DAVEY Model 250 RPV

Permavane Rotary Compressor

OPERATION AND MAINTENANCE MANUAL

WITH

PARTS LIST

MPL-160

DAVEY built to serve and endure

THE DAVEY COMPRESSOR CO.

11060 KENWOOD ROAD
CINCINNATI, OHIO 45242

DAVEY COMPRESSOR

MODEL 250 RPV PERMAVANE ROTARY

COMPRESSOR SPECIFICATIONS

UNIT DATA

Mounting	single axle, leaf type springs
Tire Size	7.50-14, 6 ply
Tire Pressure	60 lbs.
Towing Speed	20 mph
Wheel Bearings	Tapered Roller
Towing Hitch	Lunette Eye
Fuel Tank Capacity	40 gallons

Dimensions:

Length (overall)	162 in.
Height (overall)	84 in.
Width	70 in.

Shipping weight ..... 4250 lbs.

COMPRESSOR

Number of Rotors	1
Rotor Slots	8
Vanes per Slot	1
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	250 cfm
Full Load Speed	1750 rpm
Lubrication	Full flood, force feed
Oil Capacity	33 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	White
Model	D-3400
Bore	4 in.
Stroke	4-1/2 in.
Piston Displacement	339 cu. in.
Horsepower (at 1800 rpm)	93
Torque (Max.)	266 ft. lb. at 1800 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;

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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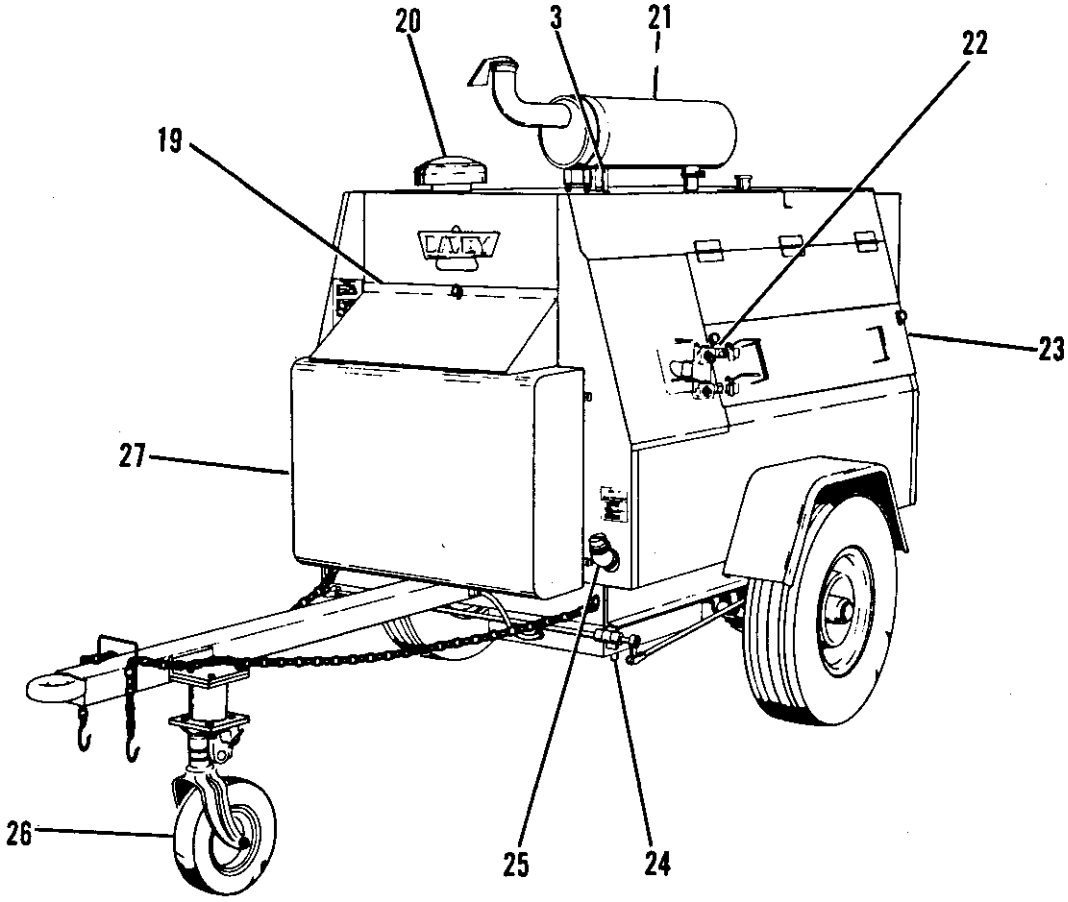
PART I - AIR COMPRESSOR

LIST OF CHARTS AND ILLUSTRATIONS



1. AIR INTAKE ADAPTER
2. OIL SEPARATOR TANK
3. LIFTING BAIL
4. ENGINE EXHAUST
5. ENGINE
6. FAN
7. RADIATOR
8. ALTERNATOR
9. MINIMUM PRESSURE VALVE
10. SAFETY VALVE
11. INSTRUMENT PANEL
12. COMPRESSOR OIL FILTER
13. THERMAL BYPASS
14. COMPRESSOR
15. QUICK START
16. OVERSPEED SWITCH
17. ENGINE OIL FILTERS
18. ENGINE HEAT EXCHANGER
19. INSTRUMENT PANEL ACCESS DOOR
20. AIR INTAKE RAIN CAP
21. MUFFLER
22. DISCHARGE MANIFOLD
23. ACCESS DOOR
24. SEPARATOR DRAIN
25. SEPARATOR OIL FILL
26. CASTER WHEEL
27. FUEL TANK

Figure A. Compressor Components (Sheet 1 of 2)

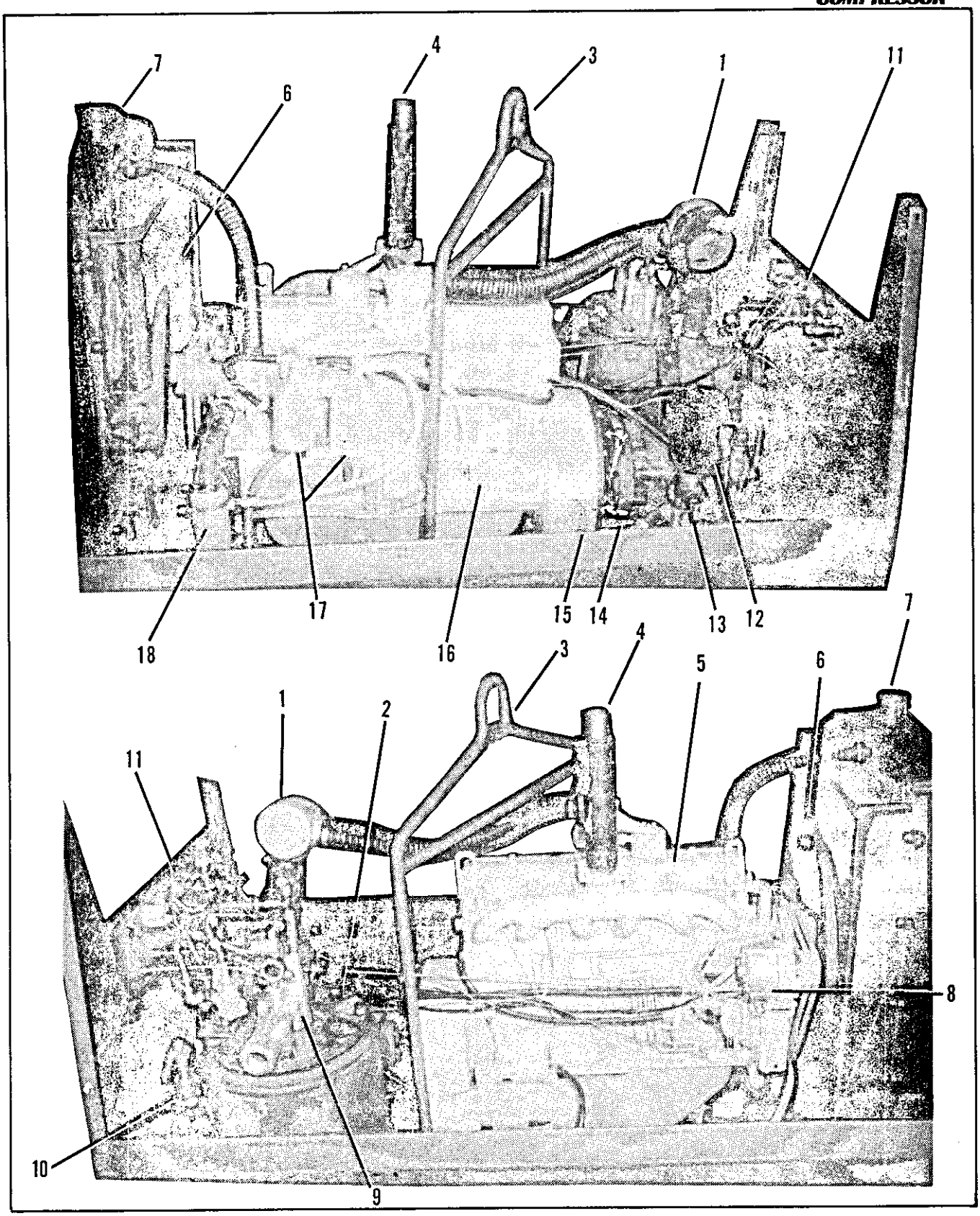


Figure A. Compressor Components (Sheet 2 of 2)

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 is two or four wheel spring mounted, and has pneumatic tire wheels. Tandem axle, steel wheels, or skid mounting are optional. A functionally designed housing with tool box 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 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

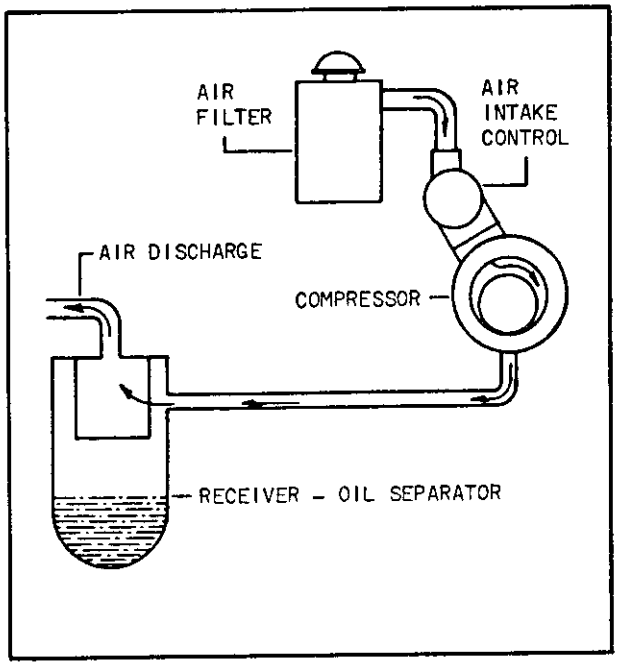


Figure 1-1. Air cycle schematic diagram

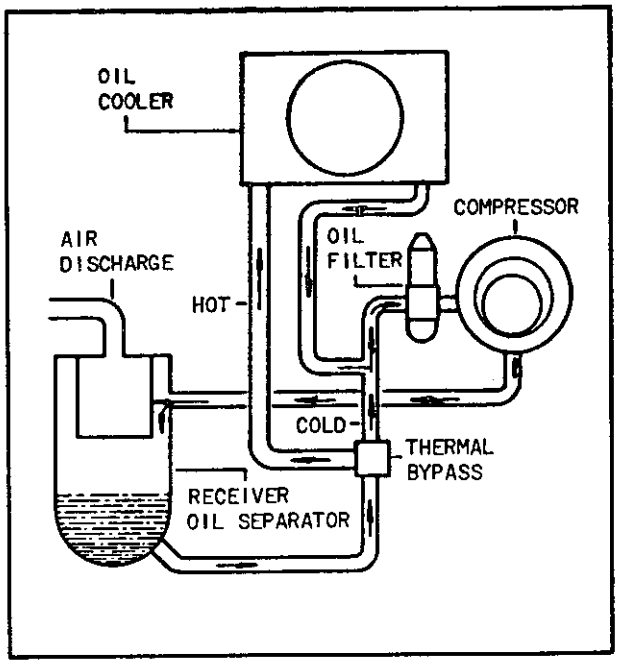


Figure 1-2. Oil cycle schematic diagram

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 options are gasoline or diesel engines. 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 (diesel), or the engine carburetor (gasoline). See Part II of this manuel 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.

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.

1-14. OVERSPEED SWITCH. An electrically operated overspeed switch is provided with the switch transmitter connected to the engine tachometer drive. The switch will automatically shut down the unit if engine speed should exceed the setting of the switch (2050 rpm ± 50 rpm).

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 33 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) Run the unit until warm before shutting down to drain oil. Remove filler plug and allow sufficient time for all oil to drain. Drain oil by opening valve at the bottom of the receiver-separator.

NOTE

BE SURE TO CLOSE DRAIN VALVE BEFORE REFILLING.

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.

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

b. ENGINE OIL PRESSURE GAUGE. Indicates oil pressure in the engine oil gallery. A pressure switch is mounted on the back of the gauge and the diesel fuel pump solenoid is wired through the switch as a safety measure. If the engine oil pressure falls below four psi, the unit will automatically shut down.

c. AMMETER. The ammeter indicates the charging or discharging rate of the battery. Refer to figure 2-3 for wiring diagram.

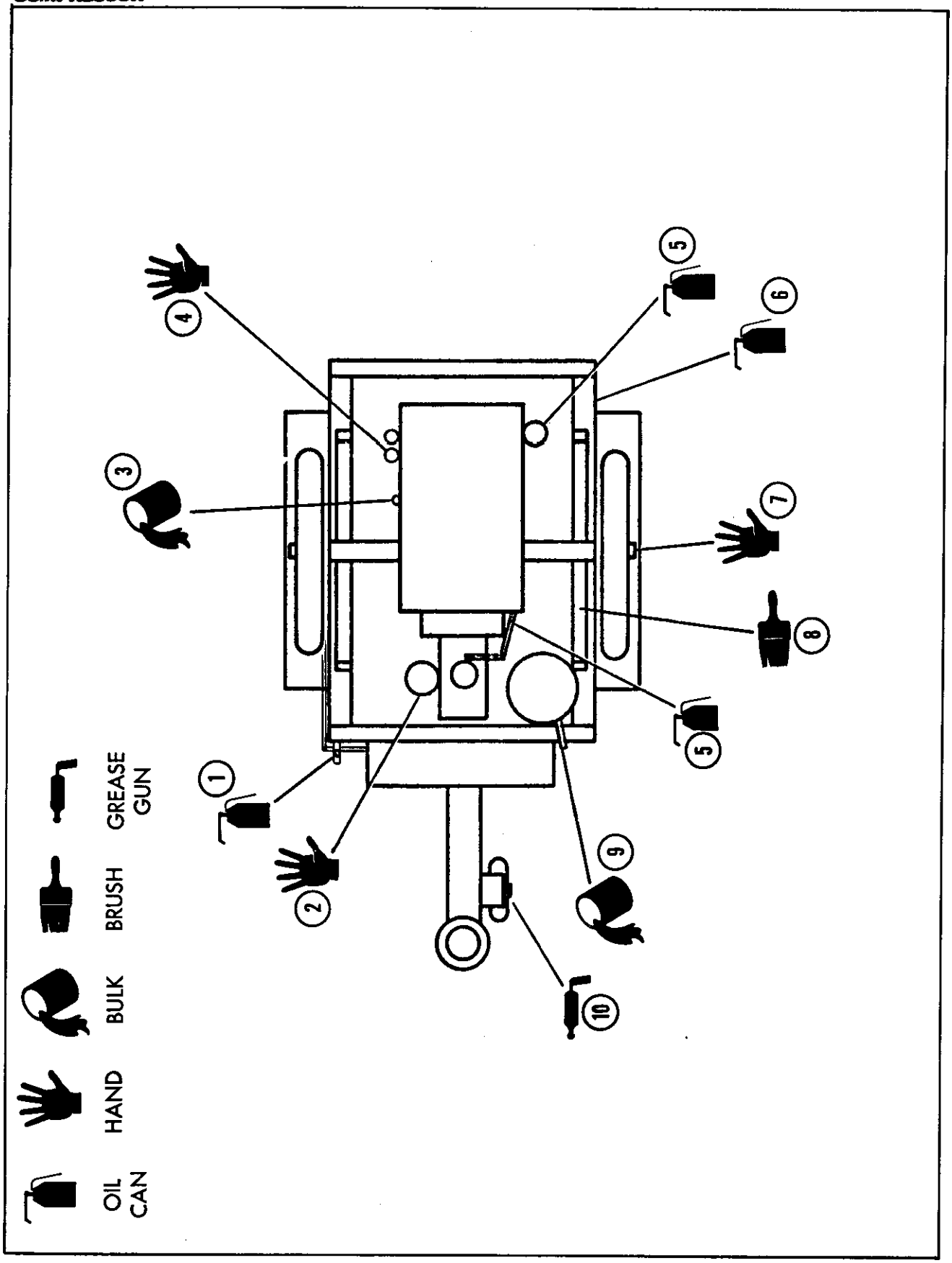


Figure 2-1. Lubrication chart (sheet 1 of 2)

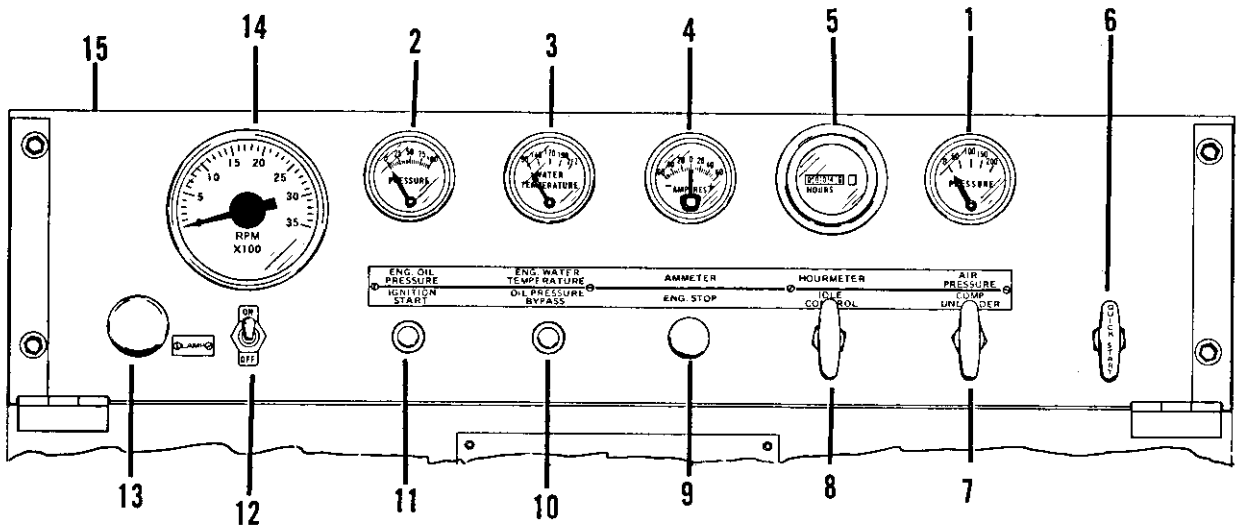
REF NO.	ITEM	INSTRUCTION	OPERATING PERIOD	LUBRICANT
1	Handbrake lever	Clean, oil mechanism sparingly	500 hrs	OC
2	Compressor oil filter	Remove, clean and dry element. Soak in oil before installing	*100 hrs	OC
3	Engine oil filler	Check oil level and fill as necessary (also refer to Engine Manual, Part II)	Daily	OC
4	Engine oil filter	Refer to Engine Manual, Part II	REF	REF
5	Throttle linkage	Clean, oil pivot points sparingly	500 hrs	OC
6	Door hinges	Clean, oil hinges sparingly	500 hrs	OC
7	Wheel Bearings	Remove wheels, clean hubs, spindles, and repack.	1000 hrs	WB
8	Springs	Clean and brush on oil sparingly	1000 hrs	OC
9	Oil separator	Check oil level, add as necessary Drain tank and refill.	Daily **500 hrs	OC OC
10	Caster wheel	Clean fittings, grease two fittings	1000 hrs	WB

*Replace element if badly clogged.
**Replace element every 4000 hrs.

SYMBOL	LUBRICANT	Below 32°F(†)	32°F to 75°F	Over 75°F
OC	Heavy Duty Motor Oil - Series 3 or Supplement 1 (MS-Motor Severe designation). (MIL-L-2104)	SAE 10	SAE 20	SAE 30
WB	General Purpose Grease. (MIL-G-10924)	No. 0	No. 0	No. 1

†When operating in temperature below 0°F, use OES MIL-L-10925 oil in compressor. Refer to Part II for engine recommendations.

Figure 2-1. Lubrication chart (sheet 2 of 2)



1. AIR PRESSURE GAUGE
2. ENGINE OIL PRESS. GAUGE
3. ENGINE WATER TEMP GAUGE
4. AMMETER
5. HOURMETER
6. COLD WEATHER STARTING KIT
7. COMPRESSOR UNLOADER
8. IDLE CONTROL
9. ENGINE STOP
10. OIL PRESSURE BYPASS SWITCH
11. START SWITCH
12. LAMP SWITCH
13. PANEL LAMP
14. TACHOMETER
15. INSTRUMENT PANEL ASSEMBLY

Figure 2-2. Instrument panel assembly

d. STARTER SWITCH (BUTTON). When this button is depressed, it completes the electrical circuit of the starting system. The starter assembly will then be energized to turn the engine.

e. OIL PRESSURE BYPASS SWITCH (BUTTON). This pushbutton is in parallel with the pressure switch on the oil pressure gauge.

In order to start, the ignition circuit must be completed and this is accomplished by depressing the bypass switch pushbutton. After starting, and engine oil pressure is obtained, the pushbutton may be released. The pressure switch is now closed.

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.

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

g. COMPRESSOR UNLOADER. Pulling out this control shuts off the air intake of the compressor. This allows no-load engine and compressor warm-up in cool weather. Lock control in desired position by turning handle clockwise.

h. IDLE CONTROL. Pulling out this control slows down the engine. This control is used to regulate engine speed during warmup. Lock control in position by turning handle clockwise.

i. OIL PRESSURE SWITCH. If the engine oil pressure drops below minimum during operation, this switch automatically shuts down the engine by breaking the ignition circuit.

j. HOURMETER. The hourmeter indicates the length of time the equipment has been operating. Inspection and servicing periods may be recorded and scheduled from the readings of the hourmeter.

k. PANEL LAMP AND SWITCH. The instrument panel lamp switch is a toggle type switch with an indicator plate marked ON and OFF. The panel lamp is used to illuminate the instrument panel.

l. STOP CONTROL. The engine stop control, when pulled outward, actuates the fuel injection pump shut-off lever thereby stopping the engine. Refer to Part II for engine fuel injection pump details.

2-4. STARTING THE UNIT.

a. Open the instrument panel door.

b. Perform the before operation procedures listed in figure 3-1. (Also, refer to Engine Manual, Part II.)

c. Open the air outlet service valves. Pull the engine stop cable (9, figure 2-2) all the way out to stop position. Press the start switch (11) for approximately three seconds to crank the engine a few revolutions; then release the start switch.

d. Push the engine stop cable (9) all the way in toward panel. Pull compressor unloader handle (7) out and lock by turning handle clockwise.

e. In cool weather, below 40°F(4.4°C), unscrew cap of cold weather starting aid (6) and place ether capsule in holder. Install cap making certain it is secured tightly with actuating handle free to be actuated. Do not operate handle until start switch (11) is pressed.

CAUTION

If engine fails to start within 20 seconds, release switches (10, 11) and allow the starter to cool for 1 to 2 minutes before attempting another start.

f. Press the start switch (11) and oil pressure bypass switch (10) simultaneously. (Actuate cold weather starting aid handle as necessary.)

g. When engine starts, release the start switch (11) but continue to hold oil pressure bypass switch (10) until engine oil pressure gauge (2) indicates a pressure of approximately 10 psi; then, release bypass switch (10).

CAUTION

If engine oil pressure does not register within three to five seconds after engine starts, release bypass switch and determine cause of no engine oil pressure.

h. After engine starts, unlock idle control (8) by turning handle counterclockwise and pull handle out to fast idle; lock handle by turning clockwise. Allow engine to run at fast idle until engine temperature reaches 140°F.

i. When operating temperature is reached, unlock compressor unloader handle (7) and idle control handle (8) and push these handles in and lock by turning clockwise. Close the air outlet valves.

j. Check the readings on all gauges. Normal operating readings are:

Air pressure gauge ..... 90 to 100 psi
Engine oil pressure gauge ..... 40 to 60 psi
Engine water temperature gauge..... 160° to 185°F

h. Unit is now ready for use and will cycle through load and unload automatically in relation to air demand.

CAUTION

Do not allow equipment to operate unattended for prolonged periods. The operator should observe all gauges periodically to be certain unit is operating normally and listen to the unit for any abnormal noises. Observance of these precautions can prevent serious damage to the unit.

NOTE

This unit is equipped with safety devices to automatically stop the unit in the event of low engine oil pressure, high engine coolant temperature, high compressor air temperature, and engine overspeed. Do not attempt to restart unit until cause for such automatic stop has been determined.

2-5. STOPPING THE UNIT.

a. Close the air outlet service valves and allow the unit to run unloaded for five minutes.

b. Pull the engine stop control (9, figure 2-2) outward until engine stops; then, push inward to the run position.

c. Perform the after operation procedures found in table 3-1. Close housing side doors and instrument panel door.

2-6. OPERATION IN EXTREME COLD (Below 0° 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 supplied with the unit. For procedures, refer to paragraph 2-4e and 2-4f.

d. In cold weather, pull compressor unloader out during warmup.

2-7. OPERATION IN EXTREME HEAT.

WARNING

Ear protection must be worn when doors are open or damage to ears can result.

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 not 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.

