DAVEY Model 365 RPV

Permavane Rotary Compressor

OPERATION AND MAINTENANCE MANUAL

WITH

PARTS LIST

VOLUME ONE

DAVEY COMPRESSOR COMPANY
11060 KENWOOD ROAD
CINCINNATI, OHIO 45242

CONTRACT DLA700-85-C-8195

MIPR NRS: N00249-85-RDC083
N00249-85-RDC233
N00249-85-RDC234

MODEL 2M365RPDQ

COMPRESSOR UNIT ASSEMBLY
NSN 4310-00-728-0203

US NAVY REGISTRATION NOS. USN31-07083 THRU USN31-07085
USN31-07086 THRU USN31-07088

MANUAL STOCK NO. 1H-7610-LL-L8A-5083

OPERATIONS AND MAINTENANCE MANUAL

WITH

ILLUSTRATED PARTS LIST

DAVEY COMPRESSOR CO.
11060 Kenwood Road, Cincinnati, Ohio 45242. (513) 793-9400.

MPL-155-85

PRINTER IN U.S.A.

MODEL 365 PERMAVANE ROTARY

COMPRESSOR SPECIFICATIONS

UNIT DATA

Mounting	Trailer, 4-Wheel, leaf type springs
Tire Size	7.50 x 15, 4 ply
Tire Pressure	45 lbs.
Towing Speed	20 mph
Wheel Bearings	Tapered Roller
Towing Hitch	Lunette Eye
Fuel Tank Capacity	74 gallons
Radiator Capacity	12 gallons

Dimensions:

Length (overall)	177 in.
Length (Towbar folded)	132 in.
Width	72 in.
Height (overall)	96 in.

COMPRESSOR

Number of Rotors	1
Rotor Slots	8
Vanes per Slot	2
Type of Vane	Light Metal *Permavane
Vane Thickness	1/4 inch, nominal
Capacity Control	Full modulation with air pressure control
Operation Pressure	100 psi
Rated Capacity	365 cfm
Full Load Speed	1800 rpm
Lubrication	Full flood, force feed
Oil Capacity	63 qts.
Oil Filter	Replaceable Cartridge
Air Cleaner	Dry type

OIL SEPARATOR

Type	Vertical labyrinth type
Element	Replaceable cartridge

ENGINE

Type	Diesel, 6-cylinder, 4 cycle
Make	John Deere
Model	6414D
Bore	4.19 in.
Stroke	5 in.
Piston Displacement	414 cu. in.
Horsepower (at 2000 rpm)	115 (intermittently)
Torque (Max.)	330 ft. lb. at 1200 rpm
Lubrication	Forced feed

*Patent No. 2905376

NOTE

Engine manuals may be obtained directly from the engine manufacturer.

FOREWORD

This manual is designed to provide you, the operator, with sufficient knowledge of the operation, use and maintenance of the Davey portable rotary compressor to realize the full capability of this machine.

It is recommended that all sections of this manual be read carefully, and if any doubt exists about the function of any part of the compressor, that you contact our nearest dealer or representative for clarification.

It is not intended to cover the operation, use and maintenance of the engine in this manual, except in such instances where special equipment has been added to the engine.The engine or equipment supplier's manual should be referred to for detailed instructions; see Part II.

NOTE

Part I of this manual is restricted to the operation, maintenance, and repair of the air compressor. Manuals covering the engine, engine accessories, and engine parts list will be found in Part II which follows the air compressor manual.

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PART I - AIR COMPRESSOR

LIST OF CHARTS AND ILLUSTRATIONS

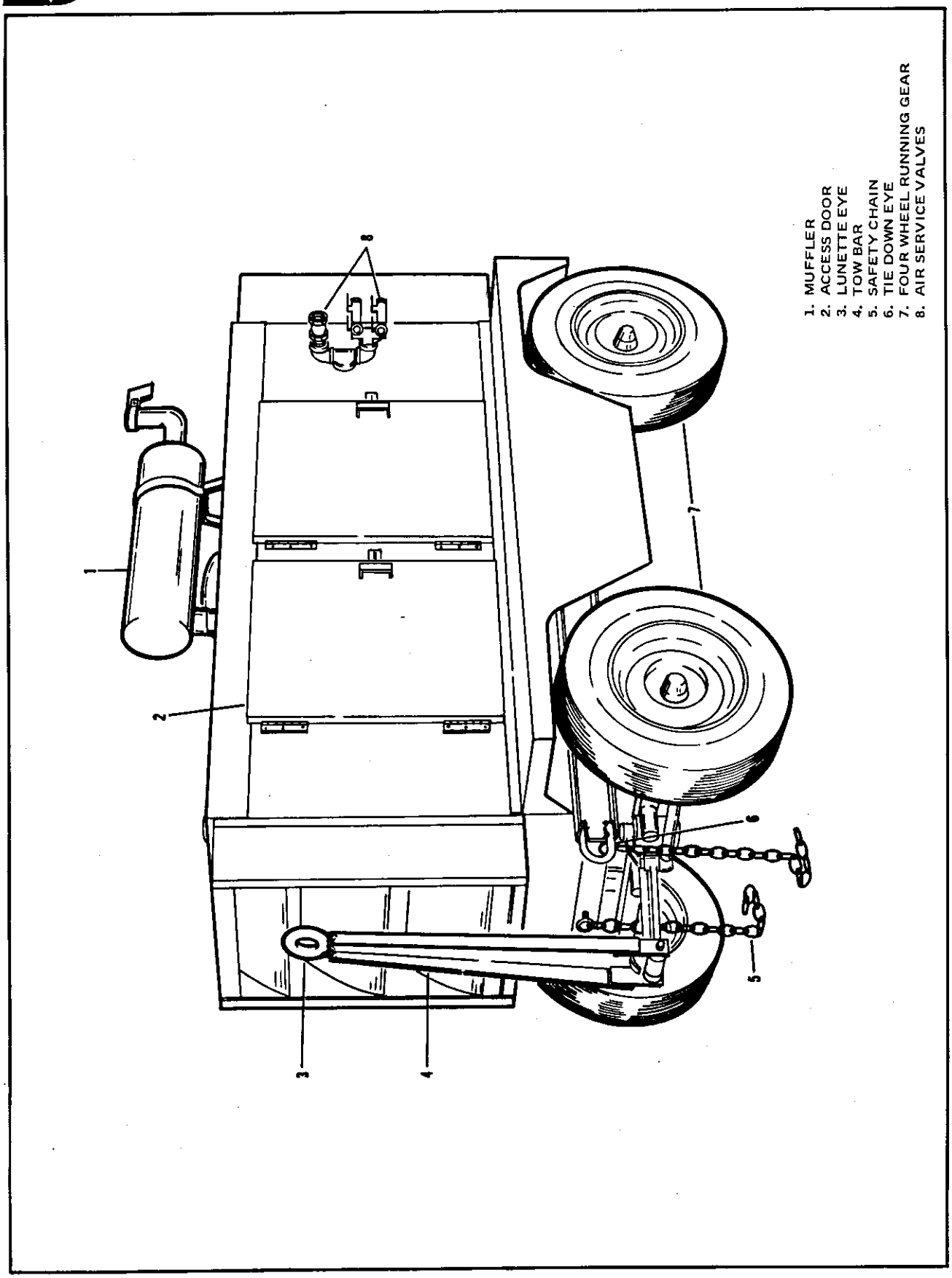
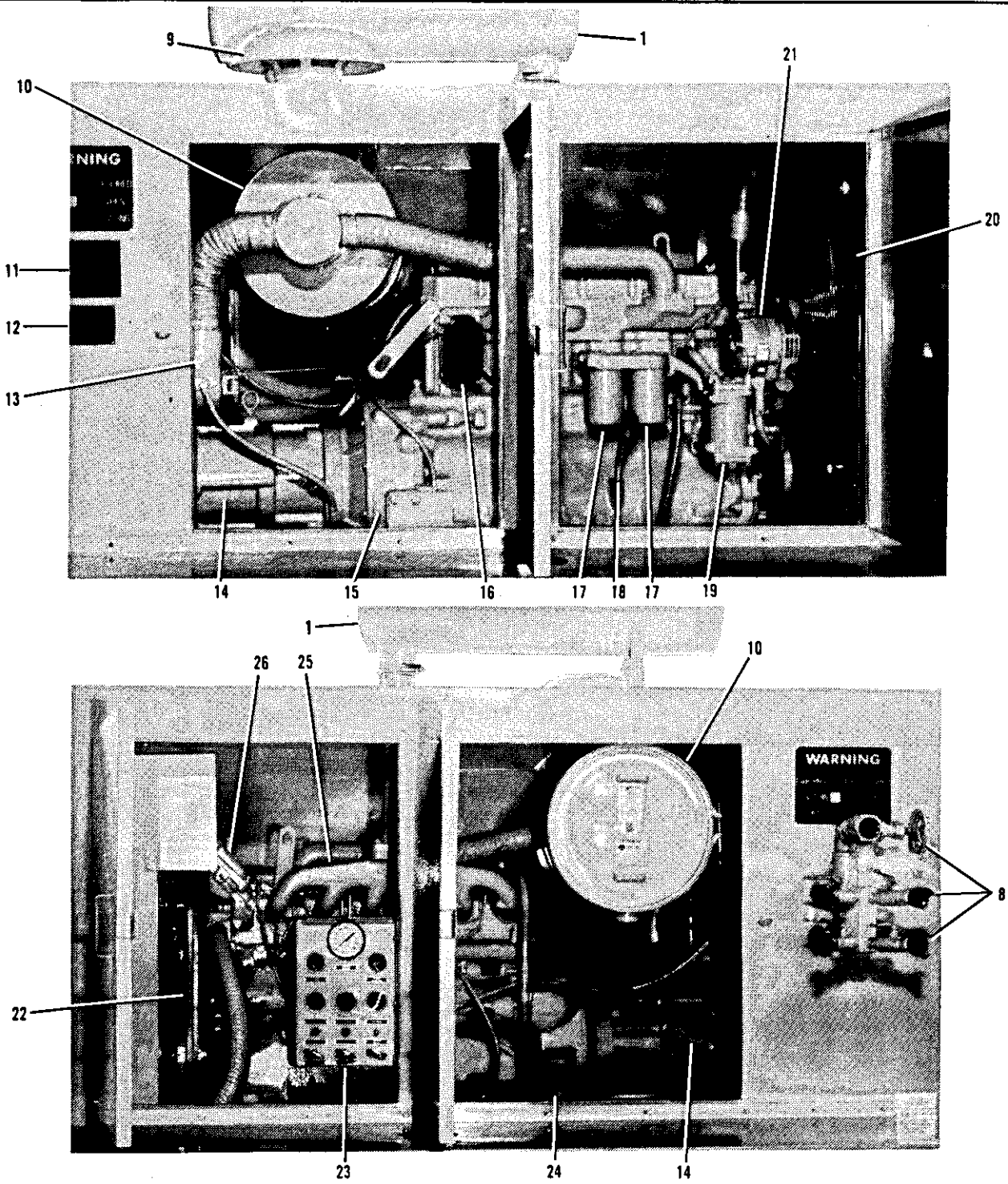


Figure A. Compressor Components (Sheet 1 of 2)



9. AIR CLEANER RAIN CAP
10. AIR CLEANER
11. SHIPPING NOTE
12. IDENTIFICATION PLATE
13. AIR INTAKE CONTROL VALVE
14. COMPRESSOR
15. DIESEL ENGINE
16. FUEL FILTER
17. ENGINE OIL FILTERS
18. ENGINE OIL DIP STICK
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22. FAN BELTS
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26. ENGINE THERMOSTAT

Figure A. Compressor Components (Sheet 2 of 2)

SAFETY PRECAUTIONS

The following precautions should be observed to prevent injury to operating personnel or damage to the equipment.

1. If the engine fails to start within 20 seconds, release the starter button and allow the starter to cool for 1 to 2 minutes before attempting another start.

2. Do not leave operating equipment unattended for prolonged periods. Operator should listen closely to unit at least daily to detect any bearing rumble or other abnormal noises. Observance of this precaution can prevent serious damage to the unit.

3. If the unit was shut down automatically, do not attempt to restart until the cause of such failure has been determined.

4. Many oils will jell at extremely cold temperatures. It is essential that oils are fluid at the temperature being experienced. Check your oil supplier for pour point data if in doubt. A quick check is to momentarily remove the drain plug of the engine.

5. If repairs or adjustments must be made while the unit is operating, use extreme care to avoid severe burns or serious injuries.

6. Do not attempt any disassembly or repair of the unit until all air pressure has been relieved. Blowdown valve will relieve pressure in about 10 seconds after shutdown.

7. During cleaning procedures, be sure to observe solvent manufacturer's instructions and precautions.

SECTION 1

INTRODUCTION AND DESCRIPTION

1-1. DESCRIPTION.

The Davey Permavane Portable Compressor consists of a rotary type air compressor directly coupled to and driven by a heavy duty industrial type engine. The compressor-prime mover unit assembly is mounted on a rugged, channel section, welded steel frame. The standard running gear has four steel wheels spring mounted with pneumatic tires. A functionally designed housing provides weather protection.

Compressor operating components include an oil cooler, air cleaner, combination air receiver-oil separator, oil filter, indicating instruments and regulating devices. Engine accessories include a cooling radiator, fuel supply tank and muffler. A speed control linkage mechanism is provided to regulate engine speed and compressor intake in relation to air demand.

1-2. MAJOR COMPONENTS.

1-3. ROTARY COMPRESSOR ASSEMBLY. The compressor is an oil flooded, sliding vane, rotary type. It is rigidly supported from an adapter which is bolted to the flywheel housing of the engine. A pilot flange insures and maintains proper alignment.

The rotor is mounted on a shaft which is supported at each end by ball bearings. The rotor is enclosed in a sealed eccentric-bored stator and is located so that it is constantly concentric with a cutaway portion of the stator. The vanes are inserted radially in longitudinal slots in the rotor. Multi-staged cooling oil injection provides cooling, sealing and lubrication during the air compression cycle.

a. AIR CYCLE. (See figure 1-1,) Free air is drawn into the stator through the air cleaner and intake control. The air enters through large ports in the end cover at a point where the vanes are well out of the rotor slots, thus filling the space

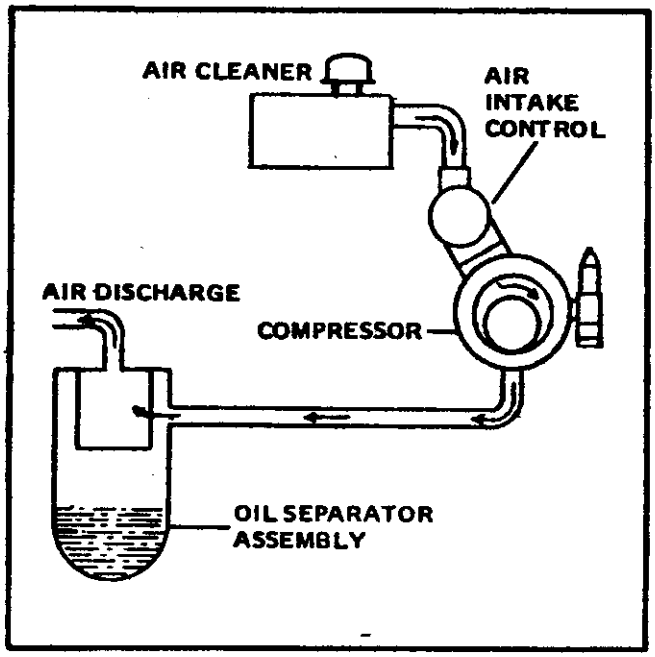

Figure 1-1. Air Cycle Schematic Diagram

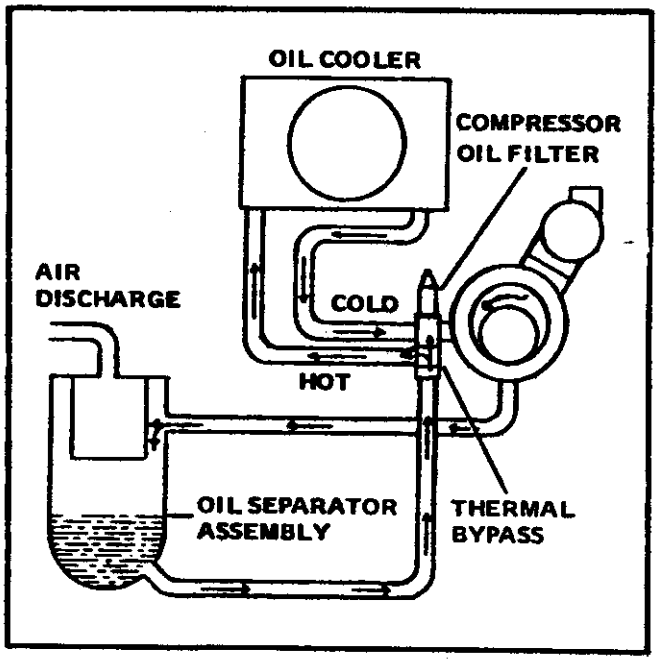

Figure 1-2. Oil Cycle Schematic Diagram

segments between the vanes with air. In rotation, the vanes are moved radially inward in their slots by the bore wall. The volume between the vanes decreases, thus compressing the trapped air. At the rated point of compression, the discharge ports are reached and the compressed air passes into the discharge chamber. Oil is injected during the above cycle to cool the air, seal all leakage and lubricate all rubbing parts. The discharge chamber is positioned at the bottom of the stator to favor natural oil drainage.

The air is delivered into the receiver-oil separator where three stages of oil separation remove virtually all oil particles from the air before final discharge.

b. OIL CYCLE. (See figure 1-2.) After oil is separated from the compressed air, it accumulates in the receiver-oil separator. The discharge air pressure forces it into the thermal bypass valve which senses the temperature of the oil. When the oil is cool, it bypasses the cooler and is passed directly into the oil filter; when the oil warms up, it is directed to the oil cooler for heat dissipation and then into the oil filter. The oil is then passed into the compressor where it is injected under pressure into the rotor bore compartment and to the bearing and end faces.

Since the injected oil was cooled before being mixed with the air, the heat of compression is removed. This provides a low final discharge temperature.

The location and the combining of the engine radiator core and oil cooler core serves to cool the compressor oil and engine water with the engine fan.

1-4. THERMAL BYPASS VALVE. The thermal bypass valve attached to the underside of the oil filter serves two purposes.

a. Rapid warming of the compressor oil at initial startup is provided by the normally open thermal bypass valve. This valve bypasses the oil from the receiver-oil separator around the cooler directly through the filter into the compressor. When the oil temperature reaches approximately 150 degrees Fahrenheit, the bypass valve starts to close and part or all of the oil is circulated through the oil cooler before entering the filter and compressor.

Unless the compressor is operating in extremely hot ambient temperatures, the thermal bypass valve will mix the hot oil from the receiver-separator and the cool oil from the cooler to maintain a constant oil temperature.

b. The thermal bypass valve thus maintains a relatively constant minimum operating temperature. This helps control temperature and also minimizes the formation of moisture condensate in the system, as well as providing slightly more energy to the air compressed.

1-5. ENGINE ASSEMBLY. The prime mover is a 6 cylinder, 4 cycle, diesel engine. Refer to Part II for detailed engine data.

1-6. ELECTRICAL SYSTEM. This unit is equipped with a 12 volt electrical system with current being supplied by an alternator. Refer to Part II of this manual for alternator details and figure 2-3 for wiring diagram of the units electrical system.

1-7. SPEED CONTROL. Speed control is accomplished by adjustable linkage between the compressor intake control and the engine fuel injection pump. See Part II of this manual for engine data. This mechanism is used to select the proper engine speed and compressor intake opening to suit air demand within the capacity of the compressor. Refer to figure 5-1, sheet 4 of 4, for air tubing diagram.

1-8. INSTRUMENT PANEL. A master control and indicator panel contains engine controls and indicating instruments for the compressor and engine assemblies.

1-9. BLOWDOWN VALVE ASSEMBLY. The blowdown valve assembly is installed on the oil separator assembly (figure 5-1, sheet 4 of 4). This valve automatically relieves air pressure from the system after shutdown.

1-10. MINIMUM PRESSURE VALVE ASSEMBLY. This valve maintains approximately 70 pounds per square inch of air pressure in the system. This pressure aids in preventing a carryout of oil with the discharge air; also, it maintains sufficient pressure in the system to provide oil circulation.

1-11. INTAKE CONTROL ASSEMBLY. The intake control assembly is regulated by the discharge air pressure demand. It also closes off the intake when the unit is shut down. This prevents oil and air mixture from the compressor being vented to the atmosphere.

1-12. THERMOSWITCH ASSEMBLY. This is an automatic control that is located in the rotary compressor discharge. If the discharge of the rotary compressor assembly should exceed 220 degrees Fahrenheit, this switch will cause the unit to shut down. No action is required by the operator to open the thermoswitch. However, no restart should be attempted until the reason for the high temperature of the oil in the rotary compressor assembly is determined. Do not attempt a restart until the oil has cooled.

1-13. OIL FILTER. Two oil filters are provided, one each for compressor and engine. Each filters the lubricating oil before it enters the unit. The compressor oil filter is incorporated after the thermal bypass valve described in paragraph 1-4.

SECTION 2

OPERATING INSTRUCTIONS

2-1. PREPARATION FOR USE.

This equipment should be located so that it is nearly level on the operating site. The angle of out-of-level operation should not exceed 15 degrees either lengthwise or sidewise. Check engine and compressor oil levels carefully before operating out-of-level. They should be full, but not overfilled. The following procedures should be observed before starting the unit.

a. INSPECTION OF NEW EQUIPMENT.

(1) Check all of the equipment against the packing list. Examine identification plates for positive identification of the equipment. Record the unit and compressor serial numbers page 5-1 for future reference. Include unit model, unit serial number, and compressor model number when ordering spare parts.

(2) Inspect for and tighten any loose nuts or bolts.

(3) Inspect the controls, instruments, and gauges for damage or loose mountings.

(4) If supplied, inspect the air service hoses for kinks and loose connections.

(5) Inspect the electrical wiring for cuts, fraying and loose connections.

(6) Inspect all tubing and piping for loose connections or damage.

(7) Check all accessories for damage and loose mountings.

b. SERVICING NEW EQUIPMENT.

(1) Lubricate the air compressor as indicated by the lubrication chart, figure 2-1. Fill the fuel tank with the recommended grade of fuel and fill the radiator with coolant. (See Engine Manual in Part II.)

(2) Perform the operator's daily before-operation services described in Section 3 of this manual.

(3) Perform the preventive maintenance services as specified in Section 3 of this manual.

2-2. LUBRICATION.

Refer to figure 2-1, "Lubrication Chart", for the manufacturer's recommended lubricants and servicing intervals.

a. ENGINE. Refer to Engine Manual in Part II for initial lubrication procedure.

b. COMPRESSOR. Oil capacity of the compressor is 63 quarts.

