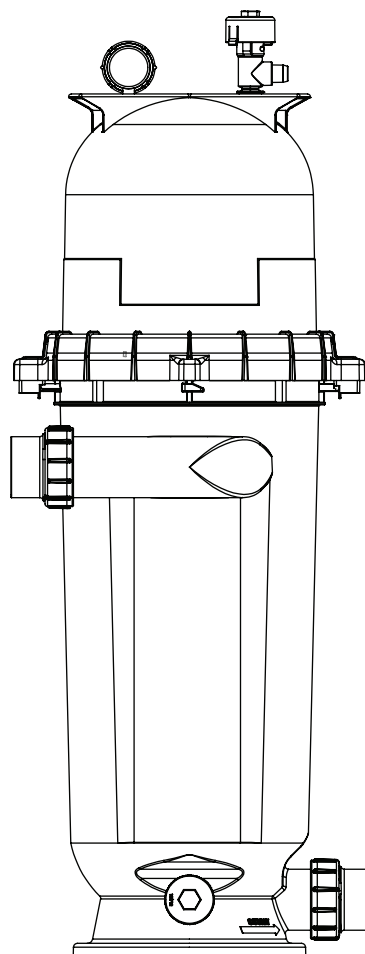




POSI-CLEAR™ RP CARTRIDGE FILTER

INSTALLATION AND USER'S GUIDE



IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

CUSTOMER SERVICE / TECHNICAL SUPPORT

Hours: 8:00AM to 7:30PM EST (5:00AM - 4:30PM PST)

Call: (800) 831-7133

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Scan or click the QR code to take a quick survey and help us provide the most easy-to-use and accurate product manuals possible!



IMPORTANT SAFETY INSTRUCTIONS



This guide provides important information that helps ensure proper and safe installation, operation, and maintenance of this equipment. If there are any concerns or questions about tasks described in this manual, consult Pentair or a qualified professional.

ATTENTION INSTALLER! Ensure this guide is given to the pool owner and/or operator after installation.

ATTENTION USER! Retain this guide for future reference.

Call (800) 831-7133 for additional free copies of these instructions or product labels. Refer to www.pentair.com for more information.

READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol in this guide or on the product itself, note the related signal word and be aware of the potential for personal injury.

DANGER

Warns of hazards, that if ignored, will result in death or serious injury.

WARNING

Warns of hazards, that if ignored, could result in death or serious injury.

CAUTION

Warns of hazards, that if ignored, could result in minor or moderate injury.

NOTICE

Indicates information, that if ignored, could result in property damage.

Carefully read and follow all instructions in this guide or displayed on the equipment. Ensure all product labels are kept in good condition and replace missing or damaged labels immediately.

WARNING

FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS COULD RESULT IN DEATH OR SERIOUS INJURY. INSTALLERS, OPERATORS, AND OWNERS MUST READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE OPERATING OR SERVICING THE FILTER.

WARNING

This filter must be installed by a qualified professional in accordance with all applicable codes and ordinances. Improper installation could result in death, serious injury, or property damage.

WARNING

Do not permit children to use this equipment.

WARNING



TRAPPED AIR CAN LAUNCH THE LID WITH DEADLY FORCE! When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, and/or property damage.

To avoid this potential hazard:

1. Before servicing the filter FOLLOW FILTER DISASSEMBLY INSTRUCTIONS EXACTLY.
2. When installing the filter clamp FOLLOW FILTER REASSEMBLY INSTRUCTIONS EXACTLY.
3. After servicing is complete FOLLOW STARTUP INSTRUCTIONS EXACTLY.
4. NEVER attempt to adjust or tighten the clamp while the system is pressurized or the filter pump is on.
5. Maintain filtration system properly. Replace worn or damaged parts immediately.

WARNING

The filter air relief valve and pressure gauge are critical for ensuring safe operation of the equipment. Failure to properly maintain these components could result in death or serious injury.

