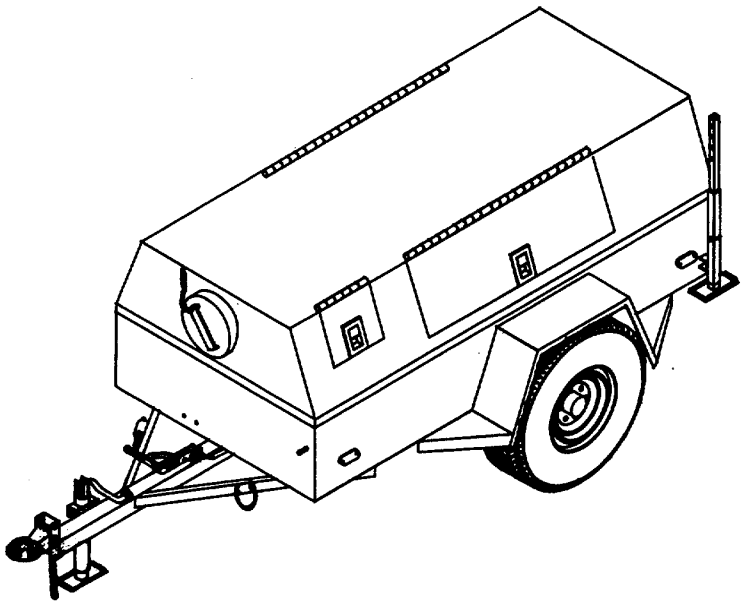
TECHNICAL MANUAL

OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL



COMPRESSOR UNIT, RECIPROCATING
15 CFM, 175 PSI,
DIESEL ENGINE DRIVEN,
TRAILER MOUNTED
MODEL CUE57-6DY-TM
NSN: 4310-01-364-4316

HEADQUARTERS, DEPARTMENT OF THE ARMY
30 MAY 1995

This portion of the manual list is a "summary" of the warnings that appear within this manual. It does not include specific warnings that pertain to particular procedural steps (e.g., parking brake, towing, climbing, etc.).

WARNING

DO NOT refuel the compressor while it is operating. Hot refueling of compressor while in operation presents a safety hazard and should not be attempted. Hot engine surfaces and sparks produced from the engine circuitry is a possible source of ignition and is a potential safety hazard. Failure to observe this warning may result in severe personal injury or death.

WARNING

The fuels used in this compressor are highly explosive. Do not smoke or use open flame when performing maintenance. Flames and explosion may occur resulting in severe personal injury or death.

WARNING

Exhaust discharge gives off deadly gases. Do not operate compressor in enclosed areas unless exhaust discharge is properly vented to the atmosphere. Failure to observe this warning may result in severe personal injury or death.

WARNING

Battery gives off flammable gas. Do not smoke or use open flame when performing maintenance because flames and explosion may occur. Battery acid can cause burns to unprotected skin. Wear protective clothing including rubber gloves and eye protection servicing battery. Failure to observe this warning may result in severe personal injury or death.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Failure to observe this warning may result in severe personal injury or death.

WARNING

When using compressed air for any cleaning or drying operation, do not exceed 30 psi at the nozzle. Eyes can be permanently damaged by contact with liquid or large particles propelled by compressed air. Inhalation of air-blown particles or solvent vapor can damage lungs. When using air for drying or cleaning at an air-exhausted workbench, wear approved goggles or face shield. When using air for drying or cleaning, wear approved respirator and goggles. Failure to observe this warning may result in severe personal injury or death.

WARNING

Air from this compressor contains dangerous hydrocarbons and is not to be used for air for human breathing purposes. Failure to observe this warning may result in severe personal injury or death.

WARNING

Avoid coming in contact with metal with bare skin while in a cold environment. Failure to observe this warning may result in personal injury due to freezing.

WARNING

Never use gasoline, paint thinner, or any volatile liquid as fuel or starting aid. Explosions may occur. Failure to observe this warning may result in severe personal injury or death.

Refer to FM 21-11 for First Aid.

TECHNICAL MANUAL

NO. 9-4310-396-13

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 MAY 1995

Operator's, Unit, and Direct Support Maintenance Manual for COMPRESSOR UNIT, RECIPROCATING, 15 CFM 175 PSI, DIESEL ENGINE DRIVEN, TRAILER MOUNTED MODEL NUMBER CUE57-6DY-TM NSN 4310-01-364-4316

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual, directly to: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

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LIST OF ILLUSTRATIONS - continued

LIST OF TABLES

HOW TO USE THIS MANUAL

DESCRIPTION OF THE MANUAL.

Manual Organization. This manual is designed to help you operate and maintain the 15 CFM/ 175 PSI Diesel Engine Driven Winterized Trailer Mounted Reciprocating Air Compressor. Warning pages are located in the front of this manual. Read the warnings before operating or doing maintenance on the equipment.

The major elements of this manual are its chapters and appendices. Each chapter has one or more sections. The Table of Contents, beginning on page i, is provided for quick reference to the subjects covered by each chapter, section, and appendix. Each chapter also has a chapter index with the exception of Chapter 1. The chapter index lists the chapter sections and paragraphs.

The front cover of this manual has an index that lists the most important areas of the manual. Each item indexed on the front cover has a black box at the edge of the cover. There is a corresponding black box on the first text page for each subject listed on the cover index. This black box on the first text page is in the same page position as the black box on the cover index.

A glossary follows the last appendix. The glossary lists and explains the special or unique abbreviations and the unusual terms used in this manual

An alphabetical index follows the glossary. That index is for use in locating specific items of information.

Chapters. This manual has five chapters and eight appendices. Each chapter is divided into sections. Each section is divided into descriptive paragraphs. The paragraphs have specific information about the units and their major components.

Paragraph Numbering. All paragraphs are numbered. This helps you find what you need when you need it. USE THE TABLE OF CONTENTS OR ALPHABETICAL INDEX TO FIND THE SECTION OR PARAGRAPH YOU NEED. Some paragraphs have a related illustration, to show the items discussed in the paragraph. Each primary paragraph, illustration, and table is identified by the number of the chapter in which it appears, followed by a dash and another number. The number after the dash indicates the sequence in which the paragraph, illustration, or table appears in the chapter. Some paragraphs are further divided into subparagraphs. Subparagraphs are identified by the number of the primary paragraph followed by a decimal number, as follows:

Example:
- 4-5 is the fifth paragraph in Chapter 4.
- 4-5.1 is the first subparagraph of paragraph 4-5.
- 4-5.2 is the second subparagraph of paragraph 4-5.
- 4-5.2.1 is the first subparagraph under 4-5.2.
- Figure 3-3 is the third illustration in Chapter 3.
- Table 2-1 is the first table in Chapter 2.

Appendices. Each appendix covers a specific subject; sometimes general, such as the list of references in Appendix A; or sometimes very detailed, such as the maintenance allocation chart (MAC) in Appendix B .

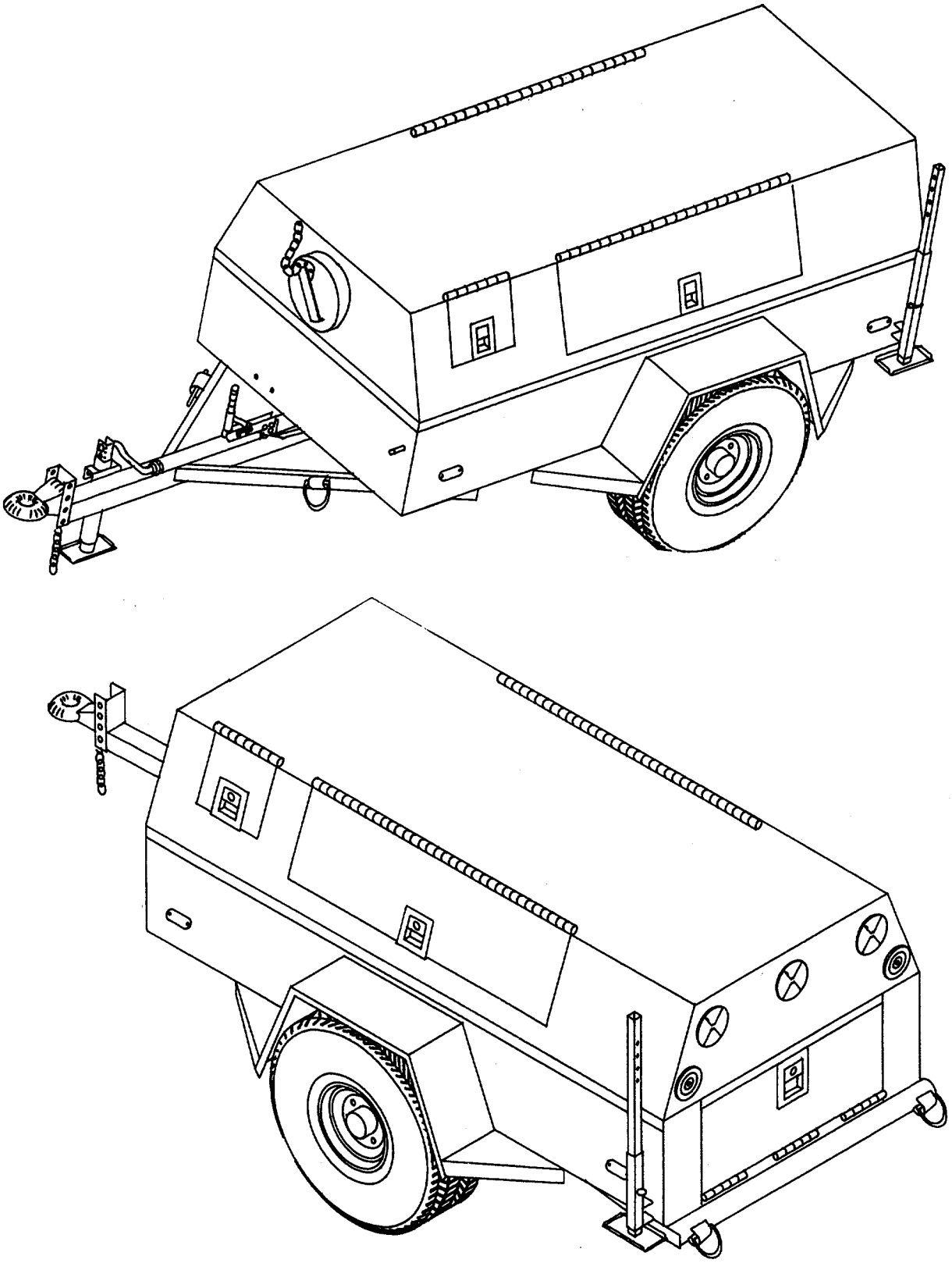


Figure 1-1. Reciprocating Air Compressor.

CHAPTER 1

INTRODUCTION

Section I - GENERAL INFORMATION

1-1 SCOPE.

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

Model Number and Equipment Name: Trailer Mounted Winterized Air Compressor, Diesel Engine Driven, 15 cfm/175 psi; Model # CUE57-6DY-TM

Purpose of Equipment: Compresses Air

1-2 MAINTENANCE FORMS AND RECORDS.

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

1-3 CORROSION PREVENTION AND CONTROL.

Corrosion Prevention and Control (CPC) of Army Materiel is a continuing concern. Any corrosion problems with this compressor shall be reported so that the problem can be corrected and improvements made. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials such as rubber or plastic. Unusual cracking, softening, swelling, or breaking down of these materials will be listed also as corrosion problems. If a corrosion problem is identified it should be reported on Standard Form 368, Product Quality Deficiency Report. Use keywords such as corrosion rust, deterioration, or cracking to insure the information is identified as a CPC problem. This form should be submitted as specified in DA PAM 738750, The Army Maintenance Management System (TAMMS).

14 DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Command decisions, according to tactical situation, will determine when destruction of the compressor unit will be accomplished. A destruction plan will be prepared by the using organization, unless one has been prepared by higher authority. For general destruction procedures for this equipment, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

1-5 PREPARATION FOR STORAGE OR SHIPMENT.

Instructions for preparation for storage and shipment are in Chapter 4, Section VII.

1-6 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S).

If your compressor 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 a SF 368 (Quality Deficiency Report). Mail it to us at Commander, Headquarters, U.S. Army Aviation and Troop Command, Attention: AMSAT-I-MDO, 4300 Goodfellow Boulevard, St. Louis, Missouri 63120-1798. We will send you a reply.

1-7 WARRANTY INFORMATION.

All components of the CUE57-6DY-TM Reciprocating Compressor are warranted by Compressed Air Equipment for a period of 1 year. The warranty starts on the date found in block 23, DA Form 2408-9 in the logbook. Report all defects in material and workmanship to your supervisor, who will take appropriate action.

Section II - EQUIPMENT DESCRIPTION AND DATA

1-8 EQUIPMENT CHARACTERISTICS , CAPABILITIES, AND FEATURES.

1-8.1 Capabilities and Features. The compressor is a fully-enclosed, self-contained unit that is trailer mounted ground portable. This unit uses diesel fuel for the diesel engine driven compressor. The temperature range is variable but under usual operating conditions is above 32°F (0°C) and below 100°F (38°C). The compressor delivers compressed air at 15 cubic feet/minute (cfm) at 175 pounds/square inch (psi). The pressure may be reduced for lower pressure air applications. This unit is capable of variable control of operating rate and is air cooled. The air volume output is 15 cfm @ 175 psi.

1-9 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

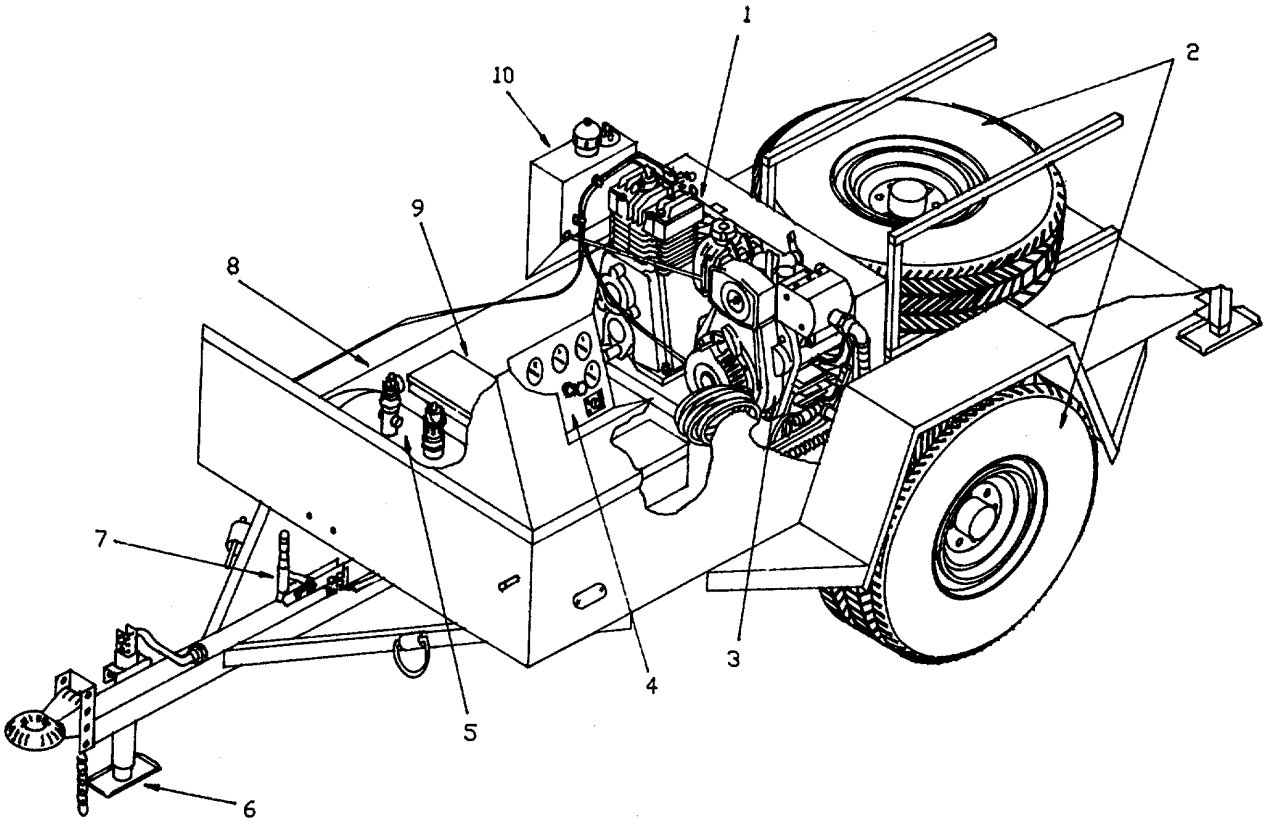


Figure 1-2. Location of Major Components.

1. Reciprocating Air Compressor - Compresses Air from atmospheric to higher elevated pressure.
2. Pneumatic Tires and Spare - Provides means for transport.
3. Diesel Engine Assembly - Provides the power required to drive the compressor.
4. Frame Control Panel - Provides means for starting and stopping.
5. Air Tank Receiver - Provides storage for air under pressure.
6. Leveling-Support Jack - Provides means for raising/lowering trailer tongue.
7. Parking Brake Handle Lever - Provides for manually engaged brakes while parking.
8. Trailer With Complete Top Hood Assembly - Provides the support of the equipment.
9. Tool Box - Provides storage of tools.
10. Primary Fuel Tank - Provides fuel supply for engine.

1-10 EQUIPMENT DATA.

1-10.1 Refer to Table 1-1 for Tabulated Equipment Data.

Table 1-1 Tabulated Data for Air Compressor

a. Air Compressor Unit Manufacturer	Compressed Air Equipment 329 Newman Drive Cookeville, TN 38501
Model Number	CUE57-6DY-TM
Type	Two-stage
Output (rated speed)	15 cfm at 175 psi
Normal Air Pressure	175 psi
Normal Operating Range	165 - 195 psi
Maximum Air Pressure	200 psi
Rated Speed	
Engine	3600 rpm
Compressor	800 rpm
Length	146 inches
Width	68 inches
Height	54 inches
Weight, dry	1690 pounds
Weight, wet	1708 pounds
Capacities	
Engine crankcase	1 1/4 quarts
Compressor crankcase	2 quarts
Fuel tank	2 3/4 gallons
Air receiver tank	20 gallons
b. Engine	
Manufacturer	Yanmar
Model number, Bare Engine	L60AE-DE
Type	Diesel (1 cylinder)
Horsepower	6.0
Cooling type	Air
Air cleaner	Paper, dry
Voltage rating	12 V., D.C.
Fuel Type	Diesel, No.2 or JP-8

Table 1-1 Tabulated Data for Air Compressor - continued

c. Compressor	
Model number, Bare pump	E57
Type	Two-cylinder, two-stage
Cooling	Air
Air cleaner	Dry
d. Running Gear	
Axle gross weight	5200 pounds
Spring weight rating	4000 pounds
Tire size	7.50 X 16, 8 ply
Number of wheels	2, with 1 spare
e. Electrical System	Douglas Manufacturing
Battery	24-4000 Part number 12 volt, 600 cranking amps
Generator	Yanmar
Starter Motor	Yanmar, 12 volts
No-load, current (A)	60 (max)
Loaded, current (A)	200

Section III - PRINCIPLES OF OPERATION

1-11 COMPRESSOR OPERATING PRINCIPLES.

1-11.1 **Compressor (1. Figure 1-3).** The compressor compresses air to put out a minimum of 15 cfm at 175 psi. It is driven by the diesel engine through two belts from the pulley contained on the engine. The belt guard protects the operator from injury and the engine pulley and compressor flywheel from damage.

1-11.2 **Engine (2).** The compressor is driven by a diesel engine. The engine drives the compressor by two V-belts attached to a clutch/pulley connected to the shaft of the engine. The engine is equipped with both an electrical starter and a manual recoil starter to allow engine start. The operating speed is factory set for a constant operating speed while compressing air and a throttling device to slow the engine while operating not loaded. The electric starter is powered by a 12 VDC battery.

1-11.3 **Air Receiver (3).** The air receiver stores the compressed air delivered from the compressor. It is equipped with a check valve, high pressure relief valve, and a line pressure gage. The receiver is also equipped with a tank drain to drain moisture or compressed air. The discharge line leads to the exterior of the trailer and is fitted with a quick air line disconnect where the air hose is attached. The air hose then transports the compressed air to the point of use by the operator.

1-11.4 **Compressor Trailer (4).** The compressor trailer provides a means to transport the compressor as well as a support base for the equipment. It is provided with two wheels with brakes and a spare tire. The enclosure of the trailer provides protection of the compressor, engine, and components.

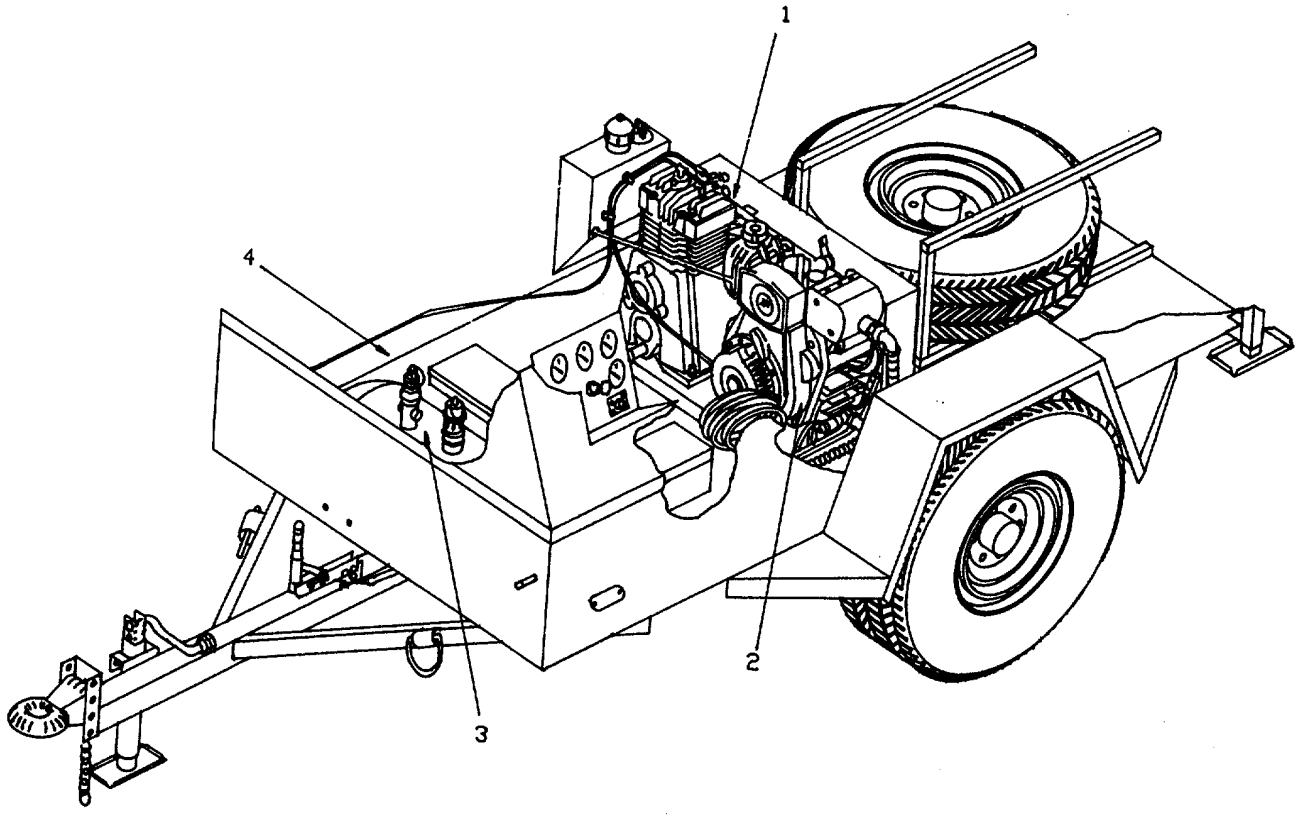


Figure 1-3. Operating Principles.

1-11.5 Air Compressor Pump. Figure 1-4 below shows the general operation of the air compressor. The air compressor has two low pressure cylinders which both feed into the high pressure cylinder. The compression cycle starts with the low pressure pistons (1, Figure 1-4) at the top of stroke. When the pistons move down, they draw air through the air filter (2) and inlet valve (3) into the cylinders. The air filter keeps dirt out of the compressor. On the upstroke, inlet valve (3) closes and the pistons (1) push air out into the intercooler (5) through the exhaust valve (4). Compressing the air heats it up. The intercooler (5) gets rid of some of that heat before passing the air on to the high pressure stage. The high pressure stage works the same as the low pressure stage except that the high pressure piston goes up when the low pressure piston goes down. This way, the low pressure piston is drawing air in while the high pressure piston is pushing air out. Compressed air from the high pressure stage goes to the air tank through a connecting tube.

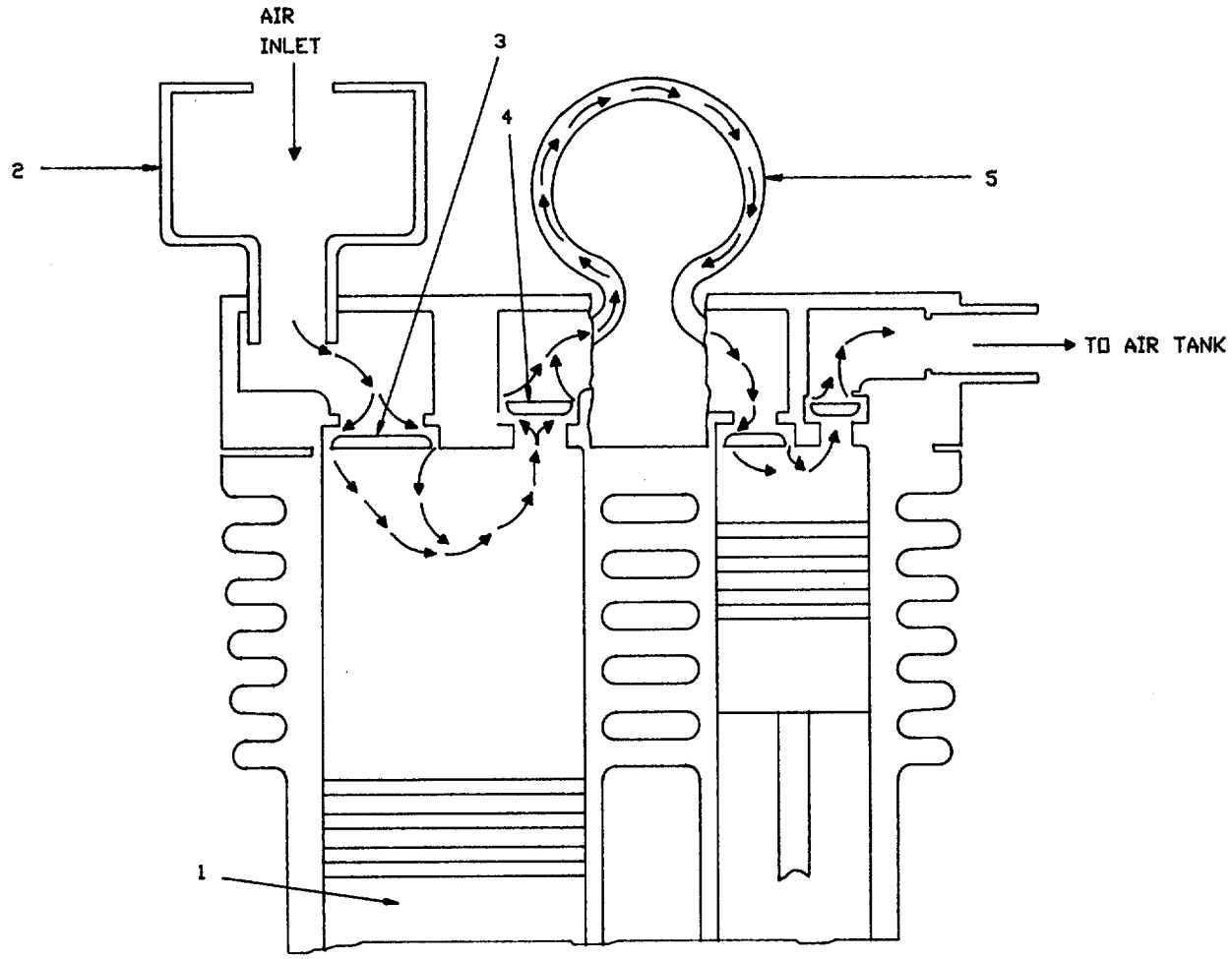


Figure 14. Air Compressor Pump Schematic.

1-11.6 Compressor Schematic. Figure 1-5 below shows the general relationship vital components play in the operation of the diesel engine driven air compressor.

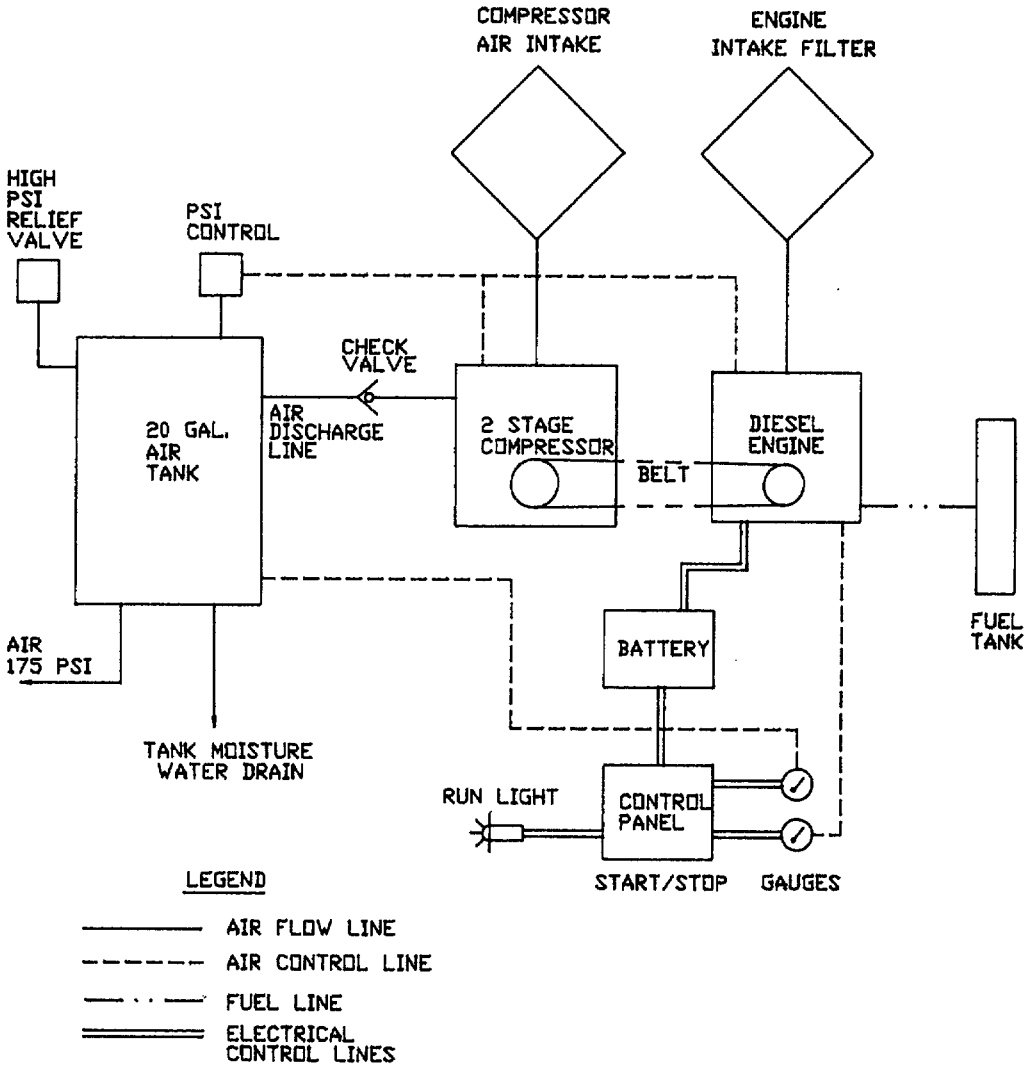


Figure 1-5. Compressor Flow Schematic.

CHAPTER 2

OPERATING INSTRUCTIONS

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

2-1 GENERAL.

This model of air compressor is designed for a variety of uses and for operation under a wide range of climatic conditions. Its primary use is for support of ground operating equipment such as pumping up tires and to power small air tools.

2-2 OPERATOR'S CONTROLS.

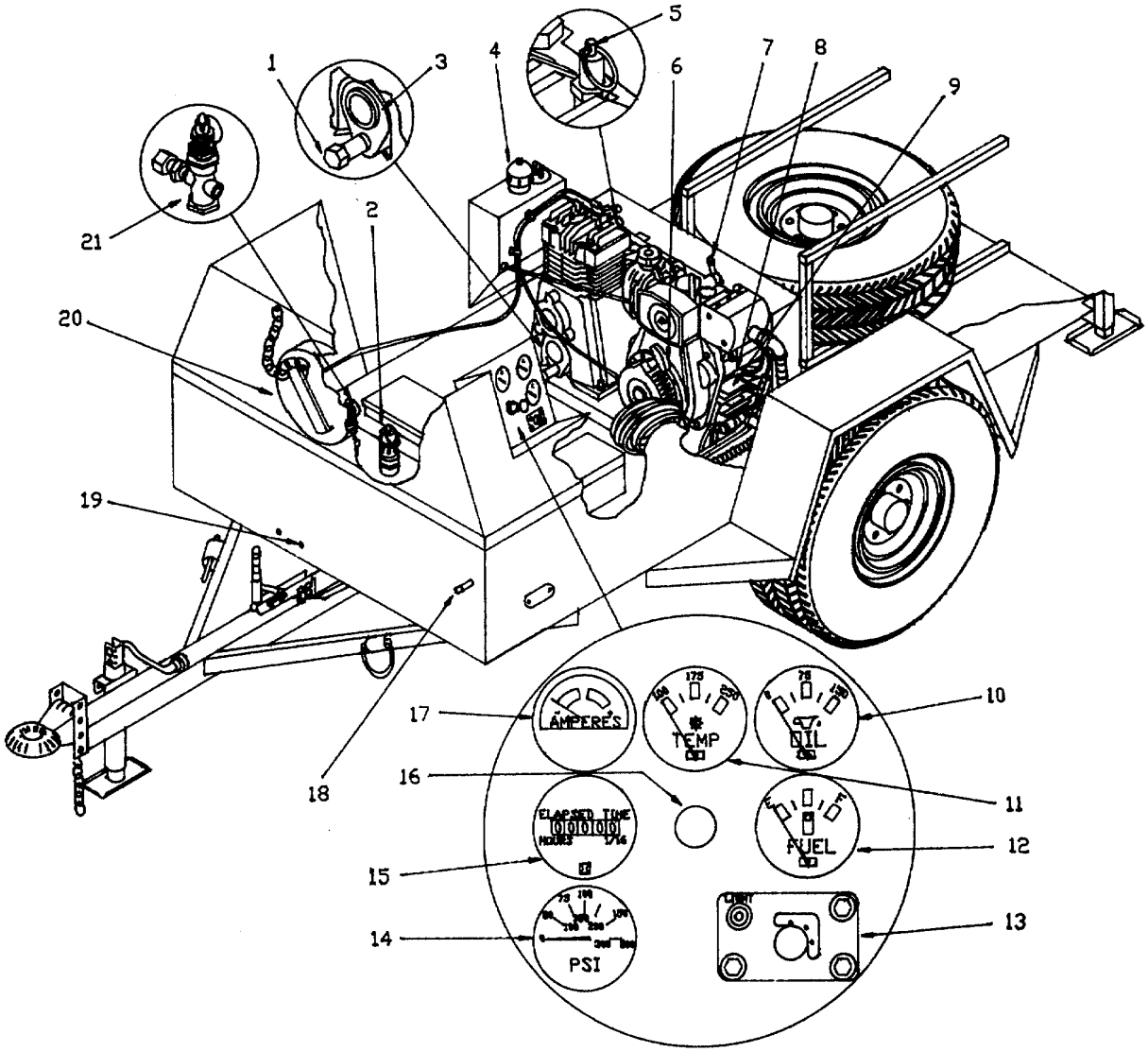


Figure 2-1. Operator's Controls and Indicators.

2-2.1 Refer to Table 2-1 for Operator's Controls and Indicators.

Table 2-1 Operator's Controls and Indicators

Key	Control or Indicator	Function
1	Pipe Plug	Used to drain compressor oil.
2	Pressure Relief Valve	Located on air tank receiver. Used to release high air pressure above 200 psi.
3	Rod-Cap Gage	Indicates oil level in compressor.
4	Fuel Cap	Place to fill tank with diesel fuel.
5	Pressure Relief Valve	Located on compressor. Releases interstage high air pressure between low pressure and high pressure cylinder.
6	Recoil Starter	Located in front of engine. Used if battery charge is too low for normal key starting.
7	Remote Control Lever	Used to make engine start easier using manual rope pull.
8	Engine Level Gage Rod-Cap	Place to check oil level and add oil to engine.
9	Engine Current Regulator	Voltage regulation to charge battery.
10	Engine Pressure Gage	Indicates oil pressure from 0 - 150 psi.
11	Engine Temperature Gage	Indicates oil temperature of diesel engine, 100°F - 250°F (38°C-121°C).
12	Engine Liquid Level Gage	Indicates level of fuel in primary fuel tank (1/4, 1/2, 3/4, or Full).
13	Engine Switch Key	Used to start diesel engine from the battery power source.
14	Pressure Gage	Located in frame control panel. Indicates air line pressure 0 - 200 pounds per square inch.
15	Time Totalizing Meter	Indicates number of hours machine has run.
16	Engine Knob	Shuts off fuel supply to stop engine when pulled out.
17	Engine Ampmeter	Indicates battery charging status, plus (+) or minus (-).
18	Hose Adaptor	Used to transport compressed air to air hose.
19	Drain Valve	Used to drain water condensate from air tank receiver.
20	Heater Inlet Lid	Used to warm up compressor/motor in cold weather.
21	Pilot Valve	Used to load and unload air pressure. Set at 175 psi unload.

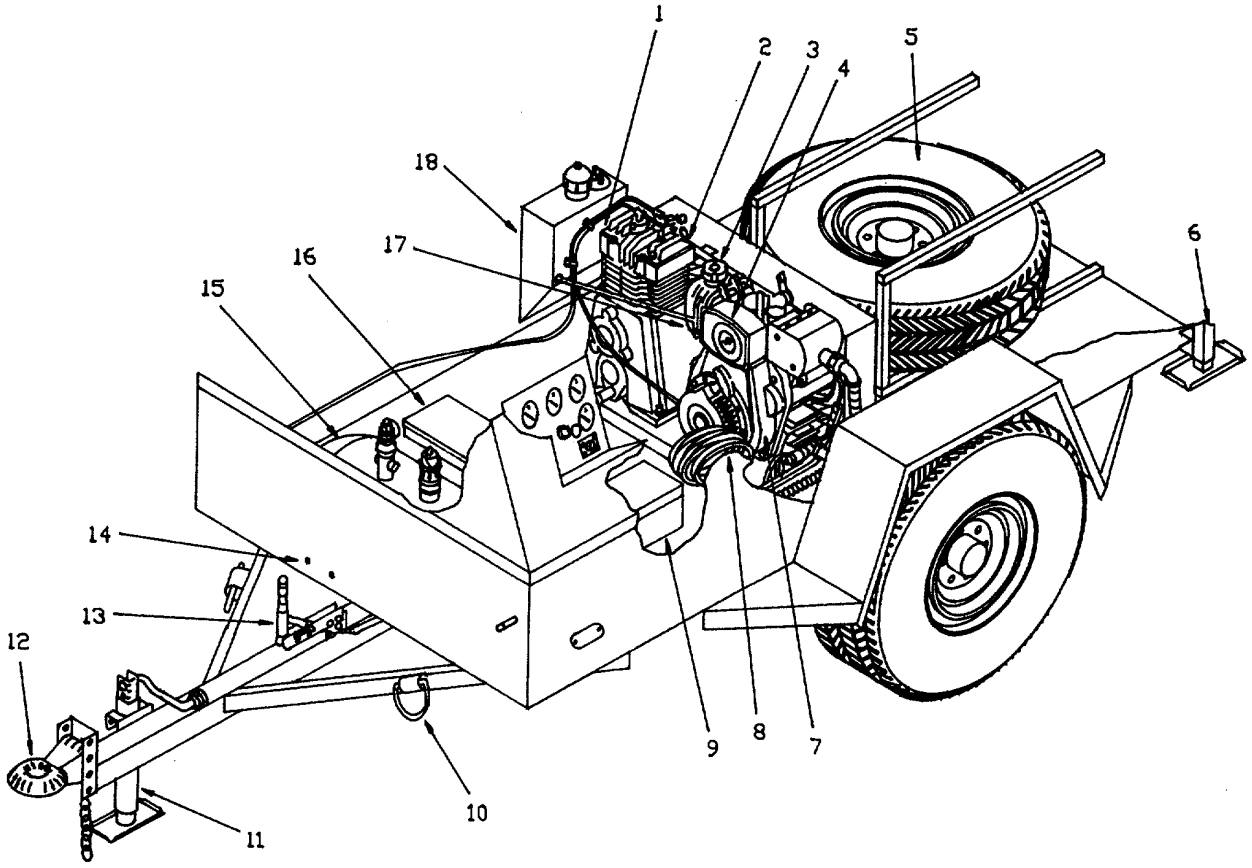


Figure 2-

2. Compressor Components.

2-2.2 Refer to Table 2-2 for Compressor Components and Functions.

Table 2-2 Compressor Components and Functions

Key	Components	Function
1	Compressor Strainer Assembly	Filters air to compressor.
2	Reciprocating Air Compressor	Two stage air compressor capable of 15 cfm @ 175 psi.
3	Fuel Tank Assembly	Located on engine. Used for fuel storage.
4	Engine Intake Air Cleaner	Located on engine. Used to filter air entering engine.
5	Spare Pneumatic Tire	Used as spare pneumatic tire in case of flat.

Table 2-2. Compressor Components and Functions - continued

Key	Components	Function
6	Trailer Stabilizer	Used for leveling of trailer.
7	Diesel Engine Assembly	Provides 6 horsepower to power compressor.
8	Nonmetallic Hose	Used to supply compressed air to point of use.
9	Storage Battery & Battery Box	Provides cover and storage for battery; provides engine starting power.
10	Tie Downs	Used for securing while hauling compressor.
11	Leveling-Support Jack	Used to raise or lower trailer tongue.
12	Trailer Drawbar Coupler	Used to hook up to towing vehicle.
13	Parking Brake Assembly	Used for setting brake when parking trailer.
14	Trailer Drain	Used to drain any accumulated rain water inside enclosure.
15	Air Tank Receiver	Used to store compressed air.
16	Tool Box	For tools and tech manual storage.
17	Shutoff Screw Cock	Located on bottom of fuel tank assembly. Shuts off fuel flow to fuel injection pump.
18	Primary Fuel Tank	Located on right side of compressor. Used for fuel storage.

Section II - OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

FOR MODEL CUE57-6DY-TM

2-3 INTRODUCTION.

Preventive Maintenance Checks and Services (PMCS) are essential to the efficient operation of the compressor and to prevent possible damage that might occur through neglect or failure to observe warning symptoms in a timely manner. Checks and services performed by operators are limited to those functions which are described in Table 2-3.

2-3.1 Warnings, Cautions, and Notes. Before You Operate. Always observe the **WARNINGS, CAUTIONS,** and **NOTES** appearing in you PMCS table. Warnings and Cautions appear before applicable procedures. You must observe these **WARNINGS, CAUTIONS,** and **NOTES** to prevent serious injury to yourself and others or prevent your equipment from being damaged.

2-3.2 Explanation of Table Entries.

2-3.2.1 Item Number Column. Numbers in this column are for reference. When completing the 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 checks and services for the intervals listed.

2-3.2.2 Interval Column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

2-3.2.3 Location. Check/Service Column. This column provides the location and the item to be checked or serviced. The item location is underlined.

2-3.2.4 Procedure Column. This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

2-3.2.5 Not Fully Mission Capable If: Column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

2-3.2.6 Other Table Entries. Be sure to observe all special information and notes that appear in your table.

WARNING

Engage parking brake assembly to avoid damage whenever compressor is parked on a slope unattached to vehicle. Failure to observe this warning may result in severe personal injury or death.

NOTE

Perform BEFORE or DURING operation PMCS if you are assigned operator and have not operated the item since the last interval or if you are operating the item for the first time.

NOTE

With the designated interval, these checks are to be performed in the order listed.

NOTE

All procedural instructions assume that the two access doors and frame control panel are opened for access.

2-3.2.7 Checks that are Common to the Entire Compressor are: Keep it clean. Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (SD-2) on all metal surfaces. Use soap and water when you clean rubber or plastic material. Check compressor and frame for rust and corrosion. If any bare metal or corrosion exists, clean and apply a thin coat of oil. Report it to your supervisor.

2-3.2.8 Bolts, Nuts. and Screws. Check them all for obvious looseness, missing, bent, or broken condition. Look for chipped paint, bare metal, or rust around bolt heads. If you are unable to tighten them, report it to your supervisor.

2-3.2.9 Welds. Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor.

2-3.2.10 Electric Wires and Connectors. Look for cracked, frayed, or broken insulation, bare wires, and loose or broken connectors. Report any damaged wires to your supervisor.

2-3.2.11 Hoses. Fuel, and Oil Lines. Look for wear, damage, and leaks, and make sure clamps and fittings are tight. Wet spots show leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, or something is broken or worn out, report it to your supervisor.

WARNING

DO NOT use diesel fuel, gasoline, or benzene (benzol) for cleaning. Failure to observe this warning may result in severe personal injury or death.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Failure to observe this warning may result in severe personal injury or death.

WARNING

In cold weather, contact of exposed skin with cleaning solvents can cause frostbite. Failure to observe this warning may result in severe personal injury or death.

CAUTION

When cleaning under hood areas, engine must be COLD (same temperature as outside air). DO NOT point water or steam directly at any electrical connection. DO NOT use high pressure water supply system. Damage to engine, electrical system, and other components may result.

