

# Tier1 Water Home Filtration System

## Salt-Free Softener OWNERS MANUAL



**BEFORE YOU BEGIN INSTALLATION, READ THIS ENTIRE MANUAL. FOLLOW THE INSTALLATION INSTRUCTIONS CAREFULLY.**

1. Avoid pinched o-rings during installation by applying NSF certified lubricant to all seals.
2. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

# Table of Contents

UNPACKING/ INSPECTION	3
SAFETY GUIDE	4
PROPER INSTALLATION	4
SYSTEM DIMENSIONS	4
SPECIFICATIONS	5
INSTALLATION INSTRUCTIONS	6
TROUBLESHOOTING & OTHER GOOD PRACTICES	8

# UNPACKING / INSPECTION

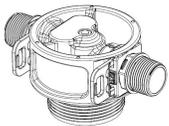
Be sure to check the entire unit for any shipping damage or parts loss. Also note damage to the shipping cartons.

Small parts needed to install the filter are in a parts box. To avoid loss of the small parts keep them in the parts bag until you are ready to use them.

## What is included with your system?



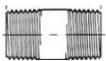
Inlet/Outlet adapters (2)



Adapter (cap)



Locking Clips (2)



Stainless Steel Nipples (2)



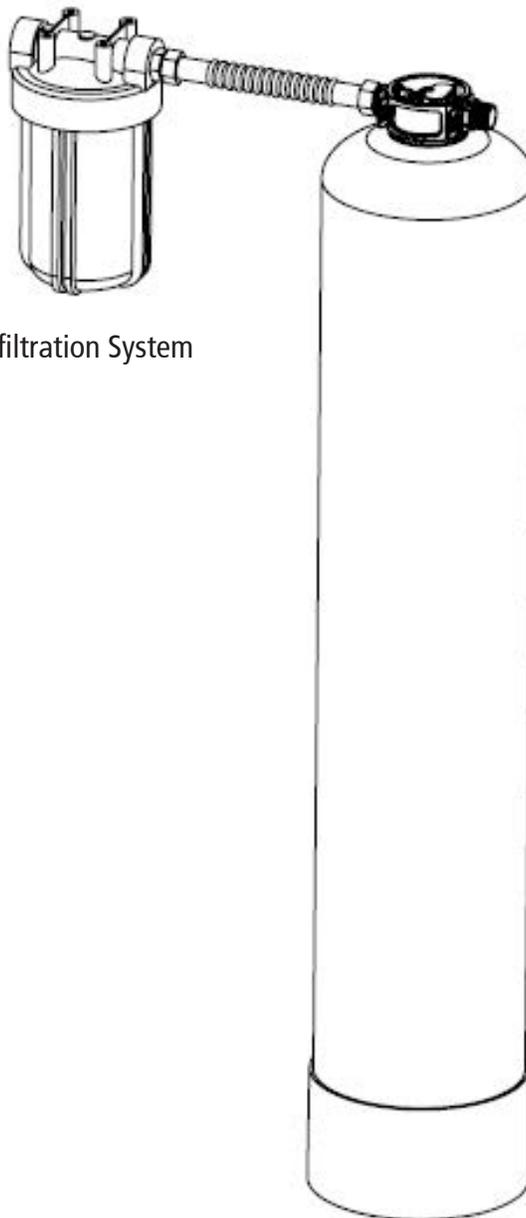
Ball Valve



Flex Connector (2)



Prefilter bracket, wrench, screws



Prefiltration System

Tank prefilled with media

**Note:** If you've opted to order both our Carbon System and Salt-free Softener, only one prefiltration system will be provided.

# SAFETY GUIDE

*For your safety, the information in this manual must be followed to minimize the risk of electric shock, property damage or personal injury.*

Check and comply with your provincial / state and local codes. You must follow these guidelines.

Use care when handling the filter tank. Do not turn upside down, drop, drag or set on sharp protrusions.

