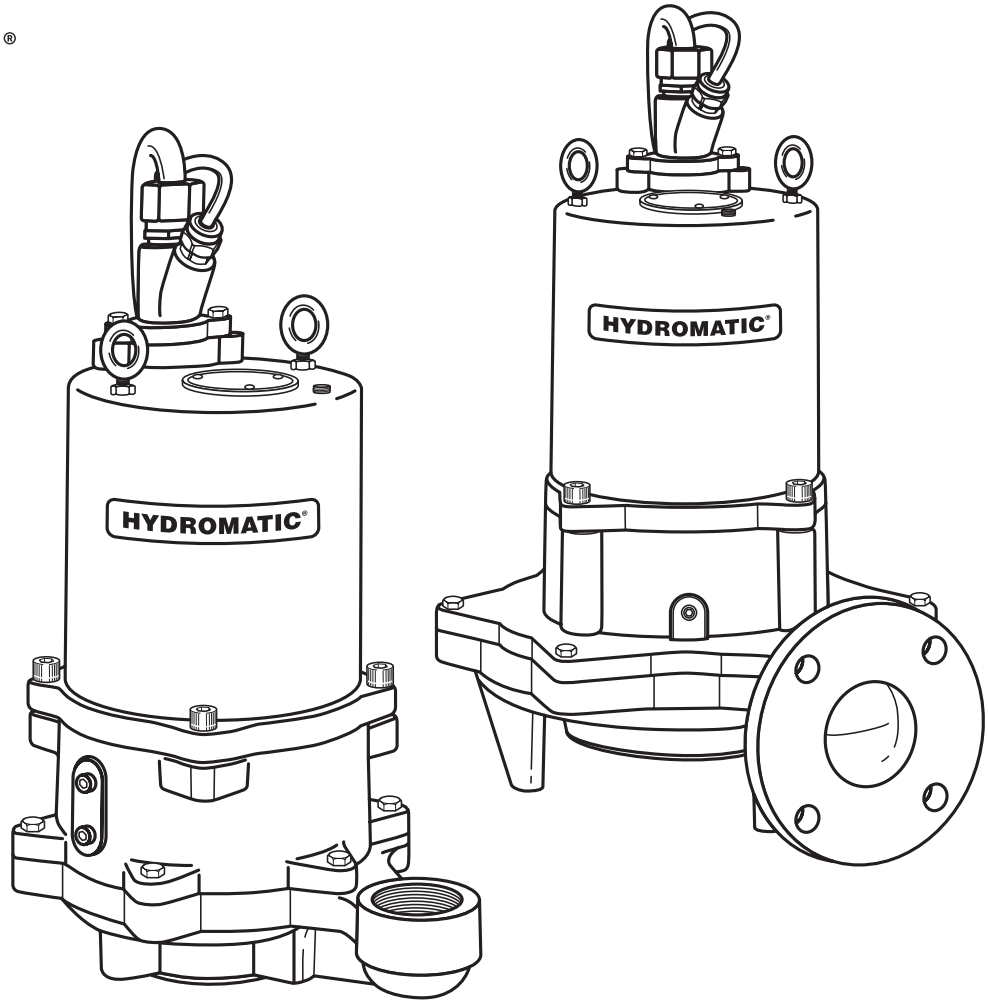
PENTAIR

HYDROMATIC®



MODELS HPGF/HPGFH, HPGH/HPGHH

SUBMERSIBLE GRINDER PUMPS

INSTALLATION AND SERVICE MANUAL

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.

Item # E-03-421 | Part # 5625-421-1 | © 2016 Pentair Ltd. | 01/18/16

General Information

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. Reasonable care and safe methods should be practiced. Check local codes and requirements before installation.

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.

CALIFORNIA PROPOSITION 65 WARNING:

⚠WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Pump Description:
The Hydromatic® pumps covered by these instructions are submersible grinder pumps.

The cutter blades are on the suction side of the centrifugal pump impeller and discharge directly into the inlet of the impeller. The integral stainless steel pump-motor shaft is sealed by two mechanical seals with an oil chamber between the seals to provide lubrication for both seal faces.