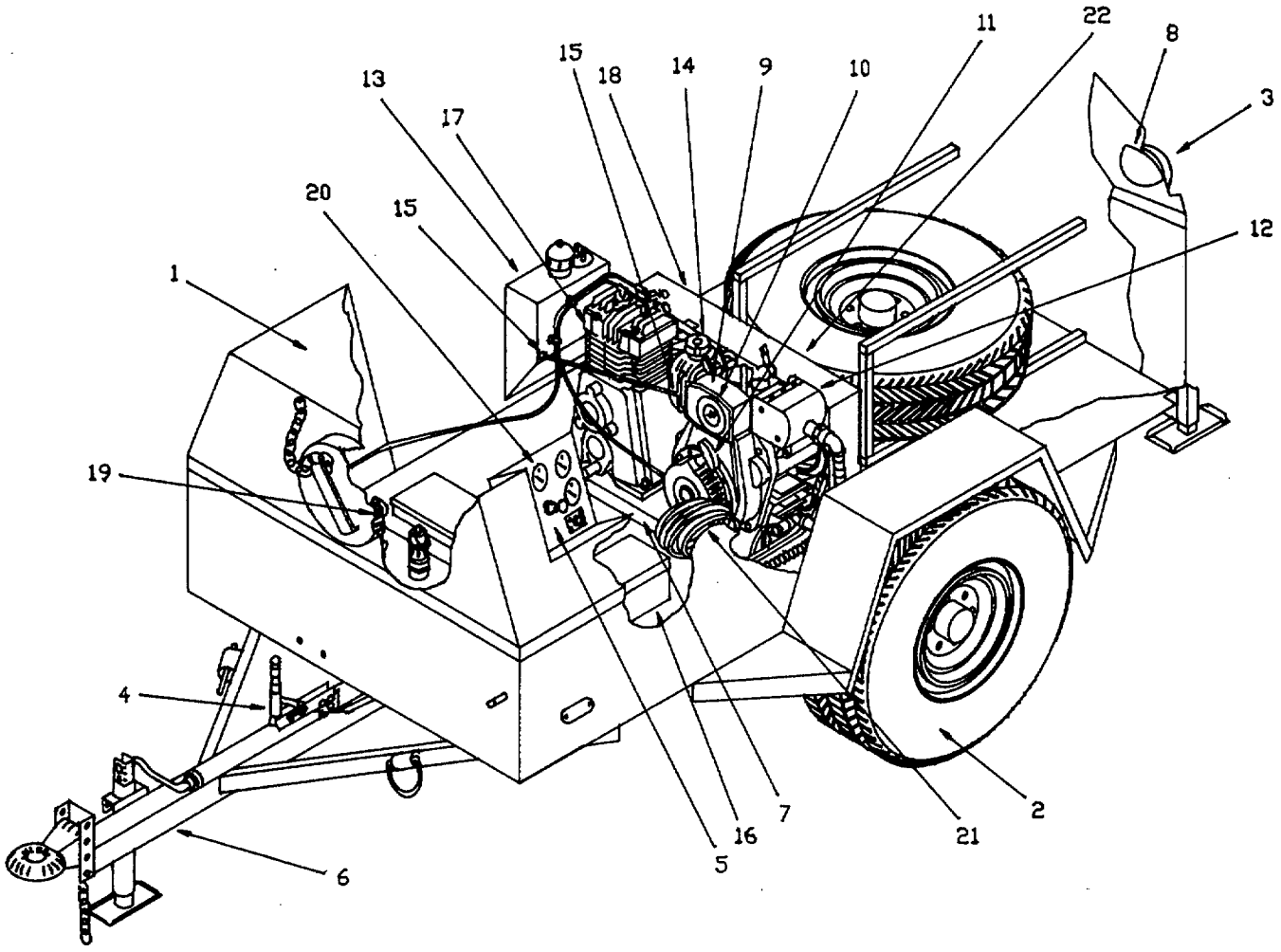


Figure 2-3. Operator PMCS Order Routing Diagram.

1. Complete Top Hood Assembly
2. Pneumatic Tire Wheels and Pneumatic Tires
3. Vehicular Stop Lights
4. Parking Brake Assembly
5. Gages
6. Trailer
7. Engine Sub-Base
8. Vehicular Stop Lights
9. Engine Intake Air Cleaner
10. Engine Filter Element
11. Recoil Starter
12. Exhaust Muffler
13. Primary Fuel Tank
14. Fuel Tank Assembly
15. Nonmetallic Hose, Hose Adaptor, and Shutoff Screw Cock
16. Storage Battery and Storage Battery Leads
17. Compressor Strainer Assembly
18. Complete Belt Guard Assembly
19. Pilot Valve and Check Valve
20. Gages
21. Nonmetallic Hose, Hose Adaptor, Air Lines, and Fittings
22. V-Belt

2-3.3 Operator/Crew PMCS Table. Refer to Table 2-3 for operator/crew preventive maintenance checks and services.

Table 2-3 Operator/Crew Preventive Maintenance Checks and Services

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		EXTERIOR		
			WARNING **DO NOT climb or get underneath trailer base. Failure to observe this warning may result in severe personal injury or death.**	
1	Before	Complete Top Hood Assembly	Inspect for loose, missing, or damaged parts. Access doors (1), and vent louvers (2) open and close properly.	Access doors and/or louvers will not open or close properly. Loose, missing, or damaged parts.

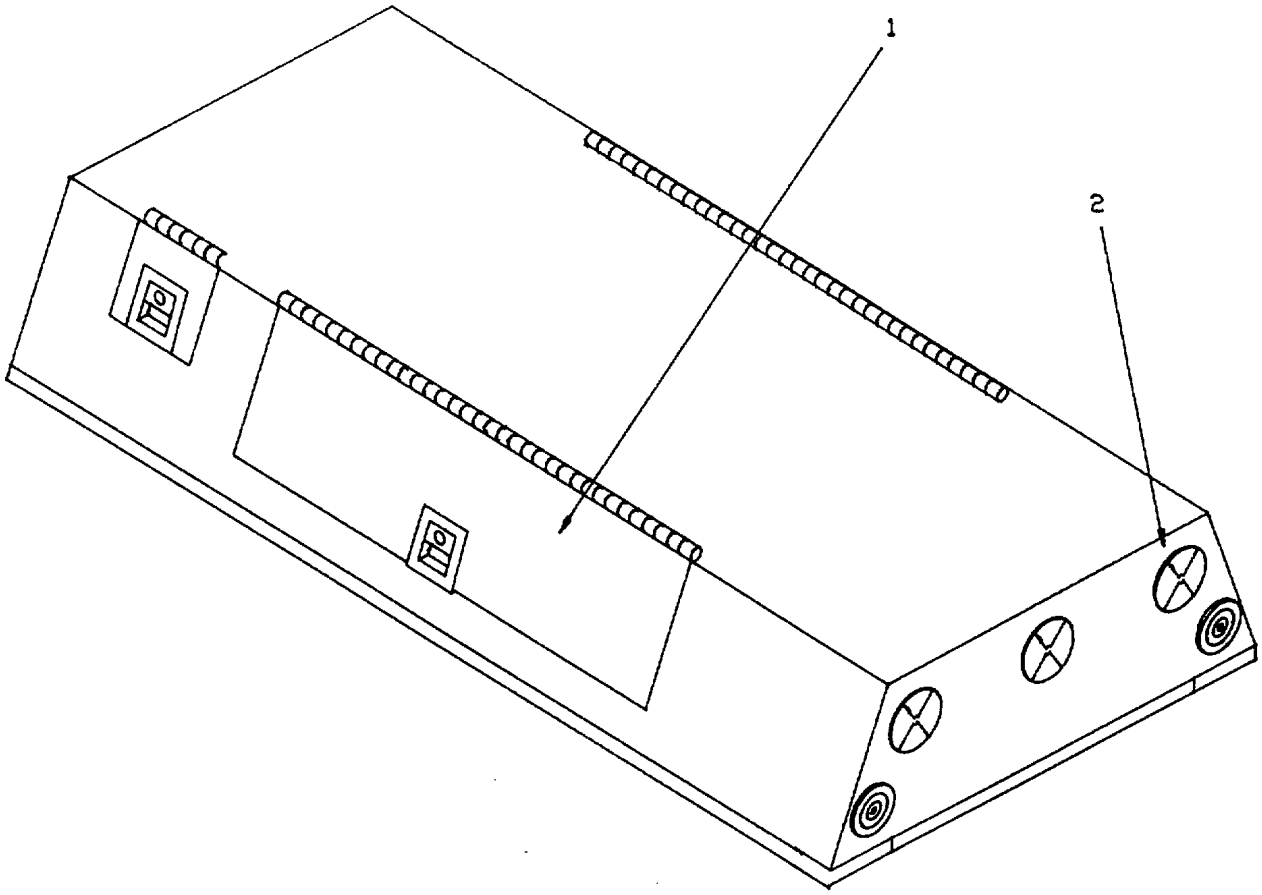


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
			WARNING **Towing compressor with defects or trailer base damage may cause severe personal injury or damage to property.**	
2	Before	Pneumatic Tire Wheels/Pneumatic Tires	Inspect pneumatic tires (1) and pneumatic tire wheels (2) for loose plain hexagon nuts (3), distortion, or flat tires. Check pneumatic tires (1) for pressure of 40 psi. Service pneumatic tires (1) by adding air pressure as required.	Missing plain hexagon nuts or flat tires.

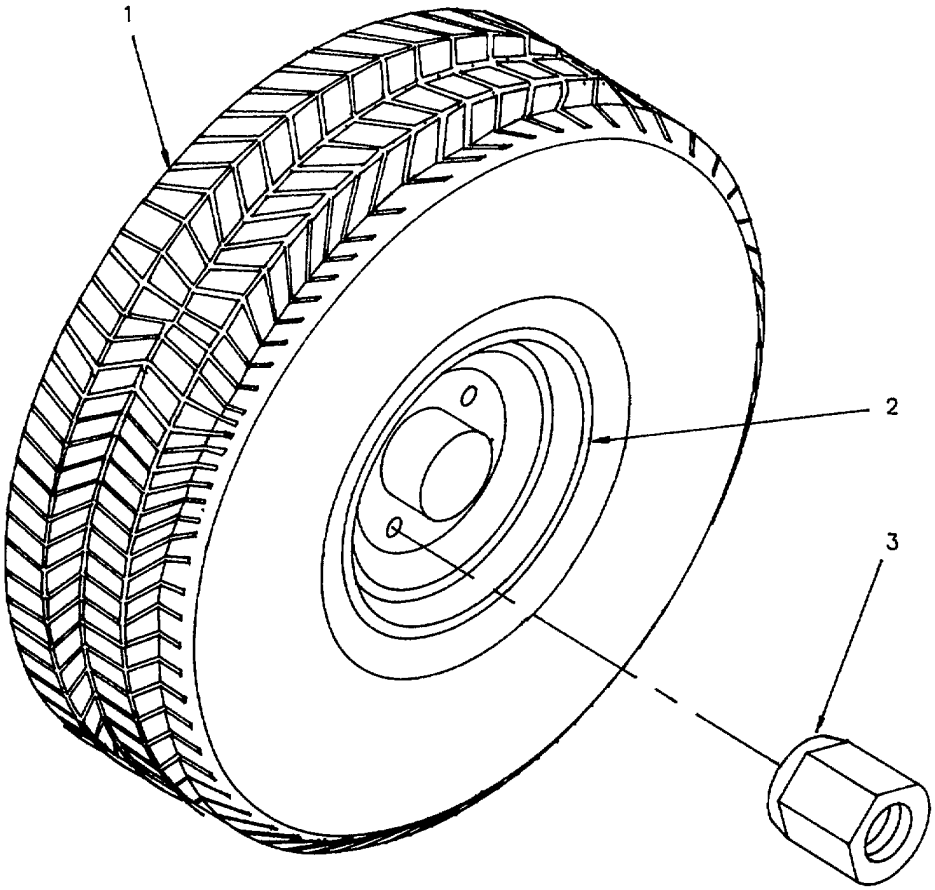


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
3	Before	Vehicular Stop Lights	Inspect vehicular stop lights (1) after hookup to insure turn signal, brake lights, and tail lights are working.	Vehicular stop lights do not work.

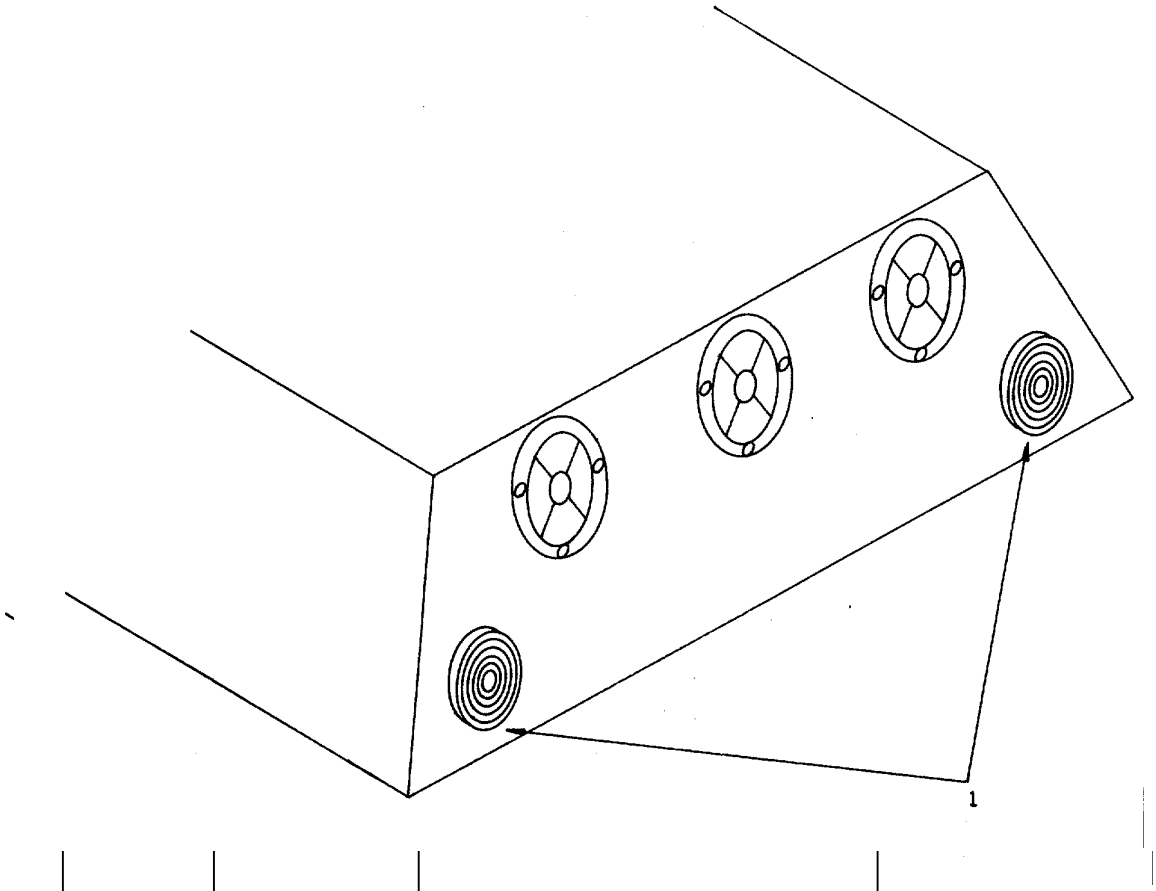


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
4	Before	Parking Brake Assembly	Inspect by engaging handle lever (1). Try to move trailer. If trailer rolls, brake is ineffective. Inspect for broken cable and loose or missing parts. Make parking brake adjustment by hand by turning handle lever (1) clockwise on parking brake assembly.	Parking brake does not hold. Loose or missing parts. Adjustment does not make parking brake assembly workable.

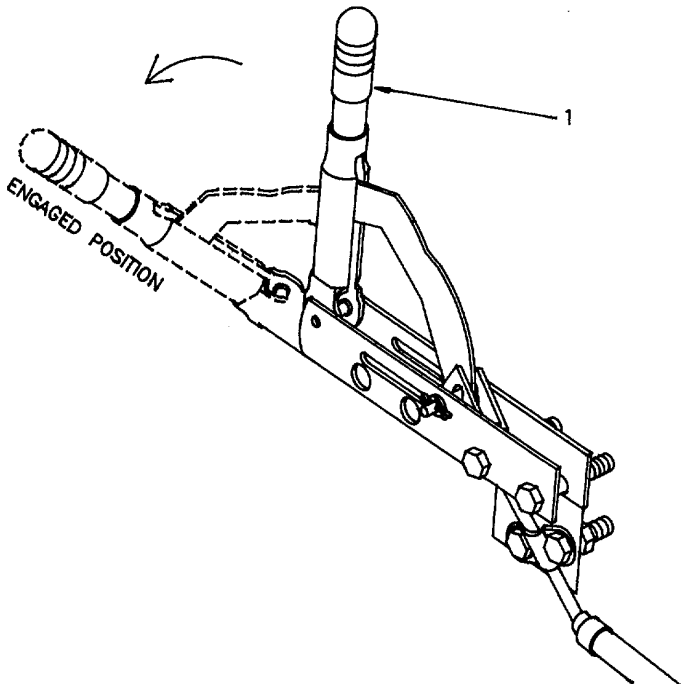


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
5	Before	Gages	Inspect gages (6) to insure not broken.	Gages are broken.
6	Before	Trailer	Inspect trailer base (2), tongue (3), leveling-support jack (4), drawbar coupler (5), or stabilizer (1) for broken or missing parts and other defects.	Trailer base, tongue, leveling-support jack, drawbar coupler, or stabilizer are broken or have missing parts. Defects are identified.

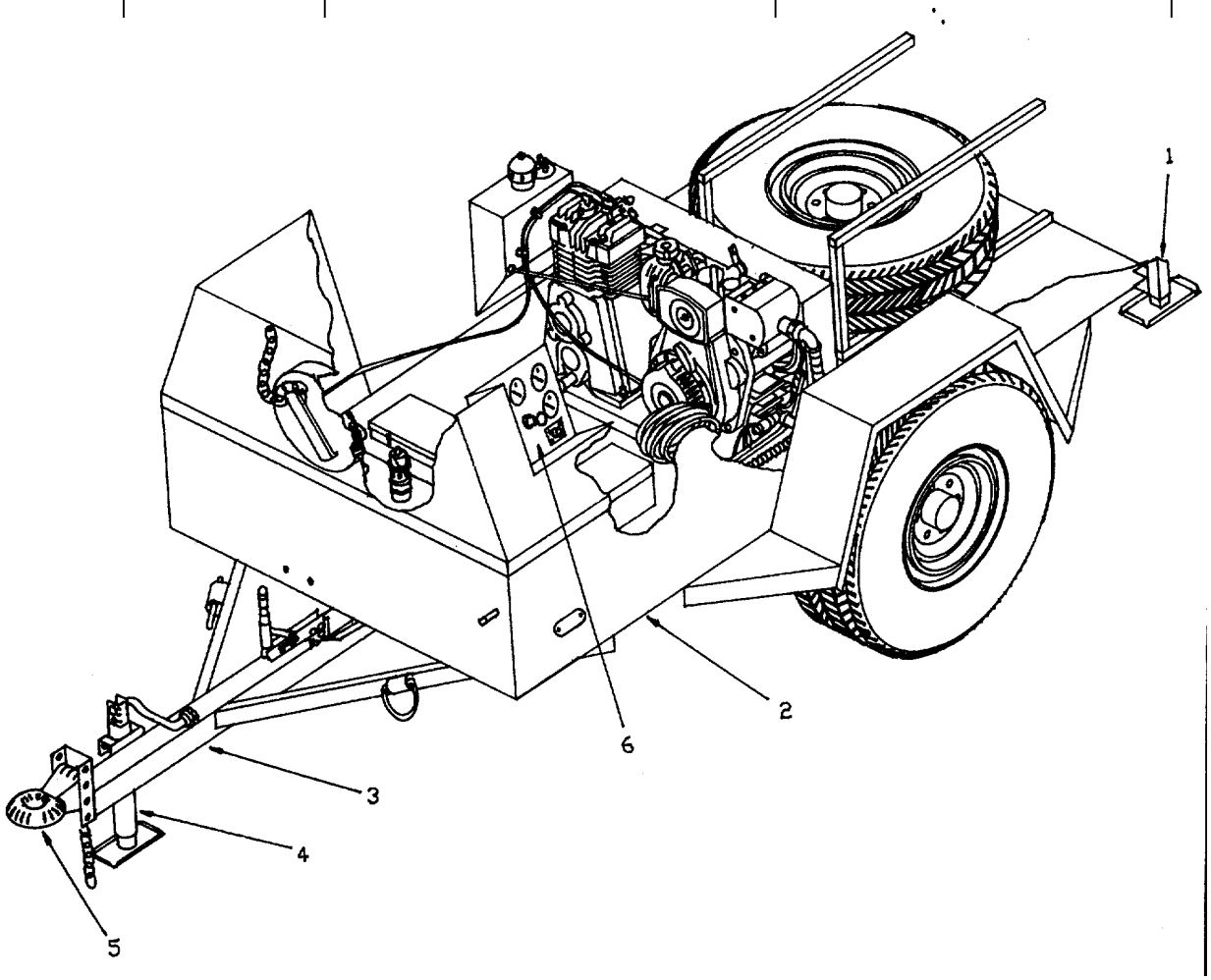


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		INTERIOR		
7	Before	Engine Sub-Base	Inspect engine sub-base (1) for cracked base, loose, missing, or broken hardware. welding or repair.	Loose, missing, or broken hardware. Sub-base needs

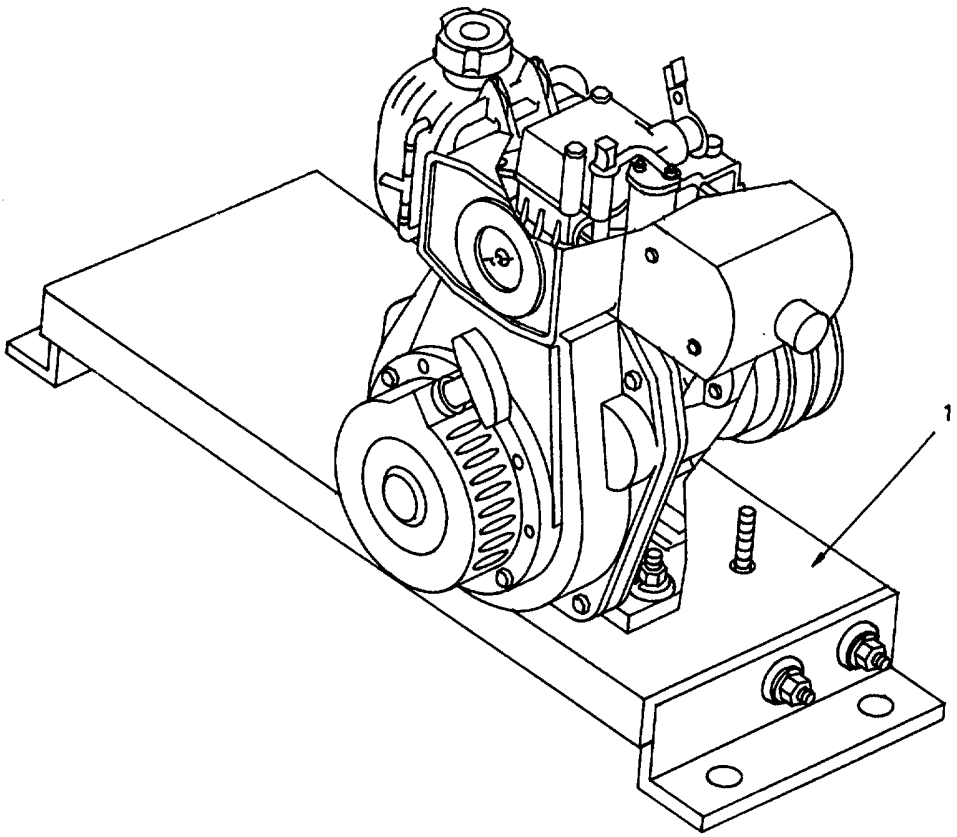


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

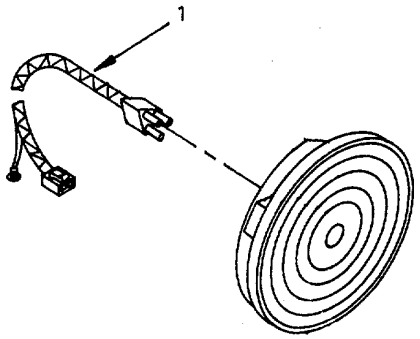
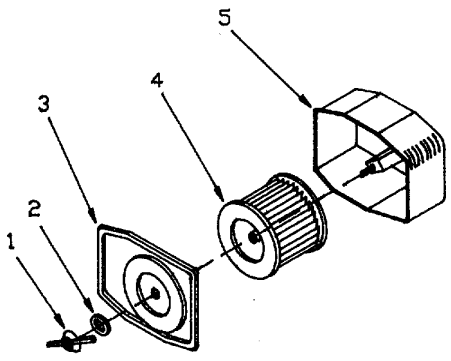
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
8	Before	Vehicular Stop Lights	Inspect for defective wiring and connectors on wire harness (1). Insure wires are connected properly.	Vehicular stop lights do not work.
				
		ENGINE		
9	Before	Intake Air Cleaner	Inspect intake air cleaner (5) for loose or missing parts and damage. Check plain wingnut (1) for tightness. Insure access cover (3) is secure.	Missing or damaged parts and plain wingnut. Access cover is damaged.
10	Before	Filter Element	Remove plain wingnut (1), seal washer (2), and access cover (3). Remove filter element (4). Inspect filter element for dirt and holes. Service by cleaning off dirt with wiping rag (Appendix E, item 3) and install. Replace with new filter element if necessary.	Filter element excessively dirty or has holes.
				

Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

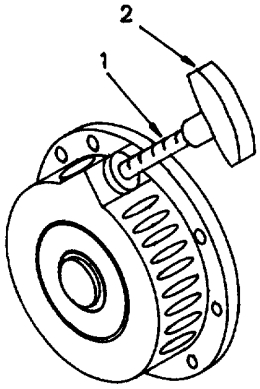
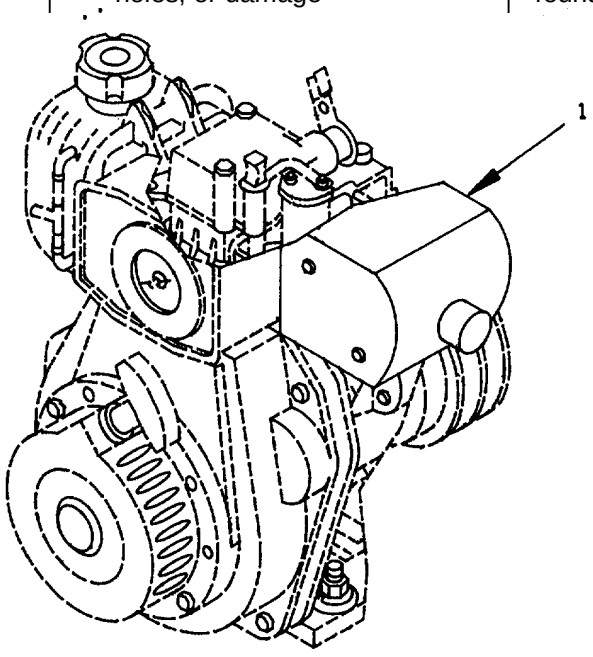
Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
11	Before	Recoil Starter	Inspect starter rope handle (1) and knob (2) to insure recoil starter and engine is operable.	Starter rope handle or knob is broken or missing.
				
12	Before	Exhaust Muffler	Inspect exhaust muffler (1) for loose or missing parts, cracks, holes, or damage	Loose, missing, or damaged parts found.
				

Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		FUEL TANK		
		WARNING **Do not smoke or use open flame when performing maintenance because fuel may ignite. Failure to observe this warning may result in severe personal injury or death.**		
13	Before	Primary Fuel Tank	Inspect primary fuel tank (1) and nonmetallic tubing (2) are not leaking fuel. Inspect for loose or missing parts or damage.	Broken nonmetallic tubing or leaking fuel. Loose or missing parts or damage.
14	Before	Fuel Tank Assembly	Inspect fuel tank assembly (3) and nonmetallic tubing (4) are not leaking fuel. Inspect for loose or missing parts or damage.	Broken nonmetallic tubing or leaking fuel. Loose or missing parts or damage.
15	Before	Nonmetallic Hose, Hose Adaptor, and Shutoff Screw Cock	Inspect nonmetallic hose (7), hose adaptor (5), and hardware to insure operable with no loose, leaking, or broken nonmetallic hose and hardware. Insure shutoff screw cock (6) is not leaking or damaged.	Leaking fuel from nonmetallic hose, hose adaptor, or hardware. Shutoff screw cock is leaking or damaged.

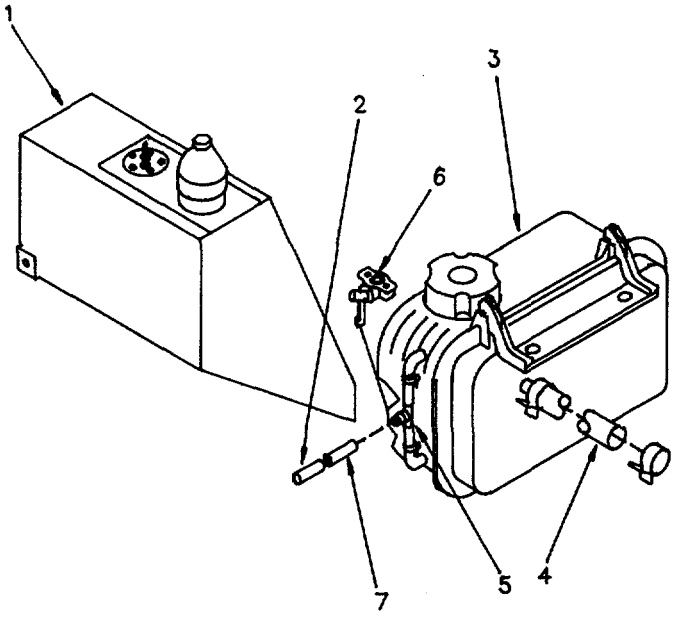


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		BATTERY BOX		
		CAUTION **If battery fluid low, engine may not start because too little electricity is reaching starter motor. Always keep fluid level within upper and lower limits. If too much battery fluid, fluid may spill and corrode surrounding parts.**		
		NOTE **If starter motor is turned for too long, battery will go dead and failure of diesel engine to restart properly will occur. Always leave switch key turned in ON position while diesel engine is running so gages are working.**		
16	Before	Storage Battery and Storage Battery Leads	Check for damage to storage battery and storage battery leads. Check level of fluid in storage battery (1). When level drops to lower mark, replenish with distilled water to upper mark. Inspect storage battery (1) for corrosion of storage battery leads (2). Turn switch key to ON position. Insure power-on light comes on indicating switch key operable.	Storage battery is discharged, has excessively corroded storage battery leads or post, or power-on light does not come on indicating inoperable switch key.

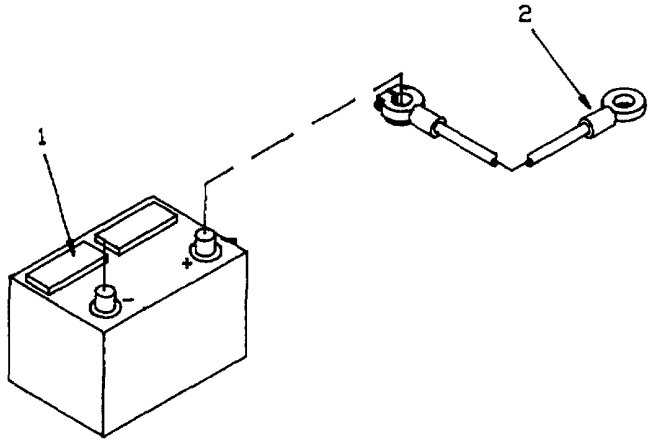


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		COMPRESSOR		
17	Before	Strainer Assembly	Inspect filter element by unfastening body retainer clips (1) and strainer body (2). If filter element (3) is dirty, wipe clean.	Filter element is excessively dirty or has holes.

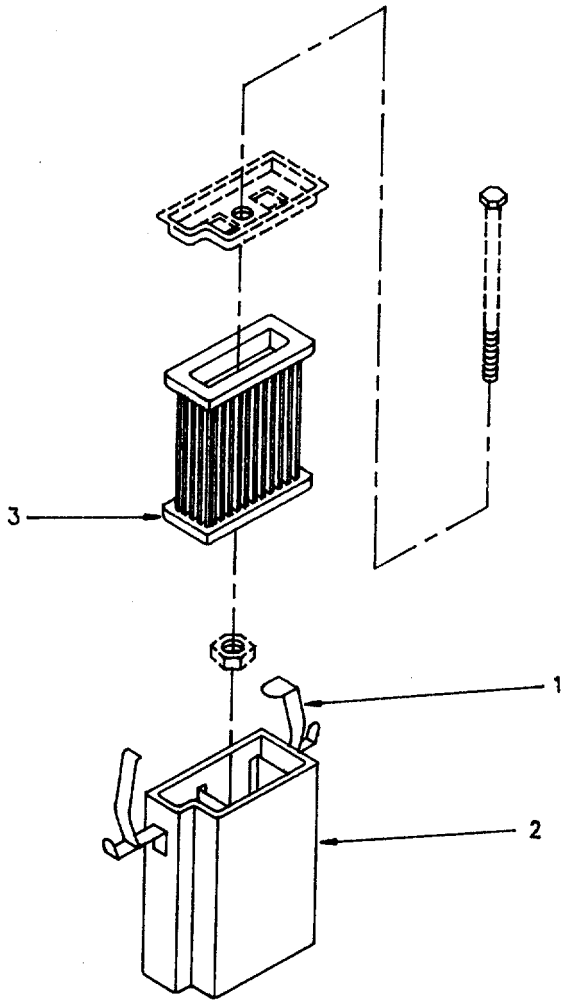


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
			WARNING **Operating compressor with belt guard assembly removed is dangerous. Never operate without belt guard assembly. Failure to observe this warning may result in severe personal injury or death.**	
18	Before	Complete Belt Guard Assembly	Inspect belt guard assembly for broken, loose, or missing parts. Inspect V-belt (1) for damage.	Broken, loose, or missing parts. V-belts are damaged.

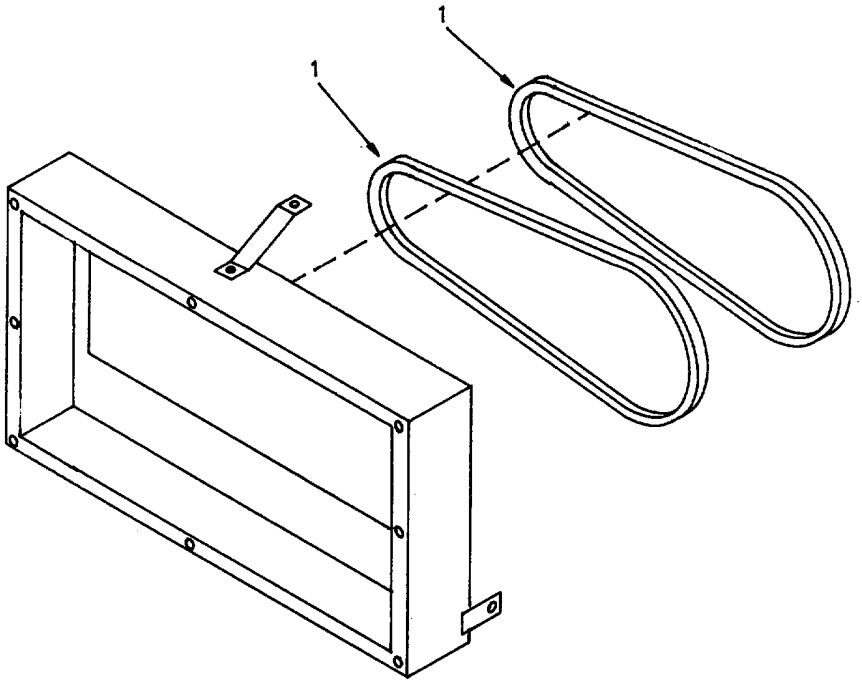


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
19	Before	Pilot Valve and Check Valve	Inspect pilot valve (1) and check valve (2) for breaks or leaks.	Pilot valve or check valve is broken, missing, or has leaks.

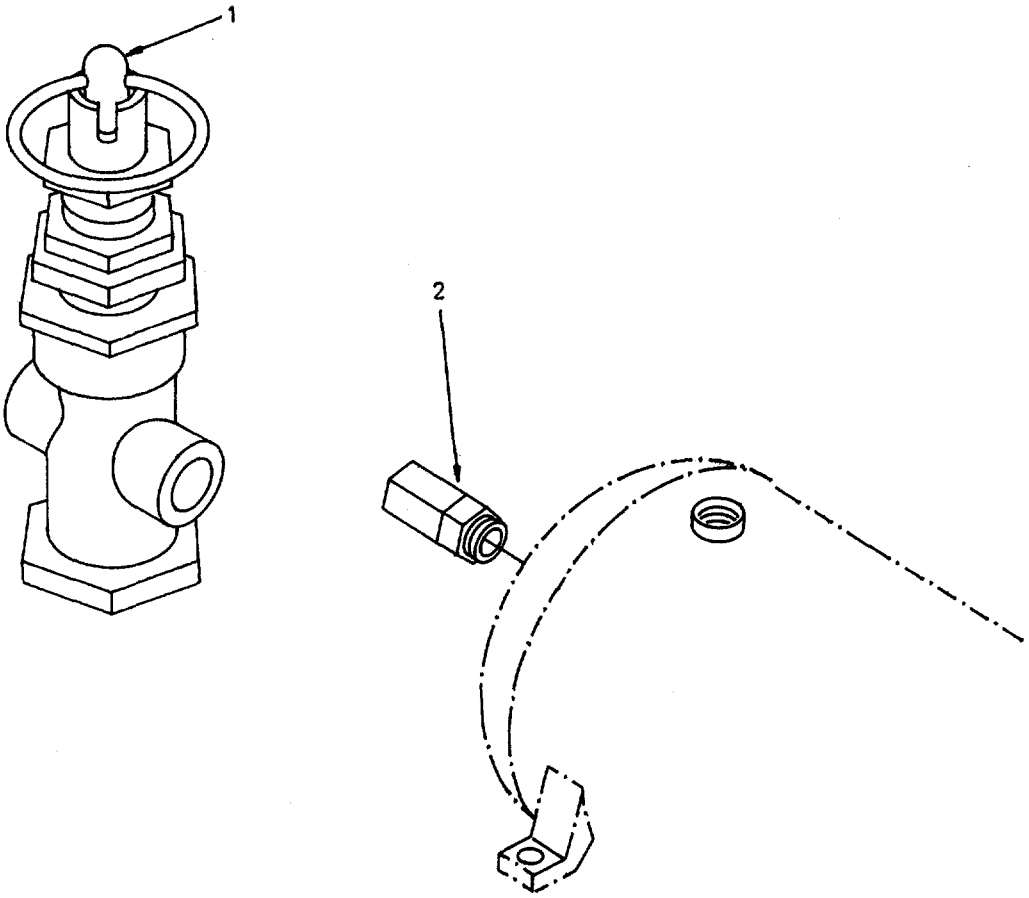
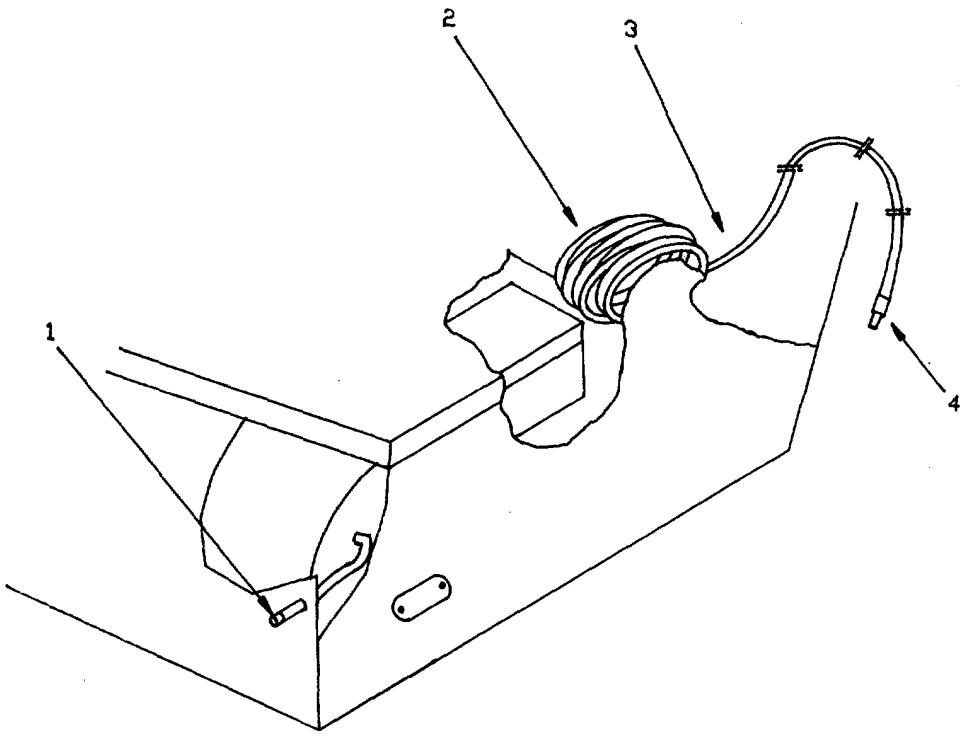


Table 2-3 Operator/Crew Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		EXTERIOR		
20	During	Gages	Insure gages are functioning.	Gages are not functioning.
		INTERIOR		
21	During	Nonmetallic Hose and Hose Adaptor	Inspect nonmetallic hose (2) for cuts, cracks, damage, or leaks and hose adaptor (1) for air leaks and defects.	Defective nonmetallic hose and hose adaptor or excessive air leaks.
		Air Lines and Fittings	Check air lines (3) and fittings (4) for leaks, cracks, or damage.	Lines or fittings leak.
22	During	V-Belt	Inspect V-belt for bouncing or vibrating indicating defective condition.	V-belt bouncing or vibrating is detected.



Section III- OPERATION UNDER USUAL CONDITIONS

2-4 ASSEMBLY AND PREPARATION FOR USE.

2-4.1 Unpackaging the Equipment. The compressor comes complete and does not require unpacking and assembly.

2-4.2 Preparation of Use at Usual Conditions Above 32°F (0°C) and Below 100°F (38°C).

NOTE

The leveling-support jack is for support or for changing tires when no tire jack is available.

a. Engage parking brake assembly (1, Figure 2-4).

b. Adjust leveling-support jack (3) to normal level position.

c. Adjust trailer stabilizer (2) to provide ground contact.

d. Re-crank leveling-support jack (3) to raise trailer frame and stabilize rear supports.

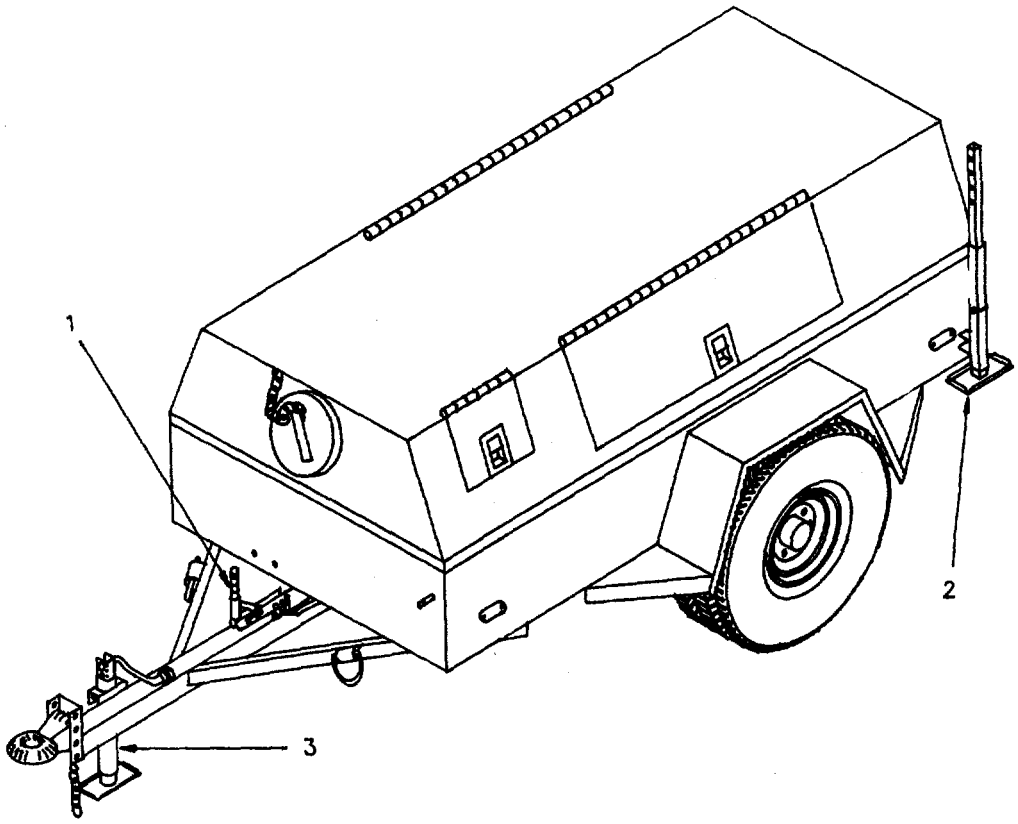


Figure 2-4. Trailer Exterior.

2-4.2.1 Vent Louver Openings.

a. Open vent louvers (1, 2, and 3, Figure 2-5) located at rear of trailer for ventilation.

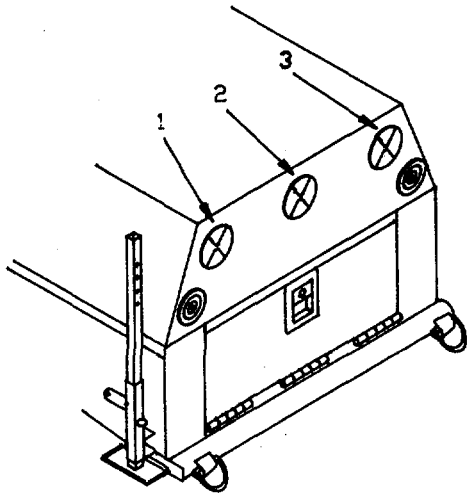


Figure 2-5. Trailer, Rear View.

NOTE

Either heater inlet lid or access doors must be opened for *ventilation* purposes.

b. Remove heater inlet lid (1, Figure 2-6) located in front of trailer. Push and twist counter clockwise to remove heater inlet lid. Place heater inlet lid on top of trailer while in operation. It may also be operated with either access door open without opening heater inlet lid.

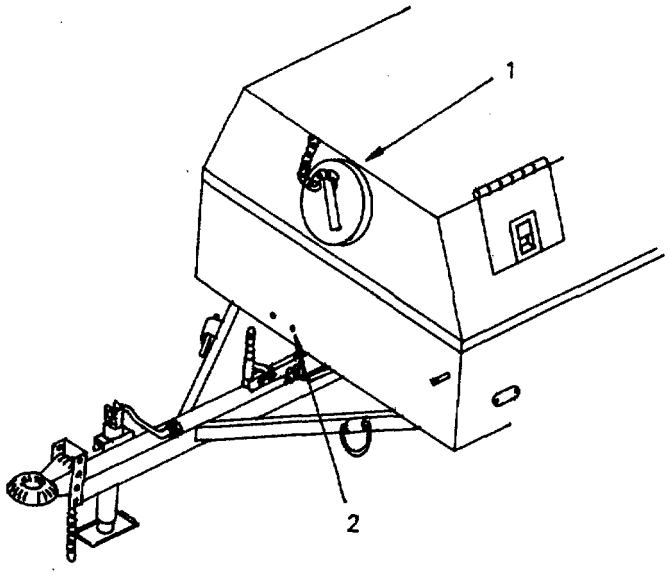


Figure 2-6. Trailer, Front View.

2-5 INITIAL ADJUSTMENTS AND CHECKS.

2-5.1 Special adjustments and checks are not required.

2-6 OPERATING PROCEDURES.

NOTE

If gage shows air pressure, it is important to drain all air tank receiver (2, Figure 2-6) air pressure to 0 psi allowing easy cranking and engine starting.

2-6.1 Preparation for Starting. Open frame control panel access door (1, Figure 2-7) and observe pressure gage (2).

