

# MAGNETIC COUPLED SEAL-LESS PUMP & MOTOR UNIT

OPERATION AND SERVICE GUIDE  
O-195A  
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## MODEL 2 X 2 SPGC

**IMPORTANT:** Check materials of construction to ascertain solution compatibility per the chart below

PUMP HOUSING	LINER	IMPELLER MAGNET ASSEMBLY	SPINDLE & THRUST WASHER	"O" RING
POLYPROPYLENE & CPVC	POLYPROPYLENE	POLYPROPYLENE W/ RULON	PORCELAIN	VITON

### SAFETY PRECAUTIONS BEFORE STARTING PUMP

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to Chemical Resistance Data Chart for compatibility of materials with solution to be used.
3. Note temperature and pressure limitations.
4. Personnel operating pump should always wear suitable protective clothing: face mask or goggles, apron and gloves.
5. All piping must be supported and aligned independently of the pump.
6. Always close valves slowly to avoid hydraulic shock.
7. Ensure that all fittings and connections are properly tightened.

### BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in item 4 above.
2. Flush pump thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in item 2 above.

### ELECTRICAL CONNECTIONS AND DRY RUNNING

The only moving part inside the pump volute is the impeller magnet assembly and Rulon bushing which rotates on the porcelain shaft. If the pump is run dry with no liquid inside the volute, there is a danger of damaging the Rulon bushing. Short runs of 5 seconds or less will not damage the pump. This will allow you to check your electrical hook-up. The electrical wiring diagram is located inside the cover of the motor conduit box. The impeller must rotate in a clockwise direction when viewed through the inlet port of the pump. The motor is rated for continuous duty.

### START-UP

- a. A suction strainer is recommended if the solution contains debris which may damage the pump or reduce flow.
- b. Unless pump is installed with a flooded suction, it will be necessary to prime the pump. Priming may be performed with the process liquid or with water if it is acceptable to the process.
- c. To prime, hold the ends of both hoses and pour liquid into the suction hose until it appears in the discharge hose. Agitate both hoses to disperse air that may be trapped in the pump.
- d. With the end of each hose facing upward, lower suction hose until the liquid overflows. Place hand over the end of the suction hose and insert into tank. Turn motor on and wait until motor develops a negative pressure in the suction hose before releasing your hand.
- e. Depending upon conditions, the pump will usually prime with less effort than described above but by following this procedure, instant priming is assured.

### OPERATING TIPS

1. Cavitation for any reason is detrimental to the pump; therefore, the use of a priming chamber to assure flooded suction is desirable. Be sure inlet is not restricted in any way, either by the use of a valve or abnormal hose size in relation to the discharge flow. Make certain air used to agitate solutions is prevented from entering the pump in sufficient quantities which would cause cavitation. Cavitation is evidenced by pulsing flow or spurts and indicated on a pressure gauge by accelerated highs and lows. Look for wear on the thrust washer and Rulon bushing in the impeller magnet. Replace worn parts immediately, otherwise impeller magnet assembly will not remain in line and wear to the raised boss in the liner will take place where the porcelain shaft is located. Be sure, in disassembling the pump, after lock nuts are removed, to pull the pump casing straight out until the end of the porcelain shaft is clearly in view. This will eliminate the chance of the porcelain shaft being broken.
2. Use a strainer to protect the impeller assembly and prevent fine abrasive particles from entering the pump unnecessarily. Since some particles are present in virtually all solutions, it is likely that some wear will be taking place at all times. Inspect the thrust washer, Rulon bushing or raised boss in the liner, for signs of wear and replace these parts as often as necessary. Consult the factory for parts made of other materials of construction if wear seems to be excessively fast.

### PUMP SERVICE - INSPECT ALL PARTS AND REPLACE AS NECESSARY

1. Drain liquid from the pump and adjacent hose or pipe.
2. To disassemble the pump, simply remove the lock bolts. The entire assembly up to the Motor and Drive Magnet Assembly will now slide apart. The impeller magnet assembly will slide off the shaft. The shaft is a light press fit into the Pump Housing and can be pulled out by hand. Clean all parts as necessary and replace any worn or damaged parts before re-assembling.
3. Replace impeller magnet assembly in pump housing.
4. Inspect "O" ring and replace when necessary.
5. Replace cover and tighten lock bolts secure. The "O" ring seal in the impeller Magnet Housing is designed to keep the pump chamber pressure tight.

**REPLACEMENT PARTS** See Parts List P-4050.

### MOTOR SERVICE AND DRIVE MAGNET REPLACEMENT

Remove four motor screws, pull off motor-pump connecting bracket. Loosen driver magnet with Allen head key. Replace new driver magnet or motor. Adjust driver magnet on shaft.