(1) Check oil level in the receiver-oil separator by removing the filler plug and visually check level. If oil is low, fill to overflow with oil specified in figure 2-1. Recheck oil level after operating fifteen minutes (with unit stopped).

(2) To drain oil, run unit to heat oil to approximately 150° F. Remove filler plug. Open receiver-separator drain valve. Remove compressor oil filter drain plug (figure 5-8, 1).

NOTE

BE SURE TO CLOSE DRAIN VALVE BEFORE REFILLING.

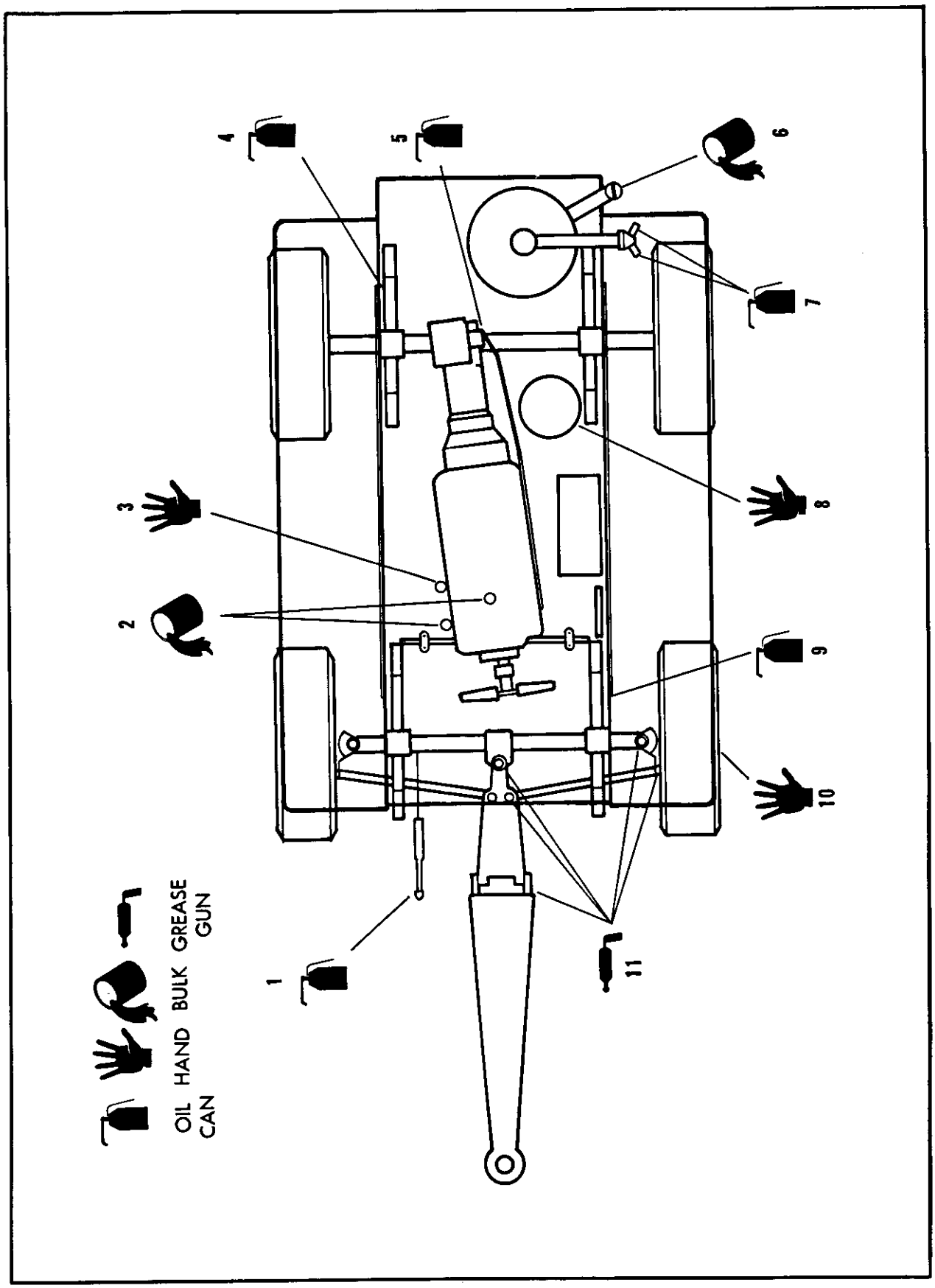

Figure 2-1. Lubrication Chart (Sheet 1 of 2)

REF NO.	ITEM	INSTRUCTION	OPERATING PERIOD	LUBRICANT
1	Hand brake lever and linkage	Oil can (sparringly)	500 hrs	*OE/HEO 30-Oil MIL-L-2104
2	Engine dipstick	Check oil level	10 hrs	
2	Engine crankcase	Drain and change oil (refer to Engine Manual, Part II)	100 hrs	*OE/HDO 30-Oil MIL-L-2104
3	Engine oil filter	Change element (refer to Engine Manual Part II)	200 hrs	
4	Springs (4 places)	Oil can or brush (sparingly)	1000 hrs	OE/HDO 30-Oil MIL-L-2104
5	Control linkage	Oil can (sparingly)	100 hrs	OE/HDO 30-Oil MIL-L-2104
6	Oil Separator	Check oil level	10 hrs	
6	Separator element	Replace	4000 hrs	
6	Separator tank	Drain and change oil	500 hrs	*EO/HDO 30-Oil MIL-L-2104
7	Service Valves (5 places)	Oil can (sparingly)	100 hrs	DE/HDO 30-Oil MIL-L-2104
8	Compressor oil filter	Change element	100 hrs	
9	Door hinges	Oil can (sparingly)	500 hrs	OE/HDO 30-Oil MIL-L-2104
10	Wheel Bearings	Remove wheels, clean hubs, spindles, and repack	1000 hrs	GAA-Grease MIL-G-10924
11	Tie rod pins and steering knuckles (8 places)	Grease gun	200 hrs	GAA-Grease MIL-G-10924
11	Steering tongue hinge and pivot (4 places)	Grease gun	200 hrs	GAA-Grease MIL-G-10924

*OE/HDO 30 used in temperatures + 130 to + 32°F (54° to 0°C)
OE/HDO 10 used in temperatures +32 to - 10°F (0° to -23°C)
OES MIL-L-10295 for temperatures -10° to -25°F (-23° to - 32°C)

Figure 2-1. Lubrication Chart (Sheet 2 of 2)

c. AIR CLEANER. The air cleaner is of the dry, replaceable element type. It is important to service the air cleaner regularly. Excessive wear and poor performance will result if the air cleaner is clogged or allows contamination to enter the engine or compressor. Dirt entering the compressor will eventually settle on the separator element and will produce a high pressure drop across the separator. Refer to maintenance instructions in Section 3 for service procedures and intervals for cleaning the air cleaner.

2-3. OPERATING CONTROLS AND INDICATING INSTRUMENTS. (Refer to figure 2-2).

a. RECEIVER AIR PRESSURE GAUGE. Indicates unit air pressure in PSI.

b. ENGINE WATER TEMPERATURE GAUGE. Indicates the water temperature in the engine assembly in degrees Fahrenheit.

c. FUEL GAUGE. Indicates the diesel fuel level in the fuel tanks.

d. IGNITION SWITCH. Energizes and de-energizes a normally closed fuel solenoid valve on fuel injection pump.

e. QUICK START. In cold weather, below +40°F, control is used to inject cold weather starting aid fuel into engine air intake.

CAUTION

Do not inject quick start fuel into engine without engine START switch being depressed simultaneously, or severe damage to engine may result.

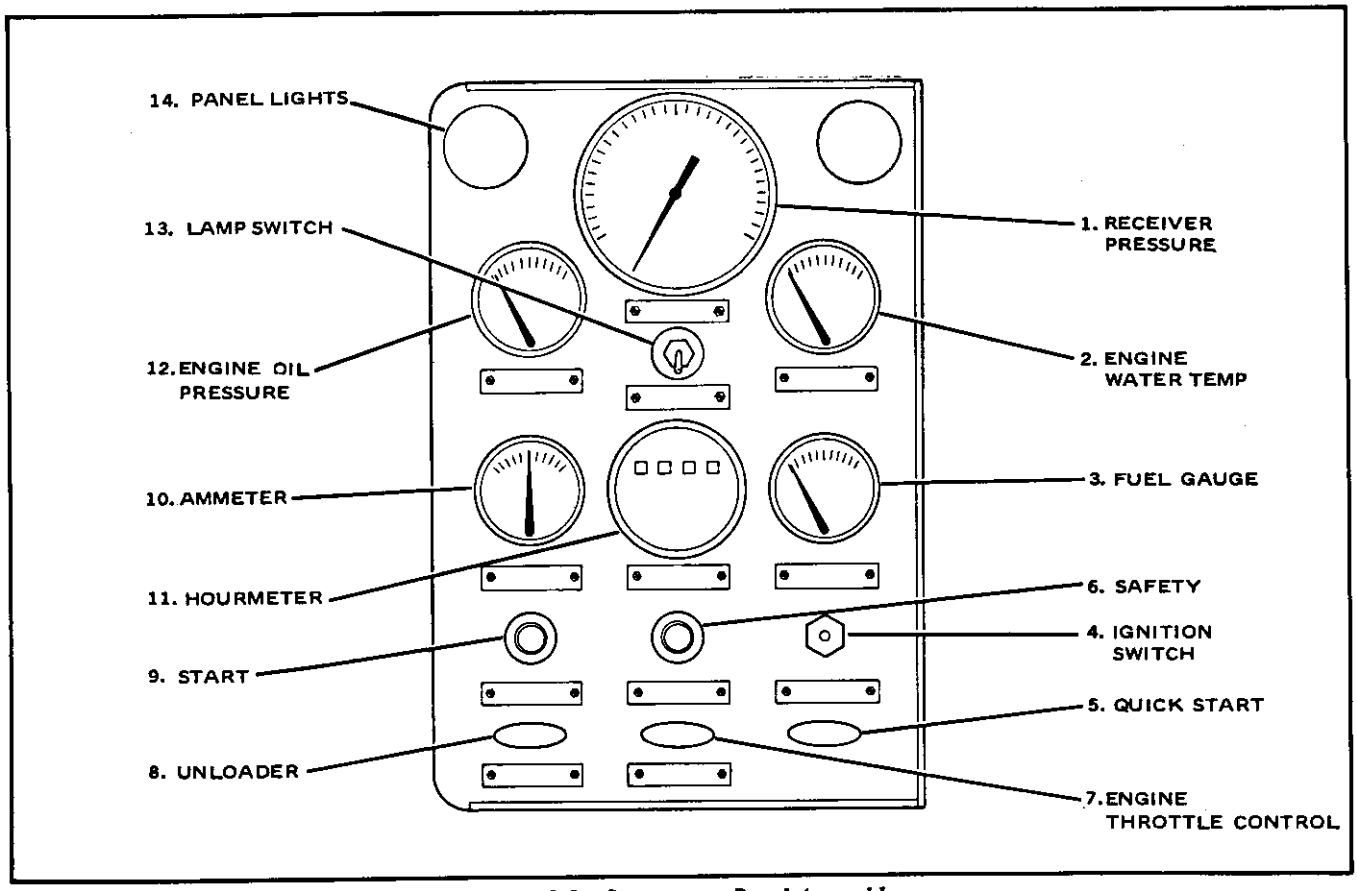

Figure 2-2. Instrument Panel Assembly

f. SAFETY. This pushbutton switch is used to bypass the low oil pressure safety switch when performing starting proceedures. After engine has started and engine operating oil pressure is obtained, switch is released.

NOTE

No attempt should be made to restart the unit after an oil pressure shut down has been caused by the safety switch until the cause of the low oil pressure has been determined.

g. ENGINE THROTTLE CONTROL. Pulling full out and locking control sets engine throttle at idle speed. Unlock and pushing control full in sets engine throttle at operating speed.

h. UNLOADER. Pulling out this control shuts off the air intake of the compressor. This allows a no-load engine condition and compressor warmup in cool weather. Lock control in desired position by turning handle clockwise.

i. START. Depressing this pushbutton switch energizes the engine starting circuit initiating cranking.

j. AMMETER. This gauge indicates the charge or discharge rate of the battery. Refer to figure 2-3 for wiring diagram.

k. HOURMETER. This indicator provides operator with units total sum of operating time. Inspection and servicing periods may be determined and scheduled from the reading of the meter.

l. ENGINE OIL PRESSURE. Gauge indicates the oil pressure in the engine oil gallery. A pressure sensing switch connected in the circuit will automatically shut down engine when oil pressure drops below 15 psi. The opening of this circuit causes the fuel pump solenoid valve to de-energize, which closes a valve cutting off diesel fuel flow to pump.

m. LAMP SWITCH. An on-off switch that controls the panel lights.

n. PANEL LIGHTS. Lamps that illuminate the control panel.

2-4. STARTING PROCEDURE.

a. Open all service and instrument panel doors.

b. Perform inspection procedures per figure 3-1 prior to operating unit. (Also, refer to Engine Manual, Part II.)

c. Open one of the outlet service valves.

d. Unlock, pull out and lock UNLOADER control (8, figure 2-2).

e. Unlock, pull out and lock ENGINE THROTTLE CONTROL (7, figure 2-2).

f. In cool weather, below 40°F (4.4°C), unscrew cap of cold weather starting aid and place ether cylinder in holder. Hand tighten cylinder. Make certain actuating lever is free to operate. Charge shot valve by pulling QUICK START control (5) out for 3 seconds. Do not press QUICK START control in until after START (9) and SAFETY (6) switchs are depressed and cranking has begun. While cranking engine press QUICK START control (5) in.

CAUTION

If engine fails to start within 20 seconds, release START switch and allow starter motor to cool for 1 to 2 minutes prior to attempting another start. Prolonged periods of cranking may overheat and damage starter motor.

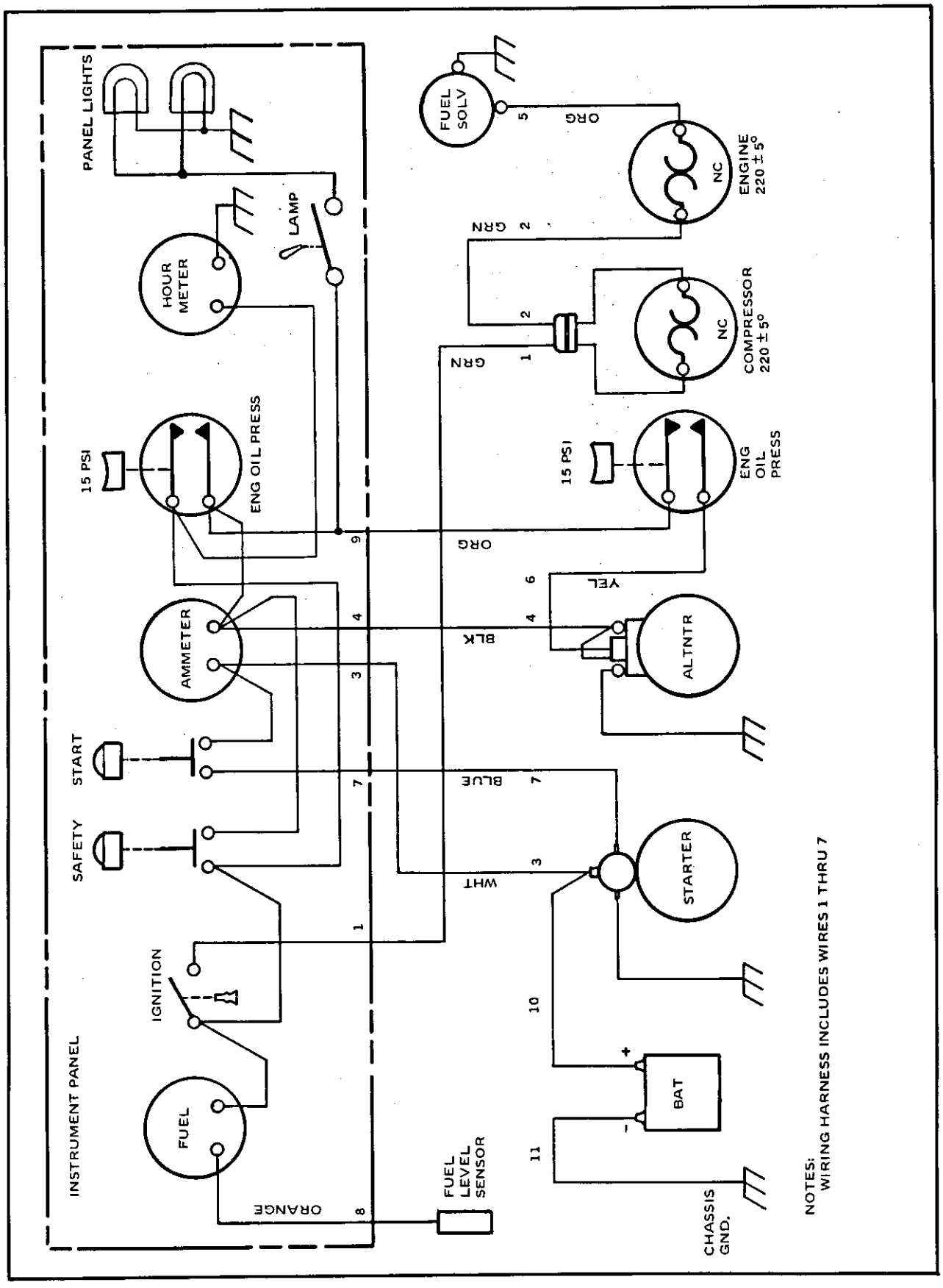

Figure 2-3. Wiring Diagram

CAUTION

If engine oil pressure fails to register within three to five seconds after engine starts release SAFETY switch and rectify cause of no engine oil pressure. Without sufficient oil pressure to lubricate engine will cause serious damage to engine.

g. Pull IGNITION SWITCH (4, figure 2-2) out.

h. Press and hold SAFETY switch (6, figure 2-2).

i. Press and hold START switch (9, figure 2-2). Release START switch when engine is running. (Actuate cold weather starting aid handle as necessary).

j. Continue holding SAFETY switch until ENGINE OIL PRESSURE gauge (12, figure 2-2) indicates above 15 psi and release.

k. Allow engine to run at idle until ENGINE WATER TEMP. gauge (2, figure 2-2) indicates approximately 140°F.

CAUTION

In hot weather and/or in the case of a malfunctioning unit, when ENGINE WATER TEMP. gauge exceeds 220°F (± 5°) (104°C) engine should automatically shut down. If not, discontinue operation and cool engine or serious damage to engine may result. (Refer to Engine Manual Part II.)

l. Push ENGINE THROTTLE CONTROL in and lock.

m. Push UNLOADER control in and lock.

n. Close all air service outlet valves.

o. Check the following gauges for normal operating indications:

RECEIVER PRESSURE (1, figure 2-2) ..... 90 to 100 psig

ENGINE WATER TEMP. ..... 160° to 185° F

ENGINE OIL PRESSURE..... 40 to 60 psig

NOTE

Compressor is now ready for normal operation. Unit will now automatically supply air pressure, upon demand, up to 365 cfm at approximately 100 psig.

CAUTION

This unit is protected by safety devices to automatically shut down operation in the event of low engine oil pressure (less than 15 psig), high engine coolant temperature (above 220°F ± 5°) and high compressor air temperature (above 220°F ± 5°). Do not attempt to restart in the event of automatic shutdown until cause has been rectified or serious damage to unit may result.

CAUTION

Do not allow unit to operate unattended for prolonged periods. Periodically observing gauges for normal operating indications and listening for abnormal noises may prevent serious damage to the unit.

p. Connect pneumatic equipment to air service outlets as required and open related outlet valve.

2-5. SHUTDOWN PROCEDURE.

a. Close all air outlet service valves.

b. Unlock, pull out and lock UNLOADER control (8, figure 2-2).

c. Allow unit to run unloaded for five minutes.

CAUTION

If compressor is shut down in loaded mode, do not attempt to re-start for five minutes or compressor damage may result.

d. Press IGNITION SWITCH (4, figure 2-2) in.

e. Perform the after operation procedures in table 3-1.

f. Close all housing access doors.

2-6. OPERATION IN EXTREME COLD (Below 40° Fahrenheit.)

a. Lubricate the air compressor in accordance with the lubrication table, figure 2-1. Lubricate the engine per instructions in the Engine Manual, Part II.

CAUTION

Many oils will jell at extremely cold temperatures. It is essential that oil(s) used are fluid at the temperature being experienced. Check your oil supplier for pour point data if in doubt. A quick check is to momentarily remove the drain plug of the engine.

b. Clean off all ice and snow.

c. For temperatures below 40°F. use the cold weather starting equipment supplies with the unit. For procedures, refer to paragraph 2-4.

d. Keep the unit doors closed during operation in extreme cold temperatures. Open the door on the instrument panel side of the machine from time to time to check machine operation.

2-7. OPERATION IN EXTREME HEAT.

a. Locate the air compressor in a well ventilated area and keep all doors open.

b. Keep the radiator assembly clean and full of coolant.

c. Lubricate the air compressor in accordance with lubrication table.

2-8. OPERATION IN DUSTY OR SANDY AREAS.

a. Locate the air compressor in a sheltered area, if possible.

b. Keep the engine unit as clean as possible.

c. Lubricate the unit in accordance with the lubrication table. Lubricate more often than under normal conditions.

d. Service the air cleaner and oil filters every five hours of operation.

e. Wet down the surrounding area to help keep down dust.

2-9. OPERATION IN SALT WATER AND HIGH HUMIDITY AREAS.

a. Wipe all exposed area frequently.

b. Cover the air compressor when not in operation.

c. Keep all electrical components (leads, starter, alternator, battery, etc.) clean and dry.

d. Service the air cleaner and oil filters frequently.

2-10. OPERATION AT HIGH ALTITUDE.

This unit will operate satisfactorily at high altitudes. A slight loss of efficiency may be noticed at altitudes greater than 5000 feet. This is a normal condition that cannot be prevented.

2-11. OPERATING PRECAUTIONS.

a. Do not remove, lubricate or adjust any parts while the unit is operating.

b. Do not play with compressed air. Pressurized air can cause serious injuries to personnel.

c. Watch all instruments for any indication that the unit is malfunctioning.

d. Provide sufficient ventilation. Exhaust gases contain carbon monoxide which is a colorless, odorless and deadly gas.

e. Do not attempt any disassembly or repair of the unit air end with air pressure in system. Allow minimum of three minutes after shutdown for pressure to bleed off. In an emergency, pull out on lever of safety valve on separator assembly to relieve pressure in separator assembly and compressor.

f. Do no fill fuel tank with engine running.

g. Do not touch the muffler or engine with bare hands while the equipment is running. Shut down the unit and allow it to cool off before making repairs.

h. Keep compressor and engine oil and air filters clean to protect the unit against rapid wear and low output.

i. Do not attempt to start the engine until the unit has been checked for lubricating oil, water and fuel supply. (Also see Engine Manual.)

