# Installation, Operation and Maintenance Manual

FOUNTAIN FILTERS

OneFlow® Anti-Scale System

## Residential OneFlow® Anti-Scale System
## Chemical-Free, Salt-Free Scale Prevention
## Model OFRES-0835
## Model OFRES-0935
## Model OneFlow 30LPM


OFRES

**⚠ WARNING**

**Read this Manual BEFORE using this equipment.**

**Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.**

**Keep this Manual for future reference.**

THINK SAFETY FIRST

## Introduction

The Watts residential OneFlow® system provides protection from hardness related scale formation throughout the plumbing system. The OneFlow® system can be installed at the point of entry to treat your entire home. These systems are designed to treat the domestic water used in a single family dwelling. For higher volume applications please contact your Watts representative.

OneFlow® reduces or eliminates scale formation on internal plumbing surfaces.

OneFlow® prevents scale by transforming the normal dissolved hardness minerals into undissolved crystal microparticles. These crystals stay suspended in the water and have a reduced ability to react and attach to surfaces like dissolved hardness minerals do. Therefore, the problem of internal buildup of scale in pipes, water heaters and plumbing fixtures is greatly reduced.

Unlike softened water, OneFlow® treated water maintains the beneficial essential mineral content of your water.

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**⚠ WARNING**

If you are unsure about installing your Watts OneFlow® system contact a Watts representative or consult a professional plumber.

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product. **FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCITONS COULD RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.** Watts is not responsible for damages resulting from improper installation and/or maintenance. Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

Save manual for future reference.

Refer to the enclosed for operating parameters to ensure proper use with your water supply.

- Use only lead-free solder and flux for sweat-solder connections, as required by state, province and federal codes.
- Handle all components of the system with care. Do not drop, drag or turn components upside down.
- Be sure the floor under the system is clean, level and strong enough to support the unit.
- Install the system in a protected area.
- Do not attempt to treat water over 100°F (38°C) with the system.
- Always connect the system to the main water supply pipe before the water heater.
- Do not expose the system to freezing temperatures. Water freezing in the system causes equipment damage.
- Do not install in direct sunlight. Ultraviolet rays from the sun may cause damage.

WATTS®

# Setup

Unpack and check the system components for damage or missing parts.

## Installation Considerations

Consider the following points when determining where to install the system:

- Do not install the system where it would block access to the water heater, main water shutoff, water meter, or electrical panels.
- Install the system in a place where water damage is least likely to occur if a leak develops.

# OneFlow® 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
- Compatible with all on-site and community wastewater treatment systems
- Not subject to water softener restrictions and “bans”

# System Overview

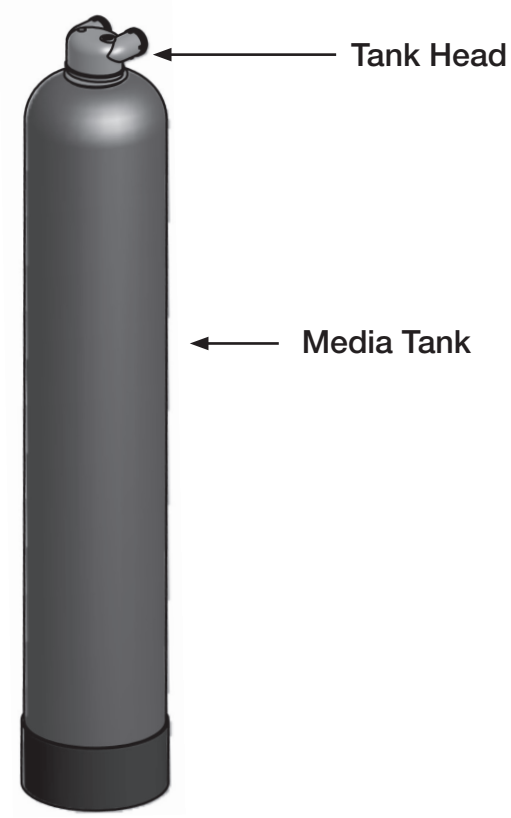
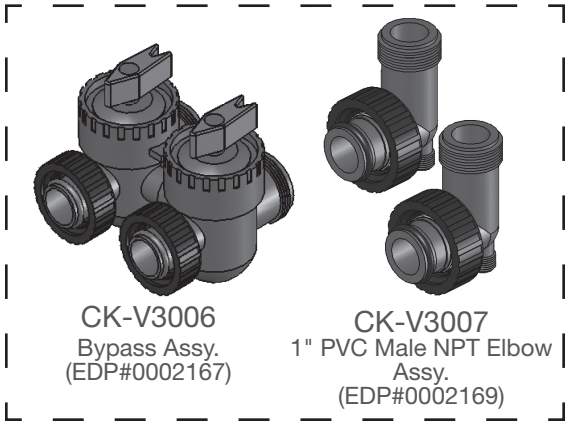



**Figure 1.**

**Bypass Valve and Connection Fittings**



CK-V3006
Bypass Assy.
(EDP#0002167)

CK-V3007
1" PVC Male NPT Elbow Assy.
(EDP#0002169)

# Equipment Specifications

Watts OneFlow® 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 and performance.

