

# PELICAN WATER FILTER AND WATER SOFTENER ALTERNATIVE COMBO SYSTEM

PSE1800-P | PSE2000-P



# **TABLE OF CONTENTS**

IMPORTANT INFORMATION	2
WATER CONDITIONS FOR OPERATION	3
CUSTOMER SERVICE CONTACT INFORMATION	3
PRODUCT OPERATION AND SPECIFICATIONS	4
COMPLETE PARTS LIST	5
INSTALLATION OVERVIEW	6
PRE-INSTALLATION	
BYPASS VALVE INSTALLATION	7
WATER FILTER - CARBON SOAK	8
WATER FILTER - CARBON FLUSH	9
INSTALLATION	
SEDIMENT FILTER ASSEMBLY	10
SEDIMENT FILTER INSTALLATION	10
CARBON WATER FILTER TANK INSTALLATION	11
WATER SOFTENER ALTERNATIVE TANK INSTALLATION	12
BYPASS VALVE OPERATIONS	
NATURSOFT® - MEDIA SOAK	14
NATURSOFT® - MEDIA FLUSH	
COMPLETE THE INSTALLATION	15
WHAT TO EXPECT WITH YOUR NEW WATER SOFTENER ALTERNATIVE	16
MAINTENANCE	17
TROUBLESHOOTING	18
PRODUCT WARRANTY & REGISTRATION FORM	19
PRODUCT CERTIFICATIONS	
PERFORMANCE DATA SHEET	21

# IMPORTANT INFORMATION

- Read these instructions carefully and determine the location of all system components before beginning installation.
- · Check all applicable plumbing, building, and electrical codes for installation compliance.
- · Install the system on the main water supply.
- The use of plumbers tape and/or pipe thread seal paste will be needed on all threaded connections.
- To condition all water in the home, install the system close to the water supply inlet, and upstream of all other plumbing connections, except outside water pipes. Outside faucets should remain on hard water to avoid wasting conditioned water.



# **WARNING**

If this or any other system is installed in a metal (conductive) plumbing system, i.e. copper or galvanized metal, the plastic components of the system will interrupt the continuity of the plumbing system. As a result any errant electricity from improperly grounded appliances downstream or potential galvanic activity in the plumbing system can no longer ground through contiguous metal plumbing. Some homes may have been built in accordance with building codes, which actually encouraged the grounding of electrical appliances through the plumbing system. Consequently, the installation of a bypass consisting of the same material as the existing plumbing, or a grounded "jumper wire" bridging the equipment and re-establishing the contiguous conductive nature of the plumbing system, must be installed prior to your systems use.



# **CAUTION**

When adding a filtration/softening system to homes/buildings supplied by well water, the system should be installed following the pressure tank. **DO NOT USE this system for pneumatic or hydropneumatic applications. If you are using a booster pump, then install this system following the booster pump.** If you have questions, please call customer service.

# WATER CONDITIONS FOR OPERATION

- The water should be free of hydrogen sulfide, a dissolved gas with a characteristic smell of rotten eggs. If present, it can coat the catalytic surface of the media and interfere with the process. The gas should be removed through adequate pre-treatment.
- The water should be free of hydrocarbons, oils, and lubricants. If present, they can coat the catalytic surface of the media and interfere with the process. Remove through adequate pre-treatment.
- The water should contain less than 1 mg/l of phosphates. Phosphates sequester dissolved hardness molecules preventing them from forming crystals and may coat the catalytic media surface and interfere with the process.
- The copper level in the water supply should be below the MCL of 1.3mg/L. If copper is present above this level, it can attach to the surface of the catalytic media and interfere with the process.
- The water should be free of Iron and Manganese. If present, they can coat the catalytic surface of the media and interfere with the process. Remove through adequate pre-treatment.