WARNING

If repairs or adjustments must be made while the unit is operating, use extreme care to avoid severe burns or serious injuries.

SECTION 3

MAINTENANCE INSTRUCTIONS

3-1. PREVENTIVE MAINTENANCE.

To ensure that the equipment is ready for operation at all times, it must be inspected systematically by the operator before operation, during operation, and after operation (see figure 3-1); biweekly, quarterly and every 1000 hours of operation (see figure 3-2). The biweekly interval will be equivalent to a maximum of 100 hours of use. The quarterly interval will be equivalent to 3 months or a maximum of 500 hours of use, whichever occurs first. In this manner, defects will be discovered and corrected before they result in serious damage or failure.

The necessary preventive maintenance services will be performed before operation. Defects discovered during operation of the unit will be noted for correction to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment if operation were continued. After-operation services will be performed at intervals based on the normal operation of the equipment. Reduce interval to compensate for abnormal conditions.

3-2. ENGINE MAINTENANCE. Refer to Engine Manual in Part II for all engine maintenance procedures.

3-3. CORRECTIVE MAINTENANCE. Major maintenance will normally not be required, provided that normal maintenance is observed. It is essential that oil be changed regularly and that oil filters and air cleaner are inspected and serviced regularly. Cleanliness of these components is extremely important.

WARNING

Do not attempt any disassembly or repair of the unit until all air pressure has been relieved. Blowdown valve will relieve pressure in about 10 seconds after shutdown.

3-4. DISASSEMBLY OF AIR COMPRESSOR UNIT. (Fig. 5-1). Disassembly of the air compressor unit or any of the major components is accomplished by following the order of the key index numbers assigned to figures in section five of this manual. Many of the components can be removed and replaced without disturbing the rest of the assembly. Disassemble to the extent required to accomplish repair.

3-5. CLEANING.

a. Wash all metal parts with solvent, Federal Specification P-D-680, or a commercial equivalent prior to inspection.

b. Strip off all gaskets and clean surface where sealing compound was used.

c. If varnish exists, carefully scrape off or soak components in commercial solvents available for this purpose.

CAUTION

Be sure to observe manufacturer's instructions and precautions.

d. Clean all foreign matter from internal surfaces, rotor slots, and all passages.

e. Wash air cleaner (Fig. 5-2) thoroughly and air dry. Wash bowl, wipe dry.

BEFORE	DURING	AFTER	PROCEDURE
OPERATION			
X		X	VISUAL INSPECTION – Make a general inspection of the entire unit for obvious deficiencies, such as oil leaks, loose or missing bolts, nuts, screws, loose connections, broken wires, and any damage that may have occurred since the equipment was last operated. Inspect for a bent or cracked housing or frame. Correct any deficiencies.
X			TAMPERING – Inspect the air compressor for evidence of tampering or damage. Do not operate the unit until defects are corrected.
	X		LEAKS – Inspect all air lines and fittings for air leaks. Correct all deficiencies.
X			LUBRICATION – Lubricate the air compressor in accordance with the lubrication table, figure 2-1.
X			AIR CLEANER – The dry filter of the air cleaner shall be removed and cleaned every eight hours of operation. The element may be washed in a solution of lukewarm water and detergent. Dry with compressed air. In conditions of extreme dust, dirt, or blowing sand, the element should be cleaned every four hours of operation.
X		X	COOLING SYSTEM – Inspect the condition of the fins on the radiator assembly. See that they are clean and free from dust and dirt. Backwash with water or blow air through radiator and cooler fins to remove dust.
X	X	X	INSTRUMENTS – Inspect the instruments for broken glass, improper operation, and insecure mounting. Replace any defective instruments. When the compressor is operating, the gauges should give satisfactory readings.
X	X	X	AIR HOSES – Inspect the air hoses for breaks, wear or leaks. Replace defective air hose.
		X	CLEAN EQUIPMENT – See that the equipment is clean and free of grease, oil and dirt on all surfaces. Clean with nonflammable cleaning solvent and wipe dry.
		X	PROTECTION – Protect the unit by placing and covering it in a sheltered place to protect it from tampering and weather.
X		X	BATTERY – Check level of electrolyte in the batteries. Use distilled water to maintain proper level.

Figure 3-1. Operator's Preventive Maintenance Chart

100 HOURS (2 Weeks)	500 HOURS (3 Months)	1000 HOURS (6 Months)	PROCEDURE
X			AIR CLEANER – Inspect the air cleaner for loose connections and mountings.
X			Tighten any loose connections or mounting hardware. Replace a clogged or defective air cleaner.
X			TIRES – Check air pressure; maintain at 45 psi.
X			REGULATORS, CHECK VALVES, SAFETY VALVES, GAUGES. Inspect the condition of all gauges, valves and safety valves. Start the air compressor and see that all gauges read correctly and that the glass is not cracked. Inspect the condition of all safety valves to see they are working properly.
X			Tighten any loose mounting screws and connections. Replace any defective or damaged gauges, check valves, and safety valves.
X			Check settings of safety valves and pressure gauges.
X			FAN AND SHROUDS – Inspect the engine fan assembly for insecure mounting and improper operation. Check fan and alternator belts for proper tension.
	X		LUBRICATION – Drain oil in rotary compressor and engine and refill with clean oil of type and grade specified on lubrication chart.
X			Remove compressor oil filter. Clean or replace.
	X		APPEARANCE – Inspect the general appearance of the air compressor, paying particular attention to dirt, illegible markings of identification, and poor condition of the paint surfaces.
	X		HOOD, SIDE PANELS – Inspect the doors, side panels, and cover panels for loose or missing nuts and screws and damaged hinges, latches, and panels.
	X		CONTROLS, WIRING – Inspect all controls and instruments on the control panel for damaged or improper operation. Inspect all controls and instruments for loose mountings and connections and damaged wiring. Clean the accumulated dust and dirt from the control panel. Tighten any loose connections and replace damaged controls, instruments, or wiring.
X			Perform periodic service on engine, refer to Engine Manual Section II.
	X		Check battery voltage and recharge if voltage is low. If condition persists, check ignition system per Engine Manual.
		X	WHEEL BEARINGS – Remove, clean out old grease and repack per lubrication chart, figure 2-1.

Figure 3-2. Periodic Inspection Chart

f. Check oil filter element (Fig. 5-8). Clean body assembly thoroughly.

NOTE

Do not attempt to wash oil separator fiber glass element (Fig. 5-5). Replace if clogged.

g. Blow out any dust or dirt accumulation from between radiator-cooler tubes.

3-6. AIR COMPRESSOR INSPECTION (Fig. 3-3). Periodic inspection of the compressor assembly rotor blades (4) every 4000 hours of operation will ensure that unit maintains a high degree of efficient performance without the need for a major overhaul.

a. Remove housing panel (19, Fig. 5-1) to gain access to non-drive end of compressor.

b. Remove end cover (3, Fig. 3-3) with intake control and bearing cover attached.

c. Remove blades (4, Fig. 3-3) and inspect for evidence of excessive wear. See figure 3-4. Blades are excessively worn when 25 percent of covering is removed exposing shiney metal. Blades worn on one side only may be turned around and reinstalled. Replace blades when 1/16-inch in height is lost due to wear. Replace blades when scored, chipped or both sides are worn.

d. Visually inspect stator bore for evidence of excessive wear, scores or chips. If bore indicates excessive wear remove and replace compressor or overhaul as required.

NOTE

Do not disassemble rotor and drive end cover assembly (89, 90, 91, 92, 93, figure 5-7) and inner race of bearing (58) unless it is determined the need to remove or replace a part other than rotor blades. To disassemble, rotor and drive end cover assembly, refer to paragraph 3-7.

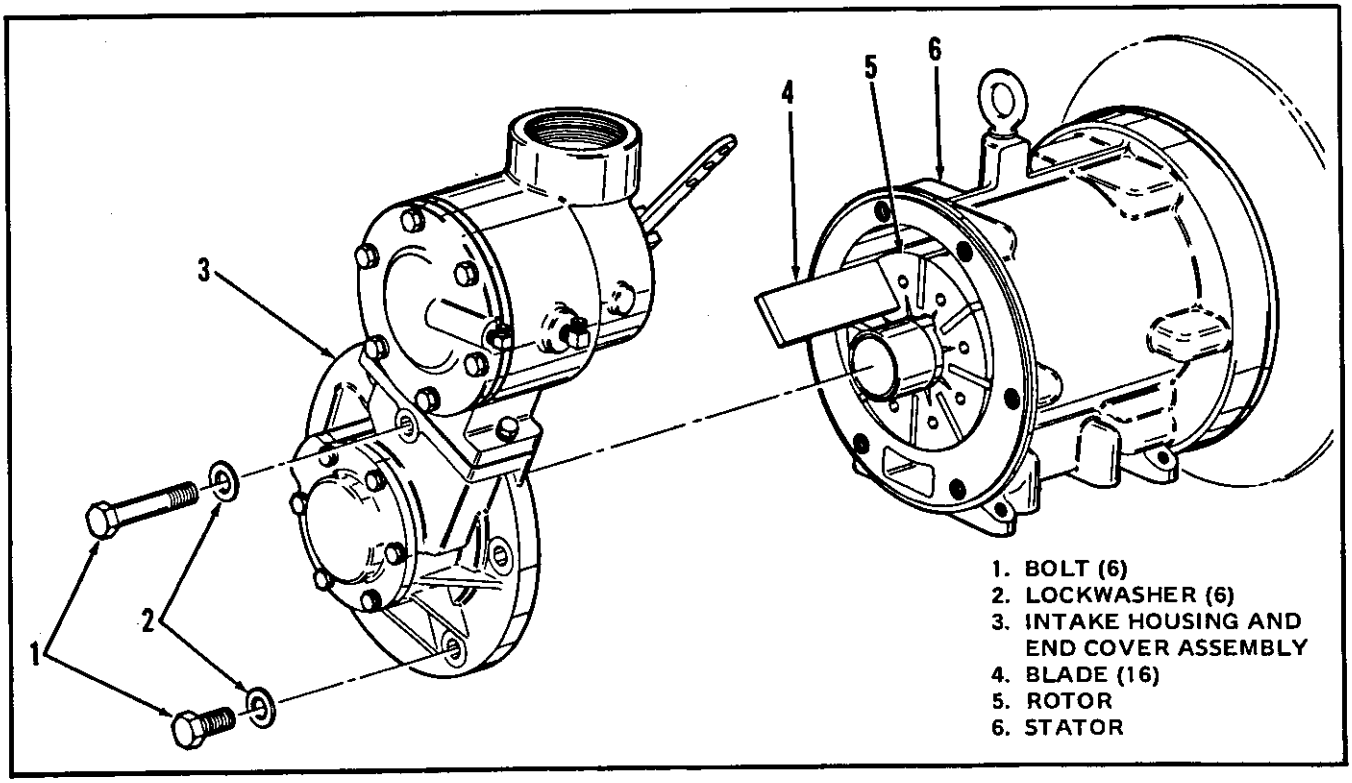

Figure 3-3. Compressor Inspection

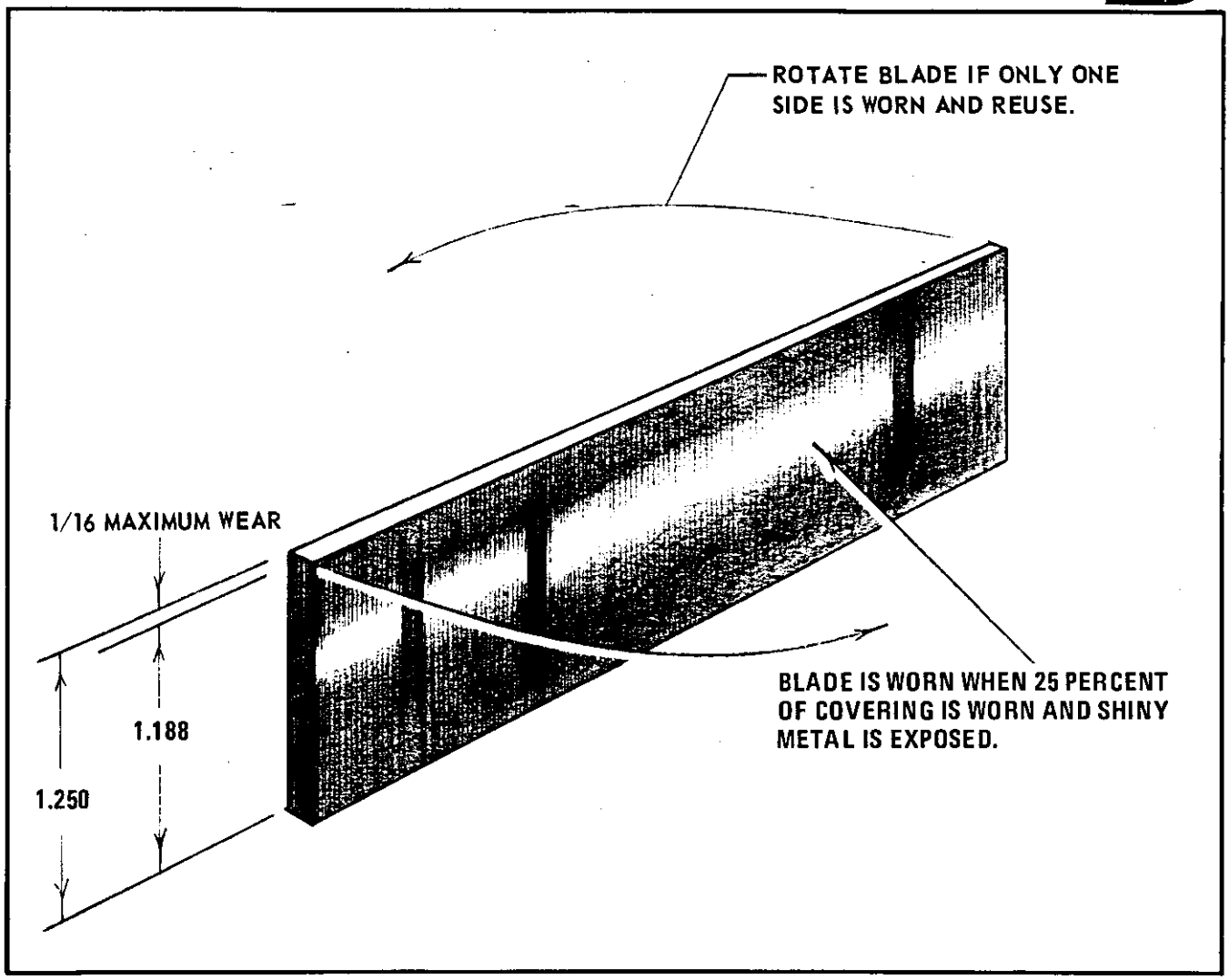

Figure 3-4. Rotor Blade Inspection

e. Remove and replace "O" ring (67, figure 5-7). Reassemble compressor the reverse order of disassembly. Coat blades with clean lubricating oil and they must slide freely in slots.

f. Check compressor for normal operation and after operation is resumed visually inspect end cover for proper seal.

3-7. AIR COMPRESSOR DISASSEMBLY (Fig. 5-7). Disconnect all tubing or hose assemblies, the intake control cable, cable clip and throttle linkage.

NOTE

For blade and rotor inspection, it is only necessary to remove non-drive end cover (3, figure 3-3) with intake control and bearing cover attached. Refer to paragraph 3-6.

NOTE

Do not disassemble rotor and drive end cover assembly (89, 90, 91, 92, 93) and inner race of bearing (58) unless it is determined that a part must be replaced.

NOTE

Do not remove intake control body (50) from nondrive end cover for rotor or stator replacement or overhaul. When compressor is removed for replacement or for any reason is determined that intake control body (50) must be removed, component parts (11 thru 23) must be removed to gain access to retaining bolt (51) inside of intake control body.

a. Disassemble rotor and drive end cover assembly, refer to figure 3-5.

b. Remove nondrive end bearing inner race using suitable gear puller. If inner race fails to move, apply even heat from torch to inner race. Apply gear puller and remove race.

NOTE

Replace and discard entire bearing of any race that is heated.

c. Remove minor nicks or scratches from machined surfaces of rotor (5, Fig. 3-3) and stator (6, Fig. 3-3) with a fine honing stone or emery cloth. If excessive scoring or chipping is evident replace damaged parts.

3-8. AIR COMPRESSOR REASSEMBLY. The reverse of disassemble, refer to figure 3-5 and 5-7).

a. Coat o-rings, blades and internal machined parts with clean lubricating oil.

WARNING

Perform the following step with caution and using the proper protection or severe burns could be obtained.

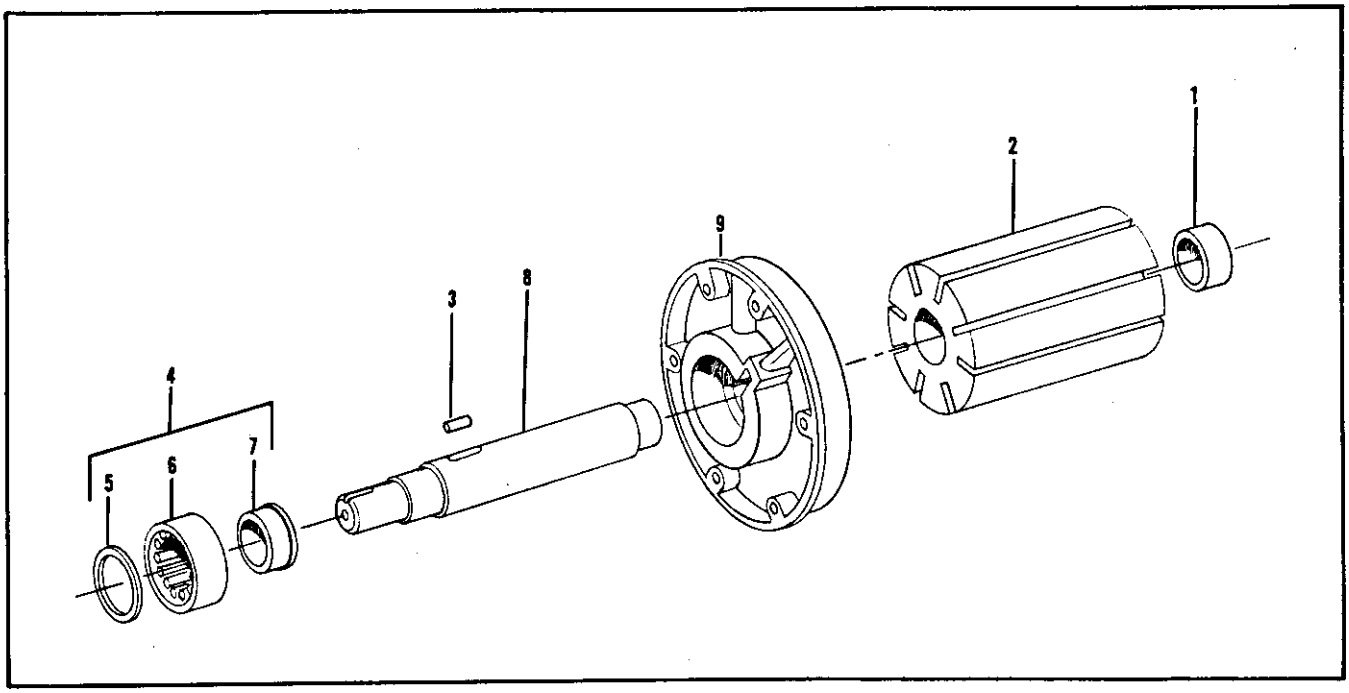

Figure 3-5. Rotor Assembly

b. Heat bearing inner races (1, 7, Figure 3-5) evenly in cooking oil to a maximum of 350°F.

c. Install inner race (7) on shaft to shoulder.

d. Assemble outer race (6) and spacer (5) on bearing inner race.

e. Press bearing and shaft into cover (9).

f. Place key (3) into shaft and slide rotor on to shaft, make sure relief slots on rotor are leading in the direction of rotation (Fig. 3-6).

g. Install heated inner race (1) on to shaft to shoulder.

h. Complete assembly, referring to Figures 5-7 and 3-5. Use grease to hold o-rings in place during assembly.

CAUTION

Improper installation of gripsprings will result in slippage between the shaft and coupling, causing excessive wear.

i. Install gripsprings, refer to Figure 3-7, as follows:

(1) Install smaller gripspring (3) on shaft (2) with beveled edge out.

(2) Position larger gripspring (4) over gripspring (3) so that the beveled edges meet.

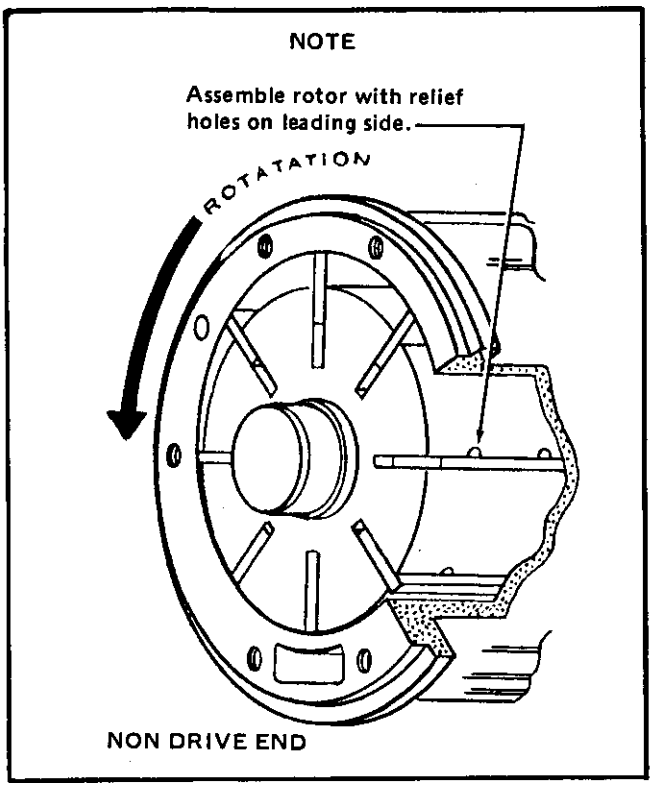

Figure 3-6. Compressor Rotor Installation

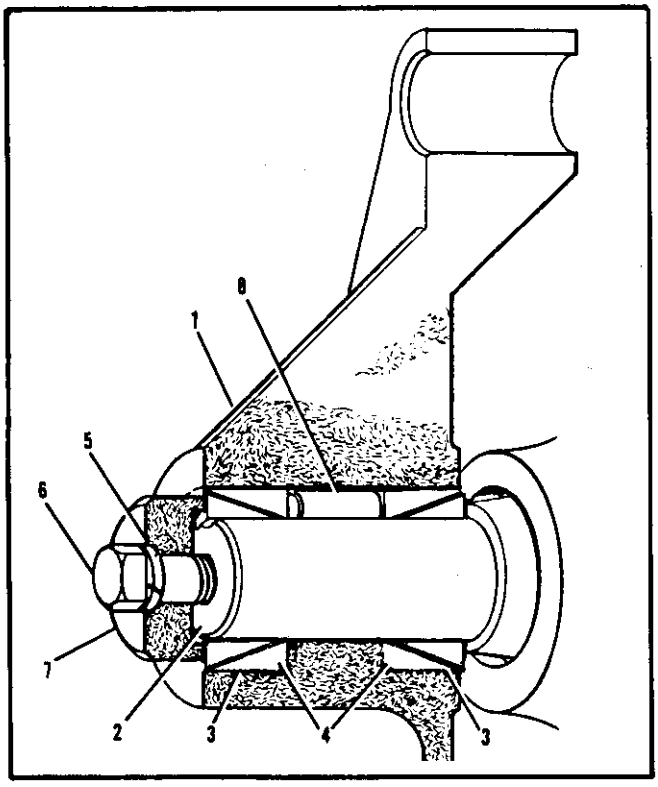

Figure 3-7. Gripspring Installation

(3) Install key (8) on shaft. Slide coupling (1) on shaft and over key and gripsprings until it seats.

