

US Water Fusion OXi-Gen Professional-Grade Backwashing Filter For Iron, Sulfur and Manganese Removal



FUSION
SUPERFILTER

Owners Manual

Models:

089-FSF-XXX-OG

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Unpacking / Inspection

Be sure to check the entire system for any shipping damage or parts loss. Also note damage to the shipping cartons. Contact US Water Systems at 1-800-608-8792 to report any shipping damage within 24 hours of delivery. Claims made after 24 hours may not be honored.

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

Safety Guide

- Check and comply with your provincial / state and local codes. You must follow these guidelines.
- Use care when handling the iron removal system. Do not turn upside down, drop, drag or set on sharp protrusions.
- The iron removal system works on 12 volt-60 Hz electrical power only. Be sure to use only the included transformer.
- Transformer must be plugged into an indoor 120 volt, grounded outlet only.
- **WARNING:** This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Contact US Water Systems for disinfection treatment equipment.

Proper Installation

This water filtering system must be properly installed and located in accordance with the Installation Instructions before it is used or the warranty will be void.

- **Do not** install or store where it will be exposed to temperatures below freezing or exposed to any type of weather. Water freezing in the system will break it. Do not attempt to treat water over 100°F.
- **Do not** install in direct sunlight. Excessive sun or heat may cause distortion or other damage to non-metallic parts.
- Properly ground to conform with all governing codes and ordinances.
- 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 pressure.
- **WARNING:** Discard all unused parts and packaging material after installation. Small parts remaining after the installation could be a choke hazard.

Introduction

The Fusion Superfilter Oxi-Gen system provides iron, sulfur and manganese removal throughout the home. The Fusion Superfilter Oxi-Gen system should be installed at the point of entry to treat your entire home, both hot and cold water.

The Fusion Superfilter Oxi-Gen system's backwashing tanks removes iron, sulfur and manganese using oxidation. When water is used in the home, hydrogen peroxide is injected in the Fusion Superfilter Oxi-Gen feed to create super oxidation during operation. The Catalytic Carbon media in the Fusion Superfilter Oxi-Gen system tank provides filtration when the system is in service to collect contaminants oxidized by the hydrogen peroxide. These contaminants are backwashed from the media surface when the system regenerates.

Fusion Superfilter Benefits

- Iron, Manganese & Sulfur Removal
- Virtually maintenance free.
- Improves the efficiency of water-using appliances
- Simple installation
- Safe for landscaping and lawn watering.
- Compatible with all on-site and community wastewater treatment systems

Component Checklists

Standard System

- **Backwashing Catalytic Carbon Filter**
 - ◇ **Control Valve**
 - ◇ **Tank**
 - ◇ **Funnel**
 - ◇ **Manual**
 - ◇ **Carbon (may be multiple boxes)**
 - ◇ **Gravel (Separate Box)**
 - ◇ **Distributor Tube**
 - ◇ **Upper Basket**
 - ◇ **Control Valve Parts Box**
- **Solution Tank**
- **Stenner Econ Pump**
- **Stenner Econ Pump Bracket**
- **Stenner Water Meter**
- **(2) 3/4" Self Tapping Screws**
- **(2) 1" Self Tapping Screws**
- **(2) 1" x 3/4" Reinforced Reducing Bells**
- **1" Stainless Steel Tee**
- **1" x 1/2" Threaded Reducing Bushing**
- **1" x 2" Stainless Steel Nipple**
- **(2) 2.5 Gallons of Peroxide (1 Box)**



System Overview and Specifications

US Water has pioneered the use of hydrogen peroxide in water treatment for the eradication of iron (rust), sulfur (hydrogen sulfide odor) and manganese for nearly 20 years. It can truly be called an "Eradication System" because it TOTALLY removes iron, sulfur and manganese. Properly sized, an Fusion Superfilter Oxi-Gen Hydrogen Peroxide System from US WATER is THE MOST EFFECTIVE METHOD for removing iron, rust, sulfur, manganese and hydrogen sulfide (the rotten-egg odor) from your water supply. The Fusion Superfilter Oxi-Gen system uses Catalytic Carbon media in the backwashing filter to collect the contaminants removed by the hydrogen peroxide. Hydrogen Peroxide is not a hazardous chemical - to the contrary, hydrogen peroxide (H2O2) is composed of the elements of water: Hydrogen and Oxygen. There is nothing foreign or chemically added to the water supply. Unlike chlorine, hydrogen peroxide requires no contact time and the reaction (oxidation of iron, rust, sulfur, manganese and hydrogen sulfide) is immediate. The Fusion Superfilter Oxi-Gen Hydrogen Peroxide System is the answer to practically any iron, rust, sulfur, hydrogen sulfide or manganese problem, and is backed with our 90-Day 100% Satisfaction Guarantee. US Water Systems guarantees 100% iron, manganese and sulfur removal with its Fusion Superfilter Oxi-Gen System which utilizes Hydrogen Peroxide or H2O2.

