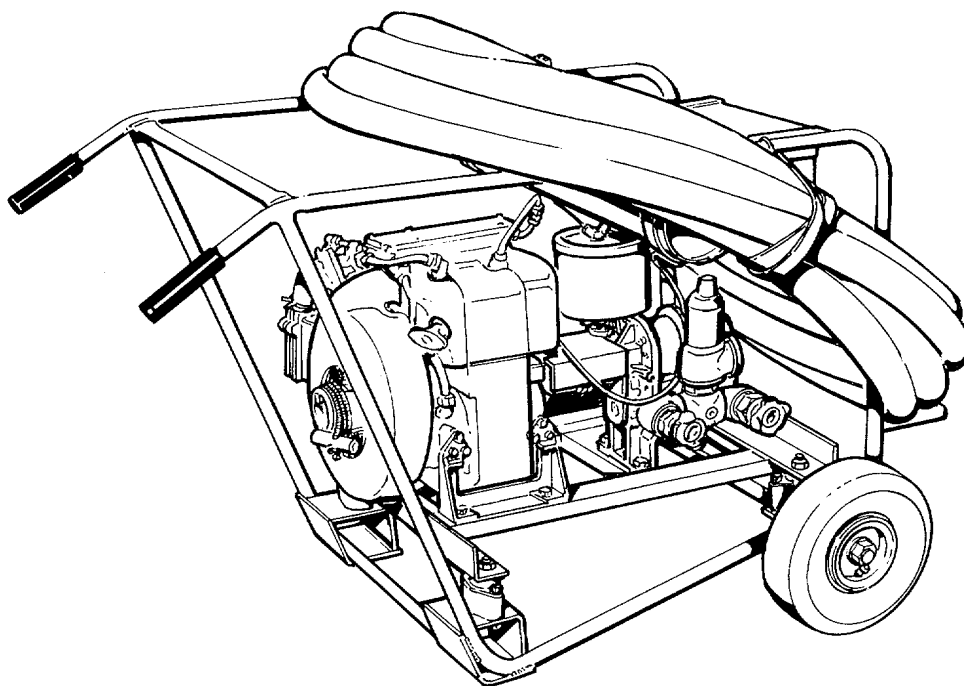


**TECHNICAL MANUAL**

**OPERATOR'S, UNIT,  
AND INTERMEDIATE DIRECT SUPPORT  
MAINTENANCE MANUAL**

---



**SAFETY  
WARNING**

**TABLE OF  
CONTENTS**

**INTRODUCTION**

**OPERATING  
INSTRUCTIONS**

**UNIT  
MAINTENANCE  
INSTRUCTIONS**

**INTERMEDIATE  
DIRECT SUPPORT  
MAINTENANCE  
INSTRUCTIONS**

**APPENDICES  
A-E**

**SUBJECT  
INDEX**

Approved for public release:  
Distribution is unlimited

**AIR COMPRESSOR, ROTARY  
GASOLINE ENGINE DRIVEN  
60 CFM, 6.5 PSI  
C&H MODEL 20-920  
NSN 4310-01-248-1661**

---

**HEADQUARTERS, DEPARTMENT OF THE ARMY  
29 MAY 1987**

**SAFETY WARNINGS****WARNING**

Drycleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact by wearing rubber or non-porous gloves when handling the solvent or material wet with drycleaning solvent. Wash hands immediately after exposure with soap and water and use a lanolin based skin cream to prevent skin drying. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C). Do not work with solvent in a closed room. Be sure there is good ventilation or the solvent vapors will build up in the air and become a poisonous mixture which can cause physical injury or even death.

**WARNING**

Death or serious injury could occur if compressed air is directed against the skin. Do not use compressed air for cleaning or drying unless the pressure is/has been reduced to 30 psi (2.11 kg/cm<sup>2</sup>) or less. When working with compressed air always use chip guards, eye protection and other personal protective equipment.

**WARNING**

Do not operate this compressor in enclosed areas. Carbon monoxide poisoning may result in injury or death to personnel.

**WARNING**

Operation of this equipment may present a noise hazard to personnel in the area. If the noise level exceeds the allowable limits for unprotected personnel, wear ear muffs or earplugs which were fitted by a trained professional.

**WARNING**

The compressed air supplied by this compressor is not breathable and must not be used to charge cylinders that will be used to supply breathable air.

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures. Engine must be cool before removal.

a/(b blank)

**HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D.C. 29 May 1987**

**OPERATOR'S, UNIT, AND INTERMEDIATE DIRECT SUPPORT  
MAINTENANCE MANUAL  
FOR  
AIR COMPRESSOR, ROTARY  
GASOLINE ENGINE DRIVEN  
60 CFM, 6.5 PSI  
C&H MODEL 20-920  
NSN 4310-01-248-1661**

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

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

Approved for public release; distribution is unlimited.

**TABLE OF CONTENTS**

			<b>Page</b>
CHAPTER 1.	<b>INTRODUCTION</b>	.....	1-1
Section I.	General Information.....		1-1
Section II.	Equipment Description.....		1-3
Section III.	Technical Principles of Operation .....		1-6
CHAPTER 2.	<b>OPERATING INSTRUCTIONS</b>	.....	2-1
Section I.	Description and Use of Operator's Controls and Indicators.....		2-1
Section II.	Operator's Preventive Maintenance Checks and Services (PMCS).....		2-2
Section III.	Operation Under Usual Conditions.....		2-8
Section IV.	Operation Under Unusual Conditions.....		2-11
CHAPTER 3.	<b>UNIT MAINTENANCE INSTRUCTIONS</b>	.....	3-1
Section I.	Lubrication Instructions.....		3-1
Section II.	Repair Parts, Special Tools, TMDE and Support Equipment.....		3-2
Section III.	Service Upon Receipt of Equipment .....		3-3
Section IV.	Unit Preventive Maintenance Checks and Services (PMCS).....		3-4
Section V.	Troubleshooting.....		3-6
Section VI.	Organizational Maintenance Procedures.....		3-8
Section VII.	Preparation for Storage of Shipment.....		3-27
CHAPTER 4.	<b>INTERMEDIATE MAINTENANCE INSTRUCTIONS</b>	.....	4-1
Section I.	Troubleshooting.....		4-1
Section II.	Direct Support Maintenance Instructions.....		4-3
	<b>APPENDICES A-E</b>		
APPENDIX A.	REFERENCES.....		A-1
APPENDIX B.	MAINTENANCE ALLOCATION CHART .....		B-1
APPENDIX C.	COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LIST.....		C-1
APPENDIX D.	ADDITIONAL AUTHORIZATION LIST.....		D-1
APPENDIX E.	EXPENDABLE SUPPLIES AND MATERIAL LIST .....		E-1
	<b>INDEX</b>	.....	I-1

LIST OF TABLES

Table		Page
2-1.	Operator's Preventive Maintenance Checks and Services.....	2-3
3-1.	Pump Oil Grades and Capacities.....	3-1
3-2.	Unit Preventive Maintenance Checks and Services.....	3-4
3-3.	Troubleshooting.....	3-6
4-1.	Troubleshooting.....	4-1

## CHAPTER 1 . INTRODUCTION

## SECTION I. GENERAL INFORMATION

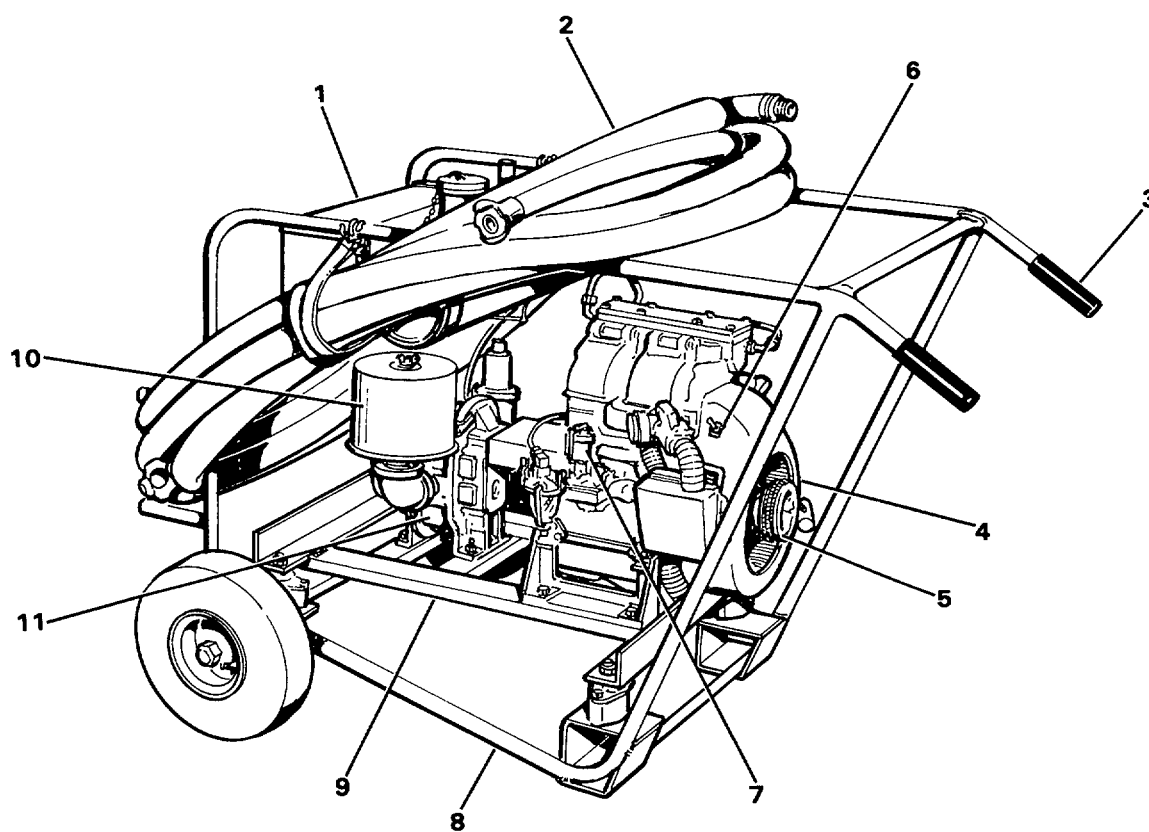
**1-1. ORIENTATION VIEWS.** The following two illustrations are provided to orient manual user with the overall air compressor and specific components.

**NOTE**

The term "compressor" will refer to the overall machine and the term "pump" will refer to the rotary vane air pump acting as a blower.

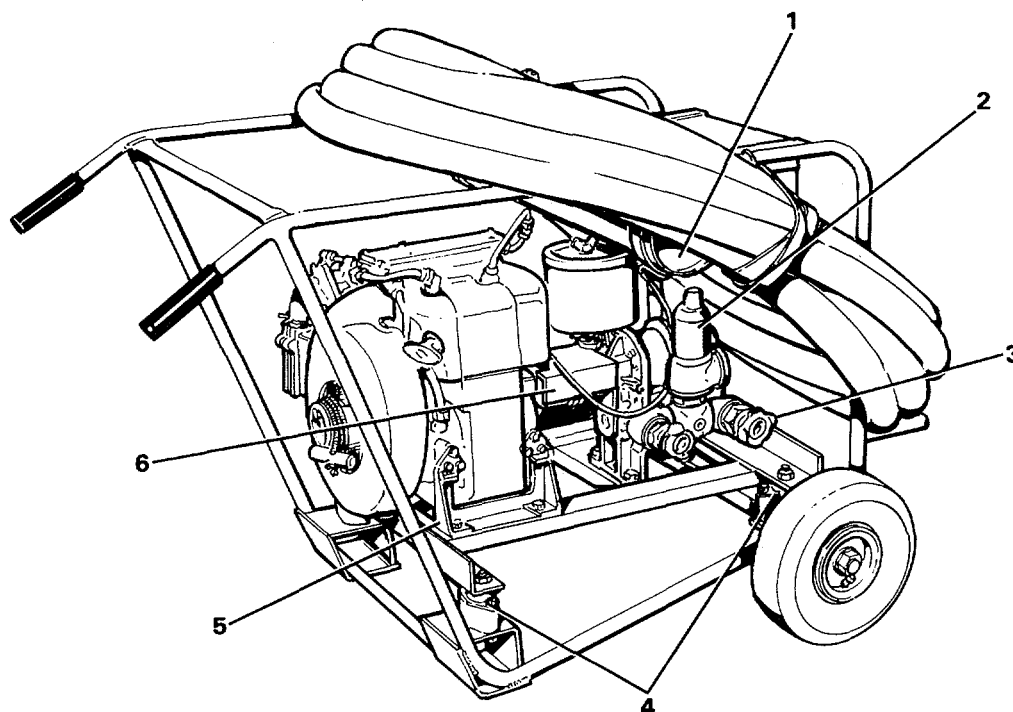
**NOTE**

The terms "left" and "right" will refer to sides of the machine as viewed by the operator while standing behind the machine at the hand grips.



1. TOOL BOX
2. AIR HOSES
3. HAND GRIPS
4. GAS ENGINE
5. ROPE STARTER
6. ON/OFF SWITCH
7. OIL FILL & DIPSTICK
8. FRAME
9. ENGINE/PUMP SUPPORT
10. AIR FILTER
11. AIR PUMP

**Air Compressor, Left Side View**



1. GAS TANK
2. SAFETY VALVE
3. DISCHARGE FITTINGS
4. VIBRATION INSULATORS
5. ENGINE MOUNT
6. GUARD & DRIVE COUPLING

**Air Compressor, Right Side View**

## **1-2. SCOPE.**

- a. *Type of Manual:* Operator's Unit, and Intermediate Direct Support Maintenance Manual.
- b. *Model Number and Equipment Name:* Air Compressor, Rotary, Gasoline Engine Driven, 60 cfm, 6.5 psi, Model 20-920.
- c. *Purpose of Equipment:* Portable compressor used as a source of compressed air to inflate pontoon boats on location.
- d. *Reference Manual for Gasoline Engine:* TM 5-2805-257-14 (Change 6, 15 July 1986); Operator, Organizational, Intermediate (Field) (Direct Support and General Support), and Depot Maintenance Manual Engine, Gasoline, 3 HP, Military Standard Model.

**1-3. MAINTENANCE FORMS AND RECORDS.** Equipment maintenance forms and procedures for their use are contained in DA PAM 738-750 update, The Army Maintenance Management System (TAMMS).

**1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S).** If your air 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 an SF 368 (Quality Deficiency Report). Mail it to us at Commander, Headquarters, U.S. Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. We will send you a reply.

**1-5. WARRANTY INFORMATION.** All components (not including the engine) of the Air Compressor are warranted by C & H Distributors Inc. for a period of 12 months. The warranty starts on the data found in block 23, DA Form 2408-9, in the logbook. Report all defects in material or workmanship to your supervisor who will take appropriate action through your organizational maintenance shop.

**1-6. DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE.** Refer to TM 750-244-3.

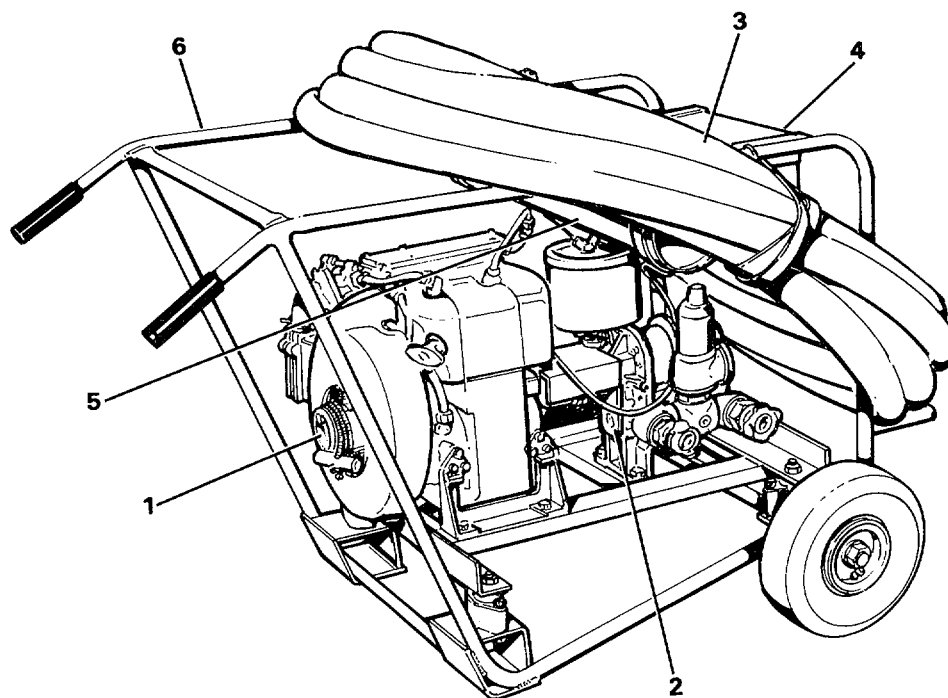
## SECTION II. EQUIPMENT DESCRIPTION

**1-7. EQUIPMENT CHARACTERISTICS.** A two wheeled, frame mounted air compressor for portable use inflating ponton floats.

