

PENTAIR RAINBOW™ CHLORINE/BROMINE* FEEDER MODEL #320 - (* Using Bromine tablets with this device is not NSF certified)

Features:

- No special venting required.
- Completely enclosed-no escaping gases.
- Positive external no-clog control valve.
- When used with timer, feeder is designed to automatically lower the water level so tablets are not soaking during off period of pump. This allows more efficient use of tablets.
- No equipment damage.
Feeds sanitizer directly to pool or spa.
- All parts replaceable.
- To prevent over chlorination during use, completely close the control valve and the built in check valve will prevent chemical from being fed into pool or spa.

YOUR LIFEGARD® FEEDER IS THE MOST EFFICIENT AND TROUBLE-FREE AUTOMATIC FEEDER YOU CAN BUY, BUT IT CAN ALSO BE DANGEROUS TO YOU AND YOUR EQUIPMENT. PLEASE FOLLOW INSTRUCTIONS EXACTLY AND HEED ALL CAUTIONS. YOUR SAFETY AND THE PROTECTION OF YOUR EQUIPMENT IS OUR FIRST CONCERN.

It is important to read all information **BEFORE** proceeding with the installation. The information will guide you in installing your feeder properly and to avoid problems due to improper installation.

IF YOUR POOL OR SPA HAS COPPER PLUMBING . . . STOP!!

Never install the feeder into copper plumbing as pipe damage will occur. (See Equipment Safety CAUTION sheet enclosed). **NOTE:** If heaters are used, a Fireman's Switch or equivalent must be installed to prevent possible damage and improper operation of Check Valve and other equipment subject to heat damage.

INSTALLATION INSTRUCTIONS MODEL #320

Note: Make sure all pumps and timer switches are in the OFF position.

WHERE TO INSTALL YOUR FEEDER

The #320 feeder is designed for permanent installation in the return line of your new pool or spa and must always be installed after the heater, pool cleaner, valves, etc. If your pool does not have a heater, then it must be installed after the filter or any other piece of equipment.

DAMAGE TO THE HEATER AND OTHER EQUIPMENT COULD RESULT IF HIGHLY CHLORINATED WATER FLOWS THROUGH IT.

If your pool is equipped with a solar system it may be necessary to install a **HI FLOW KIT**. This kit can be installed if your feeder is not getting adequate flow and/or pressure through the system. Refer to information on sheet enclosed. Your feeder may be installed in existing PVC plumbing but will require a union and/or other fittings. The feeder comes complete for installation with 2" or 1½" PVC plumbing. Choose a site in the return line where feeder can be installed in a vertical position. Always install as far from any metal equipment as practical since fumes, etc. can corrode them. If optional corrosion resistant check valve is required refer to installation instructions before next step.

BASIC PLUMBING INSTALLATION INSTRUCTIONS

2" OR 1½" PVC PIPE: If feeder is being installed on a pool, spa or pool/spa combination, correct plumbing procedures must be followed to insure proper flow through feeder. If pool or spa is plumbed with 2" PVC pipe, be certain the pump, filter and heater all have 2" inlet and outlet fittings. If any part of the equipment has less than 2" fittings or pipe, then a minimum of 6" x 1½" reducer bushings must be installed directly into the inlet side of the feeder using the 2" x 1½" reducer bushings supplied. This will build pressure directly into the feeder insuring proper operation. Continue with 2" PVC pipe on the outlet side of the feeder.

POOL/SPA COMBINATION: If plumbing and equipment is a full 2" and the feeder is being installed on the pool return line after the diverter valve, with a portion of the water diverted to the spa, install a minimum section of 6" x 1½" PVC pipe directly into the inlet side of the feeder using the 2" x 1½" reducer bushing supplied. Continue with 2" PVC pipe on the outlet side of the feeder. This will compensate for that portion of water being diverted to the spa.

90° ELBOWS: Plumbing a 90° elbow directly into the inlet side of the feeder may cause turbulence inside the elbow. This will prevent water from being scooped into the feeder. A minimum of a 6" length of PVC pipe should be installed between the 90° elbow and the inlet side of the feeder.

2" PVC: Simply glue feeder to the return line using **PVC SOLVENT CEMENT**. Be sure arrows on feeder point in the direction of water flow returning to the pool or spa.

1½" PVC: Remove (2) 2" x 1½" slip reducer bushings packed inside the feeder and glue into 2" slip tee on bottom of feeder. Complete installation by gluing into 1½" return line making sure the arrows on feeder point in the direction of water flow returning to the pool or spa. Use only **PVC SOLVENT CEMENT**. Follow directions on solvent cement label. Allow to dry. Installation in now complete.

OPERATING INSTRUCTIONS

Before start up of feeder, your pool should be properly conditioned and the residual should be 1.0 to 1.5 ppm. The water in a newly-filled pool should be properly conditioned to insure maximum effectiveness of the feeder. Consult your local dealer for water conditioning information for your area.

1. Remove cap of feeder and fill with proper size tablets.
- For Pools: 1" or 3" dia. tablets For Spas: 1" dia. tablets in optional Spa Chamber.
2. Making sure O-ring is clean, lubricated with Lifeguard Silicone and is in place, replace cap. Hand tighten only.
3. Turn on pump and timer switches for a minimum of 6 to 8 hours.
4. Adjust control valve according to your pool/spa size. Use a test kit to determine the

chemical residual. It is recommended that the chemical residual be checked daily for the first 5 days. Remember . . . hot days, higher water temperature or increased pool/spa activity will cause your pool/spa to use more sanitizer. When possible, increase the feed rate a day or two in advance. Because the chlorine demand in your pool/spa varies and is dependent on many factors (sunlight, bather load, water temperature, etc) your valve setting may have to be changed from time to time to adjust to these conditions. For example, the winter setting may be #2 while the summer setting is #3. Check the chlorine residual daily to find the ideal setting. Note: Higher numbers dispense more chemical. Small gradual changes are imperative for control.

HOW TO RECHARGE FEEDER

1. Turn control valve to the closed position. **SHUT OFF PUMP.**
2. Wait one minute. This will allow water and fumes to drain from feeder.
3. Leave control valve closed and turn on pump. The check valve will prevent water from entering the feeder.
4. Remove cap and fill with proper size tablets or sticks. (See Operating Instructions #1)
5. Making sure O-ring is clean, lubricated with Lifeguard silicone and is in place, replace cap. Hand tighten only.
6. Open control valve to original setting. Inspect inlet line below control valve each time feeder is recharged. Replace lines yearly if necessary.

SPECIAL FEATURES AND INSTRUCTIONS

If while using 3" diameter tablets the #320 feeder does not provide enough chlorine residual, switch to 1" tablets. The smaller tablet will erode faster producing more chlorine residual. If this does not correct the situation, the #320 has been fitted with an optional opening at the top of the feeder (which is plugged). To accommodate attachment of the valve and tubing assembly for top entry of water into the feeder, an additional length of tubing has been included. The following procedure should only be used if the suggested change has not solved the situation. Top entry in normal situations can cause over chlorination.

1. Turn off pump and timer switches.
2. Remove tubing by unscrewing compression nut at each end of tubing.
3. Remove plug at top of feeder directly above control valve.
4. Remove control valve. If nipple stays in valve, carefully remove by using pliers at the center of nipple. There is no need to remove the 90° tube fittings.
5. Wrap plug with 2 or 3 wraps of threaded tape in opposite direction of tightening. Screw into opening where control valve was attached. Hand tighten plus 2 or 3 turns. Do not overtighten.
6. Wrap threads of nipple with threaded tape. Thread nipple into top opening. Finger tighten only. Thread valve onto nipple. After nipple starts to turn from tightening valve, 2 to 3 more turns is enough. The nipple or valve can be broken by overtightening.
7. Slide compression nut over long section of tube. Slide tube over tapered part of 90° tube fitting and tighten. Hand tighten only. Repeat for other end of tubing.
8. Set control valve to #1. Turn on pump and timers. Check residual daily to determine proper setting. Small gradual changes are imperative for control.