Oxidation Scale (the higher the better)

Oxidant	Oxidation Potential, V
Fluorine	3.0
Hydroxyl radical	2.8
Ozone	2.1
Hydrogen peroxide	1.8
Potassium permanganate	1.7
Chlorine dioxide	1.5
Chlorine	1.4

Hydrogen peroxide or H2O2 is a powerful, yet versatile oxidant that is both safe and effective. Consider the H2O2 advantages and you'll know why this is the ONLY sure way to eradicate iron, manganese and sulfur.

Powerful - H2O2 is one of the most powerful oxidizers known and is much stronger than chlorine, chlorine dioxide, and potassium permanganate.

Safe - H2O2 is formed by the action of sunlight on water and is a natural purification system for our environment. Consequently, H2O2 has none of the problems of gaseous release or chemical byproducts that are associated with other chemical oxidants. And since H2O2 is totally miscible with water, it reverts back to hydrogen and oxygen after the reaction is complete.

Versatile - Hydrogen Peroxide is lethal to iron, sulfur and manganese. PERIOD!

Selective - In itself, H2O2 is a fantastic oxidizer, much better than chlorine and potassium permanganate. It poses no health hazard and ERADICATES 100% OF THE IRON, SULFUR OR MANGANESE – ALL THE TIME – GUARANTEED!

Consult one of water specialists for higher flow rates. US Water offers Fusion Superfilter Oxi-Gen systems up to 100 GPM and can custom design them at no extra charge. Call us at 800-608-8792 or e-mail us at info@uswatersystems.com.

How Your Fusion Oxi-Gen Superfilter Water Treatment System Works

The Fusion Superfilter Oxi-Gen iron, sulfur and manganese eradication system uses Hydrogen Peroxide (H_2O_2) to oxidize contaminants in your water source. The chemical name for hydrogen peroxide is H_2O_2 . As you can see it is very similar to water (H_2O) but with one additional oxygen molecule. Hydrogen peroxide is injected into the water stream proportionally. The water meter will engage the chemical injection pump based on the flow rate of the feed source water and the settings on the pump control.

When water is being used the water meter sends a pulse to engage the pump. So when large amounts of water are being used the pump will run more frequently during the usage period than in times when a small amount of water is being used. The standard programming is set to a 5 second control. At 100% the pump will stay engaged for 5 seconds. At 50% the pump will stay engaged for 2.5 seconds. In some applications with high flow rates or high contaminant levels, this setting may need to be changed if a residual H_2O_2 cannot be achieved. There are internal settings that can be changed to adjust the output rate. The pump settings can be changed to 10 seconds at 0-100% or 20 seconds at 0-100% if need be. 80% of the applications will use the standard setting (5 seconds).

When hydrogen peroxide is injected into the water stream, it oxidizes the iron, sulfur and manganese from solution. This reaction is immediate. When these contaminants are oxidized with hydrogen peroxide (H_2O_2) the extra oxygen molecule oxidizes the contaminants and the by product is H_2O (water). This is much safer than using chlorine in that chlorine can cause other problems in the water stream such as chloramines and trihalomethanes (THM's).

Once the hydrogen peroxide has been injected in the water it passes through the backwashing Catalytic Carbon filter. The backwashing Catalytic Carbon filter uses Catalytic Carbon media to act as a "catalysis" to remove the oxidized contaminants. As the water passes through Catalytic Carbon filter, the oxidized contaminants are removed from the water and collected on the Catalytic Carbon media. Once the water has passed through the Catalytic Carbon filter, the water is iron, sulfur and manganese free! Extreme levels of manganese may require a water softener in addition to the Fusion Superfilter Oxi-Gen system to polish the remaining manganese.

The Catalytic Carbon filter will need to be backwashed at a specified/determined frequency. In some applications this can be extended to 4-5 days. The typical frequency is 1-3 days. Contact US Water Systems and a Certified Water Specialist will be able to determine the frequency that can be used when considering the feed water contaminant levels. The factory default will be 3 days.

Fusion Superfilter Installation Instructions and Specifications

WATER PRESSURE: A minimum of 20 pounds of water pressure is required for re-generation valve to operate effectively.

ELECTRICAL FACILITIES: An uninterrupted alternating current (A/C) supply is required. Note: Other voltages are available. Please make sure your voltage supply is compatible with your unit before installation.

