



ProSeries™

HIGH RATE SAND FILTER

Owner's Manual



Models S144T S166T S210T S220T S244T S270T S310T2
S180T S210T2 S220T2 S244T2 S270T2 S360T2

Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause severe injury and/or death.

! This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

! **WARNING** warns about hazards that **could** cause serious personal injury, death or major property damage and if ignored presents a potential hazard.

! **CAUTION** warns about hazards that **will** or **can** cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

The **NOTICE** label indicates special instructions that are important but not related to hazards.

Hayward Pool Products
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⚠ WARNING - Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.

⚠ WARNING – Suction Entrapment Hazard.



Suction in suction outlets and/or suction outlet covers which are, damaged, broken, cracked, missing, or unsecured can cause severe injury and/or death due to the following entrapment hazards:



Hair Entrapment- Hair can become entangled in suction outlet cover.



Limb Entrapment- A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.

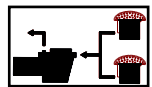


Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

Evisceration/ Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/ disembowelment.

Mechanical Entrapment- There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠ WARNING - To Reduce the risk of Entrapment Hazards:



- o When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [1 meter] apart, as measured from near point to near point.
- o Dual suction fittings shall be placed in such locations and distances to avoid “dual blockage” by a user.
- o Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- o The maximum system flow rate shall not exceed the flow rating of as listed on Table 1.
- o Never use Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- o Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- o In addition two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.
- o Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

⚠ WARNING – Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every ten years or if found to be damaged, broken, cracked, missing, or not securely attached.

⚠ CAUTION – Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children. To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.



⚠ WARNING – Hazardous Pressure. Pool and spa water circulation systems operate under hazardous pressure during start up, normal operation, and after pump shut off. Stand clear of circulation system equipment during pump start up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover, and/or filter housing and clamp due to pressure in the system, which could cause property damage, severe personal injury, or death. Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged.



⚠ WARNING – Separation Hazard. Failure to follow safety and operation instructions could result in violent separation of pump and/or filter components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa circulation system, filters manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body. **Never operate or test the circulation system at more than 50 PSI. Do not purge the system with compressed air.** Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.



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⚠ WARNING – Risk of Electric Shock. All electrical wiring **MUST** be in conformance with applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock, do **NOT** use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. Before working on any electrical equipment, turn off power supply to the equipment. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do **NOT** ground to a gas supply line.

⚠ WARNING – Risk of Electric Shock Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard. Electrical ground all electrical equipment before connecting to electrical power supply.

⚠ WARNING – Risk of Electric Shock Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

Notes to electrician: Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm²) [No. 6 AWG (13.3 mm²) for Canada] solid copper bonding wire to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

IMPORTANT - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

⚠ WARNING – Risk of Electric Shock. The electrical equipment must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the electrical equipment without the test button being pushed, a ground current is flowing, indicating the possibility of an electrical shock. Do not use this electrical equipment. Disconnect the electrical equipment and have the problem corrected by a qualified service representative before using.

⚠ CAUTION – HAYWARD® pumps are intended for use with permanently-installed pools and may be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

⚠ WARNING – Risk of Hyperthermia. To avoid hyperthermia the following “Safety Rules for Hot Tubs” are recommended by the U.S. Consumer Product Safety Commission.

1. Spa or hot tub water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
5. Persons taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anti-coagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physicians advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of Hyperthermia include:

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

SAVE THESE INSTRUCTIONS



Your Hayward Pro Series™ high-rate sand filter is a high performance, totally corrosion-proof filter that blends superior flow characteristics and features with ease of operation. It represents the very latest in high-rate sand filter technology. It is virtually foolproof in design and operation and when installed, operated and maintained according to instructions, your filter will produce clear, sparkling water with only minimal attention and care.

HOW IT WORKS

Your filter uses special filter sand to remove dirt particles from pool water. Filter sand is loaded into the filter tank and functions as the dirt removing media. The pool water, which contains suspended dirt particles, is pumped through your piping system and is automatically directed by the filter control valve to the top of the filter tank. As the pool water is pumped through the filter sand, dirt particles are trapped by the sand bed, and filtered out. The cleaned pool water is returned from the bottom of the filter tank, through the control valve and back to the pool through the piping system. This entire sequence is continuous and automatic and provides recirculation of pool water through your filter and piping system.

After a period of time, the accumulated dirt in the filter causes a resistance to flow, and the flow diminishes. This means it is time to clean (backwash) your filter. With the control valve in the backwash position, the water flow is automatically reversed through the filter so that it is directed to the bottom of the tank, up through the sand, flushing the previously trapped dirt and debris out the waste line. Once the filter is backwashed (cleaned) of dirt, the control valve is manually resequenced to Rinse, and then Filter, to resume normal filtering.

INSTALLATION

Only simple tools (screwdriver and wrenches), plus pipe sealant for plastic adapters, are required to install and/or service the filter.

1. The filter system should be installed, not more than 6 feet above pool water level, on a level concrete slab, very firm ground, or equivalent, as recommended by your pool dealer. Position the filter so that the piping connections, control valve and winter drain is accessible for operation, service and winterizing.
2. Assemble pump mounting base, (if supplied) to the filter according to instructions packed with the base.
3. **Loading sand media.** Filter sand media is loaded through the top opening of the filter.
 - a. Loosen flange clamp and remove Filter Control Valve (if previously installed). Cap internal pipe with sand shield to prevent sand from entering it. Be sure pipe is securely in place in bottom underdrain hub.
 - b. We recommend filling tank approximately 1/2 way with water to provide a cushioning effect when the filter sand is poured in. This helps protect the underdrain laterals from excessive shock. (Be sure the winter drain cap is securely in place on drain pipe).

NOTE: Check to confirm all laterals are in the down position before loading with sand. (See Figure A.)

- c. Carefully pour in correct amount and grade of filter sand, as specified on Table 2. (Be sure center pipe remains centered in opening). Because filter sand is not all the same, THE LEVEL OF SAND MUST REMAIN A MINIMUM OF 10" FROM THE TOP. Remove sand shield from internal pipe.

4. Assemble Filter Control Valve to filter tank.

- a. Loosely pre-assemble both halves of the clamp with one screw and one nut, turning the nut 2 or 3 turns. Do not tighten. Wipe filter flange clean.
 - b. Insert Filter Control Valve (with valve/flange o-ring in place) into the tank neck, taking care that the center pipe slips into the hole in the bottom of the valve. Install clamp around tank and valve flange and assemble second screw and nut. Tighten just enough so that the valve may be rotated on tank for final positioning.
 - c. Wrap two turns of Teflon pipe sealant tape manufactured for plastic pipe on the 1/4" NPT male end of gauge. Carefully screw pressure gauge, into 1/4" NPT tapped hole in valve body. Do not over tighten.
 - d. Connect pump to control valve opening marked PUMP according to instructions. After connections are made, tighten valve flange clamp with screwdriver, tapping around clamp with screwdriver handle to help seat valve flange clamp.
5. Make return to pool pipe connection to control valve opening marked RETURN and complete other necessary plumbing connections, suction lines to pump, waste, etc.
 6. Make electrical connections to pump per pump instructions.
 7. To prevent water leakage, be sure winter drain cap is securely in place and all pipe connections are tight.

