
11. With the aid of an assistant, remove two wheel chocks (10) from between condenser (7) and battery box cover (1).



12. With the aid of an assistant, remove condenser (7) from battery box cover (1) and vehicle.

AC CONDENSER REPLACEMENT - Continued

INSTALLATION



NOTE

Perform Steps 1 through 3 if replacing condenser.

CAUTION

Use extreme care not to drill into condenser any farther than needed when drilling four holes for battery diagram. Failure to comply may result in damage to condenser.

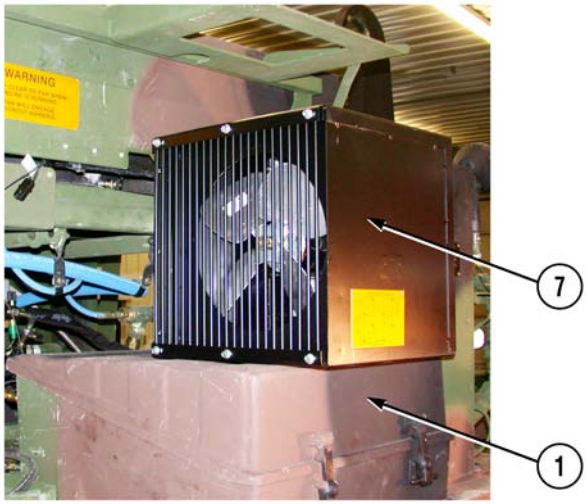
1. Using battery diagram instruction plate (21) as a template, mark and drill four .125 in. (3.18 mm) holes (22) in condenser (7).

2. Remove paper backing and install battery diagram instruction plate (21) on condenser (7) with four rivets (23).

AC CONDENSER REPLACEMENT - Continued



3. Remove paper backing and install AC installation label (24) on condenser (7).

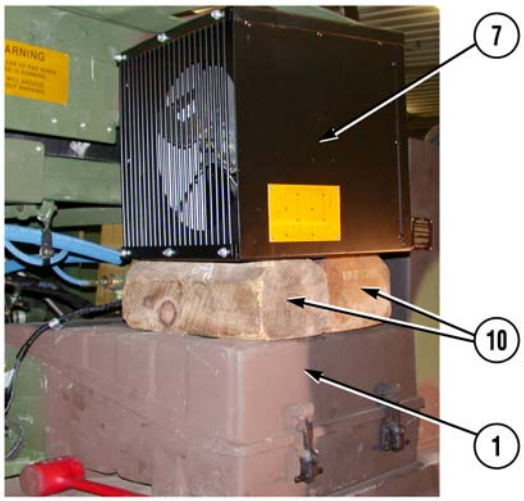


WARNING

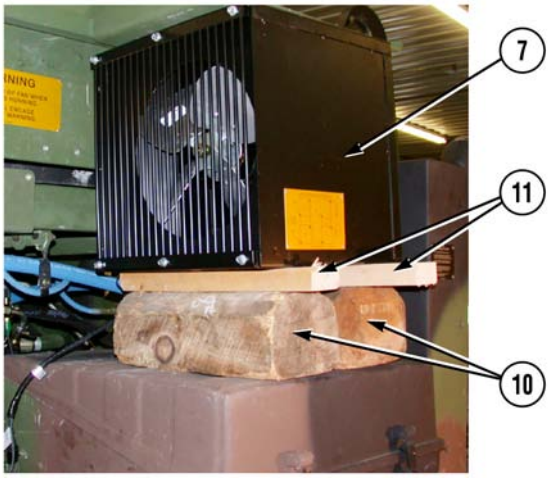
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

4. With the aid of an assistant, position condenser (7) on top of battery box cover (1).

AC CONDENSER REPLACEMENT - Continued



5. With the aid of an assistant, position two wheel chocks (10) between condenser (7) and battery box cover (1).

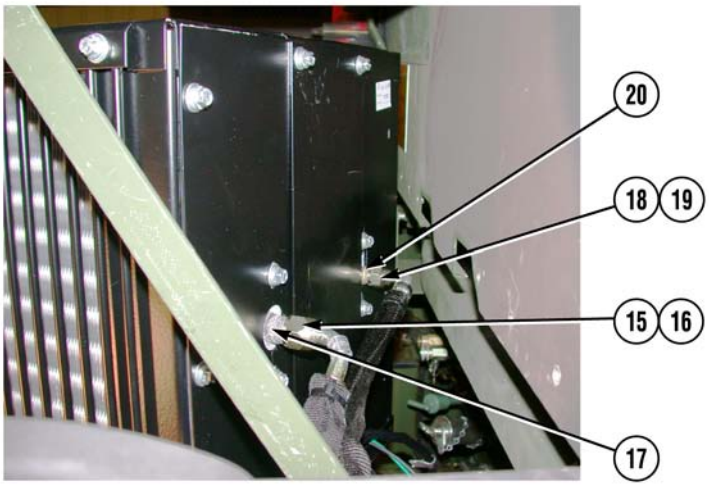


NOTE

Wooden blocks used in Step 6 should be 2 by 4 by 16 in.

6. With the aid of an assistant, position two wooden blocks (11) between condenser (7) and two wheel chocks (10).

AC CONDENSER REPLACEMENT - Continued

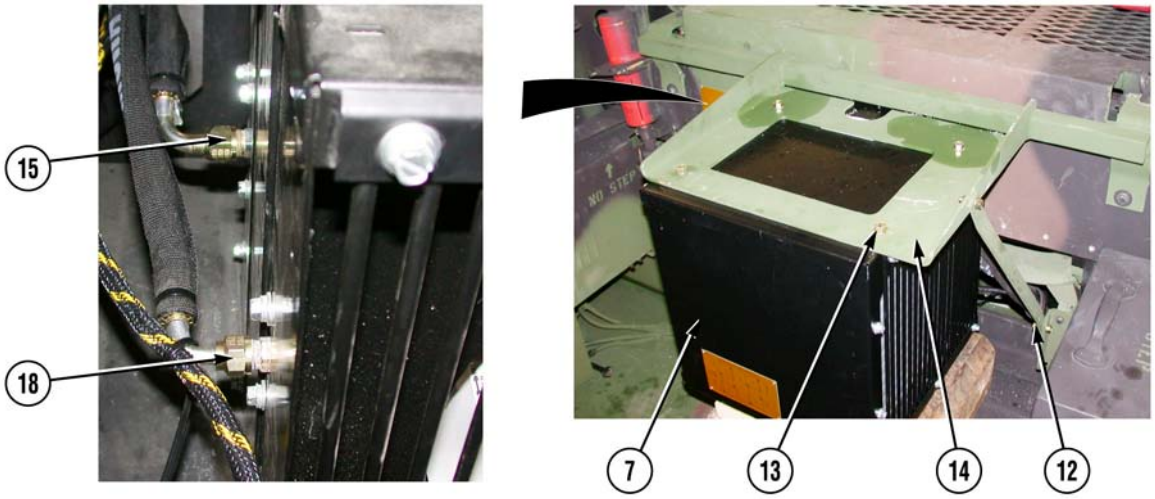


NOTE

- Only hand-tighten hoses on fittings in Steps 7 and 8.
- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

7. Install preformed packing (19) and hose 2524 (18) on fitting (20).
8. Install preformed packing (16) and hose 2521 (15) on fitting (17).

AC CONDENSER REPLACEMENT - Continued



WARNING

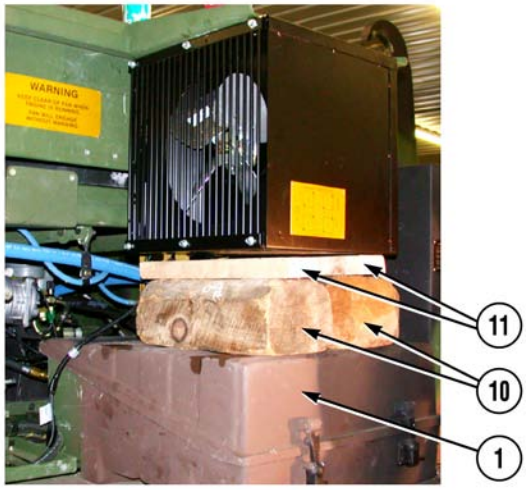
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

CAUTION

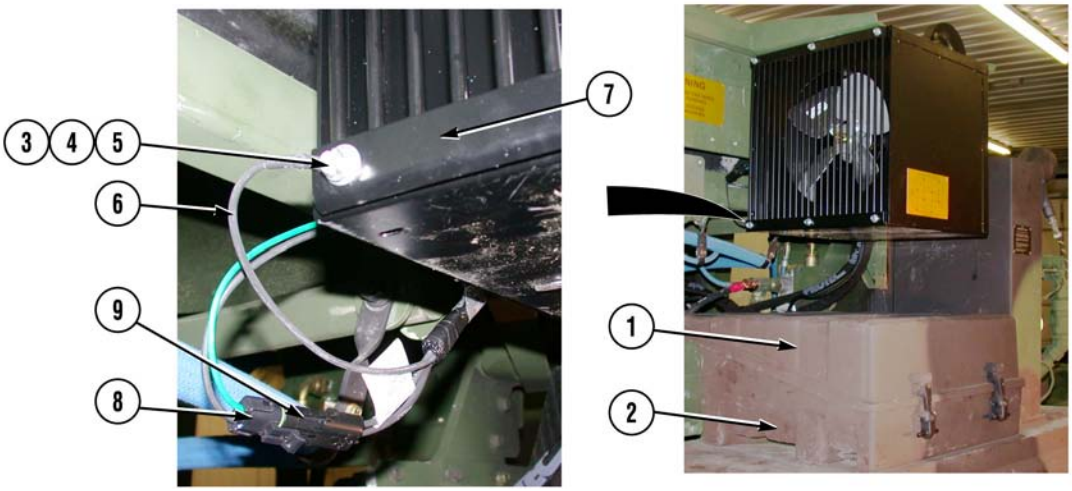
When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into the cutouts in panel. Failure to comply may result in damage to equipment.

9. With the aid of an assistant, install condenser (7) on condenser mounting bracket (14) with four screws (13).
10. Check to make sure hose 2521 (15) and hose 2524 (18) are not kinked and that they are pointing downwards toward rear of vehicle at approximately 30 degrees.
11. Torque hose 2521 (15) to 15-18 ft-lbs. (20-24 N•m).
12. Torque hose 2524 (18) to 11-13 ft-lbs. (15-18 N•m).
13. Tighten locknut (12).

AC CONDENSER REPLACEMENT - Continued



14. Remove two wooden blocks (11) and wheel chocks (10) from top of battery box cover (1).



15. Connect connector (8) to connector (9).
16. Install wire 1435 (6) on condenser (7) with washer (5), lockwasher (4), and screw (3).
17. Remove battery box cover (1) from battery box (2).

AC CONDENSER REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Connect batteries (TM 9-2320-364-20).
2. Charge AC system (WP 0053).

END OF WORK PACKAGE

AC DEFROST CABLE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Electronic control box (EBC) cover removed (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

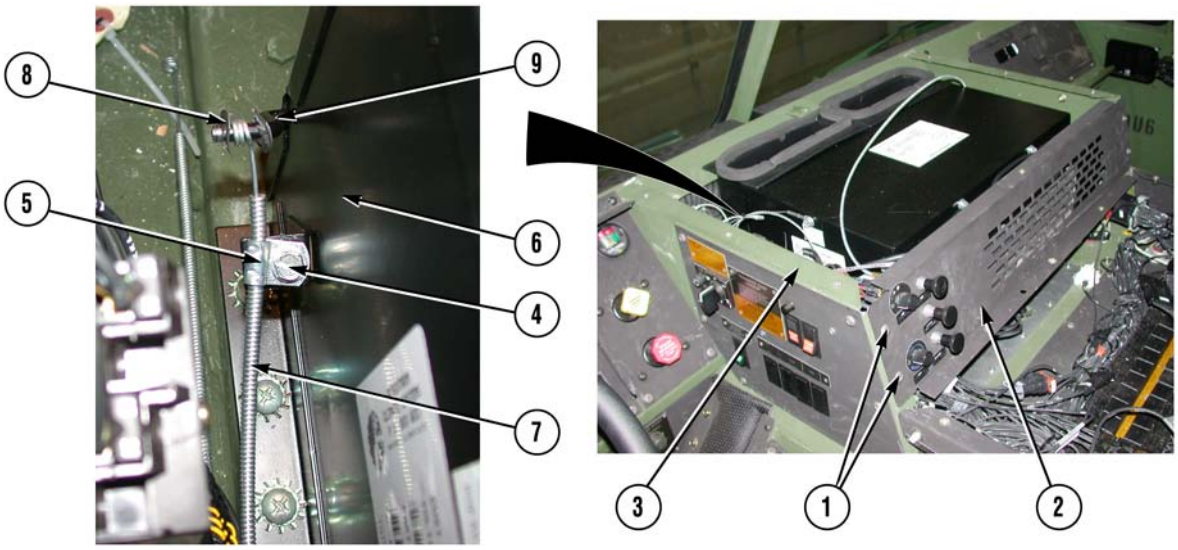
Materials/Parts
Tie, Cable (Item 13, Appendix E)

Personnel Required
One

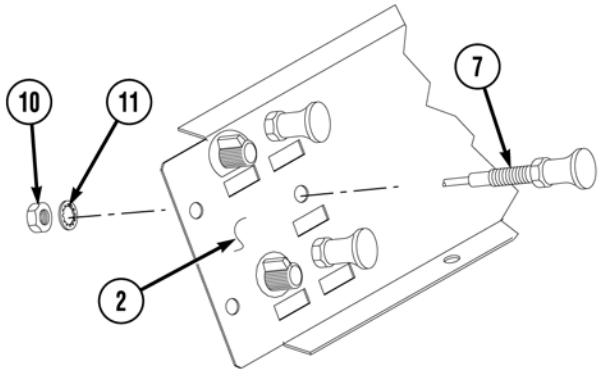
References
TM 9-2320-364-20

AC DEFROST CABLE REPLACEMENT - Continued

REMOVAL



1. Remove four screws (1) and center cover (2) from console (3).
2. Remove screw (4) and retainer (5) from heater/evaporator (6).
3. Remove retainer (5) from AC defrost cable (7).
4. Remove speed nut (8) and AC defrost cable (7) from control arm (9).



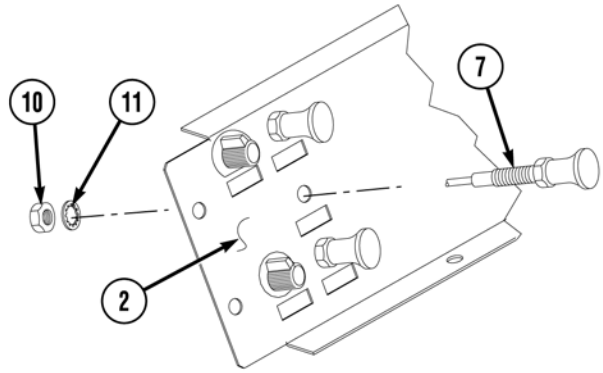
NOTE

Remove cable ties as required.

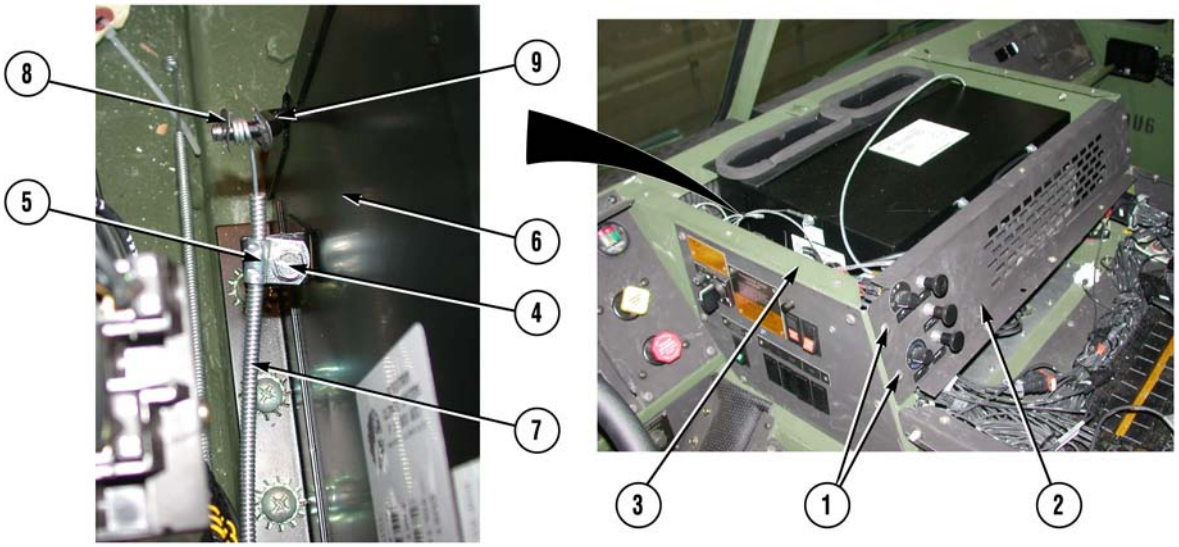
5. Remove nut (10), lockwasher (11), and AC defrost cable (7) from center cover (2).

AC DEFROST CABLE REPLACEMENT - Continued

INSTALLATION



1. Install AC defrost cable (7) on center cover (2) with lockwasher (11) and nut (10).



2. Install AC defrost cable (7) on control arm (9) with speed nut (8).
3. Place retainer (5) on AC defrost cable (7).
4. Install retainer (5) on heater/evaporator (6) with screw (4).

NOTE

Install cable ties as required.

5. Install center cover (2) on console (3) with four screws (1).

AC DEFROST CABLE REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Install electronic control box (ECB) cover (TM 9-2320-364-20).

END OF WORK PACKAGE

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
AC heater/evaporator removed (WP 0037).

Tools and Special Tools
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

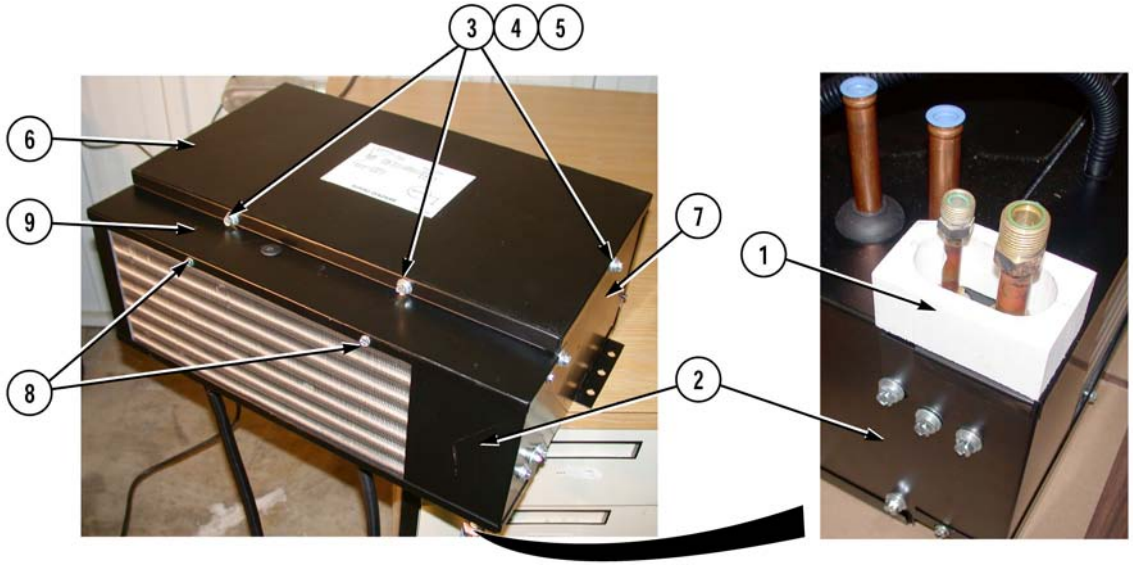
Materials/Parts
Adhesive, 3M # 1300 (Item 1, Appendix E)
Oil, PAG 46V (Item 3, Appendix E)
Foam Tape (Item 15, Figure 5, Appendix G)
Lockwashers (9) (Item 4, Figure 5, Appendix G)
Preformed Packing (Item 9, Figure 7, Appendix G)
Preformed Packing (Item 7, Figure 7, Appendix G)
Preformed Packings (2) (Item 17, Figure 5, Appendix G)
Lockwashers (2) (Item 19, Figure 5, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

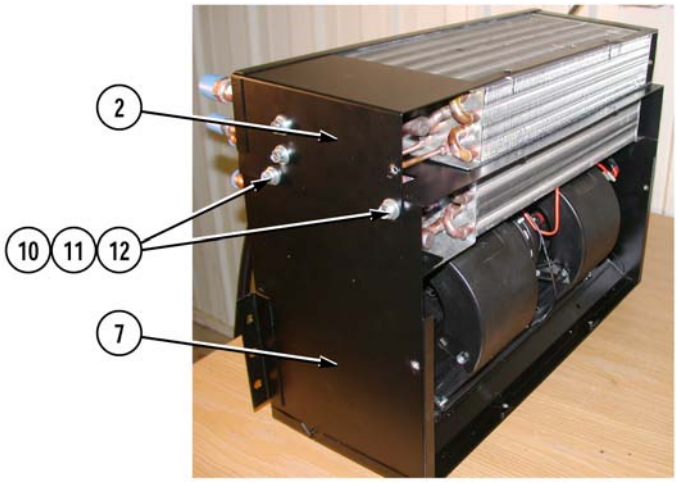
References
TM 9-2320-364-20

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued

REMOVAL

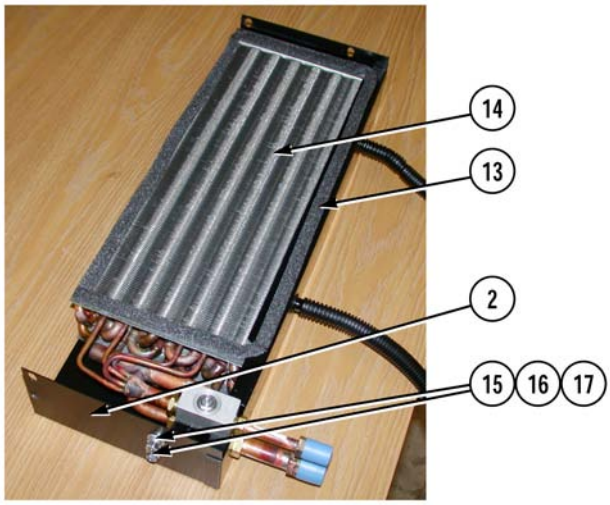


1. Remove insulation (1) from evaporator core housing (2).
2. Remove three screws (3), lockwashers (4), washers (5), and cover (6) from heater/evaporator (7). Discard lockwashers.
3. Remove four screws (8) and evaporator core cover (9) from evaporator core housing (2).

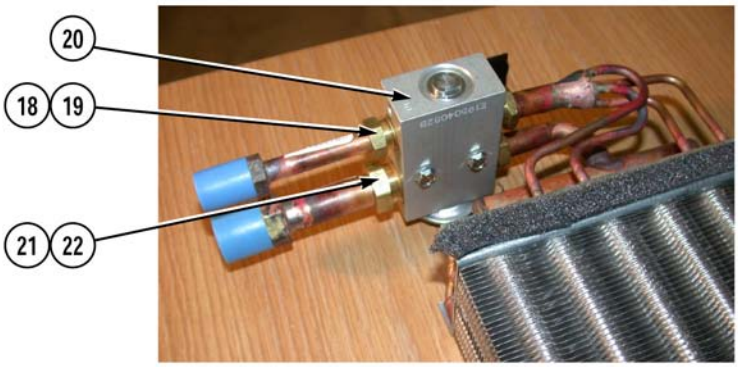


4. Remove four screws (10), lockwashers (11), washers (12), and evaporator core housing (2) from heater/evaporator (7). Discard lockwashers.

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued



5. Remove foam tape (13) from evaporator core housing (2) and evaporator core (14). Discard foam tape.
6. Remove two screws (15), lockwashers (16), washers (17), and evaporator core (14) from evaporator core housing (2). Discard lockwashers.



7. Remove fitting (18) and preformed packing (19) from expansion valve (20). Discard preformed packing.
8. Remove fitting (21) and preformed packing (22) from expansion valve (20). Discard preformed packing.

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued



9. Remove fitting (23) and preformed packing (24) from expansion valve (20). Discard preformed packing.
10. Remove fitting (25) and preformed packing (26) from expansion valve (20). Discard preformed packing.

NOTE

Note position of bracket prior to removal to ensure proper installation.

11. Remove two screws (27), lockwashers (28), and bracket (29) from expansion valve (20). Discard lockwashers.

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued

INSTALLATION



NOTE

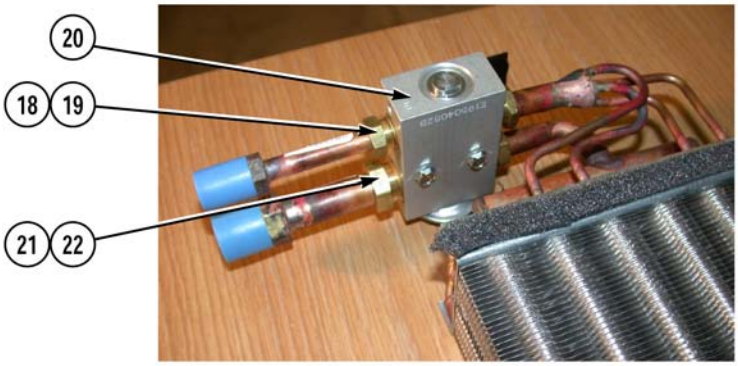
Install bracket as noted prior to removal.

1. Install bracket (29) on expansion valve (20) with two lockwashers (28) and screws (27).

NOTE

- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are on fittings prior to installation.

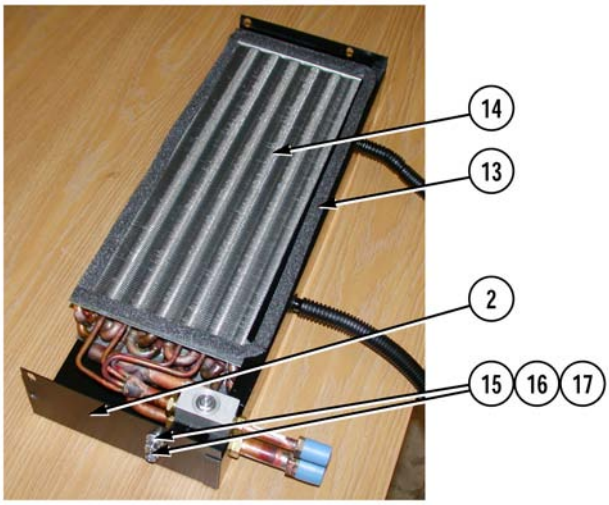
2. Install preformed packing (26) and fitting (25) on expansion valve (20).
3. Install preformed packing (24) and fitting (23) on expansion valve (20).



4. Install preformed packing (22) and fitting (21) on expansion valve (20). Torque fitting (21) to 18-22 ft-lbs. (24-30 N•m).

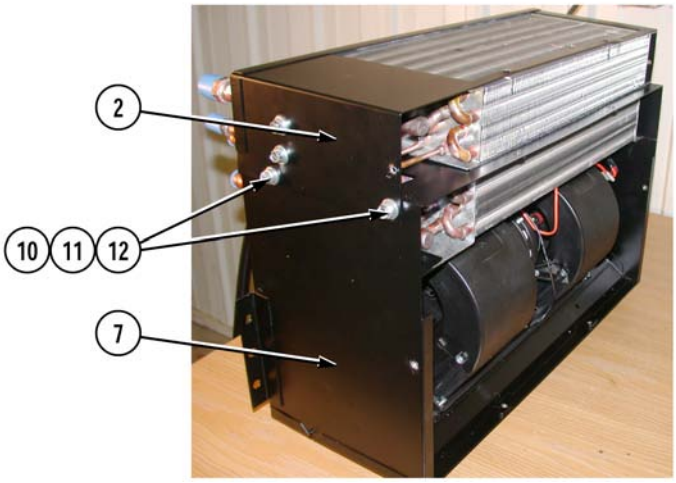
AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued

5. Install preformed packing (19) and fitting (18) on expansion valve (20). Torque fitting (18) to 11-13 ft-lbs. (15-18 N•m).



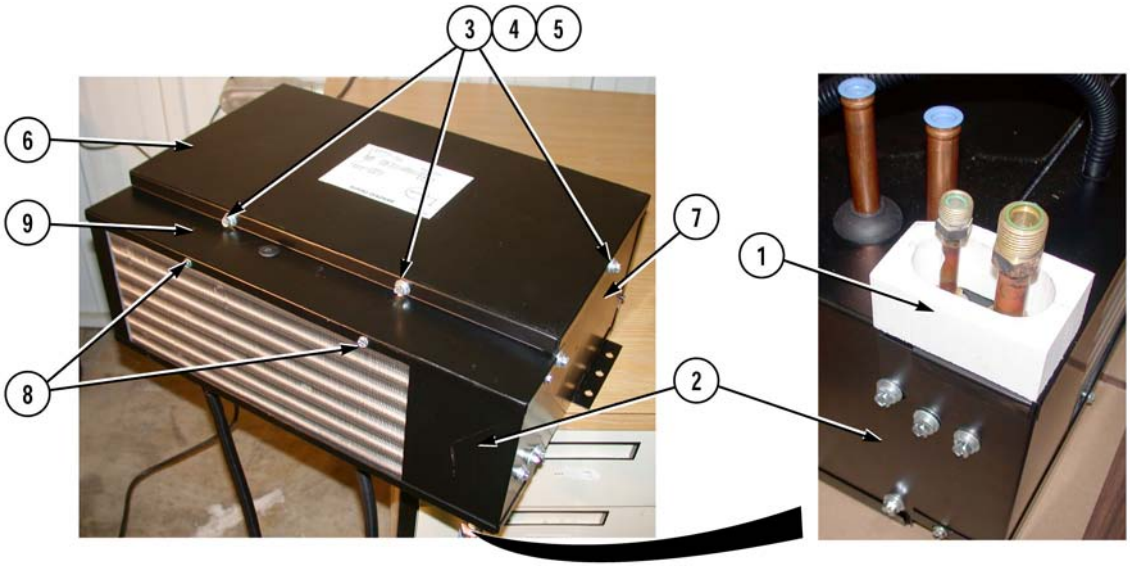
6. Install evaporator core (14) on evaporator core housing (2) with two washers (17), lockwashers (16), and screws (15).

7. Install foam tape (13) on evaporator core (14) and evaporator core housing (2).



8. Install evaporator core housing (2) on heater/evaporator (7) with four washers (12), lockwashers (11), and screws (10).

AC EVAPORATOR CORE AND EXPANSION VALVE REPLACEMENT - Continued



9. Install evaporator core cover (9) on evaporator core housing (2) with four screws (8).
10. Install cover (6) on heater/evaporator (7) with three washers (5), lockwashers (4), and screws (3).

WARNING

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

11. Apply adhesive to bottom of insulation (1).
12. Install insulation (1) on evaporator core housing (2).

FOLLOW-ON MAINTENANCE

1. Install AC heater/evaporator (WP 0037).

END OF WORK PACKAGE

0031

AC FAN CONTROL SWITCH REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

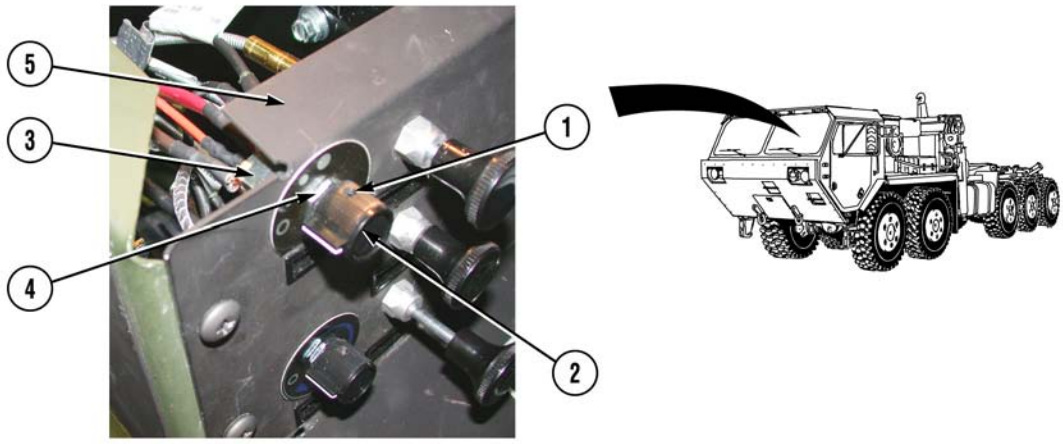
Tools and Special Tools
Goggles (Item 1, Appendix F)
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Solvent, Dry Cleaning (Item 9, Appendix E)
Tags, Identification (Item 10, Appendix E)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



1. Loosen two screws (1) and remove knob (2) from fan control switch (3).

NOTE

Note position of fan control switch prior to removal to ensure proper installation.

2. Remove nut (4) and fan control switch (3) from center cover (5).

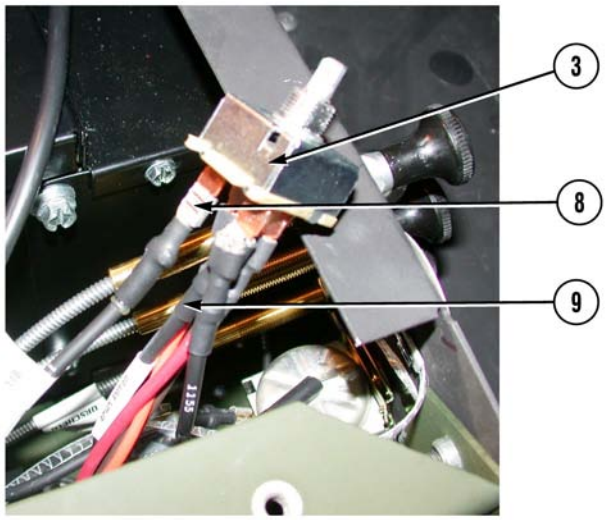
AC FAN CONTROL SWITCH REPLACEMENT - Continued



NOTE

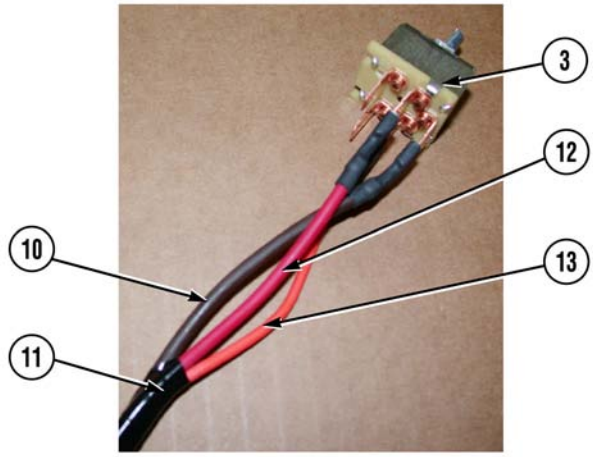
Tag and mark connectors and wires prior to removal to ensure proper installation.

3. Disconnect connector (6) from connector (7).

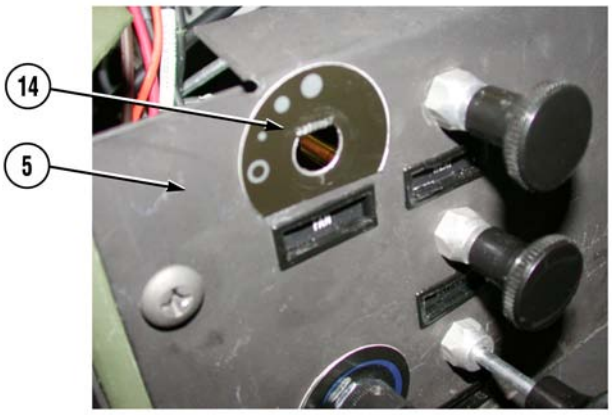


4. Remove wire 1156 (8) from terminal C of fan control switch (3).
5. Remove wire 1082 (9) from terminal B of fan control switch (3).

AC FAN CONTROL SWITCH REPLACEMENT - Continued



6. Remove brown wire (10) of wire harness (11) from terminal M of fan control switch (3).
7. Remove red wire (12) of wire harness (11) from terminal L of fan control switch (3).
8. Remove orange wire (13) of wire harness (11) from terminal H of fan control switch (3).



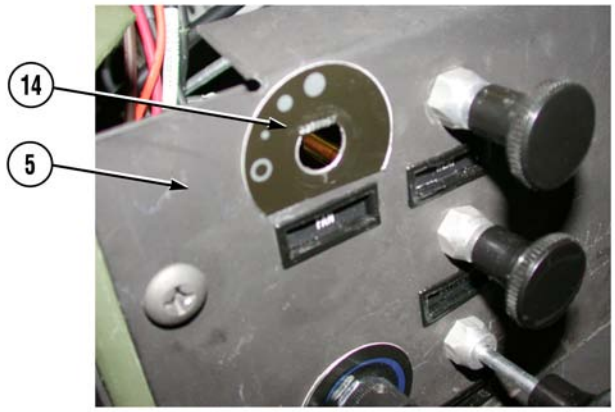
NOTE

Perform Step 9 if fan label needs to be removed.

9. Remove fan label (14) from center cover (5).

AC FAN CONTROL SWITCH REPLACEMENT - Continued

INSTALLATION



WARNING

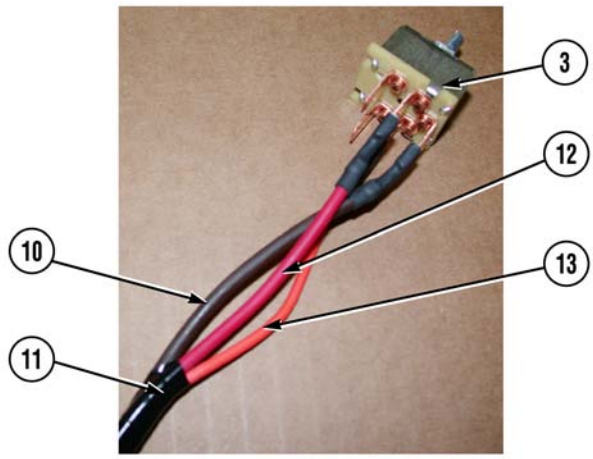
- **Dry cleaning solvent is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and DO NOT breathe vapors. Keep away from heat or flame. Never smoke when using dry cleaning solvent; the flashpoint for Type II is 140°F (60ºC), and for Type III it is 200ºF (93ºC). Failure to follow this warning may result in death or injury 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 them with water and get immediate medical attention.**

NOTE

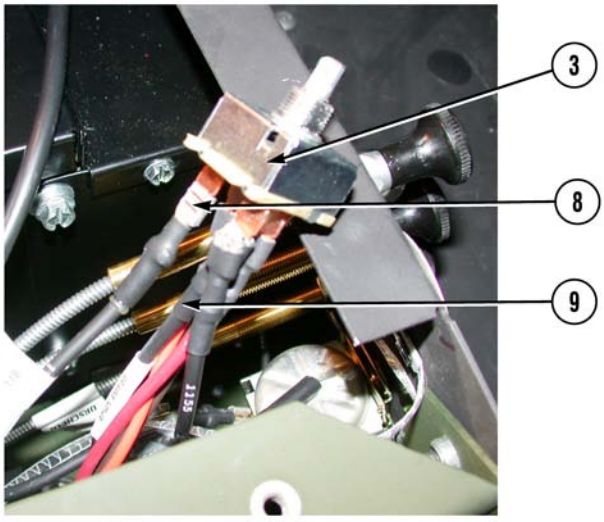
Perform Steps 1 through 3 if fan label was removed.

1. Clean center cover (5) where fan label (14) was mounted with dry cleaning solvent.
2. Peel paper back off of fan label (14).
3. Install fan label (14) on center cover (5).

AC FAN CONTROL SWITCH REPLACEMENT - Continued



4. Install orange wire (13) of wire harness (11) on terminal H of fan control switch (3).
5. Install red wire (12) of wire harness (11) on terminal L of fan control switch (3).
6. Install brown wire (10) of wire harness (11) on terminal M of fan control switch (3).

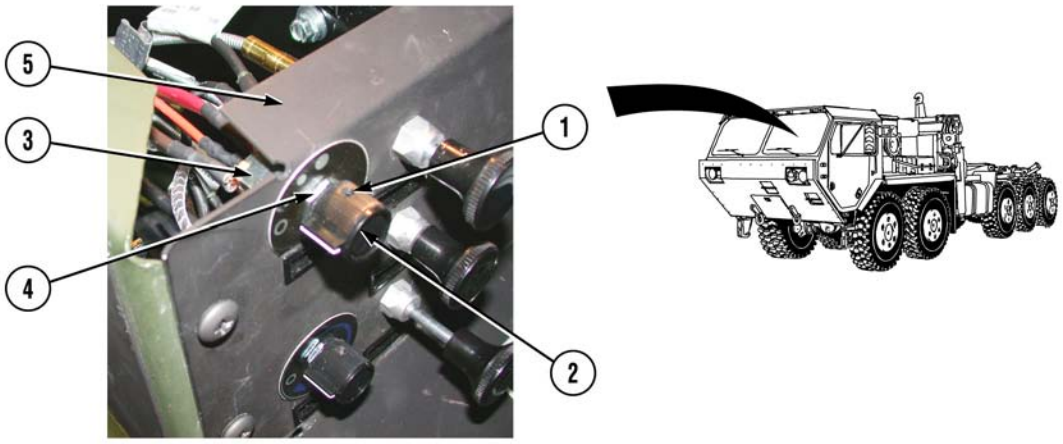


7. Install wire 1082 (9) on terminal B of fan control switch (3).
8. Install wire 1156 (8) on terminal C of fan control switch (3).

AC FAN CONTROL SWITCH REPLACEMENT - Continued



9. Connect connector (6) to connector (7).



NOTE

Install fan control switch as noted prior to removal.

10. Install fan control switch (3) on center cover (5) with nut (4).
11. Install knob (2) on fan control switch (3) and tighten two screws (1).

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

0032

AC HEATER CABLE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Heater compartment access panel removed (TM 9-2320-364-20).
Electronic control box (ECB) covers removed (TM 9-2320-364-20).
Electronic control box (ECB) right side panel removed (TM 9-2320-364-20).

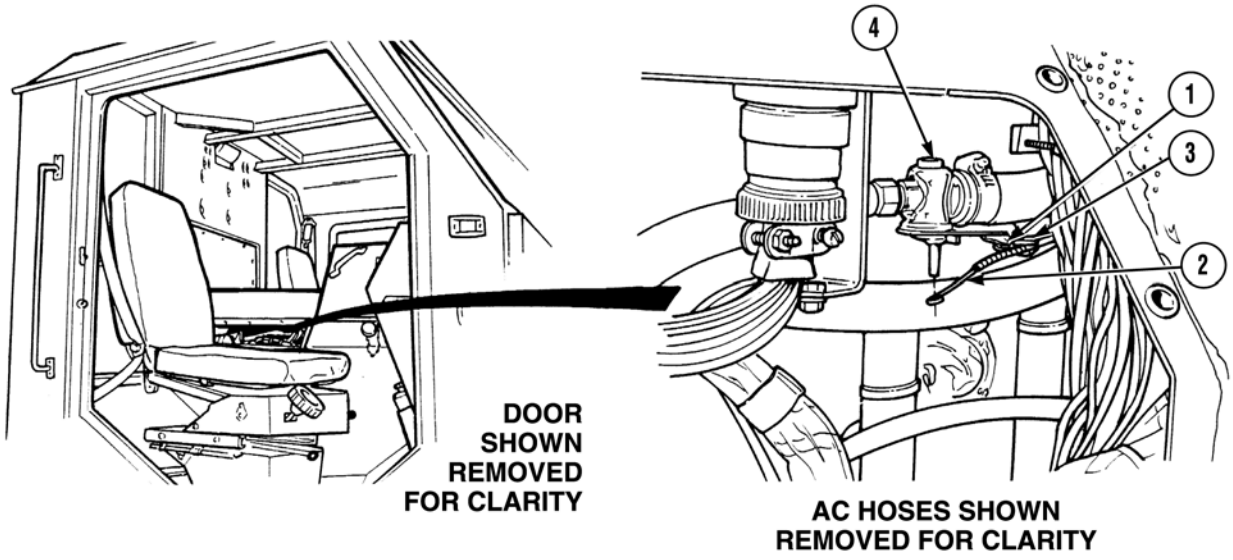
Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tie, Cable (Item 12, Appendix E)

Personnel Required
One

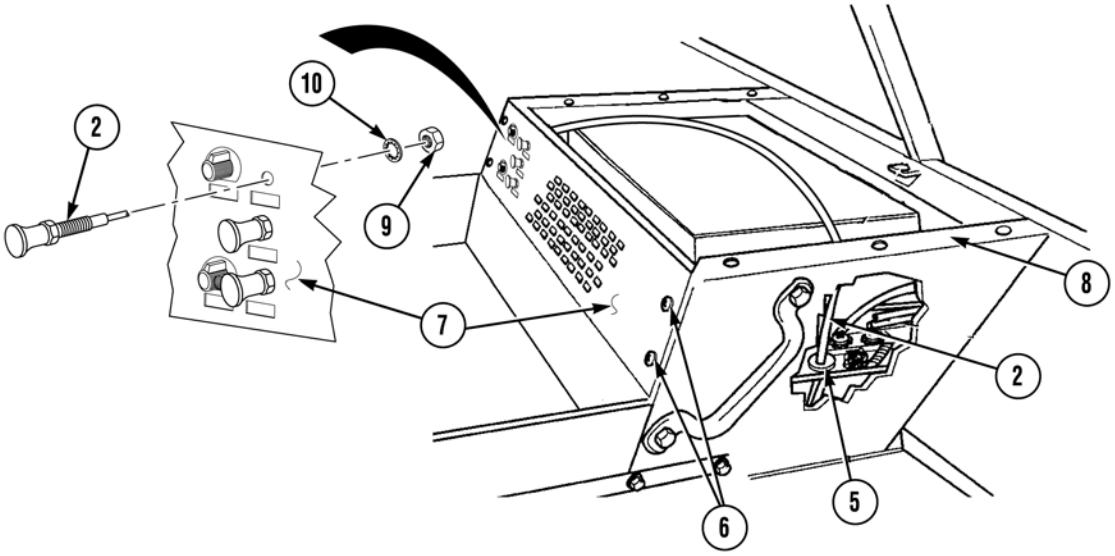
References
TM 9-2320-364-20

REMOVAL



1. Loosen screw (1) and remove heater cable (2) from retainer (3).
2. Remove heater cable (2) from heater control valve (4).

AC HEATER CABLE REPLACEMENT - Continued



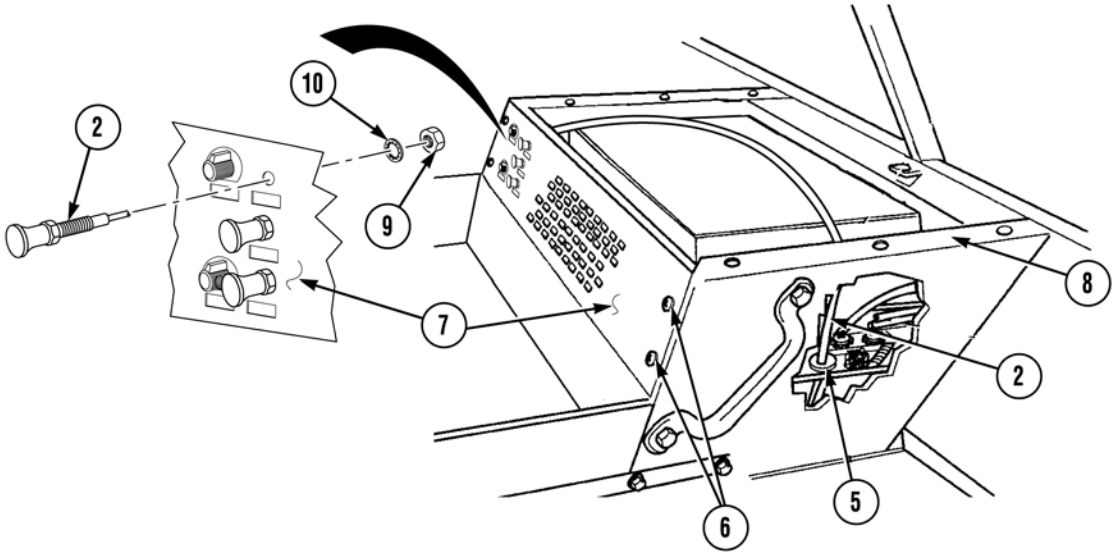
NOTE

- Remove cable ties as required.
- Note routing of heater cable prior to removal to ensure proper installation.

3. Pull heater cable (2) through grommet (5).
4. Remove four screws (6) and center cover (7) from console (8).
5. Remove nut (9), lockwasher (10), and heater cable (2) from center cover (7).

AC HEATER CABLE REPLACEMENT - Continued

INSTALLATION



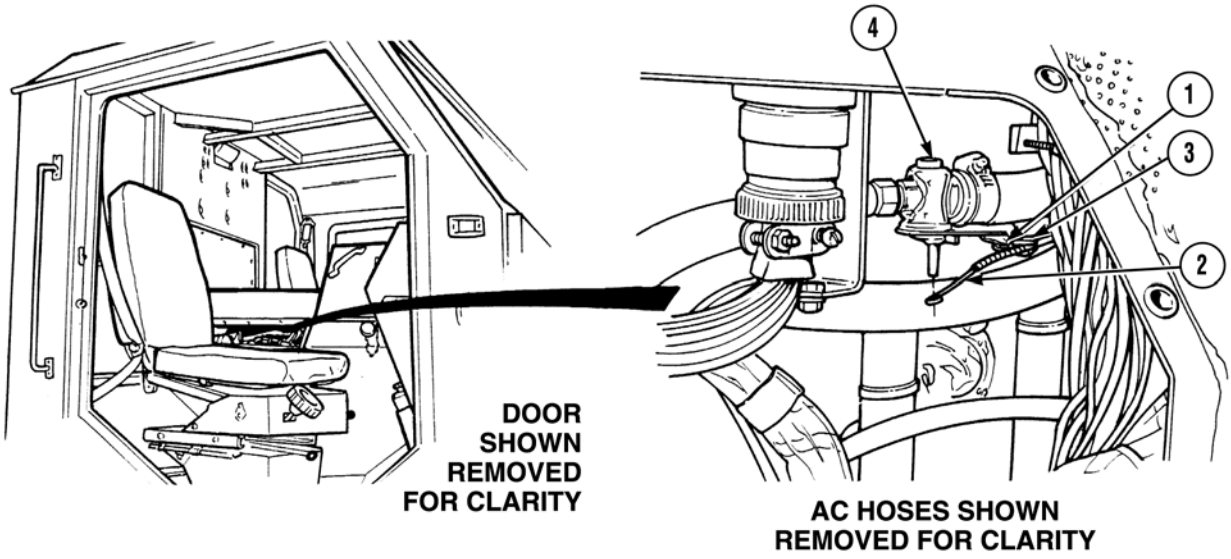
1. Install heater cable (2) on center cover (7) with lockwasher (10) and nut (9).
2. Install center cover (7) on console (8) with four screws (6).

NOTE

- Route heater cable as noted prior to removal.
- Install cable ties as required.

3. Pull heater cable (2) through grommet (5).

AC HEATER CABLE REPLACEMENT - Continued



4. Install heater cable (2) on heater control valve (4).
5. Install heater cable (2) in retainer (3) and tighten screw (1).

FOLLOW-ON MAINTENANCE

1. Install electronic control box (ECB) right side panel (TM 9-2320-364-20).
2. Install electronic control box (ECB) covers (TM 9-2320-364-20).
3. Install heater compartment access panel (TM 9-2320-364-20).

END OF WORK PACKAGE

AC HEATER CORE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
AC heater/evaporator removed (WP 0037).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

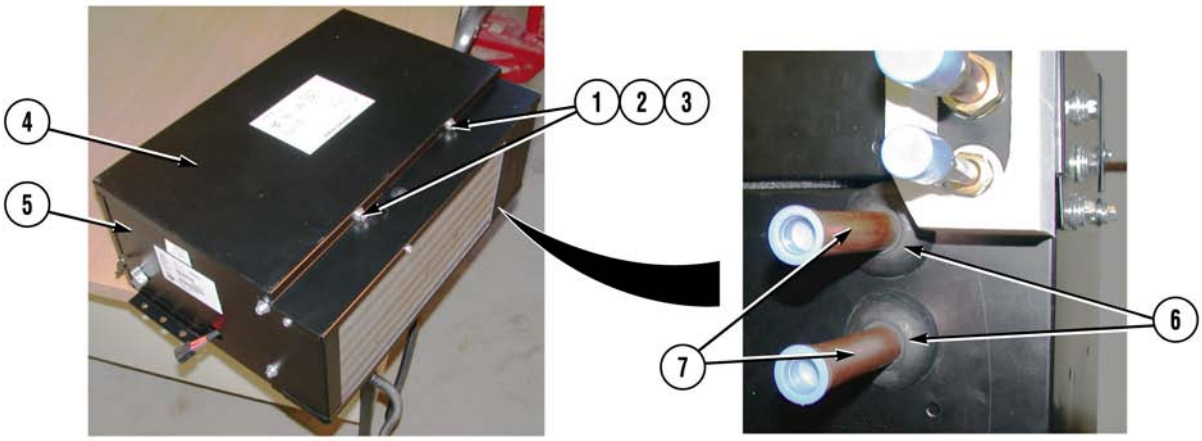
Materials/Parts
Lockwashers (5) (Item 4, Figure 5, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

References
TM 9-2320-364-20

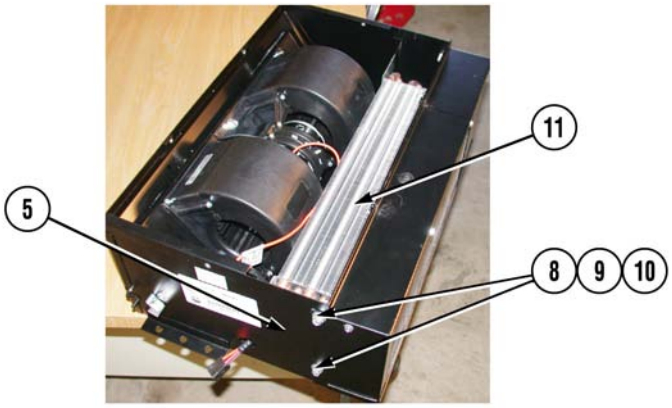
AC HEATER CORE REPLACEMENT - Continued

REMOVAL



1. Remove three screws (1), lockwashers (2), washers (3), and cover (4) from heater/evaporator (5). Discard lockwashers.

2. Remove two grommets (6) from flanges (7).

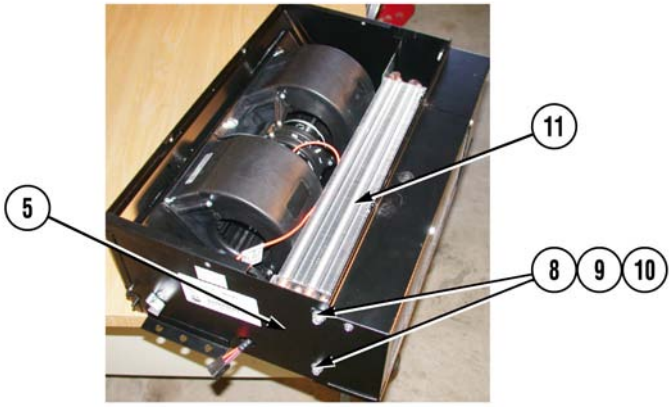


3. Remove two screws (8), lockwashers (9), and washers (10) from heater core (11) and heater/evaporator (5). Discard lockwashers.

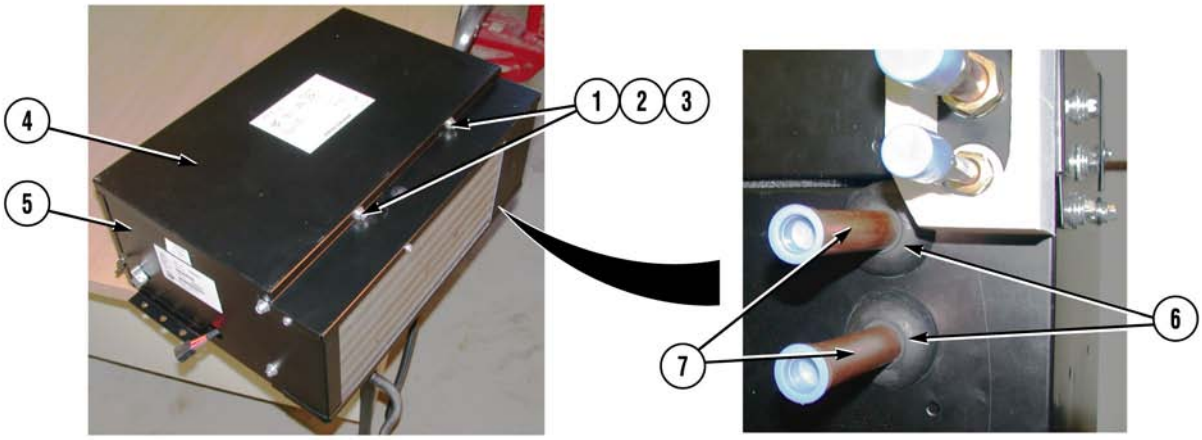
4. Remove heater core (11) from heater/evaporator (5).

AC HEATER CORE REPLACEMENT - Continued

INSTALLATION



1. Install heater core (11) in heater/evaporator (5) with two washers (10), lockwashers (9), and screws (8).



2. Install two grommets (6) on flanges (7).
3. Install cover (4) on heater/evaporator (5) with three washers (3), lockwashers (2), and screws (1).

FOLLOW-ON MAINTENANCE

1. Install AC heater/evaporator (WP 0037).

END OF WORK PACKAGE

AC HEATER/EVAPORATOR BLOWER MOTOR ASSEMBLY REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater/defroster tubing (upper plenums) removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tags, Identification (Item 10, Appendix E)
Tape, Insulation, Electrical (Item 11, Appendix E)
Lockwashers (7) (Item 4, Figure 5, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and ground wire (4) from heater/evaporator (5). Discard lockwasher.

2. Remove three screws (6), lockwashers (7), washers (8), and cover (9) from heater/evaporator (5). Discard lockwashers.

AC HEATER/EVAPORATOR BLOWER MOTOR ASSEMBLY REPLACEMENT - Continued



3. Remove electrical tape (10) from wire (11) and wire (12).
4. Disconnect orange wire (11) from orange wire (12).
5. Remove screw (13), lockwasher (14), black wire (15), and washer (16) from blower motor assembly (17). Discard lockwasher.
6. Remove two screws (18), lockwashers (19), washers (20), and blower motor assembly (17) from heater/evaporator (5). Discard lockwashers.

AC HEATER/EVAPORATOR BLOWER MOTOR ASSEMBLY REPLACEMENT - Continued

INSTALLATION



1. Install blower motor assembly (17) on heater/evaporator (5) with two washers (20), lockwashers (19), and screws (18).
2. Install washer (16), black wire (15), lockwasher (14), and screw (13) on blower motor assembly (17).
3. Connect orange wire (11) to orange wire (12).
4. Apply electrical tape (10) to wire (11) and wire (12).



5. Install cover (9) on heater/evaporator (5) with three washers (8), lockwashers (7), and screws (6).
6. Install ground wire (4) on heater/evaporator (5) with washer (3), lockwasher (2), and screw (1).

AC HEATER/EVAPORATOR BLOWER MOTOR ASSEMBLY REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install heater/defroster tubing (upper plenums) (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

0035

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater/defroster tubing (upper plenums) removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwashers (4) (Item 4, Figure 5, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR REPLACEMENT - Continued

REMOVAL



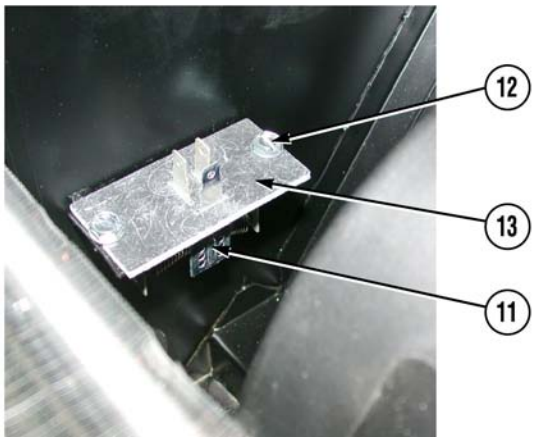
NOTE

Tag and mark wire and connector prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and ground wire (4) from heater/evaporator (5). Discard lockwasher.

2. Remove three screws (6), lockwashers (7), washers (8), and cover (9) from heater/evaporator (5). Discard lockwashers.



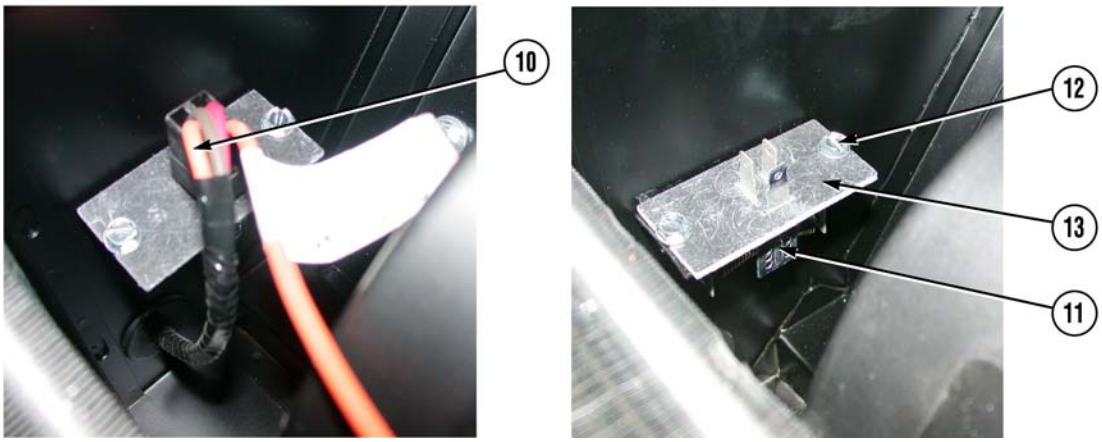


3. Disconnect connector (10) from resistor (11).

4. Remove two screws (12) and resistor (11) from bracket (13).

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR REPLACEMENT - Continued

INSTALLATION



1. Install resistor (11) on bracket (13) with two screws (12).
2. Connect connector (10) to resistor (11).



3. Install cover (9) on heater/evaporator (5) with three washers (8), lockwashers (7), and screws (6).
4. Install ground wire (4) on heater/evaporator (5) with washer (3), lockwasher (2), and screw (1).

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install heater/defroster tubing (upper plenums) (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater/defroster tubing (upper plenums) removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tags, Identification (Item 10, Appendix E)
Tape, Insulation, Electrical (Item 11, Appendix E)
Lockwashers (4) (Item 4, Figure 5, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



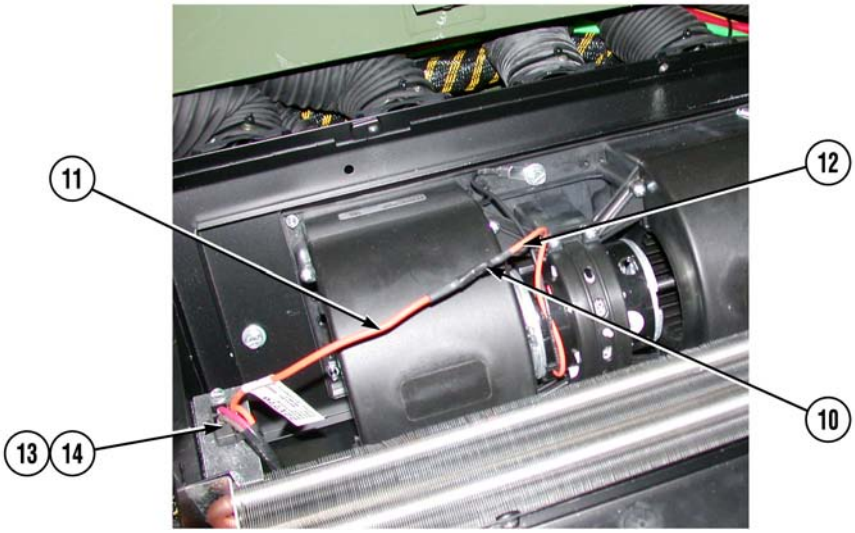
NOTE

Tag and mark wires and connectors prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and ground wire (4) from heater/evaporator (5). Discard lockwasher.

2. Remove three screws (6), lockwashers (7), washers (8), and cover (9) from heater/evaporator (5). Discard lockwashers.

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR HARNESS REPLACEMENT - Continued



3. Remove electrical tape (10) from orange wire (11) and orange wire (12).
4. Disconnect orange wire (11) from orange wire (12).
5. Disconnect connector (13) from resistor (14).



6. Disconnect connector (15) from connector (16).
7. Pull connector (16) through grommet (17) and remove wire harness (18) from vehicle.

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR HARNESS REPLACEMENT - Continued

INSTALLATION

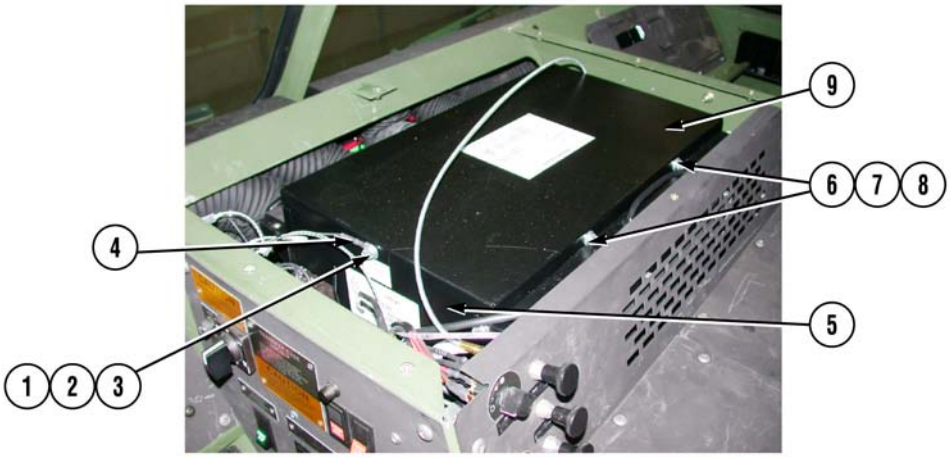


1. Route connector (16) through grommet (17).
2. Connect connector (15) to connector (16).



3. Connect connector (13) to resistor (14).
4. Connect orange wire (11) to orange wire (12).
5. Apply electrical tape (10) to orange wire (11) and orange wire (12).

AC HEATER/EVAPORATOR BLOWER MOTOR RESISTOR HARNESS REPLACEMENT - Continued



6. Install cover (9) on heater/evaporator (5) with three washers (8), lockwashers (7), and screws (6).
7. Install ground wire (4) on heater/evaporator (5) with washer (3), lockwasher (2), and screw (1).

FOLLOW-ON MAINTENANCE

1. Install heater/defroster tubing (upper plenums) (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC HEATER/EVAPORATOR REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Refrigerant recovered (WP 0053).
Heater/defroster tubing (upper plenums) removed (TM 9-2320-364-20).
AC heater cable removed (WP 0032).
Cab engine access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Pan, Drain (Item 3, Appendix F)
Set, Cap and Plug (Item 4, Appendix F)
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

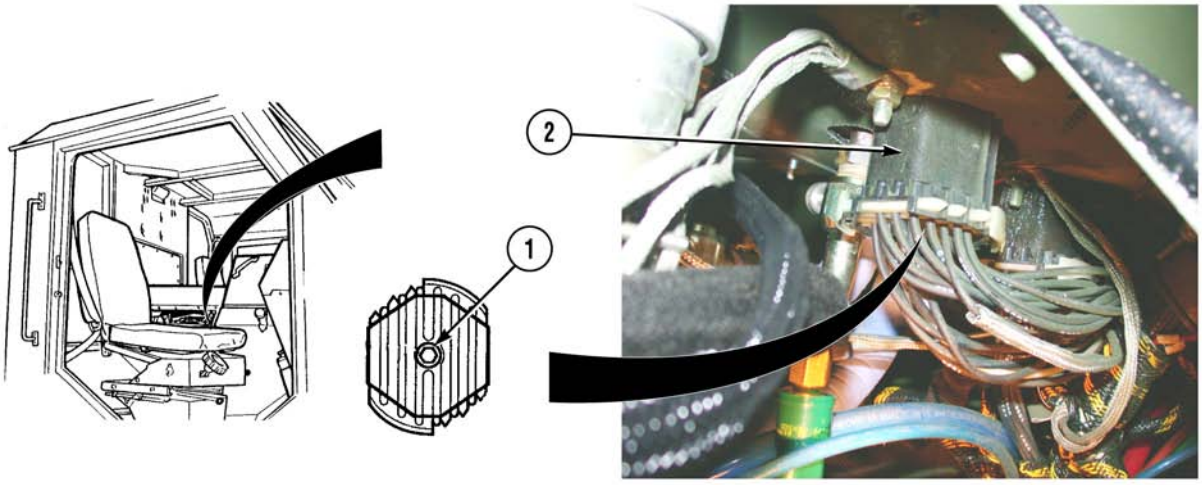
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Solution, Soap (Item 8, Appendix E)
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 13, Appendix E)
Preformed Packing (Item 4, Figure 3, Appendix G)
Preformed Packing (Item 2, Figure 3, Appendix G)
Lockwasher (Item 4, Figure 4, Appendix G)
Lockwashers (6) (Item 4, Figure 7, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20

AC HEATER/EVAPORATOR REPLACEMENT - Continued

REMOVAL



NOTE

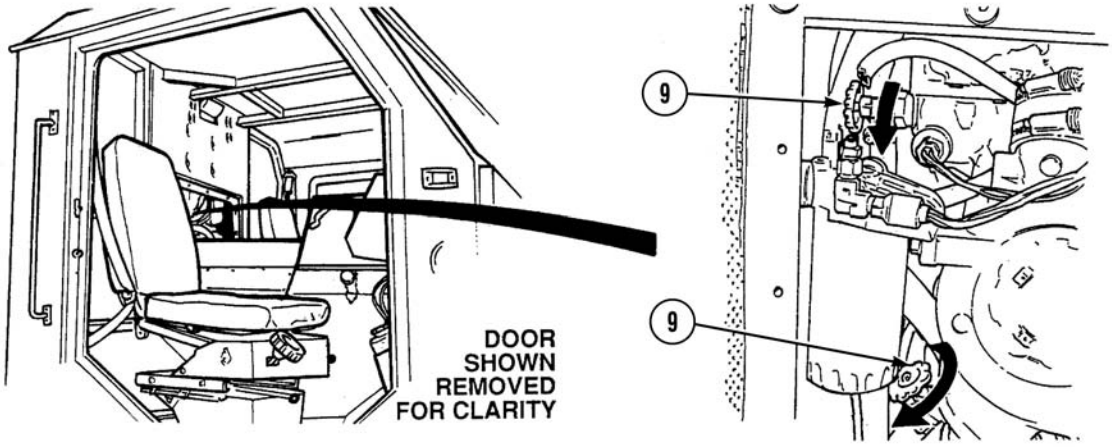
- Tag and mark hoses, connectors, and wires prior to removal to ensure proper installation.
- Cap and plug hoses upon removal.
- Remove cable ties as required.

1. Loosen center screw (1) and disconnect chassis harness MC3 connector (2).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



2. Remove hose 2522 (3) and preformed packing (4) from fitting (5). Discard preformed packing.
3. Remove hose 2524 (6) and preformed packing (7) from fitting (8). Discard preformed packing.

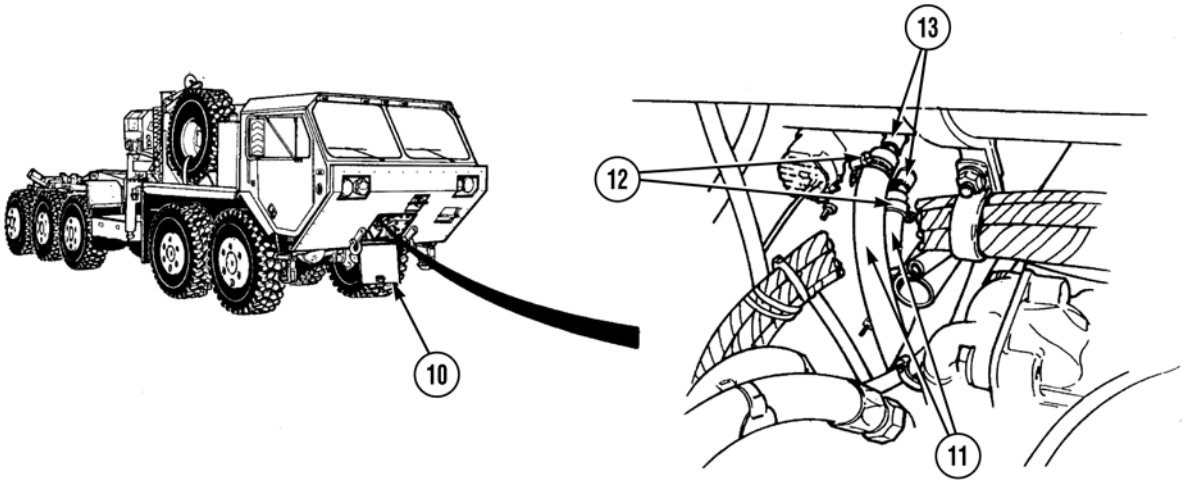


NOTE

Valves are closed by turning clockwise.

4. Close two valves (9) at right front of engine.

AC HEATER/EVAPORATOR REPLACEMENT - Continued



5. Open front access cover (10).

WARNING

- **Do not remove heater hoses when engine is hot; steam and hot coolant can escape and burn personnel.**
- **Use clean wipe rags or like material to remove heater hoses. Avoid using gloves. If hot water soaks through gloves, personnel could be burned.**
- **Coolant is slippery and can cause falls and injury. Clean up spilled coolant immediately.**

CAUTION

As hoses are removed, plug all hoses and flanges to keep out foreign matter. Failure to comply may cause damage to equipment.