EXISTING PLUMBING: Condition of existing plumbing should be free from lime and iron buildup. Piping that is built up heavily with lime and/or iron should be replaced.

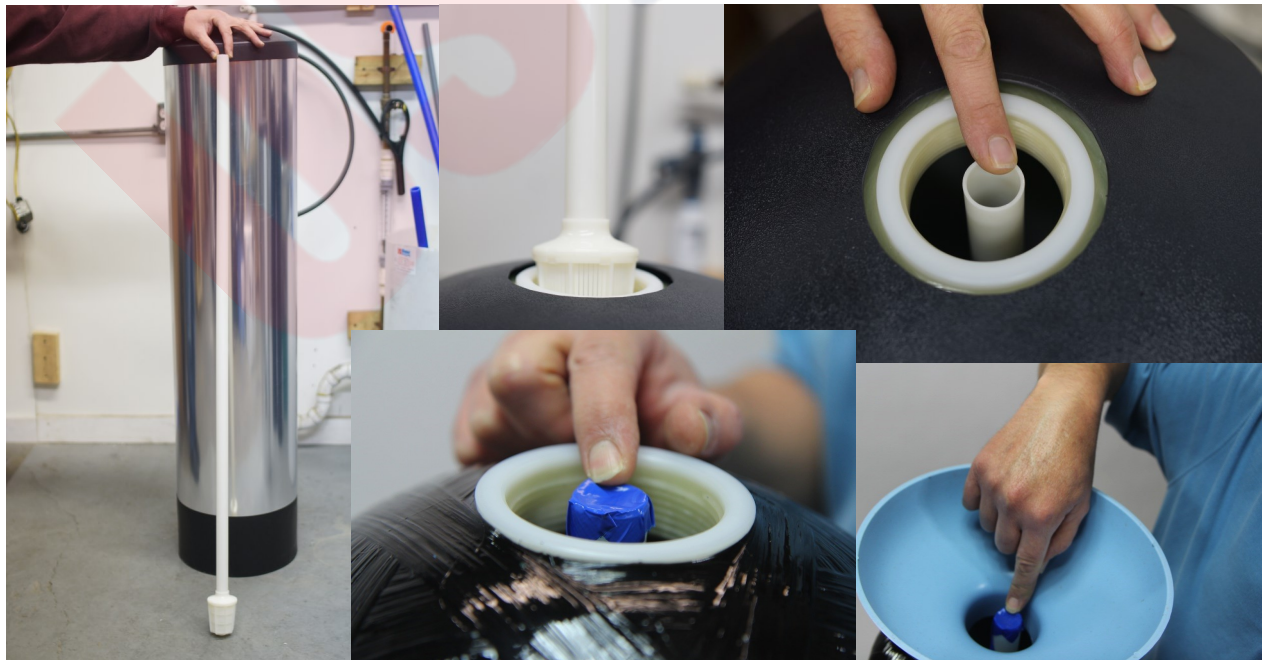
LOCATION OF FUSION SUPERFILTER TANK AND DRAIN: The Fusion Superfilter tank should be located close to a drain to prevent air breaks and back flow.

BY-PASS VALVES: Always provide for the installation of a by-pass valve if unit is not equipped with one. The Catalytic Carbon Superfilter is equipped with a bypass valve.

CAUTION: Water pressure is not to exceed 80 psi, water temperature is not to exceed 110°F (43°C), and the unit cannot be subjected to freezing conditions or direct sunlight.

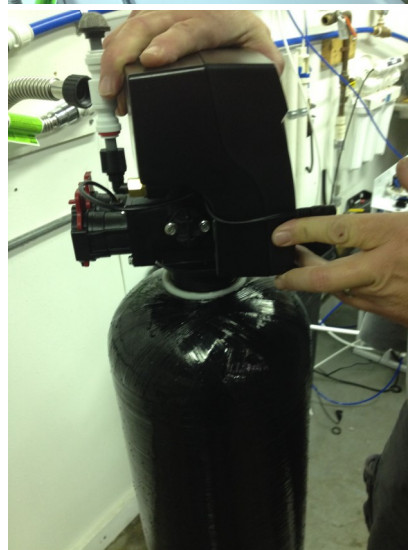
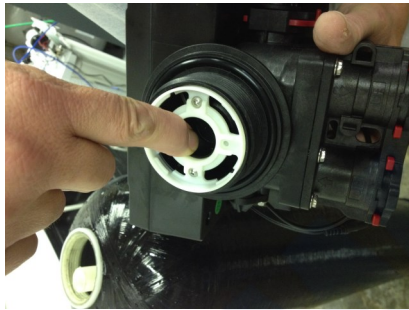
Superfilter Tank and Control Valve Preparation

1) Use a piece of duct tape to cover the top of the distributor tube in the tank. Be sure the distributor tube is centered in the tank. The distributor tube should be flush with the top of the tank or no more than 1/4" below flush. Install the supplied funnel and pour the gravel in the tank first. Each system will ship with gravel and Catalytic Carbon media. Pour the gravel in the tank first then pour in all the Catalytic Carbon media that was shipped in the tank last. US Water does not ship "extra" media.



