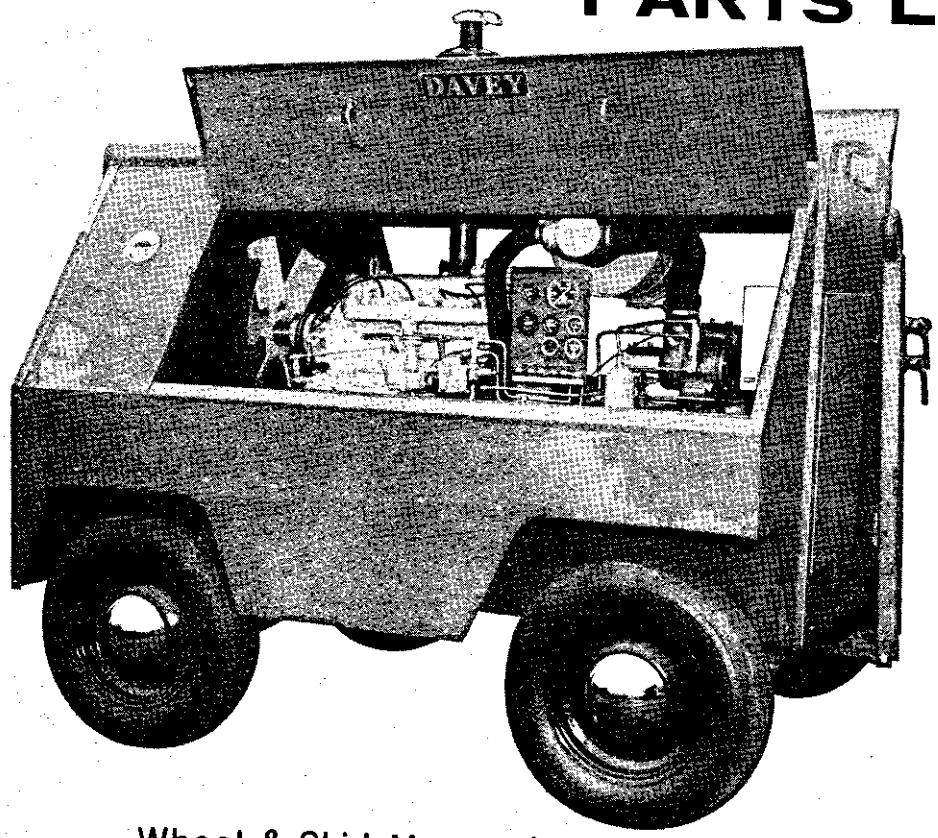
DAVEY Model 250 RPV

Permavane Rotary Compressor

OPERATION AND MAINTENANCE MANUAL

WITH

PARTS LIST



Wheel & Skid Mounted Units

MPL-128

DAVEY built to serve and endure

THE DAVEY COMPRESSOR CO.

U.S.A.

DAVEY

MODEL 250 RPV SPECIFICATIONS
GASOLINE ENGINE DRIVEN

COMPRESSOR

General Description	Oil-cooled rotary. Single rotor with sliding vanes
Rated Capacity 100 PSI	250 CFM
Full Load Speed	1800 RPM
Number of Rotors	1
Number of Slots	8
Number of Blades per Slot	1
Type of Blades	*Patented, Light Metal, Permavane Blades
Thickness of Blades	0.245 inches
Type of Rotor Stator Assy.	Self aligning
Method of Cooling Air during compression	Multi-stage oil injection
Type of Compressor Oil Cooler	Steel tube and fin with oil thermal bypass
Method of Lubrication	Full flood, force feed
Method of Cooling Compressor Oil	Air (fan)
Type of Air Cleaner	Dry, 2-stage, with washable element
Type of Oil Filter	Micronic screen
Capacity Control	Full modulation with air pressure control
Type of Bearings	Precision radial roller
Type of Drive	Direct coupling
Blowdown Valve	Automatic
Protective Devices	High air-oil temperature shutdown
Capacity - Oil	33 quarts

OIL SEPARATOR AND RECEIVER

General Description	3-stage, vertical labyrinth type
Safety Valve	ASME - Bronze
Type of Element	Replaceable cartridge
Capacity	4 cubic feet

ENGINE

Make	Hercules
Model	G-3400
Type	4 cycle, 6 cylinder
Bore-Stroke	4-inch bore, 4-1/2-inch stroke
Piston Displacement	339 cu. in.
Rated HP (Net) at 1800 RPM	98 BHP
Maximum Torque at 1800 RPM	306 ft. lbs.
Valve Arrangement	Overhead
Cylinder Head Material	Cast iron - one piece
Crankcase Material	Cast iron
Crankshaft Main Bearings	Surface hardened, inserts
Number of Main Bearing	7
Type of Air Cleaner	Dry, 2-stage with washable element
Type of Lube Oil Filter	Replaceable cartridge
Type of Fuel Filter	Porous ceramic element
Type of Governor	Fly-Ball
Lubrication	Pressure
Oil Capacity	7 quarts
Starter	12 Volt, Delco-Remy
Type of Cooling	Liquid
Capacity of Engine Cooling System	20 quarts
Thermostat Temperature Setting	180 degrees
Fuel Consumption	.495 lbs. per BHP hour

ELECTRICAL SYSTEM

Voltage	12 Volt
Capacity of Battery	155 Amp. hours
Number of Plates	19 per cell
Make of Alternator	Delco-Remy
Alternator Output	32 Amperes
Type of Ignition System	Distributor
Make of Voltage Regulator	Delco-Remy

WHEEL MOUNTED UNITS

Material-Chassis Frame	Structural steel
Size of Tires - Standard (2 Wheel)	7:50x16, 8 ply
Size of Tires - Standard (4 Wheel)	6:50x16, 6 ply
Type of Tires - Standard	Implement (See Options)
Fenders	Heavy gauge steel
Type of Wheels	Disc with drop center
Type of Wheel Bearing	Tapered roller
Fuel Tank Capacity	40 gallons
Type of Fuel Tank	Lead lined
Housing	Heavy gauge steel with hinged doors
Type of Radiator Grille	Heavy duty steel mesh

MODEL 250 RPV SPECIFICATIONS
GASOLINE ENGINE DRIVEN

Size of Toolbox (2 Wheel)	9" wide, 21" deep, 91" long
Size of Toolbox (4 Wheel)	18" wide, 9" deep, 91" long
Number of Toolboxes	2
Type of Toolboxes	Lockable, weatherproof
Type of Mounting (2 Wheel)	2 Pneumatic tires, retractable third wheel, and support leg at rear of unit
Type of Mounting (4 Wheel)	4 Pneumatic tires. Steerable front axle with 40 degree turning angle. Latch to retain drawbar in vertical position.
Type of Suspension	Heavy duty, leaf type spring
Type of Towing Hitch (2 and 4 Wheel)	Lunette eye (3" I.D.)
Location of Fuel Filler	Inside housing, curbside
Location of Control Panel	Centralized underhood, curbside
Number and Size Service Outlets	4 - 3/4 NPT Throttle valves
Type of Muffler	Heavy duty industrial

Instrument Gauges and Controls

Engine Water Temperature Gauge	Low Engine Oil Pressure Shutdown
Engine Oil Pressure Gauge	Starter Button
	Idle Control
Ammeter	Ignition Switch
Hour Meter	Air Pressure Gauge
Choke Control	

SKID MOUNTED UNITS

Housing (With Toolboxes)	Heavy gauge steel with hinged doors
Housing (Without Toolboxes)	Heavy gauge steel with sliding door
Skid	Structural steel for truck mounting
Fuel Tank Capacity	40 gallons
Location of Control Panel	Centralized, underhood
Controls, Instruments and Other Applicable Specifications	Same as wheel mounted units

PAINTING

Prime Coat	Best quality red lead based primer
Final Coat	Highway yellow

DIMENSIONS - WHEEL MOUNTED UNITS

	2 Wheel	4 Wheel
Length (Overall)	145 in.	148 in.
Height (Overall)	90 in.	89 in.
Width (Overall)	74 in.	72 in.
Dry Weight	3485 lbs.	3790 lbs.
Wet Weight	3950 lbs.	4140 lbs.
Track	66 in.	64 in.
Wheel Base	.....	60 in.

DIMENSIONS - SKID MOUNTED UNITS

With Toolboxes	
Length (Overall)	93 in.
Width (Overall)	54 in.
Height (Overall)	76 in.
Dry Weight	3165 lbs.
Wet Weight	3630 lbs.
Without Toolboxes	
Length (Overall)	93 in.
Width (Overall)	38 in.
Height (Overall)	76 in.
Dry Weight	2855 lbs.
Wet Weight	3320 lbs.

OPTIONAL ITEMS AND ACCESSORIES

1. Hose Reel with Clamp, Single or Dual
2. Lifting Bail
3. Fuel Level Gauge
4. Safety Chains
5. Directional Turn Signals
6. Electric Tail Light
7. Set of 4 Reflectors
8. License Plate Holder
9. Residential Type Muffler
10. Optional Tires, As Required
11. Electric Brakes with Emergency Breakaway
12. Parking Brakes, Manual
13. Special Paint, As Required
14. Rear Bumper
15. High Engine Water Temperature Shutdown
16. Ball and Coupler Type Towing Hitch
17. Lockable Fuel Cap
18. Oil Field Skid

DAVEY

MODEL 250 RPV SPECIFICATIONS

DIESEL ENGINE DRIVEN

COMPRESSOR

General Description	Oil-cooled rotary. Single rotor with sliding vanes
Rated Capacity 100 PSI	250 CFM
Full Load Speed	1800 RPM
Number of Rotors	1
Number of Slots	8
Number of Blades per Slot	1
Type of Blades	*Patented, Light Metal, Permavane Blades
Thickness of Blades	0.245 inches
Type of Rotor Stator Assy	Self aligning
Method of Cooling Air during compression	Multi-stage oil injection
Type of Compressor Oil Cooler	Steel tube and fin with oil thermal bypass
Method of Lubrication	Full flood, force feed
Method of Cooling Compressor Oil	Air (fan)
Type of Air Cleaner	Dry, 2-stage, with washable element
Type of Oil Filter	Micronic screen
Capacity Control	Full modulation with air pressure control
Type of Bearings	Precision radial roller
Type of Drive	Direct coupling
Blowdown Valve	Automatic
Protective Devices	High air-oil temperature shutdown
Capacity - Oil	33 Quarts

OIL SEPARATOR AND RECEIVER

General Description	3-Stage, vertical labyrinth type
Safety Valve	ASME - Bronze
Type of Element	Replaceable cartridge
Capacity	4 cubic feet

ELECTRICAL SYSTEM

Voltage	12 Volt
Capacity of Battery	155 Ampere hours
Number of Plates	19 Per cell
Make of Alternator (D3400)	Delco-Remy
Alternator Output (D3400)	32 Amperes
Make of Generator (GM 4-53)	Delco-Remy
Generator Output (GM 4-53)	25 Amperes
Make of Voltage Regulator	Delco-Remy

WHEEL MOUNTED UNITS

Material-Chassis Frame	Structural steel
Size of Tires - Std. (2 Wheel)	7:50x16, 8 ply
Size of Tires - Std. (4 Wheel)	6:50x16, 6 ply
Type of Tires - Standard	Implement (See Options)
Fenders	Heavy gauge steel
Type of Wheels	Disc with drop center
Type of Wheel Bearing	Tapered roller
Fuel Tank Capacity	40 Gallons
Type of Fuel Tank	Lead lined
Housing	Heavy gauge steel with hinged doors
Type of Radiator Grille	Heavy duty steel mesh
Size of Toolbox (2/W), inches	9 wide, 21 deep, 91 long
Size of Toolbox (4/W), inches	18 wide, 9 deep, 91 long
Number of Toolboxes	2
Type of Toolboxes	Lockable, weatherproof
Type of Mounting (2 Wheel)	2 Pneumatic tires, retractable third wheel, and support leg at rear of unit
Type of Mounting (4 Wheel)	4 Pneumatic tires. Steerable front axle with 40 degree turning angle. Latch to retain drawbar in vertical position.
Type of Suspension	Heavy duty, leaf type spring
Type of Tow Hitch (2 & 4/W)	Lunette eye (3" I.D.)
Location of Fuel Filler	Inside housing, curbside
Location of Control Panel	Centralized underhood, curbside
Number and Size Service Outlets	4 - 3/4 NPT Throttle valves
Type of Muffler	Heavy duty industrial

Instrument Gauges and Controls

Engine Water Temperature Gauge	Low Engine Oil Pressure Shutdown
Engine Oil Pressure Gauge	Starter Button
Ammeter	Idle Control
Hour Meter	Air Pressure Gauge
Manual Shutdown	Cold Weather Starting Aid (Ether)

SKID MOUNTED UNITS

Housing (With Toolboxes)	Heavy gauge steel with hinged doors
Housing (Without Toolboxes)	Heavy gauge steel with sliding door
Skid	Structural steel for truck mounting
Fuel Tank Capacity	40 Gallons
Location of Control Panel	Centralized, underhood
Controls, Instruments and Other Applicable Specifications	Same as wheel mounted units

PAINTING

Prime Coat	Best quality red lead based primer
Final Coat	Highway yellow

DAVEY

MODEL 250 RPV SPECIFICATIONS

DIESEL ENGINE DRIVEN

OPTIONAL ITEMS AND ACCESSORIES

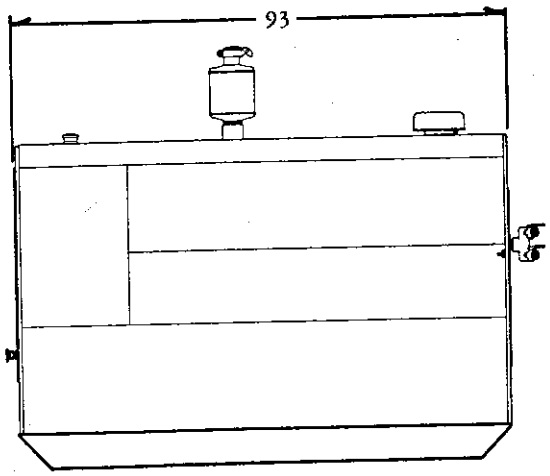
1. Hose Reel with Clamp, Single or Dual
2. Lifting Bail
3. Fuel Level Gauge
4. Safety Chains
5. Directional Turn Signals
6. Electric Tail Light
7. Set of 4 Reflectors
8. License Plate Holder
9. Residential Type Muffler
10. Optional Tires, As Required
11. Electric Brakes with Emergency Breakaway
12. Parking Brakes, Manual
13. Special Paint, As Required
14. Rear Bumper
15. High Engine Water Temperature Shutdown
16. Ball and Coupler Type Towing Hitch
17. Lockable Fuel Cap
18. Oil Field Skid

ENGINE		
MAKE	**HERCULES**	**GENERAL MOTORS**
Model	D3400	4-53
Type	4 cycle, 6 cylinder	2 cycle, 4 cylinder
Bore-Stroke	4" Bore x 4.5" stroke	3.875" Bore x 4.5" stroke
Piston Displacement	339 cubic inches	213.3 cubic inches
Rated HP (Net) at 1800 RPM	98 BHP	85 BHP
Maximum Torque at 1800 RPM	306 foot pounds	254 foot pounds
Valve Arrangement	Overhead	Overhead
Cylinder Head Material	Cast iron - one piece	Alloy iron - one piece
Crankcase Material	Cast iron	Alloy iron
Crankshaft Main Bearing	Surface hardened, inserts	Surface hardened, inserts
Number of Main Bearings	7	5
Type of Air Cleaner	Dry, 2 stage, with washable element	Dry, 2 stage, with washable element
Type of Lube Oil Filter	Primary and secondary. Repl. cartridges	Primary and secondary. Repl. cartridges
Type of Fuel Filter	Porous ceramic element	Replaceable cartridge
Type of Governor	Fly-Ball	Variable speed
Lubrication	Pressure	Pressure
Oil Capacity	7 Quarts	14 Quarts
Starter	12 Volt, Delco-Remy	12 Volt, Delco-Remy
Type of Cooling	Liquid	Liquid
Capacity of Engine Cooling System	20 Quarts	20 Quarts
Thermostat Temperature Setting	180 Degrees Fahrenheit	180 Degrees Fahrenheit
Fuel Consumption	.395 Pounds per BHP hour	.410 Pounds per BHP hour

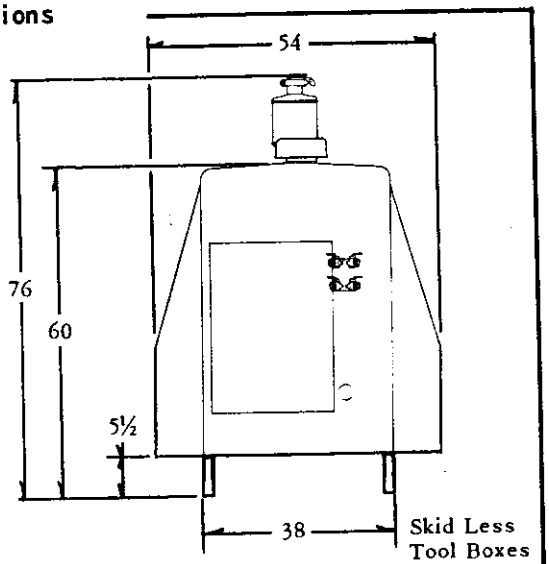
DIMENSIONS	2 Wheel		4 Wheel		Skid w/Toolboxes		Skid w/o Toolboxes	
	Herc.	G. M.	Herc.	G. M.	Herc.	G. M.	Herc.	G. M.
Length (Overall), inches	145	145	148	148	93	93	93	93
Height (Overall), inches	90	90	89	89	77	77	77	77
Width (Overall), inches	74	74	72	72	54	54	38	38
Dry Weight, pounds	3485	3810	3790	4115	3165	3490	2855	3180
Wet Weight, pounds	3950	4285	4140	4465	3630	3955	3320	3645
Track, inches	66	66	64	64	.....	.....	.....	.....
Wheel Base, inches	.....	.....	60	60	.....	.....	.....	.....