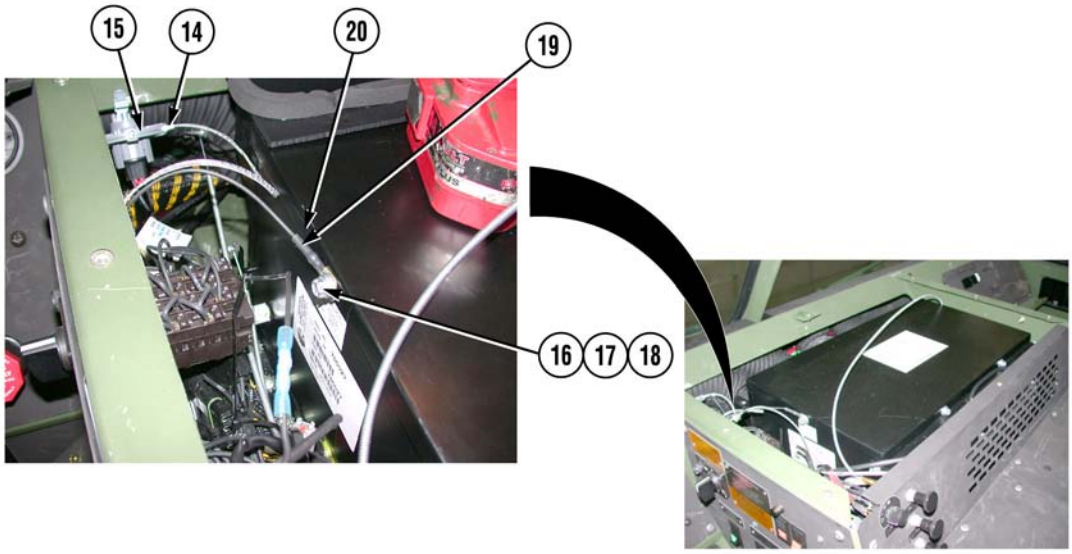
NOTE

Approximately one pint (0.47 L) of coolant will drain from heater after hoses are removed.

6. Position drain pan under two heater hoses (11).

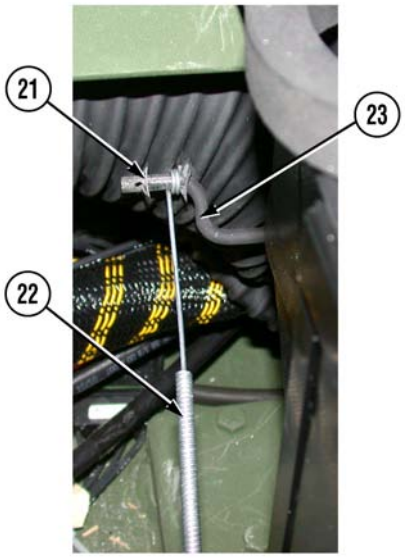
7. Loosen two clamps (12) and remove heater hoses (11) from flanges (13).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



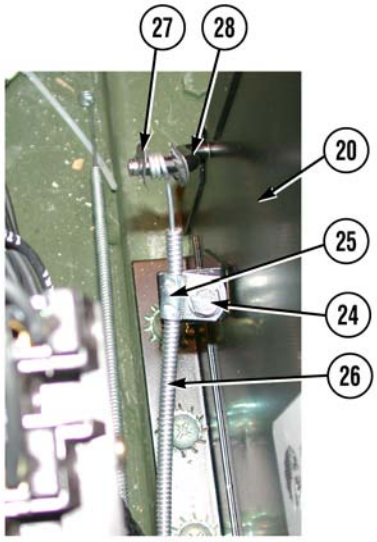
8. Unplug optic ribbon (14) from light source (15).

9. Remove screw (16), lockwasher (17), washer (18), and ground wire (19) from heater/evaporator (20). Discard lockwasher.

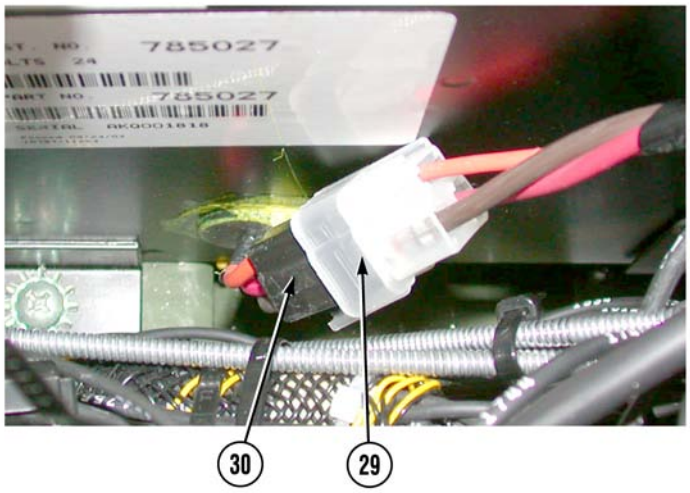


10. Remove speed nut (21) and AC cable (22) from damper control arm (23).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



11. Remove screw (24) and retainer (25) from heater/evaporator (20).
12. Remove retainer (25) from AC defrost cable (26).
13. Remove speed nut (27) and AC defrost cable (26) from control arm (28).



14. Disconnect connector (29) from connector (30).

AC HEATER/EVAPORATOR REPLACEMENT - Continued

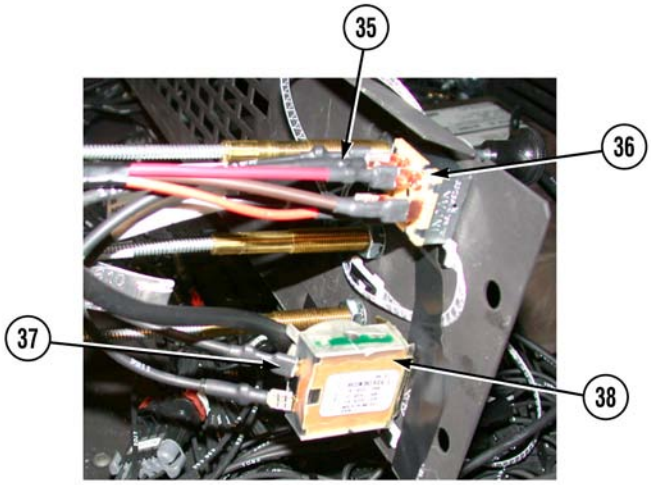




CAUTION

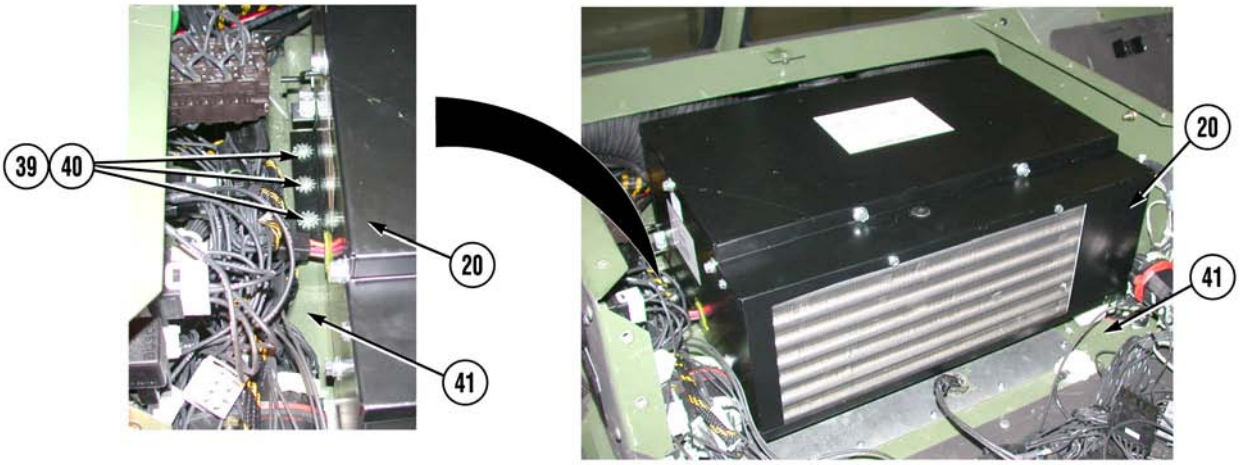
Remove temperature probe slowly from heater/evaporator. Failure to comply may result in damage to temperature probe.

15. Remove temperature probe (31) from heater/evaporator (20).
16. Remove four screws (32) and center cover (33) from console (34).



17. Remove wire 1082 (35) from terminal B of fan control switch (36).
18. Remove wire 1156 (37) from OUT terminal of temperature control switch (38).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



19. Remove six screws (39) and lockwashers (40) from heater/evaporator (20) and cab (41). Discard lockwashers.

WARNING

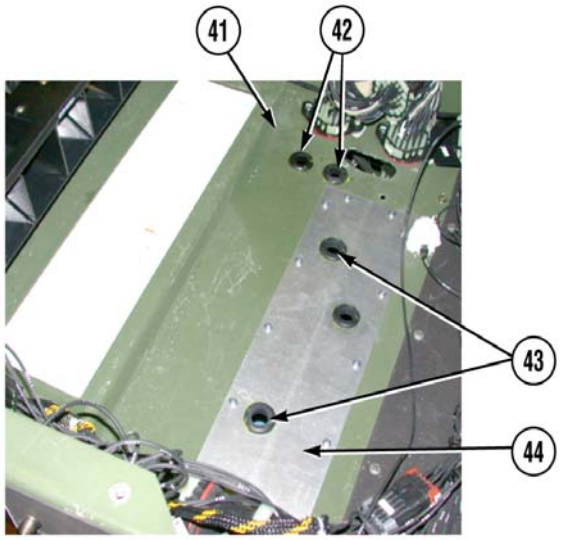
Do not remove heater/evaporator without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

CAUTION

Use extreme care when removing heater/evaporator from cab. Failure to comply may result in damage to equipment.

20. With the aid of an assistant, remove heater/evaporator (20) from cab (41).

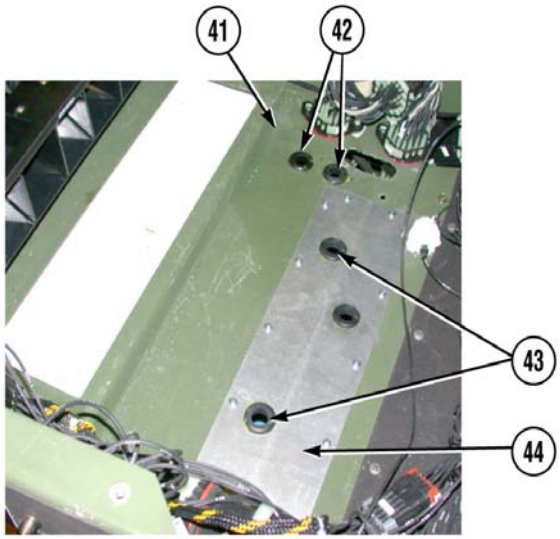
AC HEATER/EVAPORATOR REPLACEMENT - Continued



21. Remove two grommets (42) from cab (41).
22. Remove two grommets (43) from plate (44).

AC HEATER/EVAPORATOR REPLACEMENT - Continued

INSTALLATION



1. Install two grommets (43) on plate (44).
2. Install two grommets (42) on cab (41).

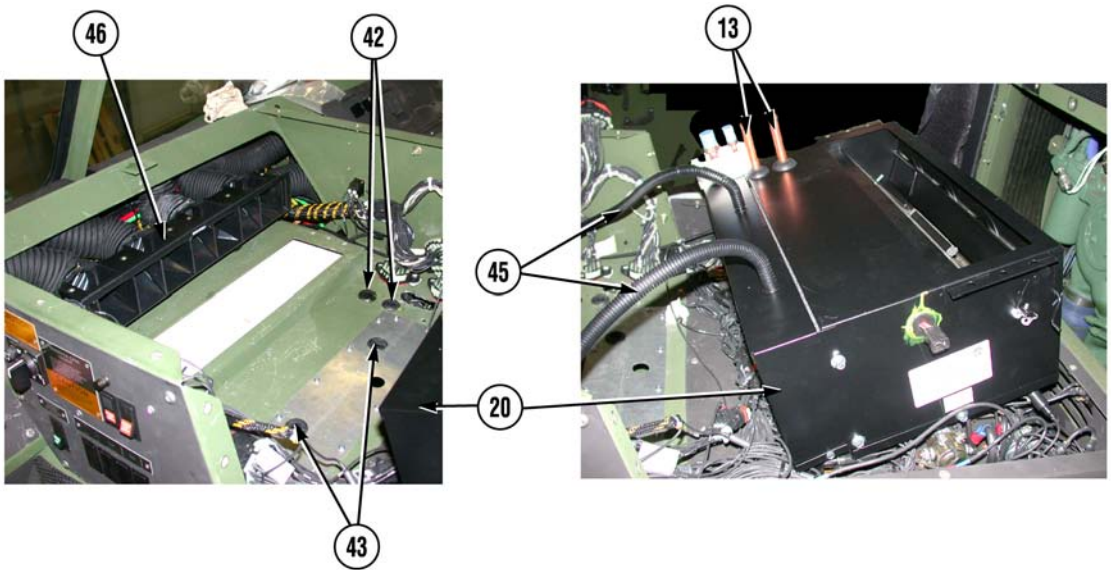


WARNING

Do not install heater/evaporator without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

3. With the aid of an assistant, position heater/evaporator (20) in cab (41).

AC HEATER/EVAPORATOR REPLACEMENT - Continued

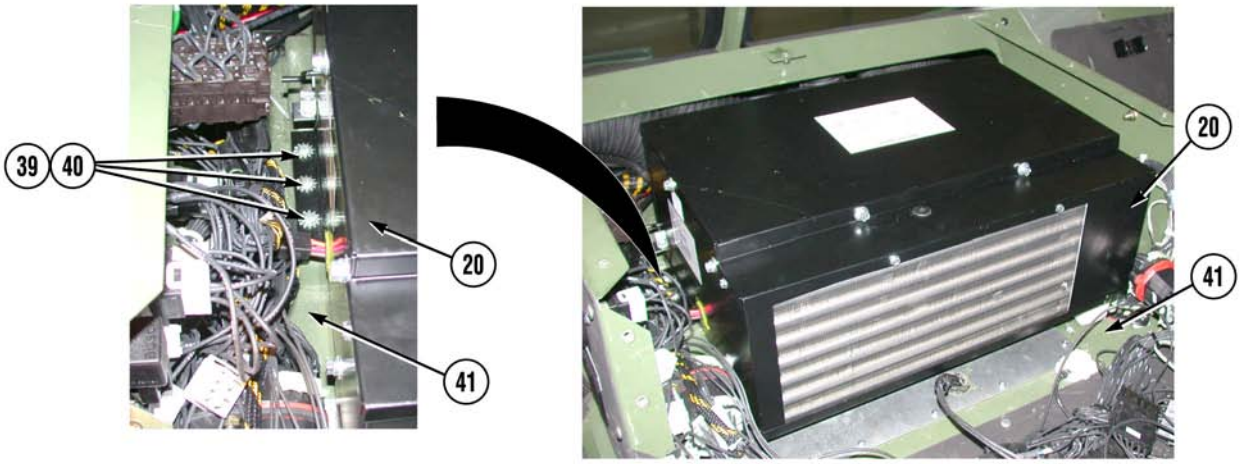


4. Coat four grommets (42 and 43) with soap solution.

CAUTION

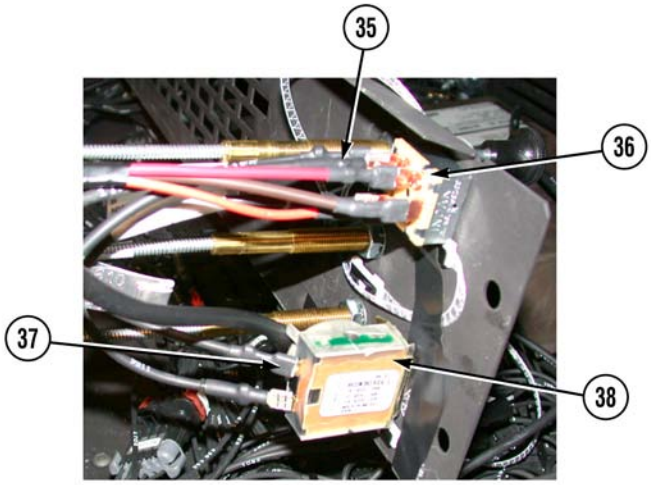
Ensure that grommets are not dislodged during installation of heater/evaporator. If grommets are not positioned properly flanges and drain hoses could be damaged.

5. With the aid of an assistant, position two flanges (13) through grommets (42) and drain hoses (45) through grommets (43) while positioning lower plenum (46) on heater/evaporator (20).



6. Install heater/evaporator (20) in cab (41) with six lockwashers (40) and screws (39).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



7. Install wire 1156 (37) on OUT terminal of temperature control switch (38).
8. Install wire 1082 (35) on terminal B of fan control switch (36).





9. Install center cover (33) on console (34) with four screws (32).

CAUTION

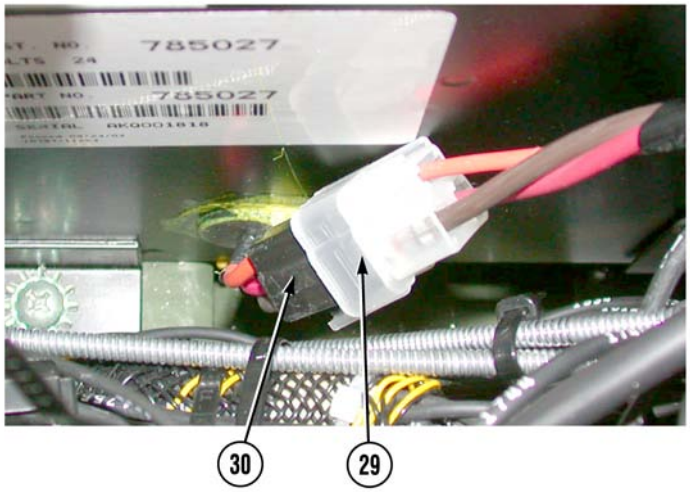
- **Do not puncture temperature probe. Failure to comply will cause gas in tube to leak out.**
- **Install temperature probe slowly into heater/evaporator. Failure to comply may result in damage to temperature probe.**

NOTE

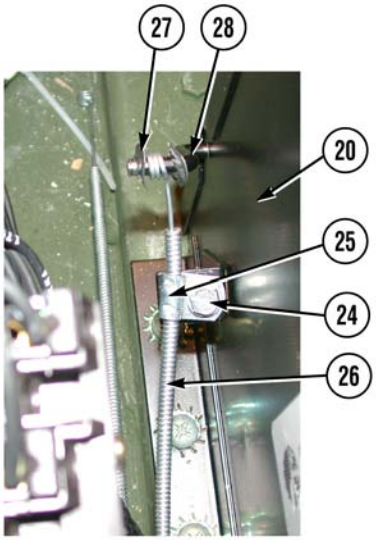
Temperature control switch temperature probe is installed correctly when it is inserted into the AC evaporator core until it touches bottom of the insertion hole.

10. Slowly slide temperature probe (31) into heater/evaporator (20).

AC HEATER/EVAPORATOR REPLACEMENT - Continued

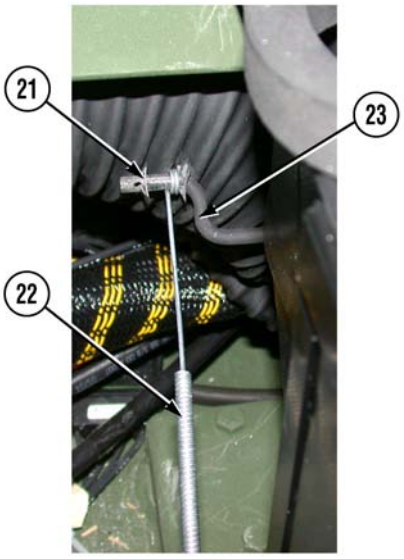


11. Connect connector (29) to connector (30).

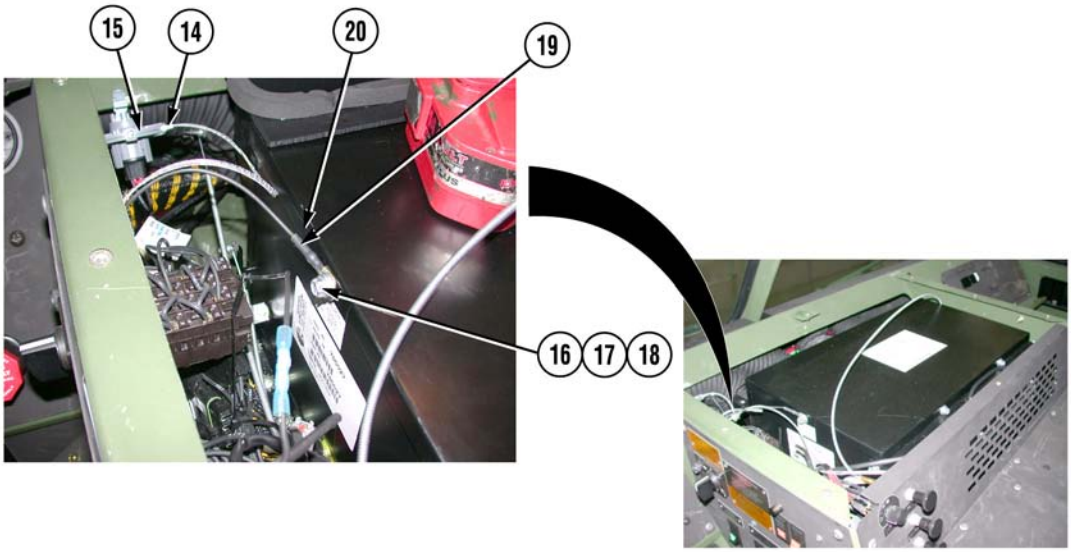


12. Install AC defrost cable (26) on control arm (28) with speed nut (27).
13. Place retainer (25) on AC defrost cable (26).
14. Install retainer (25) on heater/evaporator (20) with screw (24).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



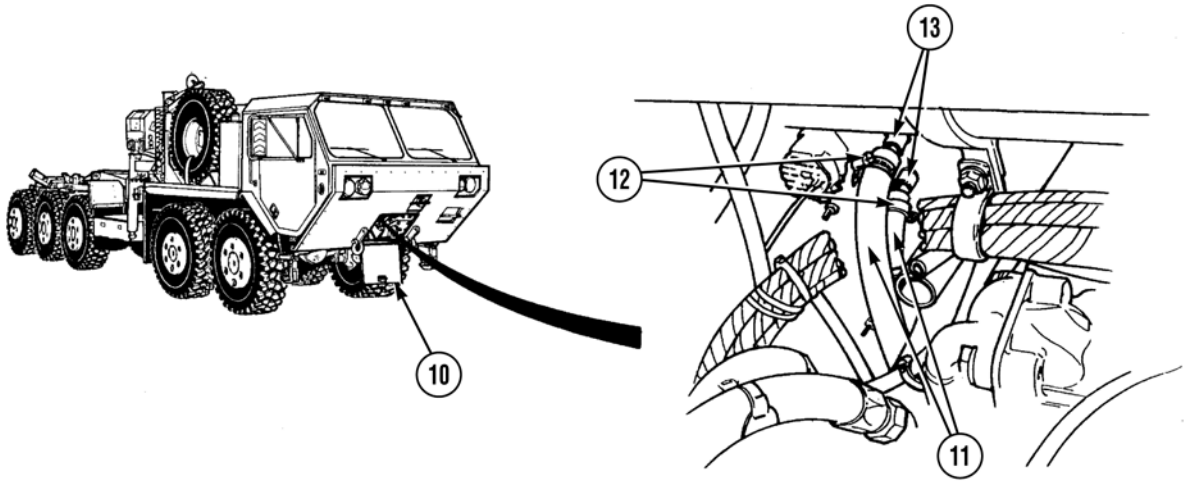
15. Install AC cable (22) on damper control arm (23) with speed nut (21).



16. Install ground wire (19) on heater/evaporator (20) with washer (18), lockwasher (17), and screw (16).

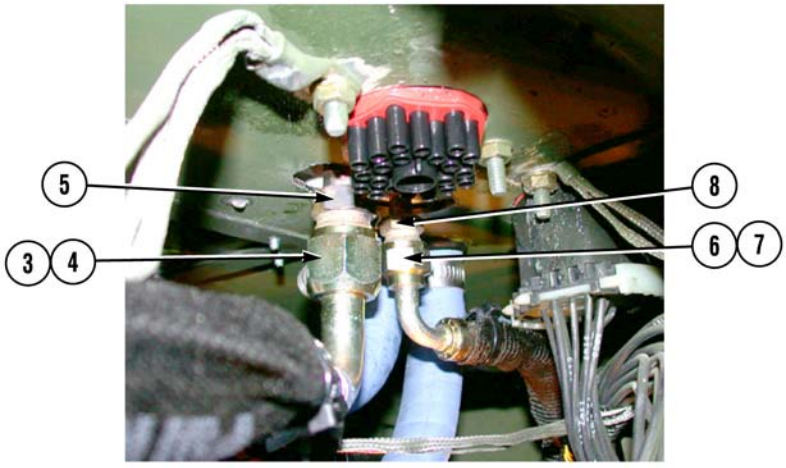
17. Plug optic ribbon (14) into light source (15).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



18. Install two heater hoses (11) on flanges (13) and tighten clamps (12).

19. Close front access cover (10).



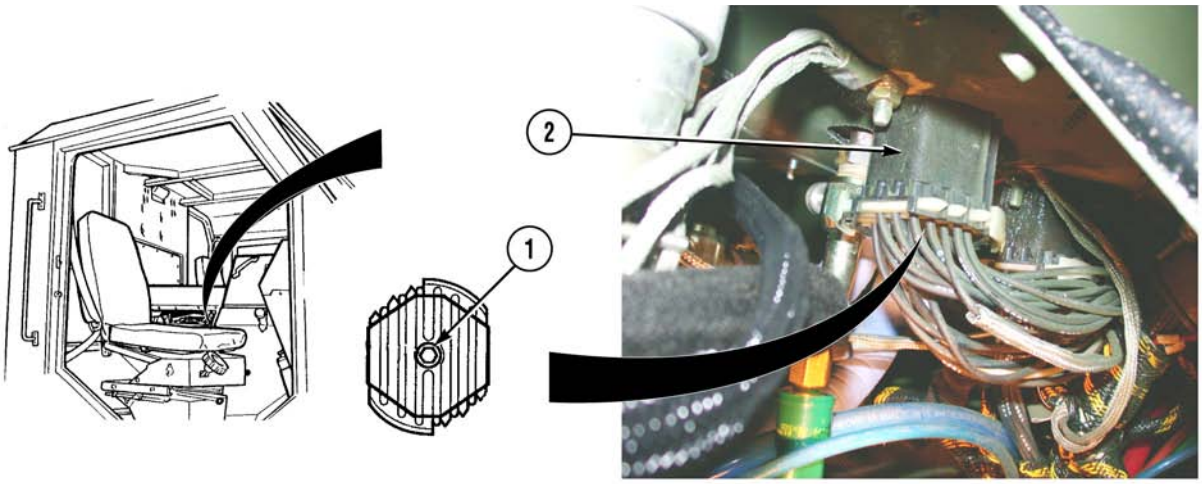
NOTE

- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

20. Install preformed packing (7) and hose 2524 (6) on fitting (8). Torque hose (6) to 11-13 ft-lbs. (15-18 N•m).

21. Install preformed packing (4) and hose 2522 (3) on fitting (5). Torque hose (3) to 18-22 ft-lbs. (24-30 N•m).

AC HEATER/EVAPORATOR REPLACEMENT - Continued



22. Connect chassis harness MC3 connector (2) and tighten center screw (1).

FOLLOW-ON MAINTENANCE

1. Install heater/defroster tubing (upper plenums) (TM 9-2320-364-20).
2. Install AC heater cable (WP 0032).
3. Install cab engine access panel (TM 9-2320-364-20).
4. Fill radiator (TM 9-2320-364-20).
5. Connect batteries (TM 9-2320-364-20).
6. Charge AC system (WP 0053).
7. Perform leak test inspection (WP 0052).
8. Start engine and warm up to normal operating temperature (TM 9-2320-364-10).
9. Check operation of heater/evaporator (WP 0004).
10. Check heater hoses for leaks.
11. Shut off engine (TM 9-2320-364-10).

END OF WORK PACKAGE

AC HIGH PRESSURE SWITCH REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Left side noise panel and rubber flap removed (WP 0051).
Batteries disconnected (TM 9-2320-364-20).

Tools and Special Tools
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic (Item 9, Appendix F)

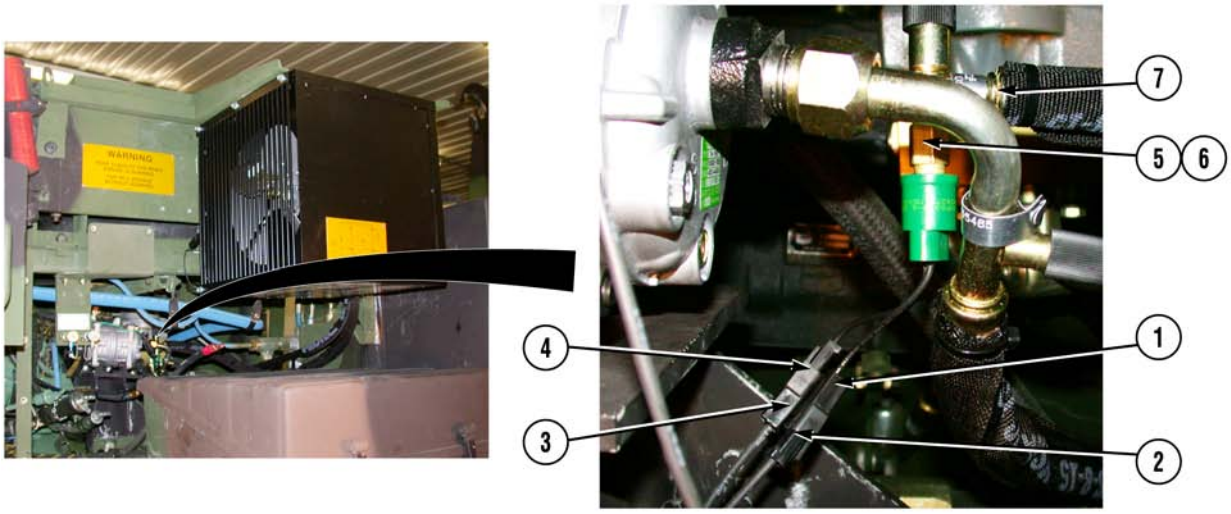
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 13, Appendix E)
Preformed Packing (Item 16, Figure 4, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC HIGH PRESSURE SWITCH REPLACEMENT - Continued

REMOVAL



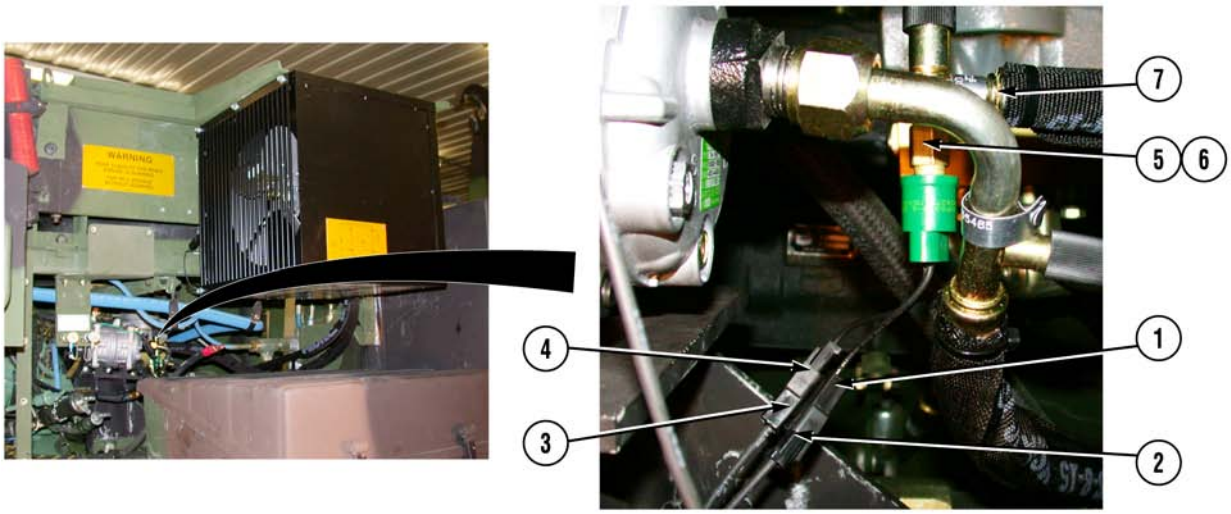
NOTE

- Tag and mark connectors prior to removal to ensure proper installation.
- Remove cable ties as required.

1. Disconnect connector (1) from connector (2).
2. Disconnect connector (3) from connector (4).
3. Remove high pressure switch (5) and preformed packing (6) from hose 2521 (7). Discard preformed packing.

AC HIGH PRESSURE SWITCH REPLACEMENT - Continued

INSTALLATION



NOTE

- Lightly lubricate preformed packing with PAG oil prior to installation.
- Ensure preformed packing is in place in high pressure switch prior to installation.

1. Install preformed packing (6) and high pressure switch (5) on hose 2521 (7). Torque high pressure switch (5) to 7.5-10 ft-lbs. (10-14 N•m).

NOTE

Install cable ties as required.

2. Connect connector (3) to connector (4).
3. Connect connector (1) to connector (2).

FOLLOW-ON MAINTENANCE

1. Connect batteries (TM 9-2320-364-20).
2. Install left side noise panel and rubber flap (WP 0051).
3. Perform leak test inspection (WP 0052).

END OF WORK PACKAGE

AC HOSES REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Hose Assembly # 6 2524 Removal

Hose Assembly # 6 2524 Installation

Hose Assembly # 8 2521 Removal

Hose Assembly # 8 2521 Installation

Hose Assembly # 10 2522 Removal

Hose Assembly # 10 2522 Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Refrigerant recovered (WP 0053).
Electronic control box (ECB) right side panel removed (TM 9-2320-364-20).
Right side noise panel removed (TM 9-2320-364-20).
Left side noise panel and rubber flap removed (WP 0051).
AC high pressure switch removed, if hose assembly #8 2521 needs to be replaced (WP 0038).
AC low pressure switch removed if hose assembly #10 2522 needs to be replaced (WP 0040).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Wheel chocks (TM 9-2320-364-20)
Wooden blocks (TM 9-2320-364-34)

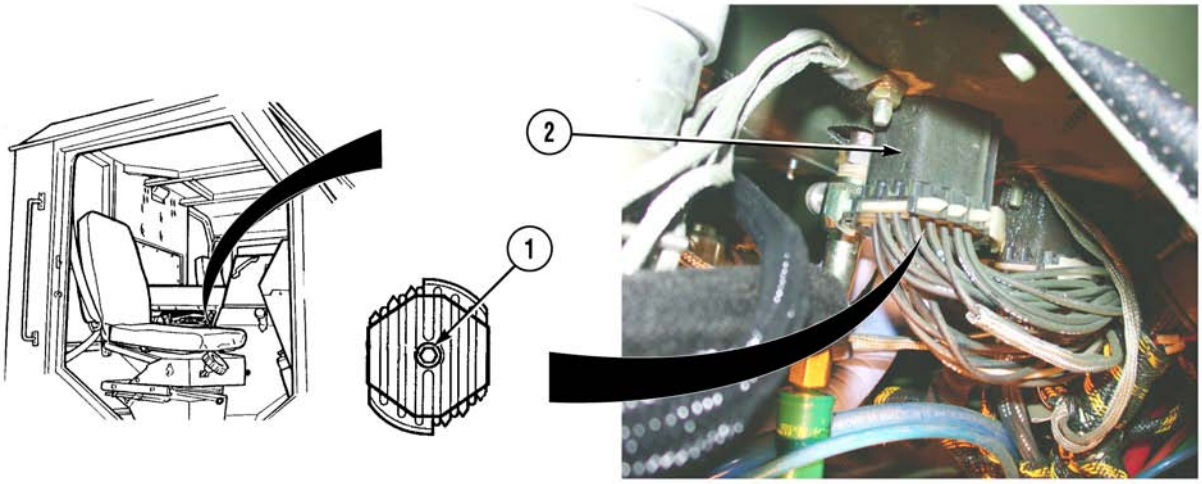
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 12, Appendix E)
Locknut (Item 8, Figure 3, Appendix G)
Preformed Packings (2) (Item 2, Figure 3, Appendix G)
Preformed Packings (2) (Item 4, Figure 3, Appendix G)
Preformed Packings (2) (Item 10, Figure 3, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer (2)

References
TM 9-2320-364-10
TM 9-2320-364-20
TM 9-2320-364-34

AC HOSES REPLACEMENT - Continued

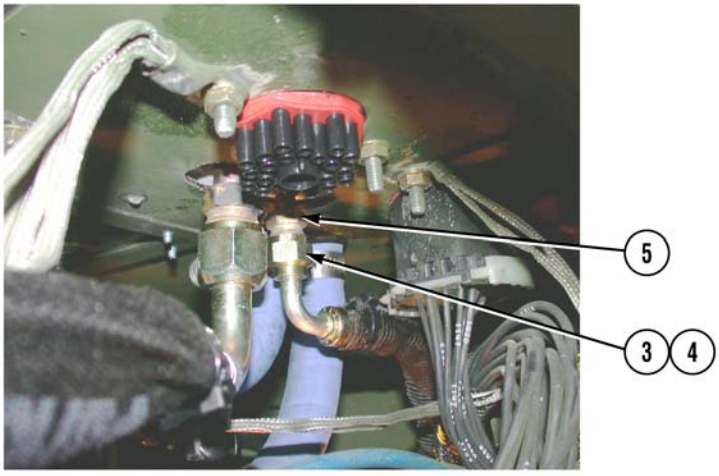
HOSE ASSEMBLY #6 2524 REMOVAL



NOTE

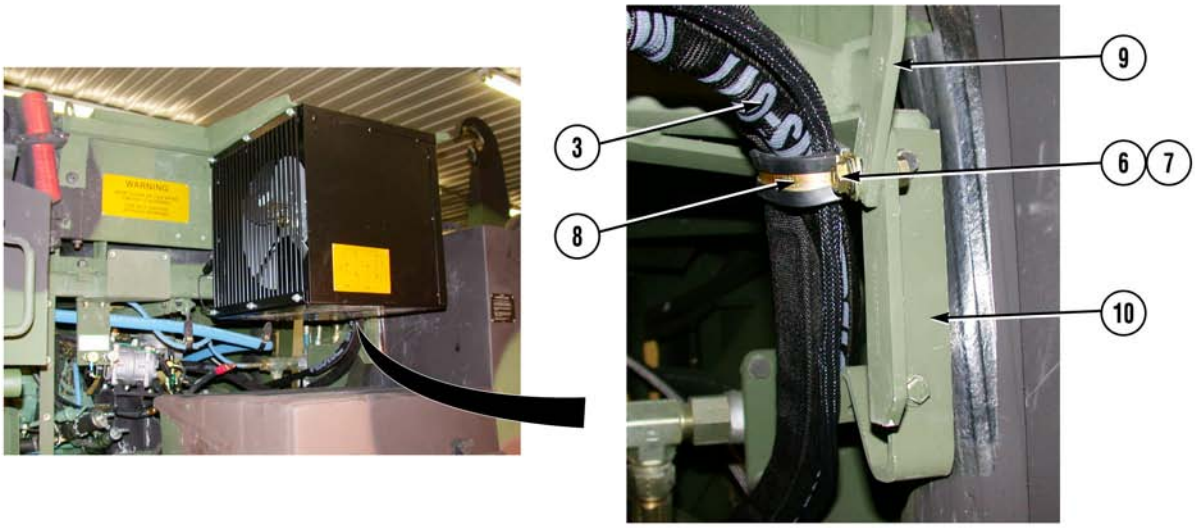
- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Remove cable ties as required to remove AC hose.
- Note routing of AC hose prior to removal to ensure proper installation.
- Tag and mark AC hoses prior to removal to ensure proper installation.
- Cap and plug hoses upon removal.

1. Loosen center screw (1) and disconnect chassis harness MC3 connector (2).



2. Remove hose 2524 (3) and preformed packing (4) from fitting (5). Discard preformed packing.

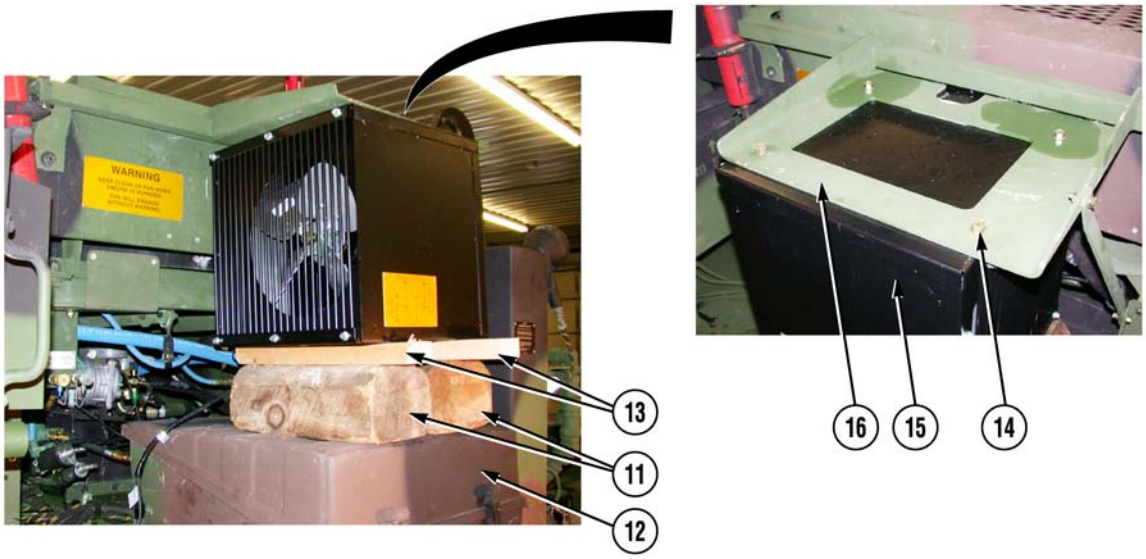
AC HOSES REPLACEMENT - Continued



3. Remove locknut (6), screw (7), cushion clip (8), and support bar (9) from stabilizer bracket (10). Discard locknut.

4. Remove hose 2524 (3) from cushion clip (8).

AC HOSES REPLACEMENT - Continued



NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to aid in positioning of condenser to access AC hose.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

5. Position two wheel chocks (11) on top of battery box cover (12).

NOTE

Wooden blocks used in Step 6 should be 2 by 4 by 16 in.

6. Position two wooden blocks (13) on top of two wheel chocks (11).

WARNING

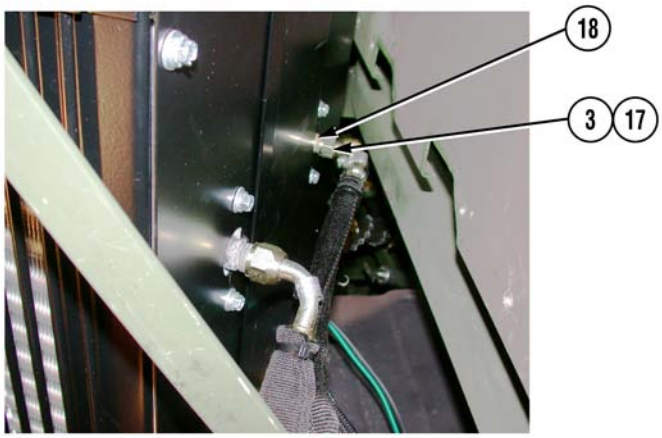
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 6.

7. With the aid of an assistant, remove four screws (14) and condenser (15) from condenser mounting bracket (16).

AC HOSES REPLACEMENT - Continued



WARNING

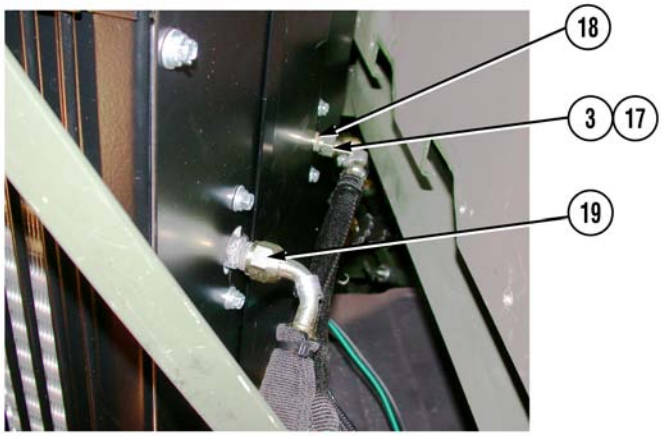
Use extreme care when moving condenser to access AC hose. Failure to comply may result in injury to personnel and/or damage to equipment.

8. Remove hose 2524 (3) and preformed packing (17) from fitting (18). Discard preformed packing.

9. Remove hose 2524 (3) from vehicle.

AC HOSES REPLACEMENT - Continued

HOSE ASSEMBLY #6 2524 INSTALLATION

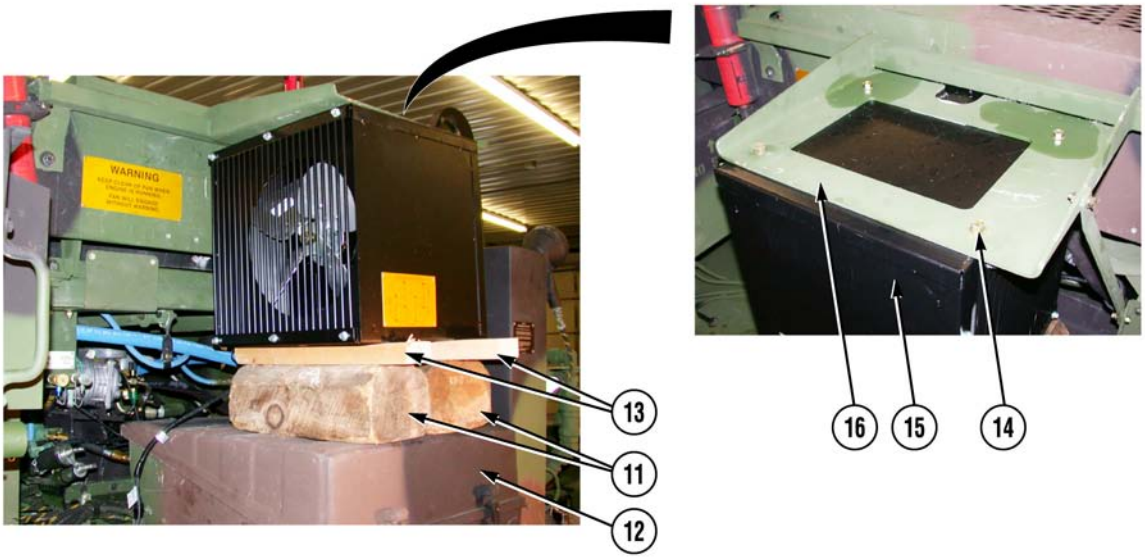


NOTE

- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Install cable ties as required.
- Route AC hose as noted prior to removal.
- Only hand tighten hose on fitting in Step 1.
- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

1. Install preformed packing (17) and hose 2524 (3) on fitting (18).

AC HOSES REPLACEMENT - Continued



WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

CAUTION

When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into the cutouts in panel. Failure to comply may result in damage to equipment.

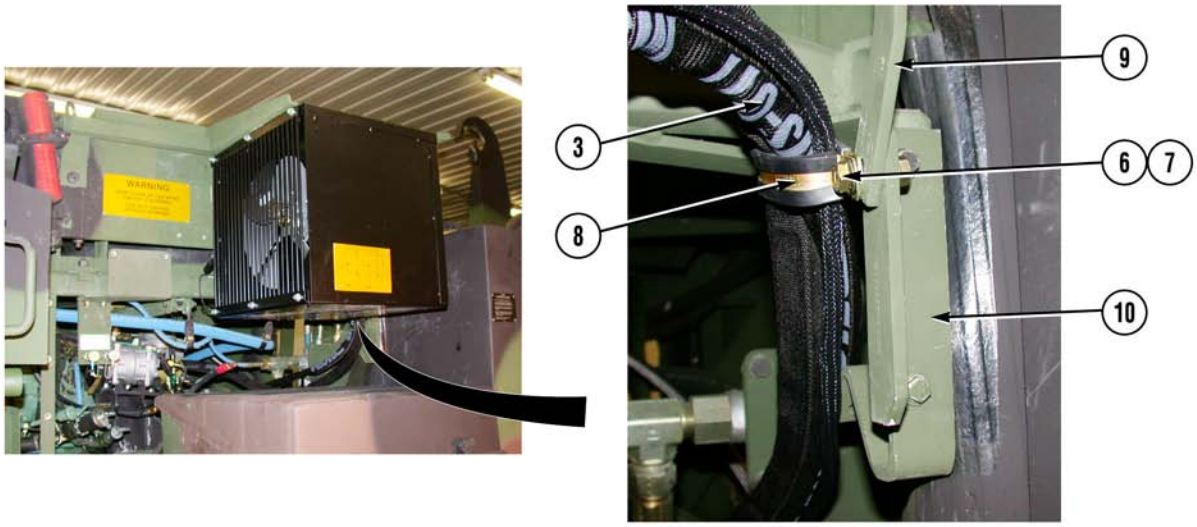
2. With the aid of an assistant, install condenser (15) on condenser mounting bracket (16) with four screws (14).

3. Check to make sure hose 2524 (3) and hose 2521 (19) are not kinked and that they are pointing downwards toward rear of vehicle at approximately 30 degrees.

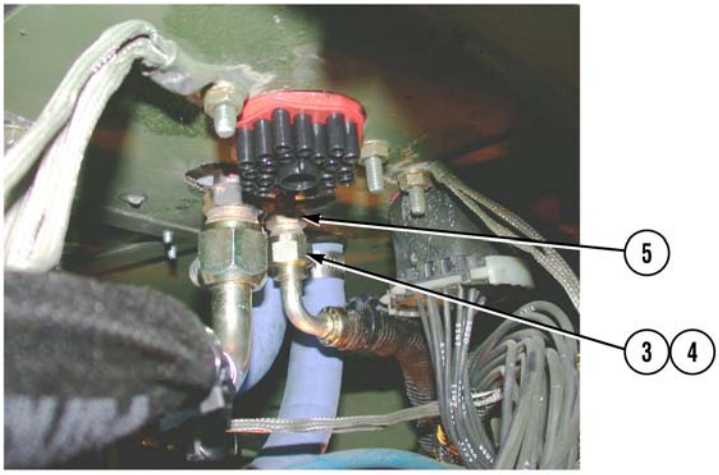
4. Torque hose 2524 (3) to 11-13 ft-lbs. (15-18 N•m).

5. Remove two wooden blocks (13) and wheel chocks (11) from top of battery box cover (12).

AC HOSES REPLACEMENT - Continued



6. Position hose 2524 (3) in cushion clip (8).
7. Install support bar (9) and cushion clip (8) on stabilizer bracket (10) with screw (7) and locknut (6).

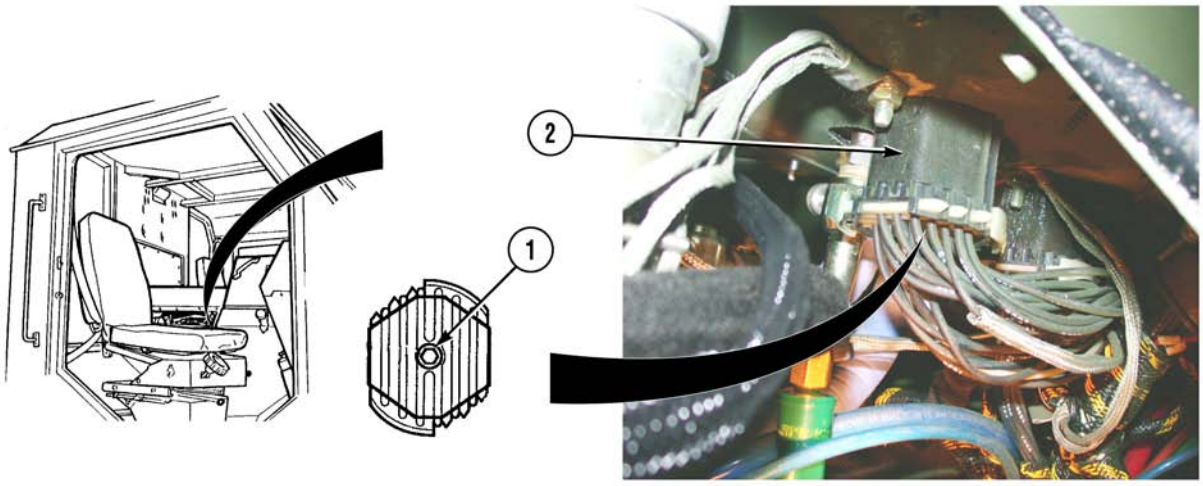


CAUTION

Ensure AC hose is routed away from exhaust manifold, exhaust pipes, and any moving parts. Failure to comply may result in damage to equipment.

8. With the aid of an assistant, route hose 2524 (3) to cab.
9. Install preformed packing (4) and hose 2524 (3) on fitting (5). Torque hose 2524 (3) to 11-13 ft-lbs. (15-18 N•m).

AC HOSES REPLACEMENT - Continued



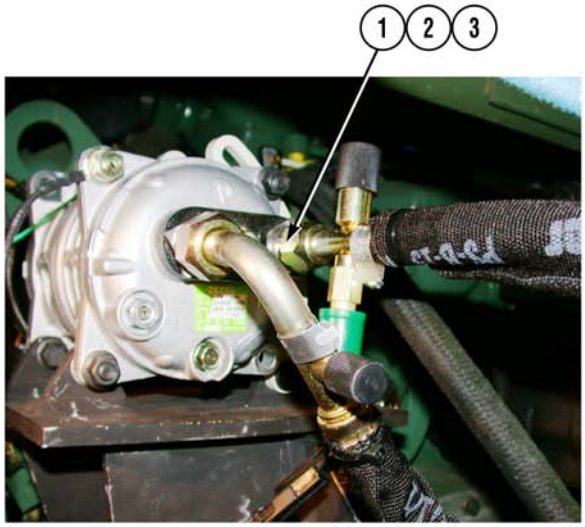
NOTE

Install cable ties as needed to secure AC hose away from moving parts.

10. Connect chassis harness MC3 connector (2) and tighten center screw (1).

AC HOSES REPLACEMENT - Continued

HOSE ASSEMBLY #8 2521 REMOVAL



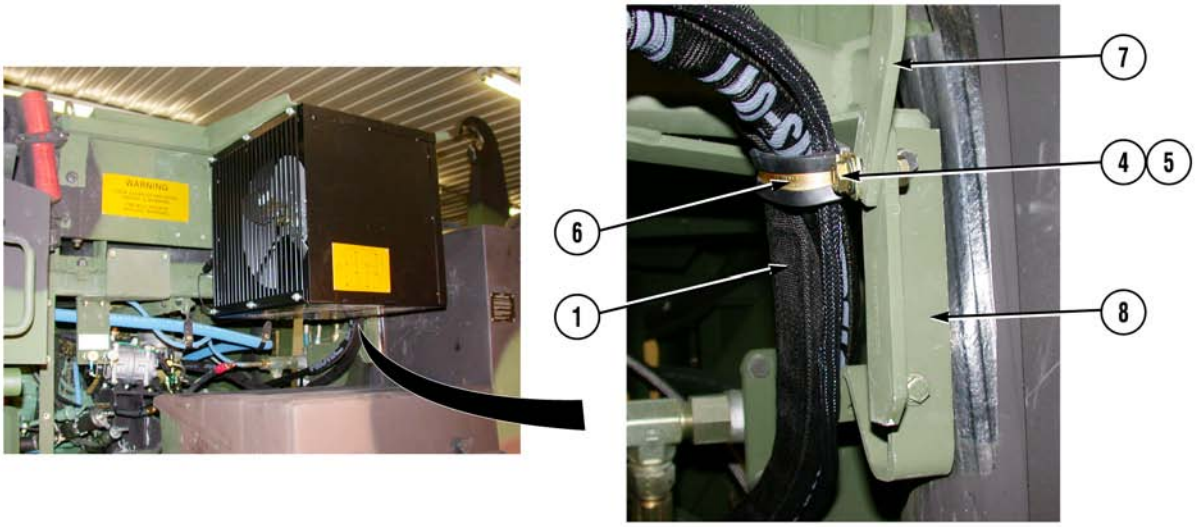


NOTE

- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Remove cable ties as required to remove AC hose.
- Note routing of AC hose prior to removal to ensure proper installation.
- Tag and mark AC hoses prior to removal to ensure proper installation.
- Cap and plug hoses upon removal.

1. Remove hose 2521 (1) and preformed packing (2) from compressor discharge fitting (3).

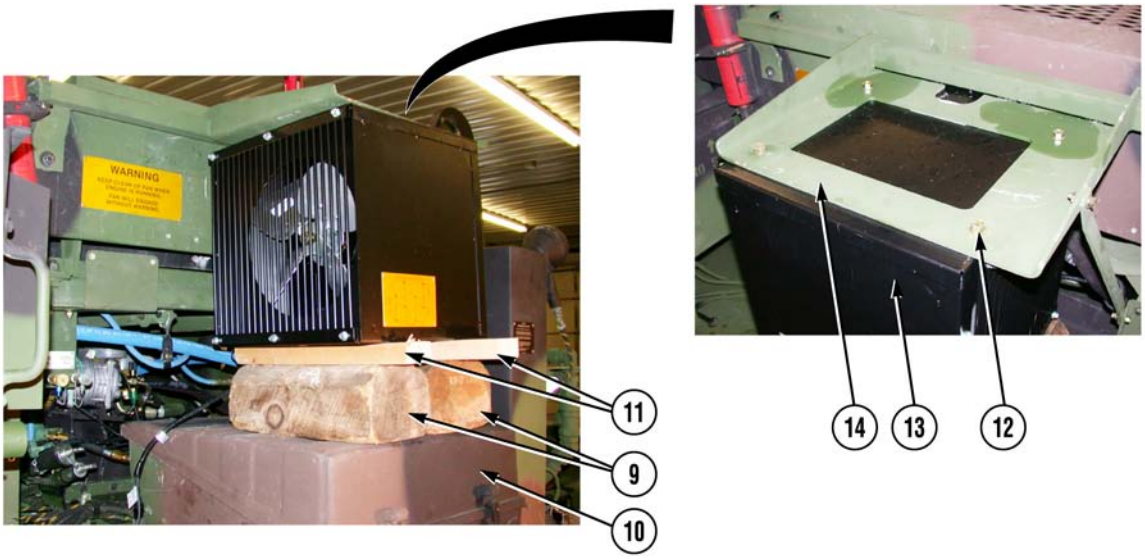
AC HOSES REPLACEMENT - Continued



2. Remove locknut (4), screw (5), cushion clip (6), and support bar (7) from stabilizer bracket (8). Discard locknut.

3. Remove hose 2521 (1) from cushion clip (6).

AC HOSES REPLACEMENT - Continued



NOTE

- Wheel chocks and wooden blocks are placed on top of battery box cover to aid in positioning of condenser to access AC hose.
- If wheel chocks are not available, use similar size material to support condenser. Support needs to be approximately 5.75 by 15.5 by 15.5 in.

4. Position two wheel chocks (9) on top of battery box cover (10).

NOTE

Wooden blocks used in Step 5 should be 2 by 4 by 16 in.

5. Position two wooden blocks (11) on top of two wheel chocks (9).

WARNING

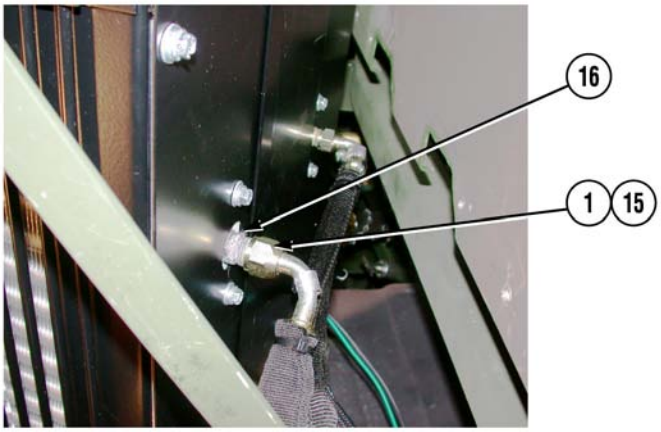
AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

NOTE

After being removed from condenser mounting bracket, condenser will be positioned on top of two wooden blocks that were installed in Step 5.

6. With the aid of an assistant, remove four screws (12) and condenser (13) from condenser mounting bracket (14).

AC HOSES REPLACEMENT - Continued



WARNING

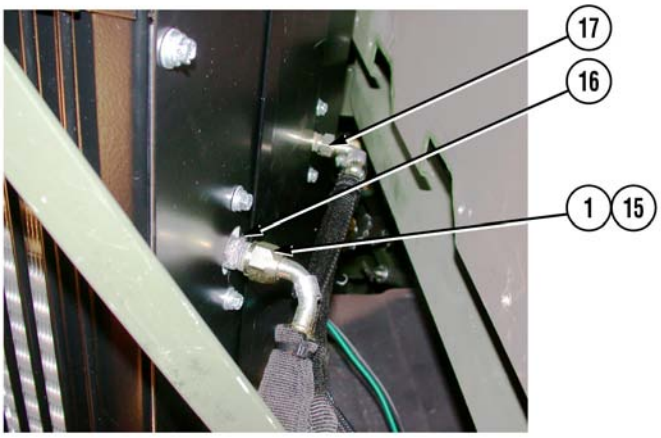
Use extreme care when moving condenser to access AC hose. Failure to comply may result in injury to personnel and/or damage to equipment.

7. Remove hose 2521 (1) and preformed packing (15) from fitting (16). Discard preformed packing.

8. Remove hose 2521 (1) from vehicle.

AC HOSES REPLACEMENT - Continued

HOSE ASSEMBLY #8 2521 INSTALLATION

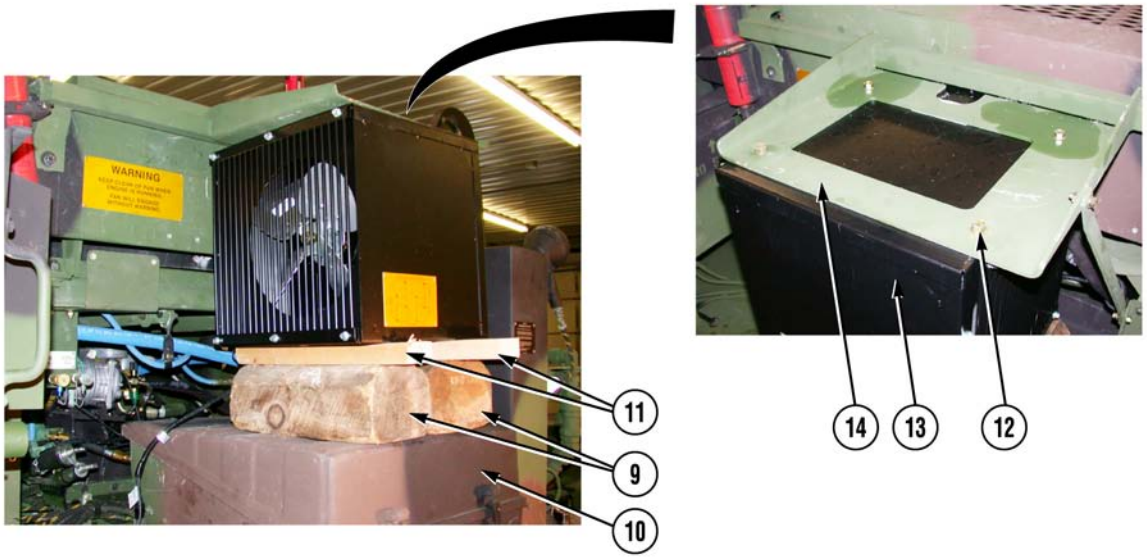


NOTE

- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Install cable ties as required.
- Route AC hose as noted prior to removal.
- Only hand tighten hose on fitting in Step 1.
- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

1. Install preformed packing (15) and hose 2521 (1) on fitting (16).

AC HOSES REPLACEMENT - Continued



WARNING

AC condenser assembly weighs 75 lbs. (34 kg). Do not lift AC condenser assembly without the aid of an assistant. Failure to comply may result in injury to personnel and/or damage to equipment.

CAUTION

When installing condenser on condenser mounting bracket, two hoses and wire harness must be carefully tucked into the cutouts in panel. Failure to comply may result in damage to equipment.

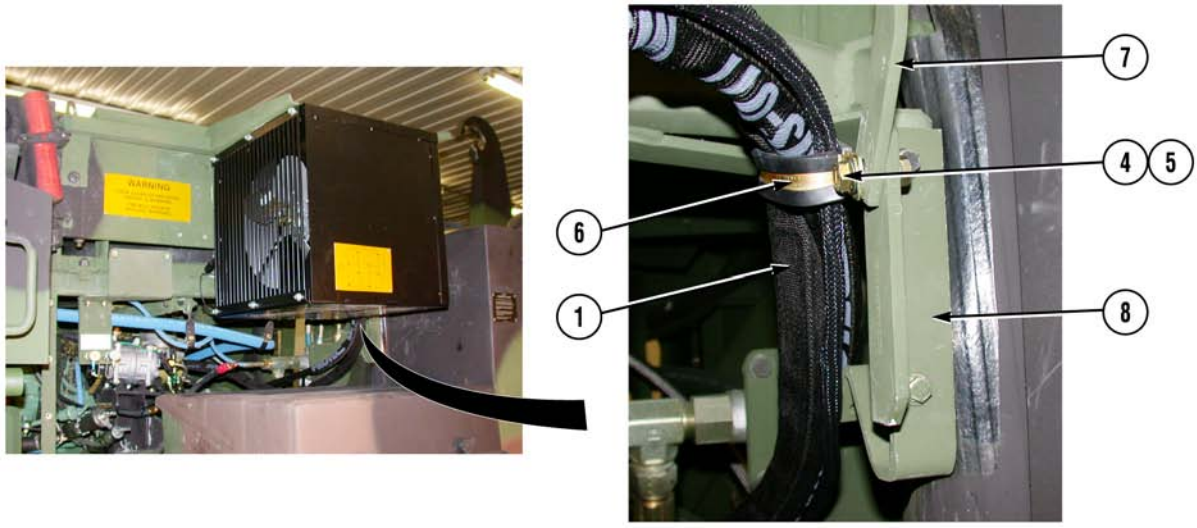
2. With the aid of an assistant, install condenser (13) on condenser mounting bracket (14) with four screws (12).

3. Check to make sure hose 2521 (1) and hose 2524 (17) are not kinked and that they are pointing downwards toward rear of vehicle at approximately 30 degrees.

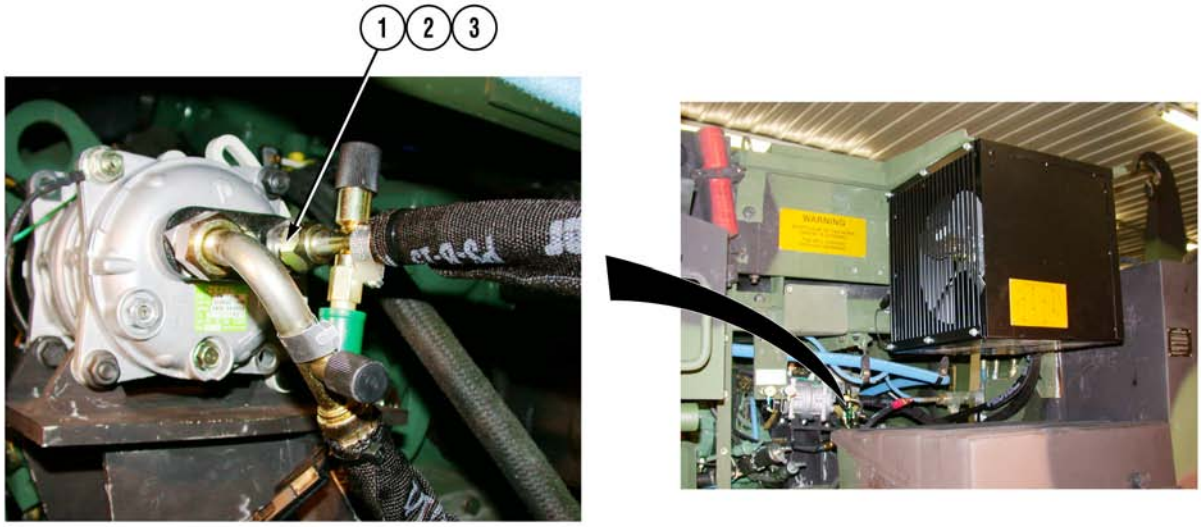
4. Torque hose 2521 (1) to 15-18 ft-lbs. (20-24 N•m).

5. Remove two wooden blocks (11) and wheel chocks (9) from top of battery box cover (10).

AC HOSES REPLACEMENT - Continued



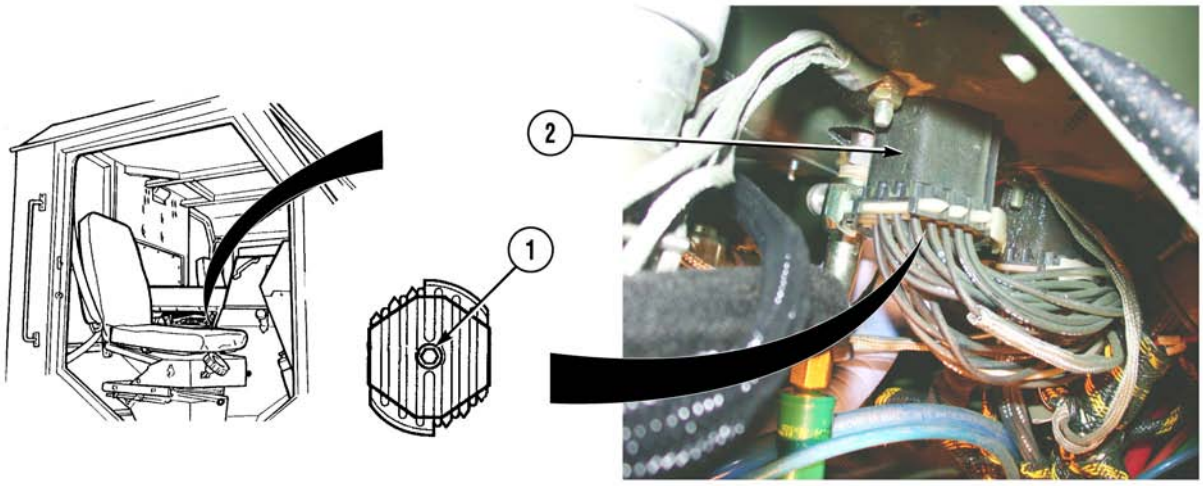
6. Position hose 2521 (1) in cushion clip (6).
7. Install support bar (7) and cushion clip (6) on stabilizer bracket (8) with screw (5) and locknut (4).



8. Install preformed packing (2) and hose 2521 (1) on compressor discharge fitting (3). Torque hose 2521 (1) to 15-18 ft-lbs. (20-24 N•m).

AC HOSES REPLACEMENT - Continued

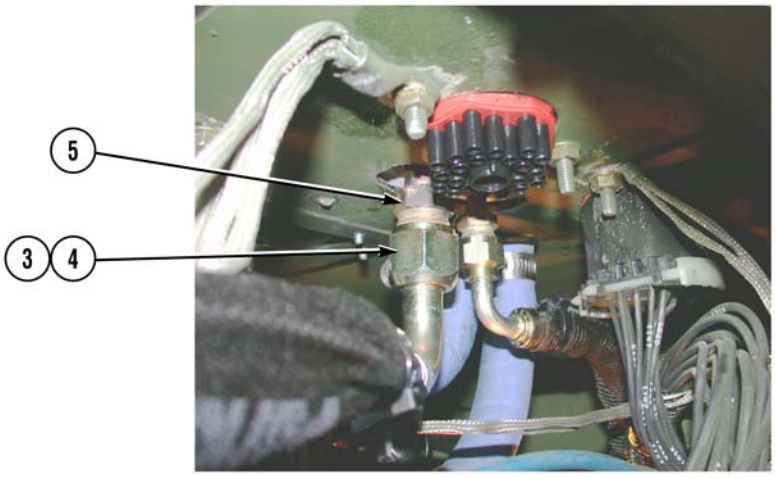
HOSE ASSEMBLY #10 2522 REMOVAL



NOTE

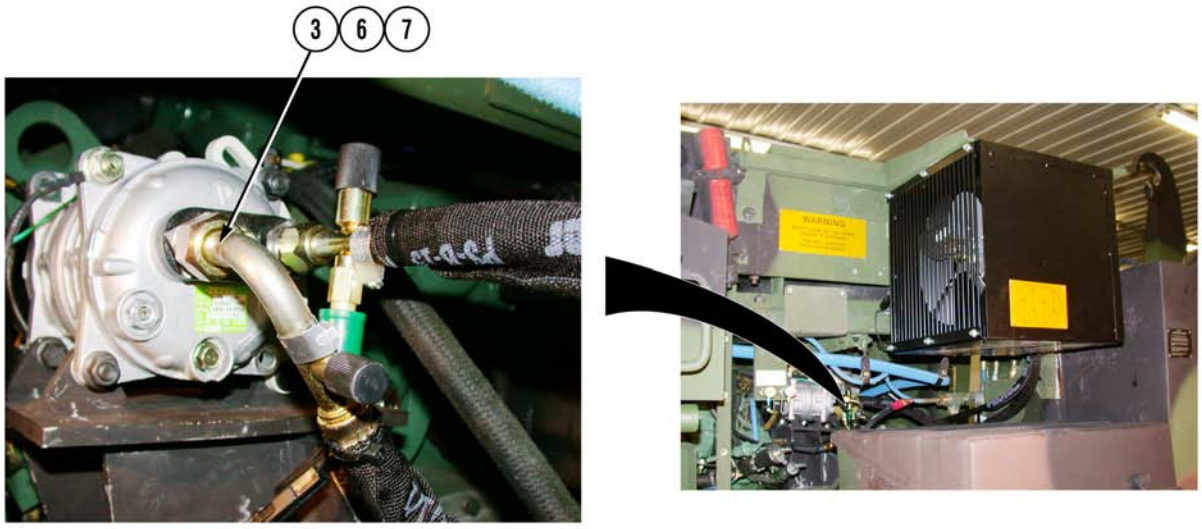
- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Remove cable ties as required to remove AC hose.
- Note routing of AC hose prior to removal to ensure proper installation.
- Tag and mark AC hoses prior to removal to ensure proper installation.
- Cap and plug hoses upon removal.

