

SELF-PRIMER CHAMBER FOR USE WITH SERIES 'F' MAGNETIC-COUPLED PUMP

OPERATION AND
SERVICE GUIDE
O-2375
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Refer to Bulletin P-621 and Parts List P-4025.

INTRODUCTION

Chamber provides a self-priming feature to the seal-less centrifugal pump. A state-of-the-art, one piece modular design allows the pump to lift liquids up to 15 feet (4.57 meters) in two minutes. For use with 'F' magnetic Pumps having a 4.5" diameter impeller.

HOW IT WORKS

Chamber is initially filled with liquid. When the pump is started, recirculating liquid creates a vacuum in the suction line. This vacuum draws air from the suction line and releases it through the discharge outlet. When the liquid in the suction line reaches the pump inlet, the pump is primed and normal operation begins (see Figure 1).

SAFETY PRECAUTIONS

⚠ WARNING: READ THIS INSTRUCTION MANUAL COMPLETELY BEFORE INSTALLING AND OPERATING THIS UNIT. FAILURE TO FOLLOW THESE PRECAUTIONS CAN RESULT IN SERIOUS BODILY INJURY.

- Wear proper eye and skin protection when installing, operating, and maintaining this equipment.
- All electrical wiring (e.g., motor) should be performed by a qualified electrician.
- Never use this pump for flammables or combustibles.
- Verify chemical compatibility of the pump's materials of construction with the liquid being pumped.
- Maximum liquid temperature is 120°F (49°C).

INSTALLATION

Chamber comes complete with housing gasket and hardware. The user must supply 1½" rigid suction piping and 1¼" discharge piping. The suction inlet is located at the front of the priming chamber.

SECTION 1 - INSTALLATION OF CHAMBER FOR AN EXISTING PUMP.

1. Remove any piping from the pump housing.
2. Remove the (5) ¼-20 x 1" bolts and (4) Phillips pan head screws from the suction casing.
3. Gently tap the suction casing's discharge outlet (using a rubber mallet) to remove.
4. Save the suction casing -DO NOT DISCARD- it is necessary for pump assembly/disassembly.
5. Remove and discard the gasket (Item 7) from the magnetic liner (Item 8).
6. Install the new housing gasket (supplied with chamber) onto the magnetic liner.
7. Verify that the white ceramic thrust washer is firmly seated into the chamber.
8. Install the chamber by aligning the groove in the chamber with the ridges on the liner. Press in place until firmly seated.
9. Install the (5) ¼-20 x 1¾" hex bolts, washers and nuts (supplied with chamber). The nuts will insert into the back tabs on the motor adapter (Item 13). Tighten each bolt to between 30 and 35 in/lb (3.4 and 4.0 Nm) using star pattern sequence (shown in Figure 2 of the installation and Maintenance Instructions). Do not overtighten.
NOTE: Periodic retightening of the bolts is required. The bolts will loosen from vibration and the expansion/contraction of the plastic parts.
10. Firmly support the motor, primer chamber and piping. Shim as necessary. Important: Failure to support these items will result in damage to the pump.
11. Plumb the pump into your systems. Use only 1½" rigid piping on the suction side. Important: Suction piping must be raised approximately 7" (18 cm) above the center line of the suction inlet on the chamber (see Figure 2). This ensures proper priming and pump operation.
12. Install 1¼" rigid piping on the discharge of the chamber. **IMPORTANT: if the chamber mounting and piping are not extremely rigid, leakage can occur and possible pump damage.**

SECTION 2 - INSTALLATION USING CUSTOMER SUPPLIED MOTOR

1. Install the pump (not chamber) in accordance with Installation and Maintenance Instructions - Assembly Section steps 1 through 7.
2. Follow installation steps 2 through 12 from Section 1 of this instruction sheet.

SECTION 3 - INSTALLATION USING FACTORY SUPPLIED MOTOR

Follow installation steps 2 through 12 from Section 1 of this instruction sheet.

OPERATION

Remove the fill plug (Item 15, located on the top of the chamber). Use approximately 3 quarts (3 liters) of the liquid being pumped to fill the chamber to capacity. Replace the plug.

⚠ CAUTION: Do not allow chamber to overflow. Start the pump. Check all pump components and piping for leaks.

NOTE: It is critical that the suction piping is air tight. Any leaks, no matter how small, will prevent the pump from priming properly.

TROUBLESHOOTING

If pump does not prime and begin to pump within three minutes (specific gravity of 1.0 - higher specific gravities require longer prime times), verify the following:

- No air leaks in suction piping.
- Self-Primer chamber filled to proper level.
- The liquid's specific gravity is not greater than 1.4.
- The impeller is a 4½" diameter.
- The motor is at least 2900 rpm and rotating in the proper direction.

For further troubleshooting, consult the Application Engineering Department.