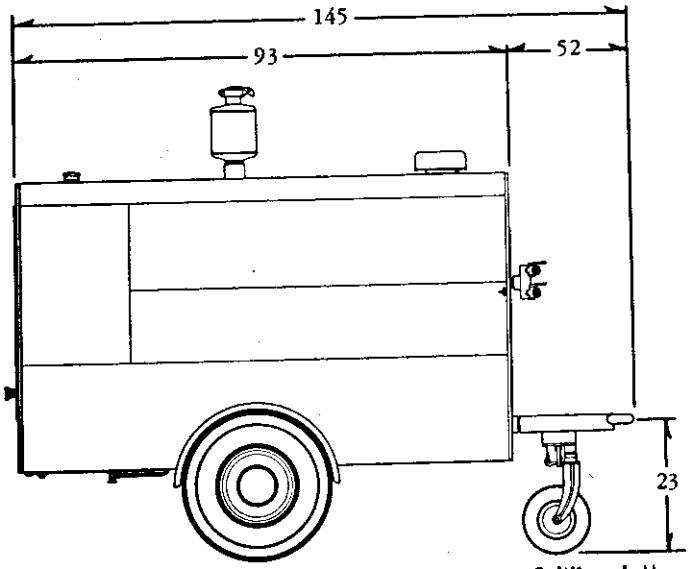
DAVEY

Model 250 RPV Specifications

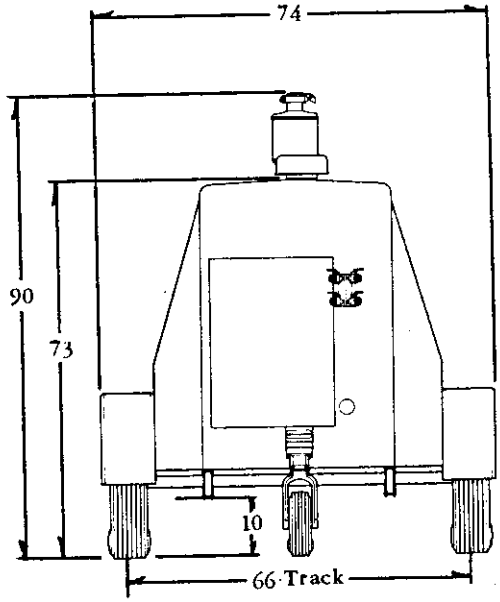


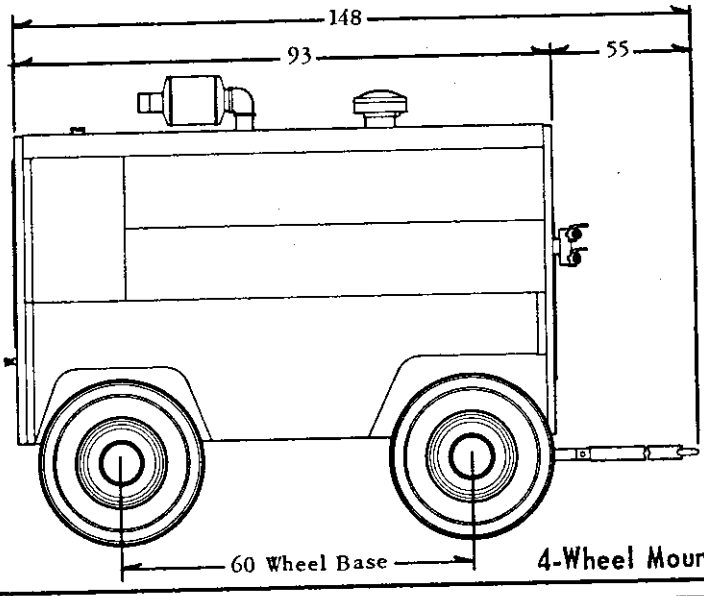
Skid Mounting



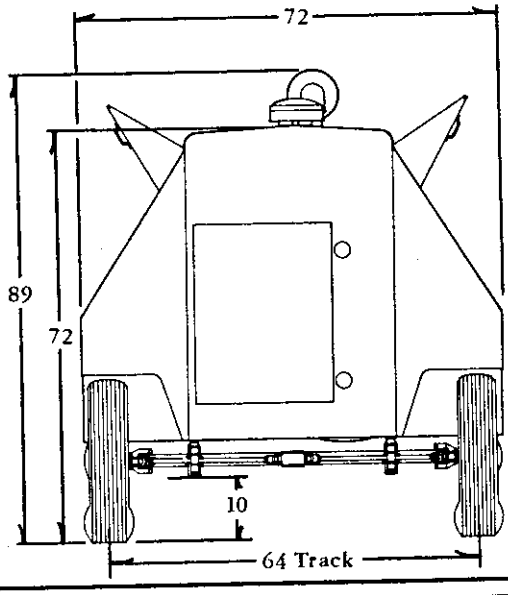


2-Wheel Mounting





4-Wheel Mounting



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.

WARRANTY

The manufacturer warrants each new compressor sold by the manufacturer to be free from defects in material and workmanship for 6 months from date of shipment, but not to exceed 90 days from first day of service, or such other period of time as may be agreed upon in respect to the application in which the compressor is used. The obligation under this warranty, statutory or otherwise, is limited to the replacement or repair in the manufacturer's factory of such part which appears to the manufacturer to have been defective in material or workmanship.

This warranty does not obligate the manufacturer to bear the cost of labor or transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to a compressor upon which repairs or alterations have been made unless authorized by the manufacturer.

The manufacturer shall in no event be liable for consequential damages or contingent liabilities arising out of the failure of any compressor or part to operate properly. No expressed, implied, or statutory warranty other than herein set forth is made or authorized by the manufacturer.

DAVEY COMPRESSOR COMPANY

KENT, OHIO, U.S.A.

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.

TABLE OF CONTENTS

PART I — AIR COMPRESSOR

LIST OF CHARTS AND ILLUSTRATIONS

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.

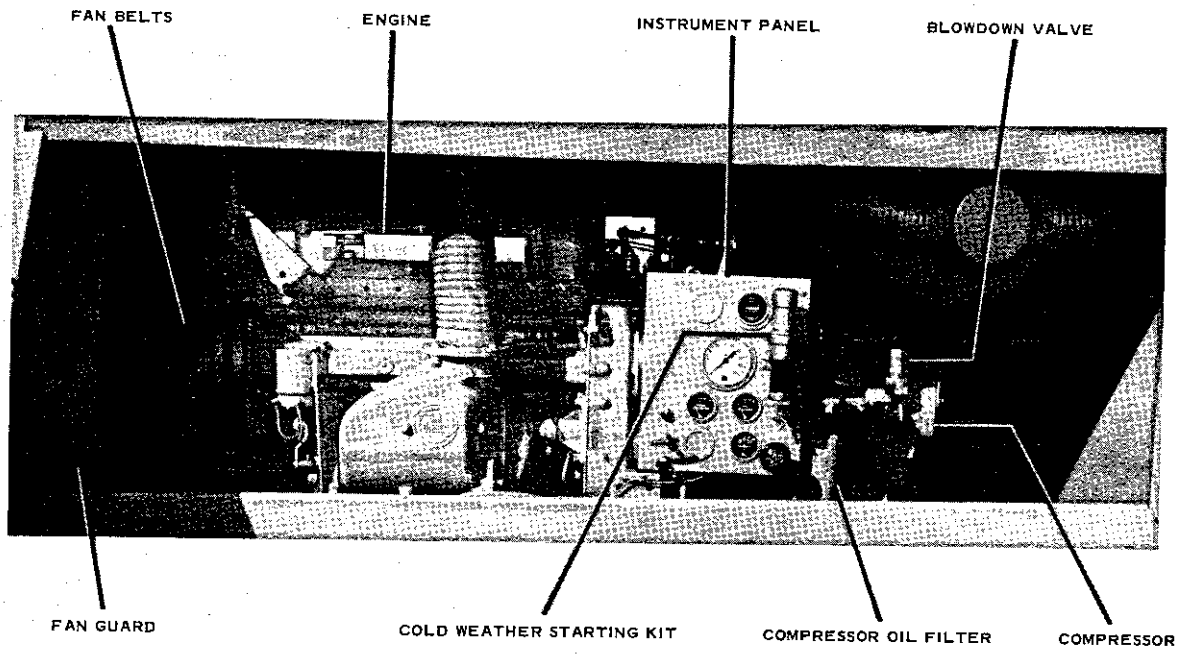
3. If the unit was shut down automatically, do not attempt to restart until the cause of such failure has been determined.

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.



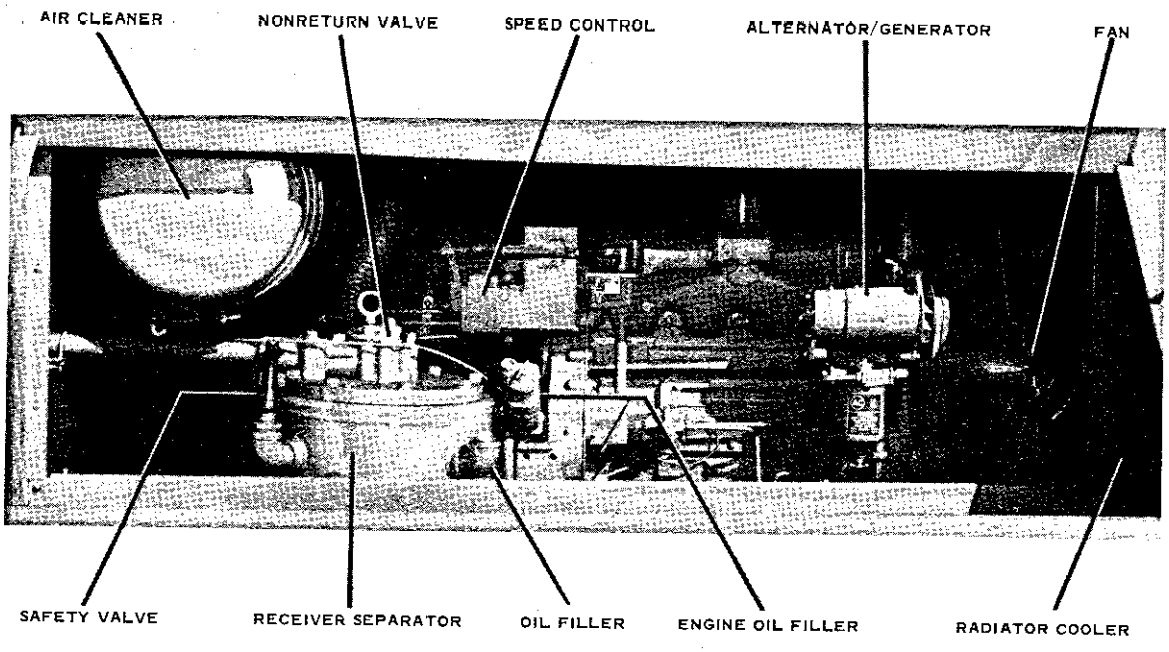


FIGURE A. COMPRESSOR UNIT COMPONENTS

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 tired wheels. 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 is provided to regulate engine speed and compressor intake in accordance with 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 roller 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

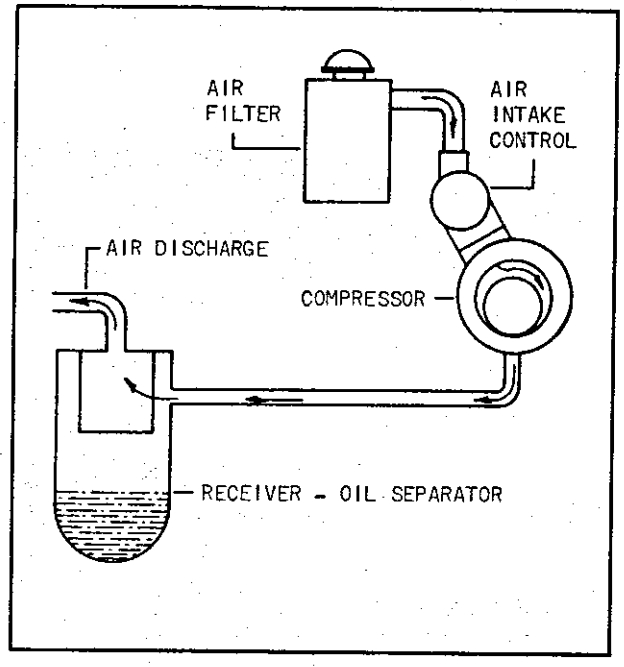


Figure 1-1. Air Cycle Schematic Diagram

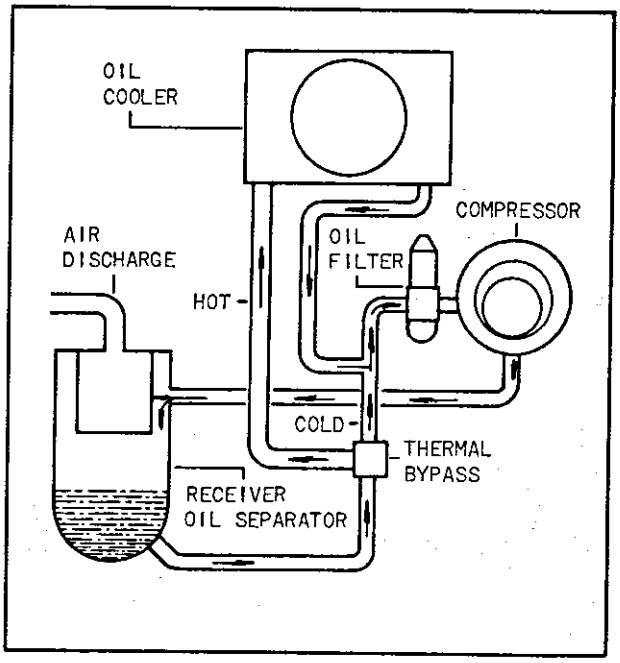


Figure 1-2. Oil Cycle Schematic Diagram

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. OPTIONAL ELECTRICAL SYSTEMS. Standard models are equipped with 12 volt electrical systems with current being supplied by an alternator. A 24 volt, radio-shielded electrical system is optional equipment. A generator supplies current for these units.

1-7. SPEED CONTROL. This unit is a pneumatic device of the modulating type. It is capable of selecting an engine speed and compressor intake opening to suit any air demand within the capacity of the compressor. Refer to the Pneumatic Speed Control supplement in Part II of this manual.

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 intake control. This valve automatically relieves air pressure from the system after shutdown.

1-10. MINIMUM PRESSURE VALVE ASSEMBLY. This valve maintains approximately 40 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 1-6.

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. Return the manufacturer's copy of the WARRANTY card to Davey Compressor Company; your warranty is void unless it is registered.

(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 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 as indicated by the liquid level gauge. If low, add oil at oil filler (see Figure 2-1). Recheck oil level after operating fifteen minutes.

(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 REINSTALL AND SECURE DRAIN PLUG BEFORE REFILLING.