Superfilter Tank and Control Valve Preparation

2) Lubricate the distributor O-ring and the tank O-ring. Then install the upper basket (may look different than the pictures below) on the bottom of the valve by lining up the tabs then turning the basket clockwise to lock it in place. Place the upper basket over the distributor tube and push the valve on the tank. Thread the valve on the tank by turning it clockwise. Be sure not to cross-thread the valve on the tank. Tighten the valve hand tight, then snug it further by tapping it with the palm of the hand. **DO NOT** use tools to tighten the valve or damage could occur.



Water Meter Installation Instructions

1. After the sediment filter, install the water meter. There is a flow direction arrow on the meter. Be sure the inlet plumbing is attached to the meter correctly. There should be 18" of horizontal pipe before and after the water meter to ensure it is reading properly.
2. Slide the nut over the connection nipple, apply Teflon tape and install it in the inlet plumbing. Do not over tighten the plastic nipple or damage could occur.



3. Install the rubber washer gasket in the connecting nut and install the water meter with the flow arrow pointing away from the inlet fitting. Tighten the nut hand tight channel locks can be used to tighten the nut an additional 1/4 to 1/2 turn. The rubber washer gasket will seal the connection so the nut should not be over-tightened.

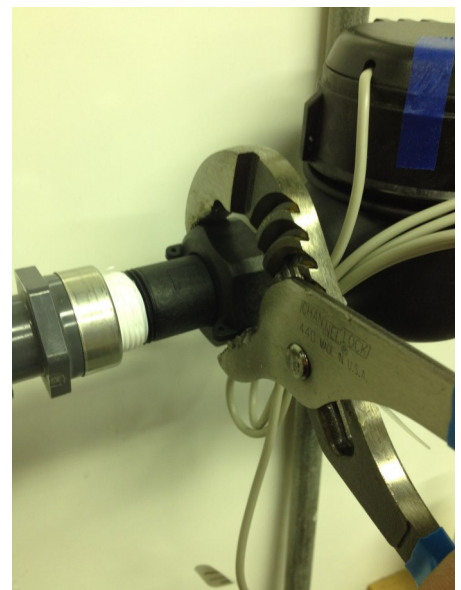


Water Meter Installation Instructions

- Slide the nut over the outlet nipple and install the outlet nipple in the outlet plumbing. Use Teflon tape to seal the connection and tighten with channel locks. Do not over-tighten the nipple in the outlet plumbing connection or damage could occur.



- Install the rubber washer gasket in the nut and tighten the outlet plumbing to the water meter outlet connection. Tighten it hand tight then turn it an additional 1/4 to 1/2 turn with channel locks. Do not over-tighten or damage could occur.



Superfilter Carbon Tank Installation Instructions

Any solder joints being soldered near the valve must be done before connecting any piping to the valves. Always leave at least 6" (152 mm) between the control valve and joints being soldered when soldering pipes that are connected to the valves. Failure to do this could cause damage to the valves.

The Fusion Backwashing Filter is equipped with 1" removable connectors. It is recommended that these connectors are installed in the plumbing fitting using Teflon tape then lubricate the o-ring on the connector. Remove the red clips and push the connectors into the bypass valve once they are tight in the plumbing fitting. The red clips can then be re-installed to secure the connectors in the bypass valve.

The inlet and outlet can be identified on the bypass valve. There are arrows stamped in the bypass valve showing flow direction. The arrow pointing toward the valve is the inlet and the arrow pointing away from the valve is the outlet

1. Apply Teflon tape to the inlet connector and install the supplied Tee fitting on the inlet connector of the Superfilter control valve. **ATTENTION!** If the injection panel is used, the injection tee is not used because the injection point is on the injection panel. If the injection panel is used skip to step 5.



All piping should be secured to prevent stress on the bypass valve and connectors.

Superfilter Carbon Tank Installation Instructions

2. Install the supplied 1" x 1/2" reducing bushing in the Tee fitting outlet. Be sure to use Teflon tape on the reducing fitting.