The motor winding, rotor, and ball bearings are mounted in a housing sealed and filled with oil to lubricate the bearing and transmit the heat from motor winding to outer shell.

The power cord is sealed into the motor housing with a cord grip, and the individual conductors are sealed into the cord cap with epoxy sealing compound.

Application:
These pumps are designed for either home or industrial 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°F.

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.

Pump Installation

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 that the Hydromatic nonclog 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.

Electrical Connections:
Make all connections from motor to control panel to comply with local codes.

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

Pump Operations

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

1. 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 interchange any two line leads to motor to correct rotation.

   If pump is piped-in permanently and inlet cannot be observed, rotation will have to be checked.

   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 so that pump turns off when level is about 2 inches above inlet and turns on when level is about 2 inches above motor.

Pump Maintenance

Replacing Grinder Parts:

1. Close gate valve at pump discharge.
2. Turn off circuit breaker.
3. Remove pump from sump.
4. Unscrew cap screws and remove cutter ring retainer.
5. Unscrew hex head cap screws and remove volute case. Cutter ring can now be removed from volute.
6. Radial cutter and axial cutter 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 cap screw, washer, and radial cutter from shaft.

   Radial cutter and impeller are slip fitted onto shaft. If necessary, pry at two opposite points on back of impeller while tapping with a plastic hammer to loosen. Disassemble radial cutter and axial cutter from the impeller by removing socket head cap screws.
8. Clean all parts thoroughly before proceeding with assembly, replace impeller, axial cutter and radial cutter and secure together with socket head cap screws. Make sure impeller key is in place between shaft and impeller.
9. Replace cutter ring and cutter ring retainer. It may be necessary to loosen hex head cap screws in pump case and tap with a hammer to get proper clearance on O.D. of radial cutter.
10. Plug pump into power and operate for a few seconds only to be sure parts are not rubbing.

Replacing Seals:

1. Remove pipe plug from the top of the housing and two pipe plugs from the side. The lower pipe plug drains the seal housing while the other drains the motor housing. Check for water in the oil drained from motor chamber. If there is some water in this oil, the stator should be replaced.
2. Remove cutters, impeller and pump parts.
3. Remove socket head cap screw in seal plate and screw two of the screws into the tapped back-off holes to force seal plate from seal housing. Pulling this plate off will also force lower seal from shaft. Remove lower seal from seal plate.
4. Remove snap ring and pull upper seal from shaft. 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 sleeve bearing or shaft is not worn. Be sure all O-rings are in excellent condition without cuts or nicks. If not, replace them. Use O-ring lube to prevent cutting at assembly.
6. After all parts are replaced and before final assembly of impeller and cutters, refill seal chamber and motor chamber with oil. Lay pump on side to fill seal chamber. Do not fill completely. Allow about 1⁄2 inch below fill plug so that there will be an air space for expansion. Set pump upright, and replace the upper and side drain plugs before filling motor chamber. Again fill so that oil level is just over the top of winding to allow air space for expansion.
7. Use only a high grade transformer oil in the motor chamber and in the seal chamber.

Replacing Motor Stator:

1. If necessary to replace stator, completely dismantle pump.
2. Remove shaft rotor assembly. If the ball bearing feels rough when turned, it should be replaced. Pressing on the outer face will ruin the bearing. When shaft rotor assembly is removed, motor leads can be disconnected through the cord cap bore. Do not tape leads when replacing stator as oil will deteriorate the tape and cause motor failure. Use only twist on wire nuts.
3. Remove motor housing bolts and lift off housing.
4. Remove stator screws and stator clamping ring and set housing on hardwood blocks. Bump housing up and down on hardwood block to loosen stator which should drop out.
5. Thoroughly clean housing and other parts and install new stator.

6. Connect leads through housing bore and tuck leads back behind the stator windings to prevent rubbing on rotor. Use only butt splice connectors.
7. In reassembly replace any O-rings that are defective.
8. Completely reassemble, air test and fill with oil as described under replacing seals.
9. 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.