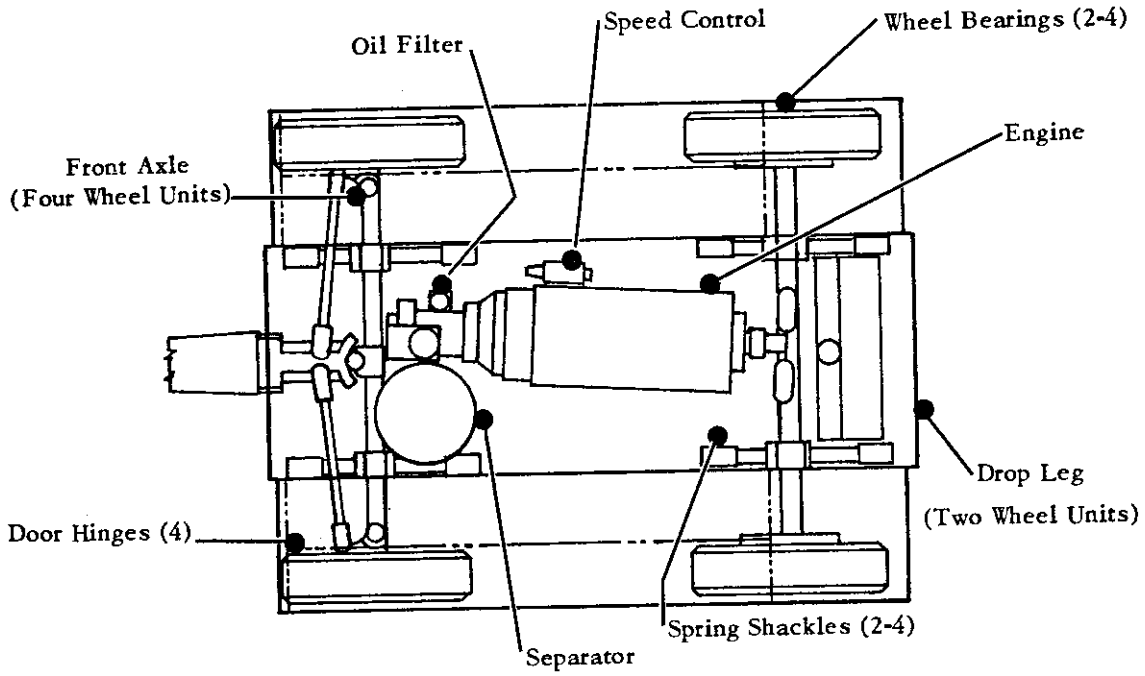
c. AIR CLEANER. The air cleaner is of the dry, replaceable filter type. It is important to service the filter regularly, as excessive wear and poor performance will result if the filter is clogged, or allow contamination to enter the engine or compressor, and dirt entering the compressor will eventually settle on the separator element and will produce a high pressure drop across the separator. Refer to the maintenance instructions in Section 3 for service procedures and intervals for 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 valve is wired through the switch as a safety measure. If the engine oil pressure falls below eight PSI, the unit automatically shuts down.

c. AMMETER. Indicates charge or discharge of the batteries. It should be noted that not all the circuits are wired through the ammeter, notably the starting circuit. (Refer to wiring diagram.) Therefore, a leak on this circuit will not register on the ammeter.



ITEM	INSTRUCTION	OPERATING PERIOD	LUBRICANT
Engine	Refer to Engine Manual, Part II.	REF	REF
Speed Control	Fill with lubricating oil per instructions in Speed Control Manual, page 7 (Part II).	150 hrs. (monthly)	OC
Wheel Bearings	Remove, clean and repack (4)	1000 hrs. (6 mos.)	WB
Receiver-Oil Separator	Check level, add if low. Drain and refill.	Daily 500 hrs.	OC OC
Oil Filter	Remove, clean and dry element. Soak in oil before reinstalling.	*100 hrs.	OC
Steering Mechanism	Grease all points.	100	WB
Door Hinges (4), Support Legs (2)	Oil can application sparingly.	40 hrs. (weekly)	OC
Spring Shackles	Use grease gun at fittings (6).	150 hrs. (monthly)	WB

*Replace element if badly clogged.
**In extremely dusty locations, check, clean if sludged and refill every 8 hours.

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).	SAE 10	SAE 20	SAE 30
WB	General Purpose Grease	No. 0	No. 0	No. 1

Figure 2-1. Lubrication Chart

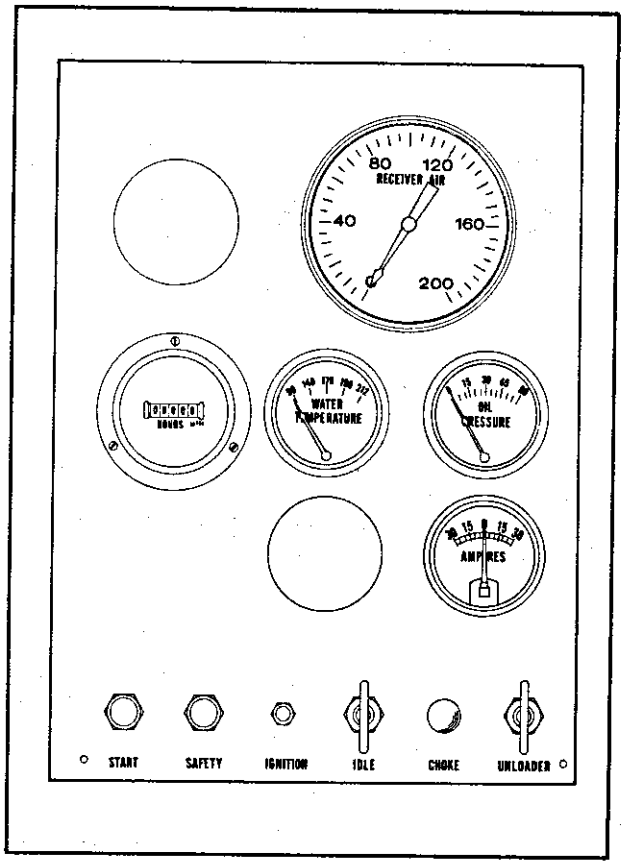


Figure 2-2. Gasoline Unit Panel

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. SAFETY CONTROL PUSHBUTTON (if provided). This pushbutton is in parallel with the pressure switch on the oil pressure gauge, when provided.

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

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

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

j. FUEL GAUGE. Indicates engine fuel level. Two types are available; one is tank mounted and the other is mounted on the instrument panel.

k. HOURMETER. (Optional Accessory.) Indicates length of time the equipment has been operating. Thus, scheduled inspection and servicing periods are facilitated.

l. PANEL LAMP(S) AND SWITCH. (Optional Accessories.) These illuminate the instrument panel for night operation.

m. STOP CONTROL. (Diesel Engine.) When pulled out, this closes the rack in the fuel pump and stops the engine. (Also see Engine Manual in Part II.)

2-4. STARTING THE UNIT.

a. Open the unit doors on each side and secure in position.

b. In cool weather, pull compressor unloader control out and lock.

c. Open air outlet valve.

2-5. GASOLINE ENGINE UNIT. (Also see ENGINE MANUAL, PART II.)

a. Turn unit over by pressing starter switch for three seconds with ignition switch in (off).

b. Pull out the choke control. As the engine warms up during running, the choke control should be pushed in until fully open when the engine has reached normal operating temperature.

c. Pull the ignition switch out (on), press starter switch and safety control switch in.

CAUTION

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.

d. Release starter switch immediately after engine starts, but hold safety control switch in until engine oil pressure gauge registers pressure. If engine oil pressure does not register within three to five seconds after starting, release safety control switch and determine cause.

NOTE

On units so equipped, briefly press in the shutdown relay switch and the engine oil pressure gauge safety release lockout.

e. Adjust idle control and choke control to fast idle.

f. Let unit run until engine temperature reaches 140° F., then push idle control and compressor unloader in and LOCK by turning clockwise. Close air outlet valve. The unit will now be controlled by the speed control.

g. Check readings on all engine and compressor gauges.

h. Unit is now ready for use. Normal operating air pressure range is 90 to 100 psi.

2-6. DIESEL ENGINE UNIT. (Also see ENGINE MANUAL, PART II.)

a. Turn unit over by pressing starter switch for three seconds with stop control out. Then push stop control full in.

b. Press starter switch in. Observe CAUTION following paragraph 2-5.c.

c. Release starter switch immediately after engine starts, but hold safety control switch in until engine oil pressure gauge registers pressure. Engine oil pressure should register within three to five seconds; if not, stop unit and determine cause.

NOTE

On units equipped with General Motors diesel engines, a toggle clamp located at the speed control must be positioned for either idling or running. The correct position is indicated by the plate directly below the clamp.

d. Adjust idle control to fast idle, turn handle clockwise to lock.

e. Proceed per paragraphs 2-5.f, g and h.

2-7. STOPPING THE UNIT.

a. Close air outlet valve and allow to run unloaded for five minutes.

b. On gasoline engine units, push ignition switch in (off). On diesel engine units, pull stop control full out until engine stops, then push in.

CAUTION

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

NOTE

If the unit stops because of high compressor oil discharge temperature, no action is required to restart, except that the temperature of the compressor oil must be lower than 220 degrees Fahrenheit. If overheating persists, stop the unit and correct the cause. (Refer to Trouble Shooting, Section 4.)

c. Close the doors of the unit housing.

2-8. NORMAL OPERATION.

a. Check all instruments for proper indication. Continue to make periodic checks of the instruments while the equipment is operating.

b. The air compressor will automatically stop if the oil temperature exceeds 220 to 250 degrees Fahrenheit.

c. Units equipped with automatic safety devices will stop for one or more of the following conditions.

(1) High engine coolant temperature.

(2) Low engine oil pressure.

(3) High operating speed.

2-9. 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 the engine manual.

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

e. 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.

f. On gasoline engine units, use a small amount of dry gas in the fuel tank with each refueling of the air compressor unit. Always completely fill the tank after securing equipment. On diesel engine units, use a cold weather starting kit (see Part II).

2-10. 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.

2-11. 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 cleaners and oil filters every five hours of operation.

e. Clean out sediment bowl of the fuel pump every five hours of operation.

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

2-12. 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 electrical components (plugs, leads, etc.) clean and dry.

d. Clean the air cleaning and oil filters frequently.

2-13. 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.

2-14. 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. Pull out the catch on the safety valve to relieve air pressure in the compressor, then loosen or remove component. Allow three minutes after shutdown for pressure to bleed off.

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.)

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

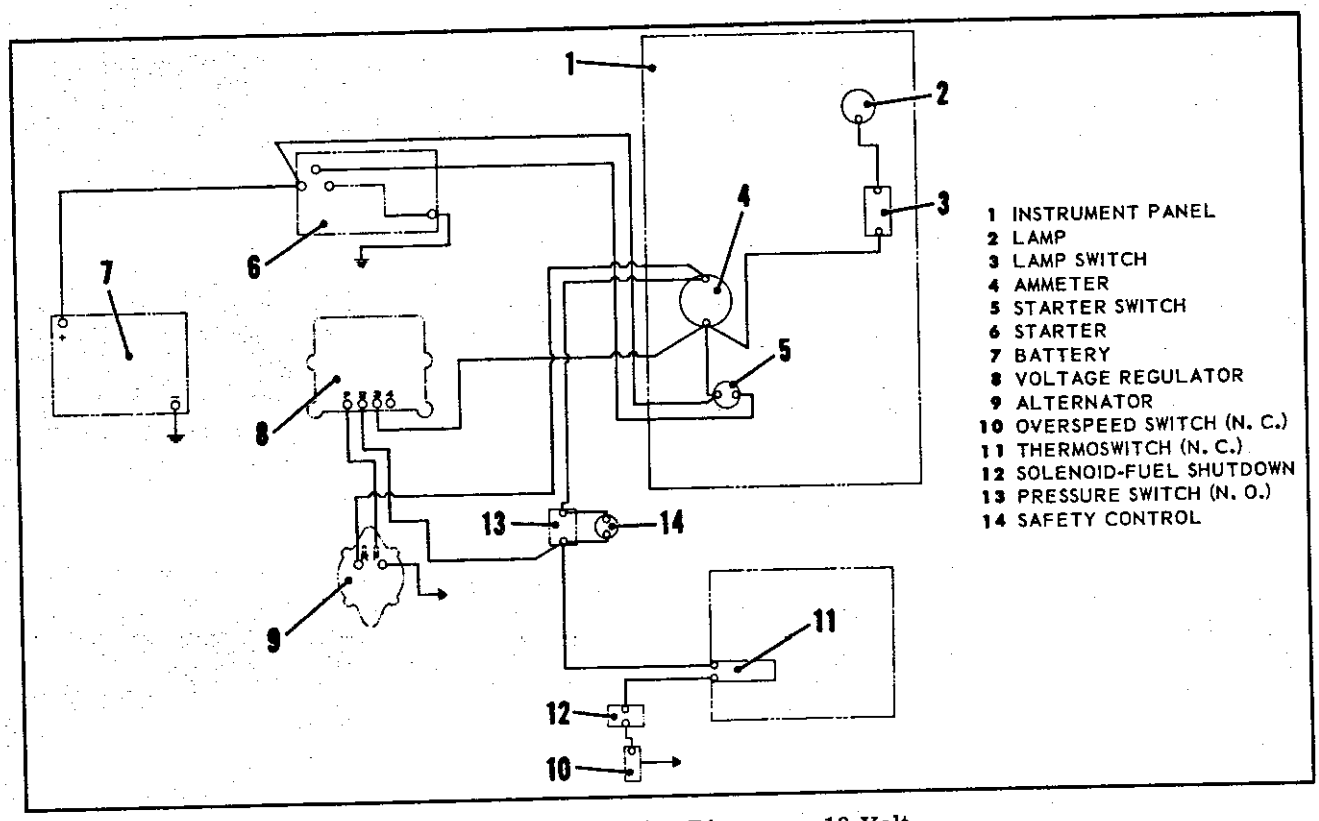


Figure 2-3A. Wiring Diagram - 12 Volt

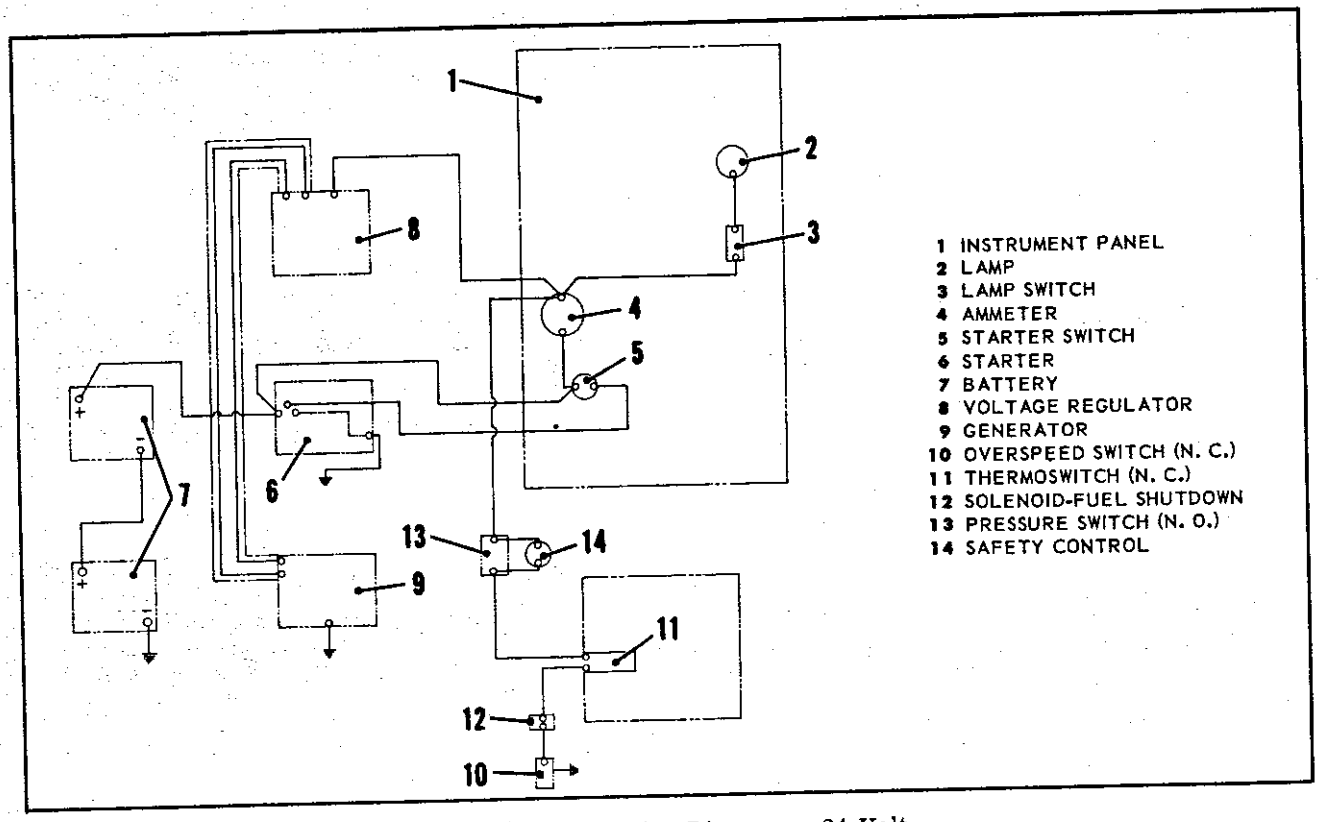


Figure 2-3B. Wiring Diagram - 24 Volt

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, bimonthly and every 500 hours of operation (see figure 3-2). The biweekly interval will be equivalent to a maximum of 50 hours of use. The bimonthly interval will be equivalent to 8 weeks or a maximum of 250 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 future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation of the unit 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. SPEED CONTROL. Refer to Speed Control Manual in Part II for all speed control maintenance procedures.

3-4. CORRECTIVE MAINTENANCE. Major maintenance will normally not be required. The Permavane blades are expected to last over 10,000 hours 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. Thus, the bearings, rotor, stator, and vanes (blades) will always be supplied with clean oil so that practically no wear will occur.