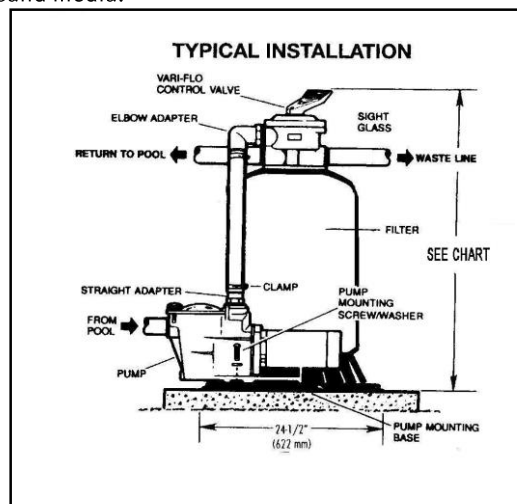
INITIAL START-UP OF FILTER

1. Be sure correct amount of filter sand media is in tank and that all connections have been made and are secure.
2. Depress Vari-Flo control valve handle and rotate to BACKWASH* position. (To prevent damage to control valve seal, always depress handle before turning.)
3. Prime and start pump according to pump instructions (be sure all suction and return lines are open), allowing the filter tank to fill with water.



⚠ WARNING: ALL SUCTION AND DISCHARGE VALVES MUST BE OPEN WHEN STARTING THE SYSTEM. FAILURE TO DO SO COULD CAUSE SEVERE PERSONAL INJURY.

Once water flow is steady out the waste line, run the pump for at least 2 minutes. The initial back-washing of the filter is recommended to remove any impurities or fine sand particles in the sand media.





- Turn pump off and set valve to RINSE position. Start pump and operate until water in sight glass is clear—about 1/2 to 1 minute. Turn pump off, set valve to FILTER position and restart pump. Your filter is now operating in the normal filter mode, filtering particles from the pool water.
- Adjust pool suction and return valves to achieve desired flow. Check system and filter for water leaks and tighten connections, bolts, nuts, as required.
- Note the initial pressure gauge reading when the filter is clean. (It will vary from pool to pool depending upon the pump and general piping system). As the filter removes dirt and impurities from the pool water, the accumulation in the filter will cause the pressure to rise and flow to diminish. When the pressure gauge reading is 8-10 PSI (0.55-0.69 BAR) higher than the initial "clean" pressure you noted, it is time to backwash (clean) the filter (see BACKWASH under Filter Control Valve Functions.)

NOTE: During initial clean-up of the pool water it may be necessary to backwash frequently due to the unusually heavy initial dirt load in the water.

KEEP SAFETY LABELS IN GOOD CONDITION AND REPLACE IF MISSING OR DAMAGED.

IMPORTANT: To prevent unnecessary strain on piping system and valving, always shut off pump before switching Filter Control Valve positions.

To prevent damage to the pump and filter and for proper operation of the system, clean pump strainer and skimmer baskets regularly.

FILTER CONTROL VALVE FUNCTIONS

FILTER—Set valve to FILTER for normal filtering. Also use for regular vacuuming.

BACKWASH—For cleaning filter. When filter pressure gauge rises 8-10 PSI (0.55-0.69 BAR) above start-up (clean pressure):

Stop the pump, set valve to BACKWASH. Start pump and backwash until water in sight glass is clear. Approximately 2 minutes or less depending on dirt accumulation. Proceed to RINSE.

RINSE—After backwashing, with pump off, set valve to RINSE. Start pump and operate for about 1/2 to 1 minute. This ensures that all dirty water from backwashing is rinsed out of the filter to waste, preventing possible return to the pool. Stop pump, set valve to FILTER, and start pump for normal filtering.

WASTE—To bypass filter for draining or lowering water level and for vacuuming heavy debris directly to waste. **RECIRCULATE**—Water is recirculated through the pool system, bypassing the filter.

CLOSED—Shuts off flow from pump to filter. **VACUUMING**—Vacuuming can be performed directly into the filter. When vacuuming heavy debris loads, set valve to WASTE position to bypass the filter and vacuum directly out to waste.

WINTERIZING

- Completely drain tank by unscrewing drain cap at base of filter tank. Leave cap off during winter.
- Depress Vari-Flo control valve handle and rotate so as to set

- pointer on valve top between any two positions. This will allow water to drain from the valve. Leave valve in this "inactive" position.
- Drain and winterize pump according to pump instructions.

SERVICE & REPAIRS

Consult your local authorized *Hayward* dealer or service center. No returns may be made directly to the factory without the expressed authorization of Hayward Pool Products, Inc.

PLEASE REALIZE..

Pure, clear swimming pool water is a combination of two factors—adequate filtration and proper water chemistry balance. One without the other will not give the clean water you desire.

Your filter system is designed for continuous operation. However, this is not necessary for most swimming pools. You can determine your filter operation schedule based on your pool size and usage. Be sure to operate your filtration system long enough each day to obtain at least one complete turnover of your pool water.

To properly sanitize your pool, maintain a free chlorine level of 1 to 3 ppm and a pH range of 7.2 to 7.6. Insufficient chlorine or an out of balance pH level will permit algae and bacteria to grow in your pool and make it difficult for your filter to properly clean the pool water.

*NOTE: For new concrete or gunite pools, or where there is a large amount of plaster dust or debris—start filter in FILTER position (not BACKWASH) to prevent clogging of underdrain laterals

| MAXIMUM RECOMMENDED SYSTEM FLOW RATE BY PIPE SIZE | | | | | |
|---|---------------|-------------|---------------|-------------|---------------|
| Pipe Size | Flow rate GPM | Pipe Size | Flow rate GPM | Pipe Size | Flow rate GPM |
| 1" [32] | 20 [75] | 1 1/2" [50] | 45 [170] | 2 1/2" [75] | 110 [415] |
| 1 1/4" [40] | 30 [110] | 2" [63] | 80 [300] | 3" [90] | 160 [600] |

TABLE 1

| SUGGESTED POOL CHEMISTRY | |
|-------------------------------------|-----------------|
| pH | 7.2 to 7.6 |
| TOTAL ALKALINITY | 80 to 120 ppm |
| CALCIUM HARDNESS | 200 to 400 ppm |
| COMBINED CHLORINE | 0.2 ppm Maximum |
| CHLORINE (STABILIZED) | 1.0 to 3.0 ppm |
| CHLORINE STABILIZER (Cyanuric Acid) | 60 to 80 ppm |



SPECIFICATIONS (Table 2)

| MODEL NUMBER | EFFECTIVE FILTRATION AREA | | MAXIMUM WORKING PRESSURE @75°F | | REQUIRED CLEARANCE | | | | MEDIA CAPACITY | | | INSTALLED HEIGHT | |
|----------------------|---------------------------|-----|--------------------------------|------|--------------------|-----|-------|-----|----------------|--------|-----|------------------|------|
| | FT² | M² | PSI | BAR | SIDE | | ABOVE | | TYPE | AMOUNT | | INCH | MM |
| | | | | | INCH | MM | INCH | MM | | LBS | KG | | |
| S144T (14") | 1.1 | .10 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 50 | 22 | 32 | 815 |
| S166T (16") | 1.4 | .13 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 100 | 45 | 33 | 840 |
| S180T (18") | 1.8 | .17 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 150 | 68 | 35 | 890 |
| S210T / S210T2 (21") | 2.2 | .20 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 200 | 90 | 38 | 965 |
| S220T / S220T2 (22") | 2.6 | .25 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 250 | 115 | 41 | 1040 |
| S244T / S244T2 (24") | 3.1 | .29 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 300 | 135 | 42 | 1070 |
| S270T / S270T2 (27") | 3.7 | .34 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 350 | 160 | 43 | 1090 |
| S310T2 (31") | 4.9 | .46 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 500 | 225 | 48 | 1220 |
| S360T2 (36") | 7.1 | .66 | 50 | 3.45 | 18 | 460 | 18 | 460 | 0.45-0.55mm | 700 | 315 | 53 | 1350 |