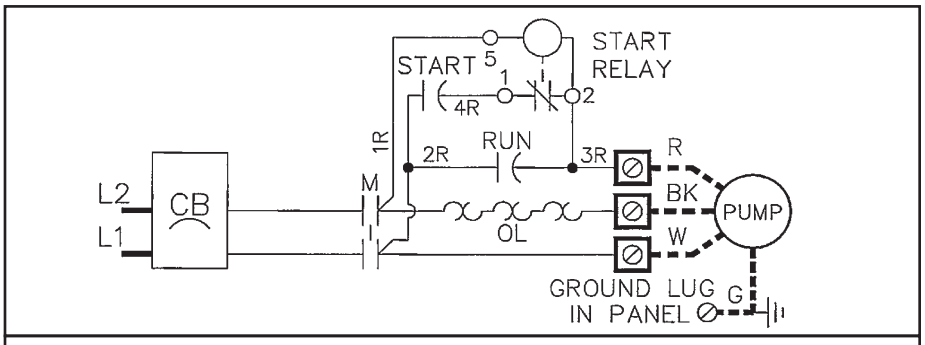
NOTE: When applying power, be sure the pump is restrained from turning by holding the pump at the motor housing, or by clamping it in a holding fixture.

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

Replacing Bearings:

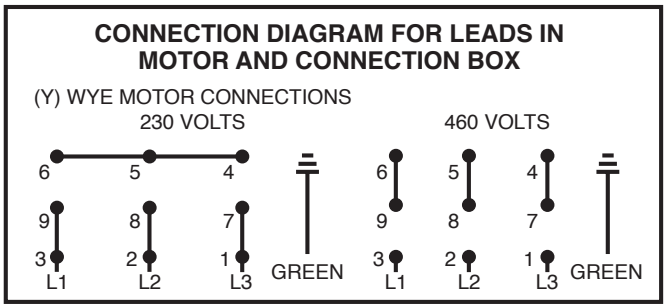
1. Drain all oil from motor chamber as described.
2. Remove cutters and impeller as described earlier.
3. Remove bolts that hold motor housing to bearing housing. Remove bolts that hold bearing housing to volute. Remove screws holding seal plate to bearing housing.
4. Remove rotating assembly (rotor, shaft and impeller) from pump case and place horizontally on bench. With hardwood block, tap end of impeller to loosen from shaft.
5. Use bearing puller to remove bearings. Replace with new bearings. Press only on inner face of bearing when replacing. Pressing on outer face can damage the bearing. Bearings are standard size that can be obtained from any bearing supply house or can be obtained from Hydromatic factory.
6. Thoroughly clean all castings before replacing bearings. Examine all O-rings for nicks before reusing.
7. Use Locktite on socket head locking screw in end of shaft.
8. Completely reassemble, air test and fill with oil.
9. Always check all leads with high voltage or with Megger for grounds before operating the pump.

SINGLE PHASE POWER

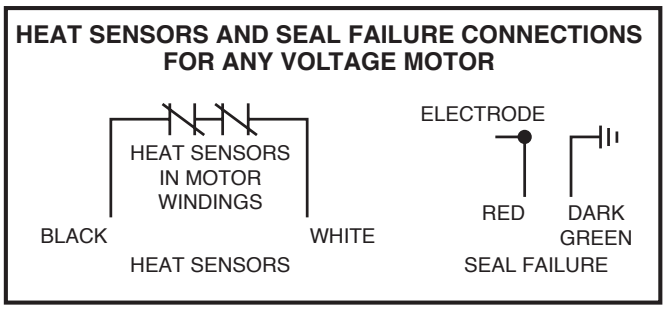


Pump	HP	V.	Ø	RPM	Start Capacitor	Run Capacitor	Start Relay
HPGH300M7-2	3	208	1	3450	005290115	122670021	015450151
HPGH300M2-2	3	230	1	3450	005290055	122670011	015450051
HPGH500M7-2	5	208	1	3450	005290125	23186A000	015450151
HPGH500M2-2	5	230	1	3450	005290125	23186A000	015450051
HPGF300M7-4	3	208	1	1750	005290125	23186A000	015450041
HPGF300M2-4	3	230	1	1750	005290125	122670031	015450061
HPGF500M7-4	5	208	1	1750	005290125	23839A000	015450071
HPGF500M2-4	5	230	1	1750	005290125	122670081	015450071

THREE PHASE POWER



SENSOR CORD



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 damages
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 cutter ring and axial cutter.
4. No diametral clearance between radial cutter and cutter ring.

