PENTAIR

HYDROMATIC®

INSTALLATION AND SERVICE MANUAL

OSP50/OSP50AB
Submersible Effluent Pumps

Now Includes OSP50AB Parts List

NOTE! TO THE INSTALLER: Please make sure you provide this manual to the owner of the pumping equipment or to the responsible party who maintains the system.

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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.

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 Warning

To reduce risk of electrical shock:

1. **Risk of Electrical Shock:**

   This pump has not been investigated for use in swimming pool areas.

2. **Risk of Electrical Shock:**

   Connect only to a properly grounded receptacle.

   Septic tank is to be vented in accordance with local plumbing codes.

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

   If a septic sump condition exists and if entry into sump is necessary, then (1) provide proper safety precautions per OSHA requirements and (2) do not enter sump until these precautions are strictly adhered to.

   Do not install pump in location classified as hazardous per N.E.C., ANSI/NFPA 70-2001.

   Failure to heed above cautions could result in injury or death.

Installation Instructions

These important instructions must be followed for satisfactory performance of your pump:

1. Provide proper sump (recommended minimum sump diameter is 18").
2. Do not set pump directly on the bottom of the sump if it is not solid. Raise the pump by placing bricks or concrete blocks underneath it.
3. Make sure sump is free of string, cloth, nails, gravel, etc. before installing pump.
4. Pump is to be connected to a properly grounded, grounding type receptacle only.
5. Do not remove ground pin from electrical plug.
6. Do not use an extension cord.
7. For proper automatic operation, make sure the pump power cord is plugged into the piggyback receptacle on the diaphragm switch cord.
8. Connect to separate electrical circuit taken directly from main switch.
9. Use steel or plastic pipe for all connecting lines between pump and sewer outlet.

NOTE: Some city regulations do not allow installing a pump with plastic pipe. Check local regulations.

10. In applications where the pump may sit idle for months at a time, it is recommended that the pump(s) be cycled every month to ensure the pumping system is working properly when needed.
11. HYDROMATIC check valve should be installed in discharge pipe at least 12" above the discharge outlet of the pump.
12. For greater protection, an audible alarm, such as the Hydromatic Q Alert, should be used with all pump installations to indicate a high water condition exists.

Pump Installation

OSP50 Shown

Pump Servicing

Read the following instructions carefully before replacing any parts. Reasonable care and safe methods should be practiced. Check local codes and requirements before installation. Only competent electricians should make the installations.

Servicing should be performed only by knowledgeable pump service contractors or authorized service stations.

WARNING: Always disconnect the pump from power source before handling or making any adjustments. Always wear rubber boots when there is water on the floor and you must unplug the pump or make any adjustments.

1. **Removing pump from sump.** Before removing pump from sump for repair, check to see if the trouble could simply be a blown fuse, tripped circuit breaker, or a power cord not completely inserted into the receptacle.

   NOTE: Automatic thermal overload protects the sealed-in oil motor. Running dry may overheat the motor and activate the overload protector. This will close the circuit when the motor cools and allow pump to restart. If condition continues to exist, it may cause premature pump failure.