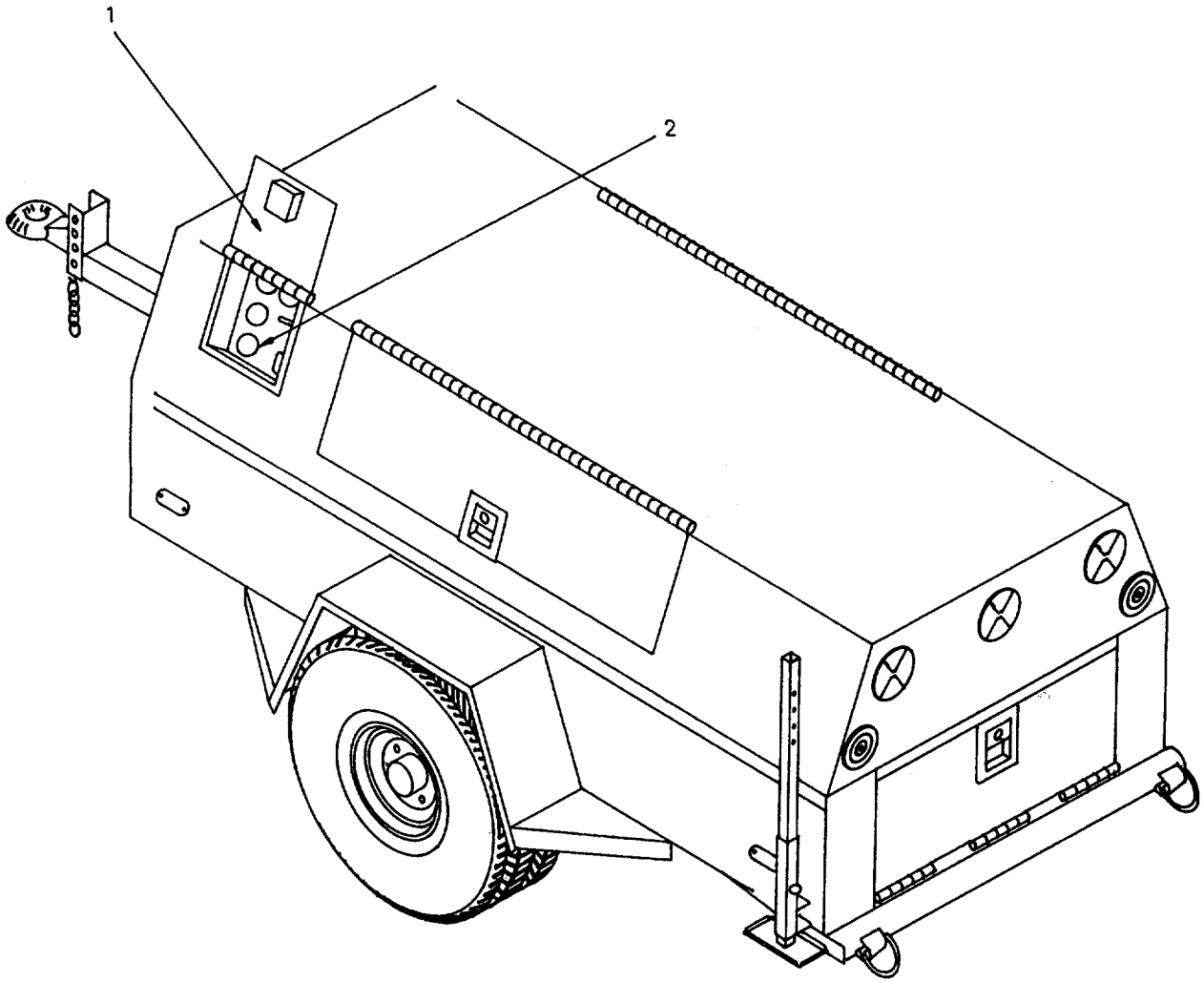


Figure 2-7. Frame Control Panel Location.

2-6.2 Handling the Engine.

CAUTION

Avoid applying any prolonged loads during the initial 20 hours of operation. Damage to engine could occur.

2-6.3 Selection and Handling of Fuel Oil.

WARNING

Refuel in a well ventilated area with engine stopped. Do not smoke or allow flames or sparks in area where engine is refueled or where fuel is stored. Do not overfill fuel tank and insure tank cap is securely closed. Be careful not to spill fuel when refueling. If any fuel is spilled, clean and insure area is dry before starting engine. Flames and explosion may occur. Failure to observe this warning may result in severe personal injury or death.

CAUTION

Make sure that no dust or water is mixed in the fuel when filling the fuel tank from drums. This may lead to serious fuel pump and fuel injection nozzle problems.

CAUTION

Only use recommended fuel (Appendix E, item 17). Use of non-recommended fuel may cause clogging in filter element, fuel pump, or fuel injection nozzle. This clogging often causes sudden engine stops after starting. Fuel substitutes are not recommended; they may be harmful to fuel system components.

2-6.4 Handling the Engine Oil System.

CAUTION

Engine may be damaged if operated with insufficient lube oil. Refer to LO9-4310-396-12. It is also dangerous to supply too much lube oil to engine because a sudden increase in engine rpm could be caused by its combustion. Always check lube oil level before starting engine and refill if necessary.

2-6.5 Use Proper Lube Oil to Preserve Your Engine.

CAUTION

Nothing affects performance and durability of engine more than lube oil used. Refer to LO9-4310-396-12 for correct oil. If inferior oil used or if engine oil is not changed regularly, risk of internal combustion piston seizure, piston ring set sticking, accelerated wear of cylinder liner, ball bearing, and other moving components increases significantly. Engine life may be seriously shortened.

CAUTION

DO NOT overfill. Engine will consume too much oil and oil temperature will become dangerously high. When checking oil level, make sure engine is stopped and sitting level. If it is tilted, you may add either too much or too little oil. If you do not add enough oil, engine could seize up. When checking oil, simply dip rod-cap level gage into engine block. Do not screw in rod-cap level gage.

2-6.6 Handling the Compressor Oil System. Change oil per L094310-396-12.

2-6.7 Starting the Engine by Electric Starting.

WARNING

Never use gasoline, paint thinner, or any volatile liquid as fuel or starting aid. Explosions may occur. Failure to observe this warning may result in severe personal injury or death.

a. Make sure shutoff screw cock (1, Figure 2-8) below fuel tank assembly is in the down position.

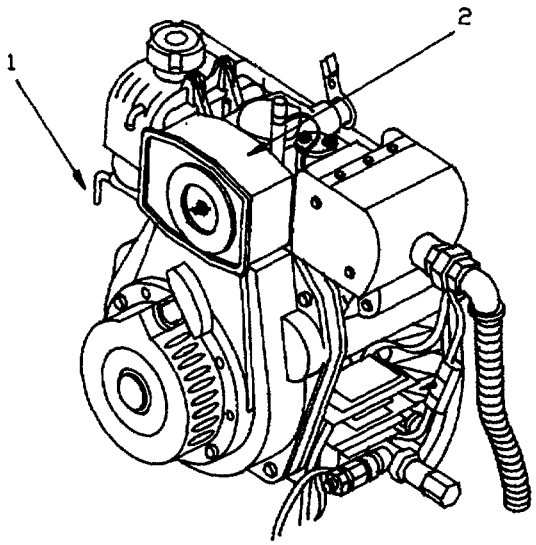


Figure 2-8. Engine Shutoff Screw Cock.

b. Push knob (1, Figure 2-9) located inside frame control panel access door (2) to allow fuel flow.

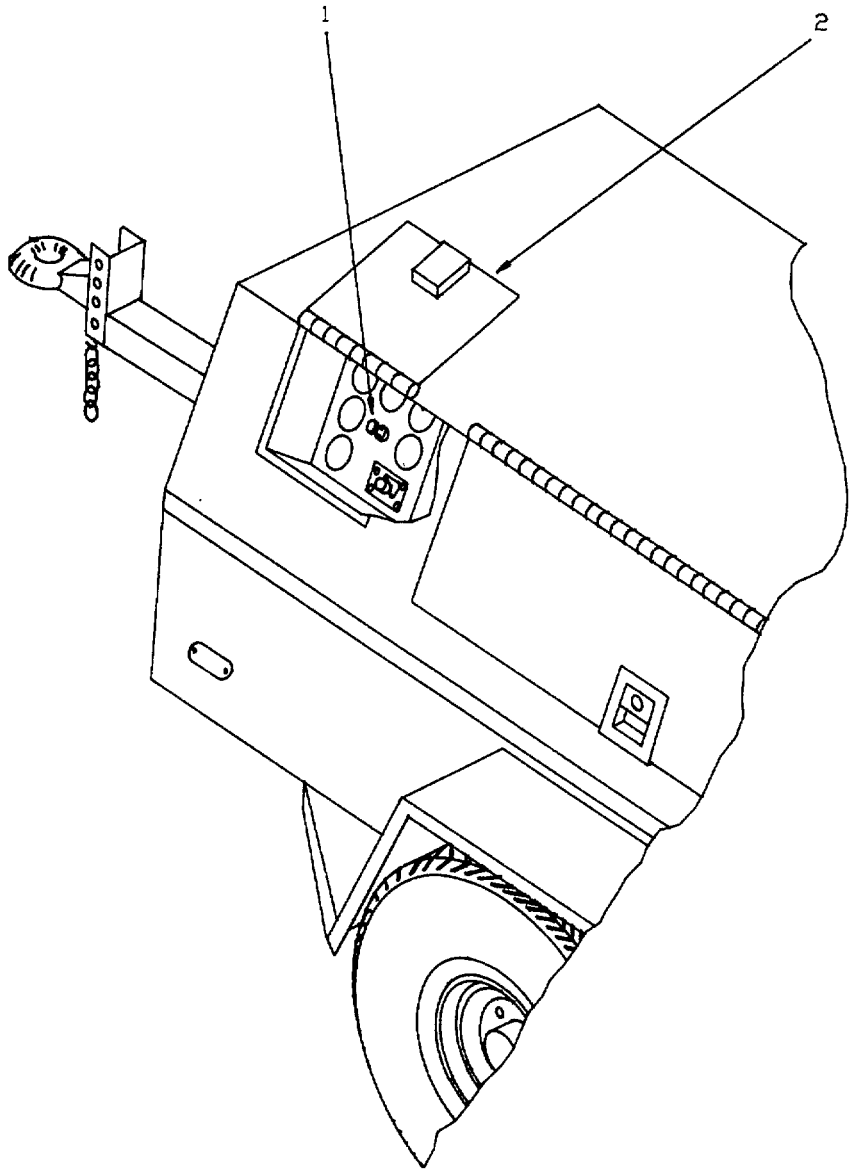


Figure 2-9. Frame Control Panel Knob.

c. Turn switch key to start position.

NOTE

Engine should speed up and compressor start producing air pressure. If engine does not start after 10 seconds, wait approximately 15 seconds before attempting start again.

d. If engine (1, Figure 2-10) does not start, push down remote control lever (2) and try again. Red remote control lever will automatically return upon starting.

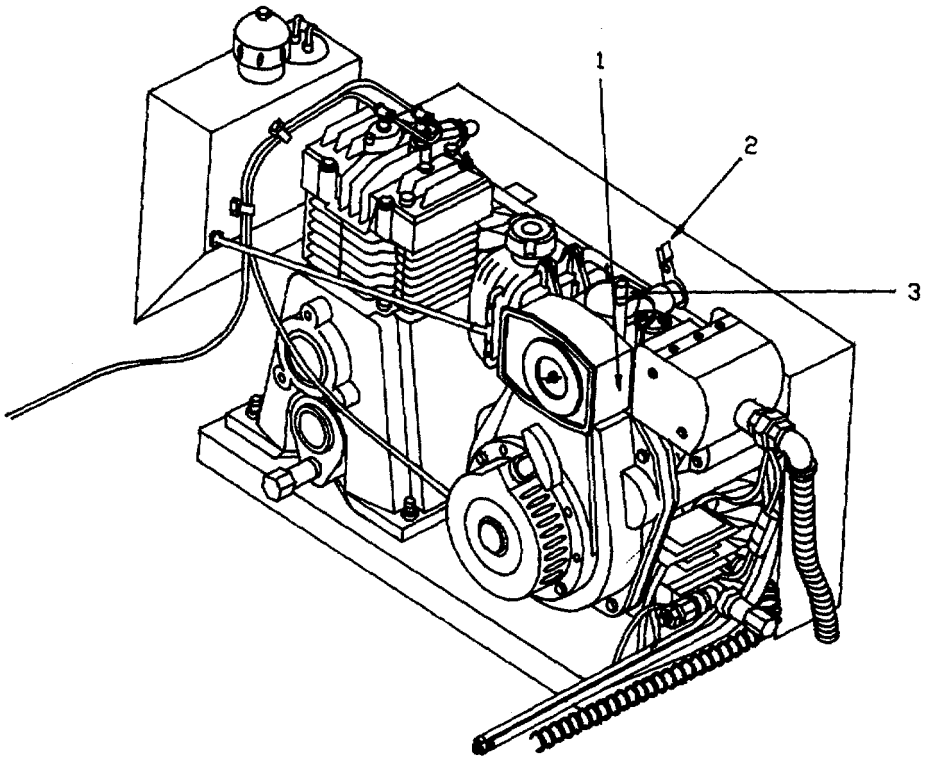


Figure 2-10. **Engine Remote Control Lever**.

2-6.8 Stopping your engine.

CAUTION

When stopping engine, shut off air supply and wait until compressor unloads and engine returns to idle. Do not stop engine suddenly since it may cause the temperature to rise abnormally. Do not stop engine with remote control lever (2, Figure 2-10).

a. Pull knob (1, Figure 2-9) inside frame control panel access door (2) to shut off fuel.

b. Return engine switch key to off position.

2-7 DECALS AND INSTRUCTION PLATES.

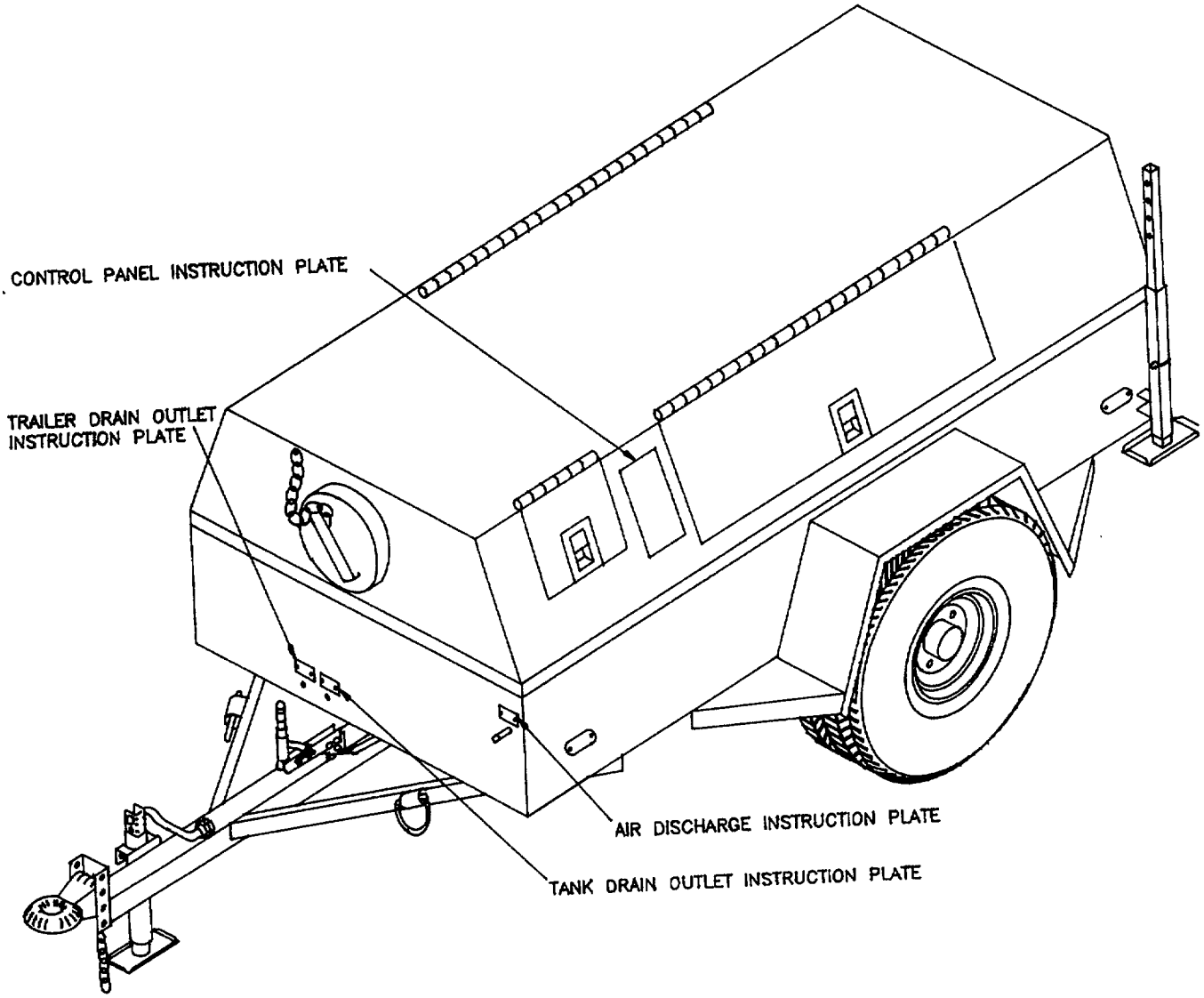


Figure 2-11. Instruction Plates.

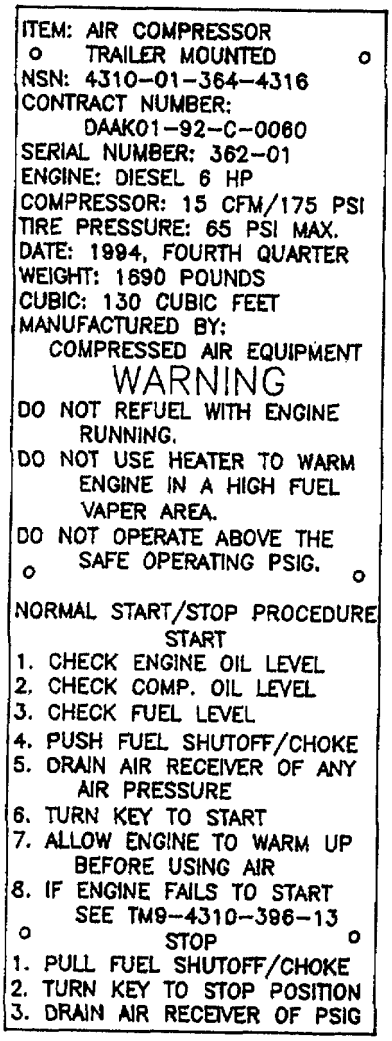


Figure 2-12. Frame Control Panel Instruction Plate.

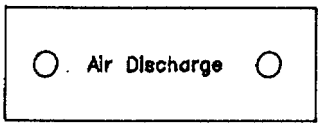


Figure 2-13. Air Discharge Instruction Plate.

Figure 2-14. Tank Drain Outlet Instruction Plate.

Figure 2-15. Trailer Drain Outlet Instruction Plate.

2-8 OPERATING AUXILIARY EQUIPMENT.

2-8.1 Heater.

NOTE

Compressor is designed for operation in cold climates by use of heater. Heater will warm up engine and compressor to allowable temperature. Use model PH400-G heater or equivalent and hook up heater hose to front of compressor. Follow operating instructions on applicable heater instruction plate and heater technical manual.

2-8.2 Air Hose.

a. Compressor is designed for hose adaptor (1, Figure 2-16) in front of trailer base (2).

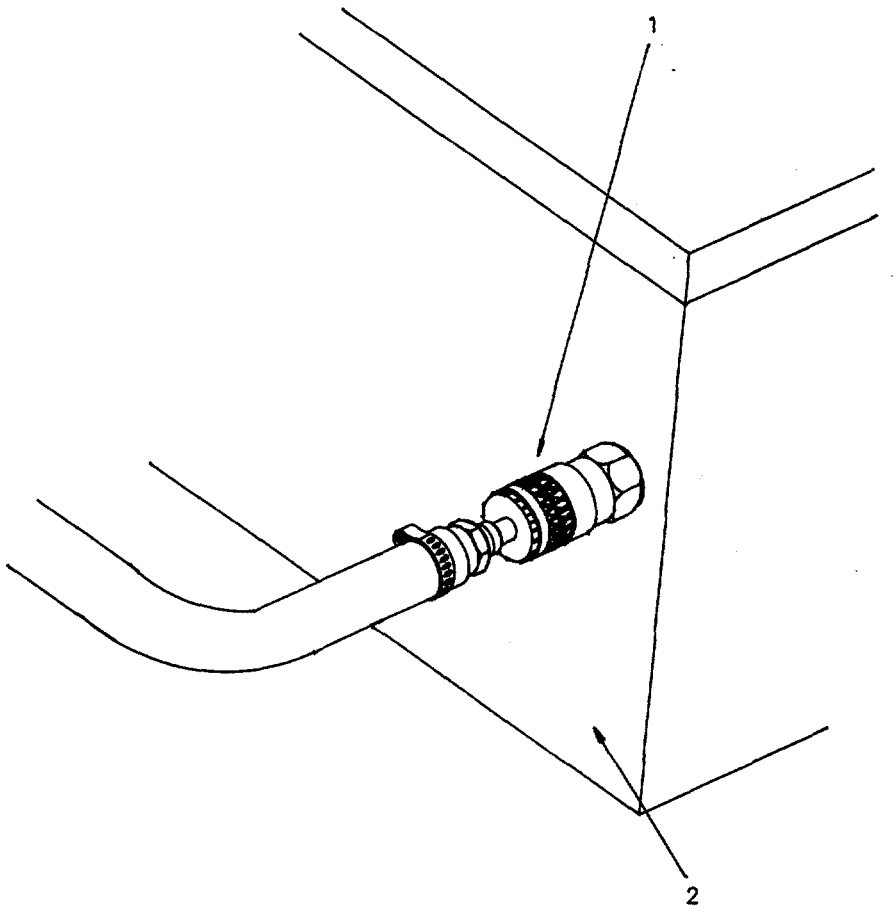


Figure 2-16. Compressor, Air Hose Hookup.

b. Remove nonmetallic hose and fittings from transport location inside trailer base.

c. Push hose adapter (2, Figure 2-17) of nonmetallic hose (1) into hose adapter (3).

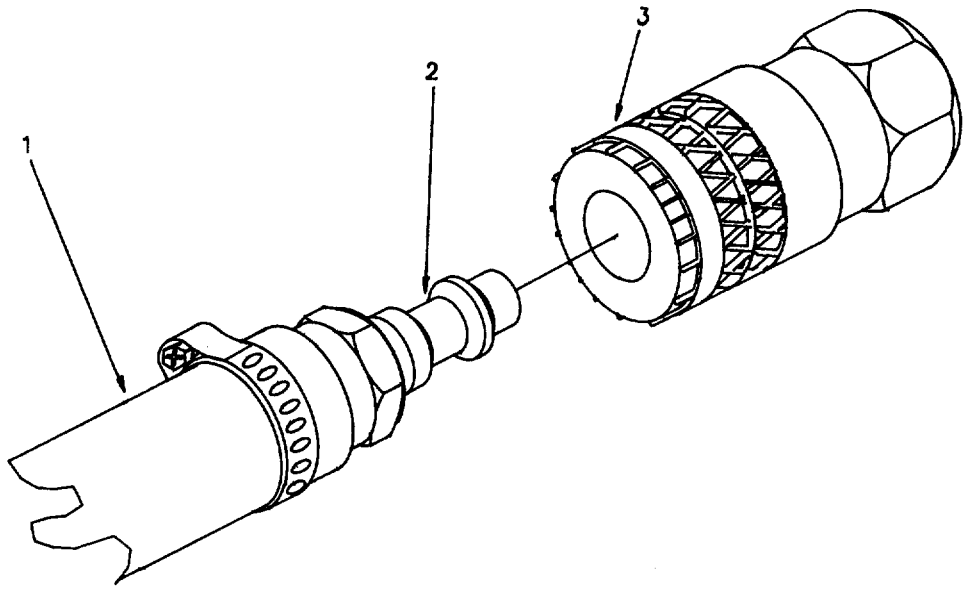


Figure 2-17. Hose Adaptors and Nonmetallic Hose.

d. Tire inflator-gage is attached to other end of nonmetallic hose and is used to inflate or deflate pneumatic tire pressure. To inflate, press lever fully (1, Figure 2-18). To deflate, lift chuck (2) half way. To check pressure, release lever (1).

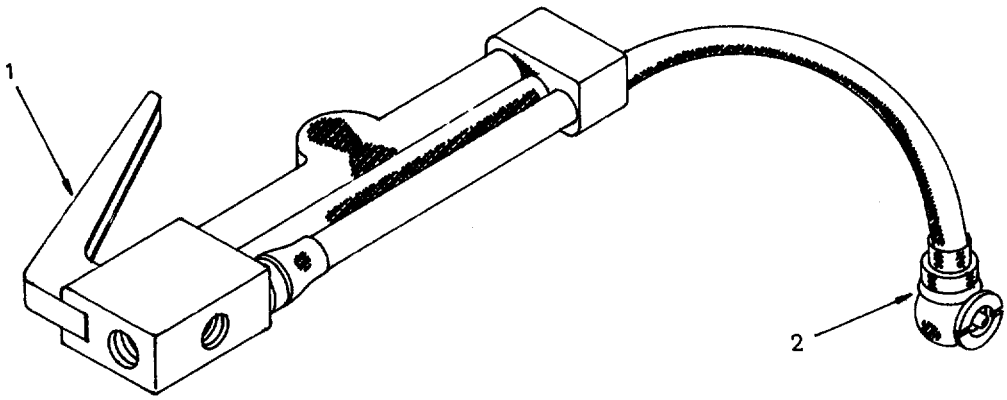


Figure 2-18. Tire Inflator-Gage.

2-9 PREPARATION FOR MOVEMENT.

2-9.1 Preliminary.

WARNING

Do not carry loose or inappropriate tools, equipment, or supplies on or in trailer base. Do not permit personnel to ride in or on trailer base or tongue. Make sure areas behind, in front, and under trailer base are clear of personnel and obstructions prior to moving. Failure to observe this warning may result in severe personal injury or death.

WARNING

Keep hands and feet clear of drawbar coupler and other pinch points to avoid injury. Make sure drawbar coupler is fully engaged, closed, and locked. Hook up safety chains, brake, or electrical connections if provided. Make sure that drawbar coupler and adjacent structures on towing vehicle do not interfere with or restrict motion of trailer base. Failure to observe this warning may result in severe personal injury or death.

CAUTION

Make sure towing vehicle and coupling device are rated to tow a vehicle of at least the net weight of trailer base plus an additional 10% allowance for weight of mud, snow, ice, or stored equipment.

a. Hook up drawbar coupler (1, Figure 2-19) to towing vehicle. Back towing vehicle to trailer base and position it for coupling. Raise tongue to engage drawbar coupler or couple trailer base to towing vehicle. Use leveling-support jack (6) to lift or lower trailer base (5).

b. Retract leveling-support jack (6) to towing position.

CAUTION

Insure chain length, brake and electrical connections provide sufficient slack to prevent strain when maneuvering and are supported to prevent dragging or rubbing which might cause wear rendering them inoperative.

c. Install safety chains (7) to towing vehicle.

d. Insure rear stabilizers (4) are in transport position (fully retracted) and self locking pins are in place.

e. Install electrical plug (2) to towing vehicle.

f. Release parking brake assembly (3).

g. Insure pneumatic tire wheels are not chocked or blocked and all tie-downs are free.

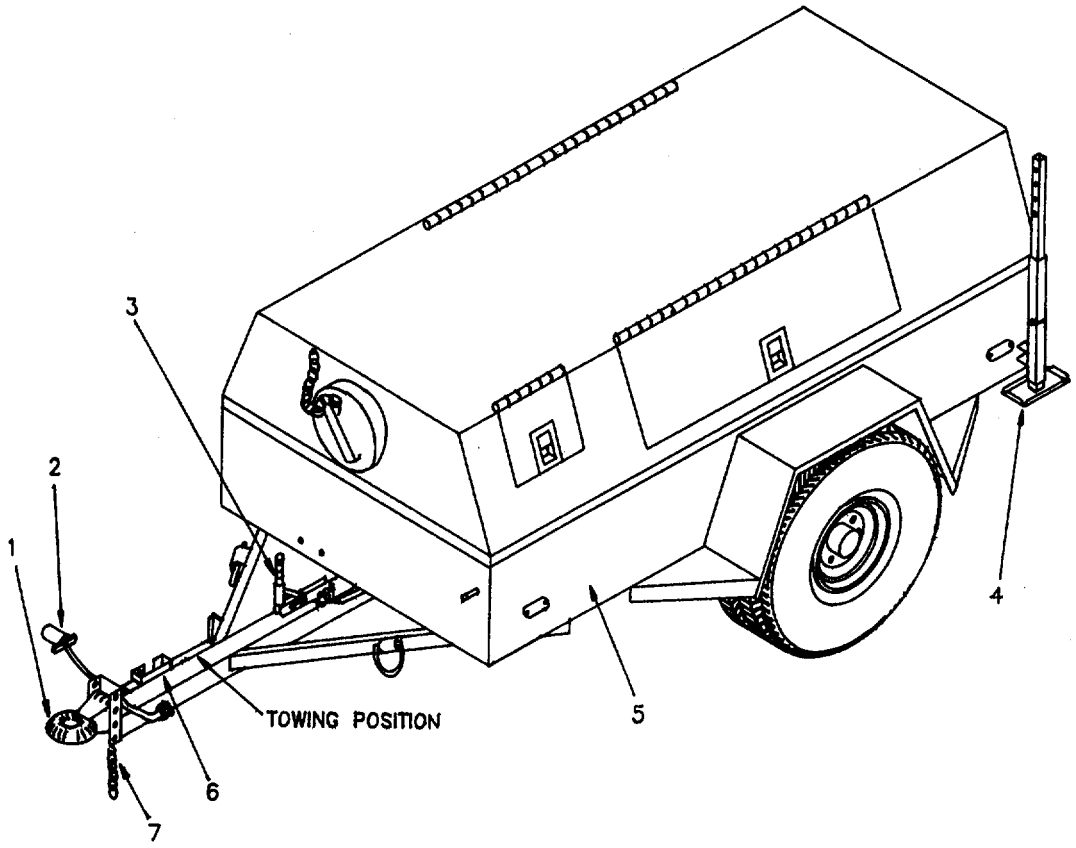


Figure 2-19. Trailer Base. Towing.

2-9.2 Towing. Adjust towing speed for road conditions and allow for increased stopping distances.

CAUTION

Do not exceed legal speeds or maximum towing speeds. Avoid potholes, rocks, obstructions, soft shoulders, or unstable terrain. Maneuver carefully, especially when backing up, to avoid adjacent structures and crimping and binding of tongue and connections. Never tow with over-inflated or under-inflated pneumatic tires.

NOTE

Observe all local and federal traffic laws.

2-9.3 Location and Parking.

CAUTION

Park trailer base on firm level areas and across grade so it does not roll downhill. Do not park trailer base on grades exceeding 15%.

NOTE

Park to avoid interference with traffic.

2-9.4 Tire Inspection.

a. Inspect pneumatic tires for wear, damage, and proper inflation. Refer to Operator/Crew Preventative Checks and Services Table 2-3.

b. Insure plain hexagon nuts on pneumatic tire are tightened in-accordance with TM9-2610-200-14.

2-9.5 Preparations for Unhooking.

a. Set parking brake assembly and disconnect electrical connections.

b. Unhook chains.

c. Lower leveling-support jack and stabilizers. Insure leveling-support jack and stabilizers are securely locked in down position.

d. Use leveling-support jack to raise drawbar coupler from towing vehicle coupling device.

e. Move towing vehicle clear of compressor and set hazard indicators or barricades as appropriate.

Section IV: OPERATION UNDER UNUSUAL CONDITIONS

2-10 GENERAL.

This compressor is designed to operate normally within a wide range of climatic conditions. However, some extreme conditions require special operating and servicing procedures to permit starting and to prevent excessive wear on equipment.

2-11 EXTREME COLD CONDITIONS.

2-11.1 Precautions.

NOTE

Before adding fuel clean ice and snow from tank cap to avoid water in fuel.

a. Keep fuel tank assembly full when not operating to prevent condensation.

b. Use low temperature lubricant in engine and compressor per L09-4310-396-12.

2-11.2 Start Up at Temperatures Below 32°F (0°C). If the engine will not start below 32°F (0°C), the following procedures are applicable.

a. Crank motor starter for 1-2 minutes (reference 2-6.7). Wait 15-20 seconds before attempting to reengage motor starter.

b. If it does not start but storage battery is still turning engine at normal speed, open access door and push remote control lever (2, Figure 2-10) on engine.

c. Remove fuel injection plunger (3). Add 2cc (4-6 drops) of engine oil.

d. Repeat step a., above.

e. If engine still does not start, follow next procedures in paragraph 2-11.3

2-11.3 Start Up at Temperatures Below 20°F (-7°C).

WARNING

Avoid coming in contact with metal with bare skin while in a cold environment. Failure to observe this warning may result in severe personal injury or death.

NOTE

Heater will supply heated air into trailer base which will warm up storage battery, engine, and compressor oil allowing easy start. Heated air should not be applied for more than 30 minutes under coldest condition. In most conditions, warmer than -50°F (-46°C), heater will warm engine enough to start in 10 - 15 minutes.

a. Obtain heater model PH-400-G or equivalent.

b. Remove heater inlet lid (1, Figure 2-20) and place on top of complete top hood assembly.

c. Install heater hose (2) directly to heater inlet adaptor (3).

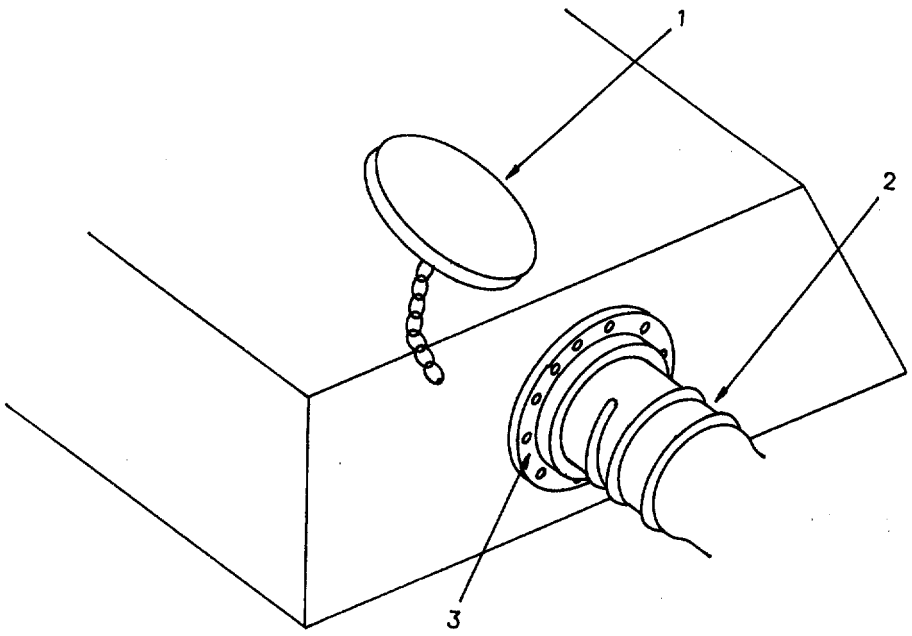


Figure 2-20. Heater Hose and Heater Inlet Adaptor.

d. Open all three vent louvers (1, Figure 2-21) on rear of complete top hood assembly.

e. Close all access doors (2) and latch.

f. Operate heater as directed on applicable heater instruction plate or heater manual.

g. After warm up by use of heater, start engine (reference 2-6.7).

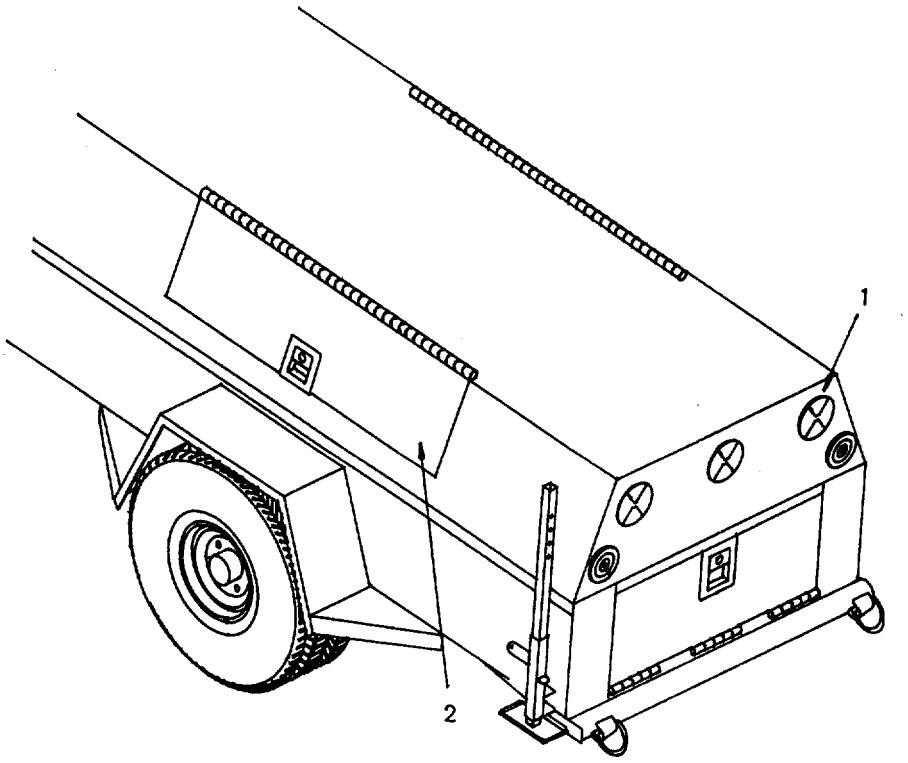


Figure 2-21. Trailer Vent Louvers.

2-11.4 After Starting.

a. If heater was used, shut off heater and remove heater hose from compressor.

b. If gages are operating, return to normal operating procedures. If gages are not operating, shut down engine and refer to PMCS Table 2-3.

2-12 DUSTY OR SANDY AREAS.

CAUTION

When operating in blowing dust or sand, protect compressor frame control panel with tarpaulins as necessary. Be careful not to close off air intakes or vent louvers. Protect fuel supply from dust and dirt contamination. Under extreme conditions, change filter element at least twice the normal frequency of once every six months or 500 hours, whichever comes first. When not operating, close and cover compressor as tightly as possible.

2-12.1 Operation. For startup and shutdown procedures, refer to paragraphs 2-6.7 and 2-6.8.

2-13 EXTREME HOT CONDITIONS.

2-13.1 Operation.

a. If subjected to continually high ambients of 100°F (38°C) or above for any length of time, follow L09-4310-396-12 for engine and compressor lubrication.

NOTE

Access doors will swing and lay on top hood assembly while compressor is operating.

b. In unusually high ambient temperatures of 100°F (38°C) or above it is necessary to provide additional ventilation by opening access doors (2, Figure 2-21) on each side.

2-14 EMERGENCY CONDITIONS.

2-14.1 Engine Starting.

a. If storage battery too low to start engine, engine is equipped with recoil starter.

NOTE

The switch key ON position only gives a light to indicate power on condition.

b. Turn switch key to ON position.

c. Push knob (1, Figure 2-9) located inside frame control panel (2) to allow fuel flow.

d. Open and vent drain valve to 0 air pressure and close.

e. Pull knob and starter rope handle of recoil starter with adequate force to turn engine.

WARNING

Storage batteries give off flammable fumes that can explode. Improper jumper cable connections can cause an explosion. Prevent sparks near storage batteries. Sparks could cause vapors to explode. Do not allow jumper cable ends to contact each other or engine. Do not smoke when observing storage battery electrolyte levels. Always wear protective glasses working with storage batteries. Electrolyte is an acid and can cause personal injury if it contacts skin or eyes. Failure to observe this warning may result in severe personal injury or death.

CAUTION

When using an external electrical source to start engine, turn switch key off and remove switch key. Turn off electrical accessories before attaching jumper cables. When using jumper cables always connect POSITIVE (+) cable to POSITIVE (+) terminal of storage battery and NEGATIVE (-) cable to a convenient location on trailer base. Do not reverse storage battery leads. Always attach ground storage battery lead last and remove ground storage battery lead first. The alternator can be damaged.

CAUTION

When boost starting an engine, refer to para. 2-6.7 to properly start engine. Engine is equipped with 12 VDC starting system. Use only equal voltage for boost starting. Use of higher voltage will damage electrical system.

f. To start engine with jumper cables use 12 VDC, DC battery source.

g. Report to Unit maintenance if these methods are unsuccessful.

CAUTION

Do not allow small items to be drawn into the intake to prevent potential damage to compressor and/or engine.

NOTE

Key switch alone will not stop engine. To stop engine, pull engine knob (1, Figure 2-9) on frame control panel. By pulling knob, fuel will be shut off and engine will stop.

2-14.2 Engine Emergency Shut Off Procedures. If engine knob when pulled as detailed in paragraph 2-6.7 does not stop engine, then as a last resort the operator may do one of the following: a) push remote control lever (2, Figure 2-10) or b) restrict air flow into intake air cleaner (2, Figure 2-8) by placing a cloth over it.

2-15 NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION PROCEDURES

2-15.1 General. In the event nuclear, biological, and/or chemical agents come into contact with the compressor, the operator should cease all contact and report to their immediate supervisor the status. Any decontamination procedures shall be directed by the procedures in Army use by the qualified persons. The following emergency procedures can be performed until field (NBC) decontamination facilities are available. Commander will supervise, assign crew duties, and assist the supporting NBC unit.

2-15.2 Emergency Procedure. If NBC attack is known or suspected, mask at once and continue mission. Follow decontamination procedures. Do not unmask until told to do so.

a. Nuclear Decontamination. Brush fallout from skin, clothing, and equipment with available brushes, rags, and tree branches. Wash skin and have radiation check made as soon as tactical situation permits.

b. Biological Decontamination. Remain masked and continue mission until told to unmask. Use authorized chemical agent detector kit. If exposed by known or suspected agent, clean exposed and personal gear in that order using approved system as soon as tactical situation permits.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

Section I - OPERATOR LUBRICATION INSTRUCTIONS

3-1 GENERAL.

Lubrication methods, procedures, and instructions are included in Lubrication Order LO9-4310-396-12. Reference this manual for complete instructions.

Section II - OPERATOR TROUBLESHOOTING PROCEDURES

3-2 INTRODUCTION.

3-2.1 The Troubleshooting Table 3-1 lists the common malfunctions which you may find during the operation or maintenance of the compressor or its components. You should perform the tests and inspections and corrective actions in the order listed.

3-2.2 This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

3-2.3 Any trouble or corrective action beyond the scope of operator maintenance shall be reported to Unit maintenance.

3-2.4 All procedural instructions assume that the compressor is shutdown before attempting any procedures and that all access doors are opened.

3-2.5 For Operator troubleshooting procedures refer to Table 3-1.

OPERATOR TROUBLESHOOTING TABLE 3-1

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. ENGINE WILL NOT START.

Step 1. Check condition of fuel tank cap vent.

Ensure that vent is open.

Step 2. Check primary fuel tank to insure adequate fuel.

WARNING

Fuel used in operating this compressor is explosive. Do not refuel during operation. Avoid open flame near fuel tank filler neck. Keep cap on fuel tank except during refueling. Failure to observe this warning may result in severe personal injury or death.

Add fuel.

Step 3. Check to see if fuel engine knob is pulled out.

Push in fuel engine knob.

Step 4. Check fuel remote control lever is in normal "up" position.

Raise remote control lever.

Step 5. Condition continues.

Notify Unit maintenance.

OPERATOR TROUBLESHOOTING TABLE 3-1 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

2. ENGINE WILL NOT CRANK.

Step 1. Check all storage battery connections.

If connections are loose, damaged, or corroded, notify Unit maintenance.

Step 2. Turn on switch key.

Power-on light is off or wire harness is broken, notify Unit maintenance.

Step 3. Condition continues.

Notify Unit maintenance.

3. ENGINE OIL PRESSURE IS LOW (LESS THAN 25 PSI).

Step 1. Check engine oil level is full.

Add oil (refer to LO9-4310-396-12).

Step 2. Condition continues.

Notify Unit maintenance.

4. ENGINE OIL TEMPERATURE IS HIGH (ABOVE 150°F/66°C).

Step 1. Check engine oil level is full.

Add oil (refer to LO9-4310-396-12).

Step 2. Condition continues.

Notify Unit maintenance.

5. ENGINE OVERHEATS.

Step 1. Check cooling fins are clean and free of debris.

Clean fins if dirty or caked with debris.

OPERATOR TROUBLESHOOTING TABLE 3-1 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

5. ENGINE OVERHEATS (cont).

Step 2. Check belt guard assembly for debris blocking cooling air flow.

Clean debris.

Step 3. Check oil level.

Add oil (refer to LO9-4310-396-12).

Step 4. Check engine shrouds for proper installation or missing shrouds.

If incorrectly installed or missing, notify Unit maintenance.

Step 5. Condition continues.

Notify Unit maintenance.

6. EXCESSIVE OIL CONSUMPTION.

Notify Unit maintenance.

7. EXHAUST INSIDE TRAILER.

Step 1. Check for plugged discharge hose.

Clear all obstructions from under trailer base exhaust port.

Step 2. Check for discharge hose or exhaust muffler leaks.

Notify Unit maintenance.

8. SEVERE VIBRATION.

Step 1. Check for damage to engine friction clutch assembly and compressor groove pulley.

If engine pulley is damaged or wobbling while compressor is running, notify Unit maintenance.

If compressor groove pulley is damaged or wobbling while compressor is running, notify Unit maintenance.

OPERATOR TROUBLESHOOTING TABLE 3-1 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

9. COMPRESSOR WILL NOT BUILD AIR PRESSURE.

Step 1. Check compressed air disconnect lines, hoses, and tank drain valve.

Insure there are no holes or excessive leaks causing pressure drop.

Step 2. Check to see if the pilot valve is preventing the compressor from loading.

Slightly tap on side or pull ring up (1, Figure 3-1). If pull ring (1) is stuck in manual locking position (2), twist and release.

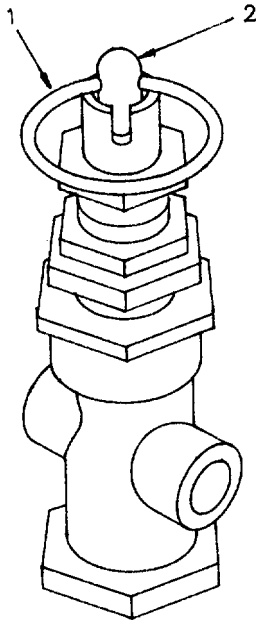


Figure 3-1. Pilot Valve.

Step 3. If subject to freezing temperatures, check if pilot valve is frozen due to internal moisture condensate.

If frozen, notify Unit maintenance.

OPERATOR TROUBLESHOOTING TABLE 3-1 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

9. COMPRESSOR WILL NOT BUILD AIR PRESSURE (cont).

WARNING

Stand free of moving parts and possible pinch points prior to start up and during operation. Do not remove belt guard assembly or operate operate compressor without a belt guard. Failure to observe this warning may result in severe personal injury or death.

Step 4. Check V-belts for vibration or looseness.

Notify Unit maintenance.

Step 5. Condition continues.

Notify Unit maintenance.

10. PRESSURE RELIEF VALVE VENTS OFF CONTINUALLY.

Step 1. Check pilot valve to insure it is operating.