BELOW WATER LEVEL INSTALLATION

Feeder should be installed above water level whenever practical. If installed below water level, a drain valve must be installed to prevent spillage and dangerous splash back of high chlorinated water during recharging. Drill and tap a ¼" MPT hole at the same level the control valve is located. Make sure there is no water or tablets inside the feeder before drilling. Install optional drain valve, Part R172060, or suitable chemical resistant drain valve.

BELOW WATER LEVEL RECHARGING INSTRUCTIONS

1. Shut off pump and timer switches.
2. Shut off control valve.
3. Place a clean container under drain and open drain valve.
4. Exercise extreme caution when opening or servicing feeder. Do not inhale fumes. Wear protective gear. Remove cap. Water will now drain from feeder. Empty container back into pool or spa.
5. Close drain valve. fill with proper size tablets or sticks.
6. Making sure O-ring is clean, lubricated with Lifeguard Silicone and in place, replace cap.
7. Turn on pump and timer switches.
8. Reset control valve to original setting. Inspect inlet and outlet line each time feeder is recharged. Replace lines yearly if necessary.



DANGER

READ CAREFULLY

This feeder is designed to use only **CLEAN** Trichlor-s-trizinetriene OR **CLEAN** Bromine tables - slow dissolving type. Never use dirty tablets. **UNDER NO CIRCUMSTANCES MIX** Trichlor or Bromine with Calcium Hypochlorite, with other forms of concentrated chlorine or with other chemicals. Keep inside of feeder clean of dirt and debris at all times. **FIRE AND/OR EXPLOSION MAY RESULT.**

NEVER use oils or grease to lubricate o-ring. Oil in contact with Trichlor OR Bromine may result in **FIRE**. Lubricate o-ring with Lifeguard Silicone o-ring Lubricant **ONLY**, available at your dealers. If shock treatments or Algaecides containing chemicals other than sanitizers tablets in feeder must be used, turn off Feeder OR remove tablets until the shock or Algae treatment is complete and all granules have dissolved. Failure to do so may result in granules mixing in feeder causing **FIRE AND/OR EXPLOSION**. The shock or algae treatment dissolved in water is safe with tablets. If you are not the original owner of this feeder, not sure which chemicals was used, or if dirt and/or debris inside feeder, be **SAFE** and flush thoroughly with fresh water. **CAUTION SHOULD BE USED WHEN REMOVING CAP. DO NOT INHALE FUMES.**

CALCIUM HYPOCHLORITE IS NOT TO BE USED IN ANY FORM. Use of chemicals other than listed by manufacturer may be hazardous.



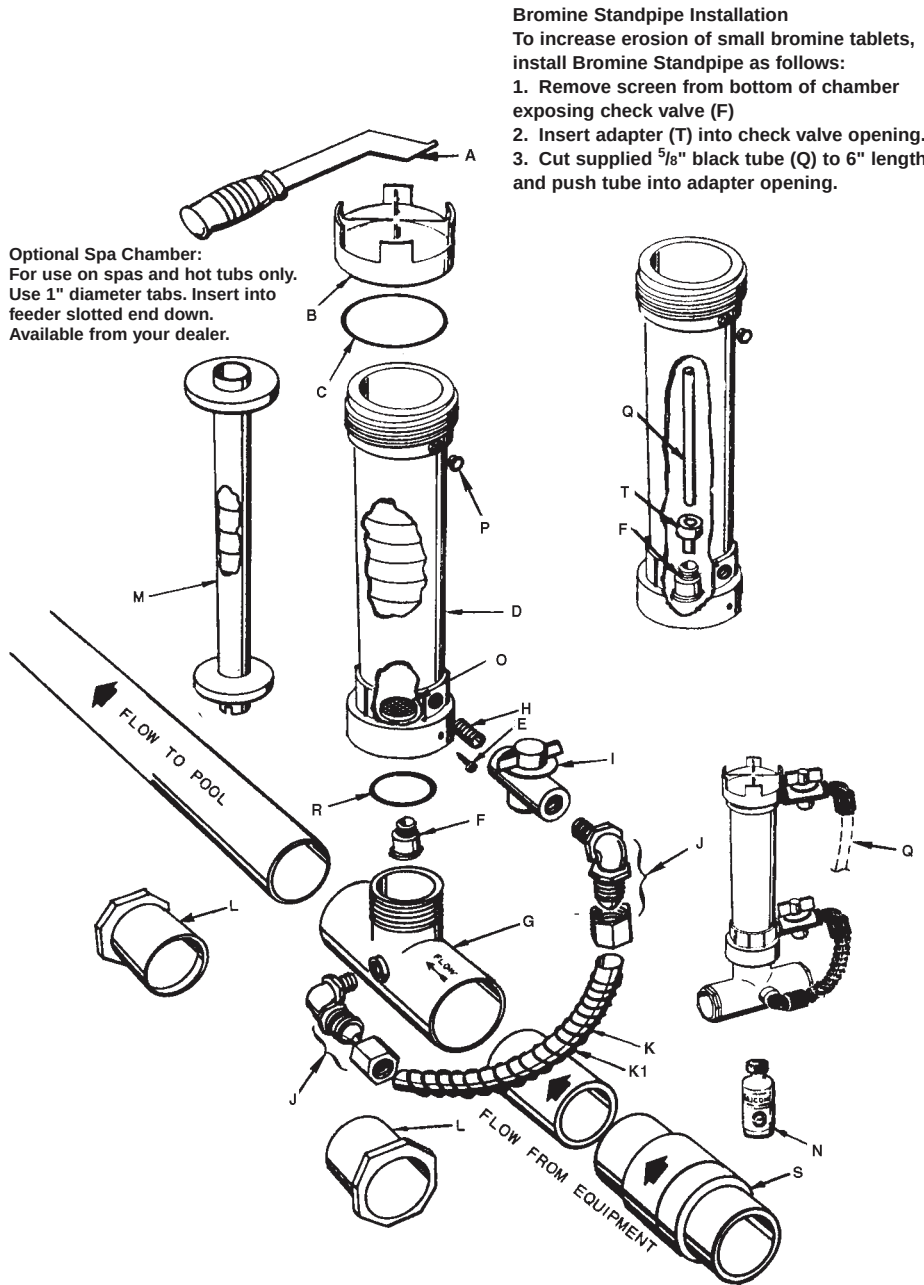
#320 CHLORINE / BROMINE FEEDER PARTS BREAK DOWN DRAWING

Item	Qty.	Part No.	Description
A	Optional	R172052	Cap wrench
B	1	R172008W	3" Threaded cap
C	1	R172009	3" O-Ring
D	1	R172331	#320 Body only (new)
E	1	R01052	Lock screw
F	1	R172248	Check valve
G	1	R172317	Divertor tee
H	1	R172256	½" x Short MPT nipple
I	1	R172086	½" Chlorine control valve
J	2	R172272	½" NPT x tube fitting w/nut
K	1	R172091	5/8" OD Chlorinator tube
K1	1	R171097	Tube support spring
*L	2	R172210	2" x 1½" s x s bushing
M	Optional	R172037	Spa chamber
N	1	R172036	Silicone lubricant
**O	1	210396	Screen
P	1	R172134	½" MPT PVC plug
Q	1	R172253	5/8" OD 18" tube (optional top feed)
R	1	R172319	Bottom O-ring
S	Optional	R172288	1½" Corrosion resistant check valve
T	1	R172048B	Standpipe adapter

*Not used with 2" PVC, for 1½" PVC only.

**Be sure screen has not come loose in shipment—if loose: Simply snap over 4 posts in bottom of chlorinator to replace.

NOTE: To service check valve F, Remove lockscrew E, and unscrew (counter-clockwise) D chlorinator body from G divertor tee.