1. Loosen center screw (1) and disconnect chassis harness MC3 connector (2).



2. Remove hose 2522 (3) and preformed packing (4) from fitting (5). Discard preformed packing.

AC HOSES REPLACEMENT - Continued

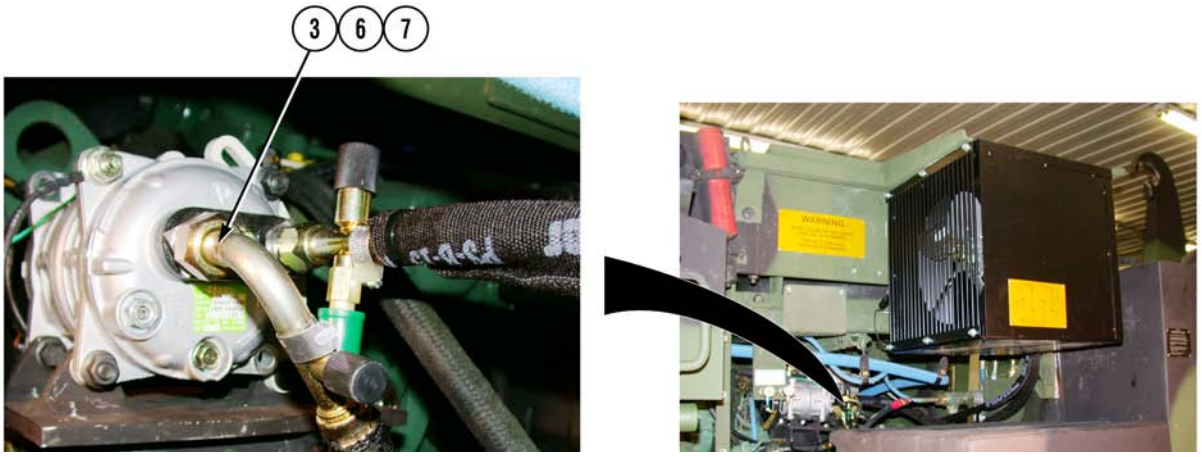


3. Remove hose 2522 (3) and preformed packing (6) from compressor suction fitting (7). Discard preformed packing.

4. Remove hose 2522 (3) from vehicle.

AC HOSES REPLACEMENT - Continued

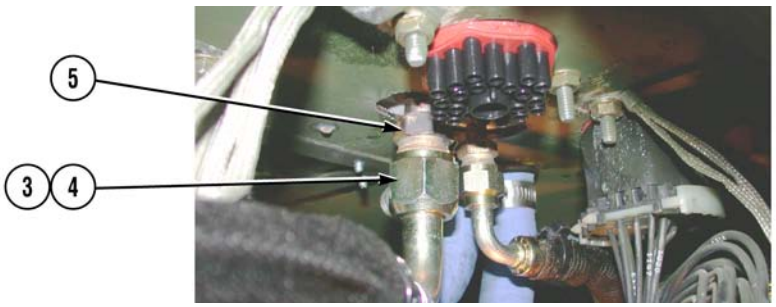
HOSE ASSEMBLY #10 2522 INSTALLATION



NOTE

- Refer to WP 0055 and Appendix A, Figure A-2, for routing and location of AC hoses.
- Install cable ties as required.
- Route AC hose as noted prior to removal.
- Lightly lubricate preformed packings with PAG oil prior to installation.
- Ensure preformed packings are in place in hoses prior to installation.

1. Install preformed packing (6) and hose 2522 (3) on compressor suction fitting (7). Torque hose 2522 (3) to 18-22 ft-lbs. (24-30 N•m).



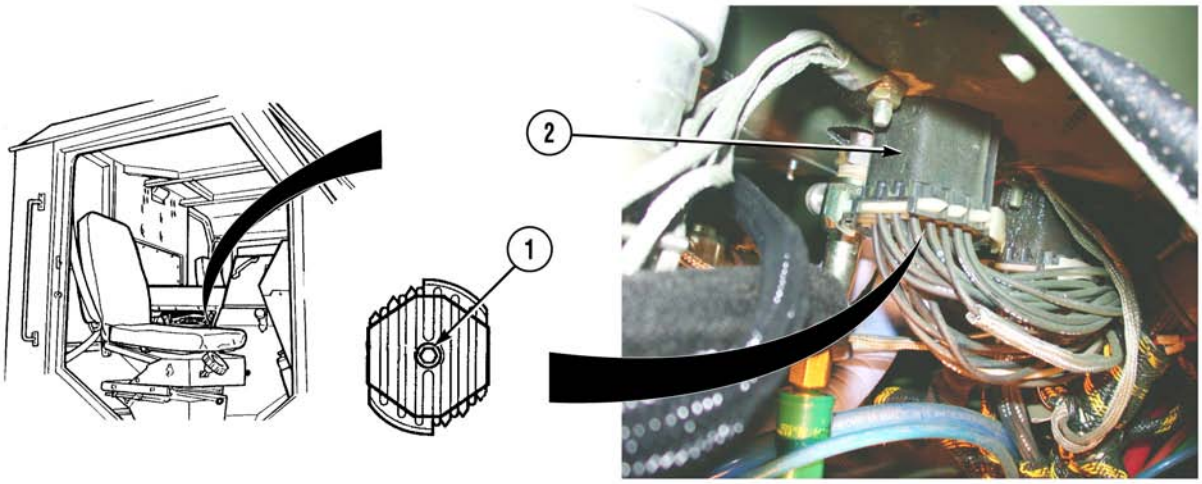
CAUTION

Ensure AC hose is routed away from exhaust manifold, exhaust pipes, and any moving parts. Failure to comply may result in damage to equipment.

2. With the aid of an assistant, route hose 2522 (3) to cab.

3. Install preformed packing (4) and hose 2522 (3) on fitting (5). Torque hose 2522 (3) to 18-22 ft-lbs. (24-30 N•m).

AC HOSES REPLACEMENT - Continued



NOTE

Install cable ties as needed to secure AC hose away from moving parts.

4. Connect chassis harness MC3 connector (2) and tighten center screw (1).

FOLLOW-ON MAINTENANCE

1. Install AC low pressure switch if hose assembly #10 2522 was replaced (WP 0040).
2. Install AC high pressure switch if hose assembly #8 2521 was replaced (WP 0038).
3. Install left side noise panel and rubber flap (WP 0051).
4. Install right side noise panel (TM 9-2320-364-20).
5. Install electronic control box (ECB) right side panel (TM 9-2320-364-20).
6. Charge AC system (WP 0053).
7. Perform leak test inspection (WP 0052).

END OF WORK PACKAGE

AC LOW PRESSURE SWITCH REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Electronic control box (ECB) right side panel removed (TM 9-2320-364-20).

Tools and Special Tools
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

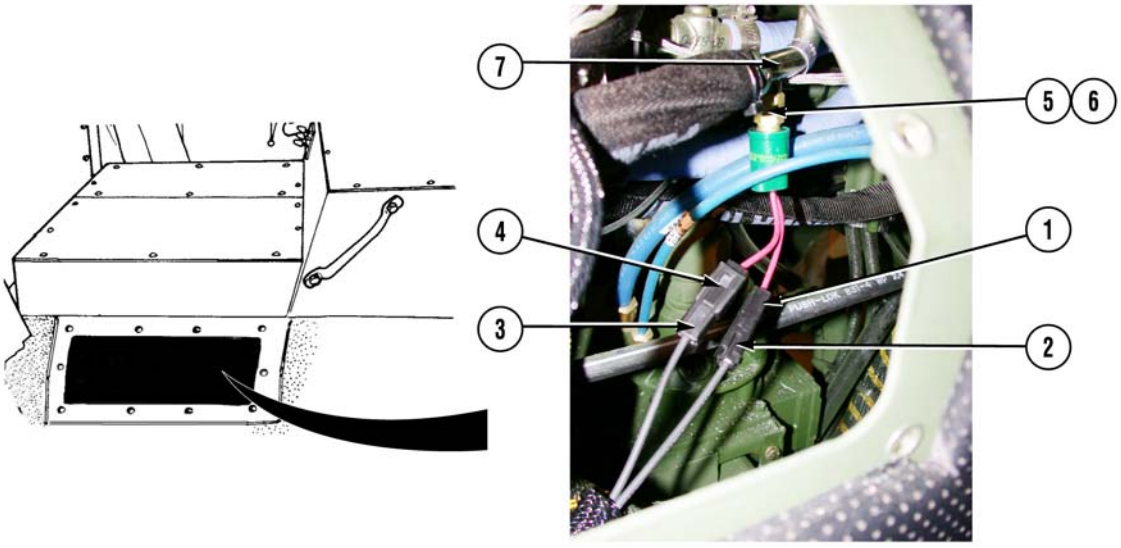
Materials/Parts
Oil, PAG 46V (Item 3, Appendix E)
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 13, Appendix E)
Preformed Packing (Item 16, Figure 4, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC LOW PRESSURE SWITCH REPLACEMENT - Continued

REMOVAL



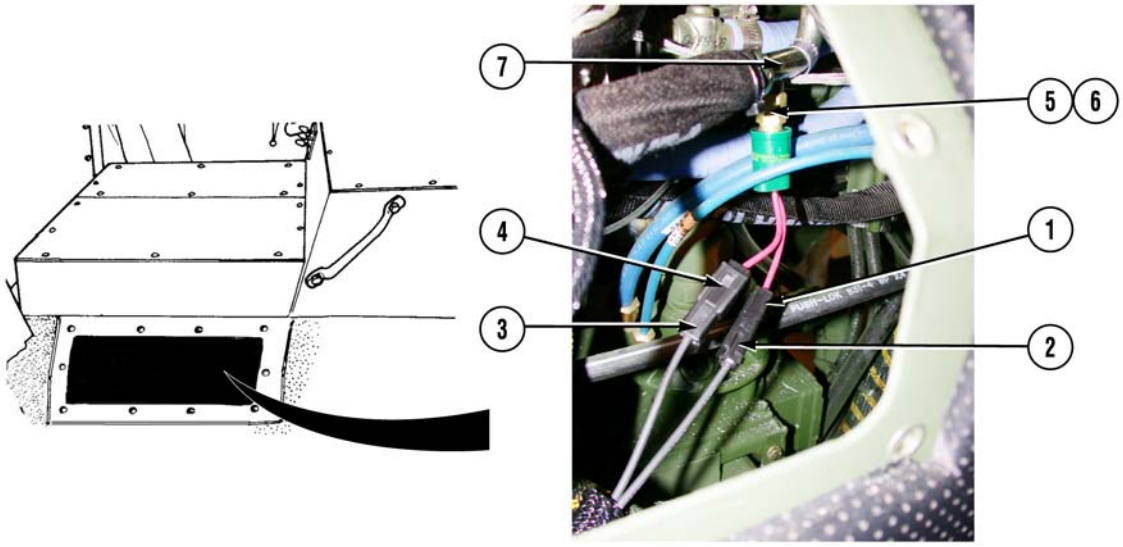
NOTE

- Tag and mark connectors prior to removal to ensure proper installation.
- Remove cable ties as required.

1. Disconnect connector (1) from connector (2).
2. Disconnect connector (3) from connector (4).
3. Remove low pressure switch (5) and preformed packing (6) from hose 2522 (7). Discard preformed packing.

AC LOW PRESSURE SWITCH REPLACEMENT - Continued

INSTALLATION



NOTE

- Lightly lubricate preformed packing with PAG oil prior to installation.
- Ensure preformed packing is in place in low pressure switch prior to installation.

1. Install preformed packing (6) and low pressure switch (5) on hose 2522 (7). Torque low pressure switch (5) to 7.5-10 ft-lbs. (10-14 N•m).

NOTE

Install cable ties as required.

2. Connect connector (3) to connector (4).
3. Connect connector (1) to connector (2).

FOLLOW-ON MAINTENANCE

1. Install electronic control box cover (ECB) right side panel (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).
3. Perform leak test inspection (WP 0052).

END OF WORK PACKAGE

AC OPTIC RIBBON REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
AC heater cable removed (WP 0032).
AC defrost cable removed (WP 0029).
AC cable removed (WP 0019).

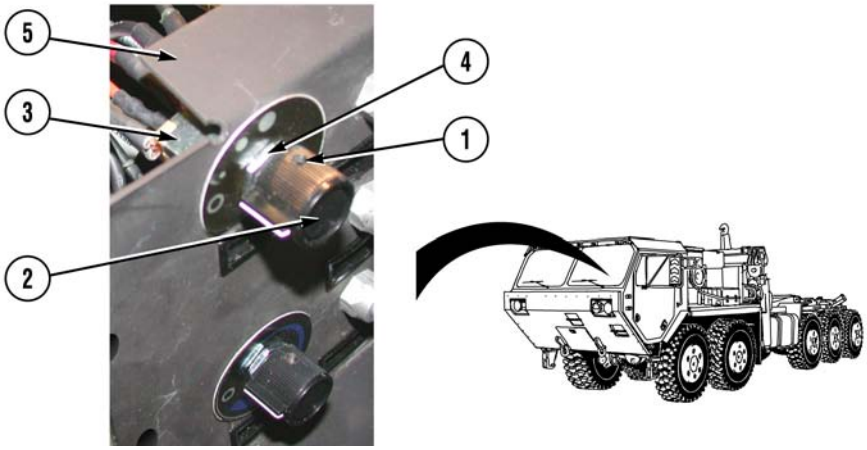
Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tape, Insulation, Electrical (Item 11, Appendix E)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



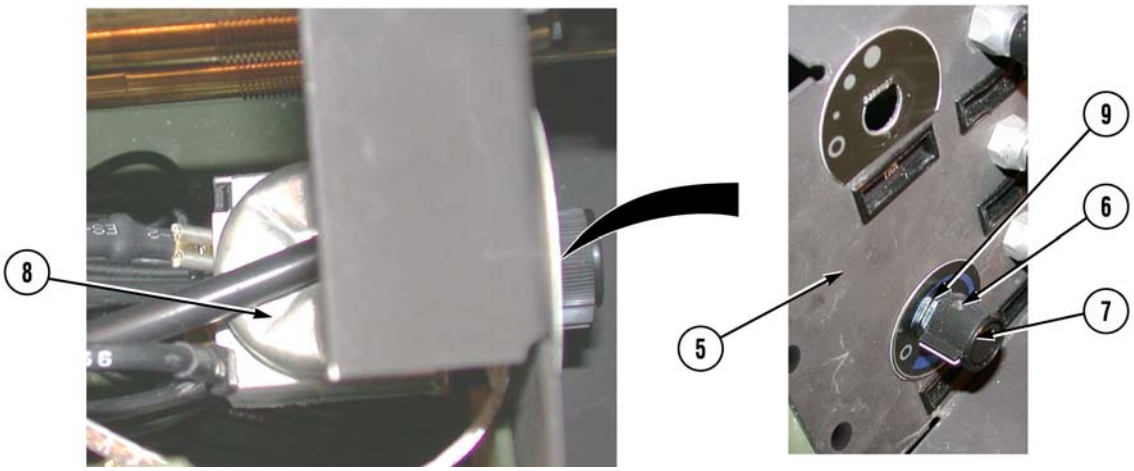
1. Loosen two screws (1) and remove knob (2) from fan control switch (3).

NOTE

Note position of fan control switch prior to removal to ensure proper installation.

2. Remove nut (4) and fan control switch (3) from center cover (5).

AC OPTIC RIBBON REPLACEMENT - Continued

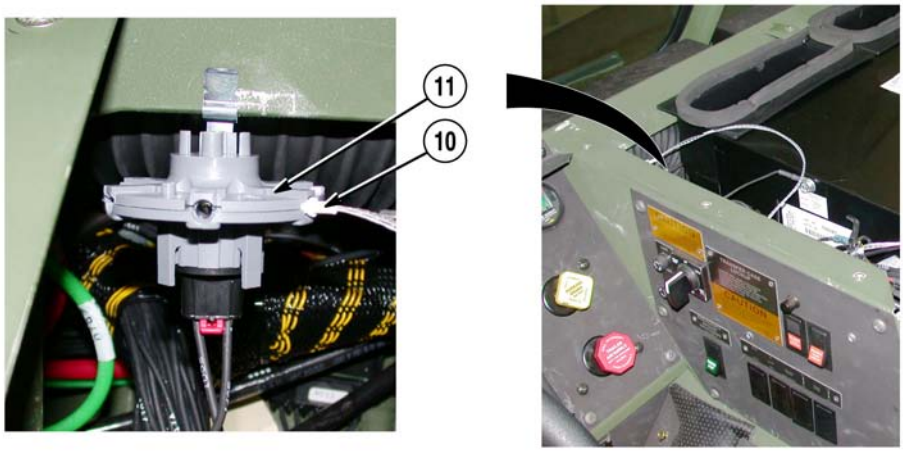


3. Loosen two screws (6) and remove knob (7) from temperature control switch (8).

NOTE

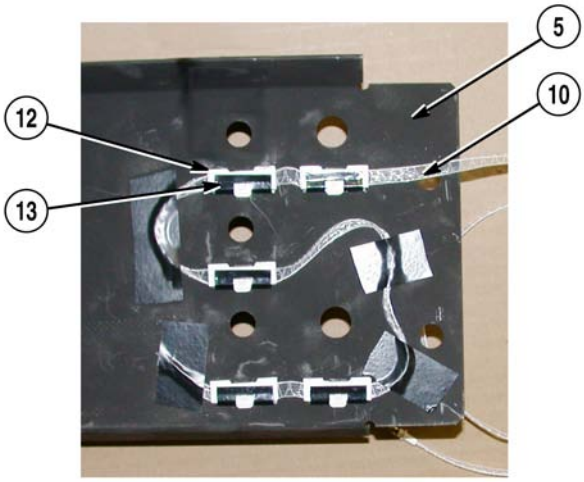
Note position of temperature control switch prior to removal to ensure proper installation.

4. Remove nut (9) and temperature control switch (8) from center cover (5).



5. Unplug optic ribbon (10) from light source (11).

AC OPTIC RIBBON REPLACEMENT - Continued



NOTE

- Remove electrical tape as needed.
- Note routing of optic ribbon prior to removal to ensure proper installation.

6. Remove five identification markers (12) of optic ribbon (10) from five bezels (13).

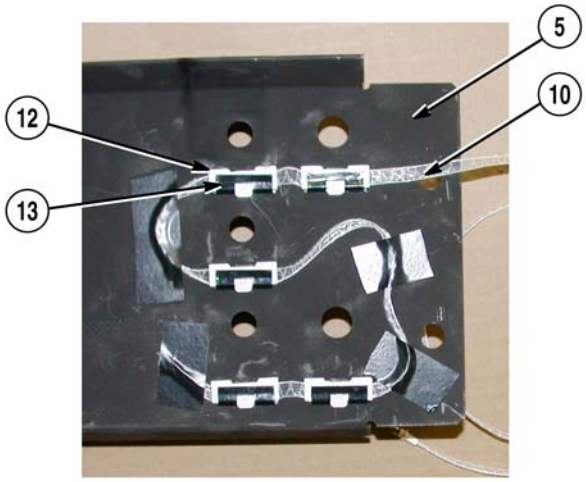
NOTE

Perform Step 7 if bezels need to be removed.

7. Remove five bezels (13) from center cover (5).

AC OPTIC RIBBON REPLACEMENT - Continued

INSTALLATION



NOTE

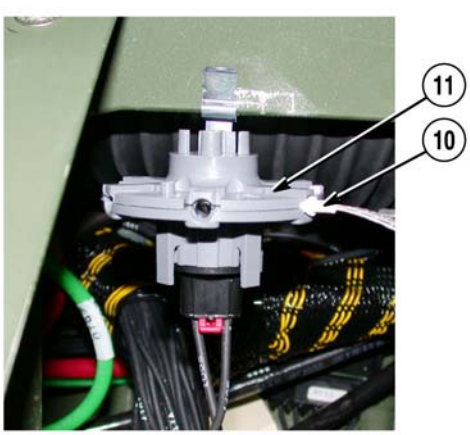
Perform Step 1 if bezels were removed.

1. Install five bezels (13) on center cover (5).

NOTE

- Route optic ribbon as noted prior to removal.
- Use electrical tape as needed to secure optic ribbon to center cover.

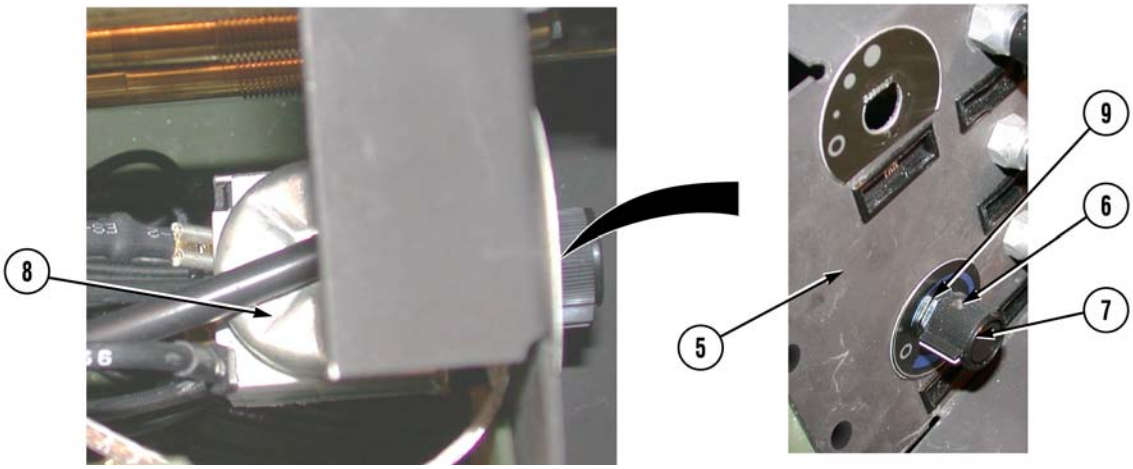
2. Install five identification markers (12) of optic ribbon (10) in five bezels (13).





3. Plug optic ribbon (10) into light source (11).

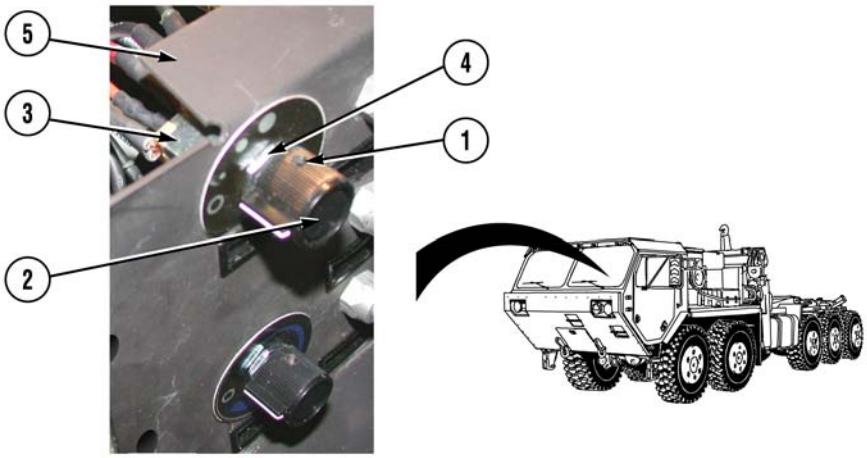
AC OPTIC RIBBON REPLACEMENT - Continued



NOTE

Install temperature control switch as noted prior to removal.

4. Install temperature control switch (8) on center cover (5) with nut (9).
5. Install knob (7) on temperature control switch (8) and tighten two screws (6).



NOTE

Install fan control switch as noted prior to removal.

6. Install fan control switch (3) on center cover (5) with nut (4).
7. Install knob (2) on fan control switch (3) and tighten two screws (1).

AC OPTIC RIBBON REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install AC cable (WP 0019).
2. Install AC defrost cable (WP 0029).
3. Install AC heater cable (WP 0032).

END OF WORK PACKAGE

0042

AC OPTIC RIBBON LIGHT SOURCE REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Electronic control box (ECB) cover removed (TM 9-2320-364-20).

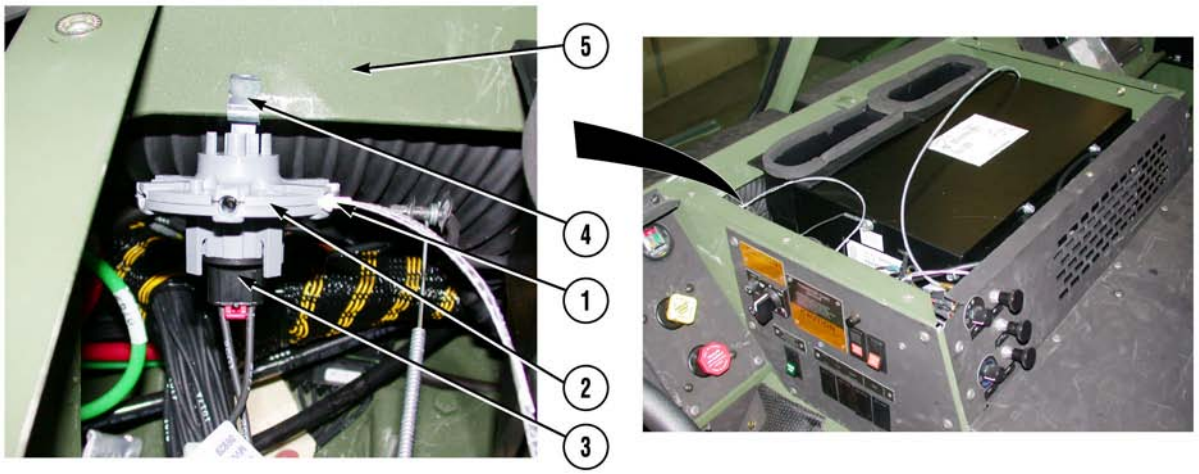
Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
None

Personnel Required
One

References
TM 9-2320-364-20

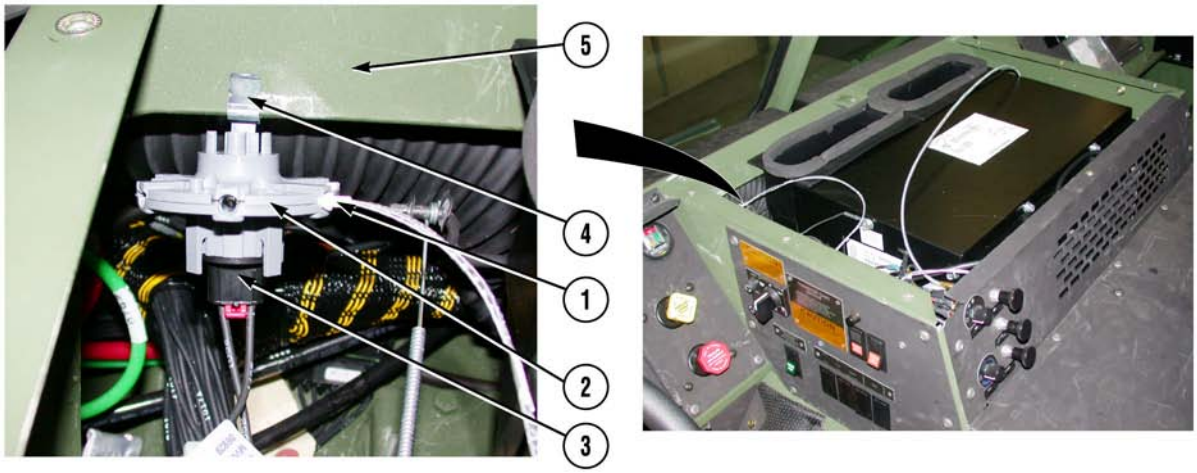
REMOVAL



1. Unplug optic ribbon (1) from light source (2).
2. Remove lamp socket (3) from light source (2).
3. Remove clip (4) and light source (2) from dash (5).
4. Remove clip (4) from light source (2).

AC OPTIC RIBBON LIGHT SOURCE REPLACEMENT - Continued

INSTALLATION



1. Install clip (4) on light source (2).
2. Install clip (4) on dash (5).
3. Install lamp socket (3) in light source (2).
4. Plug optic ribbon (1) into light source (2).

FOLLOW-ON MAINTENANCE

1. Install electronic control box (ECB) cover (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

0043

AC OPTIC RIBBON LIGHT SOURCE WIRE HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

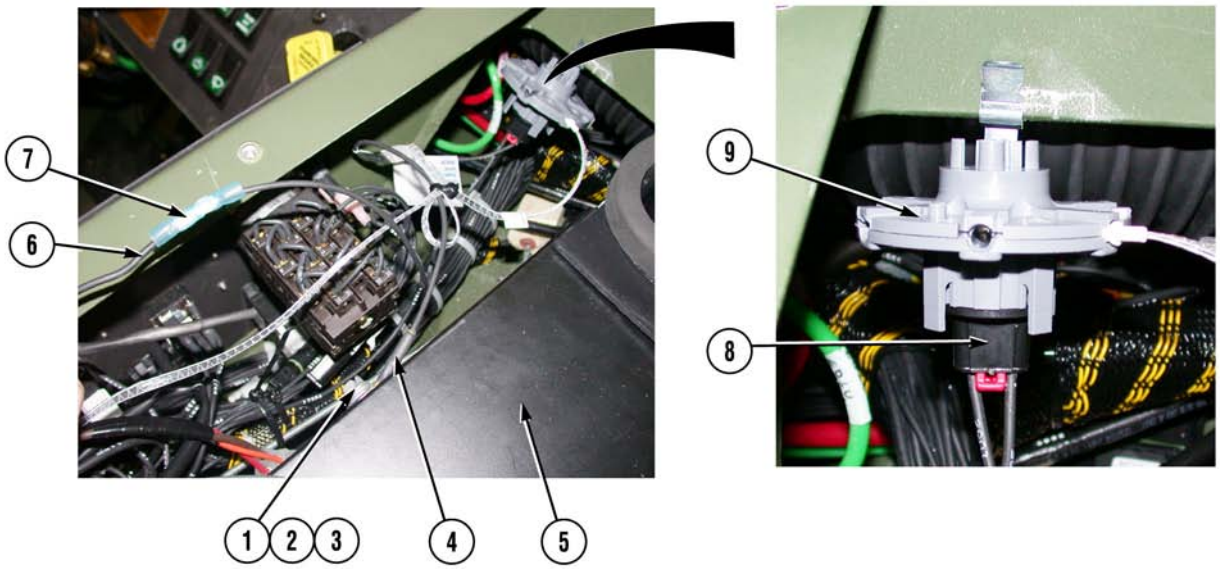
Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwasher (Item 4, Figure 5, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC OPTIC RIBBON LIGHT SOURCE WIRE HARNESS REPLACEMENT - Continued

REMOVAL



NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and ground wire (4) from heater/evaporator (5). Discard lockwasher.

NOTE

Wire 1052 being cut in Step 2 is from cab wire harness.

2. Cut wire 1052 (6) below butt splice (7).

3. Remove lamp socket (8) from light source (9).



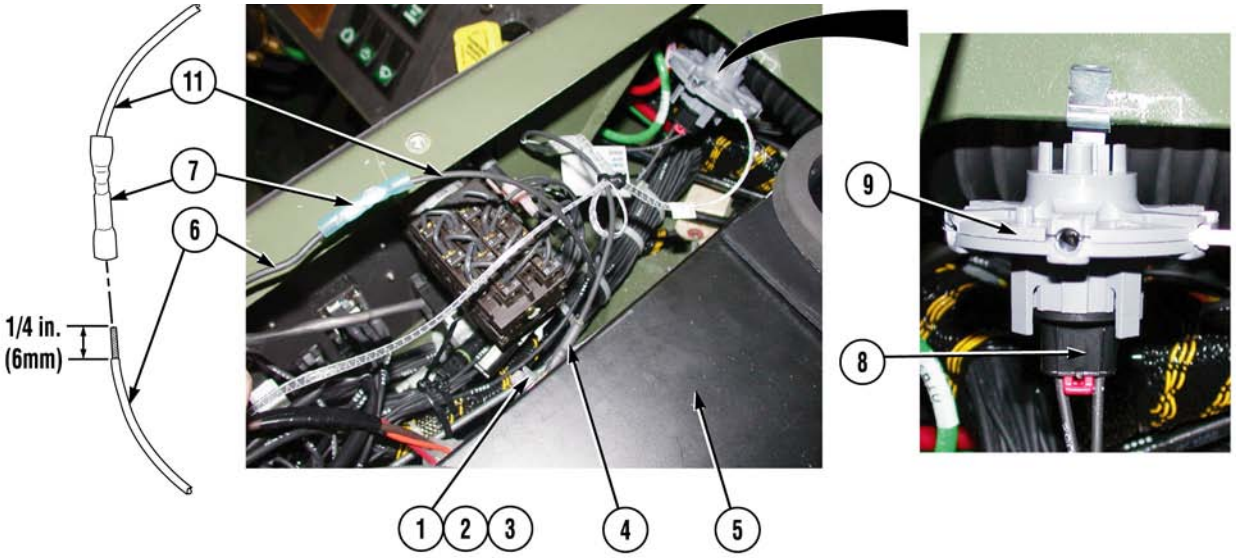
4. Remove bulb (10) from lamp socket (8).

AC OPTIC RIBBON LIGHT SOURCE WIRE HARNESS REPLACEMENT - Continued

INSTALLATION



1. Install bulb (10) in lamp socket (8).



2. Install lamp socket (8) in light source (9).

NOTE

Insulation being removed from wire 1052 in Step 3 is from cab wire harness.

3. Remove 1/4 in. (6 mm) of insulation from end of wire 1052 (6).

NOTE

Ensure all strands of wire 1052 are inside terminal when installing.

4. Install butt splice (7) of wire 1052 (11) over bare wire ends of wire 1052 (6) and crimp securely.
5. Inspect wire splice to ensure no bare wire is visible.
6. Install ground wire (4) on heater/evaporator (5) with washer (3), lockwasher (2), and screw (1).

AC OPTIC RIBBON LIGHT SOURCE WIRE HARNESS REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

0044

AC TEMPERATURE CONTROL SWITCH REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Goggles (Item 1, Appendix F)
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

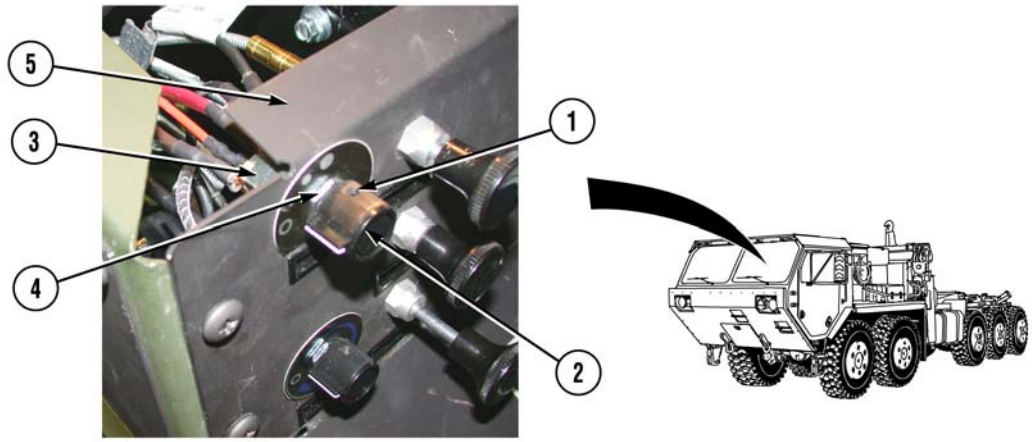
Materials/Parts
Solvent, Dry Cleaning (Item 9, Appendix E)
Tags, Identification (Item 10, Appendix E)

Personnel Required
One

References
TM 9-2320-364-20

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued

REMOVAL



NOTE

Fan control switch needs to be removed from center cover to access temperature control switch.

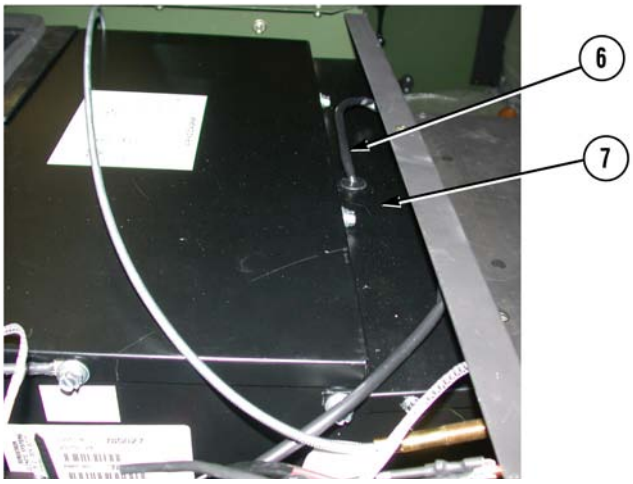
1. Loosen two screws (1) and remove knob (2) from fan control switch (3).

NOTE

Note position of fan control switch prior to removal to ensure proper installation.

2. Remove nut (4) and fan control switch (3) from center cover (5).

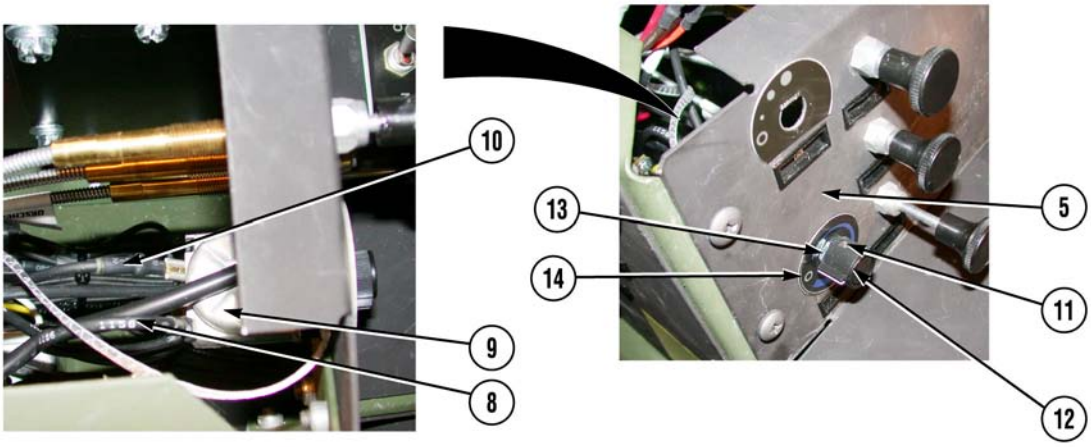
AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued



CAUTION

Remove temperature probe slowly from heater/evaporator. Failure to comply may result in damage to temperature probe.

3. Remove temperature probe (6) from heater/evaporator (7).

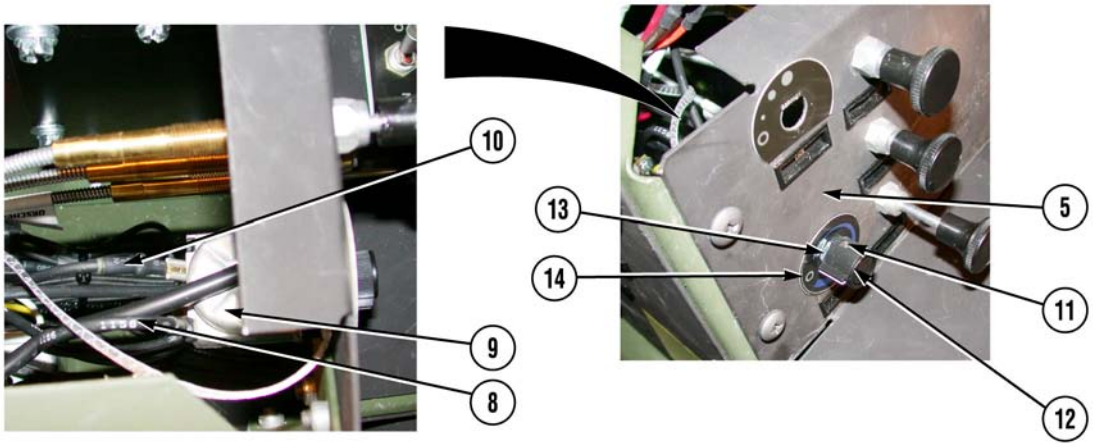


NOTE

Tag and mark wires prior to removal to ensure proper installation.

4. Remove wire 1156 (8) from OUT terminal of temperature control switch (9).
5. Remove wire assembly 1156 (10) from IN terminal of temperature control switch (9).
6. Loosen two screws (11) and remove knob (12) from temperature control switch (9).

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued



NOTE

Note position of temperature control switch prior to removal to ensure proper installation.

7. Remove nut (13) and temperature control switch (9) from center cover (5).

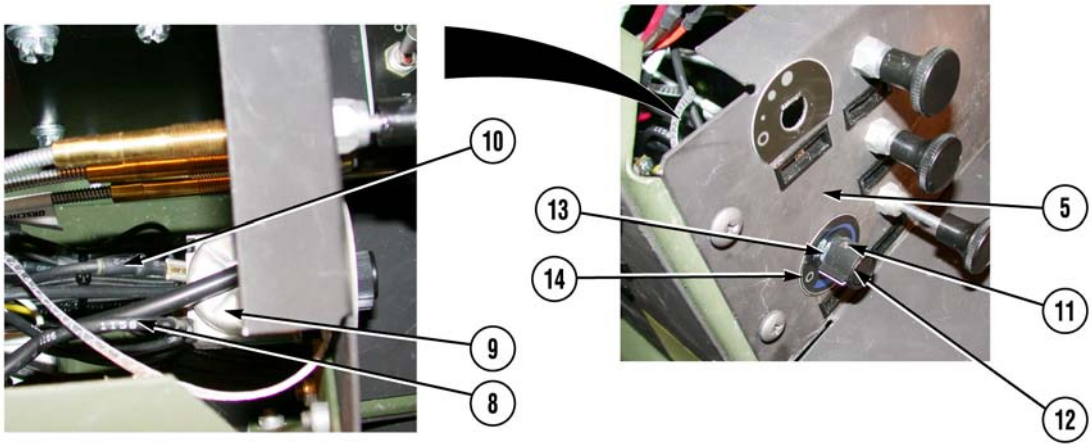
NOTE

Perform Step 8 if temperature label needs to be removed.

8. Remove temperature label (14) from center cover (5).

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued

INSTALLATION



WARNING

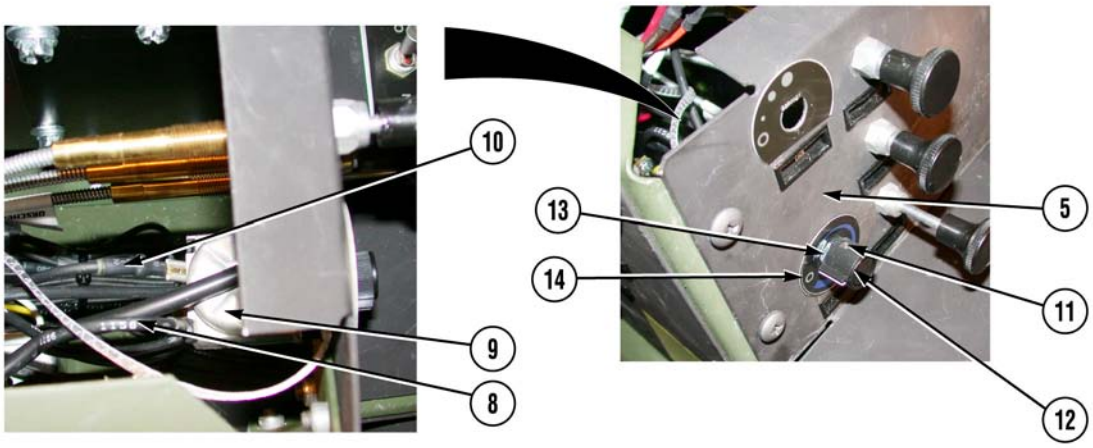
- **Dry cleaning solvent is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and DO NOT breathe vapors. Keep away from heat or flame. Never smoke when using dry cleaning solvent; the flashpoint for Type II is 140°F (60°C), and for Type III it is 200°F (93°C), Failure to follow this warning may result in death or injury 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 them with water and get immediate medical attention.**

NOTE

Perform Steps 1 through 3 if temperature label was removed.

1. Clean center cover (5) where temperature label (14) was mounted with dry cleaning solvent.
2. Peel paper back off of temperature label (14).
3. Install temperature label (14) on center cover (5).

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued

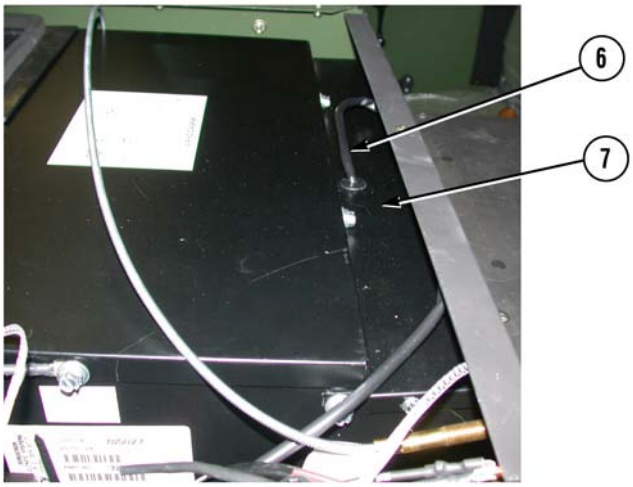


NOTE

Install temperature control switch as noted prior to removal.

4. Install temperature control switch (9) on center cover (5) with nut (13).
5. Install knob (12) on temperature control switch (9) and tighten two screws (11).
6. Install wire assembly 1156 (10) on IN terminal of temperature control switch (9).
7. Install wire 1156 (8) on OUT terminal of temperature control switch (9).

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued



CAUTION

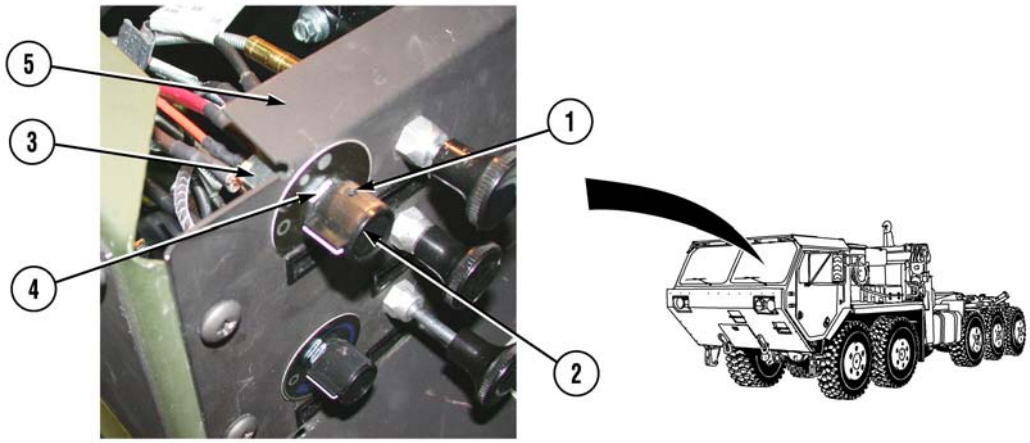
- **Do not puncture temperature probe. Failure to comply will cause gas in tube to leak out.**
- **Install temperature probe slowly into heater/evaporator. Failure to comply may result in damage to temperature probe.**

NOTE

Temperature control switch temperature probe is installed correctly when it is inserted into the AC evaporator core until it touches the bottom of the insertion hole.

8. Install temperature probe (6) into heater/evaporator (7).

AC TEMPERATURE CONTROL SWITCH REPLACEMENT - Continued



NOTE

Install fan control switch as noted prior to removal.

9. Install fan control switch (3) on center cover (5) with nut (4).
10. Install knob (2) on fan control switch (3) and tighten two screws (1).

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC WIRE 1082 HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Electronic control box (ECB) covers removed (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

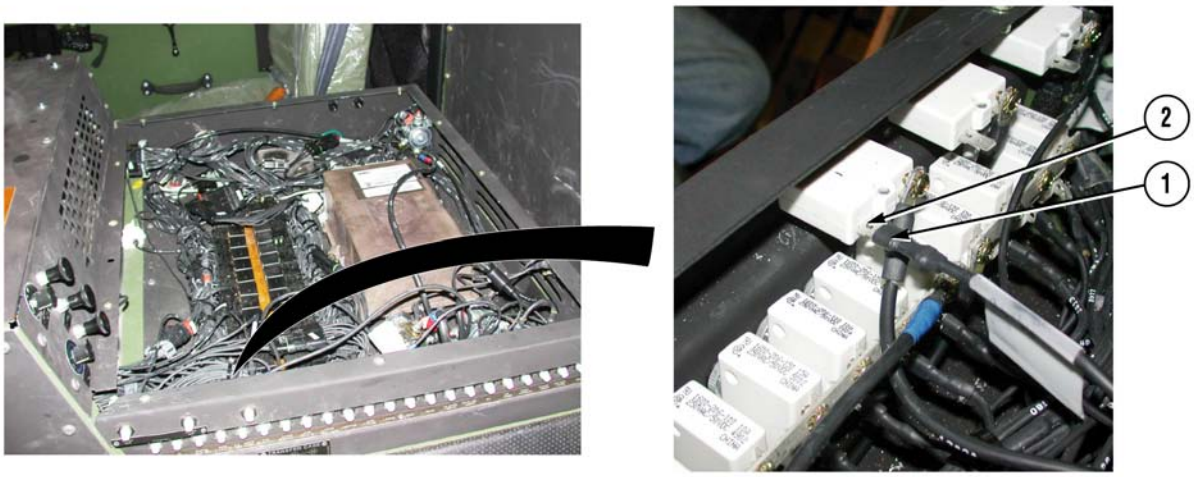
Materials/Parts
Tags, Identification (Item 10, Appendix E)

Personnel Required
One

References
TM 9-2320-364-20

AC WIRE 1082 HARNESS REPLACEMENT - Continued

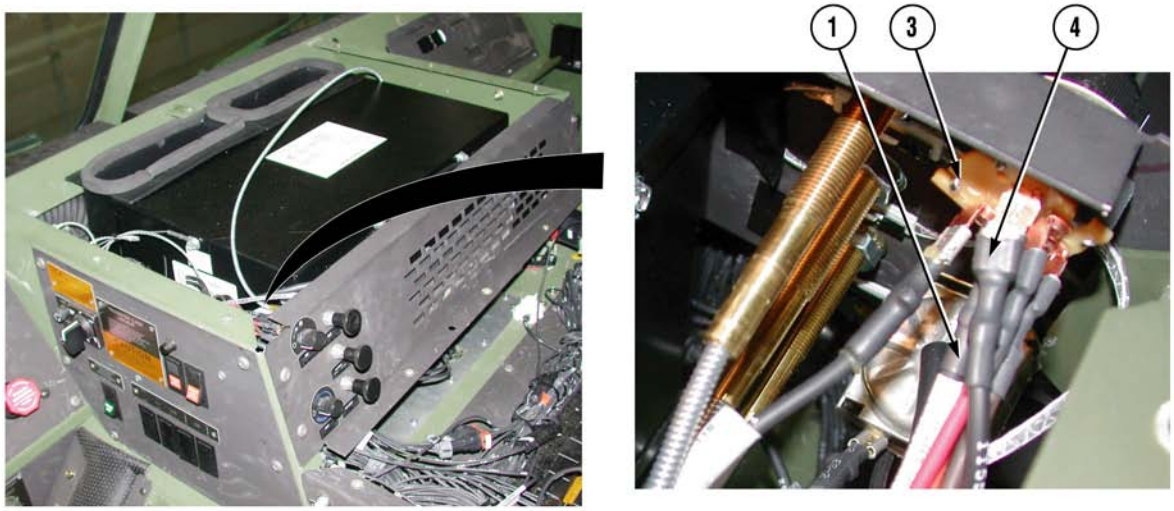
REMOVAL



NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove wire 1082 harness (1) from terminal (2).

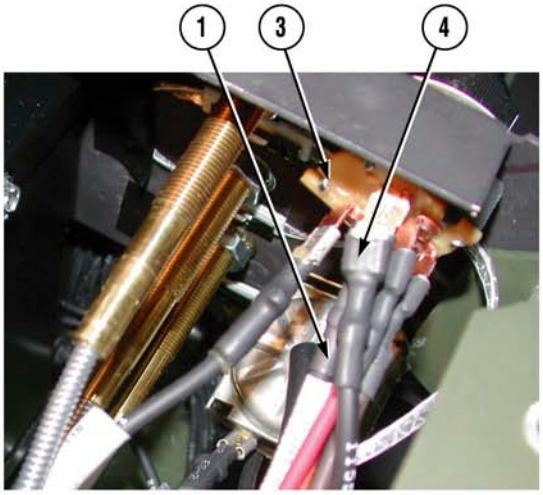


2. Remove wire 1082 harness (1) from terminal B of fan control switch (3).
3. Remove wire 1155 (4) from wire 1082 harness (1).

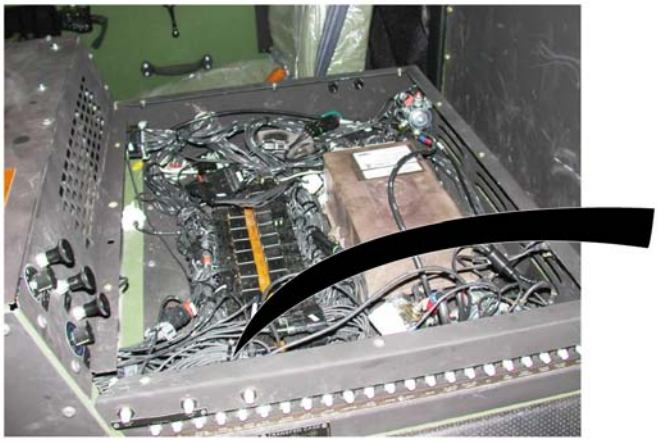
AC WIRE 1082 HARNESS REPLACEMENT - Continued

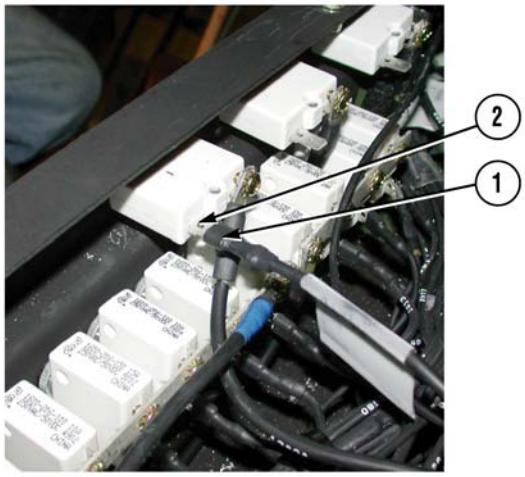
INSTALLATION





1. Install wire 1155 (4) on wire 1082 harness (1).
2. Install wire 1082 harness (1) on terminal B of fan control switch (3).





3. Install wire 1082 harness (1) on terminal (2).

AC WIRE 1082 HARNESS REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Install electronic control box (ECB) covers (TM 9-2320-364-20).
3. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

0046

AC WIRE 1156 HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).

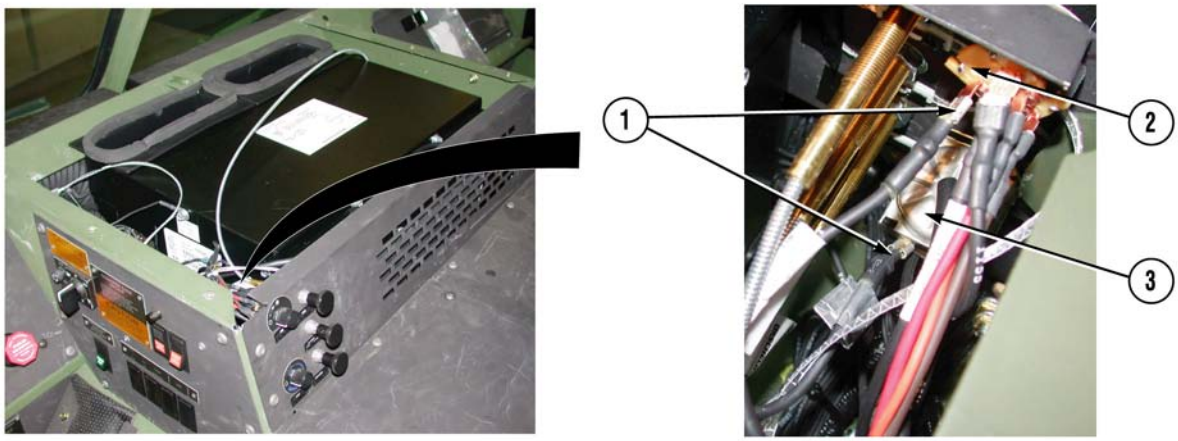
Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tags, Identification (Item 10, Appendix E)

Personnel Required
One

References
TM 9-2320-364-20

REMOVAL



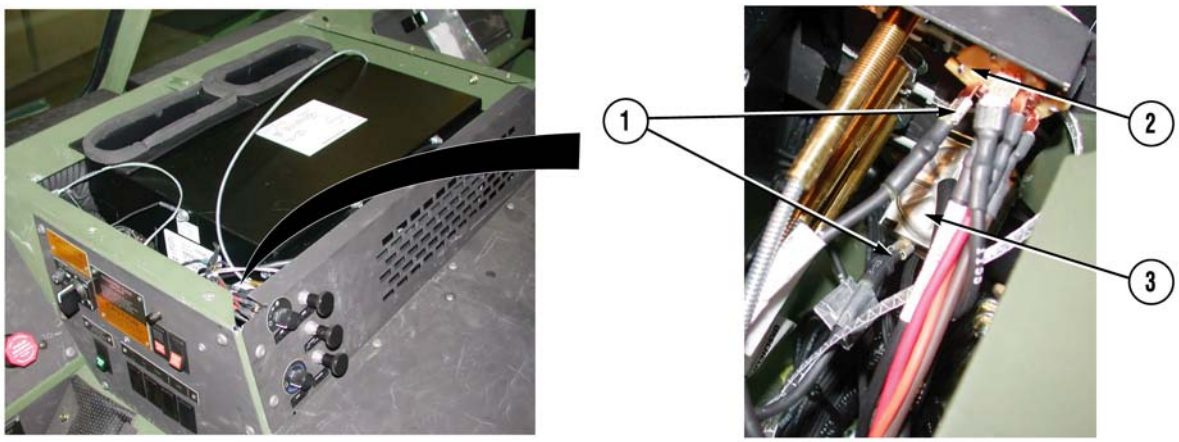
NOTE

Tag and mark wires prior to removal to ensure proper installation.

1. Remove wire 1156 harness (1) from terminal C of fan control switch (2).
2. Remove wire 1156 harness (1) from IN terminal of temperature control switch (3).

AC WIRE 1156 HARNESS REPLACEMENT - Continued

INSTALLATION



1. Install wire 1156 harness (1) on IN terminal of temperature control switch (3).
2. Install wire 1156 harness (1) on terminal C of fan control switch (2).

FOLLOW-ON MAINTENANCE

1. Install heater compartment access panel (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC WIRE 1280A HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Electronic control box (ECB) cover removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

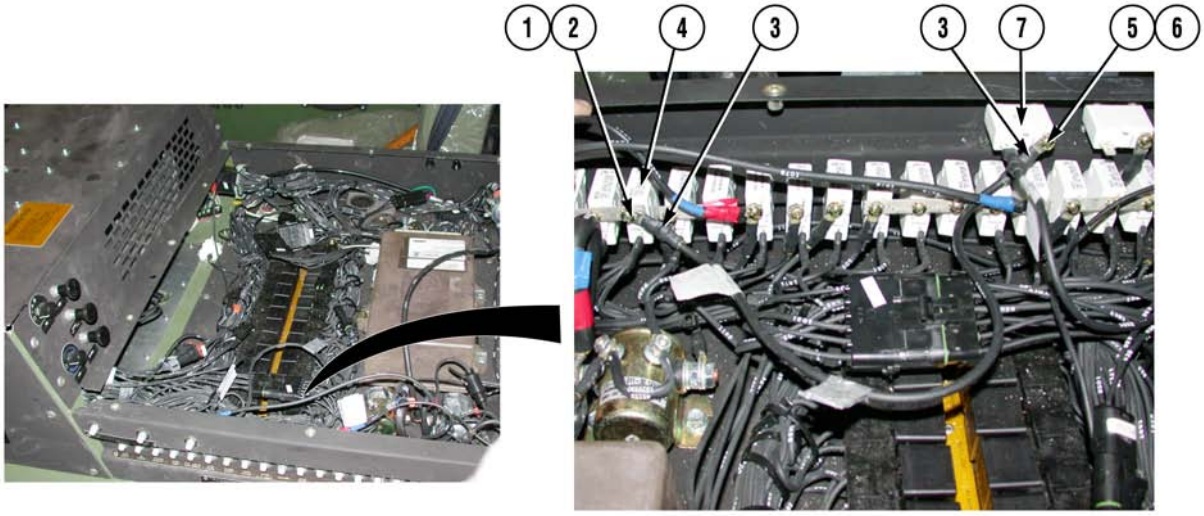
Materials/Parts
Tags, Identification (Item 10, Appendix E)
Lockwashers (2) (Item 25, Figure 4, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC WIRE 1280A HARNESS REPLACEMENT - Continued

REMOVAL



NOTE

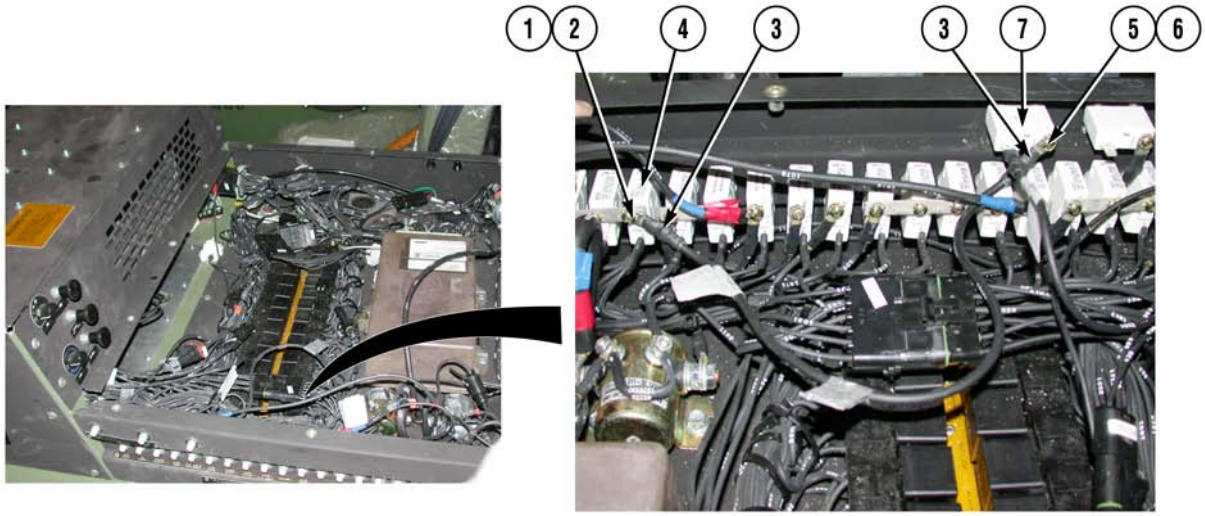
Tag and mark wires prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), and wire 1280A harness (3) from circuit breaker 15 (4). Discard lockwasher.

2. Remove screw (5), lockwasher (6), and wire 1280A harness (3) from AC circuit breaker (7). Discard lockwasher.

AC WIRE 1280A HARNESS REPLACEMENT - Continued

INSTALLATION



1. Install wire 1280A harness (3) on AC circuit breaker (7) with lockwasher (6) and screw (5).
2. Install wire 1280A harness (3) on circuit breaker 15 (4) with lockwasher (2) and screw (1).

FOLLOW-ON MAINTENANCE

1. Install electronic control box (ECB) cover (TM 9-2320-364-20).
2. Connect batteries (TM 9-2320-364-20).

END OF WORK PACKAGE

AC WIRING HARNESS REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Batteries disconnected (TM 9-2320-364-20).
Heater compartment access panel removed (TM 9-2320-364-20).
Electronic control box (ECB) covers removed (TM 9-2320-364-20).
Electronic control box (ECB) right side panel removed (TM 9-2320-364-20).
Right side noise panel removed (TM 9-2320-364-20).
Left side noise panel and rubber flap removed (WP 0051).

Tools and Special Tools
Tool Kit, Electrical (Item 8, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

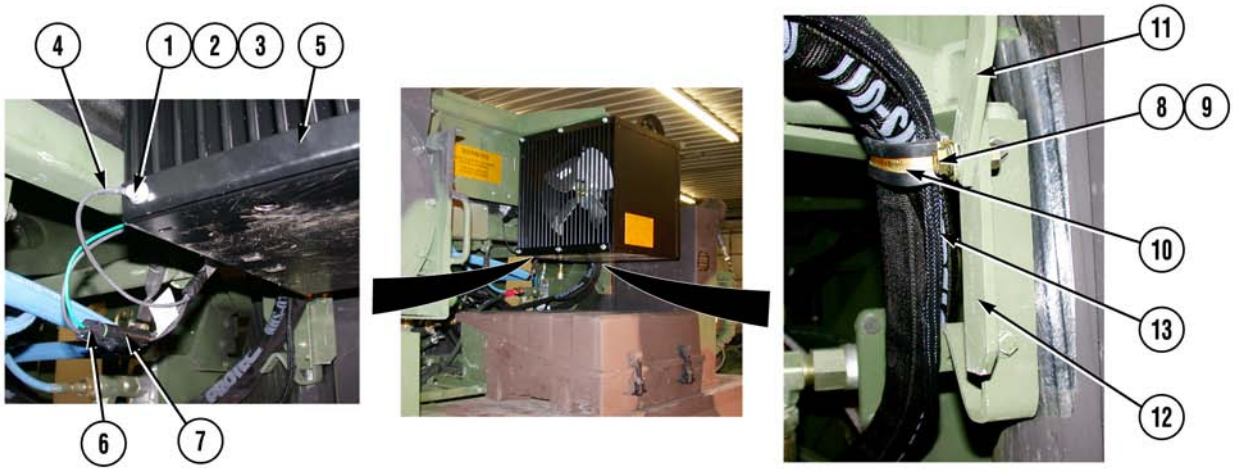
Materials/Parts
Tags, Identification (Item 10, Appendix E)
Tie, Cable (Item 13, Appendix E)
Lockwasher (Item 4, Figure 4, Appendix G)
Locknut (Item 8, Figure 3, Appendix G)
Locknut (Item 14, Figure 4, Appendix G)

Personnel Required
One

References
TM 9-2320-364-20

AC WIRING HARNESS REPLACEMENT - Continued

REMOVAL

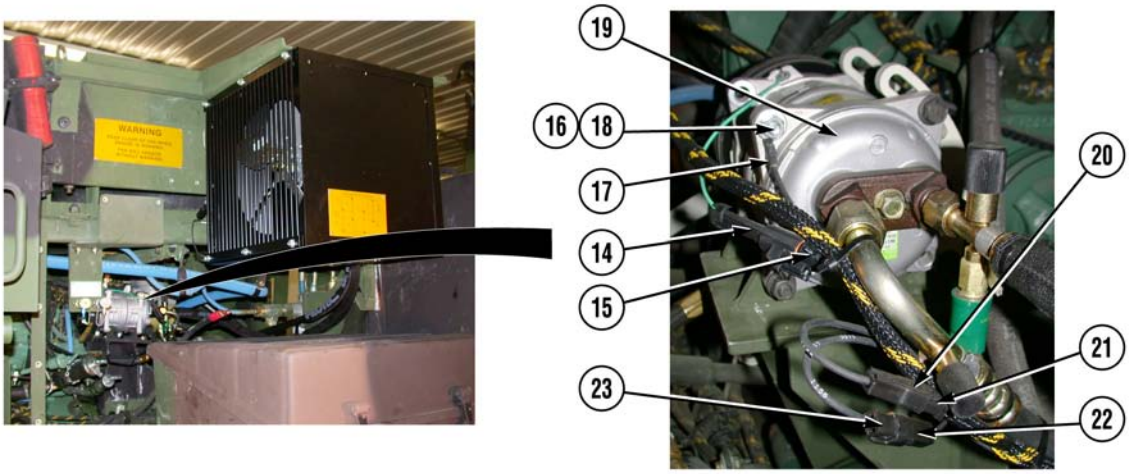


NOTE

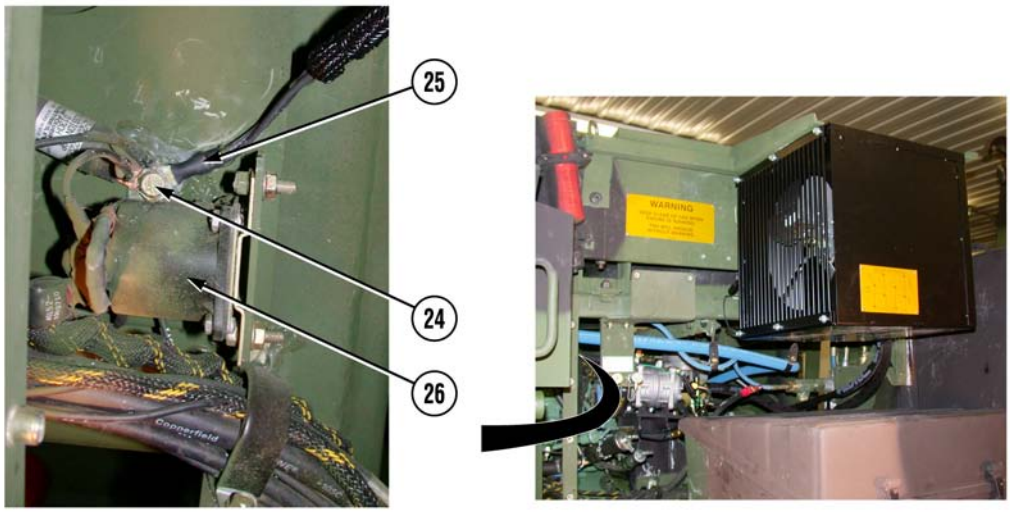
- Refer to Appendix A, Figure A-1, for electrical schematics.
- Tag and mark connectors and wires prior to removal to ensure proper installation.
- Remove cable ties as required.
- Note routing of wire harness prior to removal to ensure proper installation.

1. Remove screw (1), lockwasher (2), washer (3), and ground wire (4) from condenser (5). Discard lockwasher.
2. Disconnect connector (6) from connector (7).
3. Remove locknut (8), screw (9), cushion clip (10), and support bar (11) from stabilizer bracket (12). Discard locknut.
4. Remove AC wire harness (13) from cushion clip (10).

AC WIRING HARNESS REPLACEMENT - Continued



5. Disconnect connector (14) from connector (15).
6. Remove locknut (16), wire 1435 (17), and screw (18) from compressor (19). Discard locknut.
7. Disconnect connector (20) from connector (21).
8. Disconnect connector (22) from connector (23).



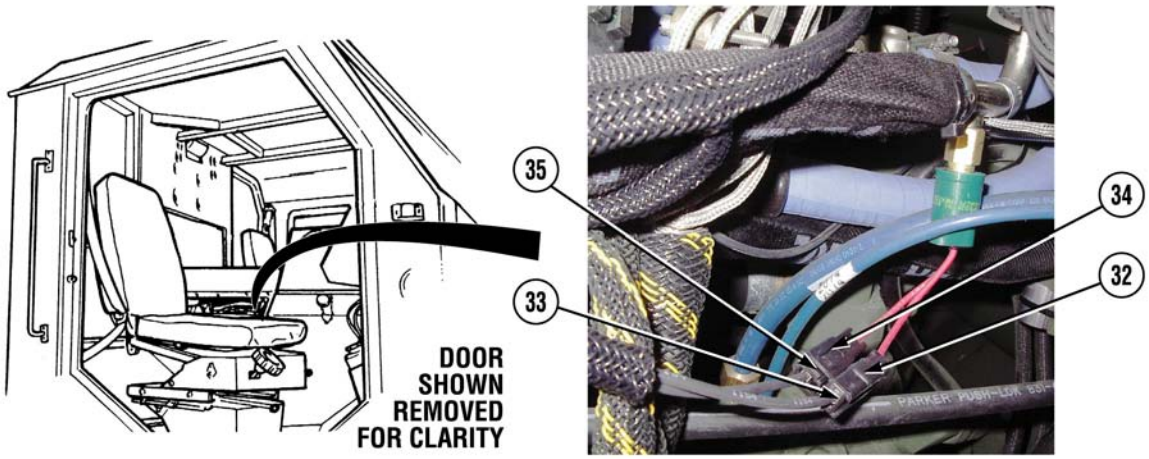
9. Remove screw (24) and wire 1435 (25) from starter relay (26).

AC WIRING HARNESS REPLACEMENT - Continued



10. Remove wire 1155 (27) from wire 1082 (28).
11. Remove wire 1156 (29) from OUT terminal of temperature control switch (30).
12. Push wire 1155 (27) and wire 1156 (29) of AC wire harness (13) through grommet (31).

AC WIRING HARNESS REPLACEMENT - Continued



13. Disconnect connector (32) from connector (33).

14. Disconnect connector (34) from connector (35).

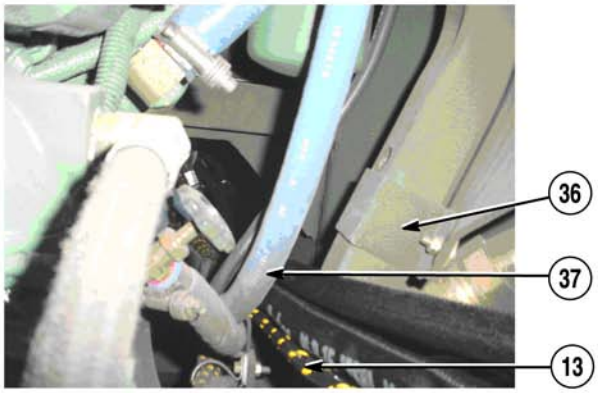


15. Remove AC wire harness (13) from vehicle.

AC WIRING HARNESS REPLACEMENT - Continued

INSTALLATION





CAUTION

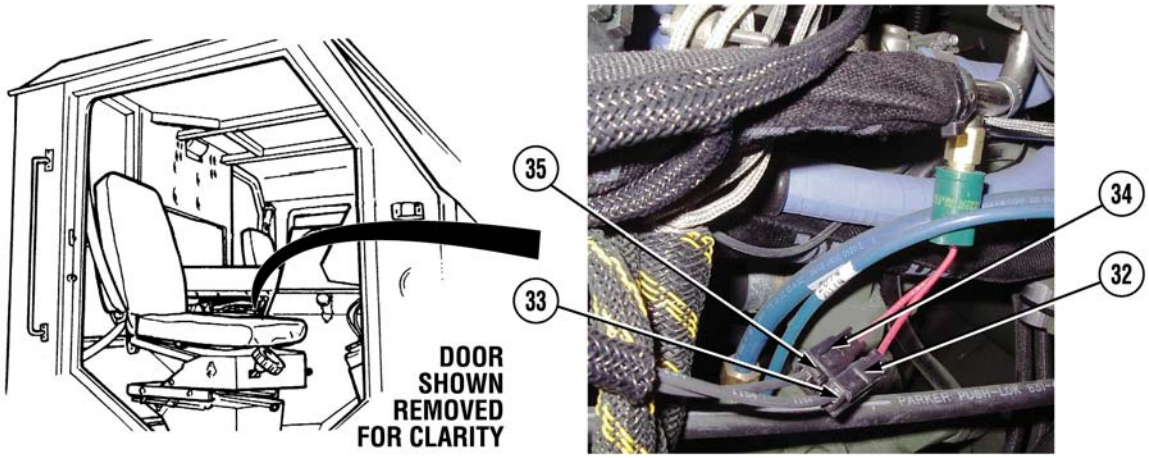
Ensure AC wire harness is routed away from exhaust manifold and exhaust pipes. AC wire harness must be routed between coolant lines and power pack structure. Failure to comply may result in damage to equipment.

