

OWNER'S MANUAL

BE Self Priming Effluent Pumps



SAFETY WARNINGS



BEFORE OPERATING OR INSTALLING THIS PUMP, READ THIS MANUAL AND FOLLOW ALL SAFETY RULES AND OPERATING INSTRUCTIONS.

SAFETY CAREFULLY READ THESE SAFETY MESSAGES IN THIS MANUAL AND ON PUMP.

CAUTION

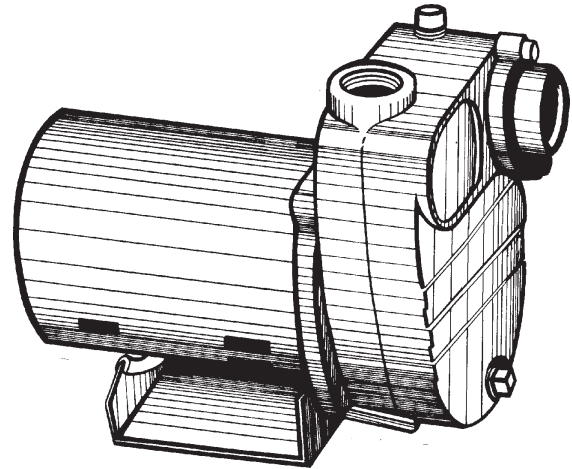
- **DO NOT OPERATE THIS PUMP DRY!**
- Review instructions before operating.

WARNING - ELECTRICAL PRECAUTIONS

All wiring, electrical connections, and system grounding must comply with the National Electrical Code (NEC) and with any local codes and ordinances. Employ a licensed electrician.

FOR DUAL VOLTAGE MOTORS:

Voltage change instructions are located on motor label or on wiring access cover.



WARNING - RISK OF ELECTRICAL SHOCK

- Have an electrician provide electrical power to the motor.
- Motor must be grounded and terminal cover in place to reduce electrical shock hazard.
- Keep motor operating area as dry as possible.
- Always disconnect power before servicing.
- Not investigated for use in swimming pool areas.

APPLICATION

This pump is suitable for installations where the vertical distance from the pump to the water level does not exceed *25 ft.(7.6m), including friction loss. In off-set installations, friction losses in the

suction pipe must be taken into consideration.
*Varies with elevation above sea level.

INSTALLATION

- a) **PUMP LOCATION:** The pump should be installed in a clean, dry and ventilated location which provides adequate drainage and room for servicing and protection from freezing temperatures. It should be bolted down evenly on a good foundation, preferably concrete, to prevent the development of unnecessary stress. Locating the pump as close as possible to the source of water supply reduces the friction losses in the suction pipe and provides for maximum capacities.
- b) **SUCTION PIPE:** It is recommended that only new clean pipe or hose be used and the size be the same as that of the pump suction tapping. If the pump is installed any appreciable distance away from the source of water supply, the suction pipe should be increased by one size (this would increase the priming time). The suction pipe must always slope upwards from the water source to the pump to avoid air pockets in the line. In cases where the pump has to be

reprimed often and it is not necessary that a lot of water be delivered, it is advisable to use a 90° or 45° elbow on the suction line. This enables the pump to prime sooner and also prevents kinking of the hose. In cases where a maximum volume of water is required over a prolonged period of time, the suction line should be led almost horizontally to the pump. Thread compound should be used on all pipe joints and connections should be thoroughly tightened. A strainer should be connected to the bottom end of the suction pipe and it should be well submerged at all times.

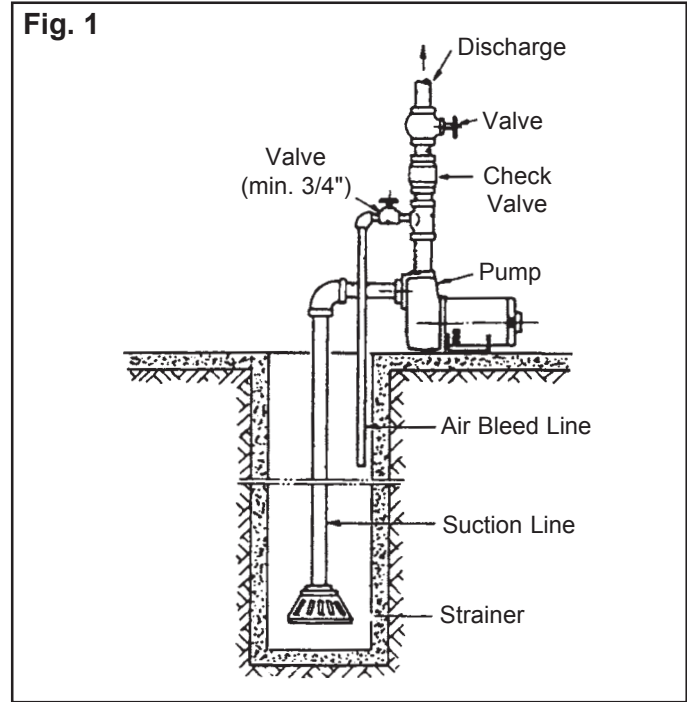
- c) **WIRING:** It is recommended that a separate circuit be used from the distribution panel to the pump unit. A properly fused disconnect switch is to be installed in the line, making sure that the correct gauge of cable is used to carry the load. Very long leads will require a larger cable. An electrician should be employed to do the wiring.