3. Apply Teflon tape to the supplied nipple and install it in the outlet of the installed Tee fitting.

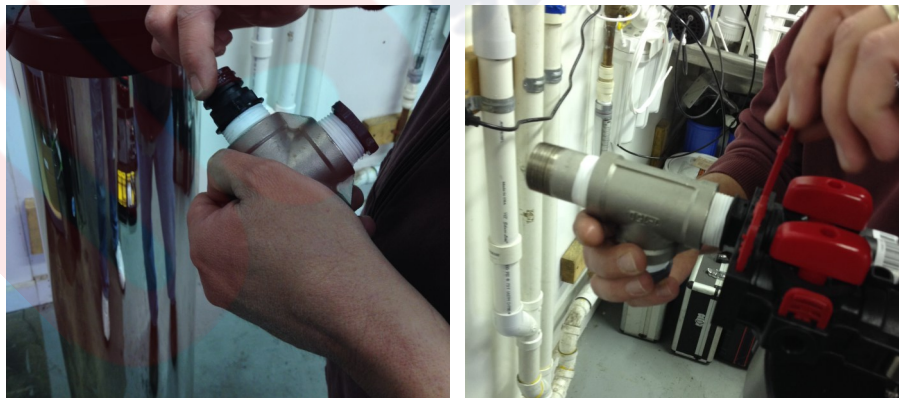


Superfilter Carbon Tank Installation Instructions

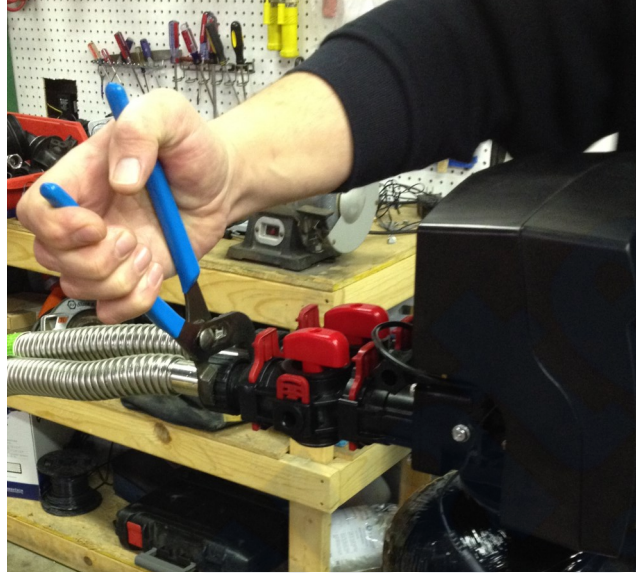
4. Install the injection check valve in the reducing bushing. Be sure to use Teflon tape on the injection check valve.



5. Lubricate the O-rings on the connectors. Remove the red clips from the bypass on the valve and install both connectors. Be sure the Tee fitting in on the inlet port.



Superfilter Carbon Tank Installation Instructions



6. Attach the inlet and outlet plumbing to the Superfilter control valve. Be sure to check the stamped arrows on the valve and bypass for inlet/outlet orientation.

All piping should be secured to prevent stress on the bypass valve and connectors.

Superfilter Carbon Tank Installation Instructions

7. Install the drain line on the 3/4" threaded elbow. This should be a 3/4" solid pipe conveyed to a floor drain, sink drain or stand pipe. This drain line can be any material allowed by the local code (photos show PEX but PVC is typically the piping used). An air gap should be established if the local code requires it. Drain line smaller than 3/4" could cause a restriction on the system and prevent it from backwashing properly. If you reduce the drain line to a size smaller than 3/4" **BE SURE** it can provide the backwash flow rate requirement of the unit being installed. Drain line larger than 3/4" is acceptable. The system will drain with pressure, so the drain line can be ran vertically for up to 5'. If the drain line is ran vertically then along the wall horizontally, make sure the horizontal pipe has a drop to the final drain point. The system should be plumbed with the least amount of back pressure on the drain line.

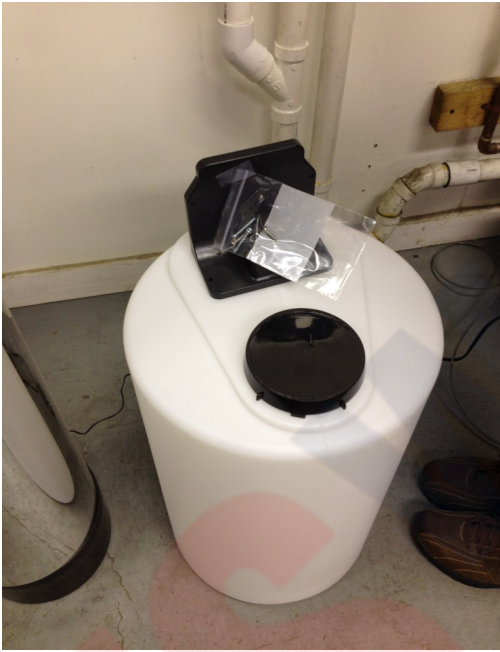


8. The drain elbow can be removed by removing the red clip and pulling the elbow out of the valve. This will make it easier to connect the plumbing fitting used. **BE CAREFUL** not to cross thread the fitting on the elbow. There is a small thread tolerance for this fitting to help reduce a possible leak.