(4) Position second larger gripspring (4) in coupling with beveled edge facing outward.

(5) Install second smaller gripspring (3) on shaft. Be sure beveled edges of gripsprings (3 and 4) match.

(6) Position gripspring retainer (7) and secure with washer (5) and bolt (6).

j. Service unit per paragraphs 2-1 and 2-2 before restarting compressor.

k. Start compressor and check for normal operation. Refer to operating procedure.

l. Check visually all fillings, joints, etc., for leakage. Use a soapy water solution to check for air leaks.

m. Unit is now ready for normal operation.

3-9. SPEED CONTROL LINKAGE ADJUSTMENT. After replacement of engine, compressor assembly, fuel injection pump linkage, or air intake control, readjustment of engine RPM may be required as follows:

a. Using a strob light tachometer, mark damper on crankshaft of engine, set strob for 1050 rpm or connect manual tachometer to tachometer drive pinion adaptor on engine flywheel housing.

NOTE

In the following step make adjustment in unload mode.

b. Start engine and adjust linkage and idle control adjusting screw for 1050 rpm. Refer to Start Procedure paragraph 2-4.

c. Push ENGINE THROTTLE CONTROL in and lock.

d. Push UNLOADER control in and lock.

e. Close all air service outlet valves.

f. Adjust linkage and high idle adjusting screw for 100 PSI on RECEIVER PRESSURE gauge.

g. Open a air service outlet valve. RECEIVER PRESSURE gauge will indicate a reduction in pressure, at approximately 70 psi engine rpm should automatically increase. Close service outlet valves. RECEIVER PRESSURE gauge must return to 115 psi ± 5. Compressor must then switch into the unload mode.

h. Unit is now ready for normal operation.

SECTION 4

TROUBLESHOOTING

4-21. TROUBLESHOOTING. The following chart gives common troubles, their probable causes and suggested remedies. For engine troubles, refer to Part II.

TROUBLE	PROBABLE CAUSE	REMEDY
COMPRESSOR OVERHEATS	Dirty oil cooler	Clean the cooling fins.
	Low oil level	Fill with oil as specified in the lubrication chart.
	Sticking thermal bypass valve	Dismantle and clean.
	Oxidized oil	Dismantle compressor and seaprator. Clean using Oakite Composition No.111, Oakite Products, Inc. Reassemble. Replace oil separator element. Fill with oil, specified on lubrication chart.
	Blade damaged or stuck in slots	Clean or replace blades. If varnish deposits are excessive, clean compressor as specified above.
NOISY COMPRESSOR OPERATION	Lack of lubricant	Fill to oil levels specified in the lubrication chart. If it is determined that damage has occurred due to lack of lubrication, follow procedure below.
	Loose, worn or damaged internal or external parts	Tighten all accessible external attaching parts and components. If it is determined that internal parts are the cause of the trouble, remove compressor unit for overhaul.
COMPRESSOR NOT COMPRESSING TO FULL CAPACITY OR PRESSURE	Leak in piping	Shut down pressure; check piping for leaks with soap and water solution. Repair or replace defective piping or fittings. If unloader is leaking, remove for overhaul.
	Air service valve open or leaking	Close the service valve or replace as necessary.
	Safety valve leaking	Replace safety valve.

NOTE

If the equipment fails to compress to full capacity or pressure, check all piping connections and components for leaks.

WARNING

Do not attempt any adjustment or repair to the unit until all air pressure has been relieved.

Figure 4-1. Troubleshooting Chart

TROUBLE	PROBABLE CAUSE	REMEDY
COMPRESSOR FAILS TO LOAD OR UNLOAD	Faulty unloader	Remove defective unit for overhaul.
	Plugged orifice	Clean.
	Dirt on control valve seat.	Clean valve seat.
	Ruptured diaphragm in control assembly	Replace diaphragm.
	Unloading pressure too high or too low	Readjust.
	Defective hose assemblies between compressor and minimum pressure valve housing.	Repair hose assemblies or replace.
	Moisture in control lines	Disconnect control lines, clean and replace.
	Damaged intake valve	Inspect for damaged seat or back-up washer.
ENGINE STALLS WHILE IDLING	Engine or compressor is not warm enough	Run at part load until equipment is warmed up.
	Idle speed set too low	Readjust.
	Backlash in linkage	Readjust linkage.
COMPRESSOR OVERHEATING	Dirty oil filter	Remove, clean with non-flammable solvent and install.
	Clogged oil cooler fins	Clean oil cooler fins of debris and dirt accumulated on fins.
COMPRESSOR OUTPUT LOW	Faulty air filter element	Remove, clean or replace.
	Intake valve malfunction	Remove intake control. Remove intake valve assembly. Clean or replace worn parts.
	Dirty fuel and/or filters	Remove, clean, or replace fuel filter. Drain water or foreign particles from fuel tank.
	Low power unit RPM	Refer to Engine Manual.
	Damaged blades	Drain oil. Remove non-drive end cover. Remove blades, inspect for burrs. Replace damaged blades.
ENGINE RETURNS TO IDLE, COMPRESSOR FAILS TO UNLOAD	Faulty intake control	Check for sticking intake valve, punctured diaphragm in intake control assembly, damaged or plugged lines to intake control.

Figure 4-1. Troubleshooting Chart (cont)

TROUBLE	PROBABLE CAUSE	REMEDY
EXCESSIVE OIL IN DISCHARGE LINE	Dirty oil return valves, or saturated oil separator element	Disassemble, clean, and assemble oil return valves. Should this remedy fail to correct the problem, install new oil separator element.
ENGINE STALLS OR SHUTS DOWN DURING OPERATION	Oil safety switch cutting out due to low engine oil pressure	Refer to Engine Manual in Part II.
	Engine overspeed switch shutting down the unit	Engine running at speed exceeding 2250 ± 50 rpm. Refer to Engine Manual in Part II.
	High compressor air temperature	Check compressor oil supply and cooling system. Check operation of thermal bypass valve.
	High engine coolant temperature.	Check coolant level in radiator and fill as necessary. Check radiator hoses and radiator for leaks and repair as necessary.

Figure 4-1. Troubleshooting Chart (cont)

SUPPLEMENT

PRIME MANUFACTURE & VENDOR PART NO. CROSS REFERENCED TO ACTUAL MANUFACTURE PART NO.

PRIME MFG. OR VENDOR PART NO.	FMC	ACTUAL MFG. PART NO.	FMC	DESCRIPTION	FIG. & INDEX NO.
DAVEY PARTS LIST					
-		2502D022	78252	CAP, Fuel tank, 3 O.D. filler neck	5-1, 62
46246	16004	OK1039-201	61112	STARTING KIT, Cold weather	5-13
51123	16004	MH-845	92850	HOSE, Radiator, upper, 2¼" ID x 20" lg	5-1, 38
-		MS35840-1	96906	CAP, Radiator, 2¾" OD filler neck, 7 lb. pressure	5-1, 55
24669	16004	D4-A9Y	19728	BATTERY, 12 Volt	5-1, 24
62085	16004	2550-108	09393	GAUGE, Engine oil pressure, 0 to 100 PSI	5-4, 17
48271	16004	4015-98	09527	AMETER, Dial increments 60-0-60	5-4, 18
60135	16004	9164771	33955	HOURMETER, 12 volt	5-4, 19
6067	22938	L44649	60038	CONE, Bearing, outer	5-10, 27 5-11, 38
6158	22938	L44610	60038	CUP, Bearing, outer	5-10, 28 5-11, 39
6063	22938	L68149	60038	CONE, Bearing, inner	5-10, 31 5-11, 42
6157	22938	L68111	60038	CUP, Bearing, inner	5-10, 30 5-11, 41
JOHN DEERE ENGINE PARTS LIST					
		1105068	16764	ALTERNATOR (See Delco-Remy Manuals in Part II of this manual)	
AR104000	75160	DM4627ABE4012	84760	FUEL INJECTION PUMP (Also see Stanadyne parts sheet in Part II of this manual)	page 33-16 thru page 33-20 and page 35-22

00736	Air-Maze Div. of Incom International Inc. 25000 Miles Road Cleveland, OH 44123
09393	Rochester Gauges Inc. of Texas P.O. Box 20180 Dallas, Texas 75220
09527	Faria, Thomas G., Co. Faria Road Uncasville, Conn. 06382
13445	Cole-Hersee Co. 20 Old Colony Ave. Boston, MA 02127
14892	Bendix Corp., The Brake and Steering Div. 40 N. Bendix Dr. South Bend, IN 46619
16004	Davey Compressor Co. 11060 Kenwood Road Cincinnati, OH 45242
16764	Delco-Remy Div. of General Motors Corp. 2401 Columbus Avenue Anderson, Ind. 46011
19728	Prestolite Co., The Division of Eltra Corp. Champlain and Chestnut Street P. O. Box 931 Toledo, OH 43601
22938	Prototype Development Inc. 7750 Hub Parkway Cleveland, OH 44125
24522	Humphrey Products Div. General Gas Light Co. P. O. Box 2008 Kalamazoo MI 49003
28136	Minnesota Mining and Mfg. Co. Duplicating Products Div. 3M Center St. Paul MN 55101
57733	Stewart-Warner Corp. 1826 Diversey Parkway Chicago IL 60614
60038	Timken Roller Bearing Co. 1835 Dueber Ave., S.W. Canton, OH 44706
61349	Ametek/U.S. Gauge 909 Clymer Ave. Sellersville, PA 18960
61112	Turner Co. Div. of Olin 821 Park Avenue Sycamore, IL 60178
70707	Bostik Div. USM Corp. Boston Street Middleton, MA 01949
74400	Hobbs Div. Stewart-Warner Corp. Yale Blvd. and Ash St. Springfield IL 62705
75160	Deere and Co. John Deere Road Moline, IL 61265
78252	Stolper Ind. Inc. W. 156 N. 9073 Pilgrim Menominee Falls, Wisc. 53051
79136	Waldes-Kohinoor Inc. 76-16 Anstel Place Long Island City, NY 11101
81321	Purolator Inc. 970 New Brunswick Avenue Rahway, N.J. 07065
84760	Stanadyne Hartford Div. P.O. Box 1440 Hartford CT 06102
87930	Tower Mfg. Corp. 158 Pine Street Providence, RI 02903

Federal Manufacture Code to Name

96906	Military Standards Promulgated by Standardization Div. Directorate of Logistic Services DSA
96452	American Standard Inc. Controls Dept. Products Group Pittsburgh, PA
99806	Foamade Industries Inc. 1220 Morse Street Royal Oak MI 48068

SECTION 5

PARTS LISTS

5-1. INTRODUCTION.

This section contains illustrated parts lists for the Davey PERMAVANE Series Portable Compressor. Index numbers are in order of disassembly except that attaching hardware follow the part which they secure. In some instances, hardware, fittings and some accessories are not indexed if it is not deemed necessary. They are identified either by Davey part number or commercial designation and are listed in most suitable sequence of disassembly.

5-2. INSTRUCTIONS FOR ORDERING PARTS.

a. ALL PARTS ARE SHIPPED F.O.B. Cincinnati, Ohio, USA, EXCEPT parcel post packages and United Parcel Service (UPS) which are prepaid and billed to customer on invoice.

b. WHEN ordering by telegram or telephone, be sure to send us confirming order.

c. WHEN in doubt as to any item, send in sketch, or the old part (prepaid) and specify on order "as per sketch" or "as per sample."

NOTE

Do not send part (sample), or any returned goods, without prior authorization.

d. IF you return old part as sample be sure to advise us that you are doing so, and put a tag on part with your name and address for identification. Also advise disposition of old part.

e. ALWAYS give the SERIAL NUMBER and MODEL NUMBER of compressor. This is shown on the serial number plate attached to the unit.

NOTE

When determining source of part to be ordered, all Federal Supply Codes for Manufacturer's (FSCM) are listed for each assembly and are the same for the components that make up that assembly unless otherwise indicated. If FSCM's are not indicated for an assembly the source is Davey Compressor Co.

Retain for your own record.

THIS MANUAL IS FOR MY DAVEY UNIT MODEL NO. .....

UNIT SERIAL NO. .....

ENGINE SERIAL NO. .....

The above information, which will be found on the serial number plate attached to the side panel of unit housing assembly, should be filled in. For prompt shipment of repair parts, this information should be supplied when ordering parts.

DAVEY COMPRESSOR COMPANY

11060 Kenwood Rd.

Cincinnati, Ohio 45242

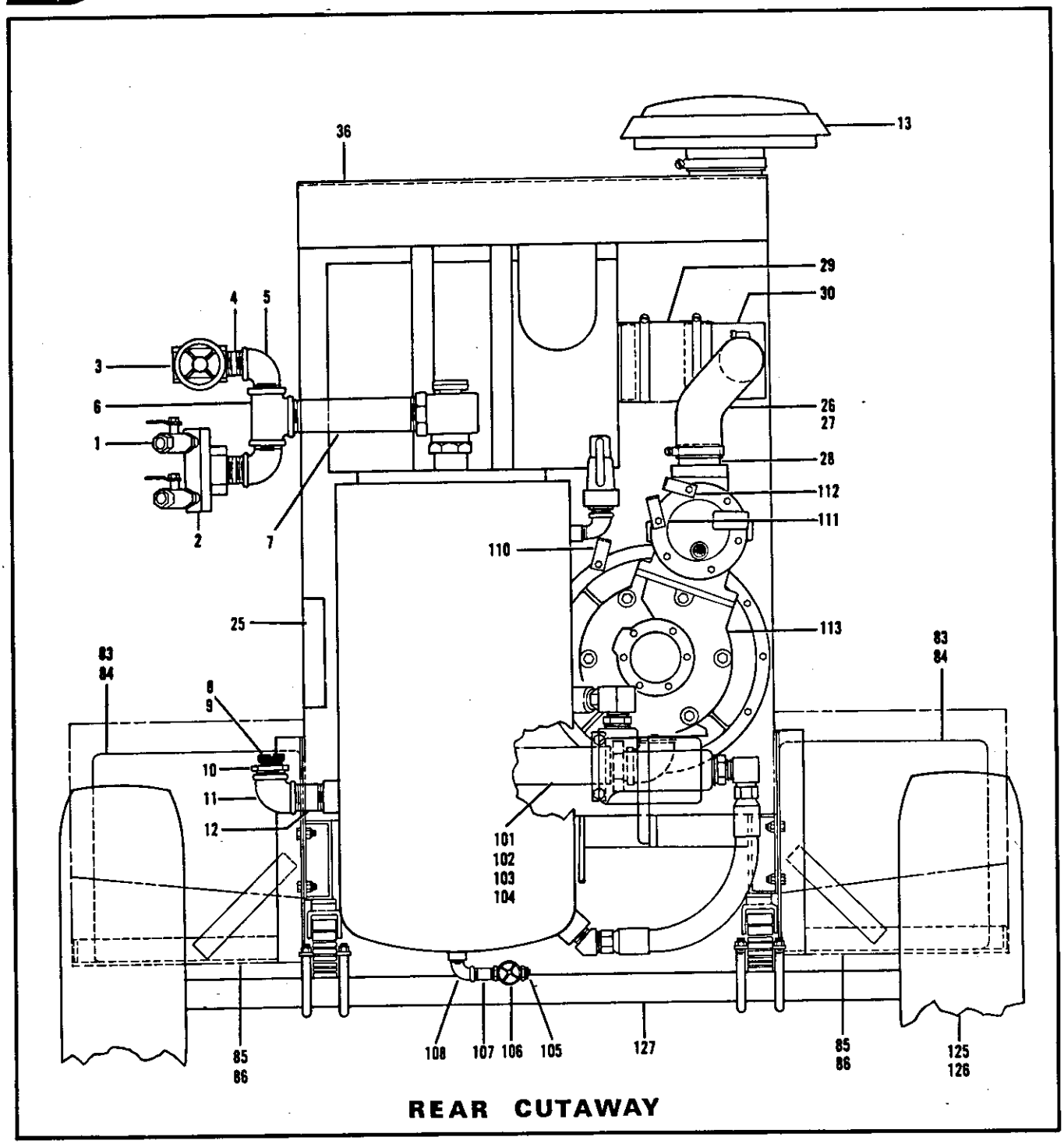

Figure 5-1. Air Compressor Unit Assembly (Sheet 1 of 4)

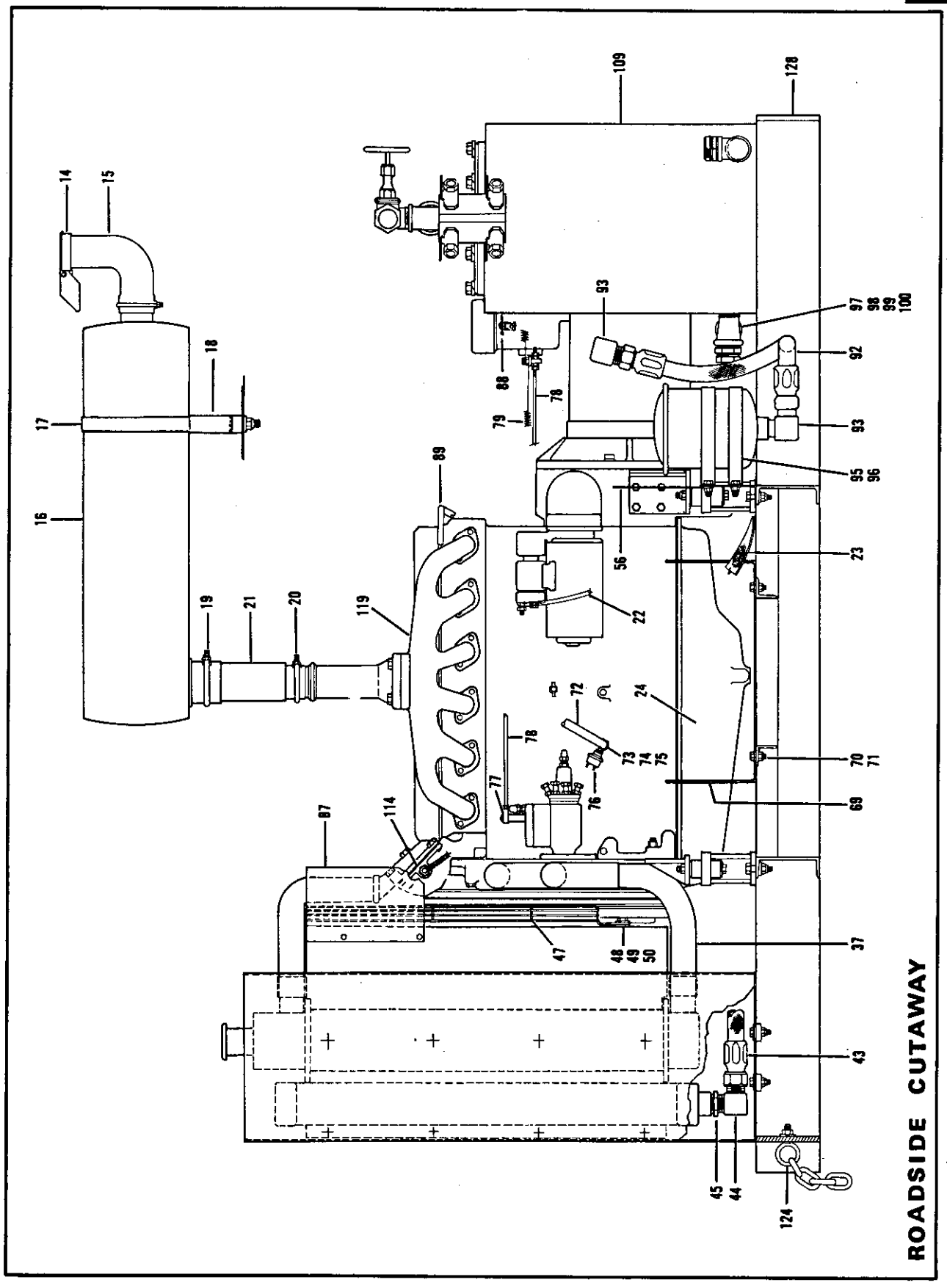

Figure 5-1. Air Compressor Unit Assembly (Sheet 2 of 4)