# **Customer Service Contact Information Section**

Homeowners Phone: 877.842.1635 Professionals Phone: 877.842.1635

# PRODUCT OPERATION AND SPECIFICATIONS

Specification Description	PSE1800-P	PSE2000-P	
Rated Service Flow Rate	8 GPM	12 GPM	
Peak Flow Rate	12 GPM	16 GPM	
Minimum/Maximum Working Pressure	25-80 PSI		
Maximum Vacuum	5 inch/127 mm Hg		
Operating Temperatures	36°F – 120°F		
pH Range	7-11		

The WATER SOFTENER ALTERNATIVE WITH NATURSOFT® SALT-FREE TECHNOLOGY will be effective on water supplies with a maximum hardness of 75 Grains per Gallon (GPG) or 1,282 ppm. For best results, all iron/manganese, sulfur and Tannin should be removed prior to this system's installation.

# **COMPLETE PARTS LIST**

Note: The parts supplied are intended to accommodate a variety of water supply lines. Additional fittings may be needed to fit to your plumbing. Visit pentair.com to view our full line of installation kits.

Part	Description	Qty.		
	1" Plastic Male NPT Assembly: V3007-04 WS1 Fitting 1" Plastic Male NPT Assembly (2), 0-Rings (2), Split Rings (2), and Connectors (2)	2		
0000	Mounting Bracket, Phillips Head Screws (4), Bolt Head			
	Sediment Filter: 5-Micron Polyspun Sediment Filter	1		
	Sediment Filter Spanner Wrench	1		
WAX	Non-Abrasive Auto Wax	1		
RINSE	Rinse-Aid	1		

Part	Description	Qty.
	Bypass Valve: In/Out Bypass Valve with Red Arrow Handles	2
	Hose Bib Assembly	1
	Pentair Whole House Water Filter: Model - PC600 or PC1000	1
	Pentair NaturSoft® Water Softener Alternative Model - NS3 or NS6	1

Note: Drawings are not to scale.

Additional fittings will be needed to adapt to your plumbing.

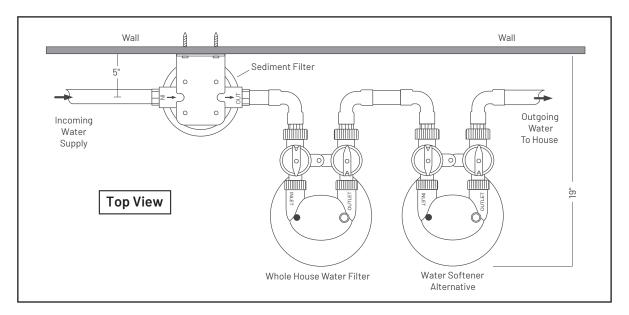


Figure 1A

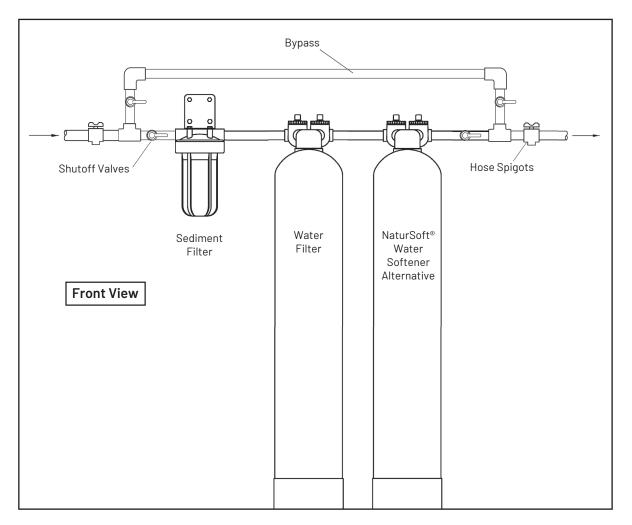


Figure 1B

Note: Sediment filter position is at the discretion of your professional installer. As a general guideline, the sediment prefilter is typically installed in the "pre" position (as shown above) for well water applications. For city water applications, the sediment filter is typically installed in the "post" position after the Water Softener Alternative tank.

# PRE-INSTALLATION

Notice: Head may come loose in transit. Please check head by tightening clock wise, hand tighten only, no more than  $\frac{1}{4}$  turn. Head may not move at all or less than  $\frac{1}{4}$  turn.