SPARE PARTS

| REF NO | PART NO. | DESCRIPTION | NO. REQ |
|--------|---|--|------------------|
| 1 | SP0714T SP071620T | 1 1/2" Vari-Flo XL Control Valve 2" Vari-Flo XL Control Valve | 1 |
| 2 | ECX270861 | Pressure Gauge | 1 |
| 3 | GMX600F | Valve/Tank O-ring | 1 |
| 4 | GMX600NM SX310N | Flange Clamp (Plastic) Flange Clamp (Stainless Steel) | 1 |
| 5 | SX202S | Sand Shield -Corrugated | 1 |
| 6 | SX144DA SX164DA SX180DA SX210DA SX220DA SX244DA SX244DA2X SX270DA2X SX310DA2 SX360DA | Folding Lateral Assy 14" Folding Lateral Assy 16" Folding Lateral Assy 18" Folding Lateral Assy 21" Folding Lateral Assy 22" Folding Lateral Assy 24", 27" Folding Lateral Assy 24" T2 Folding Lateral Assy 27" T2 Folding Lateral Assy 31" Folding Lateral Assy 36" | 1 |
| 7 | SX144AA1 SX164AA1 SX180AA1 SX210AA1 SX220AA1 SX244AA1 SX270AA1 SX310AA1 SX360AA2 | Filter Assy less valve & clamp 14" Filter Assy less valve & clamp 16" Filter Assy less valve & clamp 18" Filter Assy less valve & clamp 21" Filter Assy less valve & clamp 22" Filter Assy less valve & clamp 24" Filter Assy less valve & clamp 27" Filter Assy less valve & clamp 31" Filter Assy less valve & clamp 36" | 1 |
| 8 | SX200SNPAK10 SX200QNPAK10 SX240DNPAK10 SX310HNPAK10 | 14" Lateral with Ball end (10) 16",18",21",22" Lateral Ball end (10) 24",27" Lateral Ball end (10) 30",36" Lateral Ball end (10) | 1 1 1 1 |
| 9a | SX180HG | Drain Cap Kit (Round) | 1 |
| 9b | SX180LA | Drain Cap Assy | 1 |
| 10 | SX164B SX200J SX310J | 14" & 16" Filter Base 18"-27" Filter Base 30" & 36" Filter Base | 1 |
| 11a | SX164C | 14" & 16" Pump Base | |
| 11b | SX180J | System base 18", 21", 23" | |
| 12 | ECX1108A | Pump mounting screw kit | |
| 13 | SX160Z4KIT SX201Z1KIT | 26" Hose Kit (14",16" System) 33" Hose Kit (18", 21", 23" System) | |

Note: S210T2, S220T2, S244T2, S270T2, S310T2 and S360T2 are equipped with 2" valves

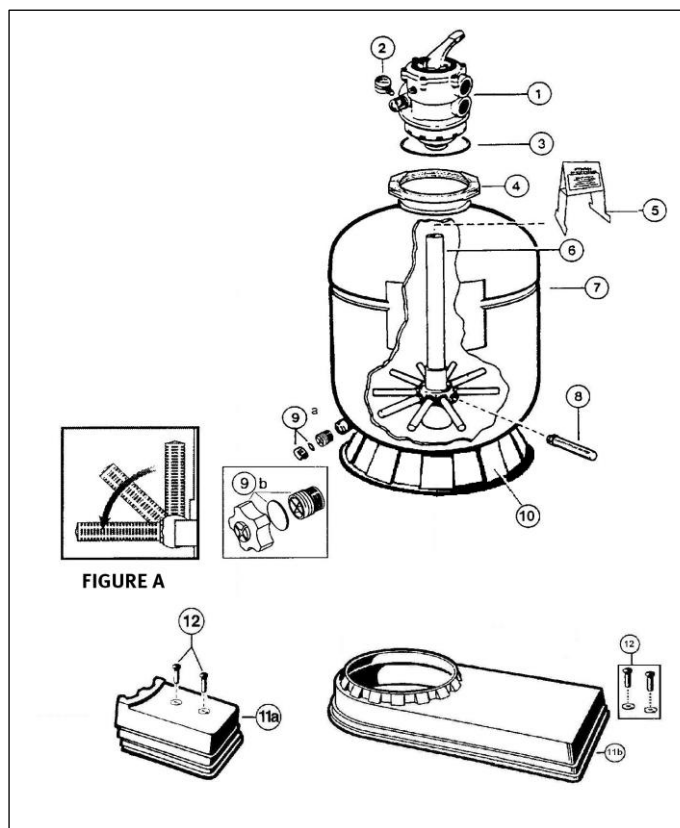
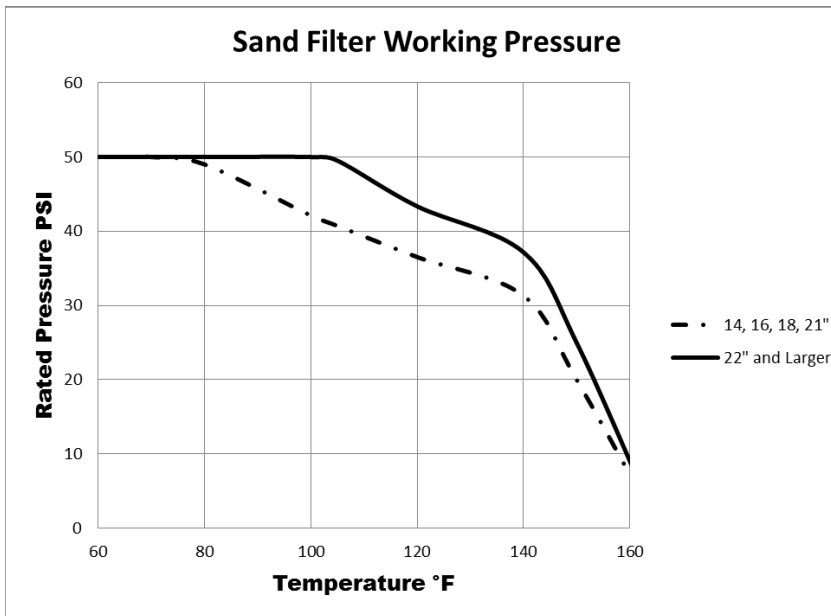
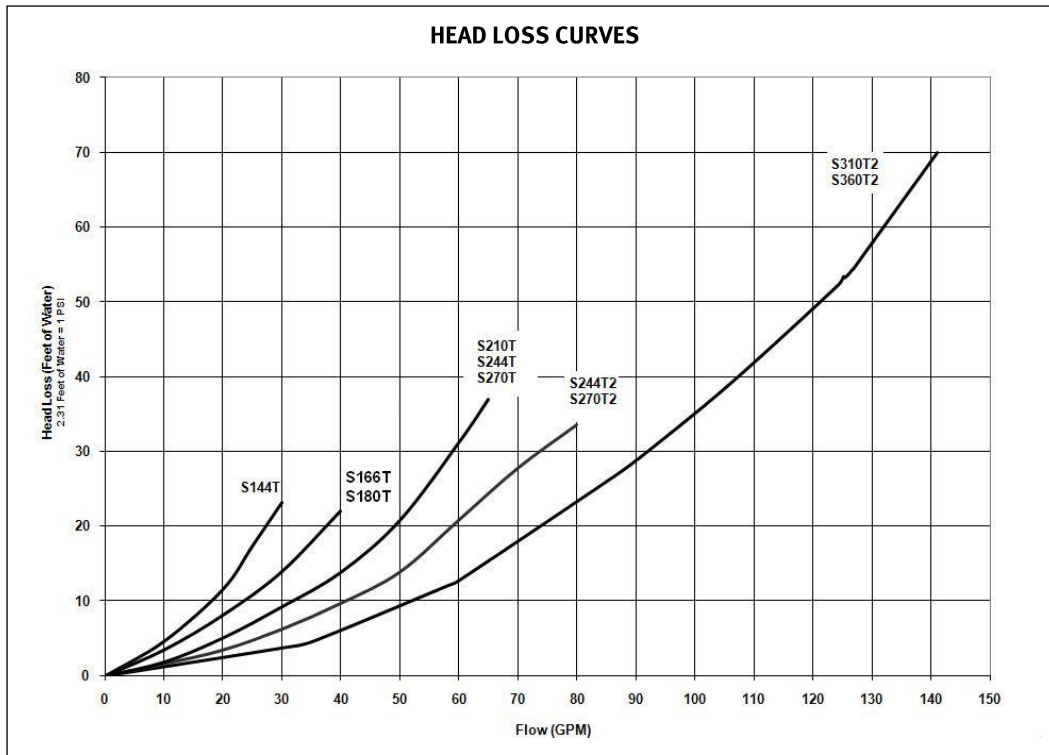