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. Many of the components can be removed and replaced without disturbing the rest of the assembly. Disassemble only to the extent required to accomplish repair.

a. Disassembly Of Air Compressor. (Fig. 5-4) The compressor is accessible by removing the rear housing panel. The blades (88) and rotor (89) are accessible by removing the rear end cover (6). The compressor may be removed from the engine by removing twelve bolts securing the adapter (60, Fig. 5-4) to the engine bell housing. Matchmark parts before disassembly to assist in reassembly.

If necessary, remove bearings (5 and 74, Fig. 5-4) by using a suitable gear puller. Apply pressure on the inner race only.

NOTE

Tag all tubing (Fig. 5-2) and electrical lines at time of disassembly. This will facilitate reassembly.

3-6. CLEANING.

a. Wash all metal parts with standard solvent or 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. 5-7) thoroughly and air dry. Wash bowl, wipe dry.

f. Wash oil filter element (4, Fig. 5-6). Use a brush to clean the wafer elements, then air dry.

NOTE

Do not attempt to wash oil separator fiberglass element (20,5-5). Replace if clogged.

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 36 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 generator 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.
	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

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

3-7. REPAIR OR REPLACEMENT.

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

b. Remove minor nicks or scratches from machined surfaces of rotor (89, Fig. 5-4) and stator (91) with a fine honing stone or emery cloth. If extremely scored or galled, replaced damaged parts.

c. Inspect air cleaner (Fig. 5-7) for clogging or other damage. Replace if not repairable.

d. Oil filter elements (Fig. 5-6) that are damaged or cannot be unclogged shall be replaced.

e. Varnished or damaged oil separator element (20, Fig. 5-5) shall be replaced.

f. Replace blades (88, Fig. 5-4) when the coating is worn off and bare metal is exposed. Blades should slide freely in rotor slots. (Also see Fig. 3-3).

g. Replace any tubing (Fig. 5-2), cables or other parts with obvious damage that are not repairable.

h. Replace bearings (5 and 74, Fig. 5-4) that feel gritty or bind when rolled manually. Do not reuse any races or bearings which have been heated or removed by force as these practices soften and deform parts.

3-8. REASSEMBLY OF AIR COMPRESSOR. (Fig. 5-4) 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 per Figure 3-3.

b. Hold O-rings (12 and 76, Fig. 5-4) in place on end covers (6 and 75) with grease until secured in reassembly.

c. Gripsprings: During reassembly of the compressor, it is essential that the gripsprings (59, Fig. 5-4) be installed in the correct sequence. Improper installation of the gripsprings will result in slippage between the shaft (86, Fig. 5-4) and the coupling (54), and cause excessive wear. Refer to Figure 3-4 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 small gripspring (3) on shaft with beveled edge out.

(5) Install second large gripspring (4) over gripspring (3). Be sure bevels agree.

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

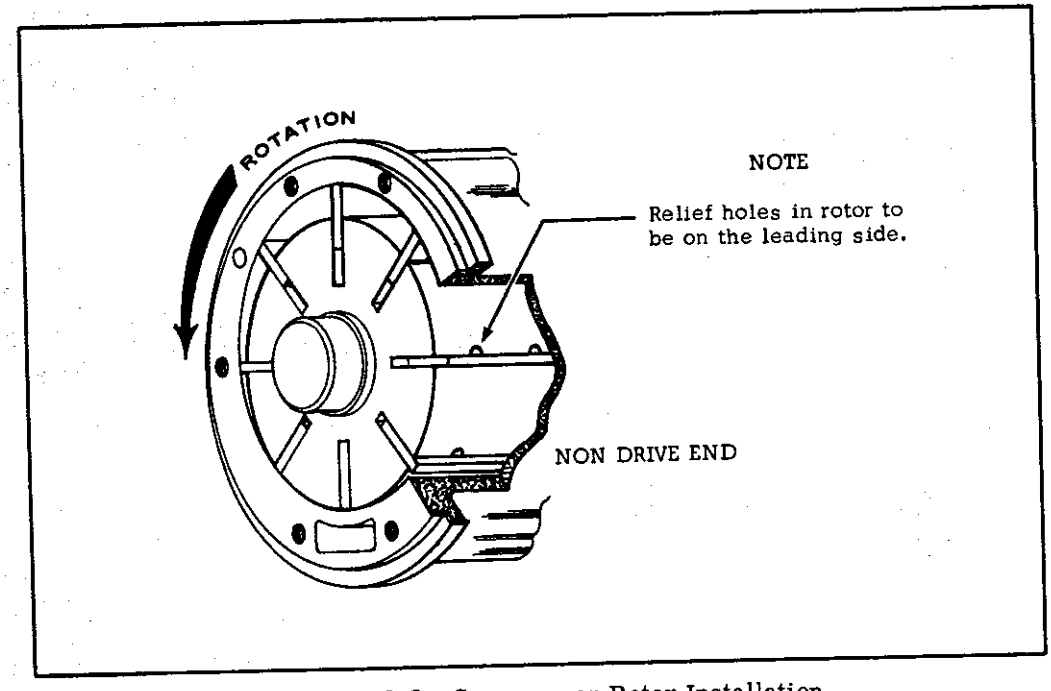


Figure 3-3. Compressor Rotor Installation

d. Fill air cleaner bowl with clean lubricating oil before installing.

e. 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.

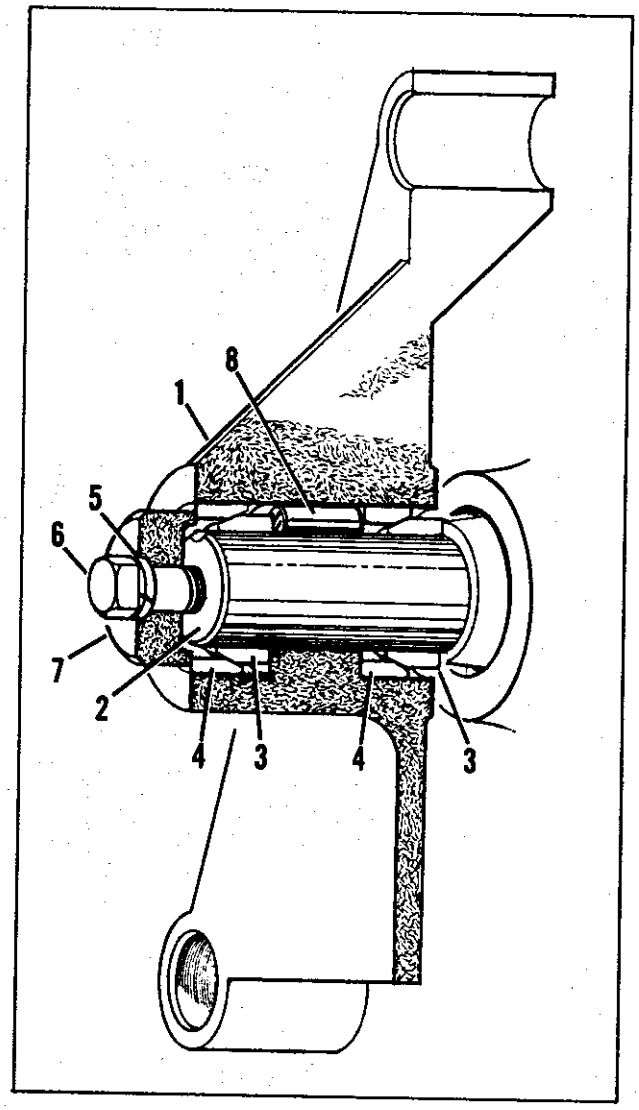


Figure 3-4. Gripspring Installation

RIB IMPLEMENT TIRE INFLATION CHART		
TIRE SIZE	PLY RATING	MAXIMUM PRESSURES AT MAXIMUM LOADS
4.10/3.50X6 (Caster wheel)	4	28
5.90 X 15	4	28
6.40 X 15	4	28
6.40 X 15	6	40
6.70 X 15	4	24
6.70 X 15	6	36
7.60 X 15	4	24
7.60 X 15	6	36
7.60 X 15	8	48
6.00 X 16	4	24
6.00 X 16	6	40
6.50 X 16	4	24
6.50 X 16	6	36
6.50 X 16	8	48
7.50 X 16	4	20
7.50 X 16	6	32
7.50 X 16	8	44
7.50 X 16	10	56

Figure 3-5. Tire Inflation Chart

TABLE OF LUBRICANTS		
TEMPERATURE (DEGREES FAHRENHEIT)	TYPE OF LUBRICANT	GRADE
	Grease Fittings	
120 to 30	Grease, General Purpose	No. 1
30 to 0		No. 0
0 to -25		No. 0
	Compressor Oil Chamber	
120 to 30	Supplement 1 or Series 3 Heavy Duty Motor Oil	SAE 30
30 to 0		SAE 20
0 to -25		SAE 10
*Specified oil is adequate for temperature range indicated. However, viscosity ranges specified by engine manufacturer are suitable for this compressor and may be used to avoid dual stocks of lubricants.		

Figure 3-6. Lubricant Chart

SECTION 4
TROUBLE SHOOTING

4-1. TROUBLE SHOOTING. The following chart gives common troubles, their probable causes and suggested remedies. For engine or speed control 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 (If so equipped)	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 receiver drain valve open or leaking	Close valve or repair leak.
	Safety valve leaking	Clean, repair or replace 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.

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.
(REFER TO SPEED CONTROL MANUAL FOR ADDITIONAL REMEDIES)	Ruptured bellofram or diaphragm in engine speed control assembly	Replace bellofram or diaphragm.
	Unloading pressure too high or too low	Readjust.
	Line between compressor and engine control damaged	Repair line.
ENGINE STALLS WHILE IDLING	Engine or compressor is not warm enough	Run at part load until equipment is warmed up.
(REFER TO SPEED CONTROL MANUAL FOR ADJUSTMENTS)	Idle speed set too low	Readjust.
	Backlash in linkage	Remove.
COMPRESSOR WILL UNLOAD BUT ENGINE WILL NOT SLOW DOWN	Piston seized due to varnish	Dismantle and clean. Reassemble and use correct oil.
	Piston seized due to dirt	Dismantle and clean. Reassemble. Replace any damaged parts.
COMPRESSOR OVERHEATING	Dirty oil filter	Remove, clean with non-flammable solvent and install.
COMPRESSOR OUTPUT LOW	Faulty air intake 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.
	Speed control	Refer to Speed Control Manual (Model 3C).
	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.
	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 line from speed control to intake control.

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 IN OPERATION	Oil safety switch cutting out due to low engine oil pressure	Refer to Engine Manual in Part II.
	Engine overspeed switch shutting down	Refer to Engine Manual in Part II.
	High compressor air temperature	Check compressor oil supply and cooling system.

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. Kent, Ohio, USA., EXCEPT parcel post packages, 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."

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.

INDEX TO PARTS LIST GROUPS

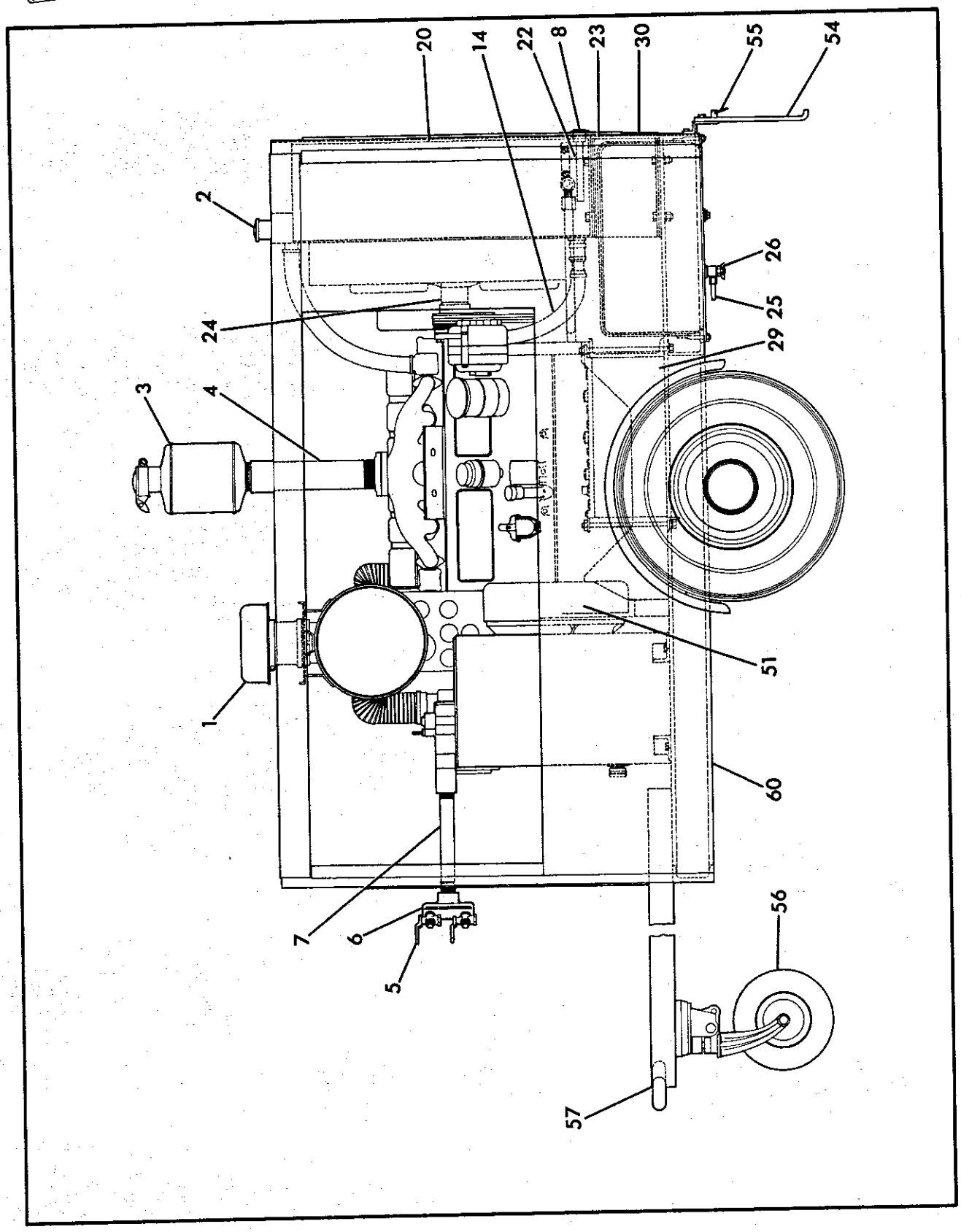


Figure 5-1. Unit Assembly (Sheet 1 of 3)

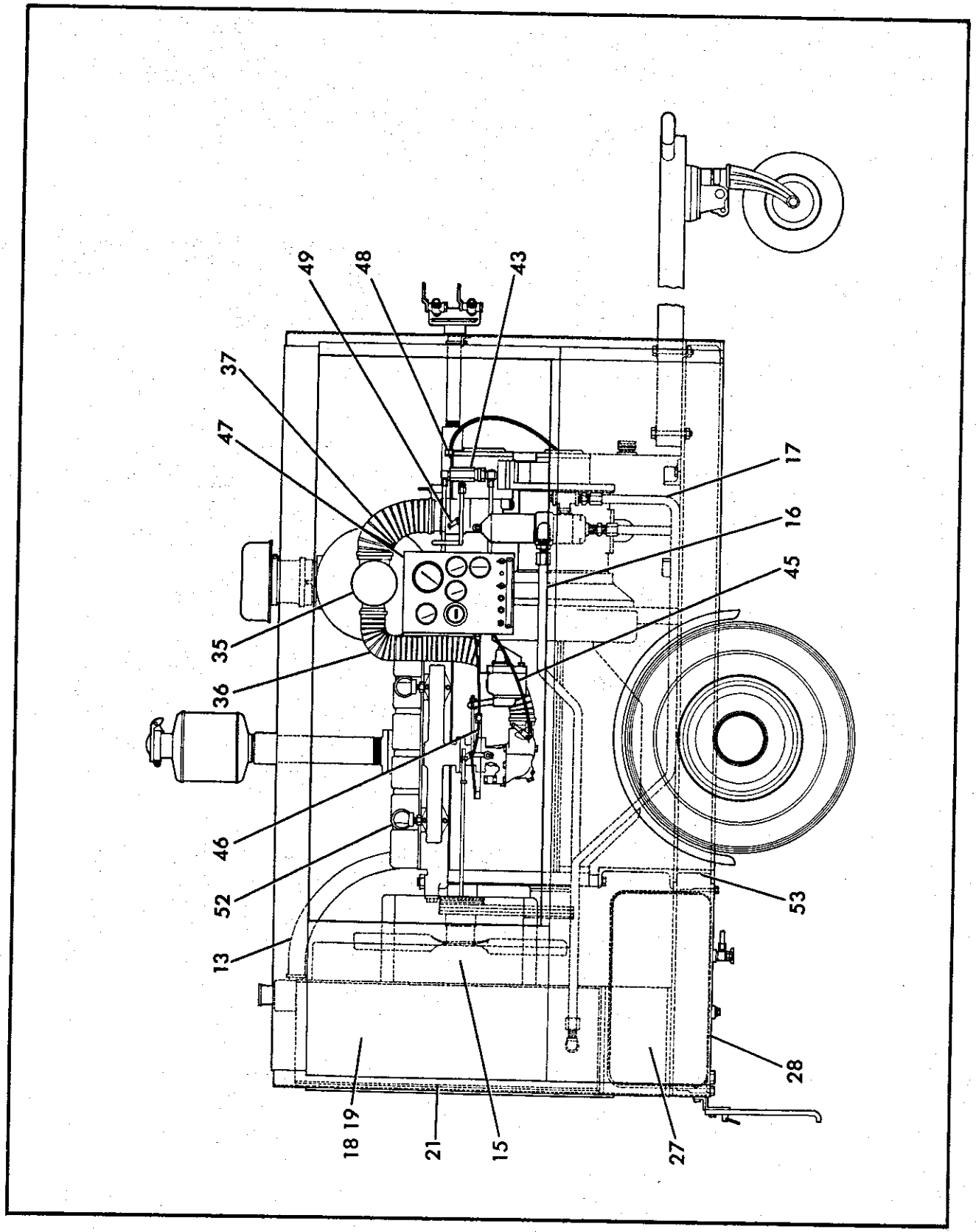


Figure 5-1. Unit Assembly (Sheet 2 of 3)

