

Installation and Service Manual

HAZARDOUS LOCATION SUBMERSIBLE GRINDER PUMPS

Models HPGFX/HPGHX & HPGFHX/HPGHHX

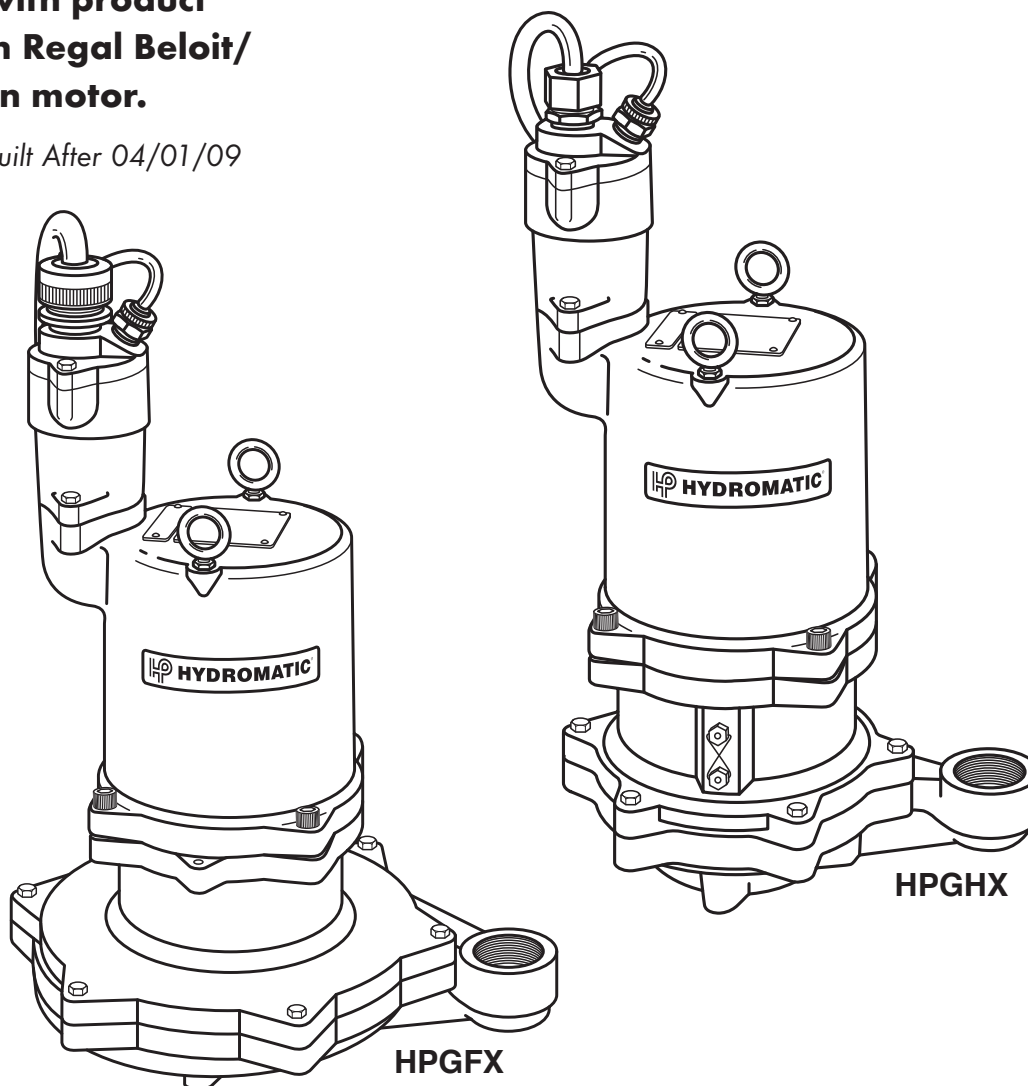


(Class I, Division 1, Groups C & D): FM

NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

**For use with product
built with Regal Beloit/
Marathon motor.**

For Pumps Built After 04/01/09



HYDROMATIC®
Pentair Water

04/11
Item # E-03-441
Part # 5625-441-1
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General Information

Thank you for purchasing your Hydromatic® pump. To help ensure years of trouble-free operation, please read the following manual carefully.

Before Operation:

Read the following instructions carefully. Reasonable care and safe methods should be practiced. Check local codes and requirements before installation.

Attention:

This manual contains important information for the safe use of this product. Read this manual completely before using this product and refer to it often for continued safe product use. **DO NOT THROW AWAY OR LOSE THIS MANUAL.** Keep it in a safe place so that you may refer to it often.

Unpacking Pump:

Remove pump from carton. When unpacking unit, check for concealed damage. Claims for damage must be made at the receiving end through the delivery carrier. Damage cannot be processed from the factory.

WARNING: Before handling these pumps and controls, always disconnect the power first. Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

Pump:

The hazardous location submersible pump family was designed in accordance with requirements for hazardous locations. These pumps, connected properly, will provide years of trouble-free service. If servicing is required, the repair should be done by a Hydromatic approved service center.

Application:

These pumps are designed for on-site residential sewage discharge applications with a pH ranging from 6 to 9, specific gravities from 0.9 to 1.1, viscosities ranging from 28 to 35 S.S.U., and temperatures up to 140 degrees Fahrenheit.

Codes:

All local wiring codes must be observed. Consult the local inspector before installation to avoid costly delays that can occur due to rejection after job is finished.

Pumps Not Operating or in Storage:

Pumps with carbon ceramic seals must have impellers manually rotated (6 revolutions) after setting nonoperational for 3 months or longer and prior to electrical start-up.

Seal Failure Probes:

All hazardous location submersible pumps have two factory-installed moisture detectors (seal failure probes). They are in a normally open series circuit, in the seal chamber. Under normal operating conditions, the circuit remains open. If the lower seal leaks and moisture enters this chamber, the moisture would

settle to the bottom of the chamber and will complete the circuit between the moisture detectors.

This circuit must be connected to a sensing unit and signaling device. This is supplied in a Hydromatic control panel.

NOTE: Failure to install such a device negates all warranties by Hydromatic pumps.