If the cause of the trouble cannot be determined and corrected as outlined above, contact an authorized Hydromatic service facility.

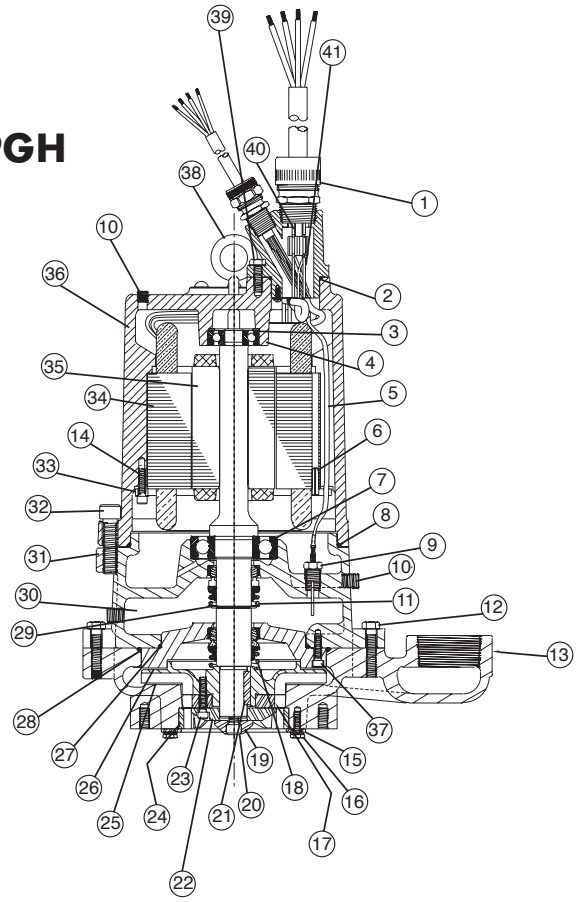
Effective 04/01/09

HPGF/HPGFH, HPGH/HPGHH Parts List

For use with product built with Regal Beloit motor.