OPERATION - PRIMING THE PUMP

WARNING: DO NOT RUN THE PUMP BEFORE PRIMING IT, SINCE THE SEAL AND IMPELLER COULD BE PERMANENTLY DAMAGED.

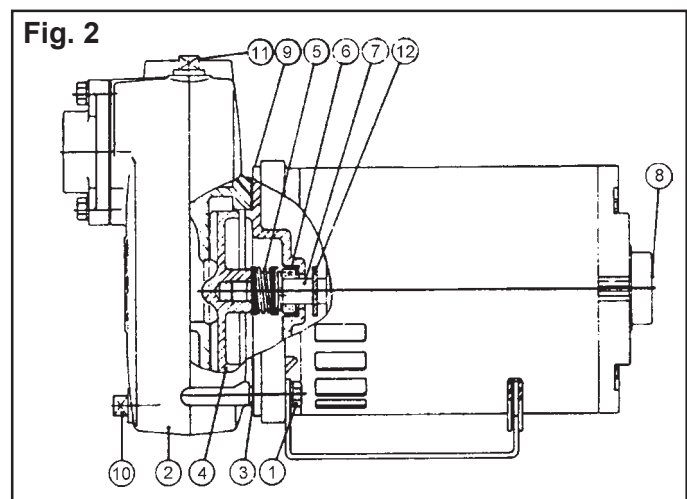
- a) **PRIMING:** Remove the priming plug located on the top of the casing and fill the pump casing with water. Replace the priming plug.
- b) **PRIMING UNDER PRESSURE:** (Refer to Figure 1). Should it be necessary to prime under pressure, place a check valve on the discharge line of the pump and a pet cock or a ball type air bleeder in place of the priming plug, or an air bleed line with a gate valve connected to the discharge line. It will then be possible for the liquid to remain in the discharge pipe and allow the pump to draw the air bleeder, thereby facilitating priming.
- c) **STARTING THE PUMP:** Never operate the pump dry as this may damage the seal. If an exceptionally long suction line is used, the pump casing may become overheated or vapour locked. Should this occur, replace the water in the casing with cold water and continue priming.
- d) **DRAINING:** Should the pump be subject to freezing temperatures, it will be necessary to drain the pump completely. To drain, remove the drain plug (10) located at the bottom of the front face of the pump casing and the priming plug (11) and make sure that the drain hole is not

choked. After all the water has been drained, operating the pump for a few seconds will ensure that the impeller (4) is devoid of water (make sure that the suction line is also devoid of water).



MAINTENANCE

- a) **LUBRICATION:**
 - The pump requires no lubrication.
 - For electric motor, refer to instructions provided by the motor manufacturer.
- b) **REPLACING MECHANICAL SEAL:**
(Refer to Figure 2)
To Disassemble:
 - Disconnect electric power.
 - Drain pump.
 - Disconnect piping.
 - Remove the 4 bolts (1) and take off the casing (2).
 - Remove motor cap (8) and insert a screwdriver. Unscrew the impeller (4) in a counter-clockwise direction.
 - Slip the rotating seal (5) from shaft (7) of seal plate/motor assembly.
 - Remove seal plate (9) from the motor, being very careful not to damage the ceramic seat (6).
 - Inspect the ceramic seat (6), if it needs replacing, press it out of the adapter from the motor end.
- c) **To Reassemble:**
 - Clean all parts thoroughly before reassembly. Use liquid soap on the rubber cup on the ceramic seat (6) and push it into the seal plate (9). Make sure that the smooth surface of the ceramic seat faces outwards.
 - Assemble the seal plate (9) to the electric motor, being very careful so as not to damage the ceramic seat (6).



