


HAYWARD®

Perflex® Series

Extended Cycle Filtration Systems

Owner's Manual



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Models: EC50AC, and EC50C Series Systems

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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⚠ 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.



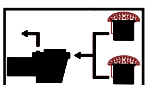
Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

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 6 ft/sec in the suction return line
- 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.



HAYWARD®



⚠ 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



The Hayward-Perflex is a high performance swimming pool filter. As a system it has an output rating of 3,000 gallons (11 Kl) per hour. Manufactured from durable, corrosion-proof materials, the filter and pump are combined on a strong, molded mounting base. The systems are designed for continuous operation, for installation below, the pool water line. It may be used on fresh or salt water swimming pools.

The Perflex filter uses diatomite filter powder (commonly called D.E.). D.E. is the most efficient dirt remover known. It is normally fed into the system through the skimmer when the filter is initially started; then drained from the filter when it can no longer efficiently remove dirt from the water. Through the Perflex's exclusive "BUMP" action, the D.E. is periodically regenerated and the filter cycle extended without changing the powder. When the filter powder is totally used, the "BUMP" action makes it possible to drain the used diatomite without backwashing or dismantling the filter.

Hayward Pool Pumps are non-corrosive, centrifugal pumps with pressure, flow, and safety features specifically designed for swimming pool service. They are driven by a heavy duty motors, which are electrically isolated and insulated from the pool water. Output pressure and flow are tuned to the filter, resulting in a perfectly balanced, non-corrosive system.

SYSTEM LOCATION

1. Though the system is designed for outdoor use, it is advisable to protect electrical components from the weather. Select a well-drained area, one that will not flood when it rains.
2. For best pump performance, the system **MUST** be located below the swimming pool water line. Set the mounting platform level. Keep the filter bump handle, drain outlet, and pressure gauge accessible for convenient operation. There is an alternate bump handle location on the other side of the filter outlet. Instructions for changing the handle position are covered later.
3. Position the system so that the filter tank can drain by gravity.

PLUMBING & INSTALLATION

1. To facilitate servicing of the filter system and to allow for indoor storage during the winter months, installing union connections at the suction and outlet ports is recommended.
2. Use 1-1/4" or 1-1/2" I.D. flexible plastic pipe, or hose, joined with insert fittings and stainless steel clamps.
3. All plumbing connections on the system are 1-1/2" N.P.T. When making connections, use plastic male-end adapters. Apply three turns of Teflon tape or plastic pipe sealant compatible with ABS to the male threads. Screw the fitting into the thread hand tight; then, using a wrench, tighten one more full turn. Additional tightening is unnecessary-and-could result in damage to components.
4. Refer to the diagram for suggested valving. Ball-type valves are recommended where needed.
5. Tighten pump base mounting bolts, if loose.
6. Securely *hand tighten* the union nut between the filter and pump.
7. Connect the pool suction plumbing between the skimmer, pool outlet, and the pump.
8. Connect the pool return (inlet) plumbing
9. If the pressure gauge is not installed, apply Teflon tape to the gauge threads, and *carefully* screw the gauge into the threaded hole in the side of the filter body.
10. A filter drain plug, with gasket, is furnished with each filter and is all that is needed for complete filter draining. If desired however, drain piping may be extended from the filter by using the optional Drain Valve Kit (Model SP0723) and an appropriate length of 1-1/2" pipe. Piping must slope away from the filter so the tank can drain by gravity.
11. All electrical connections should be made in accordance with applicable electrical codes.
12. Check for joint leaks before operating system.
13. Refer to pump instruction booklet for pump information.

BEFORE STARTING THE FILTER

1. Obtain a supply of operating chemicals, D.E., and a pool test kit.
Use only the swimming pool grades of D.E., such as:

CELATOM®	A trademark of EP Minerals
DICALITE®	A trademark of EP Minerals
DE Filter media	Local Pool Supply

2. Superchlorinate the pool water by adding unstabilized granular or liquid chlorine. Stabilized forms of chlorine are recommended for normal daily use after the initial clean-up of the water. Follow chemical manufacturer's recommendations for superchlorination and daily use.

INITIAL SET-UP

1. Always turn off pump and relieve tank pressure by opening Air Relief Valve before loosening Center Clamp or servicing filter.

