

Installation, Operation and Maintenance Manual



H2Flow® Anti-Scale System
Chemical-Free, Salt-Free Scale Prevention

Model CH2F-10

Model CH2F-12

Model CH2F-16

Model CH2F-20

Model CH2F-30

Introduction

The H2Flow® system provides protection from scale formation throughout the plumbing system. The H2Flow® 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 that requires protection that requires protection from hard water.

H2Flow® reduces or eliminates scale formation on internal and external plumbing surfaces as well as reducing spotting and streaking normally associated with hard water.

H2Flow® 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.

H2Flow® 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.

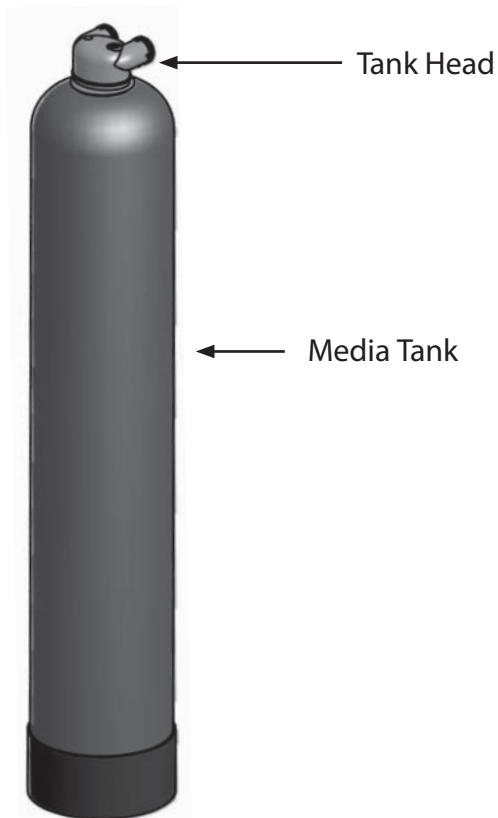
Unlike softened water, H2Flow® treated water maintains the beneficial essential mineral content of your water and is safe to drink.



H2Flow® 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 the water heater
- Simple installation - no electrical drain hookup
- Compatible with all on-site and community wastewater treatment systems
- Not subject to water softener restrictions and "bans"

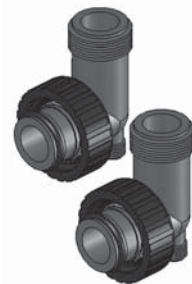
System Overview



Typical Connection Fittings

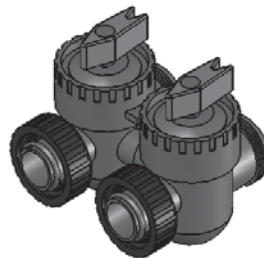


H2F-V3007-02
1" Brass Sweat
Fitting



H2F-V3007
1" PVC Male NPT Elbow
Assy.