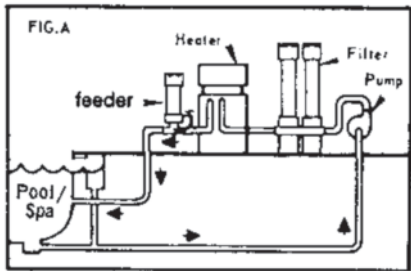


YOU MAY SUBSTITUTE BROMINE TABLETS OR STICKS FOR TRICHLOR IN THIS FEEDER. **DO NOT MIX.**

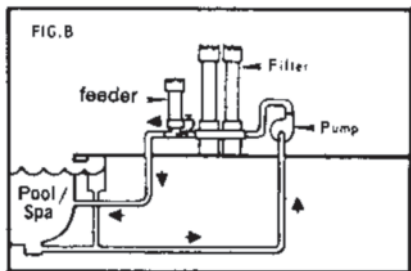
CALCIUM HYPOCHLORITE IS NOT TO BE USED IN ANY FORM.

IMPORTANT OPTION.
SEE CORROSION CAUTION SHEET.

CAUTION
Do not install feeder into copper plumbing. Pipe damage could occur. Never install feeder before heater. Heater damage could occur.



Typical Installation #320 with heater.



Typical Installation #320 without heater



NSF listed for public or residential use in Swimming Pools, Spas or HotTubs using 1" Trichlor tablets and when used with a flow indicating device such as Rainbow Model #R172276". Output rating for Bromine is not NSF certified.

[*] Using Bromine tablets with this device is not NSF certified

Technical Support: (800) 831-7133



HI FLO FEEDER KIT #R171099

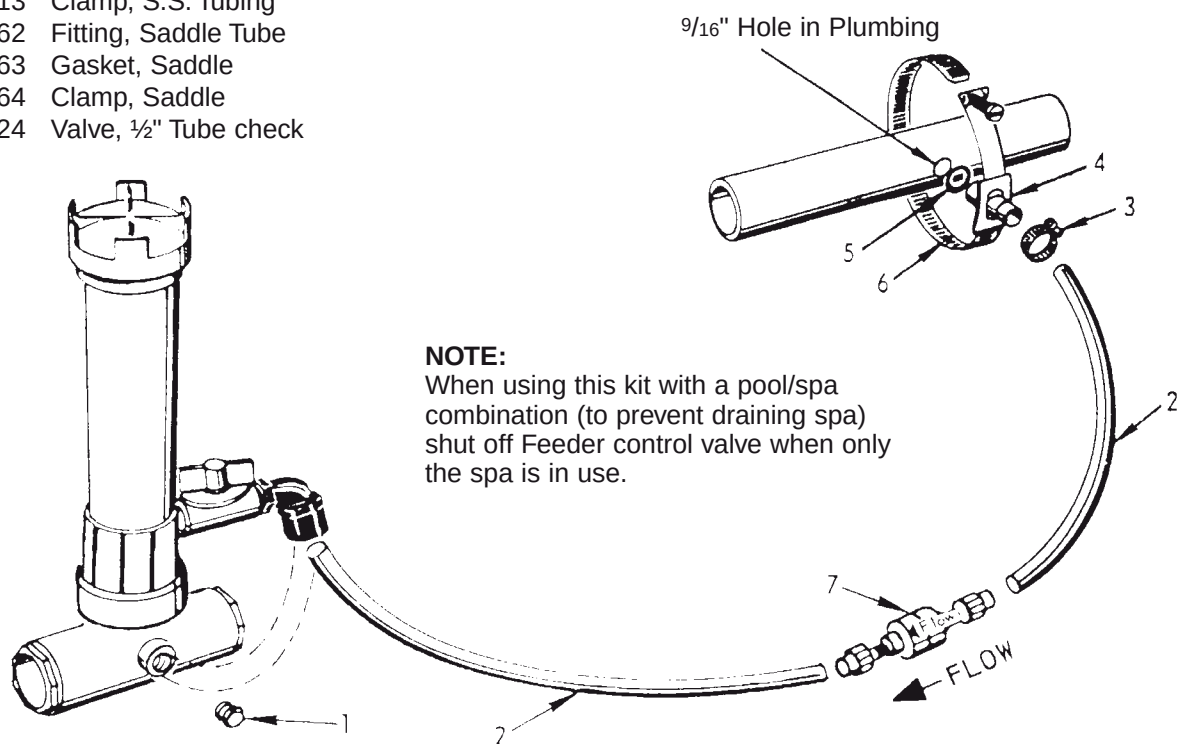
FOR MODELS #320 & #322

DIRECTIONS

1. Turn off pump and timer switches.
2. Loosen compression nut and remove Feeder tube and 90° elbow from the diverter tee at base of Feeder.
3. Using thread seal tape as thread sealant, wrap $\frac{1}{2}$ " MPT plug threads (1) with several turns of the tape only. Install in place of 90° elbow on diverter tee.
4. Disconnect other end of Feeder tube from control valve 90° elbow, by loosening compression nut. Use the compression nuts from old tube to attach new 6' section (2).
5. Push compression nut over tubing end, then push tubing onto tapered end of elbow. Tighten nut firmly by hand.
6. Connect other end of plumbing. **IF POOL/SPA HAS A HEATER, INSTALL BETWEEN FILTER AND HEATER. IF YOUR POOL/SPA HAS A SOLAR SYSTEM, INSTALL BEFORE SOLAR SYSTEM INLET LINE. IF NO HEATER, INSTALL BETWEEN PUMP AND FILTER.** Drill $\frac{9}{16}$ " hole in plumbing, remove burrs, and install saddle clamp assembly. (See illustration) Tighten clamp with screwdriver. Slide small stainless steel clamp #3 over tubing #2 and slide tubing over saddle tube fitting #4. Secure tubing to fitting by tightening camp with screwdriver. Make sure clamp is below rib at end of saddle tube fitting.
7. To install $\frac{1}{2}$ " **CHECK VALVE**, cut tube approximately 6" away from plumbing connection. Remove compression nuts from check valve. Slide nuts over both ends of tube. Insert check valve ends into both pieces of tubing and tighten compression nuts firmly by hand. Be sure arrow "**FLOW**" is pointing toward the Feeder.

HI FLO FEEDER KIT #R171099 PARTS BREAKDOWN DRAWING

Item	Quantity	Part No.	Description
1	1	R172134	Plug, $\frac{1}{2}$ " MPT
2	6'	R172093	Tube, $\frac{1}{2}$ " ID Chlorinator
3	1	R175013	Clamp, S.S. Tubing
4	1	R171162	Fitting, Saddle Tube
5	1	R172263	Gasket, Saddle
6	1	R172264	Clamp, Saddle
7	1	R172324	Valve, $\frac{1}{2}$ " Tube check



Technical Support: (800) 831-7133

EXTENSIONS

- Going on vacation?
- Need more chlorine?
- Filling Chlorinator/Brominator too frequently?

LIFEGARD CHLORINATOR EXTENSIONS SOLVE THE ABOVE PROBLEMS BY:

1. Increasing tablet capacity.
2. Larger chamber size allows more erosion of tablets. (See special instructions below)

The 10" extension doubles and the 20" extension triples (approximately) the capacity and time between refills. ***AVAILABLE THROUGH LIFEGARD DEALERS ONLY.**

NOTE: On free standing #300 series chlorinators, the base of the chlorinator should be secured to prevent the possibility of the chlorinator tipping over due to increased height.

INSTALLATION INSTRUCTIONS

1. Follow recharging instructions to the point of filling with tablets
2. Making sure O-Ring is clean, lubricated with Lifeguard Silicone and in place, screw on extension tightly and secure with lock screw. (You may wish to wait until back in operation before tightening screw to insure against leaks).
3. Fill with tablets and continue with normal recharging procedure.