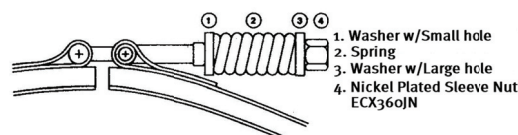
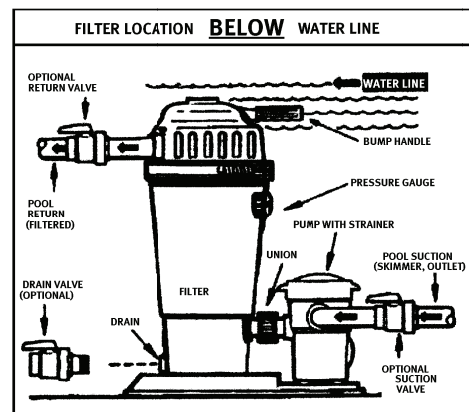
▲ WARNING – Separation Hazard Failure to fully tighten clamp nut per instructions below could result in serious personal injury or death. To prevent, tighten the sleeve nut until spring coils touch each other plus 2 full turns.

2. To re-assemble Clamp on filter, make sure Clamp is located and centered properly over the filter flange. If Clamp is tight, tap Clamp with rubber mallet or block of wood to help seat it.

The end of the T-bolt must extend through the trunnion, slide the washer (with small hole) over the end of the T-bolt. Follow with the spring and then the washer with the large hole. Thread the sleeve nut onto the end of the T-bolt.

Tighten the sleeve nut using a wrench and a 9/16" socket until the spring coils all touch. Finally, tighten 2 additional turns.

3. To re-start system, open all in-line valves. Open Air Relief Valve before starting pump. Stand clear of filter and prime and start the pump per the manufacturer's instructions. When a steady stream of water emerges from the Air relief Valve, close Air Relief Valve.





STARTING THE FILTER

Close the filter drain and the vent valve.

▲ CAUTION: Separation Hazard. Failure to open all suction and discharge valves when starting the pump could cause severe personal injury and/or property damage. To avoid open all suction and discharge valves.



Prime and start the pump following the manufacturer's instructions. Air trapped in the system will automatically vent to the pool. When there is a steady flow of water returning to the pool, the filter is ready for precoat. **DO NOT** operate the filter for more than one minute without the precoat charge.

PRECOATING

Scoop 5 lbs. (2.3 kgs.) of diatomite into the system through the skimmer as fast as the plumbing will take it. Note and record the pressure gauge reading after the diatomite has been added. This is the "precoat pressure."

FILTERING

Filtration starts as soon as the filter has been precoat. As the filter removes dirt from the pool water, the accumulated dirt causes a resistance to flow. As a result, the gauge pressure will rise and the flow will decrease. When the pressure rises 7-10 psi (.49-.70 Bar) above the precoat pressure, regenerate the filter.

REGENERATION (Extending the Cycle)

Stop the pump. Move the bump handle down slowly, then up briskly. Repeat 3 times. Restart the pump and filtration will resume at near the original flow and pressure.

After each regeneration, and until the filter is cleaned, there may be a slight increase in the starting pressure. This is the result of dirt accumulating within the filter and is completely normal.

CLEANING

Cleaning is recommended when the gauge pressure rises more than 10 psi (.70 Bar) in less than a 24 hour period or when cloudy water returns to the pool for more than 30 seconds after regeneration. To clean, first stop the pump; then move the bump handle down slowly, then up briskly. Repeat 8 times. Open the vent valve (under bump cover), open the filter drain (Note: if the filter is installed below the pool water line, close the suction and return valves) and allow water and dirt to empty completely.

After the filter has drained, and with the drain still open, run the pump for a few seconds to flush out any dirt remaining in the bottom of the filter. (Note: If the filter is installed below the pool water line, opening the *suction* valve for a few seconds with the pump off will adequately flush the unit.)

Close the filter drain and the vent valve. Open the suction and return valves (when used). Start the pump and let the filter fill with water and repeat the CLEANING procedure. This completes the cleaning phase. The filter is now ready for recharging. Proceed as in STARTING THE FILTER and PRECOATING.

VACUUMING

Vacuuming can be performed directly into the filter whenever needed. For fastest results, regenerate the filter before and after each vacuuming operation.

TO CHANGE BUMP HANDLE POSITION

1. Remove the bump handle grip. Push in tab at base of handle. Carefully pry the bump cover from the retaining groove and slide the cover off the handle.
2. Using a drift (or 10 penny nail), tap the pivot pin out of the filter head anchor point, freeing the end of the handle. Rotate the bump handle to the alternate position and align the handle and the head anchor holes. Tap the pivot pin in place.
3. Reinstall the bump cover and grip.