Optional Connection Fittings



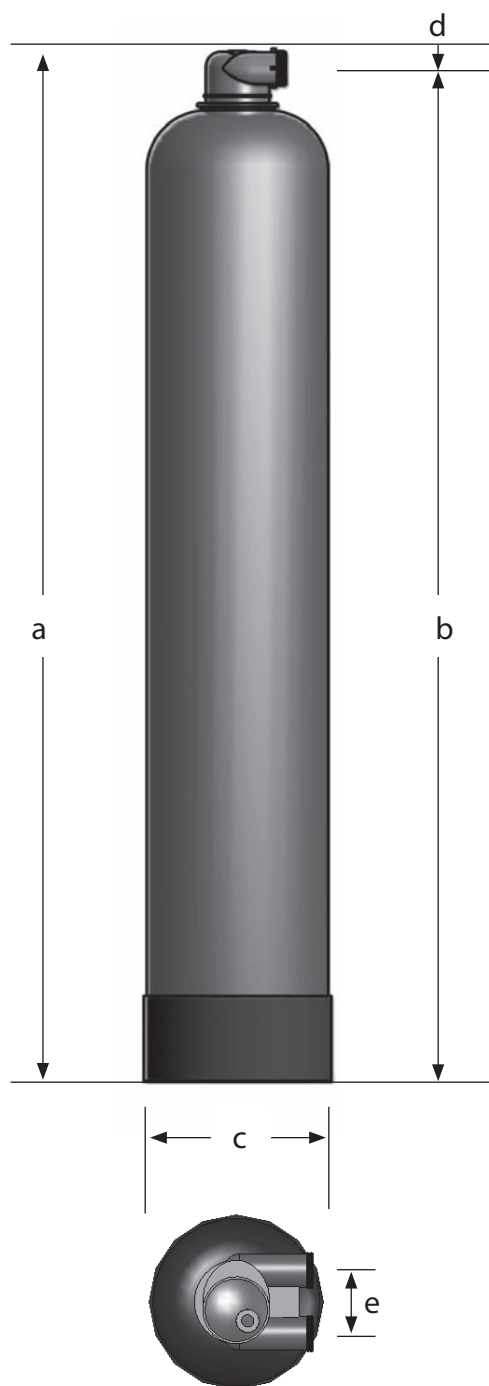
H2F-V3006
Bypass Assy.



H2F-V3191-01
Bypass Elbow
Assy.

Equipment Specifications

H2Flow® 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.



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	CH2F-10	CH2F-12	CH2F-16	CH2F-20	CH2F-30
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

- Pressure drop at peak flow rate is less than 10 psi. Pressure drop reading taken with inlet and outlet gauges installed at a common elevation and 80 degree feed water.

Dimensions (nominal - inches)

	a	b	c	d	e
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 H2Flow® with other water treatment equipment.

Due to the unique properties of H2Flow®, there are some unique requirements for using H2Flow® in conjunction with filtration or other forms of water treatment.

1. H2Flow® must be the last stage in the treatment chain. Do not install any filters after H2Flow® or before any devices for which scale prevention is required. POU drinking water filter, e.g. carbon or RO are exempt from this requirement.
2. Do not apply phosphate or any other antiscalant either before or after H2Flow®.



Important Note about Iron, Manganese, and Copper in the Water Supply

Iron and Manganese

Just as with conventional water softening media, H2Flow® 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 H2Flow® 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 H2Flow® system in bypass prior to following the startup procedure and flush the plumbing for at least 10 minutes.



Caution!

- 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 H2Flow® 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 H2Flow® 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 H2Flow® with other water treatment equipment" on the previous page.

Installation and Start-Up

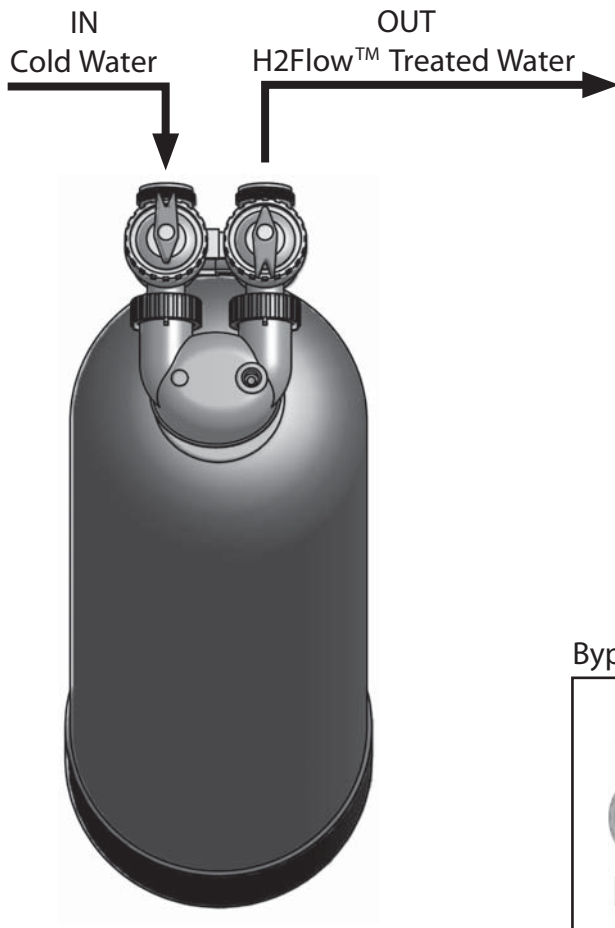
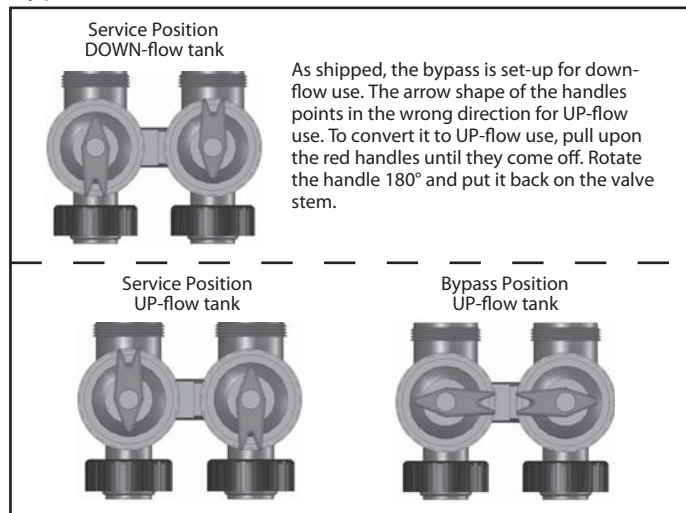