Item No.	Eng. No.	Part Description	Qty.
1	152720335	35' Cord Assembly 14-4	1
	152720305	35' Cord Assembly 12-4	1
	152720315	35' Cord Assembly 10-4	1
	152720325	35' Cord Assembly 8-4 SOOW	1
	152720345	35' Cord Assembly 8-4 W	1
2	008340151	O-Ring	1
3	000640031	Spring – Brg.	1
4	000650211	Brg.	1
5	060000141	Seal Fail Wire – HPGH	1
	060000551	Seal Fail Wire – HPGF	
6	054540011	Pin – Roll	1
7	000650181	Brg.	1
8	001500571	O-Ring	1
9	084720015	Seal Fail – Ass'y	1
10	05022A092	Pipe Plug	3
11	049160001	Mechanical Seal, Upper (CE-B)	1
12	19101A021	Screw – Cap	9
13	078920032	Volute Hor. Discharge – HPGHH	1
	078920012	Volute Vert. Discharge – HPGH	1
	078910022	Volute HPGFH, Horizontal Discharge	
	078910002	Volute HPGF, Vertical Discharge	
14	005170081	Screw – Cap	4
15	079113041	Cutter Retainer – HPGH	1
	079070001	Cutter Retainer – HPGF	
16	19099A029	Screw – Cap	3
17	079090002	Cutter Axial – HPGH	1
	079040002	Cutter Axial – HPGF	
18	049160001	Mechanical Seal, Lower (CE-B)	1
	049160011	Mechanical Seal, Lower (TC-B)	1
	049160041	Mechanical Seal, Lower (TC-V)	1
19	084220031	Washer – Impeller	1
20	148850011	Screw – Cap	1
21	065790031	Key – Square	1
22	079080002	Cutter Radial – HPGH	1
	079030002	Cutter Radial – HPGF	
23	06106A019	Screw – Cap	2
24	079100002	Cutter Stationary – HPGH	1
	079050002	Cutter Stationary – HPGF	
25	078930322	Impeller – 4.50" – HPGH	1
	078930402	Impeller – 5.50" – HPGH	1
	078930122	Impeller – 6.87" – HPGH	1
	078940062	Impeller – HPGF300	1
	078940092	Impeller – HPGF500	1
	078940012	Impeller – HPGF750	1
26	078891012	Plate – Seal – HPGH	1
	078891022	Plate – Seal – HPGF	1
27	001500361	O-Ring	1
28	001500191	O-Ring – HPGH	1
	001500371	O-Ring – HPGF	1
29	009750121	Snap Ring	1
30	24709110000	Oil – Paraffinic	1
31	078880032	Brg. Housing – HPGH	1
	078880022	Brg. Housing – HPGF	1
32	005680071	Screw – Cap	4
33	002990021	Ring – Ret. Stator	1
34	22574C210	Stator – HPGH300 – 230/1/60	1
	24407C209	Stator – HPGH300 – 200/1/60	1
	22574C200	Stator – HPGH500 – 230/1/60	1
	24407C209	Stator – HPGH500 – 200/1/60	1
	146920031	Stator – HPGH500 – 230,460/3/60	1
	24407C209	Stator – HPGH500 – 200/3/60	1
	22574C204	Stator – HPGH500 – 575/3/60	1
	22574C216	Stator – HPGH750 – 230,460/3/60	1
	22574C217	Stator – HPGH750 – 575/3/60	1
	24407C200	Stator – HPGF300 – 230/1/60	1
	24407C209	Stator – HPGF300 – 200/1/60	1
	24407C209	Stator – HPGF300 – 200/3/60	1

HPGF/HPGH



Item No.	Eng. No.	Part Description	Qty.
	24407C202	Stator – HPGF300 – 230,460/3/60	1
	24407C203	Stator – HPGF300 – 575/3/60	1
	24407C204	Stator – HPGF500 – 230/1/60	1
	24407C209	Stator – HPGF500 – 200/1/60	1
	24407C209	Stator – HPGF500 – 200/3/60	1
	24407C206	Stator – HPGF500 – 230,460/3/60	1
	24407C207	Stator – HPGF500 – 575/3/60	1
	24407C209	Stator – HPGF750 – 200/230/460/3/60	1
	24407C210	Stator – HPGF750 – 575/3/60	1
35	080530175	Rotor/Shaft HPGH300 – 200/230/1/60	1
	084340185	Rotor/Shaft HPGH300 – 200/230/460/1/60	1
	007640185	Rotor/Shaft HPGH500 – 200,230/1/60	1
	007640185	Rotor/Shaft HPGH750 – 200,230,460,575/3/60	1
	007650215	Rotor/Shaft HPGH500 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF300/500 – 200,230/1/60	1
	013290275	Rotor/Shaft HPGF300 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF500 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF750 – 200,230,460,575/3/60	1
36	002940032	Housing – Motor	1
37	005170051	Screw – Cap	4
38	005890021	Bolt – Eye	2
39	19100A029	Screw – Cap	2
40	12672A001	W.C. – HPGH & HPGHH 3 HP except 460/3	6
		W.C. – HPGH500 & HPGHH500; 200/3, 230/3, 575/3	6
		W.C. – HPGH750 & HPGHH750; 230/3, 575/3	6
		W.C. – All HPGH & HPGHH 460/3	9
		W.C. – HPGH500 & HPGHH500; 200/1, 230/3	3