# PROPER INSTALLATION

*This system must be properly installed and located in accordance with the installation instructions before it is used.*

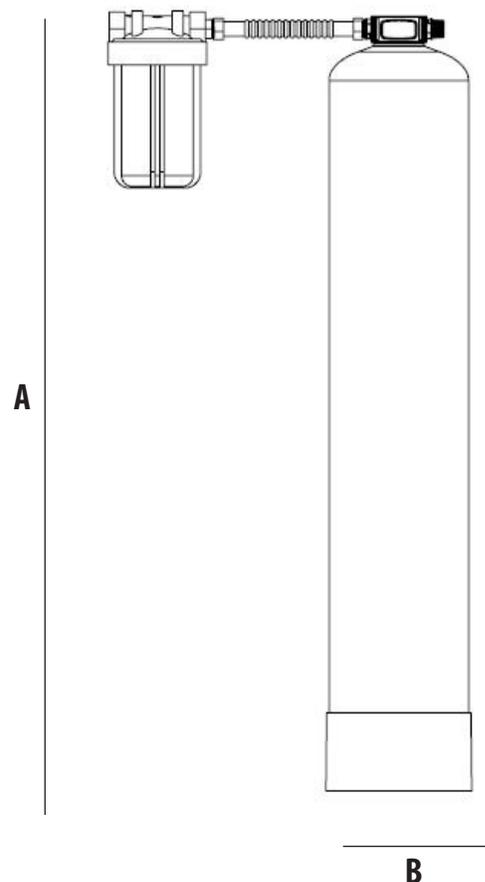
Use only *lead-free solder and flux* for all sweat-solder connections, as required by state and federal codes. Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, night time pressure may exceed the maximum. Use a pressure reducing valve to reduce the flow if necessary.

**WARNING:** Prefilter must be installed level with tank head, as diagram below shows.

Discard all unused parts and packaging material after installation. Small parts remaining after the installation could be a choke hazard.

## SYSTEM DIMENSIONS

Models	A	B
8000	48"	8"
10000	58"	10"



# SPECIFICATIONS

## How Your Filter Works

Please review operating pressures, temperatures and water chemistry limitations to ensure compatibility.

System Specifications	8000	10000
Service Flow Rates		
Normal	5gpm	7 gpm
Filter Media Volume - Cubic Feet	75ft	1.5 ft
Filter Tank Size	8" x 44"	10" x 54"
Media Type	Template Assisted Crystallization	
Media Preloaded	Yes	
Media Lifetime	3-5 years (depending on water quality)	
Water Temperature	41 - 100 degrees F	
Max Water Pressure	125 psi	
Plumbing Connections	Includes 3/4" straight adapters	
Electrical Requirements	None	
Hardness Max	75 grains	
Ferrous Iron, Max*	0.3 mg/L	
Manganese, Max*	0.05 mg/L	
Copper, Max*	1.3 mg/L	
PH Level	6.5 to 8.5	

\*Hydrogen Sulfide MUST be removed upstream

## BEFORE STARTING INSTALLATION

### Tools, Pipe, and Fittings, Other Materials

These systems are complete, self-contained, loaded with media and ready to use. Inlet and outlet fittings are included with the filter. To maintain full valve flow, 3/4" or 1" pipes to and from the filter fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the inlet and outlet.

Use copper, brass, or PEX pipe and fittings. Some codes may also allow PVC plastic pipe.

Helpful Tools: screwdriver, Teflon tape, adjustable wrenches, razor knife

*\*Additional tools may be required if modification into home plumbing is required.*

### If you've opted to install both our Carbon and Scaleless systems please note the below:

Due to the unique properties of scaleless filtration, the scaleless system must be the last stage in the treatment chain.

Do not install any filters after scaleless or before any devices for which scale prevention is required. Point of Use filters, e.g. carbon or RO are exempt from this requirement.

Do not apply phosphate or any other antiscalant either before or after Scaleless.



# WHERE TO INSTALL

Place the filter tank as close as possible to the pressure tank (well system or water meter (city water). Connect the filter to the main water supply pipe BEFORE the water heater.

DO NOT RUN HOT WATER THROUGH THE FILTER. Temperature of water passing through the filter must be less than 100 deg. F. Keep the filter out of direct sunlight. The sun's heat may soften and distort plastic parts.

Do not install the filter in a place where it could freeze. Water freezing may damage the system.

Put the filter in a place where water damage is least likely to occur if a leak develops. The manufacturer will not repair or pay for water damage.

If installing in an outside location, you must take the steps necessary to assure the filter, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.

# INSTALLATION INSTRUCTIONS

1. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
2. If you have a private well, turn the power off to the pump and then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to the faucet, (preferably on the lowest floor of the house) turn on the cold water until all pressure is relieved and the flow of water stops.
3. **ON COPPER PLUMBING SYSTEMS BE SURE TO INSTALL A GROUNDING WIRE BETWEEN THE INLET AND OUTLET PIPING TO MAINTAIN GROUNDING.** Any solder joints near the adapter must be done before connecting any piping to the adapter. Always leave at least 6" (152 mm) between the adapter and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.
4. Lubricate the adapter o-rings and insert inlet/outlet adapters into tank cap. Insert locking clips to lock in adapters.
5. Attach nipples. Do not use tape on nipples.
6. Attach flex connectors. Make sure to not apply any tape or putty as flex connectors include a sealing washer.
7. Perform all plumbing according to local plumbing codes. Make sure not to over tighten any plastic parts, and do not over bend the flex connectors.
8. Attach the prefiltration system to the wall at equal high with tank adapter. Make sure you have the appropriate amount of space needed before attaching to walls/pipes.
9. Slowly turn on the main water supply. At the nearest cold treated water tap nearby remove the faucet screen, open the faucet and let water run a few minutes or until the system is free of any air or foreign material resulting from the plumbing work.
10. Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean.

