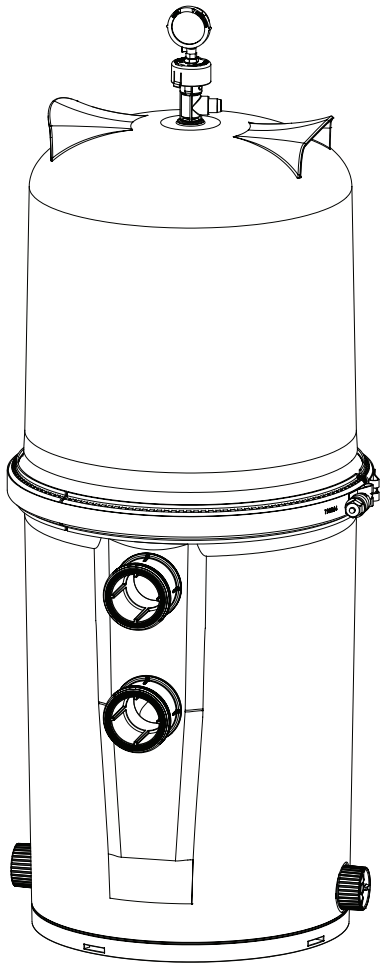
PENTAIR POOL

FULLFLOXF® C-SERIES
CARTRIDGE FILTER

INSTALLATION AND USER'S GUIDE



IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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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.

Template 179234.A 7/23/25

CUSTOMER SERVICE / TECHNICAL SUPPORT

Hours: 9:00AM to 7:00PM EST (6:00AM - 4:00PM PST)

Call: (800) 831-7133

Visit: www.pentair.com

Fax: (800) 284-4151

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Your feedback could play an important role in Pentair's goal to continuously improve our instructional material, and better support those who install, maintain, and use our products everyday.

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!

GENERAL INFORMATION

⚠WARNING **THIS SYSTEM OPERATES UNDER HIGH PRESSURE.**
When any part of the circulating system (e.g., Clamp 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.

Filter Overview

- Four easily removable, large-capacity cartridges provide maximum filter surface area for greater dirt-trapping capacity and longer periods between cleanings.
- Full 2-1/2 inch x 3-inch bulkhead unions for improved hydraulic efficiency and easy piping installation.
- Air Relief Valve intended for rapid air release.
- Conveniently located 2-inch drain for easy and complete draining.

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 Your filter is a piece of machinery, do not tamper with it, attempt to disassemble it or otherwise adjust it unless you fully understand it's operation. Serious injury or death can occur if the equipment is improperly handled. Consult a pool service professional for maintenance and service assistance.

1. The filter operates under pressure and operates in a safe manner if clamped properly and without air in the circulating system.
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 (refer to *Maintaining the Pressure Gauge*).

Maintaining the Pressure Gauge

The pressure gauge is the primary indicator of how the system operates. It is critical to keep the pressure gauge in good condition.

Replace pressure gauge *(P/N 190058)* if any of the requirements below are not met:

1. Pressure gauge at zero (0) when pressure is relieved and system is turned off.
2. Pressure gauge reads correctly while system is in operation.
3. The pressure gauge is readable and not damaged in any way.

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.

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 to pool users, installers, services, or others and may also cause damage to property.

⚠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 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 clamp is properly installed around the tank flanges, see **Figure 1**.
4. Provide 6.7 ft. [2.1 m] of vertical clearance above the filter to remove the filter lid for cleaning and servicing.

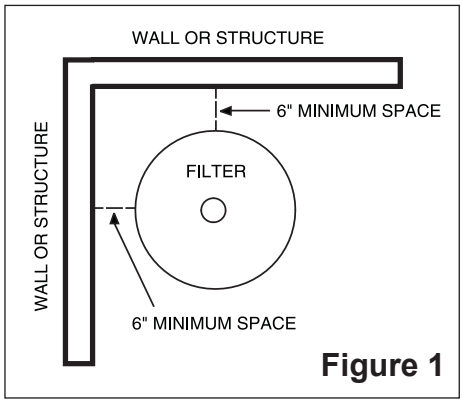


Figure 1

5. Position the filter to safely direct water drainage away from electrical equipment or anything that might be damaged.
6. Position the Air Relief Valve to safely direct purged air or water. Refer to *Installing the Air Relief Valve, page 3*.

⚠WARNING

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION. Position the filter and air relief valve to safely direct water drainage and purged air or water. 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

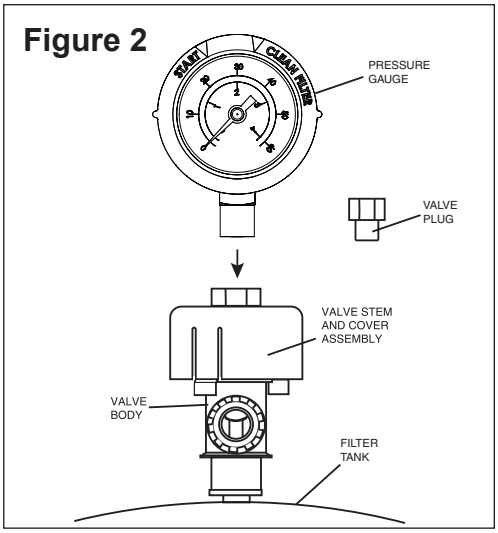
Make all plumbing connections in accordance with local plumbing and building codes. Check local codes for restrictions on backwash to waste requirements.