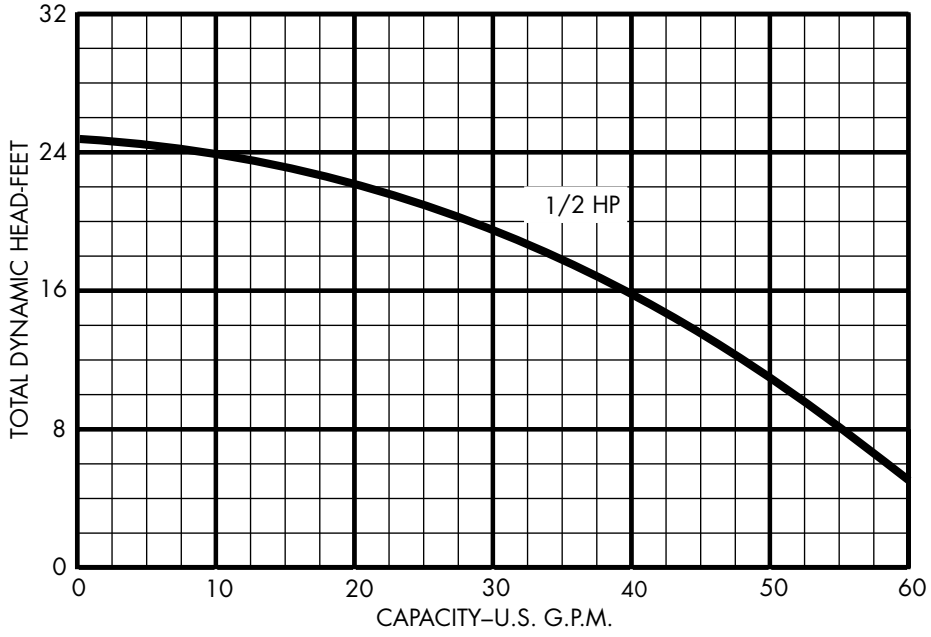
   Unplug the power cord and pull the pump, by the handle, from the sump. Sandblast, if possible, any dirt or trash from the outside of the pump before dismantling.

2. **Check diaphragm switch.** If the unit is being operated by the automatic diaphragm switch, unplug the pump from the piggyback receptacle and plug the pump directly into the power source. If the pump starts each time it is plugged directly into the receptacle and does not start each time when plugged into the piggyback switch with the diaphragm switch pressed into a start position, replace the complete piggyback switch assembly and retest with the new assembly.

3. **Check for impeller blockage.** Check for an obstruction in the impeller cavity by laying the pump on its side and inserting a screwdriver through the hole in the foot and baffle plate (28) and the bottom plate (26) and turning the rotor and shaft (16). It should turn freely. If the impeller hangs up or there is an indication of impeller blockage, the foot and baffle plate must be removed by removing the three hex head cap screws (29) and the bottom plate removed by removing the five hex head cap screws (27). Clear the impeller of its obstruction and clean the impeller, and reassemble.

4. **Check power cord.** Check the power cord (5) for brittleness or for any cuts or nicks in the insulation. Using an ohmmeter, check the continuity of the power cord. If any of these tests fail, the power cord should be replaced. To replace power cord, unscrew the nut on the cord, pull cord up and discard damaged power cord. Add pipe sealant to threads and reinstall by pushing cord onto pins and tighten nut.

5. **Check for air lock.** A sump pump is said to be air locked if water traps in the pump and it cannot get out, thus preventing pump from operating.



HYDROMATIC pumps have a small air vent hole in the impeller cavity to let out trapped air. If this hole becomes plugged, pump may air lock. To break the air lock, use a small screw-driver to clear hole in the impeller cavity.

As a secondary precaution in installations of this type — 1⁄16" hole should be drilled in the discharge pipe below the check valve. The check valve should be 12 to 18 inches above pump discharge. Do not put check valve directly into pump discharge opening.

NOTE: In sumps where the pump is operating daily, air locking rarely occurs.

6. **Check the oil.** Remove the pipe plug (4) in the top of the motor cover and drain oil into a clean, dry container. A milky appearance to the oil indicates that water has entered through either worn out or damaged seals (23, 24), seal ring (20), or cord nut.

7. **Remove the motor cover.** Remove the four hex head cap screws (22). Use a screwdriver to pry the motor cover (19) from the volute case (21) at the fastening ears, being careful not to cut the seal ring (20) with the screwdriver or crack the motor cover. Lift the motor cover until it clears the stator (15).