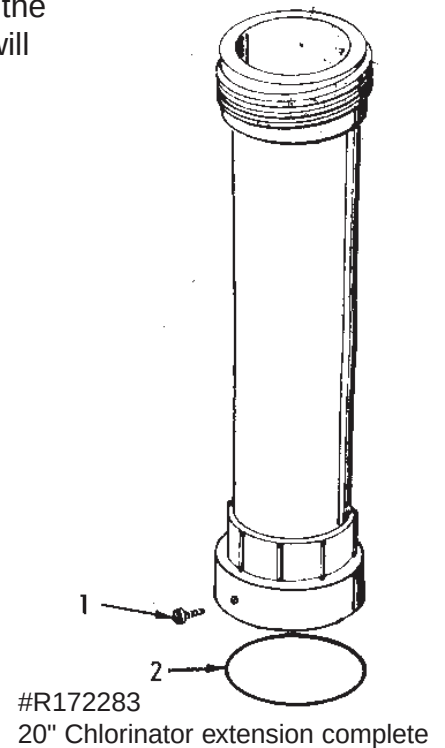
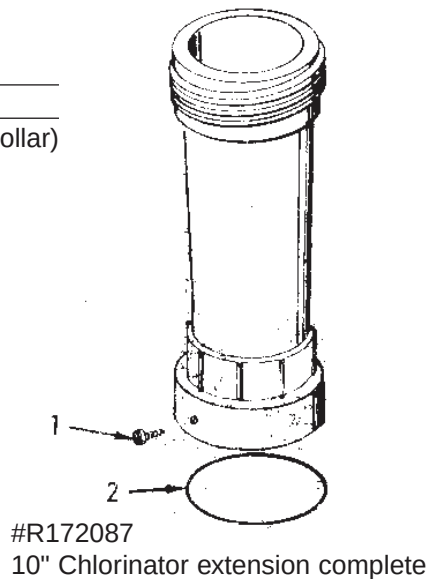
SPECIAL INSTRUCTIONS:

The large chamber size will result in more chlorine being dispensed at the same valve setting, therefore, once installed, several days monitoring will be necessary to readjust chlorinator output.

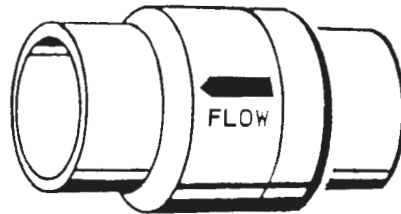
*Does not apply to large capacity #300-19 or #300-29.

Parts Breakdown Drawing

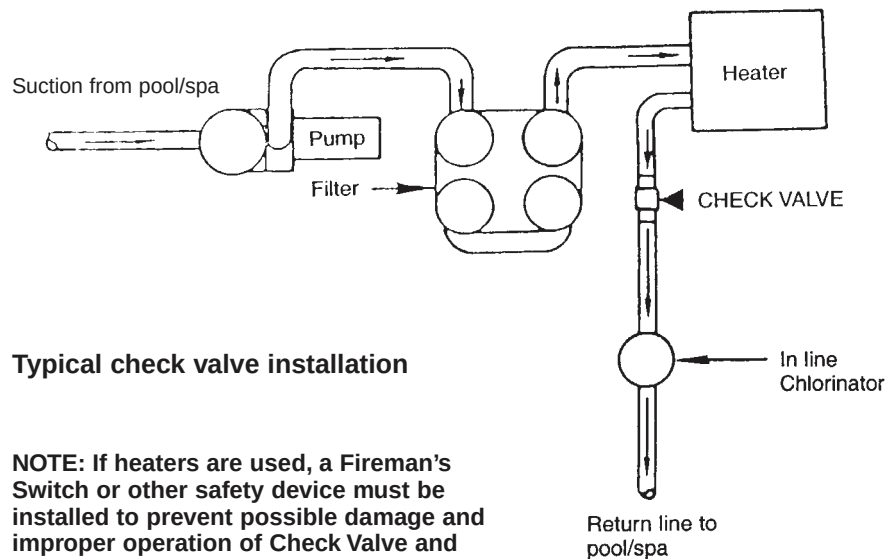
Item	Quantity	Part No.	Description
1	1	R172078	Lockscrew (bottom collar)
2	1	R172009	O-Ring



#R172288 1½" & 2" SLIP SPRING CHECK VALVE



- Special corrosion resistant 1½" & 2" slip spring check valve can be used to check back flow of fluids, air, etc.
- Full free flow design
- Special Spring and Seal for corrosive applications.
- Enclosed spring insuring free operation.
- Very effective when used in conjunction with chlorinator to check back flow of chemicals to pool/spa equipment, preventing corrosion problems and damage.
- Can be mounted in any position.



Typical check valve installation

NOTE: If heaters are used, a Fireman's Switch or other safety device must be installed to prevent possible damage and improper operation of Check Valve and other equipment subject to heat damage.

Technical Support: (800) 831-7133

EQUIPMENT SAFETY

CAUTION!

PLEASE READ CAREFULLY

Since most pool's plumbing is not airtight, and a mixture of air and chlorine is highly corrosive to metals, it is important to protect these items from corrosion in the OFF period when no circulation is taking place. (There is no chance for chlorine corrosion when the circulating system is in operation.)

Of course, corrosion or erosion of metal components can still occur independently of any chlorinator installation for the following reasons:

1. Water velocity too high.
2. Water pH less than 7.2.
3. Total alkalinity less than 100 PPM.

If your pool or spa has any of the following equipment, special plumbing procedures must be followed for safe operation:

1. Brass or bronze gate, rotary or backwash valves.
2. The preceding valves constructed of PVC or other plastic material with metallic shafts.
3. Filters, heaters, heat exchanges or other items with metallic tanks, shafts, coils or tubes.
4. **NOT FOR USE IN COPPER PLUMBING.**

Installation of the **OPTIONAL** Rainbow #R172288 positive seal, corrosion resistant check valve **SHOWN ON REVERSE SIDE** will prevent the backflow of corrosive liquids and gases that can damage equipment containing metallic components. Examples listed above.

WARNING: If your pool is equipped with a permanent built in pool-cleaning system, damage could occur to that system if materials are not compatible with low pH Tri-Chloro feeders. Check with manufacturer for compatibility.



TECHNICAL SUPPORT (800) 831.7133

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10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000

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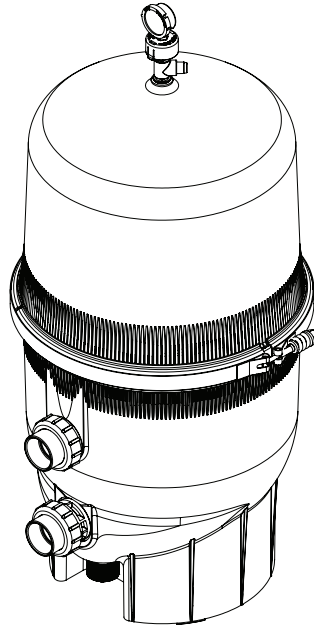
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P/N R24290 REV E 3/15



CLEAN AND CLEAR® PLUS CARTRIDGE FILTER



INSTALLATION AND USER'S GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS



⚠ WARNING



Pressurized air can cause the lid to separate from the tank with great force. To reduce the risk of severe injury or death, relieve pressure by opening air relief valve before opening filter. Before starting the pump after servicing, ensure that clamp band is correctly fastened. See Important Warnings and Safety Instructions (page iii) and follow all instructions exactly; including the *Opening the Filter* (page 4), *Installing the Filter Lid and Clamp Ring* (page 5), and *Start-Up Instructions* (page 6).

CUSTOMER SERVICE / TECHNICAL SUPPORT

If you have questions about ordering Pentair Aquatic Systems replacement parts, and pool products, please contact:

Customer Service and Technical Support, USA

(8 A.M. to 4:30 P.M. — Eastern/Pacific Times)

Phone: (800) 831-7133

Fax: (800) 284-4151

Web site

Visit www.pentairpool.com or www.staritepool.com for information about Pentair products.