Filter plumbing connections are provided with an O-ring seal. To avoid damage to the O-rings, use only a silicone base lubricant on the O-rings. Do not use pipe joint compound, glue or solvent on the bulkhead connections.

⚠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.

Installing the Air Relief Valve

⚠WARNING The air relief valve and pressure gauge are included with this filter to help ensure safe operation of the equipment. Always maintain these components in good working condition.



1. Remove the Air Relief Valve and the pressure gauge from the accessories package included with your filter.
2. Thread the air relief valve into the threaded hole at the top of the filter tank.

   Note: **Hand tighten only!** Over tightening the valve can cause damage to the tank or valve connection threads.
3. Verify that the valve is positioned to safely direct purged air or water away from electrical equipment or anything that might be damaged.

⚠WARNING **RISK OF ELECTRICAL SHOCK OR ELECTROCUTION.** Position the filter and air relief valve to safely direct water drainage and purged air or water. 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.

4. Remove the plug from the top of the air relief valve with a 9/16 inch wrench.
5. Wrap the pressure gauge connection threads with thread seal tape (two full wraps of tape will be enough).
6. Thread the pressure gauge into the top of the air relief valve. **Hand tighten only!**
7. Follow *Start-Up Instructions, page 7.*

Anchor Clamp Installation

Installation of anchor clamps is recommended in high wind and seismically active areas. A Pentair Anchor Clamp Kit *(P/N 178840)* is not included with this filter, but can be purchased separately.

Anchor clamps secure the filter to the equipment pad in order to withstand high winds caused during extreme weather, such as hurricanes.

To install the anchor clamps:

1. Ensure the filter is in its permanent location on the equipment pad.
2. Place the clamps into the base of the filter in the 4 anchor slots shown in **Figure 3**.

   Note: Bolts and bolt anchors are not included with the filter. The installer must provide 1/4-inch x 1-3/8-inch stainless steel anchor bolts and the appropriate size concrete anchor to mount the clamp to the equipment pad. Be sure to check local codes.
3. Fit the hook of each clamp into the anchor slots on the base panel of the filter. See **Figure 3**.
4. Mark the position of the hole in each clamp on the equipment pad.
5. Use a masonry drill bit and drill a hole in the cement with a diameter as determined by the concrete anchor, at each of the marks on the equipment pad. The hole should be approximately 1.5 inches [3.8 cm] deep. See **Figure 4**.
6. Insert a bolt anchor into each of the holes. Be sure the anchors are set completely into the holes.
7. Position the anchor clamps so that the holes in the clamps are over the bolt anchors.

   Ensure the clamp hooks are over the lip of the filter base.
8. Insert an anchor bolt through each clamp into the bolt anchor and tighten to secure the clamp and filter to the equipment pad.

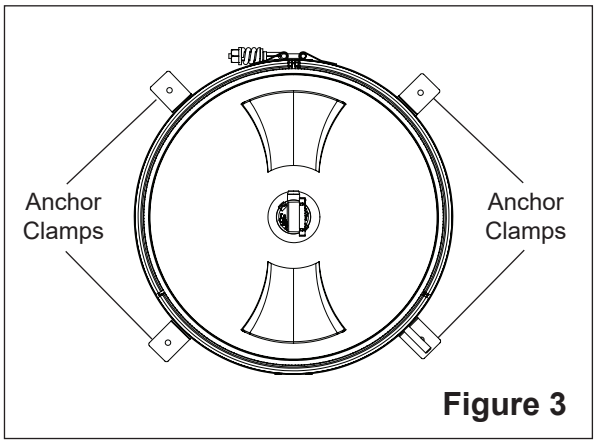


Figure 3

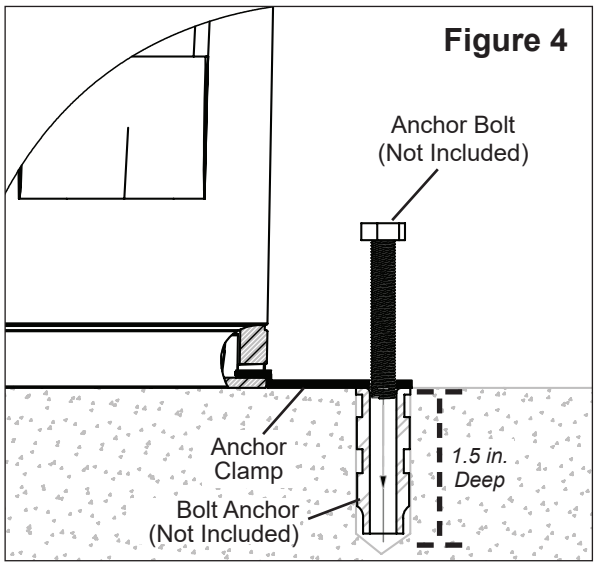


Figure 4

SYSTEM START-UP AND OPERATION

⚠CAUTION The following information outlines the proper manner of care and operation for your filter system. Follow these instructions to ensure the maximum efficiency and lifespan of your filtration system.