## Notes to the installer regarding the Tier1 Salt Free Softener

The Scaleless system differs from a conventional softener or media filter in a number of key respects. The system is light and only partially filled with media. This is normal. The UP-flow operation of the system requires a lot of freeboard to allow the bed to fully fluidize. The system has no underbed so you can tip the system over without any fear of upsetting the media. This makes transportation and installation much easier than conventional systems. Because the scaleless system operates in the UP-Flow mode, the tank connections are opposite of what you're used to. Please see the "important note about iron, manganese and copper" above. Please see the note about "Using scaleless with other water treatment equipment" on the previous page. To retain the attractive appearance of your new water filter, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 100°F.

## Replacing the Media Bed

Under normal operating conditions the effective life of the filter media is approximately one to three years, depending on the water quality, after which, taste and odor problems may return. When this happens, contact us for a replacement media bed.

# TROUBLE SHOOTING

	Question	Answer
<b>A. FILTER BLEEDS TASTE AND ODOR OR SEDIMENT</b>	1. By-pass valve open.	Close by-pass valve.
	2. Defective or stripped media bed	Replace media
	3. Quality of water has worsened	Have water sample analyzed to determine any change
	4. Filter capacity too small	Replace with larger unit or add another filter
	5. Leak between valve and central tube.	Check if central tube is cracked or o-ring is damaged. Replace faulty parts.
	6. Internal valve leak.	Replace valve seals, spacer, and piston assembly
<b>B. LOW WATER PRESSURE</b>	1. Iron or scale build up in line feeding unit.	Clean pipes.
	2. Iron build up inside valve or tank.	Remove piston and clean control valve.
	3. Inlet of control plugged due to foreign material.	Clean control and add resin cleaner to clean bed. Increase regeneration frequency.

## AN IMPORTANT NOTE ABOUT IRON AND MANGANESE IN YOUR WATER

### Iron and Manganese

Just as with conventional water softening media, Scaleless needs to be protected from excess levels of certain metals that can easily coat the active surface, reducing its effectiveness over time. Public water supplies rarely, if ever, present a problem, but if the water supply is from a private well confirm that the levels of iron (Fe) and manganese (Mn) are less than 0.3 mg/L and 0.05 mg/L respectively. Copper should be less than 1.3 mg/L.

### Copper

Copper usually originates from new copper plumbing upstream of the Scaleless system. If this condition exists, we recommend waiting 3-4 weeks before placing the system in operation. This will allow the copper surfaces to be fully flushed and develop a natural protective surface. To further minimize any problem with excess copper the plumbers should be advised to avoid applying excess flux on the inner surfaces of the pipe and to use a low-corrosivity water soluble flux listed under the ASTM B813 standard. Once the plumbing connections are complete, place the Scaleless system in bypass prior to following the startup procedure and flush the plumbing for at least 10 minutes.

### Things to watch for during the first 30-90 days:

Faucet aerators and drains may plug occasionally as old scale is removed from your plumbing system and water heater. You may also see milky water while the descaling is taking place. This is simply an increase in the calcium in the water. If your dishwasher is severely coated with scale at the time of water because Scaleless is removing old scale deposits from your pipes.

## SALT FREE SOFTENER GOOD PRACTICES

If your dishwasher is severely coated with scale at the time of installation, we recommend that you purchase a product like Jet-Dry Dishwasher cleaner to accelerate the cleaning. After this initial cleaning Scaleless should keep it clean. We also recommend that you drain your water heater tank. This should be done 30 to 60 days after Scaleless is installed, and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance.

If you have an electric "tank type" water heater, for optimum results and higher efficiency, we recommend you change the heating elements to a "low watt density" model. Please insure that the watt density is specified at less than 70 watts per square inch, and is compatible with the brand you own. If you can only change one heating element, change the lower unit which operates most of the time. The Scaleless will help keep the tank and heating elements free of scale and operating at peak efficiency.