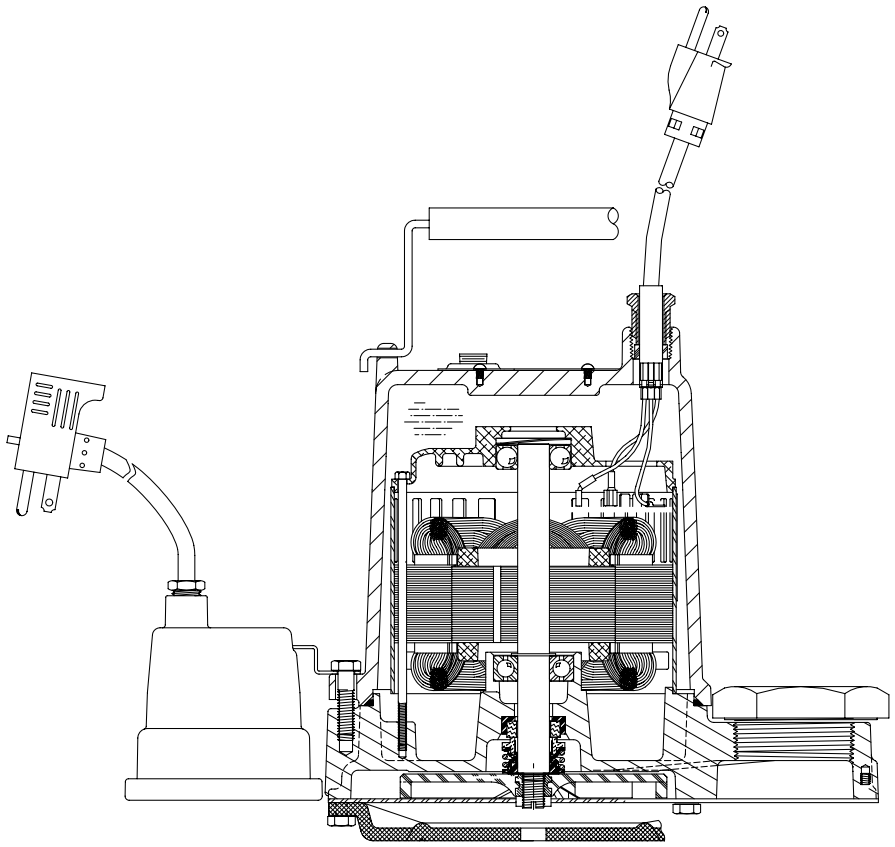
8. **Check for short.** Disconnect the stator leads (7, 8, 9) from the connector (6). Use an ohmmeter to check the continuity of the stator. If stator fails to pass the continuity test, it must be replaced.

9. **Remove the stator.** To remove the stator, remove the four hex head screws (12) and the stator plate (13). Lift the stator off the volute case (21) and set aside.

10. **Remove the impeller.** To remove the impeller (25), hold the rotor (16) in your hand and tap the impeller with a plastic or rubber mallet so as to turn the impeller counterclockwise.

11. **Check the seal.** Remove the rotating portion of seal (24) from shaft by inserting a screwdriver under the edge of the seal and lifting it off without damaging seal. Inspect the seal face for any nicks or an uneven seating of seal face. If any are present, replace the seal. (See Step 14.)

12. **Remove rotor and shaft.** Tap the rotor shaft (16) at the impeller end of the shaft with a plastic mallet to remove the rotor and shaft. Inspect the bearings (17). If they do not rotate freely and smoothly, they should be replaced. When new bearings are ready to be added onto the shaft, do not push on outer face of bearings. This will damage bearings. If a rotor and shaft are ordered from HYDROMATIC, the bearings will be supplied already pressed on the shaft.



Pump Servicing

13. **Remove seal.** Remove the old stationary portion of the seal (23) from the case (21) by inserting a screwdriver into the seal housing of the case from the top of the case and tapping lightly with a hammer. Clean the seal area of the case with a clean cloth.

14. **Reinstall the rotor and shaft assembly.** Push on outer face to seat bearing in volute case.

15. **Reinstall seal.** Apply an oil lubricant to the new stationary portion of the seal (23) and press into the case (21). Coat the new rotating portion of seal with lubricant and press into place on the rotor shaft with the rubber ring facing the impeller.