Opening the Filter

Follow these instructions exactly to prevent the lid from separating during system start-up, operation or servicing.

⚠WARNING

This filter operates under high pressure. Air can also enter the system and become pressurized.

If there is air in the system, there will be positive pressure that could cause the lid to separate from the filter when you release the clamp or during system start-up or operation (see Important Warnings and Safety Instructions, page i-ii).
If there is no air in the system, there may be negative pressure, which would make the system hard to open.

Follow these instructions exactly - opening the relief valve equalizes the pressure and releases any trapped air within the system, making it safe and easy to open.

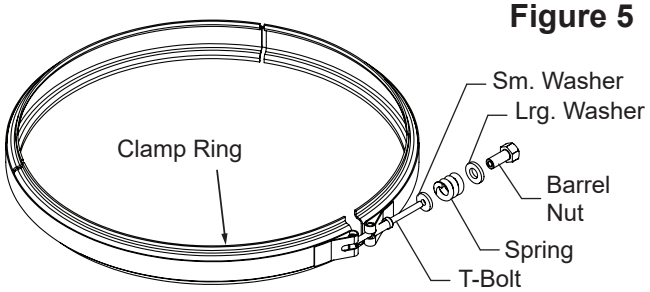
REQUIRED TOOLS:

- Ratchet Wrench
- 7/8-inch Socket
- Socket Extender (if needed)

PROCEDURE:

1. Shut off pump and relieve pressure.
   a. Turn the pump OFF, 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 Air Relief Valve by turning the valve cover assembly 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. Open the drain plug at the bottom of the filter and allow all water to drain.
3. Loosen the clamp's barrel nut with a 7/8-inch wrench, allowing the spring coils to decompress. See **Figure 6**. Remove the barrel nut, spring and two washers from the T-bolt and place them in a safe place where they will not be lost.
4. Once the spring has fully decompressed the clamp assembly will rest in the open position. Carefully lift the filter lid straight up from the lower body of the filter. If the lid is tightly sealed to the filter body you may have to gently push the filter lid from side to side in order to separate the lid from the tank base.

Figure 5



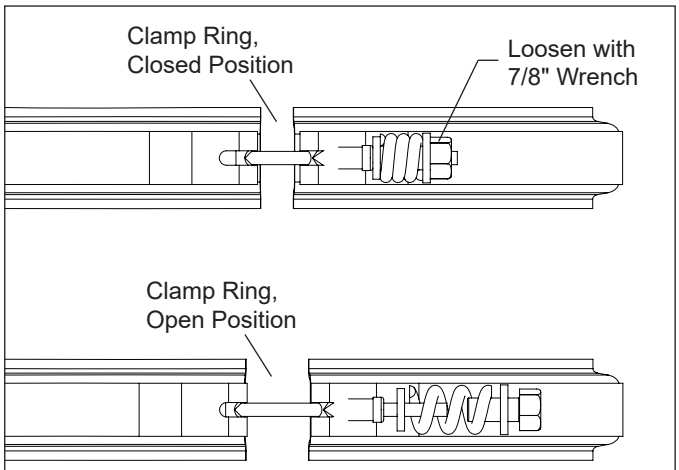


Figure 6

⚠CAUTION DO NOT use the relief valve as a handle or lever since this may damage the valve.

5. Place the tank lid in a safe place where it will not be damaged while performing any maintenance.

   Note: Attempt to minimize the amount of debris that comes in contact with the tank O-ring while it is exposed. This will help prolong the life of the O-ring.

Installing the Filter Lid and Clamp Ring

⚠WARNING

Follow these instructions exactly to prevent the lid from separating from the filter during system start-up or operation. See Important Safety Instructions, page i-ii.

REQUIRED TOOLS:

- Ratchet Wrench
- 7/8-inch Socket
- Socket Extender (if needed)
- Rubber Mallet

PROCEDURE:

1. Be sure the O-ring is clean and in position in the lower tank half. Press the filter lid onto the lower half so the O-ring fits in between the tank halves.
2. Hold the ends of the clamp ring apart and place over both upper and lower tank flanges. Bring the ends of the filter clamp together.
3. Insert the T-bolt through the other side of the clamp and hold together.
4. Place the small washer onto the T-bolt.
5. Place the spring, large washer and barrel nut onto the T-bolt and tighten the nut by hand. Be sure the clamp ring fits easily on the tank flanges.
6. After tightening by hand:
   a. Use a 7/8-inch wrench (ratchet wrench recommended) to tighten further.
   b. Tap around the outside of the clamp ring with a rubber mallet (or similar tool) multiple times around the entire clamp to fit the clamp properly.
   c. Continue to tighten until the spring coils touch.
   d. Tap around the entire clamp again and verify the spring coils remain touching. If not, continue to tighten the nut.

   Note: The clamp is installed correctly only when the spring coils remain touching after tapping the clamp. See **Figure 7**.
7. Close the drain plug at the bottom of the filter.
8. Follow *Start-Up Instructions, page 7*.