# **Bypass Valve Installation**

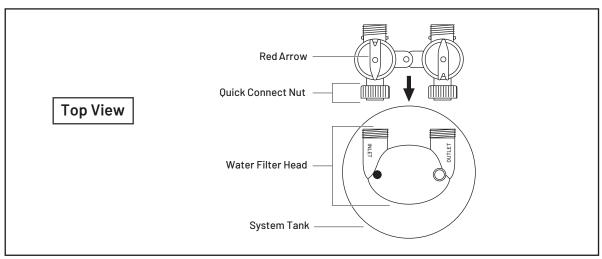


Figure 2

The bypass valve comes pre-assembled and ready to install with the o-rings, split rings, and quick connect nuts. Push the bypass valve into the head of the NaturSoft® Water Softener Alternative with the unthreaded ends oriented toward the tanks and hand-tighten the quick connect nuts.



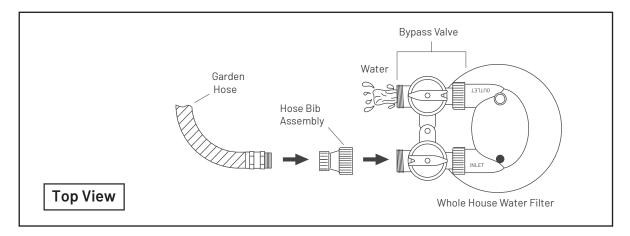
The bypass valve(s) included with this system are designed for multiple water systems. This may result in the arrows on the bypass valve(s) pointing differently than shown. If the arrows on your bypass valve(s) do not match the diagram, remove the red arrows by pulling them straight up, turn them 180° to match the drawing, and push them back down onto the stem.

# **MEDIA SOAK**

Note: Your system will not be ready for use for a minimum of 48 hours while the Carbon Soak process takes place. Please plan your installation accordingly.



Water will flow out of the outlet side of the Bypass Valve during this process. Be sure you perform this series of steps in a location suitable for water flow.



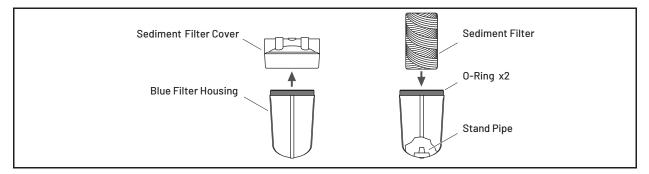
# Water Filter - Carbon Soak

# Note: Steps 1-6 should be done prior to installation

- 1. Attach a garden hose to the Hose Bib Assembly.
- 2. Connect the Hose Bib Assembly to the inlet side of the Bypass Valve and hand tighten.
- 3. Fill the Pentair Carbon Water Filter slowly until water comes out of the outlet side of the Bypass Valve.
- 4. Turn the water off.
- 5. Remove the garden hose from the Hose Bib Assembly. Do not remove the fitting.
- 6. Allow the carbon tank to soak for a minimum of 48 hours prior to installation.

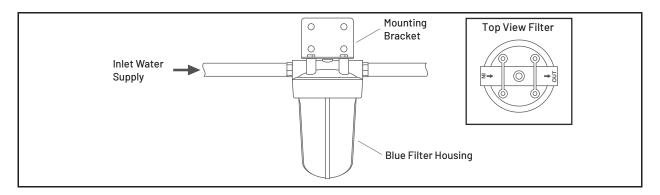
# SEDIMENT FILTER INSTALLATION

Note: Sediment filter position is at the discretion of your professional installer. As a general guideline, the sediment pre filter is typically installed in the "pre" position (as shown above) for well-water applications. For city water applications, the sediment filter is typically installed in the "post" position after the Water Softener Alternative tank.



#### Part 1

- 1. Unscrew the cover from the blue filter housing.
- 2. Remove the plastic covering from the sediment filter.
- 3. Place the sediment filter onto the stand pipe in the blue filter housing and set aside.



## Part 2

- 1. Shut off the water.
- 2. Attach the filter cover to the mounting bracket using the supplied bolt head screws and washers. Make sure to properly orientate the IN and OUT to match your flow pattern.
- 3. Attach the mounting bracket to the wall using the supplied phillips head screws.
- 4. Hand tighten the blue filter housing and then, using the supplied filter wrench, lightly snug the housing making sure not to over-tighten (counterclockwise).
- 5. Determine the size of your inlet water supply line.