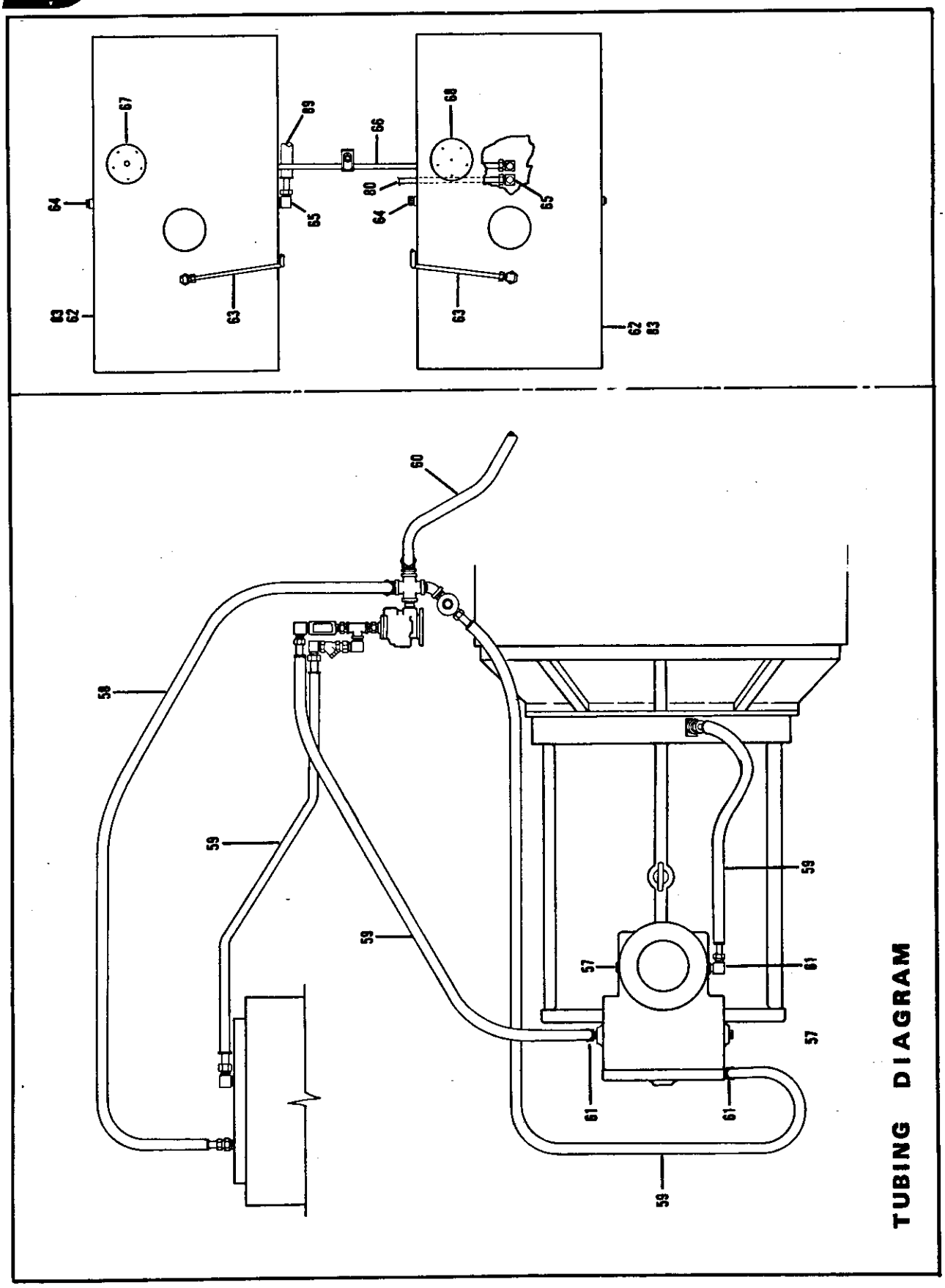

Figure 5-1. Air Compressor Unit Assembly (Sheet 3 of 4)

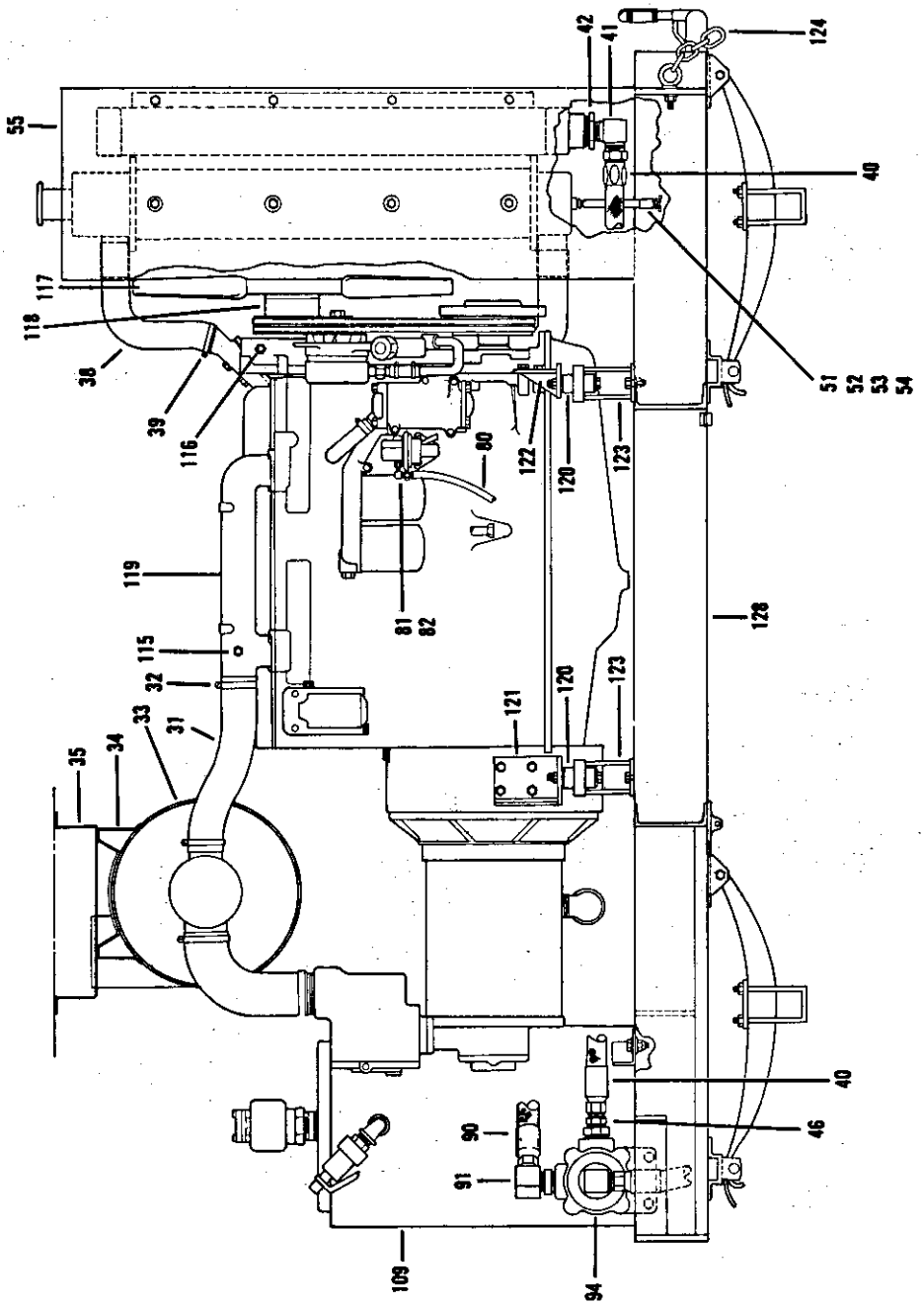

Figure 5-1. Air Compressor Unit Assembly (Sheet 4 of 4)

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1-	80306	UNIT ASSEMBLY, Compressor, 365 RPVQ	1	
-1	24046	. COUPLING, Hose, 3/4 in. NPT	4	
	62565	. VLAVE, Service	4	
	192470	. NIPPLE, Close, 3/4 in. NPT	4	
-2	60825	. MANIFOLD, Discharge	1	
-3	43132	. VALVE, Globe, 1-1/4 in.	1	
-4	219813	. NIPPLE, Close, 1-1/2 in. NPT	2	
-5	179444	. ELBOW, Street, 90°, 1-1/2 NPT	2	
-6	218608	. TEE, Reducing, 1-1/2 x 1-1/2 x 2 in. NPT	1	
-7	453867	. NIPPLE, 2 in. NPT x 10-1/2 in. lg	1	
-8	26359	. PLUG, Oil filler	1	
-9	24982	. O-RING	1	
-10	63062	. BUSHING, Adaptor	1	
-11	179454	. ELBOW, Std, 90°, 1-1/2 in. NPT	1	
-12	219831	. NIPPLE, 1-1/2 in. NPT x 7 in. lg	1	
-13	61430	. CAP, Rain, air intake	1	
-14	43524	. CAP, Rain, exhaust	1	
-15	80690	. ELBOW, Exhaust	1	
	80496	. CLAMP, Exhaust	1	
-16	69096	. MUFFLER	1	
-17	62110	. BAND, Mounting	1	
	443333	. NUT, Lock, 5/16 - 18 thd	1	
	122065	. SCREW, Cap, hex hd, 5/16 - 18 x 2 in. lg	1	
	122145	. SCREW, Cap, hex hd, 3/8 - 16 x 1-1/4 in.lg	2	
	120382	. WASHER, Lock, 3/8 in.	2	
	120394	. WASHER, Flat, 3/8 in.	2	
-18	69078	. SUPPORT, Muffler	1	
	443333	. NUT, Lock, 5/16 - 18 thd	4	
	120393	. WASHER, Flat, 5/16 in.	4	
	62554	. MOUNT, Vibration	2	
-19	80496	. CLAMP, Muffler	1	
-20	81532	. CLAMP, Muffler	2	
	443333	. NUT, Lock, 5/16-18 thd	2	
	122065	. SCREW, Cap, hex hd, 5/16 - 18 x 2 in. lg	2	
-21	81533	. PIPE, Exhaust	1	
	81531	. GASKET	1	
-22	48330	. CABLE, Battery, positive	1	
-23	11028	. CABLE, Battery, negative	1	
-24	24669	. BATTERY, 12 volt	1	
	24668	. HOLDDOWN, Battery	1	
	65436	. BOLT, Battery	2	
-25	69053	. INSTRUMENT PANEL ASSEMBLY (See figure 5-4)	1	
	273771	. SCREW, Serrated flange hd, 1/4-20 x 1/2 in. lg	3	
	9416918	. NUT, Serrated flange, 1/4 -20	3	
	66995	. WIRE HARNESS (See figure 5-4)	1	
-26	81186	. HOSE, Air intake, compressor	1	
-27	61055	. CLAMP, Hose	2	
-28	67701	. NIPPLE, 3 in. NPT One end	1	
-29	69051	. HOSE, Manifold, air cleaner	1	
	69087	. CLAMP, Hose	2	
-30	51114	. MANIFOLD, Air cleaner	1	
-31	81184	. HOSE, Air intake, engine	1	
-32	61563	. CLAMP, Hose	2	
-33	62812	. AIR CLEANER ASSEMBLY (See figure 5-2)	1	
-34	62814	. BANDS, Mounting, air cleaner	2	
	122119	. SCREW, Cap, hex hd, 3/8 - 16 x 3/4 in. lg	4	
	120394	. WASHER, Lock, 3/8 in.	4	
-35	69060	. SUPPORT, Mounting, air cleaner	1	
	273771	. SCREW, Serrated flange hd, 1/4 - 20 x 1/2 in. lg	12	
	9416918	. NUT, Serrated flange, 1/4 - 20	12	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1-36	No Number	. HOUSING GROUP (See figure 5-3)	1	
-37	80354	. HOSE, Radiator, lower, special	1	
	46330	. CLAMP, Hose	1	
	61563	. CLAMP, Hose	1	
-38	51123	. HOSE, Radiator, upper, formed elbow	1	
-39	46330	. CLAMP, Hose	2	
-40	80937	. HOSE ASSEMBLY, Thermal bypass to cooler	1	
-41	66981	. ELBOW, 90°, 1-1/4 NPT x 1-1/4 JIC	1	
-42	192654	. BUSHING, Reducing, 1-1/2 NPT to 1-1/4 NPT	1	
-43	80859	. HOSE ASSEMBLY, Cooler to thermal bypass	1	
-44	66981	. ELBOW, 90°, 1-1/4 NPT x 1-1/4 JIC	1	
-45	192654	. BUSHING, Reducing, 1-1/2 NPT to 1-1/4 NPT	1	
-46	66982	. ADAPTER, Straight, 1-1/4 JIC to 1-1/4 NPT	2	
-47	69046	. GUARD, Fan	1	
-48	9419376	. SCREW, Serrated flange, 1/4-20 x 1 in. lg	5	
-49	63002	. WASHER, Special	5	
-50	62864	. WASHER, Rubber	10	
-51	14026	. DRAINCOCK, Radiator, 1/4 NPT	1	
-52	144068	. COUPLING, Pipe, 1/4 NPT	1	
-53	147888	. NIPPLE, Pipe, 1/4 NPT x 9 in. lg	1	
-54	116332	. BUSHING, Reducing, 3/8 NPT to 1/4 NPT	1	
-55	69023	. RADIATOR AND OIL COOLER ASSEMBLY	1	
	443335	. NUT, Lock, 3/8 - 16	8	
	60744	. WASHER, Channel, 3/8 in.	8	
	120918	. SCREW, Cap, hex hd, 3/8 - 16 x 1-1/2 in. lg	8	
	120394	. WASHER, Flat, 3/8 in.	8	
	69018	. . RADIATOR	1	
	MS35840-1	. . . CAP, Radiator (96906)	1	
	120233	. . SCREW, Cap, hex hd, 3/8-16 x 1 in. lg	8	
	120382	. . WASHER, Lock, 3/8 in.	8	
	120394	. . WASHER, Flat, 3/8 in.	8	
	69017	. . SHROUD, Fan	1	
	273771	. . SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	10	
	69047	. . GUARD, Filler	1	
	69025	. . COOLER, Oil	1	
	443335	. . NUT, Lock, 3/8-16	8	
	120233	. . SCREW, Cap, hex hd, 3/8-16 x 1-1/2 in. lg	8	
	120394	. . WASHER, Flat, 3/8 in.	8	
	65595	. . STRIP, Rubber	4	
	69027	. . PANEL, Curb side	1	
	69026	. . PANEL, Road side	1	
-56	46246	. STARTING AID, Cold weather (see figure 5-13)	1	
-57	143933	. PLUG, Pipe, sq hd, 1/4 NPT	2	
-58	61074	. HOSE ASSEMBLY	1	
-59	46163	. HOSE ASSEMBLY	4	
-60	62083	. HOSE ASSEMBLY	1	
-61	44209	. ELBOW, Tube, 90°, 1/4 NPT to 5/16 tube	3	
-62	69013	. TANK, Fuel (see index 83 figure 5-1)	REF	
	2502D022	. . CAP, Fuel tank (78252)	1	
-63	69081	. TUBE, Vent, fuel	2	
	11033	. CLIP, Tube, 1/8 tube	4	
	28877	. NUT, Tube, 1/8 tube	2	
	28882	. SLEEVE, Tube, 1/8 tube	2	
	29784	. ELBOW, Tube, 90°, 1/8 NPT to 1/8 tube	2	
	144035	. BUSHING, Reducing, 1/4 NPT to 1/8 NPT	2	
-64	144011	. PLUG, Pipe, socket hd, 1/4 NPT	4	
-65	44209	. ELBOW, Tube, 90°, 1/4 NPT to 5/16 tube	2	
-66	61100	. HOSE ASSEMBLY, Tank to tank	1	
	23683	. CLAMP, Hose, 3/8 in.	1	
	273771	. SCREW, Serrated flange, 1/4 - 20 x 1/2 in. lg	1	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1-	9416918	. NUT, Serrated flange, 1/4-20	1	
	66990	. BRACKET, Fuel line support	1	
	274825	. SCREW, Serrated flange, 1/4-20 x 3/4 in. lg	2	
	9416918	. NUT, Serrated flange, 1/4-20	2	
	27691	. ELBOW, Tube, 90°, 1/2 NPT to 3/8 tube	2	
-67	27843	. SENDING UNIT, Fuel	1	
	132908	. SCREW, Mach, rd hd, 10-32 x 1/2 in. lg	5	
	120217	. WASHER, Lock, No. 10	5	
	44427	. GASKET	1	
-68	44741	. COVER, Gauge flange	1	
	132908	. SCREW, Mach, rd hd, 10-32 x 1/2 in. lg	5	
	120217	. WASHER, Lock, No. 10	5	
	44427	. GASKET	1	
-69	24667	. TRAY, Battery	1	
-70	443335	. NUT, Lock, 3/8 - 16	4	
-71	122145	. SCREW, Cap, hex hd, 3/8-16 x 1-1/4 in. lg	4	
-72	38030	. HOSE ASSEMBLY, Switch to oil press gauge	1	
-73	41935	. ADAPTER, Straight, 1/8 NPT	1	
-74	144082	. TEE, Pipe, 1/8 NPT	1	
-75	192042	. NIPPLE, Pipe, 1/8 NPT x 1-1/2 in. lg	1	
-76	66987	. SWITCH, Pressure, oil, 15 PSI	1	
-77	9665	. JOINT, Ball	1	
	443332	. NUT, Lock, 1/4-28	1	
-78	69072	. ROD, Speed control	1	
	120367	. NUT, Hex, 1/4-28	5	
	18952	. BLOCK, Stop	1	
	443332	. NUT, Lock, 1/4-28	1	
	62267	. SPRING	1	
-79	27854	. CABLE, Control, throttle (see figure 5-4)	1	
	20588	. WIRE, Stop	1	
	62059	. BLOCK, Stop	1	
	443332	. NUT, Lock, 1/4-28	1	
-80	44363	. HOSE ASSEMBLY, Fuel, tank to pump	1	
-81	41899	. ELBOW, Tube, 90°, 1/8 NPT to 5/16 tube	1	
-82	40948	. ADAPTER, Straight, 1/8 NPT	1	
-83	69013	. TANK, Fuel	2	
-84	69048	. STRAP, Retaining, fuel tank	4	
	443335	. NUT, Lock, 3/8-16	8	
	14048	. WEBBING, Strip, make from bulk stock 1/8 in. thick by 1-1/2 in. wide. TYPE 3, No. 125 x 1-500 Mfg code 70470	AR	
-85	69038	. SUPPORT, Fuel tank, one each side	2	
-86	69037	. SUPPORT, Fuel tank, one each side	2	
	443335	. NUT, Lock, 3/8-16	8	
	120918	. SCREW, Cap, hex hd, 3/8-16 x 1-1/2 in. lg	8	
-87	46151	. PLATE, Mounting	1	
	274825	. SCREW, Serrated flange, 1/4 - 20 x 3/4 in. lg	2	
	61728	. RIVNUT, 1/4 - 20	2	
-88	27854	. CABLE, Control, unloader (see figure 5-4)	1	
-89	69085	. HOSE ASSEMBLY, Fuel return	1	
-90	69059	. HOSE ASSEMBLY, Bypass to oil filter	1	
-91	66981	. ELBOW, 90°, JIC, 1-1/4 NPT x 1-1/4 37°	2	
-92	69058	. HOSE ASSEMBLY, Oil filter to compressor	1	
-93	66981	. ELBOW, 90° JIC, 1-1/4 NPT x 1-1/4 37°	2	
-94	80887	. THERMAL BY-PASS ASSY, (See figure 5-9)	1	
	443339	. NUT, Lock, 1/2 - 13	2	
	122459	. SCREW, Cap, hex hd, 1/2 - 13 x 2 in. lg	2	
-95	69039	. OIL FILTER ASSEMBLY (See figure 5-8)	1	
	443335	. NUT, Lock, 3/8-16	4	
	122145	. SCREW, Cap, hex hd, 3/8-16 x 1-1/4 in. lg	4	
	120394	. WASHER, Flat, 3/8 in.	4	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1-96	69070	. BRACKET, Mounting, oil filter	1	
	443335	. NUT, Lock, 3/8-16	2	
	60744	. WEDGE, Washer, 3/8 in.	2	
	120918	. SCREW, Cap, hex hd, 3/8-16 x 1-1/2 in. lg	2	
-97	48414	. THERMOSWITCH	1	
-98	144042	. BUSHING, Reducing, 3/4 NPT to 1/2 NPT	1	
-99	218859	. BUSHING, Reducing, 2 NPT to 3/4 NPT	1	
-100	69067	. TEE, Street, 2 NPT	1	
-101	81433	. HOSE, Discharge	1	
-102	81431	. CLAMP, Discharge hose	2	
-103	81429	. ADAPTER, Discharge	2	
-104	179439	. ELBOW, Street, 90°, 2 NPT	1	
-105	143935	. PLUG, Pipe, sq hd, 1/2 NPT	1	
-106	14034	. VALVE, Globe, 1/2 NPT	1	
-107	192077	. NIPPLE, Pipe, 1/2 NPT x 2-1/2 in. lg	1	
-108	127961	. ELBOW, Street, 90°. 1/2 NPT	1	
-109	69019	. OIL SEPARATOR ASSY (See figure 5-5)	1	
	443339	. NUT, Lock, 1/2 - 13	4	
	120396	. WASHER, Flat, 1/2 in.	10	
	122446	. SCREW, Cap, hex hd, 1/2 - 13 x 1-3/4 in. lg	4	
-110	66992	. BRACKET, Mounting	1	
	122168	. SCREW, Cap, hex hd, 3/8-16 x 1-3/4 in. lg	1	
	60886	. CLIP, Tube	1	
	9416918	. NUT, Serrated flange, 1/4-20	1	
	273771	. SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	1	
-111	80221	. BRACKET, Spring	1	
	122168	. SCREW, Cap, hex hd, 3/8-16 x 1-3/4 in. lg	1	
-112	66993	. BRACKET, Mounting	1	
	122168	. SCREW, Cap, hex hd, 3/8 - 16 x 1-3/4 in. lg	1	
	60886	. CLIP, Tube	1	
	9416918	. NUT, Serrated flange, 1/4 - 20	1	
	273771	. SCREW, Serrated flange, 1/4 - 20 x 1/2 in. lg	1	
-113	69001	. COMPRESSOR ASSEMBLY (See figure 5-7)	1	
	120918	. SCREW, Cap, hex hd, 3/8 - 16 x 1-1/2 in. lg	11	
	120394	. WASHER, Lock, 3/8 in.	11	
	25673	. BUSHING, Drive, compressor	8	
	44056	. PIN, Drive, compressor	8	
	47737	. STRAP, Locking, drive pin	4	
-114	144039	. BUSHING, Reducing, 1/2 to 3/8 NPT	1	
-115	127956	. BUSHING, Reducing, 3/8 to 1/4 NPT	1	
-116	48641	. SWITCH, Temperature, high water	1	
-117	69014	. FAN	1	
	122181	. SCREW, Cap, hex hd, 3/8-16 x 2 in. lg	4	
	120382	. WASHER, Lock, 3/8 in.	4	
-118	69080	. SPACER, Fan	1	
-119	69006	. ENGINE ASSY, Model 6414D (see Part II for engine parts manual	1	
-120	80480	. MOUNT, Vibration, engine	4	
	80138	. WASHER, Vibration mount	8	
	443343	. NUT, Lock, 5/8-11	4	
	428715	. SCREW, Cap, hex hd, 5/8-11 x 4 in. lg	4	
-121	81342	. MOUNT, Engine, rear, curb side, RH	1	
	81343	. MOUNT, Engine, rear, road side, LH	1	
	120426	. SCREW, Cap, hex hd, 1/2-13 x 1-1/4 in. lg	8	
	120384	. WASHER, Lock, 1/2 in.	8	
-122	81344	. MOUNT, Engine, front, curb side, RH	1	
	81345	. MOUNT, Engine, front, road side, LH	1	
	442833	. NUT, Lock, 9/16-12	2	
	122617	. SCREW, Cap, hex hd, 9/16-12 x 2-1/2 in. lg	2	
	428217	. SCREW, Cap, hex hd, 5/8-11 x 1-1/2 in. lg	2	
	121574	. WASHER, Lock, 5/8 in.	2	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1-123	81338	. BASE, Mount, engine	4	
	443339	. NUT, Lock, 1/2-13	8	
	60734	. WASHER, Wedge, 1/2	8	
	122459	. SCREW, Cap, hex hd, 1/2-13 x 2 in. lg	8	
	120396	. WASHER, Flat, 1/2 in.	16	
-124	61144	. CHAIN, Safety	2	
	120378	. NUT, Hex, 1/2-13	2	
	120384	. WASHER, Lock, 1/2 in.	2	
-125	63993	. TIRE AND TUBE, 7:50-15, 8 ply, Tube No. 79T	4	
-126	68742	. WHEEL, 15 x 6, drop center	4	
-127	80314	. AXLE ASSEMBLY (See figure 5-10 thru 5-12)	1	
-128	80308	. FRAME ASSEMBLY	1	

