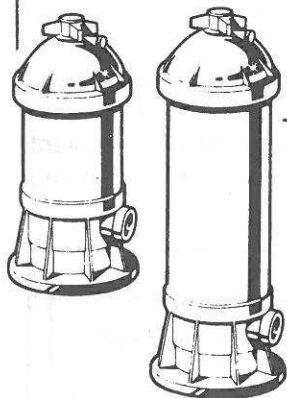


## OWNER'S GUIDE

# HAYWARD® STAR + CLEAR™ CARTRIDGE FILTERS

MODELS C-250, C-500, and C-750



Hayward Star-Clear filters are high performance swimming pool filters with a filtration rating of 1,500 gallons (5,678 L) per hour (Model C-250), 3,000 gallons (11,355 L) per hour (Model C-500), and 4,500 gallons (17,033 L) per hour (Model C-750). Manufactured from durable, corrosion-proof materials, they are designed for continuous or intermittent operation, for installation above or below the pool water line, for fresh or salt water swimming pools or spas. Star-Clear filters utilize a reusable single element, reinforced polyester filter cartridge to provide a high degree of water clarity with absolute minimum care. Their unique design is such that no tools are needed to remove or replace the cartridge in the filter assembly. Simply spin off the locking knob, lift off the filter cover, and remove cartridge. It's that easy.

## PUMP SELECTION AND LOCATION

To power your Star-Clear filter, select a continuous duty pump designed for swimming pool or spa service.

It is important to first determine where your pump and filter will be located. If above the water line, a self-priming pump must be used. Self-priming pumps (such as Hayward Super Pump®, Super II™, Max-Flo or Power-Flo II™) have the ability to lift water from a lower level and prime automatically.

As a general guide, select a pump with an average output rating of at least 25-35 gallons (95-133 L) per minute for the C-250; 50-60 gallons (189-227 L) per minute for the C-500; 75-85 gallons (284-322 L) per minute for the C-750. Other considerations are operation of hydrotherapy fittings, automatic cleaners, etc. Your dealer will help you select the proper size pump for your system.

## FILTER LOCATION

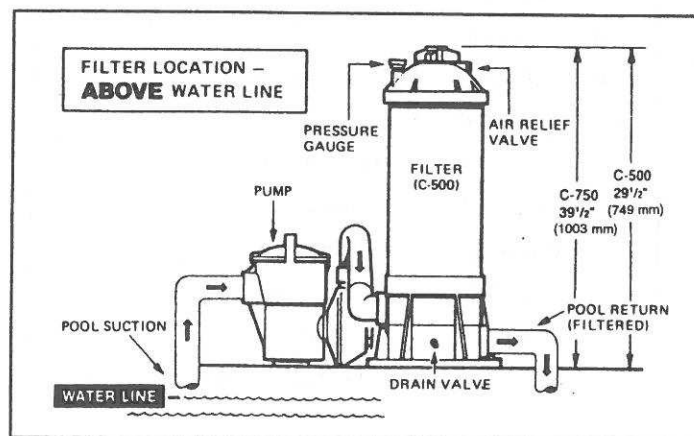
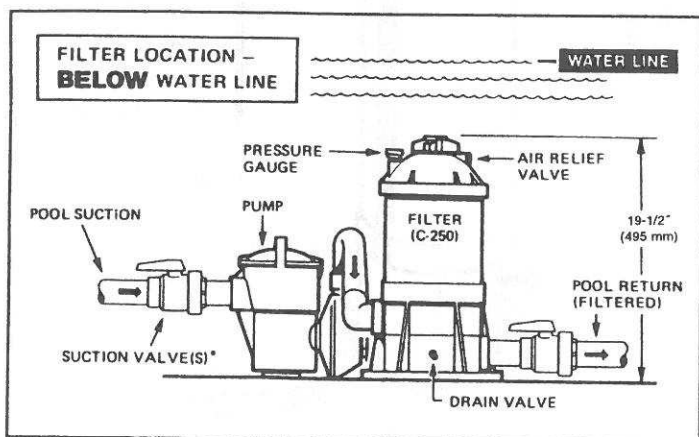
1. Since plumbing fittings offer a resistance to water flow, position the filter as close to the swimming pool as local codes allow. Keep the number of fittings to a minimum. Select a well-drained area, one that will not flood when it rains.
2. Set the filter on a solid level surface. Allow a minimum top clearance for cartridge removal (11<sup>1</sup>/<sub>2</sub>" / 293 mm for C-250; 21<sup>1</sup>/<sub>2</sub>" / 533 mm for C-500; 31<sup>1</sup>/<sub>2</sub>" / 787 mm for C-750). Be sure filter, pump, drain and pressure gauge are accessible for convenient operation.