NOTE

- Refer to Appendix A, Figure A-1, for electrical schematics.
- Route AC wire harness as noted prior to removal.
- To aid in routing of AC wire harness, lay AC wire harness on passenger side fender where spare tire sits. While one person feeds the AC wire harness from passenger side fender, another person in the cab, reaching through electronic control box (ECB) right side panel opening, can pull AC wire harness forward.

1. With the aid of an assistant, route AC wire harness (13) between power pack structure (36) and coolant line (37) and pull forward to cab.

AC WIRING HARNESS REPLACEMENT - Continued

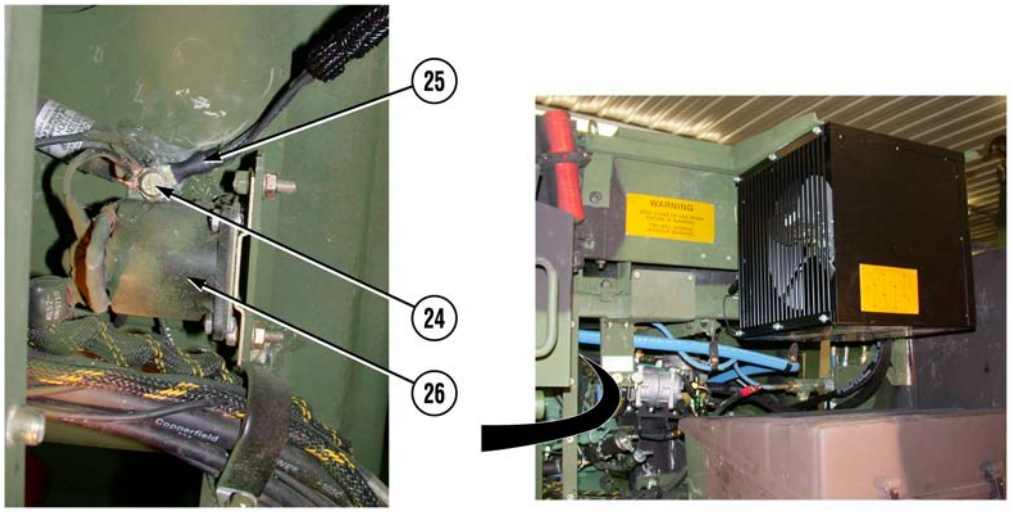


2. Connect connector (34) to connector (35).
3. Connect connector (32) to connector (33).



4. Route wire 1155 (27) and wire 1156 (29) of AC wire harness (13) through grommet (31).
5. Install wire 1156 (29) on OUT terminal of temperature control switch (30).
6. Install wire 1155 (27) on wire 1082 (28).

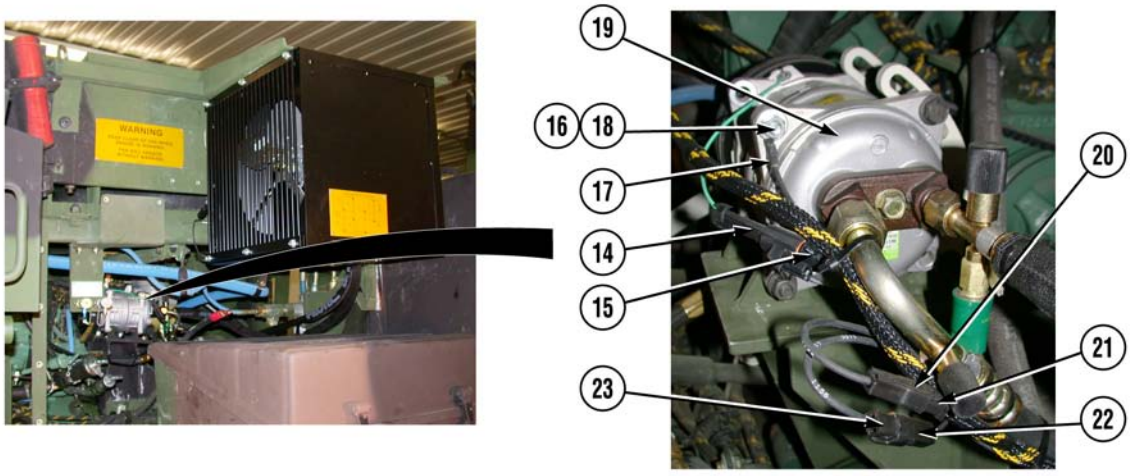
AC WIRING HARNESS REPLACEMENT - Continued



NOTE

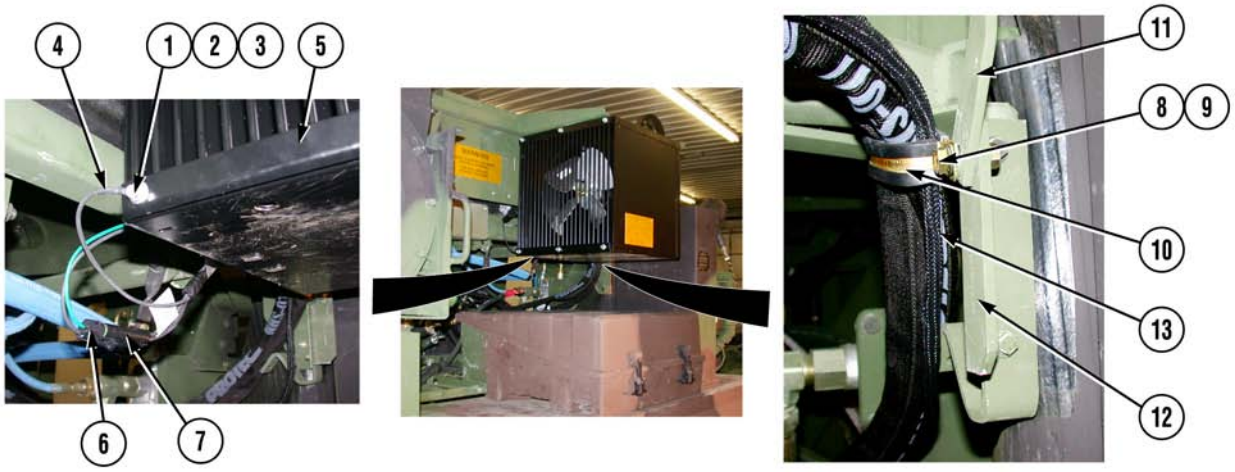
AC wire harness routes with the large hydraulic hose past the air compressor. Once past the air compressor, AC wire harness will be routed over the transmission towards the driver side of vehicle.

7. Install wire 1435 (25) on starter relay (26) with screw (24).



8. Connect connector (22) to connector (23).
9. Connect connector (20) to connector (21).
10. Install wire 1435 (17) on compressor (19) with screw (18) and locknut (16).
11. Connect connector (14) to connector (15).

AC WIRING HARNESS REPLACEMENT - Continued



12. Position AC wire harness (13) in cushion clip (10).

13. Install support bar (11) and cushion clip (10) on stabilizer bracket (12) with screw (9) and locknut (8). Do not tighten locknut (8).

14. Connect connector (6) to connector (7).

15. Install ground wire (4) on condenser (5) with washer (3), lockwasher (2), and screw (1).

CAUTION

AC wire harness needs to be secured to AC hoses and away from moving parts with cable ties. Failure to comply may cause damage to equipment.

NOTE

Install cable ties as needed to secure AC wire harness to AC hoses and away from moving parts.

16. Tighten locknut (8).

AC WIRING HARNESS REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install left side noise panel and rubber flap (WP 0051).
2. Install right side noise panel (TM 9-2320-364-20).
3. Install electronic control box (ECB) right side panel (TM 9-2320-364-20).
4. Install electronic control box (ECB) covers (TM 9-2320-364-20).
5. Install heater compartment access panel (TM 9-2320-364-20).
6. Connect batteries (TM 9-2320-364-20).
7. Check operation of air conditioning system (WP 0004).

END OF WORK PACKAGE

ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Battery box removed (TM 9-2320-364-20).
AC compressor mounting bracket removed (WP 0021).

Tools and Special Tools
Shop Equipment, Common No. 1 (Item 5, Appendix F)
Shop Equipment, Common No. 2 (Item 6, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

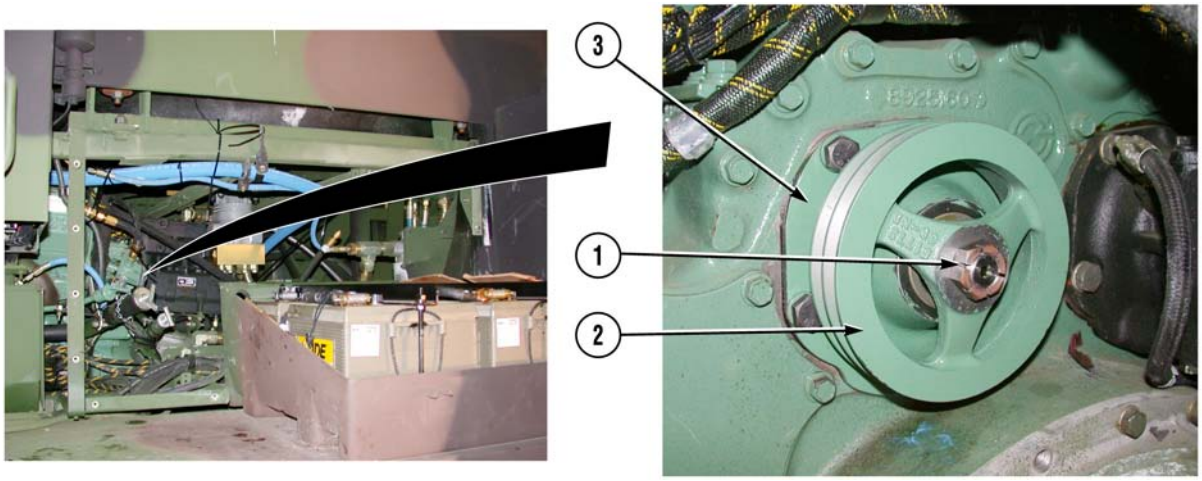
Materials/Parts
Rags, Wiping (Item 4, Appendix E)
Tags, Identification (Item 10, Appendix E)
Gasket (Item 2, Figure 1, Appendix G)
Lockwashers (4) (Item 7, Figure 1, Appendix G)
Copper Washer (Item 9, Figure 1, Appendix G)

Personnel Required
MOS 52C, Utilities equipment repairer

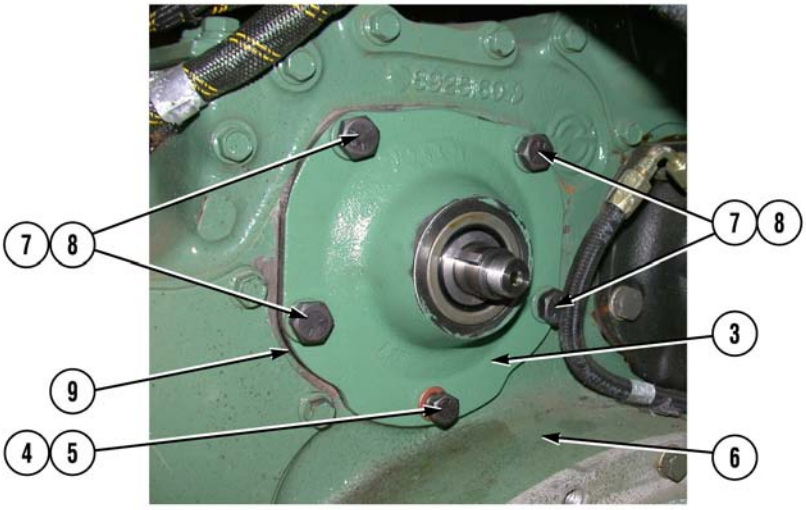
References
TM 9-2320-364-20

ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT - Continued

REMOVAL



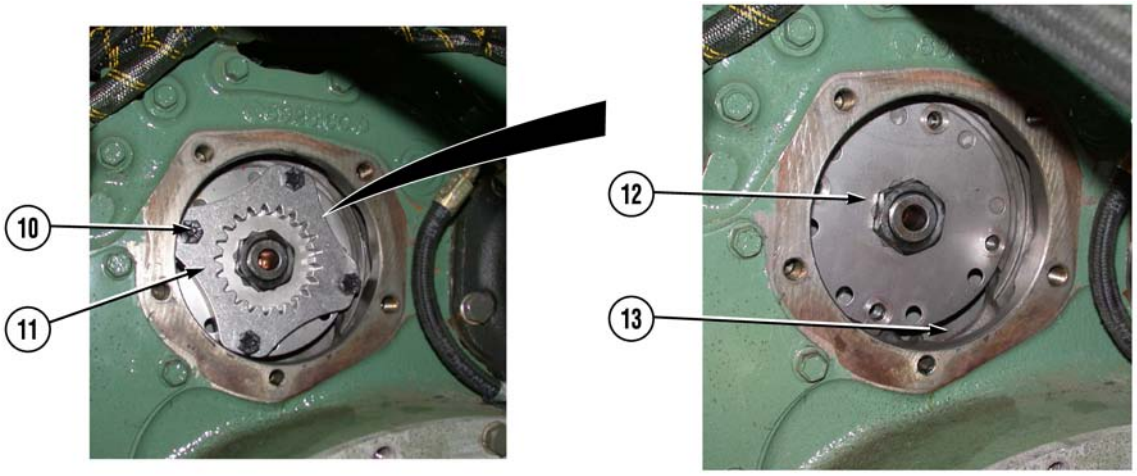
1. Remove nut (1) and pulley (2) from engine accessory drive (3).



2. Remove screw (4) and copper washer (5) from engine accessory drive (3) and flywheel housing (6). Discard copper washer.

3. Remove four screws (7), lockwashers (8), engine accessory drive (3), and gasket (9) from flywheel housing (6). Discard lockwashers and gasket.

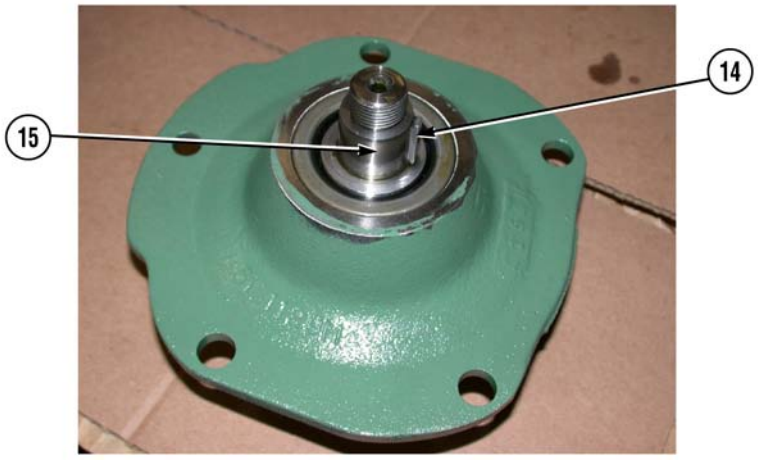
ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT - Continued



CAUTION

Rags must be stuffed in flywheel housing cavity under drive plate so when screws holding drive plate and camshaft nut lock plate to camshaft gear are removed they do not drop into cavity. Failure to comply may result in damage to equipment.

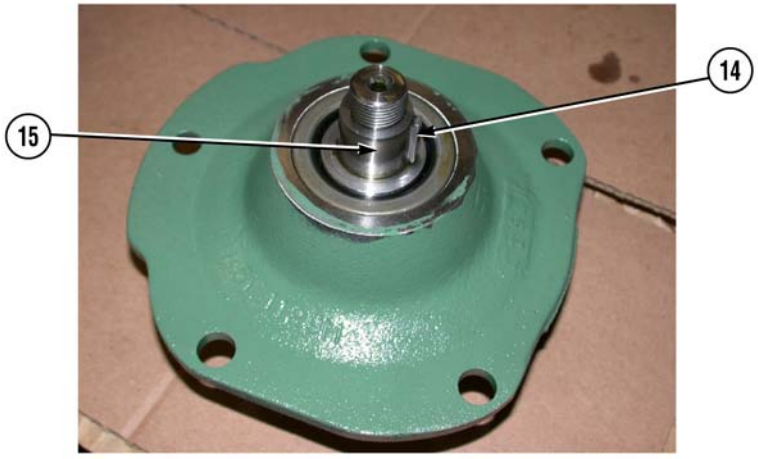
4. Remove four screws (10), drive plate (11), and camshaft nut lock plate (12) from camshaft gear (13).



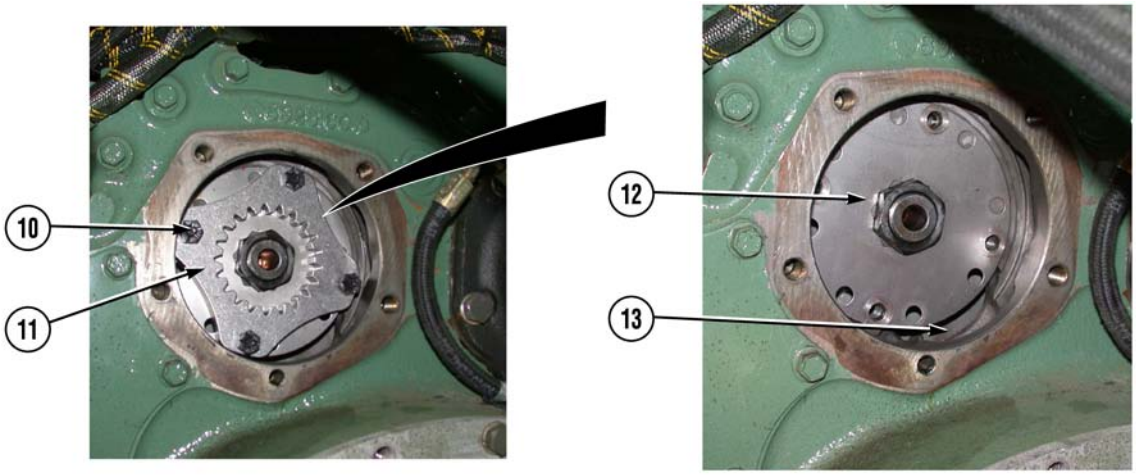
5. Remove key (14) from engine accessory drive shaft (15).

ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT - Continued

INSTALLATION



1. Install key (14) on engine accessory drive shaft (15).



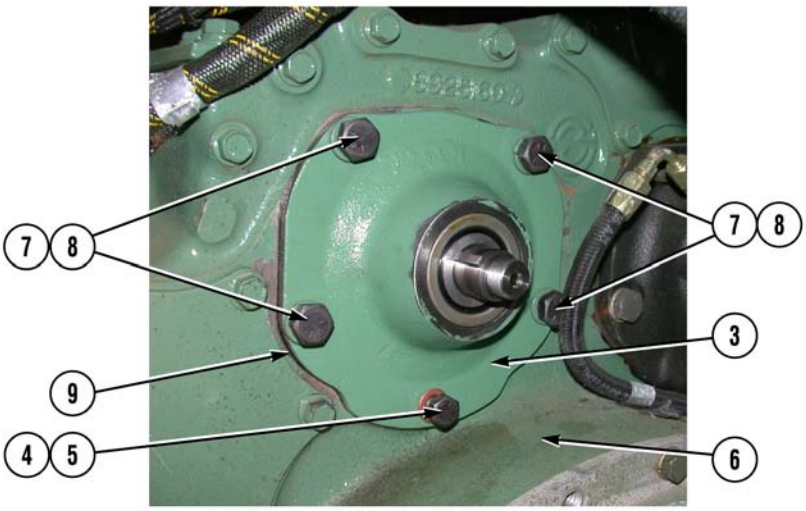
CAUTION

Rags must be stuffed in flywheel housing cavity so when screws holding drive plate and camshaft nut lock plate to camshaft gear are installed they do not drop into cavity. Failure to comply may result in damage to equipment.

2. Install camshaft nut lock plate (12) and drive plate (11) on camshaft gear (13) with four screws (10). Tighten four screws (10) to 45 ft-lbs. (61 N•m).

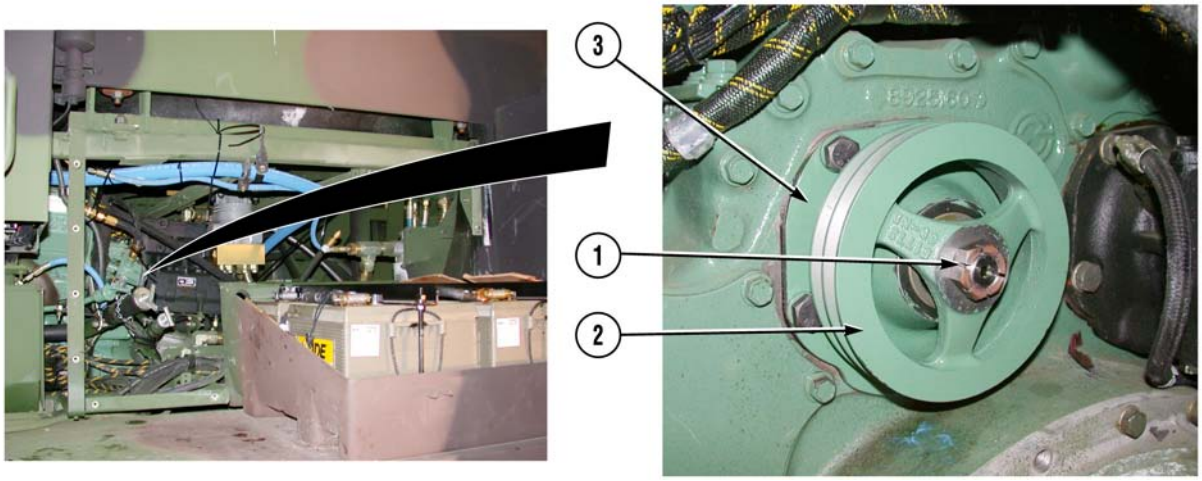
3. Remove rags.

ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT - Continued



4. Install gasket (9) and engine accessory drive (3) on flywheel housing (6) with four lockwashers (8) and screws (7). Tighten screws (7) to 53-56 ft-lbs. (72-76 N•m).

5. Secure engine accessory drive (3) to flywheel housing (6) with copper washer (5) and screw (4). Tighten screw (4) to 35-38 ft-lbs. (47-51 N•m).



6. Install pulley (2) on engine accessory drive (3) with nut (1).

ENGINE ACCESSORY DRIVE ASSEMBLY REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install AC compressor mounting bracket (WP 0021).
2. Install battery box (TM 9-2320-364-20).

END OF WORK PACKAGE

FUEL LINE EXTENSION REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Left side noise panel and rubber flap removed (WP 0051).

Tools and Special Tools
Set, Cap and Plug (Item 4, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Tie, Cable (Item 12, Appendix E)

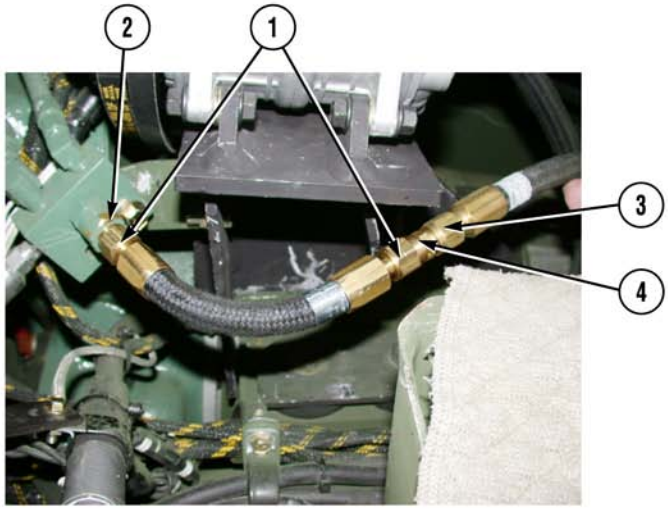
Personnel Required
One

References
None

FUEL LINE EXTENSION REPLACEMENT - Continued

REMOVAL





WARNING

Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited by hot engine. Failure to comply may result in injury or death to personnel.

CAUTION

Equipment may be damaged by foreign matter if fuel lines are not plugged and capped upon removal.

NOTE

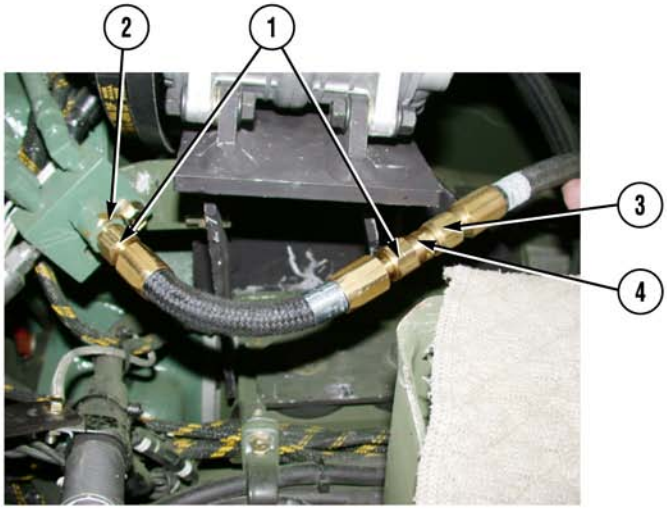
- Remove cable ties as required.
- Tag and mark fuel lines prior to removal to ensure proper installation.
- Cap and plug fuel lines upon removal.

1. Remove fuel line extension (1) from fitting (2).
2. Remove fuel return line (3) from fitting (4).
3. Remove fitting (4) from fuel line extension (1).

FUEL LINE EXTENSION REPLACEMENT - Continued

INSTALLATION





1. Install fitting (4) on fuel line extension (1).
2. Install fuel return line (3) on fitting (4).

NOTE

Install cable ties as required.

3. Install fuel line extension (1) on fitting (2).

FOLLOW-ON MAINTENANCE

1. Start engine and check for leaks (TM 9-2320-364-10).
2. Install left side noise panel and rubber flap (WP 0051).

END OF WORK PACKAGE

0051

LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT

THIS WORK PACKAGE (WP) COVERS:

Removal

Installation

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Rear noise panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)

Materials/Parts
Locknuts (6) (Item 22, Figure 11, Appendix G)
Lockwashers (8) (Item 12, Figure 11, Appendix G)

Personnel Required
Two

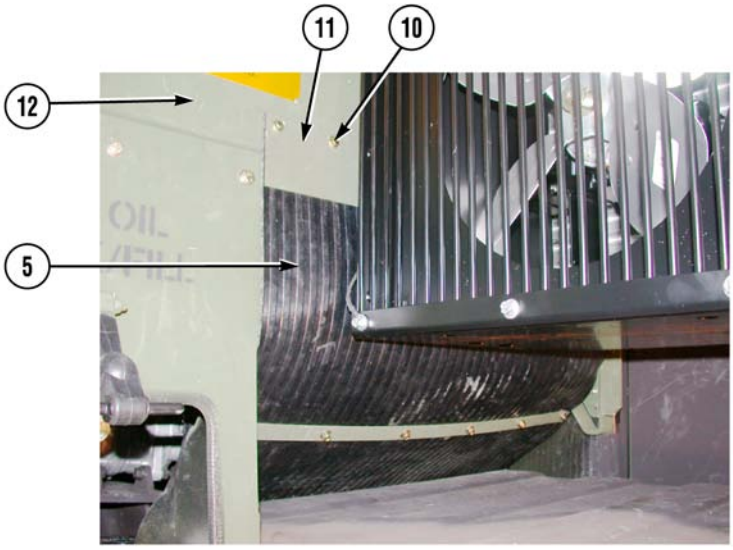
References
TM 9-2320-364-20

LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT - Continued

REMOVAL



1. Open access door (1) on left side noise panel (2).
2. Remove locknut (3), screw (4), rubber flap (5), and restraint bar (6) from left side noise panel (2). Discard locknut.
3. With the aid of an assistant, remove locknut (7), screw (8), rubber flap (5), and restraint bar (6) from stabilizer bracket (9). Discard locknut.

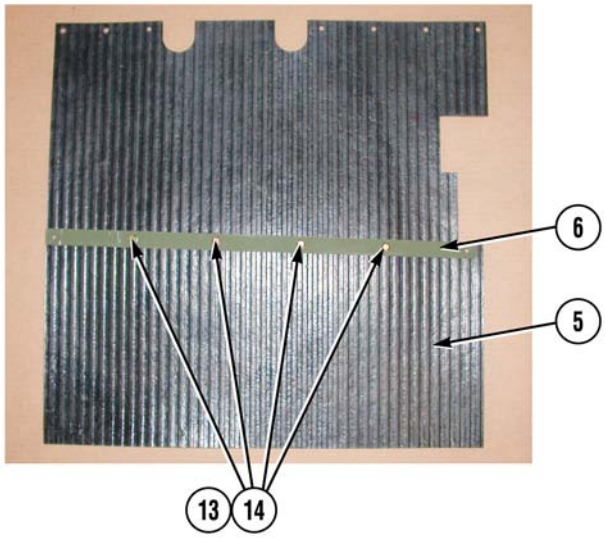


NOTE

Rubber flap may be installed on panel with seven screws.

4. Remove five screws (10), plate (11), and rubber flap (5) from panel (12) and vehicle.

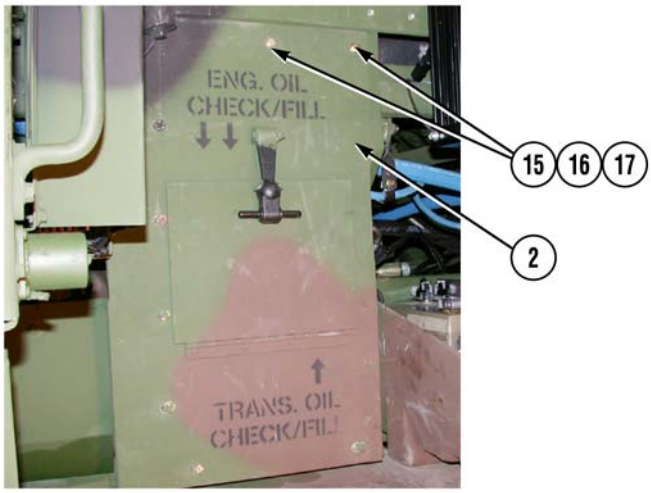
LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT - Continued



NOTE

Perform Step 5 if restraint bar needs to be replaced.

5. Remove four locknuts (13), screws (14), and restraint bar (6) from rubber flap (5). Discard locknuts.



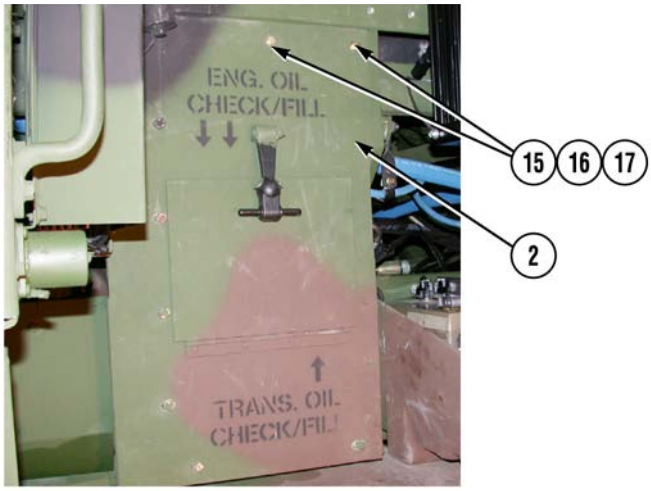
CAUTION

Ensure left side noise panel does not contact ether start aid assembly or electrical cables during removal or damage to equipment may result.

6. Remove eight screws (15), lockwashers (16), washers (17), and left side noise panel (2) from vehicle. Discard lockwashers.

LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT - Continued

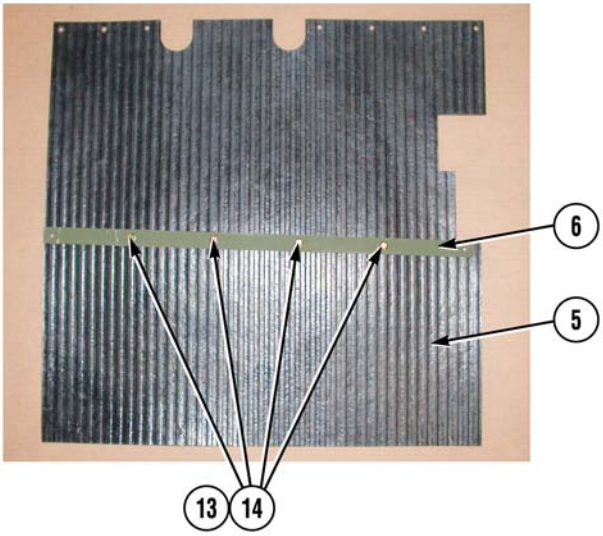
INSTALLATION



CAUTION

Ensure left side noise panel does not contact ether start aid assembly or electrical cables during installation.

1. Install left side noise panel (2) on vehicle with eight washers (17), lockwashers (16), and screws (15).

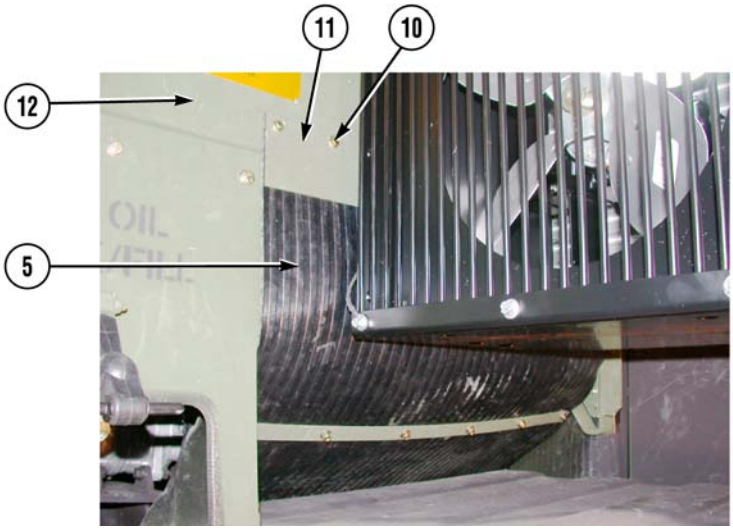


NOTE

Perform Step 2 if restraint bar was removed.

2. Install restraint bar (6) on rubber flap (5) with four screws (14) and locknuts (13).

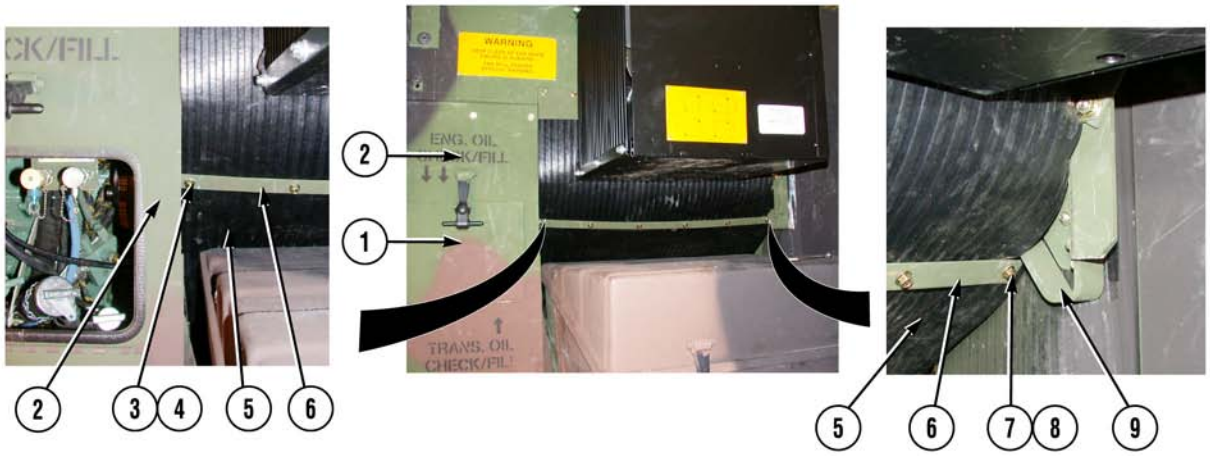
LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT - Continued



NOTE

- Bottom of rubber flap needs to be positioned behind the battery box cover and in front of the compressor mounting bracket.
- Only use five screws to install rubber flap on panel. Two inside screws not needed.

3. Install rubber flap (5) on panel (12) with plate (11) and five screws (10).



4. With the aid of an assistant, install restraint bar (6) and rubber flap (5) on stabilizer bracket (9) with screw (8) and locknut (7).

5. Install restraint bar (6) and rubber flap (5) on left side noise panel (2) with screw (4) and locknut (3).

6. Close access door (1) on left side noise panel (2).

LEFT SIDE NOISE PANEL AND RUBBER FLAP REPLACEMENT - Continued

FOLLOW-ON MAINTENANCE

1. Install rear noise panel (TM 9-2320-364-20).

END OF WORK PACKAGE

AIR CONDITIONING LEAK TEST

THIS WORK PACKAGE (WP) COVERS:

Inspection

Test

Follow-On Maintenance

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Left side noise panel and rubber flap removed (WP 0051).
Electronic control box (ECB) right side panel removed (TM 9-2320-364-20).

Tools and Special Tools
Tool Kit, General Mechanic's (Item 9, Appendix F)
Leak Detector, Refrigerant (Item 1, Appendix H)

Materials/Parts
None

Personnel Required
MOS 52C, Utilities equipment repairer

References
TM 9-2320-364-20

INSPECTION

WARNING

- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134a air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures or air and R-134a may form, resulting in a fire or explosion, which could cause personnel injury or death.**

NOTE

- Refrigerant is odorless. As a result, all of it may leak away and not be noticed until system stops cooling. All vehicle refrigerant systems lose some refrigerant depending on condition of system. Higher loss rates signal a need to locate and repair leaks.
- Leaks are most often found at compressor hose connections and at various fittings and joints in system. If unapproved replacement hoses are installed, refrigerant can be lost through hose permeation.

1. Visually inspect refrigerant system for air conditioning lubricant leakage and corrosion and damage to lines, hoses, and other components.

2. Visually inspect lowest points of fittings, hoses, and lines for indication of lubricant leakage.

AIR CONDITIONING LEAK TEST - Continued

TEST

1. AC system should be charged with a sufficient amount of refrigerant to have a gage pressure of at least 50 psi (345 kPa) when not in operation. At temperatures below 59ºF (15ºC), leaks may not be measurable, since this pressure may not be reached.

2. Take care not to contaminate detector probe tip if part being tested is contaminated. If part is particularly dirty, or moisture is present, it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since detector may be sensitive to the ingredients in cleaner or solvent.

3. Visually trace entire refrigerant system, and look for signs of air conditioning lubricant leakage, damage, and corrosion on all lines, hoses, and components. Each questionable area should be carefully checked with detector probe, as well as, all fittings, hoses, service ports with caps in place, and areas around cushion clips and cable ties.

4. Always follow AC system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue to test remainder of the AC system.

5. At each area checked, probe should be moved around location at a rate no more than 1 to 2 in./second (3 to 5 cm/second), and no more than 1/4 in. (.64 cm) from surface, completely around position. Slower and closer movement of the probe greatly improves likelihood of finding a leak. Any increase in beep rate is indicative of a leak.

6. An apparent leak should be verified at least once as follows:

   (a) Blow shop air in area of suspected leak if necessary, and repeat check of area. In cases of very large leaks, blowing out area with shop air often helps locate exact position of leak.

   (b) Move probe to fresh air and reset. Then hold probe tip as close as possible to indicate leak source and slowly move around it until leak is confirmed.

7. If leaks are indicated, repair leaks as necessary.

FOLLOW-ON MAINTENANCE

1. Install electronic control box (ECB) right side panel (TM 9-2320-364-20).

2. Install left side noise panel and rubber flap (WP 0051).

END OF WORK PACKAGE

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE

THIS WORK PACKAGE (WP) COVERS:

Recovery

Evacuation

Charging

INITIAL SETUP:

Maintenance Level
Field Level Maintenance

Equipment Condition
Wheels chocked (TM 9-2320-364-10).

Tools and Special Tools
Goggles (Item 1, Appendix F)
Set, Cap and Plug (Item 4, Appendix F)
Tool Kit, General Mechanic's (Item 9, Appendix F)
Leak Detector, Refrigerant (Item 1, Appendix H)
Reclaimer, Refrigerant (Item 2, Appendix H)

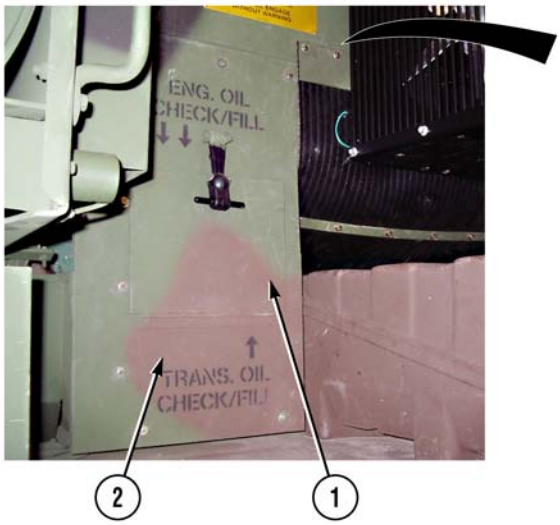
Materials/Parts
Gloves, Rubber (Item 2, Appendix E)
Oil, PAG 46V (Item 3, Appendix E)
Refrigerant (Item 5, Appendix E)
Preformed Packing (Item 10, Figure 3, Appendix G)

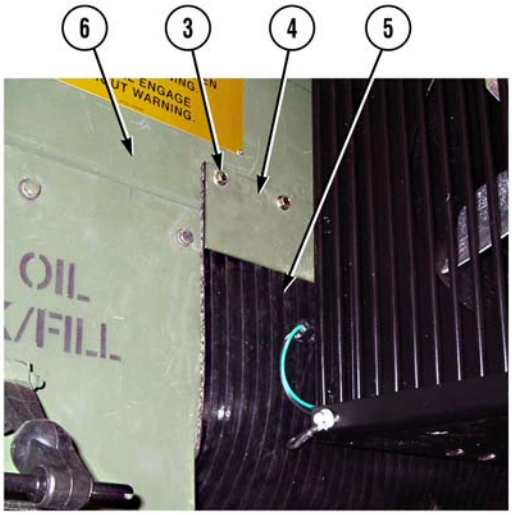
Personnel Required
MOS 52C, Utilities equipment repairer

References
TM 9-2320-364-10

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

RECOVERY

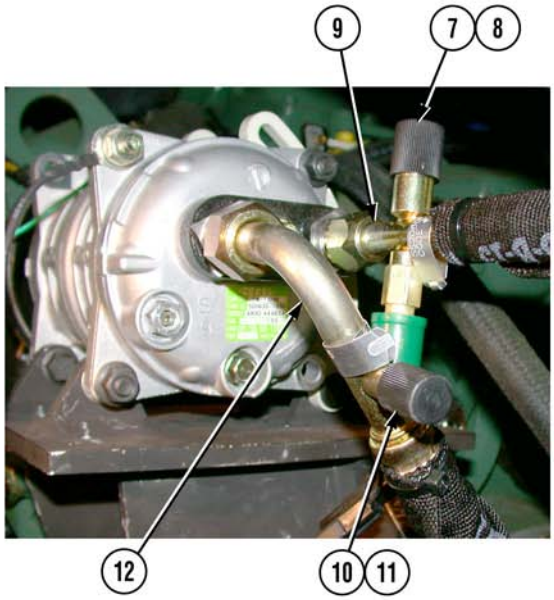




1. Start engine (TM 9-2320-364-10) and run at idle until normal operating temperature is reached.
2. Shut engine OFF (TM 9-2320-364-10).
3. Open access door (1) on left side noise panel (2).
4. Remove five screws (3), plate (4), and rubber flap (5) from panel (6).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued





WARNING

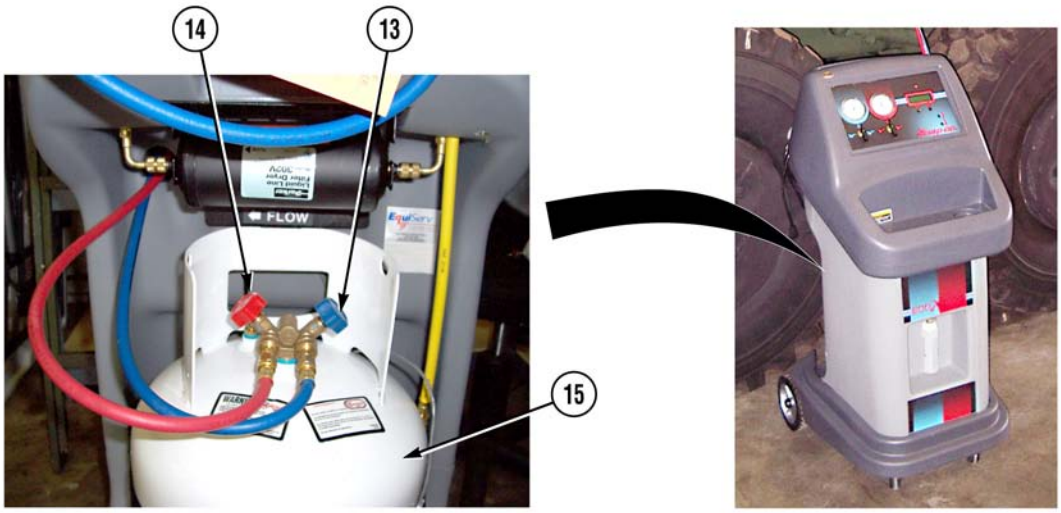
- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134a air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134a may form, resulting in a fire or explosion, which could cause personnel injury or death.**
- **Wear protective goggles and nonleather gloves when servicing air conditioner system. Failure to comply may result in injury to personnel.**

NOTE

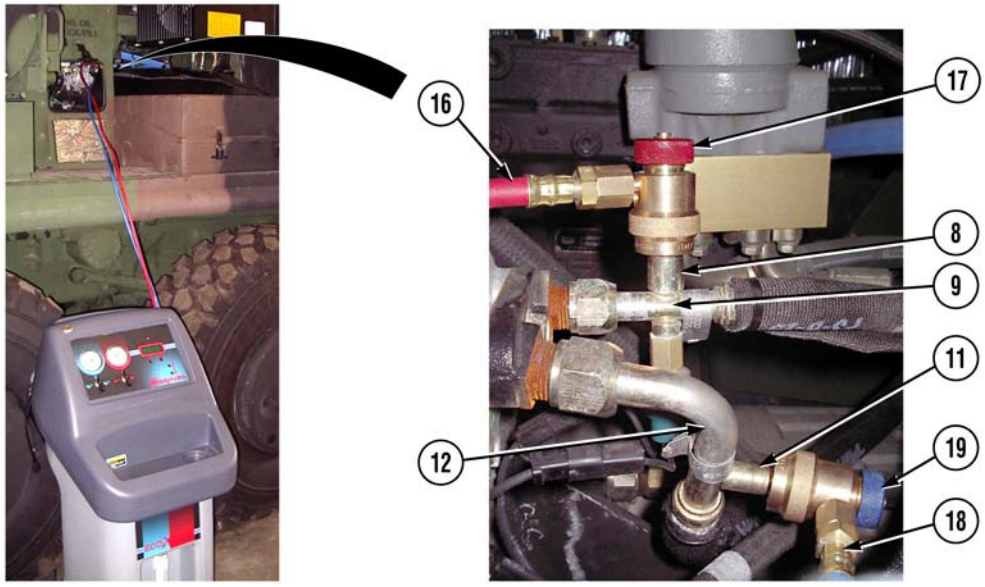
Service valves are located on two AC hoses attached to AC compressor.

5. Remove cap (7) from service valve (8) on hose (9).
6. Remove cap (10) from service valve (11) on hose (12).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

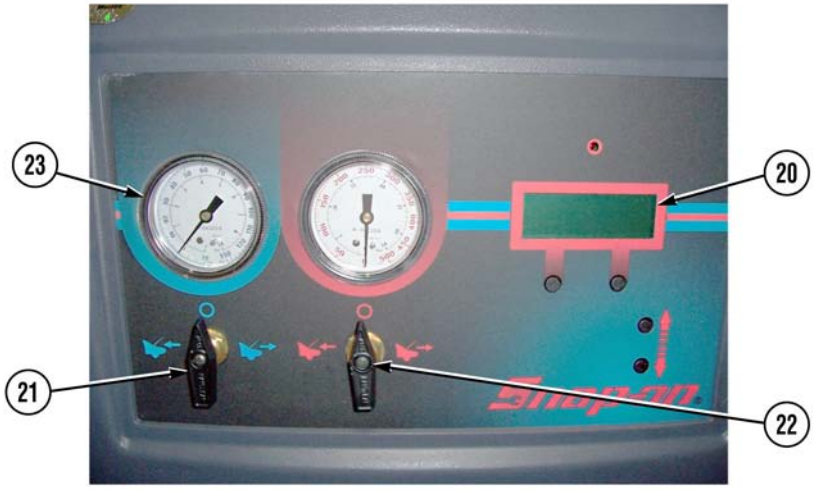


7. Open blue valve (13) and red valve (14) on recovery tank (15).



8. Connect red hose (16) to service valve (8) on hose (9) and open service hose coupler (17).
9. Connect blue hose (18) to service valve (11) on hose (12) and open service hose coupler (19).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



10. Select RECOVER and press ENTER on LCD screen (20).
11. Turn panel low side valve (21) and panel high side valve (22) to 3 o'clock position, then press START.

NOTE

As refrigerant is recovered, the panel gages will show increasing vacuum.

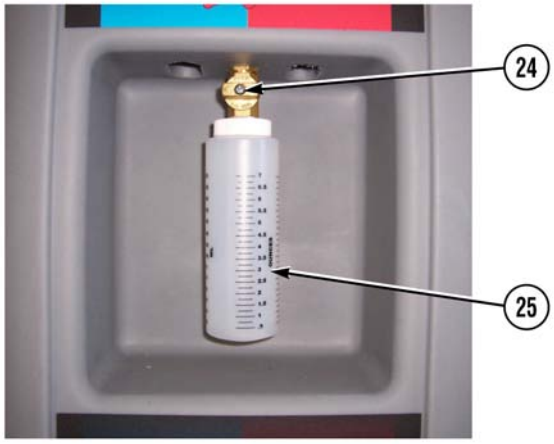
12. Recover refrigerant until the low side pressure gage (23) indicates 15 inHG, then press PAUSE.
13. Monitor low side pressure gage (23) for five minutes.

NOTE

- If pressure increases above vacuum (0 psi), perform Step 14, more recovery time is required.
- If there is no change in pressure after five minutes, proceed to Step 15, recovery is complete.

14. Repeat Steps 10 through 13 until system pressure remains stable for 2 minutes, then press START to continue recovering refrigerant.
15. Press EXIT, turn panel low side valve (21) and panel high side valve (22) to 12 o'clock position, then press NEXT.

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



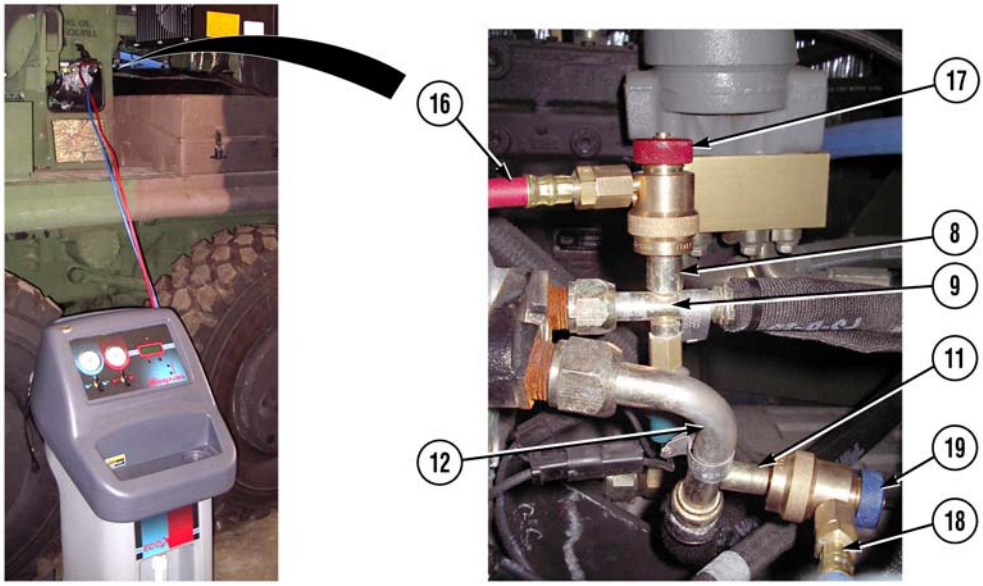
16. Open oil drain valve (24) and drain waste oil into bottle (25).
17. Close oil drain valve (24).

NOTE

- The amount of oil recorded in Step 18 will be the same amount of oil that will need to be added back into the AC system when charging.
- Always comply with local, state, and federal regulations regarding oil disposal. Failure to comply may result in penalties for improper disposal.

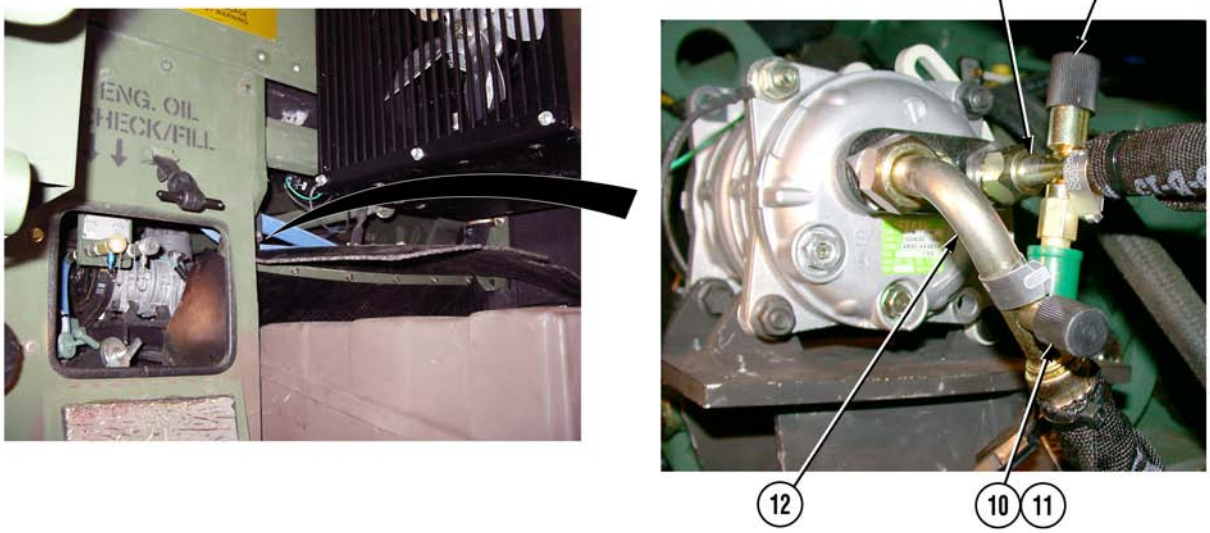
18. Remove bottle (25) from oil drain valve (24) and record amount of oil that drained into bottle.
19. Install bottle (25) on oil drain valve (24).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



20. Press NEXT, wait for Main Menu.
21. When Main Menu screen appears, close service hose coupler (17) and service hose coupler (19).
22. Remove blue hose (18) from service valve (11) on hose (12).
23. Remove red hose (16) from service valve (8) on hose (9).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



24. Install cap (7) on service valve (8) of hose (9).

25. Install cap (10) on service valve (11) of hose (12).

CAUTION

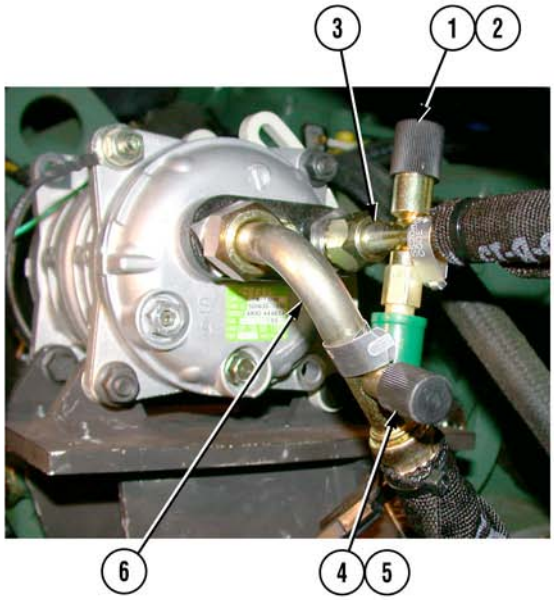
AC condenser dryer must be replaced each time AC system refrigerant is recovered or damage to AC system may result.

26. Replace AC condenser dryer (WP 0024).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

EVACUATION





WARNING

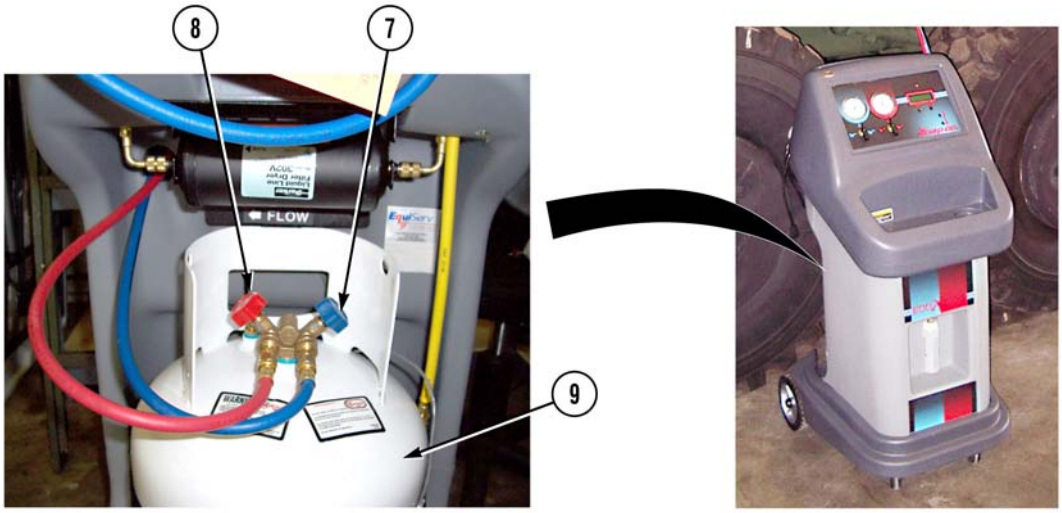
Wear protective goggles and nonleather gloves when servicing AC system. Failure to comply may result in injury to personnel.

NOTE

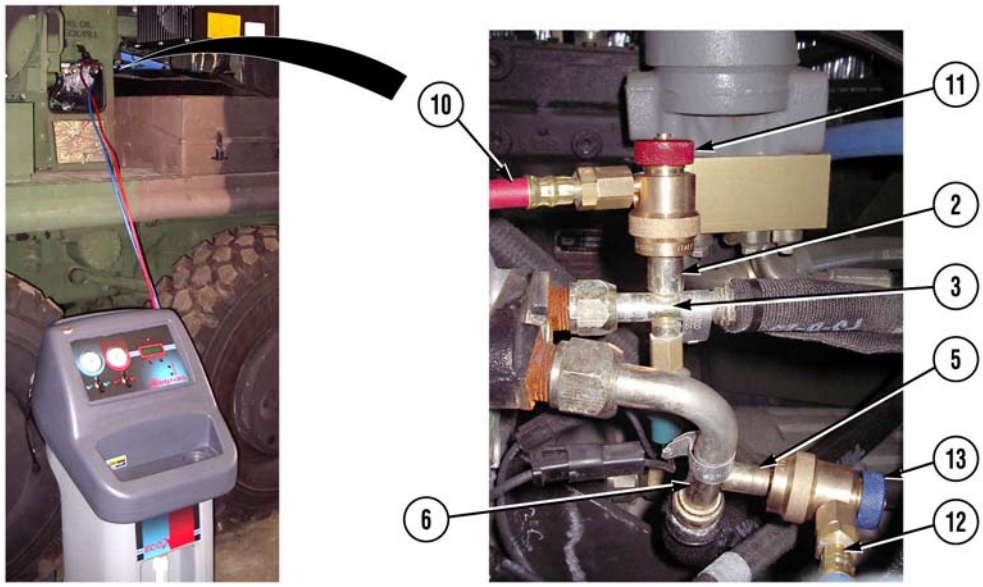
Service valves are located on two AC hoses attached to AC compressor.

1. Remove cap (1) from service valve (2) on hose (3).
2. Remove cap (4) from service valve (5) on hose (6).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



3. Open blue valve (7) and red valve (8) on recovery tank (9).



4. Connect red hose (10) to service valve (2) on hose (3) and open service hose coupler (11).
5. Connect blue hose (12) to service valve (5) on hose (6) and open service hose coupler (13).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



NOTE

If two gages indicate pressure, recover refrigerant from service station hoses before performing Step 6.

6. Select VACUUM and press ENTER on LCD screen (14).
7. Adjust time to 30 minutes.
8. Turn panel low side valve (15) and panel high side valve (16) to 3 o'clock position, then press START.
9. When evacuation time is FINISHED, press EXIT.
10. Turn panel low side valve (15) and panel high side valve (16) to 12 o'clock position, then press NEXT.

NOTE

Any rise in vacuum indicates a leak in the AC system.

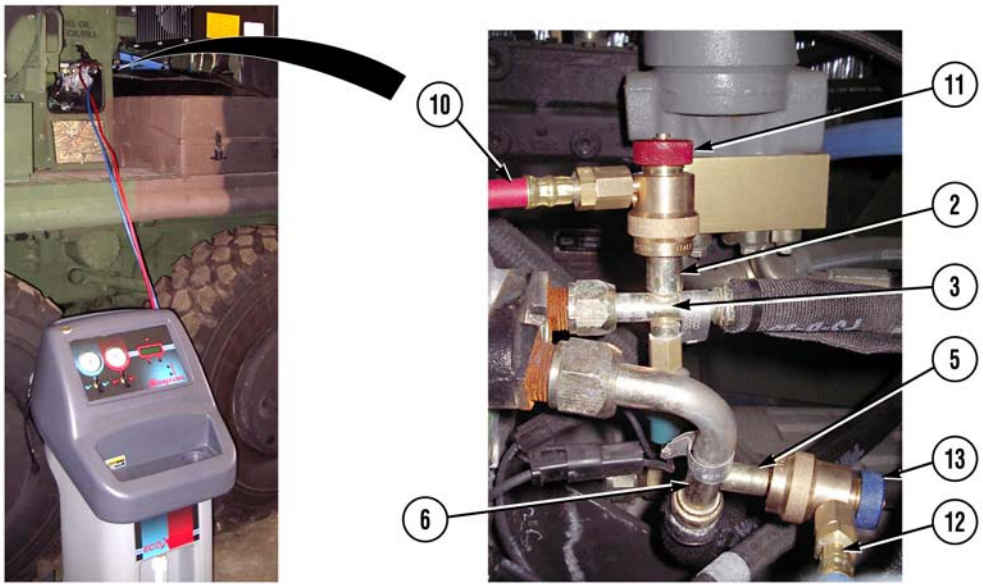
11. Monitor low side pressure gage (17) for five minutes.

NOTE

- If there is a change in pressure after five minutes, perform Steps 12 through 15. Change of pressure indicates a leak in the system.
- If there is no change in pressure after five minutes, proceed to Step 16, evacuation is complete.

12. Partially charge AC system.
13. Perform a leak test inspection (WP 0052).
14. If a leak is found, repair leak as required.
15. Recover refrigerant and repeat evacuation procedure.

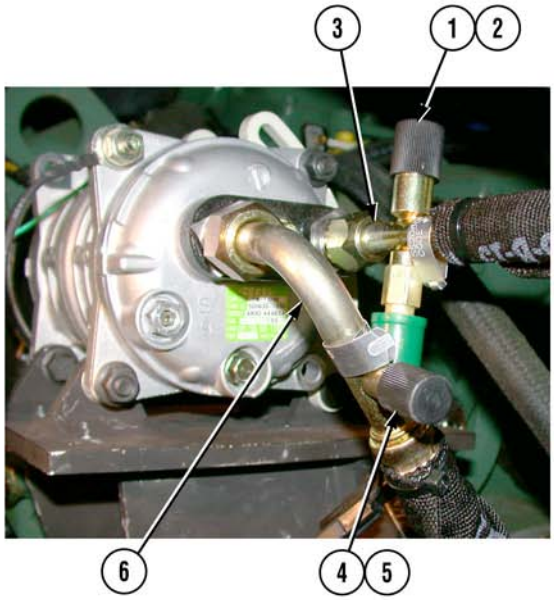
AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



16. Close service hose coupler (11) and service hose coupler (13).
17. Remove blue hose (12) from service valve (5) on hose (6).
18. Remove red hose (10) from service valve (2) on hose (3).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued





19. Install cap (4) on service valve (5) of hose (6).

20. Install cap (1) on service valve (2) of hose (3).

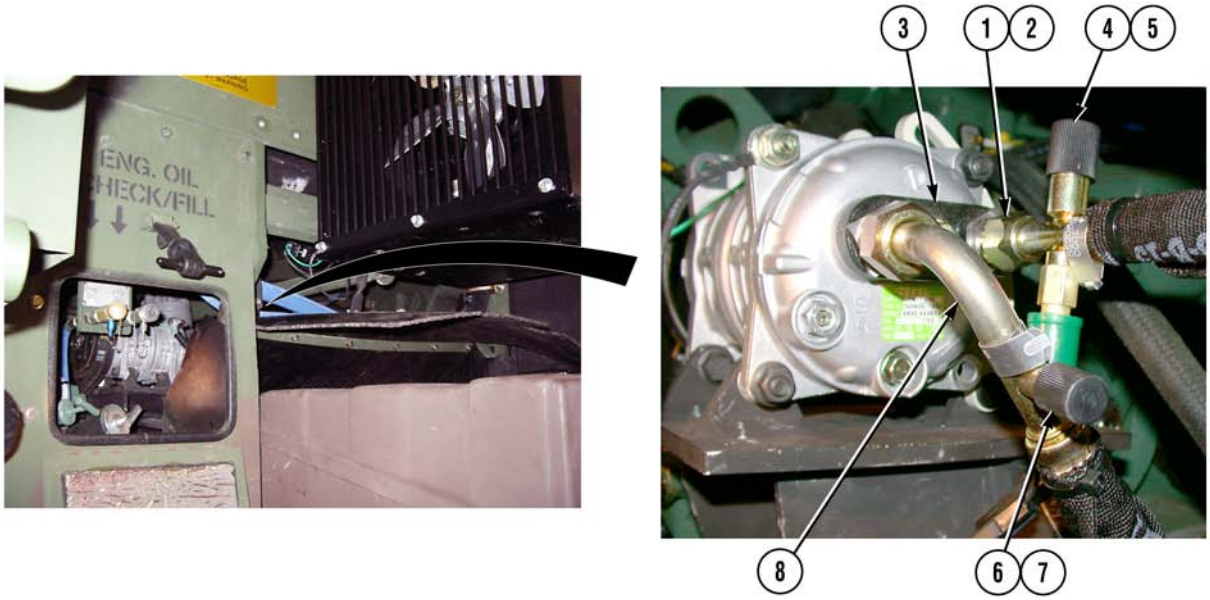
CAUTION

AC condenser dryer must be replaced each time AC system is evacuated or damage to AC system may result.

21. Replace AC condenser dryer (WP 0024).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

CHARGING



WARNING

- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134a air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134a may form, resulting in a fire or explosion, which could cause personnel injury or death.**

1. Remove hose (1) and preformed packing (2) from compressor (3). Discard preformed packing (2).

CAUTION

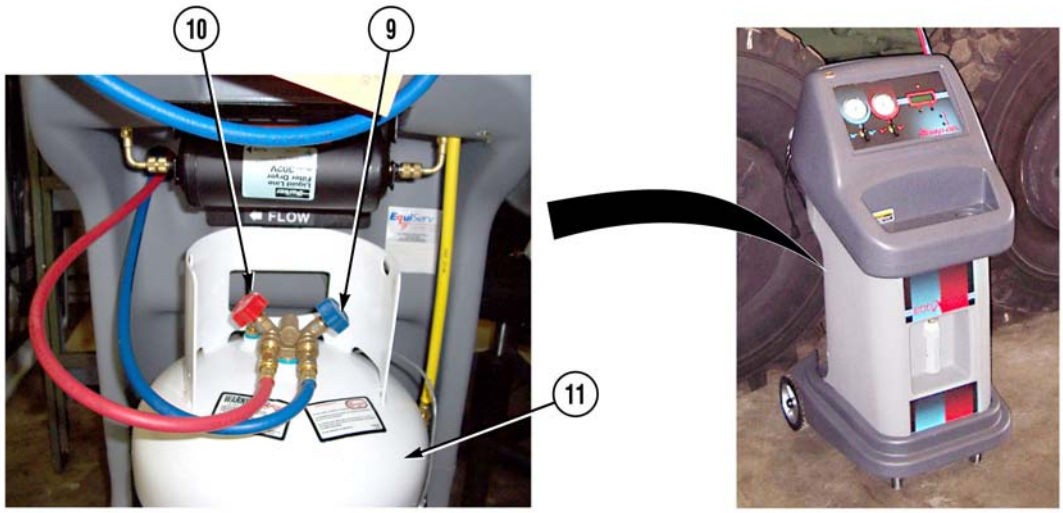
PAG oil must be added to AC system before charging or AC compressor will be damaged.

NOTE

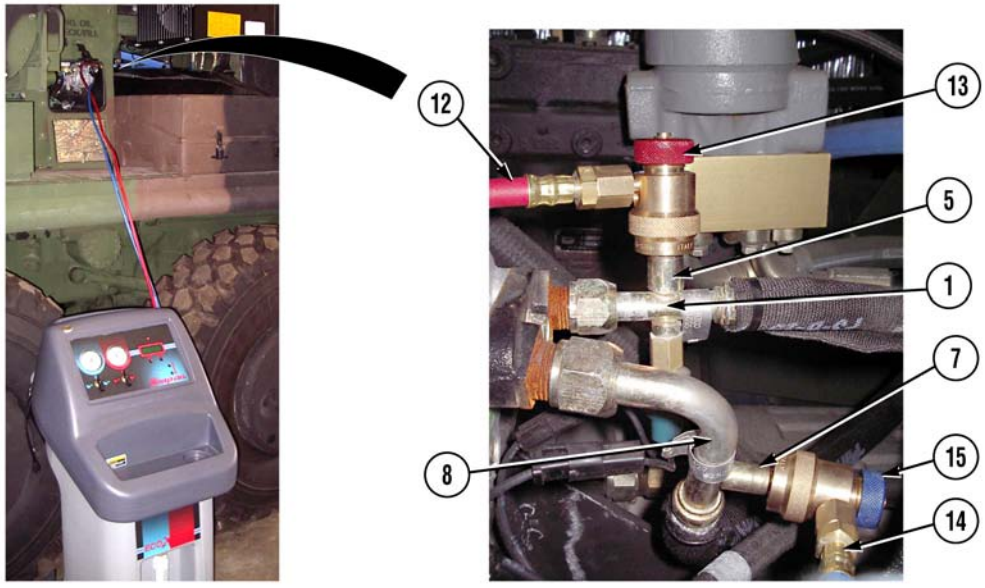
Add same amount of PAG oil in AC system as was noted during recovery, unless AC system is being charged for the first time. If charging AC system for the first time, add 1 oz. (28 g) of PAG oil into AC system.

2. Pour PAG oil into hose (1).
3. Install hose (1) and preformed packing (2) on compressor (3).
4. Remove cap (4) from service valve (5) on hose (1).
5. Remove cap (6) from service valve (7) on hose (8).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



6. Open blue valve (9) and red valve (10) on recovery tank (11).



7. Connect red hose (12) to service valve (5) on hose (1) and open service hose coupler (13).
8. Connect blue hose (14) to service valve (7) on hose (8) and open service hose coupler (15).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

NOTE

AC system must be in a 15 inHG vacuum status before charging.

9. Charge AC system as noted in table 6-1 for proper system pressure levels at measured temperatures.

Table 6-1. Proper System Pressure Levels at Measured Temperatures.

ºF	ºC	HFC-134a (psi)	ºF	ºC	HFC-134a (psi)
-60	-51.1	21.8	55	12.8	51.1
-55	-48.3	20.4	60	15.6	57.3
-50	-45.6	18.7	65	18.3	63.9
-45	-42.8	16.9	70	21.1	70.9
-40	-40.0	14.8	75	23.8	78.4
-35	-37.2	12.5	80	26.7	88.4
-30	-34.4	9.8	85	29.4	94.9
-25	-31.7	6.9	90	32.2	103.9
-20	-28.9	3.7	95	35.0	113.5
-15	-26.1	0.0	100	37.8	123.6
-10	-23.3	1.9	105	40.6	134.3
-5	-20.6	4.1	110	43.3	145.3
0	-17.8	6.5	115	46.1	157.6
5	-15.0	9.0	120	48.9	170.3
10	-12.2	12.0	125	51.7	183.6
15	-9.4	15.0	130	54.4	197.6
20	-6.7	18.4	135	57.2	212.4
25	-3.9	22.1	140	60.0	227.9
30	-1.1	26.1	145	62.8	244.3
35	1.7	30.4	150	65.6	261.4
40	4.4	35.0	155	68.3	279.5
45	7.2	40.0	160	71.1	298.4
50	10.0	45.3	165	73.9	318.3

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



10. Select CHARGE and press ENTER on LCD screen (16).

CAUTION

Use care not to overcharge AC system. The AC system is fully charged when there is 3 lbs. (1.4 kg) of refrigerant in AC system. Failure to comply may result in damage to compressor.

11. Turn panel high side valve (17) to 9 o'clock position, then press START.

NOTE

A slow charge condition may occur due to a pressure equalization between the service station and vehicle AC system.

12. Monitor the charge weight and turn panel high side valve (17) to 12 o'clock position after 3 lbs. (1.4 kg) of refrigerant has entered AC system.

WARNING

Never operate vehicle AC system with the panel high side valve in 9 o'clock position.

NOTE

- Perform Steps 13 through 19 if a slow charge condition occurs.
- Proceed to Step 20 if a slow charge condition did not occur.

13. Ensure panel low side valve (18) and high side valve (17) are in the 12 o'clock position.

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

15. Turn AC system ON (WP 0004).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



16. Turn panel low side valve (18) to 9 o'clock position.

17. Monitor the charge weight and turn panel low side valve (18) to 12 o'clock position after 3 lbs. (1.4 kg) of refrigerant has entered AC system.

18. Turn AC system OFF (WP 0004).

19. Shut engine OFF (TM 9-2320-364-10).

NOTE

Any rise in vacuum indicates a leak in the AC system.