Pull and release ring (1).

Step 2. Inspect check valve.

If venting is continuous, notify Unit maintenance.

Step 3. Condition continues.

Notify Unit maintenance.

11. V-BELTS SLIP.

Step 1. Inspect for worn V-belts.

If V-belts are worn, notify Unit maintenance and proceed to Step 2.

Step 2. Inspect V-belt for vibration or looseness.

Notify Unit maintenance.

OPERATOR TROUBLESHOOTING TABLE 3-1 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

12. PRESSURE GAGE INOPERATIVE.

Step 1. Check for damaged pressure gage.

Report damaged gage to Unit maintenance.

13. ENGINE STALLS AFTER RUNNING.

Step 1. Check primary fuel tank for adequate fuel.

If fuel is adequate, notify Unit maintenance.

Section III - OPERATOR MAINTENANCE PROCEDURES

3-3 GENERAL.

This section contains the step-by-step procedures for performing maintenance for the compressor assembly. Personnel required are listed only if the task requires more than one.

MAINTENANCE OF COMPLETE TOP HOOD ASSEMBLY, FRAME CONTROL PANEL, AND VENT LOUVERS

3-4 SERVICE COMPLETE TOP HOOD ASSEMBLY, FRAME CONTROL PANEL, AND VENT LOUVERS.

This task covers: a. Inspection b. Service

INITIAL SETUP

Tools

None

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Lubricant Spray (Appendix E, item 13)
Rag, Wiping (Appendix E, item 3)

a. Inspection. Refer to PMCS Table 2-3.

b. Service.

(1) Refer to L094310-396-12.

(2) Wipe clean of excess lubricant.

(3) If access doors or vent louvers are inoperable, notify Unit maintenance.

MAINTENANCE OF AIR FILTER ELEMENT

3-5 MAINTENANCE OF AIR FILTER ELEMENT.

This task covers: a. Inspection c. Service
b. Removal d. Installation

INITIAL SETUP

Tools

None

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Solvent, Dry Cleaning (Appendix E, item 2)
Rag, Wiping (Appendix E, item 3).
Filter Element (P/N 114250-12580)

a. Inspection. Refer to PMCS Table 2-3.

b. Removal.

(1) Remove plain wingnut (1, Figure 3-2), seal washer (2), and access cover (3).

(2) Remove filter element (4) from air cleaner case (5).

c. Service.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles or eye protection when blowing solvent from parts. Air pressure should not exceed 30 psi. (2.1 Kg/cm^2). Wear rubber gloves to protect skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C). Failure to observe this warning may result in severe personal injury or death.

(1) Remove buildup of dirt, grease, and debris.

(2) Clean metal parts with clean, soft cloth and cleaning solvent.

NOTE

If inside of filter element appears dirty or outside does not clean well, report to Unit maintenance.

(3) Wipe outside of filter element using clean soft cloth.

d. Installation.

(1) Install filter element (4) into air cleaner case (5).

(2) Install access cover (3), seal washer (2), and plain wingnut (1).

(3) Hand tighten plain wingnut (1).

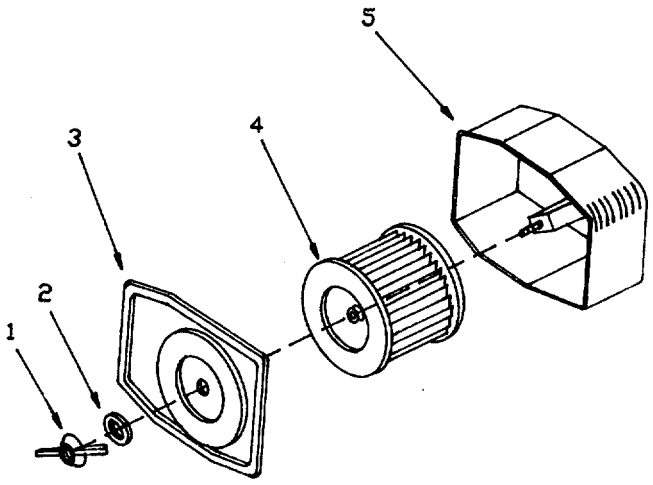


Figure 3-2. Intake Air Cleaner.

MAINTENANCE OF AIR STRAINER ASSEMBLY

3-5 SERVICE STRAINER ASSEMBLY.

This task covers: a. Inspection c. Service
b. Removal d. Installation

INITIAL SETUP

Tools

None

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Rag, Wiping (Appendix E, item 3).

a. Inspection. Refer to PMCS Table 2-3.

b. Removal.

(1) Release latch clips (1, Figure 3-3) on strainer body (2) from compressor intake.

(2) Remove filter element (3) from strainer body (2).

c. Service.

(1) Clean and wipe dry inside of strainer body (2).

NOTE

To replace filter element, notify Unit maintenance.

(2) Gently wipe clean filter element (3).

d. Installation.

(1) Install filter element (3) into strainer body (2).

(2) Install strainer body (2) to compressor intake.

(3) Install latch clips (1) on strainer body (2).

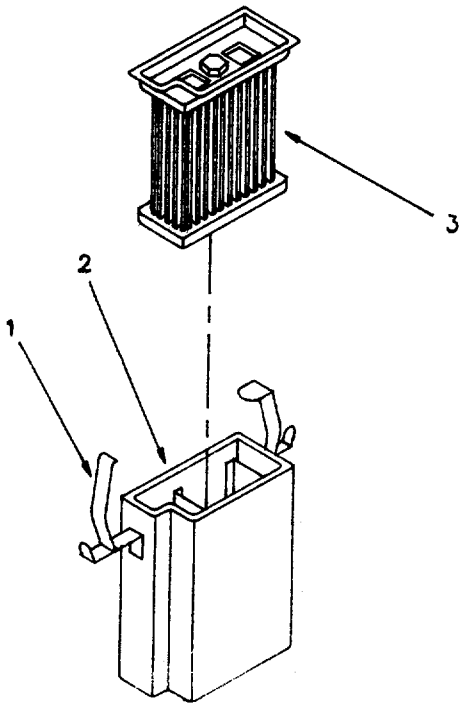


Figure 3-3. Strainer Assembly.

CHAPTER 4
UNIT MAINTENANCE INSTRUCTIONS

CHAPTER 4

UNIT MAINTENANCE INSTRUCTIONS - continued

Section I - UNIT LUBRICATION INSTRUCTIONS

4-1 LUBRICATION METHODS.

4-1.1 Unit Level Lubrication. Refer to Lubrication Order LO9-4310-396-12.

Section II - REPAIR PARTS; TOOLS; SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE) AND SUPPORT EQUIPMENT

4-2 GENERAL.

4-2.1 Modified Table of Organization and Equipment. Refer to the MTOE for authorized common tools and equipment.

4-2.2 Test, Maintenance, and Diagnostic Equipment. The TMDE and support equipment include standard equipment found in any Unit maintenance shop.

4-2.3 Repair Parts and Special Tools List. The RPSTL is listed and illustrated in TM9-4310-396-23P covering Unit and Direct Support, and repair parts and special tools required for this equipment.

4-3 COMMON TOOLS AND EQUIPMENT.

4-3.1 Authorized Common Tools and Equipment. Refer to the MTOE applicable to your unit.

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

4-4.1 Special Tools. No special tools and equipment are required to maintain the air compressor at the Unit maintenance level.

4-5 REPAIR PARTS.

4-5.1 Unit and Direct Support Maintenance Repair Parts and Special Tools List. Repair parts are listed and illustrated in TM9-4310-396-23P.

Section III - SERVICE UPON RECEIPT

4-6 UNLOADING AND PREPARATION.

4-6.1 Unloading Procedure. The compressor/trailer is shipped without a shipping crate. Unload as follows:

a. Chock wheels of transport vehicle.

b. Remove all blocking and tiedowns securing compressor/trailer to transporting vehicle.

WARNING

Keep all non-essential personnel clear of area. Failure to observe this warning may result in severe personal injury or death.

WARNING

Do not allow compressor/trailer to swing while suspended from a lifting device. Unload on a level surface. Failure to observe this warning may result in severe personal injury or death.

WARNING

Keep trailer bed and ramps clean of clay, oil, and all materials which can become slippery. Failure to observe this warning may result in severe personal injury.

CAUTION

Use care in handling to avoid damage to compressor. If an overhead lifting device must be used, use appropriate sling so that weight of compressor/trailer is balanced. Use extreme care when unloading.

CAUTION

If ramps are used, use ramps of adequate size and strength, low angle, and proper height to avoid damage to compressor/trailer.

c. Use a forklift or other suitable lifting equipment to move compressor/trailer from the transportation vehicle.

4-7 RECEIVING INSPECTION.

4-7.1 Compressor Receiving Inspection. Perform receiving inspection in the following manner:

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report damage on DD Form 6, Packaging Improvement Report and any freight damage forms as applicable.

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA PAM 738-750.

c. Check to see whether the equipment has been modified in any manner.

4-8 PREPARATION FOR OPERATION.

a. The procedure for operation will consist of understanding the compressor functions and equipment characteristics. Follow Chapter 1, Section II and Section III.

b. Before operating, be thoroughly familiar with Chapter 2.

c. Change any preservative oil and fuels according to all lubrication instructions contained within LO9-43 10-396-12.

Section IV - UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-9 INTRODUCTION.

4-9.1 Preventive Maintenance Checks and Services. PMCS are essential to ensure that the compressor is ready for operation at all times. The purpose of a preventive maintenance program is to discover and correct defects and deficiencies before they can cause serious damage or complete failure of the equipment. Any effective preventive maintenance program must begin with the indoctrination of operators to report all unusual conditions noted during daily checks or actual operation to Unit maintenance. All defects and deficiencies discovered during maintenance inspections must be recorded, together with corrective action taken, on DA Form 2404 (Equipment Inspection and Maintenance Worksheet).

4-9.2 Schedule for Unit Preventive Maintenance Inspection and Service. A schedule should be established immediately after startup of the compressor.

4-9.3 Preventive Maintenance Checks and Services. Refer to Table 4-1 for PMCS which shall be performed at specified intervals by Unit maintenance personnel. Following is the columnar headings, codes, and locations designations used in the table.

4-9.3.1 Item Number Column. Item numbers are assigned consecutively to each check or service task. These numbers are to be used as a source of item numbers for the TM Number column on DA Form 2404, Equipment Inspection, and Maintenance Worksheet in recording results of PMCS.

4-9.3.2 Interval Column. The interval columns are divided into two categories: Weekly and Monthly.

4-9.3.3 Location. Item To Check/Service Column. This column lists the item to be checked or serviced, and the location of the item within the equipment such as "Exterior", "Interior", "Engine", or "Compressor".

4-9.3.4 Procedure Column. The procedure is described by which the check or service is to be performed. Illustrations are included to assist in locating the part of the equipment requiring the check or service.

4-9.3.5 Not Fully Mission Capable If: Column. Entries in this column are keyed specifically to the procedure column. A condition that causes the covered equipment to be less than fully ready to perform its assigned mission.

4-9.3.6 Other Table Entries. Be sure to observe all special information and notes that appear in the table.

WARNING

Before performing PMCS, allow sufficient time for compressor to cool. Failure to observe this warning may result in severe personal injury.

NOTE

All procedural instructions assume that the hoods are raised or have been removed if necessary for access.

4-9.4 Air Compressor Assembly Maintenance. The best way to maintain the air compressor assembly is to inspect on a regular basis so minor faults can be discovered and corrected before they result in serious damage, failure, or injury. This section contains systematic instructions for inspection, adjustment, and correction of the compressor components to avoid costly repairs or major breakdowns.

4-9.4.1 Shortcomings. Report shortcomings on DA Form 2404, Equipment Inspection and Maintenance worksheet, immediately after the PMCS and before taking corrective action. They will also be reported in the equipment log.

4-9.4.2 Troubleshoot. If something does not work, troubleshoot it with the instructions in your manual or notify your supervisor.

4-9.4.3 Order Your Preventive Maintenance. Always do your PREVENTIVE MAINTENANCE in the same order.

4-9.4.4 Repairs/Adjustments. If anything looks wrong and you can not fix it, write in on your DA Form 2404. If you find something seriously wrong, report it to your supervisor RIGHT NOW.

4-9.4.5 Tools. When you do your PREVENTIVE MAINTENANCE, take along the tools you will need to make all the checks. Take along a wiping rag (Appendix E, item 3). You will always need at least one.

4-9.4.6 Clean Work Area. Keep work areas clean. Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (Appendix E, item 2) on all metal surfaces. Use soap and water when you clean rubber or plastic material.

4-9.4.7 Hardware/Welds/Electrical Connections. Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition. You cannot try them all with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it or report it to your supervisor if you cannot tighten it. Look at welds for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor. Look at electrical wiring for cracked or broken insulation, bare wires, and loose or broken connections. Make sure wires are in good shape.

4-9.5 Unit PMCS Table. Refer to Table 4-1 for Unit preventive maintenance checks.

Table 4-1 Unit Preventive Maintenance Checks and Services

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		EXTERIOR		
		TRAILER		
1	Semiannually	Pneumatic Tire Wheels, Vehicular Wheel Hubs, and Bearings	Inspect every 6 months. Remove pneumatic tire (2) by removing plain hexagon nuts (1). Remove grease cap plug (3) and grease cap (4). Bend key washer (6) tab away from castellated nut (5). Remove castellated nut (5), key washer (6), flat washer (7), bearing cone (8). Remove vehicular wheel hub (9), grease seal (10), and bearing cone (11). Inspect bearing cone (8), bearing cone (11), bearing cup (12), and bearing cup (13). If damage is found, replace bearing cups and bearing cones as necessary. Repack with grease (Appendix E, item 4). Reinstall (para. 4-34).	Pneumatic tire wheels and vehicular wheel hubs make noise; bearings worn or damaged.

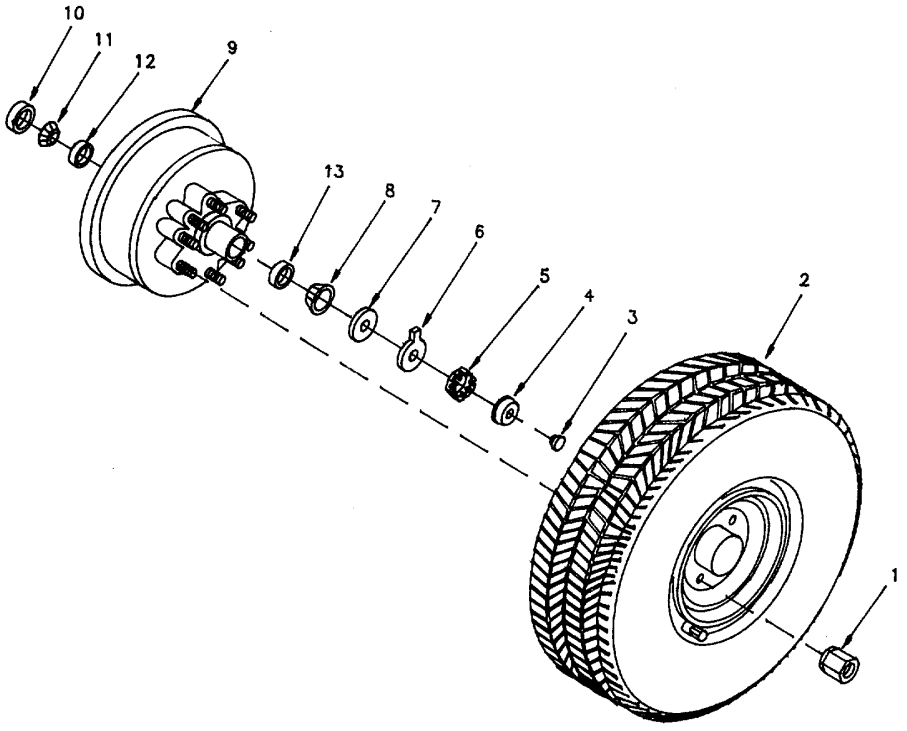


Table 4-1 Unit Preventive Maintenance Checks and Services continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
		9.5		
		ENGINE		
2	Weekly	Engine and Related Parts	Remove grille of complete belt guard assembly (para. 4-14). Check friction clutch assembly (2) for cracks and tightness of cap screws.	Cracks or loose cap screws.
			Inspect diesel cylinder head (1) for secure mounting. Inspect gasket for leaking oil on engine head or sides.	Loose diesel cylinder head or gasket, oily motor block.
			Check mounting hardware (3) for secure mounting and damage. Tighten loose hardware. Replace damaged hardware.	Loose or missing hardware.

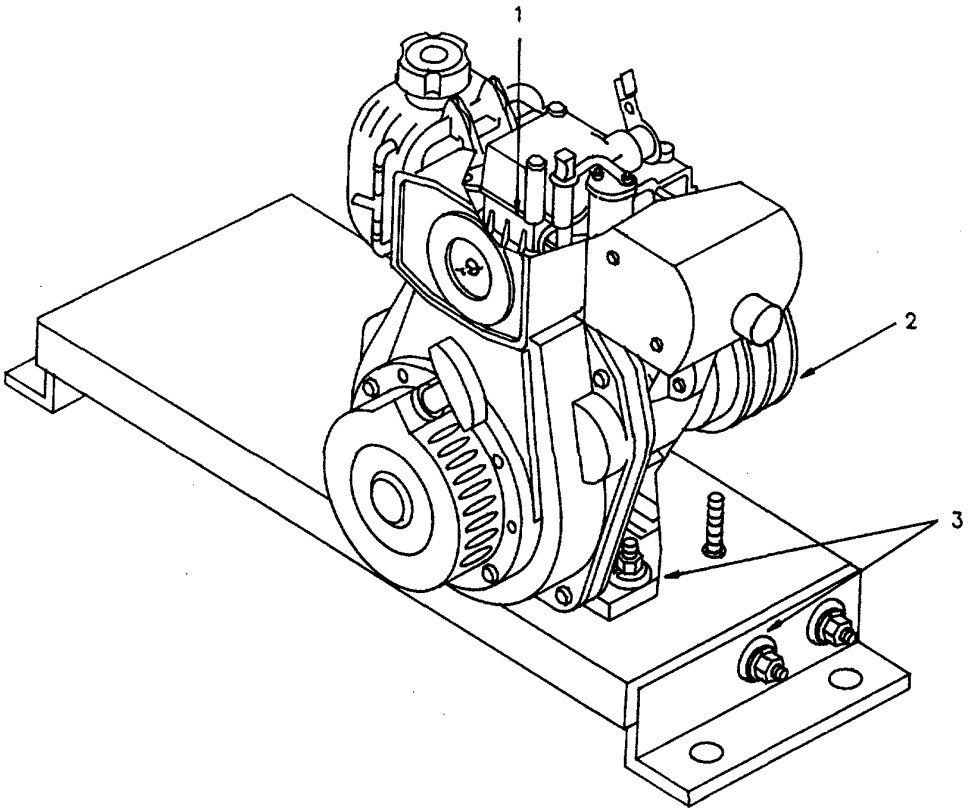


Table 4-1 Unit Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
3	Monthly	Engine Starter Motor/Controls	Check starter motor (1) for loose or missing mounting hardware and loose or disconnected electrical connections. Check for loose or disconnected electrical connections on switch key (2).	Loose or missing hardware or connections found. Loose or disconnected electrical connections found.

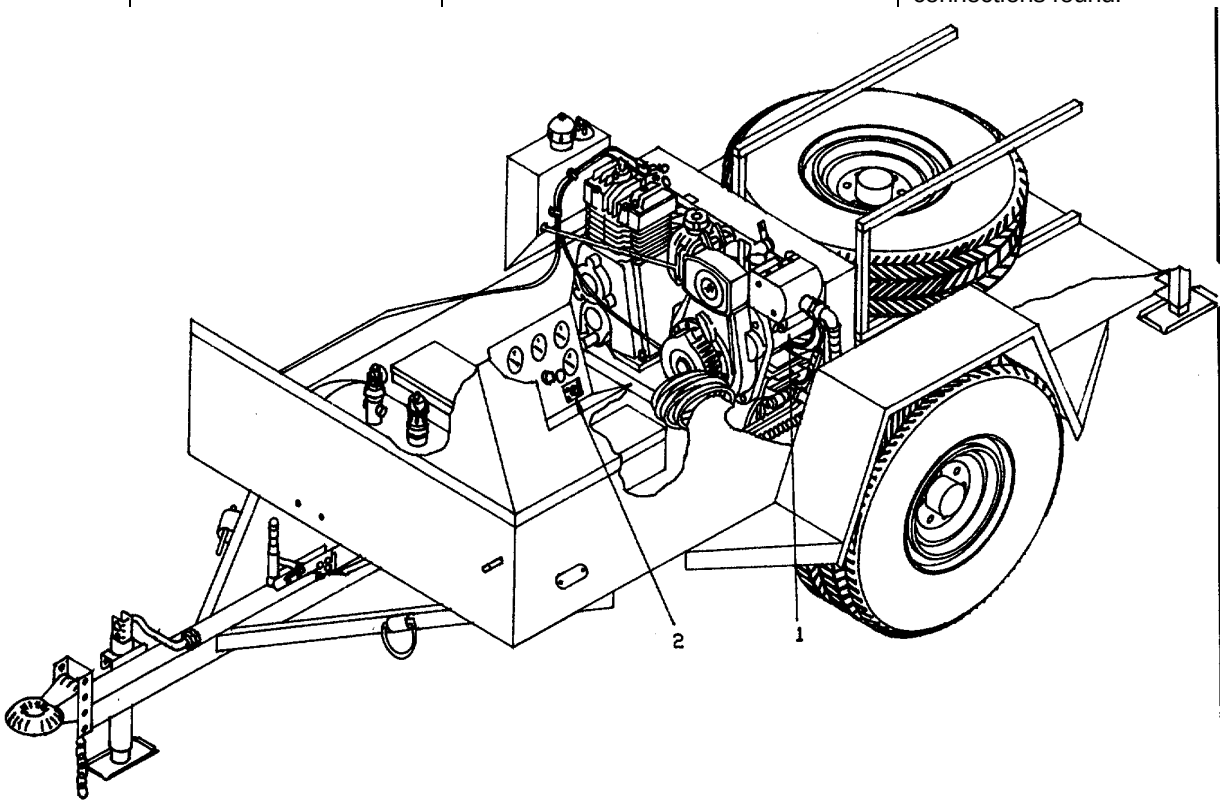
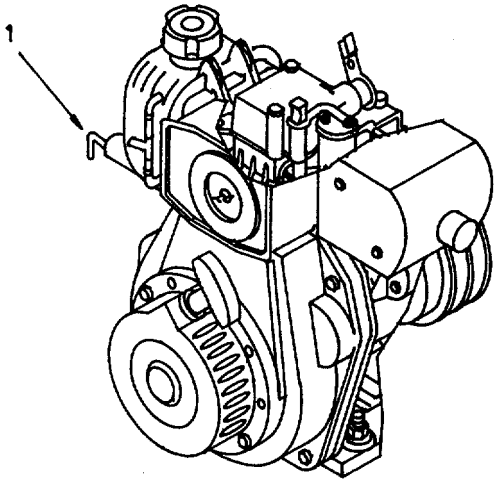


Table 4-1 Unit Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
4	Monthly	Shutoff Screw Cock	Insure shutoff screw cock (1) is not leaking, missing, or damaged. Service or replace as necessary (para. 4-22).	Shutoff screw cock leaks, missing, or is damaged.



WARNING

Stand free of moving parts and possible pinch points prior to start up and during operation. Do not operate without belt guard assembly. Failure to observe this warning may result in severe personal injury or death.

5	Monthly	V-Belts	Remove grille of complete belt guard assembly and check for torn, frayed, and proper tension of V-Belts (1). Deflection should be 1/4 to 1/2 inch (6.35 to 12.7 mm) at midpoint between pulleys (2). Tighten V-belts to this tolerance if loose. Replace V-belts if torn or frayed (para. 4-15).	V-belts are damaged or excessively loose.

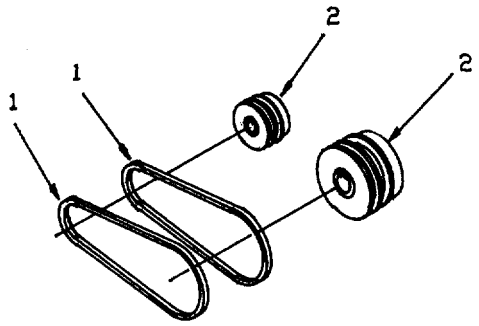
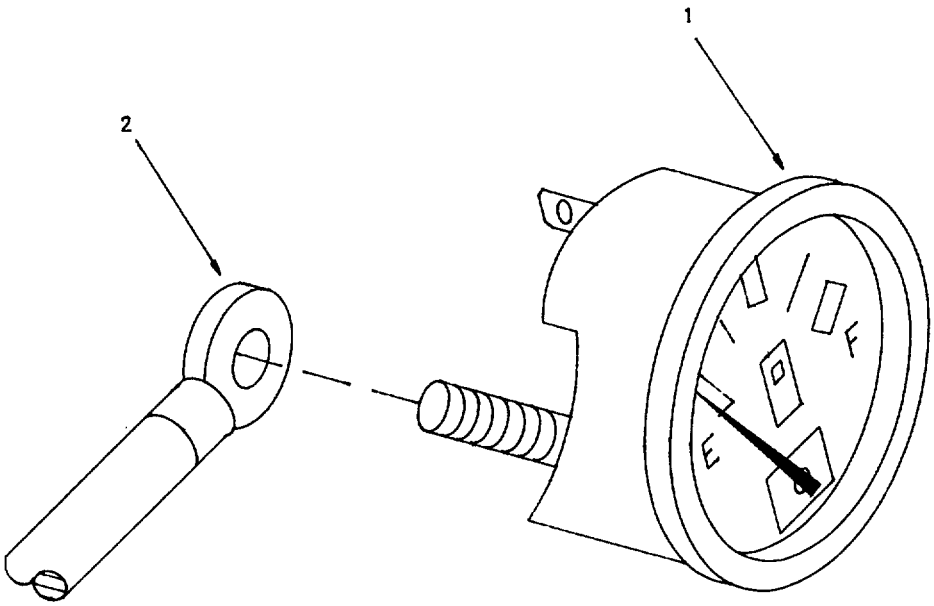


Table 4-1 Unit Preventive Maintenance Checks and Services - continued

Item No.	Interval	Location Item to Check/Service	Procedure	Not Fully Mission Capable if:
6	Monthly	Liquid Level Gage	Inspect liquid level gage (1) for broken, cracked glass cover, and loose or broken wire (2). Replace. (para. 4-29).	Liquid level gage broken, cracked, or damaged.
				
7	Annually	FUEL SYSTEM Fuel Tank Assembly	Service fuel filter element (para. 4-22).	

Section V - UNIT TROUBLESHOOTING PROCEDURES

4-10 INTRODUCTION.

4-10.1 This section contains troubleshooting information for locating and correcting most of the operating troubles which are the responsibility of Unit maintenance. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine probable causes and corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

4-10.2 This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed, or is not corrected by listed corrective actions, notify your supervisor.

4-10.3 Table 4-2 lists the common malfunctions which you may find during the operation or maintenance of the compressor or its components. You should perform the tests/inspections and corrective actions in the order listed.

WARNING

Fuel used in operating this compressor is explosive. Do not refuel during operation. Avoid open flame near fuel tank filler neck. Keep fuel cap in place except to refuel. Failure to observe this warning may result in severe personal injury or death.

NOTE

Before you use this table, be sure you have performed all applicable operating procedures. All procedural instructions assume that access doors are raised or top hood assembly and access doors have been removed.

4-10.4 Refer to Unit Troubleshooting Table 4-2 for help to correct trouble in the equipment.

UNIT TROUBLESHOOTING TABLE 4-2

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. SPEED SLOWS DOWN.

Step 1. Check engine speed control cylinder assembly adjustment.

If setting is abnormal, correct setting.

If setting is normal, replace engine.

2. SEVERE VIBRATION.

Step 1. Check for damaged friction clutch assembly and groove pulley .

If friction clutch assembly or groove pulley is damaged, replace.

Step 2. Observe friction clutch assembly and groove pulley while compressor is running.

If friction clutch assembly is wobbling, replace.

If condition continues, replace engine.

If groove pulley is wobbling, replace.

If condition continues, replace compressor.

If condition continues, notify Direct Support maintenance.

3. LITTLE OR NO AIR PRESSURE BUILDUP.

Step 1. Check drain valve is open or leaking.

If drain valve open, or leaking, close drain valve.

If drain valve is leaking, replace.

If drain valve is not open or leaking, proceed to step 2.

Step 2. Inspect for leaks in pressure relief valve.

Pull out ring and release, pressure relief valve should seal.

If pressure relief valve is leaking or defective, replace.

If pressure relief valve is not leaking or defective, proceed to step 3.

UNIT TROUBLESHOOTING TABLE 4-2 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

3. LITTLE OR NO AIR PRESSURE BUILDUP (cont).

Step 3. Check for leaking or broken tubing.

If tubing is defective, replace.

If malfunction continues, notify Direct Support maintenance.

4. GAGES INACCURATE.

Step 1. Check for damaged gages.

Replace damaged gages.

Step 2. Check for loose or broken wire, or terminal lug on electrical gages.

Replace damaged parts as necessary.

Step 3. Check for damaged, leaking, or broken tubing on mechanical gages.

Replace damaged tubing.

If condition continues, notify Direct Support maintenance.

5. EXCESSIVE OIL CONSUMPTION.

Step 1. Check for oil leaks.

Notify Direct Support maintenance.

6. PRESSURE WILL NOT BUILD TO OPERATING PRESSURE.

Step 1. Inspect for worn V-belts.

If V-belts are worn, replace.

Refer to PMCS Table 4-1, item 5.

If V-belts are not worn, proceed to step 2.

Step 2. Inspect for proper V-belt tension.

If V-belt tension is improper, adjust.

UNIT TROUBLESHOOTING TABLE 4-2 - continued

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

7. ENGINE OVERHEATS.

Step 1. Check for oil level in diesel engine block, cooling fins dirty or caked with debris, engine shrouds properly installed.

If oil level is low, add oil.

If cooling fins are dirty or caked with debris, clean.

If shrouds are incorrectly installed or missing, install correctly.

If condition continues, notify Direct Support maintenance.

8. ENGINE WILL NOT CRANK.

Step 1. Check storage battery status.

If storage battery is low, place on charger or replace if required.

Step 2. Check for proper operation of engine switch key.

If engine switch key is defective, replace engine switch key.

If engine switch key is not defective, proceed to step 3.

Step 3. Loosen V-belt and try to turn compressor by hand.

If compressor does not turn, replace compressor.

If compressor turns, notify Direct Support maintenance.

Section VI - UNIT MAINTENANCE PROCEDURES

4-11 GENERAL INSTRUCTIONS.

Maintenance instructions in this section will list resources required, personnel required, and equipment condition for the start of the procedure.

NOTE

Resources required are not listed unless they apply to this procedure. Personnel required are listed only if the task requires more than one. If "Personnel" is not listed, it means one person can do the task. The normal standard equipment condition to start a maintenance task is engine stopped and at ambient temperature.

MAINTENANCE OF COMPLETE TOP HOOD ASSEMBLY AND FRAME CONTROL PANEL

4-12. REPLACE COMPLETE TOP HOOD ASSEMBLY AND FRAME CONTROL PANEL.

This task covers: a. Removal c. Installation
b. Repair

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Parking brake set, para. 3-8
Engine stopped, para. 2-6.8
Storage battery disconnected, para. 4-26
Tail gate open
Inlet heater lid off

Materials/Parts

Tape, Adhesive (Appendix E, item 19)
Adhesive, Tube (Appendix E, item 16)
Insulation (Appendix E, item 11)
Paint, Green (Appendix E, item 12)
Nonmetallic Seal (P/N 02352)

Personnel

2 persons for mechanical lifting
4 persons for manual lifting

a. Removal.

(1) Remove nonmetallic seal (1, Figure 4-1) from frame control panel (2).

(2) Remove flat machine screws (3).

a. Removal. - continued.

WARNING

When removing frame control panel do not set on top of storage battery. Storage battery may explode. Failure to observe this warning may result in severe personal injury or death.

(3) Place frame control panel inside trailer base.

(4) Remove plain hexagon nuts (4), lock washers (5), flat washers (6), and cap screws (7).

WARNING

Complete top hood assembly is heavy. Failure to get assistance in removal of hood may result in severe personal injury.

(6) Remove complete top hood assembly (8).

b. Repair.

(1) Examine damage to determine if repair to top hood assembly can be done. If minor damage, repairs can be made.

(2) If welding is to be done to access doors or top hood assembly, first remove insulation inside of top hood assembly 6 inches away from weld. Grind and sand off paint and obtain a qualified welder from Unit maintenance to do welds.

(3) After welding, grind splatter and repaint. Coat inside surface with tube adhesive. Cut insulation and replace area removed.

(4) If irreparable, replace with new top hood assembly.

c. Installation.

(1) Coat inside of new top hood assembly with tube adhesive. Cut insulation to fit inside and press on. Tape insulation in all corners or cuts necessary.

(2) Place top hood assembly on trailer base (9) and replace cap screws (7), flat washers (6), lock washer (7), and plain hexagon nuts (4). Tighten plain hexagon nuts.

(3) Install frame control panel (2).

(4) Install flat machine screws (3) and nonmetallic seal (1).

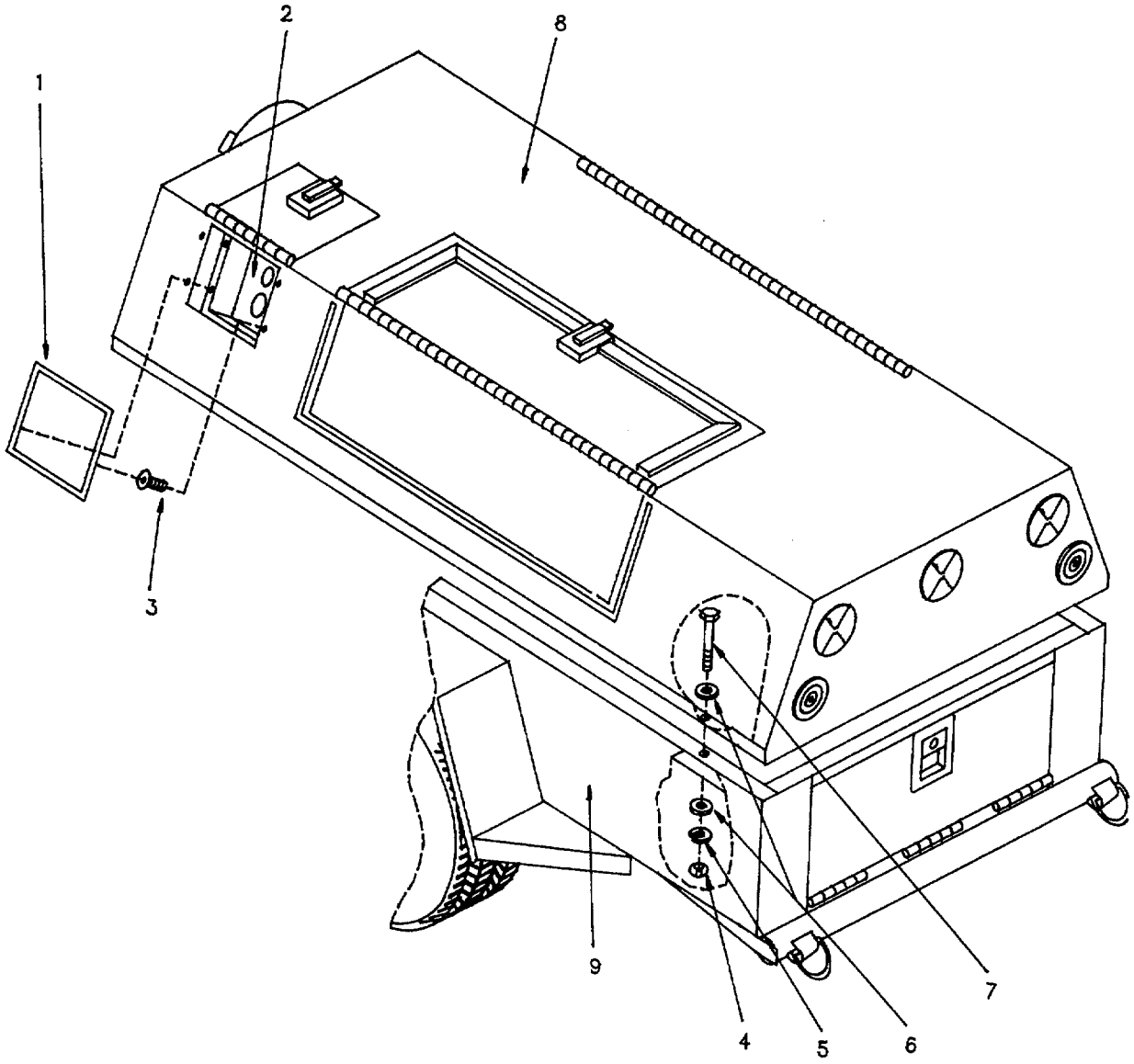


Figure 4-1. Complete Top Hood Assembly Removed.

MAINTENANCE OF VENT LOUVERS

4-13. REPLACE VENT LOUVERS.

This task covers: a. Removal c. Installation
b. Repair

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Paint, Green (Appendix E, item 12)
Rag, Wiping (Appendix E, item 3)
Vent Louvers (P/N 10-060)

a. Removal.

(1) Remove self tapping screws (2, Figure 4-2).

(2) Remove vent louvers (1).

b. Repair.

(1) Bend or re-shape vent louvers (1) so it will open and close properly.

(2) Clean with rag and repaint if required.

c. Installation.

(1) Install vent louvers (1) in top hood assembly (3).

(2) Install self tapping screws (2).

(3) Clean and repaint if required.

(4) Insure that vent louvers move freely to open and close.

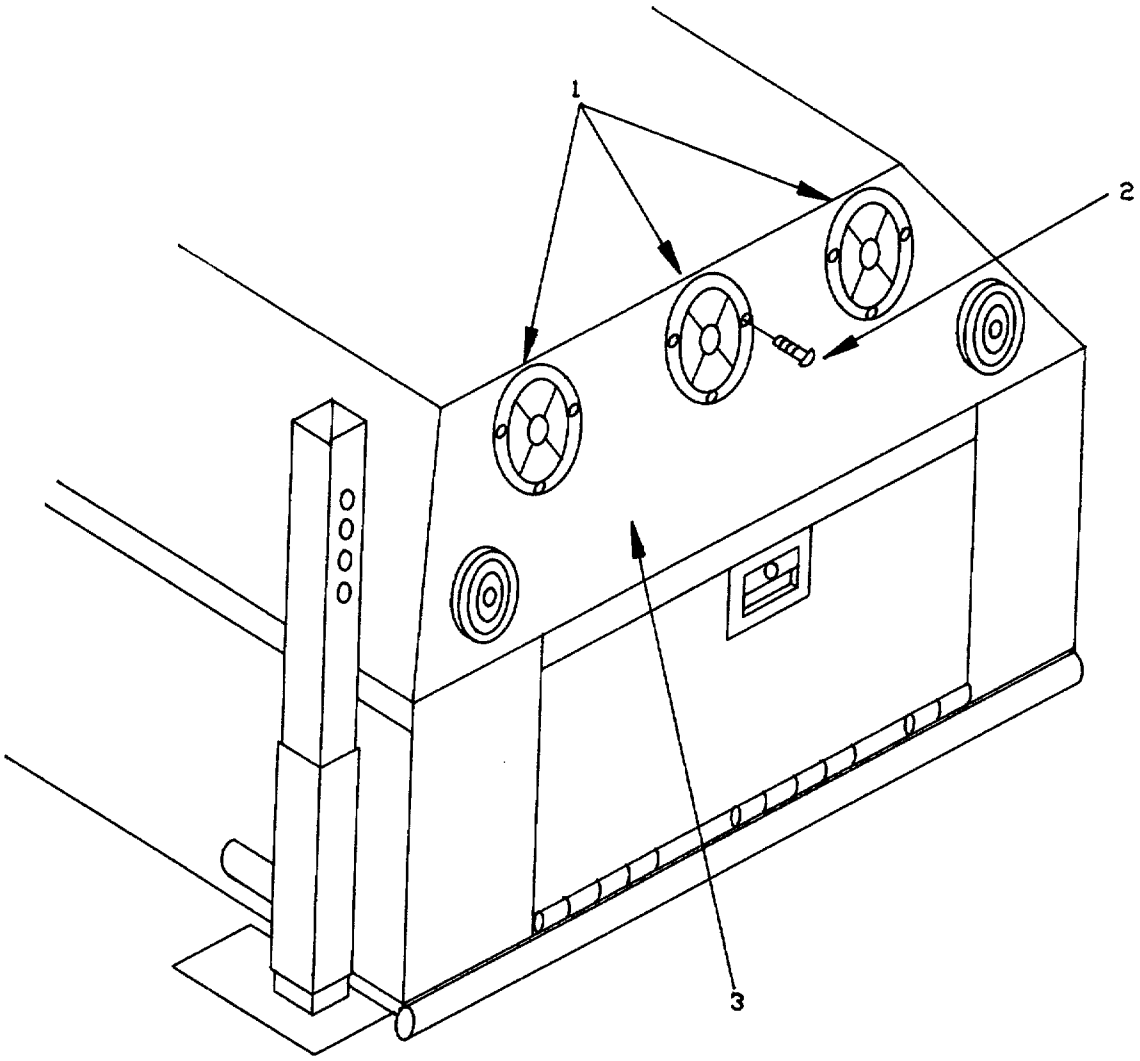


Figure 4-2. Vent Louvers.

MAINTENANCE OF COMPLETE BELT GUARD ASSEMBLY

4-14. REPLACE COMPLETE BELT GUARD ASSEMBLY.

This task covers: a. Removal c. Installation

INITIAL SETUP

Tools	**Equipment Conditions:**
General Mechanics Tool Kit	Engine stopped, para. 2-6.8 Complete top hood assembly removed, para. 4-12 Spare tire removed
Materials/Parts	**Personnel**
None	2 persons for pulley removal

a. Removal.

(1) Remove machine screws (1, Figure 4-3) and flat washers (2) holding metal grille (3) to belt guard cage (20).

(2) Remove bolt (4) and flat washer (5) from support arm of belt guard cage (20).

(3) Remove cap screws (6), lock washers (7), and flat washers (8).

(4) Remove recoil starter on engine (para.4-18).

(5) Use a bar on engine start pulley (9) to hold engine crankshaft from turning when removing cap screw from friction clutch assembly (10).

(6) Remove cap screw (11), flat washer (12), on friction clutch assembly (14).

(7) Remove cap screw (13), bearing thrust washer (14) on compressor groove pulley (15).

(8) Loosen hexagon nuts (16) on engine sub-base (17).

(9) Loosen hexagon nuts (18) so engine can slide forward then remove V-belts (19).

(10) Remove friction clutch assembly (10)

(11) Remove compressor groove pulley (15).

(12) Remove belt guard cage (20).

b. Installation.

(1) Install belt guard cage (20).

(2) Install compressor groove pulley (15).

(3) Install bearing thrust washer (14), cap screw (13), and tighten.

(4) Install friction clutch assembly (10).

(5) Install flat washer (12), cap screw (11), and tighten.

(6) Install V-belts (19).

(7) Install flat washers (8), lock washers (7), and cap screws (6).

(8) Install flat washers (5) and bolt (4) on support arm of belt guard cage (20).

(9) Adjust V-belts (para. 4-15, a.).

(10) Install metal grille (3), flat washers (2), and machine screws (1).

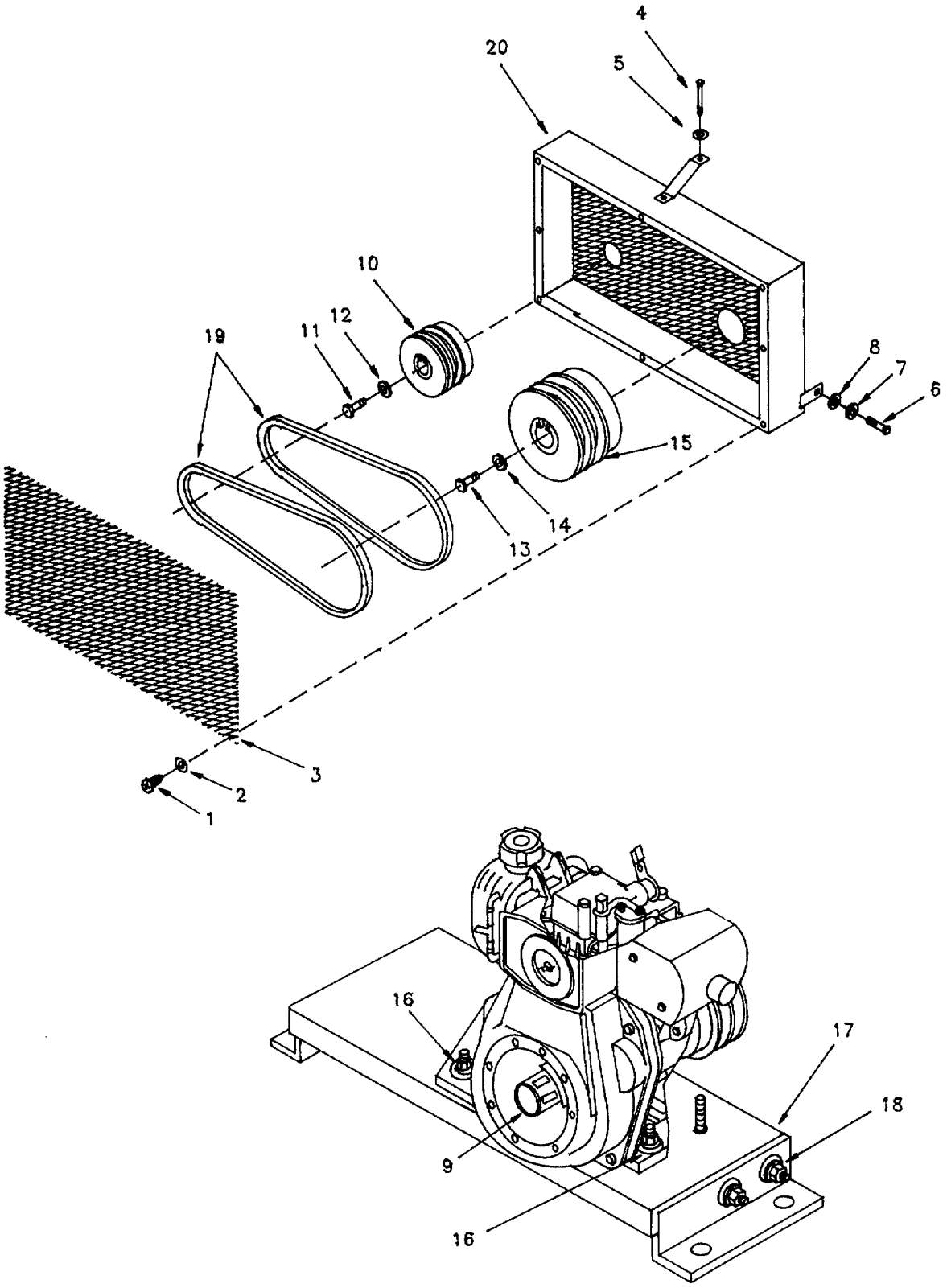


Figure 4-3. Complete Belt Guard Assembly.

MAINTENANCE OF V-BELTS

4-15. REPLACE V-BELTS.

This task covers: a. Adjustment c. Installation
b. Removal

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

V-Belt (/N 362-A63)

a. Adjustment.