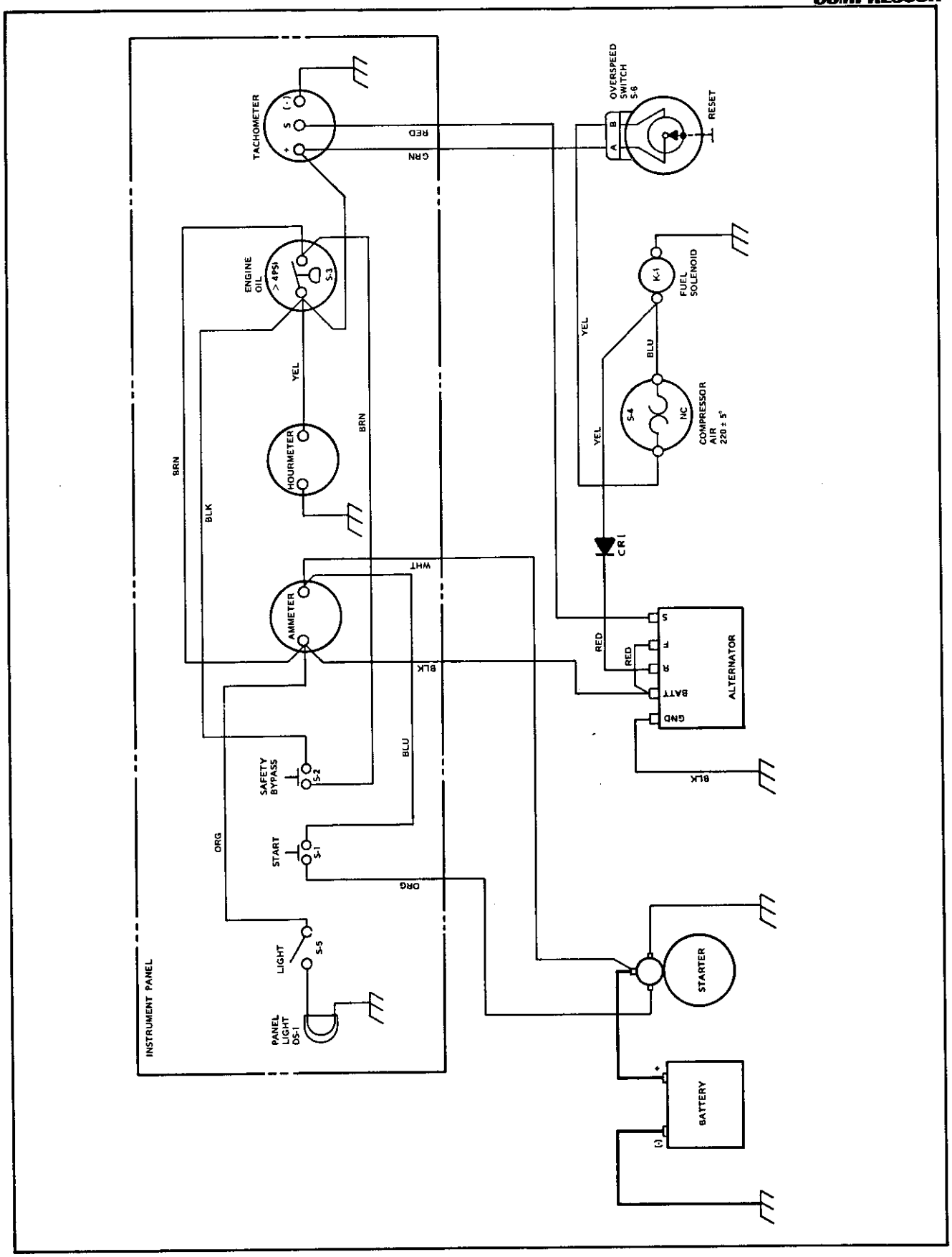


Figure 2-3. Wiring Diagram

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. DELETED.

3-4. 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.

3-5. 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.

a. Disassembly of Air Compressor. (Fig. 5-19) Disconnect all tubing or hose assemblies and the intake control cable and cable clip. For blade and rotor inspection, it is only necessary to remove nondrive end cover (61) with intake control and bearing cover attached. To remove intake control body (44), parts (26 thru 38) must be removed to gain access to bolt (45) within the intake control body.

Do not disassemble rotor and drive end cover assembly (90 through 94) and inner race of bearing (56) unless it is determined that a part must be replaced. To disassemble rotor and drive end cover assembly, refer to figure 3-3. Remove nondrive end bearing inner race by first applying a suitable gear puller. If inner race fails to move, apply heat from a torch and heat the inner race evenly. Apply gear puller and remove race.

NOTE

Discard bearing races that have been removed by applying heat. Replace with entire new bearing.

3-6. 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.

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 60 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		Check condition, gap and clean engine spark plugs. Replace any defective plug. (Gasoline engine driven units.)
	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

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

e. Wash air cleaner (Fig. 5-3) thoroughly and air dry. Wash bowl, wipe dry.

NOTE

Do not attempt to wash oil separator fiberglass element (39, Fig. 5-11). Replace if clogged.

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

3-7. REPAIR OR REPLACEMENT.

a. Replace all O-rings, seals, and gaskets at overhaul or disassembly.

b. Remove minor nicks or scratches from machined surfaces of rotor (2, Fig. 3-3) and stator (103, Fig. 5-19) with a fine honing stone or emery cloth. If extremely scored or galled, replace damaged parts.

c. Inspect air cleaner (Fig. 5-3) for clogging or other damage. Replace if not repairable.

d. Oil filter element (5, Fig. 5-10) must be replaced with each oil change.

e. Varnished or damaged oil separator element (39, Fig. 5-11) shall be replaced.

f. Replace blades (Fig. 3-6) when coating is worn off and bare metal is exposed on blade sides. If one side of blade is not worn, rotate blade 180 degrees and replace in slot. Blades should slide freely in slots. (Also, see Fig. 3-4.)

g. Replace any hoses, cables or other parts with obvious damage that are not repairable.

h. Replace bearings (56 and 90, Fig. 5-19) that feel gritty or bind when rolled manually. Replace bearing when inner race must be heated to remove from shaft.

3-8. REASSEMBLY OF AIR COMPRESSOR. (Fig. 5-19). Reassembly is essentially the reverse of disassembly. In addition, observe the following special reassembly procedures:

a. Coat O-rings, blades, and internal machined parts with clean lubricating oil at time of reassembly. Reassemble rotor (Fig. 3-3 and 3-4) with the following instructions.

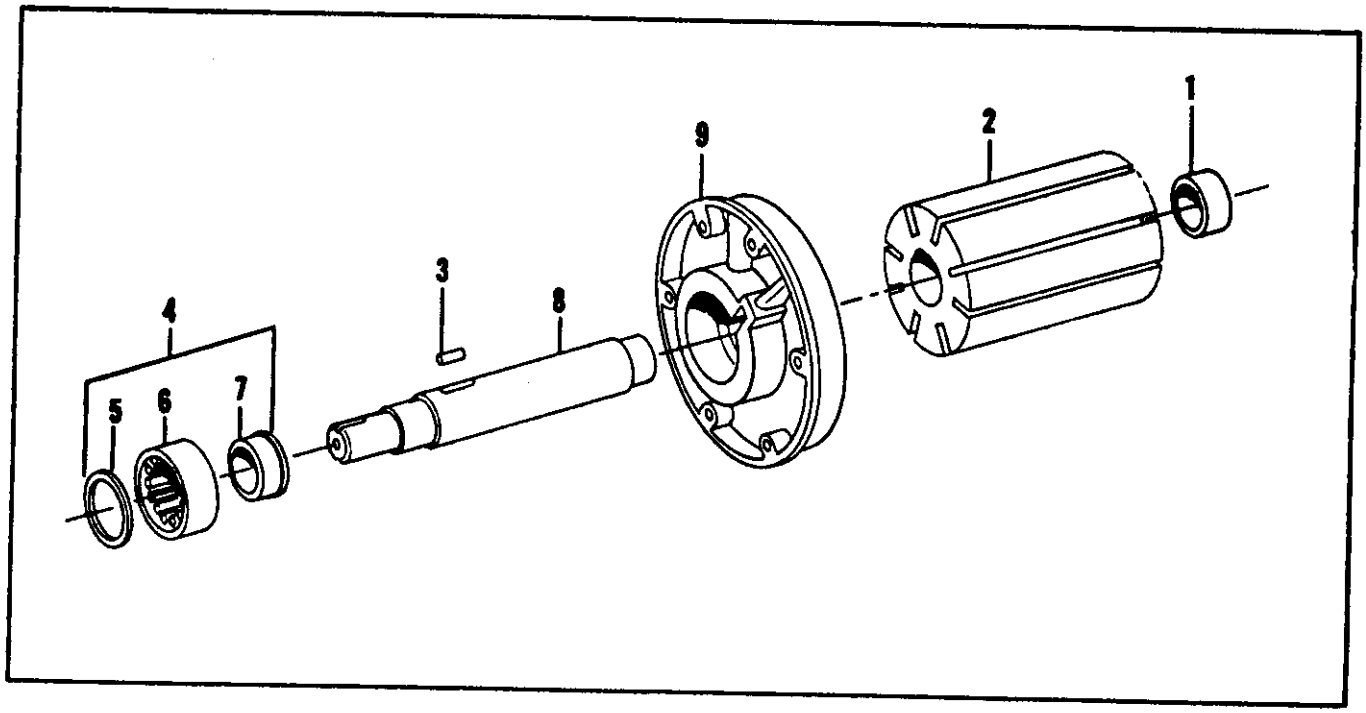


Figure 3-3. Rotor assembly

Heat bearing inner races (1 and 7) evenly in hot cooking oil to a maximum of 350°F. Install inner race (7) on shaft to shoulder. Assemble outer race (6) and spacer (5) on bearing inner race. Press bearing and shaft into cover (9). Place key (3) in shaft and slide rotor on shaft, making sure relief slots in rotor are leading in the direction of rotation (Fig. 3-4). Place heated bearing inner race (1) on shaft to shoulder. Complete assembly, referring to Figures 5-19 and 3-5.

b. Hold O-rings (65 and 86, Fig. 5-19) in place on end covers (61 and 92) with grease until secured in reassembly.

c. Gripsprings: During reassembly of the compressor, it is essential that the gripsprings (70, Fig. 5-19) be installed in the correct sequence. Improper installation of the gripsprings will result in slippage between the shaft and the coupling and cause excessive wear. Refer to Figure 3-5 and assemble the gripsprings 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.

(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).

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

3-9. INSPECTION AFTER REASSEMBLY.

a. Restart the unit in accordance with paragraph 2-4. Bring pressure up to 100 PSI.

b. Make a careful visual inspection of all fittings, joints, etc., for any signs of air or oil leakage. A soapy water solution is recommended for this check.

c. Check oil filter covers at sealing seat for evidence of oil leakage.

d. Operate compressor at part load for a minimum of 15 minutes. This will allow proper temperature stabilization.

e. Unit is now ready for normal use.

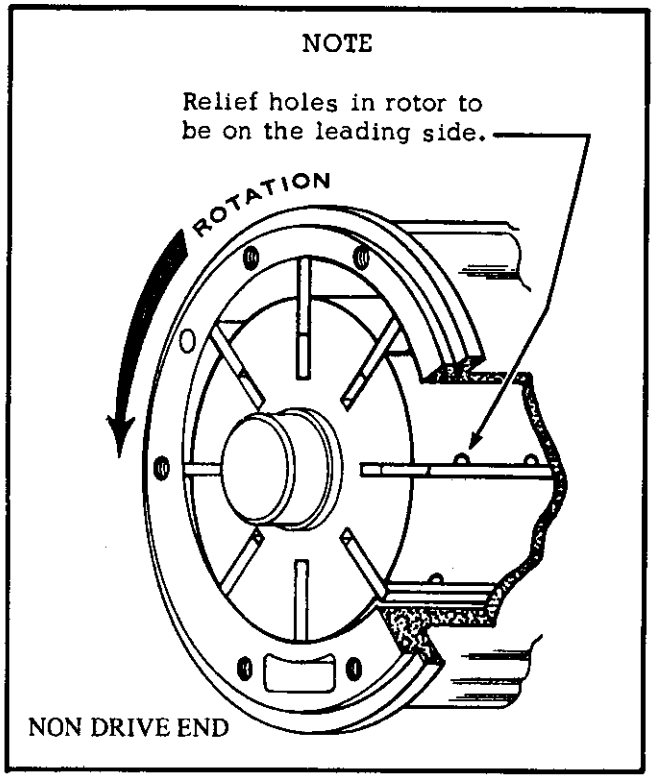


Figure 3-4. Compressor rotor installation

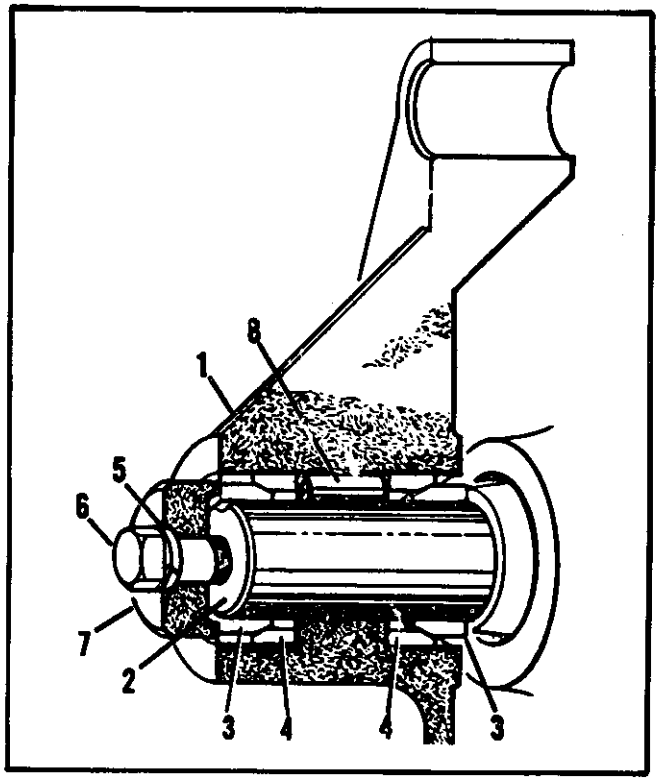


Figure 3-5. Gripspring installation

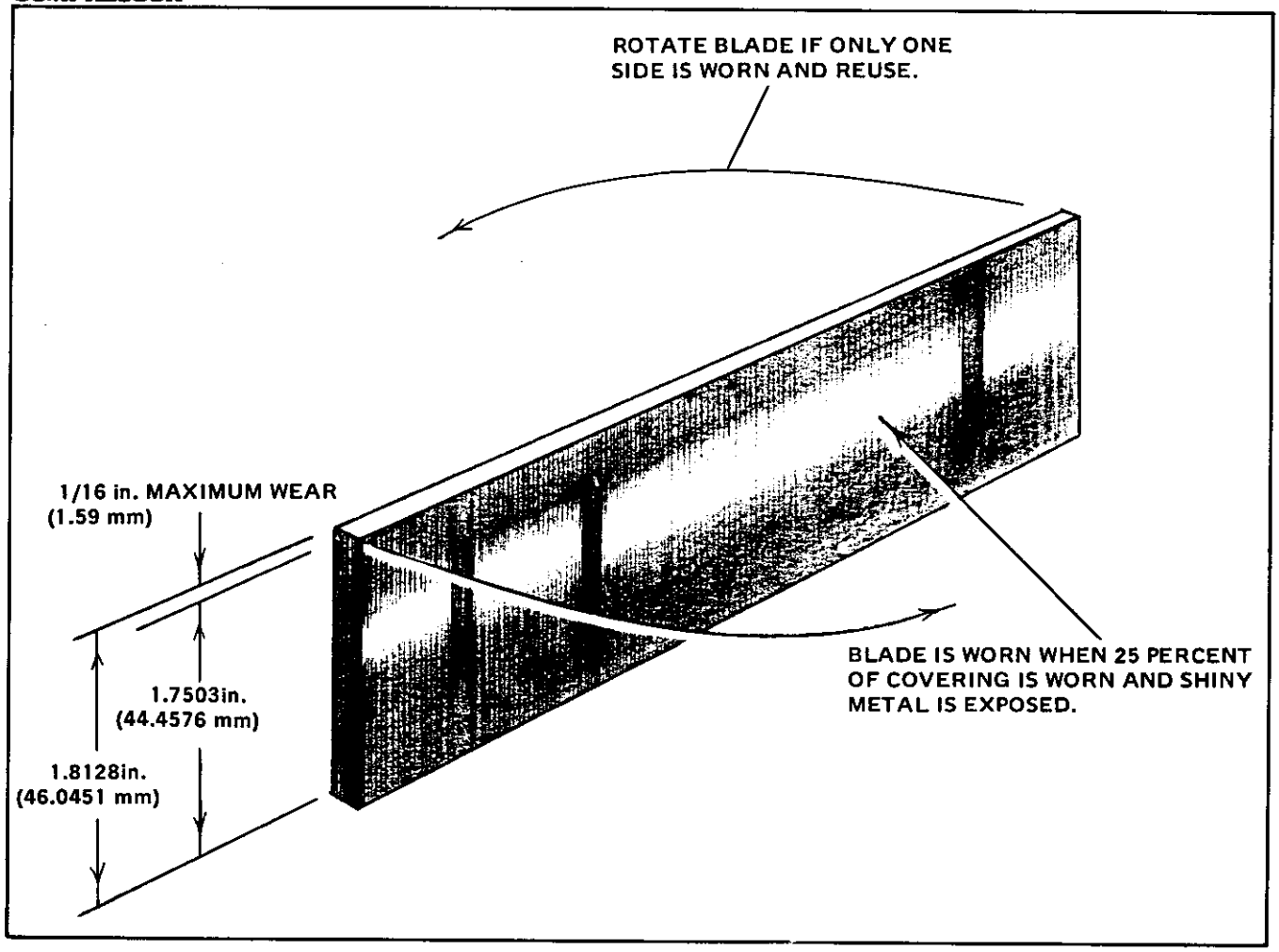


Figure 3-6. Rotor Blade Inspection

3-10. ENGINE SPEED CONTROL LINKAGE ADJUSTMENT (Figure 3-7). After replacing or due to normal wear of a component affecting the speed of the compressor may require the adjustment of the linkage to obtain the desired RPM. Adjust linkage as follows:

a. Start unit (Paragraph 2-4) and allow it to operate until normal operating temperature is attained.

b. Close the air service valves.

c. Pull UNLOADER handle out and lock.

d. Loosen jam nuts (4) on control rod at stop block (2).

e. While observing tachometer reposition stop block on control rod by rotating adjusting nuts (4). Set engine idle speed at 1050 ± 25 rpm.

f. Cycle the compressor several times, to insure setting is correct, by pushing UNLOADER control in and opening a service valve momentarily.

g. When the engine idle speed of 1050 ± 25 rpm is attained, tighten jam nuts.

h. Push UNLOADER and IDLE CONTROL in.

i. Observe TACHOMETER for 1800 ± 50 rpm, during the load mode. Open an air service valve slightly to obtain 95 to 100 psi indication on AIR PRESSURE gauge.

j. If the desired RPM is not obtained, perform the proceedure necessary in paragraph 3-5 of Engine Operation and Maintenance manual until desired RPM is attained.

3-11. AIR PRESSURE REGULATOR ADJUSTMENT. After replacement or overhaul of engine, compressor or oil separator assembly the resetting of the air pressure regulator valve may be required. Adjust regulator valve as follows:

a. Start unit and allow to operate until normal operating temperature is attained (para 2-4).

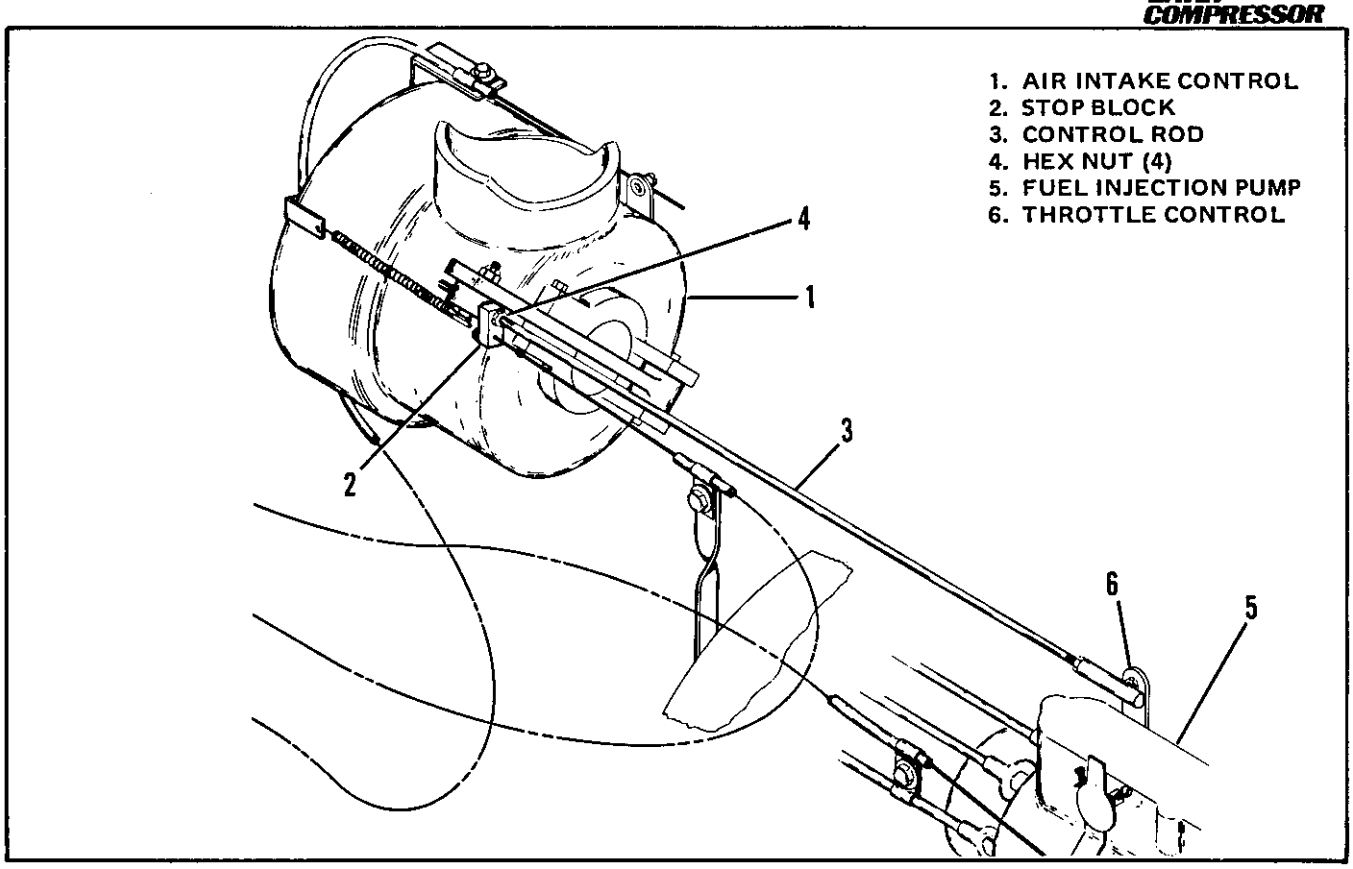


Figure 3-7. Engine Speed Control Linkage

b. Observe TACHOMETER for proper engine RPM (para. 3-10).

c. Loosen jam nut on air pressure regulator and using a allen wrench, set adjusting screw until AIR PRESSURE gauge indicates 115 ± 5 psi.

d. Cycle compressor several times while observing gauges. Tighten jam nut.

3-12. ENGINE OVERSPEED SWITCH ADJUSTMENT. After replacement or overhaul of engine or overspeed switch make the following check and/or adjustment:

a. Start unit and allow normal operating temperature to be attained.

b. Open an air service valve slightly to obtain 95 to 100 psi on AIR PRESSURE gauge.

CAUTION

Do not operate equipment with overspeed switch set at higher than 2100 rpm for a prolonged period or damage to equipment will result.

c. Disconnect engine control rod linkage from fuel injection pump control lever.

d. Observe TACHOMETER and increase engine RPM slowly by positioning injection pump control lever and record TACHOMETER reading when engine shuts down. Do not exceed 2300 rpm.

e. Engine must shut down at 2050 ± 50 rpm, if not, remove safety wire from adjusting lock screw and loosen lock screw. Rotate cap clockwise (cw) to lower tripping rpm and counter-clockwise (ccw) to increase tripping rpm.

f. When desired setting is obtained tighten lock screw and install safety wire. Reconnect control rod.

g. Check for proper settings that are required in paragraphs 3-10 and 3-11.

h. Unit is now ready for normal operation.

SECTION 4
TROUBLE SHOOTING

4-1. TROUBLE SHOOTING. The following chart gives common troubles, their probable causes and suggested remedies. For engine troubles, refer to Part II.

TROUBLE	PROBABLE CAUSE	REMEDY
COMPRESSOR OVER-HEATS	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 separator. 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. Trouble Shooting 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.
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.
COMPRESSOR FAILS TO LOAD AND UNLOAD	Moisture in control lines	Disconnect control lines, clean and replace.

Figure 4-1. Trouble Shooting Chart (cont)

TROUBLE	PROBABLE CAUSE	REMEDY
COMPRESSOR FAILS TO LOAD AND UNLOAD (Cont)	Damaged intake valve	Inspect for damaged seat or back-up washer.
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.
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. Trouble Shooting Chart (cont)

SUPPLEMENT

PRIME MANUFACTURER & VENDOR PART NO. CROSS REFERENCED TO ACTUAL MANUFACTURER'S PART NO.

