



Watch Water USA Green Chemical Technology

Filtersorb SP3 Installation, Operation and Maintenance Manual

Introduction

The Filtersorb SP3® system provides protection from scale formation throughout the plumbing system. The Filtersorb SP3® system can be installed at the point of entry to treat your entire system, both hot and cold water, or it can be located directly before a water heater or other device (e.g. steamer, etc) that requires protection from hard water.

Filtersorb SP3® reduces or eliminates scale formation on internal and external plumbing surfaces as well as reducing spotting and streaking normally associated with hard water.

Filtersorb SP3® prevents scale by transforming the normal dissolved hardness minerals into undissolved crystal micro-particles. These crystals stay suspended in the water and have a greatly reduced ability to react and attach to surfaces like dissolved hardness does. Therefore, the problem of internal buildup of scale in pipes, water heaters and on fixtures and glass is greatly reduced.

The Filtersorb SP3® system is not a water softener – Low or phosphate-free cleaning products are recommended to achieve optimum results. Modern surfactant or detergent based, liquid soaps are preferred over old-fashioned caustic solid soaps.

Unlike softened water, Filtersorb SP3® treated water maintains the beneficial essential mineral content of your water and is safe to drink.

Filtersorb SP3® Benefits

- Chemical free scale prevention. Provides cost savings and environmental benefits
- Virtually maintenance free. No salt bags or other chemicals to buy, transport and store
- No electricity, no wastewater, completely self-contained
- Beneficial minerals retained for more healthful drinking water
- Improves the efficiency of water-using appliances.
- Simple installation – no electrical and drain hookup
- Safe for landscaping and lawn watering. No need for costly bypass plumbing
- Compatible with all on-site and community wastewater treatment systems
- Not subject to water softener restrictions and “bans”

Equipment Specifications

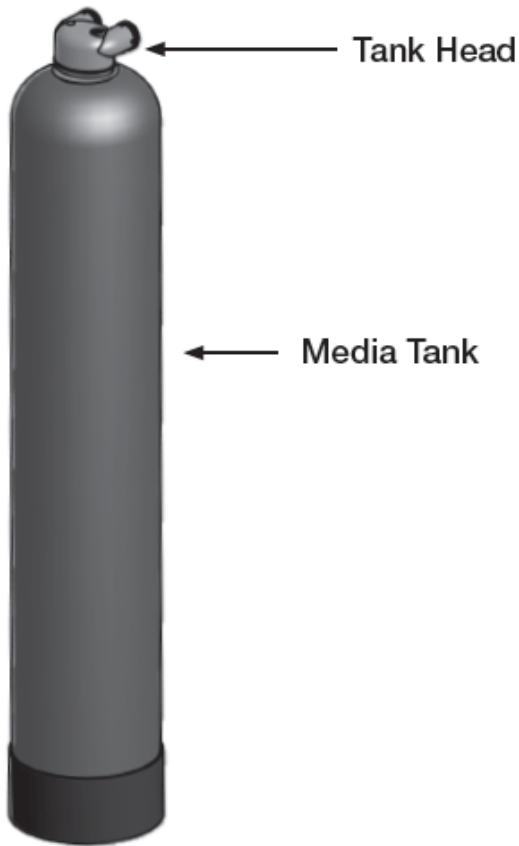
Filtersorb SP3® systems are complete, self-contained, loaded with media and ready to use. A simple inlet and outlet connection is all that is required for installation. Please review operating pressures, temperatures and water chemistry limitations to ensure compatibility.

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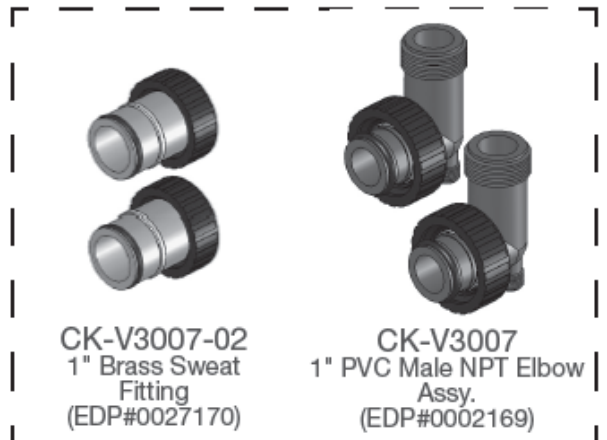