20. Monitor low side pressure gage (19) and high side pressure gage (20) for five minutes.

NOTE

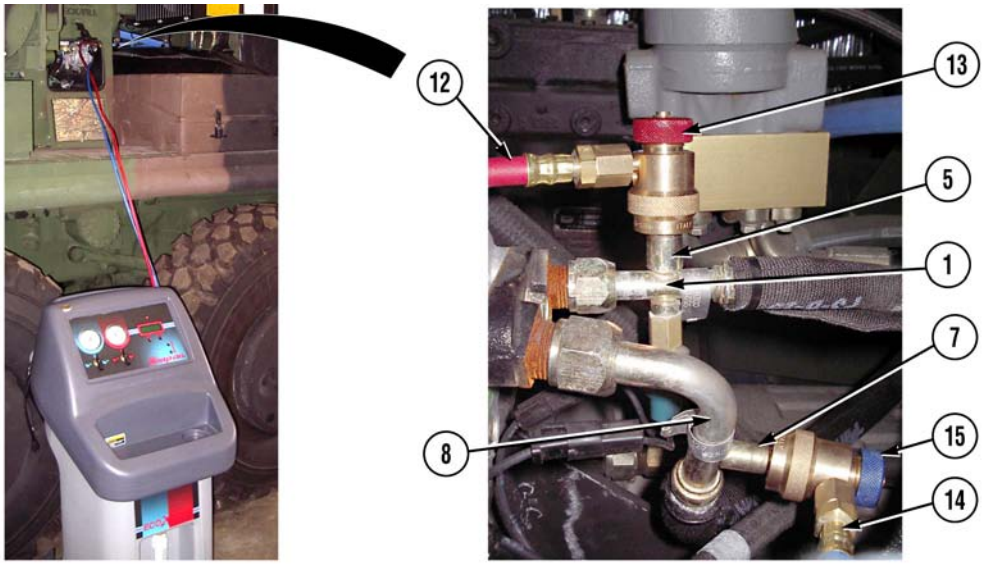
- If there is a change in pressure after five minutes, perform Steps 21 through 23. Change of pressure indicates a leak in the system.
- If there is no change in pressure after five minutes, proceed to Step 24, charging is complete.

21. Perform a leak test inspection (WP 0052).

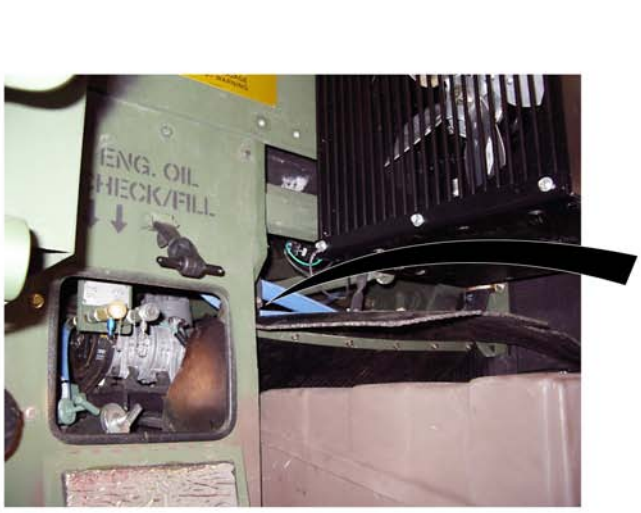
22. If a leak is found, recover refrigerant and repair leak as required.

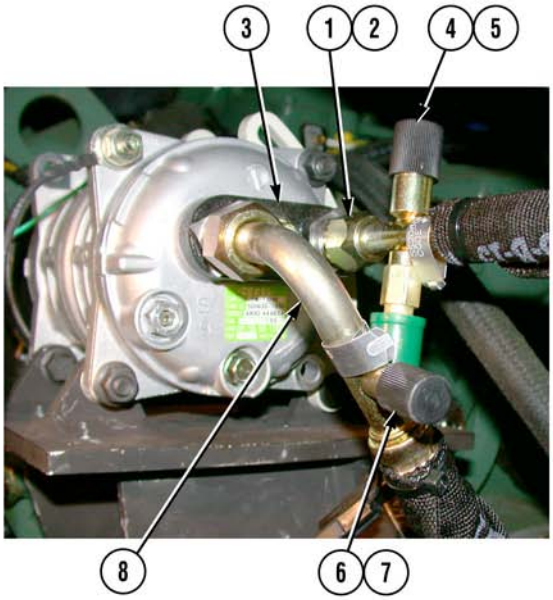
23. Repeat charging procedure.

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued



24. Close service hose coupler (13) and service hose coupler (15).
25. Remove blue hose (14) from service valve (7) on hose (8).
26. Remove red hose (12) from service valve (5) on hose (1).





27. Install cap (6) on service valve (7) of hose (8).
28. Install cap (4) on service valve (5) of hose (1).

AC SYSTEM REFRIGERANT (R-134a) MAINTENANCE - Continued

FOLLOW-ON MAINTENANCE

1. Leak test air conditioning system (WP 0052).
2. Check operation of AC system (WP 0004).
3. Engine OFF (TM 9-2320-364-10).

END OF WORK PACKAGE

APPENDIX A

INSTALLATION DRAWINGS AND SCHEMATICS

INSTALLATION DRAWINGS AND SCHEMATICS

APPENDIX A INDEX

FIGURE	FIGURE TITLE	WP PAGE NO.
Figure A-1.	AC Electrical Diagram and Schematic	0054-3
Figure A-2.	AC Refrigerant Schematic	0054-5

INSTALLATION DRAWINGS AND SCHEMATICS

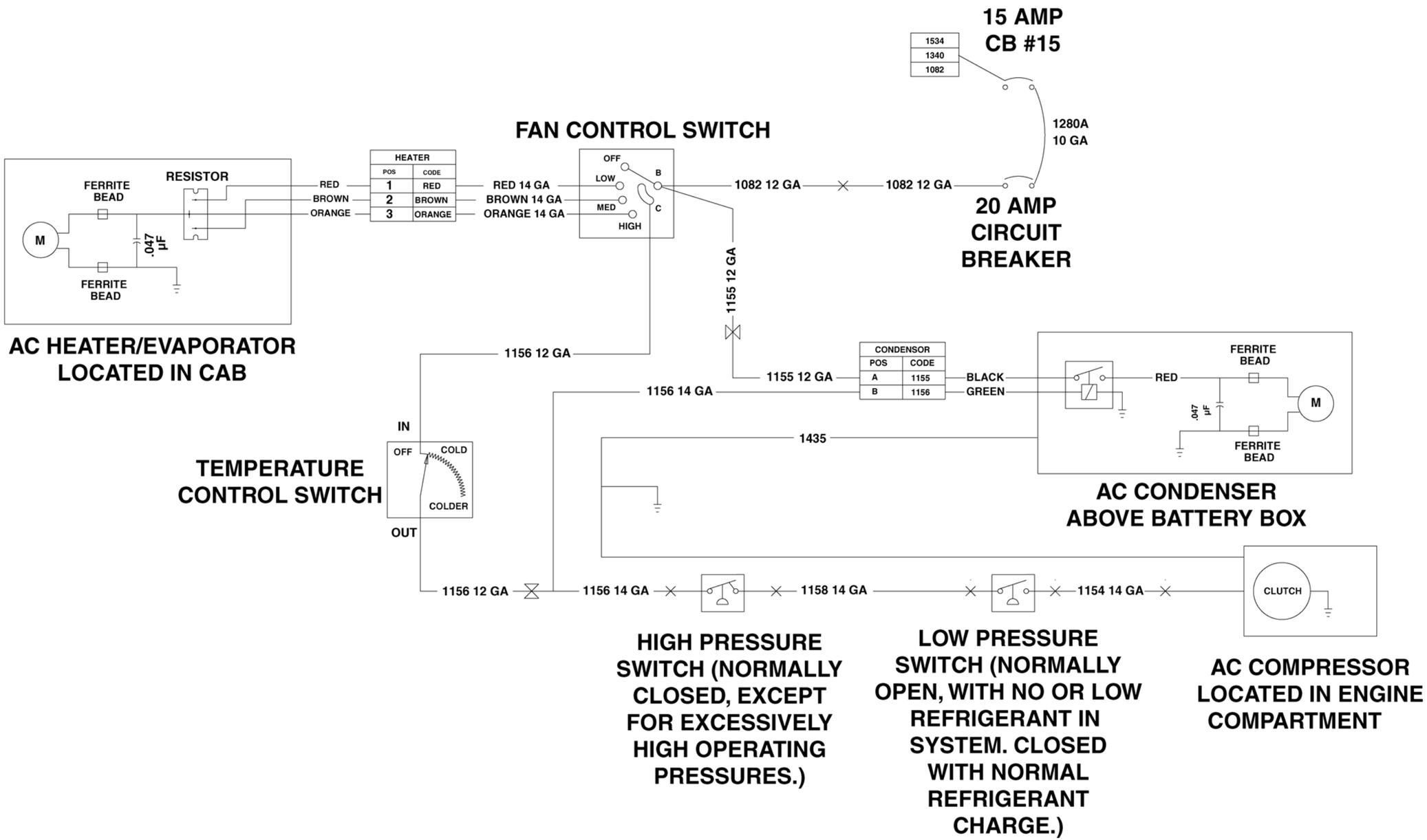
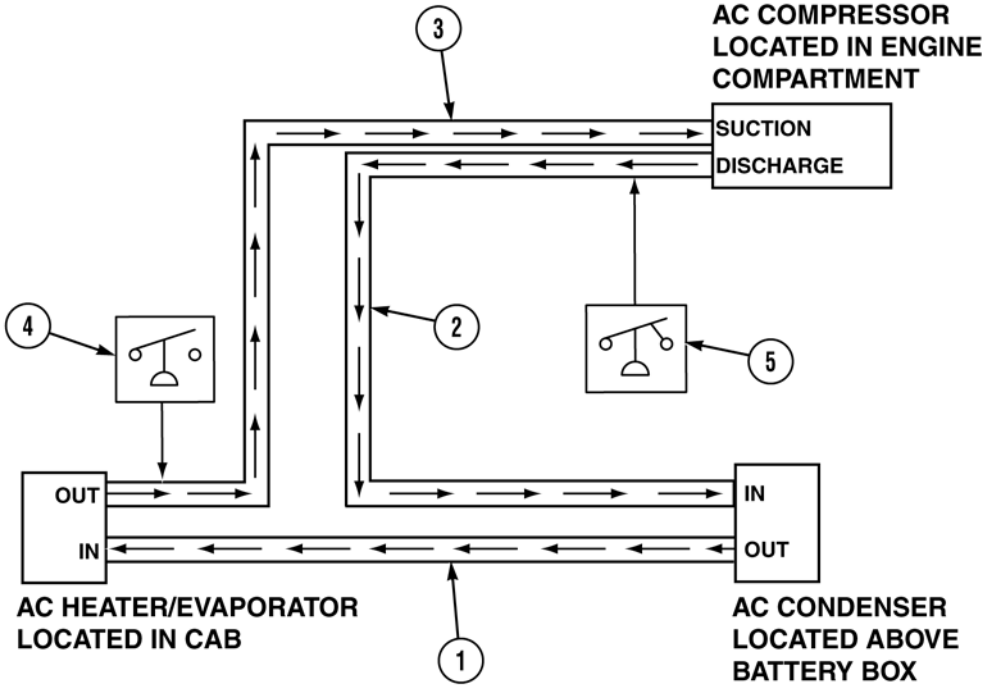


Figure A-1. AC Electrical Diagram and Schematic

INSTALLATION DRAWINGS AND SCHEMATICS - Continued



LEGEND:

1. HOSE ASSEMBLY No. 6 (2524)
2. HOSE ASSEMBLY No. 8 (2521)
3. HOSE ASSEMBLY No. 10 (2522)
4. LOW PRESSURE SWITCH
   CLOSES AT 34 ± 4 psi
   OPENS AT 6 ± 2 psi
5. HIGH PRESSURE SWITCH
   OPENS AT 300 ± 10 psi
   CLOSES AT 100 ± 10 psi

Figure A-2. AC Refrigerant Schematic

END OF WORK PACKAGE

APPENDIX B

INITIAL INSTALLATION INSTRUCTIONS OF AC KIT

INITIAL INSTALLATION INSTRUCTIONS OF AC KIT

APPENDIX B

SCOPE

This appendix contains the PLS Air Conditioner Kit Installation Instructions manual.

PLS
AIR CONDITIONER KIT
INSTALLATION INSTRUCTIONS
KIT NUMBER - 3538672



TRUCK, TRACTOR, M1074 AND M1075 PALLETIZED LOAD SYSTEM (PLS)
NSN 2320-01-304-2277
NSN 2320-01-304-2278

KIT CONTENTS	Pg. 3
COMPRESSOR INSTALLATION	Pg. 9
HOSE AND WIRE HARNESS ROUTING	Pg. 21
CONDENSOR INSTALLATION	Pg. 27
HEATER/ EVAPORATOR INSTALLATION	Pg. 37
AIR CONDITIONER CHARGE/SERVICE	Pg. 55
LEFT SIDE NOISE PANEL PREPARATION/ INSTALLATION	Pg. 67

Kit Contents.

The PLS Air Conditioner kit contains the following items:

1. Compressor Installation.		
ITEM	**QUANTITY**	**PART NUMBER**
Compressor Mounting Bracket	1	3530700
Loctite 242	A/R	65270AX
Compressor and Clutch	1	3530762
Washer-3/8 in.	2	362AX
Screw-3/8-16 x 1 1/2 in.	6	120699A
Flange Nut-3/8 in.	6	115307A
Compressor Strap	2	1935360
Compressor Drive Belt Set	1	48530AX
Nutsert	2	66223AX
Screw-3/8-16 x 1 in.	2	420AX1
Lockwasher-3/8 in.	2	351AX
Nut-3/8 in.	2	434AX1
Screw-7/16-14 x 1 3/4 in.	2	1367080
Washer-7/16 in.	2	110380A
Screw-3/8-24 x 4 1/2 in.	1	1DD339
Nut-3/8 in.	1	373AX1
Screw-3/8-16 x 1 1/4 in.	1	33259AX
Nut-3/8 in.	1	33256AX
Connector	1	6HR406
Terminal	1	3KK562
Seal	1	8HA24
Secondary Lock	1	5HR806
Fuel Line Support Bracket (Supply)	1	3536384
Fuel Line Support Bracket (Return)	1	3536496
Screw-5/16-18 x 1 in.	4	1846HX1

1. Compressor Installation (Continued).		
ITEM	**QUANTITY**	**PART NUMBER**
Locknut-5/16 in.	4	1333510
90º Fitting	1	1758280
Fitting	1	25341AX
Hose Assembly 8 in.	1	3533284
Engine Accessory Drive Assembly	1	3527801
Bracket	1	3530565
Screw-1/4-20 x 1 in.	2	66420AX
Washer-1/4 in.	2	703HX
Lockwasher-1/4 in.	2	353AX
Screw-3/8-16 x 1 1/2 in.	1	1754280
Locknut-3/8 in.	3	1437220
Air Conditioner Installation Label	1	3343685

2. Hose and Wire Harness Routing.		
ITEM	**QUANTITY**	**PART NUMBER**
Air Conditioning Wire Harness	1	3536262
Hose Assembly #6	1	3535484
Hose Assembly #8	1	3535497
Hose Assembly #10	1	3535485
High-Pressure Switch	1	2081600
Low-Pressure Switch	1	2081590

3. Condensor Installation.		
ITEM	**QUANTITY**	**PART NUMBER**
Air Conditioner Condensor	1	3561838
• Connector 2 Pin	1	1570890
• Socket Contact	2	1624070
• Seal	2	1624130
Double Cushion Clip	1	1667780
Condensor Mounting Bracket	1	3529414
Screw-5/16-18 x 1 in.	2	115305A
Screw-3/8-16 x 1 in.	4	1614120
Condensor Support Bar	1	3529418
Condensor Stabilizer Bracket	1	3529419
Screw-5/16-18 x 1 in.	2	1754210
Locknut-5/16 in.	2	1333510
Battery Instruction Label	1	3161225
Radiator Fan Warning Label	1	1448500
Rivet	8	51945AX
Nutsert	5	66223AX
Locknut-1/2 in.	2	110310A
Template, Access Trimming	1	3535369
Template, Ether Holes	1	3535370
Template, Hose Cutout	1	3535371
Drawing, Skin Rework	1	3538674
Drawing, Noise Panel	1	3538675
Drawing, Condensor	1	3538676

4. Heater/Evaporator Installation.		
ITEM	**QUANTITY**	**PART NUMBER**
Heater/Evaporator	1	3472628
Gasket-1/2 in. x 1/2 in.	55 in.	2050690
Straight Fitting	1	2099480
Straight Fitting	1	2099490
Insulation	1	2203020
1300 3M Adhesive	A/R	32167AX
Grommet	5	571FX
PVC Foam Tape	53 in.	EE100969
Lockwasher-1/4 in.	6	2251HX
Screw-1/4-20 x 3/4 in.	6	2872HX
Fresh Air Box Opening Cover	1	3538673
PVC Foam Tape	43 in.	107685A
Screw-10-32 x 1/2 in.	14	2763HX
Lockscrew-1/4-20 x 1/2 in.	12	1344950
Heater Compartment Center Cover	1	2097770
Heater Cable	1	1325470
Defrost Cable	1	1379260
Air Conditioner Cable	1	2199830
Speed Nut-3/16 in.	4	20491FX1
Fan Label	1	3399967
Air Conditioner Temperature Label	1	3398711
Rotary Switch Kit	1	2099510
Optic Ribbon	1	2187070
Bezel	5	47262CX
Air Diffuser Ball	2	90017562
Hose Clamp	3	1976250

4. Heater/Evaporator Installation (Continued).		
ITEM	**QUANTITY**	**PART NUMBER**
Nutsert	5	66223AX
Circuit Breaker 20 amp	1	1732750
Wire Assembly 10 Gage	1	3538541
Wire Assembly 12 Gage	1	3538542
Wire Assembly 12 Gage	1	2081610
Light Source	1	47375AX
Clip	1	47148AX
Bulb	1	3538702
Light Wire Harness	1	3538701
Heat Shrink	1	1704950
Cable Tie	3	5193HX
Cable Tie	16	5201HX
Cable Tie	3	60459AX

5. Air Conditioner Charge/Service.		
ITEM	**QUANTITY**	**PART NUMBER**
Dye, R134A/PAG Tracer 32	7 mL	3290249
Oil, PAG 46	1 oz.	3289224
Freon, R134A	27 oz.	3289223

6. Left Side Noise Panel Preparation/Installation.		
ITEM	**QUANTITY**	**PART NUMBER**
Rubber Flap	1	3535375
Bracket	1	3535264
Restraint Bar	1	3535265
Screw-1/4-20 x 1 in.	9	1754140
Screw-1/4-20 x 3/4 in.	4	1606140
Locknut-1/4 in.	6	1600460
Washer-1/4 in.	4	2302HX

1. COMPRESSOR INSTALLATION.

This task covers:
a. Compressor Installation.

INITIAL SETUP

Models

All

Test Equipment

None

Special Tools

Belt Tension Gage

Supplies

Grease (TM 9-2320-364-20, Item 22, Appendix B)
Compressor Mounting Bracket
Loctite 242
Compressor and Clutch
(2) Washer - 3/8 in.
(6) Screw - 3/8-16 x 1 1/2 in.
(6) Flange Nut - 3/8 in.
(2) Compressor Strap
Compressor Drive Belt Set
(2) Nutserts
(2) Screw - 3/8-16 x 1 in.
(2) Lockwasher - 3/8 in.
(2) Nut - 3/8 in.
(2) Screw - 7/16-14 x 1 3/4 in.
(2) Washer - 7/16 in.
Screw - 3/8-24 x 4 1/2 in.
Nut - 3/8 in.
Screw - 3/8-16 x 1 1/4 in.
Nut - 3/8 in.
Connector
Terminal
Seal
Secondary lock
Fuel Line Support Bracket (Supply)

Supplies (Continued)

Fuel Line Support Bracket (Return)
(4) Screw - 5/16-18 x 1 in.
(4) Locknut - 5/16 in.
90º Fitting
Fitting
Hose Assembly 8 in.
Engine Accessory Drive Assembly
Bracket
(2) Screw - 1/4-20 x 1 in.
(2) Washer - 1/4 in.
(2) Lockwasher - 1/4 in.
Screw - 3/8-16 x 1 1/2 in.
(3) Locknut - 3/8 in.
Air Conditioner Installation Label

Personnel Required

Two

References

None

Equipment Condition

Rear noise panel removed, (TM 9-2320-364-20)
Left side noise panel removed,
(TM 9-2320-364-20)
Ether start aid assembly removed,
(TM 9-2320-364-20)
Right side noise panel removed,
(TM 9-2320-364-20)
Electronic control box (ECB) right side panel removed, (TM 9-2320-364-20)
Fresh air box removed, (TM 9-2320-364-20)

Special Environmental Conditions

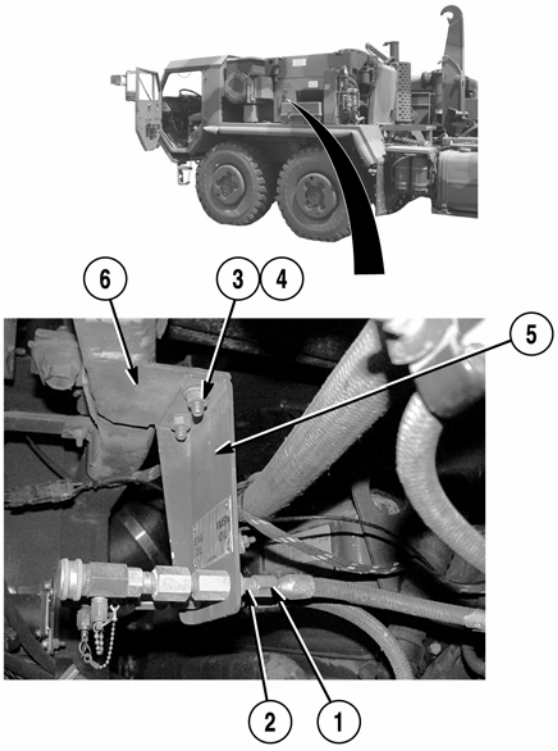
None

General Safety Instructions

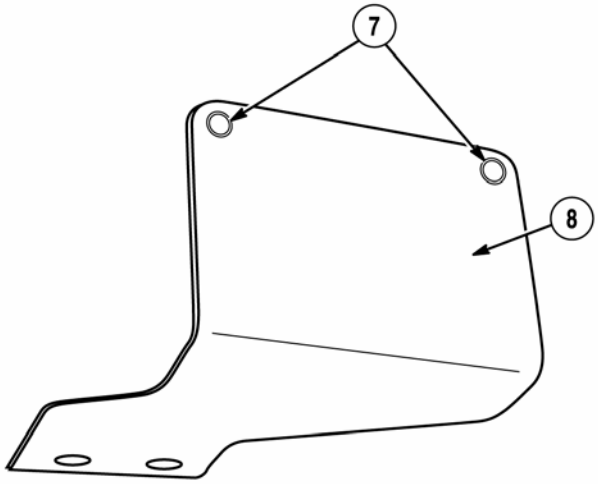
None

a. Compressor Installation.

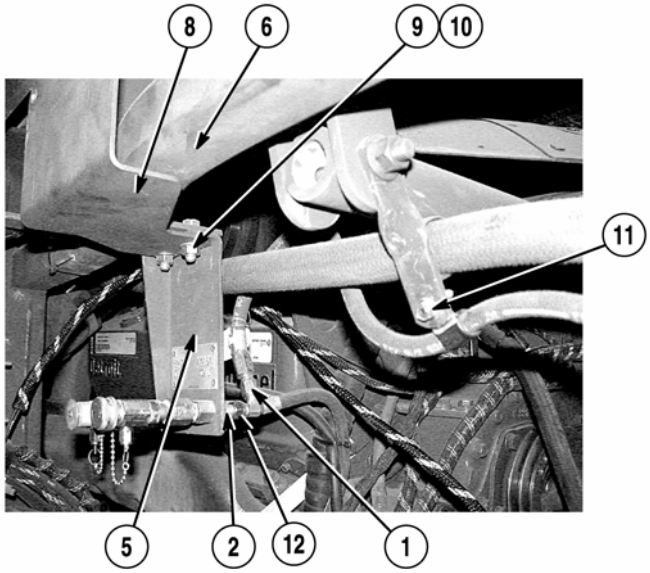
1. Remove transmission oil sample line (1) from fitting (2).
2. Remove two locknuts (3), screws (4) and sampling valve bracket (5) from power module frame (6). Discard locknuts.



3. Install two nutserts (7) on brace (8).



4. Install brace (8) and sampling valve bracket (5) on power module frame (6) with two screws (9) and locknuts (10).
5. Loosen locknut (11).
6. Install elbow (12) on fitting (2).
7. Install transmission oil sample line (1) on elbow (12).
8. Tighten locknut (11).

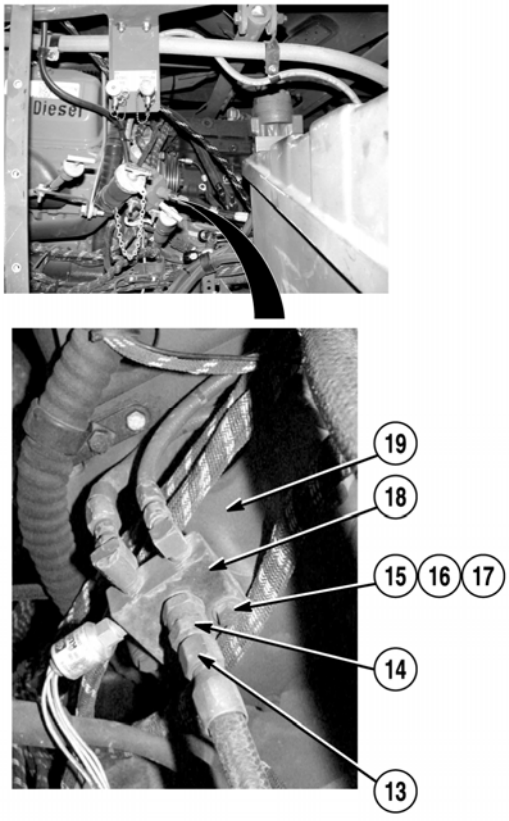


9. Remove fuel return line (13) from fitting (14).

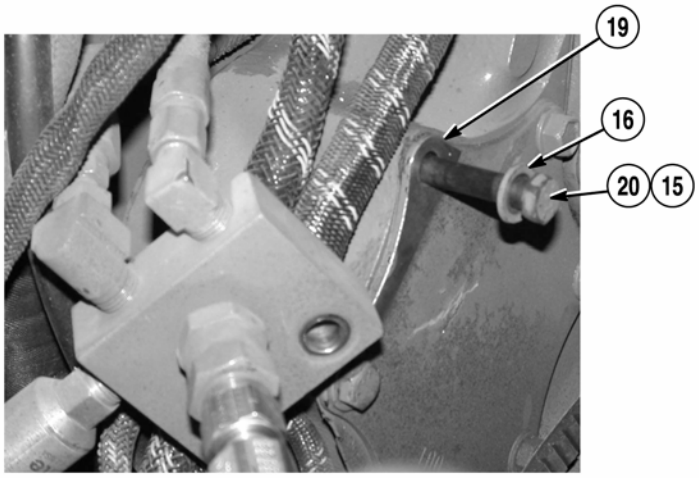
NOTE

Nut and washer removed in Step (10) will need to be retained and reused in Step (11) with new screw.

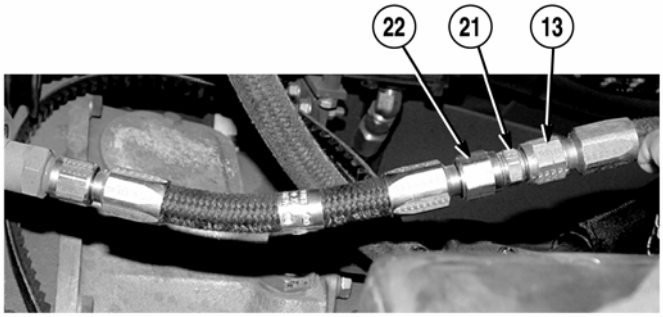
10. Remove nut (15), washer (16), screw (17) and fuel block (18) from flywheel housing (19).



11. Install screw (20) in flywheel housing (19) with washer (16) and nut (15). Tighten nut (15) to 25-30 lb-ft (34-41 N•m).



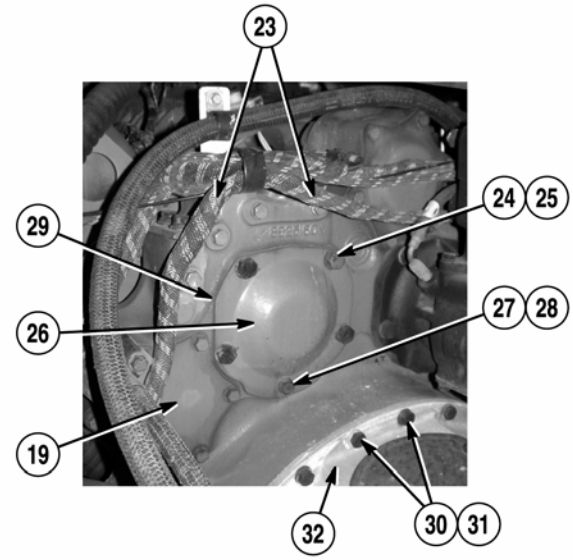
12. Install fitting (21) on fuel return line (13).
13. Install fuel hose extension (22) on fitting (21).
14. Cap open end of fuel hose extension (22).



NOTE

Use cable ties as required to secure wire harnesses forward of flywheel housing, so that wire harnesses do not come in contact with two compressor drive belts that will be installed in later steps.

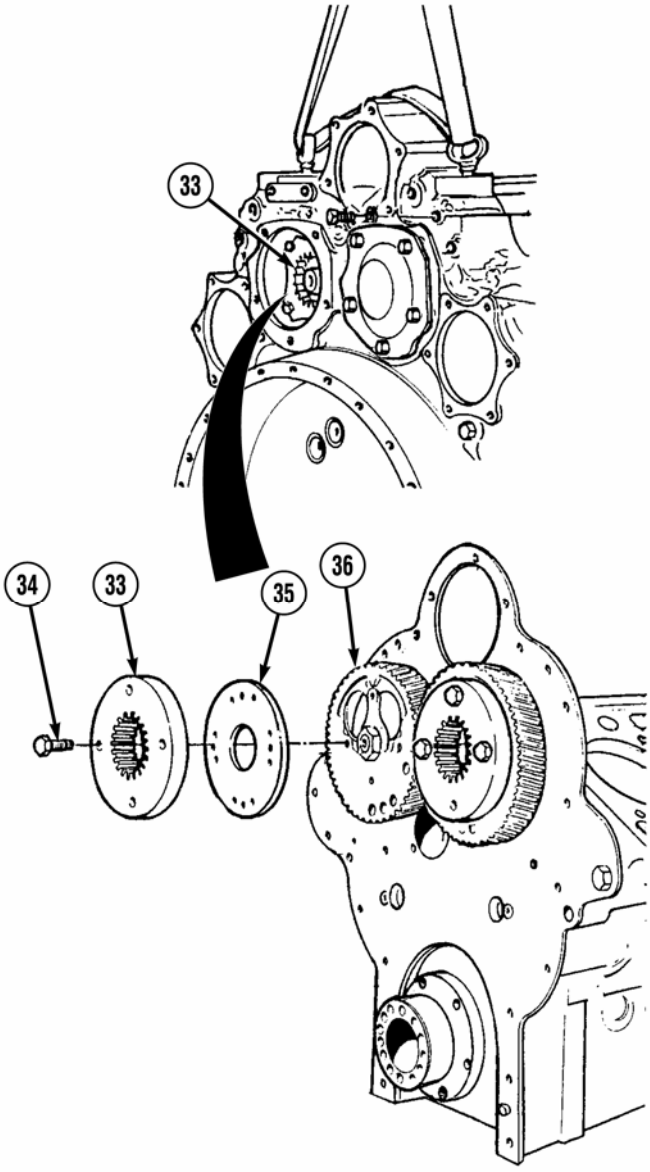
15. Secure wire harness (23) with cable ties as required.
16. Remove four screws (24) and lockwashers (25) from cam drive cover (26).
17. Remove screw (27) and washer (28) from cam drive cover (26).
18. Remove cam drive cover (26) and gasket (29) from flywheel housing (19).
19. Remove two screws (30) and lockwashers (31) from transmission (32). Discard lockwashers.



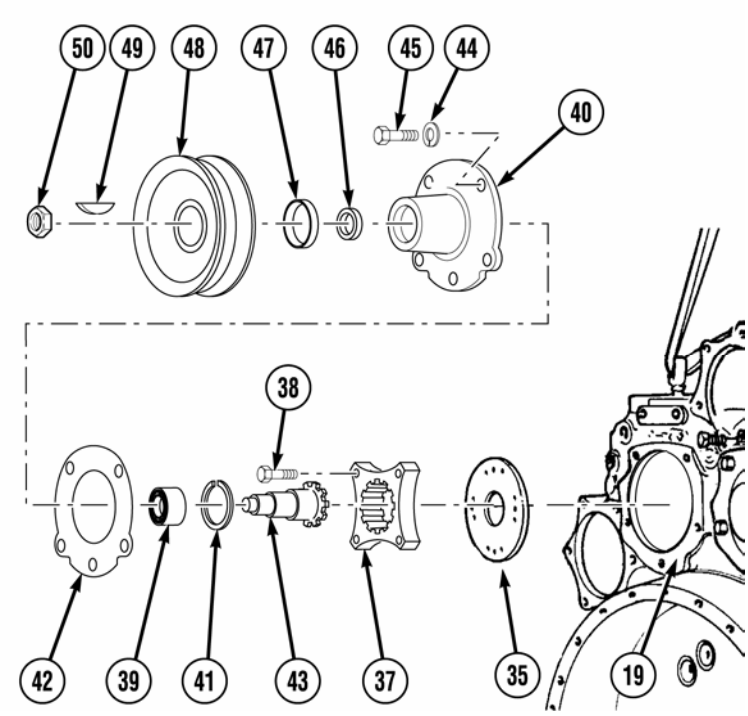
NOTE

A rag must be stuffed in flywheel housing cavity under accessory drive hub, so when screws are removed they do not fall into cavity.

20. Stuff rag in cavity under rear drive hub (33).
21. Remove four screws (34), rear drive hub (33) and camshaft nut lock plate (35) from camshaft gear (36).

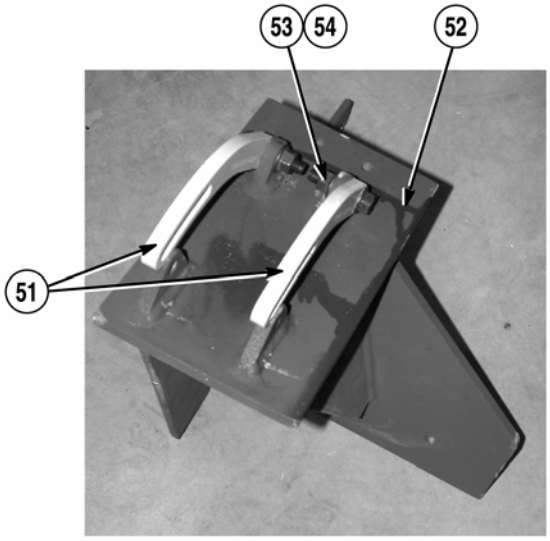


FLYWHEEL HOUSING SHOWN REMOVED FOR CLARITY



22. Install drive plate (37) and camshaft nut lock plate (35) on camshaft gear (36) with four screws (38). Tighten four screws (38) to 45 lb-ft (61 N•m).
23. Remove rag from cavity.
24. Install bearing (39) in retainer (40) with lock ring (41).
25. Apply grease to two sides of gasket (42).
26. Position drive shaft (43) in retainer (40).
27. Install drive shaft (43), gasket (42) and retainer (40) on flywheel housing (19) with five lockwashers (44) and screws (45).
28. Install spacer (46) in retainer (40).
29. Install oil seal (47) in retainer (40).
30. Install pulley (48) on drive shaft (43) with key (49) and nut (50).

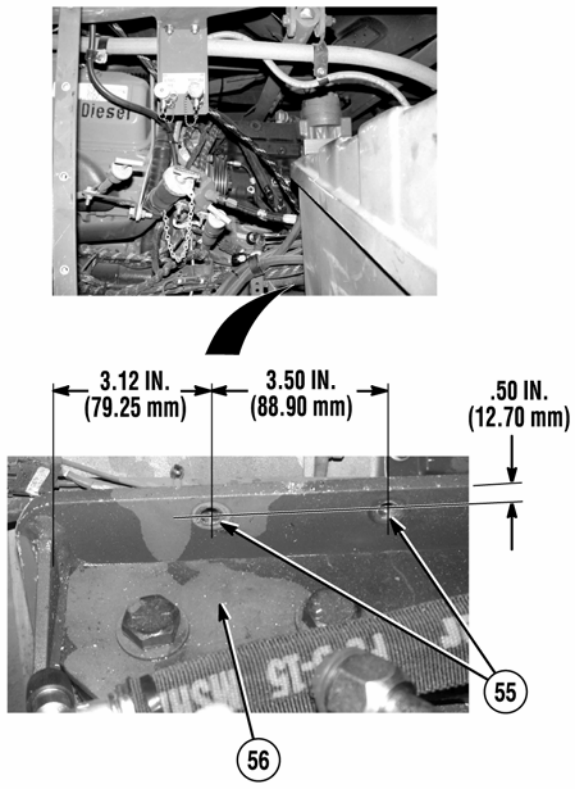
31. Install two compressor mounting straps (51) on compressor mounting bracket (52) with two screws (53) and locknuts (54). Do not tighten locknuts (54).

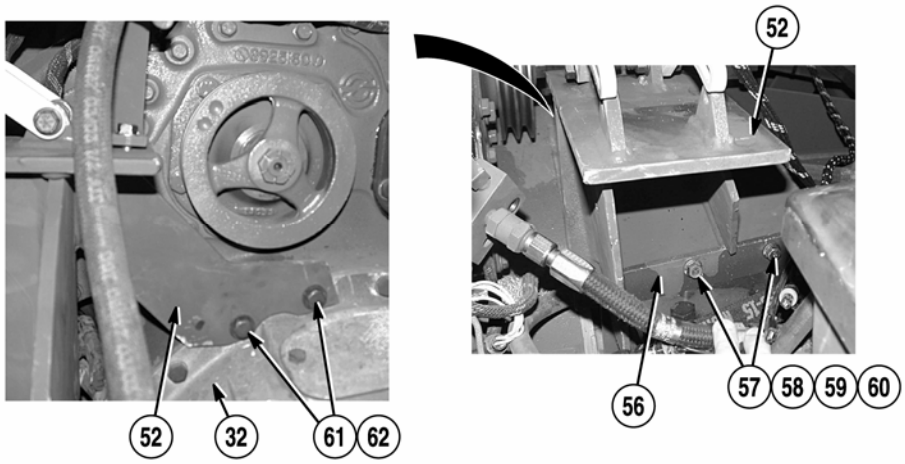


NOTE

Holes drilled in Step (32) will be used to secure compressor mounting bracket to cradle support.

32. Drill two 13/32 in. (10.32 mm) holes (55) in cradle support (56).





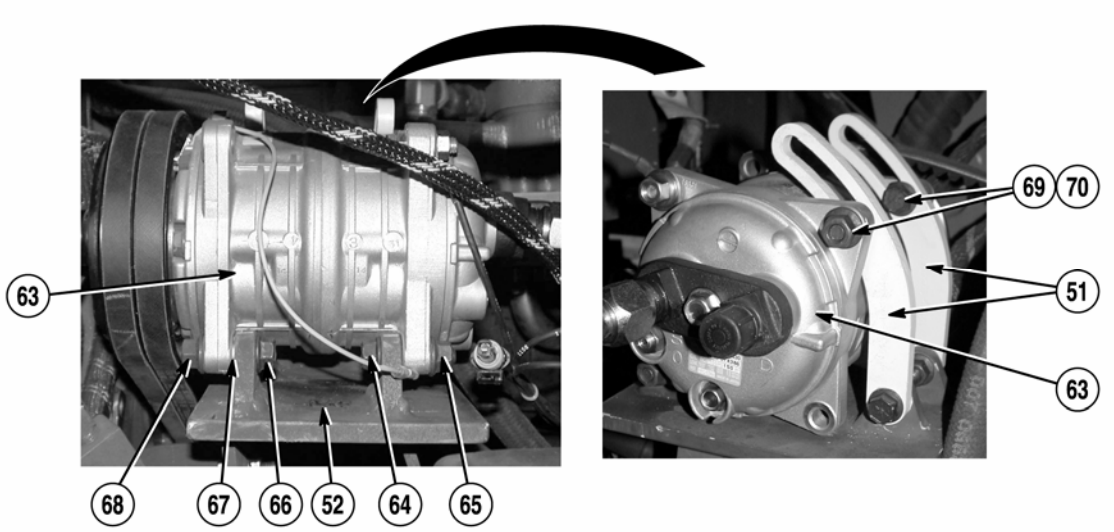
CAUTION

Fuel supply line must be inboard and over the leg on the compressor mounting bracket that attaches to the transmission. Fuel return line must be outboard of compressor mounting bracket. Failure to comply may result in damage to equipment.

NOTE

Verify that the holes on the compressor mounting bracket line up with the two holes drilled in Step (32) and with the two holes on the transmission. Some slight grinding may be needed to get holes to line up properly.

33. With the aid of an assistant, install compressor mounting bracket (52) on cradle support (56) with two screws (57), washers (58), lockwashers (59) and nuts (60).
34. Secure compressor mounting bracket (52) to transmission (32) with two screws (61) and lockwashers (62). Tighten two screws (61) to 54-65 lb-ft (73-88 N•m).



CAUTION

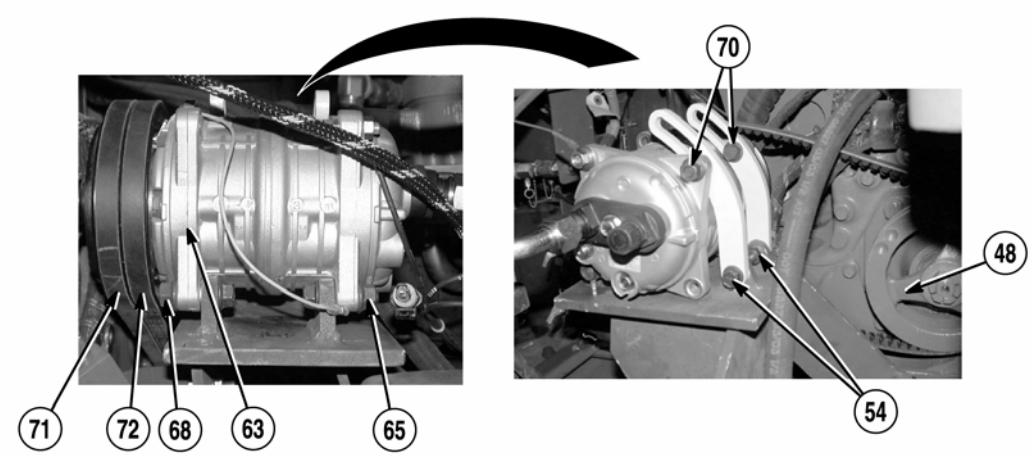
Screws holding compressor to compressor mounting bracket and to two compressor straps must have screw heads facing each other as shown. Failure to comply may result in damage to equipment.

35. Install compressor (63) on compressor mounting bracket (52) with screw (64) and locknut (65). Do not tighten locknut (65).

CAUTION

A washer may need to be installed as a shim between outside of compressor mounting bracket flange and inside of compressor flange. Failure to comply may result in compressor flange breaking off if there is space between compressor mounting bracket flange and compressor flange when locknut is tightened.

36. Install compressor (63) on compressor mounting bracket (52) with screw (66), washer (67) and locknut (68). Do not tighten locknut (68).
37. Install two compressor mounting straps (51) on compressor (63) with two screws (69) and locknuts (70). Do not tighten locknuts (70).

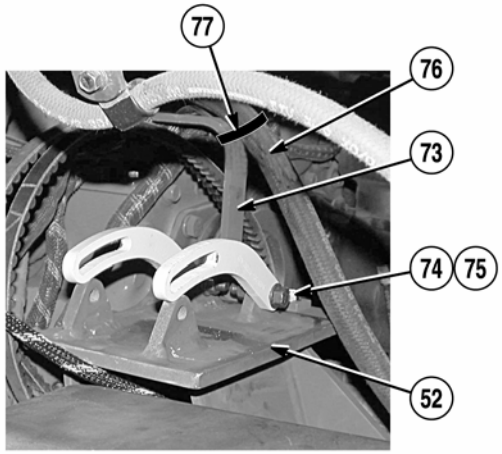


38. Install two compressor drive belts (71 and 72) on compressor (63) and pulley (48).

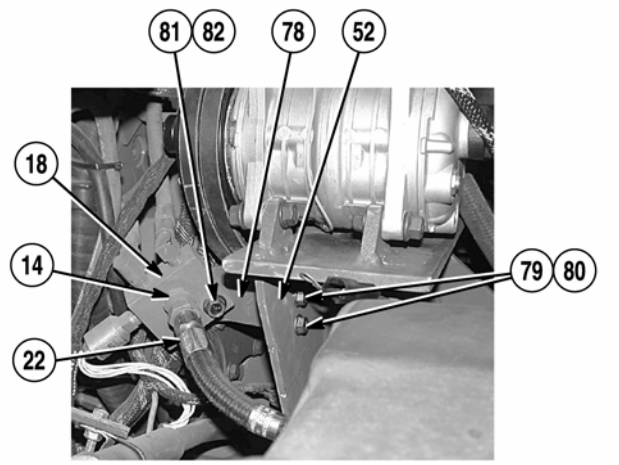
CAUTION

Do not over tighten two compressor drive belts. Failure to comply may result in damage to equipment.

39. Using a belt tension gage and pry bar, tighten two compressor drive belts (71 and 72) to 90-100 lbs. (400-445 N).
40. Tighten two locknuts (70).
41. Tighten two locknuts (54).
42. Tighten two locknuts (65 and 68).
43. Install bracket (73) on compressor mounting bracket (52) with two screws (74) and locknuts (75).
44. Secure fuel supply line (76) to bracket (73) with cable tie (77).



COMPRESSOR SHOWN REMOVED FOR CLARITY



45. Install bracket (78) on compressor mounting bracket (52) with two screws (79) and locknuts (80).

CAUTION

Fuel block must be mounted on bracket so that hoses do not touch two compressor drive belts. Failure to comply may result in damage to equipment.

46. Install fuel block (18) on bracket (78) with screw (81) and locknut (82).
47. Remove cap and install fuel hose extension (22) on fitting (14).

2. HOSE AND WIRE HARNESS ROUTING.

This task covers:
a. Hose And Wire Harness Routing.

INITIAL SETUP

Models
All

Test Equipment
None

Special Tools
None

Supplies
Air Conditioning Wire Harness
Hose Assembly #6
Hose Assembly #8
Hose Assembly #10
High-Pressure Switch
Low-Pressure Switch

Personnel Required
Two

References
None

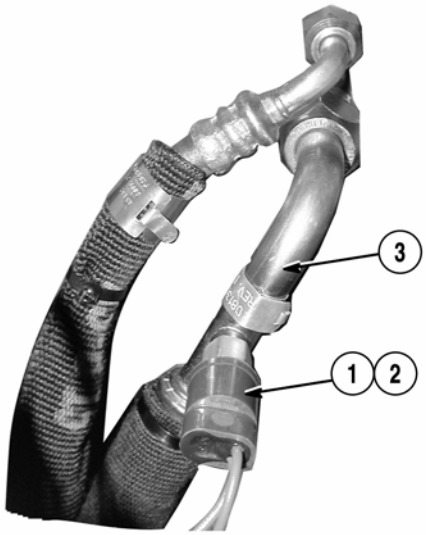
Equipment Condition
None

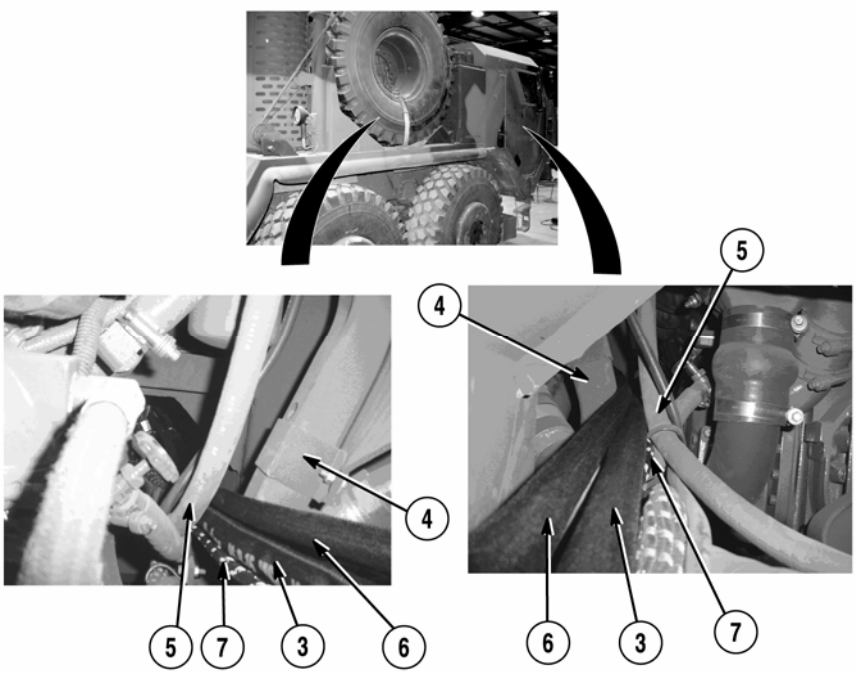
Special Environmental Conditions
None

General Safety Instructions
None

a. Hose And Wire Harness Routing.

1. Install preformed packing (1) and low-pressure switch (2) on hose 2522 (3). Torque low-pressure switch (2) to 7.5-10 ft-lbs. (10-14 N•m).





CAUTION

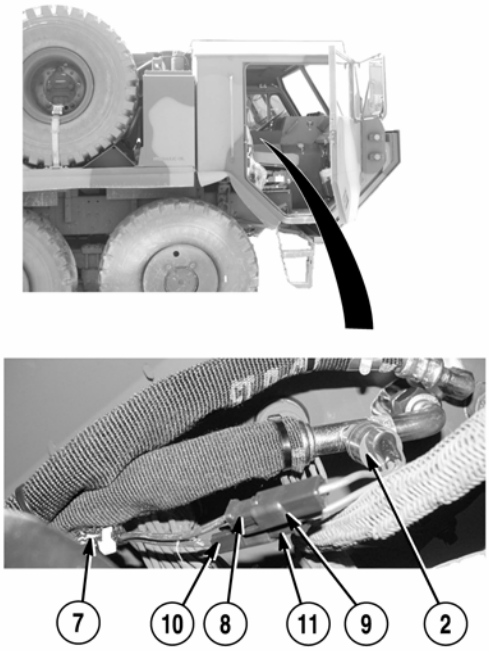
When performing Steps (2) through (4), ensure hoses and wire harness are routed away from exhaust manifold and exhaust pipes. Hoses and wire harness must be routed between coolant lines and power pack structure. Failure to comply may result in damage to equipment.

NOTE

- **In Steps (2) through (4), hose 2522, hose 2524 and the end of wire harness with wires 1055 and 1056 will be routed under cab but will not be attached to heater/evaporator components until the heater/evaporator is installed.**
- **To aid in routing hose 2522, hose 2524, and wire harness to area under cab, lay hoses and wire harness on passenger side fender where spare tire sits. While one person feeds the hoses or wire harness from passenger side fender, another person inside the cab, reaching through electronic control box opening, can pull hoses or wire harness forward.**
- **To allow for repositioning of hoses and wire harness, do not secure hoses and wire harness until after installation of condensor and heater/evaporator.**

2. With the aid of an assistant, route hose 2522 (3) between power pack structure (4) and coolant line (5) and pull forward to cab.
3. With the aid of an assistant, route hose 2524 (6) between power pack structure (4) and coolant line (5) and pull forward to cab.
4. With the aid of an assistant, route wire harness (7) between power pack structure (4) and coolant line (5) and pull forward to cab.

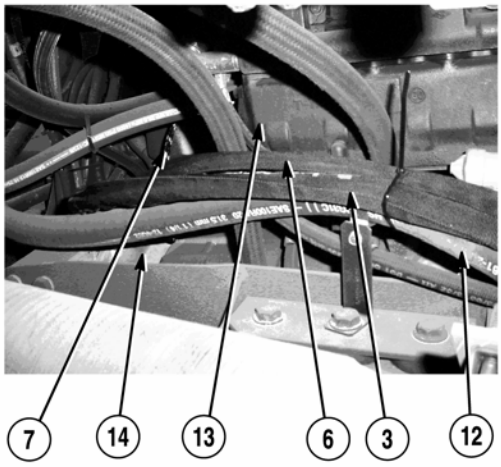
5. Connect connector (8) of wire harness (7) on connector (9) of low-pressure switch (2).
6. Connect connector (10) of wire harness (7) on connector (11) of low-pressure switch (2).

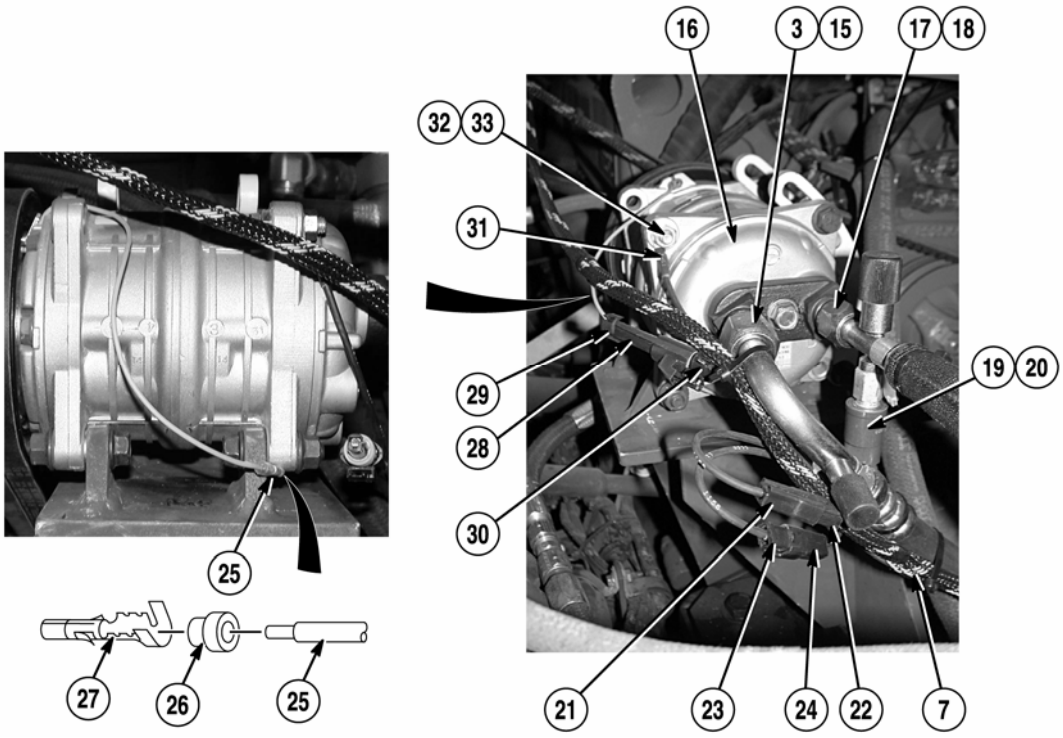


NOTE

Hose 2522, hose 2524 and wire harness route together with the large hydraulic line past the air compressor. Once past the air compressor, hoses and wire harness will be routed over the transmission towards the driver side of vehicle.

7. Route hose 2522 (3), hose 2524 (6) and wire harness (7) with large hydraulic hose (12) past air compressor (13) and over transmission (14).



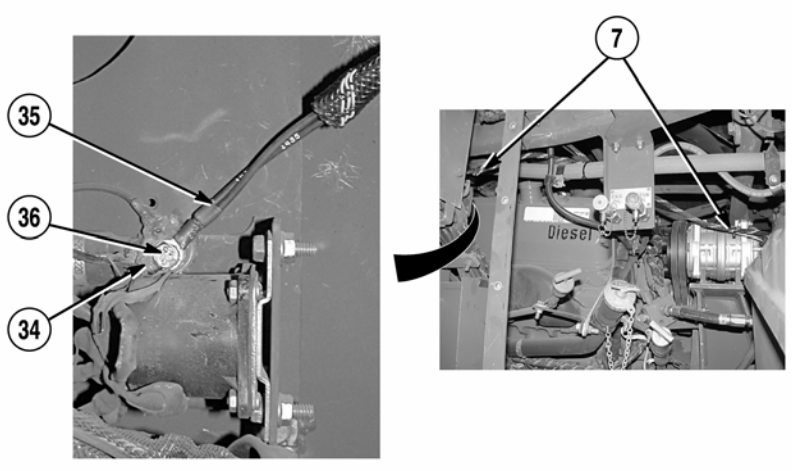


8. Install preformed packing (15) and hose 2522 (3) on compressor (16). Torque hose 2522 (3) to 18-22 ft-lbs (24-30 N•m).
9. Install preformed packing (17) and hose 2521 (18) on compressor (16). Torque hose 2521 (18) to 15-18 ft-lbs (20-24 N•m).
10. Install preformed packing (19) and high-pressure switch (20) on hose 2521 (18). Torque high-pressure switch (20) to 7.5-10 ft-lbs (10-14 N•m).
11. Connect connector (21) of wire harness (7) on connector (22) of high-pressure switch (20).
12. Connect connector (23) of wire harness (7) on connector (24) of high-pressure switch (20).
13. Cut off end of wire (25).

CAUTION

Strip wire after placing it through seal. Failure to comply may result in damage to equipment.

14. Insert 1 in. (25.40 mm) of wire (25) through seal (26).
15. Strip end of wire (25) leaving 1/4 in. (6.4 mm) of bare wire.
16. Insert contact socket (27) in locating hole of terminal crimper using proper hole according to the gage of wire (25).
17. Slide seal (26) down to end of insulation.
18. Position wire (25) in contact socket (27).
19. Press handles of terminal crimper together until ratchet releases and crimping is complete.
20. Push contact socket (27), seal (26) and wire (25) through connector (28) until seated.
21. Close secondary lock (29) on connector (28).
22. Connect connector (30) of wire harness (7) on connector (28) of compressor (16).
23. Install wire (31) on compressor (16) with screw (32) and nut (33).

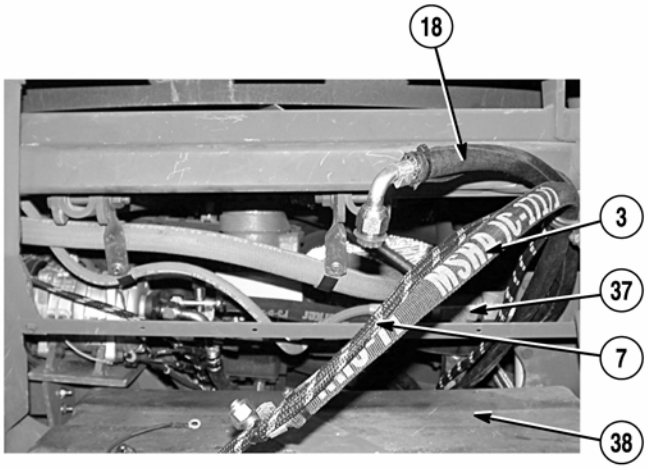


24. Route ground branch of wire harness (7) to starter relay (34).

NOTE

- **Remove sealant from screw before installing wire on starter relay.**
- **Reapply sealant after installing screw and wire on starter relay.**

25. Install wire (35) of wire harness (7) on starter relay (34) with existing screw (36).



26. Route hose 2521 (18), hose 2522 (3) and wire harness (7) under transmission sampling valve hose (37).

NOTE

Hose 2521, hose 2522 and wire harness will not be attached to condensor until the condensor is installed.

27. Position hose 2521 (18), hose 2522 (3) and wire harness (7) on top of battery box cover (38).

3. CONDENSOR INSTALLATION.

This task covers:
a. Condensor Installation.

INITIAL SETUP

Models

All

Test Equipment

None

Special Tools

Drill, Electric, Portable (TM 9-2320-364-20, Item 17, Appendix G)
Tool Kit, Blind Rivet (TM 9-2320-364-20, Item 72, Appendix G)
Rivet Gun (TM 9-2320-364-20, Item 58, Appendix G)

Supplies

Air Conditioner Condensor
Connector 2 Pin
(2) Socket Contact
(2) Seal
Double Cushion Clip
Condensor Mounting Bracket
(2) Screw - 5/16-18 x 1 in.
(4) Screw - 3/8-16 x 1 in.
Condensor Support Bar
Condensor Stabilizer Bracket
(2) Screw - 5/16-18 x 1 in.
(2) Locknut - 5/16 in.

Supplies (Continued)

Battery Instruction Label
(8) Rivet
(5) Nutsert
Locknut - 1/2 in.
Template, Access Trimming
Template, Ether Holes
Template, Hose Cutout
Drawing, Skin Rework
Drawing, Noise Panel
Drawing, Condensor

Personnel Required

Two

References

None

Equipment Condition

None

Special Environmental Conditions

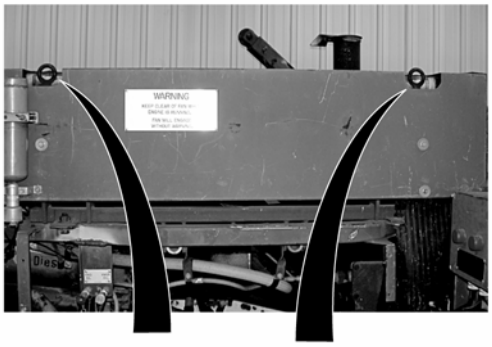
None

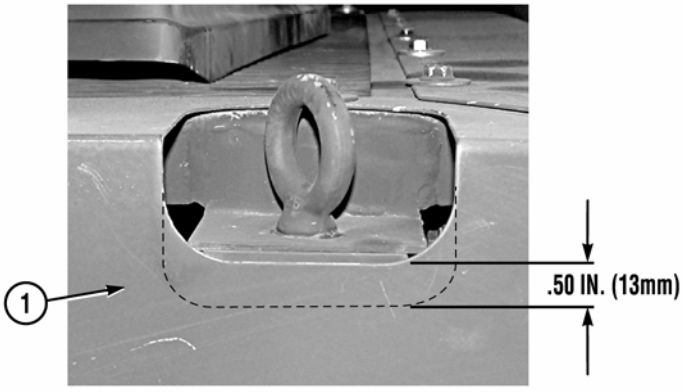
General Safety Instructions

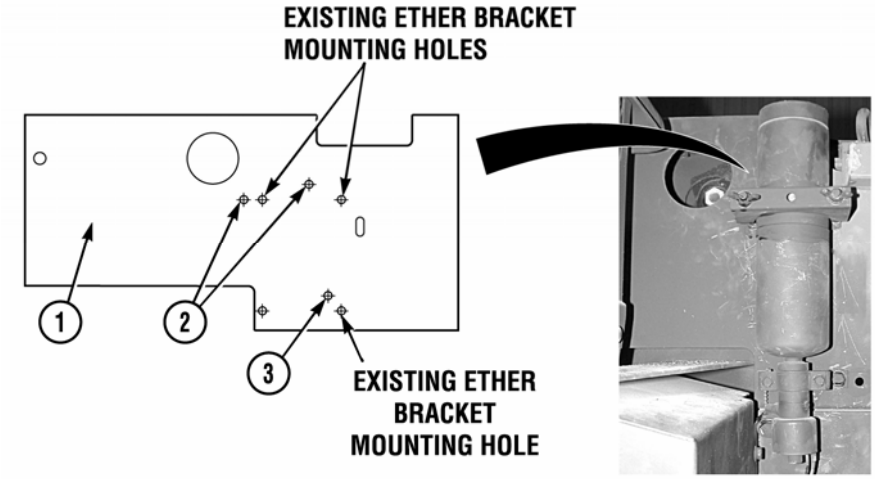
None

a. Condensor Installation.

1. Using template 3535369, enlarge two eyebolt openings on panel (1).





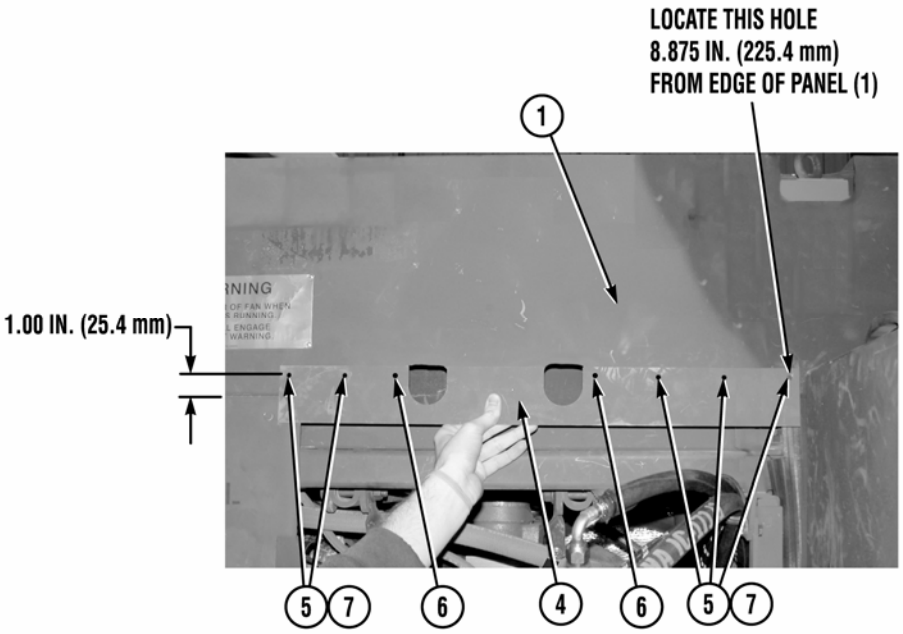


2. Using template 3535370, mark and drill two 3/8 in. (9.53 mm) holes (2) in panel (1).

NOTE

- **Ether start aid assembly will be attached to panel using holes drilled in Step (2).**
- **Ether bottle needs to be installed at a slight angle.**

3. Install ether start aid assembly (TM 9-2320-364-20).
4. Using lower bracket of ether start aid, mark and drill 3/8 in. (9.53 mm) hole (3) in panel (1).



NOTE

- **Bracket, part number 3535264, will be used as a template to mark holes on panel for drilling in Step (5).**
- **Position bracket, part number 3535264, on panel so that hose openings point up and side of bracket with four mounting holes facing rear of vehicle.**
- **Position bracket, part number 3535264, so that seven mounting holes are 1 in. (25.4 mm) from bottom edge of panel (1), and right hand most hole is located 8.875 in. (225.4 mm) from rear of panel (1).**

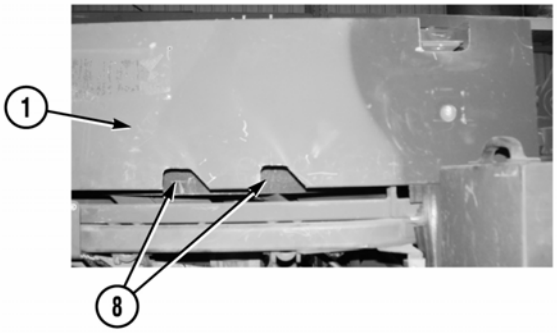
5. With the aid of an assistant, using bracket (4) as template, mark and drill seven 3/8 in. (9.53 mm) holes (5) and (6) in panel (1).

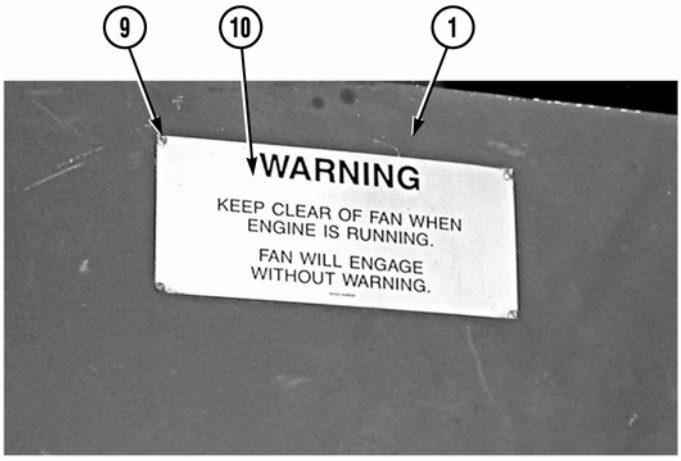
6. Install five nutserts (7) in holes (5) on panel (1).

7. Using template 3535371, align holes on template with two holes (6) and cut out two openings (8) on panel (1).

8. File off rough edges on cutouts made in Steps (1) and (7).

9. Paint edges on cutouts made in Steps (1) and (7) as required.





10. Using a 1/8 in. drill bit, remove four rivets (9) and radiator fan warning label (10) from panel (1). Discard four rivets (9) and radiator fan warning label (10).

NOTE

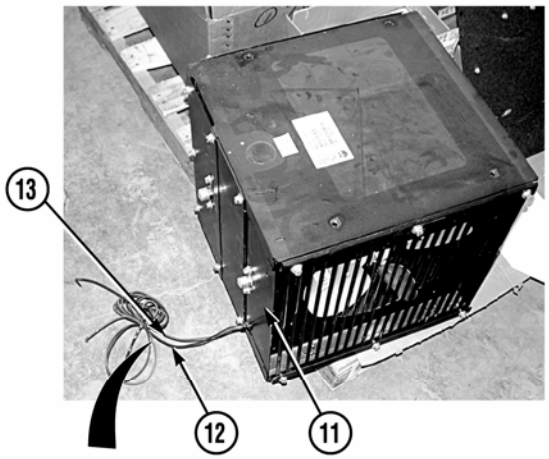
- **If condensor does not have connector installed on two wires, perform steps 11 through 21.**
- **If condensor has connector installed on two wires, go to step 22.**

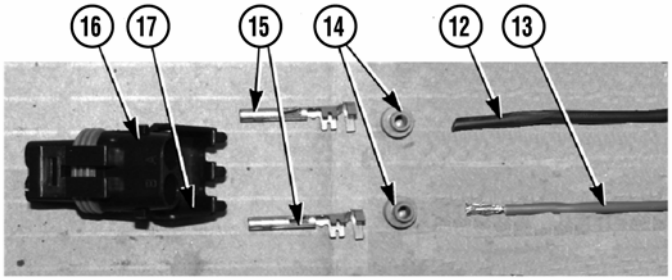
11. From edge of condensor (11), cut two wires (12 and 13) to 8 in. (203.2 mm).

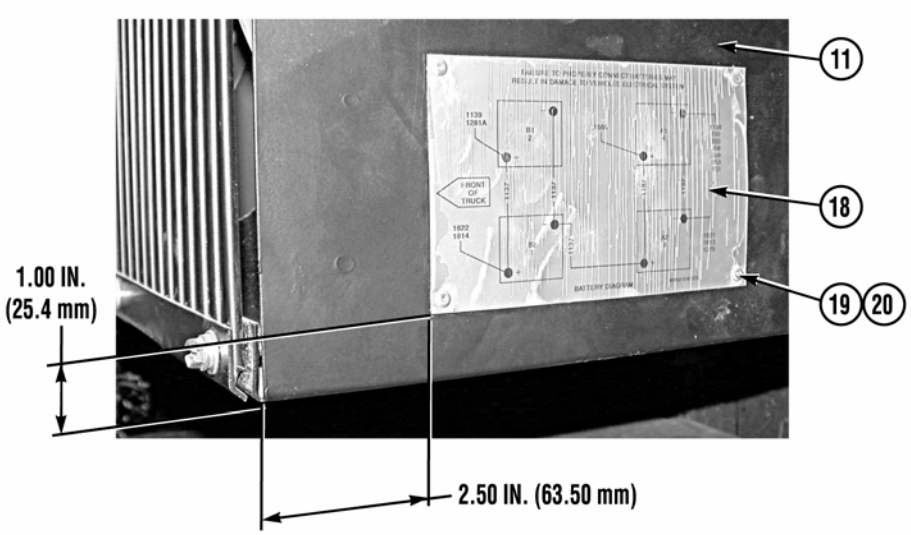
CAUTION

Strip wire after placing it through seal. Failure to comply may cause damage to equipment.

12. Insert 1 in. (25.4 mm) of black wire (12) through seal (14).
13. Strip end of black wire (12), leaving 1/4 in. (6 mm) of bare wire.
14. Insert contact socket (15) in locating hole of crimper using proper hole according to the gage of black wire (12).
15. Slide seal (14) down to end of insulation on black wire (12).
16. Position wire (12) on contact socket (15).
17. Press handles of crimper together until ratchet releases and crimping is complete.
18. Repeat Steps (12) through (17) for green wire (13).
19. Push contact socket (15), seal (14) and wire (12) through position A on connector (16).
20. Push contact socket (15), seal (14) and green wire (13) through position B on connector (16).
21. Close secondary lock (17) on connector (16).



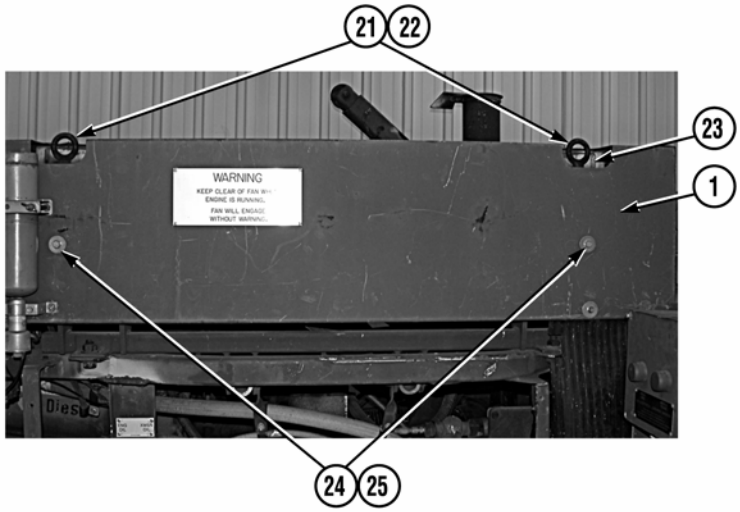




CAUTION

Use extreme care not to drill into condensor any farther than needed when drilling four holes for battery warning label. Failure to comply may result in damage to condensor.