PRIME MFG. OR VENDOR PART NO.	FMC	ACTUAL MFG. PART NO.	FMC	DESCRIPTION	FIG. & INDEX NO.
DAVEY PARTS LIST					
		CA-565	81155	CAP, Fuel tank, 2¼ O.D. filler neck	5-4, 52
46246	16004	QK1039-201	61112	START KIT, Quick	5-27
48306	16004	4283-101	24161	HOSE, Radiator, upper, 2" ID x 24" lg	5-18, 7
80775	16004	TYPE4684CF	24161	HOSE, Radiator, lower 2" ID x 27" lg	5-18, 5
		MS35840-1	96906	CAP, Radiator, 2¾" OD filler neck, 7 lb. pressure	5-18, 17
24669	16004	D4-A9Y	19728	BATTERY, 12 Volt	5-7, 7
62085	16004	2550-108	09393	GAUGE, Engine oil pressure, 0 to 100 PSI	5-5, 14
48271	16004	4015-98	09527	AMMETER, Dial increments 60-0-60	5-5, 16
60135	16004	HM12-2	31211	HOURMETER, 12 volt	5-5, 17
80473	16004	535A0	06045	Tachometer	5-5, 13
80223	16004	223	80753	LAMP, Panel	5-5, 19
65015	16004	89	24455	BULB, Lamp	5-5, 19
6058	22938	15123	60038	CONE, Bearing, outer	5-24, 7
6151	22938	15245	60038	CUP, Bearing, outer	5-24, 8
6057	22938	24780	60038	CONE, Bearing, inner	5-24, 13
6152	22938	24720	60038	CUP, Bearing, inner	5-24, 14
80389	16004	SA-783	78388	SWITCH, Overspeed	5-1, 9
WHITE ENGINE PARTS LIST					
250765	28265	1100720	16764	ALTERNATOR	1, 4
250686	28265	1113641	16764	STARTER ASSY	1, 6
2550552	28265	1119507	16764	REGULATOR	5-1, 108
40-3054051	28265	DBMFC633-1MQ	84760	FUEL INJECTION PUMP	5, 20

Federal Manufacturer's Code to Name

06046	Dixson Inc., Meter Div. P.O. Box 1449 Grand Junction, CO 81501
09393	Rochester Gauges Inc. of Texas P.O. Box 20180 Dallas, Texas 75220
09527	Faria, Thomas G., Co. Faria Road Uncasville, Conn. 06382
14892	Bendix Corp. The Brake and Steering Div. 410 W. Bendix Dr. South Bend, IN 46619
16004	Davey Compressor Co. 11060 Kenwood Rd. Cincinnati, Ohio 45242
16764	Delco-Remy Div. of General Motors Corp. 2401 Columbus Ave. Anderson, Ind. 46011
18265	Donaldson Co. Inc. 1400 West 94th St. Minneapolis, MN 55431
19728	Prestolite Co., The Division of Eltra Corp. Champlain and Chestnut Street Toledo, Ohio 43601
22938	Prototype Development Inc. 7750 Hub Parkway Cleveland, Ohio 44125
24161	Gates Rubber Co. 999 South Broadway Denver, Colo. 80217
24455	General Electric Co. Lamp Division of Consumer Products Group Nela Park, Cleveland, Ohio
28265	White Engines Inc. 101 11th St. S.E. Canton, Ohio 44707
31211	Motorola Inc. Automotive Products Div. 9401 West Grand Blvd. Franklin Park, Ill. 60131
52152	Minnesota Mining and Mfg. Co. Industrial Specialties Div. 3M Center St. Paul, MN 55101
60038	Timken Roller Bearing Co. 1835 Dueber Ave. S.W. Canton, OH 44706
61112	Turner Co. Div. of Olin Corp. 821 Park Ave. Sycamore, IL 60178
73808	General Tire and Rubber Co. One General St. Akron, OH 44329
78388	Synchro-Start Products Inc. 8109 N. Lawndale Ave. P.O. Box 147 Skokie, IL 60076
80753	Griffin Lamp Co. Highway 61 South Shelby, MS 38774
81155	Eaton Corp. Stamping Div. 17877 St. Clair Ave. Cleveland, Ohio 44110
81321	Purolator Inc. 970 New Brunswick Ave. Rahway, N J. 07065
84760	Stanadyne/Hartford Div. P.O. Box 1440 Hartford, Ct. 06102
96906	Military Standards Promulgated by Standardization Div. Directorate of Logistic Services DSA

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.

ATTENTION

Write in your UNIT MODEL, UNIT SERIAL NO. and COMP. MODEL now! Parts shipment will be quicker and more accurate when you give this information with your parts order.

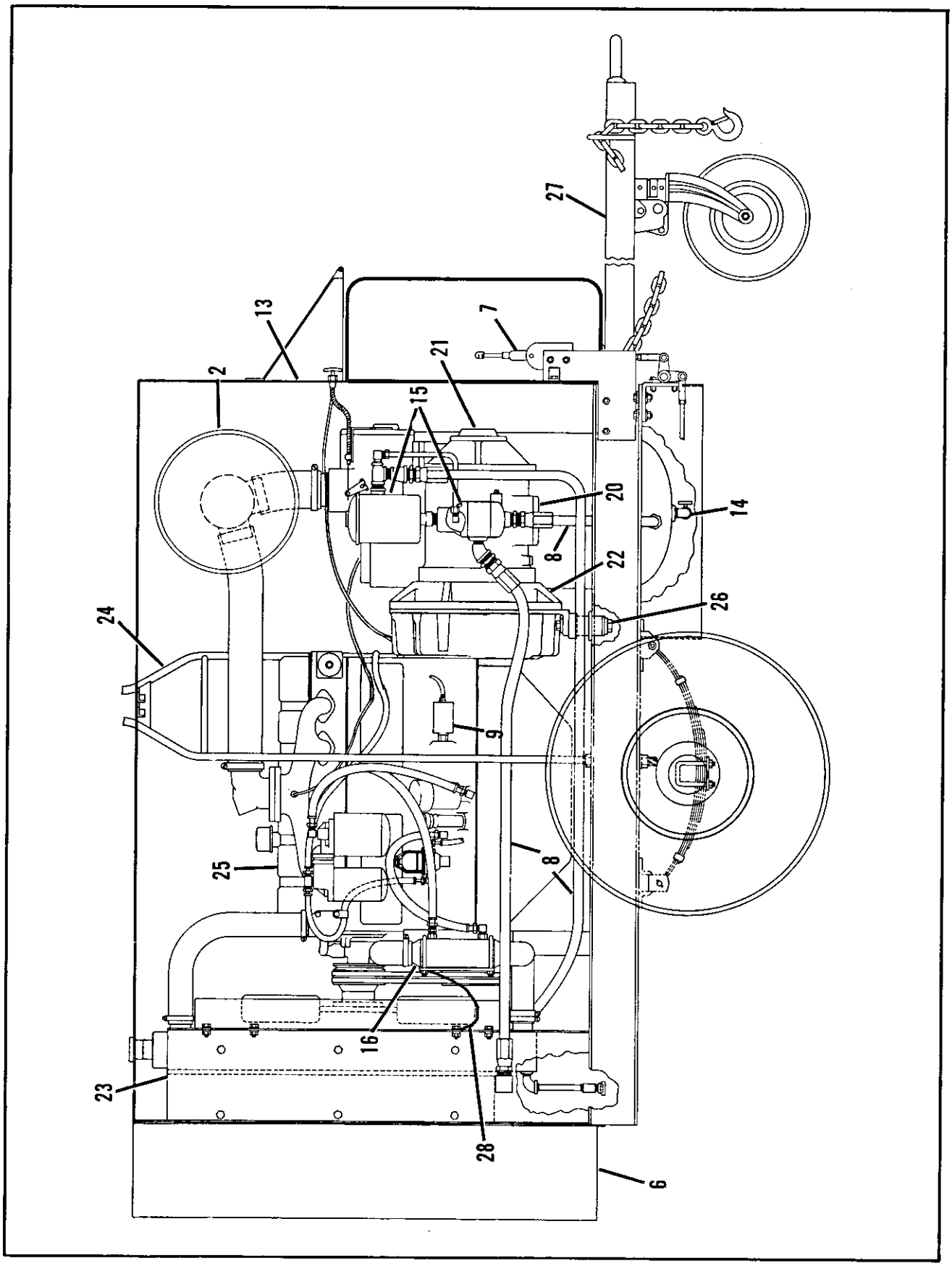


Figure 5-1. Compressor Unit Assembly (Sheet 1 of 2)

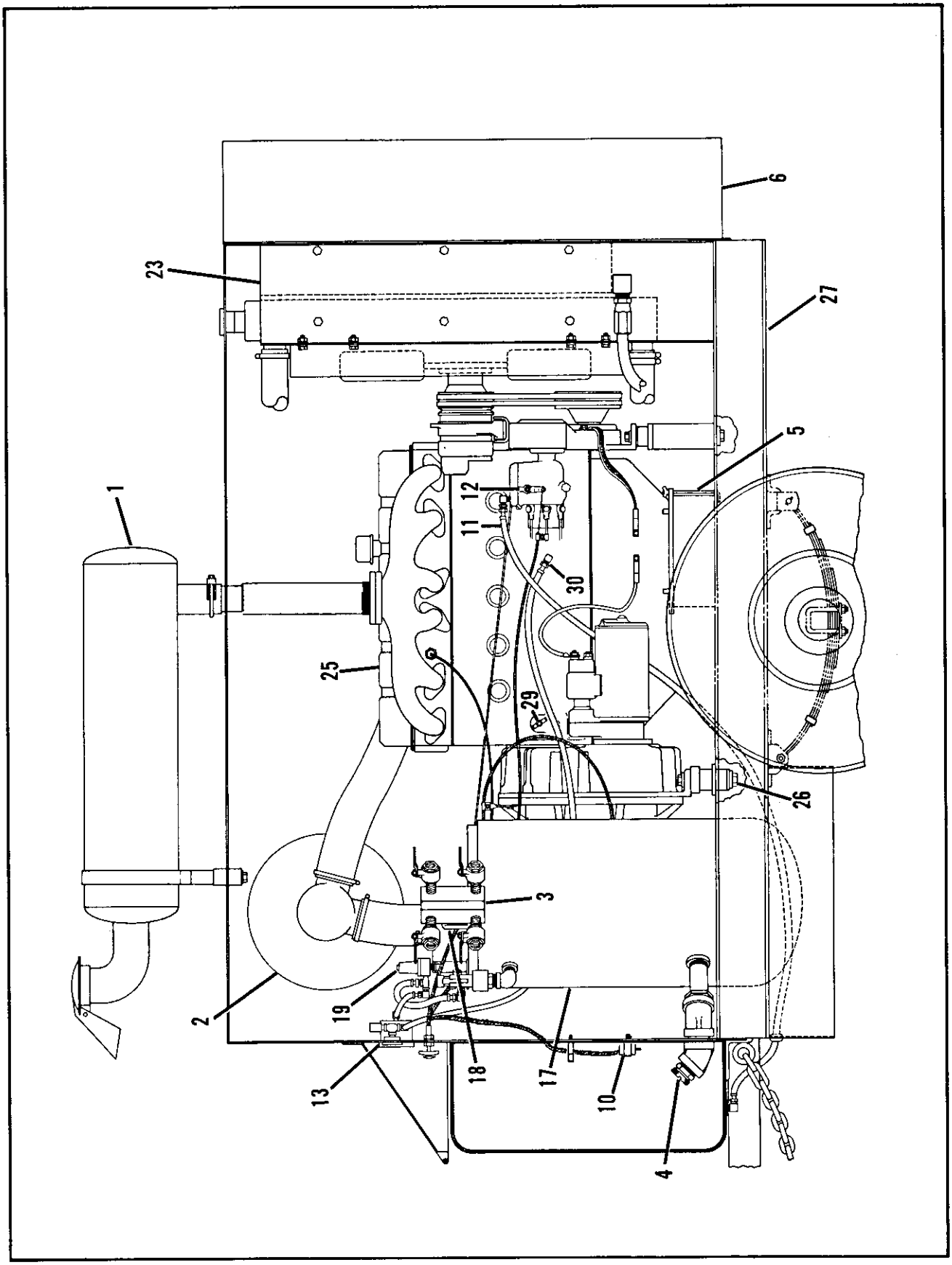


Figure 5-1. Compressor Unit Assembly (Sheet 2 of 2)

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-1	80129	UNIT ASSEMBLY, Compressor, air, Model 18M250 RPVQ	1	
-1	No Number	. MUFFLER GROUP (See figure 5-2)	REF	
-2	No Number	. AIR CLEANER GROUP (See figure 5-3)	REF	
-3	No Number	. DISCHARGE MANIFOLD GROUP (See figure 5-15)	REF	
-4	No Number	. OIL FILL GROUP (See figure 5-14)	REF	
-5	No Number	. BATTERY GROUP (See figure 5-7)	REF	
-6	No Number	. HOUSING GROUP (See figure 5-4)	REF	
-7	375-5901	. HAND BRAKE LEVER AND CROSS SHAFT ASSY (See figure 5-28)	REF	
-8	No Number	. OIL HOSE ASSEMBLIES GROUP (See figure 5-26)	REF	
-9	80389	. SWITCH, Overspeed (78388 PN SA-783)	1	
-10	No Number	. QUICK START SYSTEM GROUP (See figure 5-27)	REF	
-11	No Number	. FUEL LINE GROUP (See figure 5-21)	REF	
-12	No Number	. SPEED CONTROL GROUP (See figure 5-6)	REF	
-13	No Number	. INSTRUMENT PANEL GROUP (See figure 5-5)	REF	
-14	No Number	. SEPARATOR DRAIN GROUP (See figure 5-13)	REF	
-15	No Number	. BYPASS AND OIL FILTER GROUP (See figure 5-10)	REF	
-16	No Number	. ENGINE OIL COOLER GROUP (See figure 5-17)	REF	
-17	No Number	. OIL SEPARATOR GROUP (See figure 5-11)	REF	
-18	No Number	. MINIMUM PRESSURE VALVE GROUP (See figure 5-12)	REF	
-19	No Number	. AIR PRESSURE REGULATOR GROUP (See figure 5-9)	REF	
-20	No Number	. COMPRESSOR DISCHARGE GROUP (See figure 5-16)	REF	
-21	No Number	. COMPRESSOR GROUP (See figure 5-19)	REF	
-22	No Number	. FLYWHEEL ADAPTER GROUP (See figure 5-20)	REF	
-23	No Number	. COMPRESSOR OIL COOLER AND RADIATOR GROUP (See figure 5-18)	REF	
-24	No Number	. LIFTING BAIL GROUP (See figure 5-8)	REF	
-25	80269	. ENGINE ASSEMBLY, Model D3400 x 258 (See Part II)	1	
-26	No Number	. ENGINE MOUNT GROUP (See figure 5-22)	REF	
-27	No Number	. FRAME AND AXLE GROUP (See figure 5-23)	REF	
-28	80925	. GROUND STRAP	1	
-29	14026	. DRAIN COCK	1	
-30	41899	. ELBOW (See index no. 10, figure 5-5)	REF	

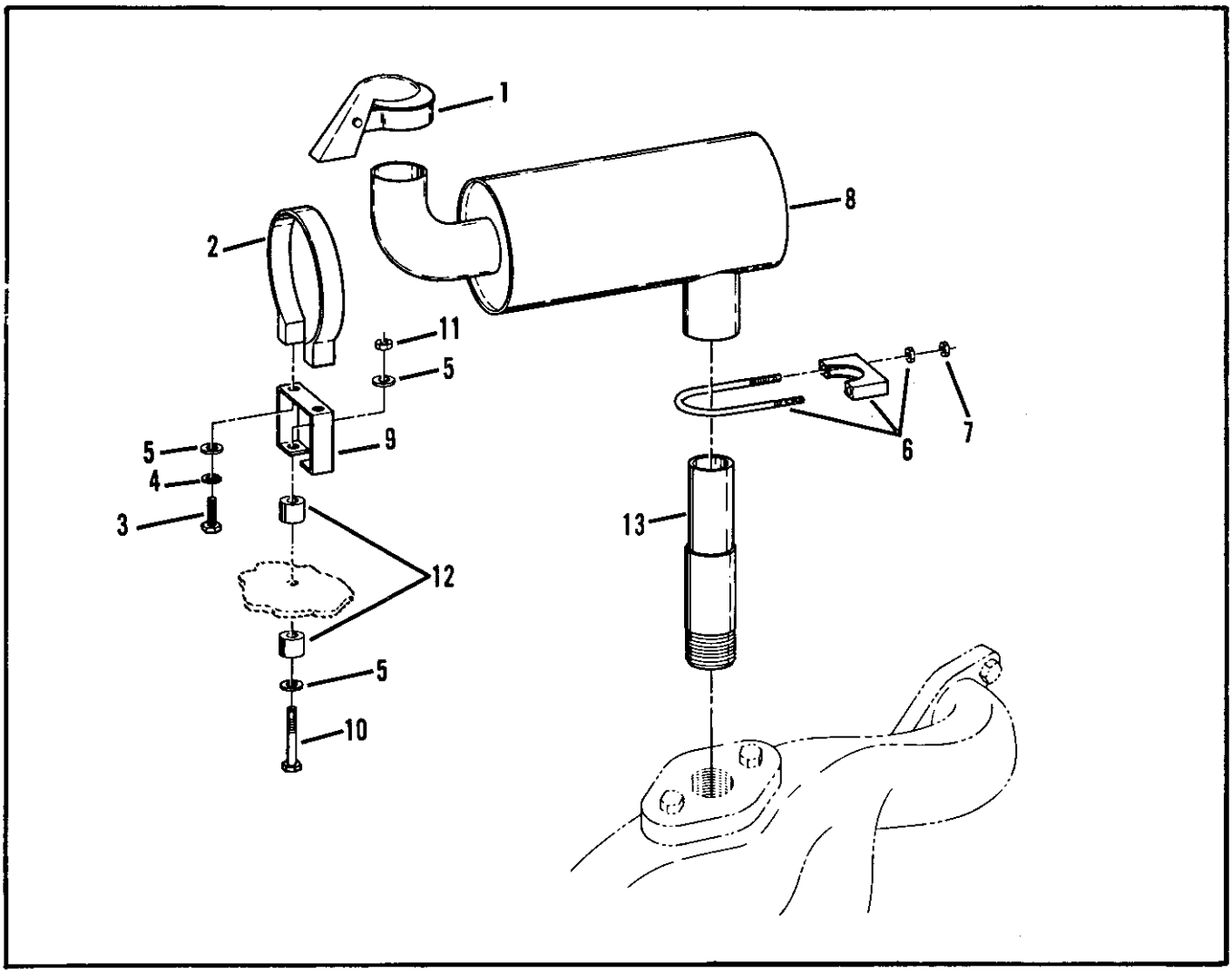


Figure 5-2. Muffler Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-2	No Number	MUFFLER,GROUP (See figure 5-1 for NHA)	REF	
-1	80139	. CAP, Rain	1	
-2	62110	. BAND, Mounting	1	
-3	120233	. SCREW, Cap (AP)	2	
-4	120382	. WASHER, Lock (AP)	2	
-5	120394	. WASHER, Flat (AP)	6	
-6	63481	. CLAMP, Muffler (AP)	1	
-7	443333	. NUT, Lock (AP)	2	
-8	80146	. MUFFLER	1	
-9	80140	. BRACKET, Mounting	1	
-10	122181	. SCREW, Cap (AP)	2	
-11	443335	. NUT, Lock (AP)	2	
-12	80141	. PAD, Mounting	4	
-13	80147	. STACK, Exhaust	1	

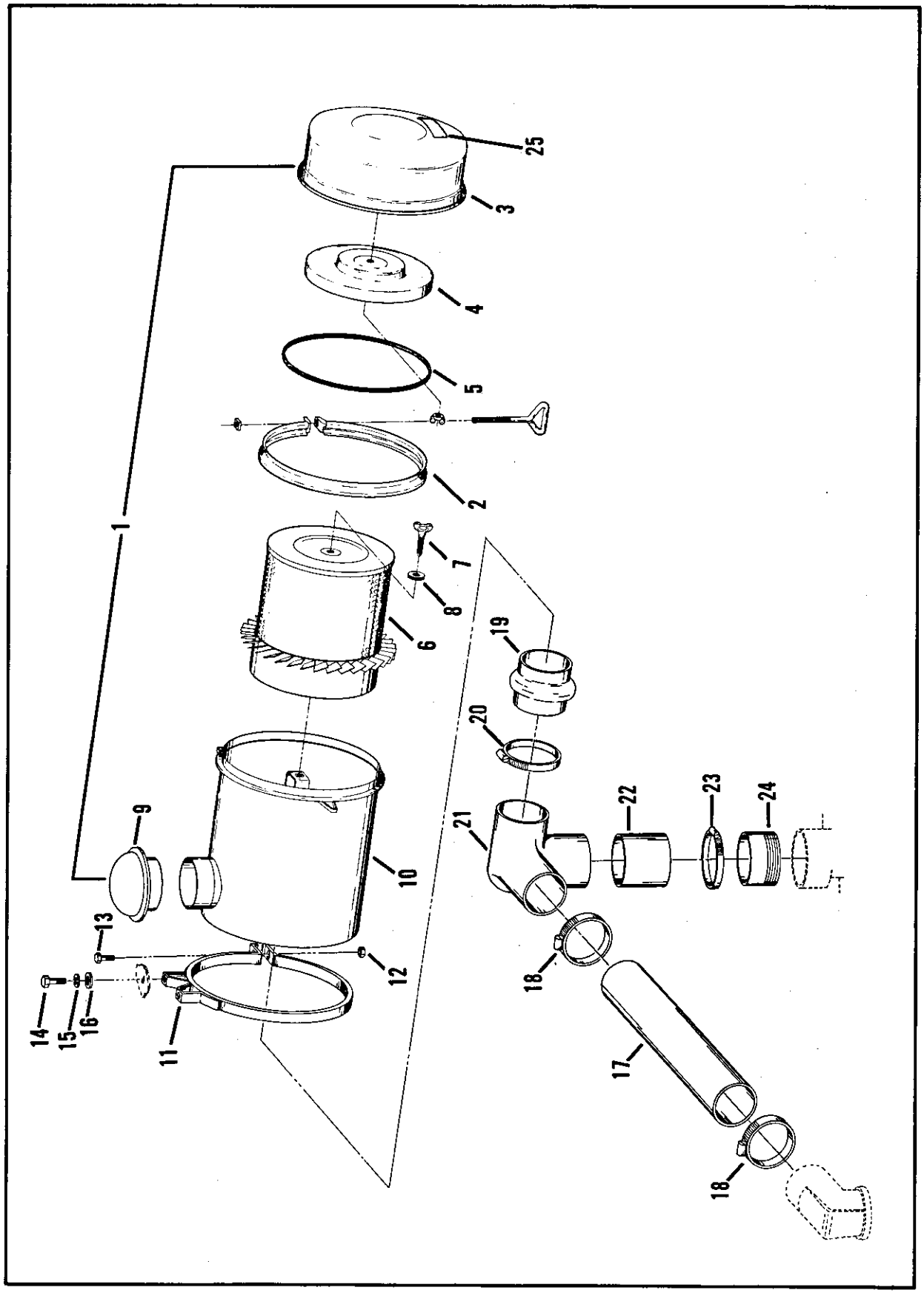


Figure 5-3. Air Cleaner Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-3	No Number	AIR CLEANER GROUP	REF	
-1	FWG14-0077	. CLEANER ASSEMBLY, Air (18265) (16004 PN 48318) (see figure 5-1 for NHA)	1	
-2	P10-0866	. . CLAMP ASSY (18265)	1	
	P10-0791	. . . NUT, Square	1	
	P10-0793	. . . BOLT, Clamp	1	
-3	P10-6773	. . CUP ASSEMBLY (18265)	1	
-4	P10-6771	. . BAFFLE ASSEMBLY (18265)	1	
-5	P01-7335	. . GASKET, Cup (18265)	1	
-6	P11-7331	. . ELEMENT ASSY, (18265) (16004 PN 48540)	1	
-7	P01-6984	. . SCREW, Thumb (18265) (AP)	1	
-8	P01-8462	. . WASHER, Gasket (18265) (AP)	1	
-9	GAH00-0165	. . CAP, Cleaner, air (18265) (16004 PN 48334)	1	
-10	No Number	. . BODY ASSEMBLY (Not procurable separately)	1	
-11	62113	. BAND, Mounting, air cleaner	2	
-12	120376	. NUT, Hex (AP)	2	
-13	122040	. SCREW, Cap (AP)	2	
-14	120233	. SCREW, Cap (AP)	4	
-15	120382	. WASHER, Lock (AP)	4	
-16	446362	. WASHER, Flat (AP)	4	
-17	66148	. HOSE, Air 28 in.	1	
-18	61055	. CLAMP, Hose	2	
-19	70218	. HOSE, Hump	1	
-20	61039	. CLAMP, Hose	2	
-21	50895	. MANIFOLD, Intake, air	1	
-22	66129	. HOSE, Air, 9 in.	1	
-23	61054	. CLAMP, Hose	2	
-24	67701	. NIPPLE, 3 in. NPT x 4 in. TOE only	1	
-25	63302	. DECAL, Air cleaner service	1	