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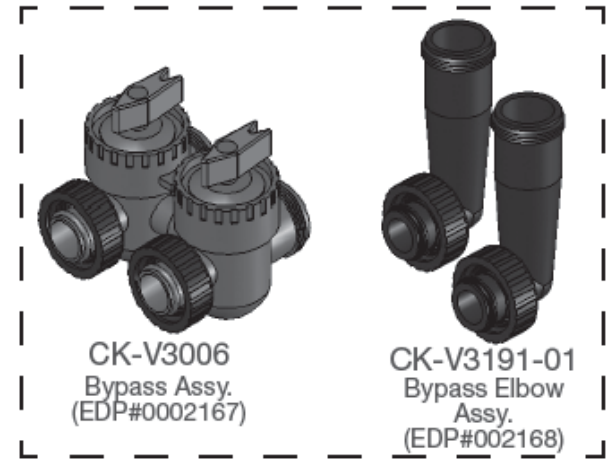
System Overview



Typical Connection Fittings

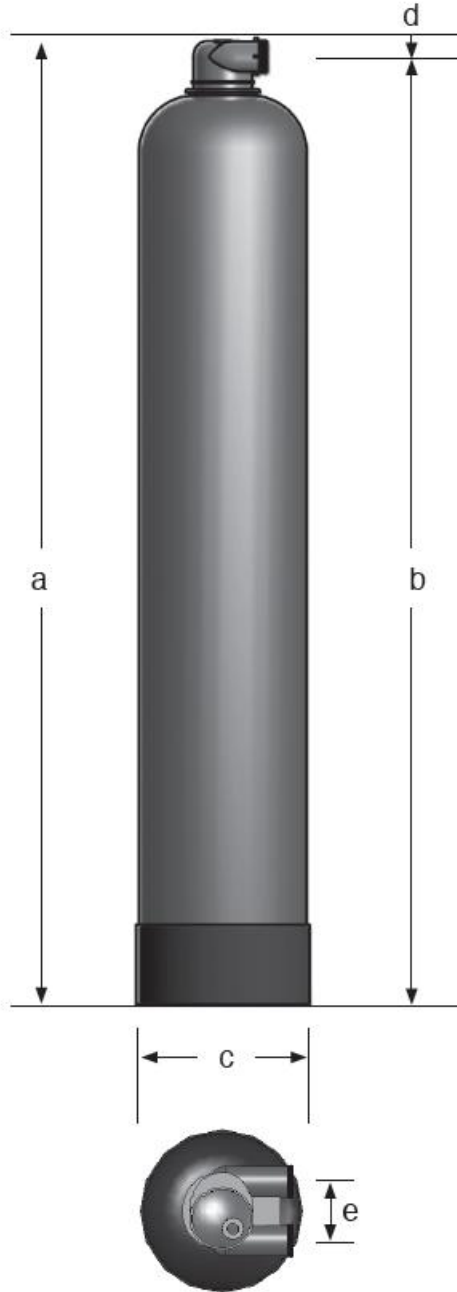


Optional Connection Fittings





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Specifications

Inlet/Outlet Connection	3/4" - 1 1/4" (multiple options)
Temperature	40° - 110°F
pH	6.5 to 8.5
Ferrous Iron, Max*	0.3 mg/L
Manganese, Max*	0.05 mg/L
Copper, Max*	1.3 mg/L
Water Pressure (psi)	15psi min., 100psi max

* See note about iron, manganese and copper on the next page.

Mechanical Specifications

Model	744	844	948	1054	1252
Max Service Flow (gpm)	10	12	16	20	30
Dry Weight (lbs)	22	25	29	35	43
Service Weight (lbs)	80	97	129	168	235

Dimensions (nominal - inches)

	744	844	948	1054	1252
a	47	47	49	58	55
b	46	46	48	57	54
c	7	8	9	10	12
d	1.0	1.0	1.0	1.0	1.0
e	3.0	3.0	3.0	3.0	3.0

Using Filtersorb SP3® with other water treatment equipment.

Due to the unique properties of Filtersorb SP3® there are some unique requirements for using Filtersorb SP3® in conjunction with filtration or other forms of water treatment.

