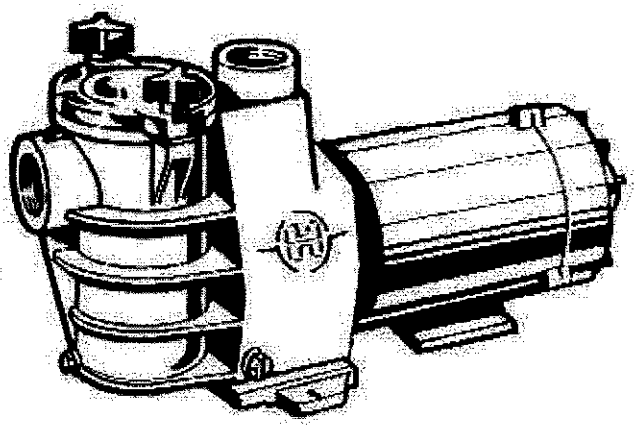
HAYWARD Hi-Performance Pumps
INSTALLATION AND OPERATING INSTRUCTIONS

ULTRA-MAX SERIES



Your Hayward Ultra-Max self priming centrifugal pump has been quality-built and engineered to give you many years of efficient, dependable service. The non-conductive, corrosion-proof motor housing provides protection from the elements and insulates the electrical motor parts from outside contact.

The advanced design reduces operation and maintenance to simple, common-sense procedures.

GENERAL TIPS ON PUMP INSTALLATION

For best pump performance, locate the system below the pool water line and as close to the pool as possible. If you own an above ground pool please see Note: NSPI-4 Article V, for safe and proper installation of the equipment package. Make sure suction joints are tight. Suction pipe should be as large or larger than discharge pipe.

Damp, non-ventilated locations should be avoided. Motors require free circulation of air to aid in cooling.

Insure that the electrical supply available agrees with the motor's voltage, phase and cycle, and that wire size is adequate for the HP/KW rating and distance from the power source. Motor must always be properly grounded. If cord connected, use only a properly grounded outlet. Electrical circuits should be protected by proper size ground fault circuit interrupter (GFCI). All electrical wiring should be performed by qualified personnel and must conform to local codes and regulations.

STARTING AND PRIMING INSTRUCTIONS

Fill strainer/housing completely with water. Never operate the pump without water. Water acts as a coolant and lubricant for the mechanical shaft seal.

Open all suction and discharge lines and valves, as well as air bleed (if available) on filter. (The air that is to be displaced from the suction line must have some-place to go)

Turn on power and allow a reasonable time for priming. Priming time depends on suction lift and length of suction piping. If pump will not start, or will not prime, see TROUBLE SHOOTING GUIDE on back page.

Note: NSPI-4 Article V, standard for above ground and on ground pools, advises that components such as the filtration system, pumps and heater be positioned so as to prevent their being used as a means of access to the pool by young children.