16. **Reinstall impeller.** Add a drop of Locktite 277 to the shaft and screw the impeller on hand tight. The impeller will force the rotating portion of seal into position.

17. **Replace seal ring.** Remove the old square seal ring (20) from the volute and stretch on a new ring coated with O-ring lube.

    Do not roll the ring onto the volute or improper seating and water leakage into the motor housing will result.

18. **Reinstall the stator.** Place the stator (15) in the volute case (21) so the stator bolt holes line up. Lay the stator plate (13) on the stator (15) and line up with stator bolt holes. Put in the stator bolts (12) and tighten evenly to prevent cocking of the stator. Push the connectors of the power cord onto the stator terminals.

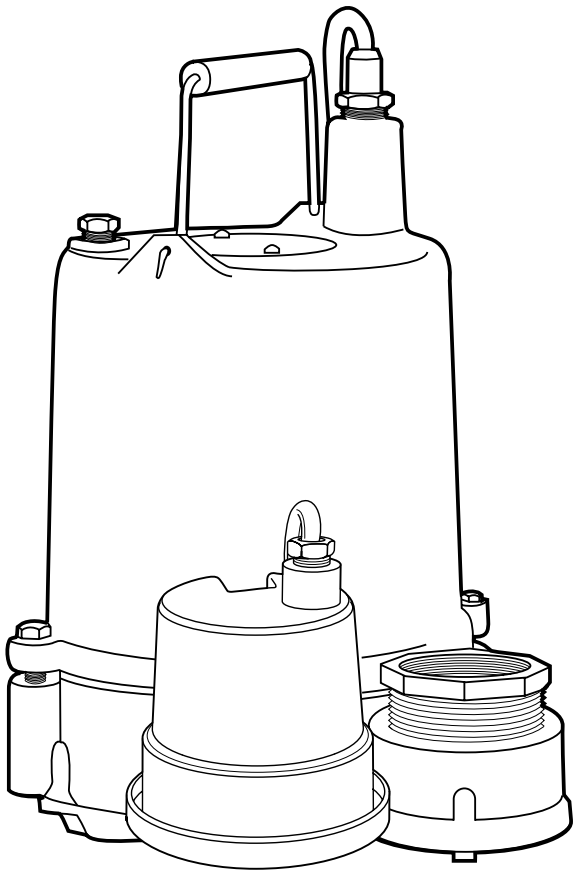
19. **Reinstall motor housing.** Tighten down the four hex head cap screws (22) evenly to prevent cocking of motor housing and achieving an uneven seal on the seal ring (20).

20. **Oil.** Fill the motor cap with high grade transformer oil such as WOCO Premium 100 oil or equivalent to at least 1⁄4" over motor windings (.54 gallon).