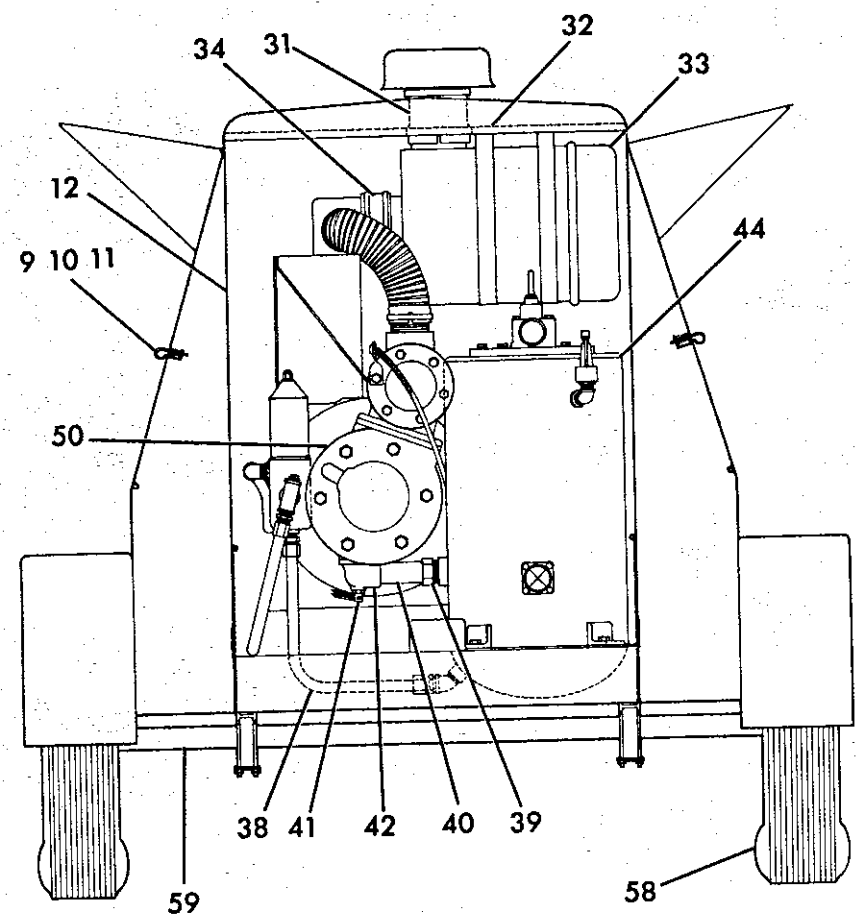


Figure 5-1. Unit Assembly (Sheet 3 of 3)

INDEX	PART NO	GROUP UNIT DESCRIPTION	MODEL NUMBER 5P155
	48160	TRAILER ASSEMBLY, 250 RPV, GASOLINE	1
1	REF	CAP, Air cleaner (See Air Cleaner Group)	
2		CAP, Radiator-cooler	1
3	43523	MUFFLER, Exhaust	1
	43524	CAP, Rain	1
4	48329	PIPE, Exhaust	1
5	14646	VALVE, Throttle	4
6	43539	MANIFOLD, Discharge	1
7	48864	CONNECTION, Discharge manifold	1
	48397	SUPPORT, Discharge pipe	1
		SCREW, Spinlock, 1/4-20 x 3/4	2
		NUT, Spinlock, 1/4-20	2
	22587	U-Bolt	1
8	14028	COCK, Shut off	1
		NIPPLE, Pipe, 3/8 NPT x 9	1
		COUPLING, Pipe, 3/8 NPT	1
	48840	GROMMET	1
9	27327	EYE, (2 per door)	4
10	27328	BRACKET, (2 per door)	4
11	27329	SPRING, (2 per door)	4
12	48316	BRACKET, Plate mounting	1
	44744	PLATE, Data	1
		SCREW, Self-tapping, No. 4 x 1/4	4

INDEX	PART NO	GROUP UNIT DESCRIPTION	MODEL NUMBER 5P155							
	46165	PLATE, Instruction	1							
		SCREW, Self-tapping, No. 4 x 1/4	4							
13	48306	HOSE, Radiator, top	1							
	14050	CLAMP, Hose	2							
14	48743	HOSE, Radiator, bottom	1							
	14050	CLAMP, Hose	4							
	48339	TUBE, Radiator	1							
15	48315	GUARD, Fan	1							
		SCREW, Spinlock, 1/4-20 x 1/2	4							
16	48309	TUBE, Filter to cooler	1							
	45248	SLEEVE	2							
	45451	NUT	2							
	45835	CLAMP, Tube	1							
		ELBOW, Street, 90 degrees x 1" NPT	1							
	41915	CONNECTOR	1							
17	48310	TUBE, Cooler return	1							
	45248	SLEEVE	2							
	45451	NUT	2							
	45835	CLAMP, Tube	1							
	41915	CONNECTOR	1							
		TEE, Pipe, 1" NPT	1							
		NIPPLE, Close, 1" NPT	1							
		PLUG, Pipe, sq hd, 1" NPT	1							

INDEX	PART NO	GROUP UNIT DESCRIPTION	MODEL NUMBER 5P155							
18	48159	OIL COOLER	1							
		BOLT, Hex, 3/8-16 x 3/4	6							
		WELDNUT, 3/8-16	6							
19	48170	RADIATOR	1							
		BOLT, Hex, 3/8-16 x 1	4							
		NUT, Lock, 3/8-16	4							
20	48171	SUPPORT, R. H., radiator	1							
		BOLT, Hex, 3/8-16 x 3/4	6							
		NUT, Lock, 3/8-16	6							
21	48172	SUPPORT, L. H., radiator	1							
		BOLT, Hex, 3/8-16 x 3/4	6							
		NUT, Lock, 3/8-16	6							
22	48403	BAFFLE, Cooler	2							
		SCREW, Spinlock, 1/4-20 x 3/4	8							
		NUT, Spinlock, 1/4-20	8							
23	48191	SPACER, Cooler support	2							
		BOLT, Hex, 1/2-13 x 1-1/2	8							
		NUT, Lock, 1/2-13	8							
24	48313	SPACER, Fan hub	1							
25	48325	TUBE Assembly	1							
	14650	NUT	1							
	28886	NUT	1							
	28881	SLEEVE	1							

INDEX	PART NO	GROUP UNIT DESCRIPTION	MODEL NUMBER 5P155							
		TUBE, Copper, 3/8 O. D. x .032 wall	1							
	41935	CONNECTOR	2							
26	42291	COCK, Shut off	1							
27	48169	TANK, Fuel	1							
	48301	STRAP, Tank	2							
		NUT, Lock, 1/2-13	4							
		WASHER, Channel, 1/2	2							
		WASHER, Flat, 1/2	2							
	14048	WEBBING, 64" Lg	2							
	44741	COVER, Gauge flange	1							
	44427	GASKET, Gauge flange	1							
		SCREW, Rd hd, No. 10-32 x 1/2	5							
	28150	WASHER	5							
		PLUG, Pipe, 1/4 NPT	1							
28	48302	PAN, Fuel tank	1							
		BOLT, Hex, 1/2-13 x 1-1/2	6							
		NUT, Lock, hex, 1/2-13	6							
		WASHER, Channel, 1/2	6							
		SCREW, Spinlock, 1/4-20 x 1	5							
		SCREW, Spinlock, 1/4-20 x 1-1/2	5							
		NUT, Spinlock, 1/4-20	5							
		WASHER, Channel, 1/4	5							
29	24669	BATTERY	1							

GROUP UNIT

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
	48330	CABLE, Starter	1							
	11028	STRAP, Ground	1							
	24668	BATTERY Tiedown	1							
30	14621	PLATE, Name, DAVEY	1							
		SCREW, Self tapping, No. 4 x 1/4	4							
31	REF	TUBE, Air intake (See Air Cleaner Group)								
	REF	CLAMP, Hose (See Air Cleaner Group)								
32	48182	BRACKET, Air cleaner	1							
		SCREW, Spinlock, 1/4-20 x 1/2	4							
		NUT, Spinlock, 1/4-20	4							
33	REF	AIR CLEANER (See Air Cleaner Group)								
	REF	BAND, Mounting, cleaner (See Air Cleaner Group)								
34	48305	ADAPTER, Air cleaner	1							
	14050	CLAMP, Hose	2							
35	48181	MANIFOLD, Air intake	1							
36	48303	HOSE, Engine air intake	1							
	14050	CLAMP, Hose	2							
37	48304	HOSE, Compressor air intake	1							
	14050	CLAMP, Hose	2							
		PIPE, 3" NPT x 3" Lg	1							
38	48311	TUBE, Filter to separator	1							
	45248	SLEEVE	2							
	45451	NUT	2							

GROUP UNIT

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
	41915	CONNECTOR	2
39	44891	ADAPTER, Separator inlet	1
40	48317	TUBE, Discharge connection to separator	1
	24033	O-RING	1
41	48414	THERMOSWITCH Assembly	2
42	48745	CONNECTION, Discharge	1
		BOLT, Hex, 3/8-16 x 1	2
		WASHER, Lock, 3/8	2
	24549	O-RING	1
43	REF	BLOWDOWN VALVE Assembly (See Blowdown Valve Group)	
44	REF	OIL SEPARATOR Assembly (See Oil Separator Group)	
		BOLT, Hex, 3/8-16 x 1-1/2	4
		NUT, Lock, 3/8-16	4
		WASHER, Plain, 3/8	4
45	27854	CABLE, Control	1
46	8188	CABLE, Choke	1
47	REF	INSTRUMENT PANEL Assembly (See Instrument Panel Group)	
		BOLT, Hex, 3/8-16 x 3/4	2
		WASHER, Lock, 3/8	2
	44745	PLATE, Name, DAVEY	1
		SCREW, Self tapping, No. 4 x 1/4	4
	45340	SPACER	2
	45341	SPACER	1

INDEX	PART NO	GROUP UNIT DESCRIPTION	MODEL NUMBER 5P155							
	48812	BRACKET, Panel support	1							
		SCREW, Spinlock, 1/4-20 x 3/4	1							
	48326	HOSE Assembly, oil pressure	1							
	29764	ELBOW	1							
	29958	CONNECTOR	1							
	27854	CABLE, Control, idle	1							
48	44506	BRACKET	1							
	20586	CLIP, Cable	1							
		SCREW, Spinlock, 1/4-20 x 1/2	1							
		NUT, Spinlock, 1/4-20	1							
49	REF	LEVER, (See compressor group)								
		SCREW, Rd hd, No. 10-32 x 1/4	1							
	REF	STOP, Wire (See compressor group)								
		SCREW, Rd hd, No. 8-32 x 3/4	1							
50	REF	COMPRESSOR Assembly (See Compressor Group)								
		BOLT, Hex ,3/8-16 x 1-1/2	12							
		WASHER, Lock, 3-8	12							
51	25673	BUSHING	8							
	44056	PIN, Coupling	8							
	47737	STRAP, Locking	4							
52	48188	ENGINE, G3400	1							
		BOLT, Hex, 5/8-11 x 2-1/2	1							
		WASHER, Channel, 5/8	1							

GROUP UNIT

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P1555							
		WASHER, Lock, 5/8	1							
		BOLT, Hex, 5/8-11 x 6	2							
		NUT, Hex, 5/8-11	2							
	48332	SPACER, Engine, front	1							
	48333	SPACER, Engine, rear	2							
53	48351	BRACKET, Engine support	1							
		BOLT, Hex, 1/2-13 x 1-1/2	2							
		NUT, Hex, lock, 1/2-13	2							
		WASHER, Channel, 1/2	2							
54	48331	LEG, Cooler end	1							
	48819	BRACKET, Leg support	1							
		SCREW, Spinlock, 1/4-20 x 1	2							
		NUT, Spinlock, 1/4-20	2							
55	27655	CHAIN, Safety	1							
	43383	PIN, Lock	1							
56	24827	CASTER WHEEL Assembly	1							
		BOLT, Hex, 1/2-13 x 6	4							
		NUT, Lock, 1/2-13	4							
		WASHER, Flat, 1/2	4							
	44991	SPACER, Wheel	1							
57	48352	TOWBAR	1							
		BOLT, Hex, 3/8-10 x 4-1/2	4							
		NUT, Lock, 3/8-10	4							

INDEX	PART NO	GROUP ___ UNIT DESCRIPTION	MODEL NUMBER 5P155							
		WASHER, Channel, 3/8	4							
58	27399	TIRE and tube	2							
	27412	HUBCAP	2							
59	REF	AXLE Assembly (See Axle Group)								
60	48199	FRAME	1							

