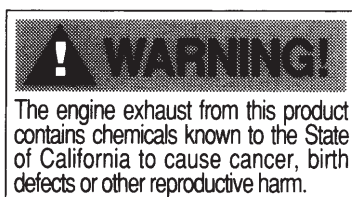
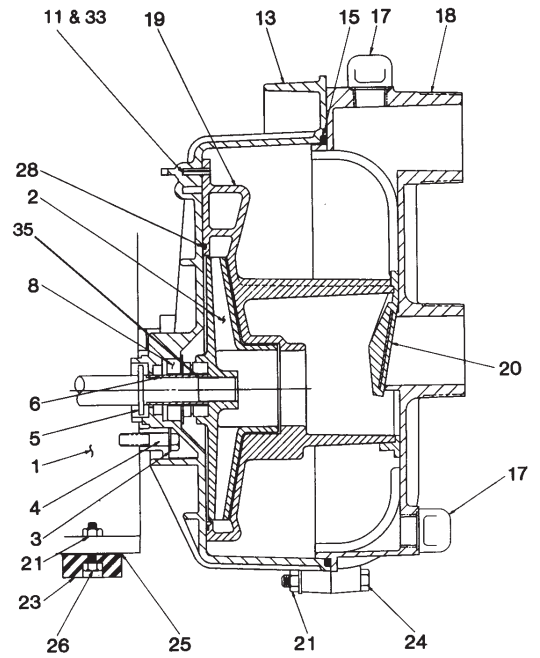
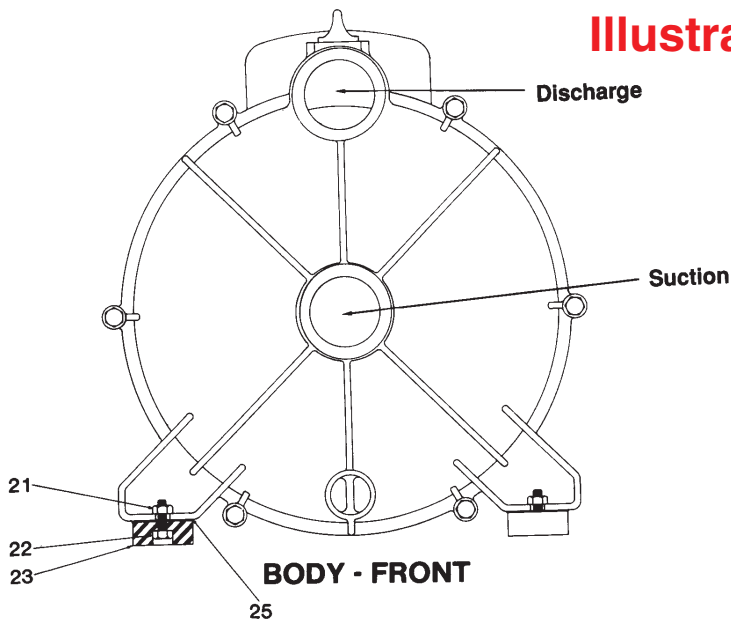

Owner's Manual

Model: 2P5

OPERATION AND MAINTENANCE OF SELF-PRIMING CENTRIFUGAL PUMPS HIGH PRESSURE



Illustrations



Parts List

REFERENCE NO.	PART NAME	QUANTITY	2P5
1 STD	ENGINE (5/8" THD SHAFT)	1	5HP
2 STD	IMPELLER-ALUMINUM	1	2- 124
2 ALT	IMPELLER-BRONZE	1	2- 124-B
3	SEALING WASHER (SET OF 4)	1	16- 233-1
4	BOLT 5/16-24 x 1.38 SST	4	19- 216
5	SLINGER	1	12- 117-B
6	SHAFT SLEEVE, SST	1	4- 110-A
8 STD	SHAFT SEAL, SIC-Viton®	1	3- 258-A
11	VOLUTE SCREW SST	2	20- 241
13 STD	BRACKET-ROTO FINISH	1	5- 128-1A
13 ALT	BRACKET-WHITE EPOXY	1	5- 128-2A
13 C.I. ALT	BRACKET-CAST IRON BLACK	1	5- 372-1A
15 STD	BODY O-RING, EPDM	1	12- 133
15 ALT	BODY O-RING, Viton®	1	12- 133-A
17 STD	PLUG & EPDM O-RING ASSY	2	11- 116-1
17 ALT	PLUG & Viton® O-RING ASSY	2	11- 116-1A
18 STD	BODY-ROTO FINISH	1	6- 129-1A
18 ALT	BODY-WHITE EPOXY	1	6- 129-2A
18 C.I. ALT	BODY-CAST IRON BLACK	1	6- 370-1A
19	VOLUTE-LARGE	1	1- 125-A
20 STD	CHECK VALVE-LARGE, EPDM	1	7- 136-1
20 ALT	CHECK VALVE-LARGE, Viton®	1	7- 136-1A
21	LOCKNUT 5/16	10	14- 167
22	BOLT 5/16 x 3/4	2	19- 232
23	RUBBER FEET	4	29- 237
24	BOLT 5/16 x 2	6	19- 226
25	FLAT WASHER 5/16 x 1-1/2	4	15- 138
26	BOLTS 5/16 x 1-1/2	2	19- 238
28 STD	O-RING EPDM	1	12- 175
28 ALT	O-RING Viton®	1	12- 175-A
33	ROLL PINS	2	21- 298
35	SHIM SET (SET OF 4)	1	22- 252-1
NOT SHOWN	STRAINER	1	44- 315
NOT SHOWN	SEAL & O-RING KIT EPDM STD	1	50- 005
NOT SHOWN	SEAL & O-RING KIT Viton® ALT	1	50- 005-A