**1-8. CAPABILITIES AND FEATURES.**

- a. Military Standard gasoline engine driven.
- b. Rotary vane pump provides compressed air at 60 cfm and 6.5 psi.
- c. Self contained, wheel mounted frame for portable use.
- d. Quick connect hose fittings and inflator valve assemblies.
- e. Tool box welded to frame.
- f. Safety valve prevents pressure buildup above 6.5 psi in pump at constant run.

**1-9. LOCATION AND DESCRIPTION OF COMPRESSOR COMPONENTS.**



**Component Location**

*a. Gasoline Engine (1).* Powers the air pump through a coupling to the crankshaft. Has ON/OFF ignition switch and pull rope starter. Air-cooled.

*b. Air Pump (2).* A rotary vane pump driven by shaft coupling to engine crankshaft. Provides 60 cfm, 6.5 psi to two service ports. Assembly includes air filter, service outlet tee, and safety valve.

*c. Air Hose Assembly (3).* Consists of two air hoses stored by rubber straps to frame. Quick connect fittings to pump outlet tee and inflator valves for ponton float use.

*d. Tool Box (4).* Stores inflator valves and fittings. Provides space for necessary maintenance/service tools.

*e. Gas Tank (5).* 2.1 gallon (8 L) capacity tank strapped to frame. Fuel strainer in fill opening and tight seal gasket in cap.

*f. Frame (6).* Welded frame and welded engine/pump support allow for rugged terrain use. Wheel mounted frame with hand grips for one person transport.

# 1-10. EQUIPMENT DATA.

## Air Compressor

Manufacturer .....C & H Distributors Inc.  
 Model ..... 20-920  
 Output ..... 60 cfm at 6.5 psi  
 Type.....Gas engine driven, two wheeled frame  
 Length .....51 in. (1295 mm)  
 Width .....33 in. (838 mm)  
 Height..... 3in.(762mm)  
 Weight, net ..... 158 lbs. (71 kg)  
 Weight, shipping..... 250 lbs. (113 kg)

## Engine

Make ..... Military Standard Engine  
 Model .....2A016-III  
 Type..... 4 cycle, gasoline, air-cooled  
 Number of cylinders ..... 2  
 Displacement ..... 1 6 cu. in.  
 Horsepower ..... 3 @ 3600 rpm  
 Refer to TM 5-2805-257-14 for specific data.

## Air Pump

Manufacturer ..... Fuller Co.  
 Model ..... 2X3V-S

Type.....Rotary impeller, vertical mount,  
 top drive shaft

Rotation ..... Either direction (central timing)

Oil Capacity ..... 2 oz.

## Air Filter

Manufacturer.....Solberg

Type.....Foam sleeve, disposable element

## Safety Valve

Manufacturer..... Kunkle

Type.....Pressure tight cap

No manual release

Relief pressure .....6.5 psi, non-adjustable

## Gas Tank

Manufacturer..... Mirax

Capacity.....2.1 gallons

Filter ..... Wire mesh strainer

## Wheel

Tire ..... 4.10x 3.50-4

Pressure..... 30 psi

Rim .....2.75 (width) x 3-1/4" (dia.) offset

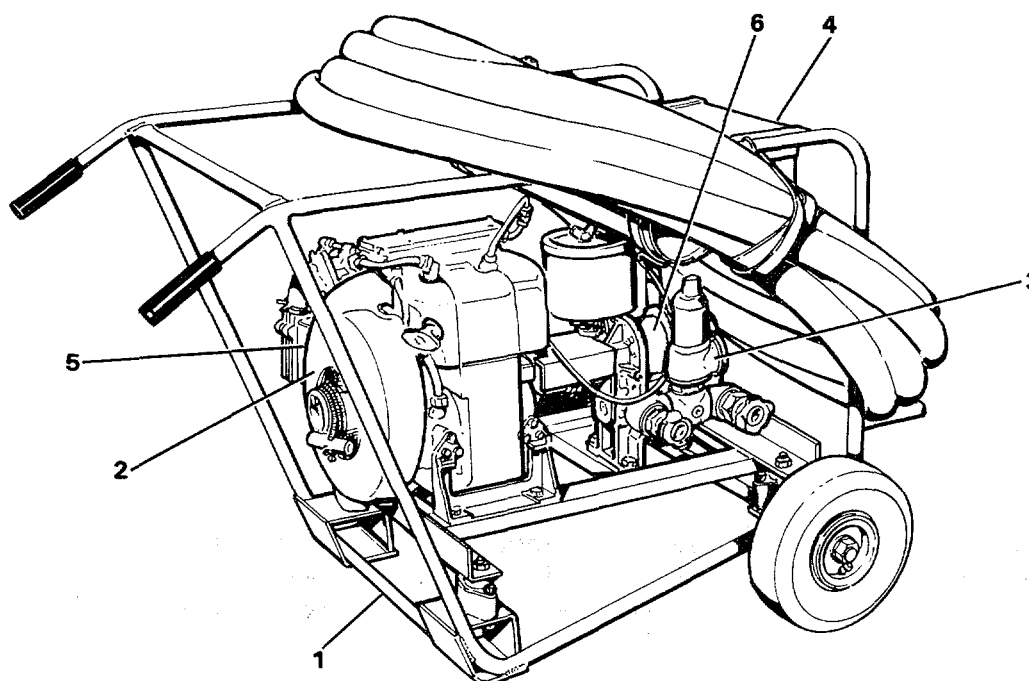
## Air Hoses

Manufacturer..... C&H Distributors, Inc.

Size ..... 1" x 25"

Quantity .....2

# 1-11. DATA PLATE LOCATION.



Data Plate/Decal Location

*a. Compressor Data Plate (1).*

COMPRESSOR, AIR; FRAME MOUNTED:  
 GAS ENGINE DRIVEN; 60 cfm, 6.5 psi  
 PART NO. 20-920  
 STOCK NO. 4310-01-248-1661  
 CONTRACT DAAK01-86-C-C123  
 C & H DISTRIBUTORS INC.

SERIAL NO. 9200  
 YEAR OF M'F'R. 1987  
 US

*b. Engine Data Plate (2).*

ENGINE, GASOLINE  
 MILITARY STANDARD  
 2 CYLINDER AIR-COOLED  
 4 CYCLE OVERHEAD VALVE  
 16 CU. IN. DISPLACEMENT

STOCK NO. NSN-2805-01-169-1100  
 SERIAL NO. AA XXXXXX  
 MIL MODEL 2A016 III  
 MANUAL TM 5-2805-257-14 & 24P  
 MFD. BY W-F INDUSTRIES  
 DATE MFG. 5/86  
 P.O. NO. DAAJ09-83-C-8280

*c. Air Pump (3).*

FULLER COMPANY

2X3V-S	XXXXXX
--------	--------

Model Serial No.

SUTORBILT PRODUCTS  
 COMPTON, CA.

**1-12. WARNING LOCATION.***a. Compressor Unit Noise Level (4).*

WARNING - EAR PROTECTION  
 REQUIRED WITHIN 36 FEET WHEN  
 UNIT IS OPERATING.

*b. Engine Decal (5).*

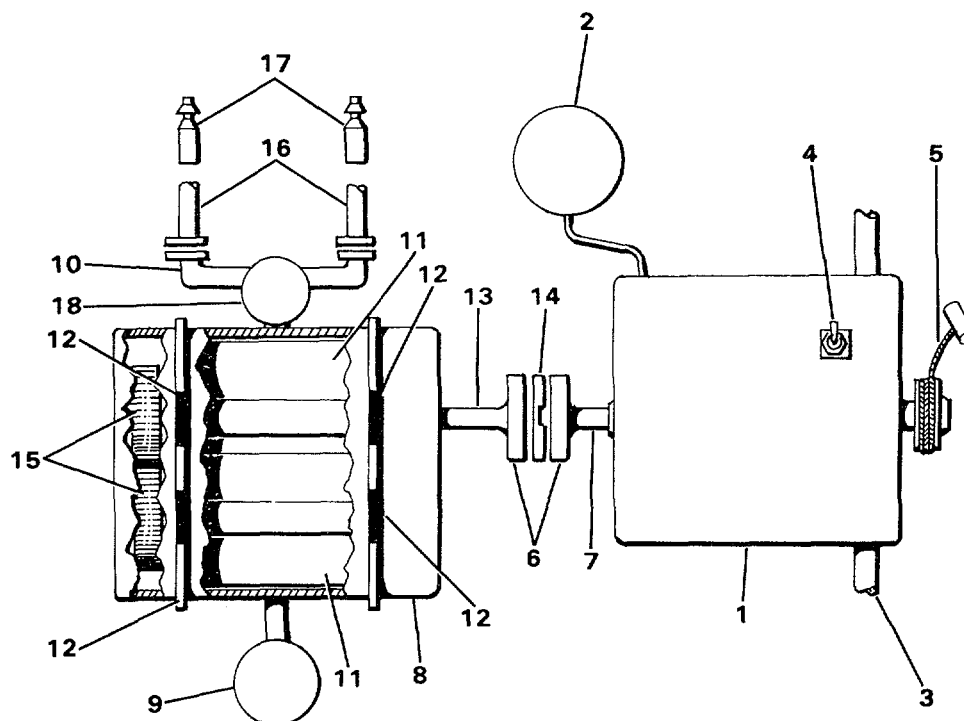
AIR-COOLED ENGINE  
 DO NOT OPERATE WITH  
 FLOW OF AIR OBSTRUCTED

*c. Air Pump (6).*

WARNING THIS EQUIPMENT HAS OPERATING LIMITATIONS. REFER TO PROPER INSTRUCTION MANUAL BEFORE ATTEMPTING TO START OR SERVICE THIS UNIT.	LUBRICATION INSTRUCTIONS	
	BLOWER DISCHARGE TEMPERATURE	GRADE OF GREASE AND OIL *
	-40 TO 250°F	NO. 2 BEARING GREASE SAE 10W SAE 20 SAE 40
	-40 TO 22°F	
+32 TO 100°F		
	+100 TO 275°F	
*USE A GOOD QUALITY STRAIGHT MINERAL OIL. ANTI-FOAM OR RUST-INHIBITING ARE OPTIONAL. DO NOT USE MULTIPLE VISCOSITY OILS.		

## SECTION III. TECHNICAL PRINCIPLES OF OPERATION

## 1-13. OPERATION OF THE AIR COMPRESSOR.



- |                      |                     |
|----------------------|---------------------|
| 1. GAS ENGINE        | 10. OUTLET TEE      |
| 2. FUEL TANK         | 11. IMPELLERS       |
| 3. ENGINE AIR FILTER | 12. BEARINGS        |
| 4. ON/OFF SWITCH     | 13. DRIVE SHAFT     |
| 5. ROPE STARTER      | 14. NEOPRENE INSERT |
| 6. COUPLING          | 15. TIMING GEARS    |
| 7. CRANKSHAFT        | 16. AIR HOSES       |
| 8. AIR PUMP          | 17. INFLATOR VALVE  |
| 9. PUMP AIR FILTER   | 18. SAFETY VALVE    |

**Compressor Operation**

a. *Gas Engine (1)*. Draws gas from the frame-mounted tank (2) and air through its own air filter (3). Controlled by an ON/OFF switch (4) and started by a pull rope starter (5). Through use of piston, connecting rods, and crankshaft, produces 3 hp. Connected to the air pump through a coupling (6) mounted on engine crankshaft (7).

b. *Air Pump (8)*. Rotary impellers compress air taken in through the pump air filter (9) and forces air out through the outlet tee (10). Impellers (11) are mounted on shafts of unequal length and supported by bearings (12) on both ends. Longer shaft serves as the drive shaft (13) and is connected to the engine through coupling (6) and a neoprene insert (14). Impellers are held in proper time by timing gears (15) mounted on opposite ends of drive shafts.

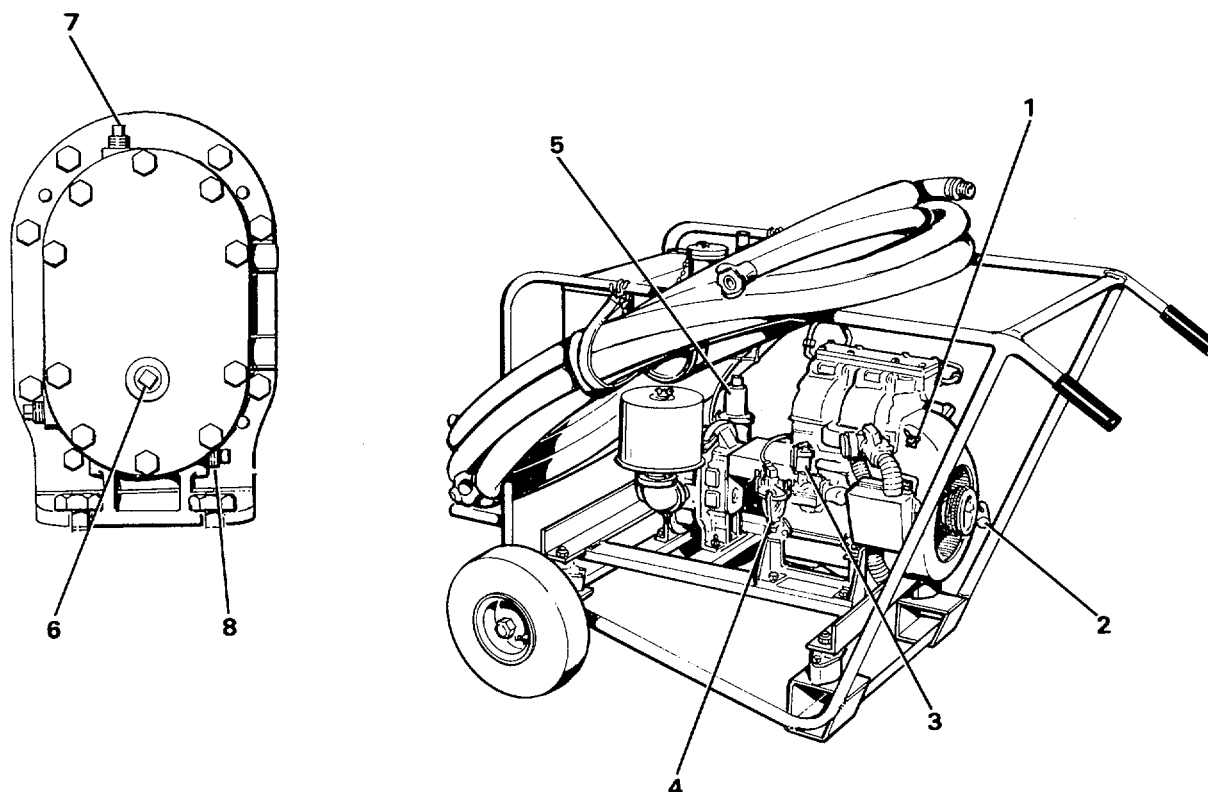
c. *Safety Valve (18)*. A safety valve with relief setting of 6.5 psi prevents pressure buildup in the air pump and hoses.

d. *Air Hoses (16)*. Two 25 ft. hoses are stored on the frame for transport. Quickly connected to outlet tee (10) to provide air to the inflator valve assemblies (17). Assemblies are specially designed for inflating ponton floats.

## CHAPTER 2. OPERATING INSTRUCTIONS

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

## 2-1. OPERATOR'S CONTROLS AND INDICATORS.



Operator's Controls and Indicators

Key	Name	Location	Function
1	ON/OFF switch	Engine block	Refer to TM 5-2805-257-14
2	Pull starter	Engine block	Refer to TM 5-2805-257-14
3	Oil level dipstick	Engine block	Refer to TM 5-2805-257-14
4	Fuel filter	Engine block	Refer to TM 5-2805-257-14
5	Safety relief valve	Outlet tee	Releases air pressure in pump and hoses above 6.5 psi
6	Oil level plug	Blower gear cover	Check oil level
7	Oil fill plug	Blower housing	Add oil
8	Oil drain plug	Blower housing	Drain oil

## SECTION II. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

**2-2. GENERAL.** The operator's PMCS table lists the inspections and service procedures to properly maintain the air compressor in good operating condition. Items covered here are appropriate for operator level only. Always keep in mind the CAUTIONS and WARNINGS before performing checks and services listed in the PMCS table.

