

## OWNER'S GUIDE

EC65, EC75 System III

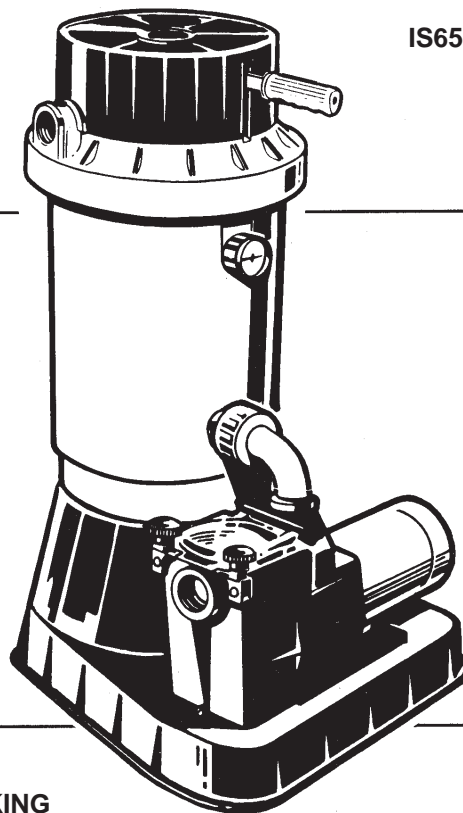
# PERFLEX<sup>®</sup>

*Extended Cycle*

# FILTERS

and

EC65A, EC75A Basic Filter Units



### HOW YOUR PERFLEX FILTER KEEPS YOU SWIMMING— NOT WORKING

Your Perflex Filter uses *filter aid filtration*. The filter aid is diatomaceous earth, commonly called diatomite. This powder has openings large enough to allow water through, but too small to pass the dirt. The diatomite process is a straining method of filtration.

Unlike ordinary diatomite filters, your Perflex unit has a porous and flexible internal element which collects the diatomite cake. Called a Flex-Tube, there are 120 of these patented elements inside your filter.

When water containing diatomite passes through each Flex-Tube, a thin coating of diatomite forms on the outside of it (Precoating). It is this "filter cake" that strains the dirt from the water. Just one pass through the "cake" clarifies the water to sparkling cleanliness.

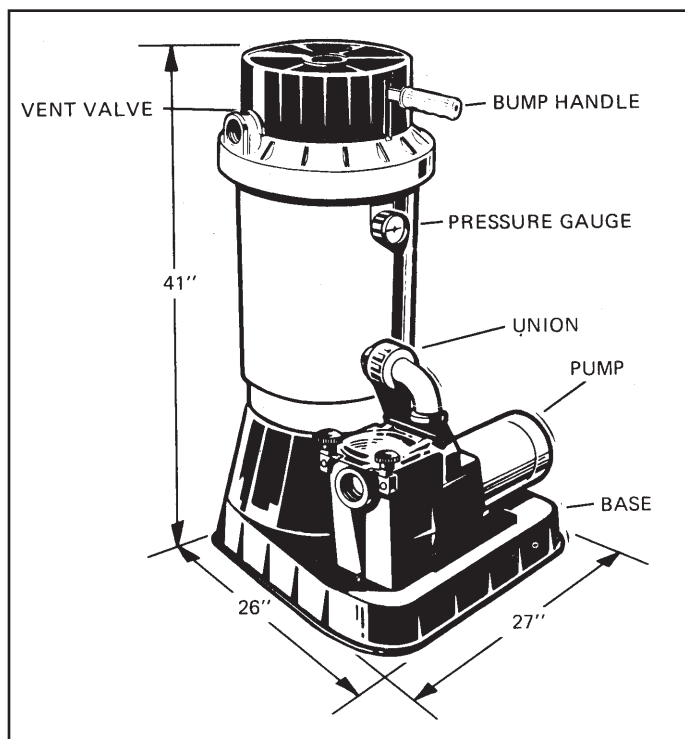
### EXCLUSIVE REGENERATIVE FILTRATION

As the dirty water from the pool strains through the diatomite "cake," dirt collects on its outside surface. After several days, the accumulated dirt begins to block the diatomite, diminishing the filter's flow output. This is when ordinary filters need backwashing, but not Perflex. With Perflex, filtration is restored to near original flow by a process called *regeneration*, an exclusive feature of the Perflex Filter.