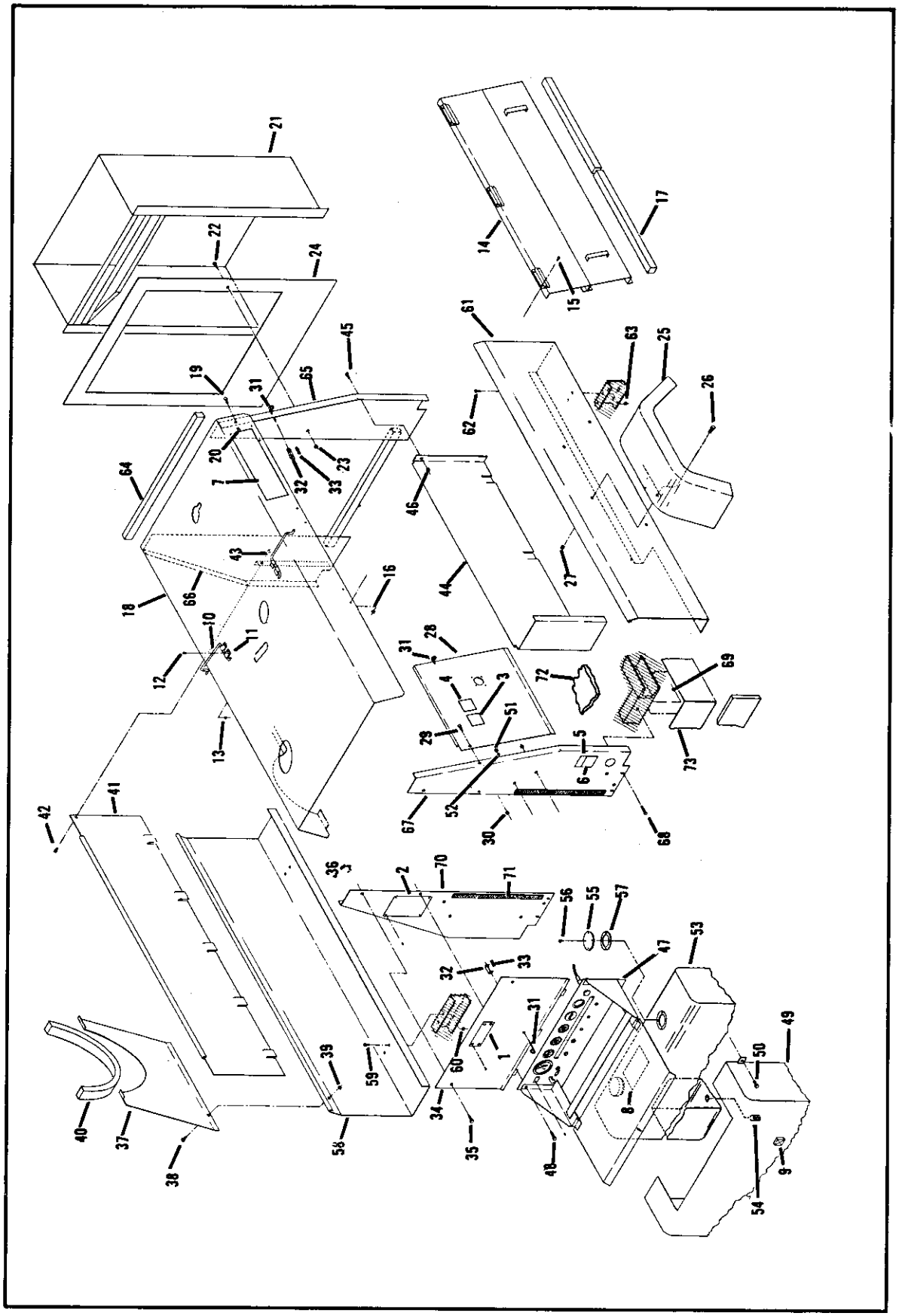


Figure 5-4. Housing Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-4	No Number	HOUSING GROUP (See figure 5-1 for NHA)	REF	
-1	14621	. PLATE, Name	1	
-2	48349	. PLATE, Operating instructions	1	
-3	80779	. PLATE, Identification	1	
-4	80780	. PLATE, Transportation data	1	
-5	61872	. DECAL, Fill to overflow	1	
-6	63303	. DECAL, Oil recommendation	1	
-7	80778	. DECAL, USN registration numbers	2	
-8	66142	. DECAL, Diesel fuel or JP-5 only	1	
-9	65995	. BUMPER, Door, SJ-5004 (52152)	2	
-10	68144	. LATCH, Door	2	
-11	11030	. CLIP, Tubing (AP)	4	
-12	273771	. SCREW, Cap, serr fl (AP)	4	
-13	9416918	. NUT, Serr fl (AP)	4	
-14	68125	. DOOR	2	
-15	274825	. SCREW, Cap, serr fl (AP)	12	
-16	9416918	. NUT, Serr fl (AP)	12	
-17	80608	. STRIP, Foam	4	
-18	68126	. ROOF	1	
-19	273771	. SCREW, Cap, serr fl (AP)	16	
-20	9416918	. NUT, Serr fl (AP)	16	
-21	80142	. BAFFLE, Radiator	1	
-22	273771	. SCREW, Cap, serr fl (AP)	26	
-23	9416918	. NUT, Serr fl (AP)	21	
-24	68121	. PANEL, Radiator	1	
-25	64107	. FENDER	2	
-26	274825	. SCREW, Cap, serr fl (AP)	8	
-27	9416918	. NUT, Serr fl (AP)	8	
-28	66118	. PIECE, Filler, road side	1	
-29	273771	. SCREW, Cap, serr fl (AP)	8	
-30	9416918	. NUT, Serr fl (AP)	8	
-31	27327	. EYE, Latch	5	
-32	27328	. BRACKET	5	
-33	27329	. SPRING	5	
-34	68475	. PANEL, Access	1	
-35	273771	. SCREW, Cap, serr fl (AP)	9	
-36		Deleted		
-37	66119	. PIECE, Filler, curb side	1	
-38	273771	. SCREW, Cap, serr fl (AP)	8	
-39	9416918	. NUT, Serr fl (AP)	8	
-40	80608	. STRIP, Foam	2	
-41	66123	. PANEL, Inner, curb sid	1	
-42	273771	. SCREW, Cap, serr fl (AP)	2	
-43	9416918	. NUT, Serr fl (AP)	2	
-44	66121	. PANEL, Inner, road side	1	
-45	273771	. SCREW, Cap (AP)	2	
-46	9416918	. NUT, Serr fl (AP)	2	
-47	No Number	. PANEL, GROUP, Instrument(see figure 5-5)	REF	
-48	273771	. SCREW, Cap. Serr fl (AP)	4	
-49	68468	. COVER, Tank, fuel	1	
-50	120918	. SCREW, Cap (AP)	4	
-51	120377	. NUT (AP)	4	
-52	120382	. WASHER, Lock (AP)	4	
	120395	. WASHER, Flat (AP)	4	
-53	66112	. TANK, Fuel	1	
-54	143934	. PLUG	1	
-55	44741	. COVER, Gauge, flange	1	
-56	120221	. SCREW, Cap (AP)	5	
-57	44427	. GASKET, Gauge, flange	1	
-58	66122	. PANEL, Box, tool curb side	1	

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-4-59	274825	. SCREW, Cap, serr fl (AP)	4	
-60	9416918	. NUT, Serr fl (AP)	4	
-61	66120	. PANEL, Box, tool, road side	1	
-62	274825	. SCREW, Cap, serr fl (AP)	6	
-63	9416918	. NUT, Serr fl (AP)	6	
-64	80607	. STRIP, Foam	4	
-65	66108	. PANEL, End, rear, road side	1	
-66	66109	. PANEL, End, rear, curb side	1	
-67	80857	. PANEL, End, front, road side	1	
-68	273771	. SCREW, Cap, serr fl (AP)	6	
-69	9416918	. NUT, Serr fl (AP)	6	
-70	66111	. PANEL, End, rear, curb side	1	
	273771	. SCREW, Cap, serr fl	6	
	9416918	. NUT, Serr fl (AP)	6	
-71	14048	. WEBBING, 140 inches	1	
-72	80222	. BOX	1	
-73	64114	. SHEET, Foam, 135 sq. ft.	1	
	64115	. ADHESIVE, FOAM, 1 qt.	3	

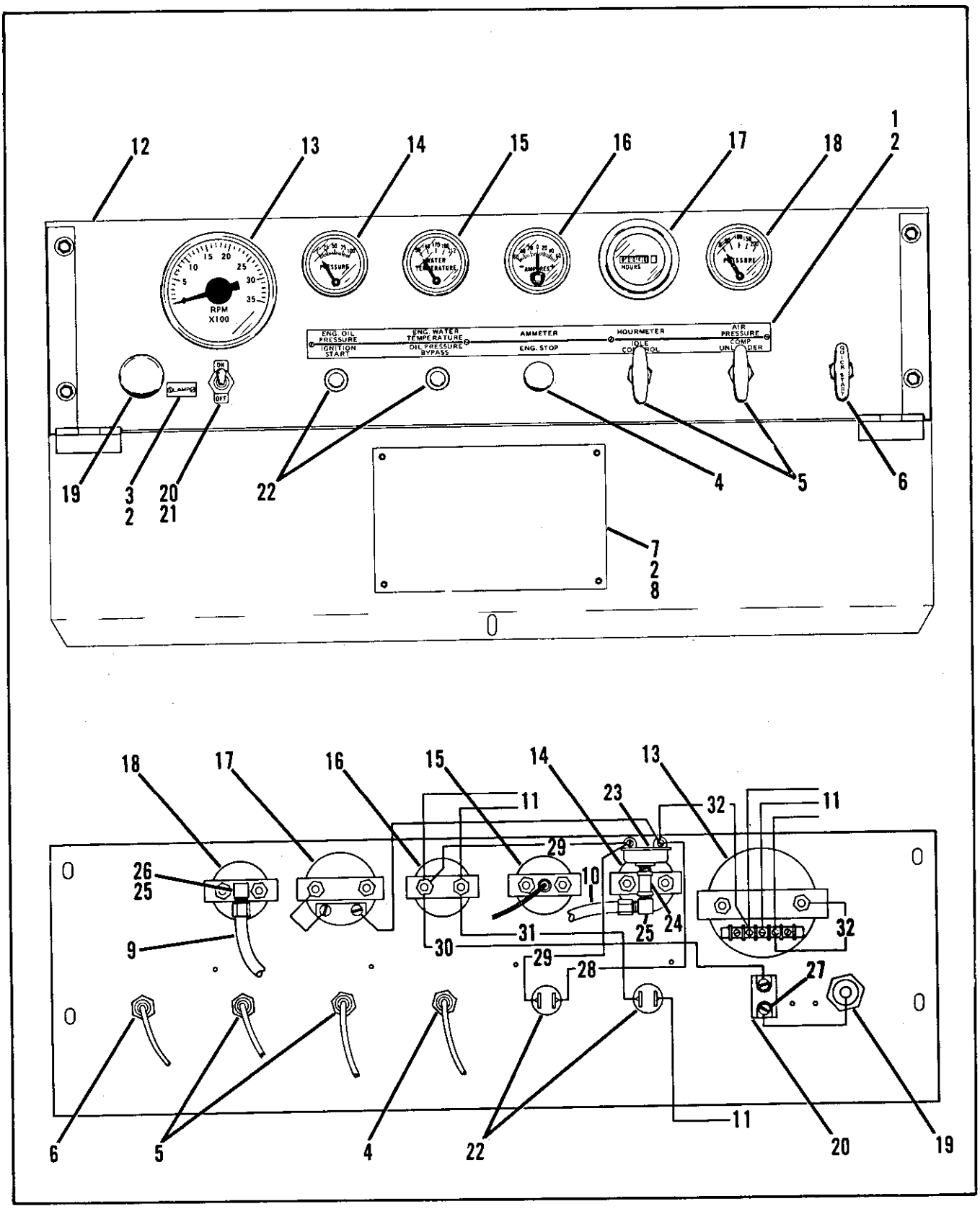


Figure 5-5. Instrument Panel Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-5	No Number	INSTRUMENT PANEL GROUP (See figure 5-1 for NHA)	REF	
-1	80870	. NAMEPLATE	1	
-2	68749	. SCREW, Self-tap (AP)	10	
-3	66134	. NAMEPLATE	1	
-4	8188	. CABLE (See figure 5-6)	REF	
-5	27854	. CABLE (See figure 5-6)	REF	
-6	LP-3864R-36	. CABLE (61112) (See figure 5-27)	REF	
-7	48349	. NAMEPLATE	1	
-8	190734	. NUT, Lock (AP)	4	
-9	61081	. HOSE ASSY	1	
-10	44469	. HOSE ASSY	1	
	41899	. ELBOW (At engine block)	1	
-11	80819	. WIRE HARNESS (See figure 5-1)	REF	
	80469	. INSTRUMENT PANEL ASSY	1	
-12	80471	. . PANEL AND COVER ASSY	1	
-13	80473	. . TACHOMETER	1	
-14	62085	. . GUAGE	1	
-15	68265	. . GUAGE	1	
-16	48271	. . AMMETER	1	
-17	60135	. . HOURMETER	1	
-18	32601	. . GUAGE	1	
-19	80223	. . LIGHT, Panel	1	
	65015	. . . BULB, Replacement	1	
-20	27670	. . SWITCH	1	
-21	27671	. . PLATE, Switch	1	
-22	14073	. . SWITCH	2	
-23	14439	. . SWITCH, Pressure	1	
-24	144082	. . TEE	1	
-25	41899	. . ELBOW	2	
-26	144098	. . COUPLING, Reducing	1	
-27	24855	. . TERMINAL, Wire	1	
-28	48966	. . WIRE ASSY	1	
-29	49493	. . WIRE ASSY	2	
-30	49060	. . WIRE ASSY	1	
-31	49059	. . WIRE ASSY	1	
-32	80824	. . WIRE ASSY	2	

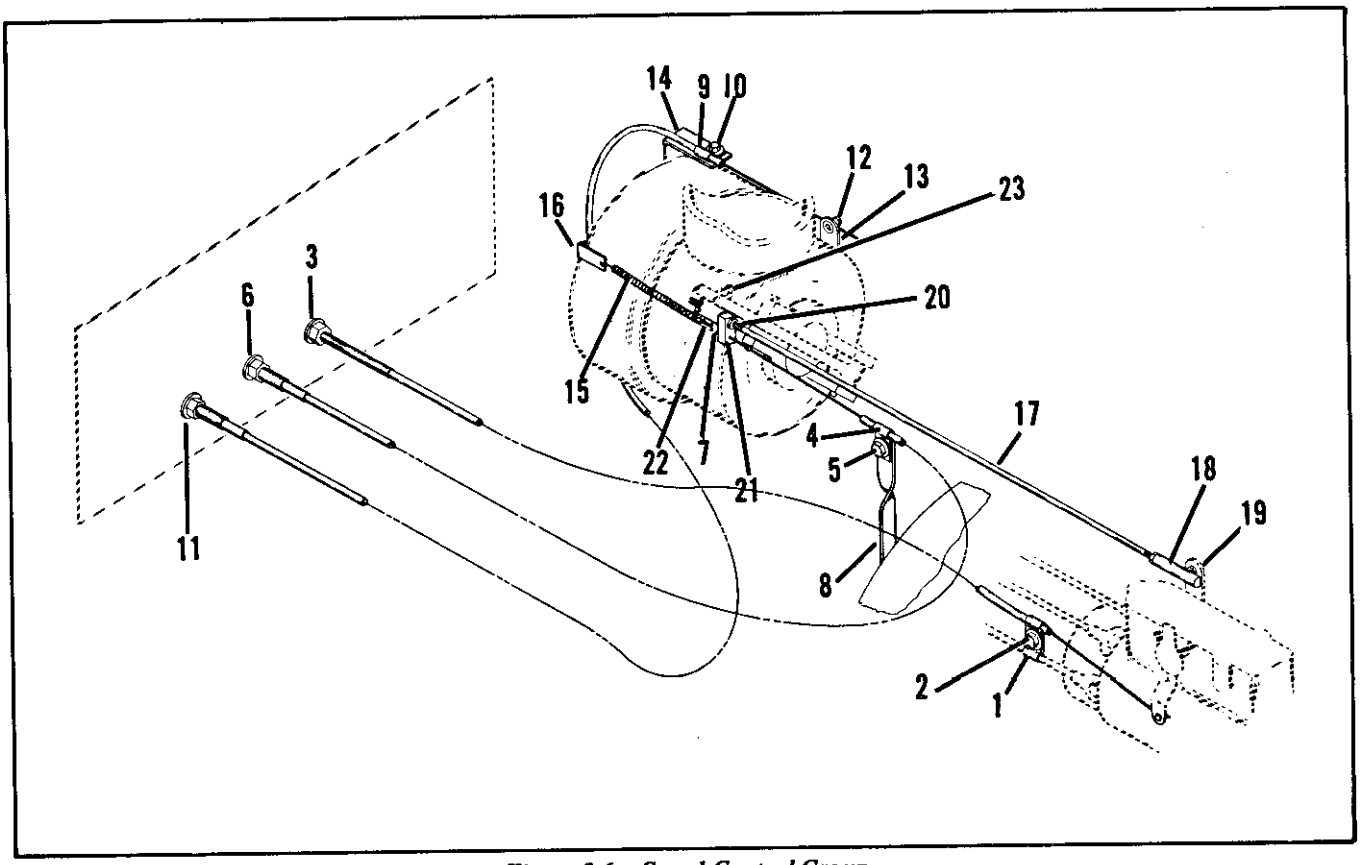


Figure 5-6. Speed Control Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-6	No Number	SPEED CONTROL GROUP (See figure 5-1 for NHA)	REF	
-1	60886	. CLIP	1	
-2	273771	. SCREW, Cap, serr fl	1	
	9416918	. NUT, Serr fl	1	
-3	8188	. CABLE, Control, Stop engine	1	
-4	60886	. CLIP	1	
-5	273771	. SCREW, Cap, serr fl	1	
	9416918	. NUT, Serr fl	1	
-6	27854	. CABLE, Control, throttle	1	
-7	20588	. STOP, Wire	1	
-8	65878	. BRACKET, Throttle cable	1	
-9	60886	. CLIP	1	
-10	273771	. SCREW, Cap serr fl	1	
	9416918	. NUT, Serr fl	1	
-11	27854	. CABLE, Control, unload	REF	
-12	67981	. STOP, Wire (see figure 5-19)	REF	
-13	30024	. ARM, Lever (see figure 5-19)	1	
-14	44506	. BRACKET, Cable, unload	1	
-15	27365	. SPRING, Throttle	1	
-16	62620	. BRACKET, Spring, throttle	1	
-17	65876	. ROD, Control	1	
-18	9665	. JOINT, Ball	1	
-19	443332	. NUT, Lock (AP)	5	
-20	120367	. NUT, Hex (AP)	1	
-21	27359	. BLOCK, Stop	1	
-22	18952	. STOP, Block	1	
-23	443332	. NUT, Lock (AP)		

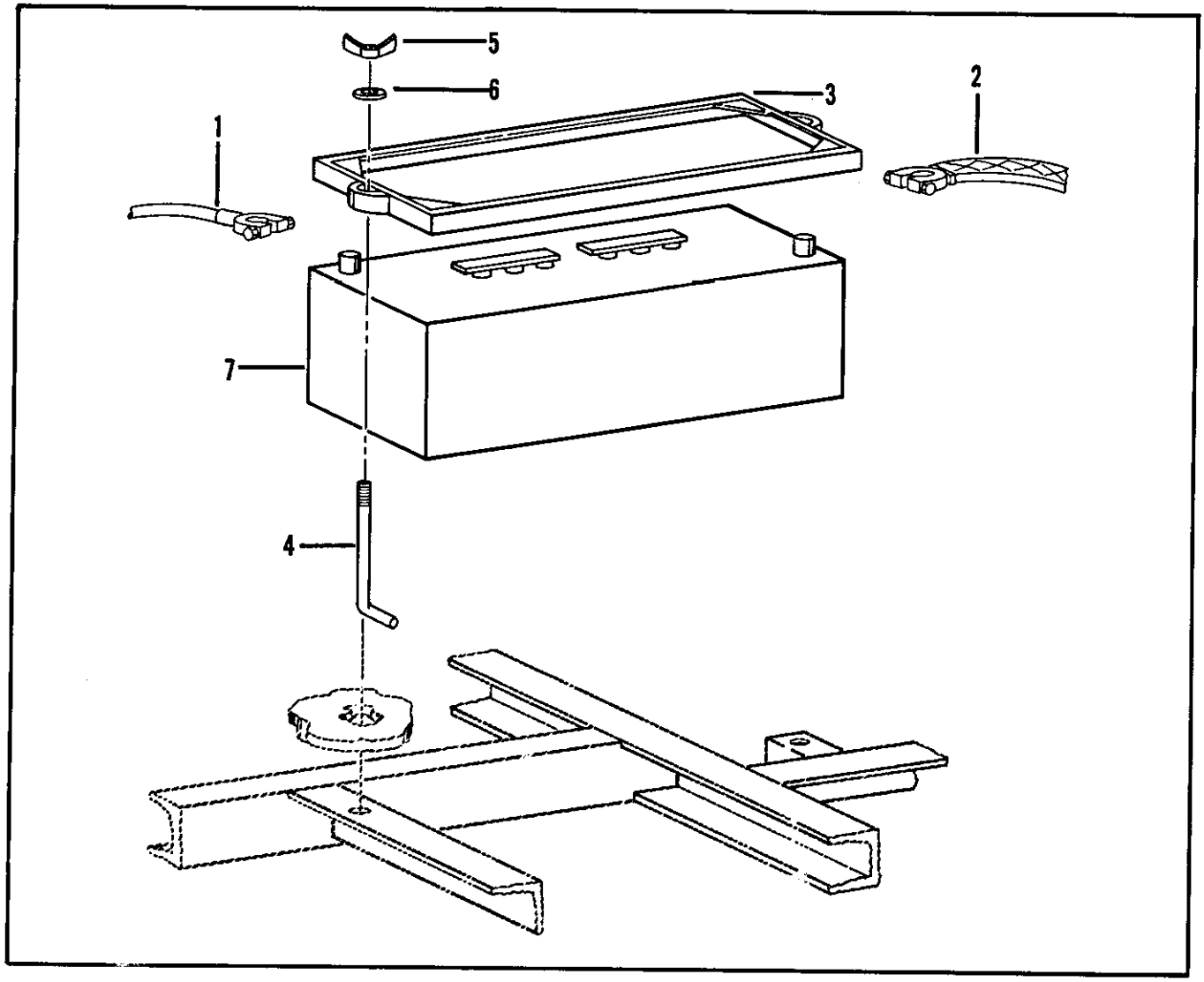


Figure 5-7. Battery Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-7	No Number	BATTERY, Group (see figure 5-1 for NHA)	REF	
-1	43143	. CABLE, Battery, pos	1	
-2	11028	. STRAP, Ground, neg	1	
-3	24668	. BRACKET, Ho'ddown, battery	1	
-4	48808	. BOLT, Angle	2	
-55	126032	. NUT, Wing.....	2	
-6	120394	. WASHER, Flat	2	
-7	24669	. BATTERY, 12 V	1	

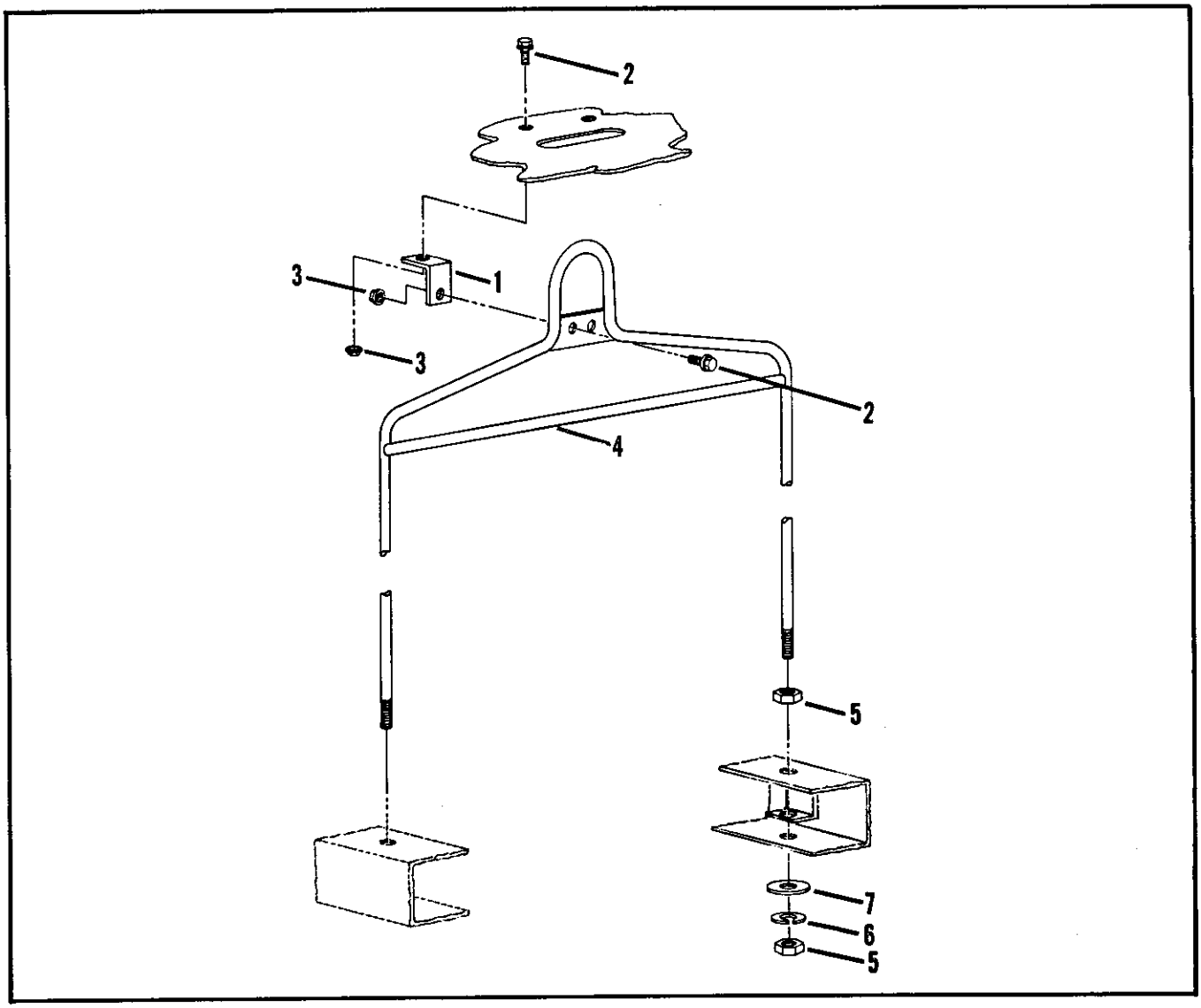


Figure 5-8. Lifting Bail Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-8	No Number	LIFTING BAIL GROUP (See figure 5-1 for NHA)	REF	
-1	61763	. BRACKET, Support, bail	2	
-2	274825	. SCREW, Cap serr fl (AP)	4	
-3	9416918	. NUT, Serr fl (AP)	4	
-4	66253	. BAIL, Lifting	1	
-5	220088	. NUT (AP)	4	
-6	131048	. WASHER, Lock (AP)	2	
-7	131019	. WASHER, Flat (AP)	2	

