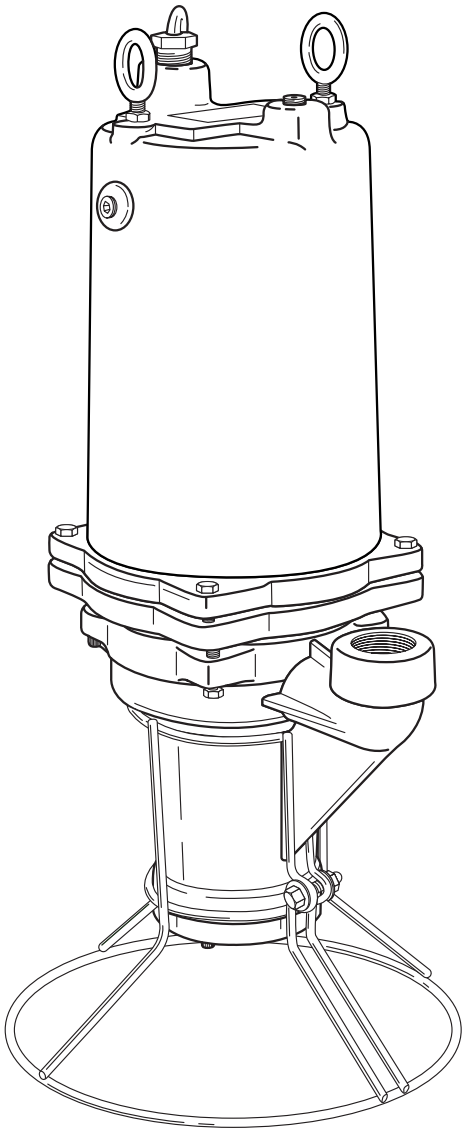
PENTAIR

HYDROMATIC®



MODELS HPD200–60 Hz and HPDY200 – 50 Hz

SUBMERSIBLE POSITIVE DISPLACEMENT GRINDER PUMP

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.

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GENERAL INFORMATION

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.

PUMP CAUTIONS AND WARNINGS

DANGER: Risk of Electrical Shock or Electrocution. May result in serious injury or death or fire hazard. Installer must disconnect all electrical sources prior to installation, handling or servicing. Only qualified personnel may install this system. NFPA 70: National Electric Code® (NEC) or local codes must be followed. System must be properly grounded according to NEC. Do not lift pump by power cord.

DANGER: Biohazard Risk. Once wastewater source has been connected to system, biohazard risk exists. Installer(s) and/or service personnel must use proper personal protective equipment and follow handling procedures per OSHA 29 CFR 1910.1030 when handling equipment after wastewater source has been connected to system.

DANGER: Risk of Asphyxiation. Installer(s) and/or service personnel must use proper personal protective equipment and follow OSHA 29 CFR 1910.146 or OSHA 29 CFR 1926. Pump may be installed in a location classified as a confined space.

DANGER: Risk of Fire or Explosion. Do not smoke or use open flames in or around this system. HPD(Y)200 systems are not intended for use in hazardous locations per NFPA 70: National Electric Code. Do not pump flammable liquids.

DANGER: Cutting Risk. Risk of serious cutting or amputation exists. Disconnect all power sources prior to servicing pump or grinding mechanism. Pump may start without warning. Grinding mechanism is extremely sharp. Use caution when handling grinder mechanism.

DO NOT modify the cord strain relief. When wiring to a system control, connect the pump ground lead to the system ground.

DO NOT run the pump dry. Dry running can overheat the pump (causing burns to anyone handling it) and will void the warranty.

The pump normally runs hot. To avoid burns, allow it to cool for 30 minutes after shutdown before handling it.

Submersible grinder pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common. This specialized pump is designed to incorporate a grinding mechanism to remove wastewater particulate and pump the resulting slurry from a residential structure to a collection system.

Examine all lifting devices, rope or chain for damage before and after each lift.