Item No.	Eng. No.	Part Description	Qty.
		W.C. – HPGH750 & HPGHH750; 200/3	3
		W.C. – HPGF & HPGFH 3 HP except 460/3	6
		W.C. – HPGF500 & HPGFH500; 200/3, 230/3, 575/3	6
		W.C. – HPGH750 & HPGHH750; 575/3	6
		W.C. – HPGF300,500 & HPGFH300,500; 460/3	9
		W.C. – HPGH500 & HPGHH500; 200/1, 230/3	3
		W.C. – HPGH750 & HPGHH750; 200/3, 230/3, 460/3	3
41	010060011	W.C. – HPGH(H) 3 HP, 5 HP & 7.5 HP; 230/3	1
		W.C. – HPGH(H) 500; 200/1, 230/1	3
		W.C. – HPGH(H) 750; 230/3	3
		W.C. – HPGF(H) 3 HP, 5 HP; 230/3	1
		W.C. – HPGF(H) 5 HP; 200/1, 230/1 & 7.5 HP; 200/3	3
		W.C. – HPGF(H) 7.5 HP; 230/3	4
		W.C. – HPGF(H) 7.5 HP; 460/3	6
		Note: W.C. Stands for Wire Connector	
	517004037	HPGH Seal Kit – Ceramic	
	517004047	HPGF Seal Kit – Ceramic	
	517005037	HPGH Seal Kit – Carbide/Buna	
	517005057	HPGF Seal Kit – Carbide/Buna	
	517005047	HPGH Seal Kit – Carbide/Viton	
	517005067	HPGF Seal Kit – Carbide/Viton	
	006280501	HPGF/HPGH Impeller Shim .005"	
	006280511	HPGF/HPGH Impeller Shim .010"	
	006280521	HPGF/HPGH Impeller Shim .020"	
	006280461	HPGF Cutter Shim .005"	
	006280491	HPGH Cutter Shim .005"	

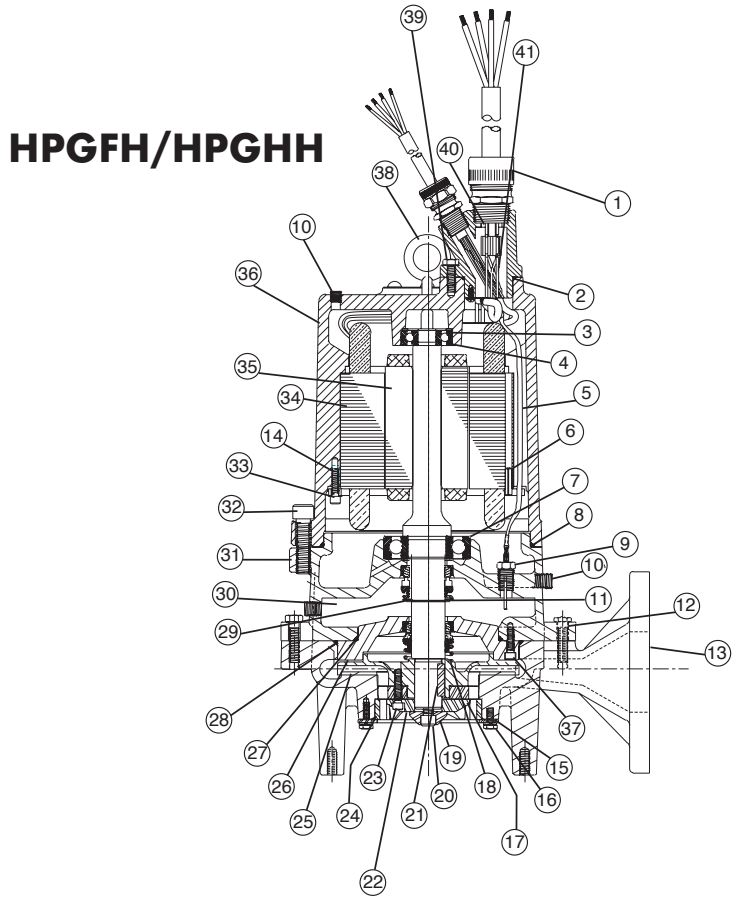
Note: Amount of oil required will vary depending on stator size, fill to above motor windings.

For pumps built prior to 04/01/09

HPGF/HPGFH, HPGH/HPGHH Parts List

For use with product built with Regal Beloit motor.