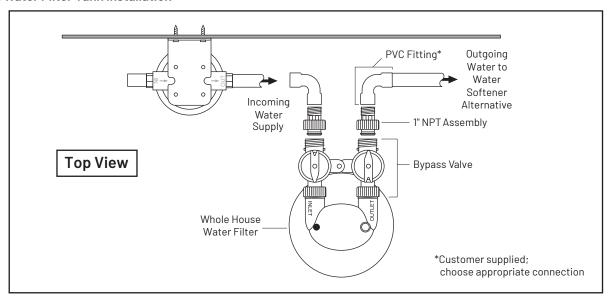


The Pre-Filter Housing comes with a  $1\frac{1}{2}$ " threaded female inlet/outlet and will require additional fittings to adapt to your plumbing. It is recommended that a shut-off valve and a bypass be plumbed in around the system before installing the Pre-Filter system.



If the tank is not level, lift the tank straight up six (6) inches and tap it on the ground until the tank stands vertical. The bottom of the tank is round and the boot allows the tank to stand upright.

#### Carbon Water Filter Tank Installation



- 1. Level the Pentair Carbon Water Filter.
- 2. Determine the size and material of your incoming water supply line from the Sediment Filter System and choose the appropriate plumbing required to adapt to the 1" Male NPT Assembly.

Note: Visit pentair.com/homewater to view our full line of installation kits.

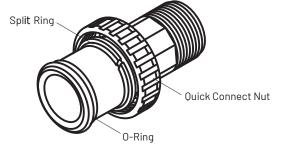


# Caution

Do not over-tighten any of the fittings during installation.

Note: The fitting below is designed with a  $\frac{1}{4}$ " give to allow for proper pipe alignment. It will not leak and is intended to have some flexibility.

Part	Description	Qty.
	1" Plastic Male NPT Assembly: V3007-04 WS1 Fitting 1" Plastic Male NPT Assembly (2): O-Rings (2), Split Rings (2), and Connectors (2)	1 bag



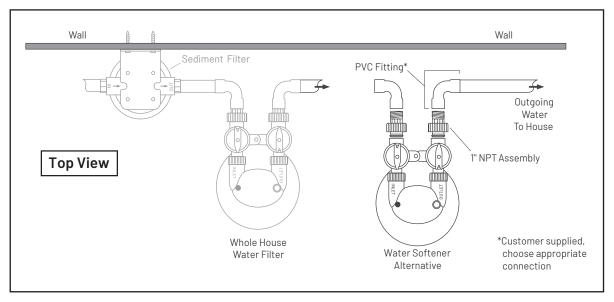
- 3. Install the fitting onto the inlet and outlet sides of the Bypass Valve. Follow the diagram supplied with the fitting.
- 4. Connect the incoming water supply from the Sediment Filter system to the fitting on the inlet side of the Bypass Valve.
- 5. Connect the outgoing water supply to the outlet side of the Bypass Valve.

# INSTALLATION



If the tank is not level, lift the tank straight up six (6) inches and tap it on the ground until the tank stands vertically. The bottom of the tank is round and the boot allows the tank to stand upright.

#### Water Softener Alternative Tank Installation



- 1. Level the Pentair Carbon Water Softener Alternative.
- 2. Determine the size and material of your incoming water supply line from the Whole House Water Filter and choose the appropriate fittings required to connect it to the Bypass Valve.

Note: Visit pentair.com/homewater to view our full line of installation kits.

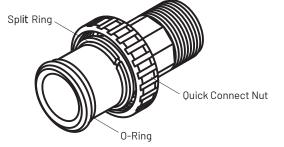


# Caution

Do not over-tighten any of the fittings during installation.

Note: The fitting below is designed with a  $\frac{1}{4}$ " give to allow for proper pipe alignment. It will not leak and is intended to have some flexibility.