FIGURE A



| PROBLEM | LOW WATER FLOW | SHORT FILTER CYCLES | POOL WATER WON'T CLEAR UP |
|---------|---|--|--|
| REMEDY | <ol style="list-style-type: none"> 1. Check skimmer and pump strainer baskets for debris. 2. Check for restrictions in intake and discharge lines. 3. Check for air leak in intake line (indicated by bubbles returning to pool). 4. Backwash filter. | <ol style="list-style-type: none"> 1. Check for algae in pool and superchlorinate as required. 2. Be sure chlorine and pH levels are in proper range (adjust as required). 3. Check surface of filter sand for crusting or caking (remove 1" of sand if necessary). | <ol style="list-style-type: none"> 1. Check chlorine, pH and total alkalinity levels and adjust as required. 2. Be sure flow rate through filter is sufficient. 3. Operate filter for longer periods. 4. Be sure Vari-Flo valve is set in the "Filter" position. |



HAYWARD®

PRODUCT REGISTRATION (Retain For Your Records)

DATE OF INSTALLATION _____

▲ Retain this Warranty Certificate (upper portion) in a safe and convenient location for your records.

HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its sand filter products and its sand filter systems to be free from defects in materials and workmanship for a period of ONE (1) year from the date of purchase, when used in single family residential applications. The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at www.hayward.com.

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation 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.

Hayward Pool Products
620 Division Street
Elizabeth, NJ 07207

*Supersedes all previous publications.



DETACH HERE: Fill out bottom portion completely and mail within 10 days of purchase/installation or register online.

ProSeries™ SAND FILTER

Warranty Card Registration

Register online at www.hayward.com

Please Print Clearly:

First Name _____ Last Name _____

Street Address _____

City _____ State _____ Zip _____

Phone Number _____ Purchase Date _____

E-Mail Address _____

Serial Number

| | | | | | | | | | | | | | | | | | | | | |
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Model Number _____

Pool Capacity _____ (U.S. Gallons)

If your product contains components that have individual serial numbers, it is not necessary to complete warranty registration for those individual components. Instead, complete warranty registration only for the overall product, using the serial number that is located on the outside of the product packaging.

Please include me on all e-mail communications regarding Hayward® Equipment or promotions.

Mail to: Hayward Pool Products, 620 Division Street, Elizabeth, NJ 07207

Attn: Warranty Dept

Or REGISTER YOUR WARRANTY ON-LINE AT WWW.HAYWARD.COM

Years Pool has been in service

< 1 year 1-3 4-5 6-10 11-15 >15

Purchased from _____

Builder Retailer Pool Service Internet/Catalog

Company Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Type of Pool:

Concrete/Gunite Vinyl Fiberglass

Other _____

New Installation

Replacement

Installation for:

In Ground

Above Ground

Spa



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to extend your
WARRANTY

see back of manual for details

Super Pump® Series

Owner's Manual

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IMPORTANT SAFETY INSTRUCTIONS

Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause severe injury and/or death.

- ▲ This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.
- ▲ **WARNING** warns about hazards that **could** cause serious personal injury, death or major property damage and if ignored presents a potential hazard.
- ▲ **CAUTION** warns about hazards that **will** or **can** cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

The **NOTICE** label indicates special instructions that are important but not related to hazards.

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Phone: (908) 355-7995
www.hayward.com



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▲ **WARNING – READ, UNDERSTAND, AND FOLLOW ALL INSTRUCTIONS**

in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.

▲ **WARNING – Suction Entrapment Hazard.**

Suction in suction outlets and/or suction outlet covers which are, damaged, broken, cracked, missing, or unsecured can cause severe injury and/or death due to the following entrapment hazards:

Hair Entrapment- Hair can become entangled in suction outlet cover.

Limb Entrapment- A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.

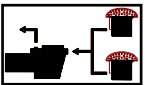
Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

Evisceration/ Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/ disembowelment.

Mechanical Entrapment- There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.



▲ **WARNING - To Reduce the risk of Entrapment Hazards:**



- o When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [1 meter] apart, as measured from near point to near point.
- o Dual suction fittings shall be placed in such locations and distances to avoid "dual blockage" by a user.
- o Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- o The maximum system flow rate shall not exceed the flow rating of as listed on Table 1.
- o Never use Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- o Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- o In addition two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.
- o Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

▲ **WARNING – Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.**

▲ **WARNING – Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material can result in an increase potential for suction entrapment as described above.**

▲ **WARNING – Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every seven years or if found to be damaged, broken, cracked, missing, or not securely attached.**

▲ **CAUTION – Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children.** To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.



▲ **WARNING – Hazardous Pressure.** Pool and spa water circulation systems operate under hazardous pressure during start up, normal operation, and after pump shut off. Stand clear of circulation system equipment during pump start up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover, and/or filter housing and clamp due to pressure in the system, which could cause property damage, severe personal injury, or death. Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged.



▲ **WARNING – Separation Hazard.** Failure to follow safety and operation instructions could result in violent separation of pump and/or filter components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa circulation system, filters manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body. **Never operate or test the circulation system at more than 50 PSI. Do not purge the system with compressed air.** Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.



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▲ WARNING – Risk of Electric Shock. All electrical wiring **MUST** be in conformance with applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock, do **NOT** use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. Before working on any electrical equipment, turn off power supply to the equipment. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do **NOT** ground to a gas supply line.

▲ WARNING – Risk of Electric Shock Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard. Electrical ground all electrical equipment before connecting to electrical power supply.

▲ WARNING – Risk of Electric Shock Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

Notes to electrician: Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm²) [No. 6 AWG (13.3 mm²) for Canada] solid copper bonding wire to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

IMPORTANT - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

▲ WARNING – Risk of Electric Shock . The electrical equipment must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). In accordance with the National Electric Code (NEC), connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI. Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the electrical equipment without the test button being pushed, a ground current is flowing, indicating the possibility of an electrical shock. Do not use this electrical equipment. Disconnect the electrical equipment and have the problem corrected by a qualified service representative before using.

▲ CAUTION – HAYWARD® pumps are intended for use with permanently-installed pools and may be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

▲ WARNING – Risk of Hyperthermia. To avoid hyperthermia the following “Safety Rules for Hot Tubs” are recommended by the U.S. Consumer Product Safety Commission.