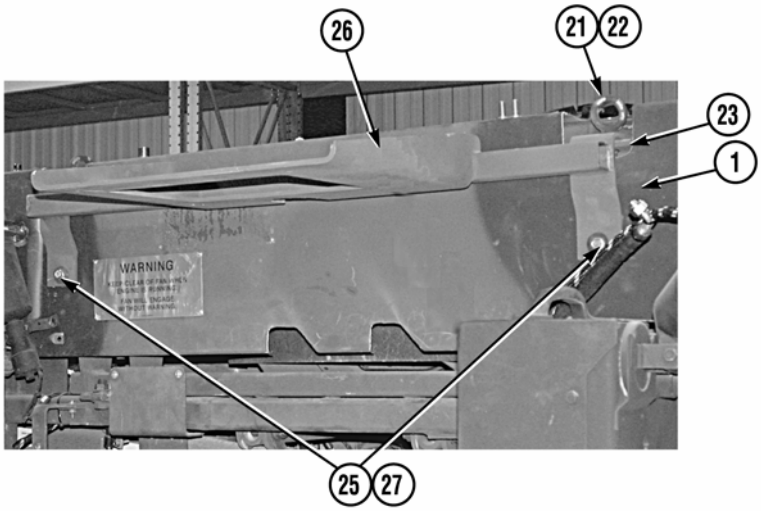
22. Using battery instruction label (18) as a template, mark and drill four 1/8 in. (3.18 mm) holes (19) in condensor (11).
23. Install battery instruction label (18) on condensor (11) with four rivets (20).



NOTE

- **Note position of eyebolts on radiator assembly prior to removal to ensure proper installation.**
- **Use care when removing eyebolts so locknuts securing eyebolts to radiator assembly are not dropped.**

24. Remove two locknuts (21) and eyebolts (22) from radiator assembly (23). Discard locknuts.
25. Remove two screws (24) and washers (25) from panel (1).



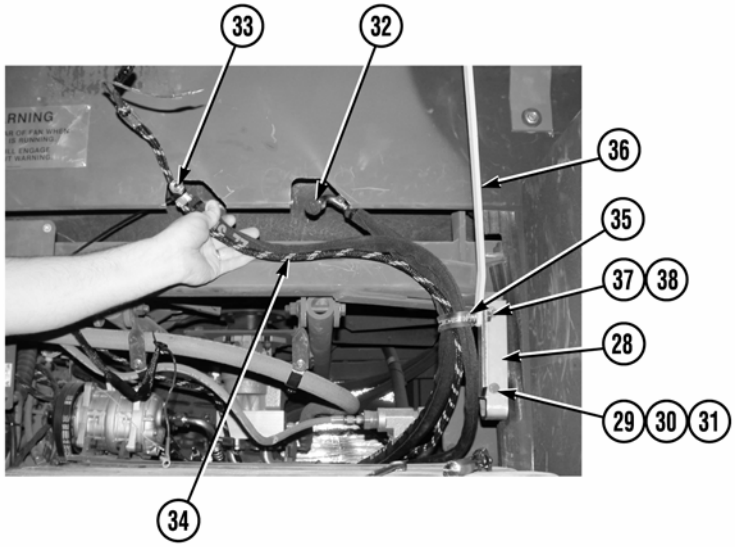
NOTE
Install eyebolts on radiator assembly as noted prior to removal.

26. With the aid of an assistant, install condensor mounting bracket (26) on radiator assembly (23) with two eyebolts (22) and locknuts (21).
27. Secure condensor mounting bracket (26) to panel (1) with two screws (27) and washers (25).

28. Install condensor stabilizer bracket (28) on vehicle with two screws (29), lockwashers (30) and washers (31).

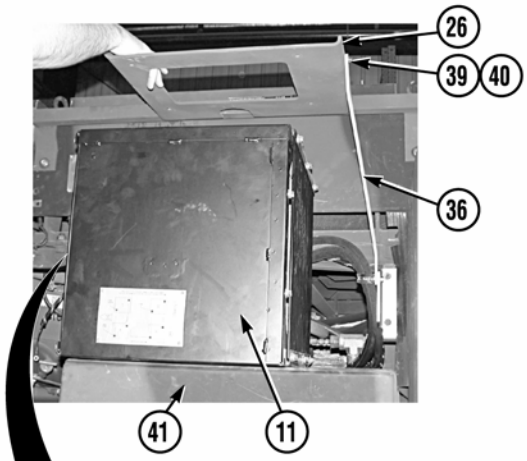
CAUTION
Make sure that when positioning and installing hoses on compressor, hoses do not become kinked. If hoses become kinked damage to equipment may result.

NOTE
When positioning two hoses in double cushion clip, hose 2521 will fit into cutout towards rear of panel, and hose 2424 will fit into cutout towards front of panel, as shown in photo. The wire harness will follow the path of hose 2424.



29. Position hose 2521 (32), hose 2424 (33) and wire harness (34) in double cushion clip (35) and install support bar (36) and double cushion clip (35) on condensor stabilizer bracket (28) with screw (37) and locknut (38). Do not tighten locknut (38).

30. Install support bar (36) on condensor mounting bracket (26) with screw (39) and locknut (40).



WARNING

Condensor weighs 75 lbs. (34 kg). Do not lift condensor without the aid of an assistant. Failure to comply may result in injury to personnel.

31. With the aid of an assistant, position condensor (11) on top of battery box cover (41).

NOTE

- **Only hand-tighten hoses 2521 and 2424 on fittings in Steps (32) and (33).**
- **Make sure hose 2424 routes under hose 2521 in Step (33).**
- **Ensure preformed packings are in place in hoses prior to installation.**

32. Install preformed packing (42) and hose 2521 (32) on fitting (43).

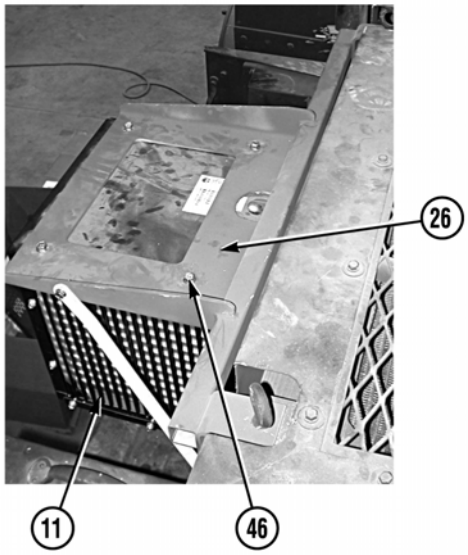
33. Install preformed packing (44) and hose 2424 (33) on fitting (45).



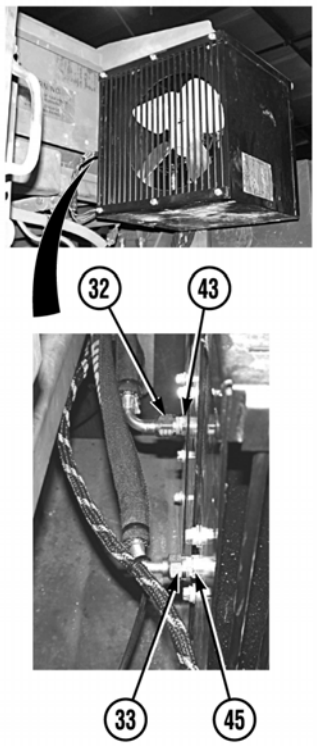
CAUTION

When installing condensor on condensor mounting bracket, two hoses and wire harness must be carefully tucked into the inside of panel, with the condensor inlets aligned with cutouts made in Step (4). Failure to comply may result in damage to equipment.

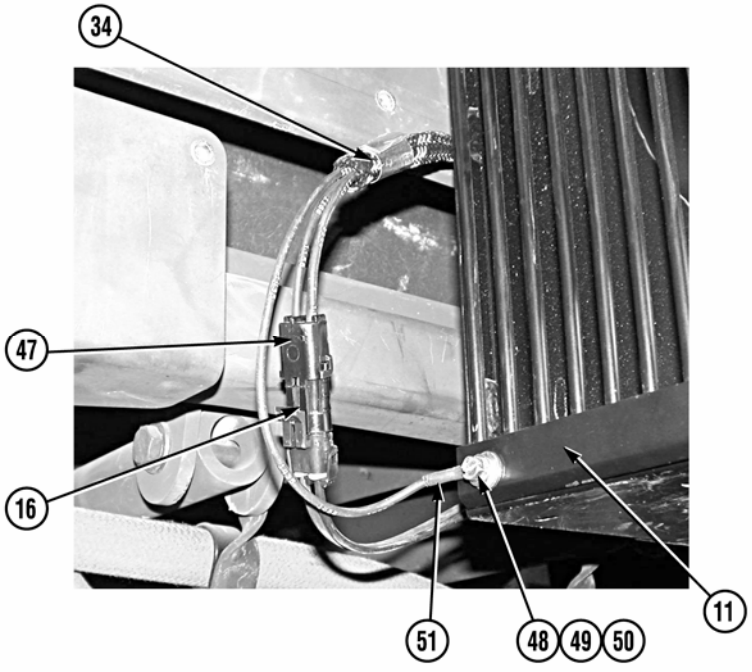
34. With the aid of an assistant, install condensor (11) on condensor mounting bracket (26) with four screws (46).



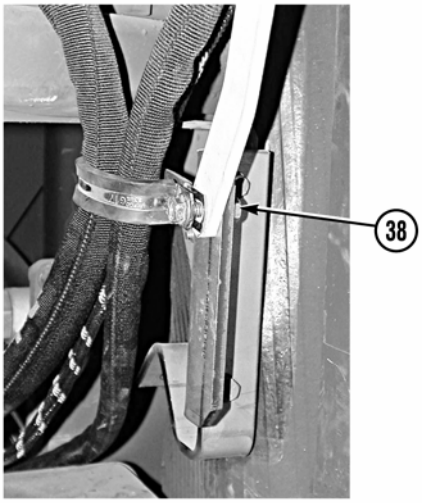
35. Check to make sure hose 2521 (32) and hose 2424 (33) are not kinked and that they are pointing downward towards rear of vehicle at 30 degrees.
36. Tighten hose 2521 (32) on fitting (43).
37. Tighten hose 2424 (33) on fitting (45).

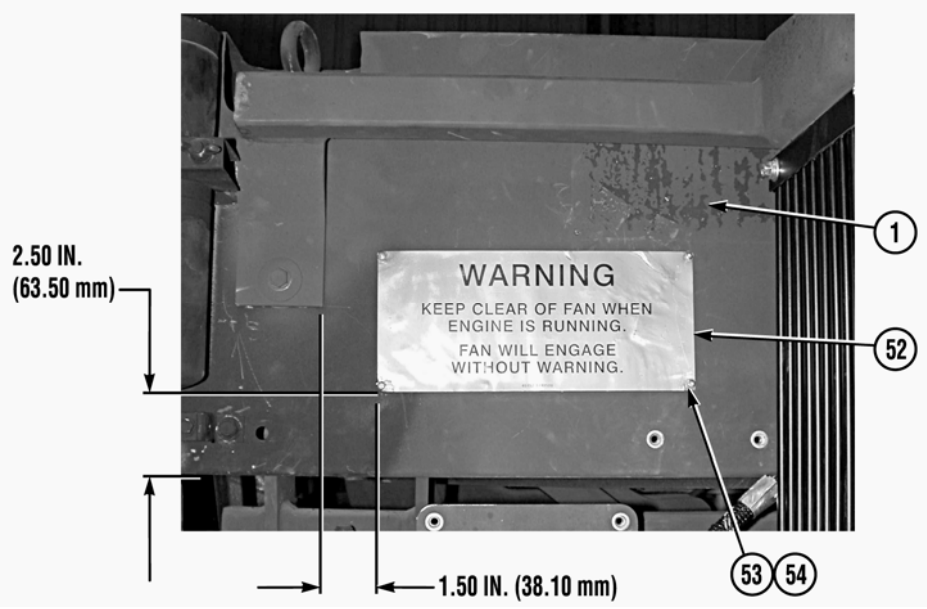


38. Connect connector (47) of wire harness (34) on connector (16).
39. Remove screw (48), lockwasher (49) and washer (50) from condensor (11).
40. Install wire 1435 (51) on condensor (11) with washer (50), lockwasher (49) and screw (48).



41. Tighten locknut (38).





42. Using radiator fan warning label (52) as a template, mark and drill four 1/8 in. (3.18 mm) holes (53) in panel (1).
43. Install radiator fan warning label (52) on panel (1) with four rivets (54).

4. HEATER/EVAPORATOR INSTALLATION.

This task covers:
a. Heater/Evaporator Installation.

INITIAL SETUP

Models

All

Test Equipment

None

Special Tools

Nutsert Tool
Torque Wrench

Supplies

Heater/Evaporator
Gasket - 1/2 in. x 1/2 in.
Straight Fitting
Straight Fitting
Insulation
1300 3M Adhesive
(5) Grommet
PVC Foam Tape
(6) Lockwasher - 1/4 in.
(6) Screw - 1/4-20 x 3/4 in.
Fresh Air Box Opening Cover
PVC Foam Tape
(14) Screw - 10-32 x 1/2 in.
(12) Lockscrew - 1/4-20 x 1/2 in.
Heater Compartment Center Cover
Heater Cable
Defrost Cable
Air Conditioner Cable
(4) Speed Nut - 3/16 in.
Fan Label
Air Conditioner Temperature Label
Rotary Switch Kit
Optic Ribbon

Supplies (Continued)

(5) Bezel
(2) Air Diffuser Ball
(3) Hose Clamp
(5) Nutsert
Circuit Breaker 20 amp
Wire Assembly 10 Gage
Wire Assembly 12 Gage
Wire Assembly 12 Gage
Light Source
Clip
Bulb
Light Wiring Harness
Heat Shrink
(3) Cable Tie
(16) Cable Tie
(3) Cable Tie

Personnel Required

Three

References

None

Equipment Condition

None

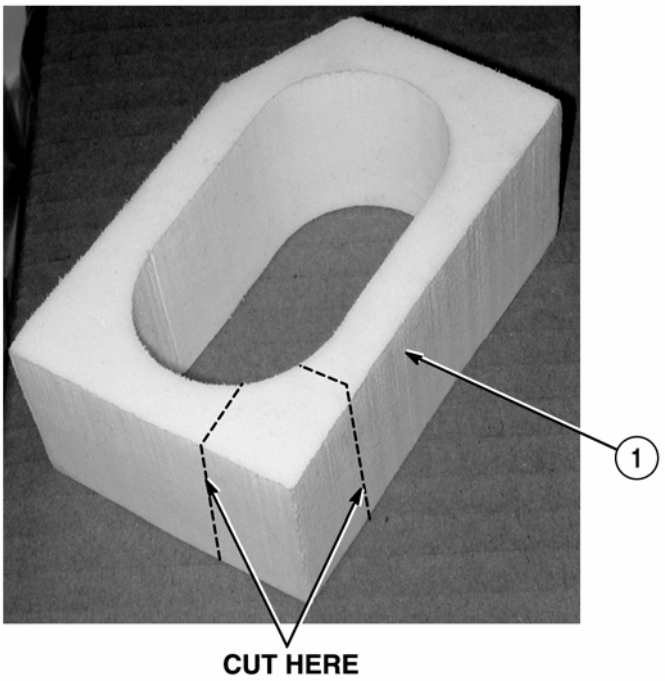
Special Environmental Conditions

None

General Safety Instructions

None

a. Heater/Evaporator Installation.



NOTE

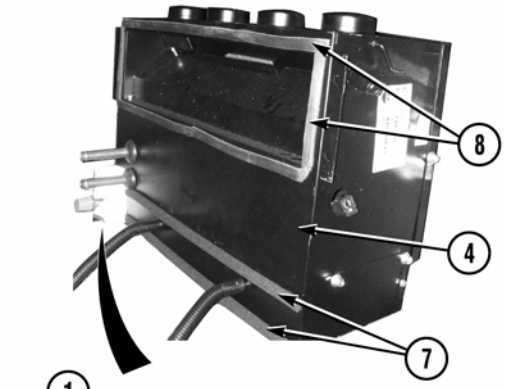
To allow for insulation to fit properly over connector, bottom corner will need to be cut off.

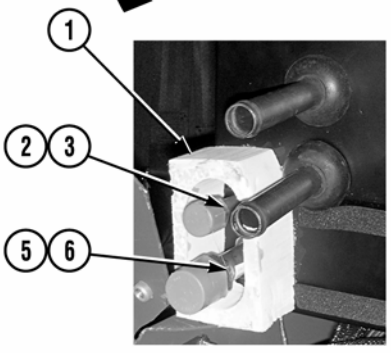
1. Cut off bottom corner of insulation (1).
2. Install preformed packing (2) and fitting (3) on heater/evaporator (4).
3. Install preformed packing (5) and fitting (6) on heater/evaporator (4).

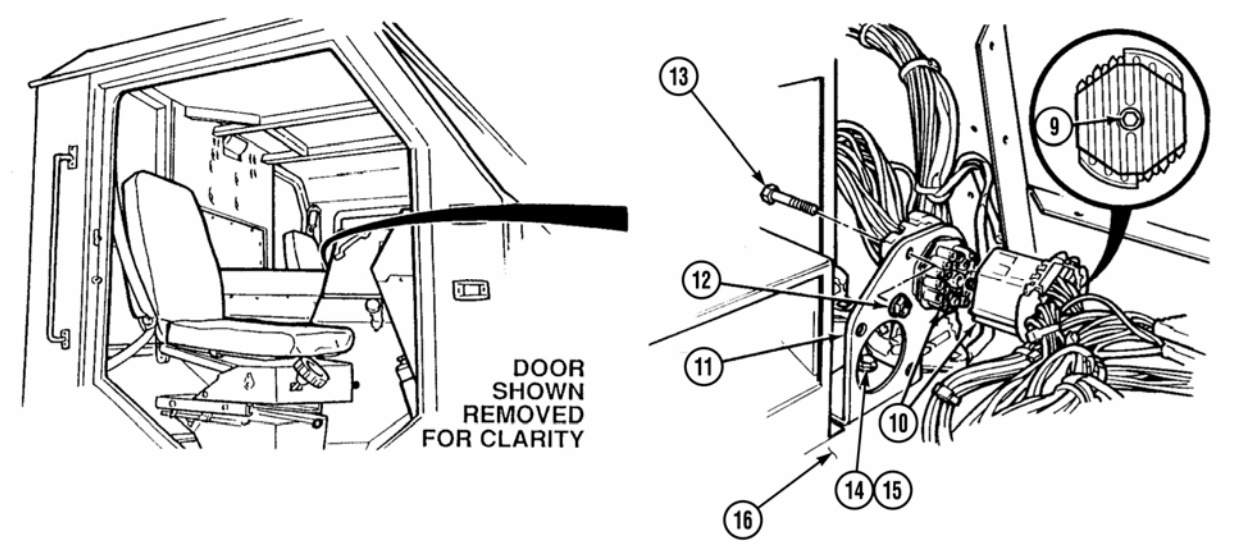
WARNING

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

4. Apply 3M adhesive to insulation (1).
5. Install insulation (1) on heater/evaporator (4).
6. Install two PVC foam tape strips (7) on heater/evaporator (4).
7. Install four PVC foam tape strips (8) on heater/evaporator (4).





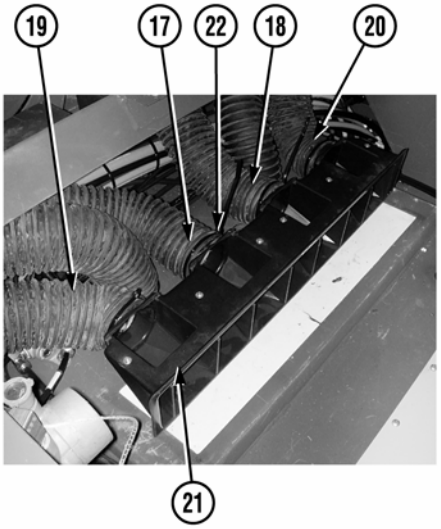


8. Loosen center screw (9) and disconnect control box harness MC44 connector (10) from bracket (11).
9. Remove two locknuts (12) and screws (13) from control box harness MC44 connector (10) and bracket (11). Discard locknuts.
10. Remove two nuts (14), screws (15) and bracket (11) from cab (16). Discard bracket.

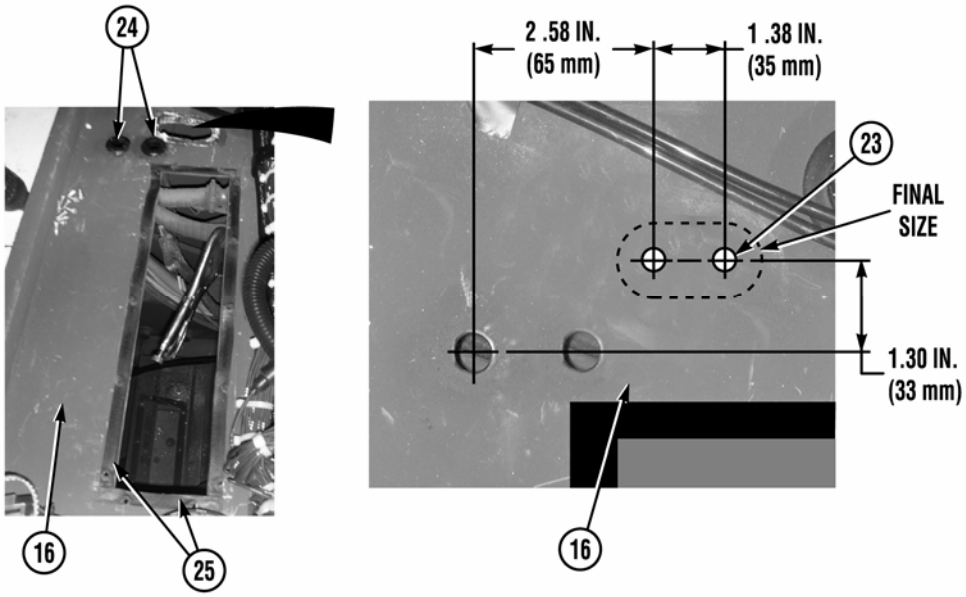
CAUTION

Cable tie wires, as required, on control box harness MC44 connector to ensure wires do not contact any edges. Failure to comply may cause damage to equipment.

11. Connect control box harness MC44 connector (10) and tighten center screw (9).



12. Coat inner edge of four defrost tubes (17, 18, 19 and 20) with 3M adhesive.
13. Install four defrost tubes (17, 18, 19 and 20) on lower plenum (21) with four cable ties (22).



CAUTION

Use extreme care when drilling and enlarging pilot holes in cab. Failure to comply may result in damage to equipment.

NOTE

Two pilot holes will need to be drilled, then enlarged, to allow for two fittings on heater/evaporator to fit through cab.

14. Using template provided with kit, drill two pilot holes (23) in cab (16).

NOTE

Do not enlarge two pilot holes any bigger then opening in the insulation installed on heater/evaporator installed in Step (5).

15. Using “nibbling” tool, cut two bigger holes using two pilot holes (23) as guides.

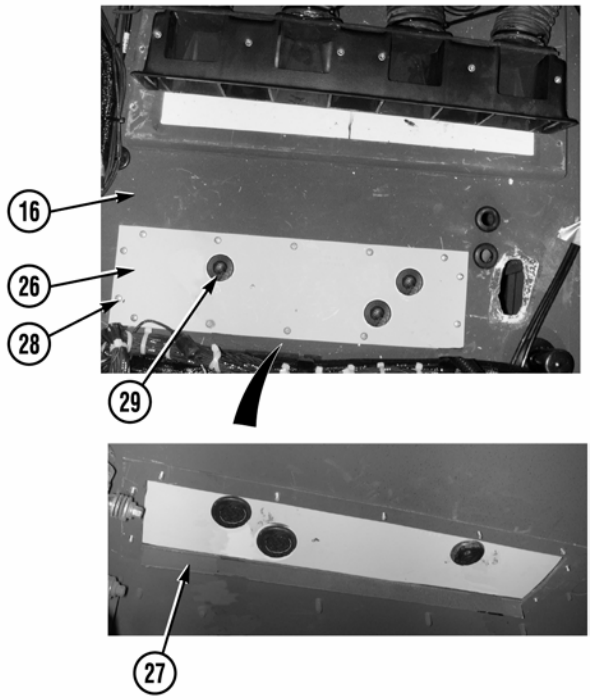
16. Install two grommets (24) in cab (16).

17. Install four PVC foam tape strips (25) on cab (16).

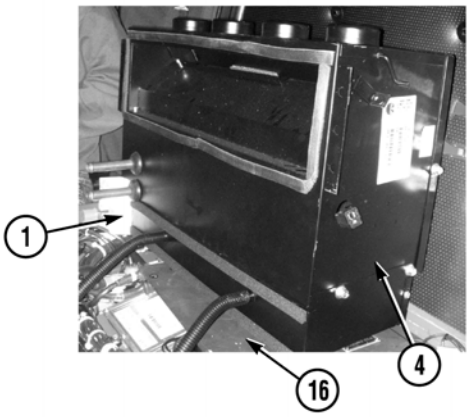
CAUTION

If fresh air box cover is not installed as shown, heater/ evaporator vent tubes will not be installed correctly, causing damage to equipment.

18. With the aid of an assistant, install fresh air box cover (26) and plate (27) on cab (16) with 14 screws (28).
19. Install three grommets (29) in fresh air box cover (26).



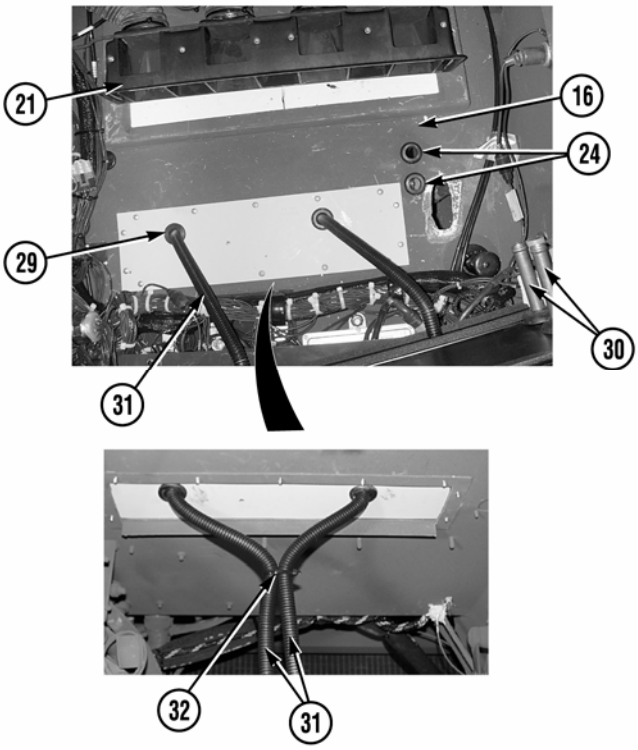
20. With the aid of an assistant, position heater/ evaporator (4) in cab (16).



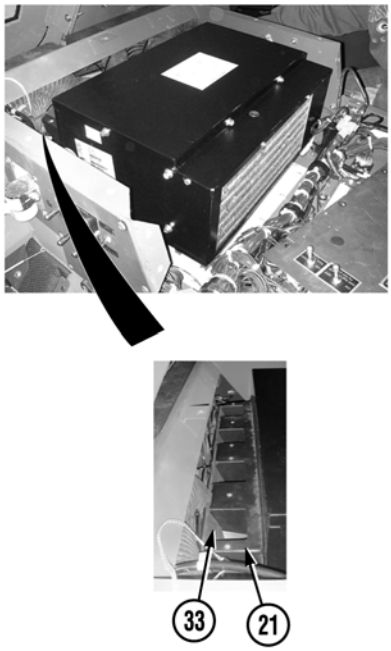
21. Coat four grommets (24 and 29) with soap solution.
22. Apply 3M adhesive to insulation (1).

CAUTION
Ensure that four grommets are not dislodged during installation. If grommets are not positioned properly, coolant tubes and heater/evaporator vent tubes could be damaged.

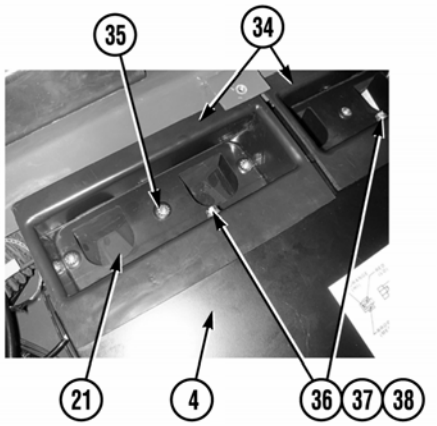
23. With the aid of two assistants, position two coolant tubes (30) through grommets (24) and two heater/evaporator vent tubes (31) through grommets (29) while positioning lower plenum (21) on heater/evaporator (4) while assistant on underside of cab guides two heater/evaporator vent tubes (31) through grommets (29).
24. Secure two heater/evaporator vent tubes (31) together with cable tie (32).



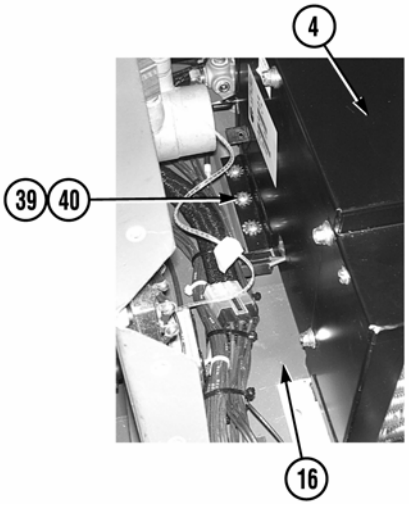
25. Position damper (33) in lower plenum (21).



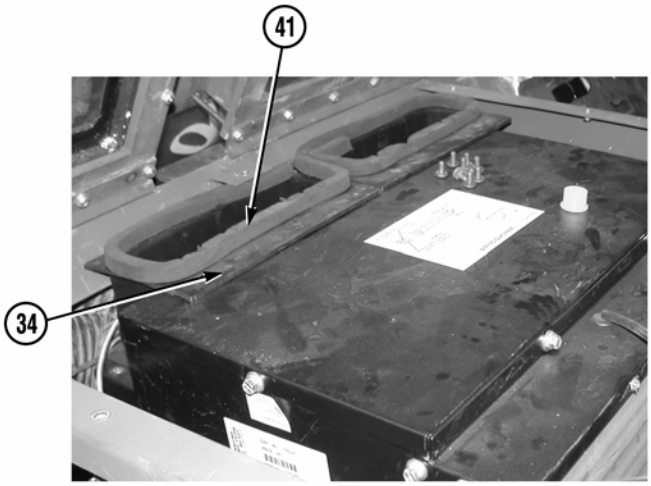
26. Install two upper plenums (34) on lower plenum (21) with six lockscrews (35).
27. Install two upper plenums (34) on heater/evaporator (4) with two screws (36), lockwashers (37) and washers (38).

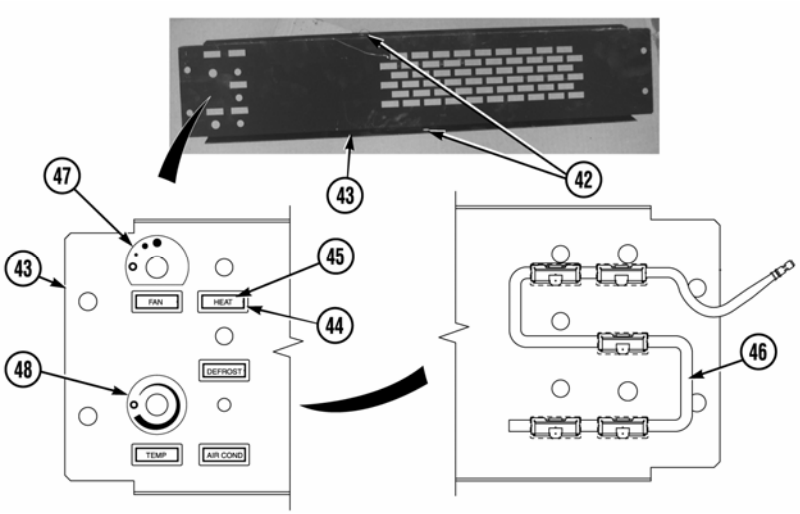


28. Install heater/evaporator (4) in cab (16) with six screws (39) and lockwashers (40).



29. Install 1/2 x 1/2 in. gasket (41) on edge of two upper plenums (34).

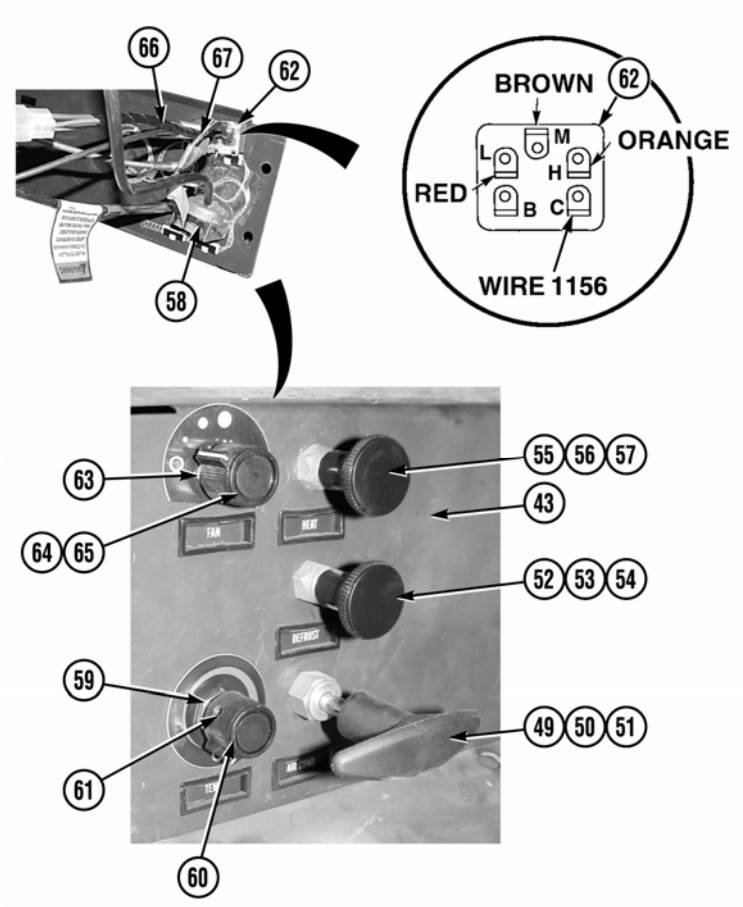




NOTE

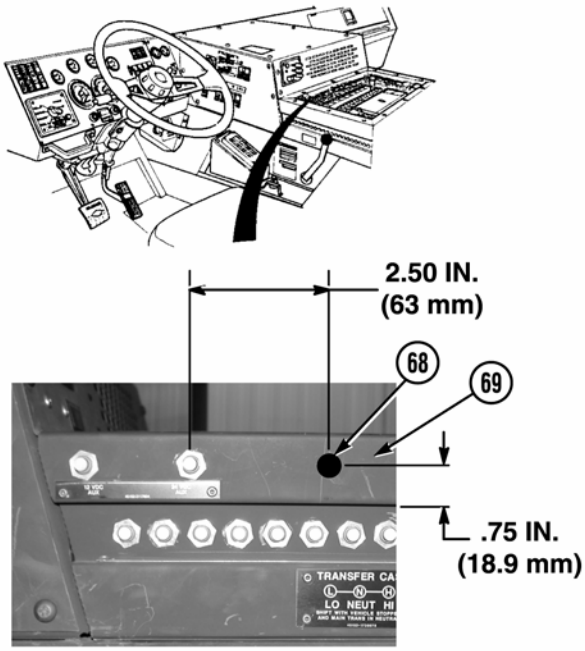
Heater center compartment cover comes with two mounting holes, five are required. Drill three additional 0.390 in. (9.91 mm) holes in heater center compartment cover as shown on drawing 209770.

30. Install five nutserts (42) on heater center compartment cover (43).
31. Install five bezels (44) on heater center compartment cover (43).
32. Install five identification markers (45) of optic ribbon (46) in five bezels (44) on heater center compartment cover (43).
33. Install fan label (47) on heater center compartment cover (43).
34. Install A/C temperature label (48) on heater center compartment cover (43).
35. Install A/C cable (49) on heater center compartment cover (43) with lockwasher (50) and nut (51).
36. Install defrost cable (52) on heater center compartment cover (43) with lockwasher (53) and nut (54).
37. Install heat cable (55) on heater center compartment cover (43) with lockwasher (56) and nut (57).
38. Install temperature control switch (58) on heater center compartment cover (43) with nut (59).
39. Install knob (60) on temperature control switch (58) with two screws (61).
40. Install fan switch (62) on heater center compartment cover (43) with nut (63).
41. Install knob (64) on fan switch (62) with two screws (65).
42. Install wire harness wires, red, brown and orange (66) on fan switch (62).

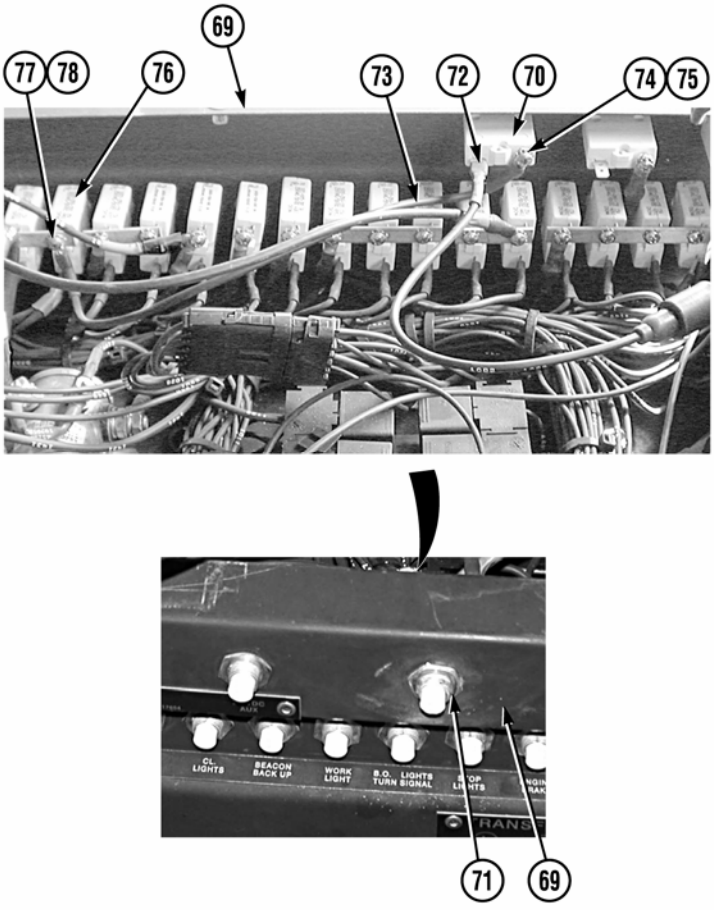


43. Install one end of wire assembly 1156 (67) on IN terminal of temperature control switch (58).
44. Install other end of wire assembly 1156 (67) on terminal C of fan switch (62).

45. Drill 0.469 in. (11.91 mm) hole (68) on side of ECB (69).



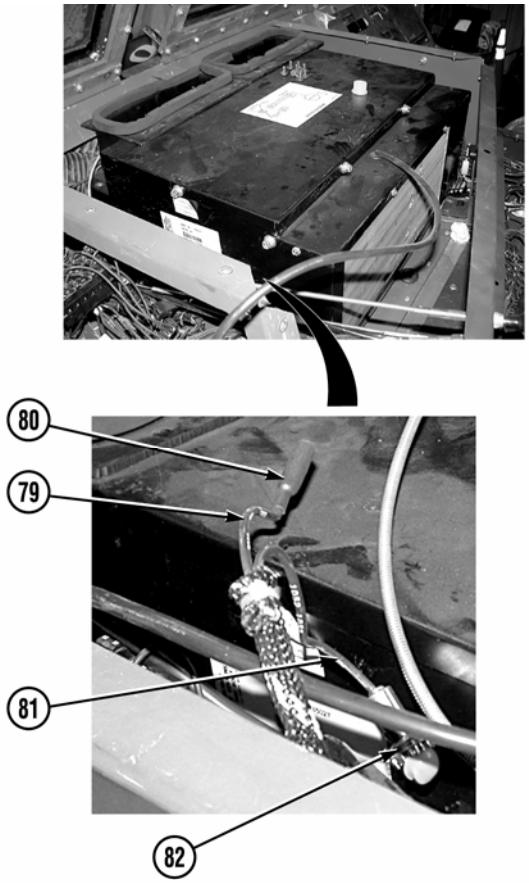
46. Install 20 amp circuit breaker (70) on ECB (69) with nut (71). Tighten nut (71) to 16-24 lb-in (1.8-2.7 N•m).
47. Connect wire assembly 1082 (72) to terminal on 20 amp circuit breaker (70).
48. Install wire (73) on 20 amp circuit breaker (70) with screw (74) and lockwasher (75).
49. Install wire (73) on circuit breaker 15 (76) with screw (77) and lockwasher (78).



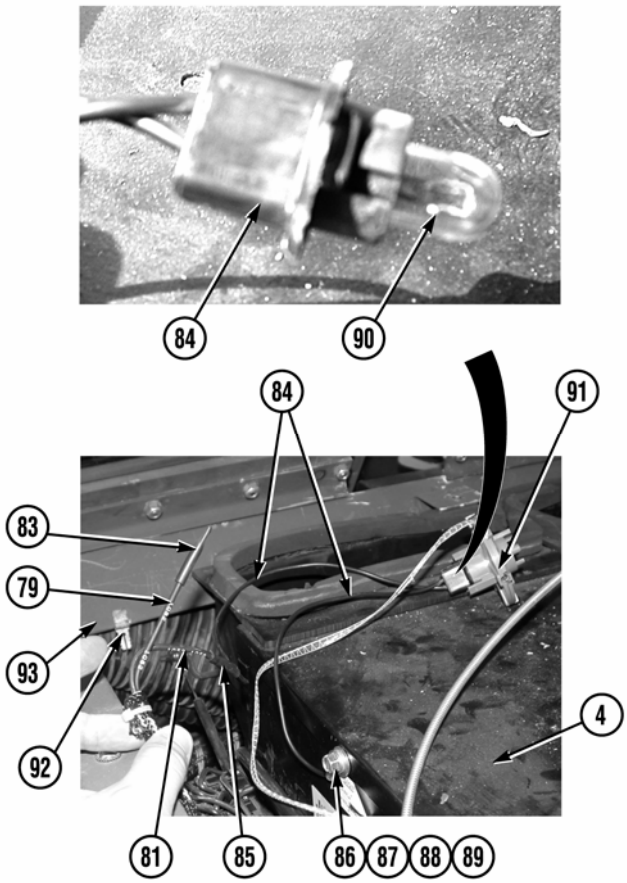
CAUTION

Wire 1082 and wire 1052 being cut in Steps (50) and (51) are from the cab wiring harness. Do not cut wire 1082 coming from the circuit breaker installed in Step (47). Failure to comply may result in damage to equipment.

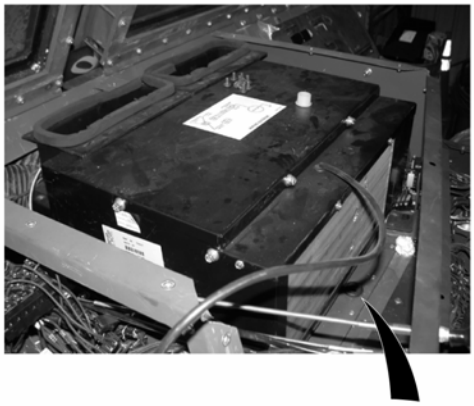
50. Cut wire 1082 (79) below terminal (80). Discard terminal (80).
51. Cut wire 1052 (81) below lamp socket (82). Discard lamp socket (82).



52. Install heat shrink (83) on end of cut wire 1082 (79).
53. Install end of lighting wire harness (84) on end of cut wire 1052 (81) with butt splice (85).
54. Install ring terminal (86) of lighting wire harness (84) on heater/evaporator (4) with screw (87), lockwasher (88) and washer (89).
55. Install bulb (90) in lighting wire harness (84).
56. Install lighting wire harness (84) and bulb (90) in light source (91).
57. Install clip (92) on panel (93).
58. Install light source (91) on clip (92).



59. Route wire 1155 (94) and wire 1156 (95) of A/C wire harness (96) through grommet (29).





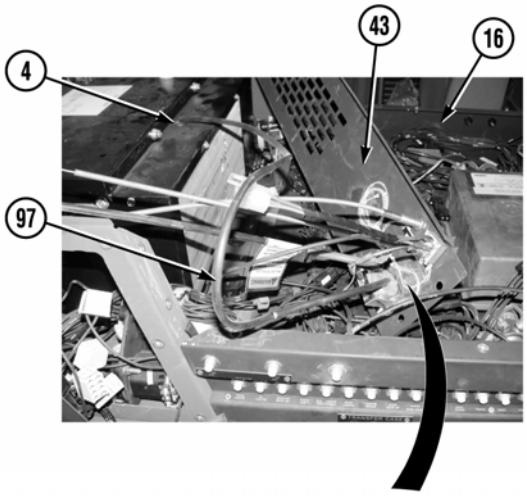
60. Position heater center compartment cover (43) in cab (16).

CAUTION

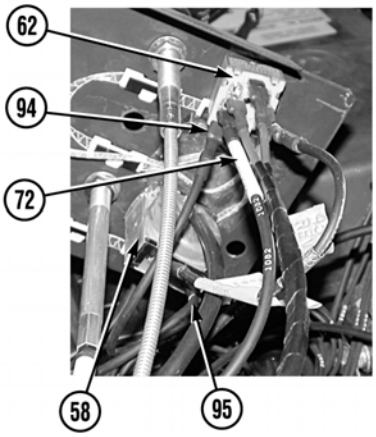
Do not puncture temperature probe. Gas in tube will leak out if temperature probe in punctured.

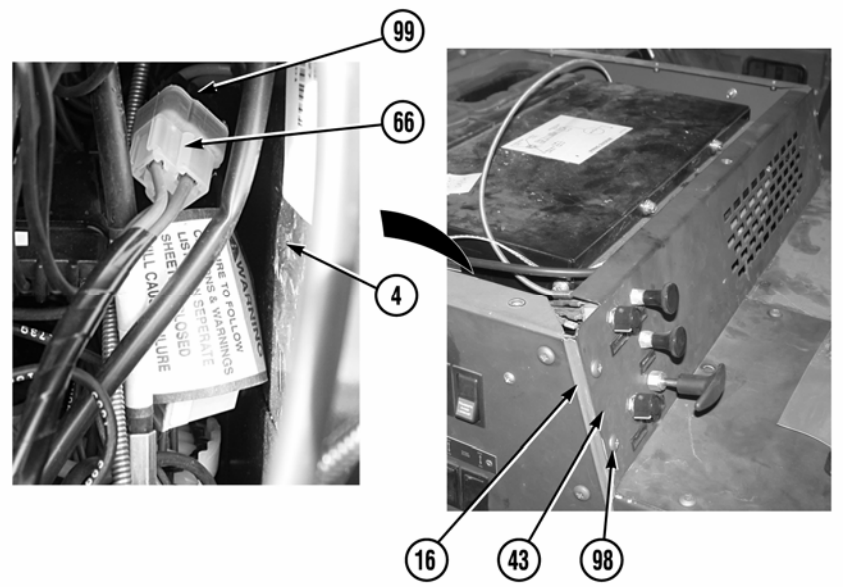
NOTE

Slide temperature probe into heater/ evaporator slowly. Temperature probe must slide into evaporator core.

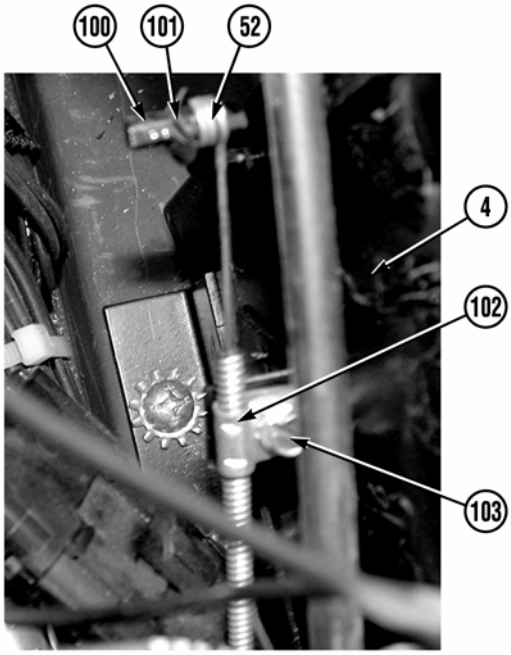


61. Install temperature probe (97) in heater/evaporator (4).
62. Install wire 1156 (95) of A/C wire harness (96) on OUT terminal of temperature control switch (58).
63. Install wire assembly 1082 (72) on terminal B of fan switch (62).
64. Install wire 1155 (94) from A/C wire harness (96) on terminal of wire assembly 1082 (72).



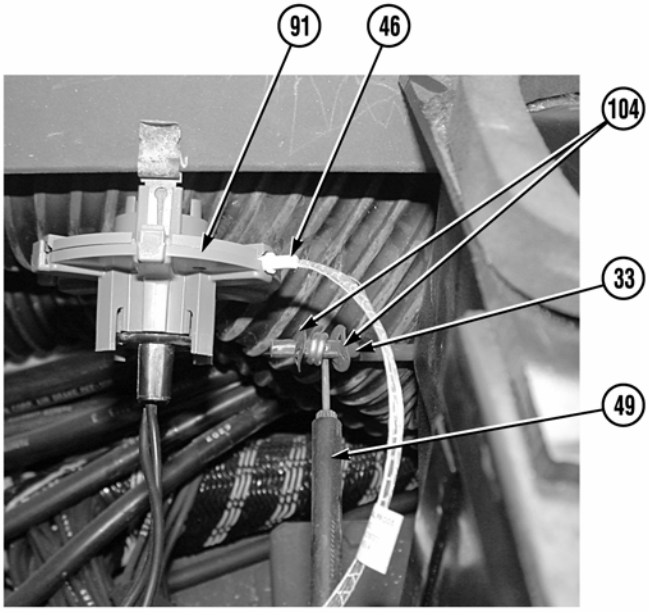


65. Install heater center compartment cover (43) on cab (16) with four lockscrews (98).
66. Connect wire harness (66) to connector (99) on heater/evaporator (4).

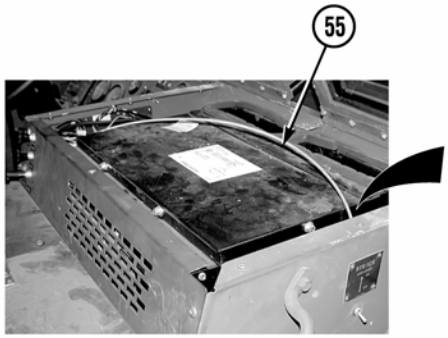


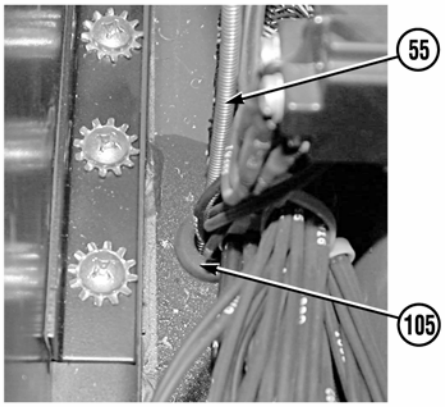
67. Install defrost cable (52) on control (100) with speed nut (101).
68. Place defrost cable (52) in retainer (102) and install retainer (102) on heater/evaporator (4) with screw (103).

69. Install A/C cable (49) on damper (33) with two speed nuts (104).
70. Plug optic ribbon (46) into light source (91).



71. Route heat cable (55) through grommet (105).



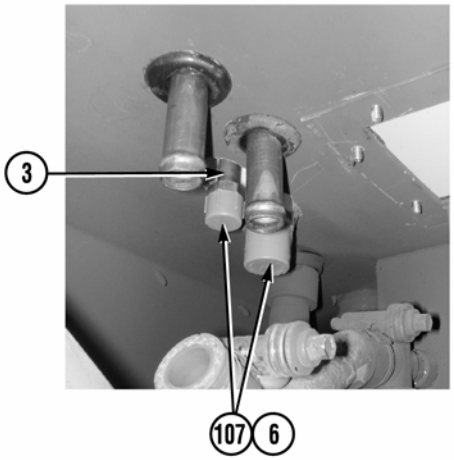


72. Disconnect connector (106).





73. Remove two caps (107) from two fittings (3 and 6).



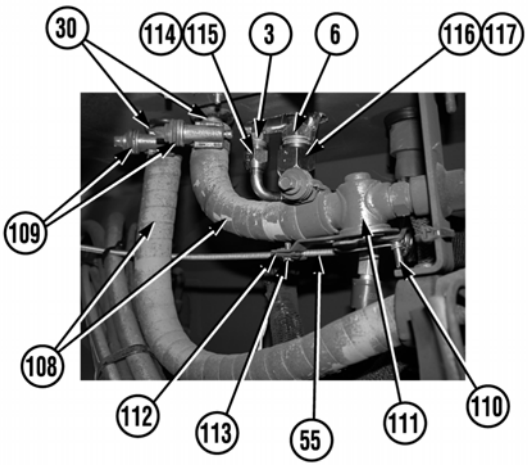
74. Install two heater hoses (108) on coolant tubes (30) and tighten two hose clamps (109).

75. Install heat cable (55) on shaft (110) of heater control valve (111).

76. Place heat cable (55) in retainer (112) and tighten screw (113).

77. Install preformed packing (114) and hose 2524 (115) on fitting (3). Torque hose 2524 (115) to 11-13 ft-lbs. (15-18 N•m).

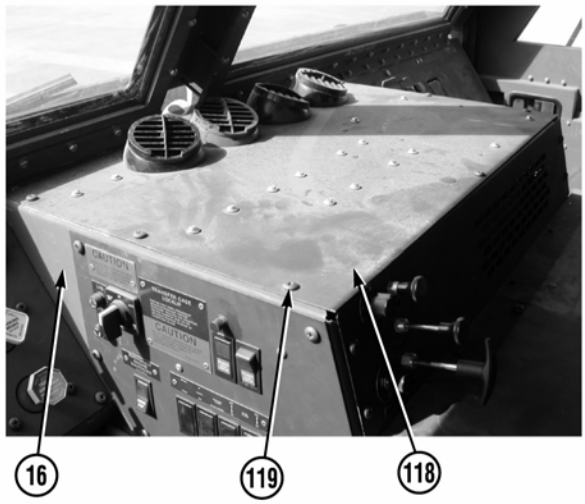
78. Install preformed packing (116) and hose 2522 (117) on fitting (6). Torque hose 2522 (117) to 18-22 ft-lbs. (24-30 N•m).



79. Connect connector (106).

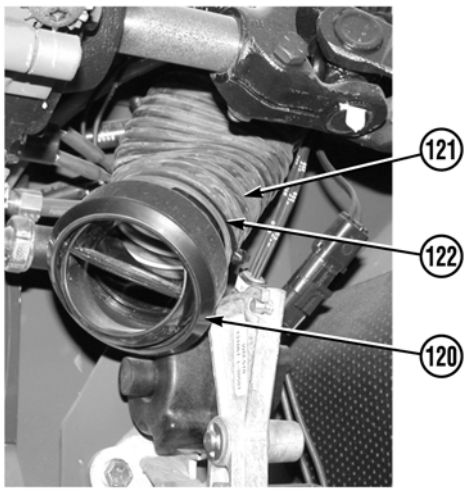


80. Install heater cover (118) on cab (16) with eight lockscrews (119).

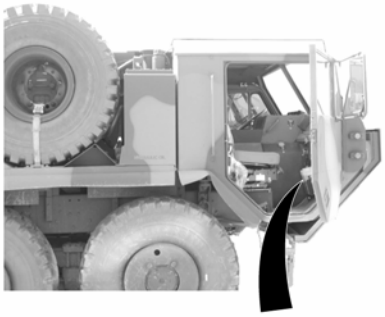


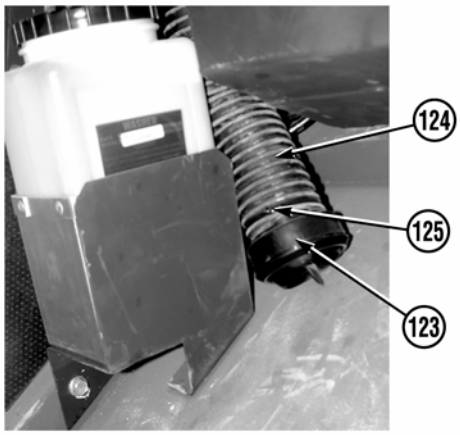
81. Install air diffuser ball (120) on driver side tube (121) with cable tie (122).





82. Install air diffuser ball (123) on passenger side tube (124) with cable tie (125).



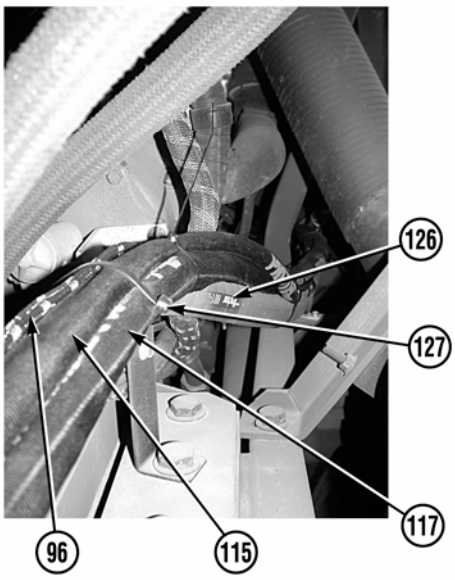


CAUTION

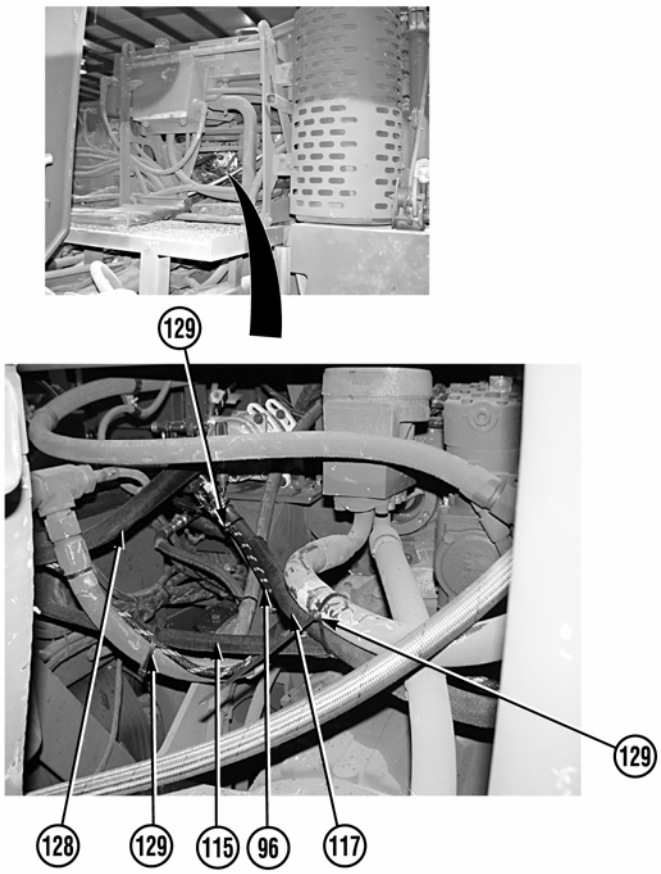
A/C hoses and wire harness need to be cable tied out of the way of exhaust manifold, exhaust pipe and any moving parts. Failure to comply may result in damage to equipment.

83. Secure hose 2524 (115), hose 2522 (117) and A/C wire harness (96) to hydraulic line (126) with four cable ties (127).





84. Periodically secure hose 2524 (115), hose 2522 (117), hose 2521 (128) and A/C wire harness (96) away from any moving parts with cable ties (129).



5. AIR CONDITIONER CHARGE/SERVICE.

This task covers:

a. Charging.
b. Recovery.
c. Evacuation/Recycling.
d. Purging.
e. Flushing.

INITIAL SETUP

Models

All

Test Equipment

Test Set Subassembly
Leak Detector, Refrigerant Gas

Special Tools

None

Supplies

Dye, R134A/PAG Tracer 32
Oil, Pag 46
Freon, R134A

Personnel Required

One

References

None

Equipment Condition

Engine OFF (TM 9-2320-364-10)

Special Environmental Conditions

None

General Safety Instructions

None

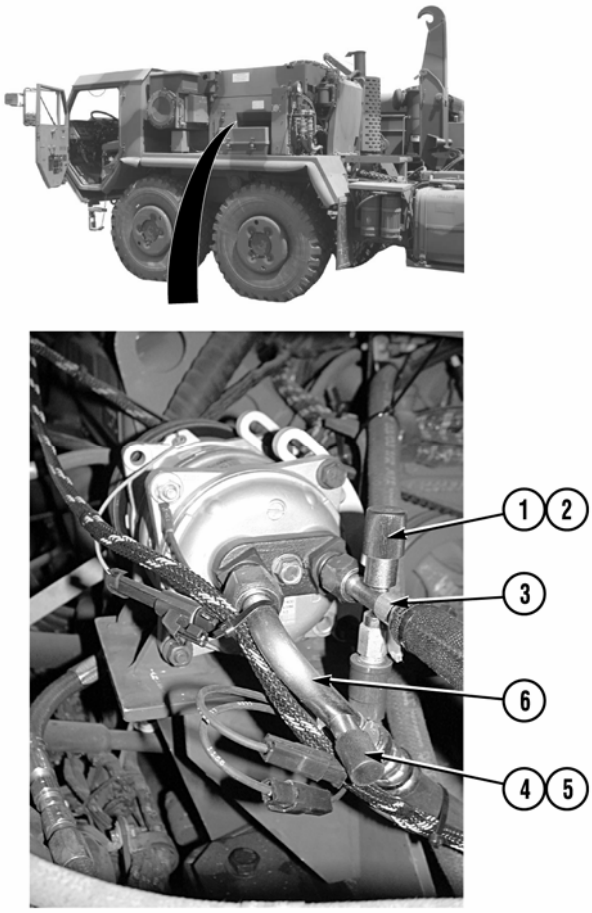
a. Charging.

WARNING

- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134A air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134A may form, resulting in a fire or explosion, which could cause personnel injury or death.**

CAUTION

- **Refrigerant oil must be added to air conditioner system before charging with refrigerant or air conditioner compressor will be damaged. Add same amount of new refrigerant oil in air conditioner compressor as was noted during recovery or evacuation, except if charging for the first time. Maximum amount of refrigerant oil required for air conditioner system is 13 oz (369 g).**
- **RECOVERY and EVACUATION/RECYCLING procedures must be performed before system is charged or damage to system may result, except if charging for the first time.**
- **Air conditioner system must be in a 10 to 15 in. Hg vacuum status before charging.**
- **Use care to prevent overcharging or damage to compressor may result.**



1. Position R-134A tank on a scale to make sure enough refrigerant is available to fully charge system. Weight of R-134A should be 3 lbs. (1.362 kg).
2. Remove cap (1) from service valve (2) on hose 2521 (3).
3. Add 1 oz. (29.6 mL) of 46 pag oil in service valve (2).

NOTE
Service valves are located on compressor.

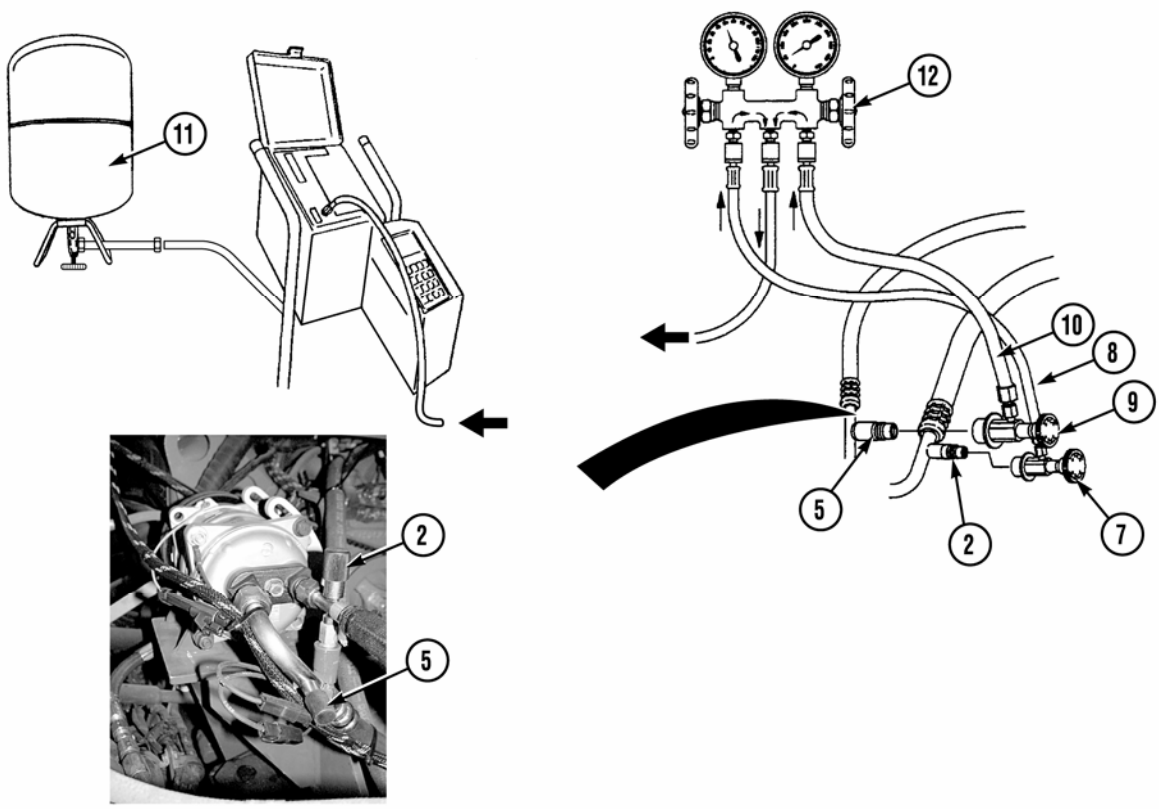
4. Remove cap (4) from service valve (5) on hose 2522 (6).

5. Refer to Table 1 for proper system pressure levels at measured temperatures.

6. Charge refrigerant system as noted:

TABLE 1

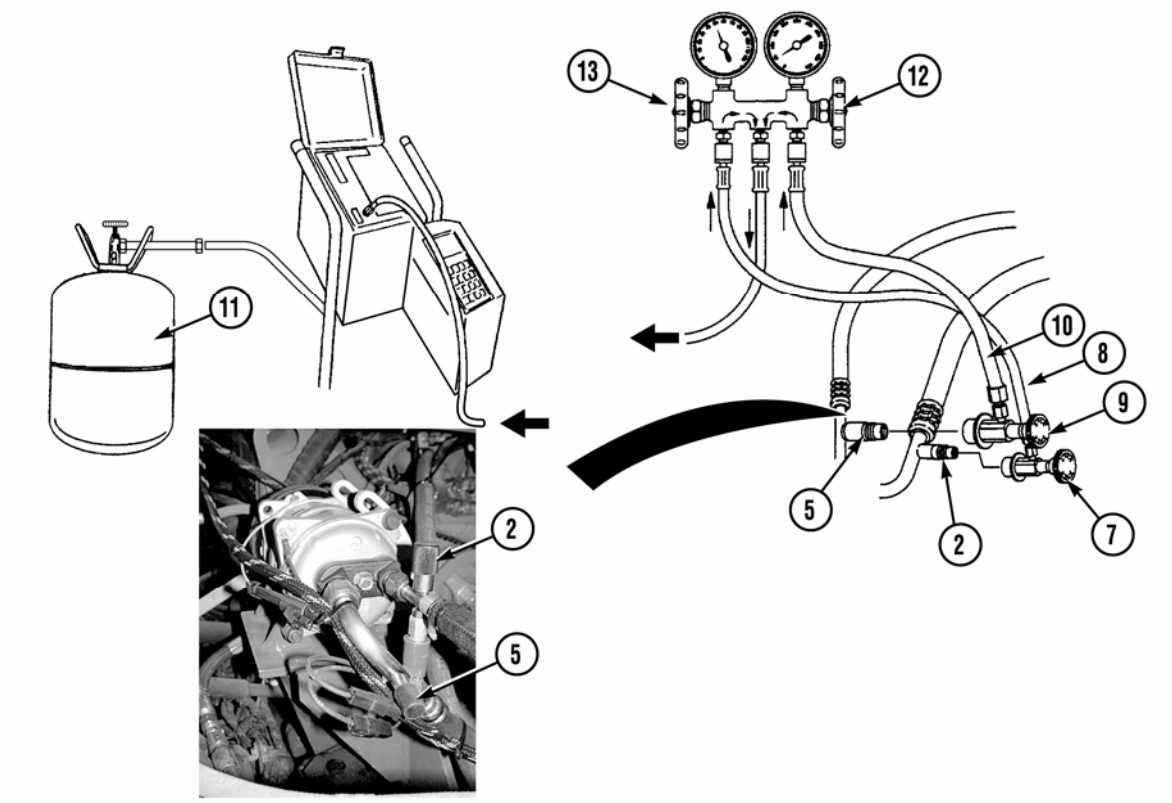
°F	°C	HFC-134A (psi)	°F	°C	HFC-134A (psi)
-60	-51.1	21.8	55	12.8	51.1
-55	-48.3	20.4	60	15.6	57.3
-50	-45.6	18.7	65	18.3	63.9
-45	-42.8	16.9	70	21.1	70.9
-40	-40.0	14.8	75	23.8	78.4
-35	-37.2	12.5	80	26.7	88.4
-30	-34.4	9.8	85	29.4	94.9
-25	-31.7	6.9	90	32.2	103.9
-20	-28.9	3.7	95	35.0	113.5
-15	-26.1	0.0	100	37.8	123.6
-10	-23.3	1.9	105	40.6	134.3
-5	-20.6	4.1	110	43.3	145.3
0	-17.8	6.5	115	46.1	157.6
5	-15.0	9.0	120	48.9	170.3
10	-12.2	12.0	125	51.7	183.6
15	-9.4	15.0	130	54.4	197.6
20	-6.7	18.4	135	57.2	212.4
25	-3.9	22.1	140	60.0	227.9
30	-1.1	26.1	145	62.8	244.3
35	1.7	30.4	150	65.6	261.4
40	4.4	35.0	155	68.3	279.5
45	7.2	40.0	160	71.1	298.4
50	10.0	45.3	165	73.9	318.3



7. Connect hand valve (7) on hose (8) to service valve (2).
8. Connect hand valve (9) on hose (10) to service valve (5).

NOTE
Perform Step (9) with engine off and low side hand valve closed.

9. When charging from bulk container, position bulk container (11) upside down and open high side hand valve (12).
10. Allow refrigerant to enter system until 27 oz. (765 g) has been added. Close high side hand valve (12).
11. Start engine (TM 9-2320-364-10). Position personnel cab air conditioner controls at maximum cooling and fan speed. Refrigerant compressor must engage.
12. Shut engine OFF (TM 9-2320-364-10).



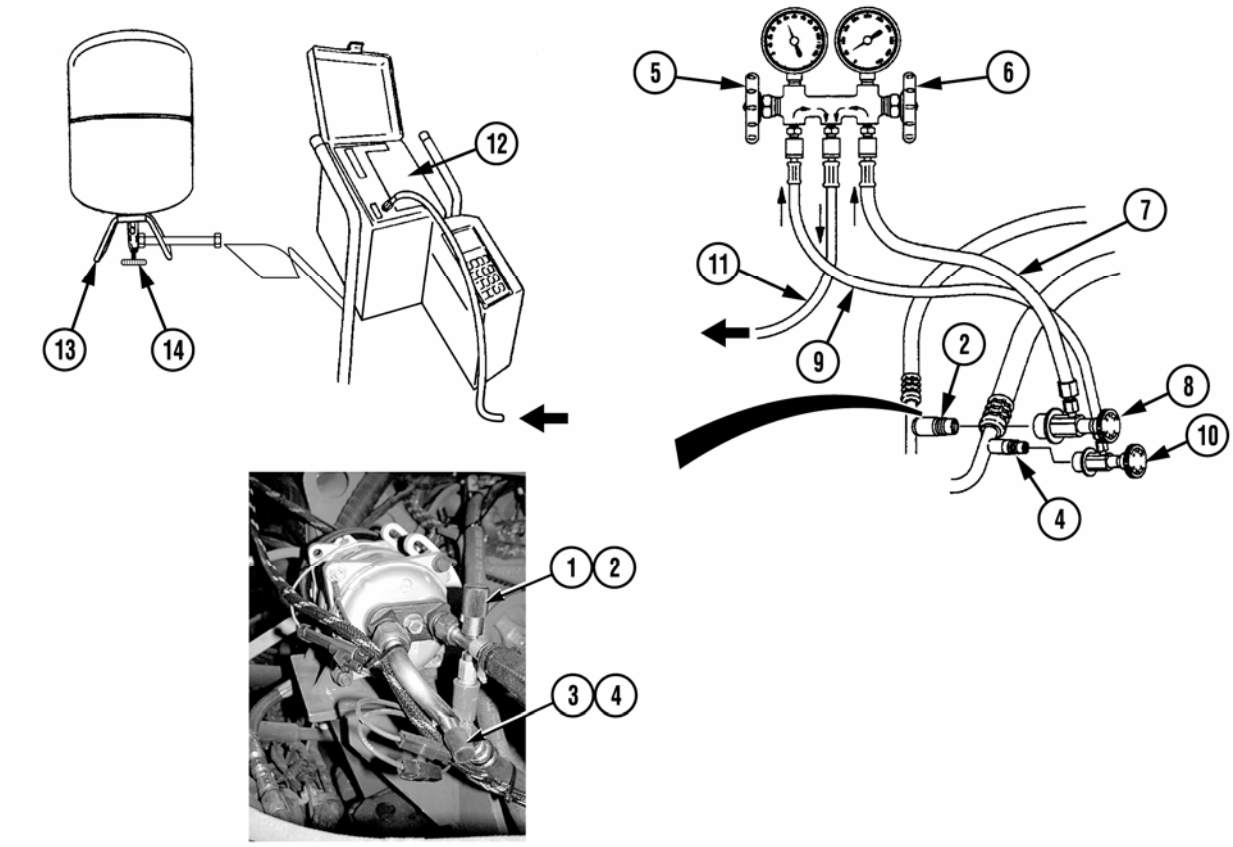
NOTE
Perform Step (13) if charge did not enter system.

13. Position bulk container (11) in upright position and open low side hand valve (13) to draw vapor into system. Leave low side hand valve (13) open until correct weight of refrigerant has entered system. Close low side hand valve (13).

NOTE
If refrigerant is slow to enter system because of low outside temperatures, vaporization may be quickened by placing refrigerant in tub of warm water. Temperature should not exceed 125°F (52°C).

14. Disconnect hose (8).
15. Start engine (TM 9-2320-364-10).
16. Open high side and low side hand valves (12) and (13) to recover refrigerant from lines.
17. Check for leaks.
18. Check operation of air conditioning system.
19. Shut engine OFF (TM 9-2320-364-10).

b. Recovery.



WARNING

- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134A air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134A may form, resulting in a fire or explosion, which could cause personnel injury or death.**

NOTE
Service valves are located on compressor.

1. Remove cap (1) from service valve (2).
2. Remove cap (3) from service valve (4).
3. Close two recovery/recycling station hand valves (5 and 6).

NOTE

Push down firmly on hose connectors until a clicking sound is heard to make sure coupler is locked.