Heat Sensors:

All motors in this family have heat sensors on or embedded in the motor winding to detect excessive heat. This prevents damage to the motor. If the sensor trips due to excessive winding temperature, the starter in the panel breaks power to the pump. Once the sensor resets, the starter is to be reset (automatic for F.M.) for continued operation of the pump. This circuitry is supplied in a Hydromatic control panel. The sensors are set to trip at 120 degrees Celsius.

NOTE: Failure to install such circuitry would negate F.M. approval and all warranties by Hydromatic pumps.

Power Cords:

The power cord and heat sensor seal failure cord are potted into the connection box cap. The cords must not be spliced.

NOTE: Each cable has a green lead. This is the ground wire and must be grounded properly per N.E.C., and/or local codes. During normal maintenance procedures power cords should be inspected for abnormal wear and replaced accordingly.

Overload Heaters:

If the Hydromatic electrical panel is not used, starters with 3-leg overload relay must be supplied on 3-phase pumps. Each leg is to have an identical heater sized in accordance with the nameplate amps on the motor housing. The amp draw on these submersible motors is slightly higher than a corresponding horsepower surface motor, so heaters must be sized by the nameplate rating.

Single-phase pumps with capacitor start have a run and a start winding, each drawing a different current. To adequately protect these windings with the appropriate heaters, consult the factory.

NOTE: Red lead is always start winding of pump using single phase.

Pump Installation

Unpacking Pump:

Remove pump from carton. Remove plywood base from bottom of pumps.

Installing Pump in Sump:

Before installing pump in sump, lay it on its side and rotate impeller. Impeller may be slightly stuck due to factory test water so it must be broken loose with a small bar or screwdriver in edge of vanes. The impeller should turn freely. Do not connect the power until after this test.

Clean all trash and sticks from sump and connect pump to piping. A check valve must be installed on each pump.

Location:

If pumps are installed in an existing basin or concrete sump, the piping can either be connected permanently or rails and brackets can be furnished for mounting to walls of basin. In either case, be sure the HYROMATIC non-clog ball check valve is used and that the pumps are submerged in a vertical position. The complete factory built packaged system is recommended for the most satisfactory installation and generally for the lowest cost where expensive installation labor is involved.

Making Electrical Connections:

All electrical wiring must be in accordance with local code, and only qualified electricians should make the installations. Complete wiring diagrams are included for use in making the installation. All wires should be checked for shorts to ground with an ohmmeter or Meggar after the connections are made. This is important, as one grounded wire can cause considerable trouble.

IMPORTANT: If equipment is not properly wired and protected as recommended, Hydromatic WARRANTY IS VOID.

Heat Sensor and Seal Failure Connection:

If a Hydromatic control panel is used, terminal blocks are provided for heat sensor and seal failure connections (see Panel Schematic). If a control panel is supplied by others, it must allow heat sensor and seal failure terminations.

Installing Sump Level Control Float Controls:

In either simplex, duplex or triplex systems the lower or turn-off control is to be set to maintain a minimum level in the sump. This level shall be no more than 3½" from the top of the motor housing down to the surface of the sewage.

The second, or turn-on control, is set above the lower turn-off control. The exact distance between the two floats must be a compromise between a frequent pumping cycle (10 starts per hour maximum) to control septicity, solids and a slower cycle for energy economy. This distance should be determined by the engineer or consulting engineer, depending on the conditions of the application.

For installation of Hydromatic supplied level controls refer to your system's installation and service manual.

Pump Operations

Starting the Pump:

To start the pump, perform the following steps in order:

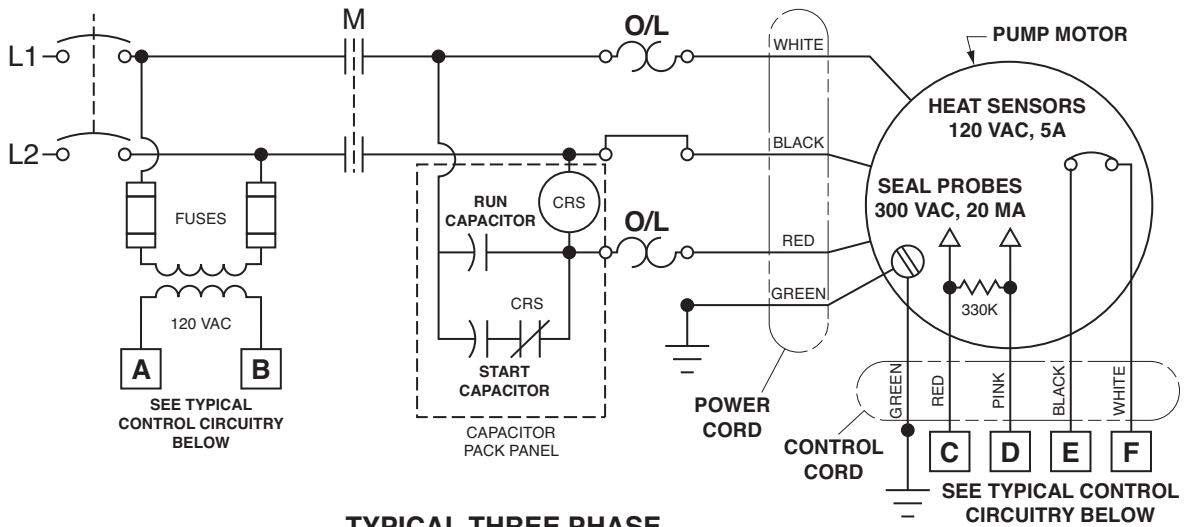
WARNING! Keep hands and clothing away from cutters and impeller!

If pump is 3 phase, the rotation of the impeller must first be checked. Lift pump from sump, lay it down, and quickly turn pump on and then off.