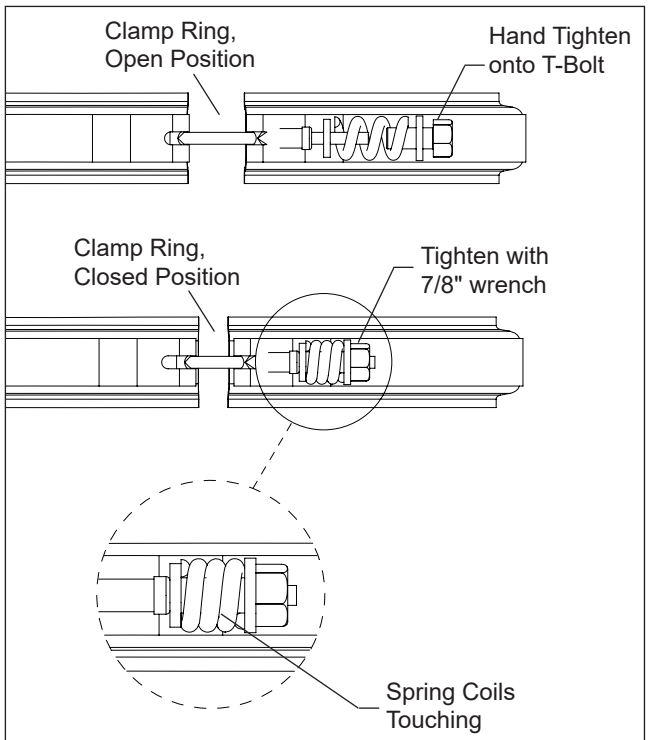


Figure 7

Note: Check the spring coils at least once a month to ensure proper tension. If spring coils do not touch then **shut off pump and relieve pressure** and tighten the nut and tap filter clamp until the coils touch.

⚠WARNING

DO NOT tighten the clamp nut or attempt to adjust the clamp ring or lid while the filtration system operating or under pressure. This could cause the lid to separate from the filter.

Start-Up Instructions

⚠WARNING **THIS FILTER OPERATES UNDER HIGH PRESSURE.**
When any part of the circulating system, (e.g., clamp, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions:

1. Ensure the **spring on the clamp ring is fully compressed, with coils touching.**
2. Open the Air Relief Valve by turning the valve cover assembly a quarter turn counter-clockwise, until it snaps into the full open position. See **Figure 8.**
3. Stand clear of the filter tank, then start the pump.
4. Watch for proper operation. The system is not working properly if:
   a. The pressure gauge indicates pressure before water out-flow appears.
   b. A solid stream of water does not appear within 30 seconds after the pump's inlet basket fills with water.
   c. Water leaks from where the two halves of the filter come together.

   If any of these conditions exist, **shut off the pump immediately**. Open the air relief valve to relieve pressure and clean the valve (see *Cleaning the Air Relief Valve, page 8*). If the problem persists, call Pentair Technical Service at (800) 831-7133 for assistance.
5. After a steady stream of water appears, close the air relief valve by turning the valve cover assembly a quarter turn clockwise.
6. The first time the system is started up, fill out **Table 1:**
   a. Record the "Original Starting Pressure."
   b. Fill in the pressure at which to clean the filter (8-10 psi higher than the "Original Starting Pressure").
   c. If the system includes a variable speed pump, record "Original Pump RPM." “Original Starting Pressure” will be dependent on the pump speed (RPM).

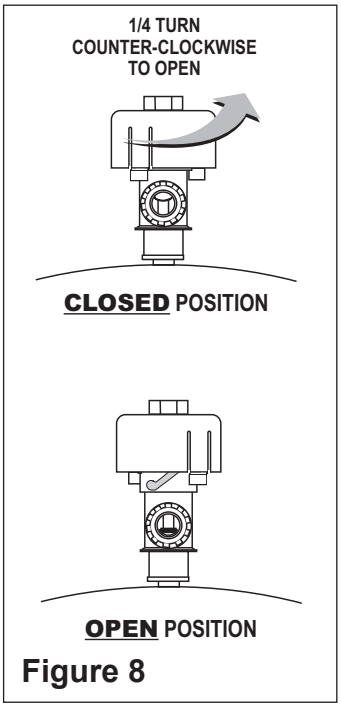


Figure 8

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)

MAINTENANCE

⚠WARNING **FILTER OPERATES UNDER HIGH PRESSURE.**

When any part of the circulating system, (e.g., clamp, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in severe injury, death, or property damage.

To avoid this potential hazard, follow these instructions:

1. Before repositioning valve(s) and before beginning the assembly, disassembly, or adjustment of the clamp or any other service of the circulating system: (A) Turn the pump OFF and shut OFF any automatic controls to ensure the system is NOT inadvertently started during the servicing; (B) open the air relief valve; (C) stand clear of the filter; (D) wait until all pressure is relieved.
2. Whenever installing the filter clamp FOLLOW THE FILTER CLAMP INSTALLATION INSTRUCTIONS EXACTLY.
3. Once service on the circulating system is complete FOLLOW SYSTEM RESTART INSTRUCTIONS EXACTLY.
4. Maintain circulation system properly. Replace worn or damaged parts immediately, (e.g., clamp, pressure gauge, valve(s), O-rings, etc).
5. Be sure that the filter is properly mounted and positioned according to instructions provided.