Part	Description	Qty.
	1" Plastic Male NPT Assembly: V3007-04 WS1 Fitting 1" Plastic Male NPT Assembly (2): O-Rings (2), Split Rings (2), and Connectors (2)	1 bag



- 3. Install the fitting onto the inlet and outlet sides of the Bypass Valve. Follow the diagram supplied with the fitting.
- 4. Connect the incoming water supply from the Carbon Water Filter system to the fitting on the inlet side of the Bypass Valve.
- 5. Connect the outgoing water supply to the outlet side of the Bypass Valve.

# **BYPASS VALVE OPERATIONS**

Figure A shows the system "in service" which allows water to flow in and out of the tank. In this position the system would be considered ON.

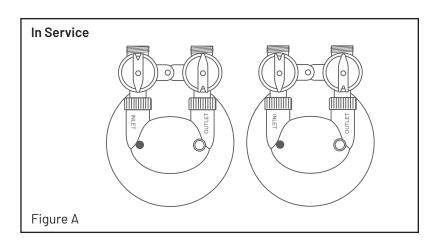
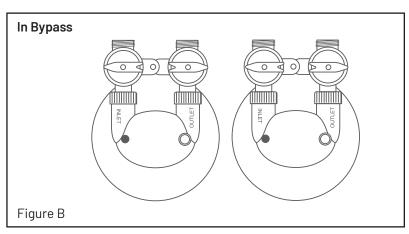
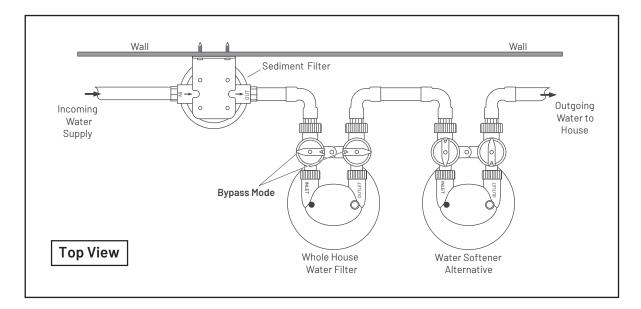


Figure B shows the system "in bypass" which will direct water straight to the home without going in and out of the tank. In this position the system would be considered OFF.







# Caution

## NaturSoft® - Media Soak:

The Pentair Carbon Water Filter MUST be in the bypass position during this process (see Figure 9).

- 1. Open a cold water faucet or test spigot close to the downstream of the Water Softener.
- 2. Turn the water back on at the main shut-off valve allowing the system to fill with water. The air being displaced will escape through the open fixture downstream.
- 3. Turn the arrows on the Bypass Valve of the NaturSoft® Tank into the Bypass Mode position to bypass the tank. This will allow you to isolate the system and restore water supply to the home/ building during the NaturSoft® media soak.
- 4. Allow the tank to soak for at least 60 minutes.



# Caution

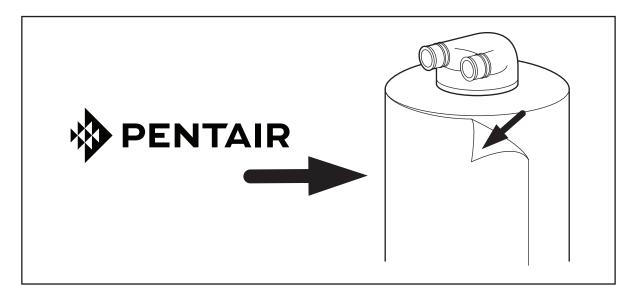
## NaturSoft® - Media Flush:

The Pentair Carbon Water Filter MUST be in the bypass position during this process (see Figure 9).

- 1. After the tank has soaked for 60 minutes, turn the main water supply back on or turn the arrows on the Bypass Valve back into their original position.
- 2. Flush the system by running water for 5 minutes at a high flow rate of 5 GPM (this can be achieved by using a bath tub or more than three (3) faucets).

Note: The flush water may have a milky look to it. This is normal as calcium carbonate fines are flushed from the system.

- 3. Rinse the system by reducing the flow rate to  $\frac{1}{2}$  GPM and run water for 60 minutes (this can be achieved by turning one faucet  $\frac{1}{4}$  of the way on).
- 4. Turn the Whole House Water Filter Bypass Valve to the on position (out of Bypass Mode).