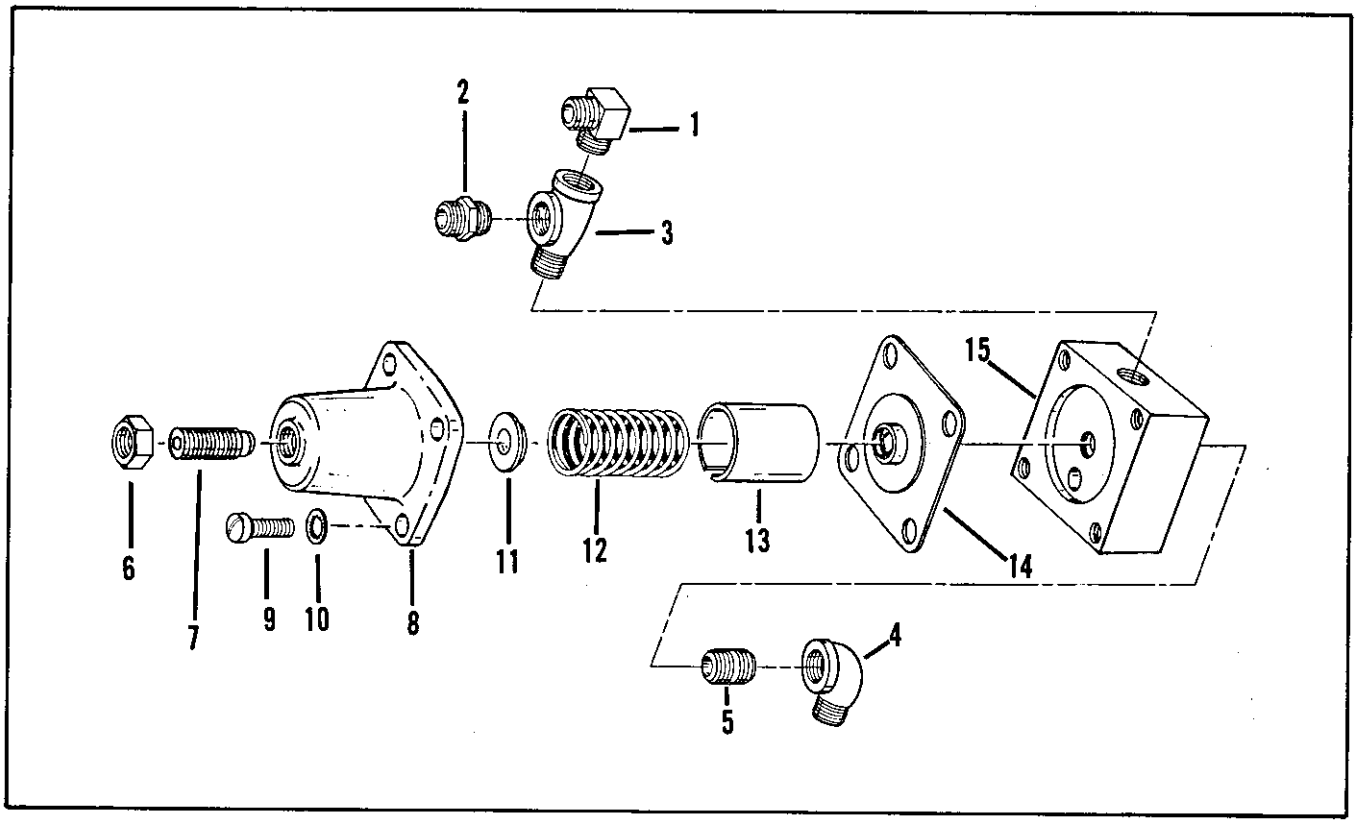


Figure 5-9. Air Pressure Regulator Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-9	No Number	AIR PRESSURE REGULATOR GROUP (See figure 5-1 for NHA)	REF	
-1	28890	. ELBOW, Tube, 1/4 NPT x 3/8	1	
-2	28888	. CONNECTOR, Tube, 1/4 NPT x 3/8	1	
-3	67800	. TEE, Street, 1/4 x 1/4 x 1/4	1	
-4	144112	. ELBOW, 90° Street, 1/4 NPT	1	
-5	192050	. NIPPLE, Close, 1/4 NPT	1	
	64142	. REGULATOR ASSY, Air pressure	1	
-6	120369	. . NUT, Hx, 3-24 NF	1	
-7	40869	. . SCREW, Adjustment, 3/8-24 NF	1	
-8	40864	. . HOUSING, Spring	1	
-9	132259	. . SCREW, Mach, Fil hd, 1/4-20NC x 5/8	4	
-10	28149	. . WASHER, Lock, Intl tooth, 1/4	4	
-11	40536	. . SEAT, Spring	1	
-12	40863	. . SPRING, Regulator	1	
-13	65959	. . TUBE, Spring	1	
-14	64141	. . DIAPHRAGM ASSY	1	
-15	64140	. . BASE, Regulator	1	

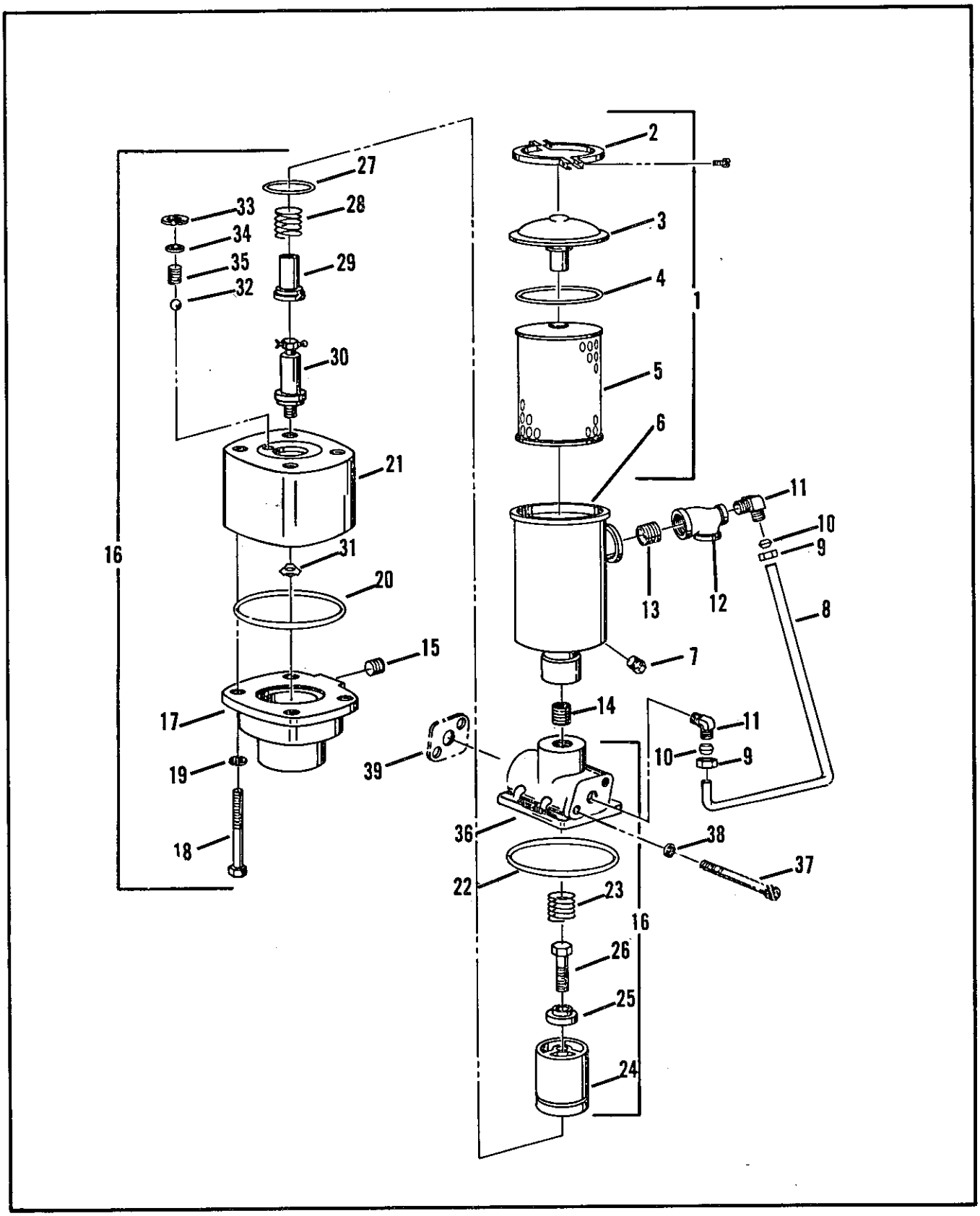


Figure 5-10. By-Pass and Oil Filter Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-10	63949	BY-PASS AND OIL FILTER ASSEMBLY (See figure 5-19 for NHA)	REF	
-1	62822	. FILTER ASSY, Oil, (Type 192-[illegible]8) (less bracket) (81321) (16004 PN 46204)	1	
-2	6654619	. . RING, Clamping (81321)	2	
	62865	. . SCREW, Cap (81321)	2	
-3	65148-4	. . COVER and Valve, relief (81321)	1	
-4	62866	. . GASKET (81321)	1	
-5	33316-13	. . ELEMENT (81321) (16004 PN 46207)	1	
-6	64010	. . CASE (81321)	1	
-7	25795	. . PLUG, Pipe (81321)	1	
-8	63944	. TUBE, Oil (16004)	1	
-9	44288	. . NUT	2	
-10	44289	. . FERRULE	2	
-11	44298	. ELBOW, Tube (16004)	2	
-12	67795	. TEE, Reducing (16004)	1	
-13	192470	. NIPPLE, Close (16004)	1	
-14	192470	. NIPPLE, Close (16004)	1	
-15	143162	. PLUG (16004)	1	
-16	46214	. BY-PASS ASSY (16004)	1	
-17	46218	. . COVER	1	
-18	9421633	. . SCREW, Skt Hd (AP)	4	
-19	28147	. . WASHER Lock (AP)	4	
-20	27293	. . O-RING	1	
-21	43367	. . BODY	1	
-22	27293	. . O-RING	1	
-23	40679	. . SPRING	1	
-24	29941	. . SHUTTLE	1	
-25	46174	. . GUIDE	1	
-26	121900	. . SCREW, Cap (AP)	1	
-27	24999	. . O-RING	1	
-28	40678	. . SPRING	1	
-29	46175	. . PLUNGER	1	
-30	40434	. . ELEMENT ASSEMBLY	1	
-31	49275	. . NUT, Spring (AP)	1	
-32	24527	. . BALL	1	
-33	44449	. . RING, Retaining	1	
-34	131014	. . WASHER, Flat	1	
-35	44501	. . SPRING	1	
-36	46201	. . CONNECTION, By-pass	1	
-37	67724	. SCREW, Soc. Hd. (AP)	REF	
-38	28147	. WASHER, Lock (AP)	REF	
-39	44051	. GASKET (16004)	REF	

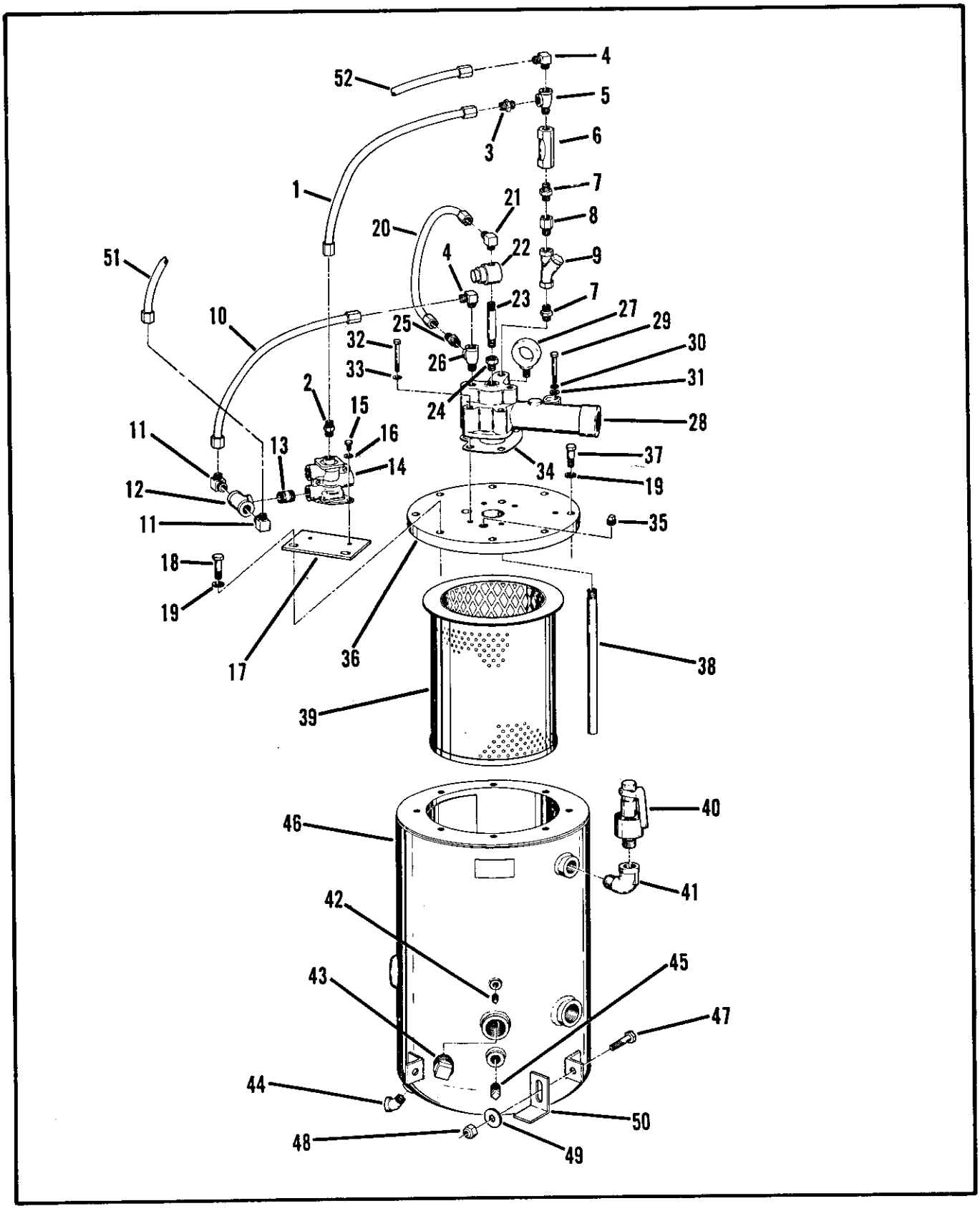


Figure 5-11. Oil Separator Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-11	No Number	OIL SEPARATOR GROUP (See figure 5-1 for NHA)	REF	
-1	61070	. HOSE ASSEMBLY	1	
-2	40783	. CONNECTOR, Brass, 1/8 NPT x 3/8 tube	1	
-3	28888	. CONNECTOR	1	
-4	28890	. ELBOW, Tube	2	
-5	67800	. TEE, Street	1	
-6	62234	. GAUGE, Flow sight	1	
-7	41545	. NIPPLE, Hex	2	
-8	49776	. ORIFICE	1	
-9	47690	. STRAINER	1	
-10	61073	. HOSE ASSEMBLY	1	
-11	27691	. ELBOW, Tube	2	
-12	144085	. TEE, Std	1	
-13	219643	. NIPPLE, 1/2 NPT x 1-3/8	1	
	68461	. SEPARATOR ASSEMBLY, Oil	1	
-14	68550	. . VALVE, Blowdown	1	
-15	122007	. . SCREW, Cap, 5/16 - 18 NC x 3/4	2	
-16	120214	. . WASHER, Lock	2	
-17	68460	. . BRACKET, Blowdown valve	1	
-18	62914	. . SCREW, Cap, 5/8 - 11 NC x 2-1/2	2	
-19	121574	. . WASHER, Lock	8	
-20	61072	. . HOSE ASSEMBLY	1	
-21	28890	. . ELBOW, Tube	1	
-22	64916	. . REGULATOR, Pressure	1	
-23	192055	. . NIPPLE, Pipe, 1/4 NPT x 3	1	
-24	144036	. . BUSHING, Hex, 3/8 x 1/4	1	
-25	28888	. . CONNECTOR	1	
-26	67800	. . TEE, Street	1	
-27	24636	. . BOLT, Eye	1	
-28	No Number	. . VALVE, Minimum pressure group (see figure 5-12)	REF	
-29	61720	. . SCREW, Cap, hardened 1/2 - 13	1	
-30	120384	. . WASHER, Lock 1/2	1	
-31	120396	. . WASHER, Flat 1/2	1	
-32	122207	. . SCREW, Cap, hx hd 3/8 - 16 NC x 3	4	
-33	120382	. . WASHER, Lock, 3/8	4	
-34	44088	. . GASKET, Valve	1	
-35	143933	. . PLUG, Pipe	1	
-36	48176	. . COVER, Tank (not procurable separately)	1	
-37	61874	. . SCREW, Cap, hardened	6	
-38	60624	. . PIPE	1	
-39	64746	. . ELEMENT, Oil separator	1	
-40	14776	. . VALVE, Safety	1	
-41	144113	. . ELBOW, 90° St, 150 lb. MI	1	
-42	143933	. . PLUG, Pipe, 1/4 NPT	1	
-43	219308	. . PLUG, Pipe, 1-1/2 NPT	1	
-44	144122	. . ELBOW, 45° St, 150 lb MI	1	
-45	219200	. . PLUG, Pipe, 1/2 NPT	1	
-46	49733	. . TANK, Oil separator	1	
-47	120426	. SCREW, Cap, 1/2 - 13 NC x 1-1/4	4	
-48	443339	. NUT, Lock, 1/2 - 13 NC	4	
-49	120396	. WASHER, Flat	4	
-50	49966	. BRACKET, Support	4	
-51	61076	. HOSE ASSEMBLY	1	
-52	61083	. HOSE ASSEMBLY	1	

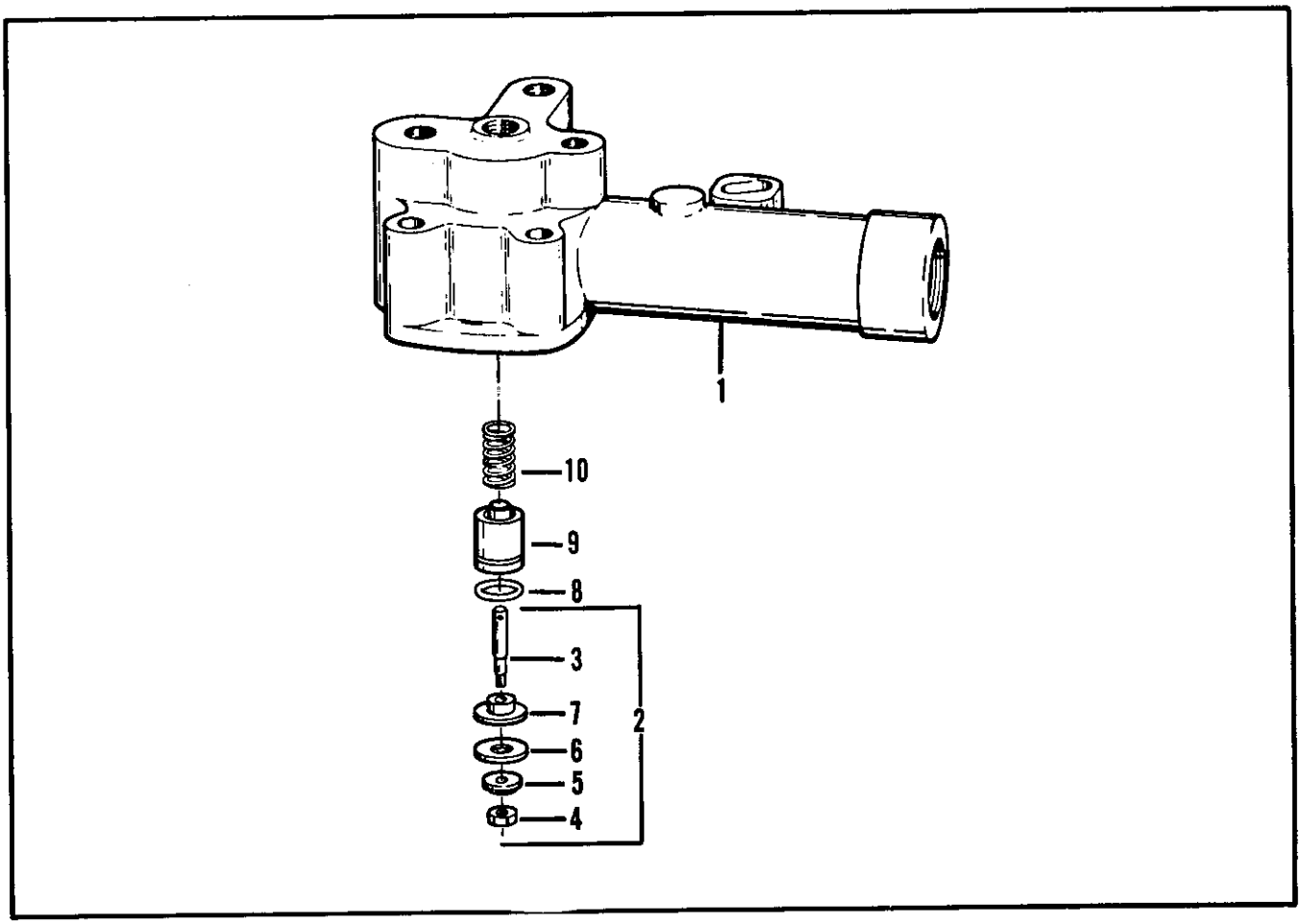


Figure 5-12. Minimum Pressure Valve Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-12	No Number	MINIMUM PRESSURE VALVE GROUP (See figure 5-1 for NHA)	REF	
-1	60826	. HOUSING, Valve, minimum pressure	1	
-2	62232	. VALVE ASSY, Non-return	1	
-3	47372	. . STEM	1	
-4	62303	. . NUT, Lock	1	
-5	47371	. . WASHER	1	
-6	47373	. . SEAT	1	
-7	47370	. . FACING	1	
-8	24999	. O-RING	1	
-9	26284	. PISTON	1	
-10	26283	. SPRING	1	

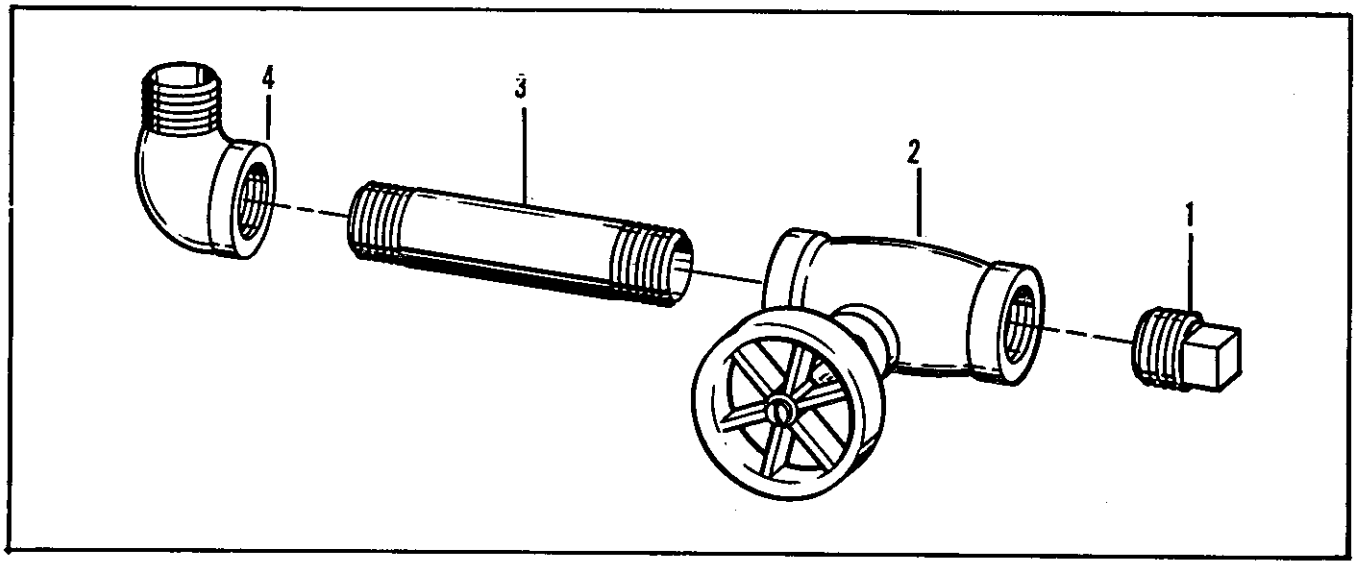


Figure 5-13. Separator Drain Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-13	No Number	SEPARATOR DRAIN GROUP (See Figure 5-1 for NHA)	REF	
-1	143395	. PLUG	1	
-2	14034	. VALVE, Globe	1	
-3	192078	. NIPPLE, 1/2 NPT x 3	1	
-4	127961	. ELBOW, St	1	