**2-3. PMCS TABLE FORMAT.** The following columns make up the PMCS table.

a. *Item No.* Each maintenance check is identified by a separate item number. The item column will 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.

b. *Interval.* The interval column of the PMCS table identifies when to perform the service check or maintenance. A dot (•) appears underneath the appropriate column(s) abbreviation:

**B** — Before Operation

**D** — During Operation

**A** — After Operation

**W** — Weekly

c. *Item To Be Inspected/Procedure.* This column identifies how to perform the required checks and services. Carefully follow these instructions. If appropriate tools are not available to operator, unit maintenance should perform the work. Report any malfunctions or failures to unit maintenance.

d. *Equipment Not Ready/Available If:* This column indicates when and why equipment cannot be used after completing the specific PMCS.

### NOTE

The terms *ready/available* and *mission capable* refer to the same status: Equipment is on hand and is able to perform its combat missions (see DA PAM 738-750).

## 2-4. SPECIAL INSTRUCTIONS.

### 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.

a. "Before Operation (B)" checks should be limited to those required for consecutive application by an assigned operator/crew. Perform "Weekly (W)" as well as "Before Operation (B)" PMCS if:

(1) Compressor has not been operated since the last weekly PMCS, or;

(2) Compressor is being operated for the first time.

b. Leakage definitions for operator/crew PMCS are classified as follows:

Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked / inspected.

Class III Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

### CAUTION

Equipment operation is allowable with minor leakages (Class I or II). Consider the fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

When operating with Class I or Class II leaks, continue to check fluid levels as required by PMCS table.

Class III leaks should be reported to unit maintenance.

TABLE 2-1. Operator's Preventive Maintenance Checks and Service

B - Before Operation

D - During Operation

A - After Operation

W - Weekly

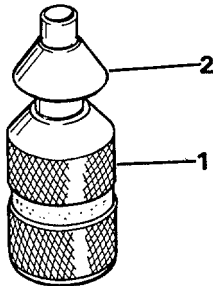
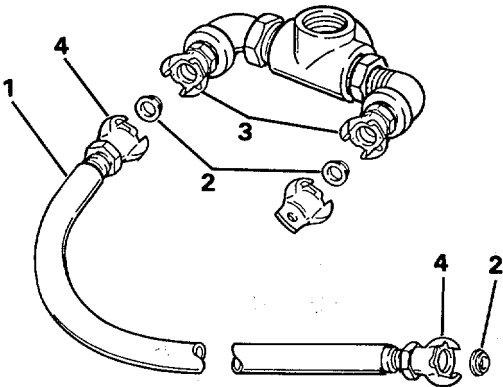
ITEM NO.	INTERVAL				ITEM TO BE INSPECTED. PROCEDURE:	EQUIPMENT NOT READY/AVAILABLE IF:
	B	D	A	W		
1	• •			• •	<p>INFLATOR VALVE ASSEMBLY</p> <p>a. Inspect the body (1) for damage.</p> <p>b. Inspect the rubber inflator seal (2) for damage or cracking.</p> 	Rubber inflator seal damaged.
2	• •			• •	<p>AIR HOSE ASSEMBLY</p> <p>a. Inspect the hoses (1) for cracks, splits or other signs of wear.</p> <p>b. Inspect the rubber packing (2) on the outlet tee fittings (3) and hose fittings (4).</p> 	Hoses or rubber packing are damaged.

TABLE 2-1. Operator's Preventive Maintenance Checks and Services (Continued)

B - Before Operation

D - During Operation

A - After Operation

W - Weekly

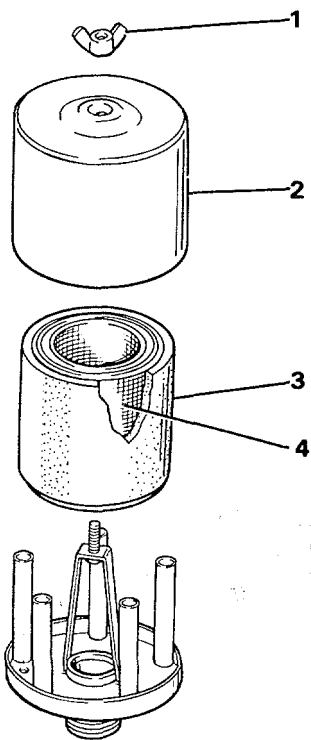
ITEM NO.	INTERVAL				ITEM TO BE INSPECTED. PROCEDURE:	EQUIPMENT NOT READY/AVAILABLE IF:
	B	D	A	W		
3				<ul style="list-style-type: none"> <li>•</li> </ul>	<p><b>AIR FILTER ASSEMBLY</b></p> <p>a. Unscrew the wing nut (1) and remove the upper housing (2).</p> <p><b>WARNING</b></p> <p>Drycleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact by wearing rubber or non-porous gloves when handling the solvent or material wet with drycleaning solvent. Wash hands immediately after exposure with soap and water and use a lanolin based skin cream to prevent skin drying. Do not use near open flame or excessive heat. Flash point of solvent is 1 000F (380C). Do not work with solvent in a closed room. Be sure there is good ventilation or the solvent vapors will build up in the air and become a poisonous mixture which can cause physical injury or even death.</p> <p>b. Clean the foam sleeve (3) with P-D-680.</p> <p>c. Inspect the filter element (4) for dirt collection.</p> 	Filter blocked.

TABLE 2-1. Operator's Preventive Maintenance Checks and Services (Continued)

B - Before Operation

D - During Operation

A - After Operation

W - Weekly

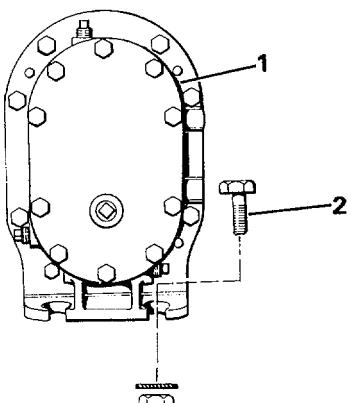
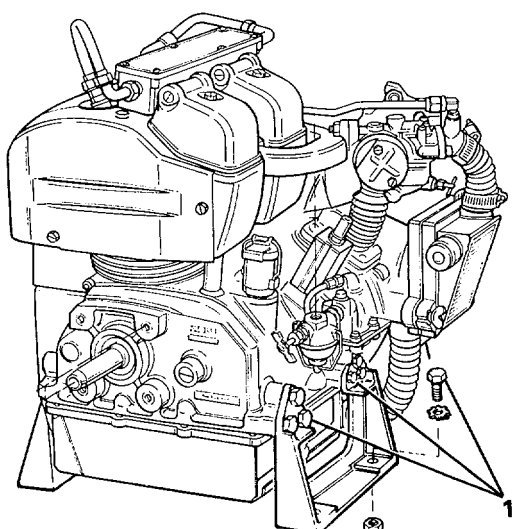
ITEM NO.	INTERVAL				ITEM TO BE INSPECTED. PROCEDURE:	EQUIPMENT NOT READY/AVAILABLE IF:
	B	D	A	W		
4	*				<p><b>AIR PUMP</b></p> <ul style="list-style-type: none"> <li>a. Check for any oil leakage from gear cover gasket (1).</li> <li>b. Check air pump mounting bolts (2) for tightness.</li> <li>c. Make sure there are not abnormal noises (clacking, chattering, etc.) during operation.</li> </ul> 	Loud pump noises during operation.
5	•				<p><b>ENGINE</b></p> <ul style="list-style-type: none"> <li>a. Check mounting bolts (1) for tightness.</li> <li>b. Refer to TM 5-2805-257-14 for all other checks of lubricants and components.</li> </ul> 	Engine mounts are not securely fastened.

TABLE 2-1. Operator's Preventive Maintenance Checks and Services (Continued)

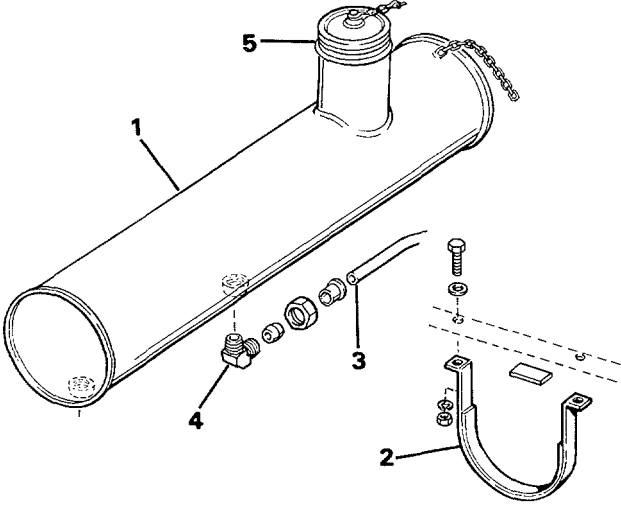
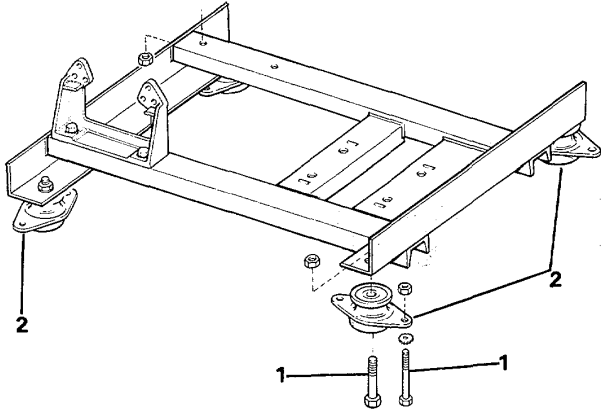
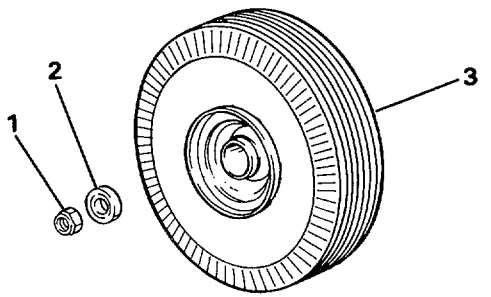
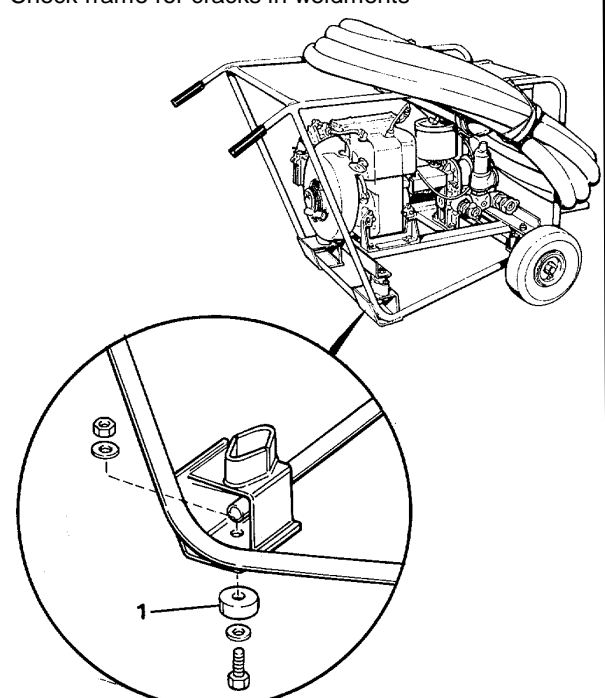
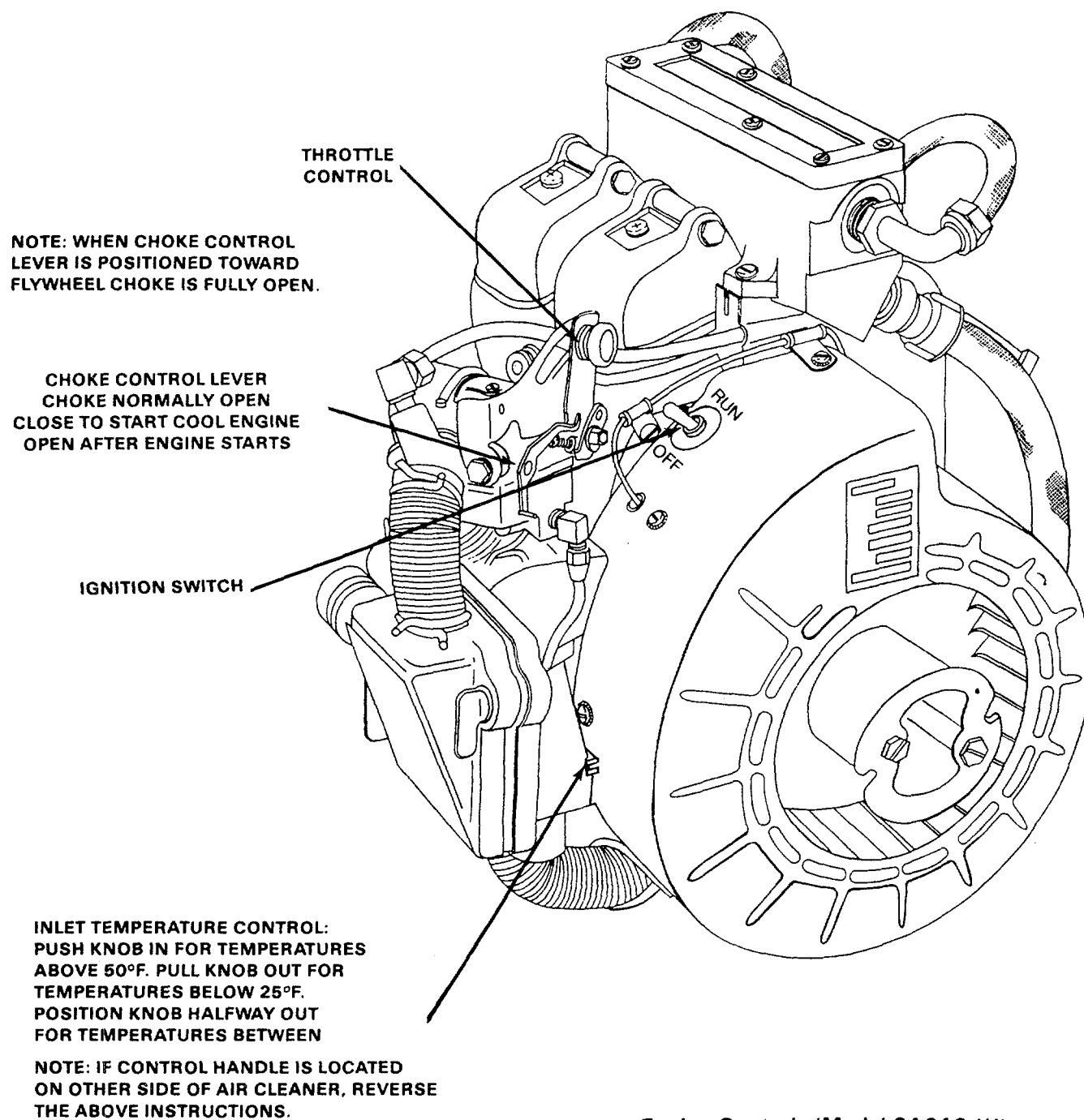
ITEM NO.	INTERVAL				ITEM TO BE INSPECTED. PROCEDURE:	EQUIPMENT NOT READY/AVAILABLE IF:
	B	D	A	W		
6					<p><b>FUEL TANK ASSEMBLY</b></p> <ul style="list-style-type: none"> <li>a. Inspect tank (1) for leaks</li> <li>b. Check tank mounting straps (2) for damage and secure attachment to frame.</li> <li>c. Inspect hose (3) and fitting (4) for leaks.</li> <li>d. Check fuel level with dipstick in cap (5). Service as required.</li> </ul> 	<p>Gas tank leaking fuel.</p> <p>Hose or fitting leaking fuel.</p>
7					<p><b>BASE AND MOUNTS</b></p> <ul style="list-style-type: none"> <li>a. Check mounting bolts (1) for tightness.</li> <li>b. Check vibration mounts (2) for tightness, cracks, or signs of wear.</li> </ul> 	

TABLE 2-1. Operator's Preventive Maintenance Checks and Services (Continued)

ITEM NO.	INTERVAL				ITEM TO BE INSPECTED. PROCEDURE:	EQUIPMENT NOT READY/AVAILABLE IF:
	B	D	A	W		
8	•				<p>WHEEL ASSEMBLY</p> <ul style="list-style-type: none"> <li>• a. Check nut (1) for tightness. Nut should keep bearing (2) outer race from turning.</li> <li>• b. Check tires (3) for proper inflation of 30 psi.</li> <li>• c. Check tires (3) for cracks or other signs of damage.</li> </ul> 	Tires will not hold air.
9					<p>FRAME ASSEMBLY</p> <ul style="list-style-type: none"> <li>• a. Check rubber bumper (1) for cracks and secure attachment.</li> <li>• b. Check frame for cracks in weldments</li> </ul> 	Frame is damaged.