⚠WARNING Operating the filter system without filter internal components installed can allow air to accumulate within the filter. Pressurized air can cause the lid to separate which can result in severe injury, death or property damage. Always operate filter system with filter internal components installed. To prevent equipment damage and possible bodily injury and/or property damage, always turn the pump off before changing the valve positions.

⚠WARNING Please follow all manufacturers' posted instructions, warnings and cautions when using pool or spa sanitizers, and/or other chlorine replacement treatments.

Cleaning the Air Relief Valve

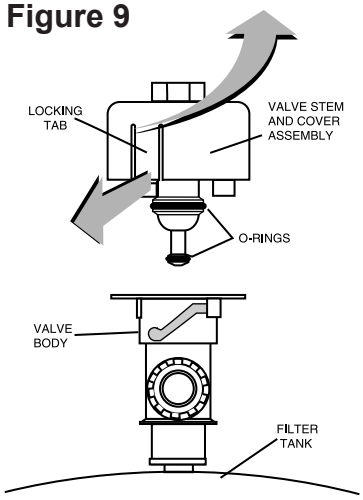
REQUIRED TOOLS:

- 5/16-inch Drill Bit (to check air passage)
- Silicone-based Lubricant (if needed)

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 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. At the air relief valve on top of 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 9**.
3. Remove valve stem and cover assembly from the valve body. See **Figure 9**.
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.

Figure 9



⚠CAUTION 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.

When to Clean the Filter

Properly monitoring and cleaning the filter will prevent avoidable repairs and maintenance.

Clean your filter when pressure reads between 8-10 psi higher than the “Original Starting Pressure” recorded in **Table 1, page 7**, 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.

Cleaning the Filter Cartridges

1. Follow *Opening the Filter, page 5* exactly.
2. Remove hair and lint strainer pot lid from the pump and clean basket. Replace strainer basket and secure strainer pot lid.
3. Remove the *Air Bleed Screen Cap (1)* from the *Top Manifold (2)*. See **Figure 10**.
4. Clean all debris from the Air Bleed Screen Cap and reinstall onto the Top Manifold.
5. Separate the *Top Manifold (2)* from the filter cartridges and lay the manifold aside. See **Figure 10**.
6. Carefully remove each cartridge separately.
7. Using a garden hose with a straight flow nozzle, wash down the entire filter cartridge. Wash from the top down, holding the nozzle at a 45-degree angle to the cartridge (see **Figure 11**). Pay special attention to the area between pleats.
8. 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 (overnight is most effective) 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 (TSP) 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.

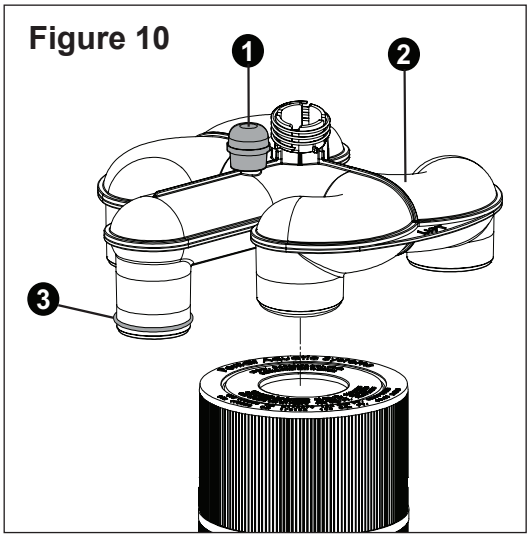


Figure 10

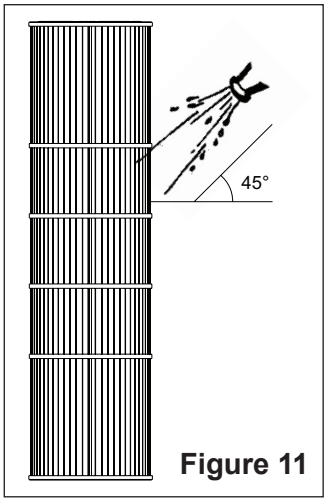


Figure 11

9. If algae, calcium, iron or other mineral build-ups are present on the filter cartridges, acid soaking may be necessary. Refer to *Acid Soaking the Filter Cartridges, page 10*, for specific instructions.
10. Direct the water spray to wash out the inside of the tank body. Water and debris will drain out through the open drain plug.
11. Place the 4 cartridges back onto the support pipes in the bottom of the tank.
12. Reinstall the Top Manifold onto the cartridges and verify the *Air Bleed Screen Cap (1)* and *O-ring (3)* are secured to the manifold. See **Figure 10**.
13. Follow *Installing the Filter Lid and Clamp Ring, page 6*.

Acid Soaking the Filter Cartridges

After an extended period of operation, it may be necessary to soak the filter cartridges in an acid solution. Acid soaking will remove algae, calcium carbonate, iron and other mineral build-ups from the cartridges. If not removed, these mineral deposits can lead to the restriction of water flow through the filter and can impede efficient operation of the equipment.

⚠WARNING Muriatic acid is corrosive and can lead to inflammation or burns to body tissue.

ALWAYS wear rubber gloves, safety glasses and an N-95 dust mask when handling acid to prevent serious bodily injury.