DO NOT exceed manufacturers recommendation for maximum performance, as this could cause the motor to overheat.

Secure the pump in its operating position so it cannot tip over, fall or slide.

DO NOT pump without safety devices in place.

Basin must be vented in accordance with the local plumbing codes.

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 INSTALLATION

The cutter blades are on the suction side of the positive displacement pump impeller and discharge directly into the inlet of the impeller. The integral stainless steel pump motor shaft is sealed by a single mechanical seal.

Two ball bearings are used to handle the loads in this design. The upper bearing takes radial loads, while the larger lower bearing handles both thrust and radial loads. Both bearings are permanently lubricated by the dielectric oil in the motor housing. The motor is fixed within the motor housing and is completely submerged in the dielectric oil for maximum heat transfer. The motor housing and seal chamber are completely sealed with O-rings located at mating part faces.

The power cord entry system is designed to give reliable sealing. The first seal is made by compression of a rubber gasket by the cord grip, thereby expanding to fill the cord entry of the motor housing. The cord grip forms a second seal around the molded cord end and provides strain relief.

Application:
These pumps are designed for residential sewage discharge applications with a pH ranging from 5 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.

Pump Not Operating or in Storage:
Pumps with carbon ceramic seals must be manually rotated (6 revolutions) after setting nonoperational for 3 months or longer and prior to electrical start-up.

Installing Pump in Sump:
Before installing pump in sump, lay it on its side and rotate grinder shaft. Stator boot and rotor may be slightly stuck due to factory test water so it must be broken loose by rotating shaft with a screwdriver at the grinder end. The common shaft should turn with a slight resistance. Slight lubrication by means of a small amount of lubricating oil down the cavity inlet of the stator boot and rotating shaft to prelube stator boot and rotor before start is recommended. 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 that the 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 and economical installation.

Making Electrical Connections:
All electrical wiring must be in accordance with local code, and only qualified electricians should make the installation. All wires should be checked for shorts to ground with an ohmmeter or megger after the connections are made. This is important, as one grounded wire can cause considerable trouble.

PUMP OPERATIONS

To reduce the risk of electrical shock, install only on a GFCI protected circuit. See pump nameplate for electrical ratings.

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

1. When grinder pump is single phase, no rotation check is necessary. Correct rotation is counter-clockwise.
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. Lift pump until sealing flange is open to vent off trapped air. Lower pump, open discharge valve, and start the pump again.

CAUTION: Positive displacement pump is designed to operate at minimum 5 GPM capacity. Running pump at shut-off condition or with gate valve closed can result in damage to the pumping stator boot and rotor.

5. Level control should be set so that pump turns off when level is about 2 inches above inlet of pump suction and turns on when level is about 2 inches above motor.

6. If problems occur, check power source.
   Make sure a separate supply line is available.
   Verify voltage supply.
7. Check resistance of windings. If not within guidelines, return pump to authorized factory service center.

As the motors are oil filled, no lubrication or other maintenance is required. Pump should be checked every quarter for corrosion and wear.

PUMP MAINTENANCE

Inspecting Cutter Parts:

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. Remove screws and stationary cutter ring assembly. Radial cutter can be screwed off the common shaft by lightly tapping cutter and unscrewing counterclockwise while holding end of common shaft with a screwdriver in slot at cutter end of shaft.
5. Radial cutter and stationary cutter can now be inspected for wear and replaced if necessary.