**SECTION III. OPERATION UNDER USUAL CONDITIONS****2-5. STARTING ENGINE.****WARNING**

Do not operate this compressor in enclosed areas. Carbon monoxide poisoning may result in injury or death to personnel.

**WARNING**

Operation of this equipment may present a noise hazard to personnel in the area. If the noise level exceeds the allowable limits for unprotected personnel, wear ear muffs or earplugs which were fitted by a trained professional.

- a. Place throttle control approximately 1/4 inch forward of full idle.
- b. Close the carburetor choke, move lever in counterclockwise position.
- c. Place ignition switch in "RUN" position.

**NOTE**

On Model 2A016-1 only, no ignition switch was installed. The engine ignition is always on with only a stop switch installed.

d. Wind the starting rope around the starter flange and pull briskly to start the engine. When the engine has started, move the throttle control, if necessary, to a position that will allow the engine to operate at a smooth idle. Rotate the choke control clockwise until the choke is fully open and the engine will continue to run. Allow engine to warm up for approximately 3 minutes.

e. After engine has warmed up, move the throttle to the full governed position. Allow engine warm-up for approximately 3 minutes.

**NOTE**

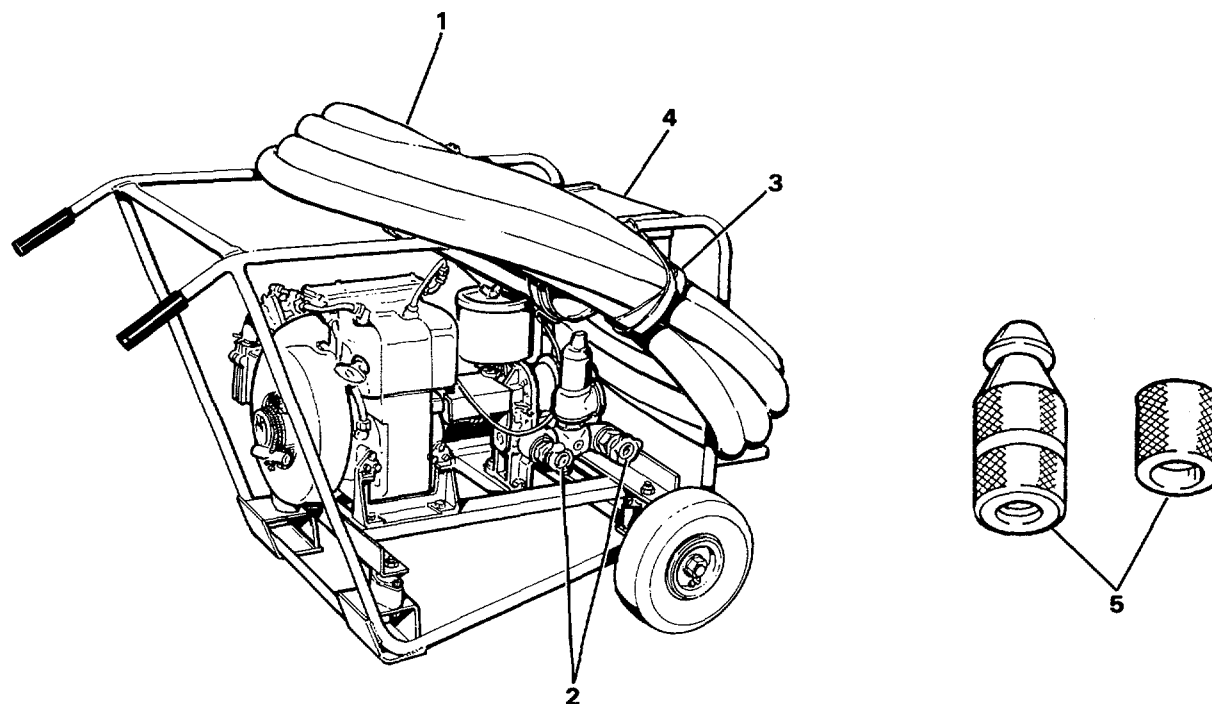
Operate the engine in a manner suitable to operate the compressor as required.

**2-6. STOPPING ENGINE.**

- a. Remove all compressor load from engine.
- b. Move throttle control to idle position, allow engine to cool for approximately 2 minutes.
- c. Turn ignition switch off or press the stop button.
- d. Close the fuel shut off valve.

**2-7. CONTROLS AND INSTRUMENTS.**

- a. Refer to the engine illustration for location, purpose and normal setting of 2A016-I engine.
- b. Refer to the engine illustration (paragraph 2-5) for location, purpose and normal setting of engine controls that are applicable to the Models 2A016-II and 2A016-III engines.

**2-8. COMPRESSOR OPERATING PROCEDURE.****Operating Compressor**

- a. Perform all the B (Before Operation) PMCS listed in Table 2-1.
- b. Remove hoses (1) from frame and couple to quick connect fittings (2) on pump outlet tee.
- c. Store rubber cords (3) securing hoses in tool box (4).
- d. Install inflator valve assemblies (5) on end of hoses.
- e. Refer to paragraph 2-5 for starting engine.
- f. After engine warm-up, couple inflator valves to quick connect fittings on equipment being serviced.

**SECTION IV. OPERATION UNDER UNUSUAL CONDITIONS****2-9. OPERATION IN DUSTY OR SANDY AREAS.****CAUTION**

Check and clean air pump filter element daily to keep it from being clogged. It is imperative to check for damage and clean the entire unit after a dust or sand storm.

- a. Use special care and handling of military engine in dusty or sandy areas, because dust and sand are highly abrasive.
- b. Keep fuel, lubrication and ignition system free of dust and sand, to prevent damage to any of these systems.
- c. Provide proper insulation and special protective covers during sand and dust storms.
- d. Keep engine clear of heavy drifts of sand or dust.
- e. Place compressor in a building, if available, when not in use.

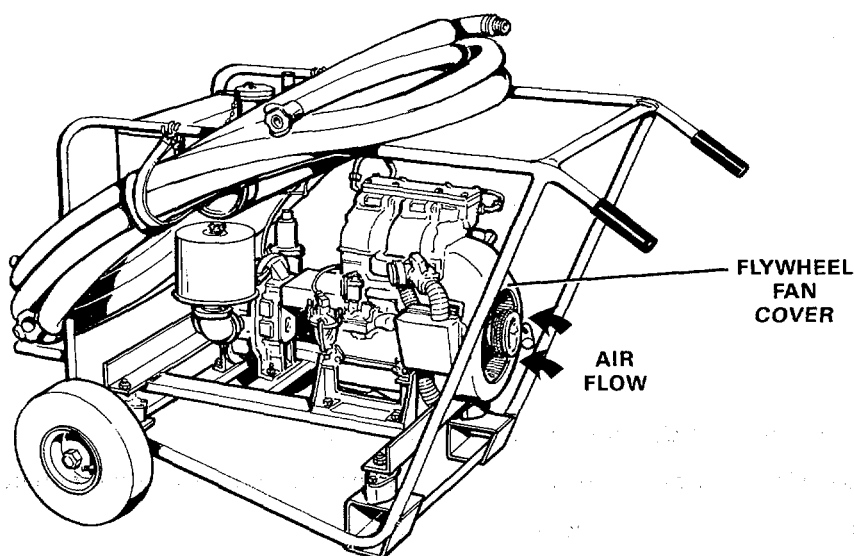
**2-10. OPERATION IN SALT WATER AREAS.**

- a. Check all painted metal surfaces for corrosion in salt air.
- b. Clean compressor and components daily with a soft cloth and dry thoroughly.
- c. A thin lubricating film of light oil or grease can be used to preserve painted metals.

**2-11. OPERATION UNDER RAINY OR HUMID CONDITIONS.**

- a. In humid areas, a slight drop of temperatures will cause condensation of moisture. Keep fuel lines and engine covered when not in use.
- b. Keep engine sheltered if possible when operated under rainy conditions.

**2-12. OPERATION IN EXTREME HEAT.** Gas engine is air-cooled. Make sure that there are no obstructions to the flywheel fan cover opening.



**2-13. OPERATION IN EXTREME COLD (-25°F,-32°C).**

- a. For air pump lubrication, refer to paragraph 3-2.
- b. Refer to TM 5-2805-257-14 for correct engine lubricants.
- c. Use proper care and handling of compressor in subzero weather to reduce maintenance and ensure adequate operation.
- d. Protect the compressor as much as possible to prevent damage from icing and moisture.
- e. Store in protective units, boxes or buildings if available during cold weather.
- f. Use a careful preventive maintenance check for operation of the engine. Refer to TM 5-2805-257-14.
- g. Operate the engine for a minimum of 30 minutes to evaporate any condensation.
- h. Allow engine to reach proper operating temperature before using service air.
- i. Inspect carefully for any malfunction during operation.

**2-14. OPERATION IN DIFFERENT ALTITUDES.**

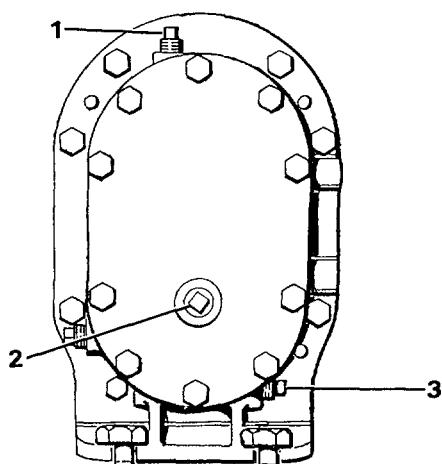
- a. Power loss due to altitude is approximately 3.5 percent for each 1000 feet above sea level.
- b. Military standard 3 hp engines will operate at elevations up to 10,000 feet (305 meters) at reduced ratings.

## CHAPTER 3. UNIT MAINTENANCE INSTRUCTIONS

### SECTION I. LUBRICATION INSTRUCTIONS

**3-1. ENGINE LUBRICATION.** Refer to TM 5-2805-257-14 for engine lubrication instructions and Lubrication Order LO 5-2805-257-12 (15 July 1986).

#### 3-2. AIR PUMP LUBRICATION.



**Air Pump Lubrication**

Temperature	Oil Grade	Oil Capacity
-40° -32°F (-40° -0°C)	SAE 10W	2 oz.
32° -100° F (0-38°C)	SAE 20	2 oz.
100-275°F (38° -135°C)	SAE 40	2 oz.

**Table 3-1. Pump Oil Grades and Capacities**

#### CAUTION

Oil drain plug (3) is located on opposite side and is lower on gear case than level plug (2). Do not confuse the two plugs or oil will be lost.

#### CAUTION

When removing oil plugs (1, 2 and 3), do not mix plugs. Oil fill plug (1) is vented, oil drain plug (3) is magnetic.

#### NOTE

It is normal for a small amount of oil to seep from vent holes in normal operation.

a. Fresh oil should be added through filler plug (1) on top of gear case to maintain proper level. Remove oil level plug (2) and fill gear case until oil drips out of oil level hole (2).

b. Oil should be drained, flushed, and replaced every 1500 hours of operation under normal service. Change oil more frequently in extreme heat or dirty environments.

c. Remove drain plug (3) to drain oil. Pour a small amount of fresh oil through filler plug (1) opening and let drain. Replace drain plug (3).

#### NOTE

Bearings in drive shaft end are sealed and do not require lubrication.

d. Repeat step a. and replace plugs (1 and 2). The following table provides a guideline for proper oil viscosities.

**SECTION II. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT**

**3-3. COMMON TOOLS AND EQUIPMENT.** Refer to Appendix B ,Section III, Maintenance Allocation Chart, for tools necessary to perform maintenance procedures.

**3-4. SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND SUPPORT EQUIPMENT.** No special tools are required for the maintenance of this air compressor.

**3-5. REPAIR PARTS.** Repair parts are listed and illustrated in the repair parts and special tools list (RPSTL, TM 5-4310-381-23P) covering unit and intermediate direct support maintenance for this equipment.

**SECTION III. SERVICE UPON RECEIPT OF EQUIPMENT****3-6. INSPECTION.**

- a. Inspect the compressor data plate for positive identification of the equipment. Refer to paragraph 1-2.
- b. Make a thorough inspection of the engine, air pump, frame, and mounted components for damage that may occur during shipment.
- c. Check the equipment against the packing list and make certain that all items are accounted for and are in serviceable condition.
- d. Inspect all components for loose and missing mounting hardware and for loose connections.
- e. Inspect the tool box for the inflator valve assembly and adaptor fitting that are packed separately.

**3-7. SERVICE UPON RECEIPT.**

- a. The compressor is crated and shipped with all components in place. Remove wood crating and inspect machine for damage or loss during shipment. Check tool box for special inflator valve assembly and adaptor.

**CAUTION**

The engine and air pump are shipped with preservatives in crankcase and gear case. Initial servicing must include draining preservatives and refilling with proper lubricants.

- b. Follow the "Depreservation Guide" that accompanies shipment of the machine.
- c. Refer to TM 5-2805-257-14 and Lubrication Order LO 5-2805-257-12 (15 July 1986) for proper engine lubrication instructions.
- d. Refer to TM 5-2805-257-14 for instructions on "Service Upon Receipt of Equipment" for the gas engine.
- e. Refer to paragraph 3-2, Air Pump Lubrication, for proper pump lubrication instructions.

**3-8. INSTALLATION.** Install the inflator valve assemblies (stored in tool box) on end of hoses.**3-9. EQUIPMENT CHECK.**

- a. Perform all the B (Before Operation) PMCS.
- b. Start the unit and operate for 15 minutes at no load. During this time, check for hot spots and other indications of interference. If minor hot spots occur, pour a small amount of lubricating oil into the blower inlet while it is operating. Repeat until hot spots disappear.
- c. Once the hot spots have been removed, it is unnecessary to lubricate the impeller chamber for proper performance.
- d. Apply the load and observe the operation of the unit for one hour. Check frequently during the first day of operation.
- e. If malfunctions occur, do not continue to operate. Major problems, such as knocking, can cause serious damage if the unit is operated without correction. Refer to paragraph 3-13, Troubleshooting.
- f. After Initial Operation:
  - (1) Check the mounting hardware securing the engine and plugs.
  - (2) Check the mounting hardware securing the support plate and base mounts.
  - (3) Check the guard and drive couplings for tightness.

## SECTION IV. UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

**3-10. INTRODUCTION.** The preventive maintenance checks and services listed in the PMCS table cover procedures to be performed by unit maintenance personnel.

**3-11. PMCS TABLE.** Explanation of the columns:

a. *Item Number.* Checks and services are numbered in sequence. This column shall be used as source of item numbers for the TM Number Column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

b. *Interval* The amount of time, in calendar days, between scheduled checks and services.

- (1) W — Weekly
- (2) M — Monthly
- (3) Q — Quarterly

c. *Item To Be Inspected.* This column gives the name of the item to be inspected or serviced.

d. *Procedures.* This column lists inspection procedures.