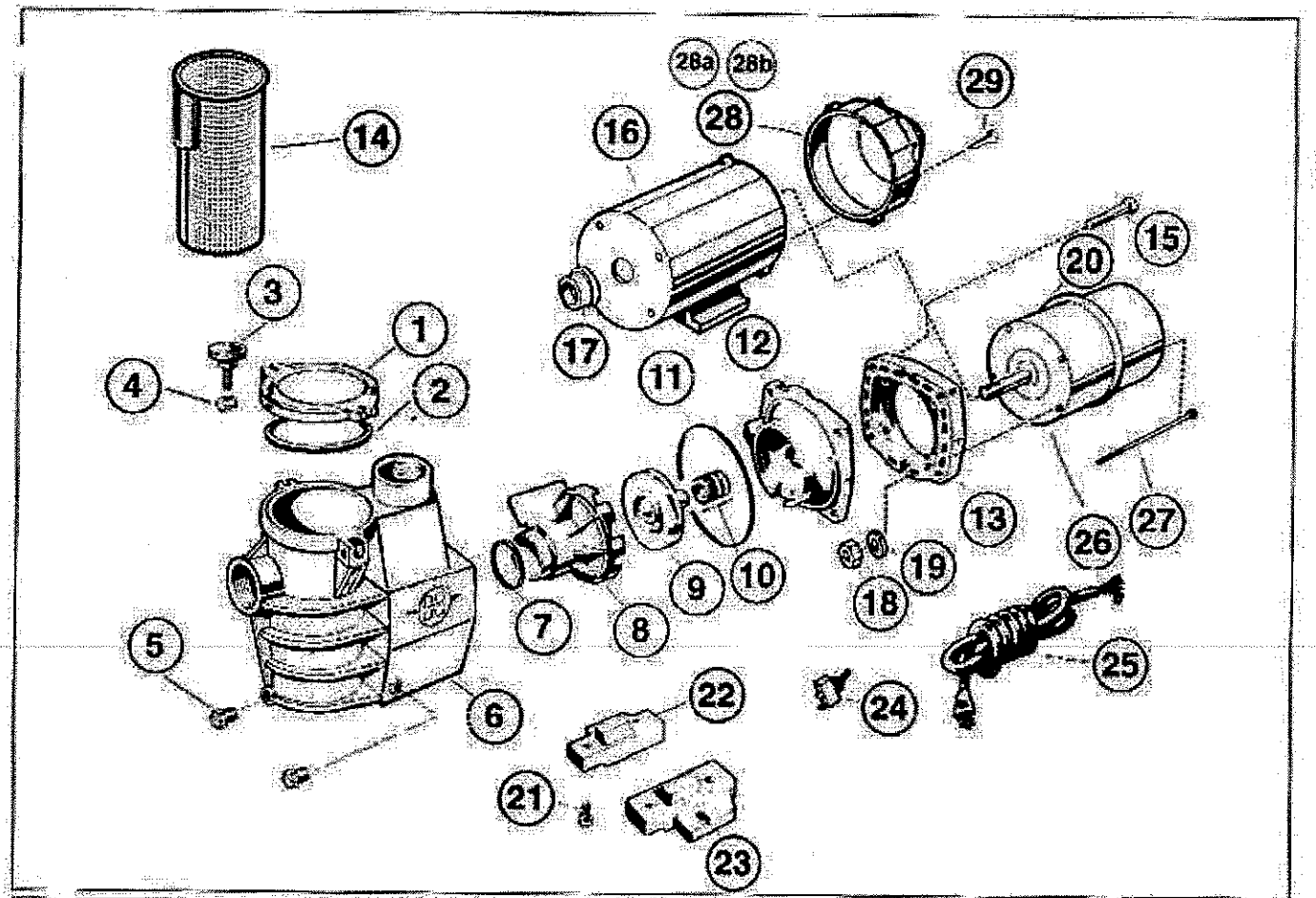
MAINTENANCE

1. Clean strainer basket regularly. **Do not strike** basket to clean. Inspect strainer cover gasket regularly and replace as necessary.
2. Hayward pumps have self-lubricating motor bearings and shaft seals. No lubrication is necessary.
3. Keep motor housing clean. Insure air vents are free from obstructions, debris, etc.
4. Occasionally, shaft seals must be replaced, due to wear or damage. See instructions.

STORAGE/WINTERIZING

Pump and motor must be protected from freezing. Shut off all electric power. Disconnect cord/electrical connections and plumbing connections. Drain thoroughly and clean out any debris; Store pump and motor in a dry, well ventilated room.