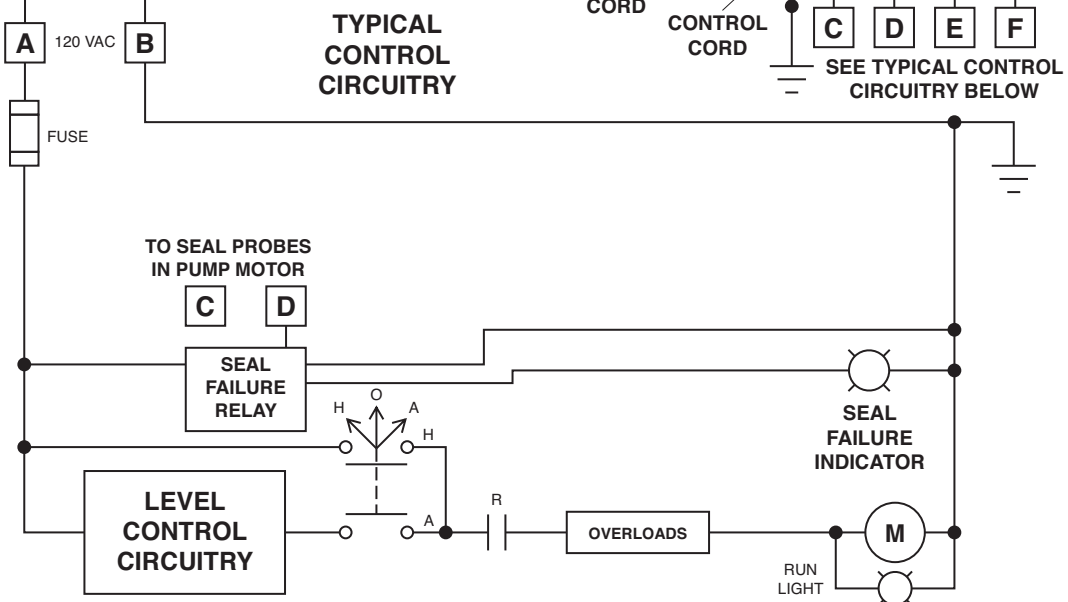
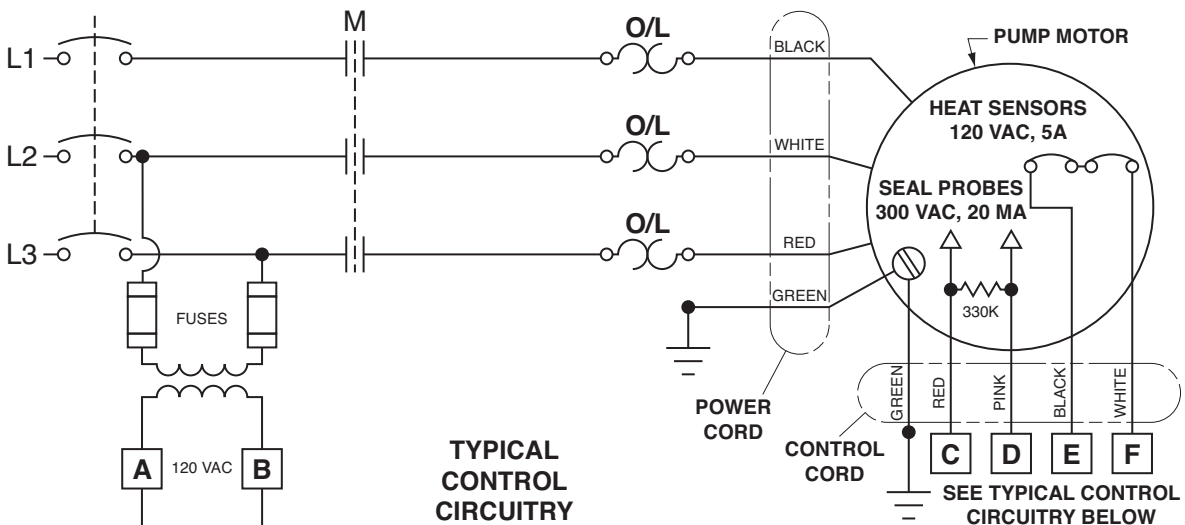
The impeller should turn counterclockwise when viewed from the suction. If rotation is wrong, turn off main breaker and

TYPICAL FM ONLY SCHEMATICS

TYPICAL SINGLE PHASE MOTOR CONNECTIONS



TYPICAL THREE PHASE MOTOR CONNECTIONS



NOTE: CAPACITORS AND/OR CONTROLS SHOULD BE LOCATED OUTSIDE HAZARDOUS AREA AND ENCLOSED IN AN APPROPRIATE ENCLOSURE.

Pump Operations

interchange any two line leads to motor to correct rotation.

1. If pump is piped-in permanently and inlet cannot be observed, rotation will have to be checked by pump operation described later.

If pump is single phase, no rotation check is necessary.

2. Run water into sump until motor is covered.
3. Open gate valve in discharge line.
4. Turn pump on. If pump runs and sump liquid does not pump down, stop pump and close discharge gate valve. Then lift pump until sealing flange is open to vent off trapped air. Lower pump, open discharge valve, and start the pump again.

If pump is piped in permanently, it may be necessary to break union at pump discharge to clear air.

5. If pump is 3 phase, piped-in permanently, and still does not operate properly after venting, rotation is wrong and can be reversed by interchanging any two line leads.
6. Level controls should be set in accordance with “Installing Sump Level Control Float Controls” above.

CAUTION: Be sure ground wire is connected to good ground such as a water pipe. This is important for safety.

Pump Maintenance

As the motors are oil filled, no lubrication or other maintenance is required.

If the heat sensor and seal failure are hooked up properly, no attention is necessary as long as the seal failure indicator light doesn't come on. To ensure continuity of the seal sensor leads, a test light is provided on intrinsically safe Hydromatic panels as standard equipment.

Pump should be checked every 3 months for corrosion and wear.

Servicing Instructions:

IMPORTANT: Read all instructions before replacing any parts.

WARNING: Before handling these pumps and controls, always disconnect the power first.

Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

Field Service on Hydromatic Hazardous Location Pumps:

If a Hydromatic hazardous location pump is used in a hazardous location, or if the pump is still in warranty, the pump must be returned to the factory for service or repaired in an authorized Hydromatic service shop. This will ensure the integrity of the hazardous location rating of the pump and comply with our warranty requirements. Pumps out of warranty and not used in a hazardous location can be field

serviced by any reputable serviceman. When any field servicing is performed on a pump, the following instructions should be followed carefully.