**Table 3-2. Unit Preventive Maintenance Checks and Services**

**W - Weekly**

**M - Monthly**

**Q - Quarterly**

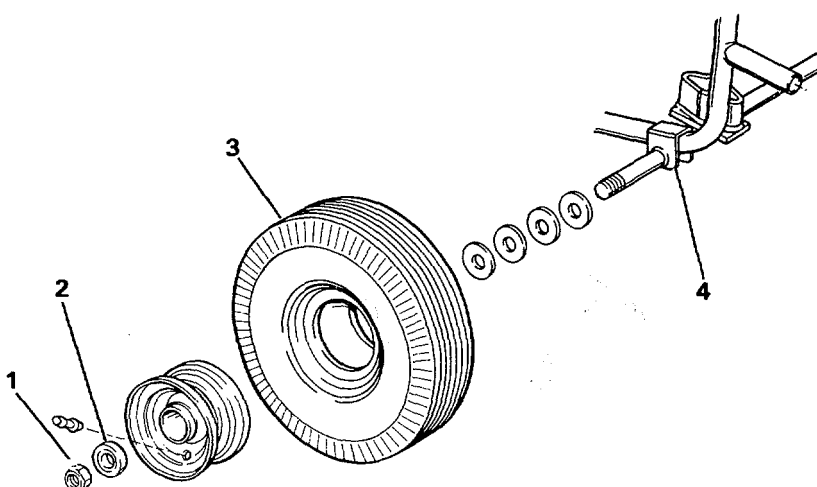
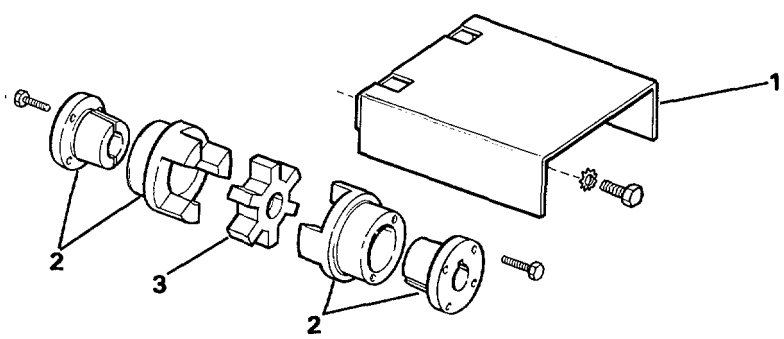
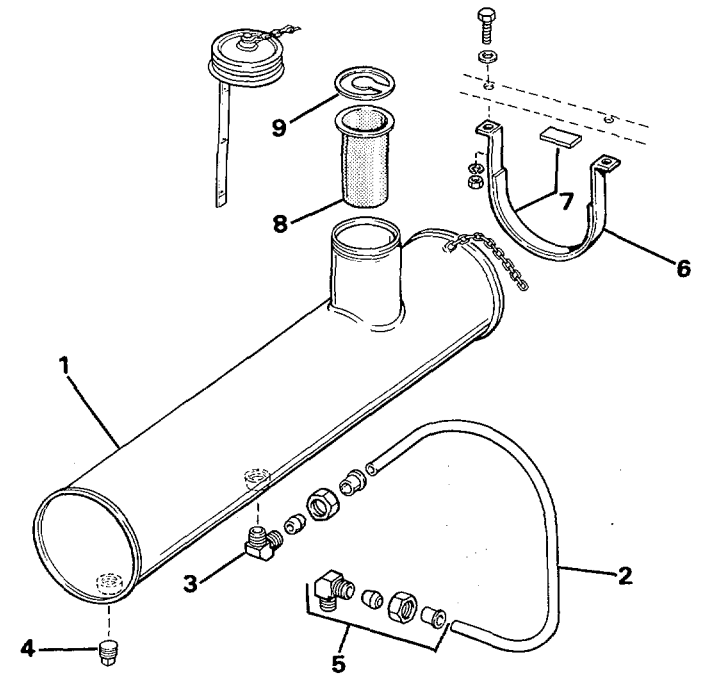
Item No.	Interval			Item To Be Inspected. Procedures
	W	M	Q	
1		*		<p><b>WHEEL ASSEMBLY</b></p> <p>a. Check wheel nut (1) for tightness. Nut should keep bearing (2) outer race from turning.</p> <p>b. Raise and block frame so that wheels (3) are off ground. Spin wheels (3) checking for any play (back and forth movement) or binding.</p> <p>c. If wheel rotation is noisy or binding, remove nut (1) securing wheel.</p> <p>d. Inspect bearing (2) for wear or damage. Inspect wheel cavity for dry or insufficient bearing grease.</p> <p>e. Check axle weldments (4) to frame for cracks.</p> 

Table 3-2. Unit Preventive Maintenance Checks and Services (Continued)

W - Weekly

M - Monthly

Q - Quarterly

Item No.	Interval			Item To Be Inspected. Procedures
	W	M	Q	
2		*	*	<p><b>GUARD AND DRIVE COUPLINGS</b></p> <p>a. Inspect guard (1) for damage and secure attachment to engine.</p> <p>b. Inspect couplings (2) for wear and secure attachment to shafts.</p> <p>c. Inspect neoprene insert (3) for major cracks or damage.</p> 
3		*	*	<p><b>FUEL TANK ASSEMBLY</b></p> <p>a. Check fuel tank (1), hose (2), and fittings (3), for leaks, cracks, or deterioration.</p> <p>b. To remove tank, drain gas at drain plug (4) or fuel pump fitting (5). Remove mounting straps (6).</p> <p>c. Check mounting straps (6) for tightness and wear on rubber shims (7).</p> <p>d. Check strainer (8) for wear.</p> <p>e. Check cap gasket (9) for wear.</p> 

## SECTION V. TROUBLESHOOTING

**3-12. GENERAL.** This section contains troubleshooting procedures to be performed by organizational maintenance. The two main areas of troubleshooting are the gas engine and air pump. Refer to TM 5-2805-257-14 for troubleshooting instructions for the engine.

**3-13. TROUBLESHOOTING TABLE.** The following columns are used in the Troubleshooting Chart.

a. *Malfunction.* Malfunctions listed are the ones most likely to happen. Not all possible malfunctions can be foreseen and listed.

b. *Test or Inspection.* Tests or inspections are listed to help you find the cause of the malfunction. The tests that are easiest to do are listed first. The tests that are hardest to do are listed last.

c. *Corrective Action.* Corrective actions are listed to help eliminate the malfunction. Where the corrective action is too complicated to be listed in full detail, the paragraph number of the detailed procedure is given.

**Table 3-3. Troubleshooting**

Malfunction	Test or Inspection	Corrective Action
-------------	--------------------	-------------------

### ENGINE

Refer to TM 5-2805-257-14 for troubleshooting instructions.

### AIR PUMP

#### 1. LOSS OF OIL.

Step 1. Check for clogged oil in fill plug vent.

#### WARNING

Death or serious injury could occur if compressed air is directed against the skin. Do not use compressed air for cleaning or drying unless the pressure is/has been reduced to 30 psi (2.11 kg/cm<sup>2</sup>) or less. When working with compressed air always use chip guards, eye protection and other personal protective equipment.

Clean vent in oil fill plug by removing plug and blowing through opening with compressed air not to exceed 30 psi.

Step 2. Check for loose gear cover bolts.

Tighten bolts. Refer to paragraph 3-19.

#### 2. LACK OF AIR PRESSURE.

Step 1. Check for clogged intake filter. Clean or replace as necessary. Refer to paragraph 3-17.

Step 2. Check for defective or missing rubber packing seals on outlet tee fittings and hose fitting. Replace packing seals as necessary. Refer to paragraph 3-16.

Step 3. Check for clogged or defective inflating valves. Remove inflating valves and replace with adaptor. If air pressure increases, repair or replace defective inflating valves. Refer to paragraph 3-15.

Step 4. Check safety valve for leakage. Replace if defective. Refer to paragraph 3-16.

Table 3-3. Troubleshooting (Continued)

Malfunction	Test or Inspection	Corrective Action
3. EXCESSIVE PUMP TEMPERATURE.		
	Step 1. Check position of coupling caps. Remove coupling caps and attach hose(s). Refer to paragraph 3-16.	
	Step 2. Check for clogged exhaust manifold. Remove clog. Refer to paragraph 3-16.	
	Step 3. Check for improperly functioning safety valve. Replace safety valve if necessary.	

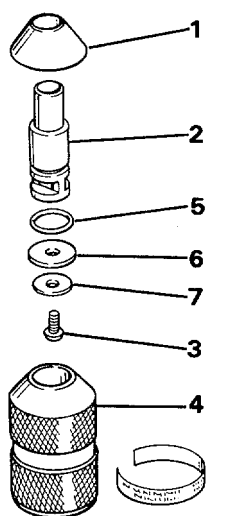
## SECTION VI. MAINTENANCE INSTRUCTIONS

**3-14. GENERAL.** This section contains removal, disassembly, inspection, repair, assembly and installation instructions for compressor components listed in Appendix B. Section III Maintenance Allocation Chart.

### 3-15. INFLATOR VALVE ASSEMBLY REPLACEMENT.

**INITIAL SETUP.** This task covers disassembly, repair and assembly:

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Inflator valve assembly removed from air hoses (usually stored in tool box).



Inflator Valve

#### DISASSEMBLY.

- a. Remove seal (1) from cylinder (2).
- b. Unscrew cylinder retaining screw (3).
- c. Remove cylinder (2) from body (4).

#### REPAIR.

- a. Inspect inflator seal (1) for cracks or damage. Replace as necessary.
- b. Inspect O-ring (5), valve disc (6), and washer (7). Replace as necessary.
- c. Inspect body (4) for dents or damage.

#### ASSEMBLY.

- a. Install cylinder (2) through body (4) and install seal (1).
- b. Assemble new parts (5, 6 and 7) and secure with retaining screw (3).

---

**3-16. AIR HOSE ASSEMBLY, FITTINGS AND COUPLINGS.**

---

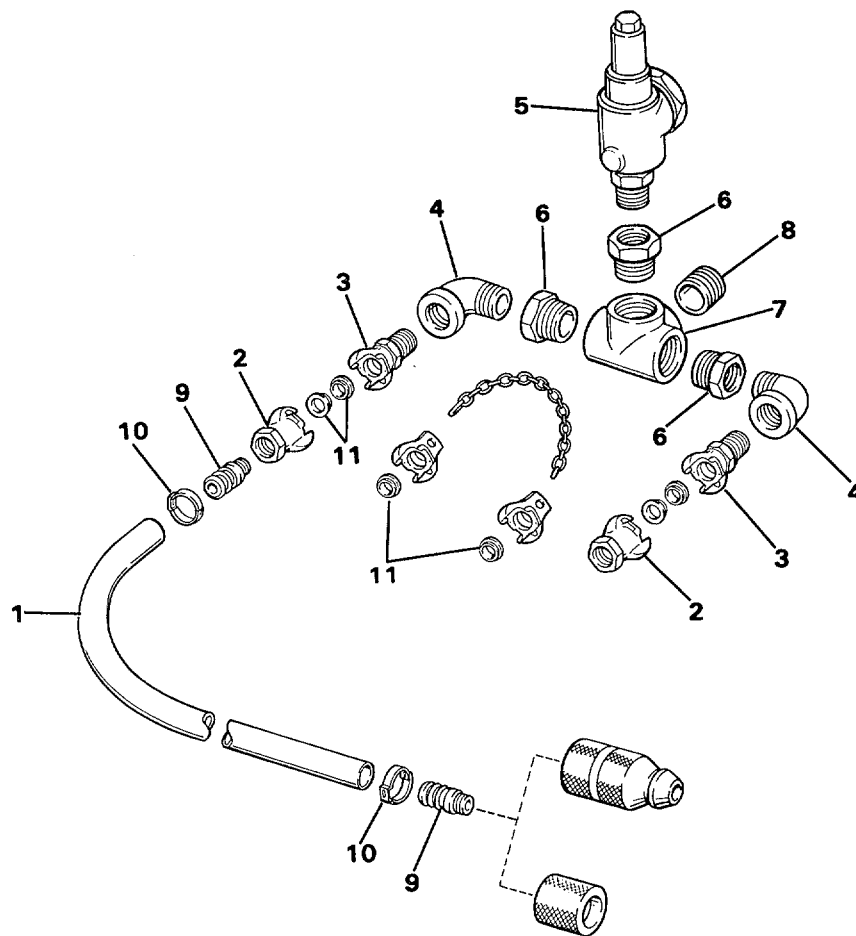
**INITIAL SETUP.** This task covers removal, disassembly, repair, assembly and installation.

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor off.
- c. *General Safety Requirements.*

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures.

---



**Air Hose**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. If attached, remove air hoses (1) by pressing together and turning the two quick release fittings (2 and 3).
- b. Remove quick release fittings (3) from elbows (4).
- c. Remove elbows (4) with a pipe wrench.
- d. Remove safety valve (5).
- e. Remove pipe adaptors (6) from outlet tee (7).
- f. Remove outlet tee (7).
- g. Remove pipe fitting (8) from air pump.

**DISASSEMBLY.**

- a. Unscrew fitting (2) from adaptor (9).
- b. Loosen hose clamps (10) and remove adaptor (9).

**REPAIR.**

- a. Inspect rubber inserts (11 ) for cracks and damage. Replace as necessary.
- b. Inspect rubber hose (1) for cracks and damage. Replace as necessary.

**ASSEMBLY.**

- a. Install adaptor (9) to air hose (1) and tighten hose clamp (10).
- b. Install fitting (2) to adaptor (9).

**INSTALLATION.**

- a. Install pipe fitting (8) to air pump.
- b. Install outlet tee (7).
- c. Install adaptors (6) to outlet tee (7).
- d. Install safety valve (5).
- e. Install elbow (4).
- f. Install fitting (3) and elbow (4).
- g. Install air hose(1) by pressing together and turning quick release fittings(2 and 3) until tabbed flanges meet.

**3-17. AIR FILTER ASSEMBLY.**

**INITIAL SETUP.** This task covers removal, repair and installation.

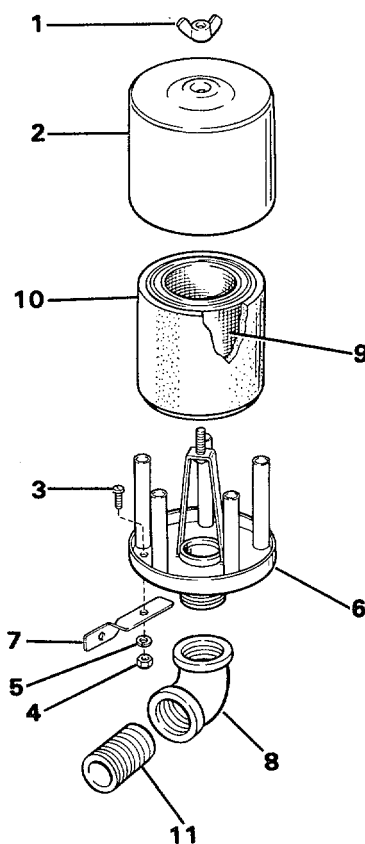
- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor off.
- c. *General Safety Requirements.*

**WARNING**

Drycleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact by wearing rubber or non-porous gloves when handling the solvent or material wet with drycleaning solvent. Wash hands immediately after exposure with soap and water and use a lanolin based skin cream to prevent skin drying. Do not use near open flame or excessive heat. Flash point of solvent is 1 00F (380C). Do not work with solvent in a closed room. Be sure there is good ventilation or the solvent vapors will build up in the air and become a poisonous mixture which can cause physical injury or even death.

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures.



**Air Filter**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. Unscrew wing nut (1) and remove filter cover (2).
- b. Remove screw (3), nut (4) and lockwasher (5) holding filter housing (6) to bracket (7).
- c. Unscrew housing (6) from pipe elbow (8).

**REPAIR.**

- a. Inspect filter element (9) and foam sleeve (10) for dirt accumulation. Sleeve (10) can be cleaned as required but element (9) is disposable type.
- b. Remove filter element (9) from housing (6).

**WARNING**

Drycleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact by wearing rubber or non-porous gloves when handling the solvent or material wet with drycleaning solvent. Wash hands immediately after exposure with soap and water and use a lanolin based skin cream to prevent skin drying. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C). Do not work with solvent in a closed room. Be sure there is good ventilation or the solvent vapors will build up in the air and become a poisonous mixture which can cause physical injury or even death.

- c. Remove foam sleeve (10) and clean in solvent.
- d. Replace filter element as required.

**INSTALLATION.**

- a. Apply antiseize tape on filter housing threads. Install filter housing (6) onto pipe elbow (8) and tighten.
- b. Install screw (3), nut (4) and lockwasher (5) to secure housing (6) to bracket (7). Tighten screw.
- c. Install filter cover (2) and secure with wing nut (1).

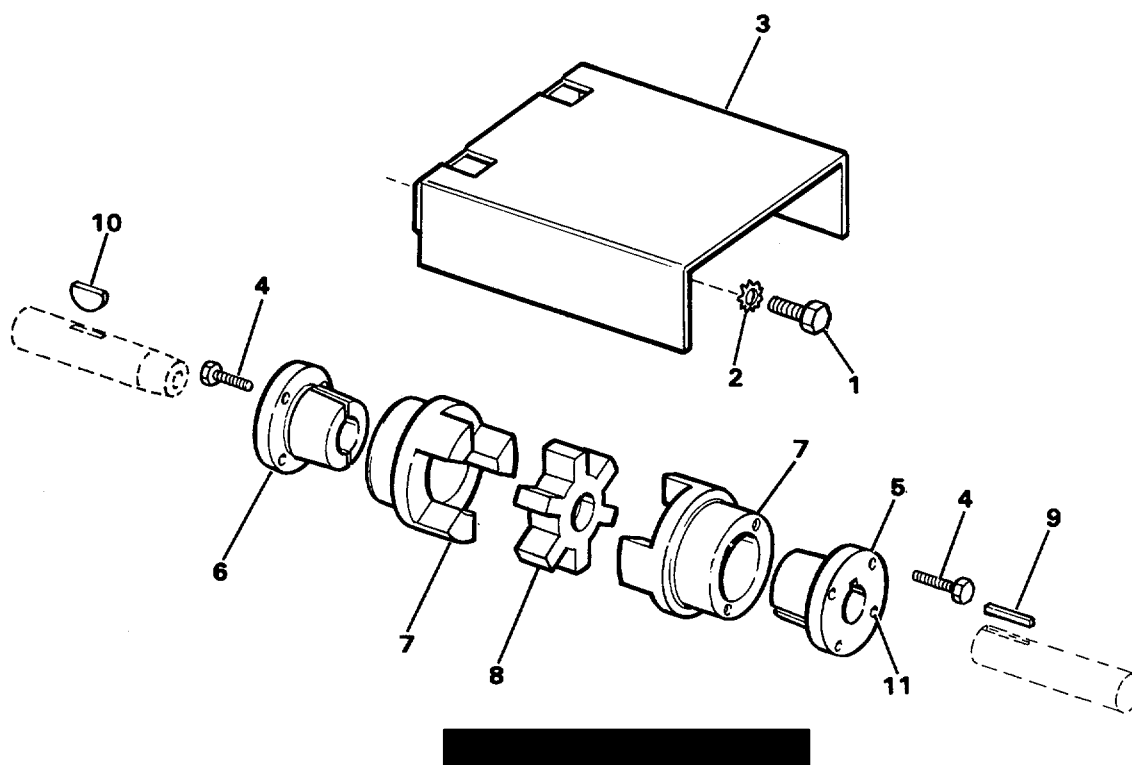
### 3-18. GUARD AND DRIVE COUPLINGS.