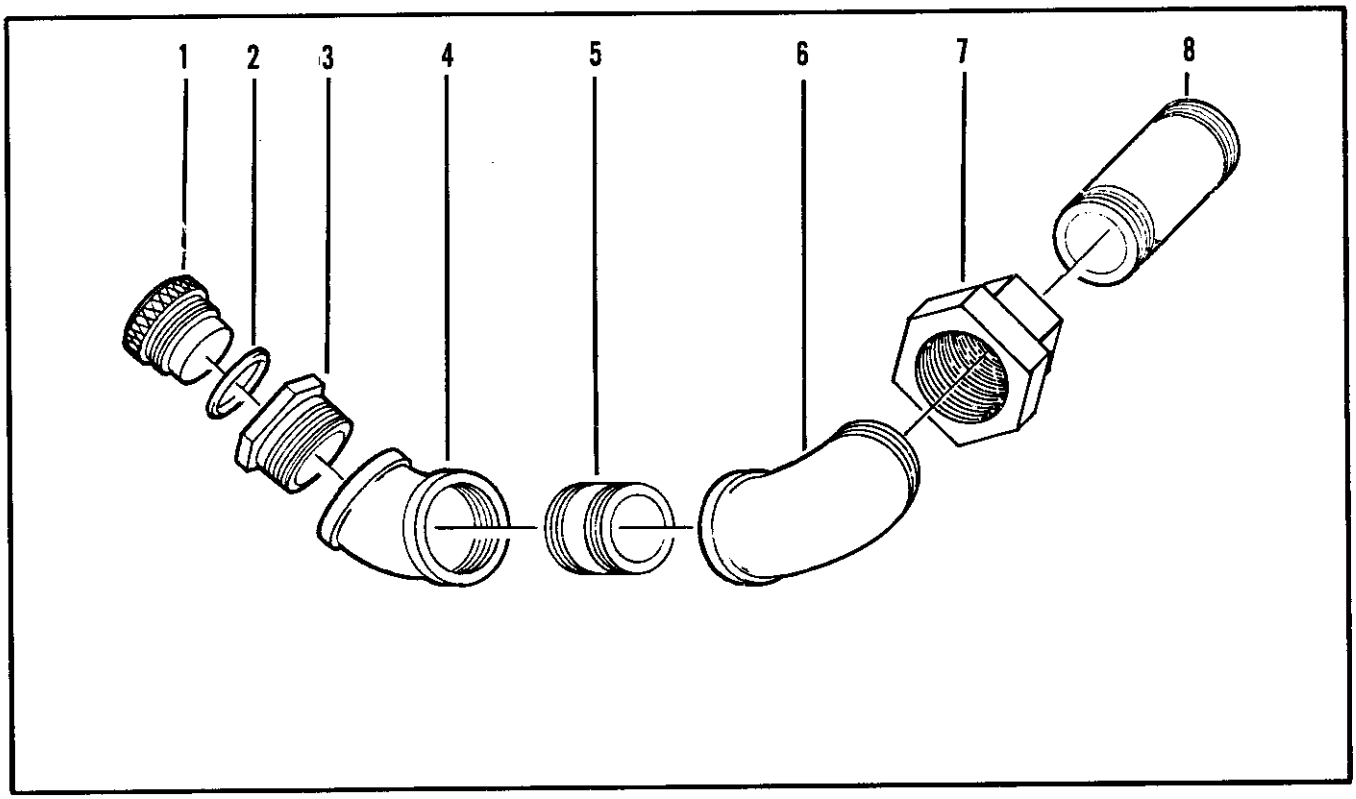


Figure 5-14. Oill Fill Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-14	No Number	OIL FILL GROUP (See figure 5-1 for NHA)	REF	
-1	26359	. PLUG	1	
-2	24982	. O-RING	1	
-3	63062	. BUSHING, Adapter	1	
-4	179462	. ELBOW, 45°	1	
-5	219823	. NIPPLE, 3 in.	1	
-6	179446	. ELBOW, St, 45°	1	
-7	179420	. COUPLING, Reducing	1	
-8	219695	. NIPPLE, 3-1/2 in.	1	

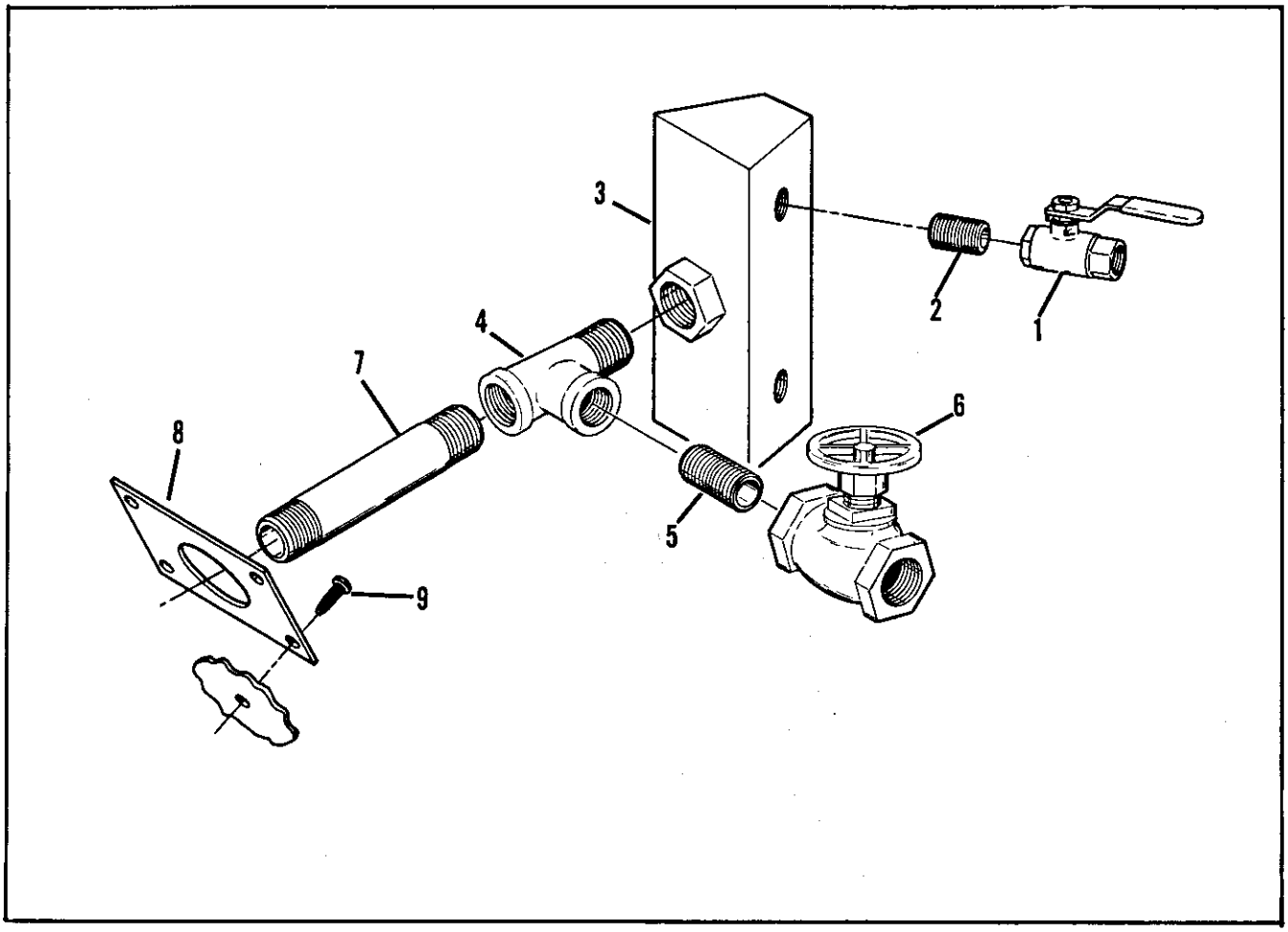


Figure 5-15. Discharge Manifold Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-15	No Number	DISCHARGE MANIFOLD GROUP (See figure 5-1 for NHA)	REF	
-1	62565	. VALVE, Throttle	4	
-2	192470	. NIPPLE, Close	4	
-3	60825	. MANIFOLD, Discharge	1	
-4	68581	. TEE, Street, 1-1/2	1	
-5	219813	. NIPPLE, Close	1	
-6	43132	. VALVE, Globe	1	
-7	219825	. NIPPLE, 1-1/2 NPT x 4	1	
-8	66251	. PLATE, Cover	1	
-9	80476	. SCREW, Self-tap	4	

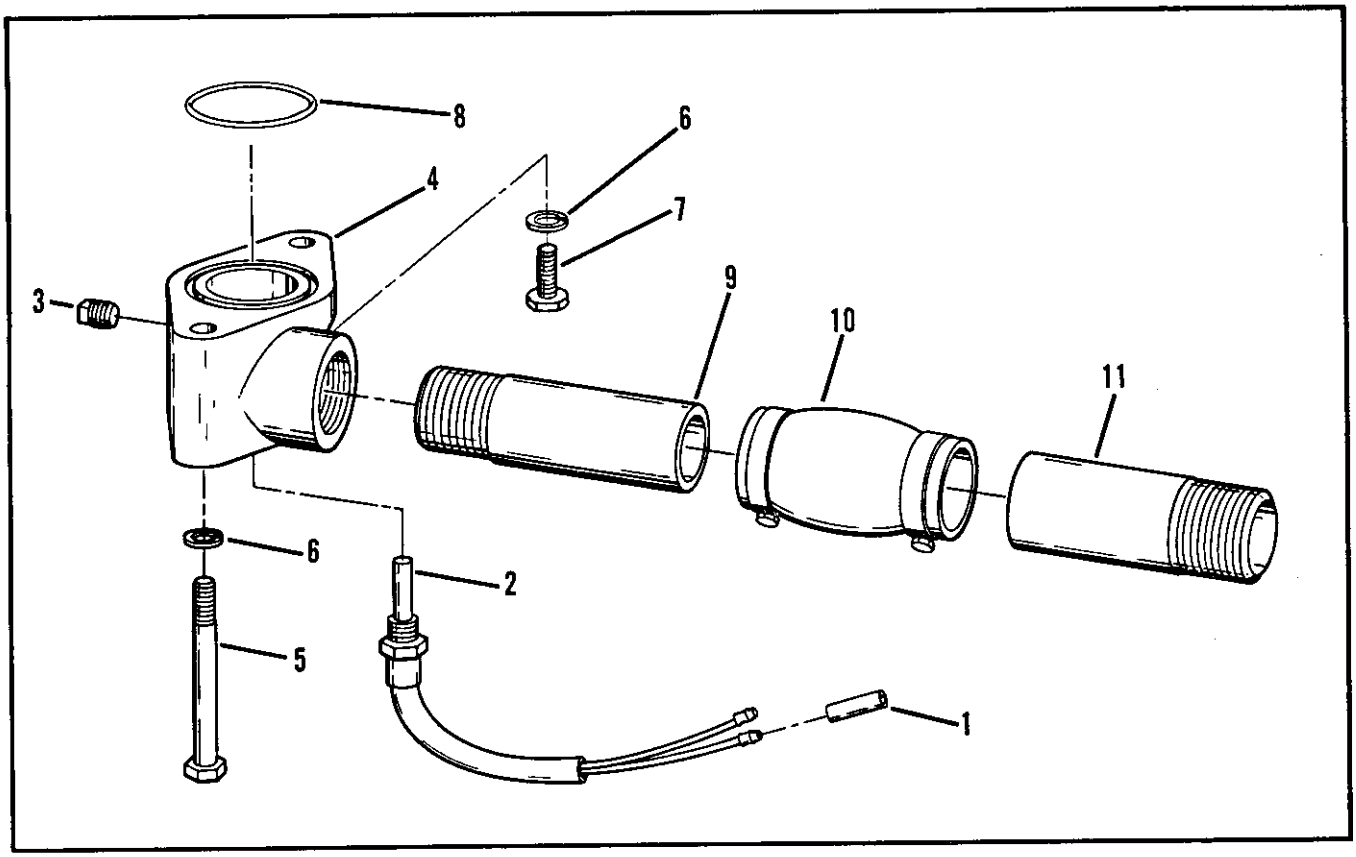


Figure 5-16. Compressor Discharge Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-16	No Number	COMPRESSOR DISCHARGE GROUP (See figure 5-1 for NHA)	REF	
-1	23921	. CONNECTOR, Wire	2	
-2	48414	. THERMOSWITCH	1	
-3	143935	. PLUG	1	
-4	68521	. CONNECTION, Discharge	1	
-5	142271	. SCREW, Cap, hx hd	1	
-6	120382	. WASHER, Lock	2	
-7	120233	. SCREW, Cap, hx hd	1	
-8	41670	. O-RING	1	
-9	80539	. NIPPLE	1	
-10	68268	. COUPLING	1	
-11	67756	. NIPPLE	1	

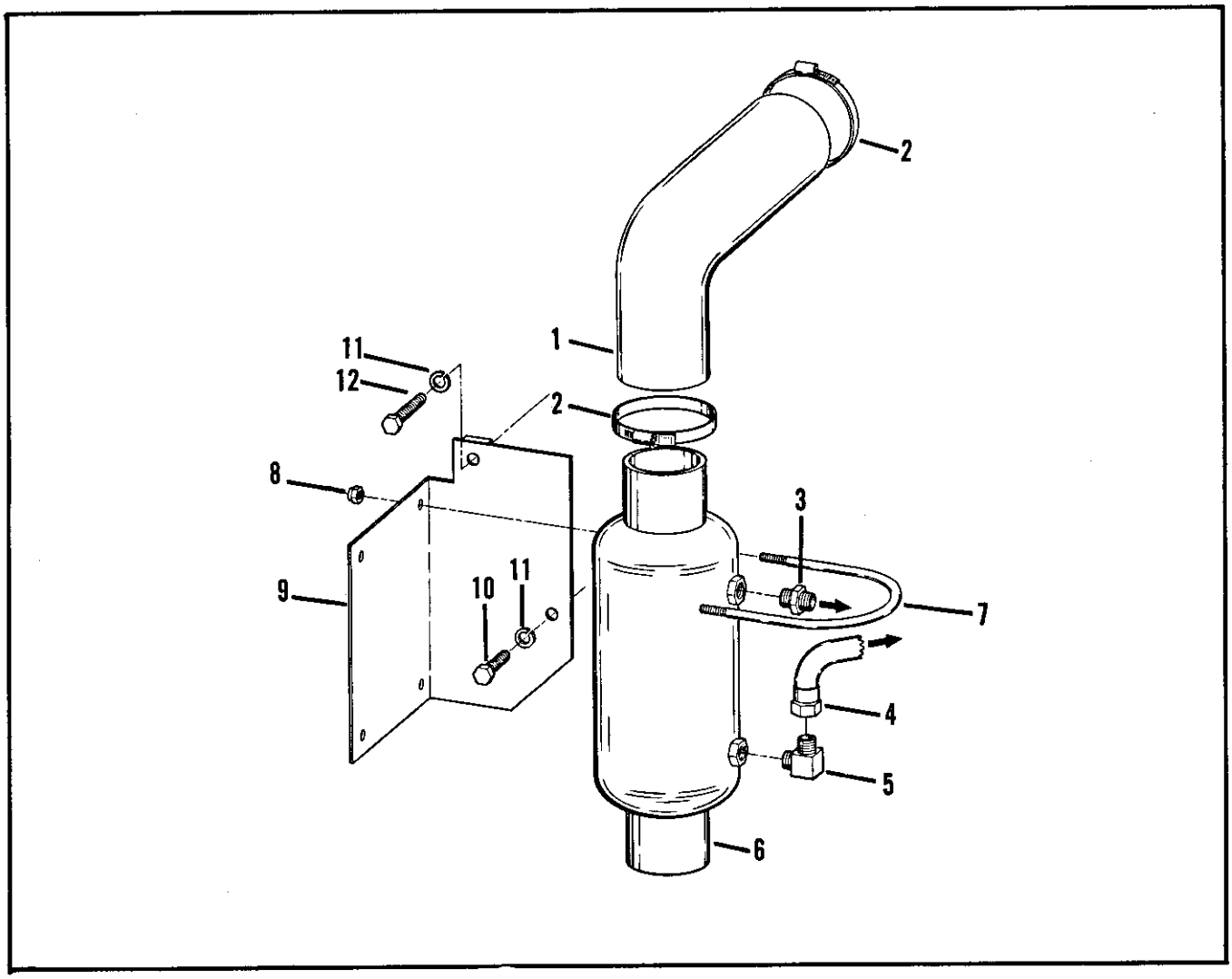


Figure 5-17. Engine Oil Cooler Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-17	No Number	ENGINE OIL COOLER GROUP (See figure 5-1 for NHA)	REF	
-1	46221	. HOSE	1	
-2	46330	. CLAMP, Hose	2	
-3	23672	. ADAPTER, Tube	1	
-4	80504	. HOSE ASSEMBLY	1	
-5	23679	. ELBOW, Tube	1	
-6	80501	. EXCHANGER, Heat (28265 PN 40-3095502).....	1	
-7	80503	. U-BOLT (AP)	2	
-8	443335	. NUT, Lock (AP)	4	
-9	80502	. BRACKET	1	
-10	122408	. SCREW, Cap (AP)	1	
-11	120384	. WASHER, Lock (AP)	2	
-12	122433	. SCREW, Cap (AP)	1	

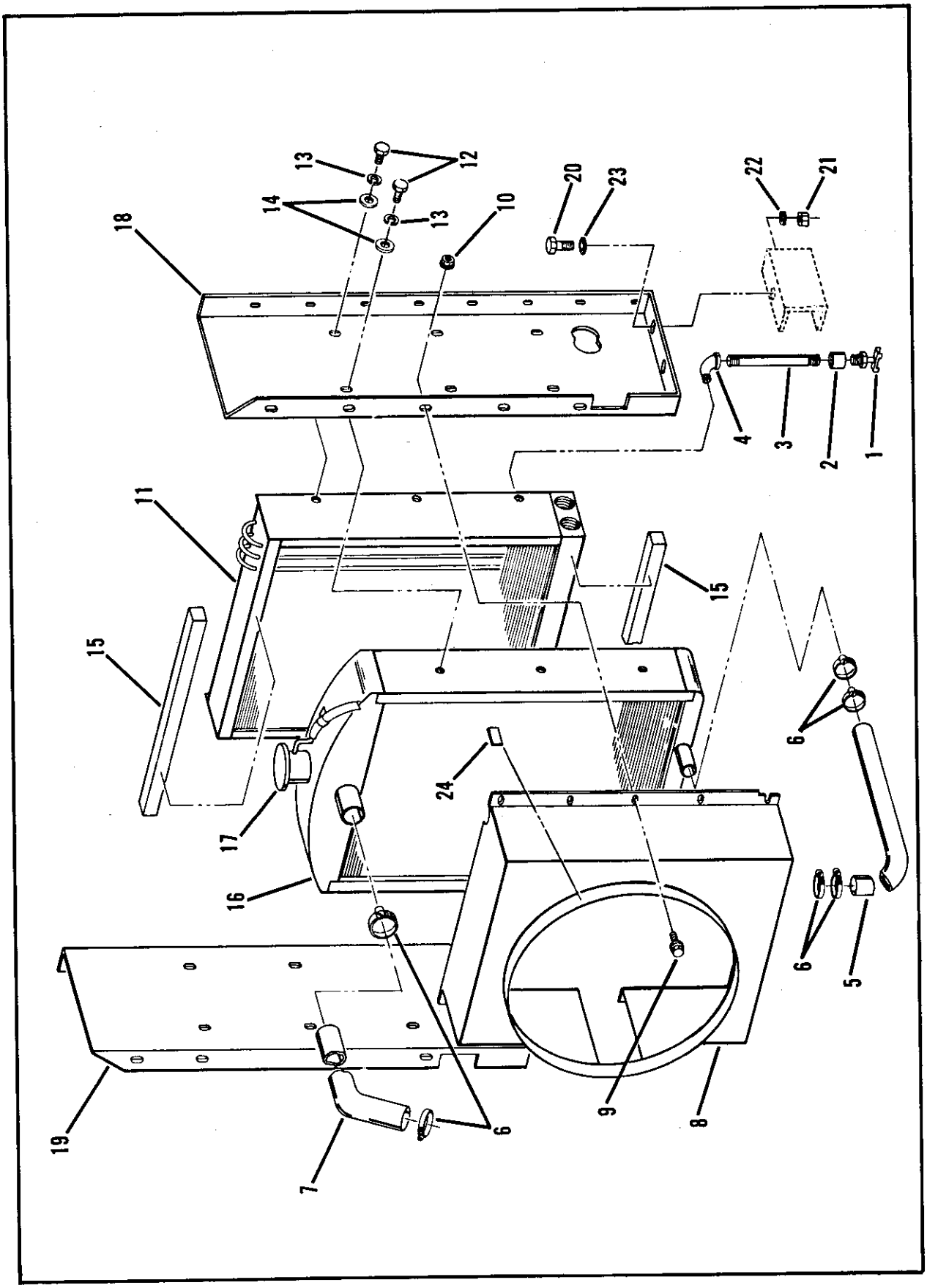


Figure 5-18. Compressor Oil Cooler and Radiator Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-18	No Number	COMPRESSOR OIL COOLER AND RADIATOR GROUP..... (See figure 5-1 for NHA)	REF	
-1	14028	. COCK, Drain	1	
-2	144069	. COUPLING	1	
-3	219638	. NIPPLE, 8 in.	1	
-4	111316	. ELBOW, St	1	
-5	80775	. HOSE, Radiator, lwr	1	
-6	46330	. CLAMP, Hose	6	
-7	48306	. HOSE, Radiator, upr	1	
-8	80253	. SHROUD, Fan	1	
-9	273771	. SCREW, Cap, serr fl (AP)	9	
-10	9416918	. NUT, Serr fl (AP)	9	
-11	48159	. COOLER, Oil	1	
-12	120233	. SCREW, Cap (AP)	12	
-13	120382	. WASHER, Lock (AP)	12	
-14	120394	. WASHER, Flat (AP)	12	
-15	80607	. STRIP, Foam	2	
-16	68548	. RADIATOR	1	
-17	96906	. . CAP, Radiator	1	
-18	66106	. SUPPORT, Radiator, road side	1	
-19	66105	. SUPPORT, Radiator, curb side	1	
-20	122433	. SCREW, Cap (AP)	4	
-21	120378	. NUT (AP)	4	
-22	120384	. WASHER, Lock	4	
-23	120396	. WASHER, Flat	4	
-24	66604	. DECAL, Caution	2	

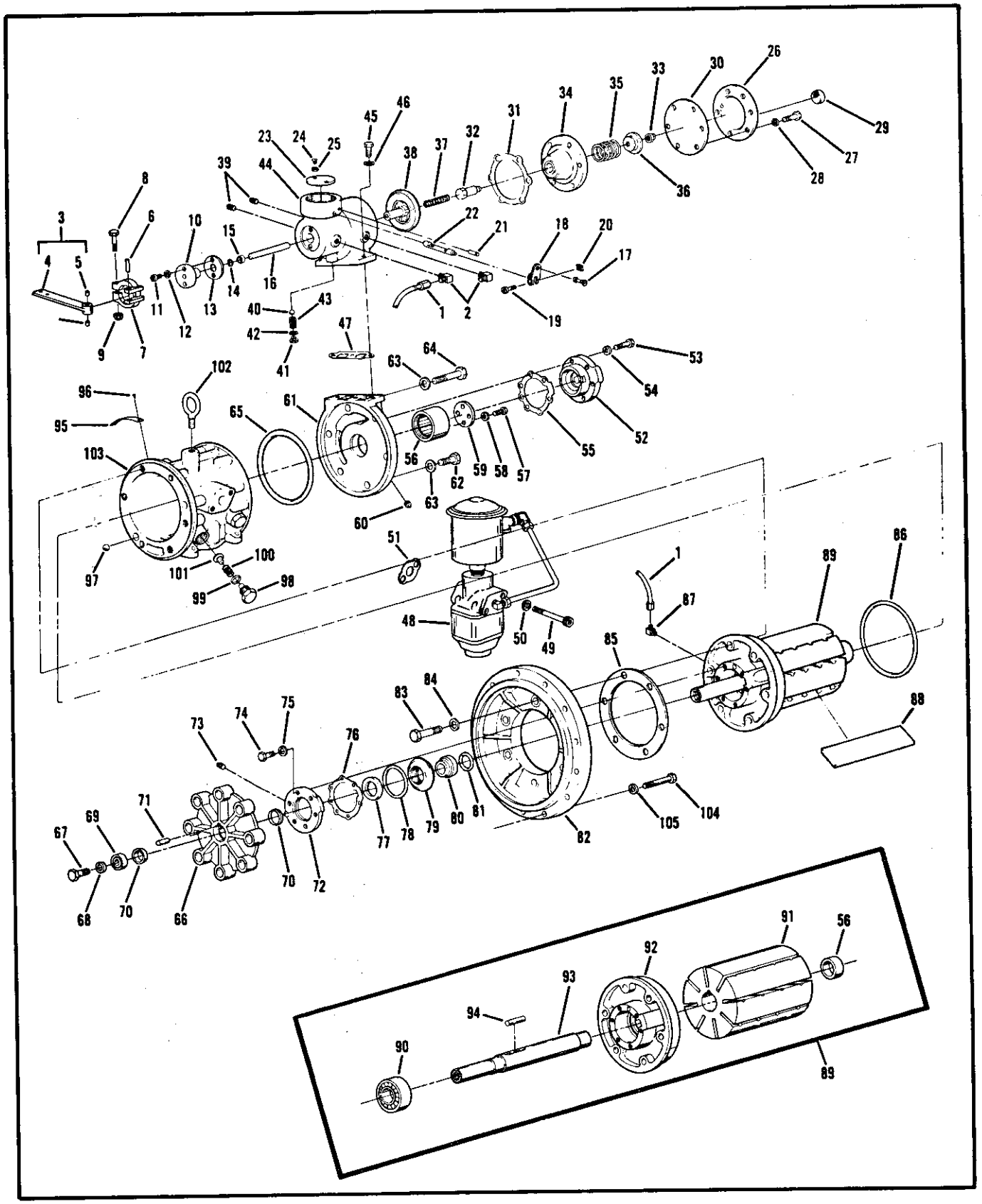


Figure 5-19. Compressor Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-19	No Number	COMPRESSOR GROUP (See Figure 5-1 for NHA)	REF	
-1	61079	. HOSE ASSEMBLY	1	
-2	28890	. ELBOW, Tube	2	
-3	62286	. ARM ASSY, Control speed	1	
-4	62285	. . ARM	1	
-5	40875	. . BUSHING	2	
-6	40596	. PIN	1	
	68105	. COMPRESSOR ASSEMBLY	1	
-7	61757	. . CLAMP, Control speed	1	
-8	138208	. . BOLT, Soc. hd (AP)	1	
-9	443331	. . NUT, Lock (AP)	1	
-10	61759	. . GUIDE, Control, speed	1	
-11	426816	. . SCREW, Cap sch 1/4 - 20 x 3/4 (AP)	2	
-12	28149	. . WASHER, Lock (AP)	2	
-13	61761	. . GASKET	1	
-14	24498	. . O-RING	1	
-15	26981	. . BUSHING, Guide	1	
-16	62047	. . ROD, Push	1	
-17	67981	. . STOP, Wire	1	
-18	30024	. . ARM, Lever	1	
-19	132915	. . SCREW, Rd hd, 10-32 (AP)	1	
-20	115295	. . NUT (AP)	1	
-21	30788	. . PIN, Stop	1	
-22	45074	. . SHAFT, Valve	1	
-23	45073	. . PLATE, Valve	1	
-24	121832	. . SCREW, Mach rd hd 8-32 x 3/8	2	
-25	40045	. . WASHER, Lock, no. 8	2	
-26	63794	. . COVER, Intake control	1	
-27	120918	. . SCREW, Cap, hx hd, 3/8 - 16 NC x 1-1/2	6	
-28	120382	. . WASHER, Lock, 3/8 in.	6	
-29	40868	. . DISC, Breather	1	
-30	44753	. . DIAPHRAGM, Intake control	1	
-31	44430	. . GASKET, Cylinder	1	
-32	44756	. . STEM, Intake control	1	
-33	67910	. . NUT, Lock, flex, thin, 3/8 - 16 NC	1	
-34	62144	. . CYLINDER, Intake control	1	
-35	44444	. . SPRING, Intake control	1	
-36	44755	. . PISTON, Intake control	1	
-37	44919	. . SPRING, Valve	1	
-38	44758	. . VALVE, Intake control	1	
-39	143933	. . PLUG, Pipe, 1/4 NPT	2	
-40	24527	. . BALL	1	
-41	45121	. . PLUG	1	
-42	24498	. . O-RING	1	
-43	46888	. . SPRING	1	
-44	62336	. . HOUSING,Intake	1	
-45	122145	. . SCREW, Hx hd, 3/8 - 16 NC x 1-1/4	3	
-46	120382	. . WASHER, Lock, 3/8	3	
-47	44446	. . GASKET, Housing	1	
-48	63949	. . BY-PASS ASSEMBLY, Oil filter and (see figure 5-10)	1	
-49	67724	. . SCREW, Cap, sch, 5/16 - 18 NC x 4-1/2	2	
-50	28147	. . WASHER, Lock, int tooth, 5/16	2	
-51	44051	. . GASKET, Filter bypass	1	
-52	46884	. . COVER, Bearing, non drive end	1	
-53	122027	. . SCREW, Cap, hx hd, 5/16 - 18 NC x 1-1/4	6	
-54	120214	. . WASHER, Lock, split, 5/16	6	
-55	47325	. . GASKET, Cover	1	
-56	46869	. . BEARING, Ball, non drive end	1	
-57	122017	. . SCREW, Cap, hx hd, 5/16 - 18 NC x 1	4	
-58	120214	. . WASHER, Lock, split, 5/16	4	