4. Connect hose (7) to hand valve (8).
5. Connect hose (7) and hand valve (8) to service valve (2).
6. Connect hose (9) to hand valve (10).
7. Connect hose (9) and hand valve (10) to service valve (4).
8. Connect center hose (11) to recovery/recycling station (12) and receiving container (13).
9. Open valve (14) on receiving container (13).
10. Turn knob clockwise to open hand valve (8).
11. Turn knob clockwise to open hand valve (10).

NOTE

Recovery/recycling station will also recover refrigerant oil from air conditioner system. Refrigerant oil will be separated from refrigerant in a container on recovery/recycling station. Amount of refrigerant oil recovered must be noted. Not all refrigerant oil will be recovered; some refrigerant oil will stay in air conditioner system.

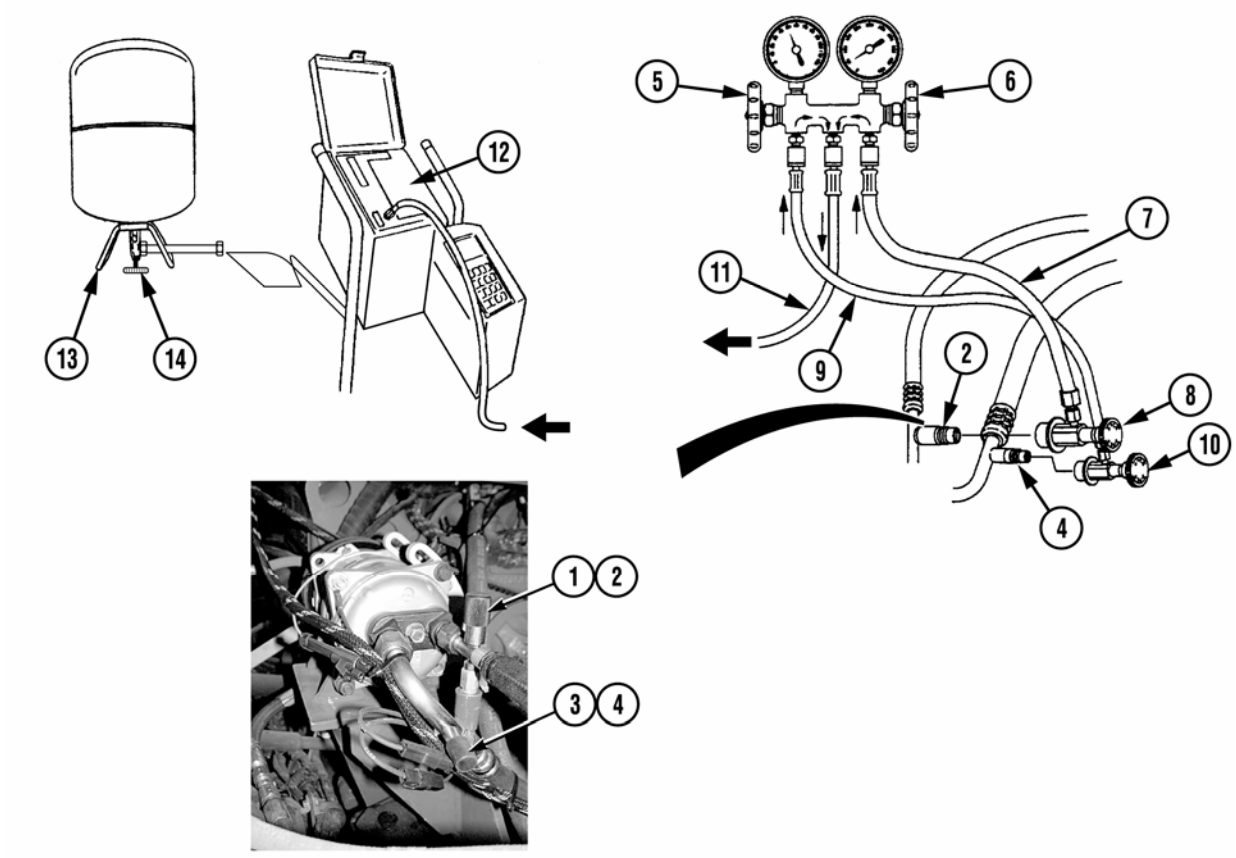
12. Recover all refrigerant from system to 10 to 15 in. Hg vacuum on low side gage of recovery/recycling station.

CAUTION

- **Always comply with all local regulations regarding refrigerant disposal. Failure to comply may result in penalties for improper disposal.**
- **Air conditioner receiver/dryer must be replaced each time air conditioning system refrigerant is evacuated or damage to system may result.**

13. Replace air conditioner receiver/dryer.

c. Evacuation/Recycling.



WARNING

Wear protective goggles and nonleather gloves when servicing air conditioner or injury may result.

CAUTION

- **Always comply with all local regulations regarding refrigerant disposal. Failure to comply may result in penalties for improper disposal.**
- **System must have been recovered and compressor filled with correct amount of refrigerant oil.**
- **Air conditioner receiver/dryer must be replaced each time air conditioning system refrigerant is evacuated or damage to system may result.**

NOTE

Service valves are located on compressor.

1. Remove cap (1) from service valve (2).
2. Remove cap (3) from service valve (4).

3. Close recovery/recycling station hand valves (5 and 6).

NOTE

Push down firmly on hose connectors until a clicking sound is heard to make sure coupler is locked.

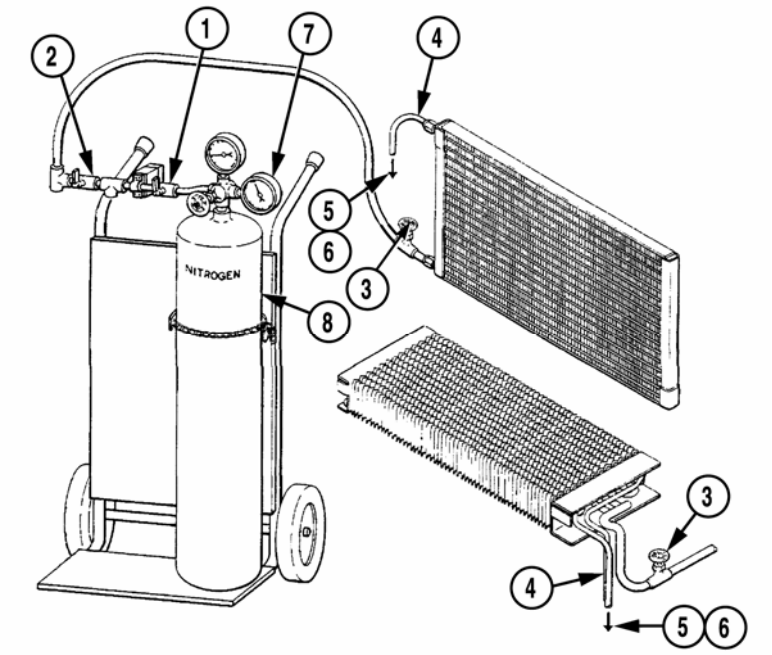
4. Connect hose (7) to hand valve (8).
5. Connect hose (7) and hand valve (8) to service valve (2).
6. Connect hose (9) to hand valve (10).
7. Connect hose (9) and hand valve (10) to service valve (4).
8. Connect center hose (11) to recovery/recycling station (12) and receiving container (13).
9. Open valve (14) on receiving container (13).
10. Turn knob clockwise to open hand valve (8).
11. Turn knob clockwise to open hand valve (10).
12. Recover all refrigerant from system to 10 to 15 in. Hg vacuum on low side gage of recovery/recycling station.

CAUTION

- **Always comply with all local regulations regarding refrigerant disposal. Failure to comply may result in penalties for improper disposal.**
- **Air conditioner receiver/dryer must be replaced each time air conditioning system refrigerant is evacuated or damage to system may result.**

13. Replace air conditioner receiver/dryer.

d. Purging.



WARNING

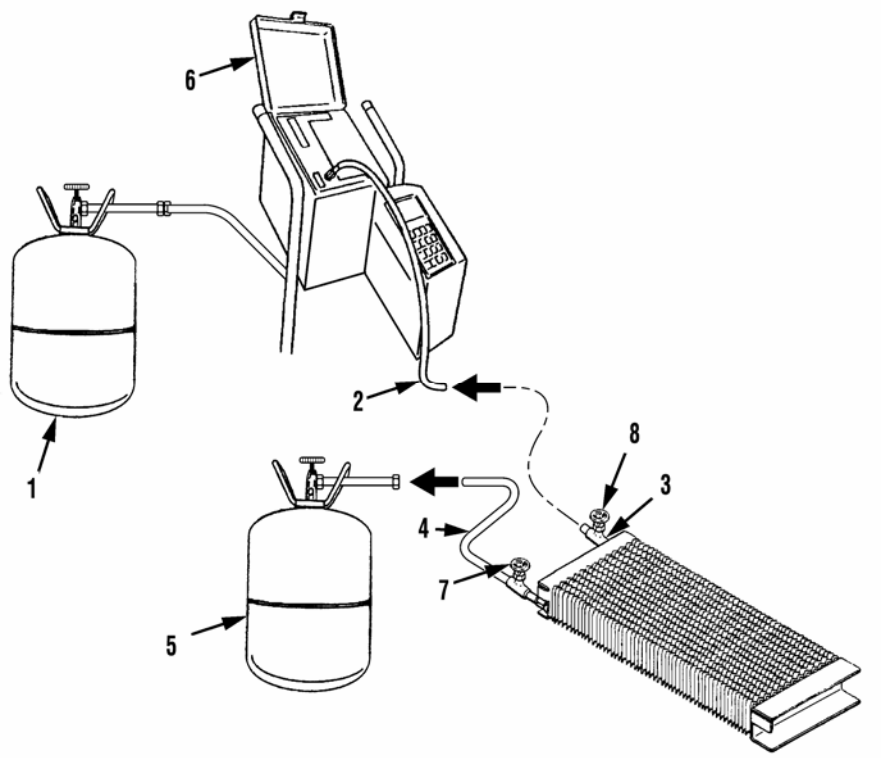
Wear protective goggles and nonleather gloves when servicing air conditioner or injury may result.

CAUTION

Dry nitrogen gas is recommended for purging. A pressure regulator is required to regulate gas pressure between 0 and 200 psi (0-1,379 kPa). Commercial cylinders of nitrogen contain pressures in excess of 2,000 psi (13,790 kPa). This pressure must be reduced to 200 psi (1,379 kPa) for purging or damage to equipment may result.

1. Recover system refrigerant (refer to **b. Recovery**).
2. Disconnect component to be purged from air conditioning system.
3. Install caps or plugs tightly on air conditioning system lines that were disconnected from component.
4. Close three valves (1, 2, and 3).
5. Connect supply line valve (3) to outlet end of component or line.
6. Connect drain line (4) to inlet end of component or line.
7. Connect outlet end of drain line (4) to recycling system container (5) or to waste container (6).
8. Adjust regulator/gage (7) on nitrogen bottle (8) to 200 psi (1,379 kPa).
9. Open nitrogen bottle control valve (1) and purging control valve (2), then slowly open supply line valve (3). Check drain line (4) for gas flow.
10. Let nitrogen flow 200 psi (1,379 kPa) for 1 to 2 minutes. If component or line was very wet, let nitrogen flow until there is no trace of refrigerant oil or solid bits of dirt or grit flowing from drain line (4).
11. Close nitrogen bottle control valve (1) and purging control valve (2) first, then close supply line valve (3).
12. Disconnect supply line valve (3) and drain line (4). Tightly cap both ends of component or line.

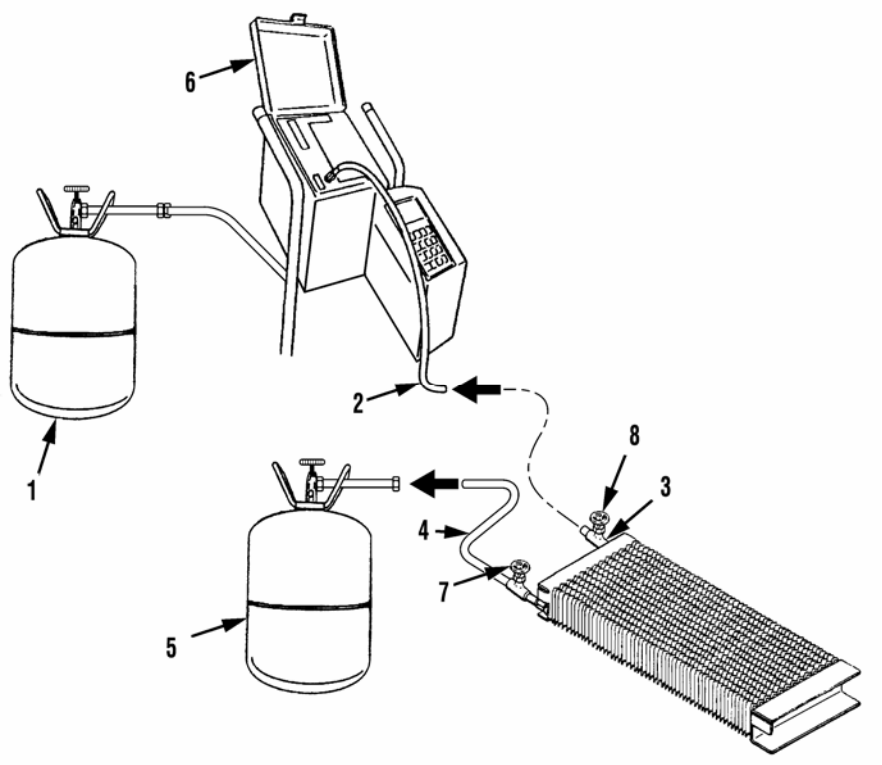
e. Flushing.



WARNING

- **Use care to prevent refrigerant from touching skin or eyes. Liquid refrigerant, when exposed to air, quickly evaporates and will freeze skin or eye tissues. Serious injury or blindness may result if you come in contact with liquid refrigerant.**
- **Refrigerant R-134A air conditioning systems should not be pressure tested or leak tested with compressed air. Combustible mixtures of air and R-134A may form, resulting in a fire or explosion, which could cause personnel injury or death.**

1. Recover system refrigerant (refer to **b. Recovery**).
2. Disconnect both ends of line or component to be purged.
3. Install caps or plugs tightly on system lines or components at disconnect points.
4. Charge or pressurize R-134A refrigerant (1) as recommended by manufacturer.
5. Connect recovery/recycling station flushing supply line (2) to outlet hose (3) side of system to reverse flow system.



NOTE

If system is extremely contaminated, install a receiver/dryer in-line as a prefilter for recovery/recycling station.

6. Connect recovery/recycling station flushing drain line (4) from inlet valve side of system to receiving container (5).
7. Turn on recovery/recycling station (6) and open inlet valve (7). Allow about 2 lbs. (1 kg) of R-134A to flow through system.
8. Close supply line valve (8) and wait for recovery/recycling station (6) to shut off.
9. Disconnect recovery/recycling station flushing supply line (2) from outlet hose (3).
10. Disconnect recovery/recycling station flushing drain line (4) from inlet valve (7).
11. Purge system and check collection bottle for contaminants.

6. LEFT SIDE NOISE PANEL PREPARATION/INSTALLATION.

This task covers:
a. Left Side Noise Panel Preparation/Installation.
b. Follow-On Maintenance.

INITIAL SETUP

Models
All

Test Equipment
None

Special Tools
None

Supplies
Rubber Flap
Bracket
Restraint Bar
(9) Screw - 1/4-20 x 1 in.
(4) Screw - 1/4-20 x 3/4 in.
(6) Locknut - 1/4 in.
(4) Washer - 1/4 in.

Personnel Required
One

References
None

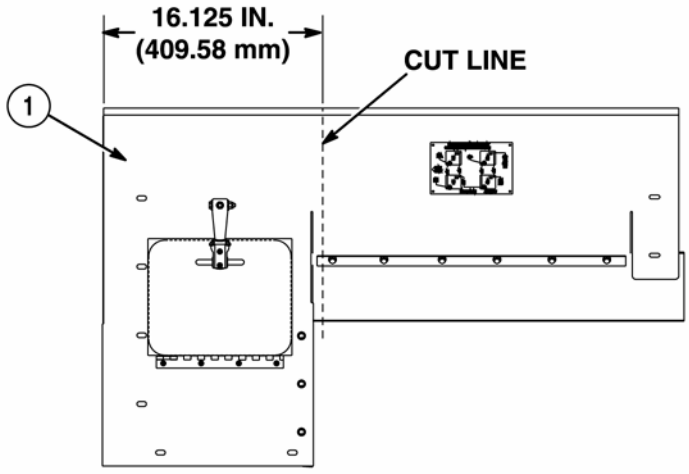
Equipment Condition
None

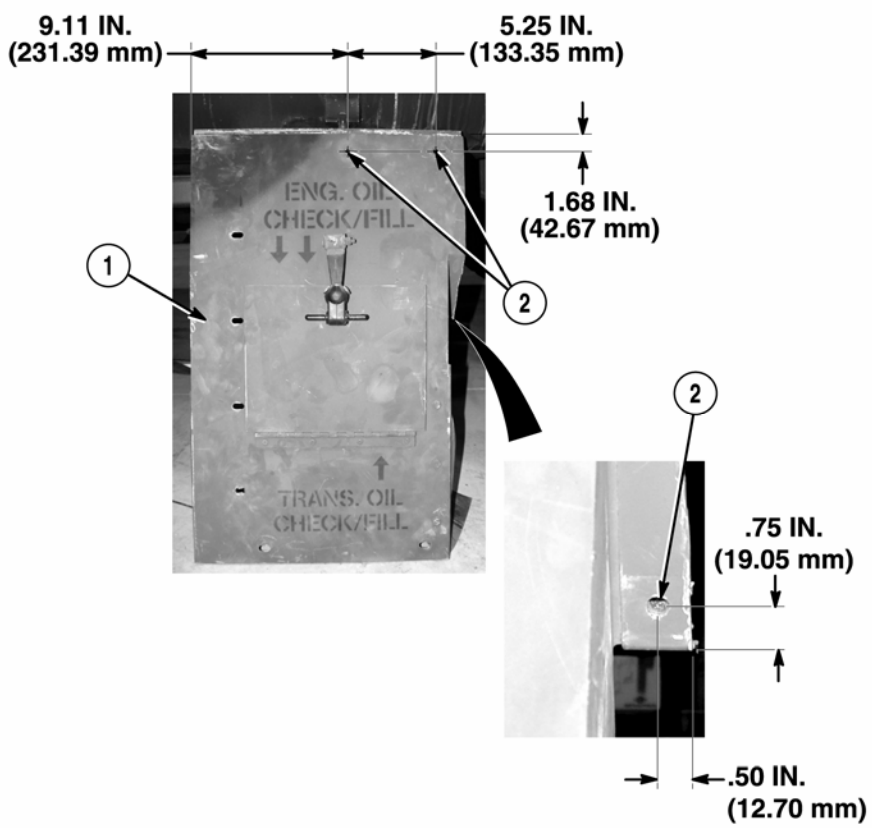
Special Environmental Conditions
None

General Safety Instructions
None

a. Left Side Noise Panel Preparation/Installation.

1. Cut left side noise panel (1) as shown in line art.
2. File off rough edges on cut edge of left side noise panel (1).





3. Drill three 0.343 in. (8.712 mm) holes (2) on left side noise panel (1).

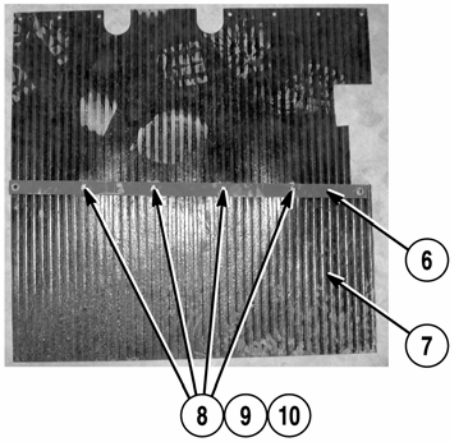
CAUTION

Ensure left side noise panel remains free from contacting ether start aid assembly or electrical cables during installation. Failure to comply may result in damage to equipment.

4. Install left side noise panel (1) on vehicle with eight washers (3), lockwashers (4) and screws (5).



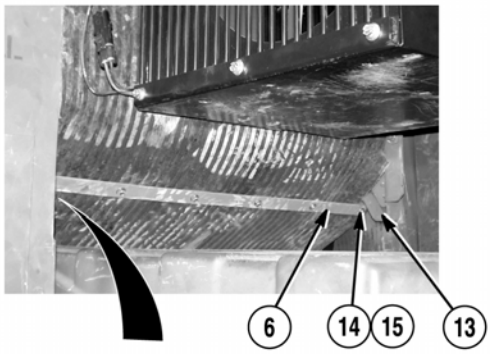
5. Install restraint bar (6) on rubber flap (7) with four screws (8), washers (9) and locknuts (10).

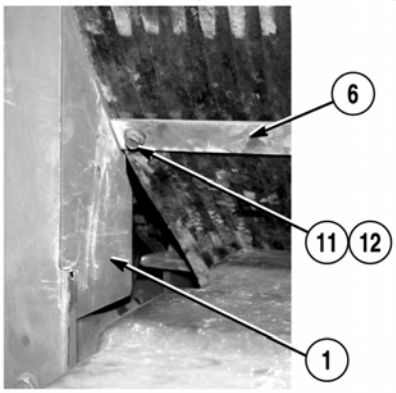


NOTE

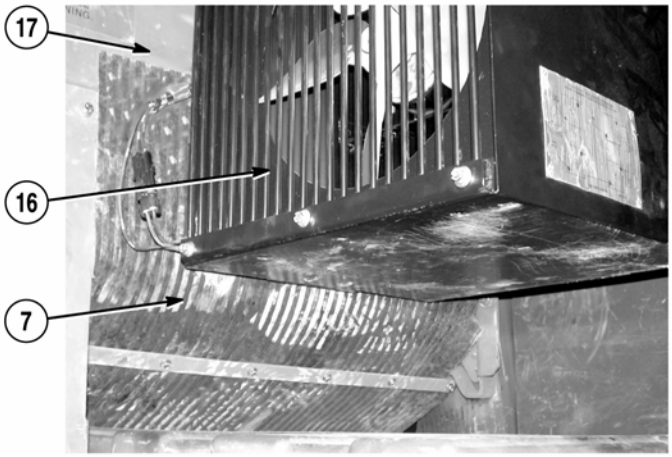
Bottom of rubber flap needs to be positioned behind the battery box cover and in front of the compressor mounting bracket.

6. Install restraint bar (6) to left side noise panel (1) with screw (11) and nut (12).
7. Install restraint bar (6) to stabilizer bracket (13) with screw (14) and nut (15).

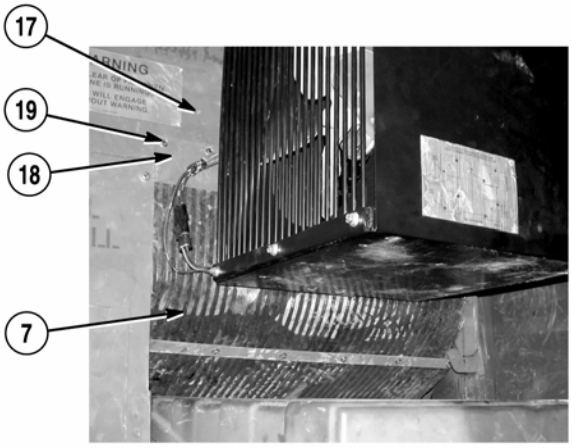




8. Slide rubber flap (7) between condensor (16) and panel (17).



9. Install rubber flap (7) on panel (17) with bracket (18) and five screws (19).



b. Follow-On Maintenance.

1. Install electronic control box (ECB) right side panel, (TM 9-2320-364-20).
2. Install cab engine access panel, (TM 9-2320-364-20).
3. Install electronic control box (ECB) cover, (TM 9-2320-364-20).
4. Install right side noise panel, (TM 9-2320-364-20).
5. Install rear noise panel, (TM 9-2320-364-20).
6. Connect batteries, (TM 9-2320-364-20).

END OF WORK PACKAGE

APPENDIX C

REFERENCES

REFERENCES

APPENDIX C

SCOPE

This appendix lists all forms, field manuals, technical manuals, and other publications referenced in this manual. Also, those publications that should be consulted for additional information about vehicle operations are listed.

PUBLICATION INDEXES

The following indexes 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

FORMS

The following forms pertain to this manual. Refer to DA Pamphlet 25-30 for index of blank forms.

Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404
Maintenance Request . . . . . DA Form 2407
Recommended Changes to DA Publication and Blank Forms . . . . . DA Form 2028

Refer to DA Pam 750-8, The Army Maintenance Management Systems (TAMMS) Users Manual, for instructions for the use of maintenance forms pertaining to this material.

OTHER PUBLICATIONS

The following publications contain information pertinent to the M1074 and M1075 series vehicles and associated equipment.

a. Safety.

First Aid . . . . . FM 4-25.11
Safety Inspection and Testing of Lifting Devices . . . . . TB 43-0142
Security of Tactical Wheeled Vehicles. . . . . TB 9-2300-422-20
Camouflage . . . . . FM 20-3
Nuclear, Biological, and Chemical Defense. . . . . FM 21-40
Chemical, Biological, and Radiological (CBR) Decontamination. . . . . FM 3-5
Nuclear, Biological, and Chemical (NBC) Reconnaissance and
Decontamination Operations (How to Fight) . . . . . FM 3-87 (HTF)

REFERENCES - Continued

b. Vehicle Operation.

Operator's Manual, M1074 and M1075 Series Vehicles . . . . . TM 9-2320-364-10
Army Motor Transport Units and Operations . . . . . FM 55-30
Manual for the Wheeled Vehicle Driver . . . . . FM 21-305
Recovery and Battlefield Damage Assessment and Repair . . . . . FM 9-43-2
Deepwater Fording of Ordnance Material . . . . . TM 9-238

c. Cold Weather Operation and Maintenance.

Basic Cold Weather Manual . . . . . FM 31-70
Northern Operations . . . . . FM 31-71
Operations and Maintenance of Ordnance Material in Extreme Cold Weather (0 degrees to -65 degrees F) . . . . . FM 9-207

d. Maintenance and Repair.

Unit Maintenance for M1074 and M1075 Series Vehicles . . . . . TM 9-2320-364-20
Direct Support and General Support Maintenance for M1074 and M1075 Series Vehicles . . . . . TM 9-2320-364-34
Operator's, Unit, Direct Support, and General Support Maintenance Manual for Care, Maintenance, Repair, and Inspection of Pneumatic Tires and Inner Tubes . . . . . TM 9-2610-200-14
Cooling Systems: Tactical Vehicles . . . . . TM 750-254
Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems . . . . . TB 750-651
Repair of Tents, Canvas, and Webbing . . . . . FM 10-16
Painting Instructions for Field Use . . . . . TM 43-0139
Color, Marking, and Camouflage Painting of Military Vehicles . . . . . TB 43-0209
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materiels Including Chemicals . . . . . TM 9-247
Metal Body Repair and Related Operations . . . . . TC 9-510
Operator’s Circular Welding Theory and Application . . . . . TC 9-237
Inspection, Care, and Maintenance of Antifriction Bearings . . . . . TM 9-214
Care and Use of Handtools and Measuring Tools . . . . . TM 9-243
Purging, Cleaning, and Coating Interior Ferrous and Terne Sheet Vehicle Fuel Tanks . . . . . TB 43-0212
Operator's Organizational, Direct Support, and General Support Maintenance Manual for Lead-Acid Storage Batteries . . . . . TM 9-6140-200-14
Rigging Techniques, Procedures, and Applications . . . . . FM 5-125
General Shop Practice Requirements for Repair, Maintenance, and Test of Electronic Equipment . . . . . TM 43-0158
Operator’s and Organizational Maintenance Manual Including Repair Parts and Special Tools List for Simplified Test Equipment for Internal Combustion Engines . . . . TM 9-4910-571-12&P
Description, Use, Bonding Techniques, Properties, of Adhesives . . . . . TB ORD1032

REFERENCES - Continued

e. Maintenance of Auxiliary Equipment and Special Purpose Kits.

Operator's and Organizational Maintenance Manual Radio Sets . . . . . TM 11-5820-498-12
Operator and Organizational Maintenance Manual for Chemical Alarm . . . . . TM 3-6665-225-12
Operator and Organizational Maintenance Manual Including Repair Parts
and Special Tools List for Decontamination Apparatus . . . . . TM 3-4230-214-12&P

f. General.

Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use . . . . . TM 750-244-6
Principles of Automotive Vehicles . . . . . TM 9-8000

END OF WORK PACKAGE

APPENDIX D

MAINTENANCE ALLOCATION CHART (MAC)

MAINTENANCE ALLOCATION CHART (MAC)

APPENDIX D

Section I. INTRODUCTION

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 Army Maintenance Management System (TAMMS) 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:

- Operators - Includes a C subcolumn.
- Field Level - Includes an F subcolumn.
- Sustainment - Includes a H 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.

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, chemical 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.

MAINTENANCE ALLOCATION CHART (MAC) - Continued

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

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 the assigned maintenance level is shown as the third 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.

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 functions to be performed on the item listed in Column 2.

---

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 malfunctioning; 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.

MAINTENANCE ALLOCATION CHART (MAC) - Continued

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 as 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 shown for each level. The work-time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C . . . . . Operators
F . . . . . Field Level Maintenance
H . . . . . Sustainment

*Asterisk indicates level of maintenance authorized to complete this function. No specific times established. Times required for replacement will depend on extent of work required.

e. Column (5), Tools and Equipment Ref Code. Column 5 specifies, by code, those common tool sets (not individual tools), common Test, Measurement, and Diagnostic Equipment, and special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to tools and test equipment in Section III.

f. Column (6), Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in Section IV.

EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III

a. Column (1), Tool or Test Equipment Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. Column (2), Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

c. Column (3), Nomenclature. Name or identification of the tool or test equipment.

d. Column (4), National Stock Number. The National Stock Number of the tool or test equipment.

e. Column (5), Tool Number. The manufacturer's part number, model number, or type number.

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.

MAINTENANCE ALLOCATION CHART (MAC) - Continued

Section II. MAINTENANCE ALLOCATION CHART FOR PLS AIR CONDITIONER

Table D-1. Maintenance Allocation Chart for PLS Air Conditioner

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level			(5) Tools and Equipment Ref Code	(6) Remarks Code
			Operators	Field Level	Sustainment		
			C	F	H		
01	ENGINE						
0109	Engine Accessory Drive Assembly	Replace		4.0		5, 6, 9	
03	FUEL SYSTEM						
0306	Fuel Line Extension	Replace		0.3		4, 9	
06	ELECTRICAL SYSTEM						
0607	Instrument Panel:						
	AC 20 AMP Circuit Breaker	Replace		0.3		8, 9	
0608	Miscellaneous Electrical Components:						
	AC Optic Ribbon	Replace		0.8		8, 9	
	AC Optic Ribbon Light Source	Replace		0.8		9	
0613	Wiring Harness:						
	AC Heater/Evaporator Blower Motor Resistor Harness	Replace		0.6		8, 9	
	AC Optic Ribbon Light Source Wire Harness	Replace		0.6		8, 9	
	AC Wiring Harness	Inspect	0.1				
		Replace		6.0		8, 9	
	AC Wire 1082 Harness	Replace		0.6		8, 9	
	AC Wire 1156 Harness	Replace		0.6		8, 9	
	AC Wire 1280A Harness	Replace		0.2		8, 9	
18	CAB AND BODY						
1801	Left Side Noise Panel and Rubber Flap	Replace		0.4		9	

MAINTENANCE ALLOCATION CHART (MAC) - Continued

Table D-1. Maintenance Allocation Chart for PLS Air Conditioner (Continued)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level			(5) Tools and Equipment Ref Code	(6) Remarks Code
			Operators	Field Level	Sustainment		
			C	F	H		
52	REFRIGERATION AND AIR CONDITIONING COMPONENTS						
5200	Air Conditioning System	Inspect	0.1				A, B
		Service		2.0		1, 4, 9	B
	AC Compressor	Inspect	0.1	0.2		9	A
		Replace		3.5		4, 5, 6, 9	
	AC Compressor Drive Belts	Inspect	0.1	0.2		7, 9	
		Replace		1.0		9	
		Adjust		0.8		7, 9	
	AC Compressor Mounting Bracket	Replace		1.7		9	
5217	AC Hoses	Inspect	0.3	0.3		9	A
		Replace		*		5, 6, 9	
	AC High Pressure Switch	Replace		0.7		5, 6, 8, 9	
	AC Low Pressure Switch	Replace		0.3		5, 6, 8, 9	
5230	AC Condenser	Inspect	0.1	0.1			A
		Replace		3.0		4, 5, 6, 9	
	AC Condenser Core	Inspect	0.1	0.2			
		Replace		3.5		4, 9	
	AC Condenser Dryer	Replace		3.5		4, 9	
	AC Condenser Fan Motor	Replace		0.8		8, 9	
	AC Condenser Fan Motor Solenoid	Replace		1.0		8, 9	
	AC Condenser Mounting Bracket	Replace		1.0		9	
5241	AC Heater/Evaporator	Inspect	0.1	0.1			A
		Replace		7.0		3, 4, 5, 6, 8, 9	
	AC Evaporator Core and Expansion Valve	Replace		8.0		5, 6, 9	

MAINTENANCE ALLOCATION CHART (MAC) - Continued

Table D-1. Maintenance Allocation Chart for PLS Air Conditioner (Continued)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level			(5) Tools and Equipment Ref Code	(6) Remarks Code
			Operators	Field Level	Sustainment		
			C	F	H		
	AC Heater Core	Replace		7.3		9	
5243	AC Heater/Evaporator Blower Motor Assembly	Replace		1.5		8, 9	
	AC Heater/Evaporator Blower Motor Resistor	Replace		0.8		8, 9	
	AC Cable	Replace		0.6		9	
	AC Defrost Cable	Replace		0.6		9	
	AC Heater Cable	Replace		0.8		9	
5244	AC Fan Control Switch	Replace		1.0		8, 9	
	AC Temperature Control Switch	Replace		1.0		8, 9	

MAINTENANCE ALLOCATION CHART (MAC) - Continued

Section III. TOOLS AND TEST EQUIPMENT FOR PLS AIR CONDITIONER

Table D-2. Tools and Test Equipment for PLS Air Conditioner

Tool or Test Equipment Reference Code	Maintenance Level	Nomenclature	National Stock Number	Tool Number
1	F	Goggles	6930-00-355-7398	1F4B
2	F	Multimeter, Digital	6625-01-625-6000	AN-PSM-45A
3	F	Pan, Drain	4940-00-387-9592	17942
4	F	Set, Cap and Plug	5340-00-450-5718	10935405
5	F	Shop Equipment, Automotive Maintenance and Repair: Common No. 1	4910-00-754-0654	SC 4910-95-A74
6	F	Shop Equipment, Automotive Maintenance and Repair: Common No. 2	4910-00-754-0650	SC 4910-95-A72
7	F	Tensiometer, Dial In	6635-01-093-3710	BT-3373-F
8	F	Tool Kit, Electrical	5180-00-876-9336	7550526
9	F	Tool Kit, General Mechanic's	5180-00-177-7033 or 5180-01-481-8389	SC 5180-95-N26 or DFP389J

Section IV. REMARKS FOR PLS AIR CONDITIONER

(1) Remarks Code	(2) Remarks
A	Inspect for leakage.
B	See Additional Authorization List (AAL) (Appendix H).

END OF WORK PACKAGE

APPENDIX E

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST

APPENDIX E

Section I. INTRODUCTION

SCOPE

This appendix lists expendable and durable supplies and materials you will need to operate and maintain the PLS AC. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

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 material (e.g., “Use cleaning compound, Item 5, Appendix E”).

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

F - Field Level Maintenance

c. Column (3) - National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the item.

d. Column (4) - Description. Indicates the Federal item name, and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Commercial and Government Entity (CAGE) Code in parentheses.

e. Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by two-character alphabetical abbreviations (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST - Continued

Section II. EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	F	8040-00-148-7182	Adhesive, 3M #1300 32167AX (45152)	tu
2	F	9320-01-237-1157	Gloves, Rubber 509891 (19428)	pr
3	F		Oil, PAG 46V 3289224 (45152)	
4	F	7920-00-205-3570	Rags, Wiping A-A-531 (58536)	lb
5	F	6830-01-439-0614	Refrigerant R-134a (4V886)	cy
6	F	8030-01-014-5869	Sealant, Loctite 242 24231 (05972)	oz
7	F	9160-01-515-2484	Sealant, RTV200 Electrical 3119525 (45152)	ea
8	F	6810-00-252-1345	Solution, Soap MIL-W-1500 Class C (81349) 1 quart bottle	qt
9	F	6850-00-664-5685	Solvent, Dry Cleaning AA59601-1D (58536)	qt
10	F	8135-00-178-9200	Tags, Identification A-A-1916 (58536)	ct
11	F	5970-00-644-3167	Tape, Insulation, Electrical 17 3-4IN (75037)	ro
12	F	5975-01-048-2922	Tie, Cable 60459AX	ea
13	F	5975-01-053-1331	Tie, Cable 5201HX (45152)	ea
14	F	5975-01-513-6305	Tie, Cable 5193HX (45152)	ea

END OF WORK PACKAGE

APPENDIX F

COMMON TOOLS AND SPECIAL TOOLS LIST

COMMON TOOLS AND SPECIAL TOOLS LIST

APPENDIX F

Section I. INTRODUCTION

SCOPE

This appendix lists the tools you will need to operate and maintain the PLS AC.

EXPLANATION OF COLUMNS

a. Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative task box to identify the tool (e.g., “Tool Kit, General Mechanic’s (Item 9, Appendix F)”).

b. Column (2) - Item Name. This column identifies the tool.

c. Column (3) - National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the item.

d. Column (4) - Part Number. This is the manufacturer’s part number assigned to the item.

e. Column (5) - Reference. This column references the Supply Catalog Number and tools which are part of/ components of shop set authorized to section/teams; tools authorized by RPSTL and CTA 50-970; special and fabricated tools; and items of TMDE.

COMMON TOOLS AND SPECIAL TOOLS LIST - Continued

Section II. TOOL IDENTIFICATION LIST

(1) Item Number	(2) Item Name	(3) National Stock Number	(4) Part Number	(5) Reference
1	Goggles	6930-00-355-7398	1F4B	SC 4910-95-A31
2	Multimeter, Digital	6625-01-625-6000	AN-PSM-45A	SC 4910-95-A72
3	Pan, Drain	4940-00-387-9592	17942	SC 4910-95-A74
4	Set, Cap and Plug	5340-00-450-5718	10935405	
5	Shop Equipment, Automotive Maintenance and Repair: Common No. 1	4910-00-754-0654	SC 4910-95-A74	
6	Shop Equipment, Automotive Maintenance and Repair: Common No. 2	4910-00-754-0650	SC 4910-95-A72	
7	Tensiometer, Dial In	6635-01-093-3710	BT-3373-F	
8	Tool Kit, Electrical	5180-00-876-9336	7550526	
9	Tool Kit, General Mechanic's	5180-00-177-7033 or 5180-01-481-8389	SC 5180-95-N26 or DFP389J	

END OF WORK PACKAGE

APPENDIX G

ILLUSTRATED PARTS LIST (RPSTL)

ILLUSTRATED PARTS LIST (RPSTL)

APPENDIX G

Section I. INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of Field Level Maintenance of the PLS AC. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

This repair parts and special tools list is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed by item name in FIG. BULK at the end of the section. Repair parts kits or sets are listed separately in their own functional group within Section II. Repair parts for repairable special tools are also listed in Section II. Items listed are shown on the associated illustration.

b. Section III. Special Tools List. A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE (UOC) column).

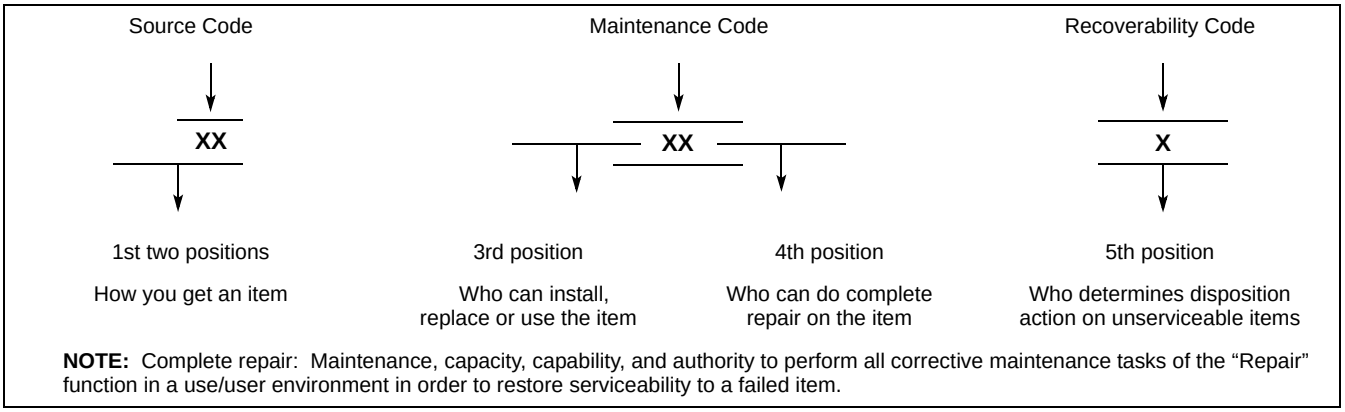
c. Section IV. Cross-Reference Indexes. There are two cross-reference indexes in this RPSTL: The National Stock Number Index and the Part Number Index. The National Stock Number Index refers you to the figure and item number. The Part Number Index refers you to the figure and item number.

ILLUSTRATED PARTS LIST (RPSTL) - Continued

EXPLANATION OF COLUMNS (SECTION II AND III)

a. ITEM NO. (Column (1)). Indicates the number used to identify items called out in the illustration.

b. SMR CODE (Column (2)). The source, maintenance, and recoverability (SMR) code contains supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout:



NOTE: Complete repair: Maintenance, capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

1. *Source Code.* The source code tells you how to get an item needed for maintenance, repair or overhaul of an end item/equipment. Explanations of source codes follow:

Code	Explanation
PA	Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code. **NOTE:** Items coded PC are subject to deterioration.
PB	
PC	
PD	
PE	
PF	
PG	

KD	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied.
KF	
KB	

MO – Made at unit level	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group of the repair parts list of the RPSTL. If the 3d position of the SMR code authorizes you to replace the item, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
MF – Made at DS level	
MH – Made at GS level	
ML – Made at SRA	
MD – Made at depot	

ILLUSTRATED PARTS LIST (RPSTL) - Continued

Code	Explanation
AO – Assembled by unit level	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3d position code of the SMR code authorizes you to replace the item, but the source code indicates it is assembled at a higher level, order the item from the higher level of maintenance.
AF – Assembled by DS level	
AH – Assembled by GS level	
AL – Assembled by SRA	
AD – Assembled by depot	
XA	Do not requisition an “XA” coded item. Order the next higher assembly. (Refer to the NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawing, diagrams, instruction sheet, field service drawing; identified by manufacturer's part number.
XD	Item is not stocked. Order an “XD”-coded item through normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those coded “XA”.

2. *Maintenance Code.* Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth position of the SMR code as follows:

   (a) The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use the item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance.

Maintenance Code	Application/Explanation
C	Crew or operator maintenance done within unit maintenance.
O	Unit level maintenance can remove, replace, and use the item.
F	Direct support maintenance can remove, replace, and use the item.
H	General support maintenance can remove, replace, and use the item.
L	Specialized repair activity can remove, replace, and use the item.
D	Depot can remove, replace, and use the item.

   (b) The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (perform all authorized maintenance functions).

ILLUSTRATED PARTS LIST (RPSTL) - Continued

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the maintenance allocation chart and SMR codes.

Maintenance Code	Application/Explanation
O	Unit is the lowest level that can do complete repair of the item.
F	Direct support is the lowest level that can do complete repair of the item.
H	General support is the lowest level that can do complete repair of the item.
L	Specialized repair activity (designate the specialized repair activity) is the lowest level that can do complete repair of the item.
D	Depot is the lowest level that can do complete repair of the item.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. No parts or special tools are authorized for the maintenance of a “B” coded item. However, the item may be reconditioned by adjusting, lubrication, etc., at the user level.

3. *Recoverability Code.* Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

Recoverability Code	Application/Explanation
Z	Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the 3rd position of the SMR code.
O	Reparable item. When uneconomically reparable, condemn and dispose of the item at unit level.
F	Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support level.
H	Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized at below depot level.
L	Reparable item. Condemnation and disposal not authorized below specialized repair activity (SRA).
A	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material or hazardous materiel). Refer to appropriate manuals/directives for specific instructions.

ILLUSTRATED PARTS LIST (RPSTL) - Continued

c. NSN (Column (3)). The national stock number for the item is listed in this column.

d. CAGEC (Column (4)). The commercial and government entity code is a 5-digit code which is used to identify the manufacturer, distributor, or government agency/activity, that supplies the item.

e. PART NUMBER (Column (5)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

NOTE

When you use a NSN to requisition an item, the item you receive may have a different part number from the number listed.

f. DESCRIPTION AND USABLE ON CODES (UOC) (Column (6)). This column includes the following information:

1. The Federal item name, and when required, a minimum description to identify the item.

2. Part number for bulk materials are referenced in this column in the line item entry to be manufactured/ fabricated.

3. The statement “END OF FIGURE” appears just below the last item description in column 6 for a given figure in both Section II and Section III.

g. QTY (Column (7)). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A “V” appearing in this column instead of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

EXPLANATION OF INDEX FORMAT AND COLUMNS (SECTION IV)

a. National Stock Number (NSN) Index.

1. *STOCK NUMBER Column.* This column lists the NSN in national item identification number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN.

NSN e.g. (5385-01-574-1467)
NSN
NIIN

NOTE

When using this column to locate an item, ignore the first 4 digits of the NSN. Use the complete NSN (13 digits) when requisitioning items by stock number.

2. *FIG. Column.* This column lists the number of the figure where the item is identified/located. The figures are in numerical order in sections II and III.

ILLUSTRATED PARTS LIST (RPSTL) - Continued

3. *ITEM Column.* The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

b. Part Number Index. Part numbers in this index are listed by part number in ascending alphanumeric sequence (vertical arrangement of letters and number combination which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

1. *CAGEC Column.* The commercial and government entity code is a code used to identify the manufacturer, distributor, or government agency, etc., that supplies the item.

2. *PART NUMBER Column.* Indicates the part number assigned to the item.

3. *STOCK NUMBER Column.* This column lists the NSN for the associated part number and manufacturer identified in the PART NUMBER and CAGEC columns to the left.

4. *FIG. Column.* This column lists the number of the figure where the item is identified/located in Section II or Section III.

5. *ITEM Column.* The item number is the number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

a. Usable on Code. The usable on code appears in the lower left corner of the Description column heading. Usable on codes are shown as “UOC…” in the Description Column (justified left) on the first line applicable item/ nomenclature. Uncoded items are applicable to all models. Identification of the usable code used in this RPSTL is:

Code	Used On
074	M1074 With Crane
075	M1075 Without Crane

b. Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk materials are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found in TM 9-2320-364-24P.

c. Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the national stock number/part number index and the bulk material list in section II.

d. Associated Publications. The publications listed below pertain to the PLS and its components:

Publication	Short Title
TM 9-2320-364-10	Operator’s Manual
TM 9-2320-364-20	Unit Maintenance
TM 9-2320-364-34	Direct Support and General Support Maintenance

ILLUSTRATED PARTS LIST (RPSTL) - Continued

HOW TO LOCATE REPAIR PARTS

a. When National Stock Numbers or Part Numbers are Not Known.

1. *First.* Using the table of contents, determine the assembly or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

2. *Second.* Find the figure covering the functional group or the subfunctional group to which the item belongs.

3. *Third.* Identify the item on the figure and note the item number.

4. *Fourth.* Look in the repair parts list for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

b. When National Stock Number or Part Number is Known.

1. *First.* If you have the national stock number, look in the STOCK NUMBER column of the National Stock Number Index. The NSN is arranged in national item identification number (NIIN) sequence (see paragraph 4a). Note the figure and item number next to the NSN.

2. *Second.* Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

NOTE

If you have the part number, look in the PART NUMBER column of the part number index. Identify the figure and item number, look up the item on the figure in Section II.

ABBREVIATIONS

Abbreviations used in this manual are in accordance with MIL-STD-12.

Section II. REPAIR PARTS LIST

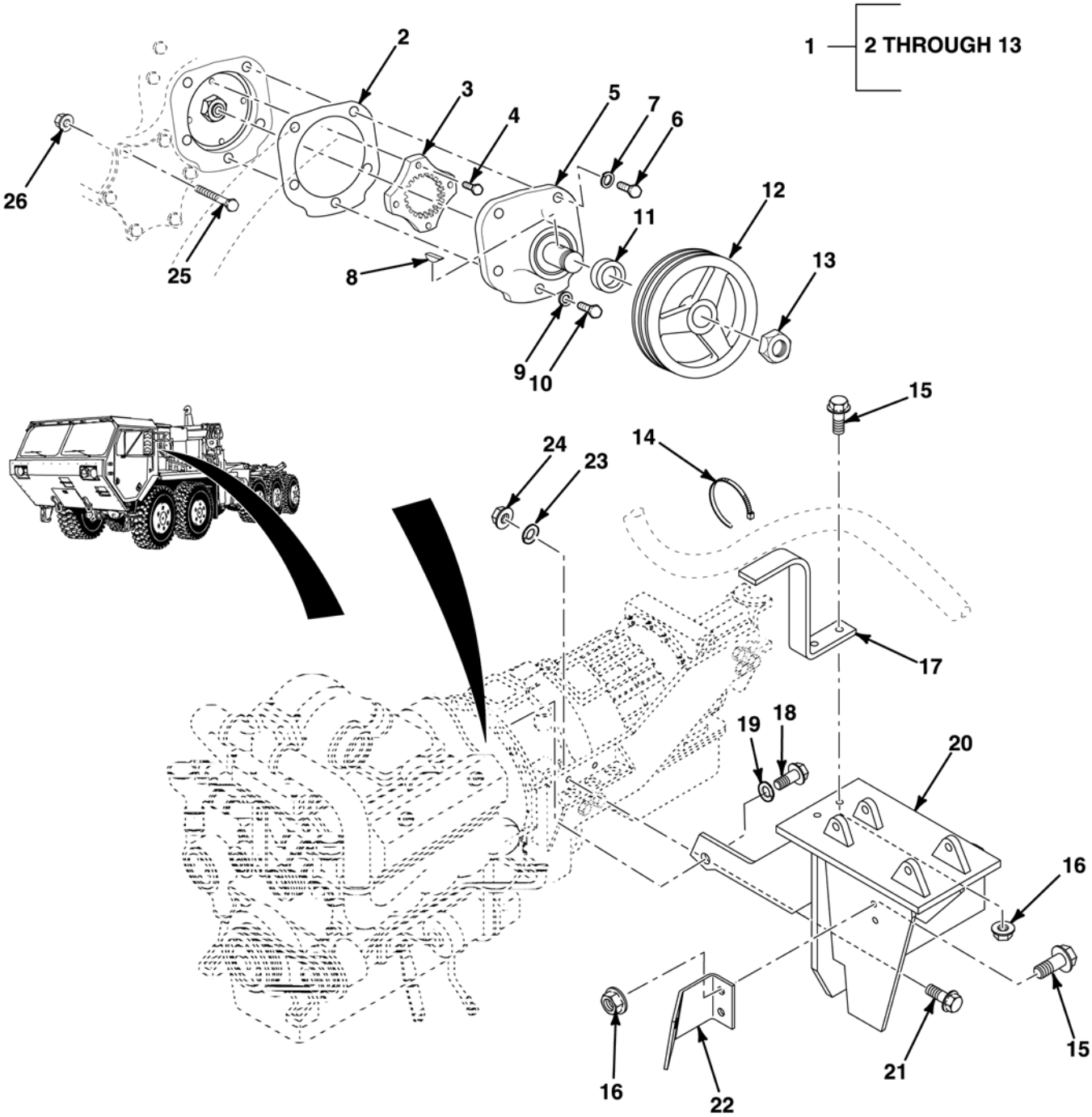


FIG. 1 AC ACCESSORY DRIVE ASSEMBLY/BRACKETS

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 1 AC ACCESSORY DRIVE ASSEMBLY/BRACKETS	
1	PAFZZ	3040-01-531-9555	72582	06X04 0309	• ACCESSORY DRIVE ASSY, RR	1
2	PAFZZ	5330-01-390-9045	72582	23515145	• • GASKET	1
3	PAFZZ	3040-00-689-3029	72582	5170450	• • PLATE, RETAINING	1
4	PAFZZ	5306-00-869-2868	72582	5145092	• • BOLT, MACHINE	4
5	PAFZZ		72582	5146552	• • DRIVER	1
6	PAFZZ	5305-01-339-3123	72582	179882	• • SCREW, CAP	4
7	PAFZZ	5310-00-584-5272	80205	MS35338-48	• • WASHER, LOCK	4
8	PAFZZ	5315-01-304-9173	72582	8928543	• • KEY SPECIAL	1
9	PAFZZ	5310-00-595-6852	24617	N24239PC1	• • WASHER, FLAT	1
10	PAFZZ	5305-00-017-9858	80204	B1821BH044C100N	• • SCREW, CAP	1
11	PAFZZ	5365-00-505-4733	72582	5131131	• • SPACER, SLEEVE	1
12	PAFZZ	3020-01-531-7289	72582	5177236	• • PULLEY	1
13	PAFZZ	5310-01-024-2474	72582	272906	• • NUT, PLAIN, SLOTTED	1
14	PAOFF	5975-01-053-1331	45152	5201HX	• STRAP, TIEDOWN	1
15	PAOFF	5305-01-344-5532	45152	1846HX1	• SCREW, CAP 5/16-18 X 1.00	4
16	PAOFF	5310-01-340-5671	45152	1333510	• NUT, SELF-LOCKING .31-18	4
17	PAOFF	5340-01-531-6447	45152	3536384	• BRACKET, SUPPORT FUEL LINE	1
18	PAOFF	5305-01-531-6053	45152	1367080	• SCREW, CAP .44-14 X 13/4	1
19	PAOFF	5310-00-809-4061	96906	MS27183-15	• FLAT, WASHER 7/16	1
20	PBFZZ	5340-01-531-9829	45152	3530700	• PLS A/C COMP MOUNT	1
21	PAOFF	5306-01-084-5390	78500	S-268-1	• BOLT, MACHINE 3/8-16 X 1.00	2
22	PBFZZ	5340-01-532-3711	45152	3536496	• BRACKET, SUPPORT FUEL LINE	1
23	PAOFF	5310-01-129-0450	45152	351AX	• WASHER, LOCK 3/8	2
24	PAOFF	5310-01-063-8970	45152	434AX1	• NUT, PLAIN 3/8-16	2
25	PAOFF	5305-00-224-1110	72582	186315	• SCREW, CAP .38-24 X 4.5	1
26	PAOFF	5310-01-061-3322	45152	373AX1	• NUT, PLAIN	1
					END OF FIGURE	

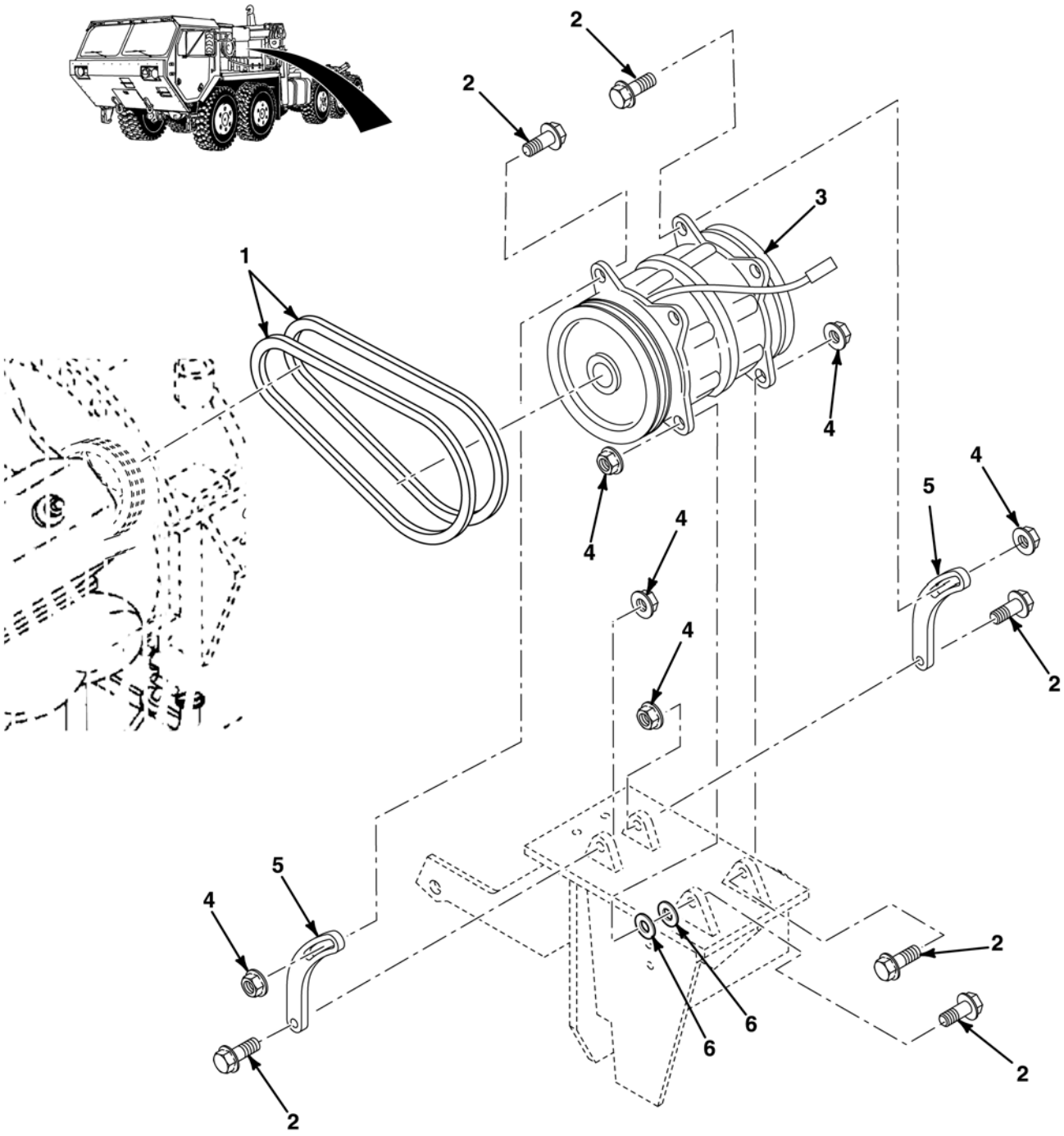


FIG. 2 AC COMPRESSOR MOUNTING

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 2 AC COMPRESSOR MOUNTING	
1	PAOZZ	3030-01-518-9765	45152	2SK308	• TWO BELT SET	1
2	PAOZZ	5305-01-242-0655	45152	120699A	• SCREW, CAP 3/8-16 X 11/2	6
3	PAFZZ	4130-01-531-6747	24234	525953	• COMPRESSOR	1
4	PAOZZ	5310-01-151-1036	45152	115307A	• NUT, SELF-LOCKING 3/8-16	6
5	PBFZZ	5340-01-530-4119	45152	1935360	• STRAP, COMPRESSOR	2
6	PAOZZ	5310-01-062-3379	45152	362AX	• WASHER, FLAT 3/8	2
					END OF FIGURE	

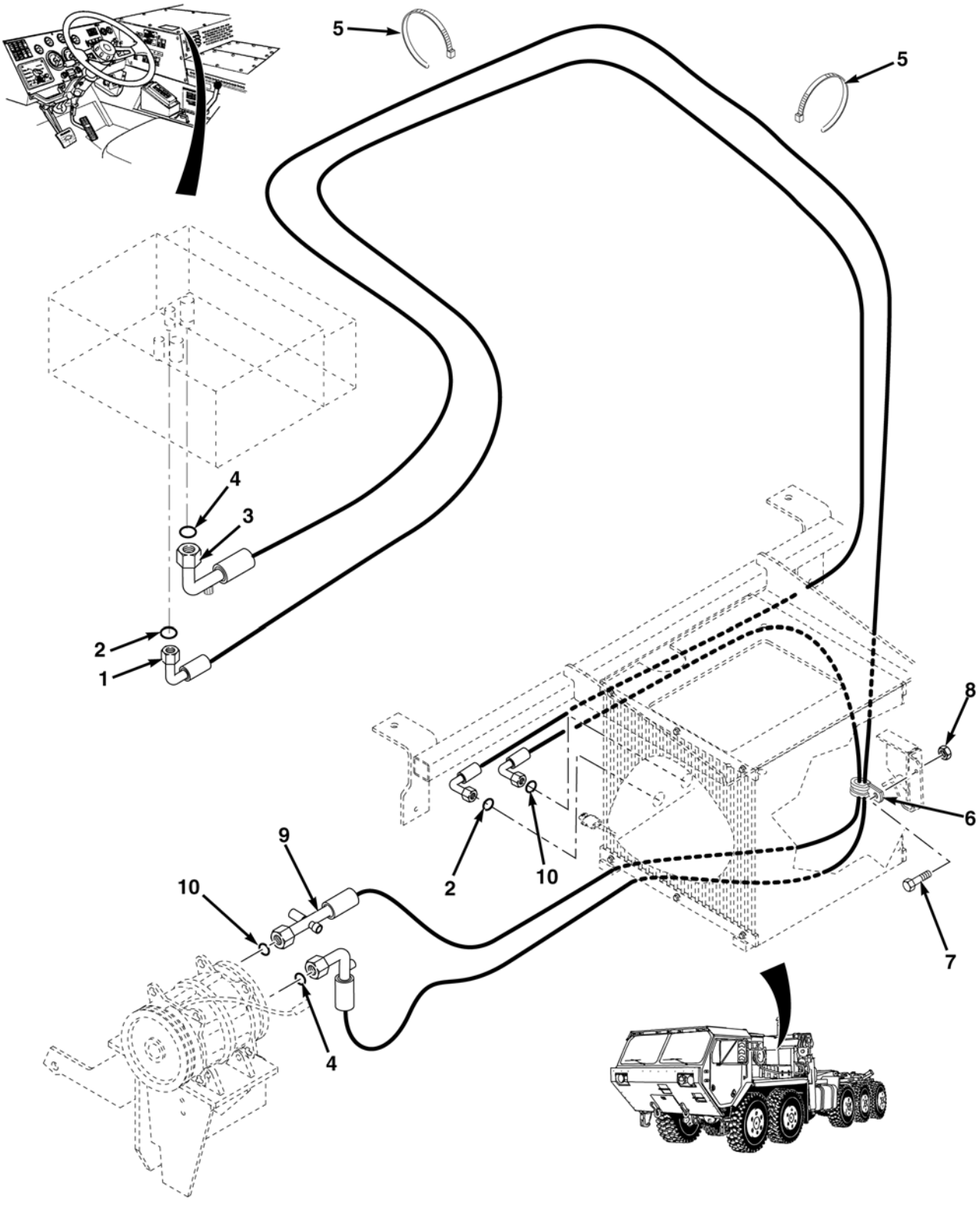


FIG. 3 AC HOSES

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 3 AC HOSES	
1	PAFFF	4720-01-531-5716	45681	331976	• HOSE ASSEMBLY, METALLIC	1
2	PAFZZ	5331-01-530-2714	45681	367989	• • PREFORMED PACKING	2
3	PAFFF	4720-01-531-6914	45681	661427	• HOSE ASSEMBLY, METALLIC	1
4	PAFZZ	5331-01-531-5087	45681	637974	• • PREFORMED PACKING	2
5	PAFZZ	5975-01-048-2922	96906	MS3367-6-0	• STRAP, TIEDOWN	3
6	PAFZZ	5340-01-465-4050	45152	1667780	• CLAMP, LOOP	1
7	PAFZZ	5305-01-340-0225	45152	1754210	• SCREW, CAP .31-18 x 1.00	1
8	PAFZZ	5310-01-340-5671	45152	1333510	• NUT, SELF-LOCKING .31-18	1
9	PAFFF	4720-01-531-6897	45681	551638	• HOSE ASSEMBLY, METALLIC	1
10	PAFZZ	5331-01-530-4135	45681	526914	• • PREFORMED PACKING	2
					END OF FIGURE	

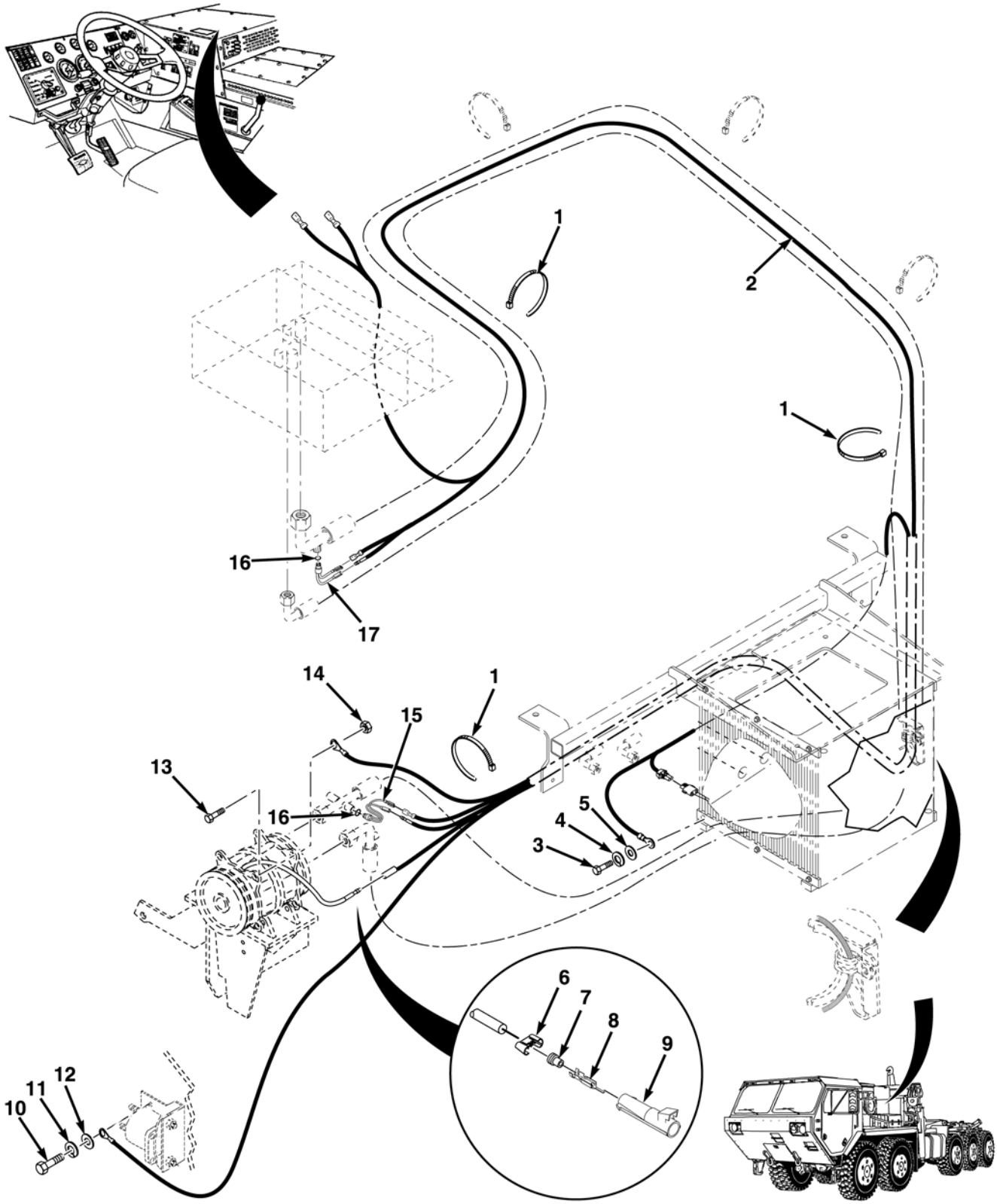


FIG. 4 AC WIRING HARNESS (SHEET 1 OF 2)

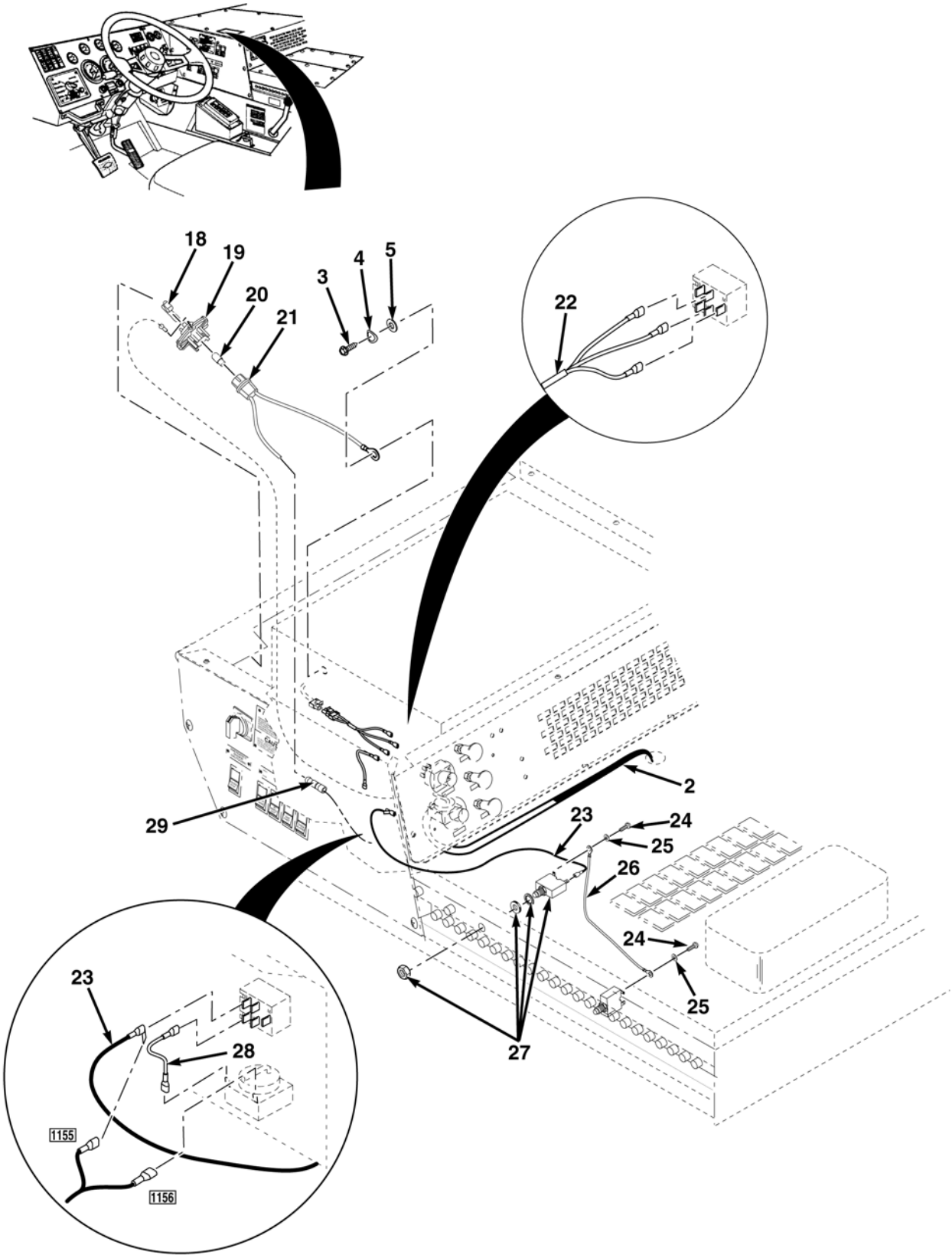


FIG. 4 AC WIRING HARNESS (SHEET 2 OF 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200 FIG. 4 AC WIRING HARNESS	
1	PAOZZ	5975-01-053-1331	45152	5201HX	• STRAP, TIEDOWN	10
2	PAOZZ	6150-01-532-3605	45152	3536262	• WIRE HARNESS	1
3	PAOZZ	5305-01-280-7671	24234	201070	• SCREW, MACHINE 1/4-20 X 1	2
4	PAOZZ	5310-01-105-2652	96195	HLKW025EG	• WASHER, LOCK 1/4	2
5	PAOZZ	5310-01-354-5726	24234	202208	• WASHER, FLAT 1/4	2
6	PFOZZ	5970-01-510-3131	77060	12065249	• INSULATOR, BUSHING	1
7	PAOZZ	5330-01-292-5293	77060	12015284	• SEAL, CABLE	1
8	PAOZZ	5940-01-462-1717	77060	12048159	• TERMINAL, LUG	1
9	PAOZZ	5935-01-447-6283	77060	12065171	• CONNECTOR BODY, PLUG	1
10	PAOZZ	5306-01-145-6949	11757	378429-8	• BOLT, MACHINE 1/4-20 X 3/4	1
11	PAOZZ	5310-00-582-5965	80205	MS35338-44	• WASHER, LOCK 1/4	1
12	PAOZZ	5310-00-809-4058	96906	MS27183-10	• WASHER, FLAT 1/4	1
13	PAOZZ	5305-01-488-6567	39428	92620A626	• SCREW, CAP .38-16 X 1.25	1
14	PAOZZ	5310-01-508-5774	39428	90715A145	• NUT, SELF-LOCKING .38-16	1
15	PAOZZ	5930-01-517-5325	24234	404279	• SWITCH, PRESSURE	1
16	PAOZZ	5331-01-530-2714	45681	367989	• O-RING	2
17	PAOZZ	5930-01-517-5327	24234	404277	• SWITCH, PRESSURE	1
18	PAOZZ	5340-01-154-1684	77060	2973343	• CLIP, SPRING TENSION	1
19	PAOZZ	5970-01-492-2839	77060	8905579	• ADAPTER, INSULATOR	1
20	PAOZZ	6240-00-944-1264	08806	194	• LAMP, INCANDESCENT	1
21	PAOZZ	6150-01-532-2274	45152	3538701	• WIRE HARNESS, LIGHTING, A/C	1
22	PAOZZ	6150-01-358-1100	24234	222554	• WIRING HARNESS	1
23	PAOZZ	6150-01-532-2633	45152	3538542	• WIRE ASSY	1
24	PAOZZ	5305-00-984-6189	80205	MS35206-241	• SCREW, MACHINE 8-32 X 1/4	2
25	PAOZZ	5305-00-596-7693	96906	MS35335-31	• WASHER, LOCK 3/16	2
26	PAOZZ	6150-01-532-1571	45152	3538541	• WIRE ASSY	1
27	PAOZZ	5925-01-351-3659	45152	1732750	• CIRCUIT BREAKER	1
28	PAOZZ	6150-01-517-9903	45152	2081610	• LEAD, ELECTRICAL	1
29	PAOZZ		27264	19040-0002	• BUTT SPLICE	1
					END OF FIGURE	