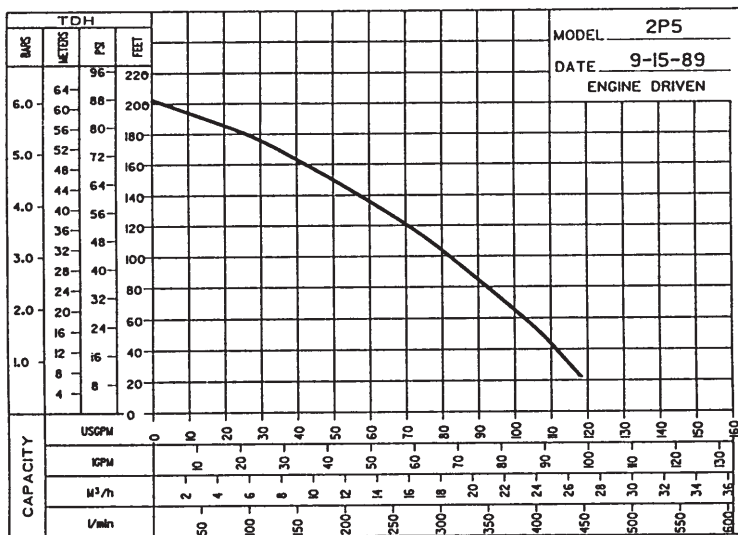
Seal and O-Ring Repair Kit Contains;

Body-O-Ring, Sealing Washer Set, Volute-O-Ring, Plugs, Shaft Seal, Shaft Sleeve, Check Valve, Instruction Sheet, and Seal Installation Tool.

Viton is a registered trademark of DuPont Dow Elastomers.

When Ordering Repair Parts, Always Give the Following Information:

1. Identify pump model number.
2. Part name and number (not illustration number).
3. Quantity required.
4. Material specification if other than standard.



Troubles and Their Cures

If difficulties are experienced, in the majority of cases they can be traced to well-known causes. We suggest you check these points first to save needless expense.

If the Pump Fails to Prime:

- A. Make sure that pump casing is full of cool liquid.
- B. If difficulty continues, remove suction hose, start engine and hold a flat piece of rubber sheet, or other suitable material against the suction inlet. If the pump develops a strong pull against the material, the trouble is not in the pump. If there is no pull, the shaft seal may need replacing.
- C. Examine suction hose or pipe connections. Air leaks in the suction line and connection to pump are the most frequent causes of priming trouble. Use new gaskets in

hose coupling. New couplings sometimes require 2 gaskets. Lining of hose may also become loose and clog the hose.

- D. Keep pump as close to the level of the liquid being pumped. It will give best performance on suction lifts less than 15 feet.
- E. Be sure strainer is not clogged.
- F. There are no parts or valves to become clogged or out of adjustment. The only requirement is that the pump case is full of liquid.
- G. Keep your pump unit clean and properly serviced. Care in this respect will repay in many years of trouble-free operation.