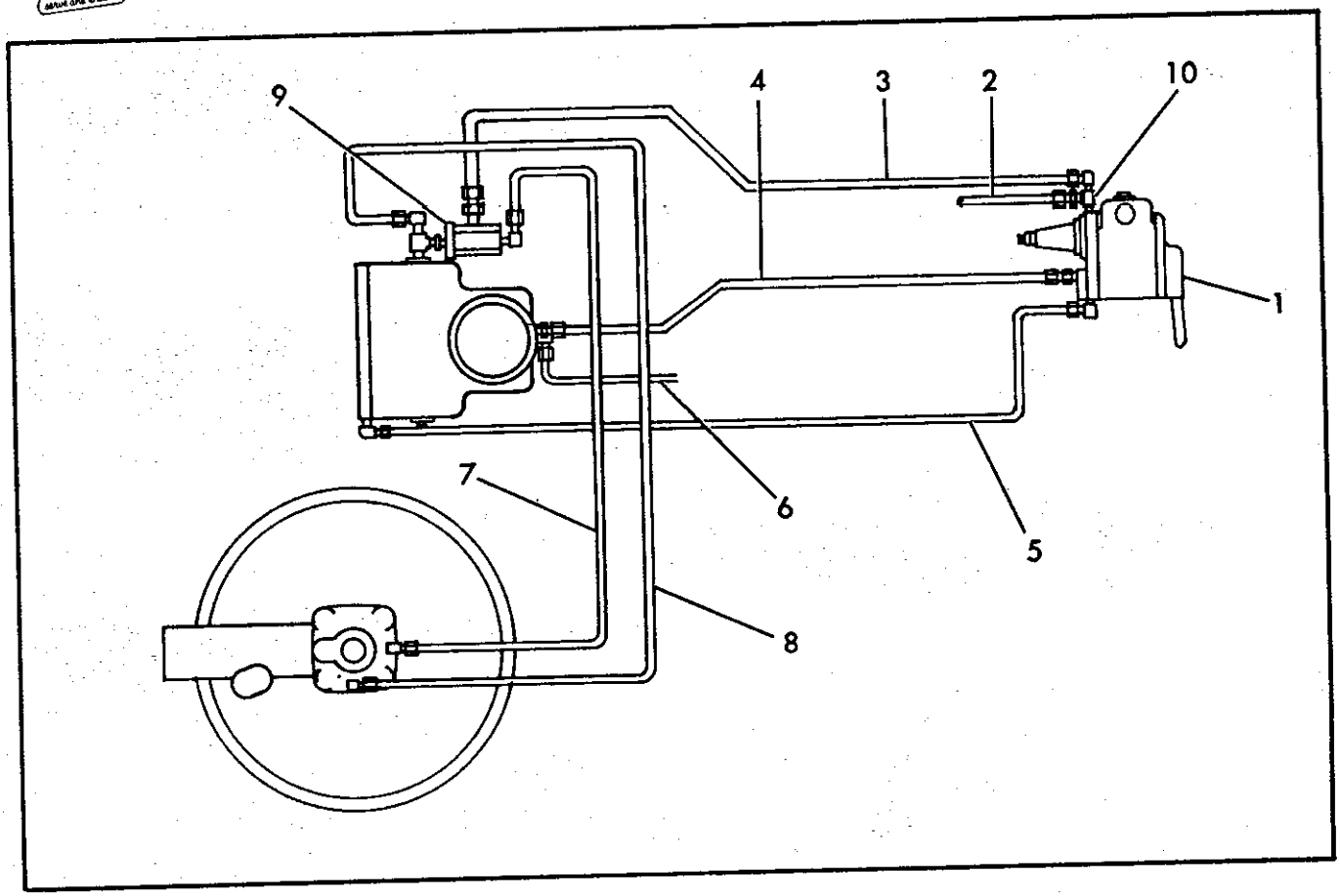


Figure 5-2. Tubing Assembly

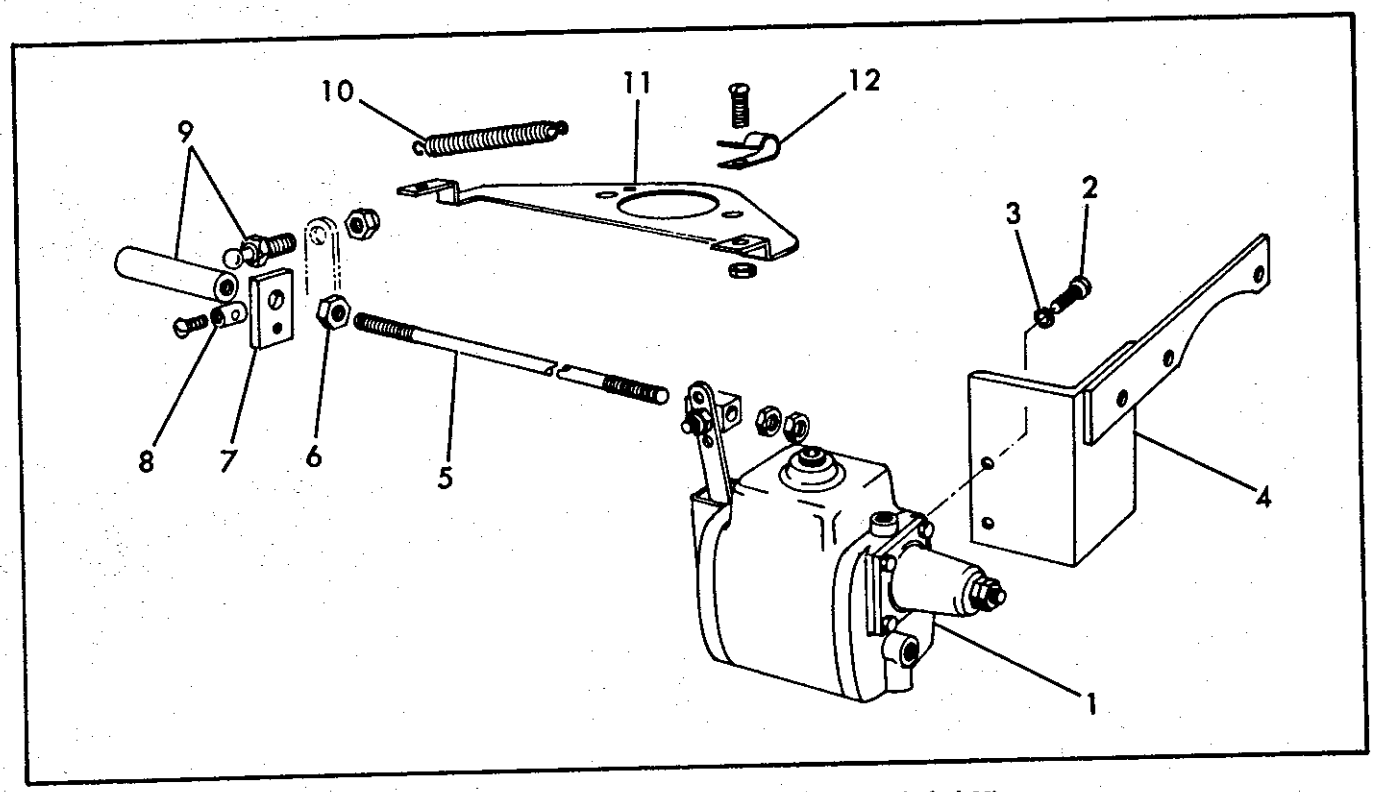


Figure 5-3. Engine Speed Control Group, Exploded View

GROUP AIR TUBING

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
1	REF	ENGINE SPEED CONTROL (See Engine Speed Control Group)								
2	48327	TUBE Assembly, (Air pressure gauge)	1							
	28880	SLEEVE	2							
	28885	NUT	2							
		TUBE, 1/4 O. D. x .032 wall	1							
	29958	CONNECTOR	1							
	41024	TEE	1							
3	48324	TUBE Assembly, (Speed control to Blowdown valve)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							
	28890	ELBOW	1							
	28888	CONNECTOR	1							
4	48322	TUBE Assembly (Speed control to Compressor)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							
	41000	ELBOW	1							
	28888	CONNECTOR	1							
5	48320	TUBE Assembly (Speed control to Compressor)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							

GROUP AIR TUBING

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
	28890	ELBOW	1							
6	48413	TUBE Assembly (Intake to end cover)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							
	28890	ELBOW	1							
7	48323	TUBE Assembly (Blowdown to separator)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							
	28890	ELBOW	2							
8	48321	TUBE Assembly (Intake to Separator)	1							
	28881	SLEEVE	2							
	28886	NUT	2							
		TUBE, 3/8 O. D. x .032 wall	1							
	28890	ELBOW	1							
	44786	ELBOW, Restricted	1							
9	REF	BLOWDOWN valve (See Blowdown Valve Group)								
10	41024	TEE	1							

GROUP ENGINE SPEED CONTROL

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
1	42205	ENGINE SPEED CONTROL ASSEMBLY (See Speed Control Manual, Part II)	1							
2		BOLT, Hex, 3/8-16 x 3/4	2							
3		WASHER, Lock, 3/8	2							
4	48173	BRACKET, Speed control	1							
5	48308	ROD, Speed control	1							
6		NUT, Hex, 1/4-28	3							
7	27359	STOP, Wire	1							
8	20588	STOP, Wire	1							
9	9665	JOINT, Ball	1							
10	27365	SPRING	1							
11	48358	BRACKET, Idle control	1							
12	20586	CLIP, Cable	1							

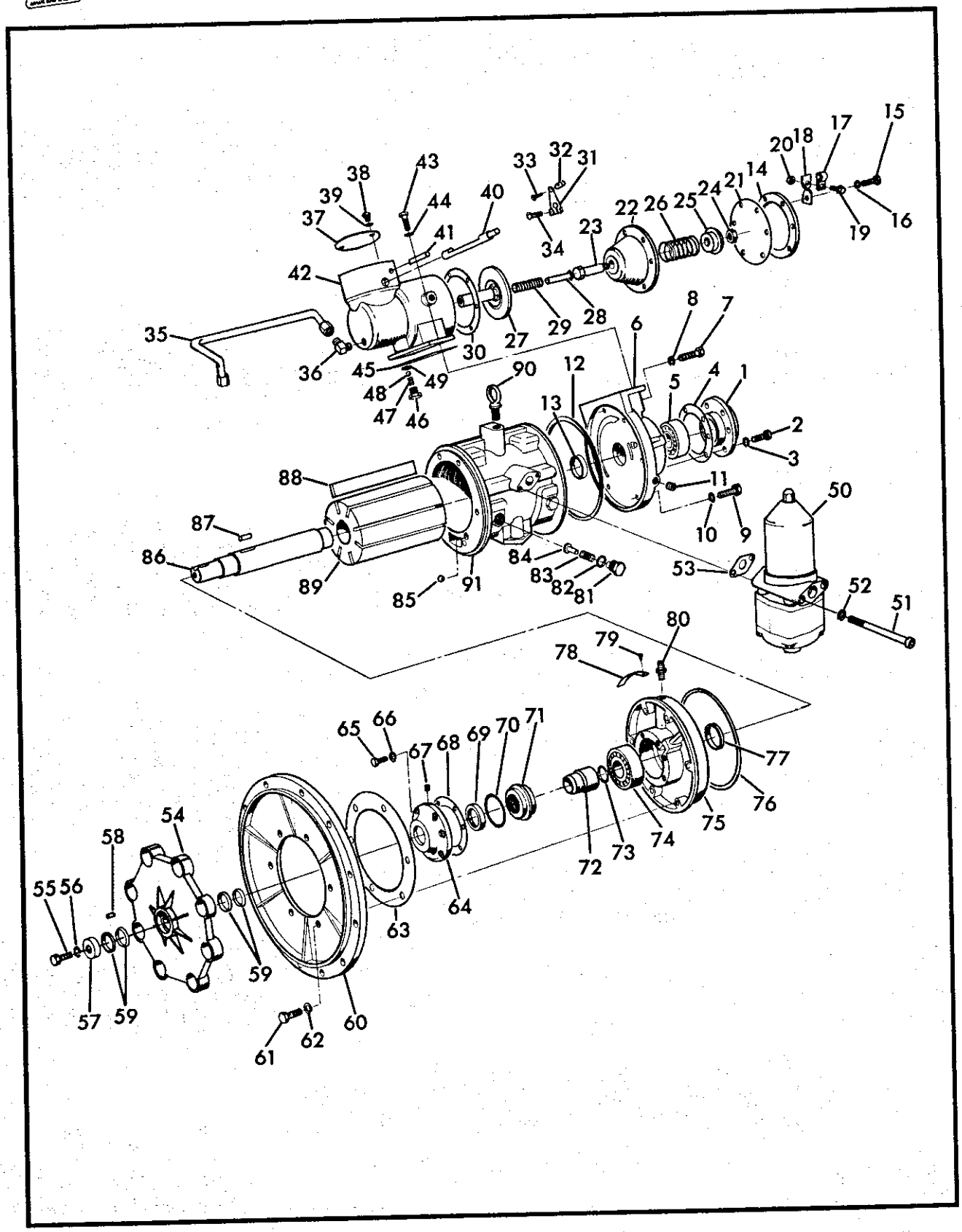


Figure 5-4. Compressor Assembly, Exploded View

INDEX	PART NO	GROUP COMPRESSOR DESCRIPTION	MODEL NUMBER 5P1555							
	48190	COMPRESSOR ASSEMBLY	1							
1	46884	COVER, Bearing	1							
2		BOLT, Hex, 5/16-18x 1-1/4	6							
3		WASHER, Lock, 5/16	6							
4	47325	GASKET	1							
5	46868	BEARING	1							
6	46875	COVER, Non-drive end	1							
7		BOLT, Hex, 5/8-11 x 4	1							
8	26393	WASHER, Seal	1							
9		BOLT, Hex, 5/8-11 x 1-1/2	5							
10	26393	WASHER, Seal	5							
11		PLUG, Pipe, 1/8	1							
12	44428	O-RING	1							
13	46877	SPACER, (Halves)	2							
14	48004	COVER, Intake control	1							
15		BOLT, Hex, 3/8-16 x 1-1/2	6							
16		WASHER, Lock, 3/8	6							
17	20586	CLIP, Cable (Not part of compressor) (See Unit Group)	1							
18	44506	BRACKET, Clip (Not part of compressor) (See Unit Group)	1							
19		SCREW, Spinlock, 1/4-20 x 1/2 (See Unit Group)	1							
20		NUT, Spinlock, 1/4-20 (See Unit Group)	1							
21	44753	DIAPHRAGM	1							
22	44754	CYLINDER, Intake control	1							

INDEX	PART NO	GROUP COMPRESSOR DESCRIPTION	MODEL NUMBER 5P155
23	44756	STEM	1
24		NUT, Lock, 3/8	1
25	44755	PISTON, Intake control	1
26	44444	SPRING, Intake control	1
27	44758	VALVE	1
28	46807	GUIDE	1
29	44919	SPRING	1
30	44430	GASKET, Intake control	1
31	30024	LEVER, (Not part of compressor) (See Unit Group)	1
32	20588	STOP, Wire (Not part of compressor) (See Unit Group)	1
33		SCREW, Rd hd, No. 8-32 x 1/4 (See Unit Group)	1
34		SCREW, Pan hd, No .10-32 x 3/4 (See Unit Group)	1
35	REF	TUBE Assembly, (Not part of compressor) (See Tubing Group)	
36	28890	ELBOW	1
37	45073	PLATE, Valve	1
38		SCREW, Mach, No .8-32 x 1/4	1
39	40045	WASHER	1
40	45074	SHAFT, Valve	1
41	30788	PIN, Stop	1
42	48186	BODY, Intake control	1
43		BOLT, Hex, 3/8-16 x 1-1/4	3
44		WASHER, Lock, 3/8	3
45	44446	GASKET	1

INDEX	PART NO	GROUP COMPRESSOR DESCRIPTION	MODEL NUMBER 5P155							
46	45121	PLUG	1							
47	46888	SPRING	1							
48	24527	BALL	1							
49	24498	O-RING	1							
50	REF	OIL FILTER Assembly (See Oil Filter Group)								
51		BOLT, Skt hd, 5/16-18 x 4-1/2	2							
52	28147	WASHER	2							
53	44051	GASKET	1							
54	48185	COUPLING	1							
55		BOLT, Hex, 3/4-10 x 1-3/4	1							
56		WASHER, Lock, 3/4	1							
57	46882	RETAINER	1							
58	46889	KEY	1							
59	46890	GRIPSPRING (Set)	2							
60	48187	ADAPTER	1							
61		BOLT, Hex, 5/8-11 x 3	6							
62	26393	WASHER, Seal	6							
63	44443	GASKET	1							
64	46872	COVER, Oil seal	1							
65		BOLT, Hex, 5/16-18 x 1-1/4	6							
66		WASHER, Lock, 5/16	6							
67		PLUG, Pipe, 1/8	1							
68	47325	GASKET	1							

INDEX	PART NO	GROUP COMPRESSOR DESCRIPTION	MODEL NUMBER 5P155							
69	46879	SEAL, Oil	1							
70	46886	O-RING	1							
71	47716	SLEEVE, Sealing	1							
72	46878	SLEEVE	1							
73	24978	O-RING	1							
74	46869	BEARING, Drive end	1							
75	46887	COVER	1							
76	44428	O-RING	1							
77	46877	SPACER, (Halves)	2							
78	44972	PLATE, Serial number	1							
79		SCREW, Drive, No. 6 x 1/4	2							
80	40783	CONNECTOR	1							
81	43392	PLUG	2							
82	24964	O-RING	2							
83	43394	SPRING	2							
84	43393	VALVE	2							
85	9314	BALL	1							
86	46873	SHAFT	1							
87	24986	KEY	1							
88	44798	BLADE	8							
89	44797	ROTOR	1							
90	24636	EYEBOLT	1							
91	47352	STATOR	1							