WARNING



Never exceed the maximum operating pressure of any filtration system component. Exceeding these limits could result in a component failing under pressure, and could result in death, serious injury, or property damage.

WARNING

It is recommended that pressure tests be kept to the minimum time required by local codes. Stand clear of the filter during pressure testing. Post appropriate warning signs and establish a barrier around the pressurized equipment. Failure to take these precautions could result in death, serious injury, or property damage.

WARNING

If using compressed air to winterize the filtration system, ensure the filter air relief valve is open before servicing to prevent violent lid separation and possible death or serious injury.

IMPORTANT SAFETY INSTRUCTIONS

WARNING



Install all system controls (ON/OFF Switches, Timers, Automation Controllers, Valves) so that the system may be serviced and started without placing any portion of the body over or

near the pump strainer lid, filter lid, or valve closures. Failure to follow these instructions could result in death or serious injury.

WARNING

Always disconnect power to the equipment at the circuit breaker before servicing this equipment. Ensure the disconnected circuit is locked out or properly tagged so that it cannot be activated during servicing. Failure to do so could result in death or serious injury.

WARNING



Position the filter and filter air relief valve so that purged water is directed away from electrical outlets, circuit breakers, and/or other electrically powered systems. Water discharged from an

improperly positioned filter or valve can create an electrical hazard that could result in death, serious injury, or property damage.

GENERAL INFORMATION

⚠ WARNING



THIS SYSTEM OPERATES UNDER HIGH PRESSURE.

When any part of the circulating system (e.g., Lock Ring, Pump, Filter, Valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in serious injury, death, or property damage. To avoid this potential hazard, follow the instructions below.

General Operation Information

Read and follow all instructions and warnings before installing or servicing your filter. Proper installation and operation can prevent unnecessary repairs and maintenance.

⚠ WARNING



Do not tamper with, disassemble, or otherwise adjust the filter unless you fully understand it's operation. Serious injury or death can occur if the equipment is improperly handled. Consult a qualified professional for maintenance and service assistance.

1. The filter operates under pressure. When the lock ring is installed properly and operated without air in the water system, this filter will operate in a safe manner.
2. The maximum working pressure of this filter is 50 psi. Never subject this filter to pressure in excess of this amount, even when conducting hydrostatic pressure tests.
3. Ensure the maximum pressure of the filter system does not exceed the maximum pressure of any components within the system during hydrostatic or external leak tests. Consult the maximum pressure stated on each component of the system.
4. The pressure gauge is the primary indicator of how the filter is operating. Maintain your pressure gauge in good working order.
5. **Clean your filter when pressure reads between 8-10 psi higher than the "Original Starting Pressure", or when significant reduction in flow is noticed.** The pressure reading increases as it filters dirt from your pool. This build up of pressure will vary due to different bathing loads, temperature, environmental conditions, etc.

Note: When using a variable speed pump the "Original Starting Pressure" will be dependent on the pump speed (RPM) when recording the original operating pressure. Record the "Original Pump RPM" in **TABLE 1**.

Pressure Tests

When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, ensure that the Maximum Pressure that the filtration system will be subjected to **DOES NOT EXCEED THE MAXIMUM WORKING PRESSURE OF ANY OF THE COMPONENTS CONTAINED WITHIN THE SYSTEM.** In most cases, the maximum pressure will be stated on each component of the system.

If you do not know the pool or spa system operating pressure, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system set to the lowest working pressure of any of the components in the system.

TABLE 1

ORIGINAL STARTING PRESSURE IS: _____ psi.
(pounds per square inch)
SERVICE THE CARTRIDGES AT: _____ psi.
ORIGINAL PUMP RPM: _____ rpm.
(for Variable Speed Pumps Only)

INSTALLATION

⚠ WARNING

This filter must be installed by a qualified pool technician in accordance with all applicable local codes and ordinances. Improper installation could result in death or serious injury.