Disconnecting Pump Cords:

If a Hydromatic hazardous location pump is to be removed from its location, one of two ways may be used to disconnect the pump cords from the rest of the system.

Pump cords may be disconnected at control panel (on sump mounted control panels) and cord assembly taken with pump.

CAUTION: If cord openings from sump to control panel are open, gases from sump could enter panel and an explosive condition could exist. Seal openings!

Pump cords may be disconnected at pump by removing the cord and cap assembly, unplugging sensor wires, and removing wire nuts.

After removal from pump, reinstall wire nuts in cord and cap assembly and install protective cover. (Required accessory item when remote mounted control panel is used PN #11159-000-1.)

CAUTION: Do not reconnect power to a cord and cap assembly while removed from pump.

Replacing Cords:

The power cord and heat sensor/seal failure cord are potted into the connection box cap, forming the cord and cap assembly.

If cords require replacement due to damage or cords being too short, cord and cap assembly must be replaced as a complete assembly available from factory.

Pump Maintenance

1. Remove cord and cap assembly.
2. Disconnect wires taking note of color/number coding.
3. Connect wires of new cord and cap assembly in the same manner as the old one was removed.
4. Reinstall cord and cap assembly taking care not to pinch wires.
5. Check pump for proper rotation before returning to normal service.

Cutter Adjustment:

There is no cutter adjustment necessary as all adjustments have been factory set.

Replacing Grinder Parts:

If necessary to replace grinder parts because of wear or to inspect for clogging:

1. Close gate valve at pump discharge.
2. Turn off circuit breaker.

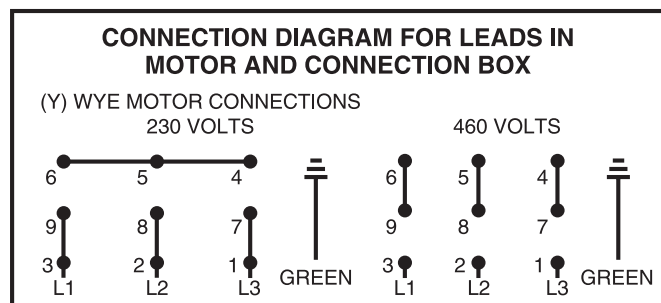
CAUTION: Never work on pump with power on. Be sure ground wire from pump is connected to a good ground such as a water pipe.

3. Remove pump from sump.
4. Unscrew cap screws (18) and remove cutter ring retainer (41).
5. Unscrew hex head cap screws (14) and remove volute case (23).
6. Radial cutter (43) and axial cutter (44) are now exposed. If checking for clogging, these parts can now be cleaned without removing them from the shaft.

7. If necessary to replace cutters, remove serrated head cap screw (20), washer (19), radial cutter (43) and impeller (17) from shaft while tapping with a plastic hammer to loosen. Disassemble radial cutter (43) and axial cutter (44) from the impeller (17) by removing socket head cap screw (21).
8. Clean all parts thoroughly before proceeding with assembly. Replace impeller (17), axial cutter (44), and radial cutter (43) and secure together with socket head cap screws (21). Make sure impeller key (42) is in place between shaft and impeller (17). Replace volute case (23), replace grinder ring (41).
9. Plug pump into power and operate for a few seconds only to ensure parts are not rubbing.

Replacing Seals:

1. Remove pipe plug (11) from motor and seal chamber and drain out all oil. The lower pipe plug drains the seal housing and the upper pipe plug drains the motor housing. Check for water in the oil drained from motor chamber. If there is some water in this oil, the pump must be completely dismantled and the stator dried out or replaced if the resistance to ground is less than 500,000 ohms after drying. A hypot check of 1,500 volts for 230 volt motors and 2,000 volts for 460 volt motors should be performed.
2. Remove cutters, impeller and pump parts as described under "Replacing Grinder Parts".
3. Remove socket head cap screw (29) in seal plate (16) and screw two of the screws into the tapped back off holes to force seal plate (16) from seal



housing (26). Pulling the seal plate (16) off will also force the lower seal (22) from shaft. Remove lower seal (22) from seal plate (16).

4. Remove snap ring (25) and pull upper seal (27) from shaft. It may be necessary to use packing hooks to remove seal. Use a screwdriver to break the upper stationary ceramic seal ring so that it can be removed easily.

CAUTION: Do not use any old seal parts. Replace all parts with new pieces. Mixing old and new parts will cause immediate seal failure.

5. When cleaning all parts before replacement, check to be sure bearings or shaft is not worn. Be sure all O-rings are in excellent condition without cuts or nicks, and replace them if not in excellent condition. Use O-ring lube to prevent cutting at assembly.
6. After upper seal (27) is replaced we recommend an air test be made by inserting 5 lb. of air pressure into the motor housing and allow ample time for air to escape. If pressure remains steady for five minutes continue by replacing the seal plate (16), lower shaft seal (22) and impeller (17). Repeat the air test in the seal chamber. Next the pump must be filled with oil. Start by filling the seal chamber. Do not fill completely. Allow about ½ inch air space for expansion. Next fill the motor housing just above the motor winding.
7. Use only Hydromatic submersible oil in motor chamber and seal chamber. In an emergency, a high grade

transformer oil can be used in the motor chamber and #20 non-detergent automobile oil can be used in the seal chamber.

Replacing Motor Stator:

1. If necessary to replace stator (30), completely dismantle pump as described above.
2. Drain all oil from upper housing. Remove drain plug (11) in bottom of bearing housing, and remove connection box assembly (34) by removing capscrews (37). Motor leads can be disconnected. The leads are connected with connectors and must be cut. DO NOT TAPE LEADS WHEN REPLACING STATOR AS OIL WILL DETERIORATE THE TAPE AND CAUSE MOTOR FAILURE. USE ONLY INSULATED BUTT CONNECTORS.
3. If cord leads are burned, it will be necessary to replace power cord and cord group assembly (1). If any wires in the connection box (34) are burned, it will be necessary to replace the connection box assembly. Connect wires per connection diagram.
4. Remove motor housing bolts (28) and lift off motor housing (32). Use care in lifting as the seal failure connection wire must be disconnected before housing is completely removed.
5. Remove stator screws (29) and set motor housing (32) on hardwood blocks. Bump motor housing (32) up and down on hardwood block to loosen stator which should drop out. This should be reinstalled with the new stator.
6. Thoroughly clean motor housing (32) and other parts and install new stator.