Figure 1

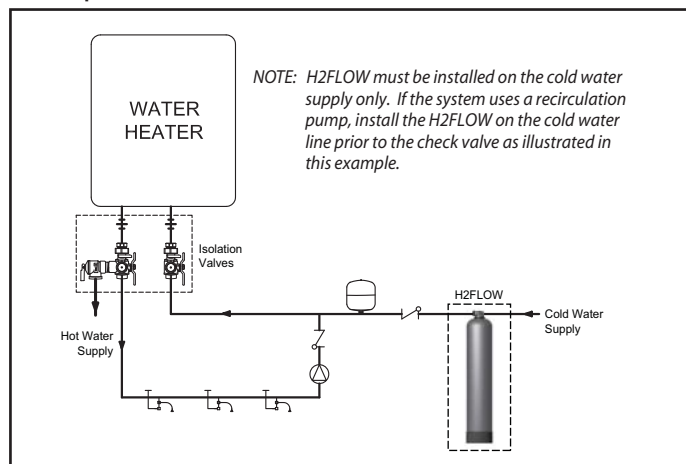
Model CH2F-12 shown with optional bypass assembly

1. Place the system in the desired location.
2. Connect the cold water supply to the inlet of the H2Flow® system.
NOTE: The H2Flow® 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 H2Flow® 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 H2Flow® system to the cold water supply of the building.
7. Open the supply valve to the H2Flow® system.
8. Open faucets downstream from the H2Flow® system to relieve any air.
9. Check for leaks. Repair as needed.
10. The system is now ready for service.

Bypass Valve Modification



Example Installation



Maintenance

Routine maintenance of your H2Flow® system involves periodic replacement of the media. If the sizing recommendations have been followed, the H2Flow® media should last three years.

Media Change Frequency

The media should be changed in response to the following conditions.

CH2FC - 36 months since installation or last media change

Replacement Media Part Numbers

H2Flow Model	Media Part No.	Max. Service Flow
CH2F-10	CH2FC-10	10
CH2F-12	CH2FC-12	12
CH2F-16	CH2FC-16	16
CH2F-20	CH2FC-20	20
CH2F-30	CH2FC-30	30

NOTE: Exceeding maximum flow can reduce effectiveness and void warranty.

Note to the Building Owner

Your H2Flow® 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 H2Flow®.