TROUBLESHOOTING

No liquid delivered

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

Insufficient liquid delivered

1. Discharge head too high
2. Cutter partially plugged or damaged
3. Stator boot or rotor damaged or worn
4. Speed too low

Insufficient discharge pressure

1. Air or gases in liquid
2. Stator boot or rotor damaged or worn
3. Speed too low

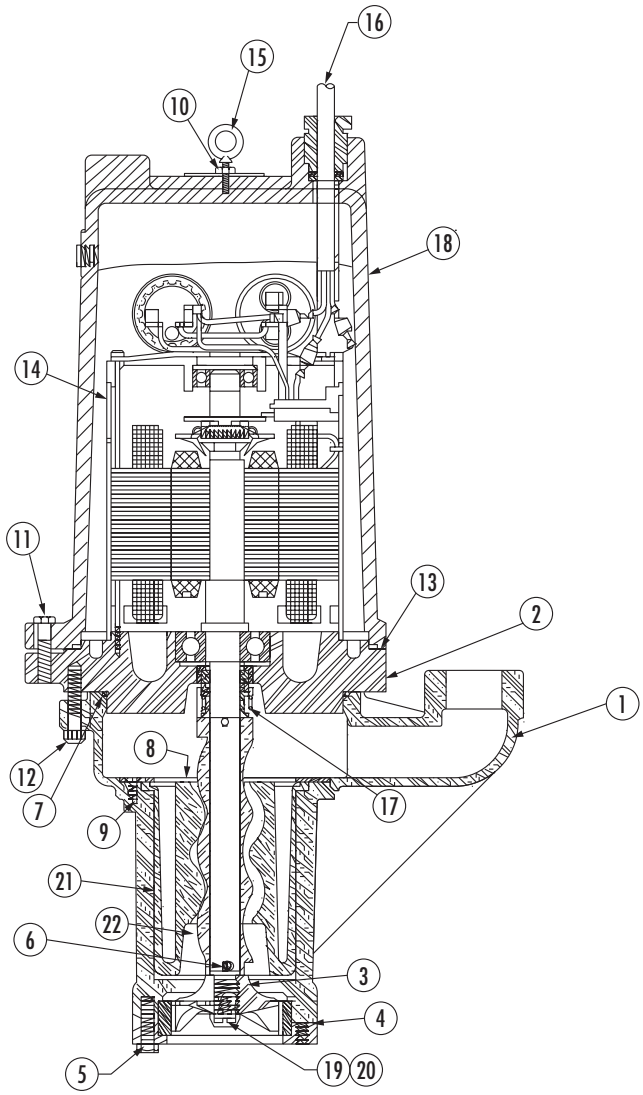
Pump overloads motor

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

Pump is noisy

1. Defective bearings
2. No diametrical clearance between radial cutter and cutter ring

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



COMMON PARTS LIST

Reference	Part Number	Description	Qty.
1	146240002	Case – Volute	1
2	145690012	Housing – Seal/Bearing	1
3	21582B000K	Cutter – Radial	1
4	21584B000K	Cutter – Stationary, Assy	1
5	19099A023	Screw – Cap	3
6	001800031	Pin – Roll, Lower	1
7	008340231	O-Ring	1
8	146270001	Ring – Retainer	1
9	008290071	Screw – Ring Retainer	3
10	010320021	Hex Nut	2
11	19100A012	Screw – Cap	4
12	001780061	Screw – Socket	4
13	05014A181	O-Ring	1
14	145701001	Motor (1ø, 60 Hz – HPD200)	1
	145701011	Motor (1ø, 50 Hz – HPDY200)	1
	145702011	Motor (3ø, 50 Hz – HPDY200)	1
15	21929A002	Bolt – Eye	2
16	25338B001	Power Cord, 1ø, 60 Hz	1
	145885301	Power Cord, 1ø, 50 Hz	1
	145885401	Power Cord, 3ø, 50 Hz	1
17	145730001	Seal – Shaft	1
18	145890021	Housing – Motor	1
19	148850001	Screw – Shaft, Motor	1
20	055700051	Washer – Shaft	1
21	147610001	Stator – Pump	1
22	147621011	Rotor – Helix	1

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.

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

Liability Limitation: IN NO EVENT SHALL PENTAIR HYDROMATIC BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY PENTAIR HYDROMATIC PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. PENTAIR HYDROMATIC DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION. PENTAIR 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 Pentair Hydromatic shall vary or expand the provision hereof.

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Warranty Rev. 12/13