⚠ WARNING

For Installation of Electrical Controls at Equipment Pad (ON/OFF Switches, Timers, Control Systems and Automation)

Install all electrical controls at the equipment pad, such as ON/OFF switches, timers, control systems, etc. to allow the operation (startup, shutdown or servicing) of any pump or filter so the user does not place any portion of his/her body over or near the pump strainer lid, filter lid or valve closures. This installation should allow the user enough space to stand clear of the filter and pump strainer lid during system startup, shutdown or servicing of the system filter.



Filter Location

1. The filter should be mounted on a level concrete slab. **Position the filter so that instructions, warnings and the pressure gauge are visible to the operator and readable.** It also should be positioned so that the piping connections, control valve and waste drain plug are convenient and accessible for servicing and winterizing.
2. Be certain to install electrical controls (e.g., on/off switches, timers, control systems, etc.) so that the user is allowed enough space to stand clear of the filter and pump during startup, shutdown or servicing.
3. Allow sufficient clearance around the filter to permit visual verification that the lock ring is properly installed around the tank flanges, see **FIGURE 1**.
4. Allow sufficient space above the filter to remove the filter lid for cleaning and servicing. This distance will vary with the model of filter you are using. See **TABLE 2** for the required vertical clearance.
5. Position the filter to safely direct water drainage away from electrical equipment or anything that might be damaged.
6. Position the Manual Air Relief Valve to safely direct purged air or water.

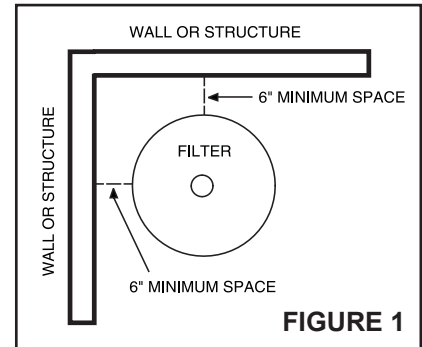


FIGURE 1

TABLE 2

<u>Model</u>	<u>Size</u>	<u>Vertical Clearance</u>
160351	100 sq. ft.	61 in.
160352	150 sq. ft.	76 in.
160350	200 sq. ft.	76 in.

⚠ WARNING



RISK OF ELECTRICAL SHOCK OR ELECTROCUTION. Water discharged from an improperly positioned filter or valve can create an electrical hazard that can cause severe personal injury as well as damage property.

Filter Plumbing

Make all plumbing connections in accordance with local plumbing and building codes. Do not use pipe joint compound, glue or solvent on the bulkhead connections. The provided filter plumbing connections include an O-ring seal.

⚠ CAUTION

Use PTFE or silicone based lubricants when lubricating the O-rings on the union and bulkhead couplings. Use of petroleum based products will damage the equipment.

OPERATION

Lock Ring Installation Instructions

WARNING



THIS SYSTEM OPERATES UNDER HIGH PRESSURE.

When any part of the circulating system (e.g., Lock Ring, Pump, Filter, Valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in serious injury, death, or property damage. To avoid this potential hazard, follow the instructions below.

These instructions **MUST BE FOLLOWED EXACTLY** to prevent the lid from separating during system restart or later operation.

1. Perform the following steps before working on any part of the circulating system (e.g., lock ring, pump, filter, valves, etc.).
 - a. Turn the pump off and shut off any automatic controls to ensure that the system is not inadvertently started during servicing.
 - b. Open the manual air relief valve.
 - c. Wait until all pressure is relieved. **Never attempt to assemble, disassemble or adjust the filter lock ring while there is any pressure in the filter.**
2. Ensure the O-ring is in position on the lower tank half. Place the filter lid over the lower tank half, making sure it is fully and firmly seated on the tank half, see **FIGURE 2**.
3. Place lock ring over the tank lid. Turn the lock ring clockwise until the safety latches click and the lock ring hits the stops. **DO NOT OVER-TIGHTEN THE LOCK RING.**
4. Follow the *Startup Instructions* below.