7. Connect leads through housing bore and tuck leads back behind the stator windings to prevent rubbing on rotor. USE ONLY INSULATED BUTT CONNECTORS TO CONNECT WIRES.
8. If the upper ball bearing (33) is rusted or feels rough when turned, it should be replaced. Press the bearing off the shaft. Install the new bearing by pressing on inner face only. PRESSING ON THE OUTER FACE WILL RUIN THE BEARING.
9. In reassembly, replace any O-rings that are defective. Use Parker O-Ring Lube on all O-rings for easy assembly and to prevent cutting.
10. Completely reassemble, making sure seal failure wires are connected.
11. Make a high voltage ground test on each wire. The only wires that should show ground are the two green leads.
12. Air test the motor housing and the seal housing by inserting 5 lb. of air pressure and allow ample time for air to escape. If pressure remains steady for five minutes, you are ready to fill the pump with oil.
13. Fill seal chamber with oil by laying pump on side with oil fill hole upright. Do not completely fill; leave oil about ½" below plug hold. Use only Hydromatic submersible oil. Replace plug with Permatex on threads.
14. Refill motor chamber with oil through connection box opening. Use high grade, nonsynthetic transformer oil or Hydromatic special submersible oil. Fill housing until oil covers top of windings. Leave air space for expansion.

Pump Maintenance

15. Always run pump for a few seconds after assembly work to be sure all parts run smoothly and are correctly adjusted before replacing in sump. Check again for correct rotation. Pump should rotate counterclockwise when viewed from the suction.

NOTE: When applying power, be sure the pump is restrained from turning by holding the pump at the motor housing, or by clamping it in a holding fixture.

CAUTION: Always keep hands away from the pump cutter area after the circuit breaker is reconnected.

Pump Troubleshooting

Below is a list of troubles and their probable causes.

No liquid delivered.

1. Pump air bound
2. Discharge head too high
3. Pump or piping plugged
4. Wrong rotation
5. Speed too low

Insufficient liquid delivered.

1. Discharge head too high
2. Impeller or cutters partially plugged or damaged
3. Wrong rotation
4. Incorrect diameter impeller
5. Speed too low

Insufficient discharge pressure.

1. Wrong rotation
2. Air or gases in liquid
3. Impeller damaged
4. Incorrect impeller diameter
5. Speed too low

Pump overloads motor.

1. Wrong rotation
2. Specific gravity or viscosity of liquid too high
3. Speed too high
4. Head lower than rating, pumping too much liquid
5. Pump clogged
6. Defective bearings
7. Defective impeller

Pump is noisy.

1. Defective bearings
2. No axial clearance between impeller and volute
3. No axial clearance between radial cutter and cutter ring

If the cause of the trouble cannot be determined and corrected as outlined above, contact your nearest factory representative.

HPGFX Parts List

**For use with product built with Regal Beloit/Marathon motor.
For Pumps Built After 04-01-09**

ORDERING REPLACEMENT PARTS: Product improvements are made from time to time. The latest part design will be furnished as long as it is interchangeable with the old part. When ordering replacement parts, always furnish the following information: (1) pump serial number, (2) pump model and size, (3) part description, (4) part number, (5) impeller diameter (if ordering impeller), (6) quantity required, and (7) shipping instructions.