INITIAL SETUP. This task covers removal, repair and installation.

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor off.
- c. *General Safety Requirements.*

#### WARNING

To avoid personal injury, compressor must be shut down before performing maintenance procedures.



**Guard and Drive Couplings**

#### REMOVAL

#### CAUTION

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. Remove bolts (1) and washers (2) that secure guard (3) to engine casing.
- b. Remove capscrews (4) from bushings (5 and 6) and thread into jacking holes (11). Tighten capscrews until bushings separate from couplings.
- c. Slide bushings (5 and 6) and couplings (7) back on shaft and remove neoprene insert (8).
- d. Remove couplings (7).
- e. Remove shaft keys (9 and 10) from keyways.

**REPAIR.**

- a. Inspect guard (3) for damage or distortion. Replace as necessary.
- b. Inspect neoprene insert (8) for wear or cracks. Replace as necessary.
- c. Inspect shaft keys (9 and 10) for distortion. File any nicks or burrs for snug fit in shaft keyway. Replace keys as necessary.

**INSTALLATION.**

- a. Install shaft keys (9 and 10) in keyways.
- b. Install coupling halves (7) onto shafts aligned with shaft keys.
- c. Install neoprene insert (8) between coupling halves (7).
- d. Insert bushings (5 and 6) into coupling halves (7).
- e. Tighten capscrews (4) securing coupling halves (7).
- f. Install guard (3) and secure with capscrews (1).
- g. Check for smooth operation upon compressor startup.

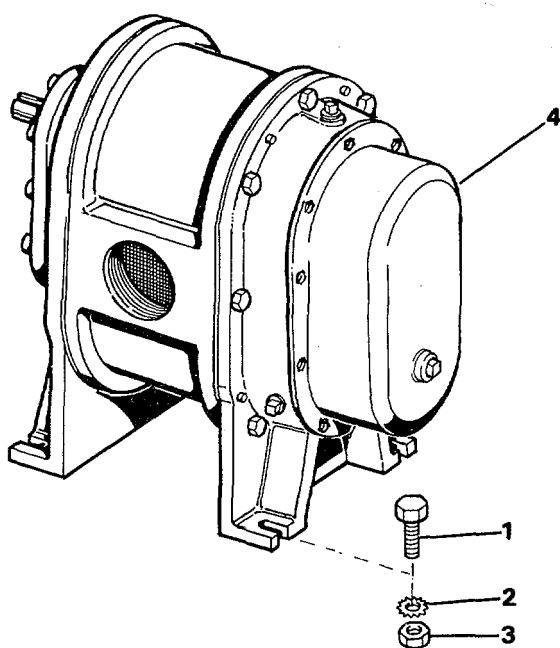
**3-19. AIR PUMP.**

**INITIAL SET-UP.** This task covers removal and installation.

- a. *Tools.* General Mechanic Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor off.
- c. *General Safety Requirements.*

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures.

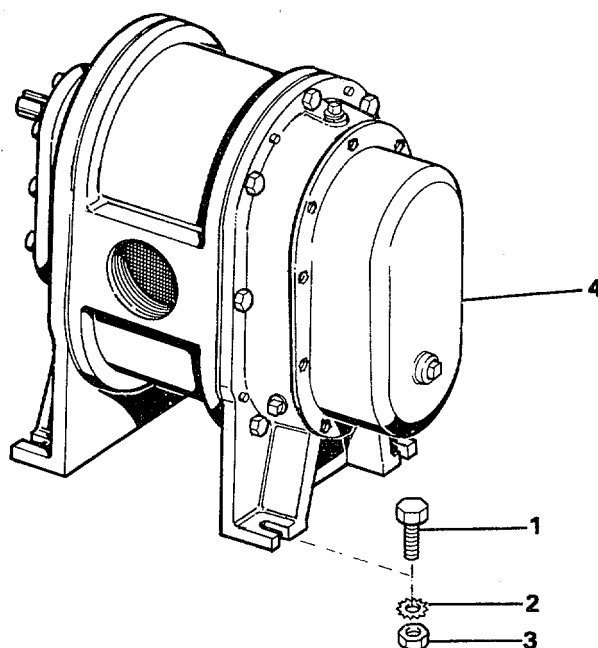


**Pump Mounting**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. Remove air hose assembly, fittings and couplings. Refer to paragraph 3-16.
- b. Remove air filter assembly and fittings. Refer to paragraph 3-17.
- c. Remove guard and drive couplings. Refer to paragraph 3-18.
- d. Remove four mounting bolts (1), washers (2) and nuts (3).
- e. Remove pump (4) from base.

**INSTALLATION.****Guard and Shaft Coupling**

- a. Install pump (4) onto base between alignment guides.
- b. Install drive couplings and guard. Refer to paragraph 3-18.
- c. Install air filter assembly and fittings. Refer to paragraph 3-17.
- d. Install air hose assembly, fittings and couplings. Refer to paragraph 3-16.
- e. Perform the B (Before Operation) checks and services listed in Operator's PMCS, Item 4.
- f. Observe operation of pump upon start up to check for secure fitting attachments and proper shaft alignment.

---

**3-20. ENGINE ASSEMBLY.**

---

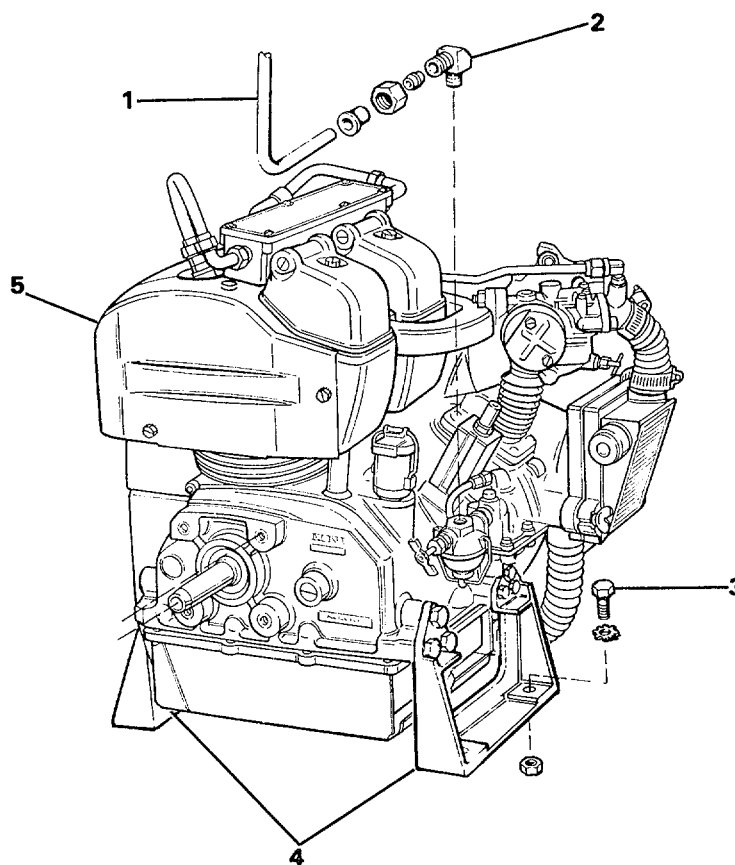
**INITIAL SETUP.** This task covers removal and installation.

- a. *Tools.* General Mechanic Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor off.
- c. *General Safety Requirements.*

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures. Engine must be cooled down before removal.

---



**Engine Removal and Installation**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures. Engine must be cooled down before removal.

- a. Place machine on flat level surface. Block wheels if surface is not level.
- b. Remove gas line (1) from fuel filter (2). Drain gas into suitable container (maximum capacity: 2.1 gals., 8 L).
- c. Remove guard and drive couplings. Refer to paragraph 3-18.
- d. Remove four mounting bolts (3) securing engine brackets (4) to frame base.

**NOTE**

Do not remove engine (5) from brackets (4) unless engine stand is available. Remove engine and mount together from frame.

- e. Remove engine (5) from frame.

**INSTALLATION.**

- a. Install engine (5) onto frame base.
- b. Install four mounting bolts (3) securing engine brackets (4).
- c. Install drive couplings and guard. Refer to paragraph 3-18.
- d. Install gas line (1) to fuel filter (2).
- e. Refill fuel tank.

---

### 3-21. FUEL TANK, HOSE AND FITTINGS.

---

**INITIAL SETUP.** This task covers removal, repair and installation.

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor unit off.
- c. *General Safety Requirements.*

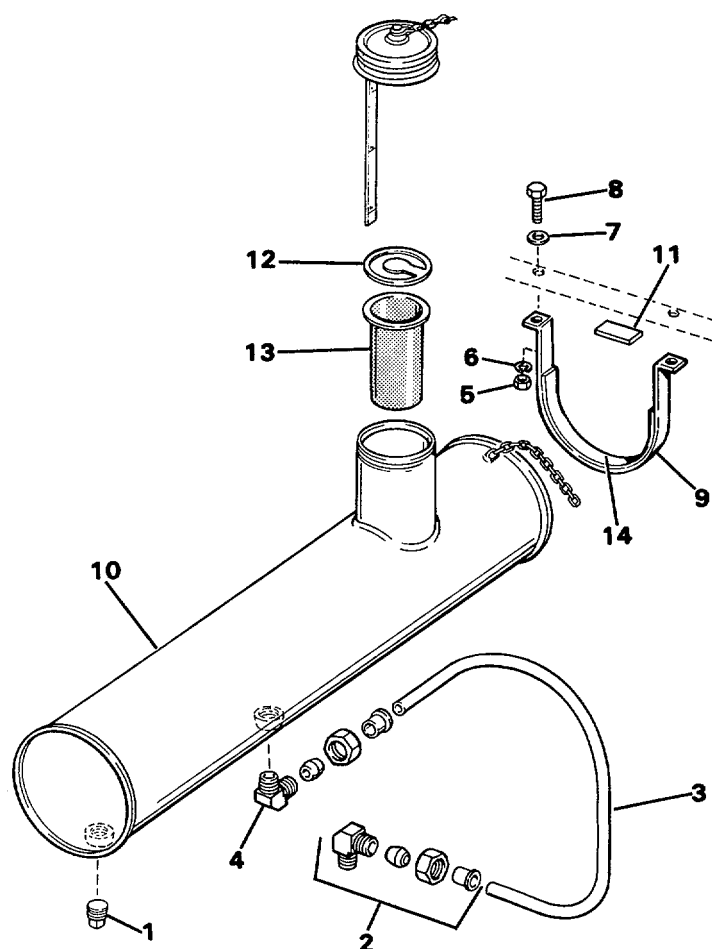
#### **WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures.

#### **WARNING**

Clean with compressed air no greater than 30 psi. Protective eyewear must be worn when using compressed air.

---



**Fuel Tank, Hose and Fittings**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. Drain gasoline at drain plug (1) and fuel pump filter fitting (2) into suitable container (maximum: 2.1 gals., 8 L).
- b. Remove hose (3) from tank fitting (4).
- c. Remove nuts (5), lockwashers (6), washers (7), and capscrews (8) securing tank straps (9) to frame.
- d. Remove fuel tank (10).
- e. Remove rubber shims (11) from fuel tank.
- f. Remove tank fitting (4) from tank.
- g. Remove hose (3) from fuel pump filter fitting (2).

**REPAIR.**

- a. Inspect hose (3) for cracks or other signs of deterioration. Replace as necessary.
- b. Inspect fittings (2 and 4) for cracks or damaged threads.
- c. Inspect tank seams for signs of damage. Clean and scrape any loose or peeling paint on tank. Bare metal must be primed and repainted.
- d. Check cap gasket (12) for wear. Replace as necessary.

**WARNING**

Clean with compressed air no greater than 30 psi. Protective eyewear must be worn when using compressed air.

- e. Check strainer (13) for any wear in mesh. Clean strainer of any accumulated debris by blowing out with compressed air.
- f. Inspect rubber lining (14) on tank strap (9) for wear. Replace as necessary with any suitable material.
- g. Inspect rubber shim (11) for wear. Replace as necessary with any suitable material.

**INSTALLATION.**

- a. Install fuel tank (10) with tank straps (9) and secure with capscrews (8), washers (7), lockwashers (6), and nuts (5). Make sure that rubber shims (11) are in place before tightening.
- b. Install tank fitting (4).
- c. Install hose (3) to tank fitting (4) and fuel pump fitting (2).
- d. Refill with fuel and check all fittings for leaks before operation.

---

### 3-22. BASE AND MOUNTS.

---

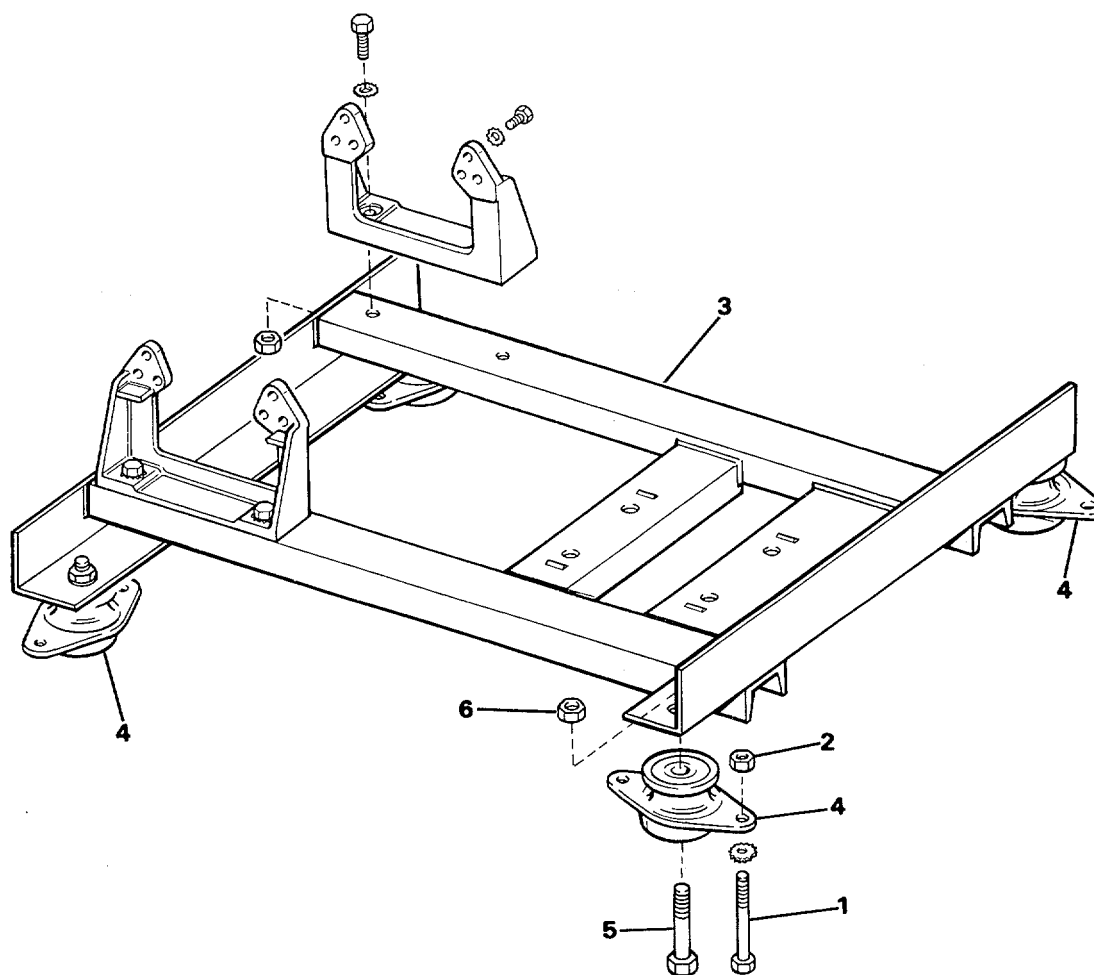
**INITIAL SETUP.** This task covers removal and installation.