- 1. Turn on the water and check for leaks.
- 2. Peel off the protective plastic wrap from the stainless steel tank jacket(s).
- 3. Add the Pentair logo sticker(s) in the desired location on the tank.
- 4. Wax stainless steel tank jacket(s) with wax provided (or any other non-abrasive auto wax) a minimum of 1-2 times per year or as needed based on the installed environment.



# Caution

Avoid high flow rates such as bathtub, utility sinks, hose bibs, multi-headed showers, body sprayers, or anything that is considered high flow for the first 72 hours to avoid flow restrictions caused by carbon blockage of the top basket inside the carbon tank.

Carbon dust may be released into the water lines of the house/building during the first few days of water use after carbon tank installation. The carbon dust is harmless, but may give the water a gray appearance that should diminish within a week or 10 days depending on water use.

# Clean your Hot Water Heater

Cleaning and restoring the plumbing system is a major benefit of the NaturSoft® system. In order to minimize the time required to complete the descaling process, we strongly recommend cleaning your hot water heater three (3) weeks after installation of your water softener alternative system.

• Turn off the heat source, attach a hose to the drain valve at the bottom of the tank and flush the heater by opening the drain valve. After the water heater is completely filled with water, turn the heat source back on.

# WHAT TO EXPECT WITH YOUR NEW WATER SOFTENER ALTERNATIVE SYSTEM

## If you have never had a water softener:

You will experience naturally soft water immediately after the installation. Most detergents will work better with treated water and you will be able to reduce the amount you use. However, there are mineral deposits and hard water scale coating the inside of your pipes and fixtures. Over the first few weeks, this hard water scale will dissolve, detach itself from the pipes, and come out of your faucets. This descaling process is temporary and will steadily diminish. During these first weeks, you will notice:

- Reduced softness of the water. This will be particularly evident when using hot water. The water can pick up more than ten grains of mineral content per gallon between the water softener alternative system and the faucet as it travels through the water heater and the plumbing.
- Mineral silt in the water. Since the existing limestone scale is softened and dissolved as part of the water softener alternative effect, it will detach in small chunks ranging in size from very fine silt to pieces larger than a grain of sand. The larger pieces may be big enough to build up in the aerator screens of your fixtures. Considerable silt-like accumulations may be visible on shower heads, so clean them weekly for the first four (4) weeks. Higher flow rates will shear off more of the existing hard water scale than will lower flow rates. Descaling activity will be most obvious in bathtubs which have high flow and hot water. You may see milky water with sand-like grit, and possibly sediment or iron in the bath tub.
- The water line supplying fixtures which experience the most use will be cleaned the quickest and will be the first to return
  to providing you the full benefits you experienced immediately following installation; rarely used fixtures will take longer.

## If you had a traditional water softener:

A traditional water softener turns dissolved mineral hardness (calcium bicarbonate) into dissolved sodium bicarbonate. The water softener alternative technology maintains the healthy mineral content of the water without adding the bicarbonate. You will notice:

- In a traditional water softener, the absence of the calcium and the presence of sodium bicarbonate makes the water feel slick and slimy. If you miss the slick feeling, add some baking soda (sodium bicarbonate) to your bath water.
- The water spots are more visible. A water softener replaces calcium with sodium. The water spotting that a traditional water softener leaves behind is a salt haze that wipes off very easily and is far less noticeable than spots caused by minerals. The water softener alternative treatment results in reduced spotting compared to untreated water, but more visible spots than produced by traditional, chemically-treated softened water. The water softener alternative mineral spots are much easier to clean than spots from untreated water.
- Soap curd forms with certain products. Oil-based soaps will react with calcium minerals to form a sticky film. Detergent-based cleaners like shampoos, shower gels, dish soaps, and laundry detergents will react very slightly or not at all. Most detergents will work better with treated water, but you will notice very little improvement when using regular bar soap or oil-based products since the minerals are largely still able to react with the fats in the soap to form the curd.
- There is some mineral silt in the bathtub. Depending on the water chemistry of your water supply, you may still have some hard water scale deposits in your plumbing system.