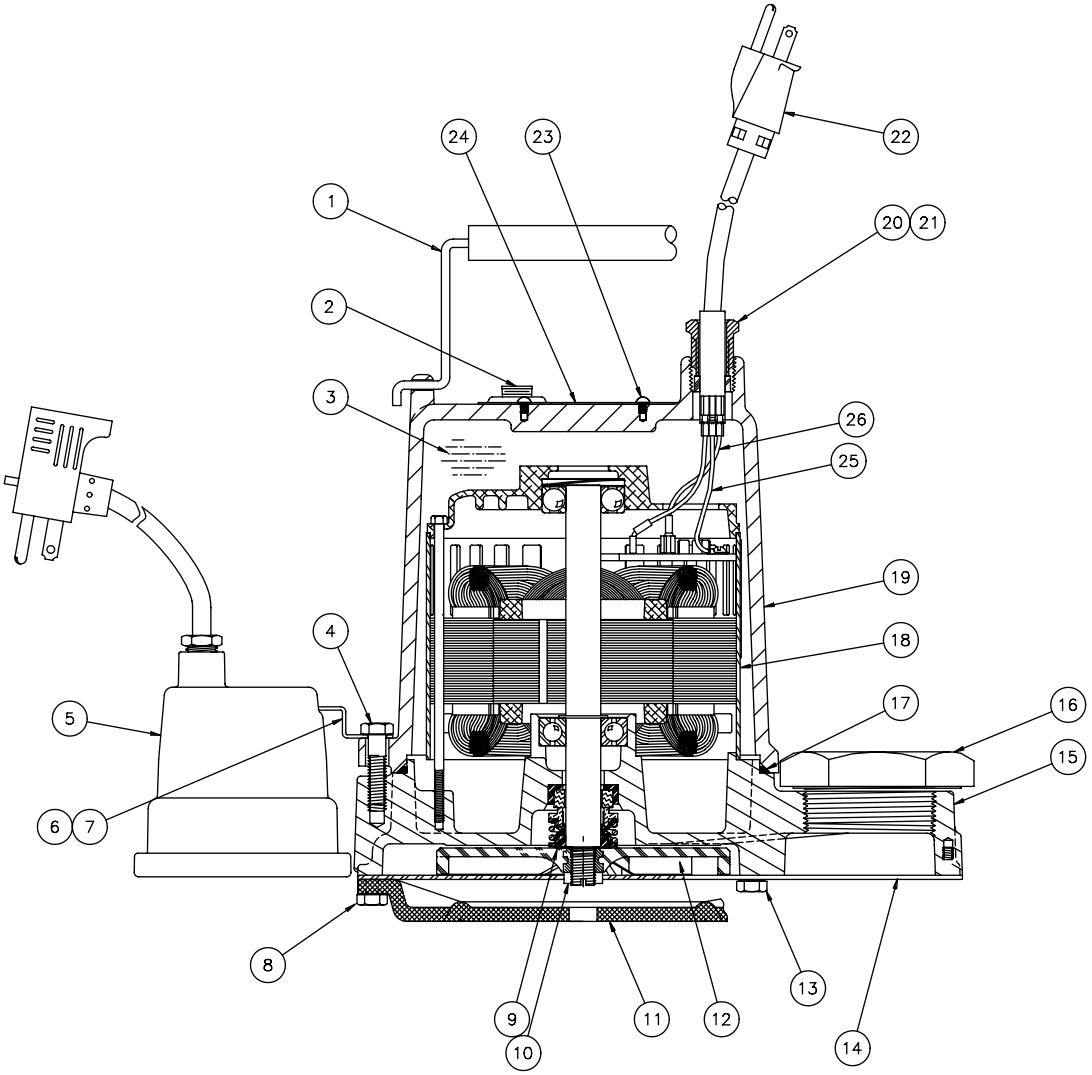
    Do not fill the motor housing completely — allow airspace for oil expansion.

21. **Reinstall oil pipe plug.** Coat pipe threads with thread sealant before installing.

22. **Check pump.** Plug the power cord into a grounded outlet and start pump by applying pressure to the switch diaphragm (automatic only — manual should start when power is applied). Motor should run smoothly, be free of vibration and stop when pressure is removed.