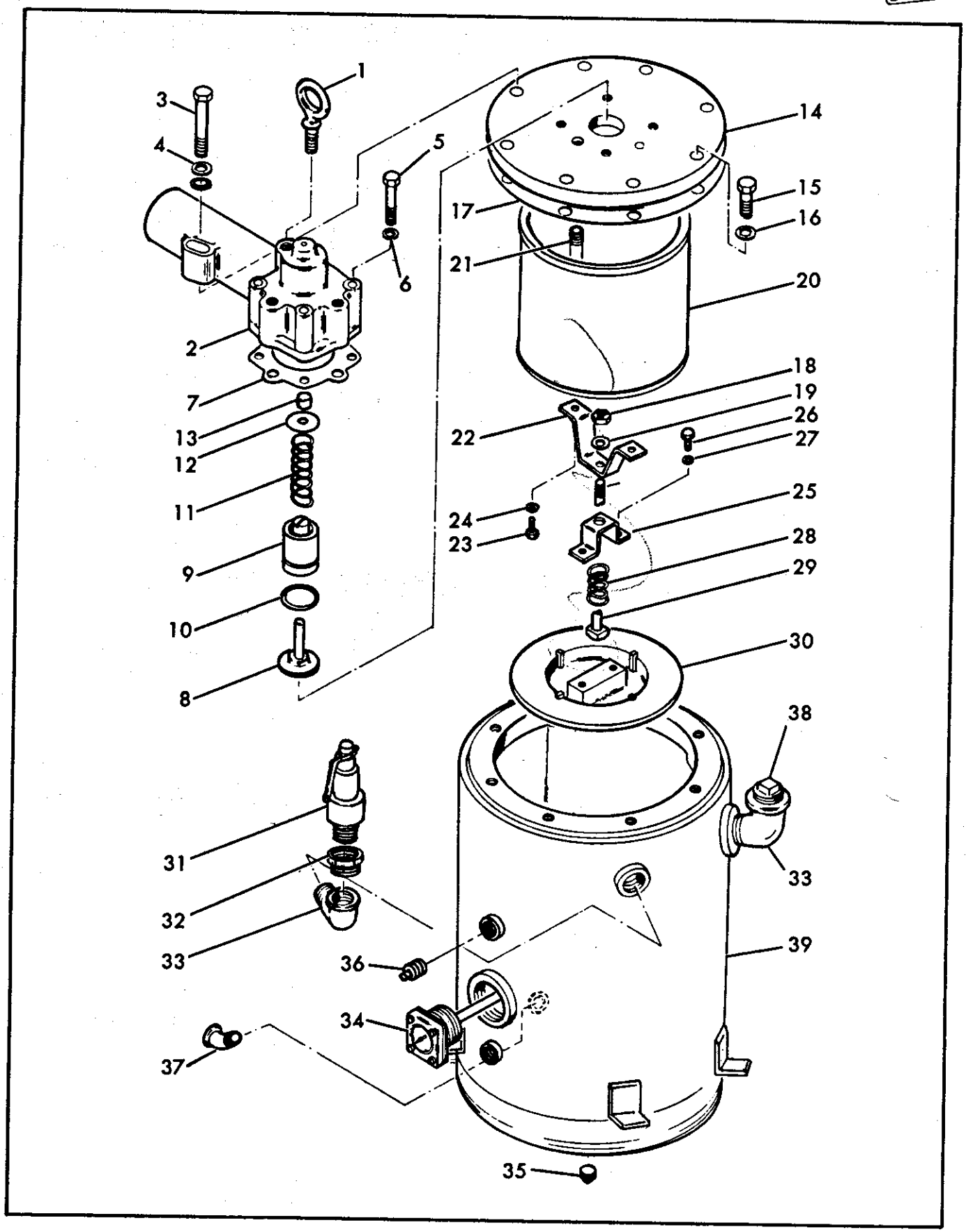


Figure 5-5. Oil Separator Assembly, Exploded View

GROUP OIL SEPARATOR

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
	48175	OIL SEPARATOR ASSEMBLY	1
1	24636	EYEBOLT	1
2	44077	HOUSING, Minimum pressure	1
3		BOLT, Hex, 1/2-13 x 3-1/2	1
4		WASHER, Lock, 1/2	1
5		BOLT, Hex, 3/8-16 x 3	4
6		WASHER, Lock, 3/8	4
7	44088	GASKET	1
8	40947	VALVE, Non-return	1
9	26284	PISTON	1
10	24999	O-RING	1
11	26283	SPRING	1
12	26281	WASHER	1
13	26396	FELT	1
14	48176	COVER	1
15		BOLT, Hex, 5/8-11 x 1-3/4	8
16		WASHER, Lock, 5/8	8
17	48177	GASKET	1
18		NUT, 3/8-16	1
19		WASHER, Flat, 3/8	1
20	43236	ELEMENT	1
21		PIPE, 1/4 NPT x 15	1
22	44402	HANGER	1

INDEX	PART NO	GROUP OIL SEPARATOR DESCRIPTION	MODEL NUMBER 5P155							
23		BOLT, Hex, 1/4-20 x 1/2	2							
24		WASHER, Lock, 1/4	2							
25	42941	RETAINER	1							
26		BOLT, Hex, 1/4-20 x 5/8	2							
27		WASHER, Lock, 1/4	2							
28	42938	SPRING	1							
29	45061	STUD	1							
30	44899	CAP, Element	1							
31	14776	VALVE, Safety	1							
32		BUSHING, Reducing, 3/4 x 1-1/4 pipe	1							
33		ELBOW, Street, 90 degrees, 1-1/4 pipe	2							
34	44074	GAUGE, Liquid level	1							
35		PLUG, Pipe, sq hd, 1/2	1							
36		PLUG, Pipe, sq hd, 1/4	2							
37		ELBOW, Street, 45 degrees, 1" NPT	1							
38		PLUG, 1-1/4 pipe	1							
39	48158	TANK	1							

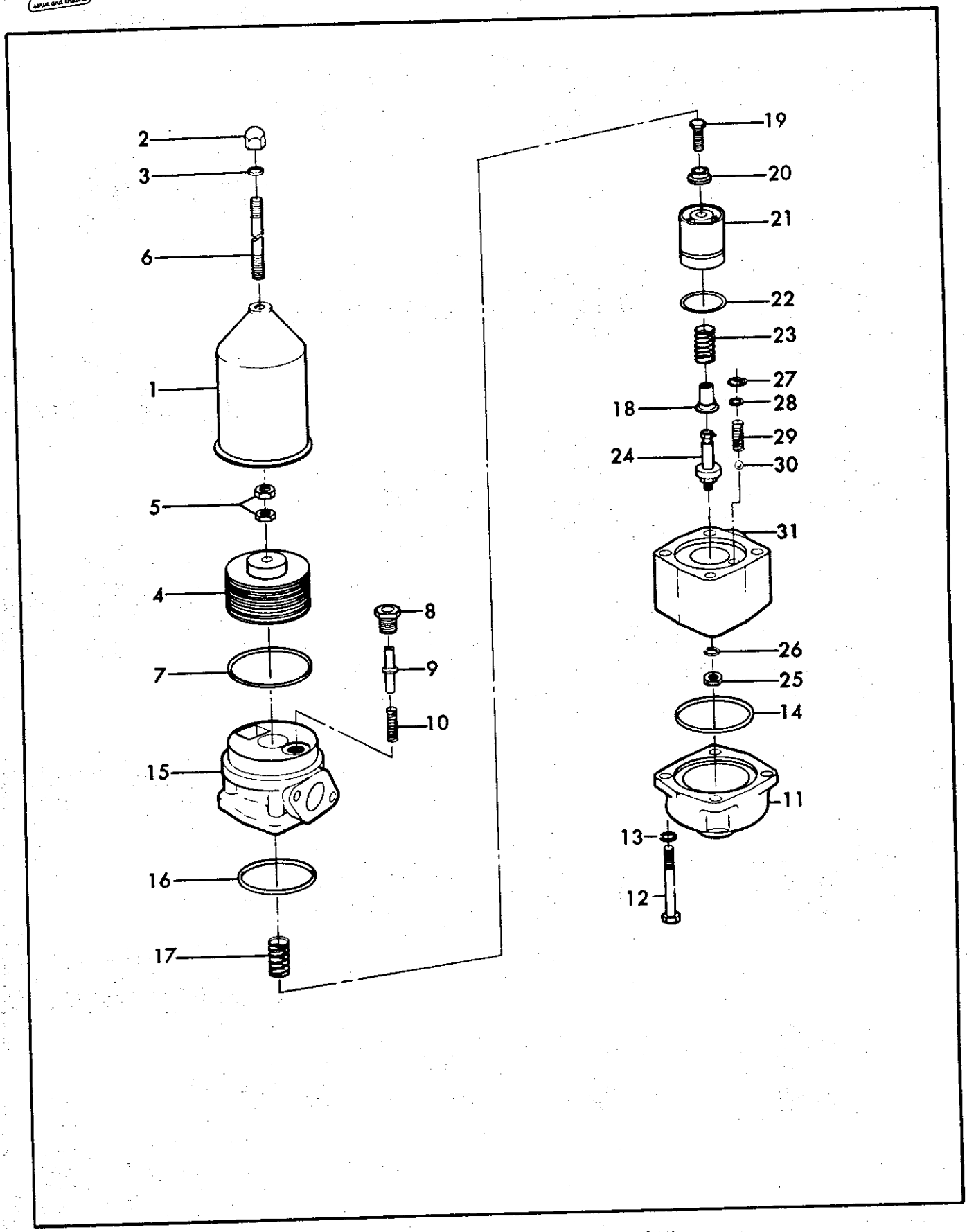


Figure 5-6. Oil Filter Assembly, Exploded View

INDEX	PART NO	GROUP OIL FILTER DESCRIPTION	MODEL NUMBER 5P155							
	44897	OIL FILTER ASSEMBLY	1							
1	28219	HOUSING	1							
2	28545	NUT	1							
3	24649	O-RING	1							
4	28218	ELEMENT, Oil filter	1							
5		NUT, 3/8-16	2							
6	45070	STUD	1							
7	28412	ELEMENT, Oil filter	1							
8	43369	PLUG	1							
9	44066	VALVE	1							
10	43371	SPRING	1							
11	46218	COVER	1							
12		SCREW, 5/16-18 x 3-1/4	4							
13	28147	WASHER, Lock	1							
14	27293	O-RING	1							
15	44698	CONNECTION	1							
16	27293	O-RING	1							
17	40679	SPRING	1							
18	46175	PLUNGER	1							
19		BOLT, Hex, 1/4-20 x 1	1							
20	46174	GUIDE	1							
21	29941	SHUTTLE	1							
22	24999	O-RING	1							

GROUP OIL FILTER

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
23	40678	SPRING	1
24	40434	ELEMENT Assembly	1
25		NUT, 1/4-28	1
26		WASHER, Lock, 1/4	1
27	44449	RING, Retaining	1
28		WASHER, Flat, No. 6	1
29	44501	SPRING	1
30	24527	BALL	1
31	43367	BODY	1

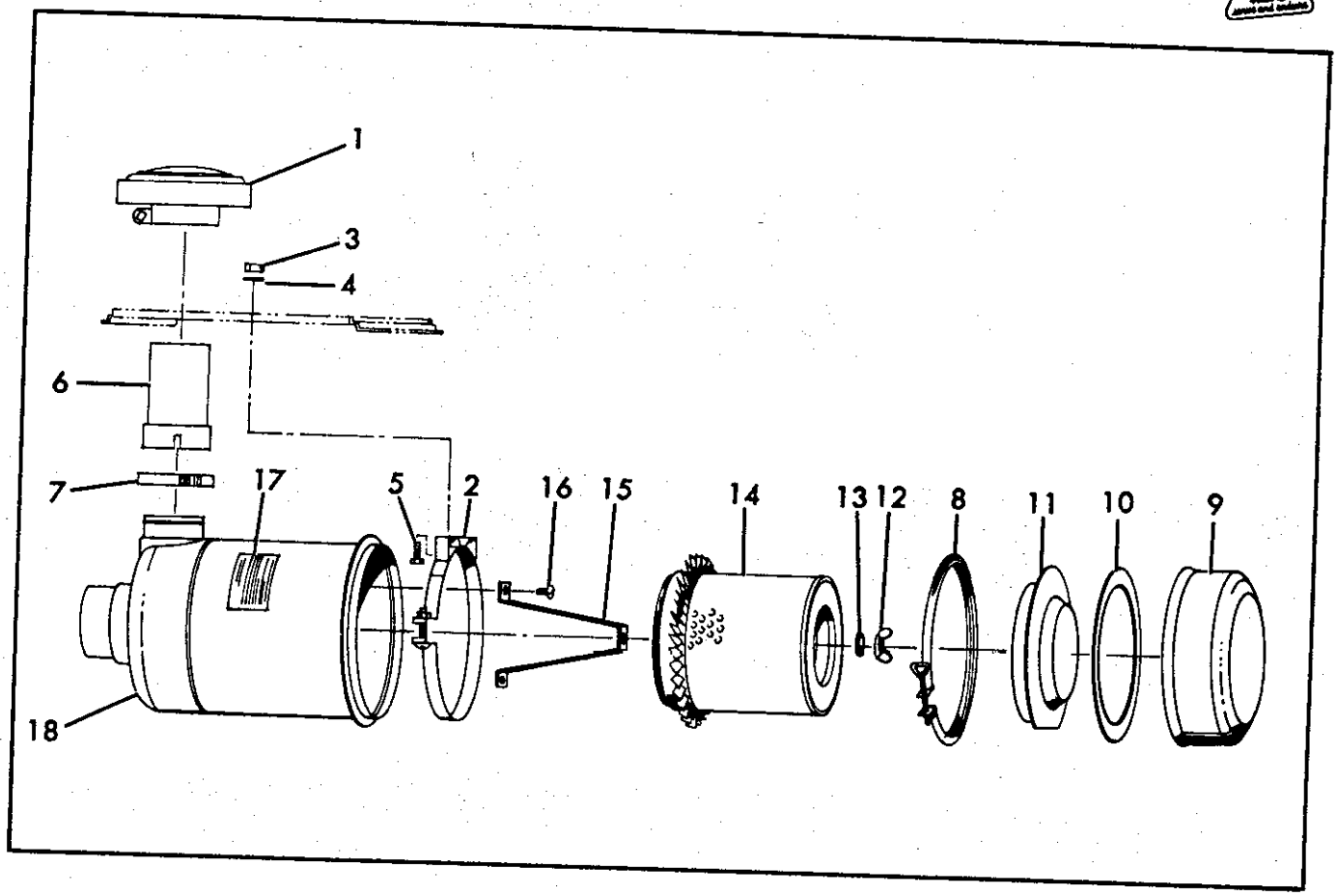


Figure 5-7. Air Cleaner Assembly, Exploded View

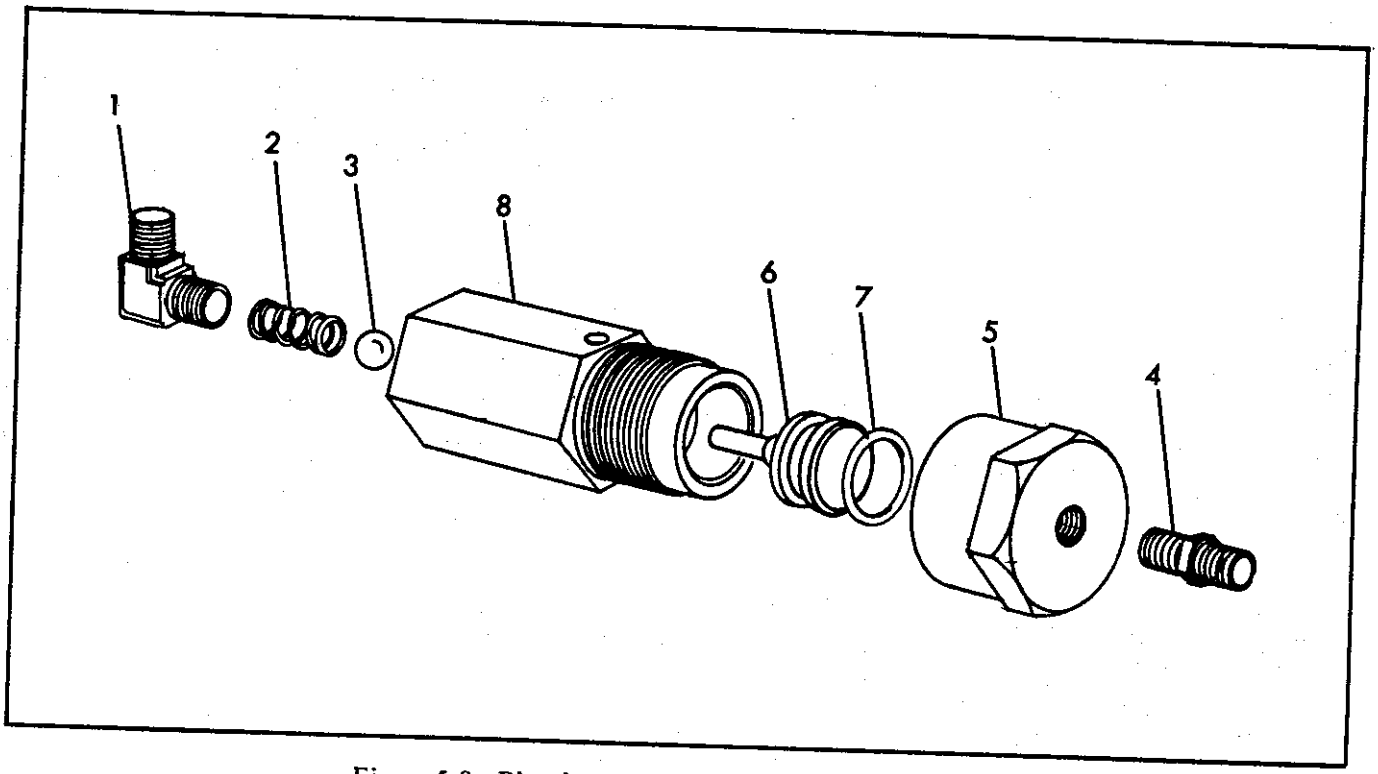


Figure 5-8. Blowdown Valve Assembly, Exploded View

GROUP AIR CLEANER

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
	48318	AIR CLEANER ASSEMBLY (Donaldson FWG14-0000)	1
1	48334	CAP, Air cleaner (Donaldson GAH00-0165)	1
2	48319	BAND, Mounting, air cleaner (Donaldson AAH00-0350)	2
3	Coml	NUT, Hex, 1/4-20	4
4	Coml	WASHER, Lock, 1/4	4
5	Coml	SCREW, Hex hd cap, 1/4-20 x 1/2 lg	4
6	48314	PIPE, Extension, air cleaner	1
7	48367	CLAMP, Pipe, air cleaner	1
		SCREW, Hex hd cap, 1/4-20 x 1-1/2 lg	1
		NUT, Hex, 1/4-20	1
		WASHER, Lock, 1/4	1
8		CLAMP Assembly (Donaldson P10-0866)	1
9		CUP Assembly (Donaldson P10-1242)	1
10		GASKET, Cup (Donaldson P17335)	1
11		BAFFLE Assembly (Donaldson P10-1241)	1
12		THUMBSCREW (Donaldson P16984)	1
13		GASKET, Washer (Donaldson P18462)	1
14		ELEMENT Assembly (Donaldson P10-1240)	1
15		YOKE (Donaldson P10-1695)	2
16		LOCKWASHER Screw (Donaldson P10-1655)	1
17		DECAL, Instruction (Donaldson P10-1093)	1
18		BODY Assembly (Donaldson P10-1784)	