- Use liquid soap on the rotating seal (5) and slip it on to the shaft (7) with the seal ring towards the ceramic seat (6). Make sure that the seal ring face on the rotating seal is in contact with the ceramic seat.
- Screw on the impeller (4). Assemble the casing (2) and use a new gasket (3). Check to ensure that the impeller can rotate freely in the casing.
- Reconnect pump to suction and discharge hoses.
- All models have a flinger (12) on the shaft. This flinger must not be removed.

PRECAUTIONS

- a) Whenever the pump is dismantled and then reassembled, always check to see that the impeller rotates freely within the casing.
- b) The flinger on the motor shaft must not be removed.

TYPICAL INSTALLATION

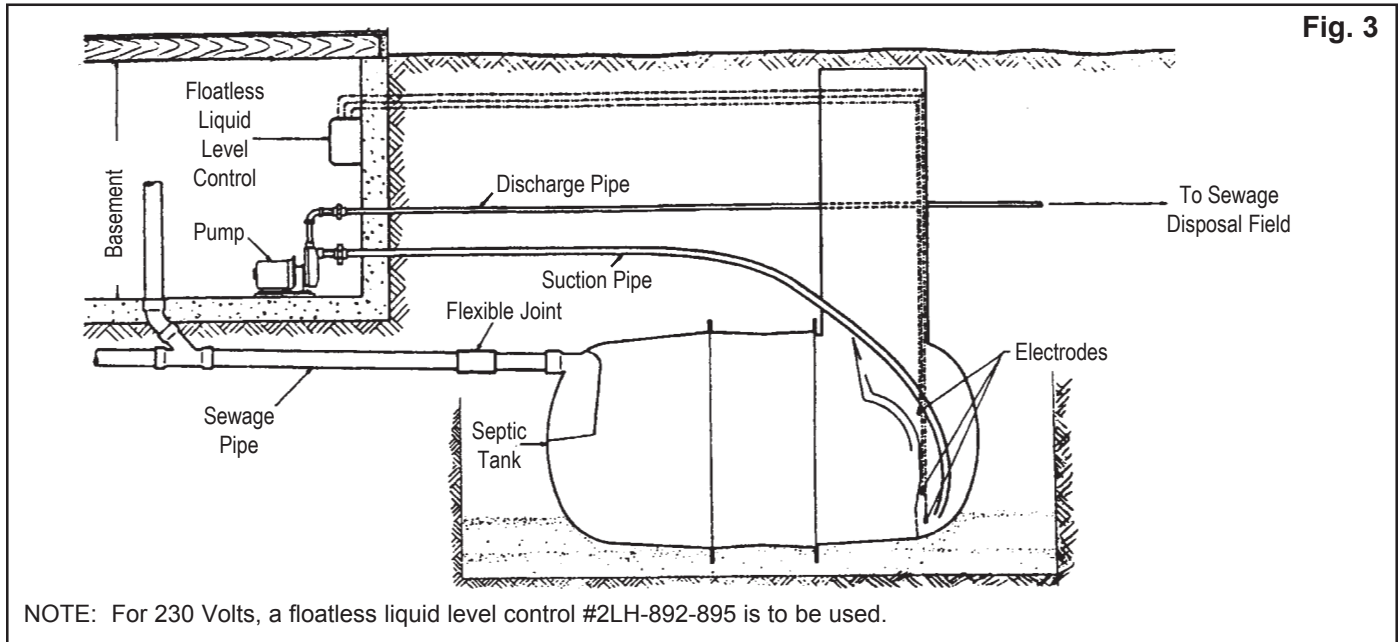
1) SEWAGE PUMP APPLICATION

- 1 only wall mounted electrode type liquid level control #LH890-895.
 - 3 only 155-3W electrodes, each with 50 ft. (15.2m) #16 flexible wire attached, for 115 volts.
- NOTE:** For 230 Volts, a floatless liquid level control #2LH-892-895 is to be used.

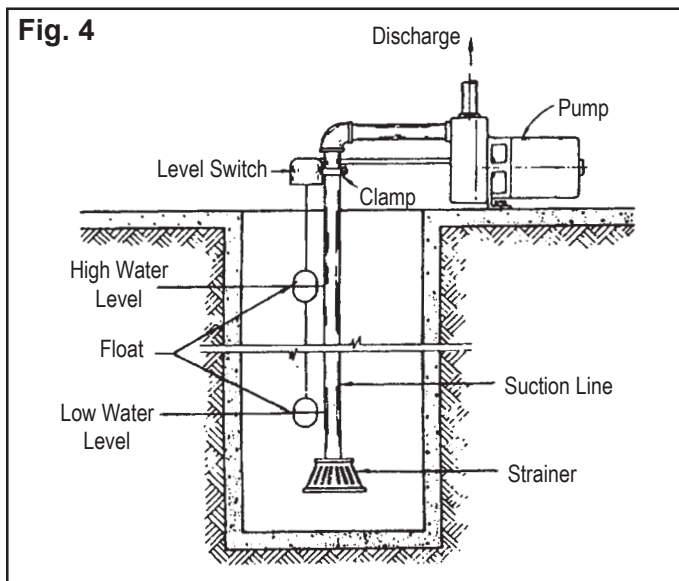
- start, a low level stop and a ground (actuator).
- b) As alternates, pressure diaphragm switches or a mercury float switch may be used. Ensure that the current and voltage specifications match those of the pump.
- c) Many plumbers prefer not to use a strainer at the suction inlet as the strainer could clog up. The pump is designed to handle the effluent and though it is advisable to use a strainer, it is not absolutely necessary.