## If you have a dishwasher:

Generally, the water softener alternative system removes mineral hardness from solution and forms microcrystals; it does not physically remove the natural minerals from the water. Harsh chemicals, specifically acidic (low pH) detergents or rinse agents, can redissolve these crystals. This reduces the desired effect. Also, dishwashers are supplied by the hot water side of a building's plumbing system, so for the first few weeks, the water hardness inside the dishwasher will be higher than normal. For both of these reasons, you should adjust the combination and amounts of detergents and rinse agents. Gel packs offer a great alternative since they contain detergents and rinse agents in predetermined amounts.

## If you have glass shower doors:

Years of untreated hardness can etch the surface of your glass allowing for soap scum and minerals to get stuck in your glass. We recommend cleaning the glass surface thoroughly with a descaling cleaner such as CLR® Cleaning Products then applying a few coatings of Rain-X® to seal the pores on the glass surface. This process will fill the pores in the glass and allow the water to bead.

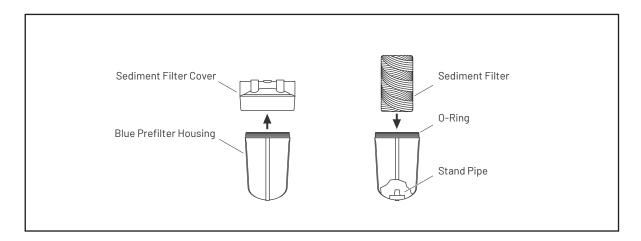
## **MAINTENANCE**

## Carbon Media Replacement

Your Pentair Carbon Water Filter requires maintenance after a period of 5 years. Replacement media and instructions can be ordered on-line at www.pentair.com/homewater or by calling 877-842-1635. Model numbers for replacement media are PC600-R or PC1000-R.

## **Sediment Filter**

It is recommended that the sediment filter be replaced every 6-9 months depending on the amount of sediment present in the water supply. If the system has been working properly and the pressure is slowing, it may be time to change the sediment filter. Check the sediment filter and replace if necessary.



## Replacing the Sediment Filter

- 1. Turn off the main water supply to the sediment filter system and bypass all tanks.
- 2. Run a faucet (cold water) inside the house to relieve the pressure (leave the faucet open).
- 3. Unscrew the blue filter housing clockwise using the supplied filter wrench.
- 4. Remove the existing sediment filter and discard.
- 5. Remove the o-ring and wipe the upper groove clean. Lubricate the o-ring with a coating of clean silicone grease. Replace o-ring. Be sure to press the o-ring down into the groove with two fingers.

Note: This step is important to ensure the proper filter seal. Make sure the upper o-rings is seated level in the groove. If the o-ring appears damaged, stretched, or crimped it should be replaced.

- 6. Place a new sediment filter onto the stand pipe in the blue filter housing.
- 7. Screw the blue filter housing onto the filter cover, hand tighten. Lightly snug the housing with the spanner wrench making sure not to over-tighten.
- 8. Turn on the main water supply slowly to allow the sediment filter system to fill with water and expel air from lines. Put tanks back in service (out of bypass).
- 9. Check for leaks.

Problem	Solution
Pressure is dropping off during the carbon wash.	Turn the water off and let the tank sit about 30 minutes to allow the carbon to settle down off of the basket inside the tank.
	If the pressure drops off again, let the system stand for 72 hours. There is air trapped in the carbon bed that needs to be released from the tank. After 72 hours have passed, continue the carbon wash by slowly turning the water supply back on.
Water leaking at the top of the tank around the head.	You may need to turn the head to tighten it. The tank head is preinstalled hand-tight, do not overtighten the head (simply turn it snug).
The tank leans to one side or is not level.	If the tank is not level, lift the tank straight up six (6) inches and tap it on the ground until the tank stands vertically. The bottom of the tank is round and the boot allows the tank to stand upright.
Unlevel Tank Boot	========
Unlevel Tank Boot	Level Tank Unlevel Boot
Water inside the tank is gray.	This is normal with all carbon filters and this will slowly fade away. The carbon inside the tank can still have air pockets inside that, when released, turn the water a little gray with carbon dust. The carbon dust is harmless.
Water pressure is slowing.	It is recommended that the sediment filter be replaced every 6-9 months depending on the amount of sediment present in the water supply. If the system has been working properly and the pressure is slowing, it may be time to change the sediment filter. Check the sediment filter and replace if necessary.
Water appears grey or cloudy.	Water may appear grey or cloudy for the first seven to ten days after installation due to extra carbon dust.
Water pressure is slowing immediately after installation.	High flow rates such as bathtubs, utility sinks, hose bibs, multi-headed showers, body sprayers, or anything that is considered high flow for the first 72 hours should be avoided. If you suspect a carbon blockage of the top basket due to a high-flow situation within the first 72 hours of installation, turn off any running water for at least 10 minutes. This will clear the blockage and you can resume using water at low or normal flow rates.