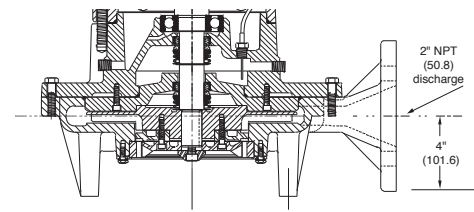
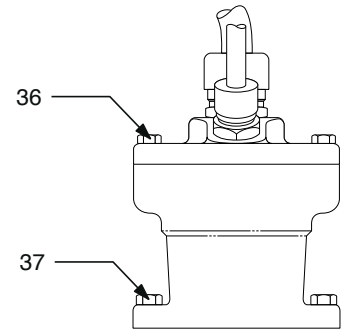
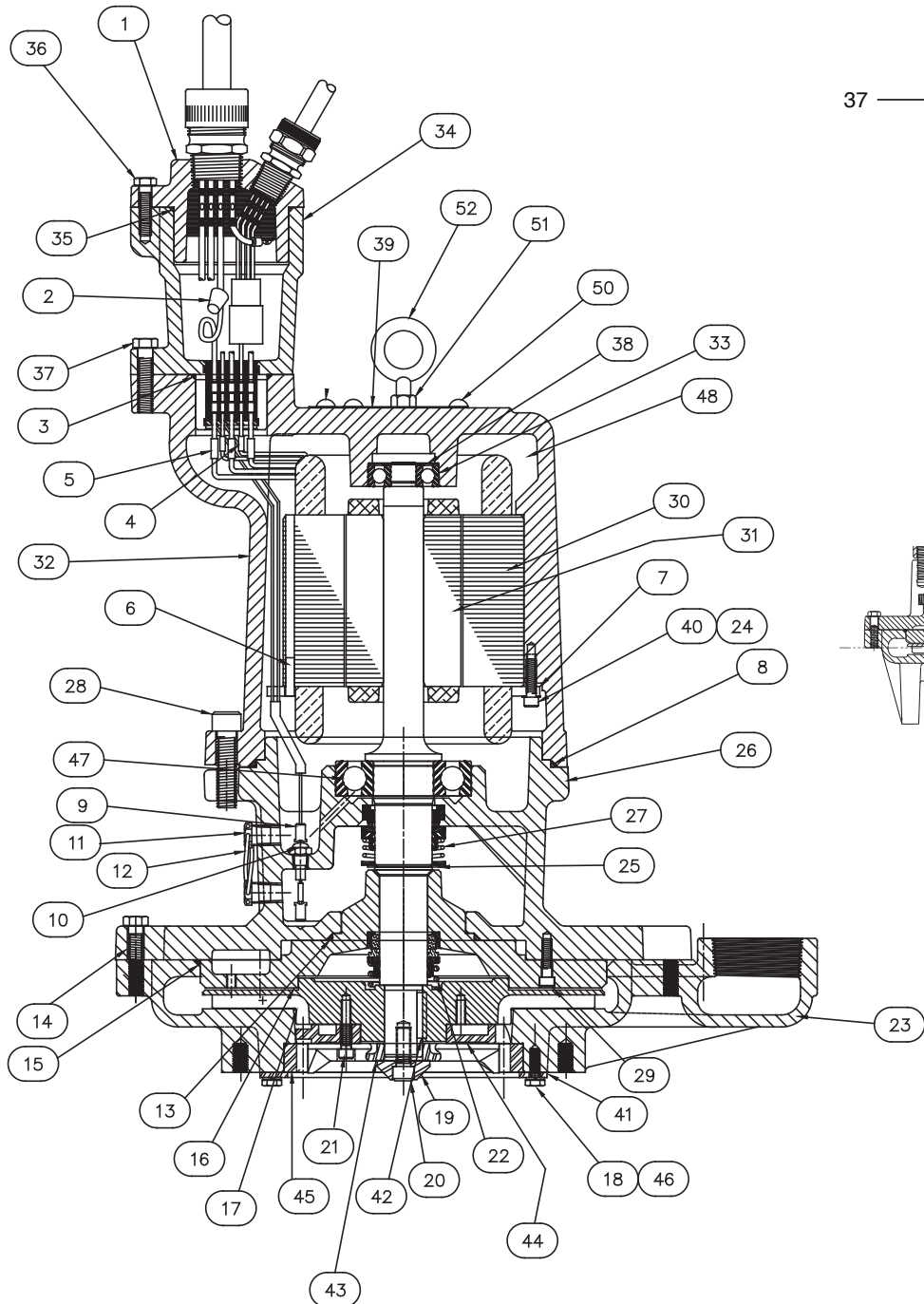
Ref. No.	Part No.	Part Description	Qty.
1	10894-029-5	Cord Cap Assy. 35'	1
	10894-030-5	Cord Cap Assy. 8/4 35'	1
	10894-005-5	Cord Cap Assy. 50'	1
	10894-010-5	Cord Cap Assy. 8/4 50'	1
2	00557-000-1	Wire Connector 230/460V	3
	00853-000-1	Wire Connector, All	3
3	00834-008-1	O-Ring	1
4	10898-000-1	Connector	4
5	10899-000-1	Connector All 1ø & 3ø 200 & 575V	3
	10899-000-1	Connector 3ø 230/460V	9
6	5454-001-1	Roll Pin	1
7	00299-002-1	Stator Retainer Ring	1
8	00150-020-1	O-Ring	S 1
9	10900-001-5	Seal Sensor Assy.	1
10	10901-000-1	Seal Failure Probe	2
11	00119-016-1	Pipe Plug	2
12	10902-000-1	Wire	1
13	05876A106	O-Ring	S 1
14	19101A021	Cap Screw	6
15	00150-037-1	O-Ring	S 1
16	07889-103-2	Seal Plate	1
17	07894-006-2	Impeller 8"	1
	07894-009-2	Impeller 10.13"	1
	07894-001-2	Impeller 10.50"	1
18	19099A029	Cap Screw	3

Ref. No.	Part No.	Part Description	Qty.
19	08422-003-1	Washer, Impeller	1
20	14885-001-1	Impeller Screw	1
21	06106A019	Screw	2
22	04916-000-1	Shaft Seal – Lower	S 1
23	07891-000-2	Volute (HPGFX)	1
	07891-002-2	Volute – Horizontal (HPGFHX)	1
24	00517-008-1	Screw	4
25	00975-003-1	Snap Ring	1
26	10915-002-2	Seal Housing	1
27	00920-001-1	Shaft Seal Upper	S 1
28	00568-007-1	Cap Screw	4
29	00517-005-1	Screw	4
30	24407C209	Stator 7-1/2 HP 230/460V/3ø	1
	24407C206	Stator 5 HP 230/460V/3ø	1
	24407C205	Stator 5 HP 200V/3ø	1
	24407C207	Stator 5 HP 575V/3ø	1
	24407C204	Stator 5 HP 230V/1ø	1
	24407C200	Stator 3 HP 230V/1ø	1
	14698-203-1	Stator 3 HP 200V/1ø	1
	24407C202	Stator 3 HP 230/460V/3ø	1
	24407C201	Stator 3 HP 200V/3ø	1
	24407C203	Stator 3 HP 575V/3ø	1
31	01329-028-5	Rotor with Shaft 3–7.5 HP 1ø/3ø	1
32	10765-002-2	Motor Housing	1

Ref. No.	Part No.	Part Description	Qty.
33	00065-021-1	Bearing – Upper	1
34	10895-000-5	Conn. Box All 230/460V/3ø	1
	10895-001-5	Conn. Box 200/230/1ø; 200/575/3ø	1
35	00834-013-1	O-Ring	1
36	19100A021	Cap Screw	2
37	19100A017	Cap Screw	2
38	00064-003-1	Spring – Bearing	
39	13425-083-1	Name Plate	1
40	05454A02-3	Lock Washer	4
41	07907-000-1	Cutter Ring Retainer	1
42	06579-003-1	Key	1
43	07903-000-2	Radial Cutter	1
44	07904-000-2	Axial Cutter	1
45	07905-000-2	Cutter Ring	1
46	05454A023	Lock Washer	3
47	08565A027	Bearing – Lower	1
	51700-501-7	Seal Kit	
48	24709110000	Paraffinic Oil	1
49	06107A015	Washer – Lock	1
50	04580-001-1	Screw – Drive	6
51	01032-002-1	Nut – Hex	1
52	00589-002-1	Bolt – Eye	1

Note: S — Parts in Seal Kit * Consult Factory
— Fill Oil to above the Top of Motor Windings