IMPORTANT

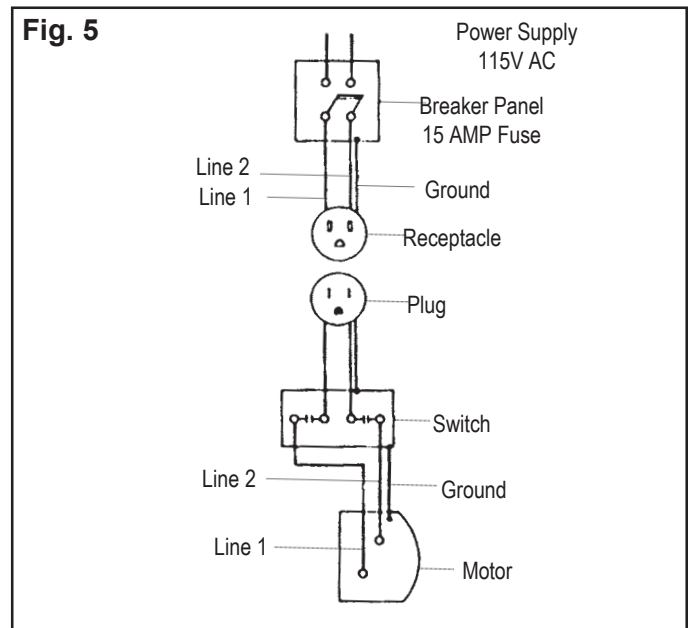
- a) We recommend, as required by CSA, a three electrode or a three brass rod system, comprising of a high level



2) SUMP PUMP APPLICATION



Clamp the switch to the suction pipe as shown in Fig. 4. Attach the float and wire assembly and adjust the position of the floats. As the water reaches the top float, the pump will turn on, when it drops



to the bottom float, the pump will turn off. The pump and switch should be wired as shown in Fig. 5. A competent electrician should be employed to do the wiring.

TROUBLES AND THEIR CAUSES

a) Pump fails to prime or primes slowly:

- 1) Leaks in the suction line.
- 2) Loose gasket connection due to shrinkage of the gasket.
- 3) Collapsed or clogged suction line.
- 4) Not enough water in the casing for priming.
- 5) Suction lift is too great.

b) Reduced pressure or capacity:

- 1) Partially collapsed or clogged suction hose.
- 2) Clogged impeller.
- 3) Leaks in the suction line.
- 4) Strainer or end suction hose is not properly submerged.
- 5) Suction line is improperly installed, resulting in air pockets in the suction line.
- 6) Suction lift is too great (the greater the suction lift, the lower the capacity and pressure).
- 7) Worn parts, such as the impeller or the pump casing.

c) Poor or little capacity:

- 1) Improper impeller rotation. Impeller must rotate in a counter-clockwise direction as seen facing the pump from the front of the casing.

MONARCH INDUSTRIES
51 Burmac Road, P.O. Box 429
Winnipeg, Manitoba, Canada
R3C 3E4

Phone: (204) 786-7921

Fax: (204) 889-9120

www.monarchindustries.com

LIMITED MONARCH INDUSTRIES WARRANTY

For one year from date of purchase, Monarch Industries will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by any Monarch Industries Authorized Service Depot or by the Monarch factory, to be defective in material or workmanship or both. Equipment and accessories not manufactured by Monarch Industries are warranted only to the extent of the original manufacturer's warranty. All transportation charges on parts submitted for replacement or repair under this warranty must be borne by the purchaser. For warranty service see your nearest Monarch Industries Authorized Service Depot. THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO ONE YEAR FROM PURCHASE AND TO THE EXTENT PERMITTED BY LAW. LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. This warranty is an addition to any statutory warranty.

MONARCH INDUSTRIES

PRINTED
IN
CANADA