Sanford, North Carolina (8 A.M. to 4:30 P.M. ET)

Phone: (919) 566-8000

Fax: (919) 566-8920

Moorpark, California (8 A.M. to 4:30 P.M. PT)

Phone: (805) 553-5000 (Ext. 5591)

Fax: (805) 553-5515

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IMPORTANT WARNINGS AND SAFETY INSTRUCTIONS



IMPORTANT NOTICE:

This guide provides installation and operation instructions for the Clean and Clear® Plus Cartridge Filter. Consult Pentair Water Pool and Spa, Inc. with any questions regarding this equipment.

Attention Installer: This guide contains important information about the installation, operation and safe usage of this product. This information should be given to the owner and/or operator of this equipment after installation.

Attention User: This manual contains important information that will help you in operating and maintaining this filter. Please retain it for future reference.



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.



Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.



Warns about hazards that may cause death, serious personal injury, or major property damage if ignored.



Warns about hazards that may or can cause minor personal injury or property damage if ignored.

NOTE

Indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

Consumer Information and Safety

This filter is designed and manufactured to provide many years of safe and reliable service when installed, operated and maintained according to the information in this manual and the installation codes referred to in later sections. Throughout the manual, safety warnings and cautions are identified by the “⚠” symbol. Be sure to read and comply with all of the warnings and cautions.



Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions or replacement safety labels.



Do not operate the filter until you have read and understand clearly all the operating instructions and warning messages for all equipment that is a part of the pool circulating system. The following instructions are intended as a guide for initially operating the filter in a general pool installation. Failure to follow all operating instructions and warning messages can result in property damage or severe personal injury or death.



Due to the potential risk that can be involved it is recommended that the pressure test be kept to the minimum time required by the local code. Do not allow people to work around the system when the circulation system is under pressure test. Post appropriate warning signs and establish a barrier around the pressurized equipment. If the equipment is located in an equipment room, lock the door and post a warning sign.

Never attempt to adjust any closures or lids or attempt to remove or tighten bolts when the system is pressurized. These actions can cause the filter to separate and could cause severe personal injury or death if they were to strike a person.



This filter must be installed by a qualified pool serviceman in accordance with all applicable local codes and ordinances. Improper installation could result in death or serious injury to pool users, installers, or others and may also cause damage to property.



Always disconnect power to the pool circulating system at the circuit breaker before servicing the filter. Ensure that the disconnected circuit is locked out or properly tagged so that it cannot be switched on while you are working on the filter. Failure to do so could result in serious injury or death to serviceman, pool users or others due to electric shock.



DO NOT permit children to use this product.

IMPORTANT WARNINGS AND SAFETY INSTRUCTIONS

WARNING



THIS SYSTEM OPERATES UNDER HIGH PRESSURE

When any part of the circulating system, (e.g., closure, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause the top closure to separate which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions:

1. Let air and pressure out of system before and after servicing.
 - a. **Shut off pump and RELIEVE PRESSURE by opening the manual air/pressure relief valve before servicing, including before tightening the clamp bolt.** Follow the *Opening the Filter* instructions exactly (page 4).
 - b. Follow *Start-Up Instructions* exactly after completing service (page 6). **The air/pressure relief valve must remain open until water comes out**, allowing all air out of the system.
2. Install lid and clamp ring properly.
 - a. Follow the *Installing the Filter Lid and Clamp Ring* instructions exactly (page 5). **The nut must be tightened until the spring is compressed when clamp is installed.** Tap the clamp with a rubber mallet or similar tool after clamp installation to ensure proper seating.
3. Maintain circulation system properly to help prevent air entering the system.
 - a. Replace worn or damaged parts immediately, (e.g., closure, pressure gauge, valve(s), O-rings, etc.).
 - b. Maintain proper water level in the pool or spa.
4. Verify that the return line to the pool is unobstructed. Ensure return valves are open and any winterizing plugs are removed.

WARNING

AVOID DAMAGING SYSTEM

Never Exceed Maximum Pressure of Components. The maximum working pressure of this filter is 50 psi. Never subject this filter to higher pressure, even when conducting hydrostatic pressure tests. Pressures above 50 psi can damage your filter.

Be sure the maximum pressure of the filter system does not exceed the maximum pressure of any components within the system (typically stated on each component), including during hydrostatic or external leak tests. Exceeding the maximum pressure of a component can result in that component failing. 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.

WARNING



Certain codes may require pressure testing the system. Performing pressure tests increases the risk of component failure. Due to the potential risk that can be involved, keep the pressure test to the minimum time required by the local code and take precautions. If pressure testing is necessary, follow these precautions:

1. Keep people away.
 - a. Do not allow people to work around the system when the circulation system is under pressure test. Post appropriate warning signs and establish a barrier around the pressurized equipment. If the equipment is located in an equipment room, lock the door and post a warning sign.
2. Never exceed maximum operating pressure.
 - a. 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.

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.

Filter Overview

- Large filter area designed for increased debris capacity
- NSF Listed
- High Flow™ Manual Air Relief Valve provided
- 1.5" x 2" Bulkhead Unions allows for easy piping installation

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 Clean and Clear® Plus Cartridge 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. Be sure 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 MEDIA 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 to pool users, installers, servicers, 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 Clean and Clear® Plus Cartridge 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 clamp is properly installed around the tank flanges, see **Figure 1**.

Note: See page 5, *Installing the Filter Lid and Clamp Ring*.

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 High Flow™ Manual Air Relief Valve to safely direct purged air or water (See page 3, *Installing the Manual Air Relief Valve*).

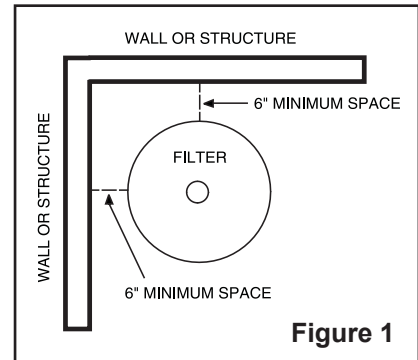


Figure 1

Table 2

Model No.	Size	Vert. Clearance Req. (From Ground Level)
CCP240	240 sq. ft.	56in.
CCP320	320 sq. ft.	62in.
CCP420	420 sq. ft.	68in.
CCP520	520 sq. ft.	74in.

⚠ 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.

Installing the Manual Air Relief Valve



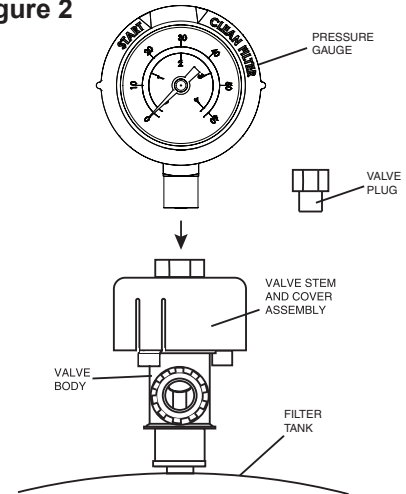
WARNING The High Flow manual air relief valve and pressure gauge are included with this filter to help ensure safe operation of the equipment. Always maintain these components in good working condition.

1. Remove the High Flow™ Manual Air Relief Valve and the pressure gauge from the accessories package included with your Clean and Clear® Plus Cartridge Filter.
2. Thread the manual 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.

Figure 2



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.

4. Remove the plug from the top of the manual air relief valve with a 9/16" 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 manual air relief valve. **Hand tighten only!**
7. Follow *Start-up Instructions* exactly (page 6).

OPENING, CLOSING, AND START-UP

CAUTION

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 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 ii-iii).

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.

RECOMMENDED EQUIPMENT:

- Ratchet Wrench
- 7/8" 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 High Flow™ Manual 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 waste drain plug on the bottom of the Clean and Clear® Plus Cartridge Filter. Allow all water to drain from the bottom of the filter tank.
3. Loosen the clamp's barrel nut with a 7/8" wrench, allowing the spring coils to decompress. See **Figure 4**. 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 bottom tank manifold.

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.