3. Position the filter so the tank can drain by gravity.
4. If practical, position pump and filter in the shade to shield it from continuous, direct heat from the sun.

## PLUMBING

1. Use 1-1/4" or 1-1/2" flexible plastic pipe or hose joined with insert fittings and stainless steel clamps. If rigid pipe is used, be sure to provide unions for easy servicing.
2. Refer to the diagrams for basic suggested valving. Ball valves are recommended where needed. While all systems vary, the main consideration is to provide the desired control of water flow from the pool to the pump and filter and back to the pool. When the filter is located below water level, provide valves to prevent back flow of water to the filter during cleaning and routine servicing.
3. All plumbing connections on the Star-Clear filter are 1-1/2" N.P.T. When making connections to the filter, use plastic male-end adapters. Apply three turns of teflon tape (or use special plastic pipe sealant) 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 broken or damaged fittings.



\*Not furnished with Filter.

4. Connect the pool suction plumbing between the skimmer, pool outlet, etc., and the pump.
5. Install the pool return plumbing.
6. If pressure gauge is not installed, apply teflon tape to the gauge threads, and carefully screw the gauge into the threaded hole in the filter cover (dome).
7. A drain plug is furnished with each filter and is all that is needed for complete filter draining. A manual air vent valve is furnished to aid in the bleeding of unwanted air when starting the filter.
8. All electrical connections should be made in accordance with local codes.
9. Check for joint leaks before operating.
10. Refer to pump instruction booklet for pump information.

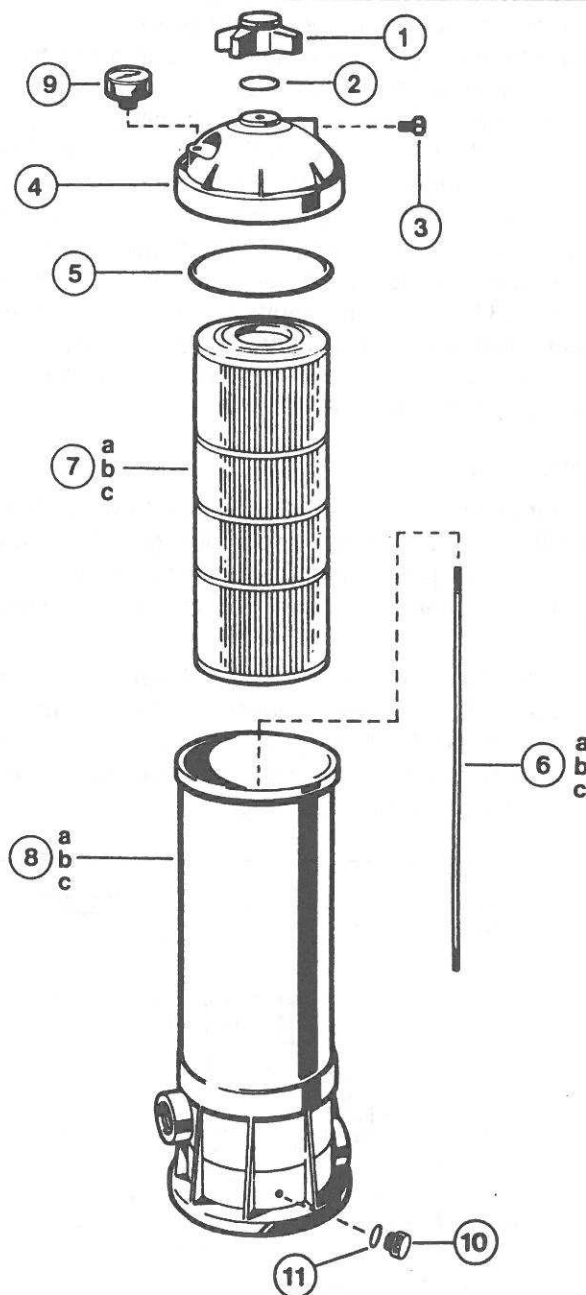
**Note:** NSPI-4 Article V, standard for above-ground and on-ground pools, advises that components such as the filtration system, pumps and heater be positioned so as to prevent their being used by a means of access to the pool by young children.