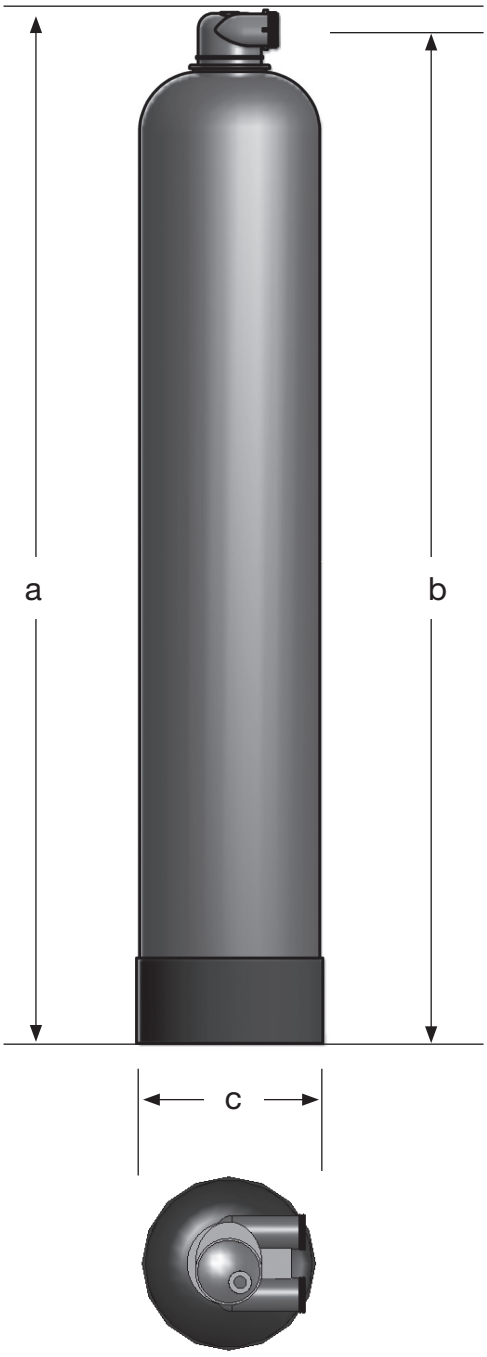



Figure 2.

## Feed Water Chemistry Requirements

| | |
|---|---|
| **pH** | 6.5-8.5 |
| **Hardness (maximum)** | 30 grains (513 ppm CaCO3)* |
| **Water Pressure** | 15 psi to 90 psi (1.03 bar to 6.2 bar) |
| **Temperature** | 40° F to 100° F (5°C to 38°C) |
| **Free Chlorine** | <2 ppm |
| **Iron (maximum)** | 0.3 ppm** |
| **Manganese (maximum)** | 0.05 ppm** |
| **Copper** | 1.3 ppm*** |
| **Oil & H2S** | Must be Removed Prior to OneFlow |
| **Total Phosphates** | < 3.0 ppm |
| **Silica (maximum)** | 20 ppm † |
| **TDS** | 1500 mg/l †† |

***NOTICE***

* Systems using OneFlow® technology are effective at controlling lime-scale formation inside the plumbing system at influent hardness levels up to 30 grains per gallon (513 ppm CaCO3) of calcium carbonate. Due to variances in water chemistry, 30 grains per gallon is a recommended hardness maximum due to potential aesthetic issues related to soft scale residue formation outside of the plumbing system. Testing should be performed to determine proper application where hardness levels exceed 30 grains per gallon.

**Just as with conventional water softening media, OneFlow® media 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.

**⚠ WARNING**

***Pursuant to the EPA drinking water standards, the copper concentration permitted is up to 1.3 ppm. Typically originating from new copper plumbing, high levels of copper can foul OneFlow media. New Copper lines need to be passivated for a minumum of 4 weeks before placing unit into service. For applications with copper concentration greater than 1.3 ppm, please consult Watts Water Quality Technical Service. To further minimize any problem with excess copper, avoid applying excessive flux on the inner surfaces of the pipe and use a low-corrosivity water soluble flux listed under the ASTM B813 standard.

***NOTICE***

† OneFlow® media does not reduce silica scaling. While silica tends to have a less significant effect on scale formation than other minerals, it can act as a binder that makes water spots and scale residue outside the plumbing system difficult to remove. This 20 ppm limitation is for aesthetic purposes.