HAYWARD POOL PRODUCTS CANADA, INC.
2880 PLYMOUTH DRIVE, OAKVILLE, ONTARIO L6H 5R4 (905) 829-2880



REF. NO.	DESCRIPTION	NO. REQ'D.	PART NUMBER MODEL SP-2910	PART NUMBER MODEL SP-2915 (2)(ET)
1	Strainer Cover	1	SP-1250-L	SP-1250-L
2	Strainer Cover Gasket	1	SP-0125-T	SP-0125-T
3	Hand Knob	2	SP-1600-P	SP-1600-P
4	Swivel Nut	2	SP-1600-N	SP-1600-N
5	Drain Plug Gasket	2	SP-1703-F6	SP-1703-F6
6	Pump/Strainer Housing	1	SP-2800-AA	SP-2800-AA
7	Diffuser Gasket	1	SP-1600-R	SP-1600-R
8	Diffuser	1	SP-2800-B	SP-2800-B
9	Impeller	1	SP-2915-C1	SP-2915-C1
10	Seal Assembly	1	SP-1600-Z2	SP-1600-Z2
11	Housing Gasket	1	SP-1600-T	SP-1600-T
12	Seal Plate	1	SP-2800-E	SP-2800-E
13	Motor Mounting Plate	1	SP-1600-F3M	SP-1600-F3M
14	Strainer Basket	1	SP-2800-M	SP-2800-M
15	Housing Cap Screw	4	SP-1600-Z4	SP-1600-Z4
16	Motor Housing	1	SP-2000-A3	SP-2000-A3
17	Shaft Sleeve	1	SP-1500-Q4	SP-1500-Q4
18	Housing Nut	4	SP-1510-N9	SP-1510-N9
19	Internal Tooth Lock Washer	4	SP-3300-Z1	SP-3300-Z1
20	Baffle	1	SP-2000-E	SP-2000-E
21	Mounting Bracket Screw	4	SP-1600-Z5	SP-1600-Z5
22	Mounting Bracket Left	1	SP-1600-K	SP-1600-K
23	Mounting Bracket Right	1	SP-1600-L	SP-1600-L
24	Switch Assembly	1	EC-1325	EC-1325
25	Power Cord	1	SP-1550-WA6C	SP-1550-WA6C
26a	Motor - 60 Cycle Single Phase	1	SP-1506Z1TFS	SP-1514Z1TFS
26b	Motor - 60 Cycle Single Phase 2 speed	Optional	-	SP-1514Z2TFS
27	Motor Securing Bolt	4	SP-1510-N7	SP-1510-N7
28	Motor End Cover	1	SP-2000-C2	SP-2000-C2
28a	Motor End Cover c/w Timer 2SP (2ET)	Optional	-	SP2000CET2
28b	Motor End Cover c/w Timer 1SP (ET)	Optional	-	SP2000CET
29	Screw	3	SP-1411-Z3	SP-1411-Z3

ELECTRONIC TIMER MODULE INSTRUCTIONS

Your integrated timer module is designed to be programmed to your filtration need, with four (4) possible settings:

Settings:
Setting 1 - Pump runs 24 hours continuously - (1 beep)
Setting 2 - Pump runs 18 hours and is off for 6 hours - (2 beeps)
Setting 3 - Pump runs 12 hours and is off for 12 hours - (3 beeps)
Setting 4 - Pump runs 6 hours and is off for 18 hours - (4 beeps)
When the pump is switched from position "off" to "program" a beep sound is heard. This allows the pumps to differentiate between settings.

To Set Timer:
1. Move switch from "off" to "program" to "off" produces 1 beep
2. Move switch from "off" to "run"
3. Repeat above 2 steps according to your choice of setting

If a power failure occurs: After the power is restored, the timer will automatically default to the programmed mode, adding the length of time of the power failure.

SEAL CHANGE INSTRUCTIONS

SP-2900 SERIES

GENERAL

Exercise extreme care in handling and installing the new seal and seat assembly. The lapped and polished surfaces may easily be damaged by dirt or scratching.

For safety, all service must be performed with **all power shut off.**

REMOVING THE MOTOR COVER

1. Turn off power and unplug power cord. Remove pump and motor assembly from piping system.
2. Remove motor housing end cover by removing three (3) screws. Carefully pull cover away from motor and disconnect wires from motor terminals.

REMOVING THE MOTOR ASSEMBLY

3. Remove the (4) 3/8" x 2" **hex head bolts** which hold the motor assembly to the pump/strainer housing.
4. Slide the motor assembly out of the pump/ strainer housing, exposing the diffuser. Pull the diffuser off of the seal plate, exposing the impeller. (The diffuser may remain in the pump/strainer housing. To remove, pull it straight out of the strainer housing.)

REMOVING THE IMPELLER (see note)

5. To hold motor shaft from turning, **carefully** slide a 7/16" wrench between the casting and the protector switch, and rotate the impeller so the wrench fits over the (2) flats on motor shaft.
6. Rotate the impeller counter-clockwise and remove. The spring portion of the seal assembly is not exposed. Note carefully the position of the spring seal, and remove it.

REMOVING THE CERAMIC SEAT

7. Remove the seal plate. Note the notch on the top of the plate and the mating lug on the top of the motor mounting bracket.
8. Press the ceramic seat with O-ring out of the seal plate. If tight, use a small screwdriver to tap seat out.

STOP – Clean all recesses and parts to be reassembled. Inspect gaskets and replace if necessary.