NOTE: It may be necessary to install drain line larger than 3/4" on a linear stretch of drain line that exceeds 15'.

Chemical Solution Tank (with Pump) Installation Instructions

1. Install the chemical pump mounting bracket on the solution tank. Center the bracket on the back side of the tank. Install the two longer screws (supplied) in the outer holes. Tighten all screws.



Chemical Solution Tank (with Pump) Installation Instructions

2. Install the chemical injection pump on the bracket that was installed on the tank using the screws taped to the bracket.



3. Drill a 1/4" hole in the top of the solution tank and install the tubing into the tank.



Chemical Solution Tank (with Pump) Installation Instructions

4. Install the weighted suction screen on the tubing that was inserted in the tank. Push the tubing down in the tank until the weighted suction screen is around 1" from the bottom of the tank.

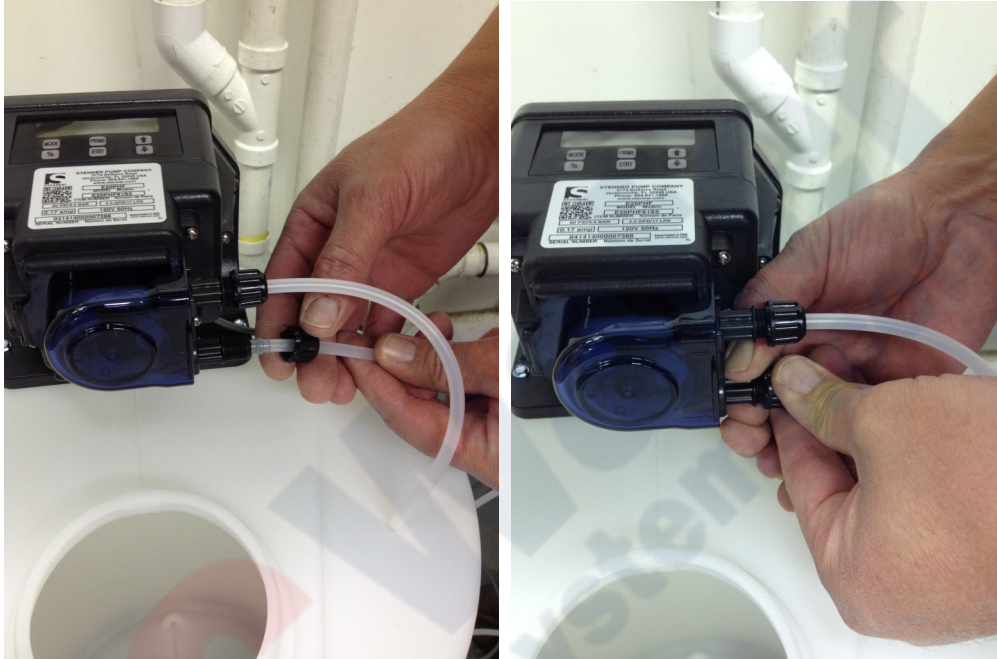


5. Install the other end of the tank suction tube to the chemical injection pump inlet. The inlet is identified by an arrow point toward the pump. Be sure the sleeve is installed on the tubing properly. The beveled side of the sleeve should be facing the pump. Tight the nut hand tight holding the pump fitting. Do not use tools. Hand tightening will be sufficient.