⚠CAUTION To prevent degradation of the acid by UV light, store muriatic acid in an opaque container and away from direct sunlight.

REQUIRED TOOLS:

- Large Plastic Container
- Garden Hose with a Straight Flow Nozzle
- Muriatic Acid (stored in opaque container)
- Rubber Gloves
- Safety Glasses
- N-95 Dust Mask

PROCEDURE:

1. Remove all oils and cleaning solutions from the cartridges.

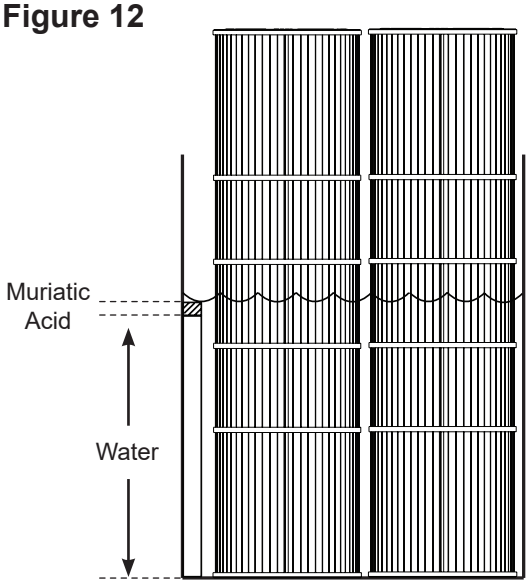
   ⚠CAUTION Acid soaking without performing this step will result in permanent restriction of water flow through the filter and premature cartridge failure.

2. Put on protective equipment - rubber gloves, safety glasses and N-95 dust mask.
3. In a large plastic container, create a solution of one part muriatic acid to twenty parts water. See **Figure 12**.

   ⚠WARNING Introduce the muriatic acid as close to the water's surface as possible. This will minimize splash and reduce the risk of user contact with the acid.

4. Gently place the bottom of the cartridges into the acid solution. Allow the cartridges to soak in the solution for 10 minutes, or until bubbling stops.
5. Turn the cartridges over, placing the top halves into the solution. Allow the top halves of the cartridges to soak for 10 minutes, or until bubbling stops.
6. Remove the cartridges from the acid solution.
7. Using a garden hose with a straight flow nozzle, thoroughly wash down the entire filter cartridge. Wash from the top down, holding the nozzle at a 45-degree angle to the cartridge. See **Figure 11, page 9**.
8. Reinstall the cartridges and dispose of the acid solution in accordance with local regulations.

Figure 12



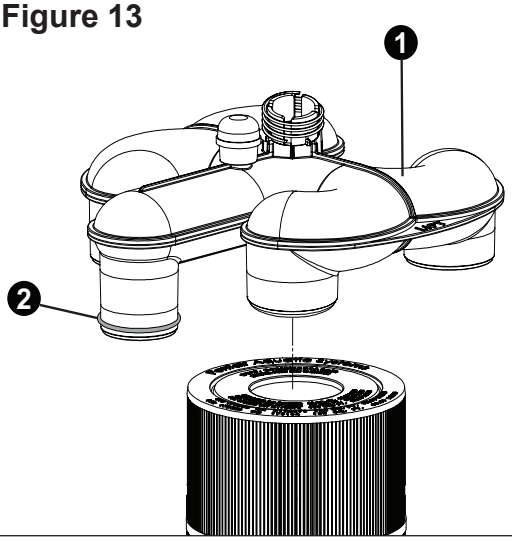
Replacing Filter Cartridges

Filter cartridge life will vary with pool conditions such as bather load, wind, dust, etc. You can expect an average cartridge life of 3 years under normal conditions.

To replace filter cartridges:

1. Follow *Opening the Filter, page 5*.
2. Separate the *Top Manifold (1)* from the filter cartridges and lay the manifold to the side. See **Figure 13**.
3. Carefully remove each cartridge separately.
4. Place the four replacement cartridges onto the support pipes in the bottom of the tank.
5. Reinstall the Top Manifold onto the cartridges and verify the *O-ring (2)* is secured to the manifold. See **Figure 13**.
6. Follow *Installing the Filter Lid and Clamp Ring, page 6*.