HPGFX



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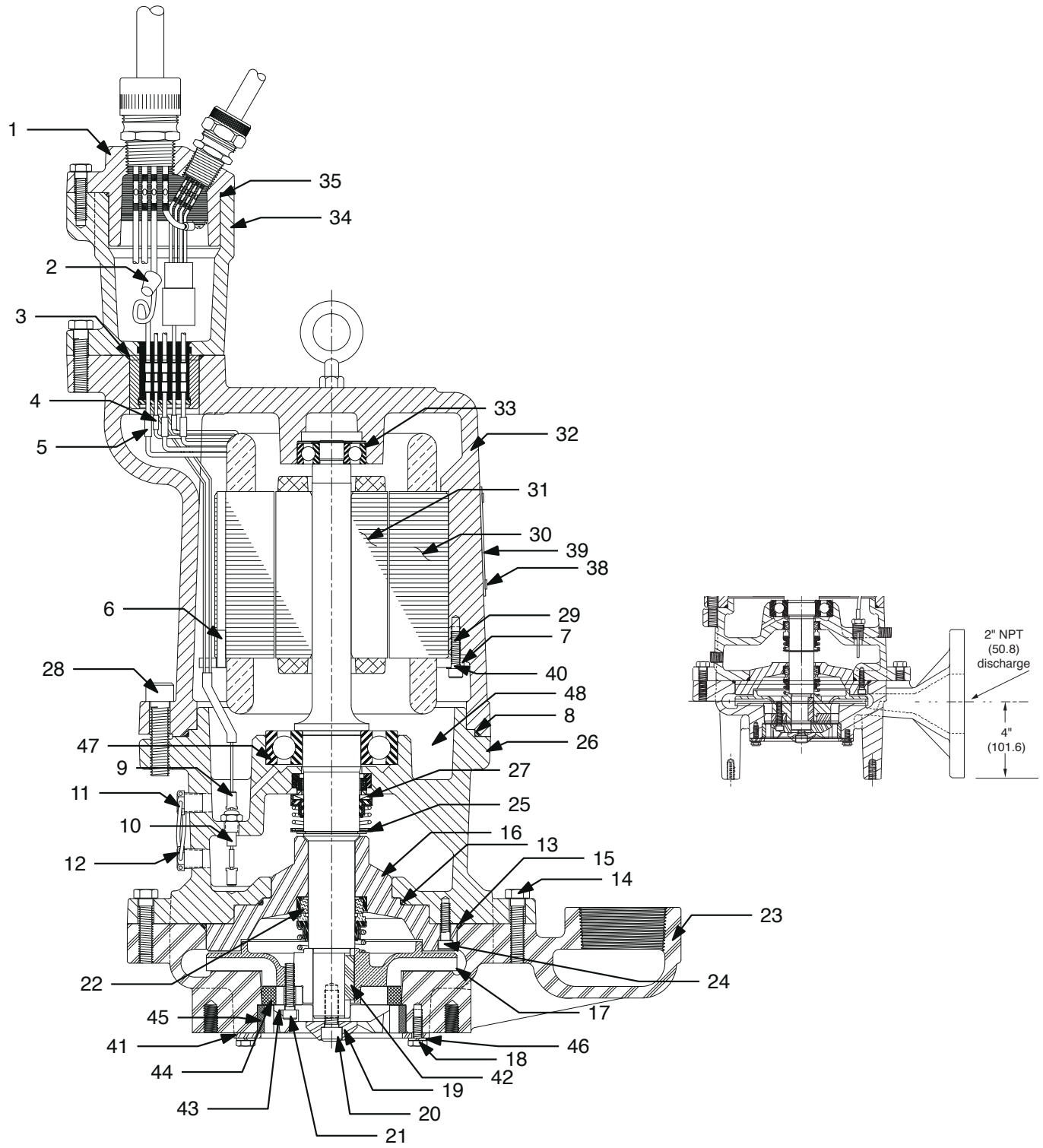
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	11675-000-1	Connector 3ø 230/460V	9
6	005454-001-1	Roll Pin	1
7	00299-002-1	Stator Retainer Ring	1
8	00150-020-1	O-Ring	S 1
9	10900-001-5	Seal Sensor Assy.	1
10	10901-000-1	Seal Failure Probe	2
11	00119-016-1	Pipe Plug	2
12	10902-000-1	Wire	1
13	00150-011-1	O-Ring	S 1
14	00238-007-1	Cap Screw	6
15	00150-011-1	O-Ring	S 1
16	07889-105-2	Seal Plate	1
17	07893-032-2	Impeller 4.50"	1
	07893-040-2	Impeller 5.50"	1
	07893-012-2	Impeller 6.866" (7-1/2 HP ONLY)	1
18	00176-003-1	Cap Screw	3
19	08422-001-1	Washer, Impeller	1

Ref. No.	Part No.	Part Description	Qty.
20	14885-001-1	Impeller Screw	1
21	00517-010-1	Screw	2
22	04916-000-1	Shaft Seal – Lower	S 1
23	07892-001-2	Volute (HPGHX)	1
	07892-003-2	Volute Horiz. (HPGHX)	1
24	00517-008-1	Screw	4
25	00975-012-1	Snap Ring	1
26	10915-003-2	Seal Housing	1
27	00920-001-1	Shaft Seal Upper	S 1
28	00568-007-1	Cap Screw	4
29	00517-007-1	Screw	4
30	22574C216	Stator 7-1/2 HP 230/460V/3ø	1
	22574C215	Stator 7-1/2 HP 200V/3ø	1
	14692-003-1	Stator 5 HP 230/460V/3ø	1
	22574C201	Stator 5 HP 200V/3ø	1
	22574C204	Stator 5 HP 575V/3ø	1
	22574C200	Stator 5 HP 230V/1ø	1
	22574C210	Stator 3 HP 230V/1ø	1
	14689-203-1	Stator 3 HP 200V/1ø	1
	22574C211	Stator 3 HP 200V/3ø	1
	22574C212	Stator 3 HP 230/460V/3ø	1
	22574C214	Stator 3 HP 575V/3ø	1
31	13219-012-5	Rotor 7-1/2 HP 3ø	1
	13219-021-5	Rotor with Shaft 7-1/2 HP 200/230/460/575V/3ø	1
	00764-021-5	Rotor with Shaft 5 HP 200/230V/1ø	1