Startup Instructions

WARNING



THIS SYSTEM OPERATES UNDER HIGH PRESSURE.

When any part of the circulating system (e.g., Lock Ring, Pump, Filter, Valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in serious injury, death, or property damage. To avoid this potential hazard, follow the instructions below.

1. **Open the manual air relief valve until it snaps into the full open position (this only requires a quarter turn counterclockwise).**
2. Stand clear of the filter tank, then start the pump.
3. Close the manual air relief valve after a steady stream of water appears.
4. The system is not working properly if either of the following conditions occur.
 - a. A solid stream of water does not appear within 30 seconds, after the pump's inlet basket fills with water.
 - b. The pressure gauge indicates pressure before water outflow appears.

If either condition exists, **shut off the pump immediately**, open valves in the water return line to relieve pressure, and clean the air relief valve, see *Cleaning the Manual Air Relief Valve*, page 4. If the problem persists, call (800) 831-7133 for assistance.

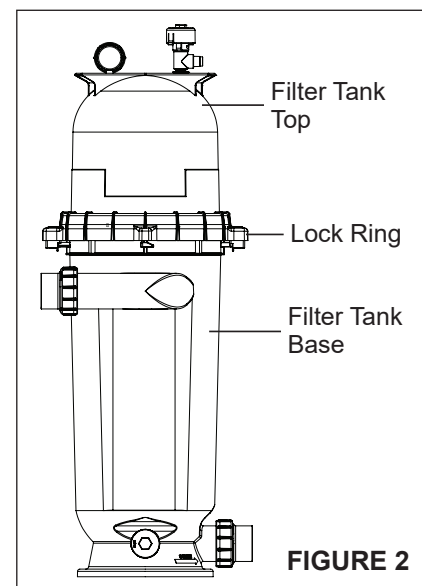


FIGURE 2

MAINTENANCE

Maintaining the Pressure Gauge

The pressure gauge is the primary indicator of how the system is operating, so correct functioning is critical. Replace the pressure gauge (Pentair P/N 190058) if it does not meet the requirements below:

1. Pressure gauge should go to zero (0) when the system is turned off and pressure is relieved.
2. Pressure gauge should indicate pressure when the system is operating.
3. The pressure gauge should be readable and not damaged in anyway

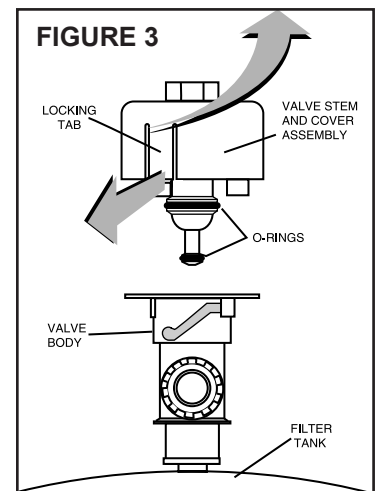
Cleaning the Manual Air Relief Valve

RECOMMENDED EQUIPMENT:

- 5/16-inch Drill Bit
- Silicone-based Lubricant

PROCEDURE:

1. Shut off pump and relieve pressure.
 - a. Turn the pump OFF and shut OFF any automatic controls (e.g., timers) and disconnect power to ensure that the system is not inadvertently started during maintenance.
 - b. Open the manual air relief valve by turning the valve cover assembly a quarter turn counter-clockwise until it snaps into the full open position.
 - c. Stand clear of the filter and wait until all pressure is relieved.
Pressure gauge must read zero (0 psi).
2. With the relief valve installed onto the filter, pull out the locking tabs and unlock the valve stem and cover assembly from the valve body with a counter-clockwise turn, see **FIGURE 3**.
3. Pull the valve stem and cover assembly straight up and away from the valve body.
4. Clean and check the valve stem and body:
 - a. Clean off any debris.
 - b. Verify that the filter tank's air passage is open by inserting a 5/16-inch drill bit through the valve body.
 - c. Verify that the valve stem O-rings are in good condition, properly positioned, and lubricated with a silicone-base lubricant.