1. Spa or hot tub water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
5. Persons taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anti-coagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physician’s advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of Hyperthermia include:

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

SAVE THESE INSTRUCTIONS

General Information



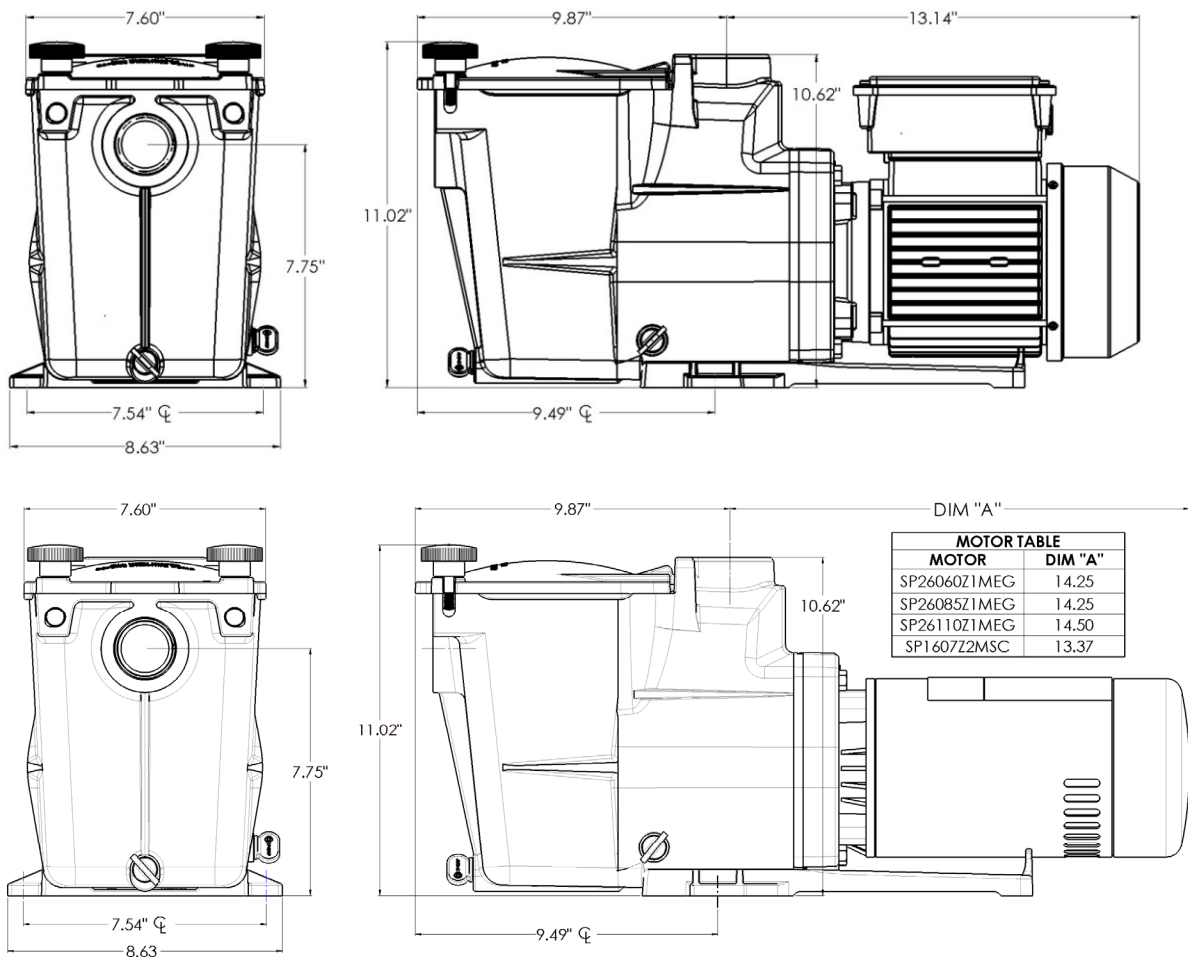
Introduction

This manual contains information for the proper installation and operation of the Hayward Super Pump® 700 Series. The instructions in this manual **MUST** be followed precisely. **Failure to install according to defined instructions will void warranty.**

Product Benefits

- Super-sized 110 cubic-inch basket has extra leaf-holding capacity and extends time between cleanings. Rigid construction with load extender ribbing assures free flowing operation even with heavy debris loads.
- Exclusive swing-aside hand knobs make strainer cover removal simple and easy.
- See-thru strainer cover lets you see when the basket needs cleaning.
- All components molded of corrosion-proof reinforced thermoplastic for extra durability and long life.
- Uni-bracket mounting base provides stable, stress-free support, plus versatility for any installation requirement. Adapts to 48 and 56 frame motors.
- Heat resistant, industrial size ceramic seal.
- Rugged, one-piece housing, with full-flow ports, assures rapid priming and continuous operation.
- Service-ease design gives simple access to all internal parts. By disengaging just four (4) bolts, motor and entire drive group assembly can be removed, without disturbing pipe or mounting connections.

Product Specifications

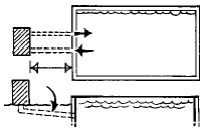




Installation Instructions

NOTICE – This product should be installed and serviced only by a qualified professional.

Pump Location



Locate pump as close to pool as practical and run suction lines as direct as possible to reduce friction loss. Suction lines should have continuous slope upward from lowest point in line. Joints must be tight (but not over-tightened). Suction line diameter must equal or be larger than the discharge line diameter.

Though the pump is designed for outdoor use, it is strongly advised to protect the electrical components from the weather. Select a well-drained area, one that will not flood when it rains. **Do NOT install pump in a damp or non-ventilated location.** Keep motor clean. Pump motors require free circulation of air for cooling.

Pump Mounting

Install pump on a firm, level base or pad to meet all local and national codes. Fasten pump to base or pad with screws or bolts to reduce vibration and stress on pipe or hose joints. The base **MUST** be solid, level, rigid, and vibration free.

Pump mount must:

- Allow pump inlet height to be as close to water level as possible.
- Allow use of short, direct suction pipe (to reduce friction losses).
- Allow for ball valves in suction and discharge piping.
- Be protected from excess moisture and flooding.
- Allow adequate access for servicing pump and piping.
- Incorporate a straight portion of pipe prior to pump inlet no less than (5) pipe diameters in length.

Pipe Sizing Chart

| MAXIMUM RECOMMENDED SYSTEM FLOW RATE BY PIPE SIZE | | | | | |
|---|-----------------|---------------------|-------------|-----------------|---------------------|
| Pipe Size | Flow rate | Water Velocity | Pipe Size | Flow rate | Water Velocity |
| inches [mm] | GPM [Liter/Min] | ft/sec [meters/sec] | inches [mm] | GPM [Liter/Min] | ft/sec [meters/sec] |
| 1 1/2" | 50.76 | 8 | 2 1/2" | 119 | 8 |
| [50] | [192] | [2.44] | [75] | [452] | [2.44] |
| 2" | 84 | 8 | 3" | 184 | 8 |
| [63] | [317] | [2.44] | [90] | [698] | [2.44] |

NOTE – System design should allow a maximum of 8-ft/sec [2.44 meters/sec] water velocity in residential pool or spa piping. It is recommended that a minimum length of piping, equivalent to 10 pipe diameters, be used between the pump suction inlet and any plumbing fittings.

Plumbing

When pump is installed in 1.5" pipe diameter system, use supplied bushing kit. Use **PTFE tape** to seal threaded connections on molded plastic components. All plastic fittings must be new or thoroughly cleaned before use.

NOTE - Do NOT use Plumber's Pipe Dope as it may cause cracking of the plastic components.

When applying **PTFE tape** to plastic threads, wrap the entire threaded portion of the male fitting with one to two layers of tape. Wind the tape clockwise as you face the open end of the fitting, beginning at the end of the fitting. The pump suction and outlet ports have molded-in thread stops. **Do NOT attempt to force hose connector fitting past this stop.** It is only necessary to tighten fittings enough to prevent leakage. Tighten fitting by hand and then use a tool to engage fitting an additional 1 1/2 turns. Use care when using PTFE tape as friction is reduced considerably; **do NOT over-tighten fitting or you may cause damage.** If leaks occur, remove connector, clean off old PTFE tape, re-wrap with one to two additional layers of PTFE tape, and re-install connector.