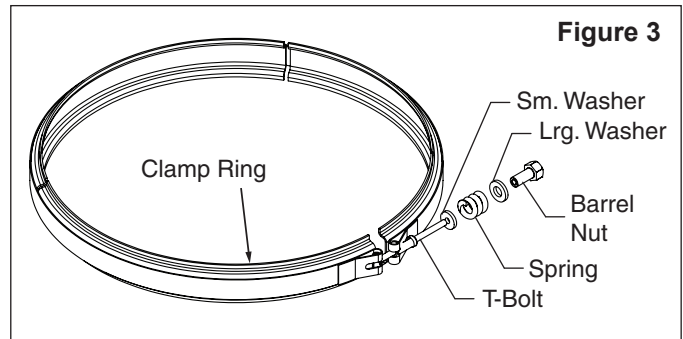


Figure 3

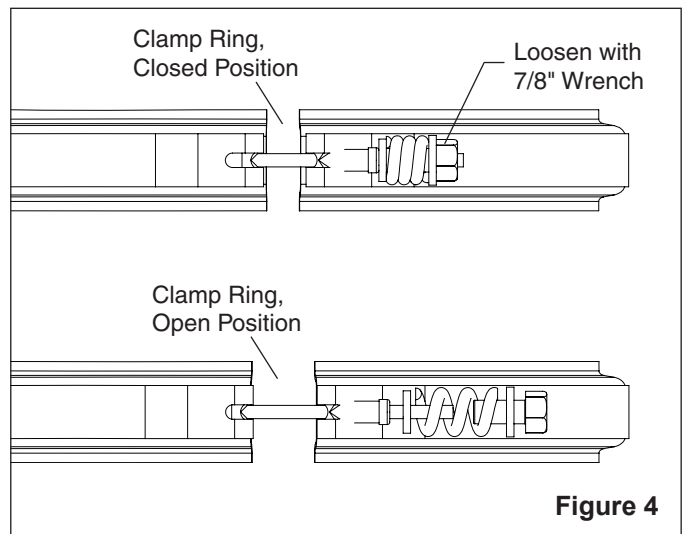


Figure 4

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 Warnings and Safety Instructions*, page ii-iii).

RECOMMENDED EQUIPMENT:

- Ratchet Wrench
- 7/8" 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 Clean and Clear® Plus Cartridge 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 in. 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 5**).

7. Close the waste drain plug at the bottom of the filter.
8. Follow **Start-Up Instructions** exactly (see page 6).

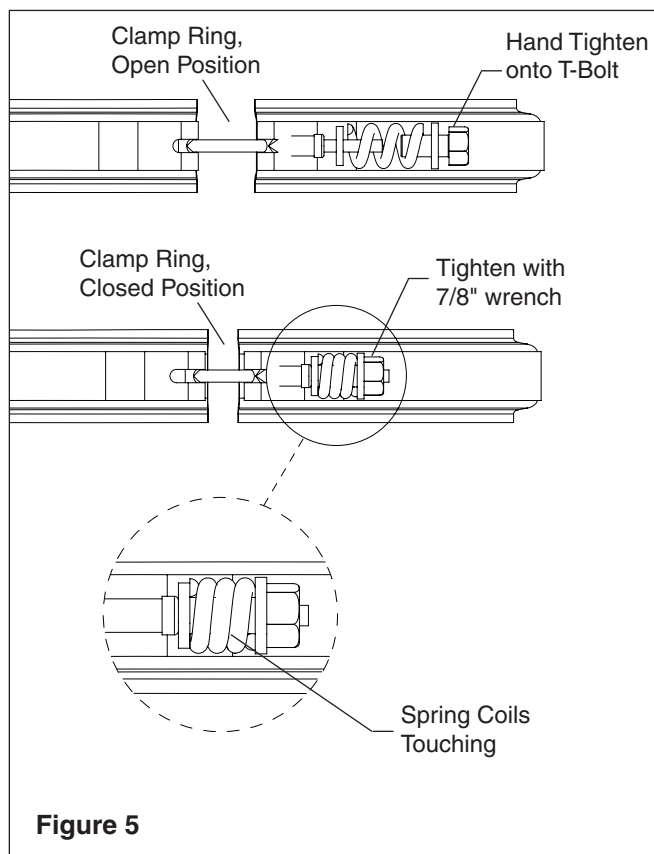


Figure 5

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 nut or attempt to adjust the clamp ring or lid while the system is turned on or under pressure. This could cause the lid to separate from the filter

Start-Up Instructions

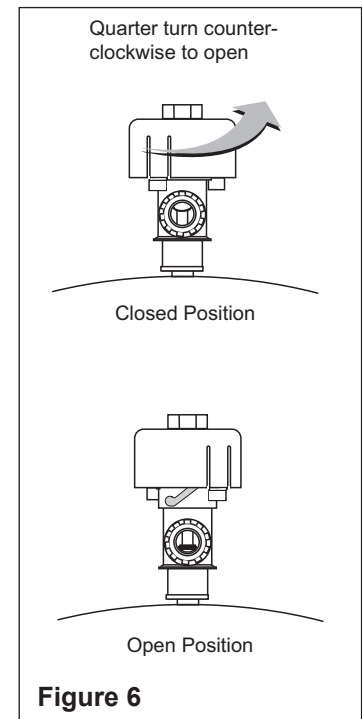
WARNING



Follow these instructions **exactly** to prevent the lid from separating from the filter during system start-up or operation. (See *Important Warnings and Safety Instructions*, page ii-iii).

1. Be sure the **spring on the clamp ring is fully compressed, with coils touching**.
2. Open the High Flow™ Manual Air Relief Valve by turning the valve cover assembly a quarter turn counter-clockwise, until it snaps into the full open position. See **Figure 6**.
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 manual air relief valve to relieve pressure and clean the valve (see *Cleaning the Manual Air Relief Valve*, page 7). If the problem persists, call Pentair Technical Service at (800) 831-7133 for assistance.
5. After a steady stream of water appears, close the manual 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 on page 1 and the corresponding label on the equipment:
 - 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".



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

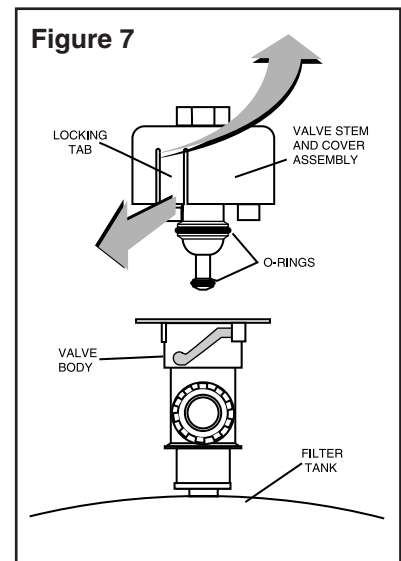
Cleaning the Manual Air Relief Valve

RECOMMENDED EQUIPMENT:

- 5/16" 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 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 attached to the Clean and Clear® Plus Cartridge Filter tank, pull out the locking tabs and unlock the valve stem and cover assembly from the valve body with a counter-clockwise turn, see **Figure 7**.
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" 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.

When to Clean Your Filter

Proper operation can prevent avoidable repairs and maintenance.

Use the pressure gauge to determine when to clean your Clean and Clear® Plus Cartridge Filter for proper operation. The pressure reading increases as dirt is filtered from your pool. This buildup of pressure will vary due to different bathing loads, temperature, environmental conditions, etc.



WARNING Clean your filter when pressure reads between **8-10 psi higher** than the “Original Starting Pressure” recorded in Table 1 (page 1), or when significant reduction in flow is noticed.

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.

Cleaning the Filter Cartridges

1. Follow *Opening the Filter* (page 4) 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 compression spring and spring adapter by pulling them straight up.
4. Separate the top manifold from the filter's cartridges and lay the manifold to the side. See **Figure 8**.
5. Carefully remove each cartridge element separately.
6. Using a garden hose with a straight flow nozzle, wash down the entire filter element. Wash from the top down, holding the nozzle at a 45-degree angle to the cartridge (See **Figure 9**). Pay special attention to the area between pleats.
7. 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



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.