(1) Refer to para. 4-14 for removal of metal grille.

(2) Loosen plain hexagon nuts (16, Figure 4-3) attached to engine sub-base.

(3) Tighten plain hexagon nuts (18) to adjust V-belts.

NOTE

Adequate tension is reached when there is approximately 1/4" to 1/2" deflection at center of the two pulleys.

(4) Tighten plain hexagon nuts (16) securing sub-base (17).

(5) Install metal grille (3), flat washers (2), and machine screws (1).

b. Removal.

(1) Refer to para. 4-14 for removal of metal grille.

(2) Loosen plain hexagon nuts (16) attached to engine sub-base (17).

(3) Loosen hexagon nuts (18) to loosen V-belts (19).

(4) Slide engine forward.

(5) Remove V-belts (19).

e. Installation.

(1) Install V-belts (19).

(2) Tighten hexagon nuts (18) to adjust V-belts.

(3) Adjust V-belts (para. 4-14,a.).

(4) Tighten hexagon nuts (16) on engine sub-base.

(5) Install metal grille (3), flat washers (2), and machine screws (1).

MAINTENANCE OF ENGINE ASSEMBLY

4-16. REPLACE ENGINE ASSEMBLY.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Storage battery disconnected, para. 4-26
Complete top hood assembly removed, para. 4-12
Complete belt guard assembly removed, para. 4-14
V-belts removed, para. 4-15
Fuel tank assembly removed, para. 4-22
Primary fuel tank removed, para. 4-21

Materials/Parts

Engine Assembly (P/N L60AEDE)

a. Removal.

(1) Loosen set screw (1, Figure 4-4) of exhaust muffler (2).

(2) Remove exhaust pipe union (3) and exhaust discharge hose (4).

(3) Disconnect wire coupling (5) from current limiter (6).

(4) Disconnect wires (7).

(5) Remove cylinder assembly (reference para. 4-29, e.).

(6) Remove cable assembly (reference para. 4-29, e.).

(7) Disconnect starter wires (reference para. 4-19).

(8) Disconnect wire and remove oil temperature transmitter (reference 4-29, c.).

WARNING

The fuels used in this compressor are highly explosive. Do not smoke or use open flame when performing maintenance. Flames and explosion may occur resulting in severe personal injury or death.

a. Removal. - continued

NOTE

Insure all fuel is drained into appropriate container.

(9) Remove nonmetallic hose (8) from fuel tank assembly (9).

(10) Remove hexagon nuts (10), lock washers (11), flat washers (12), and cap screws (13) holding engine to sub-base.

(11) Remove hexagon nuts (14), lock washers (15), and flat washers (16).

(12) Remove diesel engine (17).

b. Installation.

(1) Install diesel engine (17).

(2) Install cap screws (13), flat washers (18 & 12), lock washers (11), and hexagon nuts (10).

(3) Install adjusting bolts (19), flat washers (20 & 16), lock washers (15), and hexagon nuts (14).

(4) Tighten V-belts (reference para. 4-15).

(5) Install nonmetallic hose (8) to fuel tank assembly (9).

(6) Install oil temperature transmitter (reference para. 4-29, i.) and connect wire.

(7) Connect starter wires (reference para. 4-19).

(8) Install cable assembly (reference para. 4-29, e.).

(9) Install cylinder assembly (reference para. 4-29, e.).

(10) Connect wires (7).

(11) Connect wire coupling (5) to current limiter (6).

(12) Connect exhaust discharge hose (4) and pipe union (3). Tighten pipe union.

(13) Tighten set screw (1) of exhaust muffler (2).

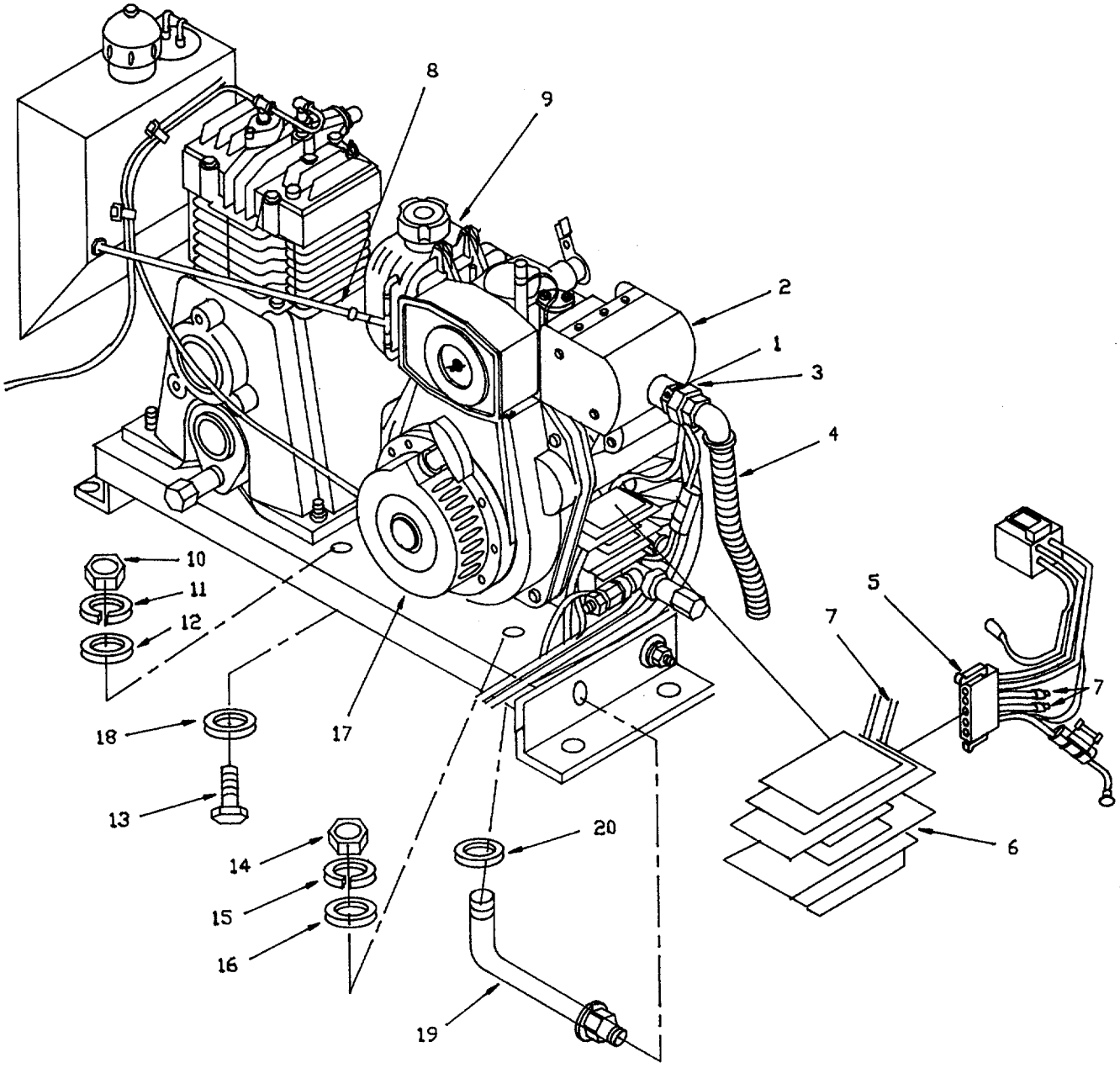


Figure 4-4. Engine Assembly.

MAINTENANCE OF INTAKE AIR CLEANER

4-17. REPLACE INTAKE AIR CLEANER.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Rag, Wiping (Appendix E, item 3)
Filter Element (P/N 114250-12580)

a. Removal.

(1) Remove plain wingnut (1, Figure 4-5) and access cover (2).

(2) Remove filter element (3).

(3) Remove plain hexagon nuts (5) and air cleaner case (4).

(4) Wipe air cleaner case (4) and access cover (2) of all dirt, grease, or foreign material.

b. Installation.

(1) Install air cleaner case (4) and tighten plain hexagon nuts (5).

(2) Install filter element (3).

(3) Install access cover (2) and plain wingnut (1). Hand tighten.

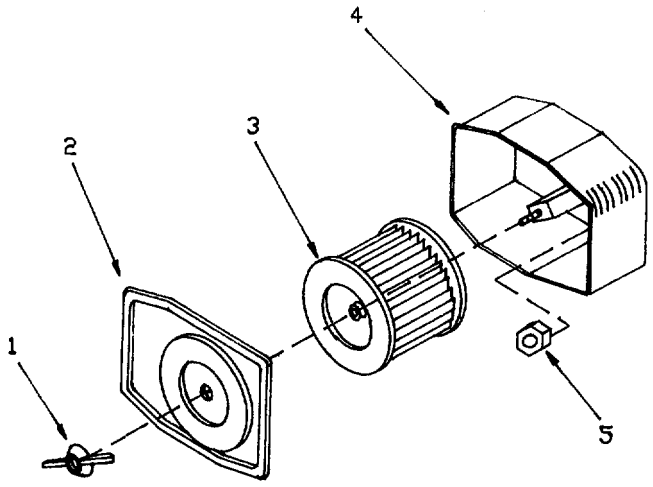


Figure 4-5. Intake Air Cleaner.

MAINTENANCE OF RECOIL STARTER

4-18. REPLACE RECOIL STARTER.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

None

a. Removal.

(1) Remove hexagon cap screws (1, Figure 4-6).

(2) Remove recoil starter (2) from cooling fan case (3).

(3) Remove hexagon cap screws (4) from engine start pulley (5).

(4) Remove engine start pulley (5).

b. Installation.

(1) Install engine start pulley (5) and tighten hexagon cap screws (4).

(2) Install recoil starter (2) to cooling fan case (3).

(3) Tighten hexagon cap screws (1).

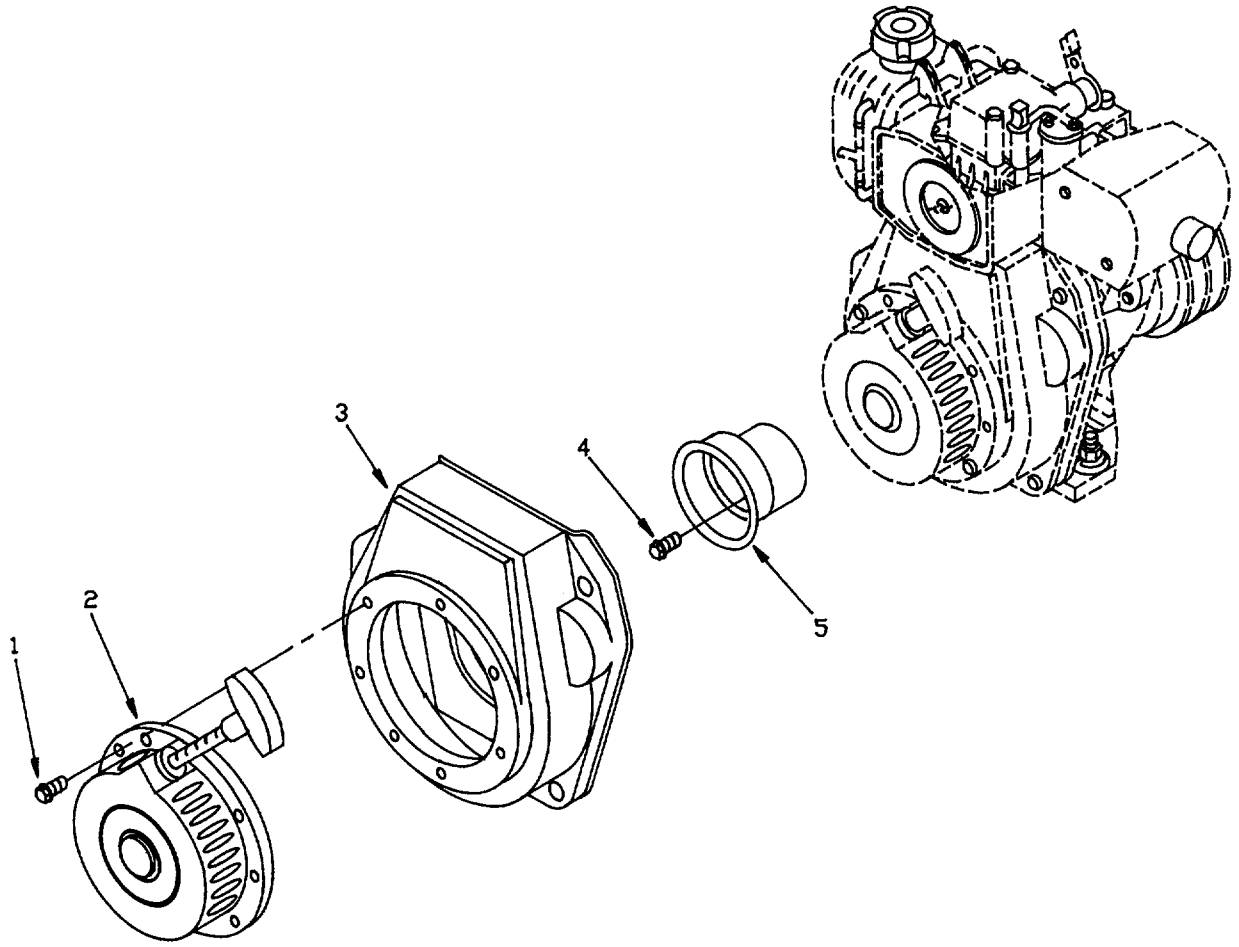


Figure 4-6. Recoil Starter.

MAINTENANCE OF ENGINE STARTER MOTOR

4-19. REPLACE ENGINE STARTER MOTOR.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Storage battery disconnected, para. 4-26

Materials/Parts

None

a. Removal.

(1) Remove exhaust muffler (para. 4-20).

(2) Remove plain hexagon nut (1, Figure 4-7) and flat washer (2) from engine starter motor.

(3) Remove wires (3).

(4) Remove spade terminal wire (4).

(5) Remove cap screws (5) holding engine starter motor (6).

(6) Remove engine starter motor (6).

b. Installation.

(1) Install engine starter motor (6) and cap screws (5).

(2) Install wires (3 & 4).

(3) Install flat washer (2) and plain hexagon nut (1).

(4) Install exhaust muffler (para. 4-20).

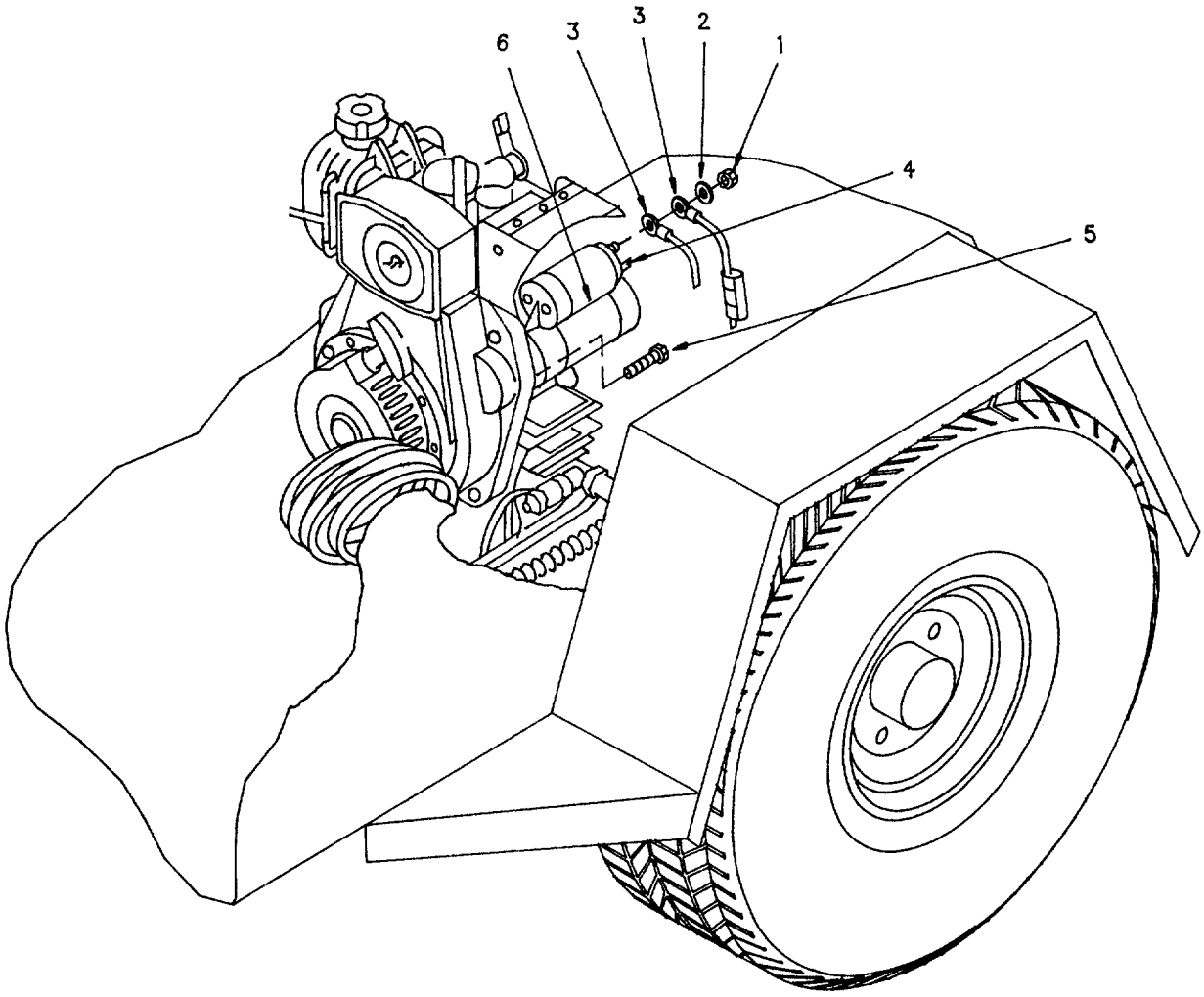


Figure 4-7. Engine Starter Motor.

MAINTENANCE OF EXHAUST MUFFLER

4-20. REPLACE EXHAUST MUFFLER.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Gasket (P/N 114250-13200)

a. Removal.

(1) Loosen set screw (1, Figure 4-8) and pipe union (2) of discharge hose (3).

(2) Remove extension washer plain nut (5) holding exhaust muffler (6) to diesel cylinder head.

(3) Remove cap screws (4) holding exhaust muffler (6) to engine block.

(4) Remove exhaust muffler (6).

(5) Remove gasket (7).

b. Installation.

(1) Install new gasket (7).

(2) Install exhaust muffler (6).

(3) Install extension plain nut (5) and cap screws (4).

(4) Insert and tighten pipe union (2) and tighten set screw (1).

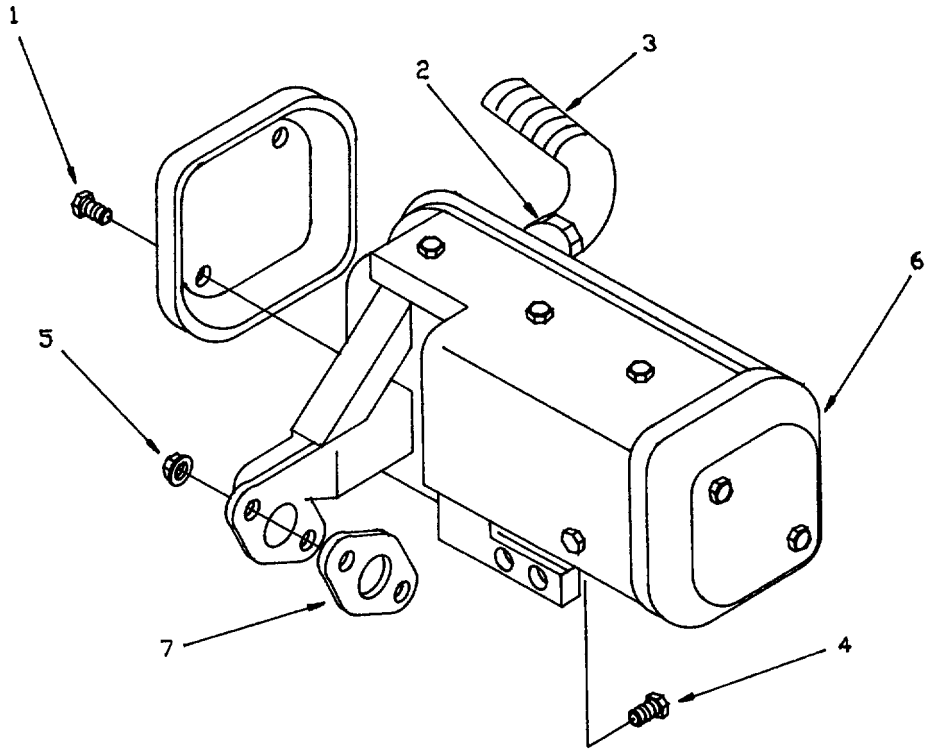


Figure 4-8. Exhaust Muffler.

MAINTENANCE OF PRIMARY FUEL TANK

4-21. REPLACE PRIMARY FUEL TANK

This task covers: a. Service c. Installation
b. Removal

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Storage battery disconnected, para. 4-26
Primary fuel tank drained

Materials/Parts

Gasket (P/N 362GKT-FLS)

a. Service.

WARNING

The fuels used in this compressor are highly explosive. Do not smoke or use open flame when performing maintenance. Flames and explosion may occur resulting in severe personal injury or death.

(1) Remove fuel cap (6, Figure 4-9).

(2) Remove filter element (7).

(3) Clean by blowing out any debris.

(4) Replace filter element if damaged.

b. Removal.

(1) Remove hexagon nuts (1).

(2) Disconnect wires (2).

(3) Remove tapping screws (3) and liquid level switch (4).

(4) Remove gasket (5).

(5) Remove fuel cap (6) and filter element (7).

(6) Remove nonmetallic hose (8), hose adaptor (9), and drain plug (10).

b. Removal. -continued

(7) Remove cap screws (11).

(8) Remove primary fuel tank (12).

c. Installation.

(1) Install primary fuel tank (12).

(2) Install cap screws (11).

(3) Install drain plug (10), hose adaptor (9), and nonmetallic hose (8).

(4) Install filter element (7) and fuel cap (6).

(5) Install gasket (5), liquid level switch (4), and tapping screws (3).

(6) Install wires (2) and tighten hexagon nuts (1).

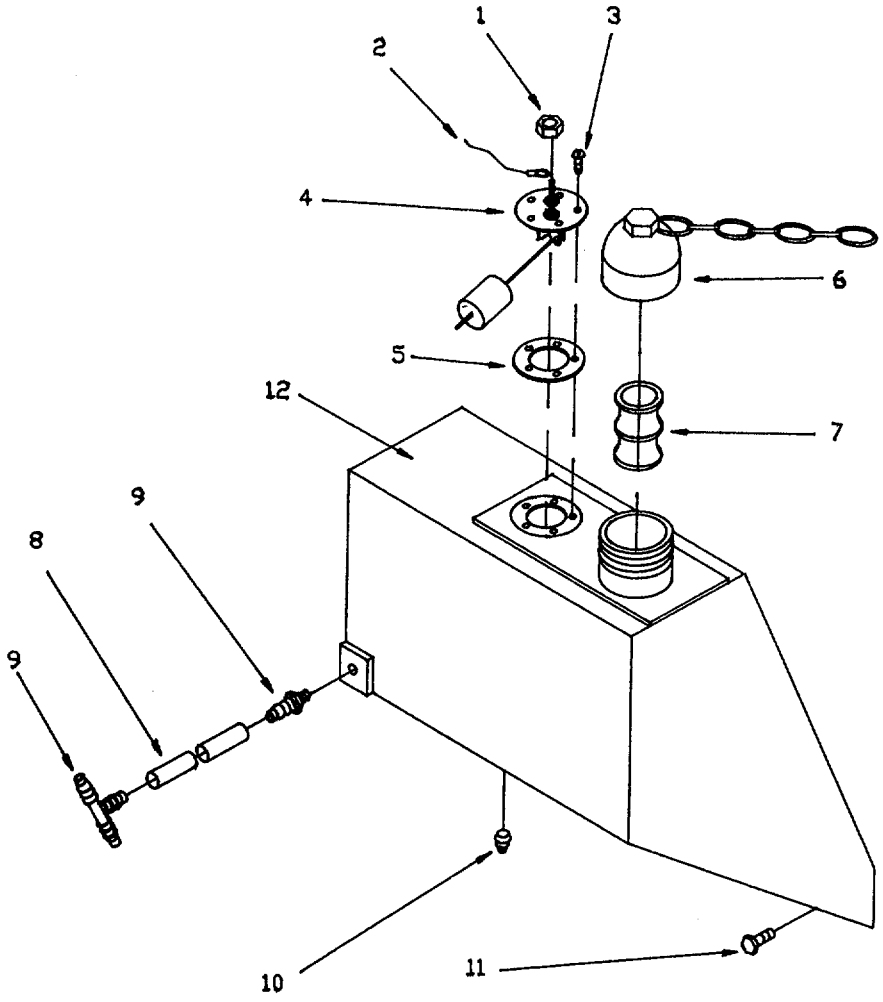


Figure 4-9. Primary Fuel Tank.

4-22. REPLACE FUEL TANK ASSEMBLY

This task covers: a. Removal c. Installation
b. Service

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Storage battery disconnected, para. 4-26
Primary fuel tank drained
Intake air cleaner removed, para 4-17

Materials/Parts

Gasket (P/N 114250-55130)
Gasket (P/N 114250-55050)
Gasket (P/N 23414-120000)

WARNING

The fuels used in this compressor are highly explosive. Do not smoke or use open flame when performing maintenance. Flames and explosion may occur resulting in severe personal injury or death.

a. Removal.

(1) Drain fuel into suitable container by removing drain plug (1, Figure 4-10) and gasket (2).

(2) Remove loop clamp (3) and nonmetallic tubing (4).

(3) Remove loop clamps (5) of nonmetallic tubing (6).

(4) Remove cap screw (7), lifting bolt (8), and washer (9) from bracket (15).

(5) Remove plain hexagon nut (10) and flat washer (11) of shutoff screw cock.

(6) Remove fuel tank assembly (12) attached to diesel cylinder head.

(7) Remove preformed packing (13) and gasket (14).

a. Removal. -continued

NOTE

Steps 8 and 9 should only be performed when installing a new tank or parts broken or damaged.

(8) Remove bracket (15) and shock absorber (16) from fuel tank assembly.

(9) Remove loop clamps (17) from liquid gage (18).

(10) If necessary to replace damaged tubing or shutoff screw cock, remove loop clamps (19) from shutoff screw cock (20) and fuel injection pump (21).

(11) Remove nonmetallic tubing (22).

(12) Remove shutoff screw cock (20).

b. Service.

(1) Remove tank cap (23).

(2) Remove filter element (24) through filler neck.

(3) Install filter element (24).

(4) Install and hand tighten tank cap (23).

c. Installation.

(1) If removed, install loop clamps (19), nonmetallic tubing (22) and shutoff screw cock (20) to fuel injection pump (21).

(2) If removed, install shock absorber (16) and bracket (15).

(3) If removed, install loop clamps (17), liquid gage (18).

(4) Install gasket (14) and preformed packing (13) on shutoff screw cock (20).

(5) Install fuel tank assembly (12).

(6) Install cap screw (7) and lifting bolt (8).

(7) Install flat washer (11) and plain hexagon nut (10) to shutoff screw cock (20).

(8) Install nonmetallic tubing (4) to liquid gage (18).

(9) Install nonmetallic tubing (4) and loop clamp (3).

(10) Add fuel and check for leaks.

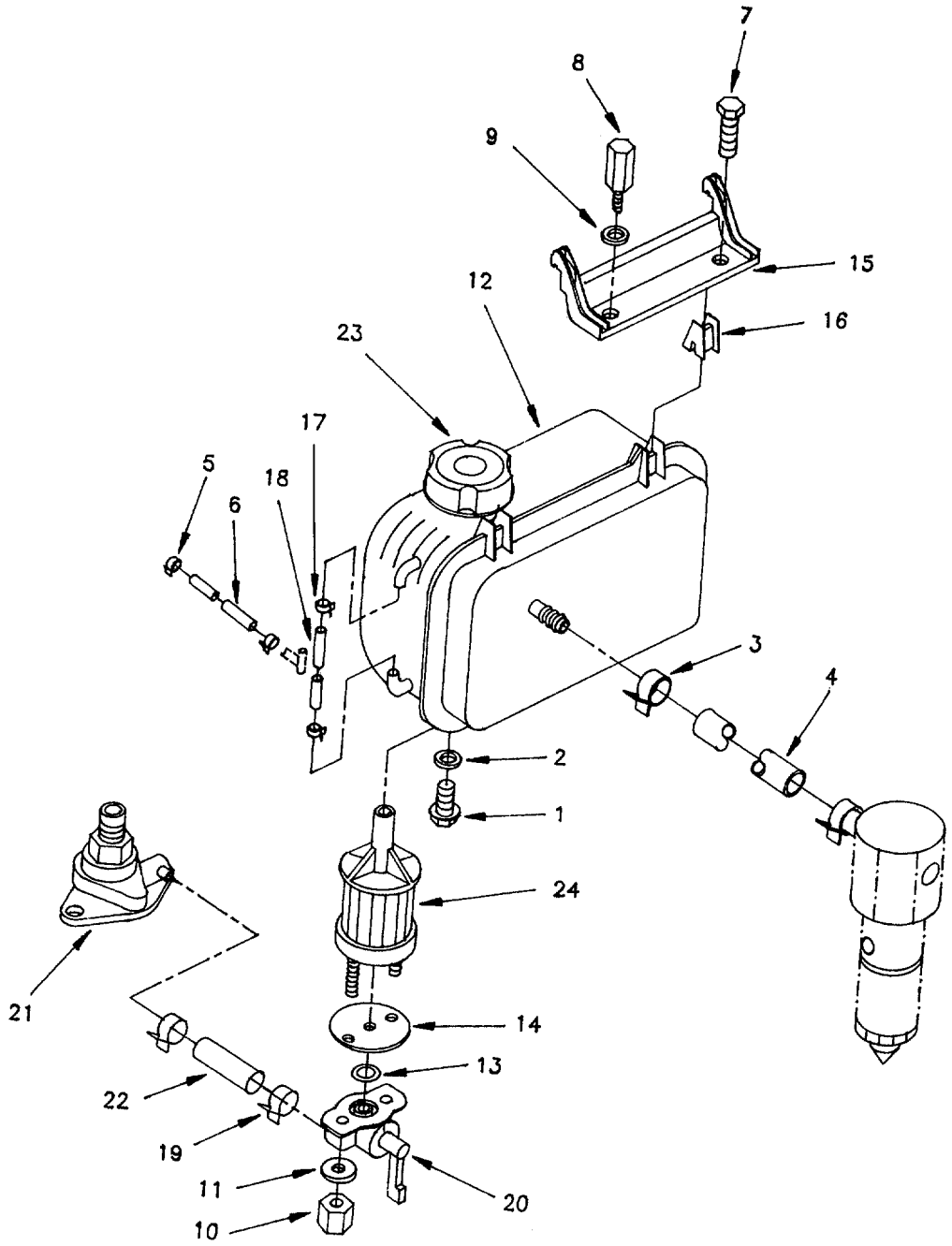


Figure 4-10. Fuel Tank Assembly.

MAINTENANCE OF FUEL INJECTOR ASSEMBLY

4-23. REPLACE FUEL INJECTOR ASSEMBLY.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Primary fuel tank drained
Fuel tank assembly removed, para. 4-22

Materials/Parts

Fuel Injector Assembly (P/N 714350-53100)

a. Removal.

CAUTION

Avoid allowing diesel fuel from leaking inside trailer base and contaminants from entering fuel system.

(1) Remove fuel tank assembly and nonmetallic tubing (reference para. 4-22).

(2) Remove loop clamp (1, Figure 4-11) and nonmetallic tubing (2).

(3) Remove metallic pipe (3).

(4) Remove plain hexagon nuts (4) and retainer nozzle (5).

CAUTION

DO NOT place fuel injector assembly directly on ground as damage may occur.

(5) Remove fuel injector assembly (6).

b. Installation.

(1) Install fuel injector assembly (6).

CAUTION

Insure spring pin is lined up with slot on engine head to prevent damage.

(2) Install retainer nozzle (5), and plain hexagon nuts (4), and tighten.

(3) Install metallic pipe (3).

b. Installation. -continued

(4) Install nonmetallic tubing (2) and loop clamp (1).

(5) Install fuel tank assembly (reference para. 4-22).

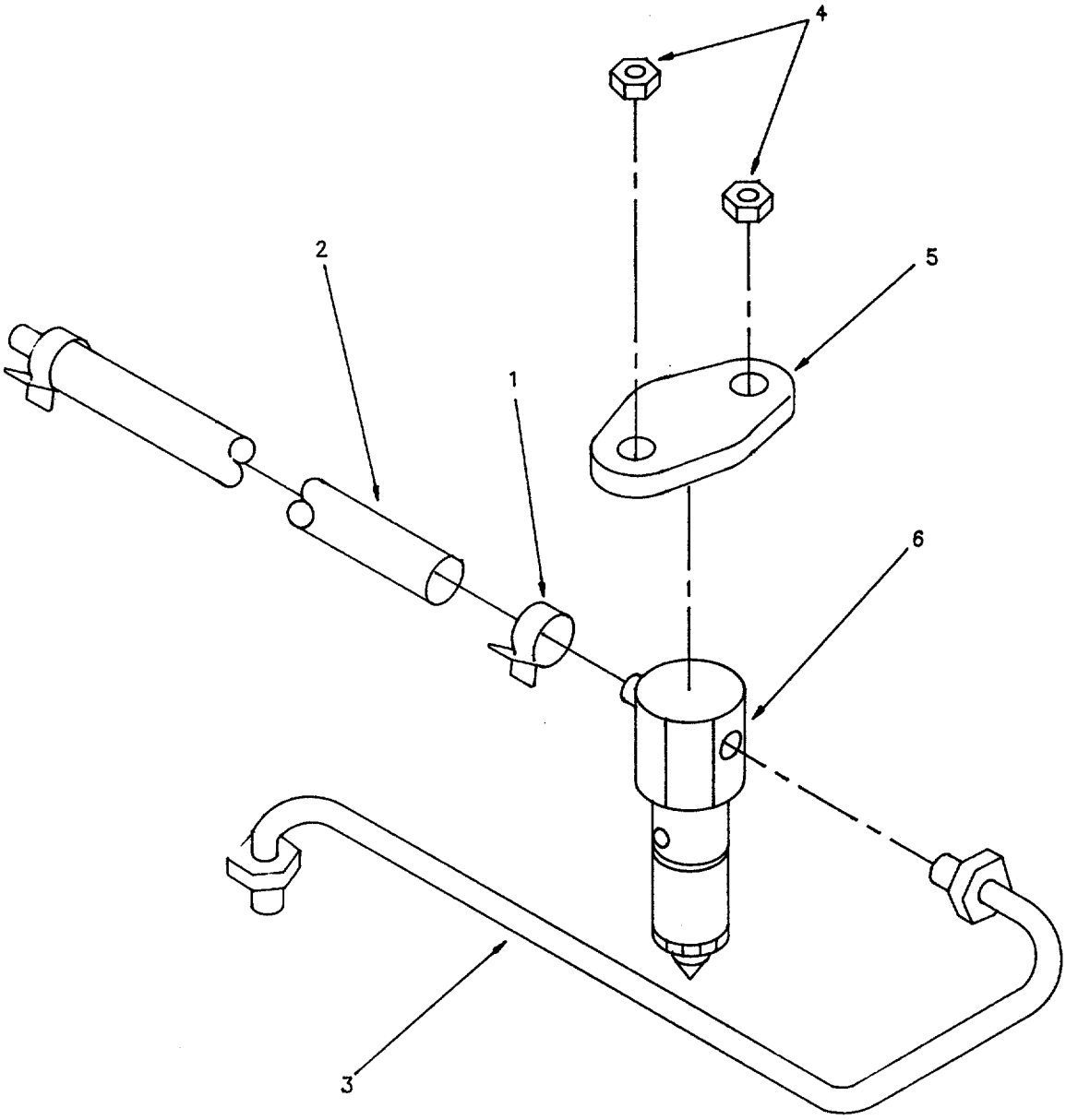


Figure 4-11. Fuel Injector Assembly.

MAINTENANCE OF FUEL PUMP

4-24. REPLACE FUEL PUMP.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Primary fuel tank drained
Fuel tank assembly removed, para. 4-22

Materials/Parts

Fuel Pump (P/N 714350-51710)
Shim Set (P/N 114250-01800)

a. Removal.

(1) Remove loop clamp (1, Figure 4-12) and nonmetallic tubing (2).

(2) Remove metallic pipe (3).

(3) Remove plain hexagon nuts (4).

(4) Remove fuel pump (5) and shim set (6).

b. Installation.

NOTE

When replacing shim set, place the same number of shims as where removed.

(1) Install shim set (6).

(2) Install fuel pump (5) and tighten plain hexagon nuts (4).

(3) Install metallic pipe (3).

(4) Install nonmetallic tubing (2) and loop clamps (1).

(5) Install fuel tank assembly (reference para. 4-22).

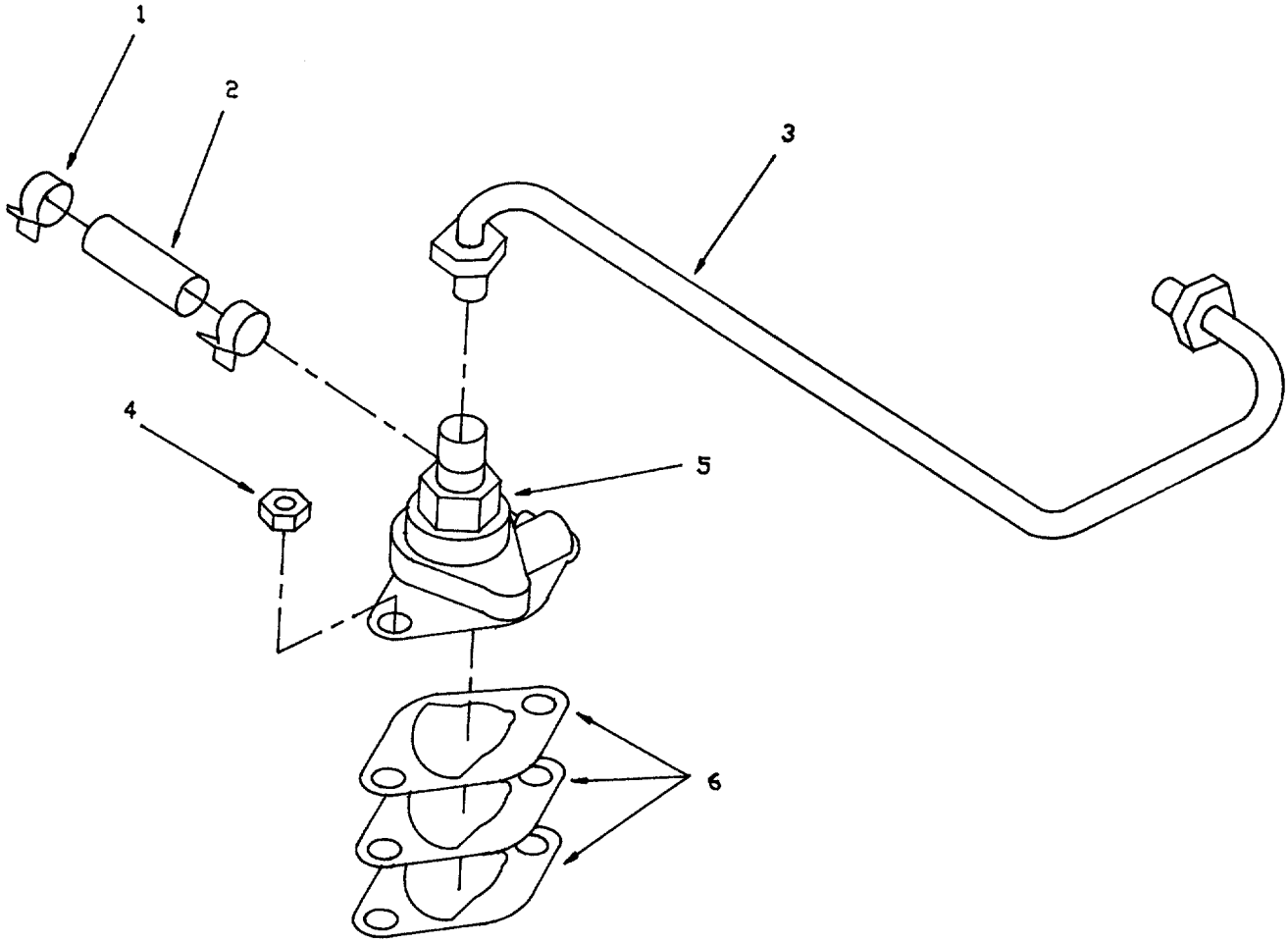


Figure 4-12. Fuel Pump.

4-25. REPLACE ROTARY PUMP AND DIESEL ENGINE GOVERNOR

This task covers: a. Removal c. Installation
b. Inspection

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Engine oil drained L09-4310-396-12
Storage battery disconnected, para. 4-26

Materials/Parts

Rotary Pump (P/N 114250-32010)
Gasket (P/N 114350-01412)
Preformed Packing (P/N 103338-32570)
Diesel Engine Governor (P/N 714770-61700)

a. Removal.

(1) Remove oil pressure line (1, Figure 4-13).

(2) Remove cap screws (2) from cover (3).

(3) Remove cover (3) and gasket (4).

(4) Remove cap screws (5) of access cover (6).

(5) Remove preformed packing (7).

(6) Remove diesel engine governor (8).

(7) Remove straight pin (9) from rotary pump.

(8) Remove rotary pump (10).

b. Inspection. Inspect rotary pump and diesel engine governor for wear patterns or distortion.

c. Installation.

(1) Install new rotary pump (10).

(2) Install straight pin (9).

(3) Install diesel engine governor (8).

(4) Install preformed packing (7).

(5) Install access cover (6) and cap screws (5) and tighten.

(6) Install gasket (4).

(7) Install cover (3) and cap screws (2) and tighten.

(8) Install oil pressure line (1).

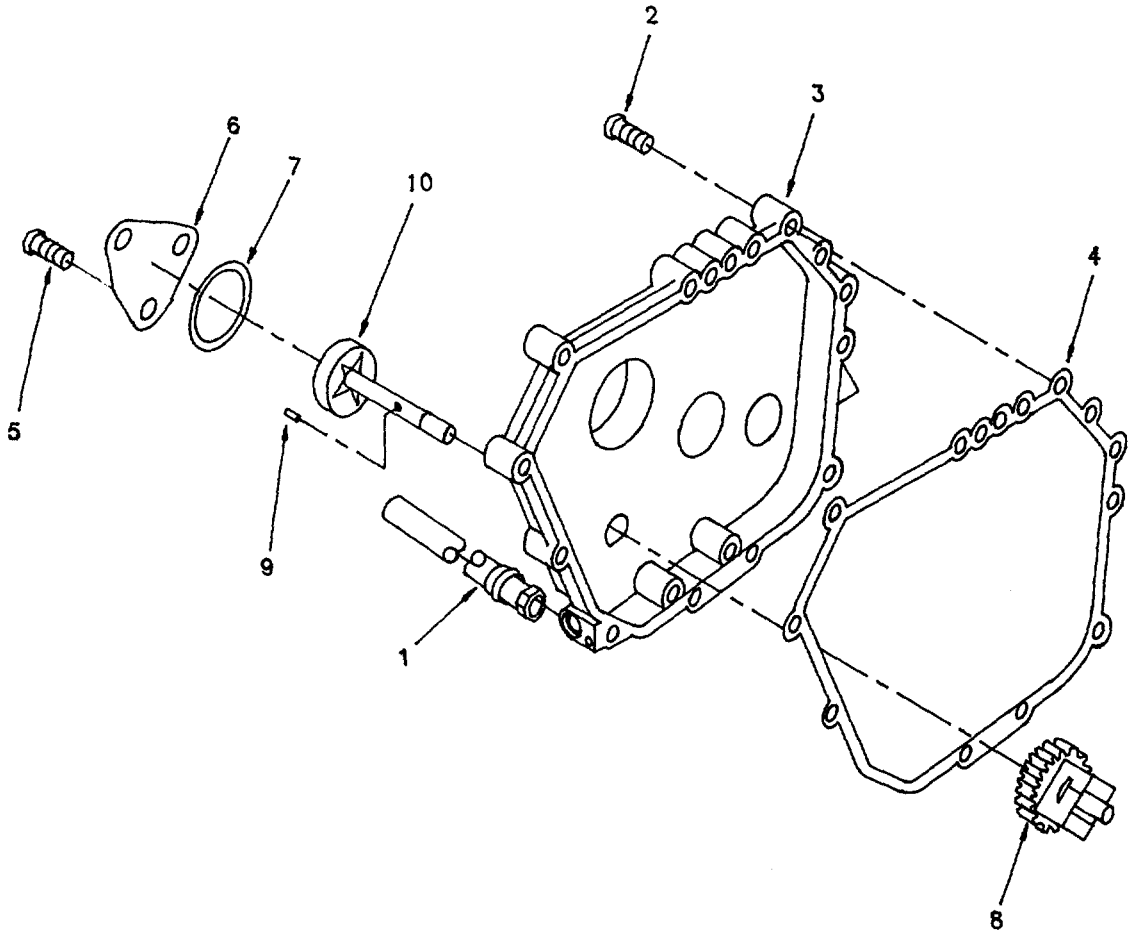


Figure 4-13. Rotary Pump and Diesel Engine Governor.

MAINTENANCE OF STORAGE BATTERYU AND STORAGE BATTERY LEADS

4-26. REPLACE STORAGE BATTERY AND STORAGE BATTERY LEADS

This task covers: a. Service c. Installation
b. Removal

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Rag, Wiping (Appendix E, item 3)

WARNING

Storage battery gives off flammable gas. Do not smoke or use open flame when performing maintenance. Flames and explosion may occur. Battery acid can cause burns to unprotected skin. Wear protective clothing including rubber gloves and eye protection when servicing storage battery. Failure to observe this warning may result in severe personal injury or death.

a. Service.

(1) Remove access cover (1, Figure 4-14). Remove negative (-) storage battery lead (3) and positive (+) storage battery lead (2).

(2) Check electrolyte level of battery. If low, add distilled water.

WARNING

An explosion can occur if charger cables are placed on wrong terminals. Failure to observe this warning may result in severe personal injury or death.

(3) Use storage battery tester to check charge status of storage battery (4). If low, charge storage battery.

(4) Clean storage battery (4), lead terminals (2 & 3), and storage battery terminals (6 & 7).

(5) If storage battery (4) will not charge, replace.

b. Removal.

(1) Remove access cover (1). Remove negative (-) storage battery lead (3) and positive (+) storage battery lead (2).

(2) Remove storage battery (4) from battery box (5).

c. Installation.

(1) Install storage battery (4) in battery box (5).

(2) Install positive (+) storage battery lead (2) to positive storage battery terminal (6).

(3) Install negative (-) storage battery lead (3) to negative storage battery terminal (7).

(4) Install access cover (1).