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Fittings

Fittings restrict flow. For better efficiency, use the fewest possible fittings. Avoid fittings that could cause an air trap. Use two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.

Electrical



▲ **WARNING** – All electrical wiring **MUST** conform to local codes, regulations, and the National Electric Code (NEC).

▲ **WARNING** – Ground and bond pump before connecting to electrical power supply. Failure to ground and bond pump can cause serious or fatal electrical shock hazard. Do **NOT** ground to a gas supply line. To avoid dangerous or fatal electrical shock, turn **OFF** power to pump before working on electrical connections. Fire Hazard - match supply voltage to pump nameplate voltage. Insure that the electrical supply available agrees with the pump's voltage, phase, and cycle, and that the wire size is adequate for the amps rating and distance from the power source. Use copper conductors only.

Electrical Specs

Refer to motor nameplate for voltage and current ratings. Use copper conductors only. For indoor & outdoor use. Connect pump to an appropriately sized/rated branch circuit protector in accordance with local codes, regulations, and the National Electric Code (NEC). A disconnecting means located at least 5 ft. from the inside wall of the pool, spa, or hot tub must be provided.

Voltage

Voltage at pump **MUST NOT** be more than 10% above or below nameplate rated voltage, or components may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when pump is running at full load, consult the power company.

Grounding and Bonding

1. Install, ground, bond, and wire pump in accordance with local or national electrical code requirements.
2. Permanently ground pump. Use green ground terminal provided under access plate; use size and type wire required by code. Connect ground terminal to electrical service ground.
3. Bond pump to pool structure. Bonding will connect all metal parts within and around the pool with a continuous wire. Bonding reduces the risk of a current passing between bonded metal objects, which could potentially cause electrical shock if grounded or shorted. Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and general wiring procedures.
4. Use a solid copper conductor, size 8 or larger. Run wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm²) [No. 6 AWG (13.3 mm²) for Canada] solid copper bonding wire to the pressure wire connector provided on the motor housing and to all metal parts of swimming pool, spa, or hot tub, and to all electrical equipment, metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

Wiring

▲ **WARNING** – All electrical wiring **MUST** conform to local codes, regulations, and National Electric Code (NEC) Pump **MUST** be permanently connected to circuit. Connect pump to an appropriately sized/rated branch circuit protector in accordance with local codes, regulations, and the National Electric Code (NEC). Use the circuit breaker as the master On-Off switch.

Start-Up & Operation



▲ WARNING – Separation Hazard - Failure to Open all suction and discharge valves could result in severe personal injury. To avoid **OPEN** all suction and discharge valves, as well as filter air relief valve (if available) on filter, when starting the circulating pump system.

Starting/Priming the Pump:

Pumps with single speed motors are self priming to 10 ft. and pumps with 2 speed motors are self priming to 10 ft. on high speed only. Fill strainer housing with water to suction pipe level. If water leakage occurs from anywhere on the pump or filter, **DO NOT** start the pump. If no leakage occurs, stand at least 10 feet from pump and/or filter and proceed with starting the pump.

▲ WARNING – Separation Hazard - Failure to do wait to close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged from valve could result in severe personal injury. To avoid wait for a steady stream of water.

NOTICE – NEVER OPERATE THE PUMP WITHOUT WATER. Water acts as a coolant and lubricant for the mechanical shaft seal. NEVER run pump dry. Running pump dry may damage seals, causing leakage, flooding, and voids warranty. Fill strainer housing with water before starting motor.

NOTICE – Do NOT add chemicals to pool/spa system directly in front of pump suction. Adding undiluted chemicals may damage pump and voids warranty.

NOTICE – Before removing strainer cover:

1. **STOP PUMP** before proceeding.
2. **CLOSE VALVES** in suction and outlet pipes.
3. **RELEASE ALL PRESSURE** from pump and piping system using filter manual air relief valve. **See filter owner's manual for more details.**
4. If water source is higher than the pump, pump will prime itself when suction and outlet valves are opened. If water source is lower than the pump, unscrew and remove strainer cover; fill strainer housing with water.
5. Clean and lubricate strainer cover O-ring with "Jack's 327" each time it is removed. Inspect O-ring and re-install on strainer cover.
6. Replace strainer cover on strainer housing; turn strainer cover hand knobs clockwise to tighten cover.
NOTE - Tighten strainer cover knobs by hand only (no wrenches).
7. **OPEN VALVES** in suction and outlet pipes.

Before re-starting pump, see “Starting/Priming the Pump” instructions.

NOTICE – Wait five (5) seconds before re-starting pump. Failure to do so may cause reverse rotation of motor and consequent serious pump damage.

Turn on power and wait for pump to prime, which may take up to ten (10) minutes. Priming time will depend on vertical length of suction lift and horizontal length of suction pipe. If pump does NOT prime within five minutes, stop motor and determine cause. Be sure all suction and discharge valves are open when pump is running. See Troubleshooting Guide.

Maintenance

- Clean strainer basket regularly. Do NOT strike basket to clean. Inspect strainer cover gasket regularly and replace as necessary.
- Hayward pumps have self-lubricating motor bearings and shaft seals. No lubrication is necessary.
- Keep motor clean. Insure air vents are free from obstruction to avoid damage. Do NOT use water to hose off motor.
- Occasionally, shaft seals must be replaced, due to wear or damage. Replace with genuine Hayward seal assembly kit. See “Shaft Seal Change Instructions” in this manual.

Storage/Winterization



▲ WARNING – Separation Hazard. Purging the system with compressed air can cause components to explode, with risk of severe injury or death. To avoid, do not purge the system with compressed air. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.

NOTICE – Allowing the pump to freeze will void the warranty.

NOTICE – Use ONLY propylene glycol as antifreeze in your pool/spa system. Propylene glycol is non-toxic and will not damage plastic system components; other anti-freezes are highly toxic and may damage plastic components in the system.

Drain all water from pump and piping when expecting freezing temperatures or when storing pump for a long time (see instructions below).

Keep motor dry and covered during storage. To avoid condensation/corrosion problems, do NOT cover or wrap pump with plastic film or bags.

Storing Pump for Winterization



▲ WARNING – Electrical Hazard - Failure to disconnect power may result in serious personal injury or death. To avoid, turn OFF power to motor before draining pump.

1. Drain water level below all inlets to the pool.
2. Remove drain plugs from bottom of strainer body, and remove strainer cover from strainer housing.
3. Disconnect pump from mounting pad, wiring system (after power has been turned OFF), and piping system.
4. Once the pump is drained of water, re-install the strainer cover and drain plugs. Store pump in a dry area.

Shaft Seal Change Instructions



IMPORTANT SAFETY INSTRUCTIONS PLEASE READ AND FOLLOW ALL INSTRUCTIONS



▲ WARNING – Electrical Hazard - Failure to disconnect power may result in serious personal injury or death. To avoid, turn OFF power to motor before servicing pump.

NOTICE- Only qualified personnel should attempt rotary seal replacement. Contact your local authorized Hayward Dealer or service center if you have any questions.

Exercise extreme care in handling both the rotating and the stationary sections of the two-part replacement seal. Foreign matter or improper handling will easily scratch the graphite and ceramic sealing surfaces.

Removing the Motor Assembly (See Parts Diagram on page 10 of this manual for pump component locations.)

1. Remove the four (4) 3/8" x 2" **housing cap screws** which hold the motor assembly to the **pump/strainer housing**.
2. 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 **pump/strainer housing**.)



Removing the Impeller (See Parts Diagram on page 10 of this manual for pump component locations.)