If needed, use only a PTFE or silicone-base lubricant on the O-rings. Use of petroleum based products on O-rings will damage the equipment.

5. Reinstall the valve stem and cover assembly with a downward and clockwise motion until it snaps into position.

Cleaning the Filter



WARNING The following information should be read carefully since it outlines the proper manner of care and operation for your filter system. As a result of following these instructions and taking the necessary preventative care, you can expect maximum efficiency and life from your filter system.

1. Turn the pump off, shut off any automatic controls to ensure that system is not inadvertently started during servicing.
2. Open the filter manual air relief valve (and the waste drain valve, or cap, if your system has one).
3. Remove hair and lint strainer pot lid and clean basket. Replace basket and secure lid.
4. Disconnect air relief drain hose if installed.
5. Remove lock ring by pushing both safety latches inwards and rotating the ring counterclockwise.
6. Remove the cartridge assembly by the lift handles.
7. Remove the cartridge from the center support tube.
8. Using a garden hose dislodge and wash the outside and inside of the cartridge.
9. For cartridges used in pools or spas where high levels of perspiration, suntan lotions and other oils are present:

- a. Soak the cartridge for at least one hour in one of the following:

- A commercial filter cleaner



WARNING Heed all manufacturers' instructions and warnings when using polyhexamethylene biguanide sanitizers or other cartridge filter cleaner solutions.

- One cup trisodium phosphate to five gallons of water
- One cup dishwasher detergent to five gallons of water

- b. Rinse the cartridge to remove oils and cleaning solution.



CAUTION Failure to remove all oils and cleaning solutions before acid soaking will result in permanent restriction of water flow through the filter and will cause premature cartridge failure.

10. Spray out the inside of the tank base and bottom manifold. Water and debris will drain out of the drain port.
11. Ensure the gasket is firmly and evenly set around the tank base.
12. Turn the cartridge over several times during washing to clean the media thoroughly.
13. Clean and remove debris from inside the filter tank and from the O-ring and O-ring groove on the tank base.
14. Replace clean cartridge on support tube and install assembly into the tank base, aligning the arrow on the support tube with the inlet port of the filter, making sure it is fully seated. Make sure the internal air relief screen is attached to the top of the support tube.
15. Replace the tank lid, making sure it is fully and firmly seated on the tank base.
16. Place lock ring over the tank lid. Turn the lock ring clockwise until the safety latches click and the lock ring hits the stops. **DO NOT OVER-TIGHTEN THE LOCK RING.**

Note: Any time the filter tank is opened, or cartridge assembly is removed, generously coat the O-ring with silicone lubricant before reassembling. **DO NOT USE PETROLEUM BASED LUBRICANTS.**

17. Replace drain cap and reinstall manual air relief valve drain hose if used.

Replacing the Cartridge

Cartridge life will vary based on bather load, wind, dust, etc. However, average cartridge life is 3-years under normal conditions.

To replace cartridge, follow the steps in *Cleaning the Filter* above.