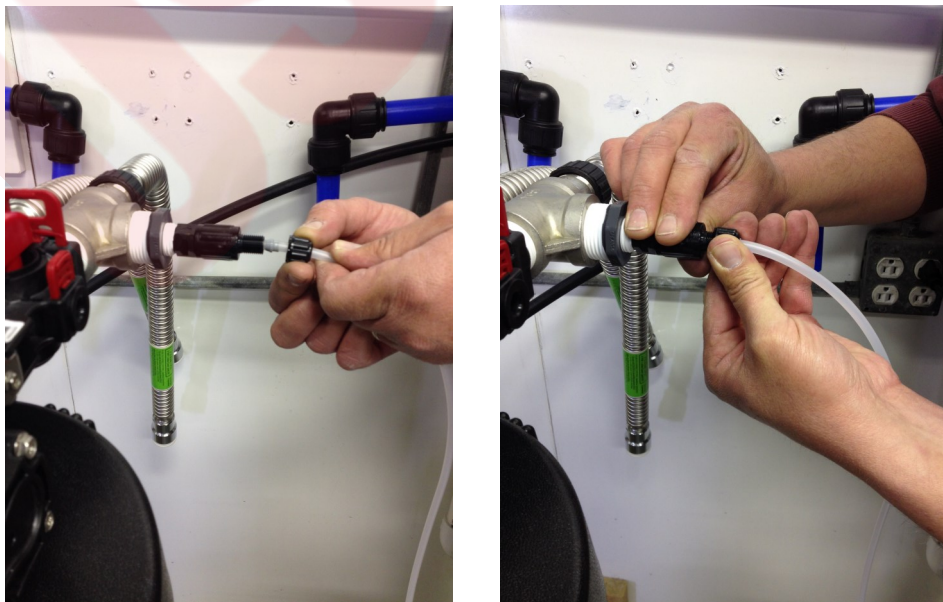


Chemical Solution Tank (with Pump) Installation Instructions

6. Install a piece of tubing on the outlet of the pump. Be sure to orient the sleeve properly and hand tighten the nut. The outlet is identified by an arrow that is pointing away from the pump.

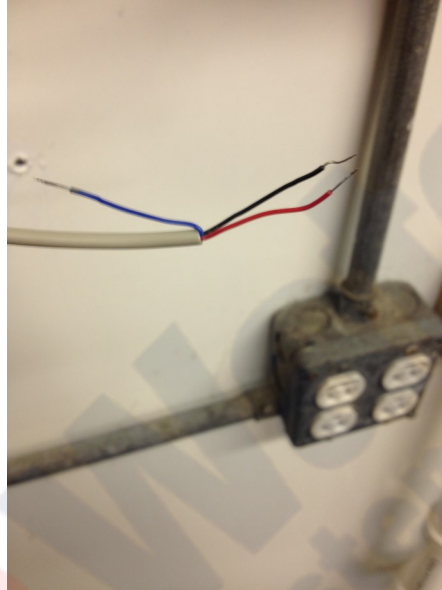
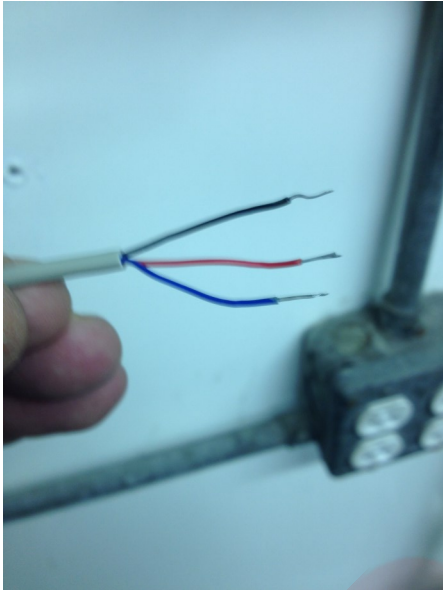


7. Install the other end of the chemical pump outlet tubing to the previously installed injection check valve. Be sure to orient the sleeve properly and hand tighten.

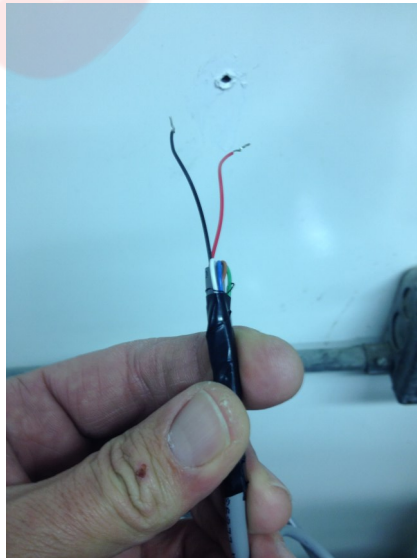
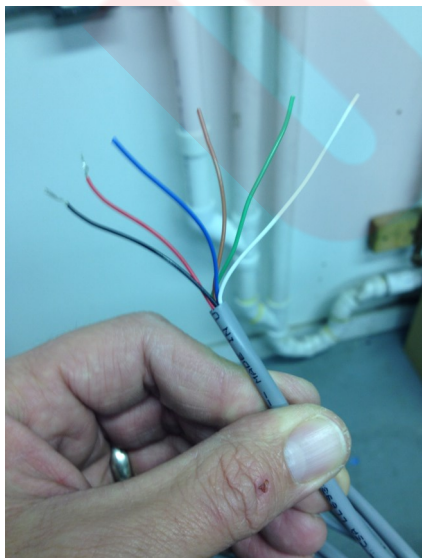


Chemical Pump Wiring Installation Instructions

1. The wire coming from the previously installed water meter should have three wires. A black, red and blue wire. The blue wire is not used and should be folded back and taped to prevent it from making contact with anything.