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor unit off.
- c. *General Safety Requirements.*

#### **WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures. Engine must be cool before removal.

---



**Base and Mounts**

**REMOVAL.****CAUTION**

To avoid equipment damage, compressor must be shut down before performing maintenance procedures.

- a. Place machine on flat level surface. Block wheels if surface is not level.
- b. Remove guard and drive couplings. Refer to paragraph 3-18.
- c. Remove air pump with air filter assembly and air hose assembly attached. Refer to paragraph 3-19.
- d. Remove gas engine from base. Refer to paragraph 3-20.
- e. Remove bolts (1) and nuts (2) that secure base (3) and mounts (4) to frame. Remove base and mounts from frame.
- f. Remove bolts (5) and nuts (6) that secure mounts to base.
- g. Inspect rubber mounts (4) for cracks or signs of deterioration. Replace as necessary during installation.

**INSTALLATION.**

- a. Install mounts (4) to base (3) and secure with bolts (5) and nuts (6).
- b. Install base (3) to frame and secure with bolts (1) and nuts (2).
- c. Install gas engine on base. Refer to paragraph 3-20.
- d. Install air pump with air filter assembly and air hose assembly attached. Refer to paragraph 3-16.
- e. Install drive couplings and guard. Refer to paragraph 3-18.
- f. Check tightness of all mounting hardware before operation.

---

### 3-23. WHEEL ASSEMBLY AND AXLE.

---

**INITIAL SETUP.** This task covers tire removal, repair and installation and bearing replacement.

a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033; Automotive Maintenance and Repair Shop Equipment, T3 4910-00-754-0654.

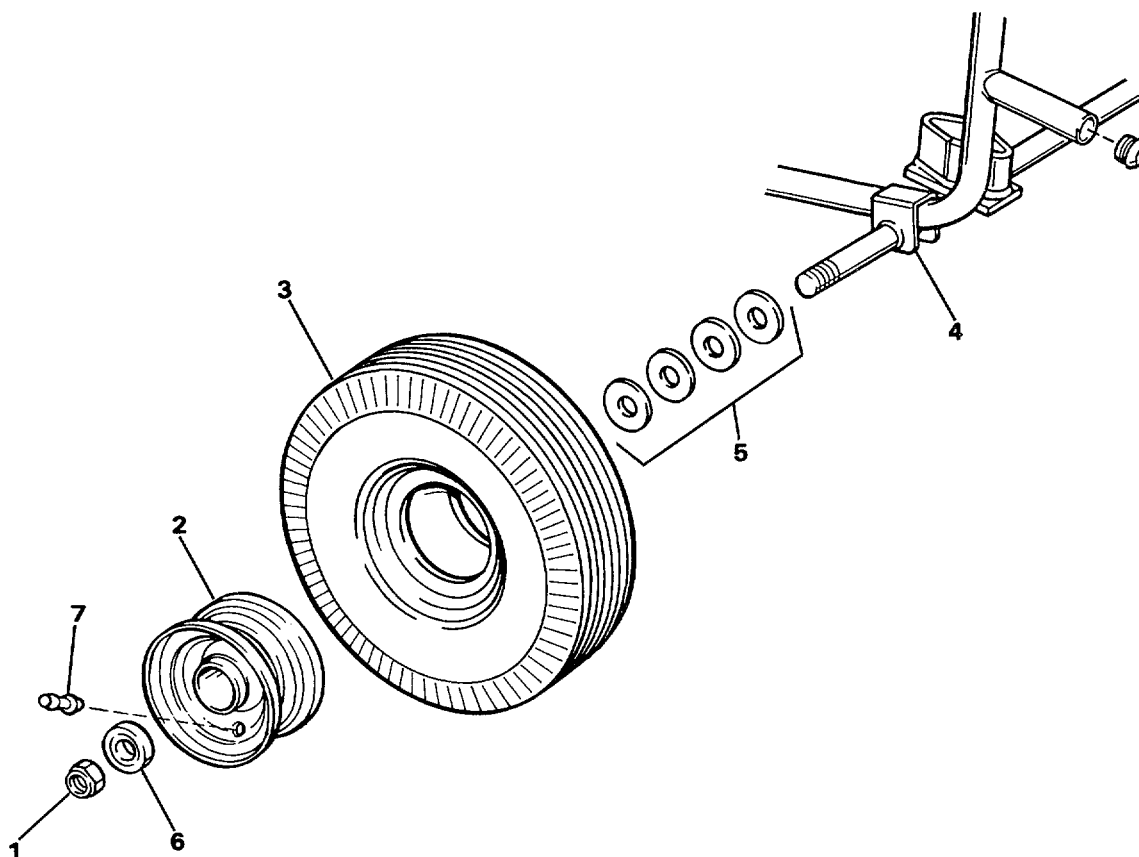
b. *Equipment Condition.* Compressor unit off.

c. *General Safety Requirements.*

#### WARNING

To avoid personal injury, compressor must be shut down before performing maintenance procedures.

---



Wheel Assembly

**REMOVAL.**

- a. Remove nut (1) securing rim (2) and tire (3) from axle (4). Remove rim and tire.
- b. Remove four washers (5) used as spacers.

**BEARING REPLACEMENT.**

- a. Inspect the wheel bearings (6) for smooth operation or signs of damage or deterioration.
- b. If bearings require replacement, use a suitable bearing puller or bench press to remove bearing from rim.
- c. Install new bearing using suitable bench press.

**TIRE REPAIR.**

- a. Inspect the tire (3) for cracked or damaged rubber.
- b. Using a soap solution, check for air leaks from the rim (2) and valve (7).
- c. If tire (3) is damaged or leaking air, remove from rim (2) and install new tire.
- d. Remove wheel valve by driving out of rim hole after tire (3) is removed.
- e. Replace wheel valve by driving through rim hole from inside the rim until valve seats.

**WARNING**

Death or serious injury could occur if compressed air is directed against the skin. Do not use compressed air for cleaning or drying unless the pressure is/has been reduced to 30 psi (2.11 kgcm<sup>2</sup>) or less. When working with compressed air always use chip guards, eye protection and other personal protective equipment.

- f. Replace tire and inflate to 30 psi.

**INSTALLATION.**

- a. Install four washers (5) used as spacers between axle (4) and rim (2).
- b. Install rim (2) and tire (3) on axle (4) and secure with nut (1). Nut should keep outer race of bearing (6) from turning.

---

**3-24. FRAME ASSEMBLY.**

---

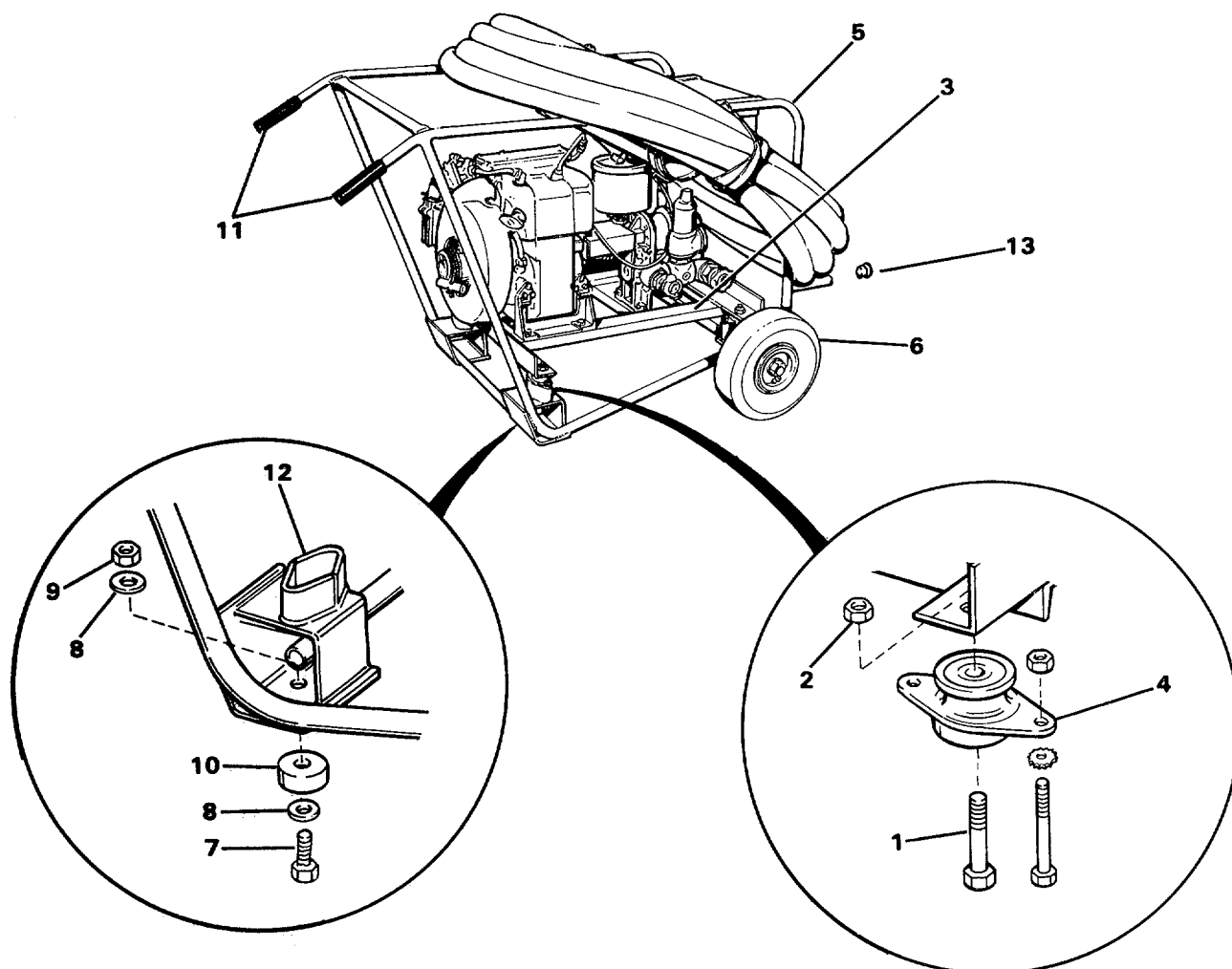
**INITIAL SETUP.** This task covers removal, repair and installation.

- a. *Tools.* General Automotive Tool Kit, T1 5180-00-177-7033.
- b. *Equipment Condition.* Compressor unit off and fuel tank removed (paragraph 3-21).
- c. *General Safety Requirements.*

**WARNING**

To avoid personal injury, compressor must be shut down before performing maintenance procedures. Engine must be cool before removal.

---



**Frame Assembly**

**REMOVAL.**

- a. Remove bolts (1) and nuts (2) that secure base (3) and mounts (4) to frame (5). Engine, air pump, air filter assembly and air hose assembly can remain attached to base.
- b. Remove wheel assembly (6) from frame. Refer to paragraph 3-23.
- c. Remove bolt (7), washers (8), nut (9) and rubber stop (10) from frame.
- d. Remove hand grips (11).
- e. Remove tubing caps (13).

**REPAIR.**

- a. Inspect frame (5) and frame mount brackets (12) for cracks in weldments. Repair as necessary.
- b. Inspect rubber stops (10) for damage or deterioration. Replace as necessary.
- c. Inspect hand grips (11) for damage. Replace as necessary.

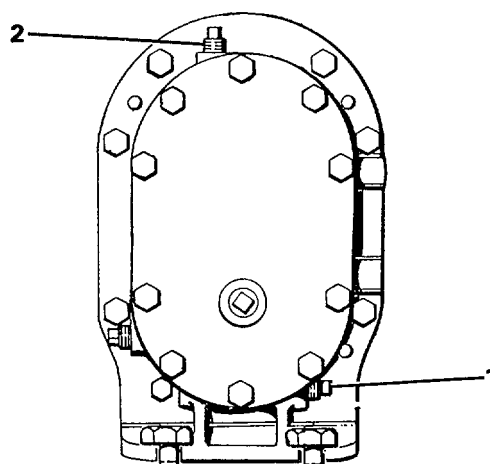
**INSTALLATION.**

- a. Install hand grips (11).
- b. Install tubing caps (13).
- c. Install rubber stops (10), nuts (9), bolts (7) and washers (8) to frame.
- d. Install wheel assembly (6) to frame. Refer to paragraph 3-23.
- e. Position base (3) and mounts (4) onto frame (5). Secure with bolts (1) and nuts (2).

**SECTION VII. PREPARATION FOR STORAGE**

**3-25. COMPRESSOR PREPARATION.** For storage longer than 30 days, perform the following steps:

- a. Drain oil from pump through drain plug (1). Reinstall plug.



**Compressor Preparation**

- b. Fill gear case through opening at filler plug (2) with 30W preservative lubricating oil (MIL-L-21260B, Grade 2, refer to Appendix E). Reinstall plug.
- c. Rotate pump shaft by hand to distribute oil.
- d. Tag pump identifying preservative oil in gear case.
- e. Clean and dry machine with a wiping rag.
- f. Install hose coupling caps on discharge couplings (paragraph 3-16).
- g. Protect the machine with a good weather-resistant tarpaulin and store under cover, preferably in a dry building.

**3-26. ENGINE PREPARATION.** Refer to TM 740-90-1 for instructions on preparing the engine for storage.

**3-27/(3-28 Blank)**

## CHAPTER 4. INTERMEDIATE DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

### SECTION I. TROUBLESHOOTING

**4-1. ENGINE.** Intermediate direct support troubleshooting and maintenance instructions for the gas engine are contained in TM 2805-257-14. Repair parts are listed in TM 5-2805-257-24P.

**4-2. AIR PUMP.** Intermediate Direct support troubleshooting and maintenance procedures cover gasket replacement. Any maintenance beyond this level is only authorized to be performed by special repair activity.

**4-3. TROUBLESHOOTING CHART.** The following columns are used in the Table 4-1, Troubleshooting.

a. *Malfunctions.* Malfunctions listed are the ones most likely to happen. Not all possible malfunctions can be foreseen and listed.

b. *Test or Inspection.* Tests or inspections are listed to help you find the cause of the malfunction. The tests that are easiest to do are listed first. The tests that are hardest to do are listed last.

c. *Corrective Action.* Corrective actions are listed to help eliminate the malfunction. Where the corrective action is too complicated to be listed in full detail, the paragraph number of the detailed procedure is given in parentheses.

**Table 4-1. Troubleshooting**

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

#### GAS ENGINE

Refer to TM 5-2805-257-14 and TM 5-2805-257-24P.

#### AIR PUMP

##### 1. LOSS OF OIL.

Step 1. Check for gear oil or bearing grease on impellers. Oil or grease indicates worn bearing seals. Replace air pump. Refer to paragraph 3-19.

Step 2. Check for oil leak in gear cover gasket. Replace gasket. Refer to paragraph 4-4.

##### 2. EXCESSIVE PUMP TEMPERATURE.

Step 1. Check position of coupling caps. Remove coupling caps and attach hose(s). Refer to paragraph 3-16.

Step 2. Check for clogged exhaust manifold. Remove clog. Refer to paragraph 3-16.

Step 3. Check for improperly functioning safety valve. Replace safety valve, if necessary.

Table 4-1. Troubleshooting Chart (Continued)

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

3. LACK OF AIR PRESSURE.

Step 1. Check for clogged Intake filter. Clean or replace as necessary. Refer to paragraph 3-17.

Step 2. Check for defective or missing rubber packing seals on outlet tee fittings and hose fitting. Replace packing seals as necessary. Refer to paragraph 3-16.

Step 3. Check for clogged or defective inflating valves. Remove inflating valves and replace with adaptor. If air pressure increases, repair or replace defective inflating valves. Refer to paragraph 3-15.

Step 4. Check safety valve for leakage. Replace if defective. Refer to paragraph 3-16.

## SECTION II. INTERMEDIATE DIRECT SUPPORT MAINTENANCE PROCEDURES

**4-4. GENERAL.** This section contains maintenance instructions for:

- a. Gear case gasket replacement.

---

### 4-5. PUMP GEAR CASE GASKET.

---

**INITIAL SETUP.** This task covers removal and installation.

a. *Tools.* General Mechanic Automotive Tool Kit, T1 5180-00-177-7033. Automotive Maintenance and Repair Shop Equipment, T3 4910-00-754-0654.

b. *Equipment Condition.* Compressor off.