3. If necessary, remove the motor end cover by removing the two (2) screws or pry off the cap covering the motor shaft. TEFC motors do not require the motor end cover to be removed to access the shaft end.
4. To prevent motor shaft from turning, depending on which motor you have, secure shaft using a flat blade screwdriver, 1/4" hex driver, or 7/16" wrench on the motor shaft through the motor fan shroud.
5. Rotate the **impeller** counterclockwise and remove. The spring portion of the **seal assembly** is now exposed. Note carefully the position of the spring seal, and remove it. **NOTE** - Replace motor cover to protect delicate motor parts if it was removed earlier.

Removing the Ceramic Seat (See Parts Diagram on page 10 of this manual for pump component locations.)

6. Remove the **seal plate**. Note the tabs on the sides of the plate and the mating grooves on the front of the **motor mounting plate**.
7. Press the ceramic seat with rubber cup out of the **seal plate**. If tight, use a small screwdriver to tap seal out.

STOP - Clean all recesses & parts to be reassembled. Inspect gaskets & replace if necessary.

Seal Installation (See Parts Diagram on page 10 of this manual for pump component locations.)

8. Clean and lightly lubricate the impeller hub and seal recess in the seal plate with a dilute solution of non-granulated liquid-type soap.
9. 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.
10. Gently wipe the polished surface of the ceramic seal with a clean, soft, cotton cloth. Lubricate the rubber cup on the ceramic seat and press it firmly and evenly into the recess of the **seal plate** – polished side facing out.

Replacing the Impeller and Diffuser (See Parts Diagram on page 10 of this manual for pump component locations.)

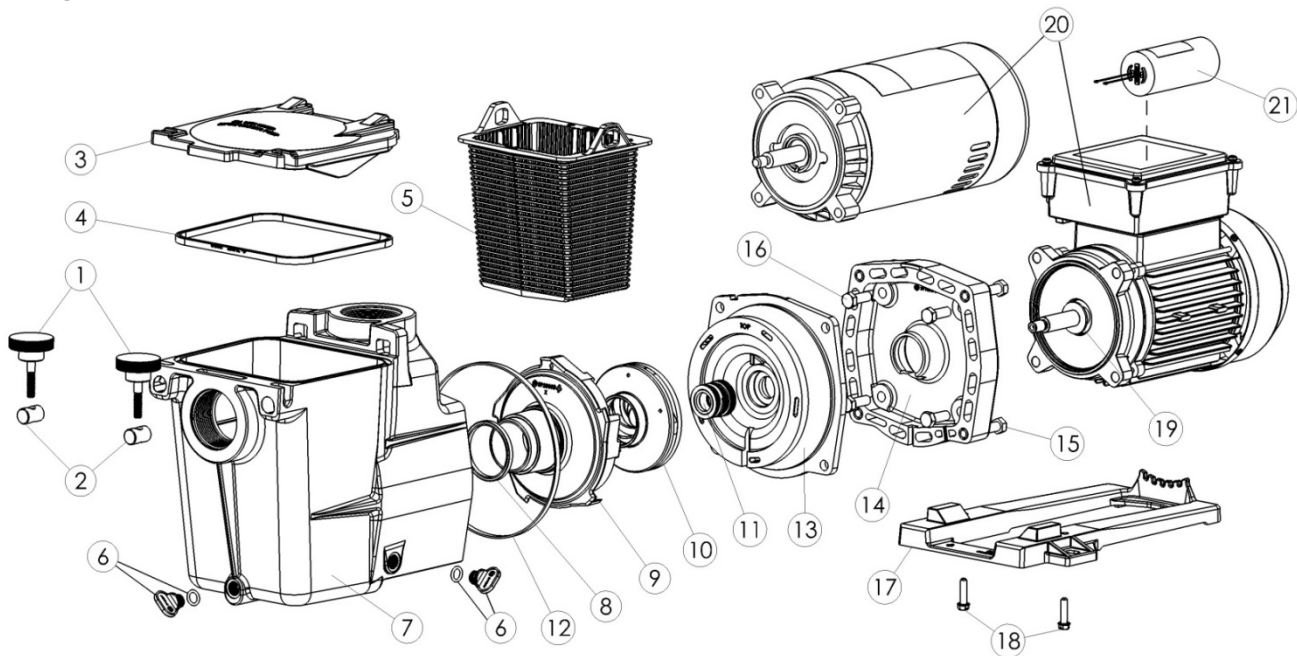
11. Place the **seal plate** onto the **motor mounting plate**, aligning the tabs on the **seal plate** with the grooves on the **motor mounting plate**.
12. Screw the **impeller** onto the motor shaft in a clockwise direction. Tighten snugly by holding motor shaft with screwdriver as noted in step #4.
13. Place the **diffuser** over the **impeller** onto the **seal plate** fitting positioning lug between the two (2) guides.

Replacing the Motor Assembly (See Parts Diagram on page 10 of this manual for pump component locations.)

14. Fasten motor end cover by using the two (2) hex shaped screws. Slide the motor assembly with the **diffuser** in place, into **pump/strainer housing**, being careful not to disturb the **diffuser gasket**.
15. Fasten assembly to **pump/strainer housing** using the four (4) 3/8" x 2" **housing cap screws**. (Be sure **housing gasket** is in place, and replace if damaged). Tighten alternately and evenly.

Replacement Parts

Parts Diagram



Parts Listing

| REF # | DESCRIPTION | NUMBER REQ'D | PART NUMBER | | | | |
|-------|--|--------------|--------------------|----------------|----------------|-----------------|-------------------|
| | | | MODEL SP2670007X10 | MODEL SP2600X5 | MODEL SP2605X7 | MODEL SP2607X10 | MODEL SP2607X102S |
| 1 | HAND KNOB | 2 | SPX1600P | SPX1600P | SPX1600P | SPX1600P | SPX1600P |
| 2 | SWIVEL NUT | 2 | SPX1600N | SPX1600N | SPX1600N | SPX1600N | SPX1600N |
| 3 | STRAINER COVER | 1 | SPX1600D | SPX1600D | SPX1600D | SPX1600D | SPX1600D |
| 4 | STRAINER COVER GASKET | 1 | SPX1600S | SPX1600S | SPX1600S | SPX1600S | SPX1600S |
| 5 | BASKET | 1 | SPX1600M | SPX1600M | SPX1600M | SPX1600M | SPX1600M |
| 6 | DRAIN PLUG W/ GASKET | 2 | SPX4000FG | SPX4000FG | SPX4000FG | SPX4000FG | SPX4000FG |
| 7 | PUMP/STRAINER HOUSING | 1 | SPX1620AA | SPX1620AA | SPX1620AA | SPX1620AA | SPX1620AA |
| 8 | DIFFUSER GASKET | 1 | SPX1600R | SPX1600R | SPX1600R | SPX1600R | SPX1600R |
| 9 | DIFFUSER | 1 | SPX2600B | SPX2600B | SPX2600B | SPX2600B | SPX2600B |
| 10 | IMPELLER | 1 | SPX2607C | SPX2600C | SPX2605C | SPX2607C | SPX2607C |
| 11 | SEAL ASSEMBLY | 1 | SPX1600Z2VIT | SPX1600Z2 | SPX1600Z2 | SPX1600Z2 | SPX1600Z2 |
| 12 | HOUSING GASKET | 1 | SPX1600T | SPX1600T | SPX1600T | SPX1600T | SPX1600T |
| 13 | SEAL PLATE | 1 | SPX2600E5 | SPX2600E5 | SPX2600E5 | SPX2600E5 | SPX2600E5 |
| 14 | MOTOR MOUNTING PLATE | 1 | SPX1600F5 | SPX1600F5 | SPX1600F5 | SPX1600F5 | SPX1600F5 |
| 15 | HOUSING CAP SCREW | 4 | SPX1600Z4 | SPX1600Z4 | SPX1600Z4 | SPX1600Z4 | SPX1600Z4 |
| 16 | MOTOR CAP SCREW | 4 | SPX0125Z4 | SPX0125Z4 | SPX0125Z4 | SPX0125Z4 | SPX0125Z4 |
| 17 | MOUNTING FOOT [WILL INCLUDE SCREWS (ITEM #18)] | 1 | SPX2600G1 | SPX2600G1 | SPX2600G1 | SPX2600G1 | SPX2600G1 |
| 18 | MOUNTING FOOT CAP SCREW | 2 | SPX1600J | SPX1600J | SPX1600J | SPX1600J | SPX1600J |
| 19 | SLINGER | 1 | SPX0125F | SPX0125F | SPX0125F | SPX0125F | SPX0125F |
| 20 | MOTOR- [WILL INCLUDE SLINGER (ITEM #19)] | 1 | SPX2607Z1MTG | SPX1600Z1M | SPX1605Z1M | SPX1607Z1M | SPX1607Z2MSC |
| 21 | CAPACITOR SET, 1 HP TEFC, DOE | 1 | * SPX2600CAP3 | --- | --- | --- | --- |