### STAR-CLEAR SPECIFICATIONS

MODEL NO.	EFFECTIVE FILTRATION AREA		DESIGN FLOW RATE				PRESSURE LOSS AT DESIGN FLOW RATE				MAXIMUM WORKING PRESSURE		REQUIRED CLEARANCE			
			RESIDENTIAL		PUBLIC		RESIDENTIAL		PUBLIC				SIDE		ABOVE	
	FT <sup>2</sup>	M <sup>2</sup>	GPM	LPM	GPM	LPM	PSI	BAR	PSI	BAR	PSI	BAR	IN	MM	IN	MM
C-250	25	2.3	25	95	9	34	0.5	0.04	0.1	0.007	50	3.45	18	457	18	457
C-500	50	4.7	50	189	18	68	1.5	0.11	0.3	0.021	50	3.45	18	457	28	711
C-750	75	7	75	284	28	106	3	0.21	0.5	0.035	50	3.45	18	457	38	965

### PARTS Models C-250, C-500, and C-750 Filters

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	CX250-G	Locking Knob	1
2	CX250-Z-7	O-Ring	1
3	ECX1321-A	Air Relief Valve w/O-Ring	1
4	CX250-C	Filter Cover (Dome)	1
5	CX250-F	Filter Cover Gasket	1
6-A	CX250-Z-2S	Tie Rod	1
6-B	CX500-Z-2S		
6-C	CX750-Z-2S		
7-A	CX250-RE	Cartridge Element	1
7-B	CX500-RE		
7-C	CX750-RE		
8-A	CX250-AA-1	Filter Tank Body w/Tie Rod Assembly	1
8-B	CX500-AA-1		
8-C	CX750-AA-1		
9	ECX2709-1	Pressure Gauge	1
10	CX250-Z-14	1/2" Drain Plug	1
11	SPX605-Z-2	Drain Plug O-Ring	1



## BEFORE STARTING THE FILTER

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

Be sure filter drain valve is closed. Open manual air relief valve a few turns and open the suction and return valves (when used). **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.** Be sure locking knob is secure (hand tight—only slight pressure is required).

Stand clear of filter and prime and start the pump, following the manufacturer's instructions. Air trapped in the system will automatically vent to the pool and out air relief valve. Close air relief valve as soon as air is vented.

## FILTERING

Filtration starts as soon as flow is steady through the filter. As the filter cartridge 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-.69 Bar) above the starting pressure, or when flow decreases below desired rate, clean or replace the filter cartridge.

## CLEAN/REPLACE CARTRIDGE

### Removing Cartridge Element

1. Shut off the pump.
2. If filter is located below water level, close valves (or block off suction and discharge lines) to prevent back-flow of water from the pool.
3. Unscrew and remove drain valve and allow water to drain from filter. Close drain valve. (Note: to assist draining process; open air vent a few turns.)
4. Unscrew and remove locking knob (counterclockwise direction).
5. Carefully lift off cover to gain access to filter cartridge.
6. Lift out cartridge and clean. Or, replace with clean, spare cartridge. (See Cleaning Cartridge)

### Reinstalling Cartridge Element

1. Clean any collected debris from the bottom of filter body.
2. Carefully replace cartridge element over tie rod and into filter body ensuring that the cartridge sits evenly on the collector hub in bottom of filter body.
3. Place filter cover on filter body (being sure filter cover gasket is in place—extended lip down). Fit tie rod end through center hole. Be sure O-ring on cover is in place and clean.
4. Tighten locking knob in clockwise direction. (Hand tight only.)
5. Proceed as in STARTING THE FILTER.

## Cleaning Cartridge

The cartridge filter element can be cleaned by pressure washing inside and out with a garden hose. (The cartridge is easier to clean when dry.) After hosing the cartridge, for best results, allow cartridge to dry and carefully brush pleated surface areas to remove fine particles.

Algae, suntan oil and body oils can form a coating on the cartridge pleats which may not be thoroughly removed by hosing. To remove such materials, soak the cartridge in a solution of filter element cleaner (various brands available at pool dealer). Follow manufacturer's directions for use and allow an hour for soaking. Hose thoroughly before reinstalling in filter.

If calcium or mineral deposits are excessive, the cartridge may be restored to "like new" condition by soaking in muriatic acid. Use commercially available 20% muriatic acid added to water in 1 to 1 ratio. Use a plastic container and take extreme care when handling cleaning agents as they can be harmful to eyes, skin and clothing. After cleaning, flush with water.

A spare cartridge filter element is an excellent investment. It provides convenience and ensures that your filter will always be ready to operate at peak efficiency.

Hayward cartridges are specially designed and engineered for use in Star-Clear filters. For best results, use only genuine Hayward Star-Clear cartridges in your filter. Order *Model No. C-250 RE, C-500 RE, or C-750 RE*, from your dealer. The Hayward name is your guarantee of quality.

## VACUUMING

Vacuuming can be performed directly into the filter whenever needed. Clean cartridge after vacuuming, if required.

## WINTERIZING

In areas where sub-freezing temperatures can be expected, the filter should be drained and/or removed from its operating location and stored indoors. Remove and clean cartridge. Reinstall cartridge in filter tank. Tighten locking knob only a few turns when storing.

## SERVICE & REPAIRS

Consult your local authorized Hayward 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 by simply 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 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.

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.

## 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.



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