†† All other contaminants must meet the requirements of the USEPA Safe Drinking Water Act. Specific Mineral and Metal MCL's, identified in Watts published Feed Water Chemistry Requirements, supersedes the USEPA SDWA.

Water known to have heavy loads of dirt and debris may require pre-filtration prior to OneFlow®.

## Mechanical Specifications

| Model | 835 | 935 | 1035 |
|---|---|---|---|
| Max Service Flow (gpm) | 8 | 12 | 16 |
| Dry Weight (lbs) | 19 | 23 | 25 |

***NOTICE***

Pressure drop at peak flow rate is less than 5 psi.

Pressure drop reading taken with inlet and outlet gauges installed at a common elevation and 80 degree feed water.

## Dimensions (nominal - inches)

| | | | |
|---|---|---|---|
| a | 40 | 40 | 40 |
| b | 37 | 37 | 37 |
| c | 12 | 12.5 | 13 |

## Using OneFlow® with other water treatment chemicals

The addition of soaps, chemicals, or cleaners, before or after OneFlow treatment, may reverse its anti-scale treatment effects and/or create water with a heavy residue or spotting potential. Any adverse conditions caused by the addition of soaps, chemicals, or cleaners are the sole responsibility of the end user.

**⚠ CAUTION**

# Cautions!

- Not for use on closed loop systems.
- 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.
- Water known to have heavy loads of dirt and debris should be prefiltered using a 20 micron filter cartridge model number PWPL10FFM20 and 1" high flow filter housing kit PWHIB10FF.
- If making a soldered copper installation, do all sweat soldering before connecting pipes to the bypass valve. Torch heat will damage plastic parts.
- When turning threaded pipe fittings onto plastic fittings, use care not to cross-thread.
- Use PTFE tape on all external pipe threads. Do not use pipe joint compound.
- Support inlet and outlet plumbing in some manner (use pipe hangers) to keep the weight off of the bypass fittings.
- Do not use on water that is microbiologically unsafe or of unknown quality.

***NOTICE***

# Notes to the Installer

The OneFlow® 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. Must be installed in VERTICAL POSITION.
- Because the OneFlow® system operates in the UP-flow mode, the tank connections are opposite of traditional installations. Please follow water flow diagram illustrated in Figure 3.
- Please see the “Important note about iron, manganese and copper in the water supply” section.
- Please see the note about “Using OneFlow® with other water treatment equipment” on the previous page.
- This system is designed for residential applications only.
- This system comes with a bypass valve to bypass the system in case of a leak or the need to remove the system from the installation area. The nuts, locking rings, and O-rings must be installed on the connection fittings by the installer. Please see Figure 1 Bypass Valve and Connection Fittings detail for proper assembly of the #CK-V3007. To properly assemble the connection fitting first install the nut, then install the locking ring in the grove closest to the nut. Use care not to break the locking ring. Finally install the O-ring in the grove at the end of the fitting.