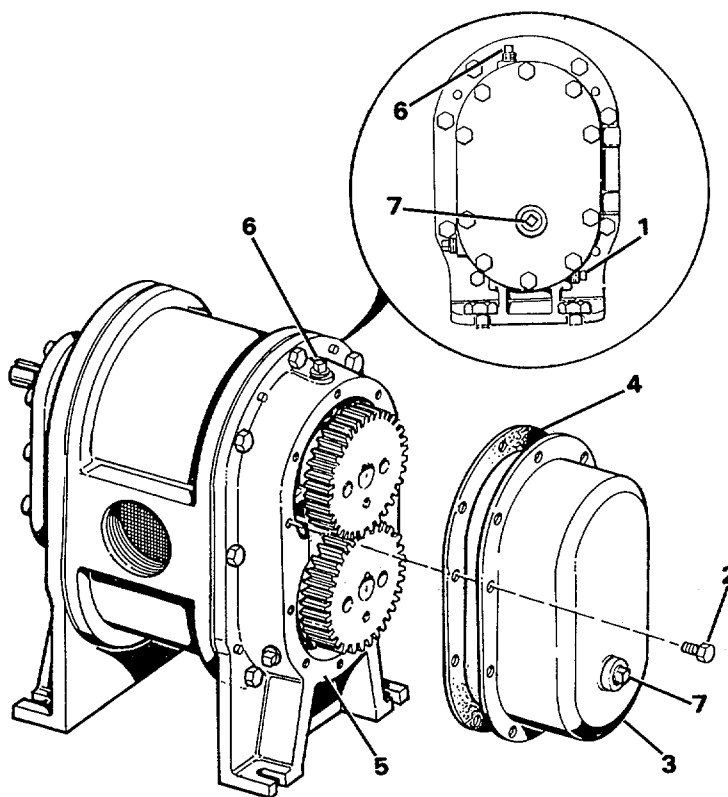
c. *Materials/Parts.* Gear Case Gasket.

d. *General Safety Requirements.*

---

#### REMOVAL.

- a. Remove drain plug (1) and drain oil into suitable container. Reinstall drain plug.
- b. Remove hex head capscrews (2) from gear case (3). Remove case (3).
- c. Remove old gasket (4) material completely from gear case (3) and head plate (5).



**Gear Case Gasket Replacement**

**INSTALLATION.**

- a. Install new gasket onto head plate (5).
- b. Install gear case (3) and hex head capscrews (2).

**CAUTION**

When removing oil fill plug (6), oil level plug (7), and oil drain plug (1), do not mix plugs up. Fill plug (6) is vented and drain plug (1) is magnetic.

- c. Remove oil fill plug (6) and oil level plug (7). Add oil through filler opening (6) until oil just drips out of plug opening (7).
- d. Reinstall plugs (6 and 7).

## APPENDIX A. REFERENCES

**A-1. SCOPE.** This appendix lists all forms, field manuals, and technical manuals referenced in this manual.

### A-2. FORMS.

Equipment Inspection and Maintenance Work Sheet..... DA Form 2404  
 Quality Deficiency Report.....SF 368  
 Recommended Changes to DA Publications ..... DA Form 2028-2

### A-3. TECHNICAL MANUALS.

Operator, Organizational, Intermediate (Field) (Direct and General Support),  
 and Depot Maintenance Manual, Engine, Gasoline, 3 hp,  
 Military Standard Models ..... TM 5-2805-257-14  
 Organizational, Intermediate (Field) (Direct and General Support), and Depot  
 Maintenance Repair Parts and Special Tools List, Engine, Gasoline, 3 hp,  
 Military Standard Models ..... TM 5-2805-257-24P  
 Unit and Intermediate Direct Support Maintenance Repair Parts and Special  
 Tools List, Air Compressor Rotary, Gasoline Engine Driven,  
 60 cfm, 6.5 psi C&H Model 20-920 ..... TM 5-4310-381-23P  
 The Army Maintenance Management System (TAMMS) ..... DA PAM 738-750  
 Hand Portable Fire Extinguishers Approved for Army Users..... TB 5-4200-200-10  
 Painting Instructions for Field Use ..... TM 43-0139  
 Administrative Storage of Equipment ..... TM 740-90-1  
 Procedures for Destruction of Equipment to Prevent Enemy Use ..... TM 750-244-3  
 Inspection and Test of Air and other Gas Compressors ..... TB 43-0151  
 Engine, Gasoline, Installation Instructions ..... MIL-STD-1227B

### A-4. MISCELLANEOUS PUBLICATIONS.

Fuels, Lubricants, Oils and Waxes ..... C91001L

**APPENDIX B. MAINTENANCE ALLOCATION CHART****SECTION I. INTRODUCTION****B-1. GENERAL.**

a. This section provides a general explanation of all maintenance and repair functions authorized at 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. *Aline.* To adjust specified variable elements of an item to bring about optimum or desired performance.

f. *Calibrate.* To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. *Remove /Install.* To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. *Replace.* To remove an unserviceable item and install a serviceable counterpart in its place.

i. *Repair.* The application of maintenance services (inspect, test, service, adjust, align, calibrate or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining or resurfacing) to 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. *Column 1, Group Number.* Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.

b. *Column 2, Component/Assembly.* Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. *Column 3, Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. *Column 4, Maintenance Category.* 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 of 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 tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C .....	Operator or Crew (Unit)
O .....	Organizational Maintenance (Unit)
F .....	Direct Support Maintenance (Intermediate)
H .....	General Support Maintenance (Intermediate)
D .....	Depot Maintenance

e. *Column 5, Tools and Equipment.* Column 5 specifies, by code, those common tool sets (not individual tools and special tools, TMDE, and support equipment required to perform the designated function.

f. *Column 6, Remarks.* This column contains remarks or added information pertaining to maintenance functions.

**B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.**

a. *Column 1, Reference Code.* The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. *Column 2, Maintenance Category.* The lowest category 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, if available.

**B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.**

a. *Column 1, Reference Code.* The code recorded in column 6 of the MAC (Section II), as applicable.

b. *Column 2, Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC (Section II).

## Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
00	COMPRESSOR, ROTARY								
01	VALVE ASSEMBLY, INFLATOR	Inspect Replace Repair	0.1 0.2 0.3					1 1	A
02	AIR HOSE ASSEMBLY FITTINGS AND COUPLINGS	Inspect Replace Repair	0.1 0.3	0.4				1 2	A
03	FILTER ASSEMBLY AND FITTINGS	Inspect Service Replace	0.1 0.2 0.3					1 1	
04	GUARD AND DRIVE COUPLINGS								
0401	Guard	Inspect Replace Repair	0.1 0.2 0.2					1 1	
0402	Couplings	Inspect Replace	0.1 0.2					1	
05	BLOWER/PUMP	Inspect Service Replace Repair	0.1	0.5 0.2 0.5				1,3 1 1,3	A, B
06	ENGINE ASSEMBLY	Inspect Service Test  Replace Repair		0.1 0.2 0.3  0.8	   1.0			1 1 1  1 1,2	Ref. to Eng. Manuals: TM5-2805- 257-14 and TM5-2805- 257-24P
07	FUEL TANK, HOSE AND FITTINGS								
0701	Tank, Assembly	Inspect Service Replace Repair	0.1 0.1	0.2 0.3				1 1	A
0702	Hose and Fittings	Inspect Replace	0.1	0.2				1	
08	BASE AND MOUNTS	Inspect Replace	0.1	0.3				1	

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP	(6)  REMARKS
			UNIT		INTERMEDIATE DEPOT				
			C	O	F	H	D		
09	WHEEL ASSEMBLY AND AXLE								
0901	Wheel	Inspect Service Replace		0.2 0.2 0.3				1 1,3 1	
0902	Tires	Inspect Service Replace Repair	0.1	 0.1 0.2 0.4				1 1 1 1	
10	FRAME ASSEMBLY	Inspect Replace Repair	0.1	 0.4 0.4				1 1	A

**SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS**

(1) Reference Code	(2) Maintenance Level	(3) Nomenclature	(4) National/NATO Stock Number	(5) Tool Number
1	C, O, F	Tool Kit, General Mechanic, Automotive	5180-00-177-7033	
2	F	Shop Set, Automotive Repair, Field Maintenance, Basic	4910-00-754-0705	
3	0	Shop Equipment Automotive Maintenance and Repair: Organization, Common No. 1	4910-00-754-0654	

**SECTION IV. REMARKS**

- A: Repair by replacing components.
- B: Repair is limited to gear case gasket replacement.

**B-5(B-6 Blank)**

## APPENDIX C. COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS

### SECTION I. INTRODUCTION

**C-1. SCOPE.** This appendix lists Components of and Basic Issue Items (BII) for the Air Compressor to help you inventory items required for safe and efficient operation.

**C-2. GENERAL.** The components of end item list are divided into the following sections:

a. *Section II. Components of the End Item.* These items, when assembled, comprise the Air Compressor and must accompany it whenever it is transferred or turned in. These illustrations will help you identify these items.

b. *Section III. Basic Issue Items.* These are minimum essential items required to place the Air Compressor in operation, to operate it and to perform emergency repairs. Although shipped separately packed, they must accompany the Air Compressor during operation and whenever it is transferred between accountable officers. The illustrations will assist you with hard-to-identify items. This manual is your authority to requisition replacement BII based on Table(s) of Organization and Equipment (TOE)/Modification Table of Organization and Equipment (MTOE) authorization of the end item.

### C-3. EXPLANATION OF COLUMNS.

a. *Illustration.* This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration on which the item is shown (if applicable).

(2) *Item Number.* The number used to identify item called out in the illustration.

b. *National Stock Number (NSN).* Indicates the national stock number assigned to the end item which will be used for requisitioning.

c. *Part Number (P/N).* Indicates the primary number used by the manufacturer which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards and inspection requirements to identify an item or range of items.

d. *Description.* Indicates the federal item name and, if required, a minimum description to identify the item.

e. *Location.* The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving on to an adjacent area.

f. *Usable on Code.* "Usable On" codes are included to help you identify which component items are used on the different models. Identification of the codes used in this list are:

CODE

USED ON

g. *Quantity Required (Qty. Req'd).* This column lists the quantity of each item required for a complete major item.

h. *Quantity.* This column is left blank for use during inventory. Under the received column, list the quantity you actually receive on your major item. The date columns are for use when you inventory the major item at a later date,

## SECTION II. COMPONENTS OF END ITEM

(1) Illustration		(2)	(3)	(4)	(5)	(6)	(7)	(8) Quantity			
(a) Fig. No.	(b) Item No.	National Stock No.	Part No. & FSCM	Description	Location	Usable On Code	Qty Reqd	Rcvd	Date	Date	Date
C1	1	000-00- 000-0000	86-485 (04718)	Inflator Valve	Tool Box						
C1	2	0000-00- 000-0000	MIL-C- 13899 (8134)	Nozzle	Tool Box						

## SECTION III. BASIC ISSUE ITEMS

(1) Illustration		(2)	(3)	(4)	(5)	(6)	(7)	(8) Quantity			
(a) Fig. No.	(b) Item No.	National Stock No.	Part No. & FSCM	Description	Location	Usable On Code	Qty Reqd	Rcvd	Date	Date	Date
				TM 5-4310-381-13  Operator's, Unit, and Intermediate Direct Support Maintenance Manual, Air Compressor, Rotary Gasoline Engine Drive, 60 cfm, 6.5 psi			1				

**APPENDIX D. ADDITIONAL AUTHORIZATION LIST****SECTION I. INTRODUCTION**

**D-1. SCOPE.** This appendix lists additional items 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 authorized to you by CTA, MTOE, TDA or JTA.

**D-3. EXPLANATION OF LISTING.** Not applicable.

**SECTION II. ADDITIONAL AUTHORIZATION LIST**

<b>(1) National Stock Number</b>	<b>(2) Part Number &amp; FSCM</b>	<b>Description</b>	<b>(3) Usable On Code</b>	<b>(4) U/M</b>	<b>Qty. Auth</b>
4210-00-555-0037		Fire Extinguisher			1

**D-1/(D-2 Blank)**

## APPENDIX E. EXPENDABLE SUPPLIES AND MATERIALS LIST

### SECTION I. INTRODUCTION

**E-1. SCOPE.** This appendix lists expendable supplies and materials needed to operate and maintain the Air Compressor Unit.

This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items. (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

### E-2. EXPLANATION OF COLUMNS.

- a. *Column 1 - Item Number.* This number is assigned to the entry in the listing.
- b. *Column 2 - Level.* This column identifies the lowest level of maintenance that requires the listed item.

C ..... Operator/Crew  
 O ..... Organizational Maintenance  
 F ..... Direct Support Maintenance  
 H ..... General Support Maintenance

c. *Column 3 - National Stock Number.* This is the National stock number assigned to the item; use it to request or requisition the item.

d. *Column 4 - Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. *Column 5 - Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

### Expendable Supplies and Materials List

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	C, O, F	6850-00-274-5421	Dry Cleaning Solvent, P-D-680	gal.
2	C	7920-00-205-1711	Rag, Wiping	lb.
3	C, O, F	9150-00-181-9858	Lubricating Oil, Engine and Blower OE 30 MIL-L-2104 (81349)	gal.
4	C, O, F	8415-00-753-6553	Gloves, Toxicological Agents Protective	pair
5	O	9150-00-111-0209	Oil, Preservative	gal.
6	C, O, F	7930-00-068-1669	Soap, Mild	gal.
7	O, F	8020-00-263-3873	Brush, Medium, Oval	ea.
8	O, F	8030-00-889-3534	Tape, Antiseize	ea.

E-1/(E-2 Blank)

## INDEX

	Paragraph Number
<b>A</b>	
Air Filter	
Operator's Check.....	Table 2-1, #3
Service.....	3-11
Replacement.....	3-17
Air Hose Assembly	
Operator's Check.....	Table 2-1, #2
Replacement.....	3-16
Repair .....	3-16
Air Pump	
Operator's Check.....	Table 2-1, #5
Lubrication.....	3-1
Removal.....	3-19
Gasket Replacement.....	4-5
Installation.....	3-19
<b>B</b>	
Base and Mounts	
Operator's Check.....	Table 2-1, #8
Replacement.....	3-22
<b>C</b>	
Controls, Operator's .....	2-1
<b>D</b>	
Data Plate, Location.....	1-11
Drive Coupling	
Operator's Check.....	Table 2-1, #4
Replacement.....	3-18
<b>E</b>	
Engine	
Operator's Check.....	Table 2-1, #6
Removal.....	3-20
Installation.....	3-20
Starting.....	2-5
Stopping.....	2-6
Controls and Instrument .....	2-7
Equipment Data.....	1-10
<b>F</b>	
Frame	
Operator's Check.....	Table 2-1, #11
Replacement.....	3-24
Fuel Tank	
Operator's Check.....	Table 2-1, #7
Replacement.....	3-21
Repair .....	3-21

**G**

Guard, Drive Coupling	
Operator's Check.....	Table 2-1, #4
Replacement .....	3-18

**H**

Inflator Valve Assembly	
Operator's Check.....	Table 2-1, #1
Replacement .....	3-15
Repair .....	3-15

**J****K****L**

Lubrication Instruction	
Engine.....	3-1
Air Pump .....	3-2

**M**

Maintenance Allocation Chart (MAC).....	B-1
Maintenance, Forms and Records .....	1-3

**N****O**

Operation	
Principles of .....	1-13
Starting Engine.....	2-5
Stopping Engine .....	2-6
Sandy and Dusty Conditions.....	2-9
Salt Water .....	2-10
Rainy or Humid Conditions .....	2-11
Extreme Heat .....	2-12
Extreme Cold .....	2-13
Different Altitudes.....	2-14
Compressor.....	2-8
Operator's Controls and Indicators .....	2-1

**P**

Preparation for Storage .....	3-25
-------------------------------	------

**Q****R****S**

Safety Warnings .....	i
-----------------------	---

**T**

Troubleshooting	
Unit Maintenance .....	3-12
Intermediate Maintenance .....	4-2

**U**

**V**

**W**

Warning Decal, Location .....	1-12
Warranty .....	1-5
Wheel Assembly	
Operator's Check.....	Table 2-1, #10
Service.....	3-23
Replacement .....	3-23
Repair .....	3-23

**X, Y, Z**

By Order of the Secretary of the Army:

**JOHN A. WICKHAM, JR.**  
*General, United States Army*  
*Chief of Staff*

Official:

**R. L. DILWORTH**  
*Brigadier General, United States Army*  
*The Adjutant General*

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25A, Operator, Unit and Direct Support Maintenance requirements for Compressor, Rotary, Air, Gas Engine, Frame Mounted, 2 Wheel, 60 CFM, 6.5 PSI (4MV).

\*U.S. GOVERNMENT PRINTING OFFICE : 1987-754-030/60458

SOMETHING WRONG WITH PUBLICATION		FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)			
		DATE SENT			
PUBLICATION NUMBER		PUBLICATION DATE	PUBLICATION TITLE		
BE EXACT PIN-POINT WHERE IT IS		IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.			
PAGE NO.	PARA-GRAPH			FIGURE NO.	TABLE NO.
PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER		SIGN HERE			

DA FORM 2028-2  
1 JUL 79

PREVIOUS EDITIONS  
ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

## 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 decigrams = .035 ounce  
 1 decagram = 10 grams = .35 ounce  
 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 milliliters = .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 acres  
 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

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
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	5/9 (after	Celsius	°C
	temperature	subtracting 32)	temperature	