During regeneration, the clogged cake is automatically removed from the Flex-Tubes, mixed thoroughly, and then reapplied to the Flex-Tubes. This distributes the dirt within the diatomite cake and provides a fresh outer filtering surface. To regenerate the filter, all you have to do is switch the pump off, move the bump handle slowly down and up sharply about five times and switch the pump on again. This takes only about thirty seconds to perform. The filter can be regenerated whenever you need maximum filter flow. For example, when vacuuming, and during and after extra heavy pool usage.

### NO BACKWASH CLEANING

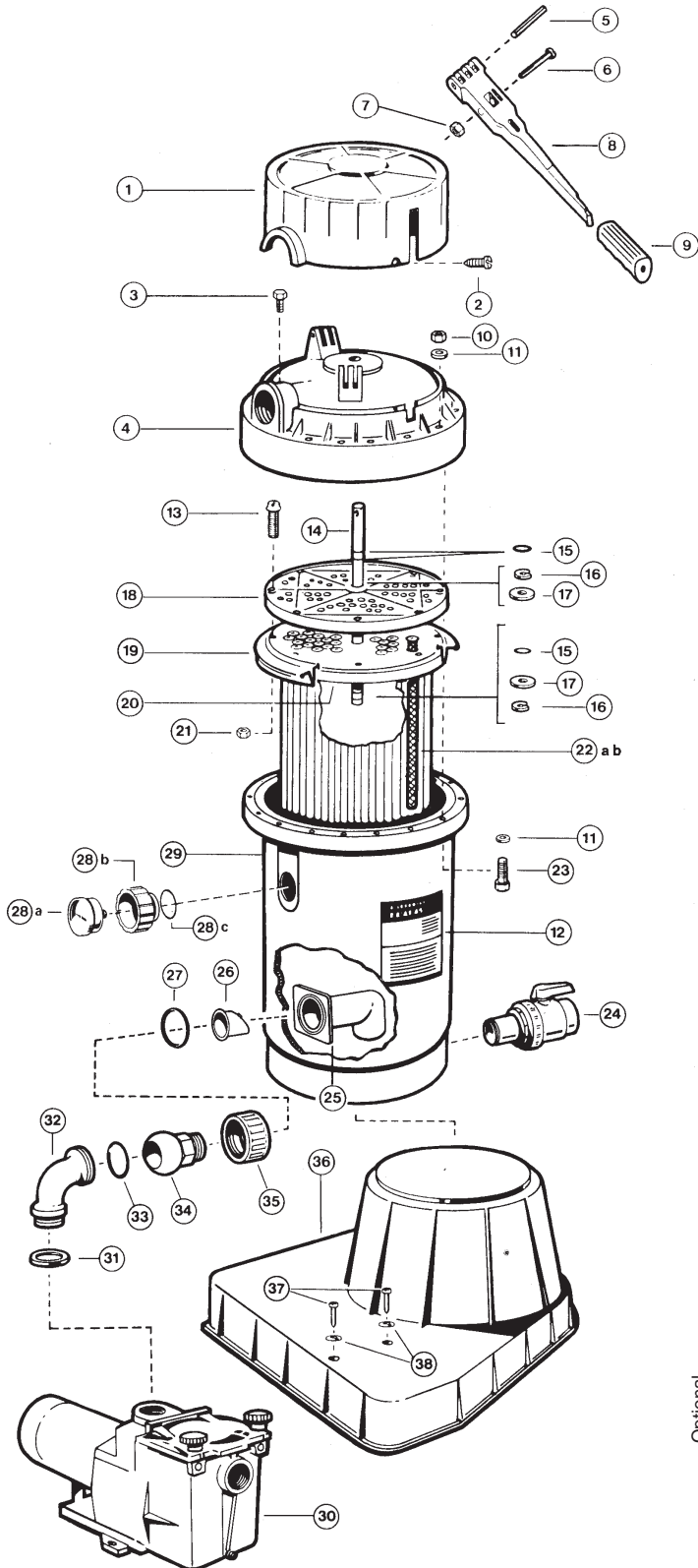
Eventually (after 3-10 weeks of operation depending on usage), the filter will need cleaning and a fresh supply of diatomite. Cleaning the Perflex Filter is fast and simple. You simply switch off the pump, bump the filter, open the drain valve, and allow the dirt and old diatomite to drain out. There is no disassembly of the unit. The complete operation takes about 5 minutes.