Figure 13



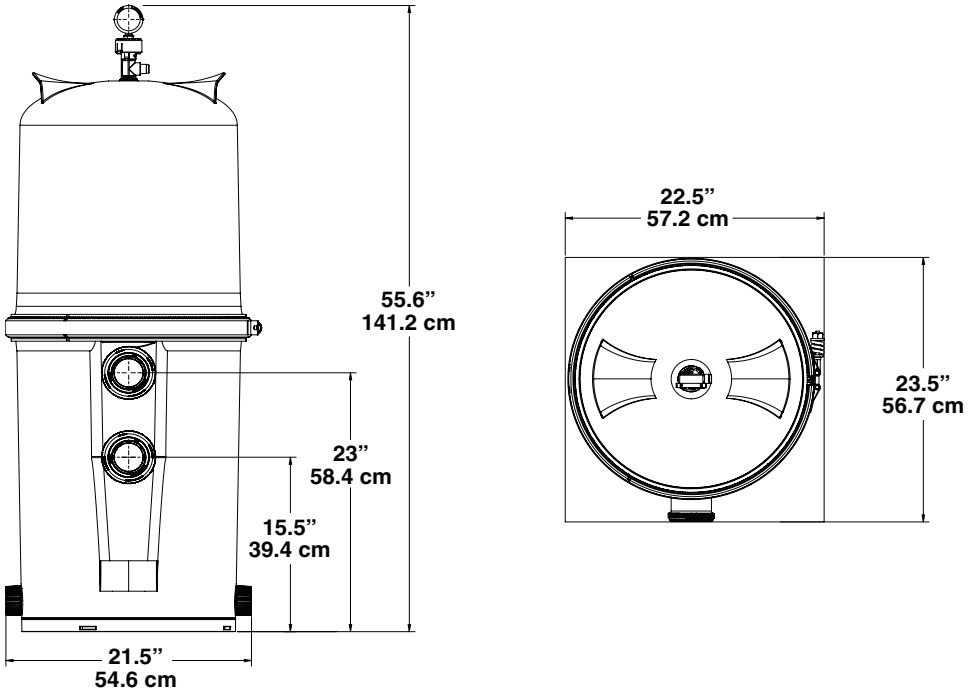
TROUBLESHOOTING

Air entering the system can cause the lid to separate from the filter. If the below symptoms are observed, do not attempt to remove or tighten the clamping system or perform any other servicing until you have shut off pump and relieved all air and pressure in accordance with the *Opening the Filter, page 5*.

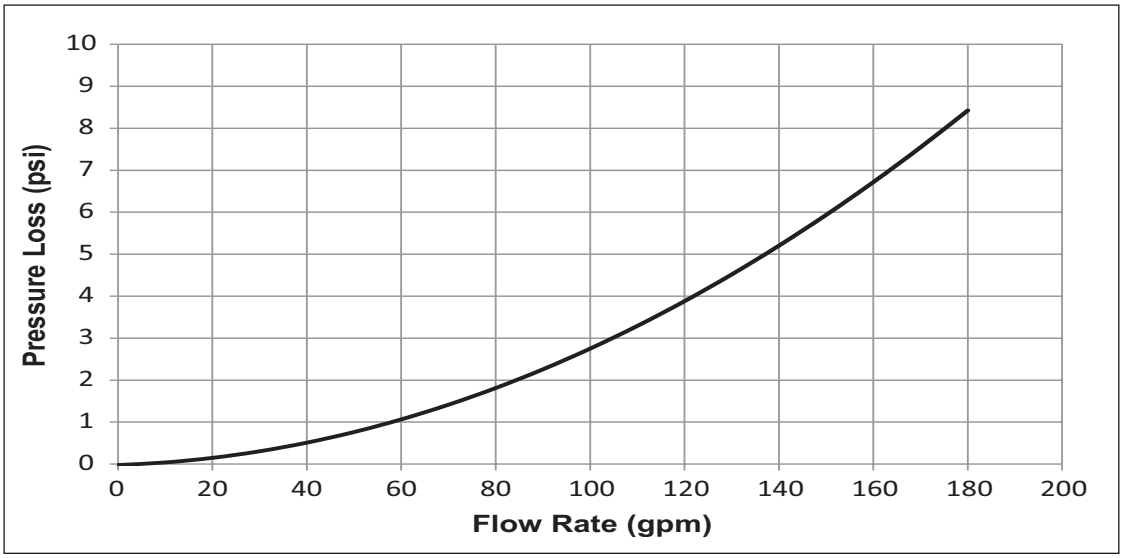
PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Air Entering Filter System	Low water level in pool or spa.	Add water to the pool or spa.
	Pump skimmer basket is clogged.	Remove all debris from the skimmer basket.
	Suction cleaner hose is pulling in air.	Check the cleaner hose for damage. Replace hose as needed.
	Pump lid is not sealing.	Inspect the pump lid O-ring for damage. Replace the O-ring as needed.
	Pump suction line is pulling in air.	Inspect the suction line for damage. Repair as needed.
Short Filter Cycles	Algae in water.	Correct and maintain proper water chemistry.
	Plaster dust from pool is building up in filter.	New pools can frequently release high amounts of plaster dust into the filter. This usually lessens over time and no action is needed.
	Oils, minerals or debris building up on filter cartridges.	Clean the filter cartridges according to *Cleaning the Filter Cartridges, page 9* and/or *Acid Soaking the Filter Cartridges, page 10*.
Leak in Filter Tank	Damaged O-ring.	Replace O-ring.
	Dirty O-ring.	Clean O-ring and all tank surfaces it comes in contact with.
	Clamp ring is loose.	Tighten clamp ring according to *Installing the Filter Lid and Clamp Ring, page 6*.
	Crack in lid or tank body.	Replace cracked component.
High Pressure Reading after Cleaning	Restriction on discharge side.	Locate and correct restriction of filter.
	Mineral deposits on filter cartridges.	Acid soak the filter cartridges. Refer to *Acid Soaking the Filter Cartridges, page 10*.
	Excessive water flow through filter (pump horsepower may exceed filter flow rate).	Establish pump flow rate and compare with maximum filter flow rate requirement.
	If heater is included in system, flow valve on heater may be stuck open.	Adjust or replace flow valve as needed.
	Pressure gauge not working properly.	Inspect and repair or replace gauge as needed.