PREVENTIVE MAINTENANCE

While Perflex filters are basically resistant to the difficulties often encountered as a result of chemical build-up in swimming pools, it is important to keep in mind that the mineral content in a pool increases every day as a result of the chemicals and the normal water evaporation process. If the concentration of minerals is allowed to get too high, the minerals will form deposits on the Flex-Tubes inside the filter, and will eventually result in shortened filter cycles. To guard against this, a yearly chemical cleaning (soaking) of the Flex-Tube assembly is suggested. Use commercially available 20% muriatic acid added to water in 1 to 1 ratio; or use other commercial filter element cleaner mixed according to the package instructions. Use a plastic container.



▲ CAUTION: Chemical Hazard –Chemicals can cause personal or property damage, to avoid use personal protective gear when handling.



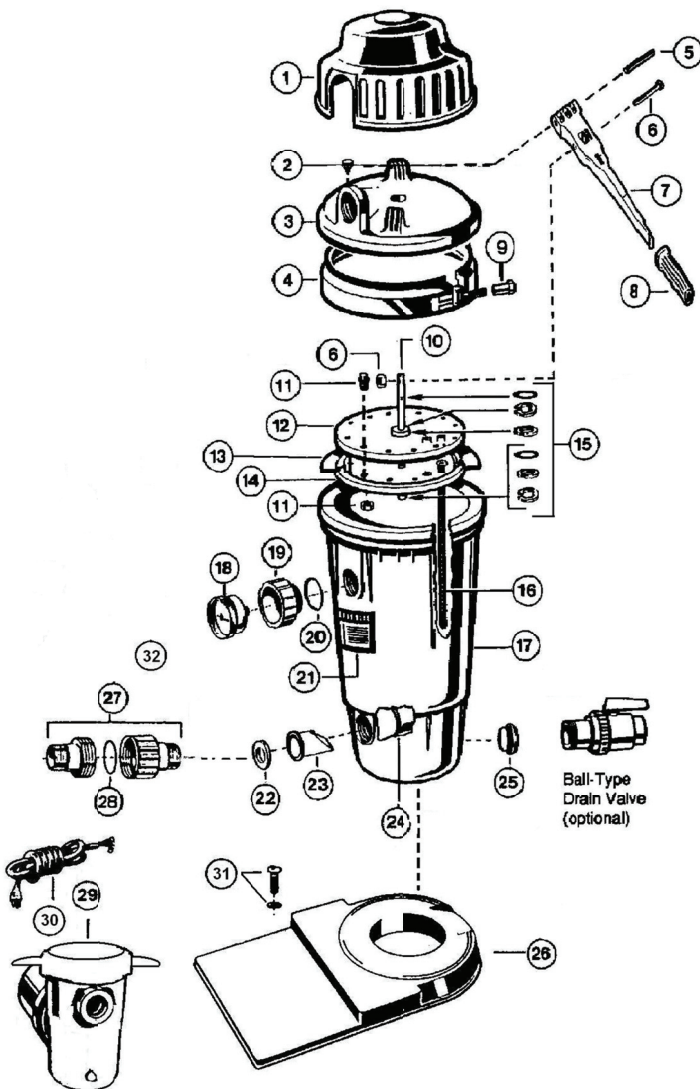
After cleaning, thoroughly flush all affected parts with cold water. Always wear gloves and eye protection when handling cleaning agents.

WINTERIZING

In areas where sub-freezing temperatures can be expected, the filter should be drained and removed from its operating location and stored indoors. Prior to removal, cycle the filter as described under CLEANING.