1. Filtersorb SP3® must be the last stage in the treatment chain. Do not install any filters after Filtersorb SP3® or before any devices for which scale prevention is required. POU drinking water filters, e.g. carbon or RO are exempt from this requirement.
2. Do not apply phosphate or any other antiscalant either before or after Filtersorb SP3®.

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Important note about iron, manganese and copper in the water supply

Iron and Manganese

Just as with conventional water softening media, Filtersorb SP3® 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. However, 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 Filtersorb SP3® 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, avoid applying excess flux on the inner surfaces of the pipe and use a low-corrosivity water soluble flux listed under the ASTM B813 standard. Once the plumbing connections are complete, place the Filtersorb SP3® system in bypass prior to following the startup procedure and flush the plumbing for at least 10 minutes.

Cautions!

- Do not let the system freeze. Damage to the tank may result.
- System must be operated in a vertical position. Do not lay it down during operation. The system may be placed in any position for shipping and installation but must be operated in the vertical position.
- Place the system on a smooth, level surface. Because the system operates in an UP-Flow, fluidized bed mode, having a level surface is more important than with a softener or media filter.
- A bypass valve should be installed on every system to facilitate installation and service.
- Observe all local plumbing and building codes when installing the system.

Notes to the Installer

The Filtersorb SP3® 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 Filtersorb SP3® system operates in the UP-flow mode, the tank connections are opposite of traditional installations.
- Please see the “Important note about iron, manganese and copper in the water supply” above.
- Please see the note about “Using Filtersorb SP3® with other water treatment equipment” on the previous page.