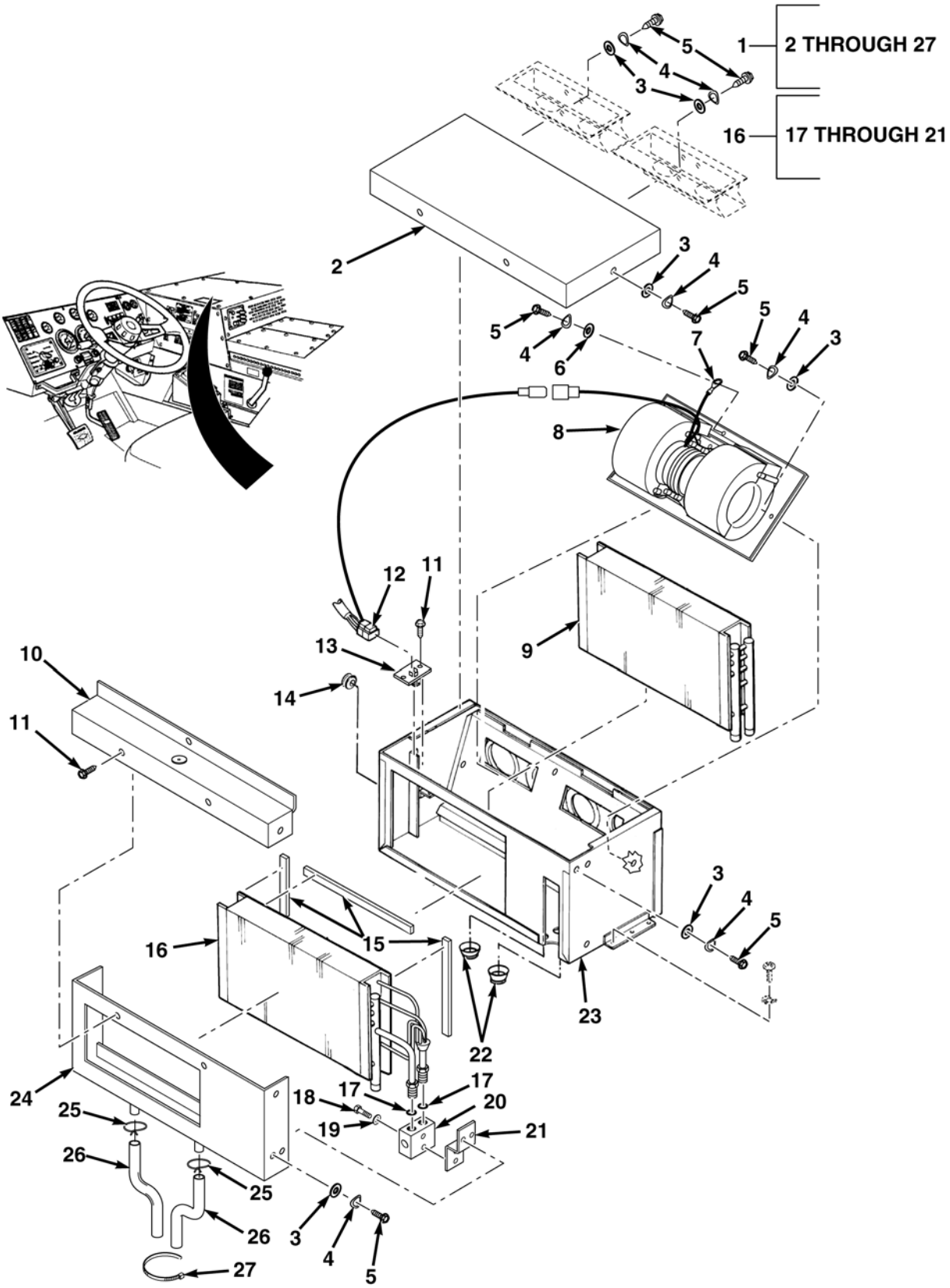


FIG. 5 AC HEATER/EVAPORATOR ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 5 AC HEATER/EVAPORATOR ASSEMBLY	
1	PAFHH	2540-01-530-4560	24234	785027	• HEATER & EVAPORATOR	1
2	PAHZZ	2540-01-155-3796	24234	512401	• • COVER	1
3	PAHZZ	5310-01-354-5726	24234	202208	• • WASHER, FLAT .25	13
4	PAHZZ	5355-01-105-2652	96195	HLKW025EG	• • WASHER, LOCK 1/4	12
5	PAHZZ	5305-01-280-7671	24234	201070	• • SCREW, MACHINE 1/4-20 X 1	13
6	PAHZZ	5310-01-101-2490	64484	9700-1	• • WASHER, LOCK 1/4	1
7	PAHZZ	5940-01-150-1427	45152	2AL712	• • TERMINAL, QUICK DISC	1
8	PAHZZ	4140-01-531-1545	24234	869736	• • BLOWER	1
9	PAHZZ	2540-01-153-9445	24234	280264	• • COIL, HEATER	1
10	PAHZZ	5340-01-531-6827	24234	512421	• • COVER, EVAPORATOR	1
11	PAHZZ	5305-01-280-7670	24234	200307	• • SCREW, MACHINE #10 X 1/2	6
12	PAHZZ	5995-01-164-6196	24234	221770	• • WIRING HARNESS	1
13	PAHZZ	5905-01-154-2354	99688	65158	• • RESISTOR ASSEMBLY	1
14	PAHZZ	5325-01-157-6663	24234	300047	• • GROMMET	1
15	MOOZZ	5330-01-295-3053	24234	350700	• • GASKET	1
16	PAHZZ	2540-01-153-9446	24234	400066	• • COIL, EVAPORATOR	1
17	PAHZZ	5331-01-160-9857	24234	300442	• • • PREFORMED, PACKING #8	2
18	PAHZZ	5305-01-530-4145	24234	200910	• • • SCREW, MACHINE #10-32 X 1 1/4	2
19	PAHZZ	5310-01-530-2719	24234	202103	• • • WASHER, LOCK #10	2
20	PAHZZ	2540-01-153-9447	24234	404255	• • • BLOCK VALVE	1
21	PAHZZ	2540-01-156-7179	24234	512423	• • • BRACKET, VALVE	1
22	PAHZZ	5325-01-500-8097	24234	300024	• • GROMMET	2
23	PAHZZ	2540-01-155-4150	24234	512400	• • CASE, HEATER	1
24	PAHZZ	2540-01-155-4149	24234	512422	• • CASE, EVAPORATOR	1
25	PAOZZ	4730-00-230-2959	96906	MS39326-11	• • CLAMP, HOSE	2
26	PAOZZ	4720-01-153-9402	24234	300404	• • TUBING, NONMETALLIC	2
27	PAOZZ	4310-01-115-2297	56501	TY525MX	• STRAP, TIEDOWN	1
					END OF FIGURE	

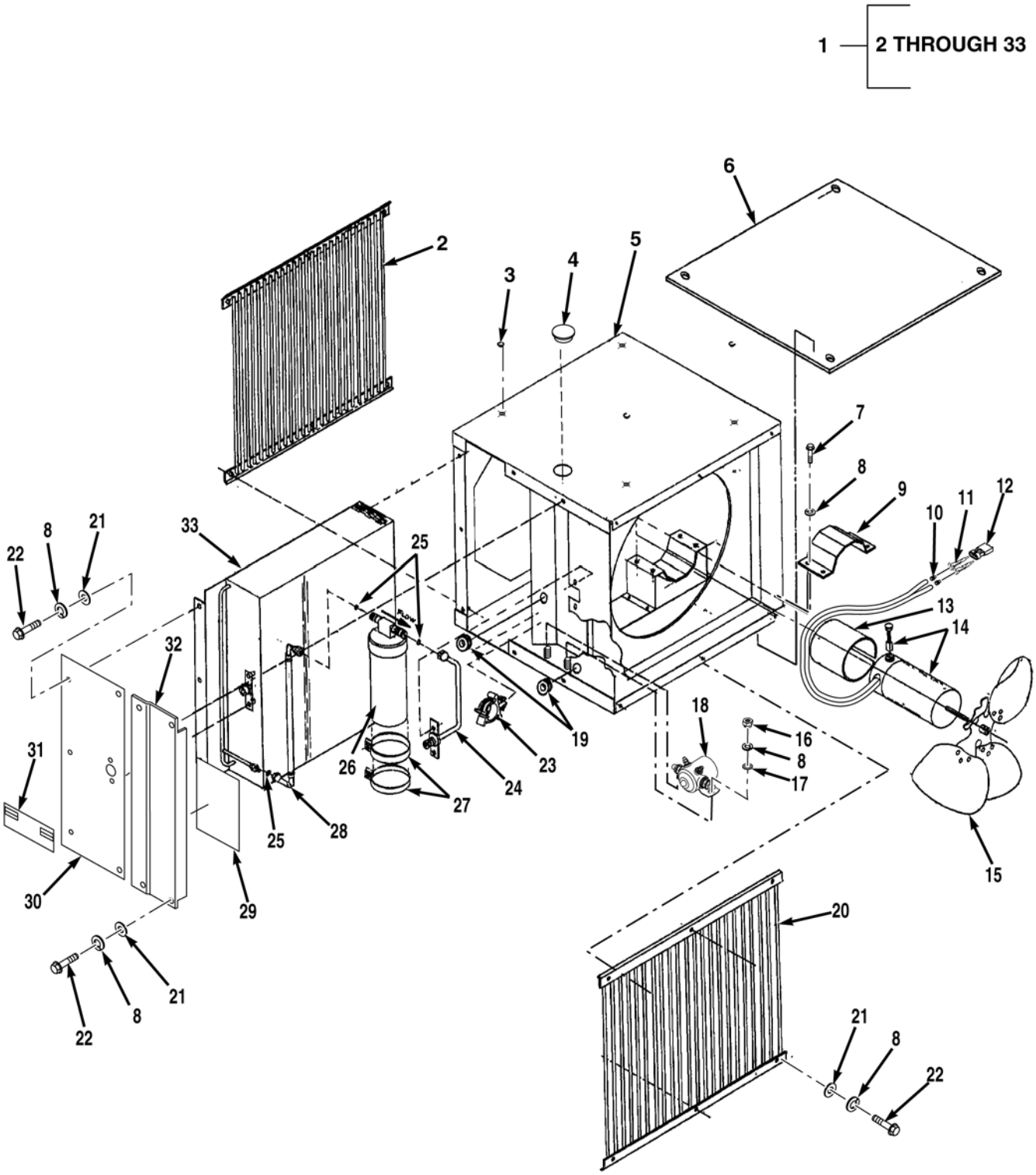


FIG. 6 AC CONDENSER ASSEMBLY

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200 FIG. 6 AC CONDENSER ASSEMBLY	
1	PAFZZ	4130-01-518-5348	24234	942073	• HEAT INTERCHANGER	1
2	PAFZZ	2510-01-530-1652	24234	511786	• • GRILLE	1
3	PAFZZ	5340-01-530-2691	24234	360161	• • PLUG, HOLE	8
4	PAFZZ	5340-01-530-4126	24234	208250	• • PLUG, HOLE	1
5	XAFZZ		24234	511729	• • CASE	1
6	XAFZZ		24234	354753	• • PAD, MOUNTING	1
7	PAFZZ		24234	201038	• • SCREW, CAP	4
8	PAFZZ	5310-01-105-2652	96195	HLKW025EG	• • WASHER, LOCK	31
9	PAFZZ	5340-01-530-2605	24234	511790	• • STRAP, MOTOR	1
10	PAFZZ	5975-01-333-5974	77060	12015193	• • CABLE, SEAL	2
11	PAFZZ	5940-01-347-5576	77060	12124581L	• • TERMINAL, QUICK DISCONNECT	2
12	PAFZZ	5935-01-214-5259	77060	12015792	• • CONNECTOR, BODY PLUG	1
13	PAFZZ	5330-01-530-6833	24234	354754	• • GASKET, MOTOR	1
14	PAFZZ	6105-01-531-7141	24234	411161	• • MOTOR 24V	1
15	PAFZZ	4140-01-530-5973	24234	265606	• • FAN	1
16	PAFZZ	5310-01-532-0210	24234	203305	• • NUT, LOCK	2
17	PAFZZ	5310-01-101-2490	64484	9700-1	• • WASHER, LOCK	2
18	PAFZZ	5945-01-530-5296	24234	221522	• • SOLENOID 24V.	1
19	PAFZZ	5325-01-398-5091	0H1F5	300011	• • GROMMET	2
20	PAFZZ	2510-01-530-6110	24234	511785	• • GRILLE	1
21	PAFZZ	5310-01-354-5726	24234	202208	• • WASHER, FLAT .25	25
22	PAFZZ	5305-01-280-7671	24234	201070	• • SCREW, MACHINE	25
23	PAFZZ	5999-01-530-5157	24234	290372	• • CLIP, CABLE	2
24	PAFZZ	4710-01-530-4110	24234	405518	• • ASSEMBLY TUBE	1
25	PAFZZ	5330-01-306-3266	24234	300448	• • PREFORMED PACKING	3
26	PAFZZ	4130-01-211-0003	24234	402529	• • DRIER	1
27	PAFZZ	5340-01-530-6372	24234	290038	• • CLAMP, DRIER	2
28	PAFZZ	4720-01-530-2622	24234	403457	• • ASSEMBLY, HOSE & FITTING	1
29	XDFZZ		24234	342456	• • DECAL, WIRING DIAGRAM	1
30	PAFZZ	5340-01-530-2612	24234	511977	• • PLATE, COIL MOUNTING	1
31	XDFZZ		24234	341621	• • DECAL, KYSOR	1
32	PAFZZ	5340-01-530-3335	24234	511725	• • COVER, ACCESS	1
33	PAFZZ	4130-01-531-1130	24234	401039	• • COIL, CONDENSER	1
					END OF FIGURE	

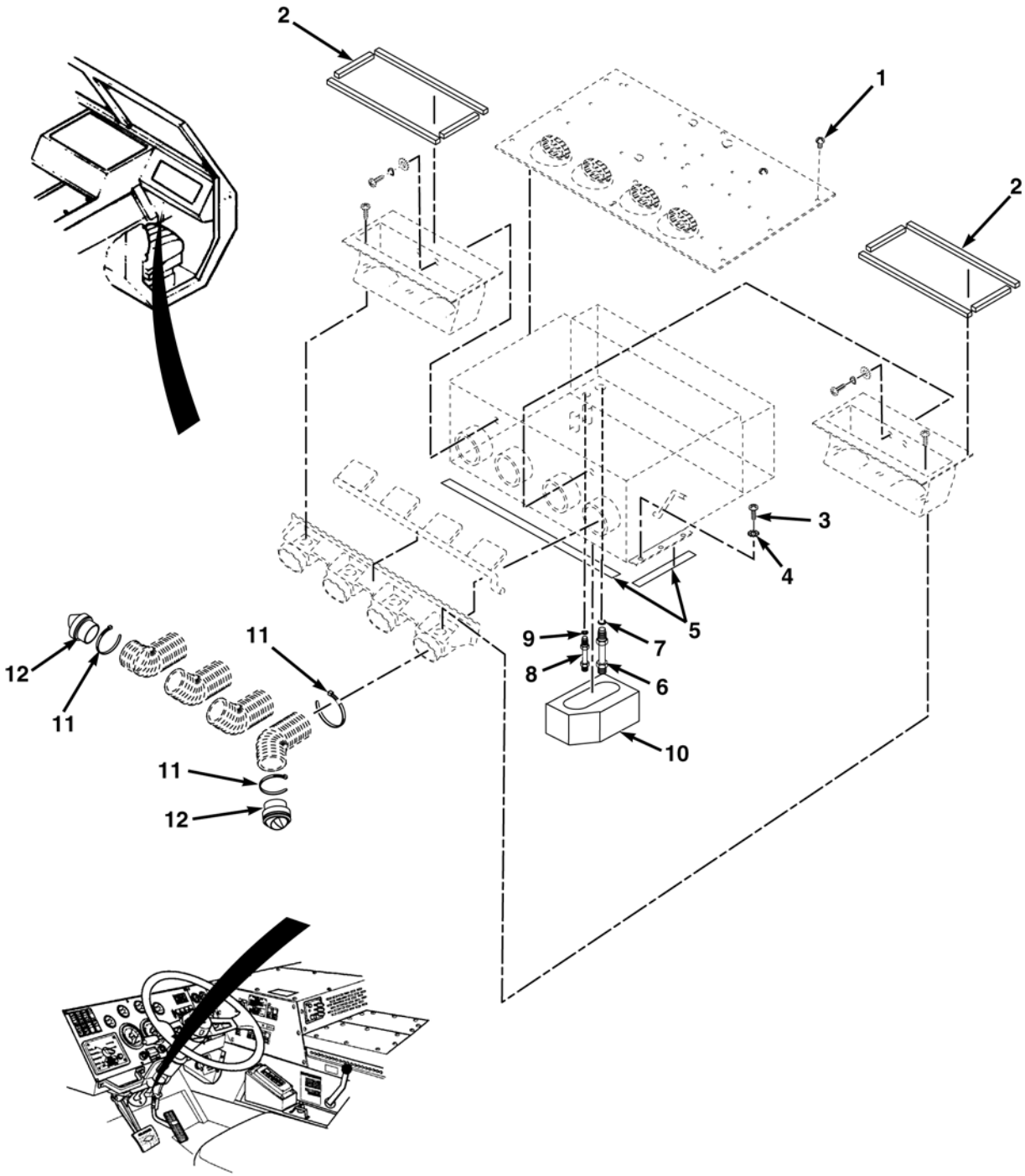


FIG. 7 AC HEATER/EVAPORATOR

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200 FIG. 7 AC HEATER/EVAPORATOR	
1	PAOZZ	5305-01-155-6107	45152	1344950	• SCREW 1/4-20 x 1/2	8
2	MOOZZ	5330-01-394-8346	45152	2050690-55	• RUBBER STRIP, MAKE FROM P/N 2050690, 55 IN.	1
3	PAOZZ	5305-01-487-2268	45152	2872HX	• SCREW, TAPPING 1/4-20 x 3/4	6
4	PAOZZ	5310-01-354-3729	45152	2251HX	• WASHER, LOCK 1/4	6
5	MOOZZ	9330-01-185-4466	45152	EE100969-53	• TAPE PVC FOAM MAKE FROM P/N EE100969, 53 IN.	1
6	PAOZZ	4730-01-517-9041	24234	405984	• ADAPTER, STRAIGHT, PIPE TO TUBE	1
7	PAOZZ	5331-01-166-1712	02697	2-015C557-70	• • O-RING	1
8	PAOZZ	4730-01-517-9040	24234	405983	• ADAPTER, STRAIGHT, PIPE TO TUBE	1
9	PAOZZ	5330-01-306-3266	24234	300448	• • PACKING, PREFORMED	1
10	PAOZZ	2540-01-530-9887	45152	2203020	• INSULATION	1
11	PAOZZ	5975-01-053-1331	45152	5201HX	• STRAP, TIEDOWN	6
12	PAOZZ	2540-01-493-7841	45152	90017562	• AIR DIFFUSER BAL	2
					END OF FIGURE	

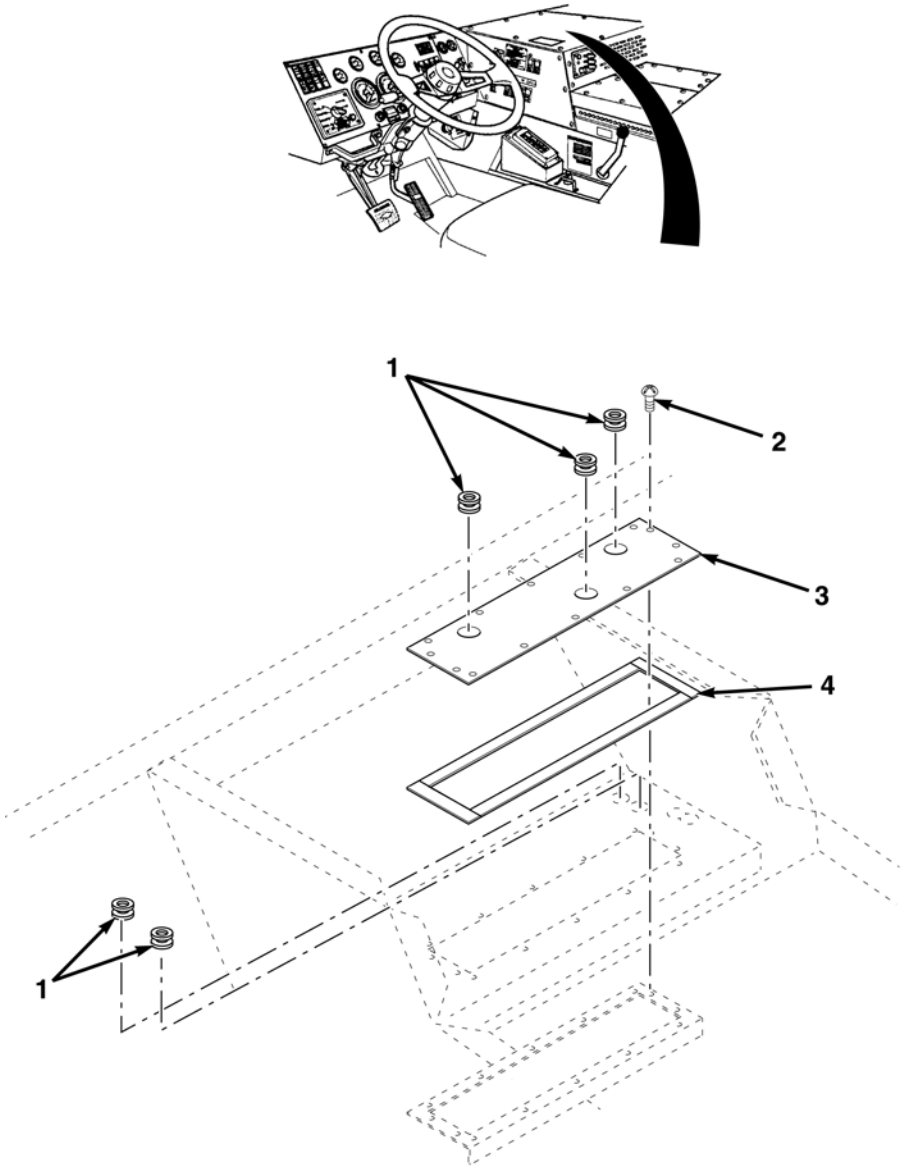


FIG. 8 AC CAB HEATER COMPARTMENT

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 8 AC CAB HEATER COMPARTMENT	
1	PAOZZ	5325-00-276-5954	96906	MS35489-49	• GROMMET, NONMETALLIC	5
2	PAOZZ	5305-01-353-6120	45152	2763HX	• SCREW, TAPPING 10-32 x 1/2	14
3	PFOZZ	5340-01-531-9828	45152	3538673	• COVER, FRESH AIR BOX OPENING	1
4	MOOZZ	5330-01-084-5058	45152	107685A-43	• PLASTIC STRIP, MAKE FROM P/N 107685A, 43 IN.	1
					END OF FIGURE	

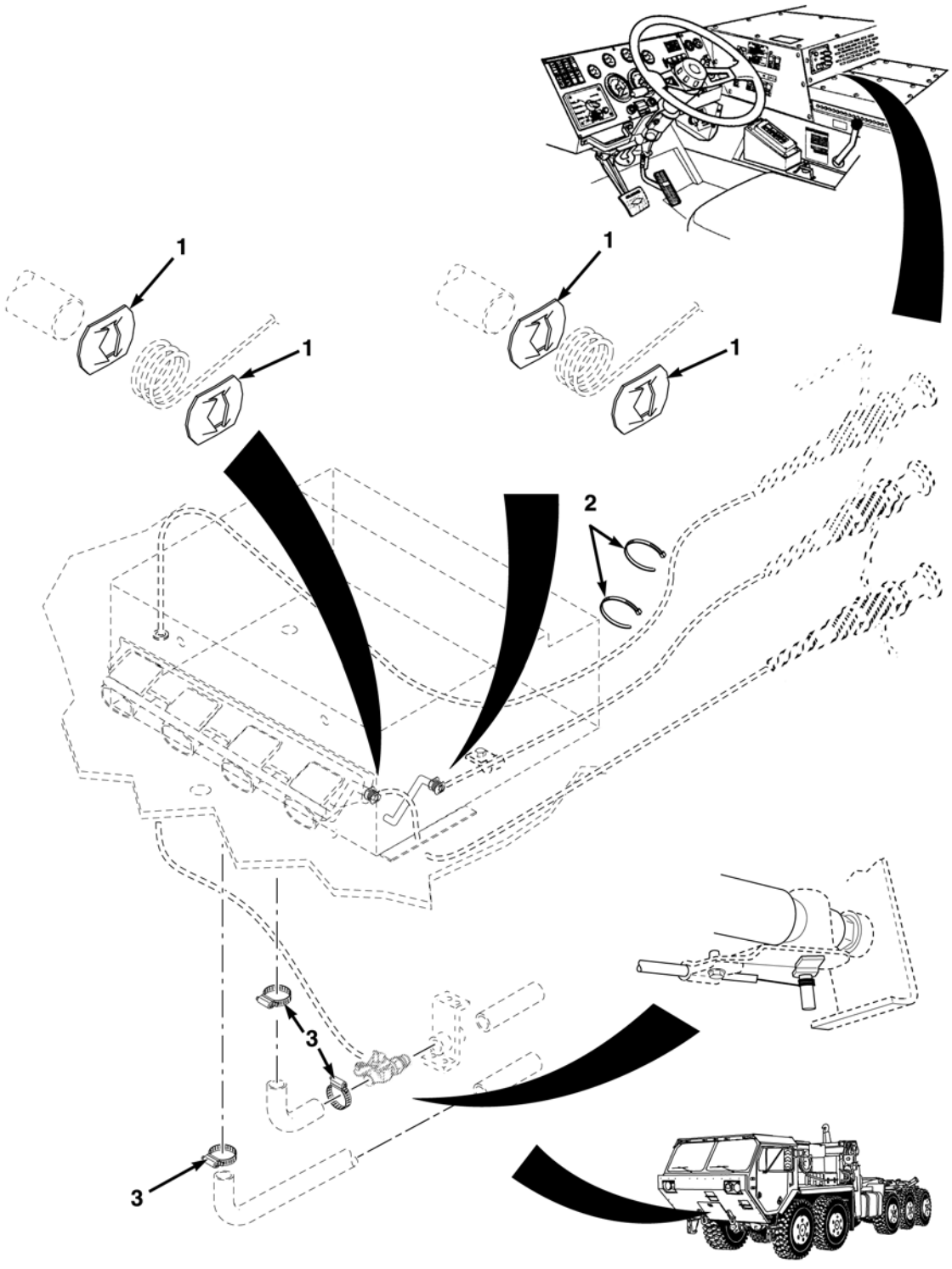


FIG. 9 AC HEATER/EVAPORATOR CABLES

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 9 AC HEATER/EVAPORATOR CABLES	
1	PAOZZ	5310-00-110-8742	78553	C12044-017-4	• PUSH IN NUT	4
2	PAOZZ	4310-01-115-2297	56501	TY525MX	• STRAP, TIEDOWN	2
3	PAOZZ	4730-01-398-8329	7Z588	CT-9410	• CLAMP, HOSE	3
					END OF FIGURE	

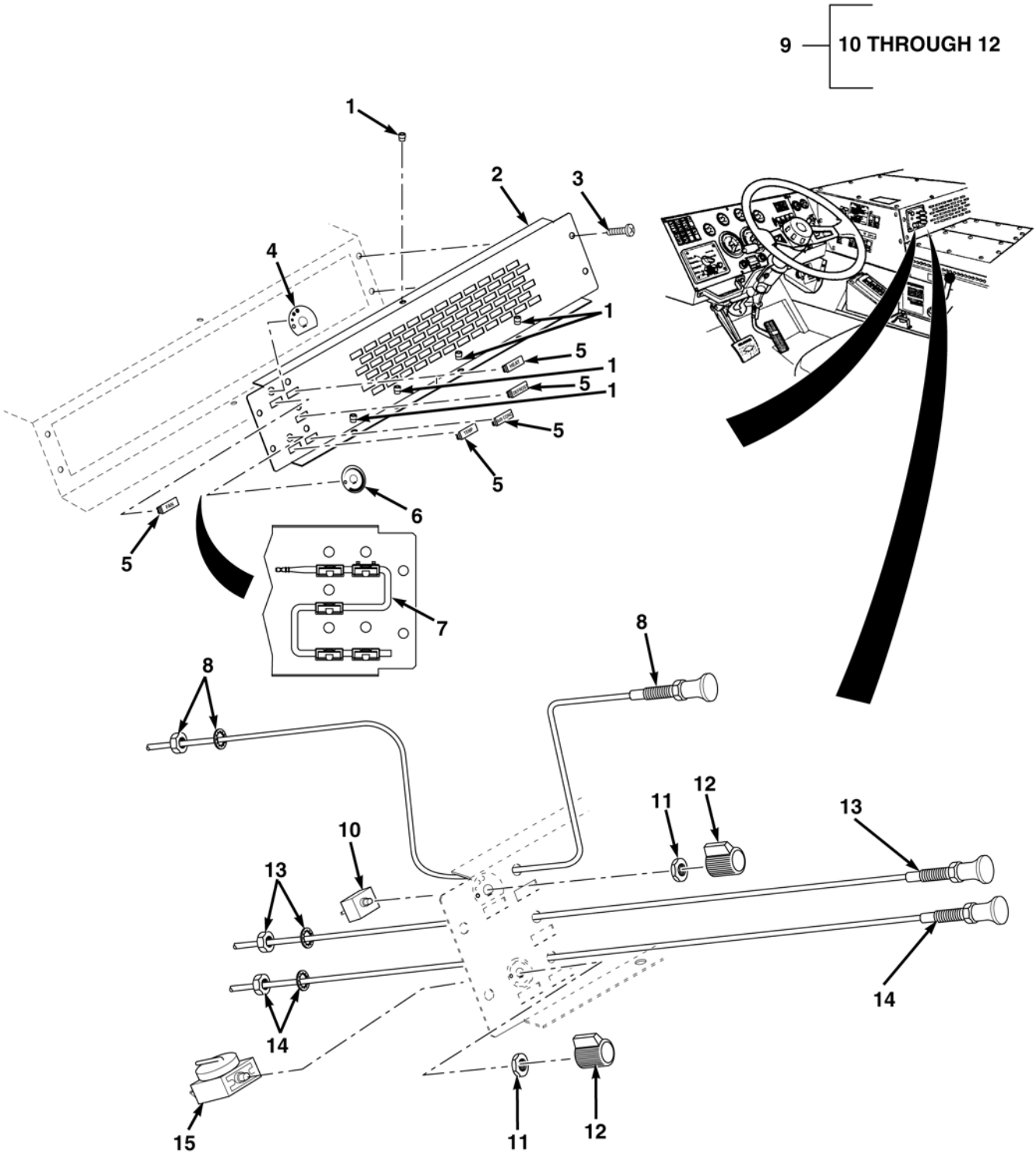


FIG. 10 AC HEATER CENTER COMPARTMENT COVER

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 10 AC HEATER CENTER COMPARTMENT COVER	
1	PAOZZ	5310-01-257-5065	45152	66223AX	• NUT, CLIP-ON	5
2	PFOZZ	5340-01-530-2629	45152	2097770	• COVER, HEATER CENTER	1
3	PAOZZ	5305-01-155-6107	45152	1344950	• SCREW 1/4-20 x 1/2	4
4	PFOZZ	7690-01-530-2618	3V1N6	3399967	• LABEL, FAN	1
5	PAOZZ	6695-01-149-9080	45152	47262CX	• BEZEL, APPLIQUE	5
6	PFOZZ	7690-01-530-3355	3V1N6	3398711	• LABEL, A/C TEMP	1
7	PAOZZ	6015-01-530-5918	28803	102-0087-00	• RIBBON ASSY, OPTIC	1
8	PAOZZ	2590-01-156-8033	45152	1325470	• CONTROL ASSY, PUSH-PULL HEAT	1
9	PAOZZ	5930-01-517-5329	24234	417222	• SWITCH SUBASSEMBLY	1
10	PAOZZ	5930-01-207-6337	24234	220635	• • SWITCH, ROTARY	1
11	PAOZZ	5310-01-162-2515	99688	62028	• • NUT, PLAIN, HEXAGON 7/16-28	2
12	PAOZZ	5355-01-290-1619	24234	380087	• • KNOB	2
13	PAOZZ	2590-01-234-8060	45152	1379260	• CONTROL ASSY, PUSH-PULL DEFROST	1
14	PAOZZ	2590-01-518-1349	45152	2199830	• CONTROL ASSY, PUSH PULL A/C	1
15	PAOZZ	5930-01-165-1657	99688	65139	• SWITCH, THERMOSTATIC	1
					END OF FIGURE	

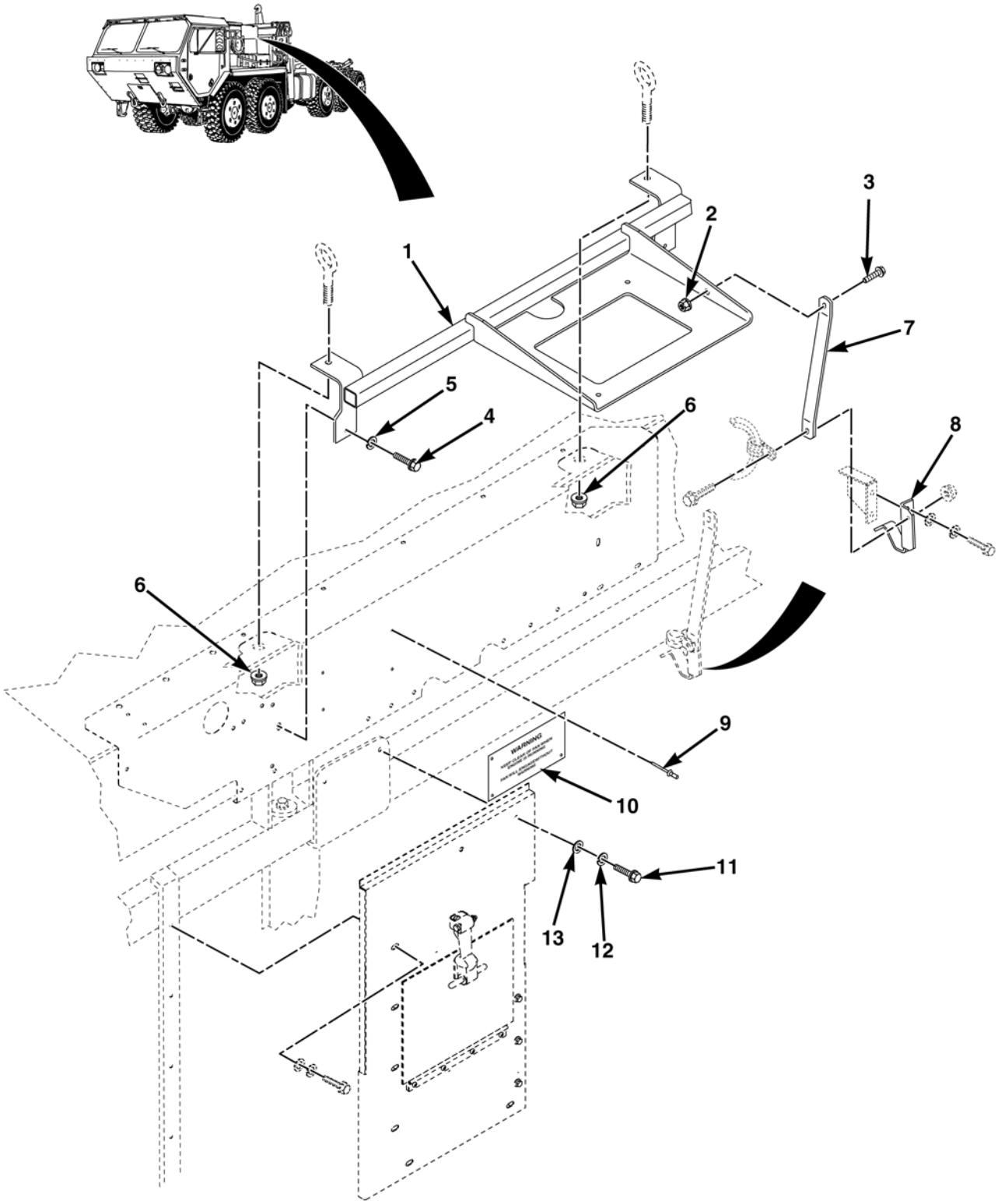


FIG. 11 LEFT SIDE BRACKET/ENGINE COVER (SHEET 1 OF 2)

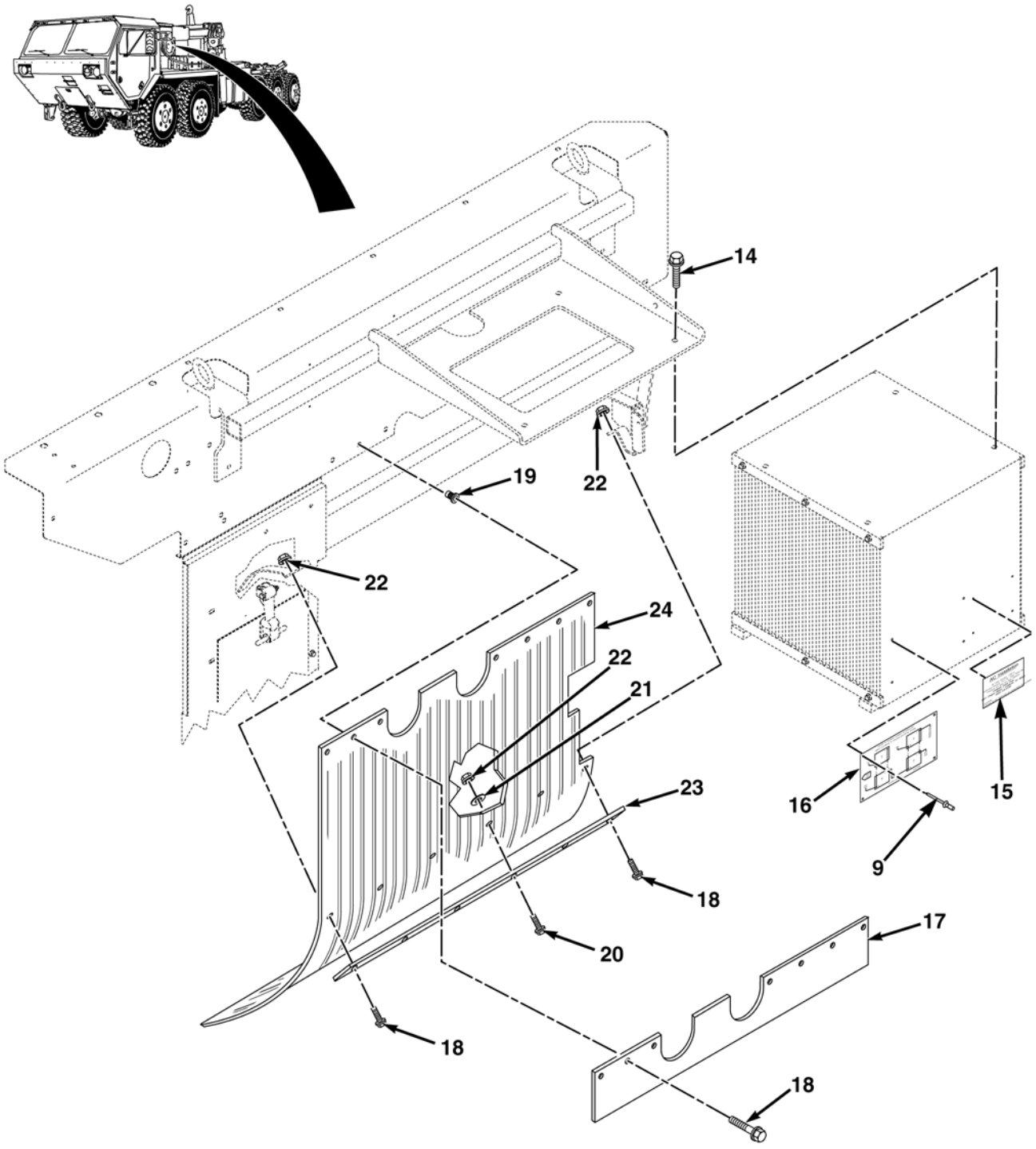


FIG. 11 LEFT SIDE BRACKET/ENGINE COVER (SHEET 2 OF 2)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200 FIG. 11 LEFT SIDE BRACKET/ENGINE COVER	
1	PAOZZ		45152	3529414	• BRACKET, A/C CONDENSER	1
2	PAOZZ	5305-01-340-0225	45152	1754210	• SCREW, CAP 5/16-18 X 1.00	1
3	PAOZZ	5310-01-340-5671	45152	1333510	• NUT, SELF-LOCKING .31-18	1
4	PAOZZ	5306-01-155-9765	45152	115304A	• BOLT, MACHINE 1/2-13 X 11/4	2
5	PAOZZ	5310-00-167-0767	80205	AN970-5	• WASHER, FLAT 5/16	2
6	PAOZZ	5310-01-159-8178	45152	110310A	• NUT, SELF-LOCKING 1/2-13	2
7	PAOZZ		45152	3529418	• BAR, A/C CONDENSER SUPPORT	1
8	PAOZZ	5340-01-532-3710	45152	3529419	• BRACKET, A/C CONDENSER STABILIZER	1
9	PAOZZ	5320-01-351-5621	45152	51945AX	• RIVET, BLIND	8
10	PAOZZ	9905-01-210-0165	45152	1448500	• PLATE, INSTRUCTION	1
11	PAOZZ	5305-01-280-7901	45152	66420AX	• SCREW, CAP 1/4-20 X 1.00	2
12	PAOZZ	5310-00-582-5965	80205	MS35338-44	• WASHER, LOCK 1/4	2
13	PAOZZ	5310-00-809-4058	96906	MS27183-10	• WASHER, FLAT 1/4	2
14	PAOZZ	5306-01-287-5714	45152	1614120	• BOLT, MACHINE 3/8-16 X 1.00	4
15	XDFZZ		45152	3343685	• LABEL, A/C INSTALLATION	1
16	PAOZZ	9905-01-474-1645	45152	3161225	• PLATE, INSTRUCTION	1
17	PAOZZ	5340-01-531-7183	45152	3535264	• PLATE	1
18	PAOZZ	5305-01-337-9120	45152	1754140	• SCREW, CAP 1/4-20 X 1.00	9
19	PAOZZ	5310-01-257-5065	45152	66223AX	• NUT, CLIP-ON	7
20	PAOZZ	5305-01-344-8899	45152	1606140	• SCREW, CAP 1/4-20 X 3/4	4
21	PAOZZ	5310-01-353-6045	45152	2302HX	• WASHER, FLAT 1/4	4
22	PAOZZ	5310-01-346-9445	45152	1600460	• NUT, SELF-LOCKING 1/4-20	6
23	PAOZZ	5340-01-531-5390	45152	3535265	• PLATE	1
24	PAOZZ	9320-01-532-6080	45152	3535375	• SHEET, RUBBER	1
					END OF FIGURE	

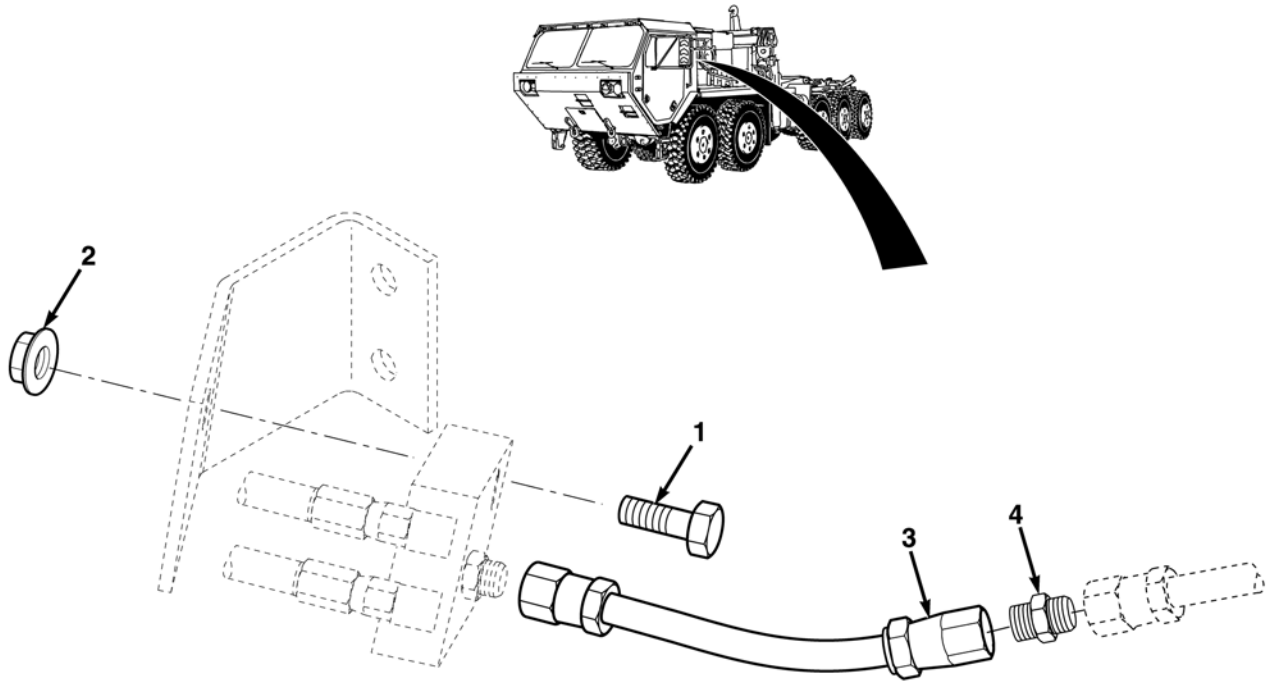


FIG. 12 FUEL LINE RETURN EXTENSION

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 12 FUEL LINE RETURN EXTENSION	
1	PAOZZ	5305-01-340-5061	45152	1754280	• SCREW, CAP 3/8-16X 1/2	1
2	PAFZZ	5310-01-288-1116	45152	1437220	• NUT-SELF-LOCKING 3/8-16	1
3	PAOZZ	4720-01-531-6905	45152	3533284	• HOSE ASSY	1
4	PAOZZ	4730-01-531-6839	45152	25341AX	• ADAPTER, UNION	1
					END OF FIGURE	

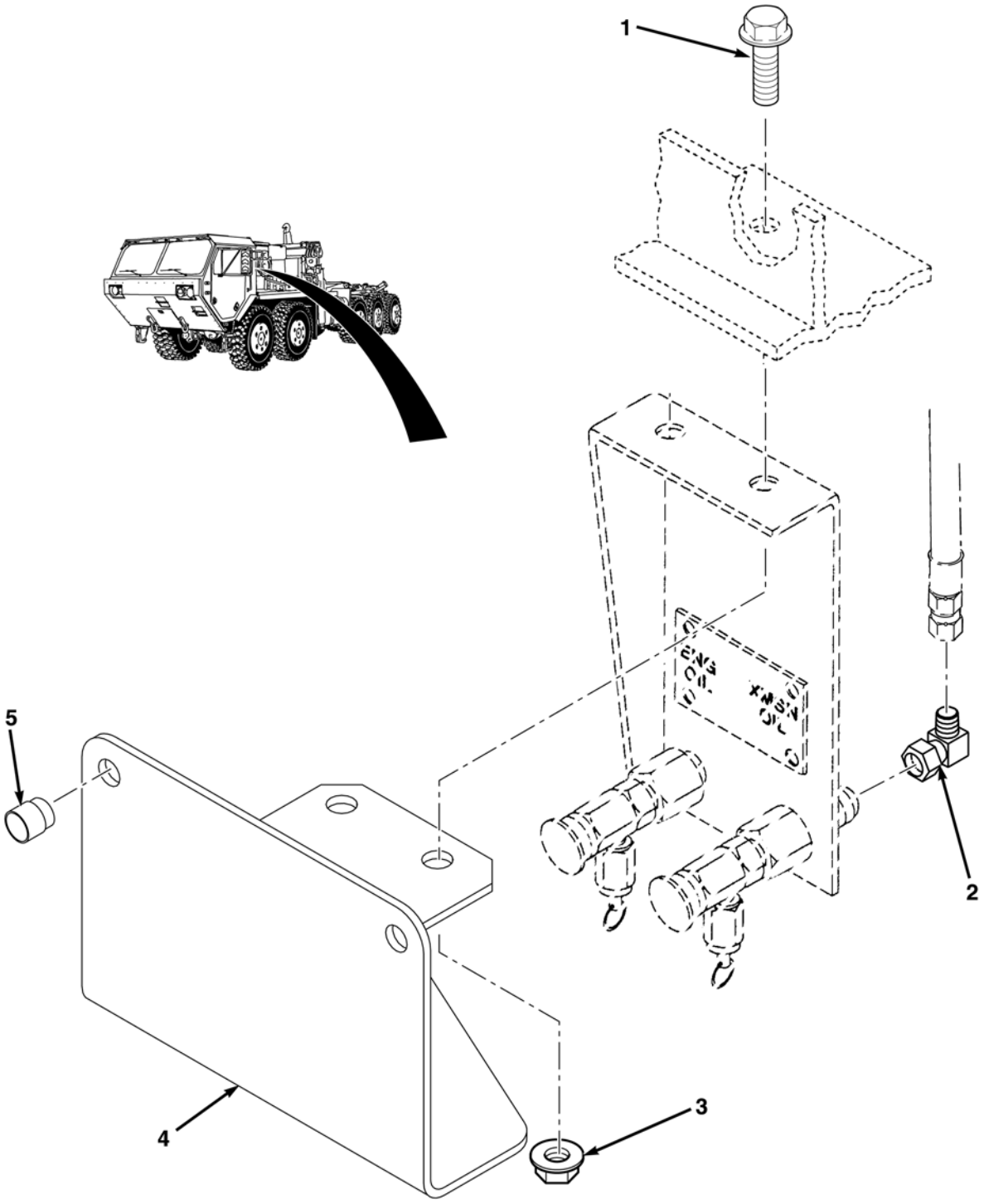


FIG. 13 SAMPLING VALVE BRACKET

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 5200	
					FIG. 13 SAMPLING VALVE BRACKET	
1	PAFZZ	5306-01-287-5714	45152	1614120	• BOLT, MACHINE, 3/8-16X1	2
2	PAOZZ	4730-00-137-7876	01276	2071-4-4S	• ELBOW, TUBE	1
3	PAFZZ	5310-01-288-1116	45152	1437220	• NUT, SELF-LOCKING 3/8-16	2
4	PFFZZ	5340-01-531-7749	45152	3530565	• BRACKET, ENGINE COVER	1
5	PAOZZ	5310-01-257-5065	45152	66223AX	• NUT, CLIP-ON	2
					END OF FIGURE	

ILLUSTRATED PARTS LIST (RPSTL) - Continued

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
					GROUP 95 GENERAL USE STANDARDIZED PARTS	
					GROUP 9501 HARDWARE SUPPLIES AND BULK MATERIAL	
					FIG. BULK BULK MATERIALS	
1	MOOZZ	5330-01-394-8346	45152	2050690	RUBBER STRIP	V
2	MOOZZ	9330-01-185-4466	45152	EE100969	PLASTIC STRIP, PRESS	V
3	MOOZZ	5330-01-084-5058	45152	107685A	PLASTIC STRIP	V
					END OF FIGURE	

Section III. SPECIAL TOOLS LIST

There are no special tools listed for the PLS Air Conditioner kit.

Section IV. CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5305-00-071-1786	1	10
5310-00-110-8742	9	1
4730-00-137-7876	13	2
5310-00-167-0767	11	5
5305-00-224-1110	1	25
4730-00-230-2959	5	25
5325-00-276-5954	8	1
5365-00-505-4733	1	11
5310-00-582-5965	4	11
	11	12
5310-00-584-5272	1	7
5310-00-595-6852	1	9
5305-00-596-7693	4	25
3040-00-689-3029	1	3
5310-00-809-4058	4	12
	11	13
5310-00-809-4061	1	19
5306-00-869-2868	1	4
6240-00-944-1264	4	20
5305-00-984-6189	4	24
5310-01-024-2474	1	13
5975-01-048-2922	3	5
5975-01-053-1331	1	14
	4	1
	7	11
5310-01-061-3322	1	26
5310-01-062-3379	2	6
5310-01-063-8970	1	24

STOCK NUMBER	FIG.	ITEM
5330-01-084-5058	BULK	
	8	4
5306-01-084-5390	1	21
5310-01-101-2490	5	6
	6	17
5310-01-105-2652	4	4
	5	4
	6	8
4310-01-115-2297	5	27
	9	2
5310-01-129-0450	1	23
5306-01-145-6949	4	10
6695-01-149-9080	10	5
5940-01-150-1427	5	7
5310-01-151-1036	2	4
4720-01-153-9402	5	26
2540-01-153-9445	5	9
2540-01-153-9446	5	16
2540-01-153-9447	5	20
5340-01-154-1684	4	18
5905-01-154-2354	5	13
2540-01-155-3796	5	2
2540-01-155-4149	5	24
2540-01-155-4150	5	23
5305-01-155-6107	7	1
	10	3
5306-01-155-9765	11	4
2540-01-156-7179	5	21

STOCK NUMBER	FIG.	ITEM
2590-01-156-8033	10	8
5325-01-157-6663	5	14
5310-01-159-8178	11	6
5331-01-160-9857	5	17
5310-01-162-2515	10	11
5995-01-164-6196	5	12
5930-01-165-1657	10	15
5331-01-166-1712	7	7
9330-01-185-4466	BULK	
	7	5
5930-01-207-6337	10	10
9905-01-210-0165	11	10
4130-01-211-0003	6	26
5935-01-214-5259	6	12
2590-01-234-8060	10	13
5305-01-242-0655	2	2
5310-01-257-5065	10	1
	11	19
	13	5
5305-01-280-7670	5	11
5305-01-280-7671	4	3
	5	5
	6	22
5305-01-280-7901	11	11
5306-01-287-5714	11	14
	13	1
5310-01-288-1116	12	2
	13	3
5355-01-290-1619	10	12
5330-01-292-5293	4	7
5330-01-295-3053	5	15
5315-01-304-9173	1	8
5330-01-306-3266	6	25
	7	9
5975-01-333-5974	6	10
5305-01-337-9120	11	18
5305-01-339-3123	1	6
5305-01-340-0225	3	7
	11	2
5305-01-340-5061	12	1
5310-01-340-5671	1	16
	3	8
	11	3
5305-01-344-5532	1	15
5305-01-344-8899	11	20
5310-01-346-9445	11	22
5940-01-347-5576	6	11
5925-01-351-3659	4	27
5320-01-351-5621	11	9
5310-01-353-6045	11	21
5305-01-353-6120	8	2
5310-01-354-3729	7	4
5310-01-354-5726	4	5
	5	3
	6	21
6150-01-358-1100	4	22
5330-01-390-9045	1	2
5330-01-394-8346	BULK	
	7	2
5325-01-398-5091	6	19
4730-01-398-8329	9	3
5935-01-447-6283	4	9
5940-01-462-1717	4	8
5340-01-465-4050	3	6
9905-01-474-1645	11	16
5305-01-487-2268	7	3
5305-01-488-6567	4	13
5970-01-492-2839	4	19
2540-01-493-7841	7	12
5325-01-500-8097	5	22
5310-01-508-5774	4	14
5970-01-510-3131	4	6

STOCK NUMBER	FIG.	ITEM
5930-01-517-5325	4	15
5930-01-517-5327	4	17
5930-01-517-5329	10	9
4730-01-517-9040	7	8
4730-01-517-9041	7	6
6150-01-517-9903	4	28
2590-01-518-1349	10	14
4130-01-518-5348	6	1
3030-01-518-9765	2	1
2510-01-530-1652	6	2
5340-01-530-2605	6	9
5340-01-530-2612	6	30
7690-01-530-2618	10	4
4720-01-530-2622	6	28
5340-01-530-2629	10	2
5340-01-530-2691	6	3
5331-01-530-2714	3	2
	4	16
5310-01-530-2719	5	19
5340-01-530-3335	6	32
7690-01-530-3355	10	6
4710-01-530-4110	6	24
5340-01-530-4119	2	5
5340-01-530-4126	6	4
5331-01-530-4135	3	10
5305-01-530-4145	5	18
2540-01-530-4560	5	1
5999-01-530-5157	6	23
5945-01-530-5296	6	18
6015-01-530-5918	10	7
4140-01-530-5973	6	15
2510-01-530-6110	6	20
5340-01-530-6372	6	27
5330-01-530-6833	6	13
2540-01-530-9887	7	10
4130-01-531-1130	6	33
4140-01-531-1545	5	8
5331-01-531-5087	3	4
5340-01-531-5390	11	23
4720-01-531-5716	3	1
5305-01-531-6053	1	18
5340-01-531-6447	1	17
4130-01-531-6747	2	3
5340-01-531-6827	5	10
4730-01-531-6839	12	4
4720-01-531-6897	3	9
4720-01-531-6905	12	3
4720-01-531-6914	3	3
6105-01-531-7141	6	14
5340-01-531-7183	11	17
3020-01-531-7289	1	12
5340-01-531-7749	13	4
3040-01-531-9555	1	1
5340-01-531-9828	8	3
5340-01-531-9829	1	20
5310-01-532-0210	6	16
6150-01-532-1571	4	26
6150-01-532-2274	4	21
6150-01-532-2633	4	23
6150-01-532-3605	4	2
5340-01-532-3710	11	8
5340-01-532-3711	1	22
9320-01-532-6080	11	24

PART NUMBER INDEX

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
72582	06X04 0309	3040-01-531-9555	1	1
28803	102-0087-00	6015-01-530-5918	10	7
45152	107685A	5330-01-084-5058	BULK	
45152	107685A-43	5330-01-084-5058	8	4
45152	110310A	5310-01-159-8178	11	6
45152	115304A	5306-01-155-9765	11	4
45152	115307A	5310-01-151-1036	2	4
77060	12015193	5975-01-333-5974	6	10
77060	12015284	5330-01-292-5293	4	7
77060	12015792	5935-01-214-5259	6	12
77060	12048159	5940-01-462-1717	4	8
77060	12065171	5935-01-447-6283	4	9
77060	12065249	5970-01-510-3131	4	6
45152	120699A	5305-01-242-0655	2	2
77060	12124581L	5940-01-347-5576	6	11
45152	1325470	2590-01-156-8033	10	8
45152	1333510	5310-01-340-5671	1	16
45152	1333510	5310-01-340-5671	3	8
45152	1333510	5310-01-340-5671	11	3
45152	1344950	5305-01-155-6107	7	1
45152	1344950	5305-01-155-6107	10	3
45152	1367080	5305-01-531-6053	1	18
45152	1379260	2590-01-234-8060	10	13
45152	1437220	5310-01-288-1116	12	2
45152	1437220	5310-01-288-1116	13	3
45152	1448500	9905-01-210-0165	11	10
45152	1600460	5310-01-346-9445	11	22
45152	1606140	5305-01-344-8899	11	20
45152	1614120	5306-01-287-5714	11	14
45152	1614120	5306-01-287-5714	13	1
45152	1667780	5340-01-465-4050	3	6
45152	1732750	5925-01-351-3659	4	27
45152	1754140	5305-01-337-9120	11	18
45152	1754210	5305-01-340-0225	3	7
45152	1754210	5305-01-340-0225	11	2

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
45152	1754280	5305-01-340-5061	12	1
72582	179882	5305-01-339-3123	1	6
45152	1846HX1	5305-01-344-5532	1	15
72582	186315	5305-00-224-1110	1	25
27264	19040-0002		4	29
45152	1935360	5340-01-530-4119	2	5
08806	194	6240-00-944-1264	4	20
24234	200307	5305-01-280-7670	5	11
24234	200910	5305-01-530-4145	5	18
24234	201038		6	7
23234	201070	5305-01-280-7671	4	3
23234	201070	5305-01-280-7671	5	5
23234	201070	5305-01-280-7671	6	22
02697	2-015C557-70	5331-01-166-1712	7	7
24234	202103	5310-01-530-2719	5	19
24234	202208	5310-01-354-5726	4	5
24234	202208	5310-01-354-5726	5	3
24234	202208	5310-01-354-5726	6	21
24234	203305	5310-01-532-0210	6	16
45152	2050690	5330-01-394-8346	BULK	
45152	2050690-55	5330-01-394-8346	7	2
01276	2071-4-4S	4730-00-137-7876	13	2
45152	2081610	6150-01-517-9903	4	28
24234	208250	5340-01-530-4126	6	4
45152	2097770	5340-01-530-2629	10	2
45152	2199830	2590-01-518-1349	10	14
45152	2203020	2540-01-530-9887	7	10
24234	220635	5930-01-207-6337	10	10
24234	221522	5945-01-530-5296	6	18
24234	222554	6150-01-358-1100	4	22
45152	2251HX	5310-01-354-3729	7	4
45152	2302HX	5310-01-353-6045	11	21
72582	23515145	5330-01-390-9045	1	2
45152	25341AX	4730-01-531-6839	12	4
24234	265606	4140-01-530-5973	6	15
72582	272906	5310-01-024-2474	1	13

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
45152	2763HX	5305-01-353-6120	8	2
24234	280264	2540-01-153-9445	5	9
45152	2872HX	5305-01-487-2268	7	3
24234	290038	5340-01-530-6372	6	27
24234	290372	5999-01-530-5157	6	23
77060	2973343	5340-01-154-1684	4	18
45152	2AL712	5940-01-150-1427	5	7
45152	2SK308	3030-01-518-9765	2	1
0H1F5	300011	5325-01-398-5091	6	19
24234	300024	5325-01-500-8097	5	22
24234	300047	5325-01-157-6663	5	14
24234	300404	4720-01-153-9402	5	26
24234	300442	5331-01-160-9857	5	17
24234	300448	5330-01-306-3266	6	25
24234	300448	5330-01-306-3266	7	9
45152	3161225	9905-01-474-1645	11	16
45681	331976	4720-01-531-5716	3	1
45152	3343685		11	15
3V1N6	3398711	7690-01-530-3355	10	6
3V1N6	3399967	7690-01-530-2618	10	4
24234	341621		6	31
24234	342456		6	29
24234	350700	5330-01-295-3053	5	15
24234	350700-34	5995-01-164-6196	5	12
45152	351AX	5310-01-129-0450	1	23
45152	3529414		11	1
45152	3529418		11	7
45152	3529419	5340-01-532-3710	11	8
45152	3530565	5340-01-531-7749	13	4
45152	3530700	5340-01-531-9829	1	20
45152	3533284	4720-01-531-6905	12	3
45152	3535264	5340-01-531-7183	11	17
45152	3535265	5340-01-531-5390	11	23
45152	3535375	9320-01-532-6080	11	24
45152	3536262	6150-01-532-3605	4	2
45152	3536384	5340-01-531-6447	1	17

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
45152	3536496	5340-01-532-3711	1	22
45152	3538541	6150-01-532-1571	4	26
45152	3538542	6150-01-532-2633	4	23
45152	3538673	5340-01-531-9828	8	3
45152	3538701	6150-01-532-2274	4	21
24234	354753		6	6
24234	354754	5330-01-530-6833	6	13
24234	360161	5340-01-530-2691	6	3
45152	362AX	5310-01-062-3379	2	6
45681	367989	5331-01-530-2714	3	2
45681	367989	5331-01-530-2714	4	16
45152	373AX1	5310-01-061-3322	1	26
11757	378429-8	5306-01-145-6949	4	10
24234	380087	5355-01-290-1619	10	12
24234	400066	2540-01-153-9446	5	16
24234	401039	4130-01-531-1130	6	33
24234	402529	4130-01-211-0003	6	26
24234	403457	4720-01-530-2622	6	28
24234	404255	2540-01-153-9447	5	20
24234	404277	5930-01-517-5327	4	17
24234	404279	5930-01-517-5325	4	15
24234	405518	4710-01-530-4110	6	24
24234	405983	4730-01-517-9040	7	8
24234	405984	4730-01-517-9041	7	6
24234	411161	6105-01-531-7141	6	14
24234	417222	5930-01-517-5329	10	9
45152	434AX1	5310-01-063-8970	1	24
3V1N6	47262CX	6695-01-149-9080	10	5
24234	511725	5340-01-530-3335	6	32
24234	511729		6	5
24234	511785	2510-01-530-6110	6	20
24234	511786	2510-01-530-1652	6	2
24234	511790	5340-01-530-2605	6	9
24234	511977	5340-01-530-2612	6	30
24234	512400	2540-01-155-4150	5	23
24234	512401	2540-01-155-3796	5	2

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
24234	512421	5340-01-531-6827	5	10
24234	512422	2540-01-155-4149	5	24
24234	512423	2540-01-156-7179	5	21
72582	5131131	5365-00-505-4733	1	11
72582	5145092	5306-00-869-2868	1	4
72582	5146552		1	5
72582	5170450	3040-00-689-3029	1	3
72852	5177236	3020-01-531-7289	1	12
45152	51945AX	5320-01-351-5621	11	9
45152	5201HX	5975-01-053-1331	1	14
45152	5201HX	5975-01-053-1331	4	1
45152	5201HX	5975-01-053-1331	7	11
24234	525953	4130-01-531-6747	2	3
45681	526914	5331-01-530-4135	3	10
45681	551638	4720-01-531-6897	3	9
99688	62028	5310-01-162-2515	10	11
45681	637974	5331-01-531-5087	3	4
99688	65139	5930-01-165-1657	10	15
99688	65158	5905-01-154-2354	5	13
45681	661427	4720-01-531-6914	3	3
45152	66223AX	5310-01-257-5065	10	1
45152	66223AX	5310-01-257-5065	11	19
45152	66223AX	5310-01-257-5065	13	5
45152	66420AX	5305-01-280-7901	11	11
24234	785027	2540-01-530-4560	5	1
24234	869736	4140-01-531-1545	5	8
77060	8905579	5970-01-492-2839	4	19
72582	8928543	5315-01-304-9173	1	8
45152	90017562	2540-01-493-7841	7	12
39428	90715A145	5310-01-508-5774	4	14
39428	92620A626	5305-01-488-6567	4	13
24234	942073	4130-01-518-5348	6	1
64484	9700-1	5310-01-101-2490	5	6
64484	9700-1	5310-01-101-2490	6	17
80205	AN970-5	5310-00-167-0767	11	5
80204	B1821BH044C100N	5305-00-071-1786	1	10

CAGEC	PART NUMBER	STOCK NUMBER	FIG.	ITEM
78553	C12044-017-4	5310-00-110-8742	9	1
7Z588	CT-9410	4730-01-398-8329	9	3
45152	EE100969	9330-01-185-4466	BULK	
45152	EE100969-53	9330-01-185-4466	7	5
96195	HLKW025EG	5310-01-105-2652	4	4
96195	HLKW025EG	5310-01-105-2652	5	4
96195	HLKW025EG	5310-01-105-2652	6	8
96906	MS27183-10	5310-00-809-4058	4	12
96906	MS27183-10	5310-00-809-4058	11	13
96906	MS27183-15	5310-00-809-4061	1	19
96906	MS3367-6-0	5975-01-048-2922	3	5
80205	MS35206-241	5305-00-984-6189	4	24
96906	MS35335-31	5305-00-596-7693	4	25
80205	MS35338-44	5310-00-582-5965	4	11
80205	MS35338-44	5310-00-582-5965	11	12
80205	MS35338-48	5310-00-584-5272	1	7
96906	MS35489-49	5325-00-276-5954	8	1
96906	MS39326-11	4730-00-230-2959	5	25
24617	N24239PC1	5310-00-595-6852	1	9
78500	S-268-1	5306-01-084-5390	1	21
56501	TY525MX	4310-01-115-2297	5	27
56501	TY525MX	4310-01-115-2297	9	2

END OF WORK PACKAGE

APPENDIX H

ADDITIONAL AUTHORIZATION LIST (AAL)

ADDITIONAL AUTHORIZATION LIST (AAL)

APPENDIX H

Section I. INTRODUCTION

SCOPE

This appendix lists additional items that are authorized for the support of the AC system.

GENERAL

This list identifies items that do not have to accompany the truck and that do not have to be turned in with it. These items are all authorized for use by CTA, MTOE, TDA, or JTA.

EXPLANATION OF LISTING

National Stock Numbers, descriptions, and quantities are provided to help to identify and request the additional items required to support this equipment. The items are listed in alphabetical sequence by item name under the type document (CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you. If item required differs for different models of this equipment, the model is shown under the “Usable On Code” heading in this column. If no code is entered in this column, item is used on all models. These codes are as identified.

Code	Used On
074	M1074 With Crane
075	M1075 Without Crane

Section II. ADDITIONAL AUTHORIZATION LIST (AAL)

(1) Item Number	(2) National Stock Number	(3) Description CAGE & Part Number / Usable On Code	(4) U/M	(5) Qty Auth
1	1290-01-077-2418	Leak Detector, Refrigerant (45225) TIFXL-1A	ea	1
2	4250-01-396-8928	Reclaimer, Refrigerant (55719) EEAC318A	ea	1

END OF WORK PACKAGE

ALPHABETICAL INDEX

Subject	WP No.
A	
AC 20 AMP Circuit Breaker Replacement	WP 0018
AC Cable Replacement	WP 0019
AC Compressor Does Not Shut Off or Cycles Constantly	WP 0014
AC Compressor Drive Belts Replacement/Adjustment	WP 0020
AC Compressor Excessively Noisy	WP 0013
AC Compressor Mounting Bracket Replacement	WP 0021
AC Compressor Replacement	WP 0022
AC Condenser Core Replacement	WP 0023
AC Condenser Dryer Replacement	WP 0024
AC Condenser Fan Motor Replacement	WP 0025
AC Condenser Fan Motor Solenoid Replacement	WP 0026
AC Condenser Mounting Bracket Replacement	WP 0027
AC Condenser Replacement	WP 0028
AC Defrost Cable Replacement	WP 0029
AC Does Not Cool or Cools Inadequately	WP 0015
AC Evaporator Core and Expansion Valve Replacement	WP 0030
AC Fan Control Switch Replacement	WP 0031
AC Heater Cable Replacement	WP 0032
AC Heater Control Panel Lights Do Not Operate	WP 0016
AC Heater Core Replacement	WP 0033
AC Heater/Evaporator Blower Does Not Operate	WP 0006
AC Heater/Evaporator Blower Does Not Operate	WP 0010
AC Heater/Evaporator Blower Does Not Operate In All Speeds (Low, Medium, and High)	WP 0011
AC Heater/Evaporator Blower Motor Assembly Replacement	WP 0034
AC Heater/Evaporator Blower Motor Resistor Replacement	WP 0035
AC Heater/Evaporator Blower Motor Resistor Harness Replacement	WP 0036
AC Heater/Evaporator Blower Operates But No Cold Air From AC Ducts During AC Operations	WP 0007
AC Heater/Evaporator Blower Operates But No Cold Air From Ducts During AC Operations	WP 0012

ALPHABETICAL INDEX - Continued

Subject	WP No.
AC Heater/Evaporator Replacement	WP 0037
AC High Pressure Switch Replacement	WP 0038
AC Hoses Replacement	WP 0039
AC Low Pressure Switch Replacement	WP 0040
AC Optic Ribbon Replacement	WP 0041
AC Optic Ribbon Light Source Replacement	WP 0042
AC Optic Ribbon Light Source Wire Harness Replacement	WP 0043
AC System Refrigerant (R-134a) Maintenance	WP 0053
AC Temperature Control Switch Replacement	WP 0044
AC Wire 1082 Harness Replacement	WP 0045
AC Wire 1156 Harness Replacement	WP 0046
AC Wire 1280A Harness Replacement	WP 0047
AC Wiring Harness Replacement	WP 0048
Additional Authorization List (AAL)	WP 0061
Air Conditioning Leak Test	WP 0052
C	
Common Tools and Special Tools List	WP 0059
E	
Engine Accessory Drive Assembly Replacement	WP 0049
Expendable and Durable Supplies and Materials List	WP 0058
F	
Field Level Maintenance Introduction	WP 0017
Field Level Preventive Maintenance Checks and Services (PMCS)	WP 0008
Field Level Troubleshooting Introduction	WP 0009
Fuel Line Extension Replacement	WP 0050

ALPHABETICAL INDEX - Continued

Subject	WP No.
G	
General Information	WP 0001
I	
Illustrated Parts List (RPSTL)	WP 0060
Initial Installation Instructions of AC Kit	WP 0055
Installation Drawings and Schematics	WP 0054
L	
Left Side Noise Panel and Rubber Flap Replacement	WP 0051
M	
Maintenance Allocation Chart (MAC)	WP 0057
O	
Operator's Controls and Indicators	WP 0002
Operator's Preventive Maintenance Checks and Services (PMCS)	WP 0003
Operator's Troubleshooting Introduction	WP 0005
R	
References	WP 0056
S	
System Operation	WP 0004

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:

SANDRA R. RILEY
Administrative Assistant to the
Secretary of the Army
0525202

DISTRIBUTION: To be distributed in accordance with the initial distribution requirements for IDN: 344833, requirements for TB 9-2320-364-13&P-1.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: *(Forward to proponent of publication or form) (Include ZIP Code)*	**FROM:** *(Activity and location) (Include ZIP Code)*	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)*	FROM: *(Activity and location) (Include ZIP Code)*	DATE

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: *(Forward to proponent of publication or form) (Include ZIP Code)*	**FROM:** *(Activity and location) (Include ZIP Code)*	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)*	FROM: *(Activity and location) (Include ZIP Code)*	DATE

PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE
1 Centimeter=10 Millimeters=0.01 Meters=0.3937 Inches
1 Meter=100 Centimeters=1000 Millimeters=39.37 Inches
1 Kilometer=1000 Meters=0.621 Miles

WEIGHTS
1 Gram=0.001 Kilograms=1000 Milligrams=0.035 Ounces
1 Kilogram=1000 Grams=2.2 Lb
1 Metric Ton=1000 Kilograms=1 Megagram=1.1 Short Tons

LIQUID MEASURE
1 Milliliter=0.001 Liters=0.0338 Fluid Ounces
1 Liter=1000 Milliliters=33.82 Fluid Ounces

SQUARE MEASURE
1 Sq Centimeter=100 Sq Millimeters=0.155 Sq Inches
1 Sq Meter=10,000 Sq Centimeters=10.76 Sq Feet
1 Sq Kilometer=1,000,000 Sq Meters=0.386 Sq Miles

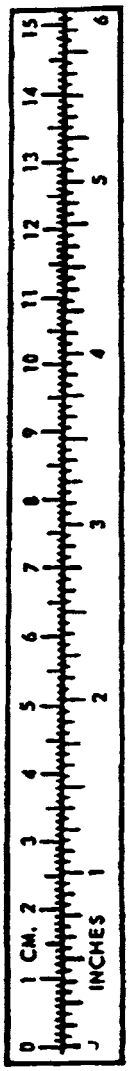
CUBIC MEASURE
1 Cu Centimeter=1000 Cu Millimeters=0.06 Cu Inches
1 Cu Meter=1,000,000 Cu Centimeters=35.31 Cu Feet

TEMPERATURE
5/9 (°F − 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° + 32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds/Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Km per Liter	Miles per Gallon	2.354
Km per Hour	Miles per Hour	0.621



PIN: 082759-000