Item No.	Eng. No.	Part Description	Qty.
1	RTF	35' Cord Assembly	1
2	008340151	O-Ring	1
3	000640031	Spring – Brg.	1
4	000650211	Brg.	1
5	060000141	Seal Fail Wire – HPGH	1
	060000551	Seal Fail Wire – HPGF	
6	054540011	Pin – Roll	1
7	000650181	Brg.	1
8	001500571	O-Ring	1
9	084720015	Seal Fail – Ass'y	1
10	05022A092	Pipe Plug	3
11	049160001	Mechanical Seal, Upper (CE-B)	1
12	19101A021	Screw – Cap	9
13	078920022	Volute Hor. Discharge – HPGHH 3 & 5 HP	1
	078920002	Volute Vert. Discharge – HPGH 3 & 5 HP	1
	078920032	Volute Hor. Discharge – HPGHH 7.5 HP	1
	078920012	Volute Vert. Discharge – HPGH 7.5 HP	1
	078910022	Volute HPGFH, Horizontal Discharge	
	078910002	Volute HPGF, Vertical Discharge	
14	005170081	Screw – Cap	4
15	079113041	Cutter Retainer – HPGH	1
	079070001	Cutter Retainer – HPGF	
16	19099A029	Screw – Cap	3
17	079090002	Cutter Axial – HPGH	1
	079040002	Cutter Axial – HPGF	
18	049160001	Mechanical Seal, Lower (CE-B)	1
	049160011	Mechanical Seal, Lower (TC-B)	1
	049160041	Mechanical Seal, Lower (TC-V)	1
19	084220031	Washer – Impeller	1
20	148850011	Screw – Cap	1
21	065790031	Key – Square	1
22	079080002	Cutter Radial – HPGH	1
	079030002	Cutter Radial – HPGF	
23	06106A019	Screw – Cap	2
24	079100002	Cutter Stationary – HPGH	1
	079050002	Cutter Stationary – HPGF	
25	078930152	Impeller – 4.50" – HPGH	1
	078930062	Impeller – 5.50" – HPGH	1
	078930122	Impeller – 6.87" – HPGH	1
	078940062	Impeller – HPGF300	1
	078940092	Impeller – HPGF500	1
	078940012	Impeller – HPGF750	1
26	078891012	Plate – Seal – HPGH	1
	078891022	Plate – Seal – HPGF	1
27	001500361	O-Ring	1
28	001500191	O-Ring – HPGH	1
	001500371	O-Ring – HPGF	1
29	009750121	Snap Ring	1
30	24709110000	Oil – Paraffinic	1
31	078880032	Brg. Housing – HPGH	1
	078880022	Brg. Housing – HPGF	1
32	005680071	Screw – Cap	4
33	002990021	Ring – Ret. Stator	1
34	22574C210	Stator – HPGH300 – 230/1/60	1
	24407C209	Stator – HPGH300 – 200/1/60	1
	22574C200	Stator – HPGH500 – 230/1/60	1
	24407C209	Stator – HPGH500 – 200/1/60	1
	146920031	Stator – HPGH500 – 230,460/3/60	1
	24407C209	Stator – HPGH500 – 200/3/60	1
	22574C204	Stator – HPGH500 – 575/3/60	1
	22574C216	Stator – HPGH750 – 230,460/3/60	1
	22574C217	Stator – HPGH750 – 575/3/60	1
	24407C200	Stator – HPGF300 – 230/1/60	1
	24407C209	Stator – HPGF300 – 200/1/60	1
	24407C209	Stator – HPGF300 – 200/3/60	1
	24407C202	Stator – HPGF300 – 230,460/3/60	1
	24407C203	Stator – HPGF300 – 575/3/60	1