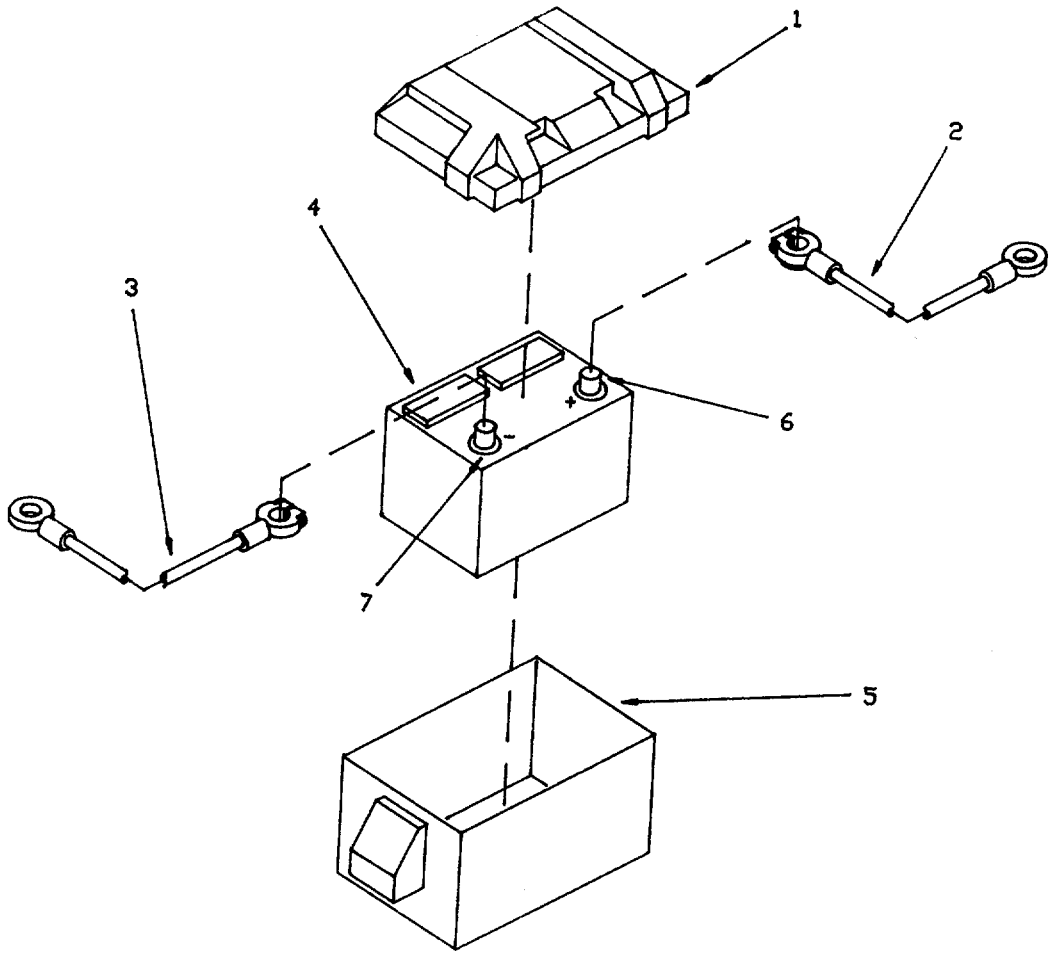


Figure 4-14. Storage Battery and Battery Box.

MAINTENANCE OF WIRE HARNESS

4-27. REPLACE WIRE HARNESS.

This task covers: a. Inspection b. Removal c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, 2-6.8
Complete top hood assembly removed, para. 4-12

Materials/Parts

Tiedown Strap (P/N MS3367-5-9)
Wire Harness (P/N WH1OX1/2)
Wire Harness (P/N 114351-77540)
Wire Harness (P/N WH30X1/2))
Wire Harness (P/N WH70X1)
Wire Harness (P/N WH130X1/2)

a. Inspection. Check for loose connections; broken or frayed wires; and missing or broken terminals, plugs, and connectors.

b. Removal.

(1) Remove tiedown straps (1, Figure 4-15).

(2) Tag and disconnect connectors and terminal lugs as necessary.

(3) Remove wire harness (2).

c. Installation.

(1) Tag replacement wire harness as previously marked on original wire harness (1).

(2) Install wire harness (2).

(3) Install tiedown straps (1).

(4) Connect terminal lugs and connectors where applicable.

(5) Remove tags from wires.

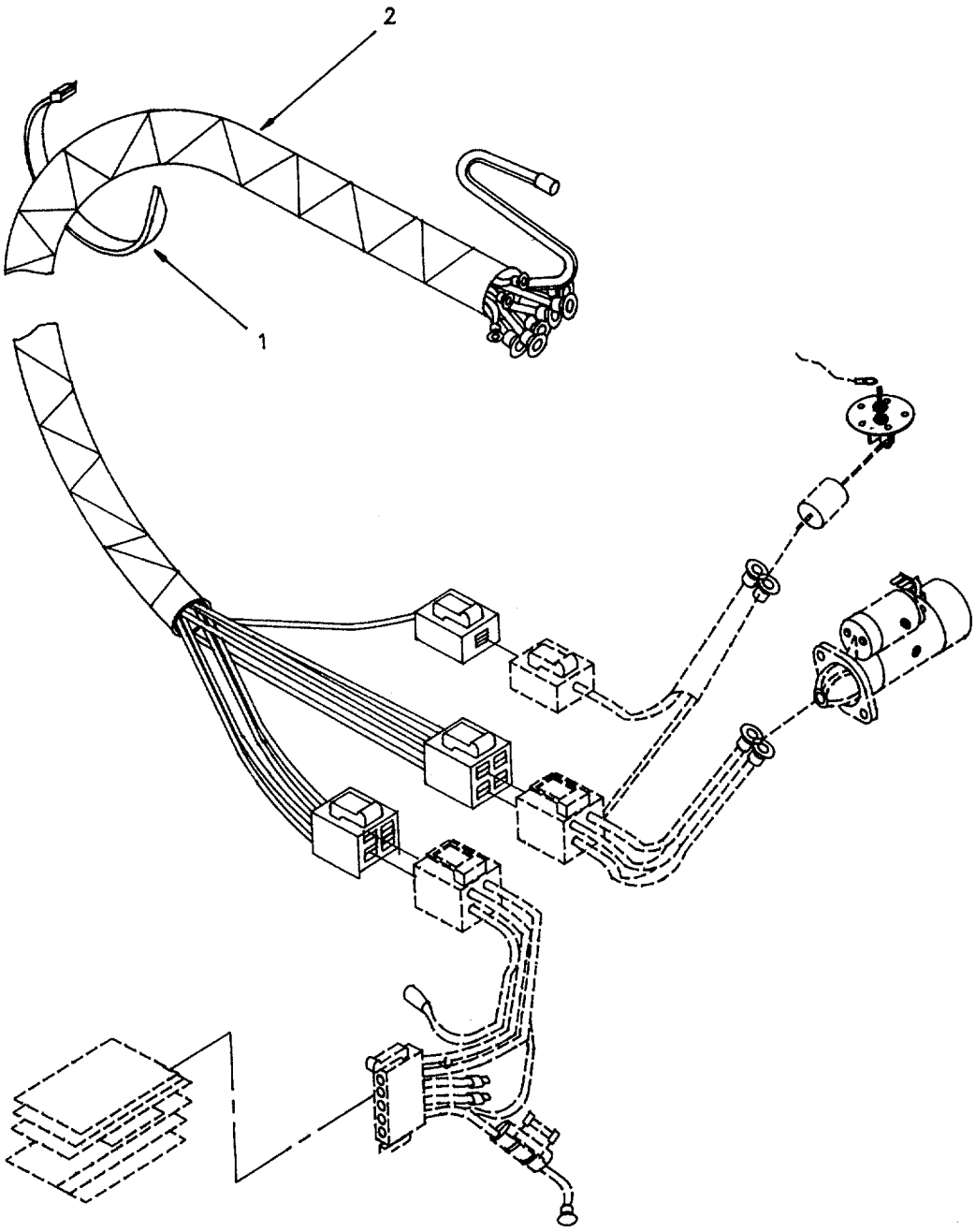


Figure 4-15. Wire Harness.

MAINTENANCE OF VEHICULAR STOP LIGHT AND INDICATING REFLECTOR

4-28. REPLACE VEHICULAR STOP LIGHT AND INDICATING REFLECTOR.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

None

Materials/Parts

Rag, Wiping (Appendix E, item 3)
Solvent, Dry Cleaning (Appendix E, item 2)

Vehicular Stop Light (P/N 11-102)
Indicating Reflector (P/N 11-511)

a. Removal.

(1) Remove plug (1, Figure 4-16) from vehicular stop light (2).

(2) Apply pressure from inside of complete top hood assembly to remove vehicular stop light (2).

(3) Pry off indicating reflector (3).

b. Installation.

(1) Install vehicular stop light (2) by pressing in from outside of complete top hood assembly.

(2) Connect plug (1) to vehicular stop light (2).

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles and rubber gloves to protect eyes and skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Failure to observe this warning may result in severe personal injury or death.

(3) Clean all residual adhesive from metal surface where reflector is located.

(4) Wipe dry.

(5) Peel backing from indicating reflector (3) and apply to trailer.

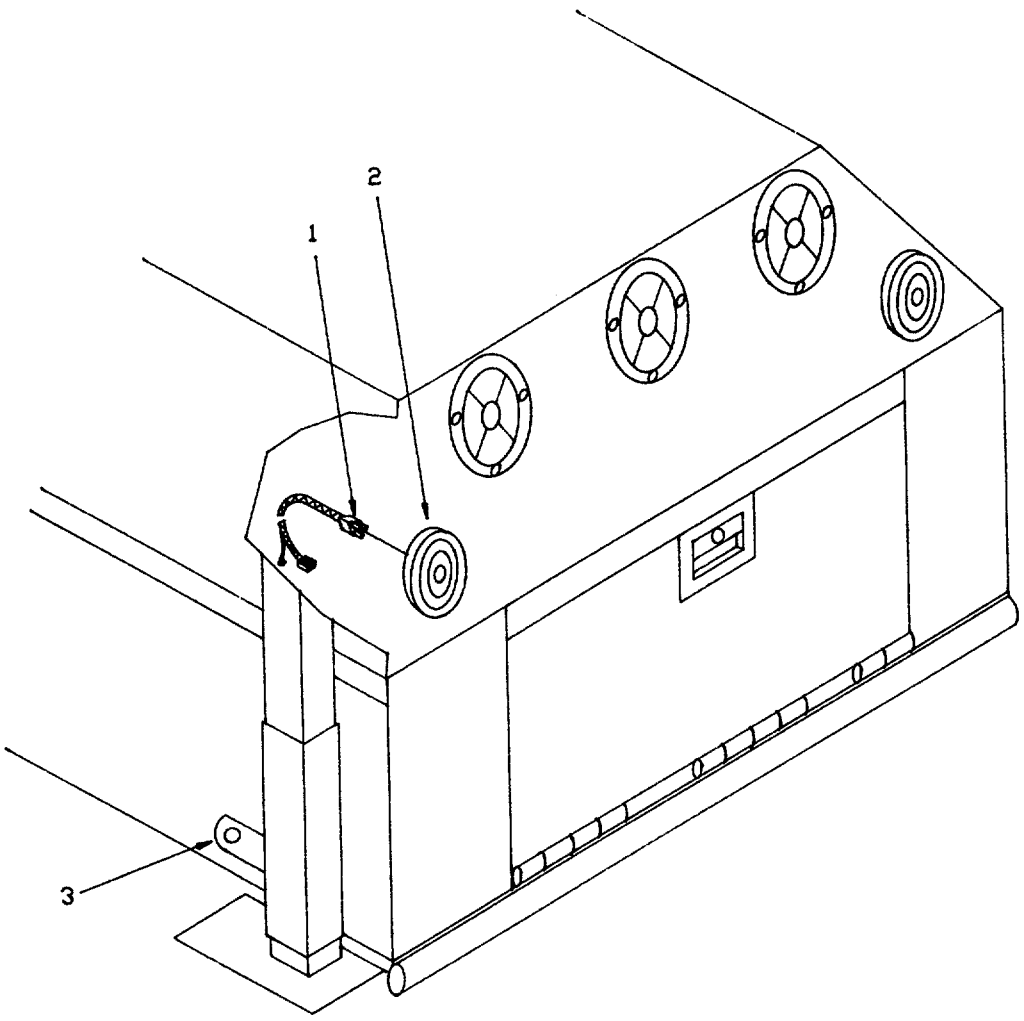


Figure 4-16. Vehicular Stop Light and Indicating Reflector.

MAINTENANCE OF GAGES, SENSORS, KNOB, AND SPEED CONTROL

4-29. REPLACE GAGES, SENSORS, KNOB, AND SPEED CONTROL.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Storage battery disconnected, para. 4-26

Materials/Parts

Brush, Cleaning (Appendix E, item 1)
Rag, Wiping (Appendix E, item 3)
Solvent, Dry Cleaning (Appendix E, item 2)
Tape, Teflon (Appendix E, item 6)
Liquid Level Gage (P/N GP0709)
Liquid Level Switch (P/N LS1038)
Time Totalizing Meter (P/N MH0042A)
Temperature Transmitter (P/N TS-1029)
Ampmeter Gage (P/N GP0528A)
Temperature Gage (P/N GP0628A)
Pressure Gage (P/N G10057)
Pressure Gage (P/N G-31653)
Gasket (P/N 362GKT-FLS)

a. Remove Mechanical Gage.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes Wear goggles or eye protection when blowing solvent from parts. Air pressure should not exceed 30 psi (2.1 Kg/cm2). Wear rubber gloves to protect skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (380C to 59°C). Failure to observe this warning may result in severe personal injury or death.

NOTE

Clean all parts and gages as necessary.

(1) Remove tube nut (1, Figure 4-17) and nonmetallic tube (2) from gage (5).

(2) Remove plain hexagon nuts (3) and bracket (4).

(3) Remove gage (5).

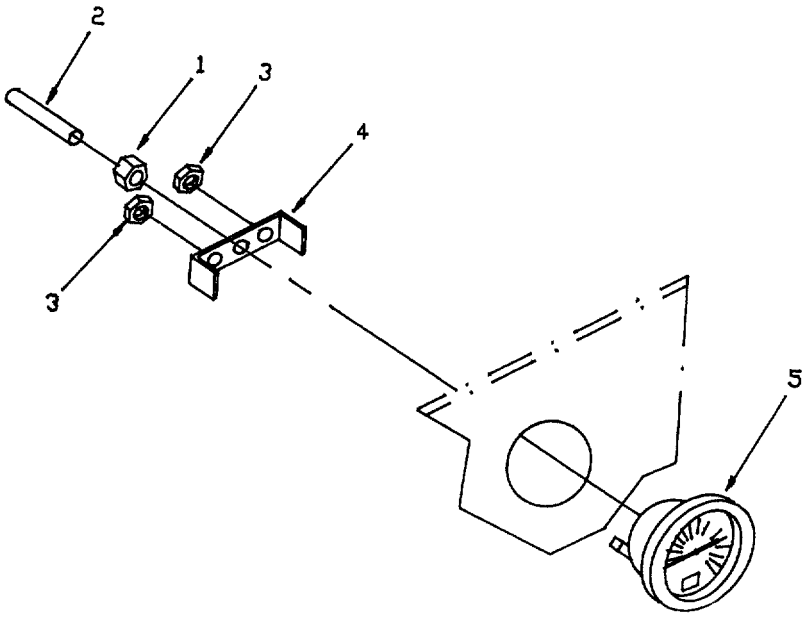


Figure 4-17. Mechanical Gage.

b. Remove Electrical Gage.

NOTE

Tag each wire for each corresponding terminal.

(1) Remove plain hexagon nuts (1, Figure 4-18) from wires (2) on electrical gage (6).

(2) Disconnect wires (2) from electrical gage (6).

(3) Remove plain hexagon nuts (3) from terminals (4).

(4) Remove brackets (5) from gage (6).

(5) Remove gage (6).

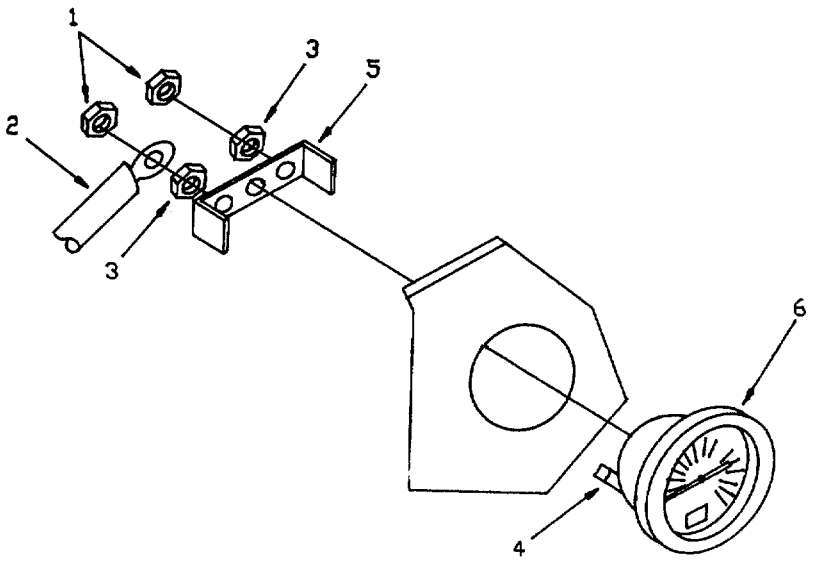


Figure 4-18. Electrical Gage.

c. Remove Temperature Transmitter.

(1) Remove plain hexagon nut (1, Figure 4-19) and disconnect wire (2) from temperature transmitter (3).

(2) Unscrew temperature transmitter (3).

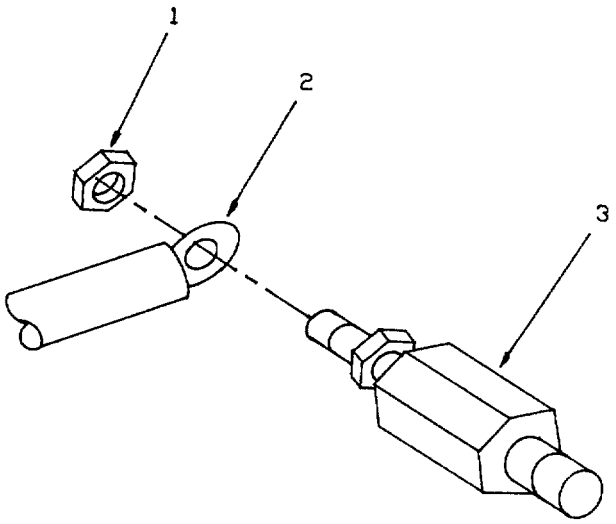


Figure 4-19. Temperature Transmitter.

d. Remove Liquid Level Switch.

(1) Remove plain hexagon nuts (1, Figure 4-20) of switch terminals.

NOTE

Tag each wire for each corresponding terminal.

(2) Disconnect wires (2) from terminals (3).

(3) Remove tapping screws (4).

(4) Remove liquid level switch (5).

(5) Remove gasket (6).

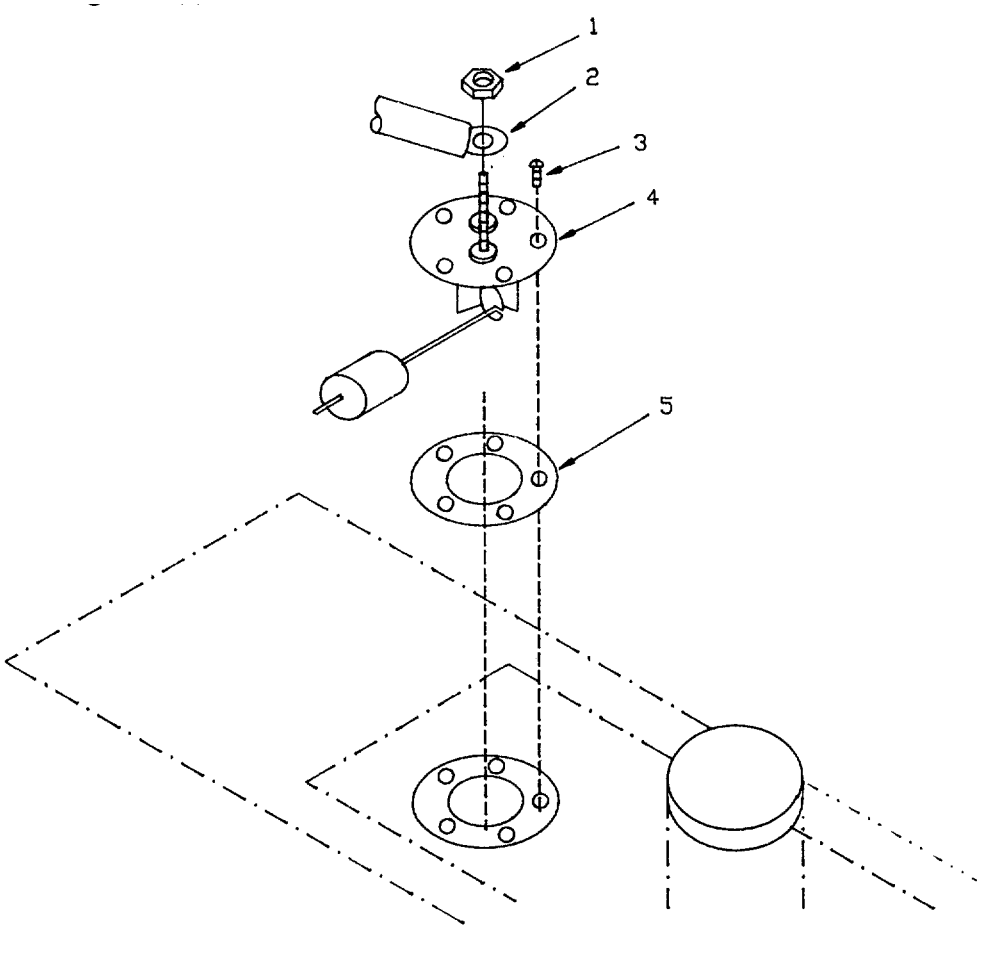


Figure 4-20. Liquid Level Switch.

e. Remove Knob and Cable Assembly.

(1) Mark cylinder assembly (4, Figure 4-21) for correct position setting on top of cable bracket (3).

(2) Remove plain hexagon nuts (1), cap screw (2), and pry cable bracket (3) apart.

(3) Remove cylinder assembly (4).

(4) Loosen set screw in cable stop (5) and remove cable stop (5).

(5) Loosen cap screw (6).

(6) Remove cap screw (7), bracket (8), and cable bracket (3).

(7) Remove cable (9).

(8) Remove plain hexagon nut (10) and slide plain hexagon nut over cable (9) length.

(9) Remove knob and cable assembly (11) from frame control panel (12).

f. Remove Speed Control.

NOTE

Engine assembly should be removed (para. 4-16) before removing speed control.

(1) Remove nonmetallic tube (13) attached to cylinder assembly (4).

(2) Remove cylinder assembly (4) (para. 4-29, e.).

(3) Disconnect extension spring (14) from top of bracket (15).

(4) Remove cap screws (16).

NOTE

Mark the appropriate hole to its applicable spring.

(5) Remove helical extension springs (17 & 18).

(6) Remove bracket (19).

(7) Remove manual control lever (20) and torsion spring (21).

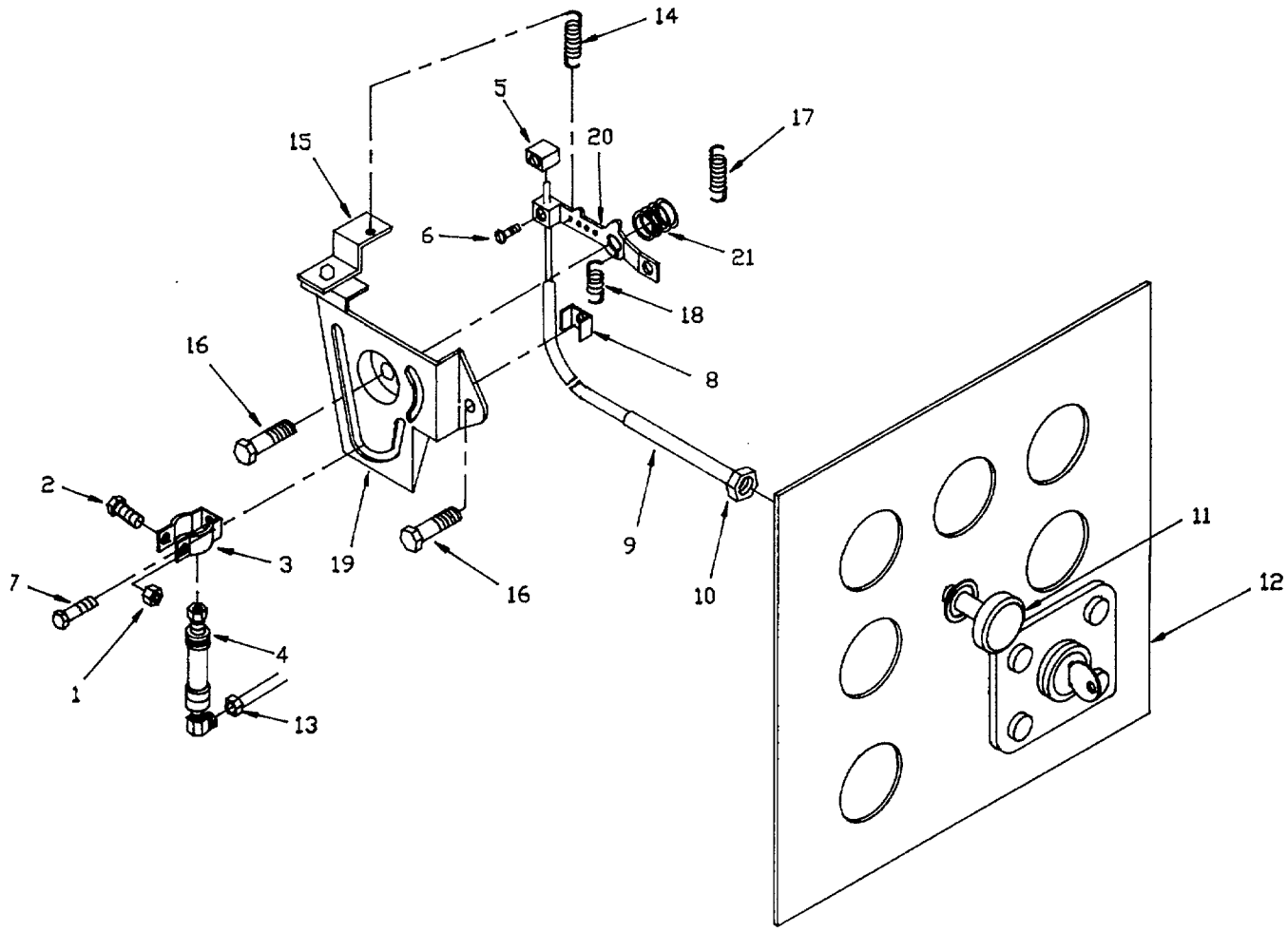


Figure 4-21. Knob, Cable Assembly, and Speed Control.

g. Install Mechanical Gage.

(1) Install new gage (5, Figure 4-17).

(2) Install bracket (4) and plain hexagon nuts (3) and tighten.

(3) Install nonmetallic tube (2) and tighten tube nut (1).

h. Install Electrical Gage.

(1) Install gage (6, Figure 4-18).

(2) Install bracket (5).

(3) Install plain hexagon nuts (3) and tighten.

(4) Install wires (2) to corresponding terminals (4) and remove tags.

(5) Install and tighten plain hexagon nuts (1).

i. Temperature Transmitter.

NOTE

Use teflon tape on pipe threads of temperature transmitter.

(1) Install temperature transmitter (3, Figure 4-19).

(2) Connect wire (2) and plain hexagon nut (1) on temperature transmitter (3). Tighten plain hexagon nut (1).

j. Liquid Level Switch.

(1) Install gasket (5, Figure 4-20).

(2) Install liquid level switch (4).

(3) Install tapping screws (3) and tighten.

(4) Connect wires (2) to corresponding terminal and remove tags.

(5) Install and tighten plain hexagon nuts (1).

k. Install Speed Control.

NOTE

Place applicable spring to marked hole.

(1) Install torsion spring (21) and manual control lever (20).

(2) Install bracket (19) and cap screws (16) and tighten.

k. Install Speed Control. - continued

(3) Install helical extension springs (17 & 18).

(4) Install extension spring (14) on bracket (15).

(5) Install cylinder assembly (4) (para. 4-29, e.)

(6) Install nonmetallic tube (13) to cylinder assembly (4).

l. Install Knob.

(1) Install cable assembly (11, Figure 4-21) through frame control panel (12).

(2) Install plain hexagon nut (10) over cable (9) length and tighten.

(3) Install cap screw (7), cable bracket (3), and bracket (8).

(4) Install cable (9) through bracket (8) and tighten cap screw (7).

(5) Install cable (9) through manual control lever (20).

(6) Install cable stop (5) and tighten set screw.

(7) Tighten cap screw (6).

NOTE

Insure mark is in correct previous position on cylinder assembly.

(8) Install cylinder assembly (4) to cable bracket (3).

(9) Install cap screw (2), plain hexagon nut (1) and tighten.

MAINTENANCE OF RECIPROCATING COMPRESSOR

4-30. REPLACE RECIPROCATING COMPRESSOR.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Complete belt guard assembly removed, para. 4-14
V-belts removed, para. 4-15

Materials/Parts

Reciprocating Compressor (P/N E57)

a. Removal.

(1) Remove nonmetallic tubing (1, Figure 4-22) from top of reciprocating compressor cylinder head (2).

(2) Remove metallic tube (3).

(3) Remove plain hexagon nuts (4), lock washers (5), and cap screws (6).

(4) Remove reciprocating compressor (7).

b. Installation.

(1) Install reciprocating compressor (7).

(2) Install cap screws (6), lock washers (5), and plain hexagon nuts (4) and tighten plain hexagon nuts.

(3) Install metallic tube (3).

(4) Install nonmetallic tubing (1) to top of reciprocating compressor cylinder head (2).

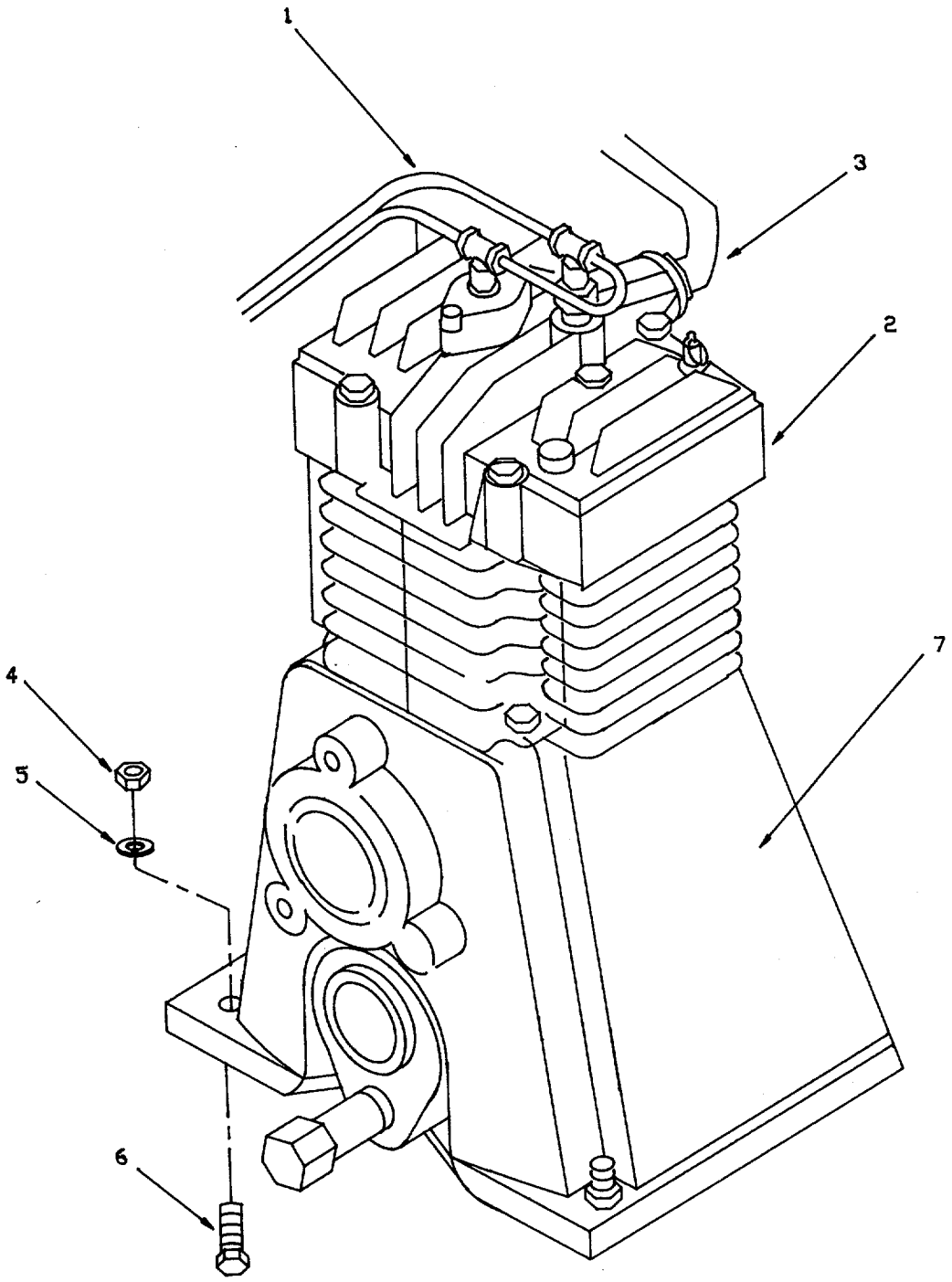


Figure 4-22. Reciprocating Compressor.

MAINTENANCE OF STRAINER ASSEMBLY

4-31. REPLACE STRAINER ASSEMBLY.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Rag, Wiping (Appendix E, item 3)
Filter Element (P/N 70153-66142)

a. Removal.

(1) Unfasten clips (1, Figure 4-23).

(2) If damaged, remove gasket (2) from access cover (6) and install new gasket.

(3) Remove air filter assembly (2 through 6) from strainer body (7).

(4) Remove filter element (3) by removing self-locking nut (4).

b. Installation.

(1) Wipe strainer body (7) clean.

(2) Install new filter element (3).

(3) Install self-locking nut (4) and tighten.

(4) If removed, install gasket (2).

(5) Install air filter assembly (2 through 6) into strainer body and fasten clips (1).

MAINTENANCE OF PILOT VALVE AND CHECK VALVES

4-32. REPLACE PILOT VALVE AND CHECK VALVES.

This task covers: a. Adjustment b. Removal c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Tape, Teflon (Appendix E, item 6)
Check Valve (P/N P-7575)
Pilot Valve (P/N SV-25)

a. Adjustment.

NOTE

Compressor in operation (para. 2-6.7) only for adjustment.

(1) Start compressor and allow time for it to build air pressure and unload.

NOTE

Diesel engine will idle when adequate air pressure is reached.

(2) Insure pilot valve is operating. Pull ring (5, figure 4-24) and make pressure adjustment to desired setting.

NOTE

One half turn of top nut (6) (1800) either decreases or increases line pressure by 20 psi.

NOTE

Do not adjust differential pressure adjustment nut (8). This is factory set.

(3) Loosen locknut (7) to adjust pressure. Turn top nut (6) counterclockwise for lower pressure, turn clockwise for higher pressure.

(4) When desired pressure is reached (175 psi), hold top nut (6) in correct position and tighten locknut (7) securely.

a. Adjustment. - continued.

NOTE

Allow compressor to make 4-5 load and unload cycles to insure proper adjustment.

NOTE

When desired pressure is reached, test is successful.

(5) When pressure is reached (175 psi), drain tank slowly of air pressure using drain valve (6, Figure 4-25) to reload compressor.

(6) Shut off drain valve (6) and allow compressor to build pressure.

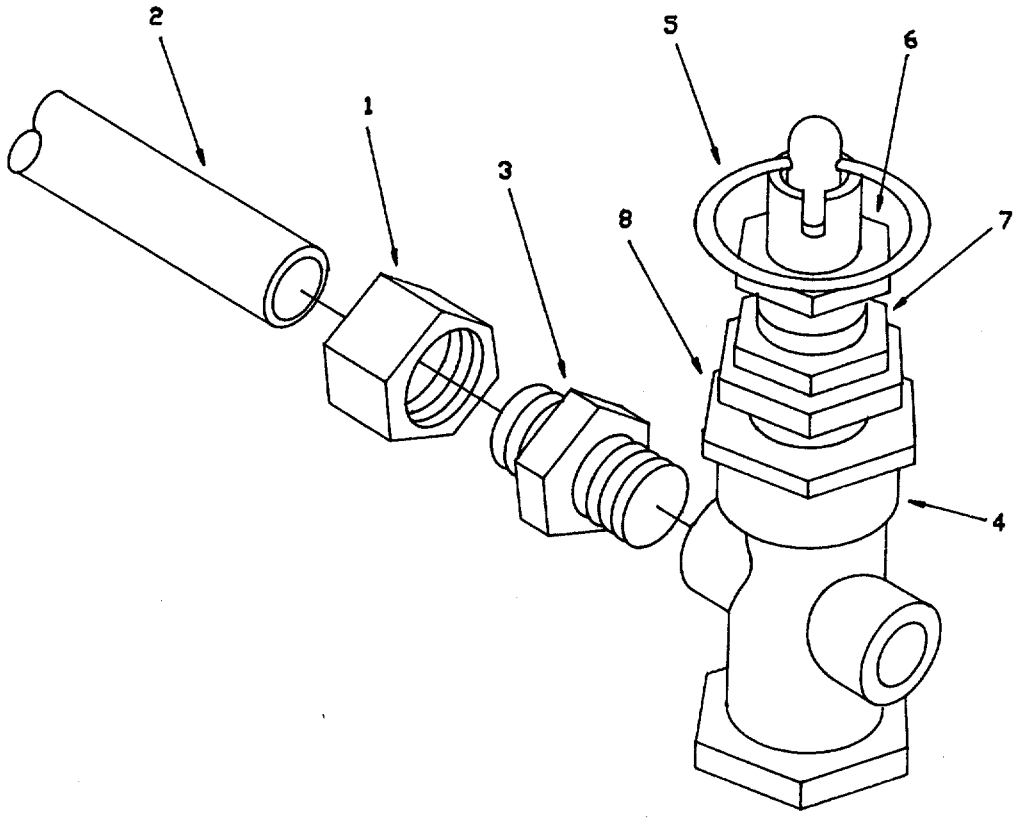


Figure 4-24. Pilot Valve.

b. <u>Remove Pilot Valve</u>.

(1) Loosen tube nut (1, Figure 4-24) and remove nonmetallic tubing (2).

(2) Remove straight adaptor (3).

(3) Unscrew pilot valve (4).

c. Remove Check Valve.

(1) Loosen tube nuts (1, Figure 4-25) and remove metallic tube (2) from pipe elbow (3) and reciprocating compressor.

(2) Remove pipe elbow (3), pipe nipple (4), and check valve (5).

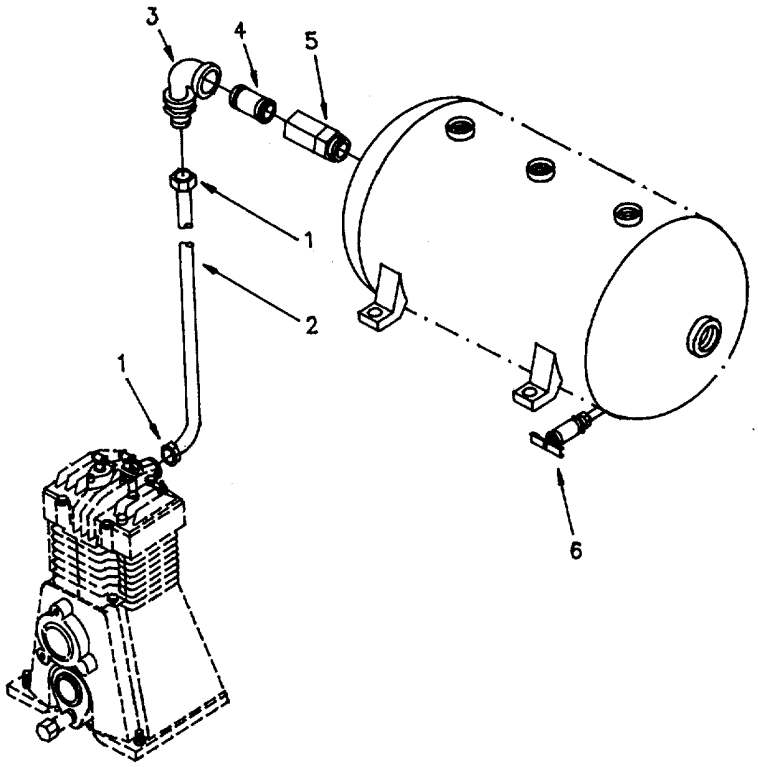


Figure 4-25. Check Valve and Drain Valve.

d. Install Pilot Valve.

NOTE

Use teflon tape to tape threads of pilot valve.

(1) Install pilot valve (4, Figure 4-24).

(2) Install straight adapter (3), nonmetallic tubing (2), and tighten tube nut (1).

e. Install Check Valve.

NOTE

Use teflon tape to tape threads of check valve and pipe nipple.

(1) Install check valve (5, Figure 4-25).

(2) Install pipe nipple (4) and pipe elbow (3).

(3) Install metallic tube (2) and tube nuts (1) and tighten.

MAINTENANCE OF LINES AND FITTINGS

4-33. REPLACE LINES AND FITTINGS.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Air tank receiver drained

Materials/Parts

Nonmetallic Tubing (P/N PT1/4)
Nonmetallic Tubing (P/N PT1/4X22)
Tube Nut (P/N61CA-4)
Nonmetallic Tubing (P/N PT1/4X32)
Nonmetallic Tubing (P/N PT1/4X58)

a. Removal. Remove tube nuts (1, Figure 4-26) and nonmetallic tube (2).

b. Installation.

(1) Install tube nuts (1) to nonmetallic tube (2).

(2) Install nonmetallic tube to applicable part.

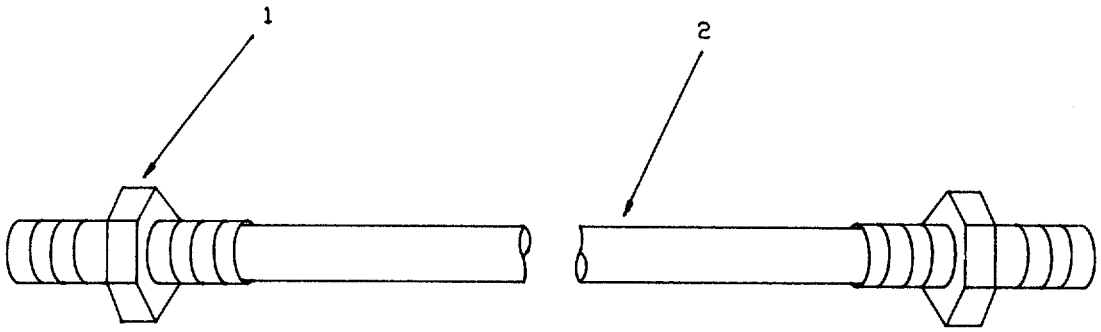


Figure 4-26. Lines and Fittings.

MAINTENANCE OF PNEUMATIC TIRE WHEEL AND PNEUMATIC TIRES

4-34. REPLACE PNEUMATIC TIRE WHEEL AND PNEUMATIC TIRES.

This task covers: a. Removal c. Installation
b. Repair

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Parking brake assembly engaged

Materials/Parts

None

a. Removal.

WARNING

Trailer must be supported so that pneumatic tire is off the ground. Use a jack of appropriate size (1,600 pounds) and capacity. Failure to observe this warning may may result in severe personal injury or death.

(1) Raise trailer base until pneumatic tire (2, Figure 4-27) is clear of ground surface and use support equipment.

(2) Remove plain hexagon nuts (1).

(3) Remove pneumatic tire (2) and pneumatic tire wheel (3) from vehicular wheel hub.

b. Repair. To repair damaged pneumatic tire or wheel, refer to TM9-2610-200-14.

c. Installation.

(1) Install pneumatic tire (2) and pneumatic tire wheel (3).

(2) Install plain hexagon nuts (1) and tighten.

(3) Remove support equipment from trailer base.

(4) Lower trailer base until pneumatic tire (2) is on ground surface.

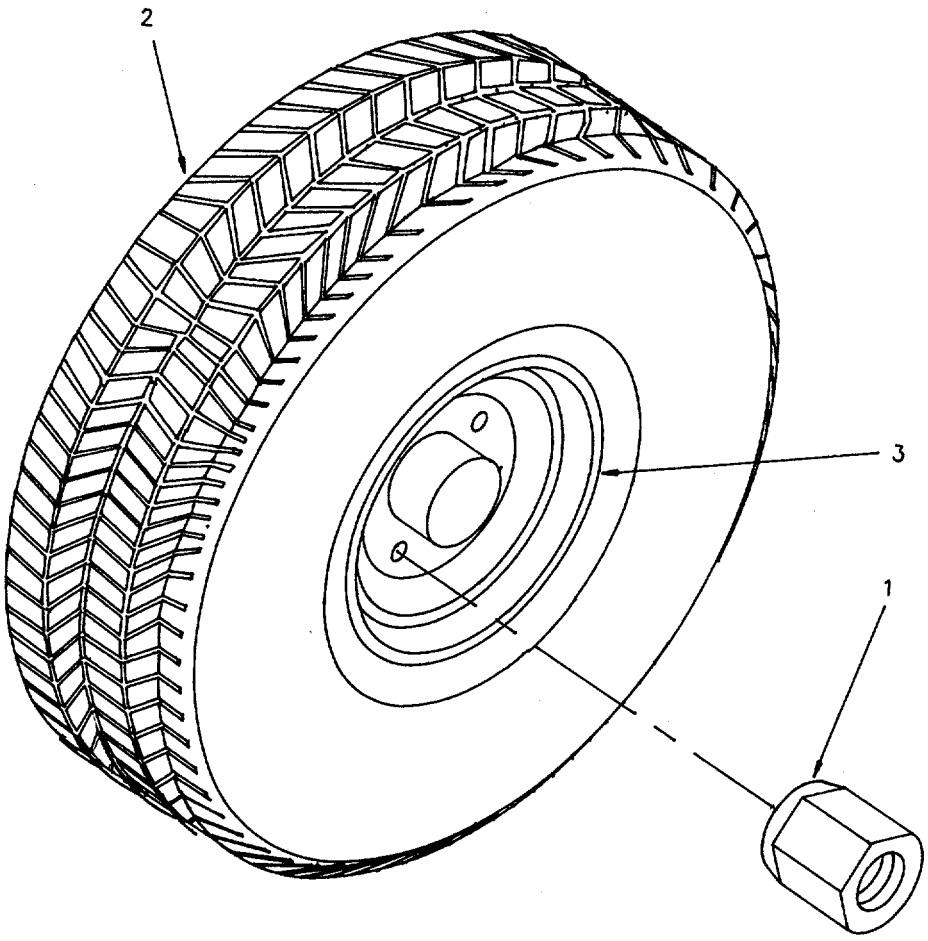


Figure 4-27. Pneumatic Tire Wheel and Pneumatic Tire.

MAINTENANCE OF AXLE ASSEMBLY

4-35.REPLACE AXLE ASSEMBLY.

This task covers: a. Inspection b. Removal c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Pneumatic tire wheel and pneumatic tire removed, para. 4-34

Materials/Parts

Leaf Spring Assembly (P/N D72-30)

a. Inspection.