REPLACEMENT PARTS

REF.	PART NO.	DESCRIPTION	QTY
1	ECX5000D	Bump Mechanism Cover	1
2	ECX1322A	Vent Valve with O-ring	1
3	ECX5000BP	Filter Head with Vent Valve	1
4	ECX5000C	Clamp Assembly with Spring	1
5	ECX100Z9	Pivot Pin (long)	1
6	ECX4236A	Shoulder Screw and Nut set	1
7	ECX1040	Bump Handle	1
8	ECX1037B	Bump Handle Grip	1
9	ECX360JN	Nickel Plated Sleeve Nut, 5/16"	1
10	ECX5000F	Bump Shaft, 1/2"	1
11	SPX1500NYA	Tube Sheet Bolt and Nut Set	12
12	ECX1004A	Tube Sheet Top	1
13	ECX5000G	Diaphragm Gasket	1
14	ECX1004	Tube Sheet Bottom	1
15	ECX1014A	Bump Shaft Kit (Includes 2 each O-ring, Retainer, Thrust Washer)	1
16	ECX1032PAK10	Flex-Tube Assembly (Set of 10)	72
17	ECX5000AP	Filter Body w/Flow Diffuser	1
18	ECX27091	Pressure Gauge, back mount	1
19	ECX12866	Gauge/Inspection Port Adapter	1
20	ECX1287	O-ring for Gauge Adapter	1
21	ECX5029	Decal -Operation	1
22	SPX1055	Flow Controller	1
23	ECX4077B1	Check Valve	1
24	ECX1256	Flow Diffuser with Check Valve	1
25	SP1022C	Drain Plug with Gasket	1
26	ECX1161	Platform Base	1
27	SP1480	1-1/2" Male Union	1
28	SPX142576	O-Ring	1
29	—	Hayward Pool Pump	1
30	SPX1250WA	6 ft. Cord Set	1
31	ECX1108A	Pump Mounting Screw Set (2)	1
	SP0723	Ball-Type Drain Valve with Nipple	1



HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its FILTERS 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.

***Supersedes all previous publications.**

Hayward Pool Products
620 Division Street
Elizabeth, NJ 07207



SERVICE & REPAIRS

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

ALGAE CONTROL

Algae is a form of plant life which can vary in size from a few thousandths of an inch to the size of a small tree. Of the many forms of algae, those most frequently found in swimming pool water are microscopic in size and green in color.

Algae readily grows in sunlight and can, under favorable conditions, quickly overgrow a swimming pool turning it completely green in just a few hours. On the other hand, swimming pool water can be kept unfavorable to algae growth simply by maintaining a chlorine level of at least 0.5 ppm in the water at all times. The chlorine level should be checked at least once a day using a suitable test kit.

If an algae condition develops and the pool water "blooms" green, superchlorination of the pool will be necessary to clear it. Add unstabilized granular chlorine, or liquid chlorine.

Follow chemical manufacturer's recommendation for superchlorination. The algae will quickly become inactive and can then be removed by the filter. Live algae, on the other hand, multiplies so fast that the filter cannot keep up with its growth rate. In an active algae situation, it may be necessary to regenerate the Perflex filter as frequently as every 2 to 3 hours.

When correctly used, commercial algaecides are effective against algae, though algaecides should be used in conjunction with, and not as a substitute for, regular chlorination or superchlorination.

Maintaining a chlorine level of at least 0.5 ppm in the pool water at all times is the most effective way to prevent algae growth in swimming pools

SUGGESTED POOL CHEMISTRY LEVELS		ACTION REQUIRED TO CORRECT POOL CHEMISTRY	
		TO RAISE	TO LOWER
pH	7.2 to 7.6	Add Soda Ash	Add Muriatic Acid or Sodium Bisulphate
TOTAL ALKALINITY	100 to 130 ppm	Add Sodium Bicarbonate	Add Muriatic Acid
CHLORINE (UNSTABILIZED)	0.3 to 1.0 ppm	Add Chlorine Chemical	No action - chlorine will naturally dissipate
CHLORINE (STABILIZED)	1.0 to 3.0 ppm	Add Chlorine Chemical	No action - chlorine will naturally dissipate
CHLORINE STABILIZER (Cyanuric Acid)	40 to 70 ppm	Add Stabilizer	Dilution - partially drain & refill pool with water that has not been treated with Cyanuric Acid.