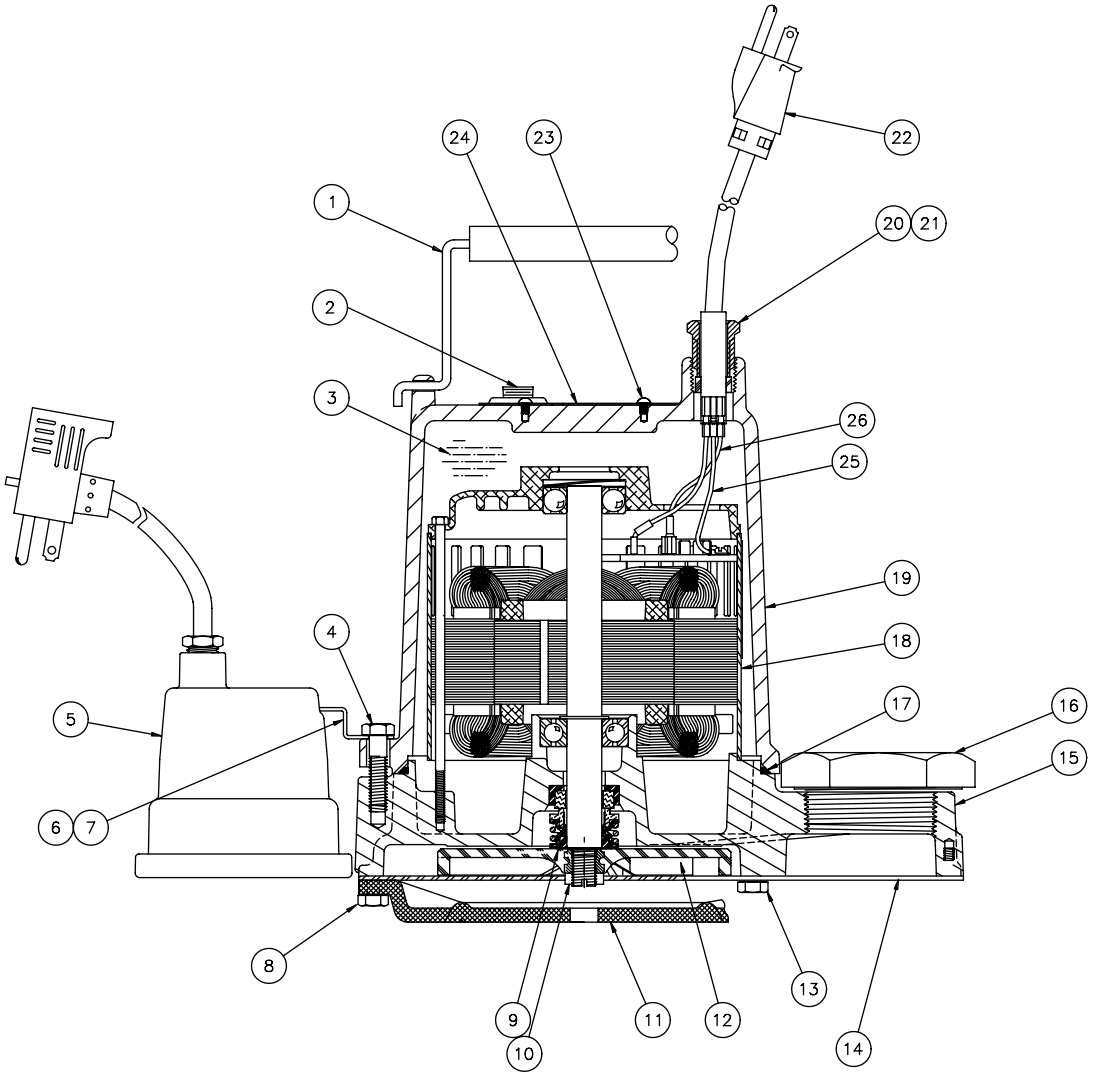
OSP50
Parts List



Ref. No.	Part No.	Description	Qty.
1	60-000-5	Handle	1
2	14981-001-1	Pipe Plug	1
3		Oil (Purchase locally)	.54 gal.
4	19100A012	Bolt, 5/16-18 x 1-1/4" Lg.	4
5*	14974-008-5	Diaphragm Switch (6-1/2" Range), 115V–10'	1
5*	14974-009-5	Diaphragm Switch (6-1/2" Range), 115V–20'	1
5*	14974-010-5	Diaphragm Switch (6-1/2" Range), 230V–20'	1
6*	5502-005-1	Bracket	1
7*	30-021-1	Screw, 10-32 x 1/2" Lg.	1
8	19-004-1	Screw, 10-24 x 5/8" Lg.	3
9	14525A010	Seal	1
10*	19109A070	Jamb Nut	1
11	21-000-2	Foot & Baffle Plate	1
12*	8498-007-1	Impeller	1
12	16-000-2	Optional Bronze Impeller	1
13	19-002-1	Screw, 10-24 x 3/8" Lg.	5
14	18-002-1	Bottom Plate	1
15	12328-002-2	Volute	1
16	12185-001-1	Reducer Bushing, 2" x 1-1/2"	1