Repair and Maintenance Instructions:

To disassemble pump follow these steps:

1. Remove body bolts (24) and nuts (21).
2. Remove body (18).
3. Remove the two stainless screws (11).
4. Follow these instructions for removing the impeller. Remove the impeller by rotating the impeller counter-clockwise. It may be necessary to strike the end of one of the impeller vanes with a wood block and hammer, or use a strap wrench, to start the counter-clockwise rotation.
5. If the mechanical shaft seal (8) needs replacing:
 - a. With a screwdriver, pry the white seal ring and its rubber boot out of the back of the impeller.
 - b. Remove the pump bracket (rear housing) (13) by removing the four bolts (4).
 - c. To remove the seal assembly from the rear housing, drive it out from behind.

6. To replace the seal component in the rear housing, coat the bore in the housing where the seal goes with gasket material (Permatex or equivalent) and press the seal component into the housing by using an arbor press or drill press. Use a short piece of pipe that fits on the small flange of the seal case so that you are not pressing on the delicate, finely finished, carbon seal ring. Do not damage the seal face.

7. To replace the seal component in the impeller hub, lubricate the outside of the rubber boot with vegetable oil or soap and press the white ring and rubber boot into the hub using your two thumbs. Be certain that the seal ring is all the way down and even with the back of the impeller so that the ring does not wobble when the impeller rotates on the shaft. Do not damage the surface of the white ring.

8. Re-assemble the pump in the reverse manner from the dis-assembly. Use thread sealant on four bolts (4) that bolt bracket to engine.

|| WARNING!! DO NOT USE PUMP IN EXPLOSIVE ATMOSPHERE
DO NOT PUMP VOLATILE OR FLAMMABLE LIQUIDS ||

Installation & Operating Instructions Self-Priming Centrifugal Pump

Inspection — Look over the unit to see that no parts are missing or broken in shipment. An engine instruction book and pump instruction and parts list are supplied with each pump. Read instruction book carefully.

Placing Pump — Place the pump on a level, firm foundation, putting it as near as possible to the level of the liquid which is to be pumped, but never higher than 15 feet.

Connecting Hose — Connect the hoses or pipes to the suction and discharge fittings. If hose is used, be sure to use strongly reinforced hose on the suction side. Tighten hose couplings firmly, using the rubber gaskets furnished with the couplings. Hose or pipes should be supported independently and not carried by the pump.

Before Starting

1. A suction strainer should be attached to the suction hose or pipe. It is provided with holes or slots small enough to prevent big stones, etc. from damaging the impeller. Keep the strainer clean. If possible, suspend it to keep it from working into the sediment.
2. Fill the engine crankcase with oil as specified in the engine manual.
3. Fill the fuel tank with unleaded gasoline.
4. Fill the pump with liquid through the priming port on top of the pump case. Remember the pump is self-priming only when the pump is filled. It will prime and reprime itself without refilling. Refilling is necessary only if pump has been drained or if the fluid has been lost.

Priming Time — With a suction lift from 5 to 10 ft., the pump should discharge liquid in less than a minute. A suction lift of 15 ft. (at sea level) should require not more than 2 minutes for initial prime. To further reduce priming time, the engine speed may be increased, after the engine is properly broken in. If pumping does not start within this time, shut off engine and check carefully to find the difficulty. (See TROUBLES AND THEIR CURES.)

Control — On high suction lifts, a higher engine speed is necessary than on low lifts. Therefore, on shallow lifts or

when there is but little liquid to pump, save fuel and the engine by reducing the engine speed. (See engine manual.)

Discharge Valve — Valves on the discharge line should be opened slowly and closed slowly to avoid destructive water hammer (HYDRAULIC SHOCK).

Discharge Lines—Lines should be filled slowly until all air is out of the line to avoid water hammer on start up. It is important, if there are nozzles or other flow restricting devices on the discharge line, to fill the line slowly.

Check Valve — If discharge line runs vertically more than 30 ft., it is advisable to install a check valve in the discharge line near the pump to stop destructive liquid hammer when the pump is shut down. If this is done, it may be necessary to vent the top of the pump so that air can be expelled during automatic repriming. This air bleed may be accomplished by providing a ¼" line from the top of the pump back to the liquid source. We will not assume any responsibility for damage to the pump if no check valve is used in the discharge line. Properly fueled and lubricated, your pump will run without attention.

Draining — During freezing weather, be sure to drain pump when it is not in use. Unscrew the drain plug and run engine about half a minute without pumping.

Storage — When pump is out of service for long periods, drain it and store in dry, well-ventilated room. Pull engine hard against compression so that valves will be sealed. (Never run pump dry for more than half a minute or the shaft seal may be damaged.)

Starting — Start the engine, following instructions in the engine manual.

Warning — Do not use pump in explosive atmosphere. Do not pump volatile or flammable liquids.