* Item #21, Capacitor Set, SPX2600CAP3 is only for pump model SP2670007X10 built AFTER 7/19/21. For replacement capacitors for pump model SP2670007X10 built BEFORE 7/19/21, please contact technical services.



Troubleshooting

Motor Will NOT Start – Check For:



Make sure the terminal board connections agree with the wiring diagram on motor data plate label. Be sure motor is wired for available field supply voltage.

1. Improper or loose wiring connections; open switches or relays; tripped circuit breakers, GFCI's, or blown fuses.
Solution: Check all connections, circuit breakers, and fuses. Reset tripped breakers or replace blown fuses.
2. Manually check rotation of motor shaft for free movement and lack of obstruction.
Solution: Refer to Steps 4 & 5 of "Shaft Seal Change Instructions" in this manual.
3. If you have a timer, be certain it is working properly. Bypass it if necessary.

Motor Shuts OFF – Check For:

1. Low voltage at motor or power drop (frequently caused by undersized wiring or extension cord use).
Solution: Contact qualified professional to check that the wiring gauge is heavy enough.

NOTE - Your Hayward pump motor is equipped with an "automatic thermal overload protector." The motor will automatically shut off if power supply drops before heat damage can build up causing windings to burn out. The "thermal overload protector" will allow the motor to automatically restart once the motor has cooled. It will continue to cut On/Off until the problem is corrected. **Be sure to correct cause of overheating.**

Motor Hums, But Does NOT Start – Check For:

1. Impeller jammed with debris.
Solution: Have a qualified repair professional open the pump and remove the debris.

Pump Won't Prime, Check For:

1. Empty pump/strainer housing.
Solution: Make sure pump/strainer housing is filled with water and cover o-ring is clean. Ensure o-ring is properly seated in the cover o-ring groove. Ensure o-ring is lubricated with "Jack's 327" and that strainer cover is locked firmly in position. Lubricant will help to create a tighter seal.
2. Loose connections on suction side.
Solution: Tighten pipe/union connections.
NOTE - Any self-priming pump will not prime if there are suction air leaks. Leaks will result in bubbles emanating from return fittings on pool wall.
3. Leaking O-ring or packing glands on valves.
Solution: Tighten, repair, or replace valves.
4. Strainer basket or skimmer basket loaded with debris.
Solution: Remove strainer housing cover or skimmer cover, clean basket, and refill strainer housing with water. Tighten cover.
5. Suction side clogged.
Solution: Contact a qualified repair professional.
Block off to determine if pump will develop a vacuum. You should have 5"-6" of vacuum at the strainer cover (**Only your pool dealer can confirm this with a vacuum gauge**). You may be able to check by removing the skimmer basket and holding your hand over the bottom port with skimmer full and pump running. If no suction is felt, check for line blockage.
 - a. If pump develops a vacuum, check for blocked suction line or dirty strainer basket. An air leak in the suction piping may be the cause.
 - b. If pump does not develop a vacuum and pump has sufficient "priming water":
 - i. Re-check strainer housing cover and all threaded connections for suction leaks. Check if all system hose clamps are tight.
 - ii. Check voltage to ensure that the motor is rotating at full RPM's.
 - iii. Open housing cover and check for clogging or obstruction in suction. Check impeller for debris.
 - iv. Remove and replace shaft seal only if it is leaking.



Low Flow – Generally, Check For:

1. Clogged or restricted strainer or suction line.
Solution: Contact a qualified repair professional.
2. Undersized pool piping.
Solution: Correct piping size.
3. Plugged or restricted discharge line of filter, valve partially closed (high gauge reading).
Solution: Sand filters – backwash as per manufacturer’s instructions; D.E. filters – backwash as per manufacturer’s instructions; Cartridge filters – clean or replace cartridge.
4. Air leak in suction (bubbles issuing from return fittings).
Solution: Re-tighten using PTFE tape.
5. Plugged, restricted, or damaged impeller.
Solution: Replace including new seal assembly.

Noisy Pump – Check For:

1. Air leak in suction piping, cavitation caused by restricted or undersized suction line or leak at any joint, low water level in pool, and unrestricted discharge return lines.
Solution: Correct suction condition or throttle return lines, if practical. Holding hand over return fitting will sometimes prove this point or putting in a smaller eyeball fitting.
2. Vibration due to improper mounting, etc.
Solution: Mount the pump on a level surface and secure the pump to the equipment pad.
3. Foreign matter in pump housing. Loose stones/debris hitting impeller could be cause.
Solution: Clean the pump housing.
4. Motor bearings noisy from normal wear, rust, overheating, or concentration of chemicals causing seal damage which will allow chlorinated water to seep into bearings wiping out the grease causing bearing to whine.
Solution: All seal leaks should be replaced at once.

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HAYWARD®

HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its products to be free from defects in materials and workmanship for a period of TWO (2) year from the date of purchase, when used in single family residential applications.

The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at www.hayward.com.

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation 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.

***Supersedes all previous publications.**

**Hayward Pool Products
400 Connell Drive, Suite 6100
Berkeley Heights, NJ 07922**



HAYWARD®

PRODUCT REGISTRATION

(Retain For Your Records)

DATE OF INSTALLATION _____

INITIAL PRESSURE GAUGE READING (CLEAN FILTER) _____

PUMP MODEL _____ HORSEPOWER _____

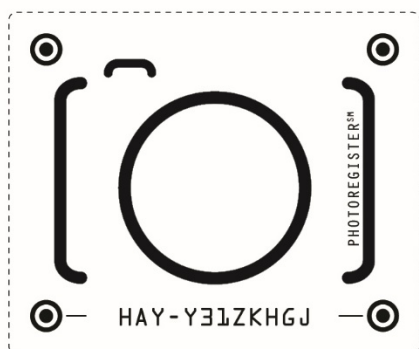
FILTER MODEL _____ SERIAL NUMBER _____

90 DAY EXTENDED WARRANTY* REGISTER WITH YOUR SMARTPHONE

— PROTECT YOUR INVESTMENT IN 2 EASY STEPS —

1. TAKE A PHOTO

Take a photo of the camera icon



2. SEND IT IN

Send it in using **one** of the methods below



SMARTPHONE

Text a photo of the camera icon to **71403**

OR



ONLINE

Visit Hayward.com/Warranty

OR



MESSENGER

Send photo to **photoregister**

*Extended warranty is in addition to applicable product warranty and is for parts only, labor not included.

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