Ref. No.	Part No.	Part Description	Qty.
31	00765-022-5	Rotor with Shaft 5 HP 200/230/460/575V/3ø	1
	08053-018-5	Rotor with Shaft 3 HP 200/230V/1ø	1
	08434-021-5	Rotor with Shaft 3 HP 200/230/460/575V/3ø	1
32	10765-002-2	Motor Housing	1
33	00065-021-1	Bearing – Upper	1
34	10895-000-5	Conn. Box All 1ø & 3ø 200 & 575V	1
	10895-001-5	Conn. Box 200/230/1ø; 200/575/3ø	1
35	00834-013-1	O-Ring	1
36	00101-007-1	Cap Screw	2
37	00238-006-1	Cap Screw	2
38	04850-001-1	Drive Screw	4
39	13425-033-1	Name Plate	1
40	00995-008-1	Lock Washer	4
41	07911-000-1	Cutter Ring Retainer	1
42	06579-003-1	Key	1
43	07908-000-2	Radial Cutter	1
44	07909-000-2	Axial Cutter	1
45	07910-000-2	Cutter Ring	1
46	00177-004-1	Lock Washer	3
47	08565A027	Bearing – Lower	1
	51700-502-7	Seal Kit	
48	24709110000	Paraffinic Oil	1

Note: S — Parts in Seal Kit * Consult Factory
— Fill Oil to above the Top of Motor Windings

HPGHX



STANDARD LIMITED WARRANTY

HYDROMATIC® warrants its products against defects in material and workmanship for a period of 12 months from the date of shipment from Hydromatic or 18 months from the manufacturing date, whichever occurs first - provided that such products are used compliance with the requirements of the Hydromatic catalog and technical manuals for use in pumping raw sewage, municipal wastewater or similar, abrasive free non-corrosive liquids.

During the warranty period and subject to the conditions set forth, Hydromatic, at its discretion, will repair or replace to the original user, the parts which prove defective in materials and workmanship. Hydromatic reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for prior sold and/or shipped units.

Start-up reports and electrical schematics may be required to support warranty claims. Warranty is effective only if Hydromatic authorized control panels are used. All seal fail and heat sensing devices must be hooked up, functional and monitored or this warranty will be void. Hydromatic will only cover the lower seal and labor thereof for all dual seal pumps. Under no circumstance will Hydromatic be responsible for the cost of field labor, travel expenses, rented equipment, removal/reinstallation costs or freight expenses to and from the factory or an authorized Hydromatic service facility.

This limited warranty will not apply: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with the printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and parts used in connection with such service; (d) to units which are not installed in accordance with applicable local codes, ordinances and good trade practices; (e) if the unit is moved from its original installation location; (f) if unit is used for purposes other than for what it is designed and manufactured; (g) to any unit which has been repaired or altered by anyone other than Hydromatic or an authorized Hydromatic service provider; (h) to any unit which has been repaired using non factory specified/OEM parts.

Warranty Exclusions: HYDROMATIC MAKES NO EXPRESS OR IMPLIED WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. HYDROMATIC SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Liability Limitation: IN NO EVENT SHALL HYDROMATIC BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY HYDROMATIC PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. HYDROMATIC DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION. HYDROMATIC RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not permit some or all of the above warranty limitations or the exclusion or limitation of incidental or consequential damages and therefore such limitations may not apply to you. No warranties or representations at any time made by any representatives of Hydromatic shall vary or expand the provision hereof.



**Pentair
Water™**

USA

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CANADA

269 Trillium Drive, Kitchener, Ontario, Canada N2G 4W5
Tel: 519-896-2163 Fax: 519-896-6337

Distributor: _____ Order No.: _____
Installing Contractor: _____ Phone: _____
Sales Contact: _____ Phone: _____
Customer: _____
Location: _____

1. SYSTEM INFORMATION

Size of Wet Well: _____ Manufacturer: _____
Discharge from Bottom of Basin: _____ Discharge Location: _____
Inlet from Bottom of Basin: _____ Inlet Location: _____
Type of Check Valves: _____ Type of Piping: _____
Does System Have Suction Gauges? Yes No Suction Pressure Reading: _____
Does System Have Discharge Gauges? Yes No Discharge Pressure Reading: _____
Liquid Being Pumped: _____ Temperature (F°): _____ Pct. of Solid (%): _____
Is a Sketch or Photograph of System Available? Yes No *If So, Please Attach.*
Any Additional Comments on System: _____

2. ELECTRICAL INFORMATION

Control Panel Part Number: _____ Panel Rated Amps: _____
Manufacturer: _____ Voltage: _____ Phase: _____
Heater Size: _____ Location of Panel to Wet Well: _____
Incoming Line Voltage: _____ Actual? _____
Voltage to Pumps: _____ Actual? _____
Type of Junction Box: _____ Manufacturer of Junction Box: _____
Are Floats Installed in Wet Well? Yes No Are Floats Set to Engineer's Specs? Yes No
Are Floats Wired for Proper Sequencing? Yes No Are Heat Sensors Hooked Up? Yes No
Is the Seal Leak Detection Hooked Up? Yes No
Any Additional Comments on Electrical: _____

3. PUMP INFORMATION

Type of Pump: _____ Serial Number of Pump: _____
Voltage of Pump: _____ Phase: _____ RPM: _____ Amps: _____
Impeller Size: _____ C.O.S. TDH: _____ GPM: _____
Voltage Supplied from Panel: _____ Actual? _____
Actual Amperage (All Phases): Phase 1 Amps: _____ Phase 2 Amps: _____ Phase 3 Amps: _____
Define the Rotation of the Pump: Clockwise Counterclockwise
Method Used to Check Rotation: Viewed from the Top Viewed from the Bottom
Any Additional Comments on Pumps: _____

4. ACKNOWLEDGE

Acknowledge that all information is accurate and proper procedures have been followed.
Customer: _____ Date: _____
Start-up Technician: _____ Date: _____

Send to Warranty Manager, 1101 Myers Parkway, Ashland, OH 44805
or Fax to 419-207-3344
or email to startupreport@hydromatic.com
or submit online at <http://forms.pentairliterature.com/startupform/startupform.asp?type=h>