SEAL INSTALLATION

9. Clean and lightly lubricate the impeller hub and seal recess in the seal plate with silicone or Jack's N° 327 O-ring lube.
10. Gently wipe the black, polished surface of the spring seal assembly with a clean, soft cotton cloth. Press the spring seal assembly onto the impeller hub – black polished surface facing away from the impeller.
11. Gently wipe the polished face of the ceramic seal with a soft, cotton cloth. Lubricate the O-ring on the ceramic seat and press it firmly and evenly into the recess in the seal plate – polished side facing out.
12. Place the seal plate onto the motor mounting bracket aligning the positioning lug and guide.

REPLACING THE IMPELLER AND DIFFUSER

13. Screw the impeller onto the motor shaft in a clockwise direction. Tighten snugly by holding motor shaft with wrench.
14. Place the diffuser over the impeller onto the seal plate, fitting positioning lug between the two guides.

REPLACING THE MOTOR ASSEMBLY

15. Slide the motor assembly with the diffuser in place, into pump/strainer housing, being careful not to dislodge the diffuser.
16. Fasten assembly to housing using the (4) 3/8" x 2" bolts. (Be sure housing gasket is in place). Tighten alternately and evenly.

REPLACING THE MOTOR COVER

17. Reconnect electric wires to pump motor terminals. Line 1 from power cord, jumper wire from switch to line 2, and ground wire to ground screw on motor. Replace motor housing end cover and secure with three (3) screws.
18. Reconnect pump to piping system. Be sure to fill strainer with water before restarting.

ELECTRICAL GUIDE – 60 CYCLE MOTORS – SINGLE PHASE

MOTOR HP	MOTOR KW	VOLTS	Circuit Breaker RATING – AMPS	RECOMMENDED WIRE SIZE 0-50', 0-15m
1	.75	115	20	No. 12
1-1/2	1.12	115	20	No. 12

A separate electrical circuit, utilizing a rating as above, is recommended.

TROUBLE SHOOTING GUIDE

A. MOTOR WON'T START

1. Check for improper or loose connections, open switches or relays, blown circuit breakers or fuses.
2. Manually check rotation of motor shaft for free movement and lack of obstruction.

B. MOTOR CUTS OUT – Check for:

1. Wiring, loose connections, etc.
2. Low voltage at motor (frequently caused by undersized wiring).
3. Binding and overload. (Amperage reading)

NOTE: *Your Hayward pump motor is equipped with Automatic Thermal Overload Protection. The motor will automatically shut off, under normal conditions, before heat damage build-up, due to an improper operating condition, can occur. The motor will auto-restart when safe heat level is reached.*

C. MOTOR HUMS, BUT DOES NOT START – Check for:

1. Centrifugal switch stuck in open position.
2. Binding of motor shaft.

D. PUMP WON'T PRIME

1. Make sure pump strainer/housing is filled with water, and that cover gasket is clean and properly seated. Tighten hand nuts.
2. Make sure all suction and discharge valves are open and unobstructed, and that pool water level is above all suction openings.
3. Block off suction as close to pump as possible and determine if pump will develop a vacuum.
   a. If pump does not develop vacuum, and pump has sufficient "priming water":
      1. Tighten all bolts and fittings on suction side.
      2. Check voltage to make sure pump is up to speed.
      3. Open pump and check for clogging or obstruction.
      4. Remove and replace shaft seal.
   b. If pump develops a vacuum, check for blocked suction line or strainer, or air leak in suction piping.

E. LOW FLOW – Generally, Check for:

1. Clogged or restricted strainer or suction line; undersized pool piping.
2. Plugged or restricted discharge line of filter (high discharge gauge reading).
3. Air leak in suction (bubbles issuing from return fittings).
4. Pump operating underspeed (low voltage).
5. Plugged or restricted impeller.

F. NOISY PUMP – Check for:

1. Air leak in suction causing rumbling in pump.
2. Cavitation due to restricted or undersized suction line and unrestricted discharge lines. Correct suction condition or throttle discharge lines, if practical.
3. Vibration due to improper mounting, etc.
4. Foreign matter in pump housing.
5. Motor bearings made unserviceable by wear, rust, or continual overheating.

SERVICE & REPAIRS

Consult your local authorized Hayward dealer or service center. No pumps or motors may be returned directly to the factory without the express written authorization of Hayward Pool Products Canada, Inc.