(1) Inspect axle assembly (4, Figure 4-28) for broken leaf spring assembly (8), u-bolts (6), and missing hardware.

(2) Inspect axle assembly (4) for stress cracks and defective condition.

b. Removal.

(1) Remove cotter pin (1, Figure 4-31) and pin (2) from cable bracket (3).

(2) Remove parking brake cable (4) from cable holder (5) on vehicular wheel hub.

(3) Remove plain hexagon nuts (1, Figure 4-28) from cap screws (2) of axle hangers (3).

(4) Remove axle assembly (4).

(5) Remove plain hexagon nuts (5), U-bolts (6), tie plate (7), and leaf spring assembly (8).

(6) Remove axle (9).

c. Installation.

NOTE

Repair is replacement of leaf spring assembly.

(1) Install leaf spring assembly (8), U-bolts (6), and tie plate (7) to axle (9).

(2) Install plain hexagon nuts (5) and tighten.

c. Installation. - continued

(3) Install axle assembly (4) to axle hangers (3).

(4) Install cap screws (2) through axle hangers (3) and leaf spring assembly (8).

(5) Install and tighten plain hexagon nuts (1).

6) Install parking brake cable (4, Figure 4-31) to cable holder (5) on vehicular wheel hub.

(7) Install pin (2) and cotter pin (1).

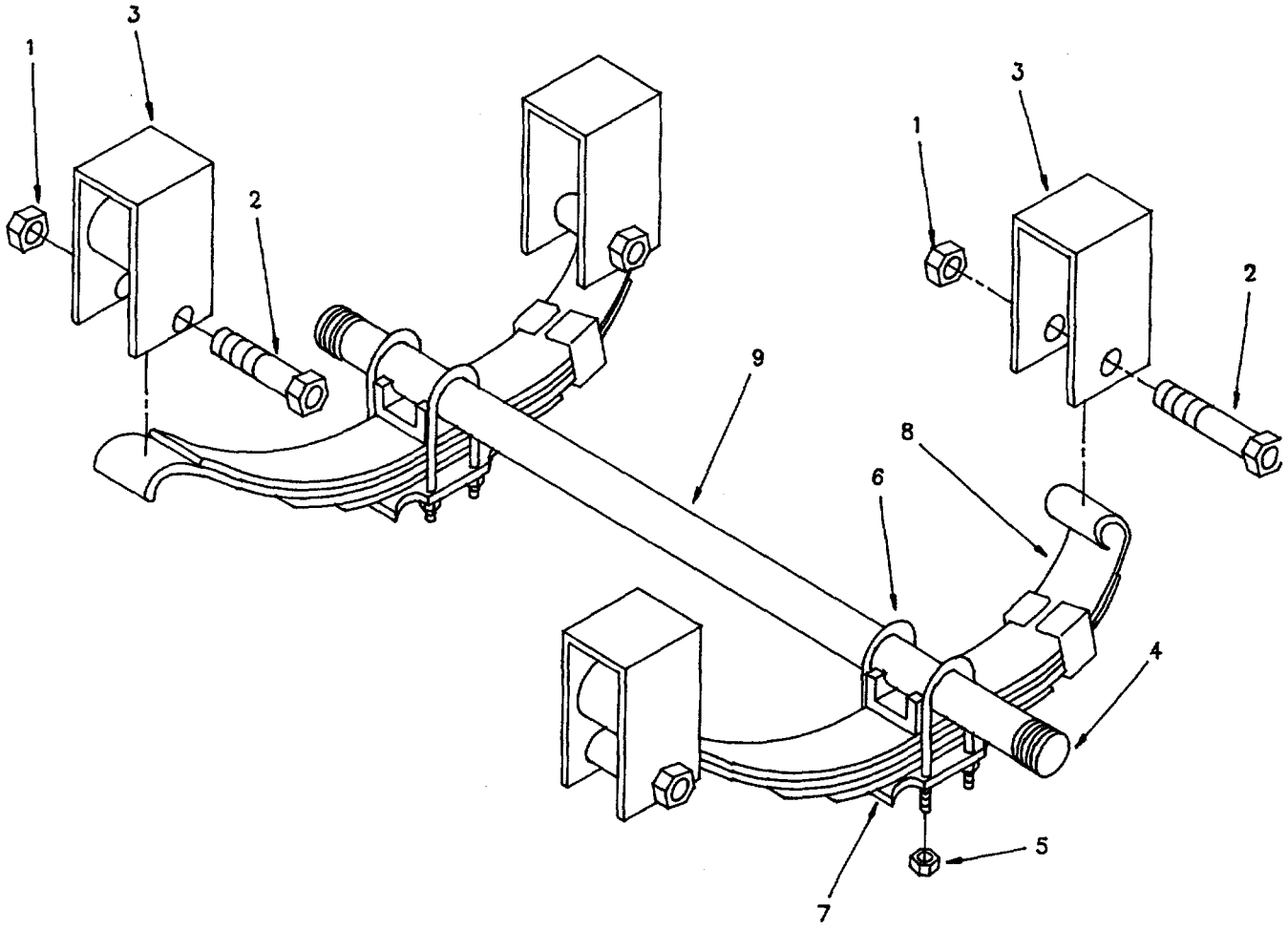


Figure 4-28. Axle Assembly.

MAINTENANCE OF VEHICULAR WHEEL HUB

4-36. REPLACE VEHICULAR WHEEL HUB.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Pneumatic tire removed, para. 4-34

Materials/Parts

Grease, Automotive (Appendix E, item 4)
Grease Seal (P/N D10-10)

a. Removal.

(1) Remove grease caps (1, Figure 4-29).

(2) Bend key washer (3) tab away from castellated nut (2).

(3) Remove castellated nut (2), key washer (3), and flat washer (4).

(4) Remove bearing cone (5).

(5) Remove vehicular wheel hub (6) from axle.

(6) Remove grease seal (7).

(7) Remove bearing cone (8)

(8) Inspect bearing cones (5 & 8) and bearing cups (9 & 10).

(9) If damage is found, replace bearing cones (5 & 8) and bearing cups (9 & 10).

b. Installation.

(1) Pack bearing cones (5 & 8) as necessary with grease.

(2) If removed, install bearing cups (9 & 10).

(3) Install bearing cone (8).

(4) Install grease seal (7) in vehicular wheel hub (6).

(5) Install vehicular wheel hub (6) to axle.

b. Installation. - continued.

(6) Install bearing cone (5), flat washer (4), and key washer (3).

(7) Install and tighten castellated nut (2).

(8) Press key washer (3) tab into castellated nut (2).

(9) Repack with grease and install grease caps (1).

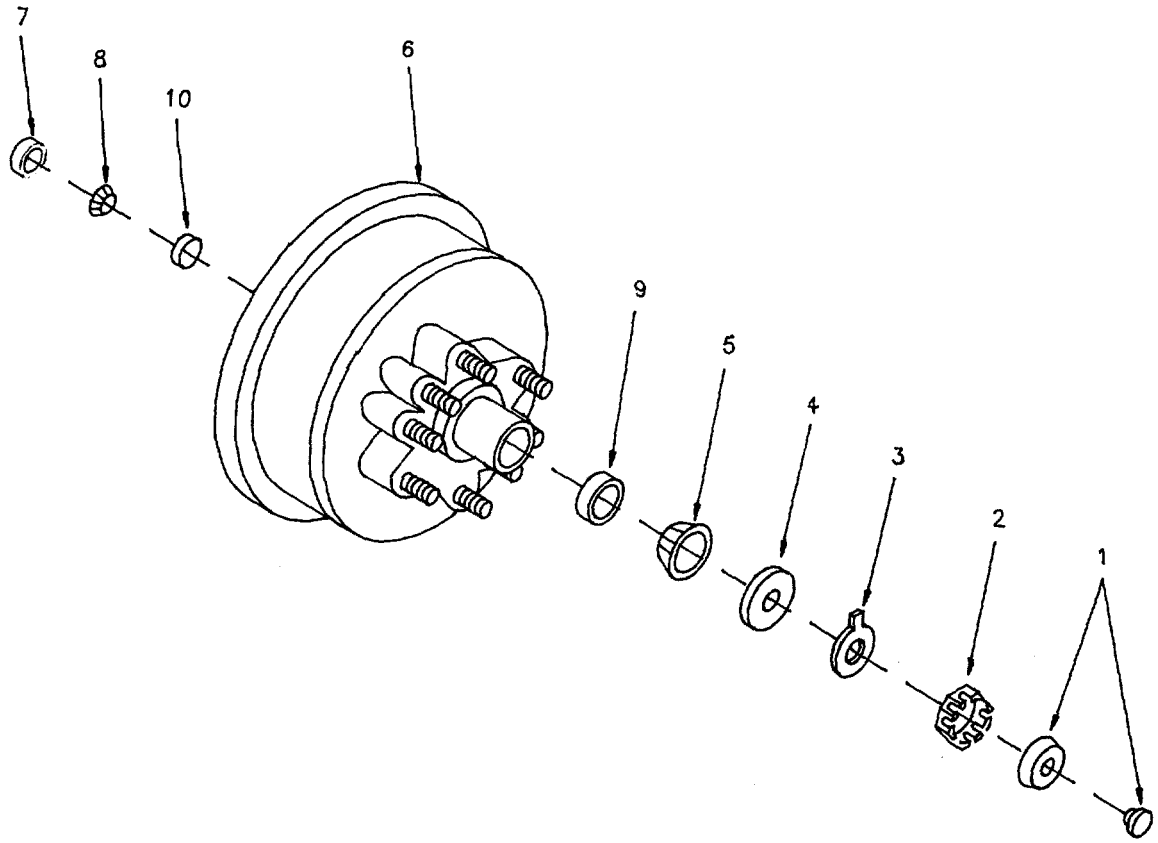


Figure 4-29. Vehicular Wheel Hub.

MAINTENANCE OF BRAKE ASSEMBLY

4-37. REPLACE BRAKE ASSEMBLY.

This task covers:	a. Inspection	c. Removal
	b. Adjustment	d. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Vehicular Wheel hub removed, para. 4-36

Materials/Parts

Brush, Cleaning (Appendix E, item 1)
Rag, Wiping (Appendix E, item 3)
Solvent, Dry Cleaning (Appendix E, item 2)
Brake Shoe Kit (P/N D71-48)
Extension Spring (P/N D40-45)
Extension Spring (P/N D46-18)
Extension Spring (P/N D46-5)

a. Inspection.

(1) Inspect brake shoe kit (4, Figure 4-30) for wear or broken and missing parts.

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent fumes. Wear goggles or eye protection when blowing solvent from parts. Air pressure should not exceed 30 psi (2.1 Kg/cm2). Wear rubber gloves to protect skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C). Failure to observe this warning may result in severe personal injury or death.

(2) Clean and wipe all areas of brake assembly.

b. Adjustment. Adjust brake assembly by tightening or loosening adjusting screw (5).

c. Removal.

(1) Remove extension spring (1).

(2) Remove extension springs (2) from pins (3).

(3) Remove brake shoe kit (4).

(4) Remove adjusting screw (5).

(5) Remove extension spring (6) holding both halves of brake shoe kit (4).

d. Installation.

NOTE

When replacing brake shoe kit or performing maintenance, remove magnet kit and magnet arm as there is no requirement for electric brakes on this trailer.

(1) Install adjusting screw (5).

(2) Install extension spring (6) on brake shoe kit (4).

(3) Install brake shoe kit (4) to backing plate (7).

(4) Install extension springs (2) on pins (3).

(5) Install extension spring (1).

(6) Adjust brakes as required.

(7) Install vehicular wheel hub (reference para. 4-36, b.).

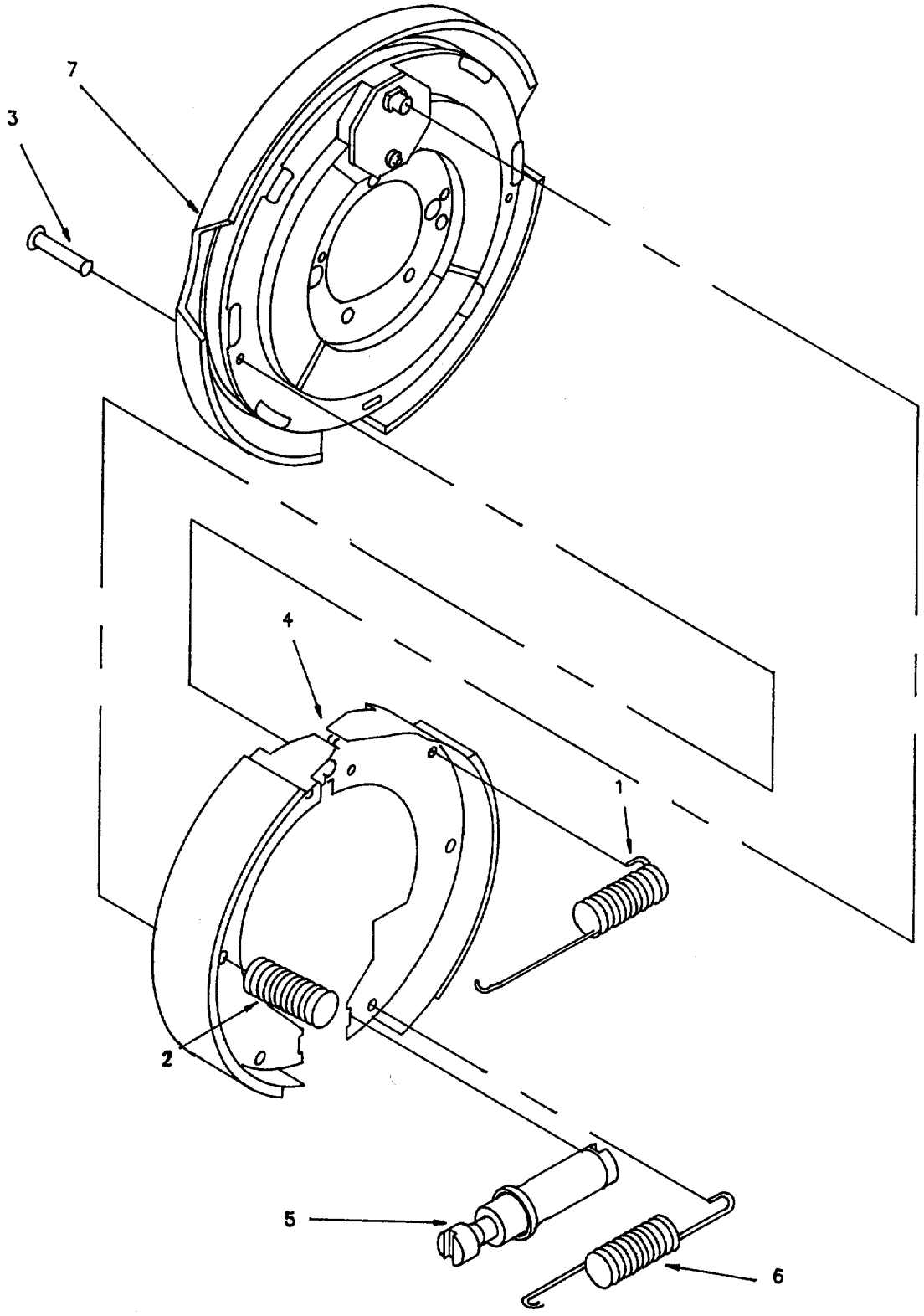


Figure 4-30. Brake Assembly.

MAINTENANCE OF PARKING BRAKE ASSEMBLY

4-38. REPLACE PARKING BRAKE ASSEMBLY.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Trailer stabilized
Pneumatic tire and wheel removed, para. 4-34

Materials/Parts

Cable (P/N FB-1)
Cable (BB-2)

a. Removal.

(1) Remove cotter pin (1, Figure 4-31) and pin (2) from cable bracket.

(2) Remove parking brake cable (3) from cable holder (4) on vehicular wheel hub.

(3) Remove plain hexagon nut (5) and flat washer (6).

(4) Remove cap screw (7), cable bracket (8), and brake cable (3).

(5) Remove cotter pin (9) and pin (10) from brake cable (3).

(6) Remove plain hexagon nuts (11) from brake cables (3) and remove bracket (30).

(7) Remove cap screw (12) from cable clamp (13).

(8) Remove cotter pin (14), flat washer (15) and pin (16) from handle lever (17).

(9) Remove plain hexagon nuts (18), lock washers (19), and flat washers (20) from plate (21).

(10) Remove cap screw (22) and cable bracket (23).

(11) Remove plain hexagon nuts (24).

(12) Remove cable (25).

(13) Remove plain hexagon nuts (26), lock washers (27), flat washers (28), and cap screws (29).

(14) Remove handle lever (17).

b. Installation.

(1) Install handle lever (17).

(2) Install cap screws (29), flat washers (28), lock washers (27), and plain hexagon nuts (26), and tighten.

(3) Install cable (25).

(4) Install plain hexagon nuts (24) on cable (25).

(5) Install cable bracket (23) and cap screws (22).

(6) Install flat washers (20), lock washers (19), and plain hexagon nuts (18) on plate (21).

(7) Install pin(16), flat washer (15), and cotter pin (14) on handle lever (17), and cable (25).

(8) Install cable clamp (13), and cap screw (12), and tighten.

(9) Install plain hexagon nuts (11) and bracket (30) on cable (3).

(10) Install pin (10) and cotter pin (9).

(11) Install cable bracket (8), cap screws (7), flat washers (6), and plain hexagon nuts (5), and tighten.

(12) Install brake cable (3) and cable holder (4) on vehicular wheel hub.

(13) Install pin (2) and cotter pin (1).

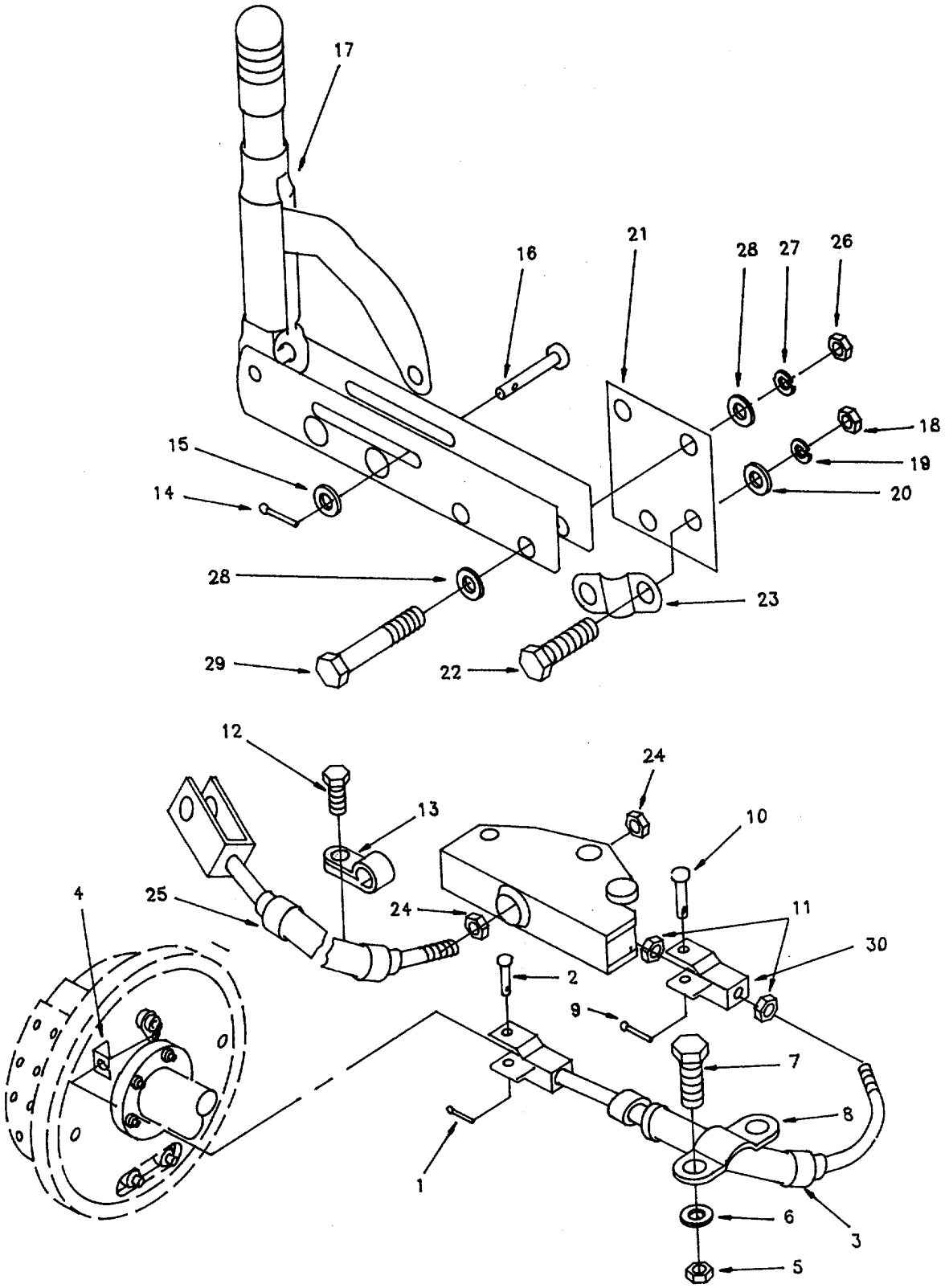


Figure 4-31. Parking Brake Assembly.

MAINTENANCE OF STABILIZING EQUIPMENT

4-39. ADJUST STABILIZING EQUIPMENT.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

Drawbar Coupler (P/N D161370)
Stabilizer (P/N 362-LJ)
Leveling-Support Jack (P/N 151401)
Plunger Assembly (P/N 018400)

a. Remove Drawbar Coupler.

(1) Remove plain hexagon nuts (1, Figure 4-32) and cap screws (2).

(2) Remove drawbar coupler (3).

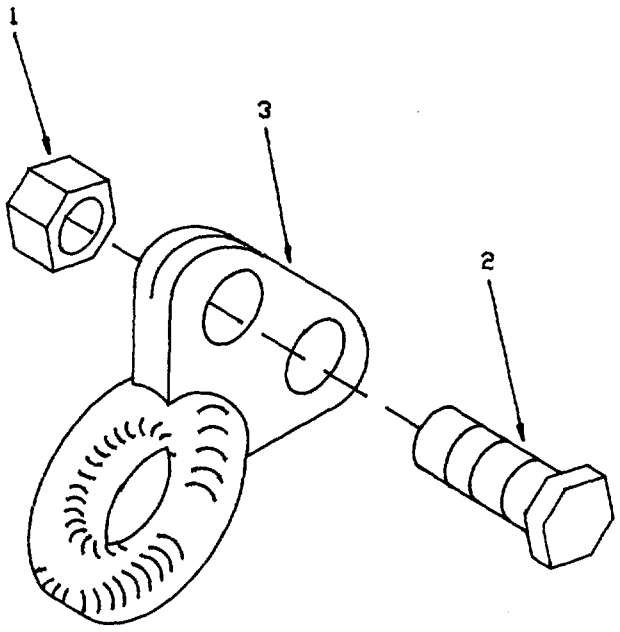


Figure 4-32. Drawbar Coupler.

b. **Remove Leveling-Support Jack.**

WARNING

Support trailer tongue when removing leveling-support jack. Failure to observe this warning may result in severe personal injury or death.

(1) Remove retaining ring (1, Figure 4-33).

(2) Remove leveling-support jack (2).

(3) Remove cotter pin (3), flat washer (4), and spring (5) from plunger assembly (6).

(4) Remove plunger assembly (6).

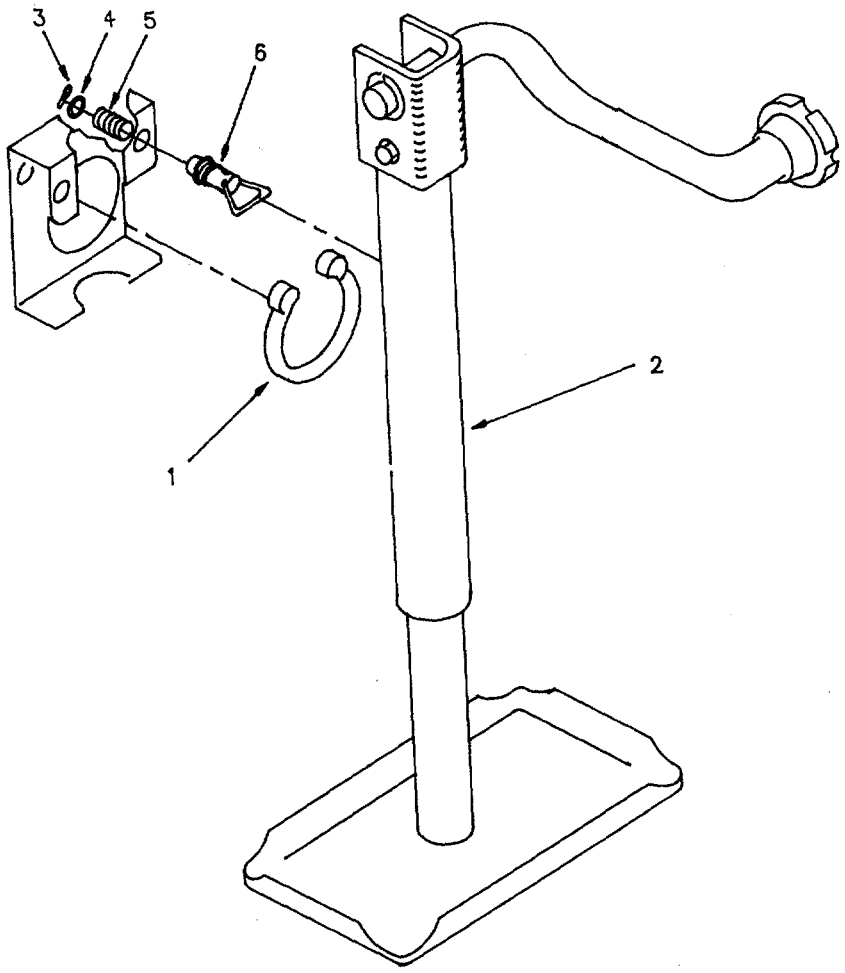


Figure 4-33. Leveling-Support Jack.

c. Remove Stabilizer.

NOTE

Jack rear of trailer to remove stabilizers.

(1) Remove self-locking pin (1, Figure 4-34).

(2) Remove stabilizer (2).

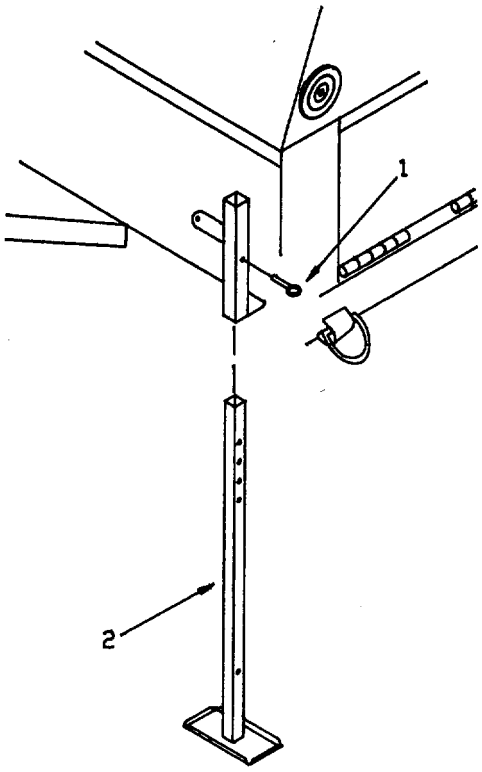


Figure 4-34 Stabilizer.

d. Install Drawbar Coupler.

(1) Install drawbar coupler ((3, Figure 4-32).

(2) Install cap screws (2), plain hexagon nuts (1) and tighten.

e. Install Leveling-Support Jack.

(1) Install leveling-support jack (2, Figure 4-33).

(2) Install retaining ring (1)

(3) Install plunger assembly (6).

(4) Install spring (5), flat washer (4), and cotter pin (3) to plunger assembly (6).

f. Install Stabilizer.

(1) Install stabilizer (2, Figure 4-34) to trailer.

(2) Install self-locking pin (1).

(3) Move stabilizer (2) to transport position (lower holes).

(4) Remove floor jack or support equipment.

Section VI - PREPARATION FOR STORAGE OR SHIPMENT

4-40 ADMINISTRATIVE STORAGE (45 DAYS OR LESS).

4-40.1 Special Instructions for Administrative Storage.

a. Placement of equipment in administrative storage should be for short periods of time when a shortage of maintenance effort exists. Items should be in mission readiness within 24 hours or within the time factors as determined by the directing authority. During the storage period, appropriate maintenance records will be kept.

b. Before placing the equipment in administrative storage, current preventive maintenance checks and services should be completed, shortcomings and deficiencies should be corrected, and all Modification Work Orders (MWO) should be applied.

c. Storage site selection. Inside storage is preferred for items selected for administrative storage. If inside storage is not available, trucks, vans, and other containers may be used.

4-41 INTERMEDIATE STORAGE (46 TO 180 DAYS).

4-41.1 Instructions for Intermediate Storage. For intermediate storage no special handling is required other than protection from damage and the elements.

a. Drain fuel tank assembly and run engine to use residual fuel.

b. Drain engine oil by removing pipe plug in both engine and compressor.

c. Open drain valve on air tank receiver.

4-42 LONG TERM STORAGE (181 DAYS OR LONGER).

4-42.1 Instructions for Long Term Storage. For long term storage no other special handling is required other than protection from damage and the elements.

a. Drain fuel tank assembly and run engine to use up residual fuel.

b. Drain engine oil by removing oil pipe plug.

c. Open drain valve on air tank receiver.

d. Install oil preservative into engine and compressor.

4-43 PREPARATION FOR SHIPMENT.

4-43.1 Loading Procedure.

a. Chock wheel of transporting vehicle.

WARNING

Use a lifting device capable of lifting compressor/trailer (1700 pounds). Do not allow compressor/trailer to swing while suspended from a lifting device. Failure to observe this warning may result in severe personal injury or death.

CAUTION

Use care in handling to avoid damage to compressor. If an overhead lifting device must be used, use appropriate sling so that weight of compressor/trailer is balanced. Use extreme care when loading.

b. Use forklift or suitable lifting equipment to move trailer mounted compressor to transporting vehicle.

c. Use tiedowns and, if required, blocking material to secure unit to transporting vehicle.

d. Check height, width, and weight for travel clearances and load limits.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I - REPAIR PARTS, TOOLS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

5-1 COMMON TOOLS AND EQUIPMENT.

5-1.1 Authorized Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-2 SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT.

5-2.1 Special Tools for Compressor. No special tools and equipment are required to maintain the reciprocating air compressor at the Unit maintenance level.

5-3 REPAIR PARTS.

5-3.1 Repair Parts and Special Tools List. Repair parts are listed and illustrated in the repair parts and special tools list TM9-4310-396-23P, Operator, Unit and Direct Support Maintenance Repair Parts and Special Tools List.

Section II - DIRECT SUPPORT TROUBLESHOOTING PROCEDURES

-54 GENERAL INSTRUCTIONS.

5-4.1 Direct Support Troubleshooting Table 5-1 contains troubleshooting information for locating and correcting most of the operating troubles which are the responsibility of Direct Support maintenance. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help you to determine probable causes and corrective actions to take. Perform the tests/inspections and corrective actions in the order listed.

5-4.2 This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

5-4.3 Only those functions within the scope of Direct Support maintenance are listed. For troubleshooting procedures within the scope of operator/crew maintenance, refer to Chapter 3, Table 3-1. For troubleshooting procedures within the scope of Unit maintenance, refer to Chapter 4, Table 4-2.

5-4.4 Refer to Table 5-1 Direct Support Troubleshooting for help to correct trouble in the equipment.

DIRECT SUPPORT TROUBLESHOOTING TABLE 5-1

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. BATTERY TESTS GOOD BUT GOES DEAD.
Step 1. Test generator output with regulator disconnected.
If generator output at 3600 rpm at least 39 VAC, replace regulator.
If generator output below 39 VAC at 3600 rpm, repair generator.
2. COMPRESSOR WILL NOT BUILD UP AIR PRESSURE.
Step 1. Check valve plate.
If damage found, replace valve plate.
If no damage found, replace compressor.

DIRECT SUPPORT TROUBLESHOOTING TABLE 5-1 - continued

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
3. COMPRESSOR NOISY.
Step 1. Check for loose pulley.
If pulley loose, tighten or replace pulley as necessary.
If pulley not loose, replace compressor.

Section III - DIRECT SUPPORT MAINTENANCE PROCEDURES

MAINTENANCE OF ENGINE STARTER MOTOR

5-5. REPAIR/TEST ENGINE STARTER MOTOR.

This task covers: a. Disassembly c. Assembly
b. Test

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine starter motor removed, para. 4-19

Materials/Parts

Grease, Automotive (Appendix E, item 4)
Rag, Wiping (Appendix E, item 3)
Solvent, Dry Cleaning (Appendix E, item 2)
Brush, Cleaning (Appendix E, item 1)
Sandpaper (Appendix E, Item 18)
Adhesive, Tube (Appendix E, item 16)

WARNING

Dry cleaning solvent used to clean parts is potentially dangerous to personnel and property. Clean parts in a well-ventilated area. Avoid inhalation of solvent from fumes. Wear goggles or eye protection when blowing solvent from parts. Air pressure should not exceed 30 psi (2.1 Kg/cm2). Wear rubber gloves to protect skin. Wash exposed skin thoroughly. Do not smoke or use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C). Failure to observe this warning may result in severe personal injury or death.

NOTE

If engine starter motor is determined defective, removal is necessary prior to test.

a. Disassembly.

(1) Loosen nut (1, Figure 5-1), lock washer (2), and flat washer (3).

(2) Disconnect electrical coil wire (4) from relay-solenoid (7).

(3) Remove cap screws (5) and lock washers (6).

(4) Remove relay-solenoid (7).

(5) Separate shifter fork (8) from plunger (9).

a. Disassembly. - continued

(6) Remove torsion spring (10) from relay-solenoid (7).

(7) Remove dust cover (11) of dust cover kit.

(8) Remove E-ring (12) and thrust washer set (13).

(9) Remove machine bolts (14) holding rear cover (15), and machine screws (16).

(10) Remove rear cover (15).

NOTE

There are three electrical brushes: two positive (+) brushes and one negative (-) brush.

(11) Remove electrical brushes (17) from electrical holder assembly (19).

(12) Remove electrical brushes (18) from electrical holder assembly (19).

(13) Mark position of electrical brush (18) to insure proper installation.

(14) Remove electrical holder assembly (19).

NOTE

Slide electrical coil slowly over motor armature so that it does not strike against other parts.

(15) Remove electrical coil (20) from motor armature (21).

(16) Remove motor armature (21) from gear housing assembly (22).

(17) Slide pinion stopper set (23) toward pinion.

(18) Remove pinion stopper (24).

(19) Remove pinion assembly (25) from motor armature.

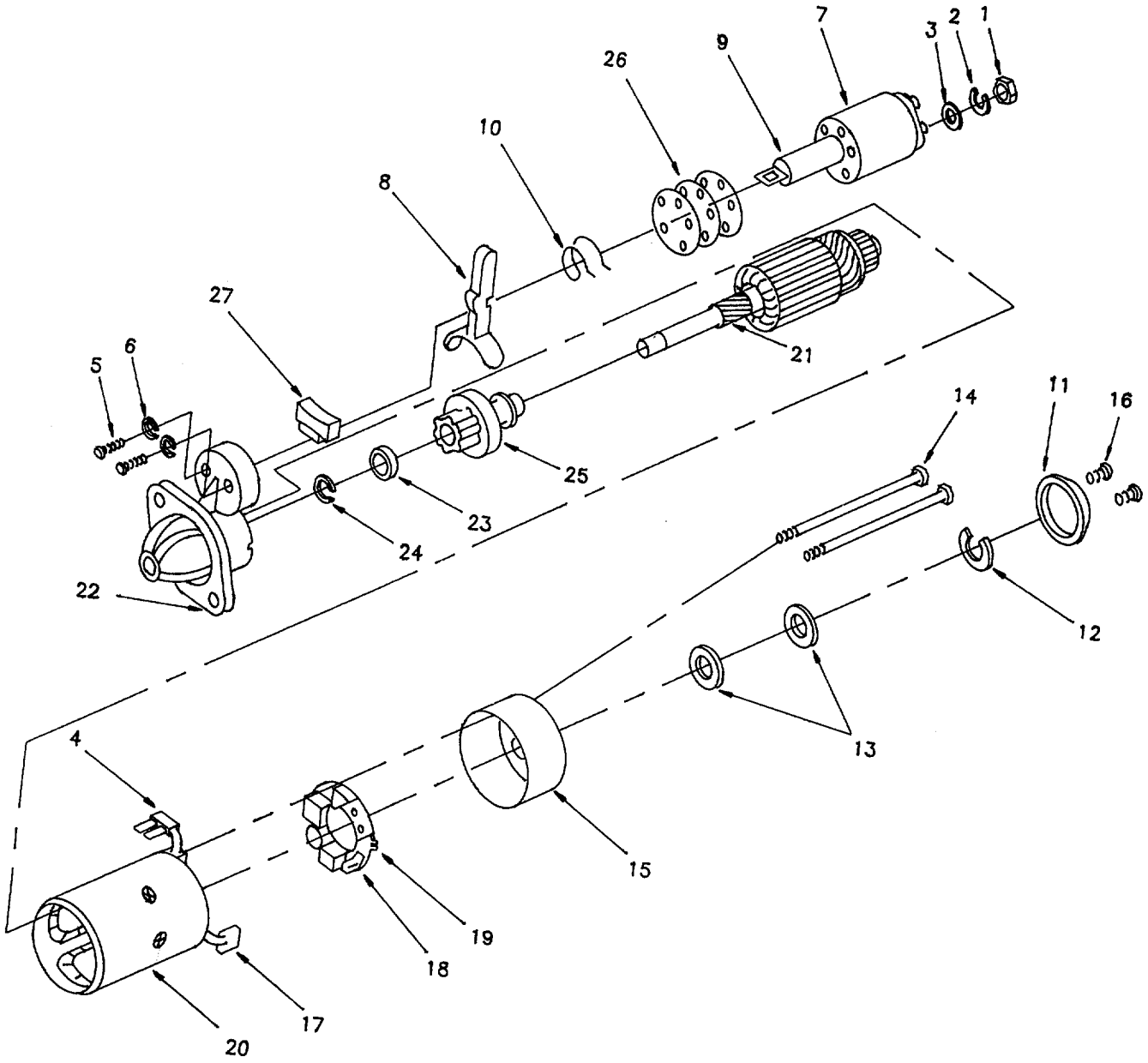


Figure 5-1. Engine Starter Motor.

b. Test Engine Starter Motor.

NOTE

To test engine starter motor, use a circuit tester capable of measuring volts and continuity (ohms).

(1) Motor armature coil ground test: use a circuit tester to check the insulation between commutator and shaft or core. If continuity is detected, replace starter motor.

(2) Inspect surface of commutator. If corroded or pitted, clean with fine sandpaper. Replace starter motor if commutator diameter measures less than 1.26 inches (32mm).

(3) Check motor armature shaft for wear, scarring, or discoloration from heat. If damage is found, replace starter motor.

(4) Check the insulating material of commutator. If insulating material is not lower than commutator, correct with hacksaw blade or undercutter. Insulating material should be .015 to .020 inches below commutator.

(5) Electrical coil open test: check electrical coil for disconnection and grounding. Check continuity between terminals connecting electrical coil brushes. Continuity indicates the electrical coil is good. If not, replace starter motor.

(6) Short-circuit test: check continuity between electrical coil case and electrical coil terminals. Continuity indicates electrical coil is shorted and starter motor must be replaced.

NOTE

Do not remove electrical coil.

(7) Clean any carbon powder or rust that has been deposited in electrical coil by blowing out with dry compressed air.

(8) Shunt coil continuity test: check continuity between C terminal (1, Figure 5-2) and relay- solenoid (4) case. If no continuity is detected, replace relay-solenoid (4) whose shunt coil is open. Resistance of 1.13 0 (ohms) should be detected.

(9) Series coil continuity test: check continuity between C terminal (1) and M terminal (2) of relay-solenoid (4) case to insure continuity is detected. Series coil resistance is 0.33 n (ohms).

(10) Relay-solenoid contact test: Push plunger with your finger and check continuity between the M (2) and B (3) terminals. If no continuity, relay-solenoid (4) is faulty and must be replaced.

b. Test Engine Starter Motor. - continued

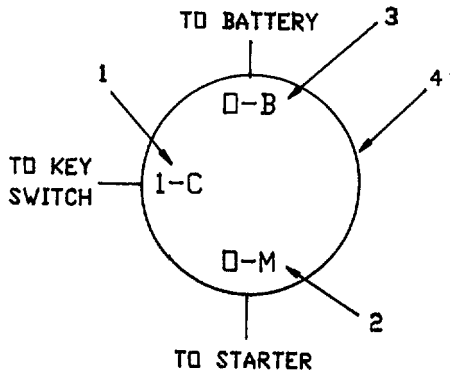


Figure 5-2. Relay-Solenoid Diagram.

(11) Pinion test.

(a) Inspect pinion teeth and replace pinion assembly if teeth are excessively worn or damaged.

(b) Insure pinion slides smoothly. Replace pinion assembly if faulty.

(c) Replace if clutch slips or seizes with new pinion assembly.

(12) Electrical brush test.

NOTE

The electrical brushes are quickly worn by the motor. When the electrical brushes are defective, the output of the motor will drop. New electrical brush dimensions are .55 inches (14mm).

(a) Install new electrical brushes which have been worn beyond specified wear limit of .43 inches 11mm) or if outside of brush is damaged.

(b) If movement of electrical brushes in electrical brush holder is hampered because electrical holder assembly is rusted, replace assembly.

(c) Electrical holder assembly ground test: check the continuity between the insulated electrical holder assembly and the base of electrical holder assembly. Continuity indicates that these two points are grounded and that electrical holder assembly must be replaced.

c. Assembly.

(1) Install pinion assembly (25, Figure 5-1) to motor armature (21).

(2) Install pinion stopper set (23) on motor armature (21).

(3) Install pinion stopper (24).

c. Assembly. - continued

(4) Insert motor armature (21) and pinion assembly (25) into gear housing assembly (22).

(5) Insert shifter fork (8) into pinion assembly (25) and insert dust seal (27) of dust cover kit into gear housing assembly (22).

(6) Insert motor armature (21) and gear housing assembly (22) into electrical coil (20).

NOTE

Insure electrical holder assembly is position as removed.

(7) Install electrical holder assembly (19) on motor armature (21).

(8) Install electrical brushes (17 & 18) into electrical holder assembly (19).

(9) Install rear cover (15) over electrical holder assembly (19).

(10) Align screw holes in electrical holder assembly (19) with holes of rear cover (15) and install machine screws (16).

(11) Install machine bolts (14) through rear cover (15), electrical coil (20) into gear housing assembly (22), and tighten.

(12) Install thrust washer set (13) and E-ring (12) on rear of motor armature (21).

(13) Scrape all adhesive from rear cover (15) and dust cover (11) of dust cover kit.

(14) Apply tube adhesive to dust cover (11) of dust cover kit.

(15) Install dust cover (11) of dust cover kit on rear cover (15).

(16) Install applicable number of shims (26) on relay-solenoid (7).

(17) If removed, install torsion spring (10) into holes of relay-solenoid (7).

(18) Install relay-solenoid (7) into gear housing assembly (22).

(19) Install lock washers (6), cap screws (5) through gear housing assembly (22) into relay-solenoid (7) and tighten.

(20) Install electrical coil wire (4) to relay-solenoid (7) and tighten nut (1).

d. Test Assembled Engine Starter Motor.

NOTE

To insure starter motor operative after installation of parts, perform a no-load test.

(1) No-load test: Fix starter motor on test bench. Connect wiring Figure 5-2) to the motor. Close switch. Current flows through motor, which will rotate at no-load. Measure working current, voltage, and motor revolutions.

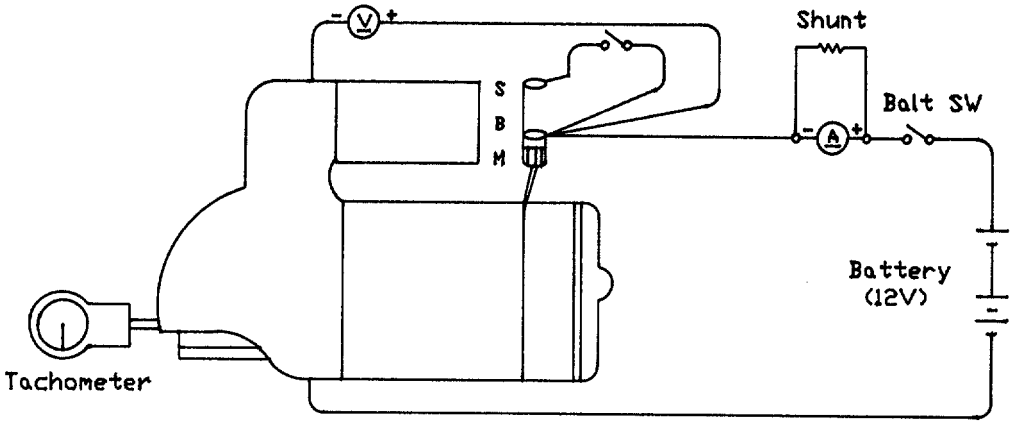


Figure 5-3. Engine Starter Motor Wire Diagram.

(2) Refer to Table 5-2 for Starter Motor Maintenance Standards.

Table 5-2 No Load Test

No Load Current (Amps)	60 Maximum
No Load Voltage	11.5 Volts
No Load RPM	7,000 Minimum

MAINTENANCE OF ENGINE GENERATOR

5-6. TEST/REPLACE ENGINE GENERATOR.

This task covers: a. Test
b. Removal
c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8

Materials/Parts

None

a. Test Engine Generator.

NOTE

The diesel engine must be running for steps (1), a. through (1), f.

(1) Engine generator voltage test.

(a) Disconnect engine generator output (1, Figure 5-4) from current regulator with engine generator (2) still attached to engine.

(b) Connect engine generator output (1) to volt/ammeter.

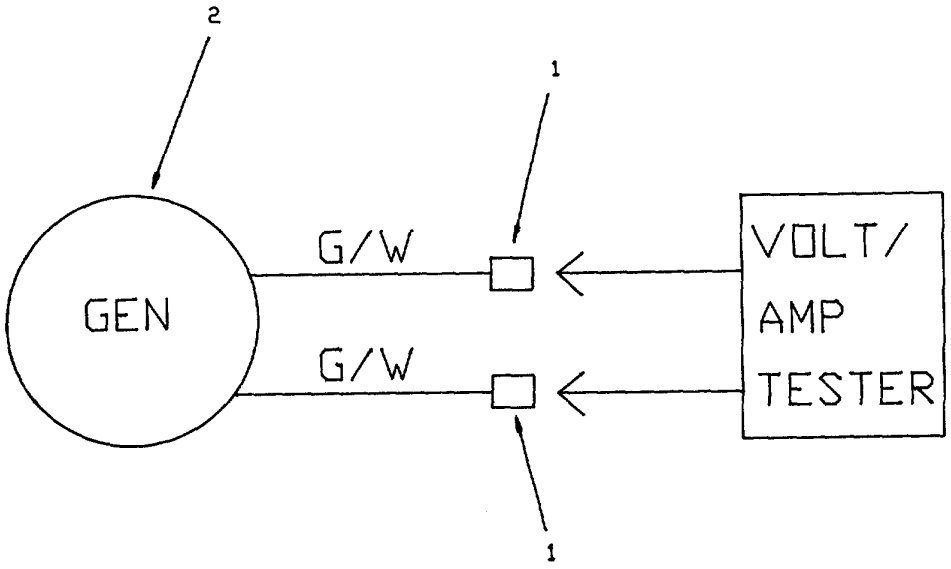


Figure 5-4. Generator Output Diagram.

a. Test Engine Generator. - continued

(1) Engine generator voltage test. - continued

(c) Set volt/ammeter to the 100 VAC range.