Ref. No.	Part No.	Description	Qty.
17	77-003-1	O-Ring	1
18	13349-000-1	Motor, 115V	1
18	13592-000-1	Motor, 230V	1
19	56-036-2	MTR HSG	1
20	75-005-1	Cord Nut	1
21	139-014-1	Seal Ring	1
22	14623-010-1	Power Cord, 115V–10'	1
22	14623-020-1	Power Cord, 115V–20'	1
22	14623-220-1	Power Cord, 230V–20'	1
23	4580-001-1	Drivescrew	2
24	13425-069-1	Nameplate	1
25	6000-053-1	Grnd Wire/Terminal Assembly (Grn)	1
26	6000-061-1	Lead Wire/Terminal Assembly (Blk)	2
		* AUTOMATIC MODELS	

OSP50AB
Parts List



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	60-000-5	Handle	1	14	18-102-1	Bottom Plate Bz.	1
2	05022A088	Pipe Plug 1/4" Sckt. Hd.	1	15	12328-102-2	Volute Bz.	1
3		Oil	.54 gal	16	12185-001-1	Reducing Bushing	1
4	19100A012	Bolt 5/16 - 18 x 1" Lg.	4	17	77-003-1	O-Ring	1
5	00057-044-5	Power Cord Assembly, 115V–20'	1	18	13349-000-1	Motor, 115V	1
5	14974-309-5	Diaphragm Switch	1	19	56-013-2	Housing, Motor	1
6	30-021-1	10-32 x 1/2 Screw	1	20	75-007-1	Nut Cord Hex	2
7	5502-005-1	Switch Bracket	1	21	139-014-1	Seal Ring	1
8	19-004-1	Screw, 10-24 x 5/8" Lg.	3	22	14623-020-1	Cord	1
9	14525A010	Seal	1	23	4580-001-1	Screw-Drive # 6 5/16 sst	2
10	19109A070	Jamb Nut	1	24	13425-069-1	Nameplate, 115V	1
11	33-000-2	Foot & Baffle Plate Bz.	1	25	6000-053-1	Green Lead	1
12	16-000-2	Impeller Bz.	1	26	6000-061-1	Black Lead	2
13	19-002-1	Screw, 10-24 x 3/8" Lg.	5				

Pump Notes

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Limited Warranty

HYDROMATIC warrants to the original consumer purchaser (“Purchaser” or “You”) of HYDROMATIC Sump Pumps, Effluent Pumps, Sewage Pumps (other than 2-1/2”), and Package Systems, that they will be free from defects in material and workmanship for the Warranty Period of 36 months from date of manufacture.

Our warranty will not apply to any product that, in our sole judgement, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that three phase motors must be protected by three-leg, ambient compensated, extra-quick trip overload relays of the recommended size or the warranty is void.

Your only remedy, and HYDROMATIC’s only duty, is that HYDROMATIC repair or replace defective products (at HYDROMATIC’s choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer as soon as a problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is not transferable.

EXCEPTIONS: Hydromatic Special Application Pumps, Battery Back-Up Sump Pumps, Filtered Effluent Pumps, Grinder Pumps, and 2-1/2” Sewage Pumps are warranted for a period of 12 months from date of purchase or 18 months from date of manufacture, whichever comes first.

HYDROMATIC SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING LIMITED WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on the duration of an implied warranty, so the above limitations or exclusions may not apply to You. This warranty gives You specific legal rights and You may also have other rights which vary from state to state.

This Limited Warranty is effective June 1, 2011 and replaces all undated warranties and warranties dated before June 1, 2011.

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