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	5-5, 17
48271	16004	4015-98	09527	AMETER, Dial increments 60-0-60	5-5, 18
60135	16004	HM12-2	31211	HOURMETER, 12 volt	5-5, 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					
AR 54796	75160	1100580	16764	ALTERNATOR	P62, 18
AR 55639	75160			STARTER ASSY	P64, 1
AR 62267	75160	1113402	16764	STARTER ASSY (Alternate Assy)	P64, 1
AR 66395	75160	DM4627MD2684	84760	FUEL INJECTION PUMP	P33, 4

Federal Manufacture Code to Name

09393	Rochester Gauges Inc. of Texas P.O. Box 20180 Dallas, Texas 75220
09527	Faria, Thomas G., Co. Faria Road Uncasville, Conn. 06382
16004	Davey Compressor Co. 11060 Kenwood Rd. Cincinnati, Ohio 45242
16764	Delco-Remey Div. of General Motors Corp. 2401 Columbus Ave. Anderson, Ind. 46011
19728	Prestolite Co., The Division of Eltra Corp. Champlain and Chestnut Street P.O. Box 931 Toledo, Ohio 43601
24161	Gates Rubber Co. 999 South Boradway Denver, Colo. 80217
28265	White Engines Inc. 101 11th St. S.E. Canton, Ohio 44707
31211	Motorola Inc. Automotive Products Div. 9401 West Grand Blvd. Franklin Park, Ill. 60131
60038	Timken Roller Bearing Co. 1835 Dueber Ave. S.W. Canton, Ohio 44706
61112	Turner Co. Div. of Olin 821 Park Ave. Sycamore, Ill. 60178
78252	Stolper Ind. Inc. W 156 N 9073 Pilgrim Minomonee Falls, Wis. 53051
81155	Eaton Corp. Stamping Div. 17877 St. Clair Ave. Cleveland, Ohio 44110
84760	Stanadyne/Hartford Div. P.O. Box 1440 Hartford, Ct. 06102
92850	Anchor Ind. Inc. 1725 London Rd. Cleveland, Ohio 44112
95026	United Mfg. Co. 5250 Dobeckman Rd. Cleveland, Ohio 44102
96906	Military Standards Promulgated by Standardization Div. Directorate of Logistic Services DSA
99252	Chevron Oil Co. Eastern Division 1200 State St. Perth Amboy, N.J. 08861

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-19-59	63196	. . RETAINER, Bearing	1	
-60	143932	. . PLUG, Pipe, 1/8 NPT	1	
-61	46875	. . COVER, Intake end	1	
-62	428217	. . SCREW, Cap, hx hd, 5/8 - 11 NC x 1-1/2	5	
-63	26393	. . WASHER, Sealing	6	
-64	428712	. . SCREW, Cap, hx hd, 5/8 - 11 NC x 3-3/4	1	
-65	44428	. . O-RING	1	
-66	48185	. . COUPLING, Drive	1	
-67	48479	. . SCREW, Special 3/4 - 10 x 1-3/4 (SAE 5)	1	
-68	131046	. . WASHER, Lock, split, 3/4	1	
-69	46882	. . RETAINER, Gripspring	1	
-70	46890	. . GRIPSPRING	2	
-71	46889	. . KEY, Dowel, coupling	1	
-72	46872	. . COVER, Seal, oil	1	
-73	143932	. . PLUG, Pipe, 1/8 NPT	1	
-74	122027	. . SCREW, Cap, hex hd 5/16 - 18 NC x 1-1/4	6	
-75	120214	. . WASHER, Lock, split, 5/16	6	
-76	47325	. . GASKET	1	
-77	46879	. . SEAL, Oil	1	
-78	46886	. . O-RING	1	
-79	47716	. . SLEEVE, Oil seal	1	
-80	46878	. . SLEEVE	1	
-81	24978	. . O-RING	1	
-82	48187	. . ADAPTER, Compressor	1	
-83	428703	. . SCREW, Cap hx hd, 5/8 - 11 NC x 3	6	
-84	26393	. . WASHER, Sealing	6	
-85	44443	. . GASKET, Adaptor	1	
-86	44428	. . O-RING	1	
-87	41000	. . ELBOW, Tube	1	
-88	44798	. . BLADE, Rotor	8	
-89	No Number	. . ROTOR, End cover and shaft assy	REF	
-90	46868	. . . BEARING, Ball, drive end	1	
-91	47215	. . . ROTOR, Compressor	1	
-92	46887	. . . COVER, End, non drive	1	
-93	46873	. . . SHAFT, Rotor	1	
-94	24986	. . . KEY, Dowel	1	
-95	44972	. . PLATE, Identification	1	
-96	145369	. . PIN, Drive	2	
-97	9314	. . BALL, Steel	1	
-98	43392	. . PLUG, Valve	2	
-99	24964	. . O-RING	2	
-100	43394	. . SPRING, Valve	2	
-101	43393	. . VALVE, Relief	2	
-102	24636	. . BOLT, Eye	1	
-103	47352	. . STATOR, Compressor	1	
-104	120918	. SCREW, Hx hd, 3/8 - 16 x 1-1/2 (AP)	12	
-105	120382	. WASHERS, Lock, 3/8 (AP)	12	

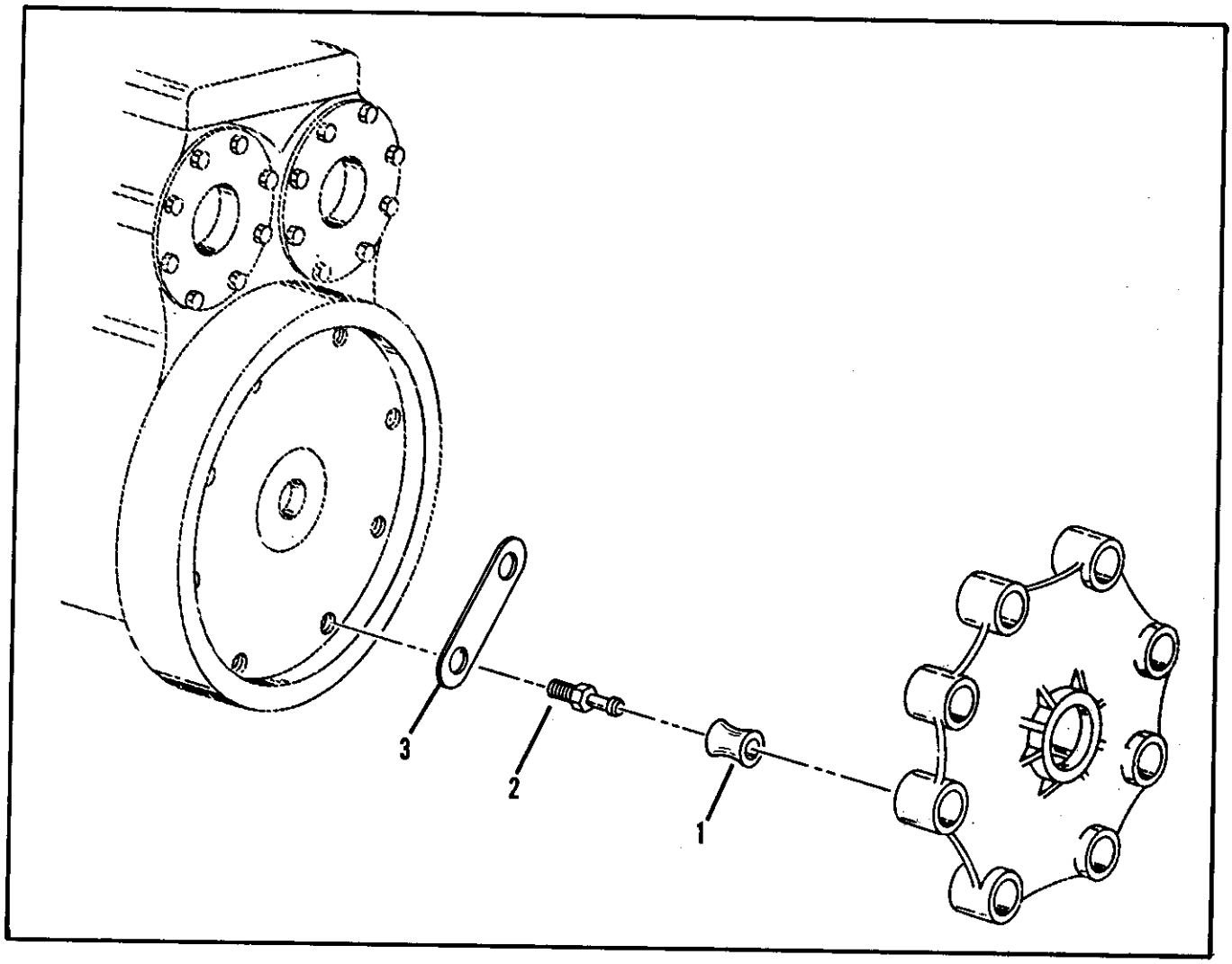


Figure 5-20. Flywheel Adapter Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-20	No Number	FLYWHEEL ADAPTER GROUP	REF	
-1	25673	. BUSHING, Drive	8	
-2	44056	. PIN, Drive	8	
-3	47737	. STRAP, Locking	4	

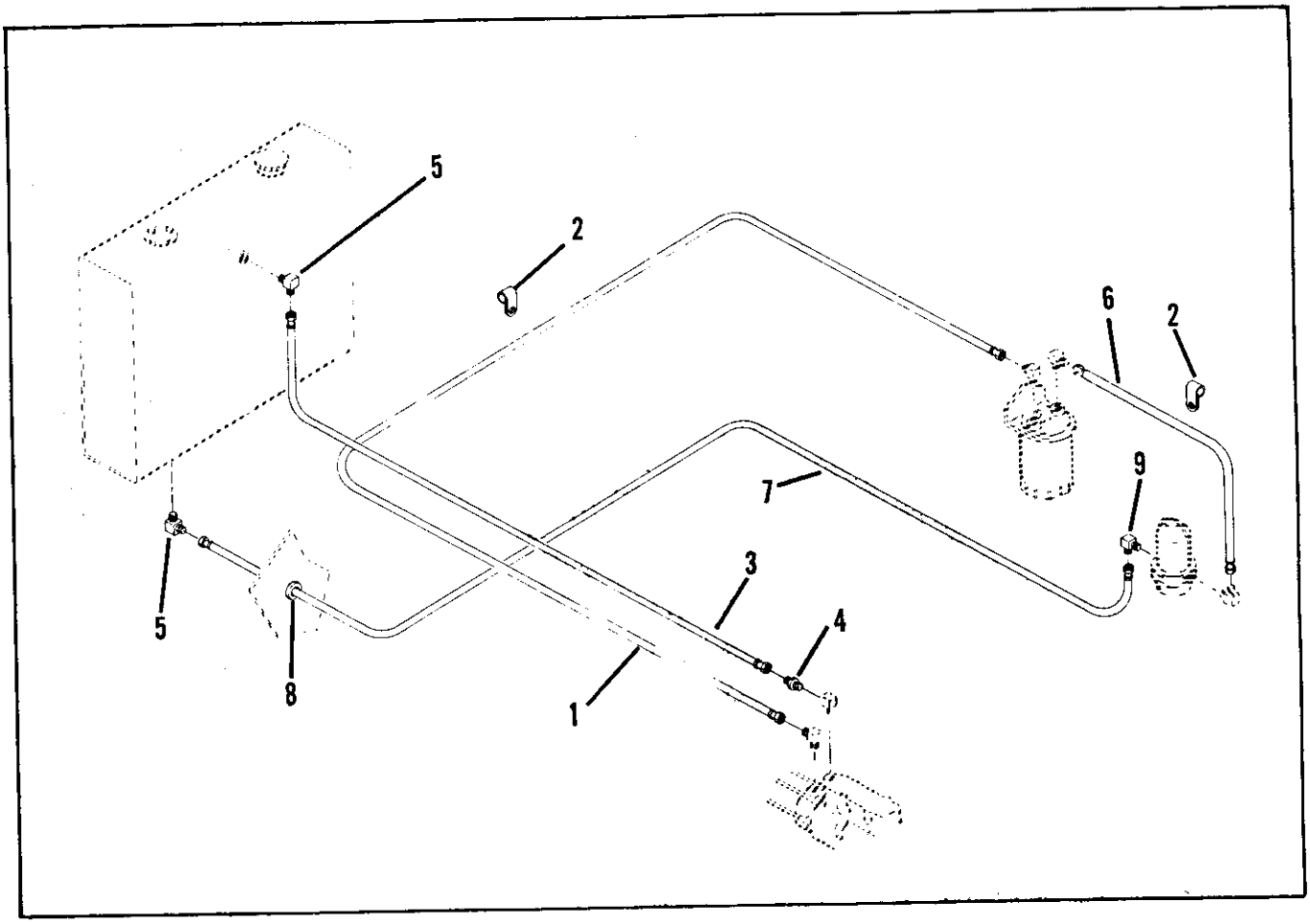


Figure 5-21. Fuel Line Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-21	No Number	FUEL LINE GROUP (See figure 5-1 for NHA)	REF	
-1	80508	. HOSE ASSEMBLY	1	
-2	23681	. CLAMP, Hose	4	
-3	61112	. HOSE ASSEMBLY	1	
-4	40783	. CONNECTOR	1	
-5	28890	. ELBOW, Tube	2	
-6	80509	. HOSE ASSEMBLY	1	
-7	62084	. HOSE ASSEMBLY	1	
-8	49311	. GROMMET, Rubber	1	
-9	41000	. ELBOW, Tube	1	

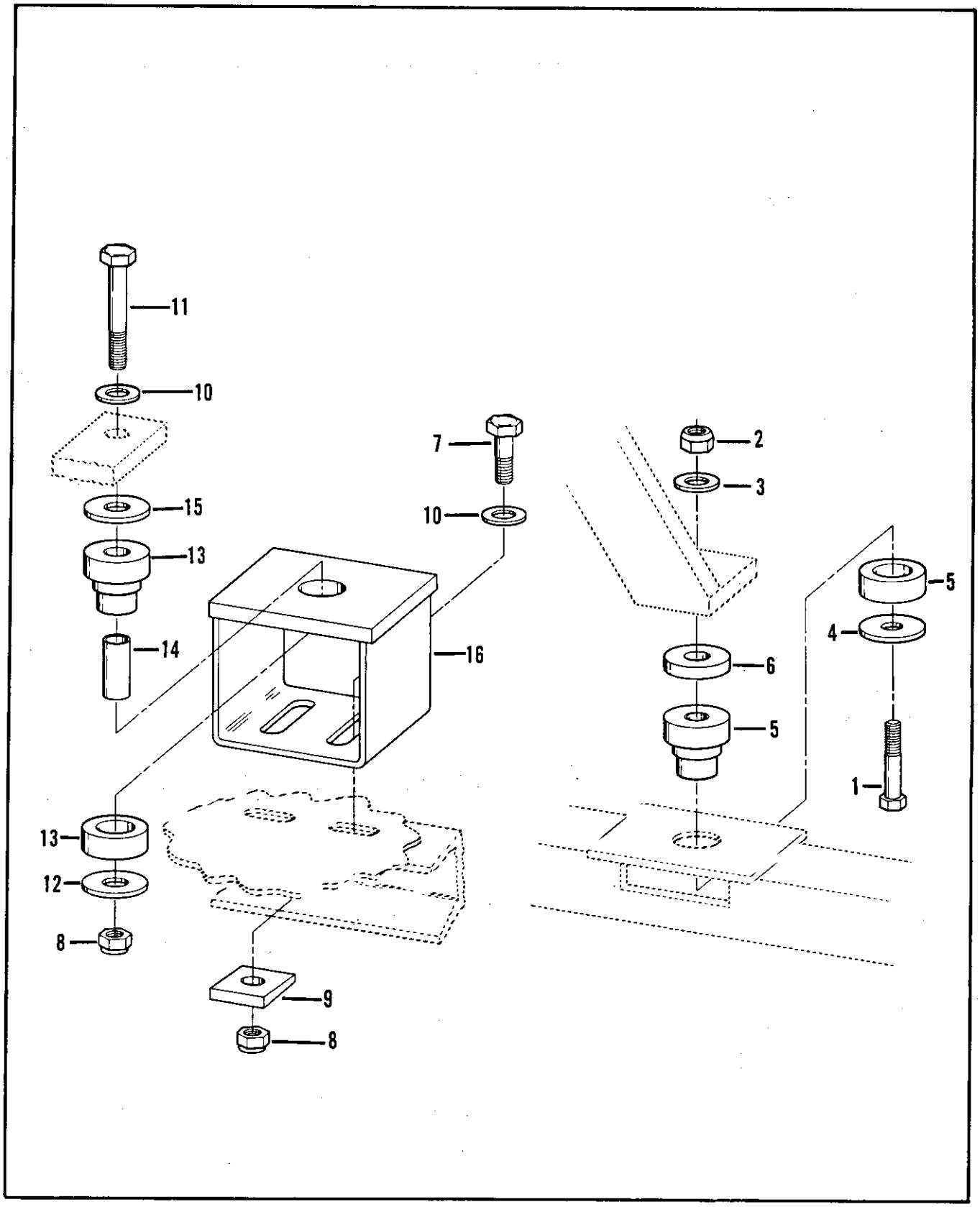


Figure 5-22. Engine Mount Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-22	No Number	ENGINE MOUNT GROUP (See figure 5-1 for NHA)	REF	
-1	454425	. SCREW, Cap	2	
-2	443343	. NUT, Lock	2	
-3	131016	. WASHER, Flat	2	
-4	80138	. WASHER, Flat (lower)	2	
-5	80196	. MOUNT, Vibration	2	
-6	80137	. WASHER, Flat (upper)	2	
-7	122459	. SCREW, Cap (AP)	4	
-8	443339	. NUT, Lock (AP)	8	
-9	60734	. WASHER, Channel	4	
-10	120396	. WASHER, Flat	6	
-11	111300	. SCREW, Cap	2	
-12	80054	. WASHER, Lower	2	
-13	80197	. MOUNT, Vibration	2	
-14	80265	. SLEEVE	2	
-15	80236	. WASHER, Upper	2	
-16	80245	. BRACKET, Engine support	2	

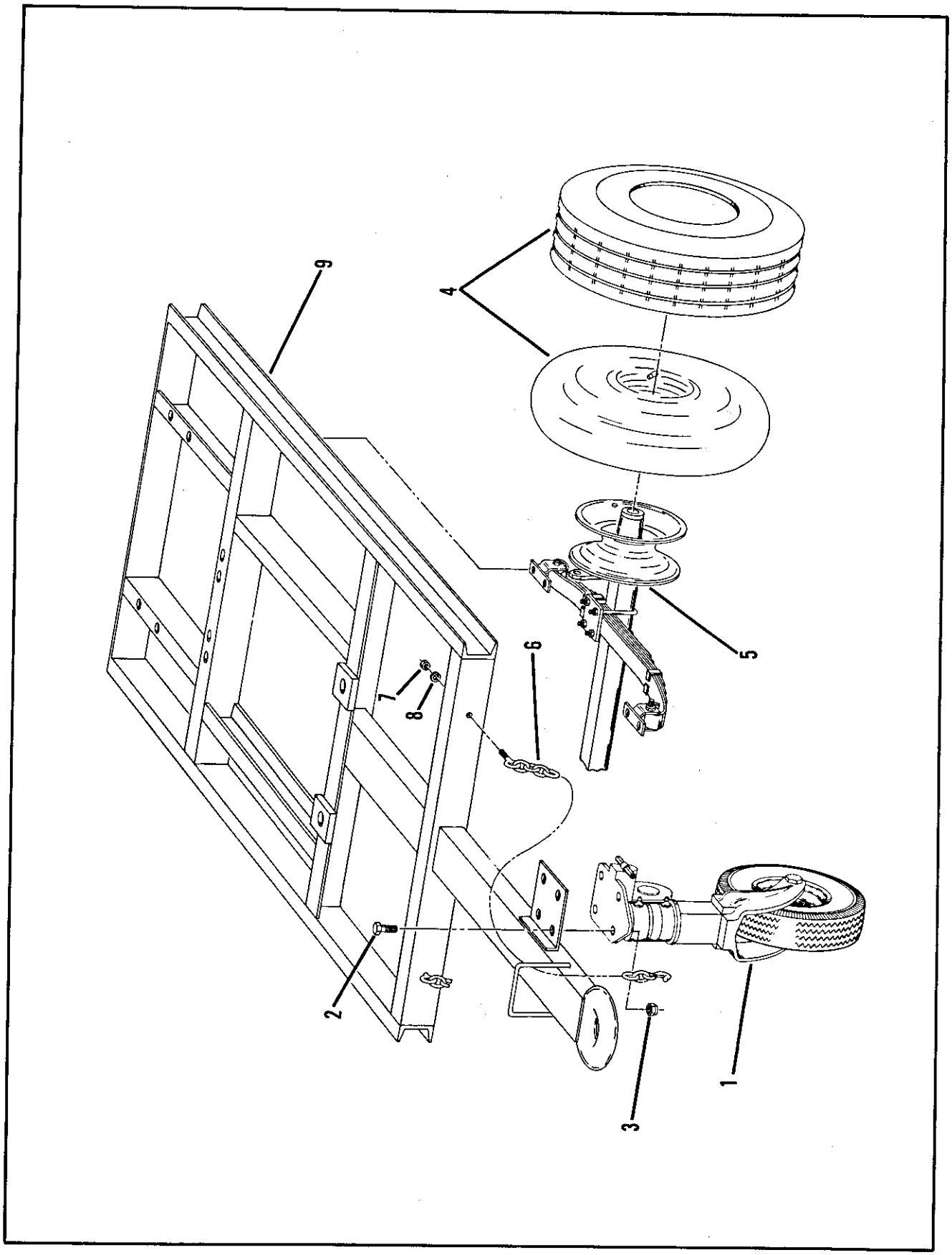


Figure 5-23. Frame and Axle Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-23	No Number	FRAME AND AXLE GROUP (See figure 5-1 for NHA)	REF	
-1	80841	. WHEEL ASSEMBLY, Caster (see figure 5-25)	REF	
-2	122446	. SCREW, Cap 1/2 - 13 x 1-3/4 (AP)	4	
-3	443339	. NUT, Lock 1/2 - 13 (AP)	4	
-4	63993	. TIRE AND TUBE, 7.50 - 15 - 8 PLY Rtg, W/ # 79 T Tube (73808)	2	
-5	80482	. RUNNING GEAR ASSEMBLY (22938 PN 375) (See figure 5-24)	REF	
-6	61144	. CHAIN ASSEMBLY, Safety	1	
-7	443339	. NUT	2	
-8	120384	. WASHER, Lock	2	
-9	80250	. FRAME	1	

