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PUMP INSTALLATION

Typical duplex systems use three controls: one set at turnoff, one set at turn-on for one pump, and one set for turn-on for two pumps. Pumps alternate operation on each successive cycle.

Two pumps operate together only if sump level rises to the third or override control. The override control also activates the second pump in case of failure of the first pump. Extra floats with appropriate controls can be supplied for alarm functions. Triplex systems use four controls: one set at turnoff, one set at turn-on for one pump, one set at turn-on for two pumps, and one set at turn-on for three pumps. Pumps alternate each successive cycle.

Three pumps operate together only if sump level rises to the fourth control (second override). This control also brings on the third pump in case of failure of either or both of the first two pumps.

Alarm Controls:

The alarm level is usually set above the override level so the alarm will signal only if the override level is exceeded. The alarm level may be set below the override level as it is possible for one pump to fail and the other pump to operate on the override level with the sump level never reaching the alarm level. This approach is particularly applicable in cases of low inflow capacity.

Electrical Control Panel:

It is recommended that the Pentair Hydromatic* control panel be used with all pumps as prope 28.1 (o)-20 (n)-14.7 (t)-1 (n)-14.7 (t)-17.4.8 (y)-23 (d/Span 5-19.31 (e o)-11 (n)-14.7.7 (m)-18.5 (y)-23 (d)-17.31 (e o)-11 (n)-14.18.3 (s1 (e o)-12.2 (t)-17r)-24.4 (o)-20 (l p)-24 (n24

PUMP OPERATION AND MAINTENANCE

In either simplex or duplex system the lower or turnoff control is set just above the top of the volute so that the volute will always be submerged during the pumping cycle. The second or turn-on control is set about 24 inches above the lower turnoff control.

Distance between turn-on and turnoff controls may be increased, but may result in sewage becoming septic or a higher amount of solids than the pump can handle. A frequent pumping cycle is recommended for ideal operation.

If an alarm system is used, this control is usually set about six inches above the override control.

Making Electrical Connections:

All electrical wiring must be in accordance with local code, and only qualified electricians should make the installations. A set of prints is included for use in making the installation. All wires should be checked for grounds with an ohmmeter or Megger® after the connections are made. This is important, as one grounded wire can impact operation effectiveness.

NOTICE: If the equipment is not properly wired and protected as recommended, the warranty is void.

Heat Sensors and Seal Failure Connections:

Be sure that heat sensor wires are connected in series with the starter coil. Connections are provided on the terminal strip. See "Wiring Diagrams" on Pages 8 - 9.

PUMP OPERATION

Starting System:

1. Turn H-O-A switch to Off position, then turn on main circuit breakers.
2. Open all discharge valves and allow water to rise in sump.
3. Turn H-O-A switch to Hand position on one pump and notice operation. If pump is noisy and vibrates, rotation is wrong. To change rotation on 3Ø motors, interchange any two line leads to motor. Do not interchange main incoming lines. If duplex or triplex system, check additional pumps in the same manner.

PUMP MAINTENANCE

number. Cut the wires. If the leads to the connection box are burned, a complete new connection box with new wire must be used. The wires are potted-in with sealing compound and a new unit must be obtained from the factory.

5. The stator is held in the housing with a bolted-in clamp ring.
6. After ring is removed, turn housing upright and bump on hardwood blocks. This should jar the stator loose and allow it to drop out.
7. Thoroughly clean housing before replacing new stator. Replace the stator and make all wire connections to the connection box before replacing housing on pump. This is important as leads must be tucked behind the windings by using hands up through rotor core.

NOTICE: Use only compression type insulated connectors on the wires. Do not tape leads as oil will deteriorate the tape and cause damage to stator and bearings.

8. Check top bearing. If clean and does not turn roughly, bearings can be reused and it is not necessary to completely dismantle pump to change bearings. If bearings are damaged with dirt or heat, they must be replaced. Remember to reinstall the upper bearing load spring.
9. Replace stator housing onto seal chamber and bolt in place. Be sure seal failure wire is connected before housing is assembled. Be sure O-ring seal has been replaced. If O-ring is nicked or cut, replace with new rings. This applies to all O-rings used in assembly.
10. After all leads are reconnected in the connection box, make a high voltage ground test on each wire. The only wire that should show ground is the green power lead and the ground lead in the auxiliary control cable.
11. For safety, complete pump should be air checked under water for leaks. Lay pump on its side for this oil filling, with oil fill hole upright. Do not completely fill; leave oil about one inch below plug hole. Use only high
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TROUBLESHOOTING

Below is a list of common problems and the probable causes:

Pump will not start:

No power to the motor. Check for blown fuse or open circuit breaker.

Selector switch may be in the Off position.

Control circuit transformer fuse may be blown.

Overload heater on starter may be tripped. Push to reset.

Pump will not start and overload heaters trip:

Turn off power and check motor leads with Megger® or ohmmeter for possible ground.

Check resistance of motor windings. All three phases should show the same reading.

If no grounds exist and the motor windings check OK, remove pump from sump and check for clogged or blocked impeller.

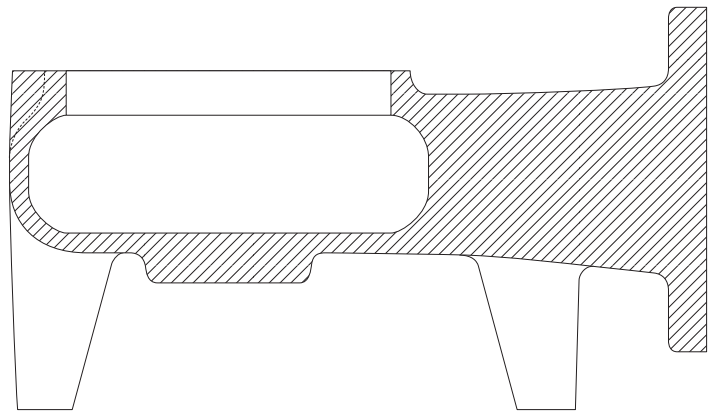
WIRING DIAGRAMS

- Notes:
- 1) Level Switches Must Be Rated a Minimum of 2 Amps at 120 Volts
 - 2) Torque all white field wiring terminals to 20 In.Lbs.

PENTAIR HYDROMATIC® S3HRC PARTS LIST



PENTAIR HYDROMATIC® S4NVX PARTS LIST



STANDARD LIMITED WARRANTY



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