NOTE: If rigid return piping is used, installation of a piping union is recommended for ease of future servicing.

# PERFLEX SPECIFICATIONS

MODEL NO.	EFFECTIVE FILTRATION RATE		DESIGN FLOW RATE		PRESSURE LOSS AT DESIGN FLOW RATE		MAXIMUM WORKING PRESSURE		REQUIRED CLEARANCE				RECOMMENDED AMOUNT OF DIATOMITE (D.E.)	
	FT <sup>2</sup>	M <sup>2</sup>	GPM	LPM	PSI	BAR	PSI	BAR	SIDE		ABOVE		LBS	KGS
EC65	26.9	2.50	67	253	6.9	.5	50	3.45	6	152	10	254	6	2.7
EC75	40	3.7	80	303	8.0	.6	50	3.45	6	152	10	254	7	3.2



## PARTS Models EC65, EC75 System III and Models EC65A, EC75A Basic Filter Unit

REF. NO.	PART NO.	DESCRIPTION	NO REQ'D.
1	ECX1120	Bump Mechanism Cover	1
2	ECX1019	Cover Screw - 1981 - Prior	2
3	ECX1321A	Vent Valve	1
4	ECX11194AT	Filter Head	1
5	ECX10029	Pivot Pin	1
6	ECX4236	Shoulder Screw	1
7	ECX4249	Lock Nut	1
8	ECX1040A	Bump Handle	1
9	ECX1037B	Handle Grip	1
10	ECX176855	1/4" - 20 Hex. Nut	15
11	ECX1252	1/4" x 11/16" O.D. Flat Washer	30
12	ECX1230	Decal - Operation	1
13	SPX1500N1	Tube Sheet Screw	15
14	ECX1110	Bump Shaft	1
15	ECX9611246	O-Ring	3
16	ECX1014	Retainer	2
17	ECX1011	Thrust Washer	2
18	ECX1104	Tube Sheet (Top)	1
19	ECX1105	Diaphragm Gasket	1
20	ECX1103	Tube Sheet (Bottom)	1
21	SPX1500Y1	Tube Sheet Nut	16
22a	ECX1031	Flex-Tube Assembly, 13-3/8" Long (EC65)	120
22b	ECX1032	Flex-Tube Assembly, 16-1/4" Long (EC75)	120
23	ECX1642215	1/2" - 20 x 1-3/4" Hex. Head Bolt	15
24	SPX723	Ball-Type Drain Valve	1
25	ECX4220A	Elbow Ass'y. w/Check Valve	1
26	ECX4077B1	Check Valve Only	1
27	SPX1500W	O-Ring	1
28a	ECX27091	Pressure Gauge, Back Mount	1
28b	ECX12866	Gauge/Port Adapter	1
28c	ECX1287	Adapter O-Ring	1
29	ECX111814AT	Filter Body	1
30	----	Super, Super II or Max-Flo Pump	---
31	SPX1485C	Gasket	1
32	SPX1485B	Pump Discharge Elbow	1
33	SPX1425Z6	O-Ring	1
34	SPX1485A	Union Ball End	1
35	SPX1480C	Union Nut	1
36	ECX1263	Base	1
37	ECX1275	Pump Mounting Screw	2
38	ECX1109	Mounting Screw Washer	2
---	ECX1251	Flex-tube Nest Assembly- (Incls. Items 13 thru 22)	---

Optional System III Components

<p><b>SETTING UP FILTER, BASE AND PUMP — SYSTEM III</b></p> <p>Place pump and base on level, well packed ground. Position pump on base, align with holes in base, and secure with screws and washers. Thread and seal union ball end into filter inlet. Thread and seal union elbow into pump discharge outlet. Place filter on pedestal base, aligning union ball end with curved pump discharge elbow. Gently move filter so ball and socket contact. Join system by hand tightening molded union nut. Do not force. If union nut is difficult to tighten, simply move filter slightly to align correctly. Then tighten union nut.</p>	<p><b>TO CHANGE BUMP HANDLE POSITION</b></p> <ol style="list-style-type: none"> <li>1. Loosen bump cover securing screws and lift off bump cover.</li> <li>2. Using a drift (or 10 penny nail), tap the pivot pin out of the filter head anchor point, freeing the END of the bump handle.</li> <li>3. Rotate bump handle to alternate position. Carefully align handle and anchor holes and tap pivot pin place.</li> </ol>
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**BEFORE STARTING THE FILTER**

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

- CELATOM . . . . . Eagle-Picher Industries, Inc.
- AQUA-CEL . . . . . Johns-Manville Products Corporation
- DICALITE 4200 . . . . . Grefco, Inc.
- WITCO . . . . . Witco Corporation

A 1 lb. coffee can makes a handy measure - leveled off it holds about 0.7 lbs. of D.E., or use Hayward's 1 lb. pre-measured D.E. scoop ((EC10SC).