TROUBLESHOOTING

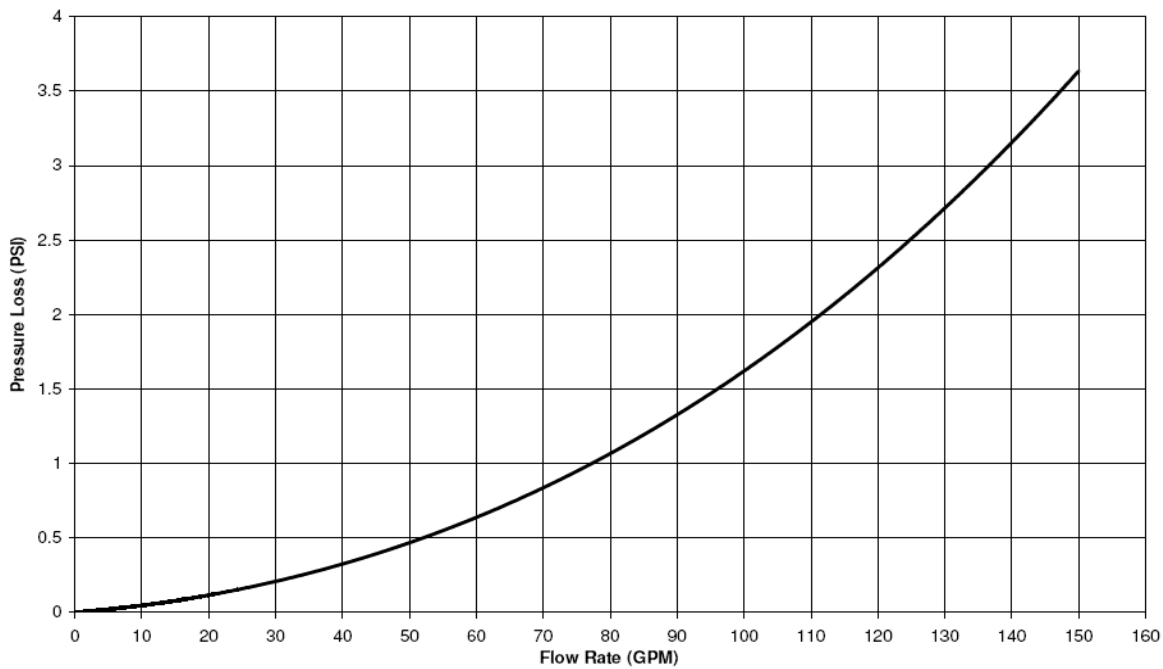
1. Air entering your filter is dangerous and can cause the lid to separate. Correct any conditions in your filtration system that allow air to enter the system.

Some common ways to identify air entering the system:

- a. Low water level in pool or spa - skimmer is starving for water with pump running. Add water to pool or spa.
 - b. Air bubbles or low water level in pump hair and lint pot are caused by; low water level, clogged skimmer basket, split suction cleaner hose, leak in pump hair and lint pot lid, or leak in pump suction line.
 - c. Air bubbles coming out of water return lines into pool or spa with pump running.
 - d. Air is discharged from the air relief valve on top of the filter when the valve is opened with the pump running.
2. Until the water initially put into the pool has been completely filtered, short filter cycles in between cleanings are normal. In most cases pool owners are dismayed by the undesirable color and appearance of water in a newly filled pool. Plaster dust can be responsible for short filter cycles, requiring frequent cleaning.
 3. If pressure drops on gauge, check skimmer basket and pump basket first for debris. If the baskets are clean, shut off power to pump and turn off any automatic controls. Then turn motor shaft with your fingers. If it turns freely then the pump must be disassembled and the impeller checked to see if it is clogged. If it is not frozen or clogged then there is an obstruction in the line between the pool and the pump.
 4. The pressure gauge is an important part of the filter system. It is your primary indicator of how the system is operating. Maintain your pressure gauge in good working order. Check the operation of your pressure gauge in the following manner:
 - a. The pressure gauge should go to zero (0) when the system is turned off and pressure is relieved.
 - b. The pressure gauge should indicate pressure when the system is operating.
 - c. The pressure gauge should be readable and not damaged in any way.
 - d. Replace the pressure gauge if it does not meet the requirements above.