(d) Start engine and check volt/ammeter.

(e) When volt/ammeter reads the specified value, engine generator is in normal operation. (Measure voltage between the connectors.)

(f) Refer to Table 5-3 Voltage (VAC) for generator value.

Table 5-3 Voltage (VAC)

Engine	VAC Range	Comments
3750 rpm	Approx. 53.8	If the voltage is too low or over voltage, the magnet is demagnetized or disconnected.
3200 rpm	Approx. 46.0	

(2) Engine generator stator coil continuity test.

(a) Remove intake air cleaner (reference para. 4-17).

(b) Remove recoil starter (reference para. 4-18).

(c) Remove cap screws (1, Figure 5-5), lock washers (2), and cooling fan case (3).

(d) Remove plain hexagon nut (4) and flat washer (5).

(e) Remove flvwheel (6).

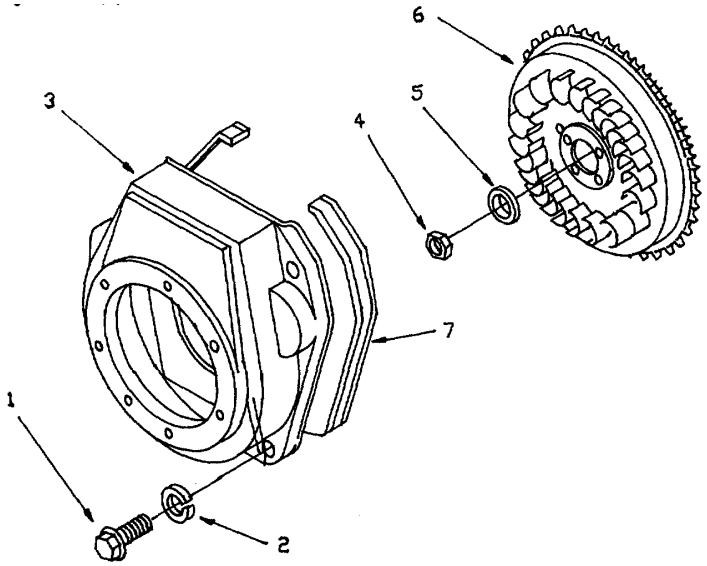


Figure 5-5. Cooling Fan Case and Flywheel.

a. Test Engine Generator. - continued

(2) Engine generator stator coil continuity test. - continued

(f) Remove wire (5, Figure 5-8) from clamp (6).

(g) Disconnect green/white wire (1 and 2, Figure 5-6). Check engine generator stator (3) for continuity using a circuit tester. If continuity is not detected (∞Ω), replace stator coil (3). Refer to Table 5-4.

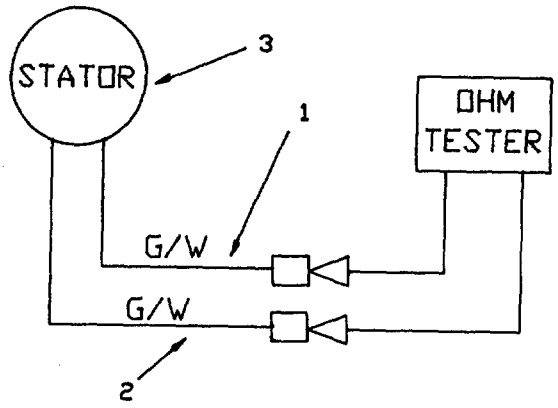


Figure 5-64. Stator Continuity Diagram.

Table 5-4 Continuity Test

Tester's Reading	Continuity	Evaluation	Comments
∞Ω	NO	Normal	---
0Ω	YES	Abnormal	Replace the stator coil

(3) Engine generator stator ground test.

(a) Connect one ohmmeter wire to one green/white wire stator lead. Connect other ohmmeter wire to engine block.

(b) When continuity is detected, replace stator.

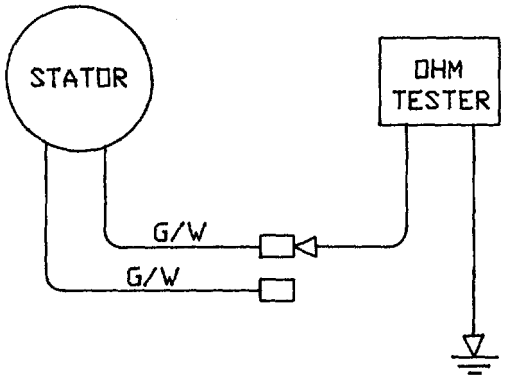


Figure 5-7. Stator Ground Test Diagram.

b. Remove Engine Generator Stator and Stator Housing.

NOTE

Observe location of wires on engine generator stator.

(1) Remove tapping screws (1, Figure 5-8).

(2) Remove engine generator stator (2).

(3) Remove cap screw (3).

(4) Remove stator housing (4) from engine flywheel (6, Figure 5-5).

c. Remove Current Limiter.

(1) Disconnect wire connector (7, Figure 5-8) from current limiter (8).

(2) Disconnect ground wires (9) from cap screws (10).

(3) Remove cap screws (10).

(4) Remove current limiter (8).

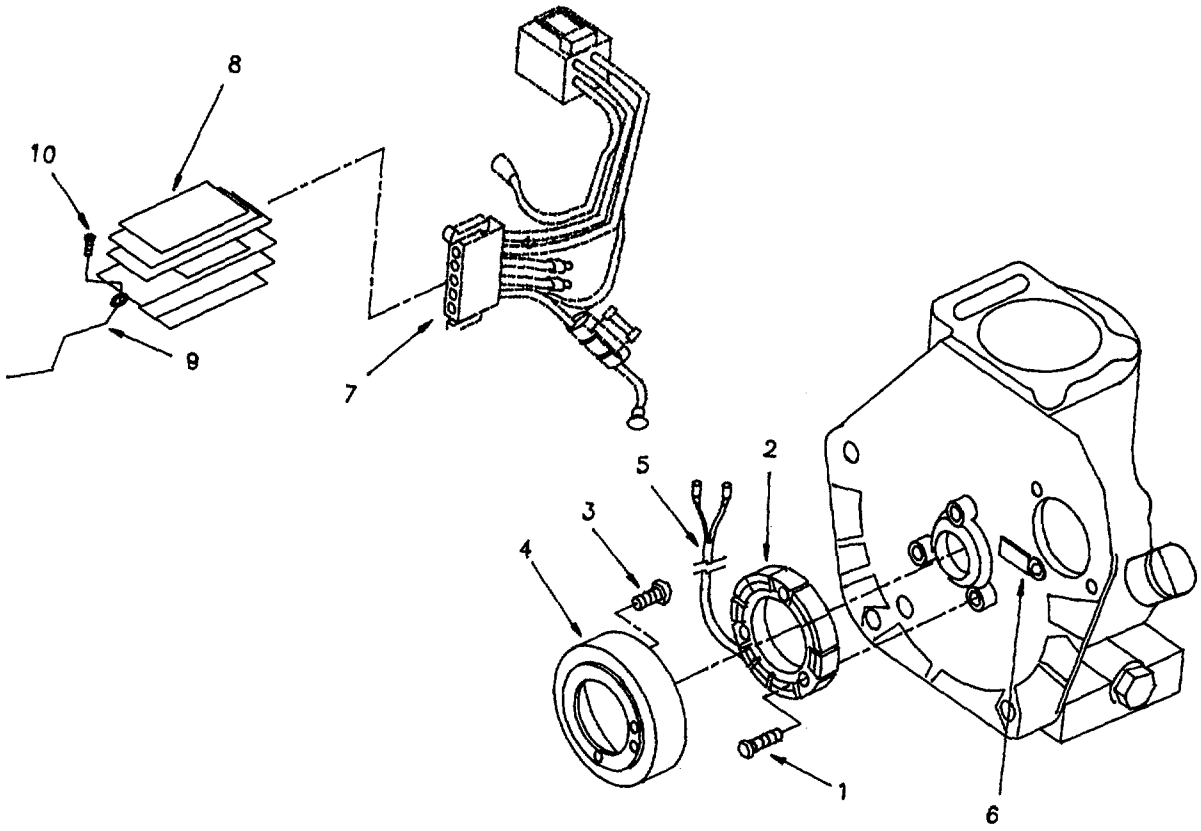


Figure 5-8. Engine Generator and Current Limiter.

d. Install Engine Generator and Stator Housing.

(1) Install stator housing (4, Figure 5-8) into engine flywheel (6, Figure 5-5).

(2) Install cap screw (3, Figure 5-8).

NOTE

Insure stator wires are installed in original location.

(3) Install engine generator stator (2), tapping screws (1) and tighten.

(4) Install wire (5) into clamp (6).

(5) Install engine flywheel (6, Figure 5-5).

(6) Install flat washer (5) and plain hexagon nut (4).

(7) If damaged, install new plain encased seal (7) on cooling fan case (3).

(8) Install cooling fan case (3).

(9) Install lock washer (2), cap screws (4) and tighten.

(10) Install engine intake air cleaner (reference para. 4-17).

(11) Install recoil starter (reference para. 4-18).

(12) Perform engine generator voltage test (reference para. 5-6, a.). If voltage is now in accordance with Table 5-3, repair is complete. If not, replace stator housing (reference para. 5-6, b.) and retest.

(13) Connect wires (5, Figure 5-8) that were removed from current limiter (8).

e. Install Current Limiter.

(1) Install current limiter (8).

(2) Install ground wires (9), cap screws (10) and tighten.

(3) Connect wire connector (7) to current limiter (8).

MAINTENANCE OF ENGINE BONNET ASSEMBLY AND DIESEL CYLINDER HEAD

5-7. REPLACE ENGINE BONNET ASSEMBLY AND DIESEL CYLINDER HEAD.

This task covers: a. Inspection c. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Fuel tank assembly removed, para. 4-22
Air cleaner assembly removed, para. 4-17
Exhaust muffler removed, para. 4-20

Materials/Parts

Gasket (P/N 114350-01340)
Gasket (P/N 114250-11310)
Diesel Cylinder Head (P/N 114350-11021)
Preformed Packing (P/N 114350-01411)

a. Removal.

(1) Remove cap screws (1, Figure 5-9) and bonnet assembly (2).

(2) Remove gasket (3).

(3) Remove plain hexagon nuts (4) and flat washers (5).

(4) Remove cap screw (6) and straight spacer (7).

(5) Remove gasket (8).

(6) Remove plain hexagon nuts (9) and flat washers (10).

(7) Remove diesel cylinder head (11), gaskets (12), and preformed packing (13).

(8) Remove cap screw (14) from rocker arm support (15).

(9) Remove rocker arm support (15) and engine rocker arms (16 & 17).

(10) Remove valve cap (18), valve spring locks (19), and spring retainer (20).

(11) Remove compression springs (21), plain seals (22), and flat washers (23) from diesel cylinder head (11).

(12) Remove engine poppet valves (24).

b. Installation.

(1) Install engine poppet valves (24) to diesel cylinder head (11).

(2) Install flat washers (23), plain seals (22), and compression springs (21).

(3) Install spring retainer (20), valve spring locks (19), and valve cap (18).

(4) Install engine rocker arms (16 & 17), rocker arm support (15), and cap screw (14).

(5) Install gasket (12), preformed packing (13), diesel cylinder head (11), flat washers (10), and plain hexagon nuts (9).

(6) Install gasket (8) and straight spacer (7).

(7) Install cap screw (6), flat washers (5), and plain hexagon nuts (4).

(8) Install gasket (3), bonnet assembly (2), and cap screws (1). Tighten cap screws.

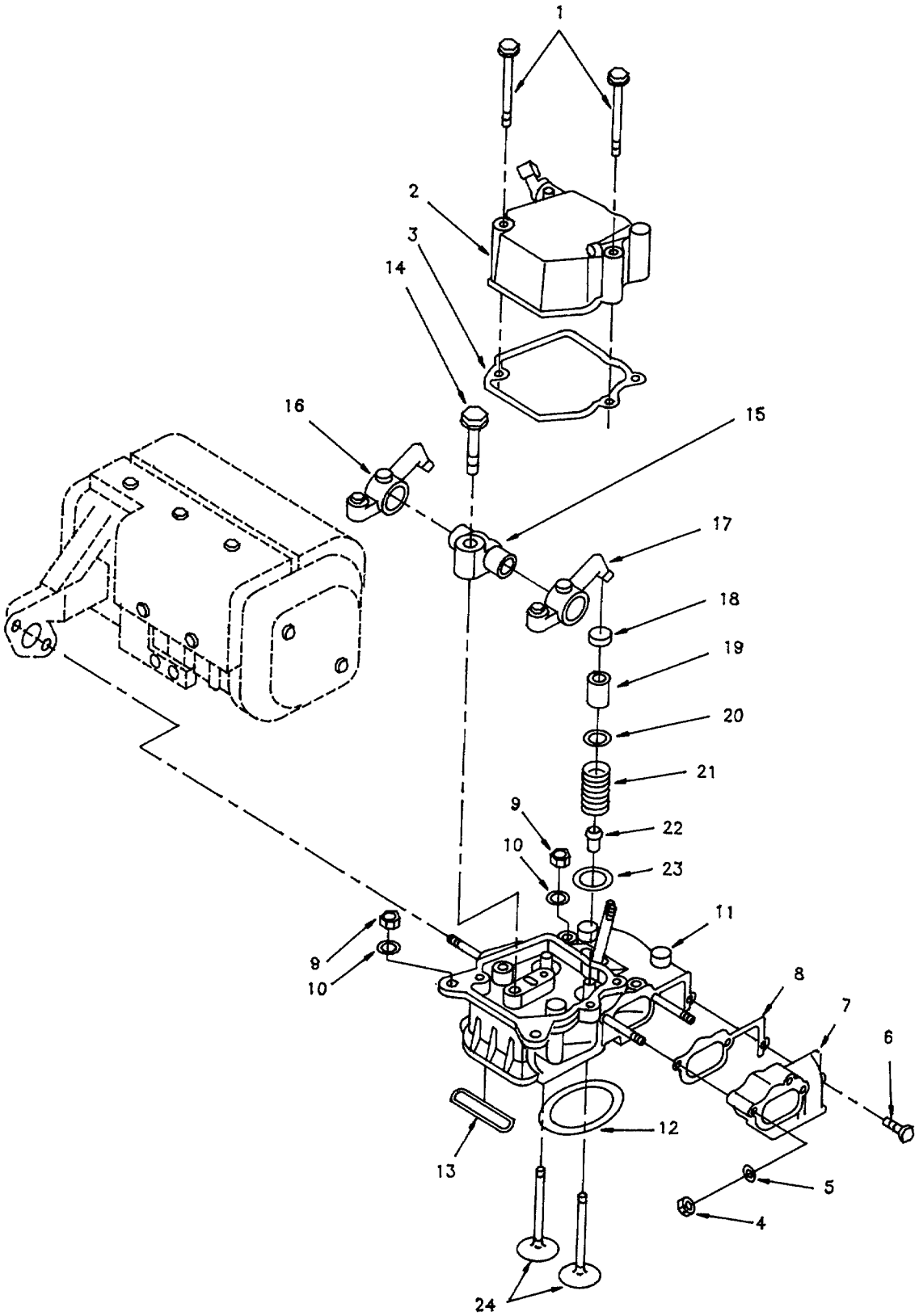


Figure 5-9. Bonnet Assembly, Diesel Cylinder Head, and Exhaust Muffler.

MAINTENANCE OF VALVE PLATES AND UNLOADERS

5-8. REPAIR/REPLACE VALVE PLATES AND UNLOADERS.

This task covers: a. Removal b. Installation

INITIAL SETUP

Tools

General Mechanics Tool Kit

Equipment Conditions:

Engine stopped, para. 2-6.8
Compressor strainer assembly removed, para. 4-31

Materials/Parts

Gasket (P/N 70153-11280)
Gasket (P/N 70153-11021)
Gasket (P/N 70153-11030)

a. Removal.

(1) Remove hexagon tube nuts (1, Figure 5-10) and nonmetallic tubes (2) from compressor cylinder head (3).

(2) Remove tube nut (4) and metallic tube (5) from compressor cylinder head (3).

(3) Remove cap screws (6), spring tension washers (7), upper cover (8) of low pressure magnetic unloader (9), and gasket (10).

(4) Remove low pressure magnetic unloader (9).

(5) Remove high pressure relief valve cover (11), preformed packing (12), and unloading piston and piston spring (13).

(6) Remove cylinder head bolts (14), spring tension washers (15), and cylinder head (3).

(7) Remove cylinder head gasket (16).

(8) Remove compression valve plate (17) and gasket (18).

b. Installation.

(1) Clean top of compressor pistons and scrape off old gasket (18).

(2) Install gasket (18) and compression valve plate (17).

(3) Install cylinder head gasket (16).

(4) Install low pressure magnetic unloader (9) to cylinder head (3).

b. Installation. - continued

(5) Install gasket (10) and upper cover (8).

(6) Install spring tension washers (7), cap screws (6) and tighten.

(7) Install high pressure relief valve (13) to cylinder head (3).

(8) Install new preformed packing (12) in cover (11) and install cover (11) and tighten.

(9) Install cylinder head (3) , spring tension washers (15), and cylinder head bolts (14) and tighten.

(10) Install metallic tube (5) and tube nut (4) and tighten.

(11) Install nonmetallic tubes (2) and hexagon tube nut (1) to compressor cylinder head (3).

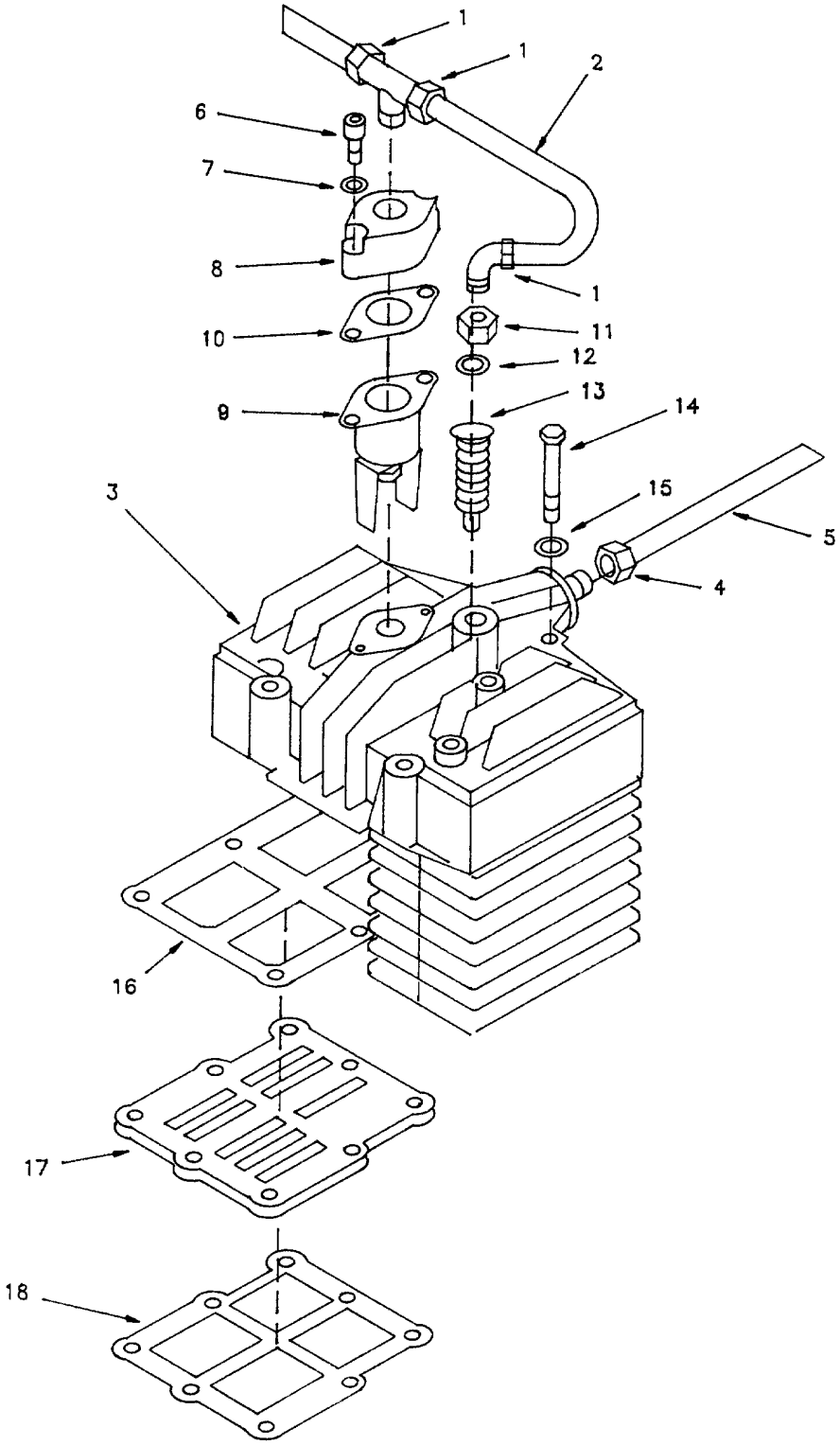


Figure 5-10. Compression Valve Plate and Unloaders.

APPENDIX A

REFERENCES

Scope

This Appendix lists all forms, field manuals, technical manuals, and miscellaneous publications referenced in this manual.

Forms

Recommended Changes to DA Publications ..... DA Form 2028-2
Equipment Inspection and Maintenance Work Sheet .....DA Form 2404
Quality Deficiency Report ..... SF 368

Field Manuals

First Aid for Soldiers ..... FM 21-11

Lubrication Order

Lubrication Order for Trailer-Mounted
Air Compressor 15 cfn/175 psi LO9-4310-396-12

Technical Manuals

Hand Portable Fire Extinguishers Approved for Army Users ..... TB 54200-200-10
Radio Interference Suppression ..... TM 11-483
The Army Maintenance Management System ..... DA PAM 738-750
Painting Instructions for Field Use.....TM 43-0139
Organizational, Direct Support, and General Support
Maintenance Repair Parts, and Special Tools List ..... TM 9-4310-396-23P
Administrative Storage of Equipment ..... TM 740-90-1
Procedures for Destruction of Equipment to Prevent Enemy Use ..... TM 750-244-3
Care and Maintenance of Pneumatic Tires ..... TM 9-1870-1
Tire Repair .....TM 9-2610-200-14

Other Publications

Fuel, Lubricants, Oils, and Waxes..... C91001L

APPENDIX B

MAINTENANCE ALLOCATION CHART (MAC)

SECTION I

INTRODUCTION

B-1. The Army Maintenance Allocation Chart.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

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 categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. Maintenance Functions. Maintenance functions will be limited to and defined as follows:

a. **Inspect**. To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination (e.g. by sight, sound, or feel).

b. **Test**. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. **Service**. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. **Align**. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. **Calibrate**. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. **Remove/Install**. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. **Replace.** To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the third position code of the 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 (hours/miles, etc.) considered in classifying Army equipment/components.

B-3. Explanation of Columns in the MAC, Section II.

a. **Functional Groups (Column 1 and 2)**. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00." Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. **Maintenance Functions (Column 3).** Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, see paragraph B-2.)

---

[1]Services - inspect, test, service, adjust, align, calibrate, and/or replace.

[2]Fault locate/troubleshoot - 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 - encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least componency identified as maintenance significant (i.d., assigned an SMR code) for the category or maintenance under consideration.

[4]Actions - welding, grinding, riveting, straightening, facing, remachinery, and/or resurfacing.

d. **Maintenance Levels (Column 4).** Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific task identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C	.....	Crew or Operator
O	.....	Unit Maintenance
F	.....	Direct Support Maintenance
H	.....	General Support Maintenance
D	.....	Depot Maintenance

e. **Tools and Equipment Reference Code (Column 5).** Column 5 specifies, by code, those common tool sets (not individual tools),common TMDE, and special tools, special TMDE, and special support equipment required to perform the designated function.

f. **Remarks Code (Column 6).** When applicable this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in Section IV.

B-4. Explanation of Columns in Tools and Test Equipment Requirements, Section III.

a. **Column 1, Tools and 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.

B-5. Explanation of Columns in Remarks, Section IV.

a. **Column 1, Remarks Code**. The code recorded in Column 6, Section II.

b. **Column 2, Remark**. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TRAILER MOUNTED AIR COMPRESSOR, 15 CFM/175 PSI

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Category C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
00	**Compressor Air, Reciprocating, Trailer Mounted, 15 CFM/175 PSI**								
01	**Enclosure Assembly**								
0101	Top Hood, Access Doors,	Inspect	0.1					1	
	Frame Control Panel, and	Service	0.5						
	Vent Louvers	Replace		4.0					A
		Repair		1.5					
02	**Belt Guard**								
0201	Belt Guard Assembly	Inspect	0.1					1	
		Replace		0.3					A
0202	V-Belt	Inspect	0.1						
		Adjust		0.5					
		Replace		0.7					A
03	**Fuel System**								
0301	Primary Fuel Tank	Inspect	0.1						
		Service	0.1						
		Replace		1.0					A
0302	Fuel Tank Assembly	Inspect	0.1						
		Replace		1.0					A
04	**Engine Assembly**								
0401	Engine, Diesel	Replace		2.0					A
		Repair			6.5				
0402	Intake Air Cleaner	Inspect	0.1						
		Replace		0.3					A
040201	Air Filter Element	Inspect	0.1						
		Service	0.1						
		Replace	0.1						A

MAINTENANCE ALLOCATION CHART - continued

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Category C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
0403	Recoil Starter	Inspect	0.1					1,2,5	
		Replace		0.5					A
0404	Starter Motor and Generator								
040401	Starter Motor	Inspect		0.1				1,2	
		Test			0.5				
		Repair			2.0				C
		Replace		1.0					A
040402	Generator	Test		1.0				1,2	
		Repair		1.0					B
		Replace		2.0					A
0405	Exhaust Muffler	Inspect	0.1						
		Replace		0.5					A
0406	Fuel Injector System							2,5	
040601	Fuel Injector Nozzle	Replace		1.0					A
040602	Fuel Injector Pump	Replace		1.0					A
0407	Oil Pump and Governor	Inspect		0.3				2,3,5,6,	
		Replace		1.5				17	A
0408	Bonnet and Cylinder Head Assembly	Repair			1.5			1,2,3,5	B
		Replace			1.0				A
05	**Electrical System**								
0501	Storage Battery and Storage Battery Leads	Inspect	0.1					1	
		Service		0.2					
		Replace		0.5					A
0502	Wiring Harness	Inspect		0.2				1	
		Replace		0.7					A
0503	Vehicular Stop Lights and Indicating Reflectors	Inspect	0.1						
		Replace		0.8					A
0504	Gages and Sensors	Inspect	0.1					1	
		Replace		0.3					A

MAINTENANCE ALLOCATION CHART - continued

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Category C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
06	**Compressor Assembly**								
0601	Reciprocating Compressor	Replace		3.0					A
		Repair		1.5					
0602	Strainer Assembly	Inspect	0.1					1	
		Service	0.1						
		Replace		0.2					A
0603	Cylinder Head Valves and	Inspect	0.3					5,10,11	
	Head Unloaders	Replace			1.0				A
		Repair			1.5				B
07	**Air Distribution System**								
0701	Pilot Valves and Check	Inspect	0.1					1	
	Valves	Adjust		0.3					
		Replace		0.5					A
0702	Lines and Fittings	Inspect	0.1					1	
		Replace		0.2					A
08	**Trailer**								
0801	Wheels and Tires	Inspect	0.1					1,13	
		Service	0.1						
		Replace		0.3					A
		Repair		0.5					
0802	Axle Assembly	Inspect		0.5				1	
		Replace		1.0					
		Repair			1.5				
080201	Hub and Drum Assembly	Service		0.3				1,13	
		Replace		0.8					A
		Repair		1.3					
080202	Brake Assembly	Inspect		0.2				1,13,14	
		Adjust		0.5					
		Replace		0.8					A
0803	Parking Brake Assembly	Inspect	0.1						
		Adjust	0.1						
		Replace		0.6					A
		Repair		0.6					B
0804	Stabilizing Equipment	Replace		0.1				1	

SECTION III. TOOLS AND TEST EQUIPMENT FOR COMPRESSOR UNIT RECIPROCATING, 15 CFM, 175 PSI, DIESEL ENGINE DRIVEN, TRAILER MOUNTED

(1) Tool or Test Equipment Ref. Code	(2) Maintenance Level	(3) Nomenclature	(4) National/NATO Stock Number	(5) Tool Number
Standard tools and test equipment in the following kits are adequate to accomplish the maintenance functions listed in SECTION II:				
1	O-F	Tool Kit, General Mechanic, Automotive	5180-00-177-7033	
2	O-F	10 mm Socket, Tool Kit, General Mechanic, Automotive	5180-01-100-0963	
3	O-F	12 mm Socket, Tool Kit, General Mechanic, Automotive	5180-01-100-0963	
4	C-O-F	13 mm Socket, Tool Kit, General Mechanic, Automotive	5180-01-100-0963	
5	O-F	17 mm Socket, Tool Kit, General Mechanic, Automotive	5180-01-100-0963	
6	F	Flywheel Puller, Shop Equipment, Automotive Maintenance and Repair Organization, Common NOI	4910-00-754-0654	
7	F	Torque Wrench, Shop Set, Automotive Repair, Field Maintenance, Basic	4910-00-754-0705	
8	O-F	Oil Can Feeder Type, Shop Equipment, Automotive Maintenance and Repair Organization, Common NOI	4910-00-754-0654	
9	O-F	Puller (Pulley), Shop Equipment, Automotive Maintenance and Repair Organization, Common NOI	4910-00-754-0654	
10	C-O-F	5 mm Hex Key, Long Handle, Tool Kit, Organizational Maintenance, Metric	5180-01-100-0964	
11	C-O-F	6 mm Hex Key Long Handle, Tool Kit, Organizational Maintenance, Metric	5180-01-100-0964	

SECTION III. TOOLS AND TEST EQUIPMENT FOR COMPRESSOR UNIT RECIPROCATING, 15 CFM, 175 PSI, DIESEL ENGINE DRIVEN, TRAILER MOUNTED

(1) Tool or Test Equipment Ref. Code	(2) Maintenance Level	(3) Nomenclature	(4) National/NATO Stock Number	(5) Tool Number
12	O-F	Air Gage, Shop Equipment Automotive Maintenance and Repair Organization, Common NOI	4910-00-754-0654	
13	O-F	4 way Lug Wrench, Shop Set Machine: Field Maintenance, heavy	3470-00-754-0738	
14	O-F	Brake Adjustment Tool, Shop Set, Machine: Field Maintenance, heavy	3470-00-754-0738	

SECTION IV. REMARKS. FOR COMPRESSOR UNIT RECIPROCATING, 15 CFM, 175 PSI, DIESEL ENGINE DRIVEN, TRAILER MOUNTED

REMARK CODE	REMARKS
A	REPLACE IS THE SAME AS REMOVAL AND INSTALLATION.
B	REPAIR IS THE SAME AS REMOVAL AND INSTALLATION.
C	REPAIR IS THE SAME AS DISASSEMBLY AND ASSEMBLY.

APPENDIX C

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS LIST (BID)

SECTION I. INTRODUCTION

C-1. SCOPE

This appendix lists components of end item and basic issue items for the air compressor to help you inventory the items for safe and efficient operation of the equipment.

C-2. GENERAL

The Components of End Item (COEI) and Basic Issue Items (BII) List are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the air compressor. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

b. Section III. Basic Issue Items. These essential items are required to place the compressor in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the compressor during operation and when it is transferred between property accounts. This list is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

C-3. EXPLANATION OF COLUMNS

a. Column (1), National Stock Number, identifies the stock number of the item to be used for requisitioning purposes.

b. Column (2), Description, cage code, and part number identifies the Federal item name (COMPRESSOR, RECIPROCATING AIR, 15 CFM, 175 PSI, TRAILER MOUNTED) followed by a minimum description when needed. The last line below the description is the Commercial and Government Entity Code (CAGEC) and the part number.

c. Column (3), U/I (unit of issue), indicates how the item is issued for the National Stock Number shown in column two.

d. Column (4), Qty Rqd, indicates the quantity required.

SECTION II. COMPONENTS OF END ITEM

(Not Applicable)

SECTION III. BASIC ISSUE ITEMS

(1) National Stock Number	(2) Description CAGEC and Part number	(3) U/I	(4) QTY rqd
	Department of Army Technical Manual, Operator's, Unit, and Direct Support Maintenance Manual TM9-4310-396-13	EA	1
	Operator's and Unit Lubrication Order, LO9-4310-396-12	EA	1
	Unit and Direct Support Maintenance Repair Parts and Special Tools List, TM9-4310-396-23P	EA	1

APPENDIX D

ADDITIONAL AUTHORIZATION LIST (AAL)

SECTION I. INTRODUCTION

D-1. SCOPE

This appendix lists additional items you are authorized for the support of the air compressor.

D-2. GENERAL

This list identifies items that do not have to accompany the air compressor and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTINGS

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s).

Section II. ADDITIONAL AUTHORIZED ITEMS LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGNEC & PART NUMBER	(3) U/I	(4) QTY RECM
	Protector, Ear	pair	1

APPENDIX E

EXPENDABLE AND DURABLE ITEMS LIST

SECTION I. INTRODUCTION

E-1. SCOPE

This is a list expendable and durable items that you will need to operate and maintain the air compressor. This listing is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-790, Expendable/Durable Items (except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

E-2. EXPLANATION OF COLUMNS

a. Column 1. Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g. "Use cleaning compound, item 5, Appendix E".)

b. Column 2. Level. This column identifies the lowest level of maintenance that requires the item.

c. Column 3. National Stock Number. This is the National stock number assigned to the item which you can use to requisition it.

d. Column 4. Item name, description, Commercial and Government Entity Code (CAGEC), and part number. This provides the other information you need to identify the item.

e. Column 5. Unit of Measure. This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

SECTION II. EXPENDABLE AD DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
1	C,O,F	BRUSH,	Cleaning, tools and parts, MCM-7241T39, (OLML6)	EA
2	C,O,F		SOLVENT, Dry Cleaning and Degreasing P-D-680a, type III	
		6850-01-369-2474	5-gal GL	
		6850-01-369-2475	55-gals	GL
3	C,O,F	7920-00-205-1711	RAG, Wiping, cotton, white, bleached, 50 lb. bale (81348) DD-R-30	LB
4	O	9150-00-065-0029	GREASE, Automotive and Artillery, Mil-G-10924, (81349)	GL
5	O	9150-00-190-0917	GREASE, Graphite, VV-G-671, (81348)	LB
6	O,F	8030-00-761-1584	TAPE, Teflon, Thread, Roll, Mil-T-27730A, (81349)	EA
7	O	9150-00-402-4478	LUBRICATING OIL, Internal Combustion Engine, Arctic, DEA, Mil-L-46167 0°F to -65°F, (82349)	QT
8	O	9150-00-189-6727	LUBRICATING OIL, Internal Combustion Engine, Mil-L-2104, OE/HDO10 -10 to +40°F, (81349)	QT
9	O	9150-00-186-6681	LUBRICATING OIL, Internal Combustion Engine, Mil-L-2104, OE/HD030 +30° and above, (81349)	QT
10	O,F	8040-00-777-0631	ADHESIVE, Tube Paste (13499)	EA
11	O,F		INSULATION, LE4125DS, (OLML6)	RL
12	O	8010-01-162-5578	PAINT, Green 383 34094, (81349) (prime per Mil-P-46186D)	GL
13	O		LUBRICANT, Spray, ST-M1-1007K11 (OLML6)	EA
14	F	5350-00-193-1340	LAPPING AND GRINDING COMPOUND, Valve SS-L-1682 (81348)	LB

SECTION II. EXPENDABLE/DURABLE ITEMS LIST-continued

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
15	O,F	8030-00-251-3980	COMPOUND, Antiseize, MIL-A-907 (81349)	LB
16	O	8040-01-165-9394	ADHESIVE, Tube LN-602, EPK1105, (12405)	EA
17	C	9140-00-221-2233 9130-01-305-5597	#2 DIESEL FUEL, VV-F-800, Mil-P-81333, (81349)	GL
18	F	5350-00-264-3485	SANDPAPER, Fine	EA
19	O,F		TAPE, Adhesive (OLML6), (P/N TP1SOSC)	EA

APPENDIX F
TORQUE LIMITS

F-1. ENGINE TORQUE LIMITS

Where Specified Torque Be Applied	Thread No. Dia. X Pitch	Tightening Torque ft-lb (kg-cm)	Remarks
Valve Rocker Arm Support	M8 X 1.25	14.5-16.6 (200-230)	12 mm
Flywheel End Nuts*	M16 X 1.5	86.8-94.0 (1200-1300)	14 mm
Crankcase Cover Bolts	13-M8 X 1.25	14.5-16.7 200-230	12 mm
Stiffener Bolts On Crankcase Cover	M8 X 1.25	14.5-16.6 (200-230)	12 mm
Head Stud Bolts'	4-M9 X 1.25	9.4-10.8 (130-150)	Apply "screw locking agent"
Cylinder Head Nuts*	4-M9 X 1.25	30.4-33.3 (420-460)	14 mm
Nozzle Case Nut	1-0.605-40UNS-2B	28.9-32.5 (400-450)	15 mm
Fuel Injection Plate Holder	M14 X 1.5	21.7-25.3 (300-350)	17 mm
Fuel Injection Pump Stud Bolts'	3-M6 X 1.0	5.1-7.2 (70-100)	Apply "screw locking agent"
Fuel Injection Pump Nuts	3-M6 X 1.0	7.2-8.7 (100-120)	10 mm
Fuel Injection Nozzle Bolts'	2-M6 X 1.0	5.1-7.2 (70-100)	Apply "screw locking agent"
Fuel Injection Nozzle Nuts	2-M6 X 1.0	7.2-8.7 (100-120)	10 mm

NOTES:

1. For nuts marked *, apply engine oil to the thread and seat.

2. For bolts marked ', apply screw locking agent to the thread before threading them.

3. Standard bolts and nuts tightening torque: M6 70-100 ky-cm (5.1-7.2 lb-ft), M8 180-200 kg-cm (10-14.5 ft lb).

F-2. BOLT TORQUES FOR AIR COMPRESSOR

Bolt Type	Bolt Size	Torque ft-lb (kg-cm)
Cylinder Head Bolts	M10 = 1.5	23.1 = (320)
Front Cover Bolt	M10 = 1.5	21.7 = (300)
Rear Cover Bolt	M8 = 1.25	21.7 = (300)

APPENDIX G

MANDATORY REPLACEMENT PARTS

G-1. GENERAL

This appendix contains all replacements described and referenced in all procedures, tasks and setups. Items in the list shall be identified by the item number, nomenclature, and applicable part number.

MANDATORY REPLACEMENT PARTS

Item	Description	Part Number	Paragraph Reference
1	Brake Shoe Kit	D71-48	4-37
2	Cable	FB-1	4-38
3	Cable	BB-2	4-38
4	Clutch Assembly, Friction	212184A	4-14
5	Compressor, Reciprocating	E57	4-30
6	Cone, Bearing	D14125A	4-32
7	Cone, Bearing	D25580	4-32
8	Drawbar Coupler	D161370	4-39
9	Engine Assembly	L60AEDE	4-16
10	Engine Assembly	L60AEDE	5-7
11	Filter Element	70153-66142	4-31
12	Filter Element	114250-12580	3-5, 4-17
13	Gage, Pressure	G-31653	4-29
14	Gage, Pressure	G10057	4-29
115	Gage, Temperature	GP0628A	4-29
16	Gage, Liquid Level	GP0709	4-29
17	Gage, Ampmeter	GP0528A	4-29
18	Gasket	70153-11021	5-8
19	Gasket	114250-55050	4-22
20	Gasket	114250-55130	4-22
21	Gasket	114250-11310	5-7
22	Gasket	70153-11030	5-8

MANDATORY REPLACEMENT PARTS-continued

Item	Description	Part Number	Paragraph Reference
23	Gasket	114350-01412	4-25
24	Gasket	23414-120000	4-22
25	Gasket	362GKT-FLS	4-21, 4-29
26	Gasket	114350-01340	5-7
27	Gasket	70153-11280	5-8
28	Gasket	114250-13200	4-20
29	Governor, Diesel Engine	714770-61700	4-25
30	Hood, Top	RA362-THC	3-4, 4-12
31	Injector Assembly, Fuel	714350-53100	4-23
32	Jack, Leveling-Support	151401	4-39
33	Leaf Spring Assembly	D72-30	4-35
34	Light, Vehicular Stop	11-102	4-28
35	Louver, Vent	10-060	4-13
36	Meter, Time Totalizing	MH0042A	4-29
37	Motor, Engine Starter	114362-77010	4-17
38	Nut, Tube	61CA-4	4-33
39	Plunger Assembly	018400	4-39
40	Preformed Packing	103338-32570	4-25
41	Preformed Packing	114350-01411	5-7
42	Pump, Fuel	714350-51710	4-24
43	Pump, Rotary	114250-32010	4-25
44	Reflector, Indicating	11-511	4-28
45	Regulator, Current	119660-77710	5-56
46	Seal, Grease	D10-10	4-36
47	Seal, Nonmetallic	02352	4-12
48	Shim Set	114250-01800	4-24
49	Spring, Extension	D46-5	4-37
50	Spring, Extension	D46-18	4-37
51	Spring, Extension	D40-45	4-37

MANDATORY REPLACEMENT PARTS-continued

52	Stabilizer	362-LJ	4-39
53	Starter, Recoil	714880-76830	4-18
54	Switch, Liquid Level	LS1038	4-29
55	Tiedown Strap	MS3367-5-9	4-27
56	Transmitter, Temperature	TS-1029	4-29
57	Tubing, Nonmetallic	PT1/4X58	4-33
58	Tubing, Nonmetallic	PT1/4	4-33
59	Tubing, Nonmetallic	PT1/4X22	4-33
60	Tubing, Nonmetallic	PT1/4X32	4-33
61	V-Belt	362-A63	4-15
62	Valve, Drain	DC604-4	4-28
63	Valve, Check	P-7575	4-32
64	Valve, Pilot	SV-25	4-32
65	Wire Harness	WH30X1/2	4-27
66	Wire Harness	WH130X1/2	4-27
67	Wire Harness	114351-77540	4-27
68	Wire Harness	WH70X1	4-27
69	Wire Harness	WH OX1/2	4-27

GLOSSARY

Section I. ABBREVIATIONS

Btu/Hr	British thermal units per hour
°C	Degree Celsius
cfm	Cubic feet per minute
cu ft	Cubic feet, foot
cu m	Cubic meter
°F	Degree Fahrenheit
ft lb	Foot pounds
gal	Gallon
IAW	In Accordance With
in.	Inch
in. lb	Inch pounds
Kg	Kilogram
lb	Pound
mm	Millimeter
PMCS	Preventive Maintenance Checks and Services
psi	Pounds per square inch
rpm	Revolutions per minute
TMDE	Test, measurement, and diagnostic equipment
Vdc	Volt direct current

GLOSSARY-continued

Section II. DEFINITION OF UNUSUAL TERMS

A

Align-To arrange in a line vertically and/or horizontally.

Ambient-Surrounding. An engine cooled to ambient temperature has the same temperature as the air around it.

Approved-Permitted to be used for a specific purpose by the person or group who is authorized to grant approval.

Assembly-A combination of parts that may be taken apart without destruction, which has no application or use of its own but is needed for the completeness of a more complex item with which it is combined, or to which it is attached.

B

Binding-Holding or restraining.

C

Capacity-The volume, amount, or quantity that can be held or contained.

Carbon Monoxide-A poisonous gas that is made while a fuel is burning, especially if there is not quite enough air. The gas is colorless, odorless, and tasteless, but it can cause illness or death. See the warnings on the Warning page at front of manual.

Check Valve-A device that holds tank pressure in and prevents back flow of air from the tank.

Combustion-A chemical change, especially oxidation, accompanied by the production of heat and light. A combustion engine functions by burning fuel to produce heat, i.e., energy.

Component-A part or a combination of parts which together accomplish a function.

Compressed Air-Air that is under pressure. When the compressed air in a hose or pipe is allowed to escape (such as when you use an air gun), the air moves very fast and is used to blow away dirt and chips for cleaning.

Condensation-A liquid formed from a vapor. Moisture carried in warm air will condense when it reaches a cold area, such as the surface of a fuel tank in subzero weather.

Contamination-To make impure by contact or mixture.

Corrosion-A gradual wearing away caused by chemical action. Metals exposed to salt water are likely to corrode.

GLOSSARY-continued

D

Defective-Faulty; lacking perfection.

Deficient-Lacking an essential element; incomplete.

E

Exhaust-The gases that leave the engine through the tailpipe while the engine is running.

Expendable-An item that is not repairable and is discarded if damaged.

F

Filter-A device which removes dirt from the air or a fluid.

Flash Point-The lowest temperature at which the vapors of a solvent will ignite and burn.

Fluid-A substance that can flow; that is, either a gas or a liquid.

Fouled-Spoiled; dirty; having an offensive odor.

Frayed-Something which has been worn away or unravelled, usually by rubbing.

G

Gasket-A seal or packing used between matched machine parts or around pipe joints to prevent the escape of gas or fluid.

Goggles-A device used to protect the eyes from dust, dirt, flying chips, etc.

H

Honing-Sharpening or finishing with a fine-grained whetstone. Honing is similar to lapping but differs in its use of a whetstone rather than metal lap. (See LAPPING)

I

Initial-The first or starting condition.

L

Lapping-The finishing of spindles, bored holes, etc., to fine limits by the use of a lap. A lap is a tool with a true surface, usually of a metal softer than the workpiece material, and capable of holding the abrasive medium used in the lapping process.

GLOSSARY-continued

M

Malfunction-Occurs when a unit fails to operate normally.

Manually-By hank; employing human rather than mechanical energy.

Manufacturer-The company which makes an item or piece of equipment for sale.

Materiel-Equipment, apparatus, and supplies of an organization such as the army.

O

Obstruction-An obstacle.

P

Pilot Valve-A device to control the compressor load and unload functions by air.

Pinch Point-A spot or place where moving equipment may come into close contact with another object and trap, crush, or pinch anything in its way. Personnel should stand clear of possible pinch points prior to startup of equipment.

Pivot-A short rod or shaft about which a related part rotates; the act of turning on or as if on a pivot.

Prime Mover-Major motive force. A engine is the prime mover of the compressor.

R

Recommendations-Suggestions for change; advice given usually to make an improvement.

Require-To demand or need.

S

Scope-The extent of an activity or concept; the amount of information covered as in a book.

Suction Valve-A valve used to control air flow entering the compressor.

T

Torque-Force around an axis. It produces a rotary or twisting motion, and is measured in foot pounds (ft lb) or newton-meters (Nm).

Toxic-Harmful; deadly; poisonous.

GLOSSARY-continued

V

Valve-A device used to control the flow of a fluid.

Vapor-The gaseous form of any substance which is usually a liquid; vapors are present in the air around the substance.

Velocity-Rapidity or speed.

Visual-Visible; detected by the unaided eye.

W

Weld-A union or joint (of metals) produced by applying heat, sometimes with pressure.

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P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
acres
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47

1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 073880-000