The **EC65** filter uses a 6 lb. charge of Diatomite, roughly 9 leveled coffee cans full, or 6 leveled scoops using Hayward's EC10SC.

The **EC75** filter uses a 7 lb. charge of Diatomite, roughly 10 leveled coffee cans full, or 7 leveled scoops using Hayward's EC10SC.

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.

**STARTING THE FILTER**

Close the filter drain. Open the suction and return valves (when used). Close the vent valve.

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 precoating. *DO NOT* operate the filter for more than one minute without the precoat charge.

**PRECOATING**

Scoop 6 lbs. (**EC65**) or 7 lbs. (**EC75**) 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 precoated. 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 diminish. When the pressure rises 7-10 psi above the precoat pressure, regenerate the filter.

**REGENERATION (Extending the Cycle)**

Stop the pump. Move the bump handle down slow, 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 in less than a 24 hour period or when cloudy water returns to the pool for longer than 30 seconds after regeneration. To clean, stop the pump. Move the bump handle down slowly, then up briskly. Repeat 8 times. Open the vent valve, 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: be sure to open suction valve, if closed, prior to turning on pump, or 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. **CAUTION: All suction and discharge valves must be open when starting the system. Failure to do so could cause severe personal injury and/or property damage.**

**VACUUMING**

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

**GAUGE/INSPECTION PORT ADAPTER**

The gauge/inspection port adapter provides an easy way to look into the filter at the "top" area of the tube nest assembly. It gives a quick inspection capability to check tube nest condition (algae, calcium or D.E. build-up, etc.) without requiring removal of the filter head. It also allows you to wash off entrapped debris and excess D.E. from between the Flex-Tubes and from under the tube sheet by spraying with a garden hose, or use Hayward's Jet-Action Cleaning Wand (EC2024) which attaches to a garden hose.

**To remove adapter**—shut off pump and valves and drain water in filter to below port. Unscrew adapter, with gauge, counterclockwise.

**To reinstall**—thread adapter, with O-ring in place, securely into filter housing.

## WINTERIZING

In areas where sub-freezing temperatures can be expected, the filter should be drained. Accessories that tend to hold water such as pressure gauges, etc., should be removed and stored indoors.

## 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 added 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 and take extreme caution when handling cleaning agents as they can be harmful to the eyes, skin and clothing. After cleaning, thoroughly flush all affected parts with cold water.

## 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.

## POOL OPERATING TIPS

### DO

1. Regenerate the filter before & after vacuuming the pool, during & after periods of heavy usage; frequently during seasonal start-ups.
2. When regenerating, wait about 30 seconds after switching pump off before bumping the filter.
3. Check chlorine residual and pH every morning and evening.
4. Vacuum at least once a week.
5. Drain and winterize the system when freezing temps are expected.
6. Preserve the appearance of the filter tank by an occasional cleaning with mild, plastic cleaner/wax.

### DON'T

1. Operate the filter without diatomaceous earth.
2. Use diatomite substitutes.
3. Attempt to regenerate the filter with pump running.
4. Allow pH to fall below 7.2 or rise above 7.8.
5. Allow chlorine residual to fall below 0.5 ppm.
6. Allow cyanuric acid stabilizer concentration to exceed 60 ppm.
7. Apply chemicals through the skimmer in concentrated amounts.

## 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 algacides are effective against algae, though algacides 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.

## POOL CHEMISTRY GUIDELINES

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.



# HAYWARD POOL PRODUCTS, INC.

Hayward Pool Products, Inc.  
900 Fairmount Avenue  
Elizabeth, NJ 07207

Hayward Pool Products, Inc.  
2875 Pomona Boulevard  
Pomona, CA 91768

Hayward Pool Products Canada  
2880 Plymouth Drive  
Oakville, Ontario L6H 5R4

Hayward Pool Products Europe  
ZA del'Observatoire  
2, Avenue des Chaumes  
78182 St. Quentin en Yvelines Cedex  
France