

## Operating & Maintenance

### SAFETY INSTRUCTIONS

1. Installation of Type P pumps must comply with all local codes.
2. Vent sump tank according to local codes.
3. Do not install pump in any location classified as hazardous by the National Electrical Code, ANSI/NFPA 70-1984.
4. Do not lift pump by power cord.
5. Before servicing pump, disconnect power to outlet box. Do not modify cord or plug. Use grounded outlet only.
6. Do not run pump dry, which can overheat pump and cause burns to personnel.
7. For normal service, allow pump to cool for 20 minutes after shutdown.
8. In normal service, motor should not need oiling. When overhauling, replace with new oil. Use only the oil specified by the factory.
9. Do not splice the power cord. Do not allow plug to be submerged. Do not use extension cords. Do not handle pump while it is connected to power supply. Do not modify plug.
10. Be sure that power supply information (volts/hertz/phase) on pump motor nameplate matches incoming power supply.
11. An automatic overload protector in the motor will protect the motor from burn-out due to overheating or overloading. When motor cools, overload protector will automatically reset and start motor.
12. Pump is permanently lubricated. No greasing is required.

### INSTALLATION

1. Install pump on hard, level surface (cement, asphalt, etc.). Do not place pump directly on earth, clay or gravel surfaces.
2. Pump discharge piping must not be smaller than the pump discharge connection. For handling sewage, pipe must be capable of handling a 2" diameter solid minimum. When handling effluent, pipe must be capable of handling a 3/4" diameter solid minimum.
3. For sewage system, use 2" discharge check valve. For sump or effluent system, use 1-1/2" discharge check or large-

er. Check valve should be installed on a 45° angle. Do not install in vertical position. Drill 3/16" hole in discharge pipe 2" above pump discharge connection but below the check valve to prevent air locking.

### SERVICING THE PUMP

1. Disconnect power to pump and control switch before removing pump from pit or basin.
2. Remove all scale and deposits on pump. Submerge pump in disinfectant solution for one hour before disassembly.
3. Replace dielectric oil in housing when overhauling pump. Allow 7/8" air space from top of boss in housing to allow for oil expansion.

### OPERATING PROBLEMS & REMEDIES

#### PUMP FAILS TO OPERATE

- A. Be sure power cord is tightly plugged into outlet.
- B. Be sure that there is power to the outlet.
- C. Be sure that liquid level is high enough to activate control switch.
- D. Be sure that 3/16" vent hole in discharge pipe is not clogged.
- E. Check for blockage of pump inlet, impeller, check valve or discharge pipe.
- F. Check to see if thermal overload is tripped. Test start pump, and if it stops immediately, allow 30 minute cooling period, then reconnect power. Determine cause of overheating.

#### PUMP FAILS TO EMPTY SUMP

- A. Be sure that all discharge line valves are fully open.
- B. Clean out discharge pipe and check valve.
- C. Check for pump inlet or impeller blockage.
- D. A higher capacity pump may be required.

#### PUMP WILL NOT SHUT OFF

- A. Check float switch and floats for proper operation and location.
- B. If pump is completely inoperative or continues to malfunction, consult your serviceman.



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