TECHNICAL DATA

Dimensional Drawings



Head Loss Comparison Curve

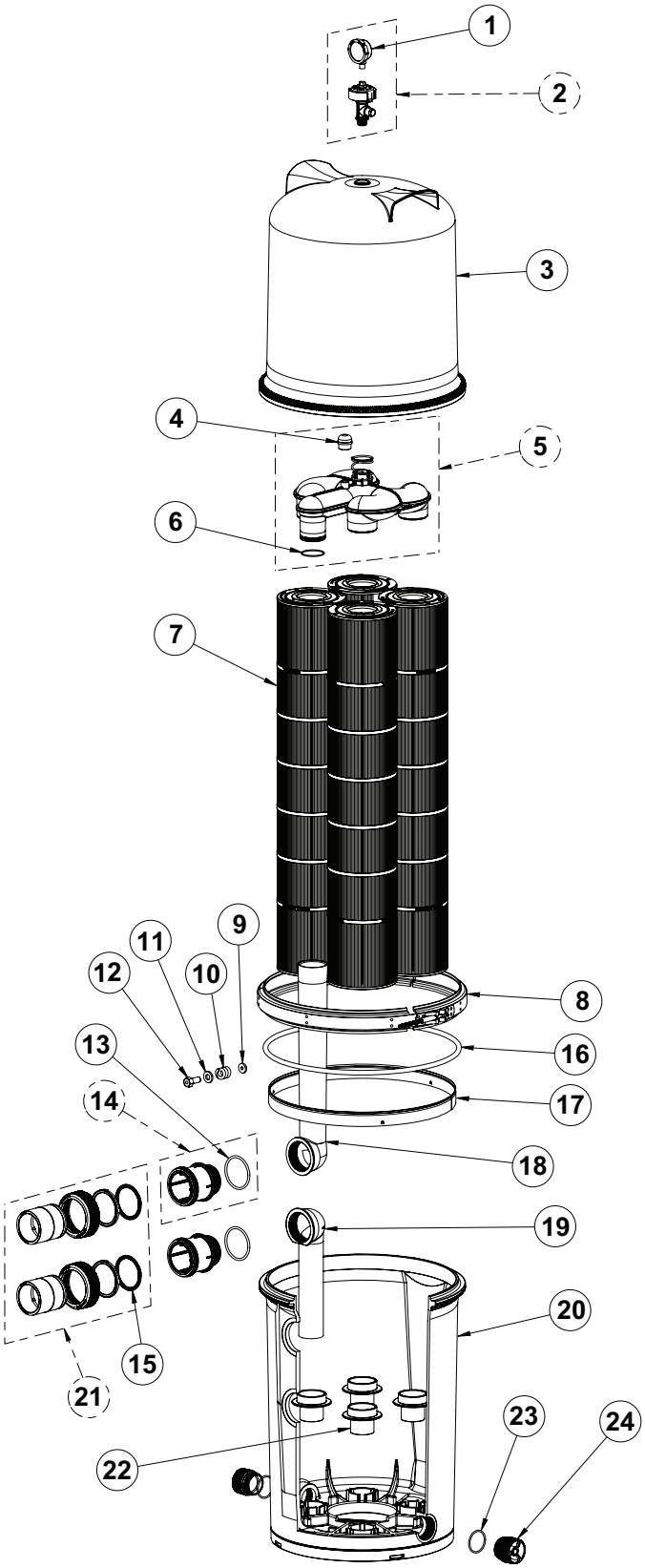


Recommended Flow Rates

Filter Area Sq. Ft.	Vertical* Clearance	Flow Rate (GPM)	Res. Turnover Capacity (Gallons)		
			8 hours	10 hours	12 hours
620	80”	180	86,400	108,000	129,600

Actual system flow will depend on plumbing size and other system components.
* Required clearance to remove filter cartridges.

REPLACEMENT PARTS



Item	Description	P/N	Qty.
1	Pressure Gauge	190058z	1
2	Air Relief Valve	98209800	1
3	Tank Lid	178810	1
4	Air Bleed Screen Cap	190106z	1
5	Top Manifold Kit	178838	1
6	O-ring, Manifold	192323	1
7	Filter Cartridge, Single	ULTRA-A18	1
	Filter Cartridges, Set	ULTRA-A18-PAK4	4
8	Clamp Ring Assembly	190003	1
9	Clamp Washer, Small	195610	1
10	Clamp Spring	195612	1
11	Clamp Washer, Large	195611	1
12	Clamp Barrel Nut	194997	1
13	O-rings, Bulkhead	R170055	2
14	Bulkhead Kit	178829	2
15	Diamond Seal Kit	410016z	1
16	O-ring, Tank	39010200z	1
17	Backup Ring	195339	1
18	Pipe Outlet	178691z	1
19	Pipe Inlet	198249z	1
20*	Tank Base	178830	1
21	Union Kit	410020z	1
22	Support Pipes	178697z	4
23	O-rings, Drain Plug	273062	2
24	Drain Plugs	178816	2
--	Anchor Clamp Kit	178840	1

(*) - Tank Base includes items 14, 17, 18, 19, and 24.

NOTES

PENTAIR POOL

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