# Installation and Start-up

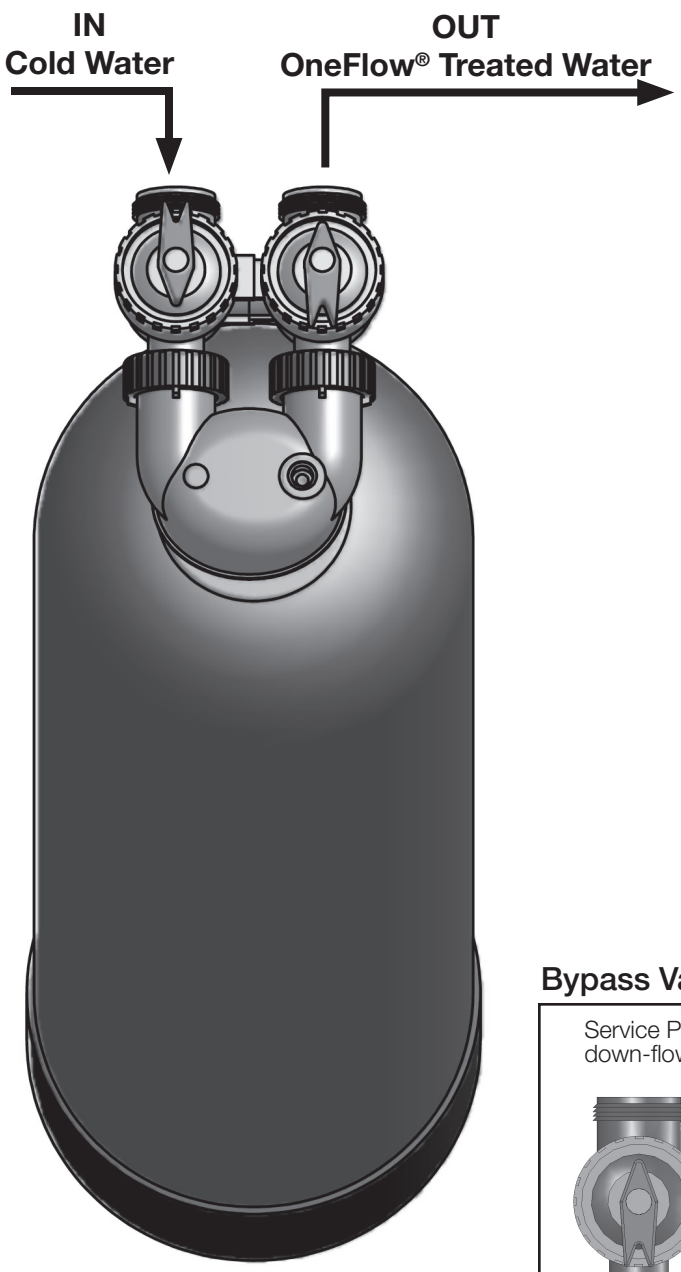


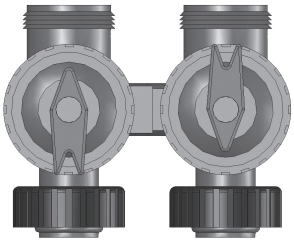

**Figure 3.**

**OFRES shown with bypass assembly.**

1. Turn off water heater(s).
2. Turn off the main water supply to the home and open an inside faucet to relieve any pressure within the plumbing system.
3. Place the system in the desired location. Make sure that the location is level and sturdy enough to support the weight of the wetted system.
4. Place the bypass valve in the up flow service position. See below Bypass Valve Modification Detail.
5. Connect the cold water supply to the inlet of the OneFlow® system. NOTE: The OneFlow® system operates in the UP-flow mode which is opposite of a conventional softener. Follow the plumbing diagram in Figure 3.
6. Install a supply valve (user supplied) in the supply line and close it.
7. Place a bucket under the outlet port or run a line from the outlet port to a drain.
8. Turn the water back on to the house. Slowly open the supply valve to the OneFlow® system. Allow the tank to fill with water. Close the supply valve when a steady stream of water comes out of the outlet port. If the outlet is flowing into a bucket, water could splash on nearby objects. If this threatens the safety, value, structure, or appearance of these objects, protect/remove them or use the outlet hose to drain option.
9. Close the inside faucet.
10. Connect the outlet of the OneFlow® system to the cold water supply to the house.
11. Open the supply valve to the OneFlow® system.
12. Open hot and cold faucets downstream from the OneFlow® system to relieve any air from the plumbing system and water heaters. Then close the faucets.
13. Check for leaks. Repair as needed.
14. The system is now ready for service.

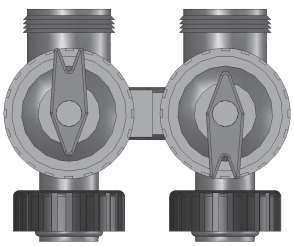
## Bypass Valve Modification

Service Position
down-flow tank.

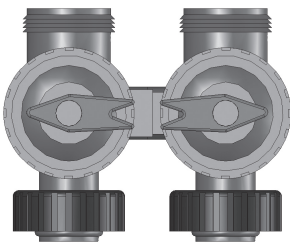


As shipped, the bypass is set-up for down-flow use. The arrow shape of the handles points in the wrong direction for UP-flow use. To convert it to UP-flow use, pull up on the red handles until they come off. Rotate the handle 180° and put it back on the valve stem.

Service Position
UP-flow tank.



Bypass Position
UP-flow tank.



# Note To The Home Owner

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

**Sinks and fixtures -** should have reduced spotting. If water is allowed to evaporate off a surface, small spots may be left behind. Many times this residue is easier to clean up than the previous hard water spotting.

**Dishwasher-Spotting on dishes and on the surface of the dishwasher should be greatly reduced.** We recommend that you immediately reduce the amount of dishwashing 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 reduced spotting. When water evaporates off a surface, small spots may be left behind. Depending on water chemistry, these spots may be easy to remove with a damp cloth or sponge.

**In the bath** you should notice that soaps and shampoos lather more than with untreated 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 OneFlow® 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 OneFlow® should keep it clean.

We also recommend that you drain your water heater tank. This should be done 30 to 60 days after OneFlow® is installed, and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance. The OneFlow® 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!

# Residential OneFlow® Media Replacement

The Watts OneFlow® media has an average life span in excess of 3 years depending on water volume and specifi c water chemistry. If you notice a change in performance after a three year period and feel the media should be replaced contact your system installer, professional plumber, or water treatment expert to perform a re-bed service. The color of the media should be noted any time it is replaced to ensure the media has not become fouled. If it has, additional pretreatment for the system may be necessary.

## Replacement Media

OneFlow Media should be replaced every 3 years

Jet-Dry® is a registered trademark of Ecolab, Inc.

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