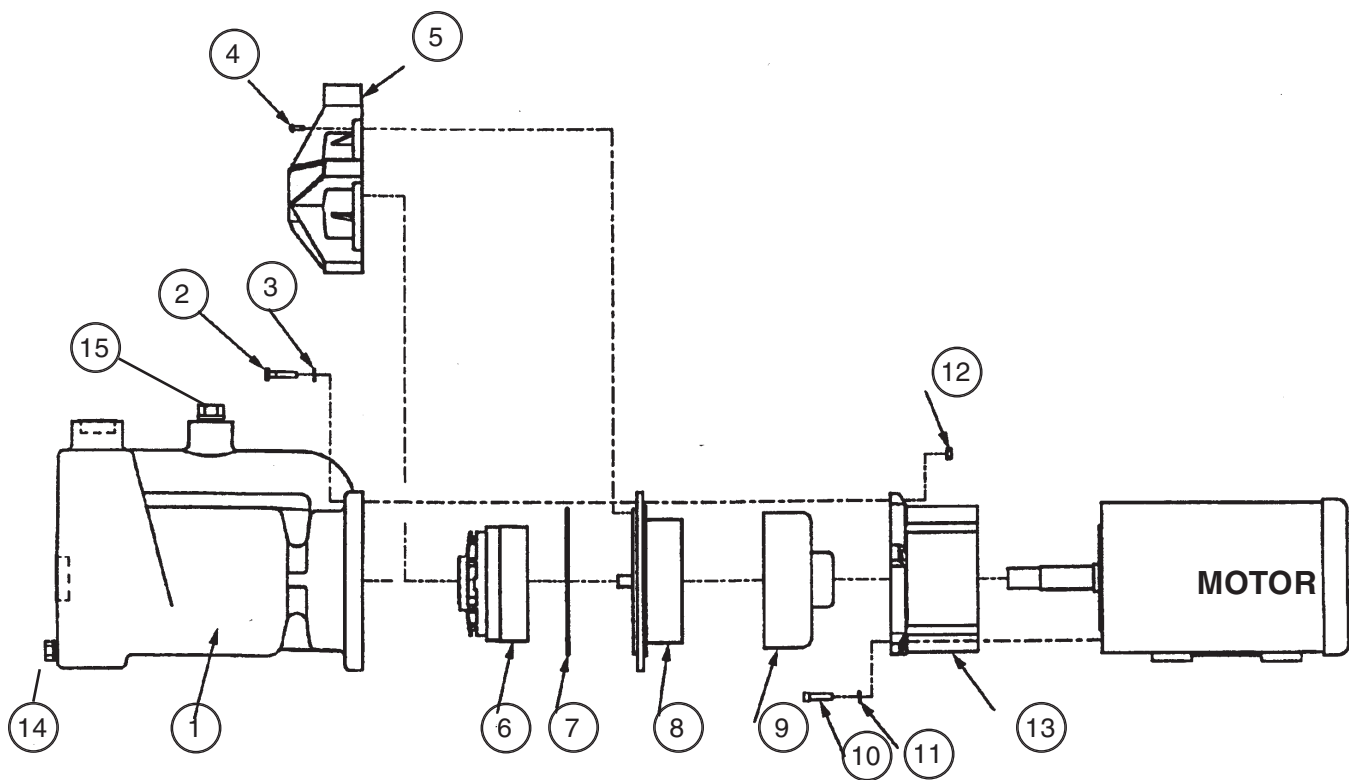
MAINTENANCE DISASSEMBLY

1. Drain chamber into an appropriate container. Remove the ½" pipe (Item 14) plug from front of chamber. Reinstall plug after draining.
2. Remove the piping from the suction and discharge on the chamber.
3. Remove the (5) ¼-20 x 1¾" bolts from the chamber.
4. Remove the chamber.

⚠ CAUTION: Some fluid may leak out when the chamber is removed.

5. Reinstall the suction casing (saved from Step 4 in Section 1 of this instruction sheet). Using (4) Phillips pan head screws, secure the housing to the barrier. **NOTE:** Reinstalling the casing allows the impeller and barrier to be easily and safely removed from the motor adapter.
6. Remove the impeller and liner in accordance with Operation and Service guide O-185.
7. Inspect and replace worn parts. Reassemble per instructions in Operation and Service Guide O-185.
8. Reinstall the chamber following installation steps 2 through 12 from Section 1 of this instruction sheet.

NOTE: Only the (4) Phillips pan head screws will be removed in Step 2.



ITEM	DESCRIPTION	PART NOS.
2	Chamber - high density polyethylene	51-1002
3	Hex head cap screw - stainless steel (5 req'd)	11-0414
4	Flat washer - stainless steel (5 req'd)	11-0121
5	Phillips head screw (4 req'd)	-
6	Suction casing assembly	-
7	Impeller assembly	-
8	Gasket	-
9	Magnet liner assembly	-
10	Drive magnet assembly	-
11	Socket head cap screws - stainless steel (4 req'd)	-
12	Lock washers - stainless steel (4 req'd)	-
13	Hex nut - stainless steel (4 req'd)	-
14	Motor adapter	-
15	Drain plug - CPVC	33-0866
	Fill plug - CPVC	33-0212

For items without part numbers, refer to Parts List P-4025.

Minimum order \$50.00



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