GROUP BLOWDOWN VALVE

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
	44546	BLOWDOWN VALVE ASSEMBLY	
1	28890	ELBOW	1
2	44703	SPRING	1
3	9515	BALL	1
4	28914	NIPPLE, Hex	1
5	44705	CAP	1
6	44704	PISTON	1
7	24506	O-RING	1
8	44706	BODY	1

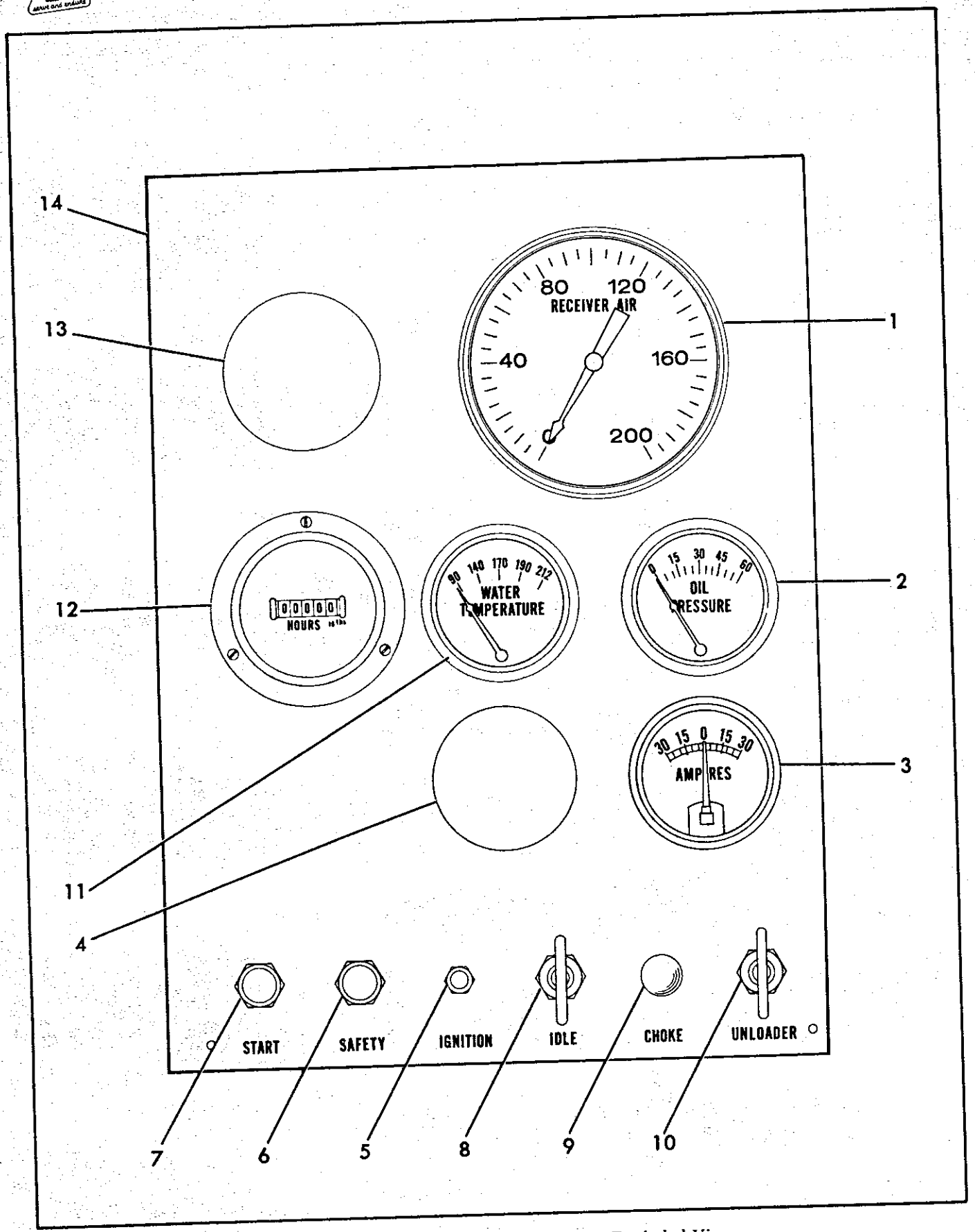


Figure 5-9. Instrument Panel Assembly, Exploded View

GROUP INSTRUMENT

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
	48312	INSTRUMENT PANEL ASSEMBLY, GASOLINE	1							
1	14950	GAUGE, Air pressure	1							
2	8105	GAUGE, Oil pressure	1							
3	48271	AMMETER	1							
4	47069	PLUG, Hole	1							
5	46551	SWITCH, Ignition	1							
6	14073	SWITCH, Safety	1							
7	14073	SWITCH, Start	1							
8	REF	CONTROL Cable (See Unit Group)								
9	REF	CONTROL, Choke (See Unit Group)								
10	REF	CONTROL, Cable (See Unit Group)								
11	24157	GAUGE, Water temperature	1							
12	27108	HOURMETER	1							
13	47069	PLUG, Hole	1							
14	48356	PANEL	1							

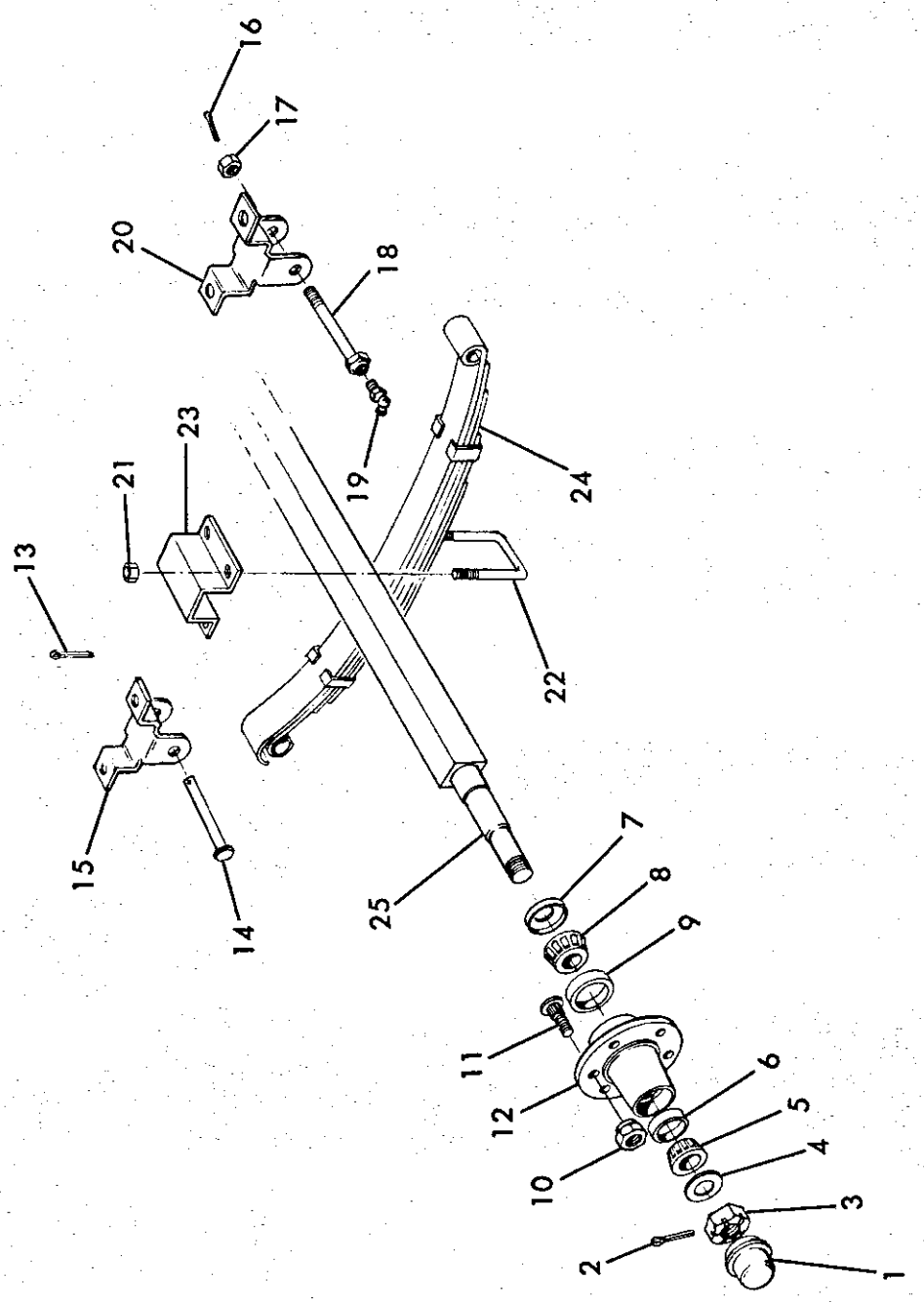


Figure 5-10. Axle Assembly, Exploded View

INDEX	PART NO	GROUP AXLE DESCRIPTION	MODEL NUMBER 5P155							
	48184	AXLE ASSEMBLY (Davey)	1							
1		CAP, Grease (United 18-100)	2							
2		PIN, Cotter (United 9X-146)	2							
3		NUT, Spindle (United 5X-407)	2							
4		WASHER, Spindle (United 11X-144)	2							
5		CONE, Outer (United 17X158)	2							
6		CUP, Outer (United 17X165)	2							
7		RETAINER, Grease (United 17-1000)	2							
8		CONE, Inner (United 17X127)	2							
9		CUP, Inner (United 17X164)	2							
10		NUT, Stud (United 3-904)	12							
11		STUD (United 10-806)	12							
12		HUB (United 613)	2							
13		PIN, Cotter (United 9X146)	2							
14		RIVET (United 6-804)	2							
15		BRACKET (United 1502-2)	2							
16		PIN, Cotter (United 9X-146)	2							
17		NUT (United 1-906)	2							
18		BOLT, Shackle (United 10-801)	2							
19		FITTING, Grease (United 3-410)	2							
20		BRACKET (United 1521-4)	2							
21		NUT (United 35X192)	2							
22		U-BOLT (United 8-1728)	2							

GROUP AXLE

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155
23		CLAMP (United 3-1722)	2
24		SPRING (United 1624-1)	2
25		AXLE (United 6500-28)	1

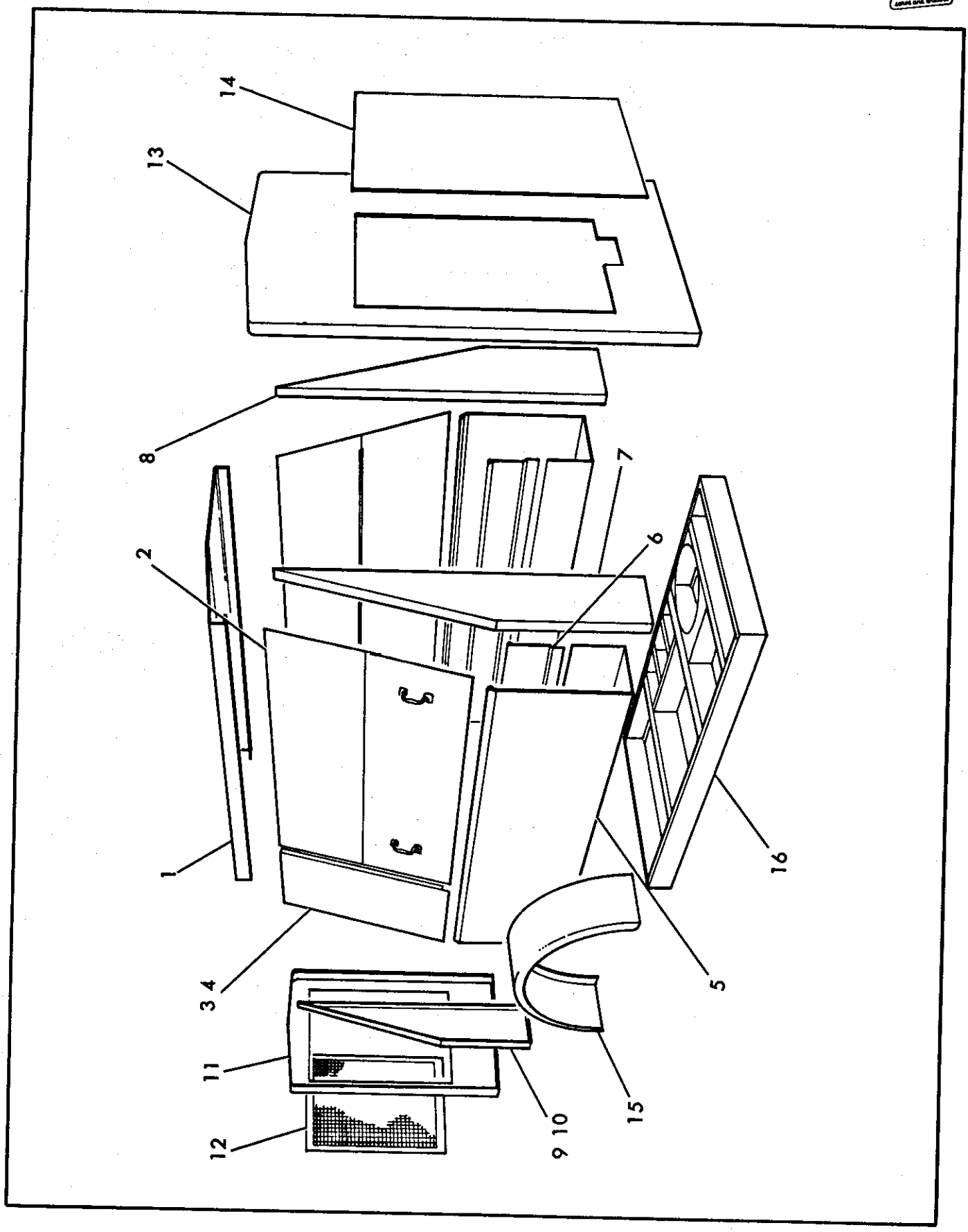


Figure 5-11. Housing Group, Exploded View

GROUP HOUSING

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
1	48197	ROOF	1							
		SCREW, Spinlock, 1/4-20 x 1/2	18							
		NUT, Spinlock, 1/4-20	18							
2	48196	DOOR, (1 each side)	2							
		SCREW, Spinlock, 1/4-20 x 1/2	18							
		NUT, Spinlock, 1/4-20 x 1/2	18							
3	48395	PANEL, Door support (R. S.)	1							
		SCREW, Spinlock, 1/4-20 x 3/4	7							
		NUT, Spinlock, 1/4-20	7							
4	48811	PANEL, Door support (C. S.)	1							
		SCREW, Spinlock, 1/4-20 x 3/4	7							
		NUT, Spinlock, 1/4-20	7							
5	48920	BODY, Toolbox	2							
		SCREW, Spinlock, 1/4-20 x 3/4	11							
		NUT, Spinlock, 1/4-20	11							
6	48192	BACKPANEL, Toolbox	2							
		SCREW, Spinlock, 1/4-20 x 1/2	13							
		NUT, Spinlock, 1/4-20	13							
7	48836	END PANEL, Toolbox	1							
		SCREW, Spinlock, 1/4-20 x 3/4	8							
		NUT, Spinlock, 1/4-20	8							
8	48837	END PANEL, Toolbox	1							
		SCREW, Spinlock, 1/4-20 x 3/4	8							

GROUP HOUSING

INDEX	PART NO	DESCRIPTION	MODEL NUMBER 5P155							
		NUT, Spinlock, 1/4-20	8							
9	48418	END PANEL, Toolbox	1							
		SCREW, Spinlock, 1/4-20 x 3/4	8							
		NUT, Spinlock, 1/4-20	8							
10	48419	END PANEL, Toolbox	1							
		SCREW, Spinlock, 1/4-20 x 3/4	8							
		NUT, Spinlock, 1/4-20	8							
11	48193	SUPPORT, Housing	1							
		SCREW, Spinlock, 1/4-20 x 3/4	3							
		NUT, Spinlock, 1/4-20	3							
12	48195	GRILLE, Radiator	1							
		SCREW, Spinlock, 1/4-20 x 1/2	18							
		NUT, Spinlock, 1/4-20	18							
13	48194	SUPPORT, Housing	1							
		SCREW, Spinlock, 1/4-20 x 3/4	5							
		NUT, Spinlock, 1/4-20	5							
14	48357	COVER, Housing support	1							
		SCREW, Spinlock, 1/4-20 x 1/2	10							
		NUT, Spinlock, 1/4-20	10							
15	44458	FENDER	2							
16	REF	FRAME (See Unit Group)								