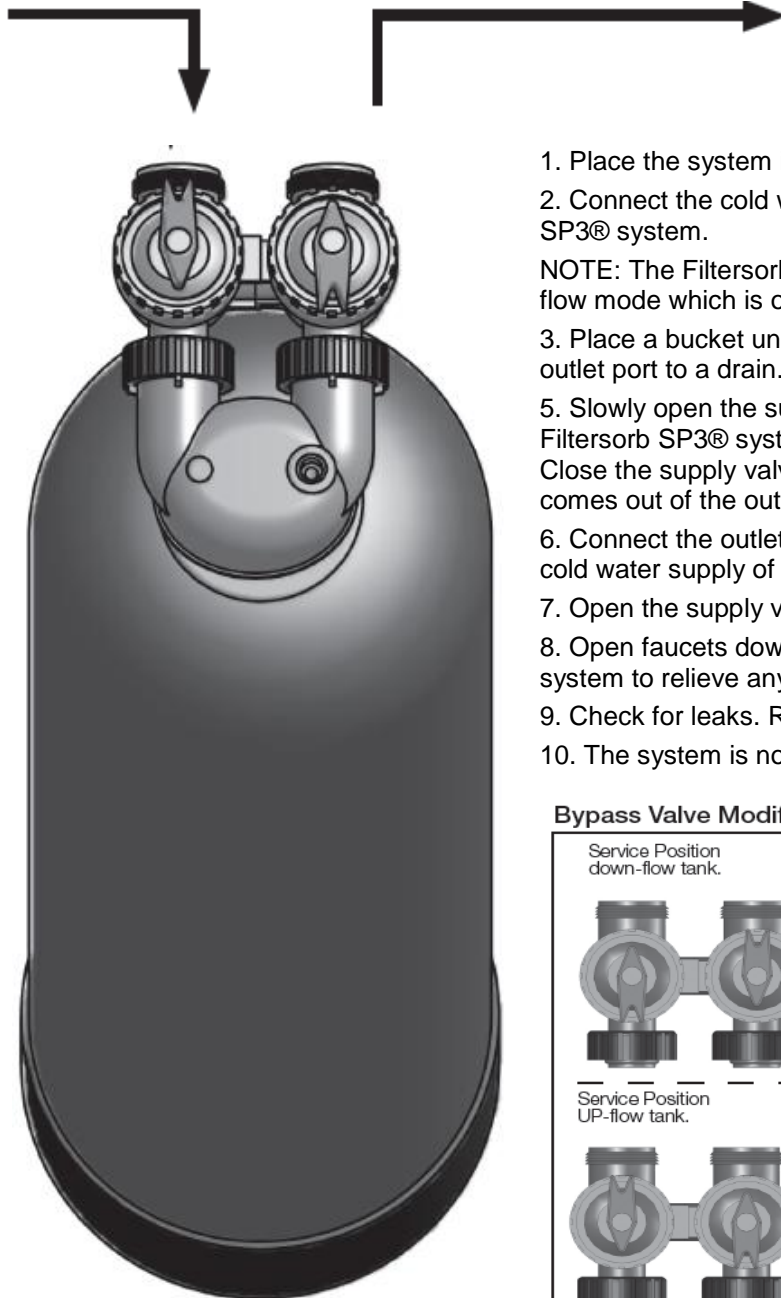


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Installation and Start Up

Raw Water In

Treated Water Out



1. Place the system in the desired location.
2. Connect the cold water supply to the inlet of the Filtersorb SP3® system.

NOTE: The Filtersorb SP3® system operates in the UP-flow mode which is opposite of a conventional softener.

3. Place a bucket under the outlet port or run a line from the outlet port to a drain.

5. Slowly open the supply valve (user supplied) to the Filtersorb SP3® system. Allow the tank to fill with water. Close the supply valve when a steady stream of water comes out of the outlet port.

6. Connect the outlet of the Filtersorb SP3® system to the cold water supply of the building.

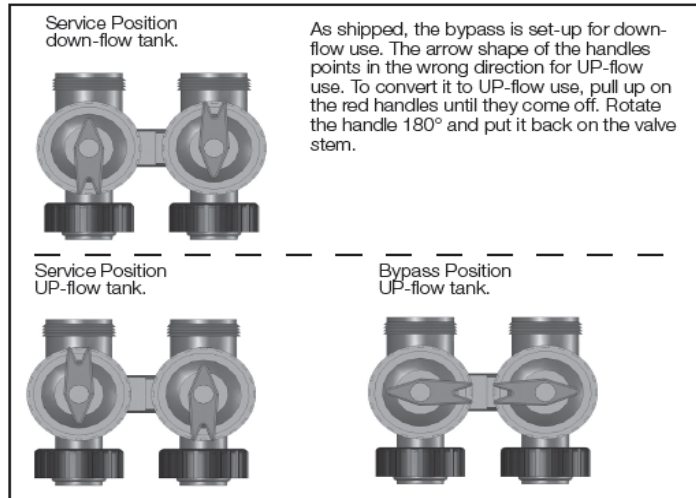
7. Open the supply valve to the Filtersorb SP3® system.

8. Open faucets downstream from the Filtersorb SP3® system to relieve any air.

9. Check for leaks. Repair as needed.

10. The system is now ready for service.

Bypass Valve Modification





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Note to the building owner

Your Filtersorb SP3® system will improve the properties of water throughout your building. Here are some things to expect and some recommendations for maximizing the benefits and your enjoyment of Filtersorb SP3® system.

Sinks and fixtures - should have little or no spotting. If water is allowed to evaporate off a surface, small spots may be left behind. This spotting should not require any more than a wet cloth or sponge to remove. No harsh chemical should be required as with typical hard water spotting.

Dishwasher-Spotting on dishes and on the surface of the dishwasher should be greatly reduced or eliminated. We recommend that you immediately reduce the amount of dish-washing detergent by approximately 50% as compared to hard water use. Dishwashing detergents low in phosphates are highly recommended as they are better for the environment and phosphates can cause spotting. In very hard water areas, the use of a rinse aid may be advised.

Shower doors and tiles- should have little or no spotting. When water evaporates off a surface, small spots may be left behind. These spots should be easy to remove with a damp cloth or sponge.

In the bath you should notice that soaps and shampoos lather more than with un-treated water. Soaps and shampoos will also rinse off much easier and faster than they would with traditional soft water. We recommend the use of modern soaps for the best results.

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 because Filtersorb SP3® is removing old scale deposits from your pipes.

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 Filtersorb SP3® should keep it clean. We also recommend that you drain your water heater tank. This should be done 30 to 60 days after Filtersorb SP3® is installed, and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance. The Filtersorb SP3® will help keep the tank and heating elements free of scale and operating at peak efficiency. Please follow the manufacturer's instructions when draining the tank!