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.

8. Direct the water spray to wash out the inside of the tank body and bottom manifold. Water and debris will drain out through the open drain plug.
9. Check gasket around outer lip of bottom plate. Gasket must be firmly and evenly set around the entirety of the outer lip.
10. Place bottom manifold, four (4) cartridges and top manifold in place. Make sure the spring and standpipe assembly are retained on the top manifold.
11. Be certain the O-ring is in position in the lower tank half and free of debris.
12. Follow *Installing the Filter Lid and Clamp Ring* exactly (page 5).

Figure 8

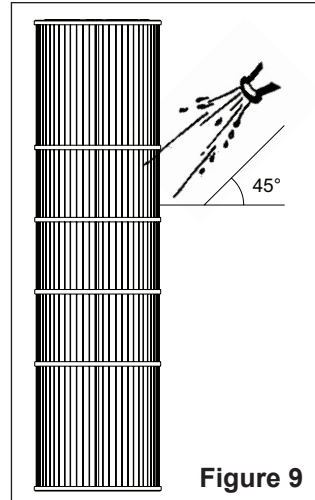
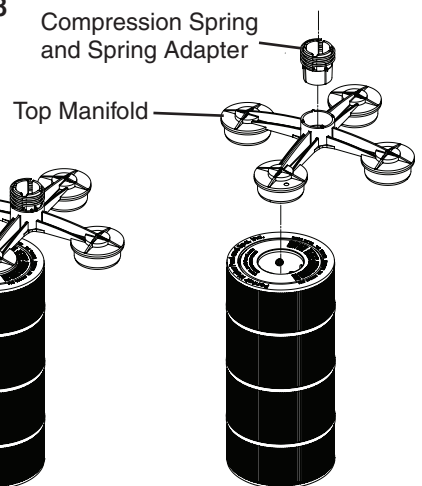


Figure 9

Acid Soaking the Filter Cartridges

After an extended period of operation, it may be necessary to soak the 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 Clean and Clear® Plus Cartridge 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.

RECOMMENDED EQUIPMENT:

- 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.

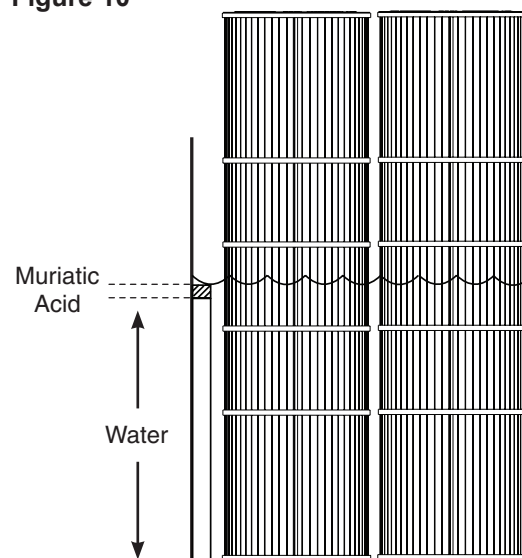
2. Put on protective equipment - rubber gloves, safety glasses and N-95 dust mask.
3. In a large plastic container, create a solution of one part muriatic acid to twenty parts water. See **Figure 10**.

⚠ 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.
4. Remove the cartridges from the acid solution.
5. Using a garden hose with a straight flow nozzle, thoroughly wash down the entire filter element. Wash from the top down, holding the nozzle at a 45-degree angle to the cartridge. See **Figure 9**, on page 8.
6. Reinstall the cartridges and dispose of the acid solution in accordance with local regulations.

Figure 10



Replacing Filter Cartridges

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

To replace filter cartridges:

1. Follow *Opening the Filter* exactly (page 4).
2. Remove the compression spring and spring adapter by pulling them straight up. Once the spring and spring adapter have been removed, separate the top manifold from the filter cartridges and lay the manifold to the side. See **Figure 6**).
2. Carefully remove each cartridge element separately.
3. Check gasket around outer lip of bottom plate. Gasket must be firmly and evenly set around the entirety of the outer lip.
4. Install the replacement cartridges onto the bottom manifold. Reinstall the top manifold on to the new cartridges.
Note: Be sure the spring and standpipe assembly are retained on the top manifold.
5. Follow *Installing the Filter Lid and Clamp Ring* exactly (page 5).

TROUBLESHOOTING

1. AIR ENTERING THE SYSTEM.

Air entering your Clean and Clear® Plus Cartridge Filter can cause lid separation. Correct any conditions in your filtration system that allow air to enter the system.

WARNING



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 instructions (page 4). (See Important Warnings and Safety Instructions, page ii-iii)

Symptoms:

- Low water level in pool or spa - skimmer starving for water with pump running.
- Air bubbles or low water level in pump hair and lint pot
- Air bubbles coming out of water return lines into pool or spa with pump running
- Air is discharged from the air/pressure relief valve on top of the filter when the valve is opened with the pump running.

Potential Causes and Solutions:

- Low water level: *Add water to pool or spa.*
- Clogged skimmer basket: *Unclog.*
- Damaged or leaking components (e.g., split suction cleaner hose, leak in pump hair and lint pot lid, or leak in pump suction line): *Repair or replace component.*

2. SHORT FILTER CYCLES BETWEEN CLEANING.

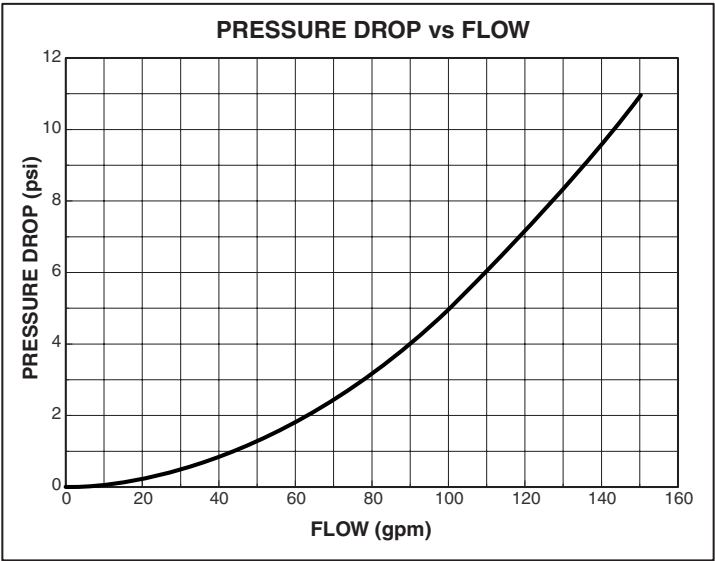
Until the water initially put into the pool has been completely filtered, short filter cycles in between cleanings are normal. In most cases pool owners are dismayed by the undesirable color and appearance of water in a newly filled pool. Plaster dust can be responsible for short filter cycles, requiring frequent cleaning.

3. PRESSURE DROP ON GAUGE.

If pressure drops on gauge, check skimmer basket and pump basket first for debris. If the baskets are clean, there is likely a problem with the pump. Refer to pump manual for pump troubleshooting.