PROBLEM	PROBABLE CAUSE	REMEDY
Running at high pressures.	1. D.E. coated with normal accumulation of pool dirt, algae, etc. 2. Overcharge of D.E. 3. Restriction in return line caused by small eyeball fitting. 4. Partially closed valve on return line.	1. Bump. 2. Bump-Drain-Recharge. 3. Change to larger size fitting. 4. Open valve.
Drop off of return flow.	1. D.E. coated with normal accumulation of pool dirt, algae, etc. 2. Pump strainer basket clogged. 3. Skimmer basket clogged. 4. Pump impeller vanes clogged. 5. Air leak on suction side of pump. 6. Electric motor running less than maximum R.P.M. (under speed)	1. Bump. Clean. 2. Clean. 3. Cleaning with a stiff wire thru the pump strainer opening will usually work. Alternate would be to disassemble-and clean. 4. Check cover gasket, hand knobs, hose, clamps, etc. Replace or tighten as necessary. 5. Consult pump and motor trouble shooting guide. NOTE: Most motor problems are due to: a) Undersized or improper wiring. b) Power cut-backs or a combination of both.
Short cycles.	1. D.E. loaded to capacity with pool dirt, algae, etc. 2. Bumping incorrectly. 3. Bump handle bent. 4. Pump output exceeds design flow rate of filter. 5. Presence of algae.	1. Bump-Drain-Recharge. 2. Slow down stroke - brisk upstroke. Repeat 6 times. 3. Check and straighten or replace. 4. Check GPM/LPM output. Regulate pump GPM/LPM output to max. filter GPM/LPM rating. 5. Super-chlorinate; Bump-Drain-Recharge as needed.
Short cycles -- even after proper bumping, draining, and recharging	Contaminated (clogged) Flex-Tube braids caused by: a. Natural accumulation of chemical deposits (accelerated if chemicals are fed thru skimmer). b. Running D.E. charge too long with excessive amount of live algae present in pool. c. Operating filter without D.E. d. Operating too long without D.E. after starting pump. D.E. must be added as soon as filter is full of water and pump is putting out a steady stream. IMPORTANT — Testing a new pool plumbing system without adding D.E. will cause this type of clogging.	Clean Tube Nest a) Detergent Cleaning: Remove tube nest and hose down with forceful stream of clean water. Soak tube nest in strong solution of laundry detergent (such as <i>Cheer</i>) and warm water. Hose down again. b) Chemical Cleaning: This requires use of water and muriatic acid solution (or filter cleaner-type preparations) to chemically dissolve contaminants. Consult your pool dealer for chemical cleaning instructions.



PROBLEM	PROBABLE CAUSE	REMEDY
D.E. leaking to pool via the return lines.	1. Opening or tear in one or more Flex-Tubes. 2. Rip or hole in diaphragm gasket. 3. Worn or loose fitting diaphragm gasket (chemicals fed thru suction lines may shorten life of this part). 4. Loose bolts on tube nest plates.	1. Replace Flex-Tube. 2. Replace gasket. 3. Replace gasket. 4. Tighten bolts.
Hard bumping.	1. Caking of D.E. under tube sheet. Sometimes caused by accumulation of sun tan oils, hair or floating particles that bind together in a clay-like form. 2. Overloaded with D.E. Sometimes happens when last charge of dirty D.E. was not properly drained. 3. Filter runs too long between bumping.	1. Bump-Drain-Recharge more often and reduce the use of oils. 2. Bump-Drain-Recharge with proper amount of D.E. 3. Bump more frequently.
D.E. leaking back to pool via skimmer or main drain.	Filter check valve worn or stuck open.	Clean and/or replace.
Very short cycles when vacuuming.	Normal if pool contains: 1. Very dirty water. 2. Presence of live, vigorously growing algae. 3. Presence of alum or floccing agents, which will clog filter.	1. Bump-Drain-Recharge more often. 2. Add enough chlorine to control this growth — then vacuum. 3. Vacuum so as to by-pass filter. Avoid using floccing agents.

PRODUCT REGISTRATION

(Retain For Your Records)

DATE OF INSTALLATION



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

Perflex® D.E. 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

[illegible]