Notice: If you have experienced a Boil Alert or require your system to be sanitized, please go to pentair.com/assets/pwsboilalert for product sanitization instructions.

# PRODUCT WARRANTY AND REGISTRATION FORM

For details on your Pentair product warranty, please visit pentair.com/assets/residential-filtration-warranty.

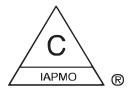
# **Warranty Registration Form**

Send in this Warranty Registration Form to validate your warranty or visit pentair.com/register-warranty to complete the warranty registration form online.

Date Item(s) were Received:	Order ID#:	Model:
Dealer Purchased From:		
Model/Serial Number:		
Name:		
Address:		
City:	State:	Zip:

# Send to:

Pentair 2361 Mason Avenue, Suite 100 Daytona Beach, FL 32117 Phone: 1.877.842.1635



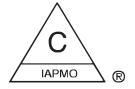
Pentair NaturSoft° - NS3/NS6 are certified By IAPMO R&T to NSF/ANSI 61 for material safety.



The NaturSoft® system is DVGW DW-9191 certified for 99.6% hard water scale prevention.



PC600/PC1000 are IAPM0 tested and certified to NSF/ANSI 42 for Chlorine Taste and Odor, and Structural Integrity. IAPM0 tested and certified to NSF/ANSI 61 for Material Safety.



PC600/PC1000 are certified By IAPMO R&T to NSF/ANSI 61 for material safety.



Do not use where water is microbiologically unsafe or with water of unknown quality without proper disinfection before or after the filter/softener system.

Performance Data - Pentair Whole House Filters						
Model Replacement Max Operating Rated Capacity Operating Rated Rated Pressure Temp Range Flow (At Rated Flow)						
PC600-P	PC600-R	25-80 PSI	662,400 gallons	36°F - 120°F	8 GPM	13 PSI
PC1000-P	PC1000-R	25-80 PSI	1,324,800 gallons	36°F - 120°F	12 GPM	13 PSI
PC1354-P	PC1354-R	25-80 PSI	1,987,200 gallons	36°F - 120°Fs	17 GPM	13 PSI

This system has been tested according to NSF/ANSI 42 for the reduction of the substances listed below. The concentration of the indicated substances in the water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 42.

NSF/ANSI 42	Influent Challenge Chlorine	Minimum Required Reduction	Average Reduction %	Results
Chlorine Reduction, Free Available	2 mg/L ±10%	≥50%	95.93%	Pass

Performance Data - Pentair Whole House Filters					
Model	Accumulated Volume (Gallons)	Chlorine, Free Available (mg/L)		Flow Rate (GPM)	Reduction %
		Influent	Effluent 1		
PC600-P	650,885	2.05	0.07	8 GPM	96.6%
PC1000-P	1,301,770	2.05	0.07	12 GPM	96.6%
PC1354-P	1,952,655	2.05	0.07	17 GPM	96.6%

Statements: Testing was performed under standard laboratory conditions, actual performance may vary. Filter usage must comply with all state and local laws. Filter is only to be used with cold water. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts. All contaminants reduced by this filter are listed. Not all contaminants listed may be present in your water. Filter does not remove all contaminants that may be present in tap water. See owner's manual for general installation conditions and needs as well as manufacturer's limited warranty.