TECHNICAL DATA

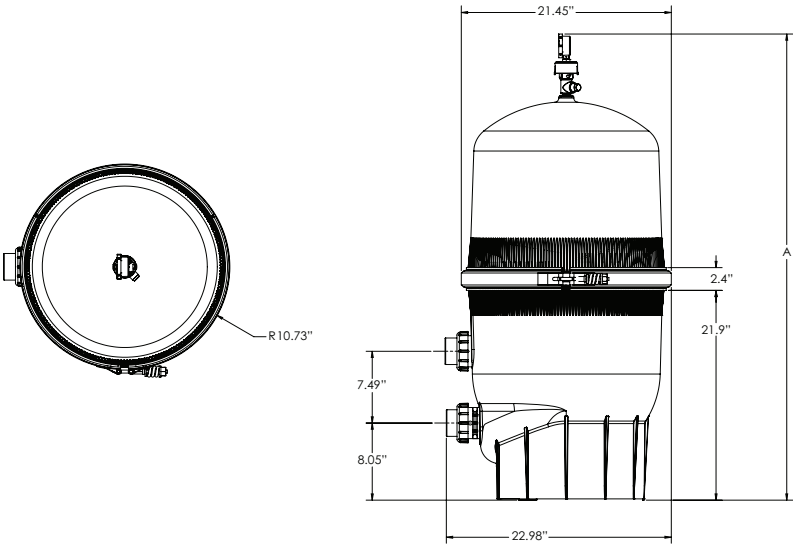
Flow Rates



Clean and Clear® Plus Cartridge Filters						
Recommended Flow Rate						
Model #	Filter Area (Sq. Ft.)	Vertical Clearance*	Flow Rate (GPM)	Turnover Capacity (Gallons)		
				6 Hours	8 Hours	12 Hours
CCP240	240	56 in.	90	32,400	43,200	64,800
CCP320	320	62 in.	120	43,200	57,600	86,400
CCP420	420	68 in.	150	54,000	72,000	108,000
CCP520	520	74 in.	150	54,000	72,000	108,000

NOTE: Actual system flow will depend on plumbing size and other system components.
* Required Clearance to remove filter elements and lid.

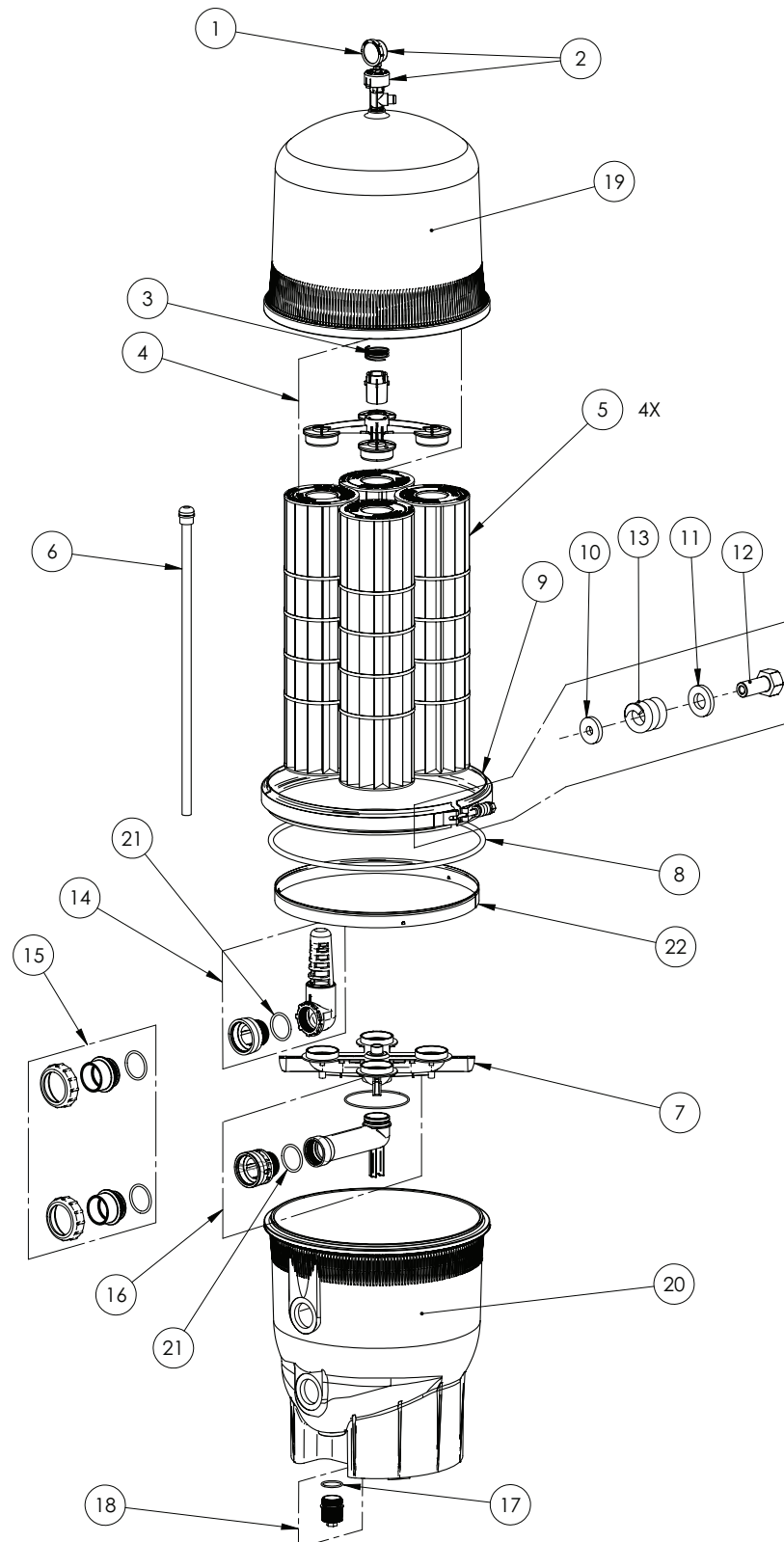
Dimensional Drawings



MODEL	DIM "A"
CCP 240	37"
CCP 320	43"
CCP 420	49"
CCP 520	56"

REPLACEMENT PARTS

Illustrated Parts View



Clean and Clear® Plus Cartridge Filter Parts List

Replacement Parts

Item No.	Part No.	Description
1	190058	Pressure Gauge, with Indicator
2	98209800	High Flow Manual Air Relief Valve (HFMARV)
3	178616	Compression Spring
4	170026	Top Manifold, 240 C&C Plus
4	170027	Top Manifold, 320/420/520 C&C Plus
5	R173572	Cartridge Element, 240 C&C Plus, 4 req.
5	R174573	Cartridge Element, 320 C&C Plus, 4 req.
5	R173576	Cartridge Element, 420 C&C Plus, 4 req.
5	R173578	Cartridge element, 520 C&C Plus, 4 req.
6	170030	Air Bleed Tube Assy., 240 C&C Plus
6	170029	Air Bleed Tube Assy., 320 C&C Plus
6	170028	Air Bleed Tube Assy., 420 C&C Plus
6	178583	Air Bleed Tube Assy., 520 C&C Plus
7	170040	Bottom Manifold
8	39010200	O-ring, Tank Clamp (.470 O.D.)
9	190003	Clamp Band Replacement Kit
10	195610	Clamp Washer, Small I.D.
11	195611	Clamp Washer, Large I.D.
12	194997	Clamp Nut
13	195612	Clamp Spring, 4-Coil
14	190039	Baffle Assy., C&C Plus
15	98960311	Union Kit, Black
15	271096	2" Valve Adapter Kit, 1 ½ in. x 2 in. (set), White
15	270004	2" Valve Adapter Kit, 1 ½ in. x 2 in. (set), Black
15	274426Z	2 x 2.5" Valve Adapter Kit,

Item No.	Part No.	Description
16	170036	Pipe Assy. Outlet, C&C Plus
17	190143	O-ring, Drain
18	190030	Drain Plug, without O-Ring
19	170023	Tank, Lid Assy., 240 C&C Plus
19	170024	Tank, Lid Assy., 320 C&C Plus
19	178581	Tank, Lid Assy., 420 C&C Plus
19	178582	Tank, Lid Assy., 520 C&C Plus
20	178578	Tank, Bottom Assy. (Includes Items 7, 14, 16 and 18)
21	86006900	O-ring
22	195339	Ring, Steel Back-up
-	192019	Drain Plug Wrench
-	171013	Label Kit w/ Air Relief, 240 C&C Plus
-	171014	Label Kit w/ Air Relief, 320/420/520 C&C Plus
-	190106Z	Air Bleed Screen Cap

(-) Not Shown



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