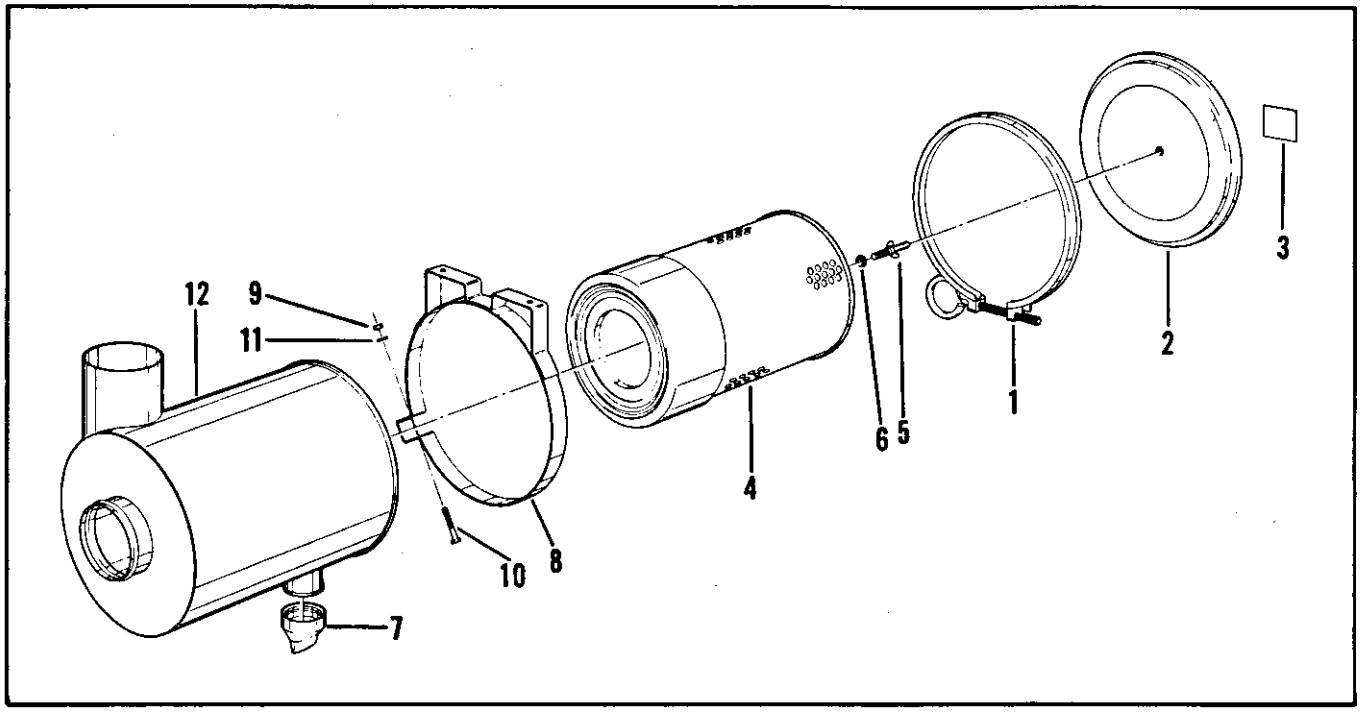

Figure 5-2. Air Cleaner Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-2	CD1623500	CLEANER ASSEMBLY, Air (00736) (16004 PN 62812) ..... (see index 33, figure 5-1 for NHA)	REF	
-1	CD1626001-311	. CLAMP ASSEMBLY, Cover (00736)	1	
-2	CD1623-101	. COVER (00736)	1	
-3	A19868-2	. DECAL (00736)	1	
-4	CD1626001-826	. ELEMENT, Filter (00736) (16004 PN 62813)	1	
-5	CD0511-212	. BOLT, Wing (AP) (00736)	1	
-6	A19892-56	. WASHER, Seal (AP) (00736)	1	
-7	CD0511500-170	. VALVE, Unloader (00736)	1	
-8	CD1626001-240	. BRACKET ASSEMBLY, Mounting (00736) (16004 PN 62814)	2	
-9	120377	. . NUT, Hex, 3/8-16NC (24617)	1	
-10	122188	. . SCREW, Cap, hex hd, 3/8-16NC x 2-1/4 in. lg (24617)	1	
-11	120382	. . WASHER, Lock, split, 3/8 in. (24617)	1	
-12	CD1623500-156	. BODY, Filter (00736)	1	

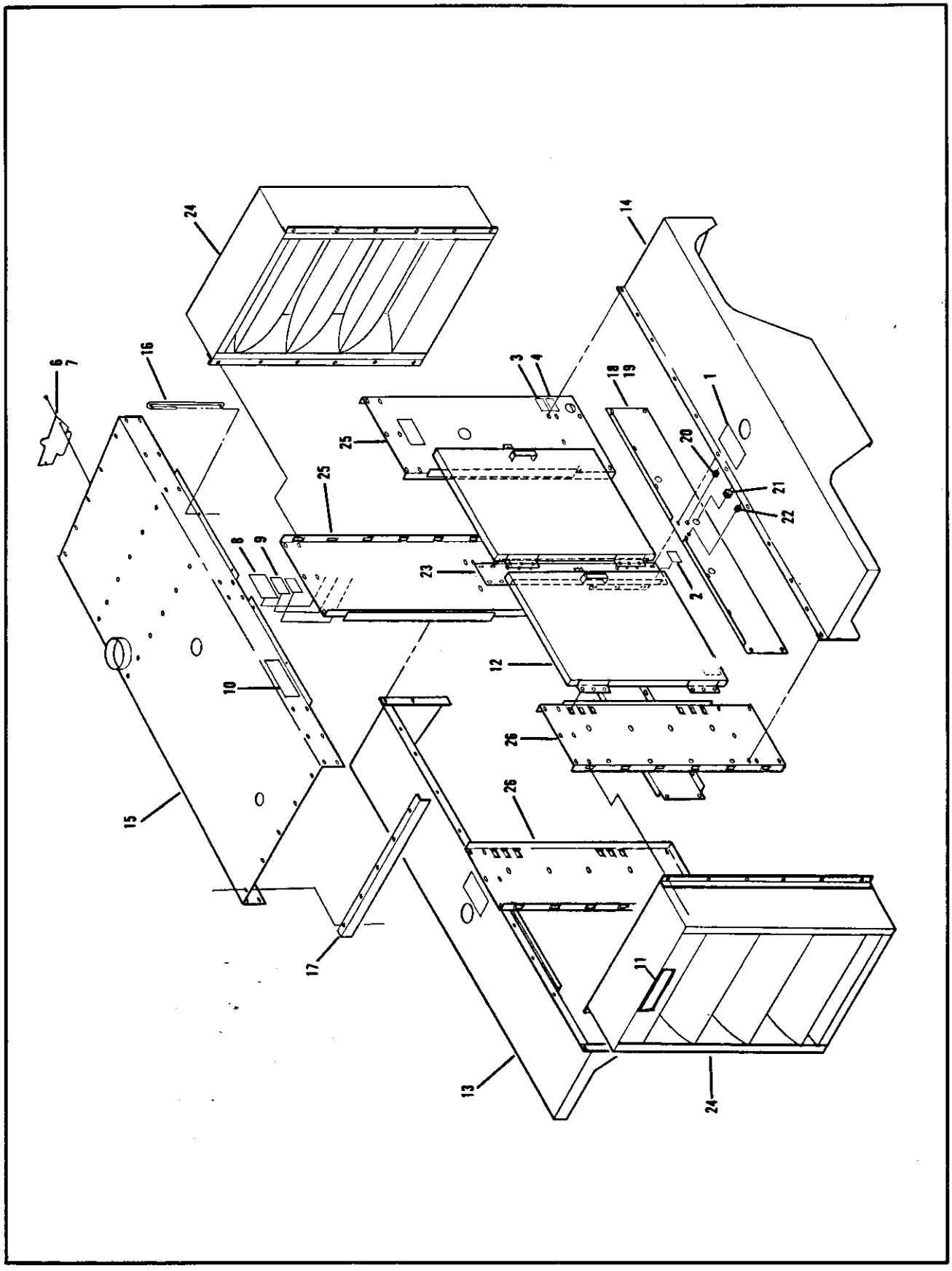

Figure 5-3. Housing Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-3-	No Number	HOUSING GROUP (See figure 5-1 for NHA)	REF	
-1	66142	. DECAL, Diesel fuel or JP-5	2	
-2	60837	. DECAL, Caution negative ground	2	
-3	63303	. DECAL, Oil Recommendation	1	
-4	61872	. DECAL, Fill to overflowing	1	
-5	67839	. PLATE, Instruction (not shown)	1	
-6	48717	. PLATE, DAVEY Logo	1	
-7	69071	. DECAL, 365 mounted on 48717 plate	1	
-8	69094	. PLATE, Transportation data	1	
-9	68600	. PLATE, Identification	1	
-10	69095	. DECAL, USN Registration no.	2	
-11	14621	. PLATE, Name	1	
-12	69063	. DOOR	4	
	273771	. SCREW, Serrated flange hd, 1/4-20 x 1/2 in. lg	24	
	9416918	. NUT, Serrated flange, 1/4-20	24	
-13	69049	. FENDER, Curb side, RH	1	
-14	69050	. FENDER, Road side, LH	1	
	273771	. SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	8	
	274825	. SCREW, Serrated flange, 1/4-20 x 3/4 in. lg	28	
	9416918	. NUT, Serrated flange, 1/4-20	36	
-15	69064	. ROOF	1	
	273771	. SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	37	
	274825	. SCREW, Serrated flange, 1/4-20 x 3/4 in. lg	10	
	9416918	. NUT, Serrated flange, 1/4-20	47	
-16	69068	. RETAINER, Door	4	
-17	81123	. FILLER, Baffle	2	
-18	69029	. PANEL, Lower, curb side, RH	1	
-19	69030	. PANEL, Lower, road side, LH	1	
	273771	. SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	4	
	9416918	. NUT, Serrated	4	
	443335	. NUT, Lock, 3/8-16	10	
	60744	. WEDGE WASHER, 3/8 in.	10	
	120394	. WASHER, Flat, 3/8 in.	10	
	120918	. SCREW, Cap, hex hd, 3/8-16 x 1-1/2 in. lg	10	
-20	48686	. GROMMET, Fuel vent tube	2	
-21	46354	. GROMMET, Fuel gauge wire	1	
-22	49311	. GROMMET, Fuel return line	1	
-23	69092	. MULLION, Curb side, RH	1	
	69054	. MULLION, Road side, LH	1	
-24	80307	. BAFFLE	2	
	274825	. SCREW, Serrated flange, 1/4-20 x 3/4 in. lg	24	
	80075	. NUT, Caged, 1/4-20	24	
-25	69031	. PANEL, Rear, curb side, RH	1	
	69032	. PANEL, Rear, road side, LH	1	
	443335	. NUT, Lock, 3/8-16	6	
	60744	. WEDGE WASHER, 3/8 in.	6	
	120394	. WASHER, Flat, 3/8 in.	6	
	120918	. SCREW, Cap, hex hd, 3/8-16 x 1-1/2 in. lg	6	
-26	69027	. PANEL, Rad. cooler curbside (see index 55, figure 5-1 for NHA)	REF	
	69026	. PANEL, Rad. cooler curbside (see index 55, figure 5-1 for NHA)	REF	
	DC-V1S	FOAM SHEET, Sound dampening, 54" x 72" (99806) (16004 PN 64114) cut to fit part	3	
	1142	ADHESIVE, Foam sheets (70707) (16004 PN 64115)	2 qts.	
	EC 1099	ADHESIVE, Foam sheets (alternate) (28136)	2 qts.	

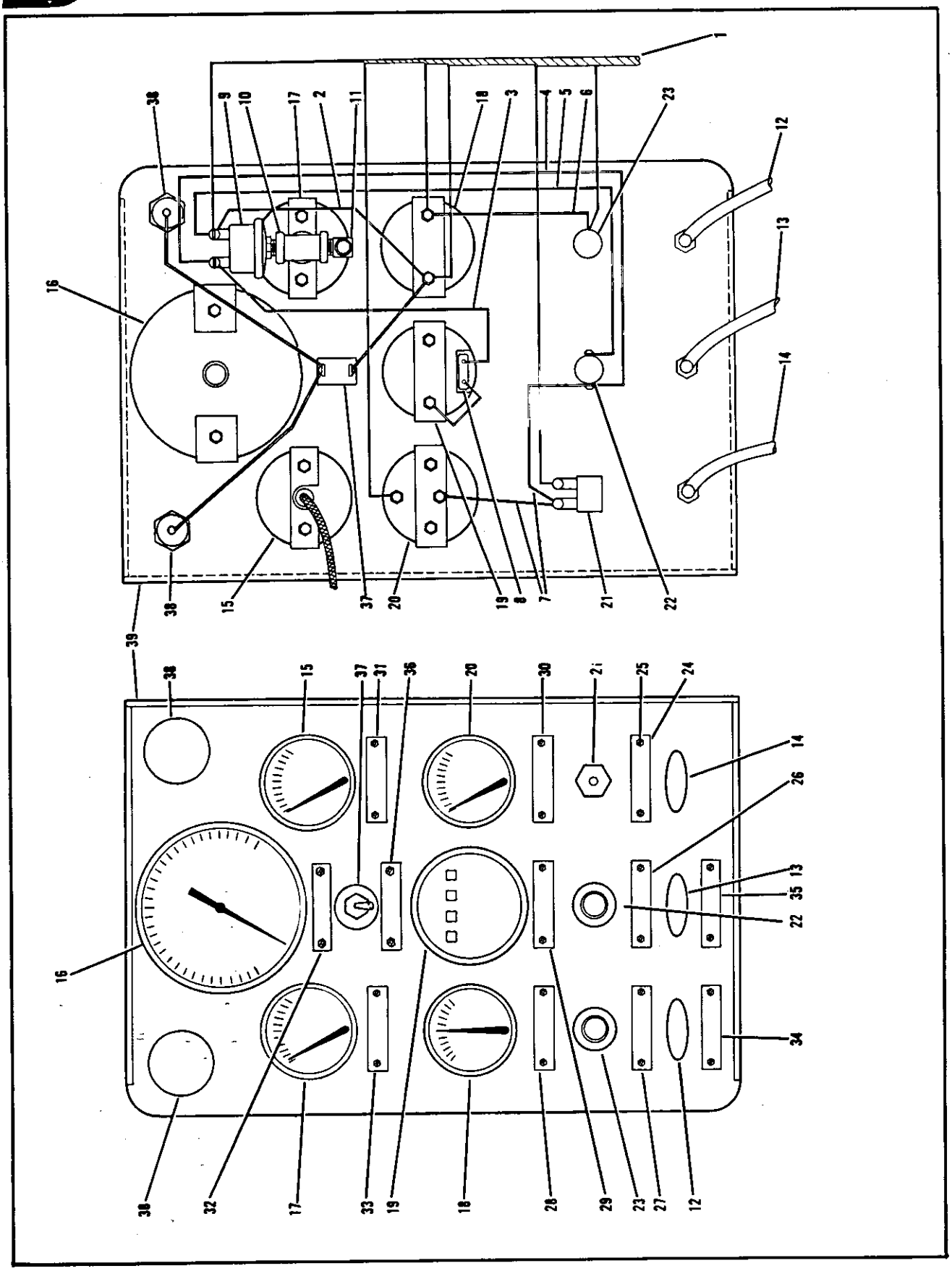

Figure 5-4. Instrument Panel Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-4	69053	INSTRUMENT PANEL ASSEMBLY (See index 25, figure 5-1 for NHA)....	REF	
-1	66995	WIRE ASSEMBLY (See index 25, figure 5-1 for NHA)	REF	
-2	49294	. WIRE HARNESS	1	
-3	24855	. TERMINAL, Ring (No. 10)	1	
-4	49622	. WIRE ASSEMBLY (14 Ga brn)	1	
-5	66986	. WIRE ASSEMBLY (14 Ga or)	1	
-6	49583	. WIRE ASSEMBLY (14 Ga wht)	1	
-7	66985	. WIRE ASSEMBLY (14 Ga brn)	2	
-8	24855	. TERMINAL, Ring (No. 10)	1	
-9	66987	. SWITCH, Pressure (74400 PN M4008)	1	
-10	144082	. TEE	1	
-11	41899	. ELBOW	1	
-12	LP3864R-36	. STARTING AID, Cable (see index 1, figure 5-13 for NHA)	REF	
-13	27854	. CABLE, Control (see index 25, figure 5-1 for NHA)	REF	
-14	27854	. CABLE, Control (see index 25, figure 5-1 for NHA)	REF	
-15	24157	. GAUGE, Temp, water (96452 PN 2055-42)	1	
-16	14950	. GAUGE, Pressure, air (61349 PN P844U)	1	
	144068	. COUPLING	1	
-17	62085	. GAUGE, Pressure, oil (09393 PN 2550-108)	1	
-18	48271	. AMMETER (09527 PN 4015-98)	1	
-19	61035	. HOURMETER (31211 PN HM24-2)	1	
-20	42341	. GAUGE, Fuel (57733 PN D-378-P)	1	
-21	46551	. SWITCH, Ignition (13445 PN 5011)	1	
-22	14073	. SWITCH, Pushbutton (87930 PN 5570-9)	1	
-23	14073	. SWITCH, Pushbutton (87930 PN 5570-9)	1	
-24	66169	. NAMEPLATE	1	
-25	9426053	. SCREW, Self tapping (AP)	22	
-26	61624	. NAMEPLATE	1	
-27	61618	. NAMEPLATE	1	
-28	66161	. NAMEPLATE	1	
-29	66162	. NAMEPLATE	1	
-30	60493	. NAMEPLATE	1	
-31	60491	. NAMEPLATE	1	
-32	60487	. NAMEPLATE	1	
-33	66160	. NAMEPLATE.....	1	
-34	63702	. NAMEPLATE	1	
-35	66175	. NAMEPLATE	1	
-36	41998	. NAMEPLATE	1	
-37	27670	. SWITCH, Toggle	1	
	22671	. PLATE, Switch, off, on	1	
-38	80223	. LIGHT, Panel	2	
	49058	. WIRE, Assy	1	
-39	69052	. PANEL, Instrument	1	

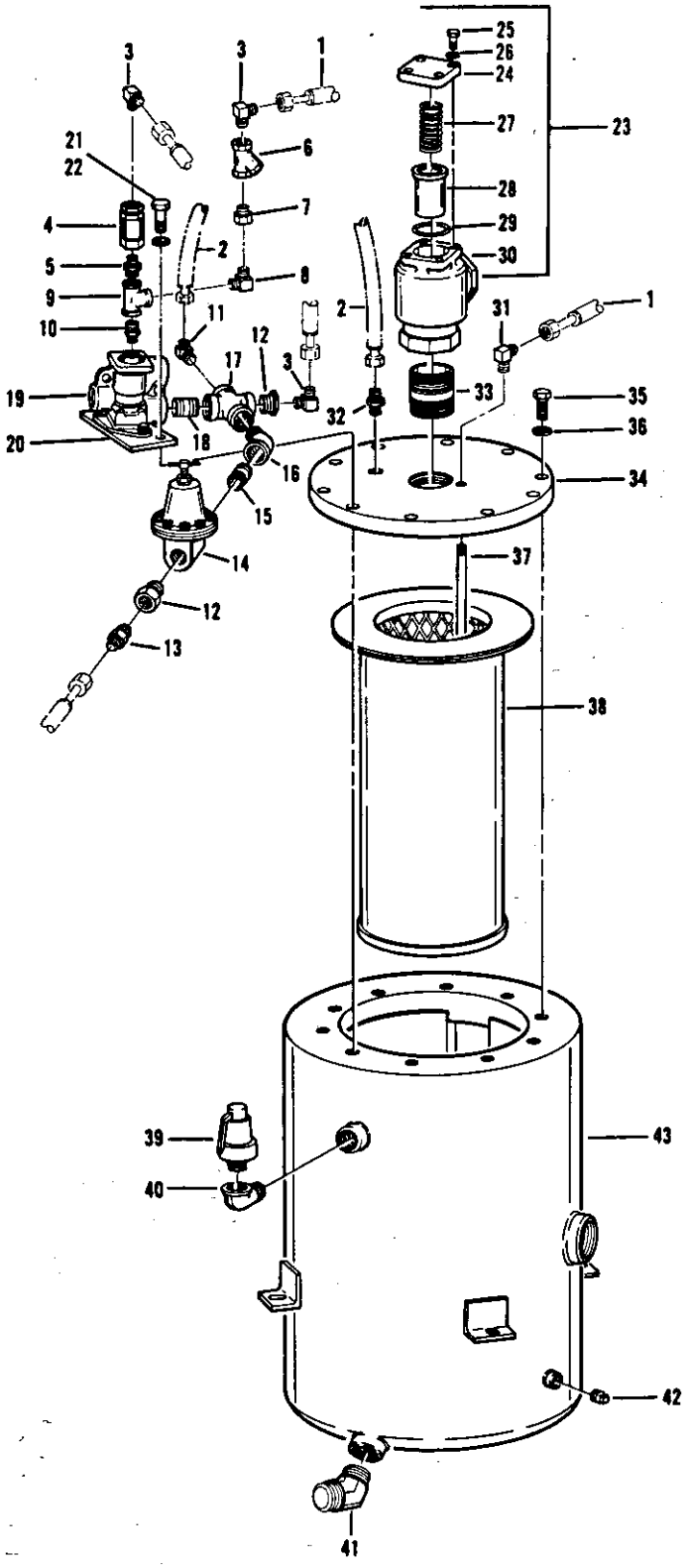

Figure 5-5. Oil Separator Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-5	69019	SEPARATOR ASSEMBLY, Oil (see index 109, figure 5-1 for NHA)	REF	
-1	46163	. HOSE ASSEMBLY (See index 59, figure 5-1 for NHA)	REF	
-2	61074	. HOSE ASSEMBLY (See index 58, figure 5-1 for NHA)	REF	
-3	44209	. ELBOW, Tube, 1/4 NPT to 5/16 tube	3	
-4	62234	. SIGHT, Flow	1	
-5	65610	. NIPPLE, Hex, 1/4 NPT	1	
-6	47690	. STRAINER	1	
-7	49777	. ORIFICE	1	
-8	28915	. ELBOW, Tube, 1/4 NPT	1	
-9	144083	. TEE, Pipe, 1/4 NPT	1	
-10	66454	. ADAPTER, 1/8 NPT x 1/4 NPT	1	
-11	27691	. ELBOW, Tube, 1/2 NPT to 3/8 tube	1	
-12	144038	. BUSHING, Reducing, 1/2 NPT to 1/4 NPT	2	
-13	43024	. ADAPTER, 1/4 NPT to 5/16 tube	1	
-14	64407	. REGULATOR, Pressure (see figure 5-6)	1	
-15	192074	. NIPPLE, Close, 1/2 NPT	1	
-16	144120	. ELBOW, Street, 45°, 1/2 NPT	1	
-17	144153	. CROSS, Pipe, 1/2 NPT	1	
-18	219643	. NIPPLE, Pipe, 1/2 NPT x 1-3/8 in. lg	1	
-19	68550	. VALVE, Blowdown (FSCM 24522 No. 501-A-2-12-21)	1	
	123473	. SCREW, Cap, hex hd, 5/16-18 x 5/8 in. lg	2	
	120214	. WASHER, Lock, 5/16 in.	2	
-20	69076	. PLATE, Mounting, blowdown valve	1	
-21	73485	. SCREW, Cap, hex hd	2	
-22	131016	. WASHER, Lock, 5/8 in.	2	
-23	69007	. VALVE ASSEMBLY, Minimum pressure	1	
-24	69010	. . COVER, Valve	1	
-25	120741	. . SCREW, Cap, hex hd	4	
-26	120214	. . WASHER, Lock	4	
-27	69009	. . SPRING, Valve	1	
-28	69008	. . PISTON, Valve	1	
-29	69012	. . O-RING	1	
-30	69011	. . BODY, Valve	1	
-31	44209	. ELBOW, Tube, 1/4 NPT to 5/16 tube	1	
-32	29387	. ADAPTER, Tube, 1/2 NPT to 3/8 tube	1	
-33	219837	. NIPPLE, Close, 2 NPT	1	
-34	No Number	. COVER, Tank, separator (furnished w/tank)	REF	
-35	67164	. BOLT, Separator cover (furnished w/tank)	8	
-36	121574	. WASHER, Lock, 5/8 in.	8	
-37	69075	. TUBE, Drain	1	
-38	69020	. ELEMENT	1	
-39	14778	. VALVE, Safety	1	
-40	127792	. ELBOW, Street, 90°, 1 NPT	1	
-41	80942	. ELBOW, Tube, 45°, 1-1/4 JIC	1	
-42	143951	. PLUG, Pipe, 1/2 NPT	1	
-43	69022	. TANK, Separator	1	