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
1. Builder 2. Builder 3. Builder 4. Builder 5. Builder 6. Builder 7. Builder 8. Builder 9. Builder 10. Builder 11. Builder 12. Builder 13. Builder 14. Builder 15. Builder 16. Builder 17. Builder 18. Builder 19. Builder 20. Builder 21. Builder 22. Builder 23. Builder 24. Builder 25. Builder 26. Builder 27. Builder 28. Builder 29. Builder 30. Builder 31. Builder 32. Builder 33. Builder 34. Builder 35. Builder 36. Builder 37. Builder 38. Builder 39. Builder 40. Builder 41. Builder 42. Builder 43. Builder 44. Builder 45. Builder 46. Builder 47. Builder 48. Builder 49. Builder 50. Builder 51. Builder 52. Builder 53. Builder 54. Builder 55. Builder 56. Builder 57. Builder 58. Builder 59. Builder 60. Builder 61. Builder 62. Builder 63. Builder 64. Builder 65. Builder 66. Builder 67. Builder 68. Builder 69. Builder 70. Builder 71. Builder 72. Builder 73. Builder 74. Builder 75. Builder 76. Builder 77. Builder 78. Builder 79. Builder 80. Builder 81. Builder 82. Builder 83. Builder 84. Builder 85. Builder 86. Builder 87. Builder 88. Builder 89. Builder 90. Builder 91. Builder 92. Builder 93. Builder 94. Builder 95. Builder 96. Builder 97. Builder 98. Builder 99. Builder 100. Builder	1. Retailer 2. Retailer 3. Retailer 4. Retailer 5. Retailer 6. Retailer 7. Retailer 8. Retailer 9. Retailer 10. Retailer 11. Retailer 12. Retailer 13. Retailer 14. Retailer 15. Retailer 16. Retailer 17. Retailer 18. Retailer 19. Retailer 20. Retailer 21. Retailer 22. Retailer 23. Retailer 24. Retailer 25. Retailer 26. Retailer 27. Retailer 28. Retailer 29. Retailer 30. Retailer 31. Retailer 32. Retailer 33. Retailer 34. Retailer 35. Retailer 36. Retailer 37. Retailer 38. Retailer 39. Retailer 40. Retailer 41. Retailer 42. Retailer 43. Retailer 44. Retailer 45. Retailer 46. Retailer 47. Retailer 48. Retailer 49. Retailer 50. Retailer 51. Retailer 52. Retailer 53. Retailer 54. Retailer 55. Retailer 56. Retailer 57. Retailer 58. Retailer 59. Retailer 60. Retailer 61. Retailer 62. Retailer 63. Retailer 64. Retailer 65. Retailer 66. Retailer 67. Retailer 68. Retailer 69. Retailer 70. Retailer 71. Retailer 72. Retailer 73. Retailer 74. Retailer 75. Retailer 76. Retailer 77. Retailer 78. Retailer 79. Retailer 80. Retailer 81. Retailer 82. Retailer 83. Retailer 84. Retailer 85. Retailer 86. Retailer 87. Retailer 88. Retailer 89. Retailer 90. Retailer 91. Retailer 92. Retailer 93. Retailer 94. Retailer 95. Retailer 96. Retailer 97. Retailer 98. Retailer 99. Retailer 100. Retailer	1. Pool Service 2. Pool Service 3. Pool Service 4. Pool Service 5. Pool Service 6. Pool Service 7. Pool Service 8. Pool Service 9. Pool Service 10. Pool Service 11. Pool Service 12. Pool Service 13. Pool Service 14. Pool Service 15. Pool Service 16. Pool Service 17. Pool Service 18. Pool Service 19. Pool Service 20. Pool Service 21. Pool Service 22. Pool Service 23. Pool Service 24. Pool Service 25. Pool Service 26. Pool Service 27. Pool Service 28. Pool Service 29. Pool Service 30. Pool Service 31. Pool Service 32. Pool Service 33. Pool Service 34. Pool Service 35. Pool Service 36. Pool Service 37. Pool Service 38. Pool Service 39. Pool Service 40. Pool Service 41. Pool Service 42. Pool Service 43. Pool Service 44. Pool Service 45. Pool Service 46. Pool Service 47. Pool Service 48. Pool Service 49. Pool Service 50. Pool Service 51. Pool Service 52. Pool Service 53. Pool Service 54. Pool Service 55. Pool Service 56. Pool Service 57. Pool Service 58. Pool Service 59. Pool Service	

Company Name

Address _____

City _____ State _____ Zip _____

Phone _____

Type of Pool:

Concrete/Gunite Vinyl Fiberglass

Other

New Installation

Replacement

Installation for:

In Ground	Above Ground	Space
1. Foundation 2. Structure 3. Interior 4. Exterior 5. Roof 6. Basement 7. Attic 8. Garage 9. Driveway 10. Front Yard 11. Back Yard 12. Side Yard 13. Front Porch 14. Back Porch 15. Side Porch 16. Front Walk 17. Back Walk 18. Side Walk 19. Front Driveway 20. Back Driveway 21. Side Driveway 22. Front Lawn 23. Back Lawn 24. Side Lawn 25. Front Garden 26. Back Garden 27. Side Garden 28. Front Trees 29. Back Trees 30. Side Trees 31. Front Fences 32. Back Fences 33. Side Fences 34. Front Gates 35. Back Gates 36. Side Gates 37. Front Drains 38. Back Drains 39. Side Drains 40. Front Sewers 41. Back Sewers 42. Side Sewers 43. Front Storm 44. Back Storm 45. Side Storm 46. Front Gutter 47. Back Gutter 48. Side Gutter 49. Front Downspout 50. Back Downspout 51. Side Downspout 52. Front Siding 53. Back Siding 54. Side Siding 55. Front Windows 56. Back Windows 57. Side Windows 58. Front Doors 59. Back Doors 60. Side Doors 61. Front Stairs 62. Back Stairs 63. Side Stairs 64. Front Balcony 65. Back Balcony 66. Side Balcony 67. Front Deck 68. Back Deck 69. Side Deck 70. Front Patio 71. Back Patio 72. Side Patio 73. Front Pool 74. Back Pool 75. Side Pool 76. Front Hot Tub 77. Back Hot Tub 78. Side Hot Tub 79. Front Spa 80. Back Spa 81. Side Spa 82. Front Sauna 83. Back Sauna 84. Side Sauna 85. Front Hammock 86. Back Hammock 87. Side Hammock 88. Front Swing 89. Back Swing 90. Side Swing 91. Front Bench 92. Back Bench 93. Side Bench 94. Front Table 95. Back Table 96. Side Table 97. Front Chair 98. Back Chair 99. Side Chair 100. Front Light 101. Back Light 102. Side Light 103. Front Fan 104. Back Fan 105. Side Fan 106. Front Heater 107. Back Heater 108. Side Heater 109. Front Cooler 110. Back Cooler 111. Side Cooler 112. Front Grill 113. Back Grill 114. Side Grill 115. Front Bar 116. Back Bar 117. Side Bar 118. Front Kitchen 119. Back Kitchen 120. Side Kitchen 121. Front Living 122. Back Living 123. Side Living 124. Front Dining 125. Back Dining 126. Side Dining 127. Front Bedroom 128. Back Bedroom 129. Side Bedroom 130. Front Bathroom 131. Back Bathroom 132. Side Bathroom 133. Front Hallway 134. Back Hallway 135. Side Hallway 136. Front Closet 137. Back Closet 138. Side Closet 139. Front Storage 140. Back Storage 141. Side Storage 142. Front Laundry 143. Back Laundry 144. Side Laundry 145. Front Entry 146. Back Entry 147. Side Entry 148. Front Exit 149. Back Exit 150. Side Exit	1. Foundation 2. Structure 3. Interior 4. Exterior 5. Roof 6. Basement 7. Attic 8. Garage 9. Driveway 10. Front Yard 11. Back Yard 12. Side Yard 13. Front Porch 14. Back Porch 15. Side Porch 16. Front Walk 17. Back Walk 18. Side Walk 19. Front Driveway 20. Back Driveway 21. Side Driveway 22. Front Lawn 23. Back Lawn 24. Side Lawn 25. Front Garden 26. Back Garden 27. Side Garden 28. Front Trees 29. Back Trees 30. Side Trees 31. Front Fences 32. Back Fences 33. Side Fences 34. Front Gates 35. Back Gates 36. Side Gates 37. Front Drains 38. Back Drains 39. Side Drains 40. Front Sewers 41. Back Sewers 42. Side Sewers 43. Front Storm 44. Back Storm 45. Side Storm 46. Front Gutter 47. Back Gutter 48. Side Gutter 49. Front Downspout 50. Back Downspout 51. Side Downspout 52. Front Siding 53. Back Siding 54. Side Siding 55. Front Windows 56. Back Windows 57. Side Windows 58. Front Doors 59. Back Doors 60. Side Doors 61. Front Stairs 62. Back Stairs 63. Side Stairs 64. Front Balcony 65. Back Balcony 66. Side Balcony 67. Front Deck 68. Back Deck 69. Side Deck 70. Front Patio 71. Back Patio 72. Side Patio 73. Front Pool 74. Back Pool 75. Side Pool 76. Front Hot Tub 77. Back Hot Tub 78. Side Hot Tub 79. Front Spa 80. Back Spa 81. Side Spa 82. Front Sauna 83. Back Sauna 84. Side Sauna 85. Front Hammock 86. Back Hammock 87. Side Hammock 88. Front Swing 89. Back Swing 90. Side Swing 91. Front Bench 92. Back Bench 93. Side Bench 94. Front Table 95. Back Table	



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