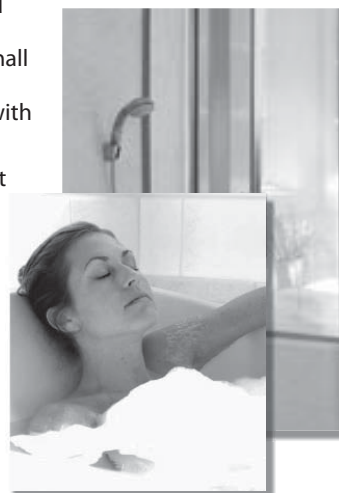
Sinks and Fixtures - should have little or no spotting. If water is allowed to evaporate off a surface, small spots may be left behind. This spotting should not require any more than a wet cloth or sponge to remove. No harsh chemical should be required as with typical hard water spotting.

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 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 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 H2Flow® 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 H2Flow® should keep it clean.

If you have a storage-type water heater, we recommend that you drain the tank about 30 to 60 days after H2Flow® is installed and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance. The H2Flow® 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!

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

Limited Warranty

- The H2Flow[®] tank system is warranted to be free of defects in materials and workmanship for 5 years from the date of original shipment.
- The H2Flow[®] media is warranted for performance for a period of 2 years from the date of the original installation when installed and operated in accordance with the instructions in the corresponding Installation and Operation Manual.

Noritz America Corporation warrants its H2Flow[®] cartridge systems as follows:

- The H2Flow[®] cartridge system is warranted to be free of defects in materials and workmanship for 1 year from the date of original shipment.
- H2Flow[®] cartridges are warranted for performance for a period of one year from the date of original installation when installed and operated in accordance with the instructions in the corresponding Installation and Operation Manual.
- Carbon replacement filter cartridges are not warranted to perform for any period of time because the service life of replacement carbon filter cartridges varies significantly with local water conditions and volume.

Conditions

1. The H2Flow[®] system must be installed in applications with municipally supplied water adhering to EPA guidelines.
2. Any component failure must not result from abuse, fire, freezing or other acts of nature, violence, or improper installation.
3. Equipment must be installed and operated in compliance with the local plumbing codes and on an approved water supply.
4. Equipment is limited to use at water pressures and temperatures that do not exceed our published specifications.
5. Water supply must not exceed 2.0 PPM chlorine. For water supply exceeding 2.0 PPM chlorine, pretreatment is required. (Please supply must not exceed 2.0 PPM chlorine. For water supply exceeding 2.0 PPM chlorine, pretreatment is required.)
6. Information, including model number, serial number, and date of installation, must be provided for any claims pertaining to equipment in warranty.
7. Defective parts are subject to inspection by either Noritz America Corporation or any authorized representative before final commitment of warranty adjustment is made.
8. Noritz America reserves the right to make changes or substitutions in parts or equipment with material of equal quality or value and of then current production.
9. This warranty shall not apply to any H2Flow[®] system installed or used for residential applications. For purposes of this warranty, a residential application is an application for a building with 4 or fewer dwelling units.

Limitations

Our obligation under this warranty with respect to the tank or valve is limited to furnishing a replacement for, or at our option, repairing any part or parts to our satisfaction that prove defective within the warranty period stated above. Such replacement parts will be delivered to the owner F.O.B. nearest factory, at no cost, excluding freight and local labor charges, if any.

Our obligation under this warranty with respect to the H2Flow[®] media will be limited to furnishing a replacement for the media within two years from date of original installation. Such replacement media will be delivered to the owner F.O.B. nearest factory, at no cost, excluding freight and local labor charges, if any. Damage to the media due to chlorine, other oxidizers or fouling caused by local water conditions or any other operation outside of the limits shown under Specifications, is not covered by this warranty.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY NORITZ AMERICA CORPORATION WITH RESPECT TO THE PRODUCT. WATTS REGULATOR COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. NORITZ AMERICA CORPORATION HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described under this warranty shall constitute the sole and exclusive remedy for breach of warranty, and Noritz America Corporation shall not be responsible for any incidental, special or consequential damages, including without limitation, freight, handling, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which Noritz America Corporation has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product.

Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state. You should consult applicable state laws to determine your rights. SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE APPLICABLE WARRANTY PERIODS STATED ABOVE.

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