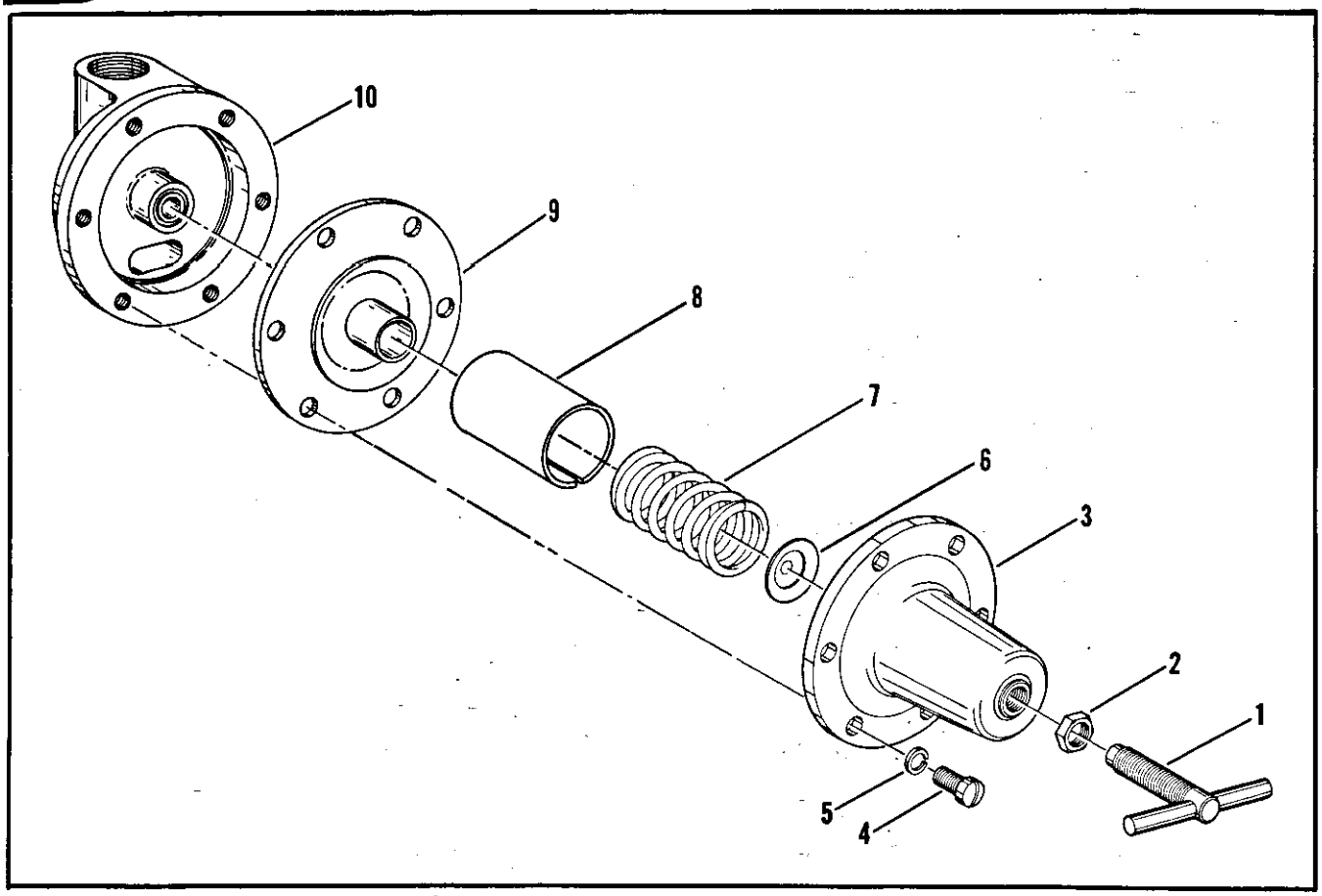

Figure 5-6. Air Pressure Regulator Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-6	64407	REGULATOR ASSEMBLY, Air pressure (see index 11, figure 5-5 for NHA)	REF	
-1	62507	. SCREW, Adjusting	1	
-2	120369	. NUT, Hex	1	
-3	62503	. SPRING, Housing	1	
-4	132259	. SCREW, Mch fil hd (AP)	6	
-5	120380	. WASHER, Lock, split (AP)	6	
-6	62502	. SEAT, Adjusting screw	1	
-7	62501	. SPRING, Regulator	1	
-8	60049	. TUBE, Snubber, spring	1	
-9	64406	. DIAPHRAGM ASSEMBLY	1	
-10	64405	. BODY, Regulator	1	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-7-57	47325	. . GASKET	1	
-58	46869	. . BEARING	1	
-59	122017	. . BOLT, Hx hd (AP)	4	
-60	120214	. . WASHER, Lock (AP)	4	
-61	63196	. . RETAINER, Bearing	1	
-62	46875	. . COVER	1	
-63	28217	. . BOLT, Hx hd (AP)	5	
-64	428712	. . BOLT, Hx hd (AP)	1	
-65	26393	. . WASHER, Seal (AP)	6	
-66	153932	. . PLUG, Pipe	1	
-67	44428	. . O-RING	1	
-68	48185	. . COUPLING	1	
-69	48479	. . BOLT (AP)	1	
-70	131046	. . WASHER, Lock (AP)	1	
-71	46882	. . RETAINER	1	
-72	46890	. . GRIPSPRING	2	
-73	46889	. . KEY	1	
-74	46872	. . COVER, Seal, oil	1	
	143932	. . . PLUG, Pipe	1	
-75	122027	. . BOLT, Hx hd (AP)	6	
-76	120214	. . WASHER, Lock (AP)	6	
-77	47325	. . GASKET	1	
-78	46879	. . SEAL	1	
-79	46886	. . O-RING	1	
-80	47716	. . SLEEVE, Sealing	1	
-81	46878	. . SLEEVE	1	
-82	24978	. . O-RING	1	
-83	69005	. . ADAPTER	1	
-84	428703	. . BOLT, Hx hd (AP)	6	
-85	26393	. . WASHER, Seal	6	
-86	44443	. . GASKET	1	
-87	No Number	. . ROTOR, End cover and shaft assembly (not procurable separately).	REF	
-88	48768	. . . BLADE, Rotor	16	
-89	46868	. . . BEARING	1	
-90	24986	. . . KEY	1	
-91	69003	. . . ROTOR	1	
-92	46887	. . . COVER	1	
-93	69004	. . . SHAFT	1	
-94	44972	. . . NAMEPLATE	1	
-95	9426053	. . . SCREW, Self tapping	2	
-96	41000	. . . ELBOW	1	
-97	44428	. . O-RING	1	
-98	9314	. . BALL	1	
-99	43393	. . VALVE	1	
-100	43392	. . PLUG	2	
-101	24964	. . O-RING	2	
-102	43394	. . SPRING	2	
-103	66981	. . ELBOW	1	
-104	24636	. . EYEBOLT	1	
-105	69002	. . STATOR	1	

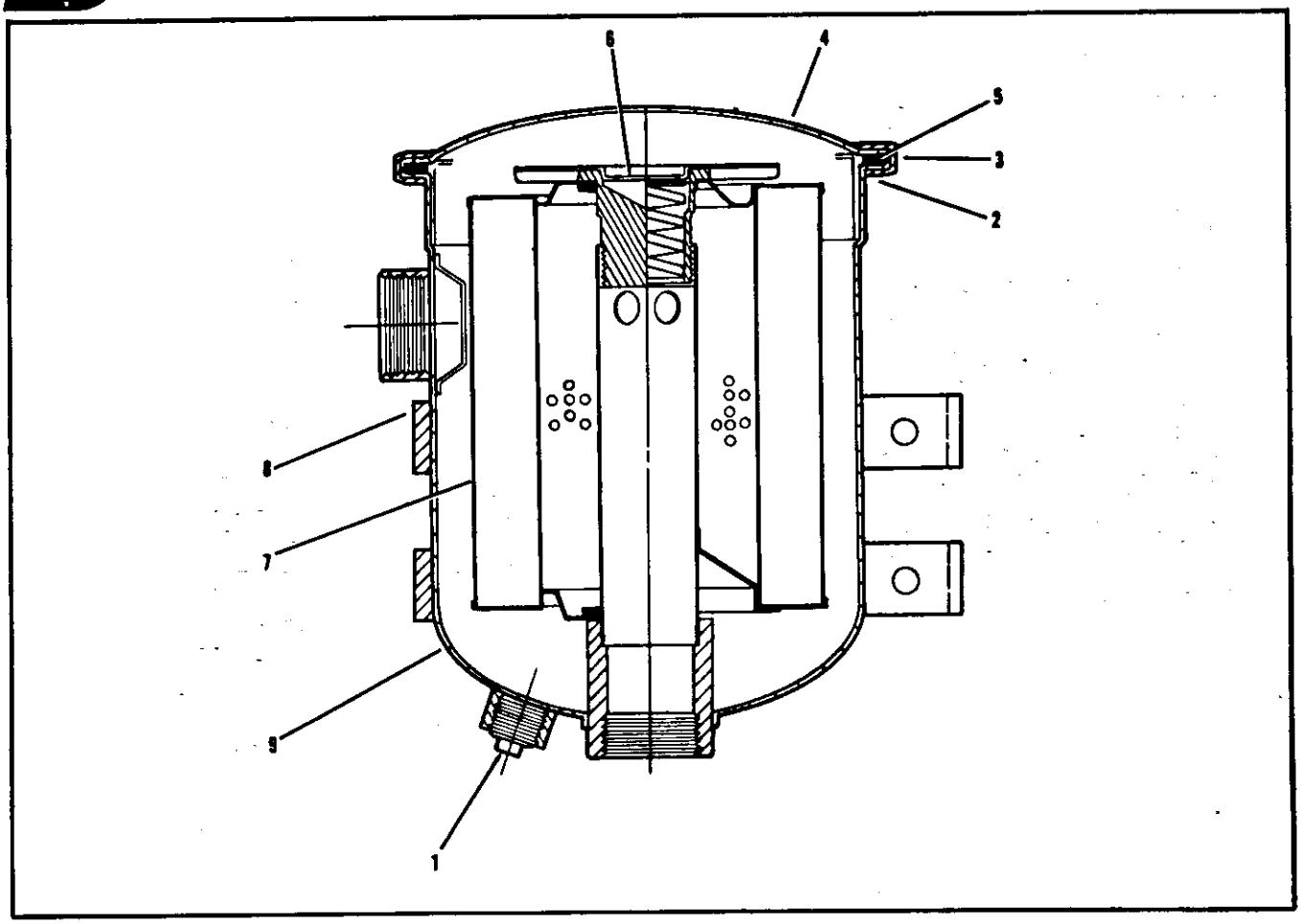

Figure 5-8. Compressor Oil Filter Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-8	69039	OIL FILTER ASSEMBLY, Compressor ..... (see index 95, figure 5- 1 for NHA)	REF	
-1	7886	. PLUG, Drain (81321)	1	
-2	6654655	. RING, Clamping (81321)	2	
-3	6653481	. SCREW, Cap (AP) (81321)	2	
-4	No Number	. COVER, Housing (not procurable separately) (81321)	1	
-5	69041	. GASKET, Cover (81321 PN 6653463)	1	
-6	6670117	. RETAINER, Element (81321)	1	
-7	69040	. ELEMENT, Filter (81321 PN P32-42-63104-3)	1	
-8	22202	. BRACKET, Mounting (81321)	2	
-9	No Number	. BASE, Filter (81321) (not procurable separately)	1	

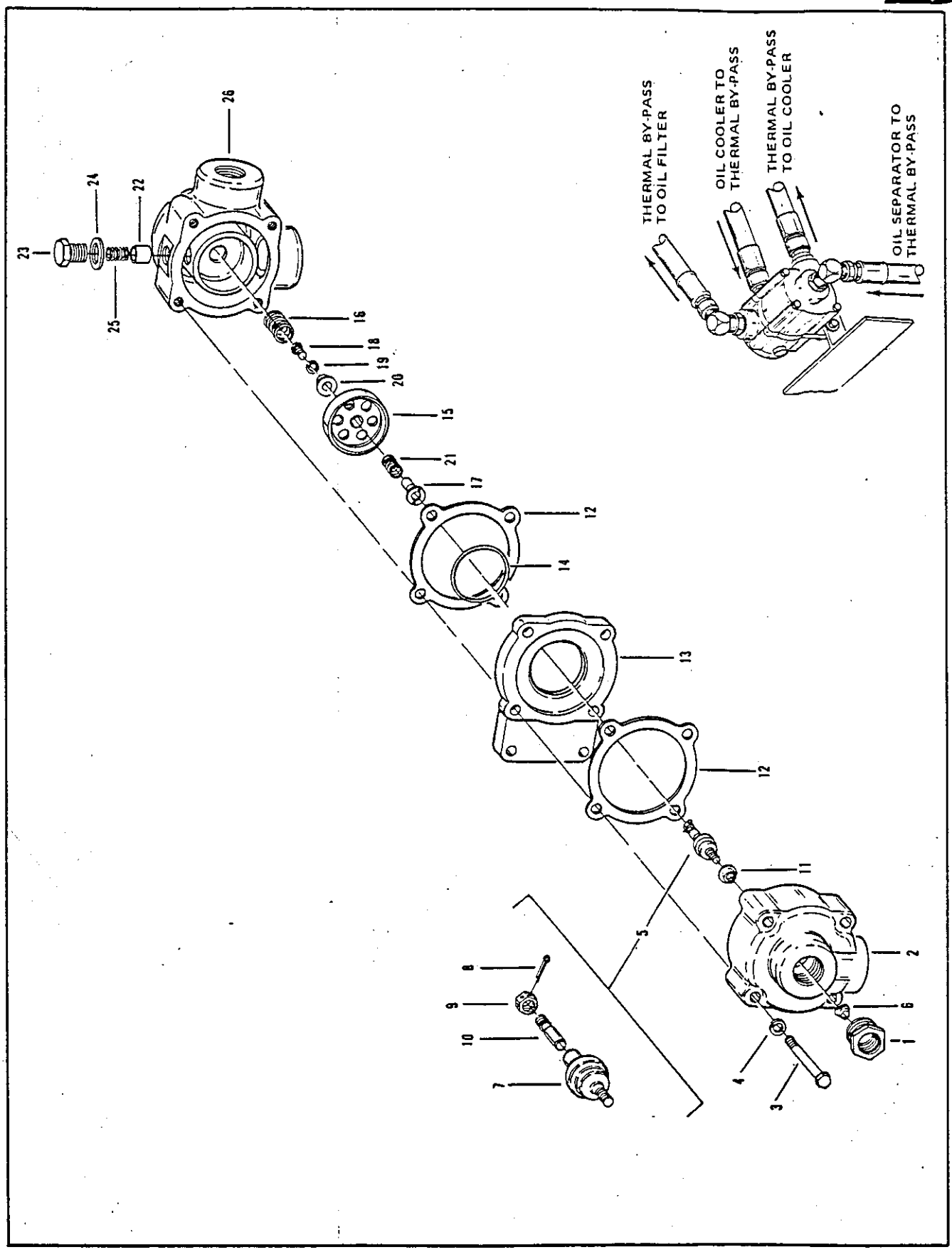

Figure 5-9. Thermal By-Pass Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-9	80887	THERMAL BY-PASS ASSEMBLY (See index 94, figure 5-1 NHA)	REF	
-1	192654	. BUSHING, Reducing	4	
-2	48792	. COVER, Inlet	1	
-3	111300	. BOLT, Hex head (AP)	4	
-4	28145	. WASHER, Lock (AP)	4	
-5	40434	. ELEMENT ASSEMBLY, Power	1	
-6	49275	. NUT (AP) (79136 PN 5300-1/4-28)	1	
-7	40664	. . ELEMENT, Power	1	
-8	137141	. . PIN, Cotter	1	
-9	40666	. . NUT, Hex	1	
-10	40665	. . PLUNGER	1	
-11	61211	. BUSHING	1	
-12	48795	. GASKET	2	
-13	48794	. BODY	1	
-14	40696	. O-RING	1	
-15	48796	. SHUTTLE	1	
-16	40679	. SPRING, Compression	1	
-17	46175	. PLUNGER, Valve, by-pass	1	
-18	121900	. BOLT, Hex hd (AP)	1	
-19	28149	. WASHER, Lock (AP)	1	
-20	46174	. GUIDE, Spring	1	
-21	40678	. SPRING	1	
-22	62443	. SEAT, Valve	1	
-23	62442	. BODY, Valve	1	
-24	26826	. WASHER	1	
-25	62444	. SPRING	1	
-26	62445	. COVER, Outlet	1	