Item No.	Eng. No.	Part Description	Qty.
	24407C204	Stator – HPGF500 – 230/1/60	1
	24407C209	Stator – HPGF500 – 200/1/60	1
	24407C209	Stator – HPGF500 – 200/3/60	1
	24407C206	Stator – HPGF500 – 230,460/3/60	1
	24407C207	Stator – HPGF500 – 575/3/60	1
	24407C209	Stator – HPGF750 – 200/3/60	1
	24407C209	Stator – HPGF750 – 230,460/3/60	1
	24407C210	Stator – HPGF750 – 575/3/60	1
35	080530175	Rotor/Shaft HPGH300 – 200,230/1/60	1
	007640185	Rotor/Shaft HPGH500 – 200,230/1/60	1
	007640185	Rotor/Shaft HPGH750 – 200,230,460,575/3/60	1
	007650215	Rotor/Shaft HPGH500 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF300/500 – 200,230/1/60	1
	013290275	Rotor/Shaft HPGF300 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF500 – 200,230,460,575/3/60	1
	013290275	Rotor/Shaft HPGF750 – 200,230,460,575/3/60	1
36	002940032	Housing – Motor	1
37	005170051	Screw – Cap	4
38	005890021	Bolt – Eye	2
39	19100A029	Screw – Cap	2
40	12672A001	W.C. – HPGH & HPGHH 3 HP except 460/3	6
		W.C. – HPGH500 & HPGHH500; 200/3, 230/3, 575/3	6
		W.C. – HPGH750 & HPGHH750; 230/3, 575/3	6
		W.C. – All HPGH & HPGHH 460/3	9
		W.C. – HPGH500 & HPGHH500; 200/1, 230/3	3
		W.C. – HPGH750 & HPGHH750; 200/3	3
		W.C. – HPGF & HPGFH 3 HP except 460/3	6

Item No.	Eng. No.	Part Description	Qty.
		W.C. – HPGF500 & HPGFH500; 200/3, 230/3, 575/3	6
		W.C. – HPGH750 & HPGHH750; 575/3	6
		W.C. – HPGF300,500 & HPGFH300,500; 460/3	9
		W.C. – HPGH500 & HPGHH500; 200/1, 230/3	3
		W.C. – HPGH750 & HPGHH750; 200/3, 230/3, 460/3	3
41	010060011	W.C. – HPGH(H) 3 HP, 5 HP & 7.5 HP; 230/3	1
		W.C. – HPGH(H) 500; 200/1, 230/1	3
		W.C. – HPGH(H) 750; 230/3	3
		W.C. – HPGF(H) 3 HP, 5 HP; 230/3	1
		W.C. – HPGF(H) 5 HP; 200/1, 230/1 & 7.5 HP; 200/3	3
		W.C. – HPGF(H) 7.5 HP; 230/3	4
		W.C. – HPGF(H) 7.5 HP; 460/3	6
		Note: W.C. Stands for Wire Connector	
	517004037	HPGH Seal Kit – Ceramic	
	517004047	HPGF Seal Kit – Ceramic	
	517005037	HPGH Seal Kit – Carbide/Buna	
	517005057	HPGF Seal Kit – Carbide/Buna	
	517005047	HPGH Seal Kit – Carbide/Viton	
	517005067	HPGF Seal Kit – Carbide/Viton	
	006280501	HPGF/HPGH Impeller Shim .005"	
	006280511	HPGF/HPGH Impeller Shim .010"	
	006280521	HPGF/HPGH Impeller Shim .020"	
	006280461	HPGF Cutter Shim .005"	
	006280491	HPGH Cutter Shim .005"	

Note: Amount of oil required will vary depending on stator size, fill to above motor windings.

STANDARD LIMITED WARRANTY

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

During the warranty period and subject to the conditions set forth, Pentair Hydromatic, at its discretion, will repair or replace to the original user, the parts that prove defective in materials and workmanship. Pentair 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. Submit at the time of start up through the Pentair Hydromatic website: http://forms.pentairliterature.com/startupform/startupform.asp?type=h. Warranty is effective only if Pentair 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. Pentair Hydromatic will cover only the lower seal and labor thereof for all dual seal pumps. Under no circumstance will Pentair 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 Pentair 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 that 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 that has been repaired or altered by anyone other than Pentair Hydromatic or an authorized Pentair Hydromatic service provider; (h) to any unit that has been repaired using non factory specified/ OEM parts.

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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 Pentair Hydromatic shall vary or expand the provision hereof.

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