TECHNICAL DATA

Pressure Loss Chart



Flow Rates

Model	P/N	Filter Area (sq. ft.)	Maximum Flow Rates (Residential)				Maximum Flow Rates (Commercial)			
			GPM	GPH	6 hour	8 hour	GPM	GPH	6 hour	8 hour
PCRP 100	160351	100	100	6,000	36,000	48,000	38	2,280	13,680	18,240
PCRP 150	160352	150	150	9,000	54,000	72,000	56	3,360	20,160	26,880
PCRP 200	160350	200	150	9,000	54,000	72,000	75	4,500	27,000	36,000

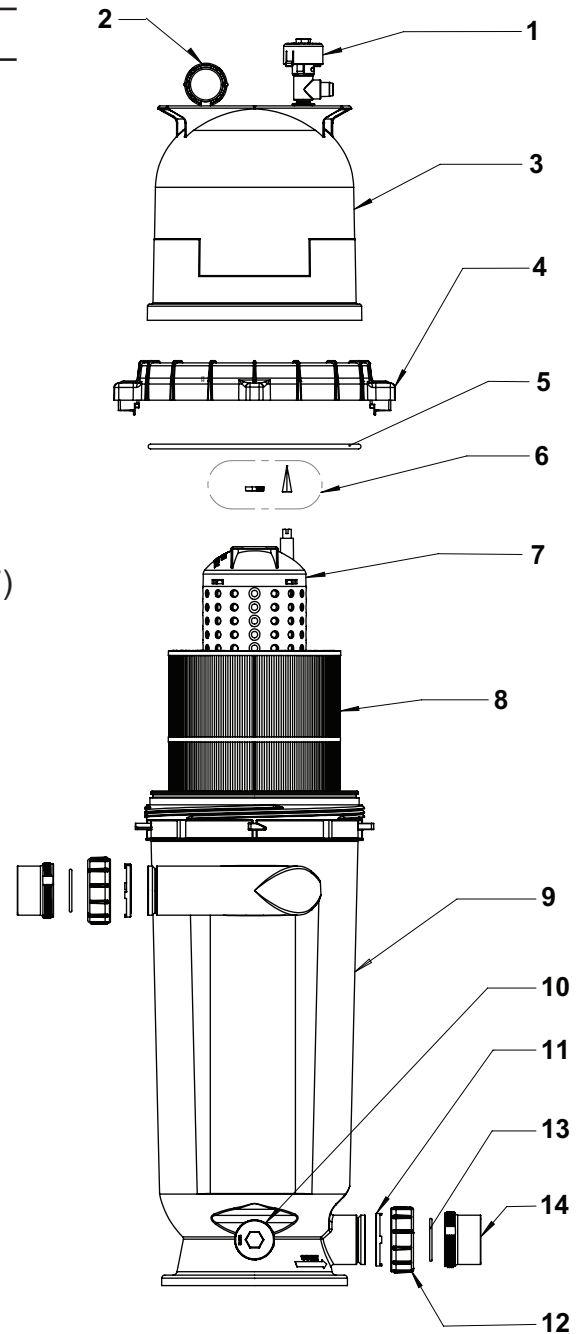
(1) Recommended flow rate for residential is 0.5 GPM per sq. ft.

(2) Commercial flow rate is a maximum of 0.375 GPM per sq. ft. of filter area.

NOTE: Actual system flow will depend on plumbing size and other system components.

REPLACEMENT PARTS

Item	P/N	Description
1	98209800	Manual Air Relief Valve
2	190058	Pressure Gauge
3	59053001	Lid, PCRP 100
	178745	Lid, PCRP 150/200
4	59052900	Lock Ring Assembly
5	87300400	Tank O-ring
6	59016200	Air Bleed Sock Kit
7	59053700	Center Core, PCRP 100
	59053800	Center Core, PCRP 150/200
8	ULTRA-C3	Cartridge, PCRP 100
	ULTRA-C4	Cartridge, PCRP 150
	ULTRA-C5	Cartridge, PCRP 200
9	178743	Tank Base
10	154712z	Drain Cap Assembly (before 10/17)
	190030z	Drain Cap Assembly (after 10/17)
11	178732	Union Nut "C" Clip
12	U11-200PS	Union Nut
13	178746	Union, Diamond Seal
14	178733	Union, Threaded Half





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