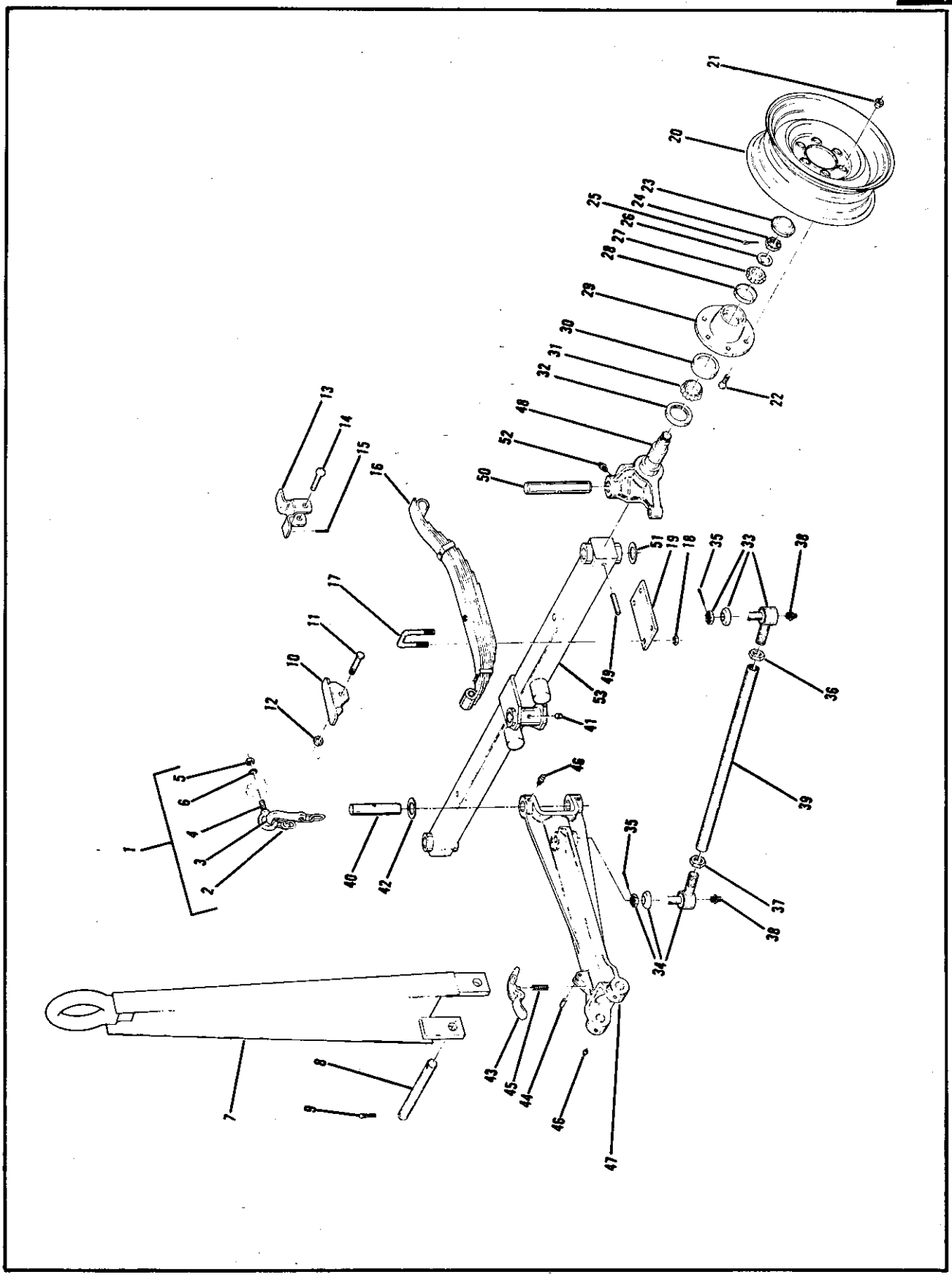

Figure 5-10. Drawbar and Front Axle Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-10	No Number	DRAWBAR AND FRONT AXLE GROUP (See figure 5-1 for NHA)	REF	
-1	61144	. CHAIN ASSEMBLY, Safety (22938)	2	
-2	49496	. . CHAIN, Link	2	
-3	49499	. . HOOK, Safety	2	
-4	24636	. . BOLT, Eye	2	
-5	120378	. NUT, Hex (AP)	2	
-6	120384	. WASHER, Lock, split (AP)	2	
-7	6-3504	. DRAWBAR ASSEMBLY (22938)	1	
-8	5406-2	. . PIN, Hinge (AP)	1	
-9	4800-6	. . PIN, Cotter (AP)	1	
	337-21910	. AXLE ASSEMBLY, Front (22938)	1	
	1-4250	. . BRACKET ASSY, Spring, front	2	
-10	4250	. . . BRACKET, Front	2	
-11	4901-19	. . . BOLT, Hx hd (AP)	2	
-12	4601-33	. . . NUT, Hex (AP)	2	
	1-4251	. . BRACKET ASSY, Spring, rear	2	
-13	4251	. . . BRACKET, Rear	2	
-14	5403-1	. . . RIVET (AP)	2	
-15	4800-3	. . . PIN, Cotter (AP)	2	
-16	1-4010-3	. . SPRING	2	
-17	5100-9	. . U-BOLT (AP)	2	
-18	4601-7	. . NUT, Hx, self locking (AP)	8	
-19	5600-2	. . PLATE, Tie, spring	2	
-20	68742	. WHEEL, 15 x 6 (16004) (see index 133, figure 5-1 for NHA)	REF	
	13-3615	. . HUB ASSEMBLY, Front	1	
-21	4603-1	. . . NUT, Stud, wheel (AP)	12	
-22	6251-11	. . . STUD, Wheel (AP)	12	
-23	6323	. . . CAP, Grease	2	
-24	4600-1	. . NUT, Spindle	2	
-25	4800-5	. . PIN, Cotter, spindle	2	
-26	4702-1	. . WASHER, Spindle	2	
-27	6067	. . . CONE, Bearing, outer (60038 PN L44649)	2	
-28	6158	. . . CUP, Bearing, outer (60038 PN L44610)	2	
-29	3615	. . . HUB, Front	2	
-30	6157	. . . CUP, Bearing, Inner (60038 PN L68111)	2	
-31	6063	. . . CONE, Bearing, Inner	2	
-32	6317	. . . SEAL, Grease	2	
	3905-262	. . TIE ROD ASSEMBLY (22938)	2	
-33	3954	. . . BALL JOINT, Left hand, with nut	2	
-34	3953	. . . BALL JOINT, Right hand, with nut	2	
-35	4800-1	. . . PIN, Cotter	4	
-36	4605-1	. . . NUT, Jam, LH	2	
-37	4605-2	. . . NUT, Jam, RH	2	
-38	5801	. . . FITTING, Lube	4	
-39	3902-222	. . . TUBE, Tie rod	2	
	1-3864	. . ARM ASSEMBLY, Center (22938)	1	
-40	5408	. . PIN, Center (AP)	1	
-41	5000-8	. . PIN, Roll (AP)	1	
-42	4701-9	. . WASHER, Flat	1	
-43	5835	. . . PEDAL, Latch	1	
-44	5000-1	. . . PIN, Roll (AP)	1	
-45	4006	. . . SPRING, Latch	1	
-46	5800	. . FITTING, Lube	4	
-47	3864	. . . ARM, Center	1	
-48	7-3807	. . SPINDLE-KNUCKLE ASSEMBLY, LH	1	
	8-3807	. . SPINDLE-KNUCKLE ASSEMBLY, RH	1	
-49	5000-8	. . PIN, Roll	2	
-50	5408	. . PIN, King	2	
-51	4701-9	. . WASHER, Flat	2	
-52	5800	. . FITTING, Lube	2	
-53	337-219X-1	. . BEAM ASSEMBLY, Axle	1	

SUPPLEMENT

Subject: Figure 5-10 - Drawbar and Front Axle Group 13-3615 - HUB ASSEMBLY, Front

Index No.	21	P/N 4603-1	NUT, Stud, wheel
Index No.	22	P/N 6251-11	STUD, Wheel
Index No.	29	P/N 3615	HUB, Front

ALTERNATE COMPONENTS

12-3615 HUB ASSEMBLY, Front

Index No. 21 and 22 replaced by P/N 4912 - CAPSCREW, Wheel

Index No. 29 P/N 3615 HUB, Front - specify with thread for capscrews

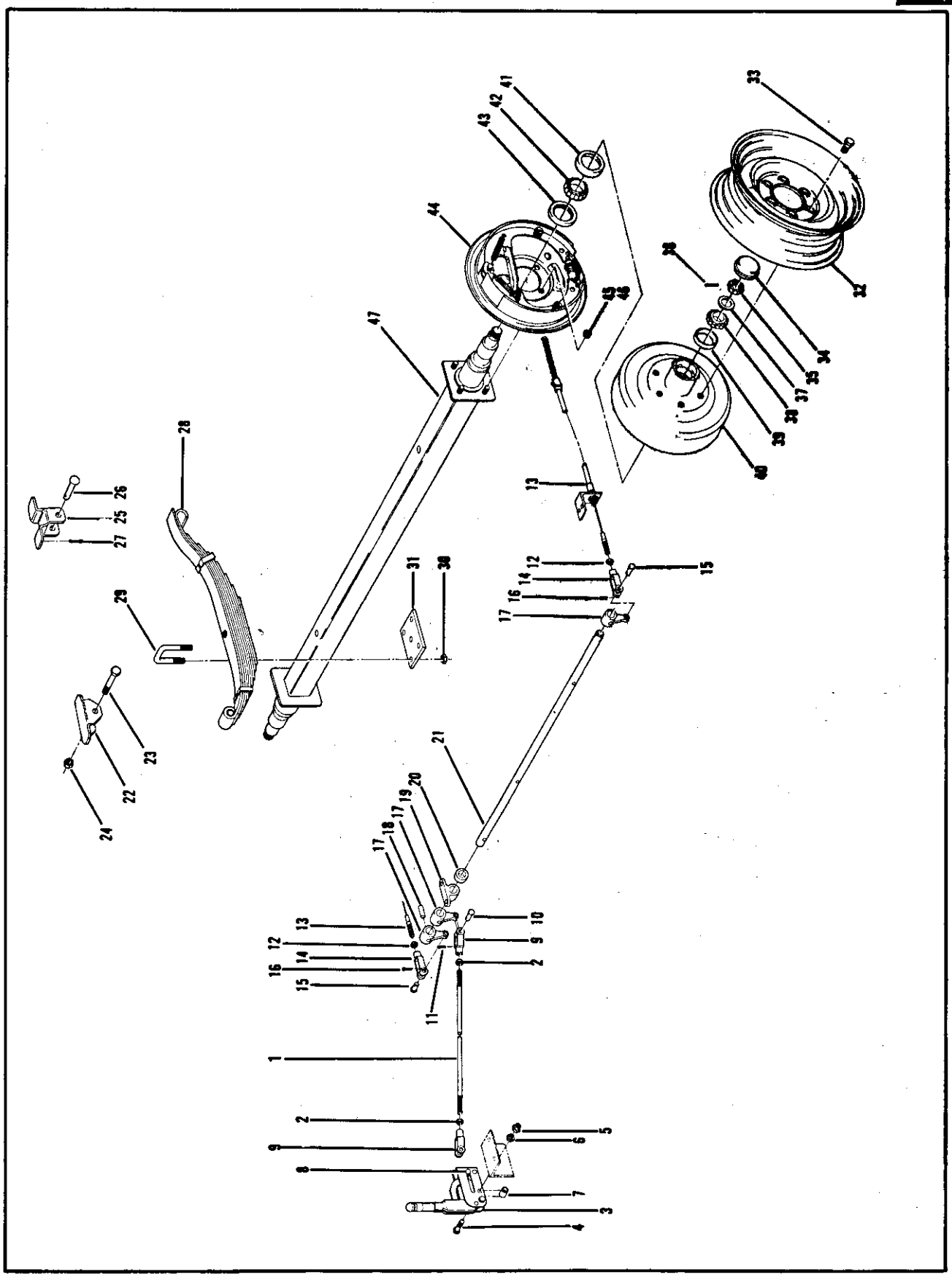

Figure 5-11. Handbrake Lever, Cross Shaft, and Rear Axle Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-11	No Number	HANDBRAKE LEVER, CROSS SHAFT, AND REAR AXLE GROUP ..... (See figure 5-1 for NHA)	REF	
	337-5901	. HANDBRAKE LEVER AND CROSS SHAFT ASSEMBLY (22938)	1	
-1	8300-524	. . ROD, Brake, Actuating	1	
-2	4601-5	. . NUT, Hex, yoke	2	
-3	1-5919	. . LEVER ASSY, Handbrake	1	
-4	122194	. . SCREW, Cap, hx hd (AP)	2	
-5	120377	. . NUT, Hex (AP)	2	
-6	120382	. . WASHER, Lock	2	
-7	5204	. . SPACER	2	
-8	5206	. . PIN, Yoke	1	
-9	5205	. . YOKE, Cable	2	
-10	5206	. . PIN, Yoke	1	
-11	4800-2	. . PIN, Cotter	2	
-12	4601-5	. . NUT, Yoke	2	
-13	3-8319	. . CABLE ASSY, Brake	2	
-14	5205	. . YOKE, Cable	2	
-15	5206	. . PIN, Yoke	2	
-16	4800-2	. . PIN, Collar	2	
-17	5909	. . LEVER, Shaft	3	
-18	5000-2	. . PIN, Roll	3	
-19	5908	. . BEARING, Cross shaft	2	
-20	6319-2	. . COLLAR, Setscrew	2	
-21	5910-337	. . SHAFT, Cross	1	
	337-21410	. AXLE ASSY, Rear (22938)	1	
-22	4250	. . BRACKET, Spring, front	2	
-23	4901-19	. . SCREW, Cap, hx hd (AP)	2	
-24	4601-33	. . NUT, Hex, self locking (AP)	2	
-25	4251	. . BRACKET, Spring, rear	2	
-26	5403-1	. . RIVET (AP)	2	
-27	4800-3	. . PIN, Cotter (AP)	2	
-28	1-4010-3	. . SPRING	2	
-29	5100-9	. . U-BOLT, Spring (AP)	4	
-30	4601-7	. . NUT, U-bolt (AP)	8	
-31	5600-2	. . PLATE, Tie, spring	2	
-32	68742	. WHEEL 15 x 6 (See index 133, Figure 5-1 for NHA)	REF	
-33	4912	. SCREW, Cap, wheel (AP) (specify when ordering)	12	
	3615-6	. HUB AND DRUM ASSY (Specify type when ordering)	2	
-34	6323	. . CAP, Grease	2	
-35	4600-1	. NUT, Hx, slotted (AP)	2	
-36	4800-5	. PIN, Cotter (AP)	2	
-37	4702-1	. WASHER, Spindle (AP)	2	
-38	6067	. . CONE, Bearing, outer (60038 PN L44649)	2	
-39	6158	. . CUP, Bearing, outer (60038 PN L44610)	2	
-40	3615	. . HUB AND DRUM, Brake	2	
-41	6157	. . CUP, Bearing, Inner (60038 PN L68111)	2	
-42	6063	. . CONE, Bearing, inner (60038 PN L68149)	2	
-43	6317	. . SEAL, Grease	2	
-44	8235-5	. BRAKE ASSY, LH (See figure 5-12 for details)	1	
	8235-6	. BRAKE ASSY, RH (See figure 5-12 for details)	1	
-45	4601-19	. . NUT, Hx (AP)	16	
-46	4700-6	. . WASHER, Lock (AP)	16	
-47	337-21410-2	. BEAM ASSY, Axle	1	

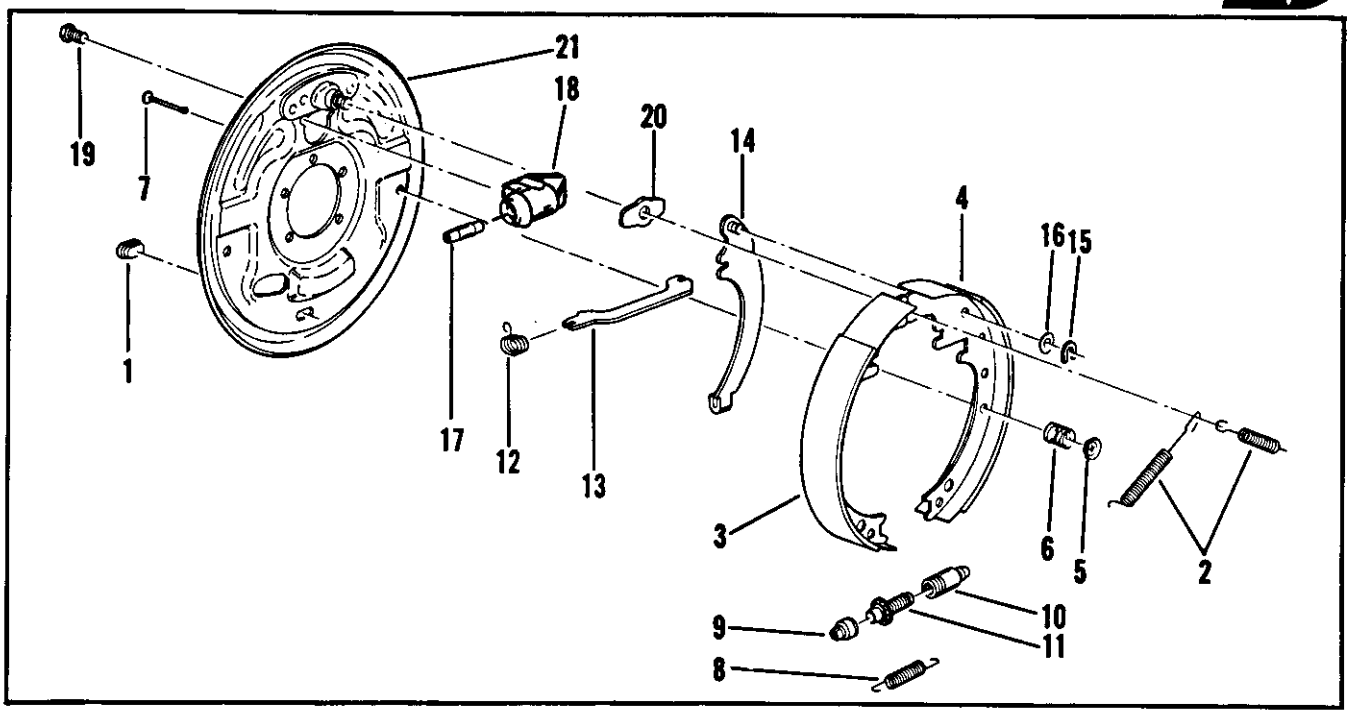

Figure 5-12. Brake Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-12	*3201913LH	BRAKE ASSEMBLY, LH (see index 44, figure 5-11 for NHA)	REF	
	3201914RH	BRAKE ASSEMBLY, RH (see index 44, figure 5-11 for NHA)	REF	
-1	301055	. COVER, Brake adjusting hole	1	
-2	34852	. SPRING, Anchor to shoe, 50 lb, grey	2	
-3	†3202019	. SHOE AND LINING ASSY, Brake, primary	1	
-4	†3202023	. SHOE AND LINING ASSY, Brake, secondary	1	
-5	23969	. CUP, Shoe holddown spring	4	
-6	24784	. SPRING, Shoe holddown, 18 lb, light blue	2	
-7	49341	. PIN, Shoe holddown	2	
-8	23815	. SPRING, Adjusting screw, 30 lb, black	1	
	3202026	. ADJUSTING SCREW ASSEMBLY	1	
-9	304230	. . SOCKET, Adjusting screw	1	
	304214	. . SCREW ASSEMBLY	1	
-10	304229	. . . NUT, Adjusting screw	1	
-11	27099	. . . SCREW, Adjusting	1	
-12	39244	. SPRING, Strut to shoe, 8.5 lb, black	1	
-13	49005	. STRUT, Parking brake lever	1	
-14	321035	. LEVER ASSEMBLY, Parking brake, left hand (shown)	1	
	321036	. LEVER ASSEMBLY, Parking brake, right hand (opposite)	1	
-15	41029	. RETAINER, Lever pin	1	
-16	41647	. WASHER, Spring	1	
-17	47865	. LINK, Connecting, wheel cylinder	1	
-18	617855	. CYLINDER ASSEMBLY, Wheel, left hand (shown)	1	
	617856	. CYLINDER ASSEMBLY, Wheel, right hand (opposite)	1	
-19	47862	. SCREW, Cap, and washer	2	
-20	32594	. PLATE, Shoe guide	1	
-21	3202038	. BACKING PLATE ASSEMBLY, left hand (shown)	1	
	3202039	. BACKING PLATE ASSEMBLY, right hand (opposite)	1	

* All part numbers are those of The Bendix Corp., Brake and Steering Div. (14892)
†† Replacement part no. 3202027 for Lined Shoes Package

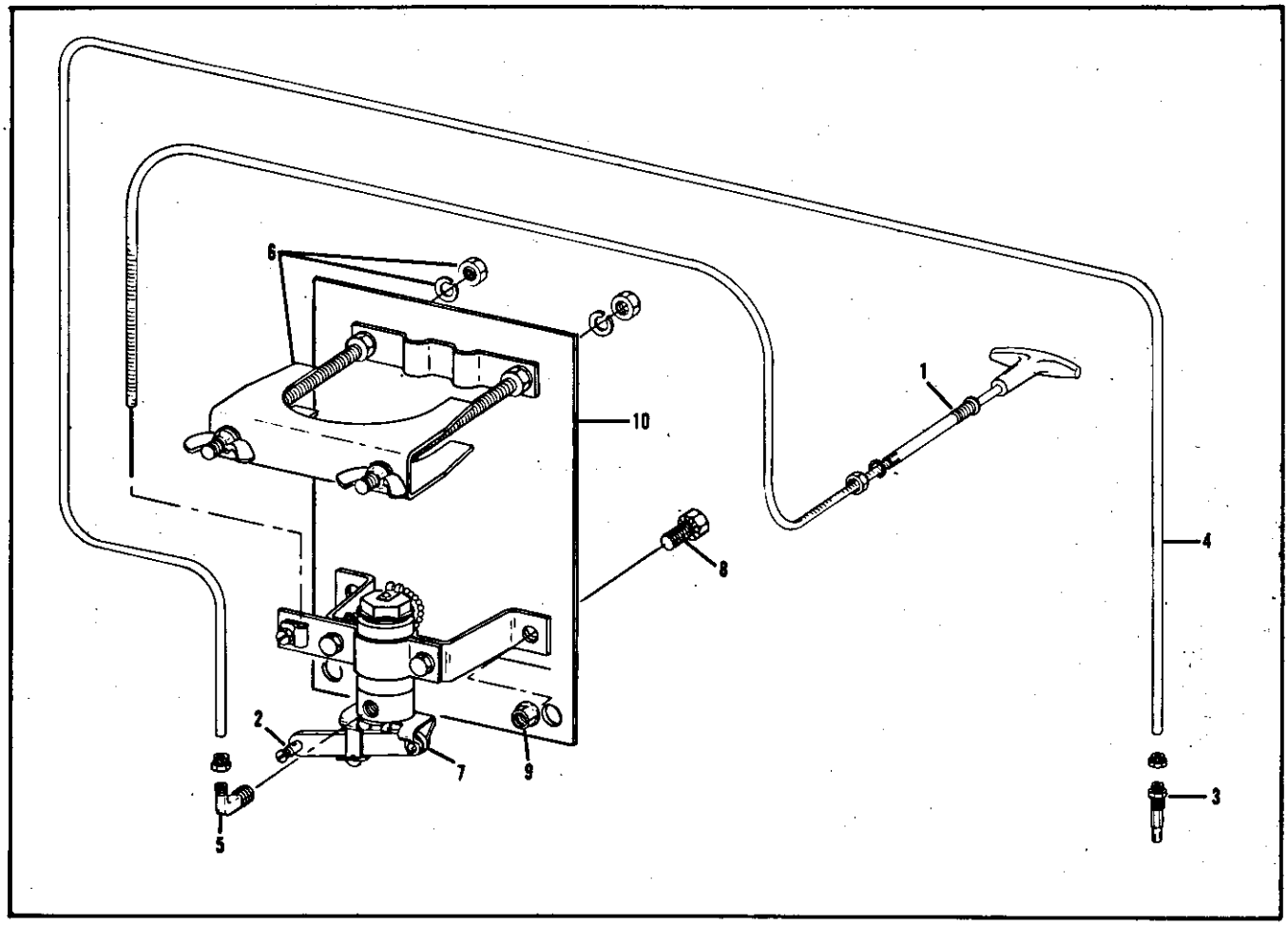

Figure 5-13. Cold Weather Starting Aid

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-13-	46246	COLD WEATHER STARTING AID (See index 56, figure 5-1 for NHA)	REF	
-1	LP3864R-36	. CABLE, Control (FSCM 6112) (see figure 5-4 for NHA)	1	
-2	LP2814	. WIRE STOP, With screw (FSCM 61112)	1	
-3	LP2377-11	. FITTING, Manifold (FSCM 61112)	1	
-4	LP3239-48	. TUBE, Nylon (FSCM 61112)	1	
-5	LP1698	. FITTING, Valve (FSCM 61112)	1	
-6	LP2299	. CLAMP MOUNTING, Cylinder (FSCM 61112)	1	
-7	QS-2-17C	. VALVE ASSEMBLY, 6 cc shot (FSCM 61112)	1	
-8	273771	SCREW, Serrated flange, 1/4-20 x 1/2 in. lg	2	
-9	9416918	NUT, Serrated flange, 1/4-20	2	
-10	69091	BRACKET MOUNTING	1	