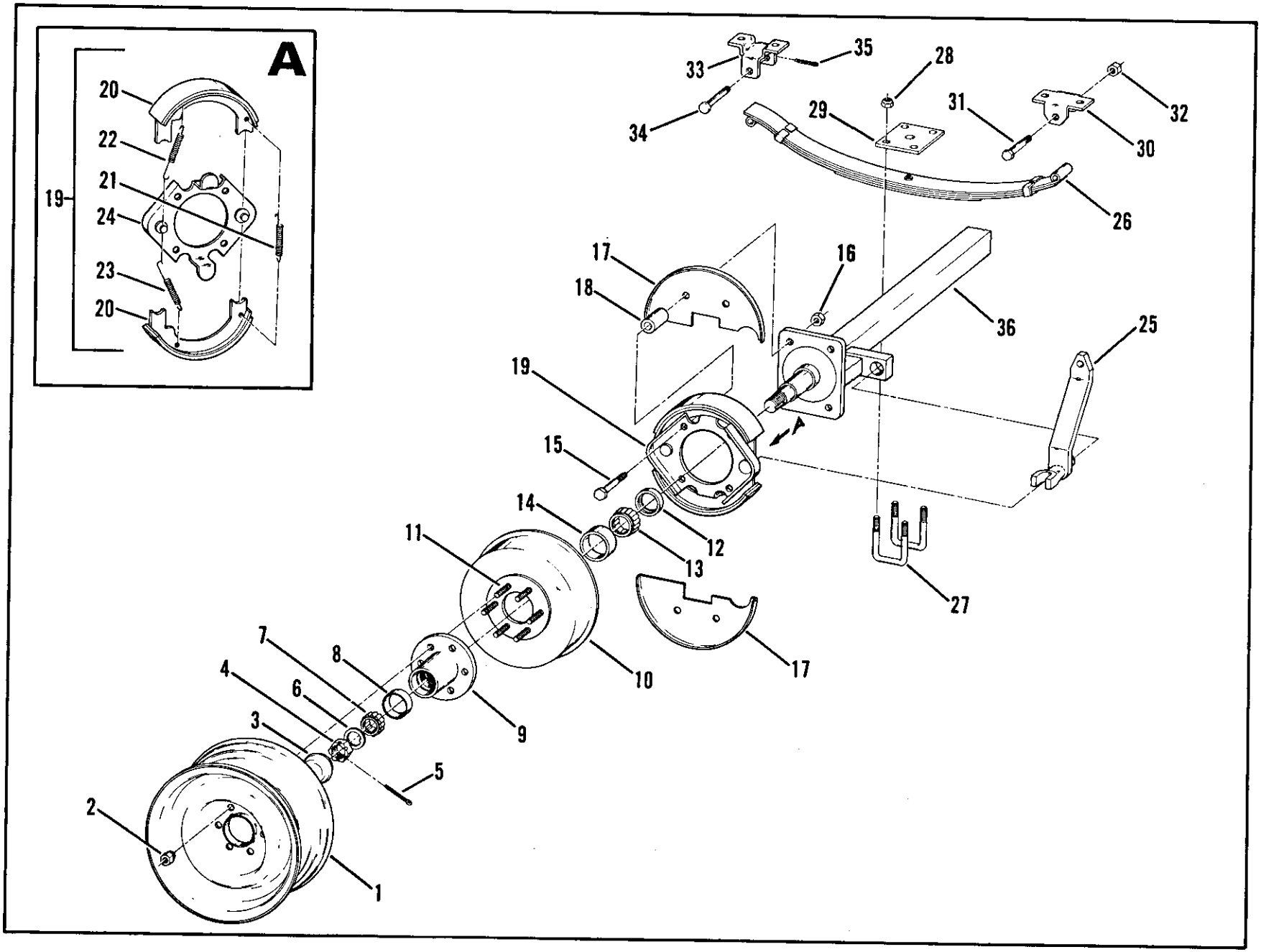


Figure 5-24. Running Gear Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-24	375	RUNNING GEAR ASSEMBLY (See figure 5-23 for NHA) (22938)	1	
		(16004 PN 80482)		
-1	3718-1	. WHEEL, 15 x 6	2	
	375-2006	. AXLE ASSEMBLY (22938)	1	
-2	4603-1	. . NUT, Stnd 122938	12	
-3	6312	. . CAP, Grease (22938)	2	
-4	4600-2	. . NUT, Spindle (22938)	2	
-5	4800-5	. . KEY, Cotter, spindle (22938)	2	
-6	4702-2	. . WASHER, Spindle (22938)	2	
	3612-13	. . HUB AND DRUM ASSEMBLY (22938)	2	
-7	6058	. . . CONE, Bearing, outer	2	
-8	6151	. . . CUP, Bearing, outer	2	
-9	3603-2	. . . HUB	2	
-10	8240-13	. . . DRUM	12	
-11	6251-10	. . . STUD	2	
-12	6311	. . . SEAL, Grease	2	
-13	6057	. . . CONE, Bearing, inner	2	
-14	6152	. . . CUP, Bearing, inner	2	
	4-8240	. . BRAKE ASSEMBLY	8	
-15	4900-13	. . . SCREW, Cap, 1/2-20 NC x 2-3/4	8	
-16	4601-7	. . . NUT, Mounting, 1/2 - 20 NC	2	
-17	8240-15	. . . SHIELD, Dust	8	
-18	4337-4	. . . SPACER	2	
-19	3-8240	. . . BRAKE SUB-ASSEMBLY (14892 PN 4150078)	2	
-20	4150087	. . . . SHOE, Lined, replacement (14892)	2	
-21	308665	. . . . SPRING, Anchor end (14892)	2	
-22	308664	. . . . SPRING, Shoe return (red) (14892)	2	
-23	3203360	. . . . SPRING, Shoe return (brown) (14892)	2	
-24	308743	. . . . PLATE ASSY, Support (14892)	2	
-25	4150080	. . . . CAMSHAFT AND LEVER ASSY, Replacement	2	
-26	1-4010-5	. . SPRING	4	
-27	5100-25	. . U-BOLT	8	
-28	4601-7	. . NUT, Lock, 1/2 - 20	2	
-29	5600-8	. . PLATE, Tie	2	
	4-4251	. BRACKET ASSY, Spring, front	2	
-30	4251	. . BRACKET	2	
-31	4901-19	. . SCREW, Cap, 9/16 - 12 NC x 3-3/4	2	
-32	4601-33	. . NUT, Lock, hx 9/16-12 NC	2	
	1-4251	. BRACKET ASSY, Spring, rear	2	
-33	4251	. . BRACKET	2	
-34	5403-1	. . RIVET, Rd hd, 9/16 x 3	2	
-35	4800-3	. . PIN, Cotter, 1/8 x 1	1	
-36	375-2006-2	. WELDMENT, Beam		

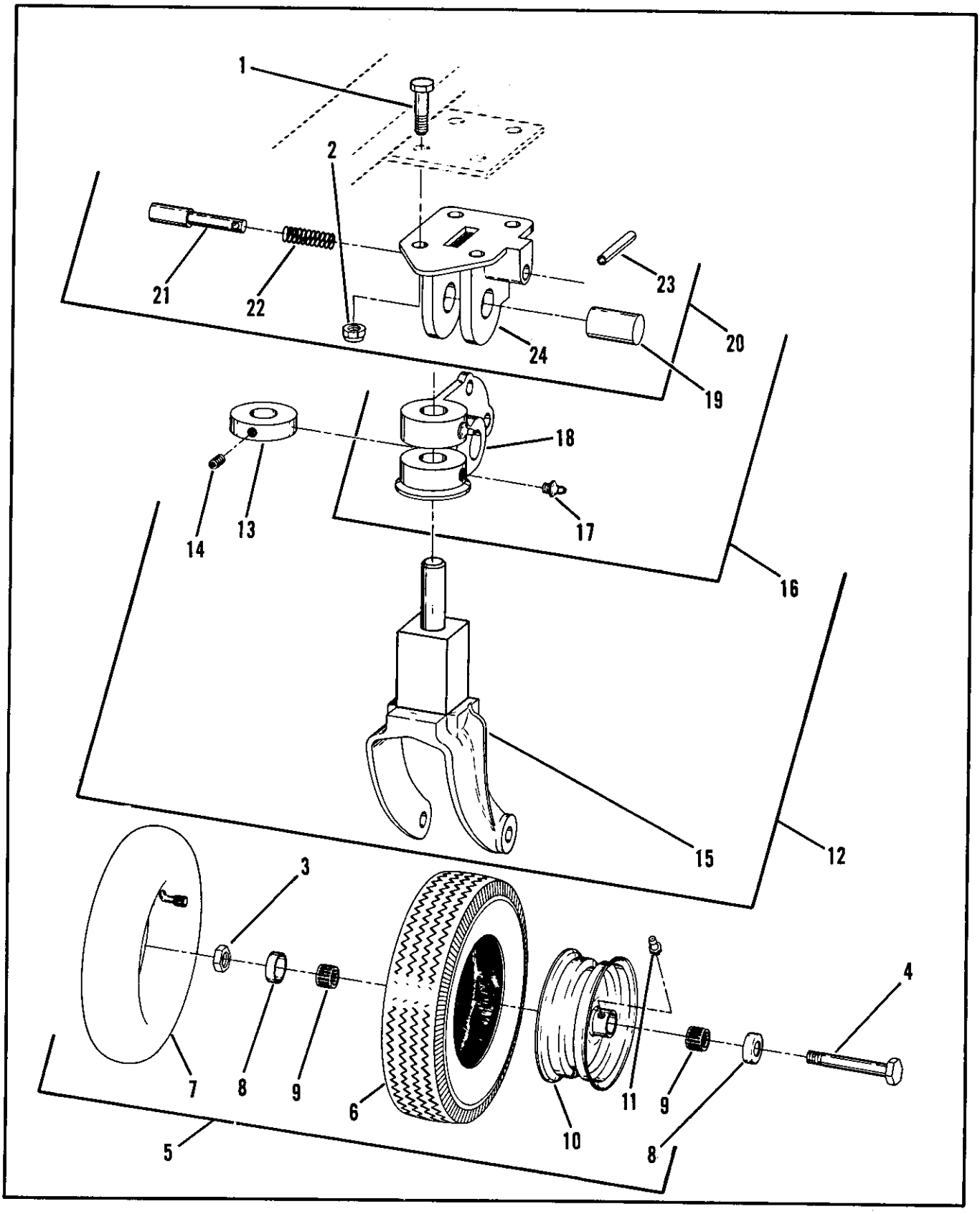


Figure 5-25. Caster Wheel Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-25	No Number	CASTER WHEEL GROUP (See fig. 5-23 for NHA)	REF	
-1	122446	. SCREW, Cap (see fig. 5-23)	REF	
-2	443339	. NUT, Lock (see fig. 5-23)	REF	
	5952-26	. CASTER WHEEL ASSY (22938) (16004 PN 80841)	1	
-3	4601-30	. . NUT, Jam 3/4 - 10 NC (22938)	1	
-4	4900-4	. . SCREW, Cap hx hd, 3/4 - 10 NC x 6 (22938)	1	
-5	3-3716	. . TIRE ASSEMBLY, AND WHEEL (22938)	1	
-6	MS35389-1	. . . TIRE, 4.10/3.50 x 6, 4 Ply (96906)	1	
-7	MS35392-48	. . . TUBE, Inner 4.10/3.50 x 6 w/MS51362-1 valve (96906)	1	
-8	3716-1	. . . WASHER, Thrust, retaining (22938)	2	
-9	6069-1	. . . BEARING, Roller (22938)	2	
-10	12-3716	. . . WHEEL, 4.00 x 6 (22938)	1	
-11	MS15001-1	. . . FITTING, Lub (96906) (22938 PN 5800)	1	
-12	5952-20	. . CASTER ASSEMBLY, Swivel (22938)	1	
-13	6319-1	. . . COLLAR, Shaft	1	
-14	AN565-616-6	. . . SETSCREW, Sch 3/8 - 16 NC x 3/8 (88044)	1	
-15	5952-21	. . . SHAFT SUBASSEMBLY, AND FORK (22938)	1	
-16	5952-2	. . . FRAME BRACKET - SWIVEL HEAD ASSEMBLY (22938)	1	
-17	MS15001-1	. . . . FITTING, Lub (96906) (22938 PN 5800)	2	
-18	5952-5	. . . . HEAD, Swivel (22938)	1	
-19	5412-1	. . . . PIN, Hinge 1 in. x 2-5/16 (22938)	1	
-20	5952-3	. . . . BRACKET SUBASSEMBLY, Frame (22938)	1	
-21	8101	. . . . . PIN, Lock 3/4 x 4 (22938)	1	
-22	4014	. . . . . SPRING, Plunger (22938)	1	
-23	5000-9	. . . . . HANDLE (22938)	1	
-24	5952-6	. . . . . BRACKET, Frame (22983)	1	

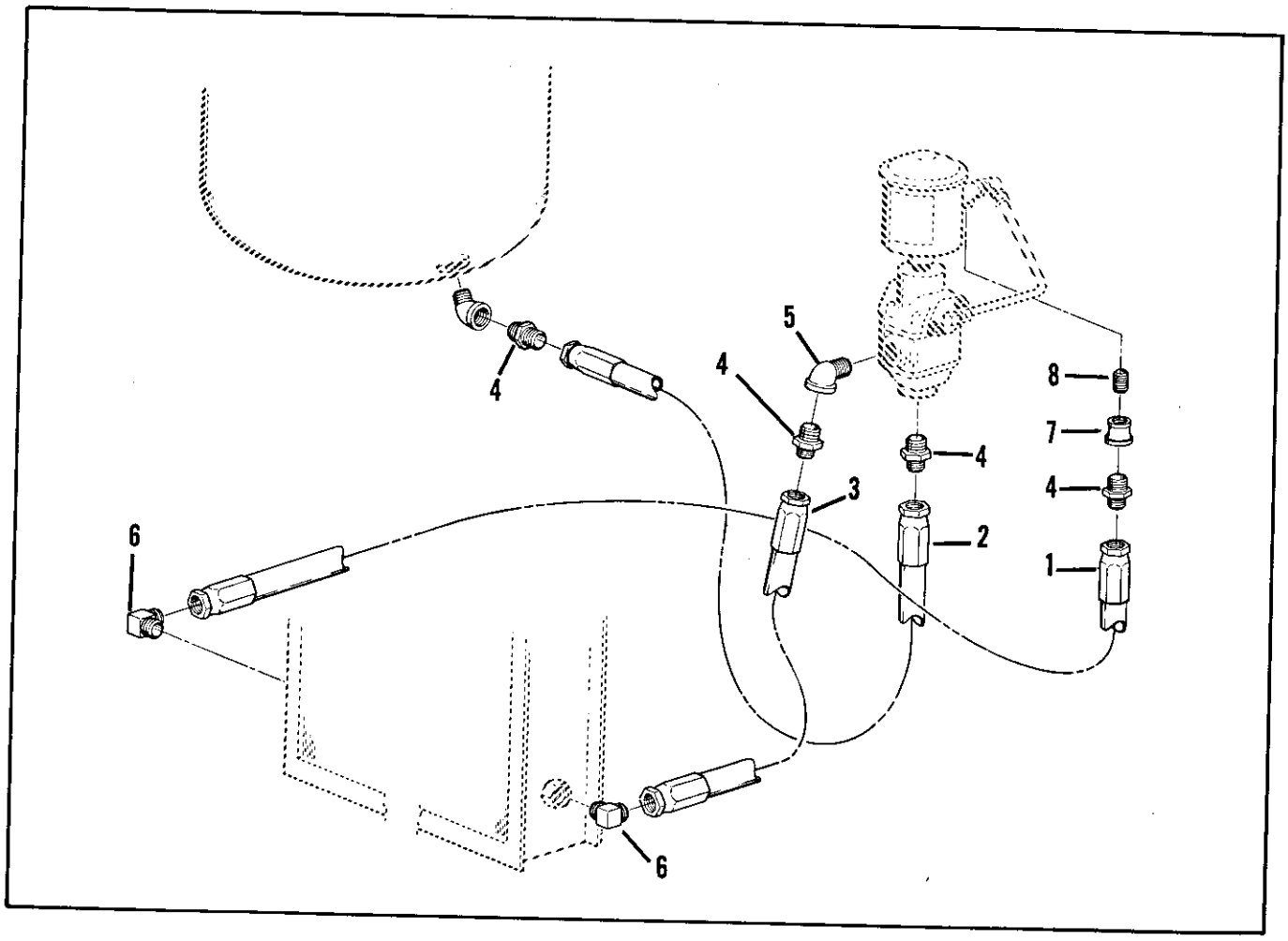


Figure 5-26. Oil Hose Assemblies Group

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE
5-26	No Number	OIL HOSE ASSEMBLIES GROUP (See figure 5-1 for NHA)	REF	
-1	80397	. HOSE ASSEMBLY	1	
-2	73666	. HOSE ASSEMBLY	1	
-3	80396	. HOSE ASSEMBLY	1	
-4	23341	. ADAPTER	4	
-5	144122	. ELBOW, St. 45°	1	
-6	23342	. ELBOW	2	
-7	144103	. COUPLING, Reducing	1	
-8	192470	. NIPPLE, Close	1	

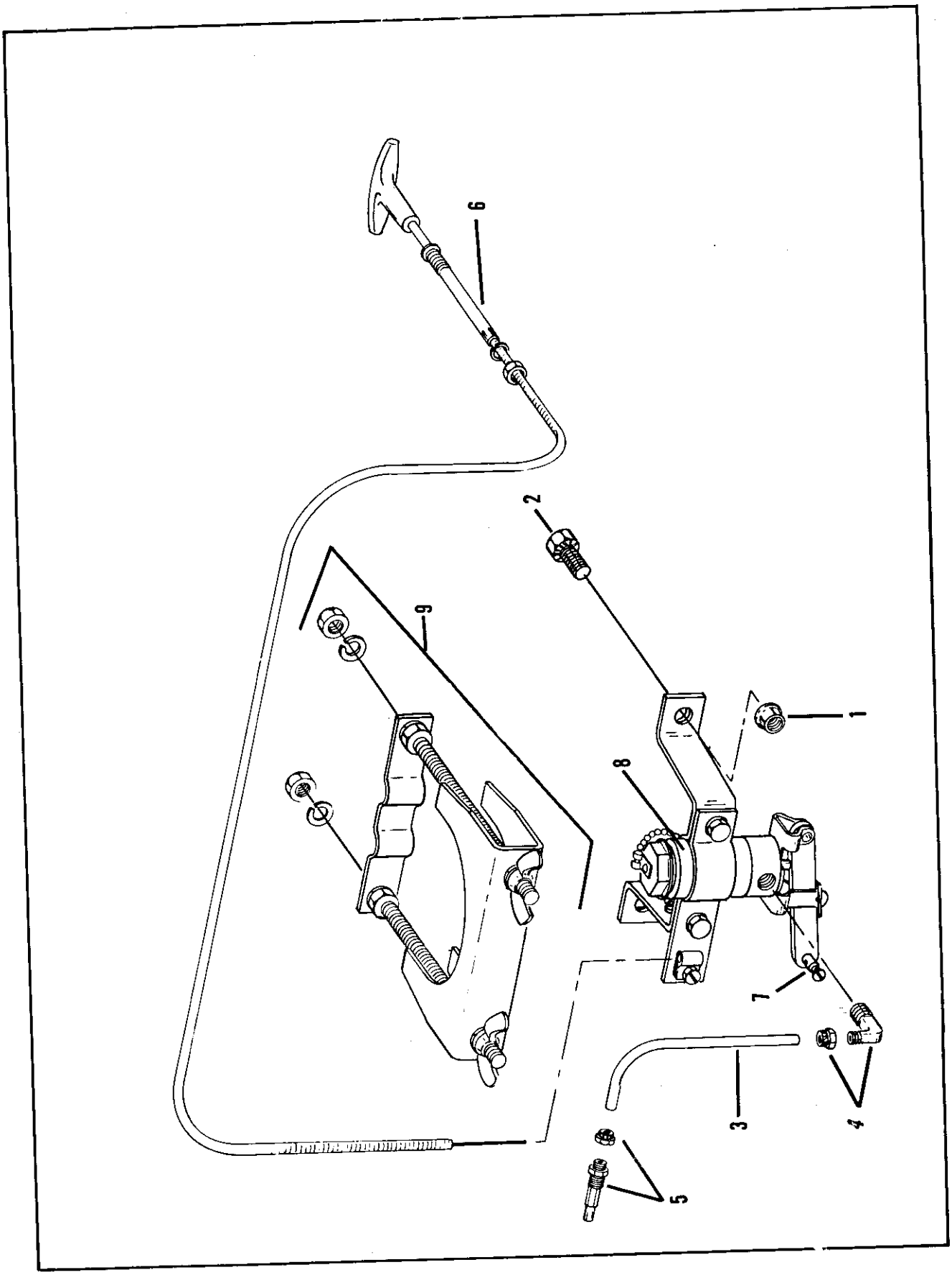


Figure 5-27. Quick-Start Group

FIG. & INDEX NO.	PART NUMBER	1 2 3 4 5 6 7 DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
5-27	No Number	QUICK-START GROUP	REF	
-1	9416918	. NUT, Lock	2	
-2	274473	. SCREW, Mach	2	
	46246	. KIT, QUICK START	1	
-3	LP-3239	. . TUBE, Fuel line (61112)	1	
-4	LP-1698	. . FITTING, Angle valve (61112)	1	
-5	LP-2377-11	. . FITTING, Engine manifold (61112)	1	
-6	LP-3864R-36	. . CABLE, Control (mounted on instrument panel, figure 5-5) (61112)	1	
-7	LP-2814	. . STOP ASSEMBLY, Cable (61112)	1	
-8	QS-2-1TC	. . VALVE ASSEMBLY, Quick-Start (61112).....	1	
-9	LP-2299	. . CLAMP ASSEMBLY, Cylinder mounting (61112)	1	

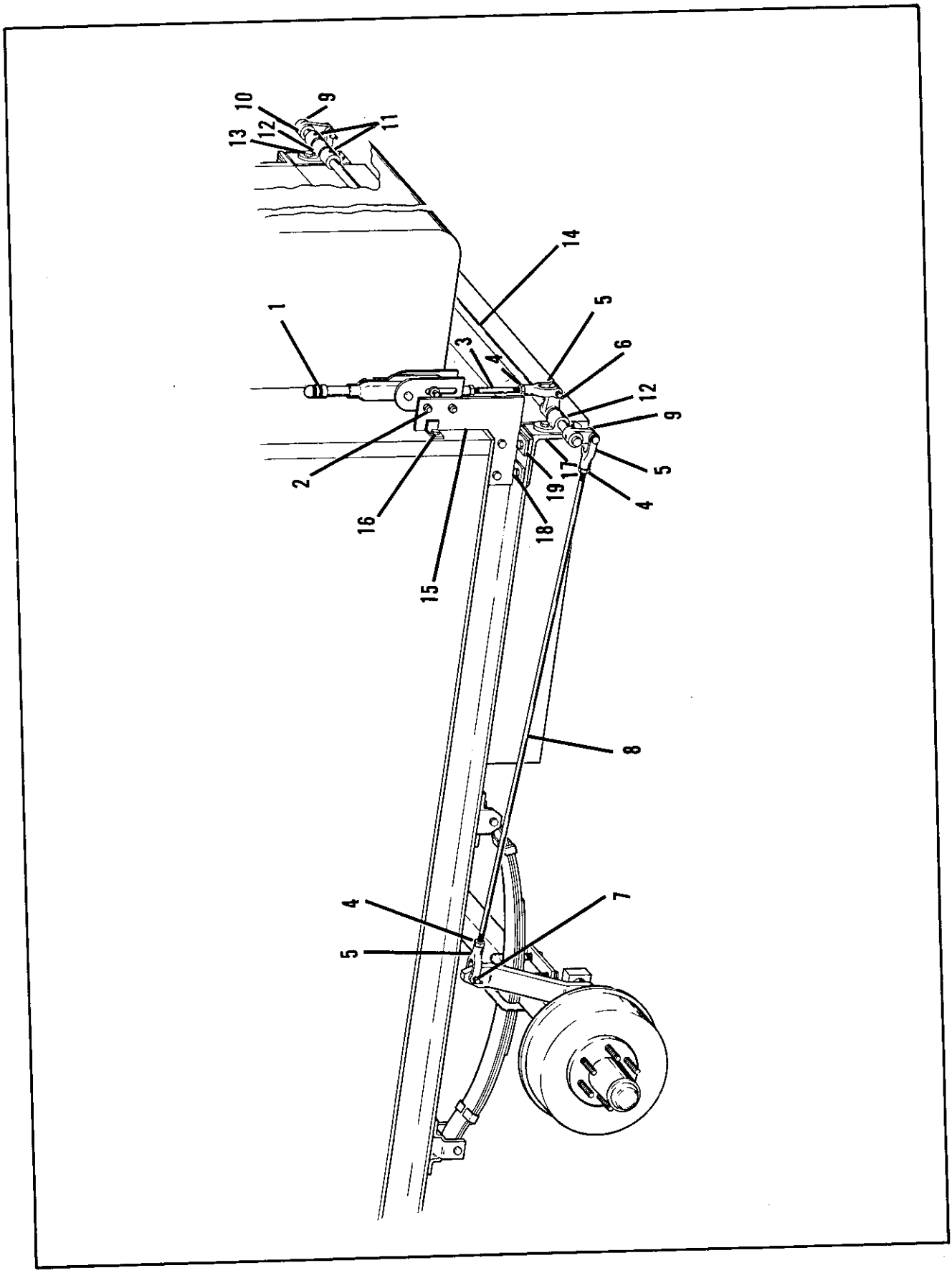


Figure 5-28. Handbrake Lever and Cross Shaft Assy

FIG. & INDEX NO.	PART NUMBER	1 2 3 4 5 6 7 DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
5-28	375-5901	HANDBRAKE LEVER AND CROSS SHAFT ASSEMBLY (22938) ..... (See figure 5-1 for NHA)	1	
-1	1-5919	. LEVER, Handbrake (16004 PN 68005)	1	
	5204	. . SPACER	2	
	5206	. . PIN, 5/16 x 1-1/2	1	
-2	122181	. SCREW, Cap (AP)	2	
	443335	. NUT, Hex. lock (AP)	2	
-3	8300-070	. ROD, Brake	1	
-4	4601-5	. NUT, Yoke	6	
-5	5205	. YOKE	6	
-6	4800-2	. PIN, Cotter 3-32 x 3/4	5	
-7	5206	. PIN, Yoke	5	
-8	8300-344	. ROD, Brake	2	
-9	5909	. LEVER, Shaft	3	
-10	5000-2	. PIN, Roll, 5/16 x 1-1/4	3	
-11	6319-2	. COLLAR, Setscrew	2	
-12	5908	. BEARING, Shaft	2	
-13	122145	. SCREW, Cap (AP)	4	
	443335	. NUT, Hex, lock (AP)	4	
-14	5910-375	. SHAFT, Cross, 3/4 x 52-3/8	1	
-15	80830	. SUPPORT, Brake handle (AP) (16004)	1	
-16	67268	. SCREW, Self-tap (AP)	1	
	120918	. SCREW, Cap (AP)	2	
	443335	. NUT, Hex, lock (AP)	2	
	120394	. WASHER, Flat (AP)	2	
-17	80823	. SUPPORT, Cross shaft (AP) (16004)	2	
-18	122168	. SCREW, Cap (AP)	4	
	443335	. NUT (AP)	4	
-19	60744	. CHANNEL WASHER (AP)	4	