2. The wire coming from the chemical injection pump will have several colors. Fold back all wires but the red and black wire. Make sure the wires that are folded back are not touching each other or anything else. Tape the wires back. Now connect the black wires together with a wire nut or butt splice connector. Connect the two red wires using a wire nut or butt splice connector. There is no voltage on these wires. An enclosure can be used or the wires connections can simply be taped to insulate the wires if desired.



Chemical Injection Pump Start-up Instructions

1. Plug the chemical pump power cord into a continuously energized 110v outlet. The chemical pump should be set when the unit is shipped. It should be set to “5 SEC-ONDS” and the percentage should be set on 50%. If the injection panel is used go to page 29.



2. If changes need to be made, the pump must be unlocked. If the pump is locked, push and hold the mode and the % “percentage” buttons at the same time and hold them for 3-5 seconds. The pump locked sentence will disappear. If “STANDBY” is on the screen. Push and hold the “Mode” and “Stby” buttons and “STANDBY” will disappear.

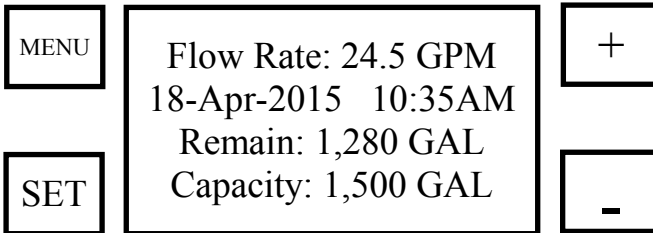
3. To change the “mode” to “5 SECONDS”, hold the mode button while using the up or down arrows to change the setting.

4. To change the percentage, press and hold the “%” button while using the up or down arrows to change the percentage to the desired rate. The pump is now programmed. See the “Bubble Method” for pump adjustment.

5. Once the pump is programmed pour the supplied Hydrogen Peroxide in the chemical tank. Now push and hold the “prime” button until the pump pulls the solution from the container up to the pump and on to the injector. The level can be seen in the tubing as the pump becomes primed. Once it is primed, the pump is ready to use. The pump will operate during the startup process. If the pump is not working see below.

NOTE: If the pump is showing “Standby”, hold the “MODE” and push the “STBY” button to take the pump out of the standby mode. The display will not show “Standby” if it is normal operation. BE SURE to check that the pump is not in the “Standby” mode. If the pump is left in “Standby”, it will not operate during regeneration as intended. If the pump is “Locked”, it will need to be unlocked to make changes. If the valve is “Locked”, press and hold the “MODE” and “%” button at the same time for 3-5 seconds to unlock.

Button Configuration



Key Pad Configuration

MENU	This function is to enter the basic set up information required at the time of installation.
SET	This function is to accept the values if changed and advance to the next page in the menu.
+ / -	These buttons are used to increase or decrease the value of the settings while in the programming mode.

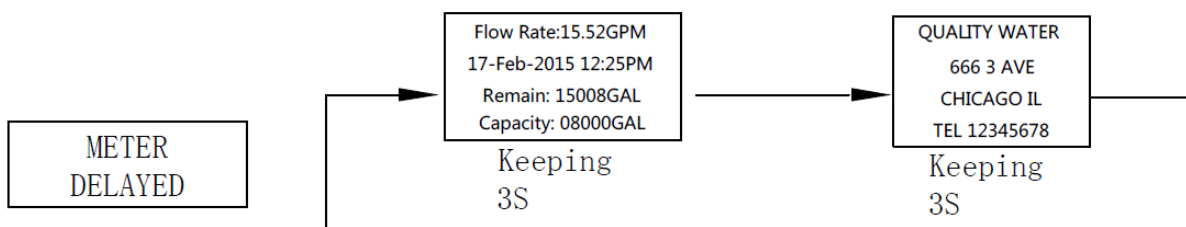
Programming Levels

There are 3 levels to the valve program. Master options and Factory options are typically adjusted at the factory. These options link the PCB function with the type of control valve and should not be tampered with. Advanced options are used to configure the unit when the valve is assembled to the tank so that it can function as the proper size and intended system operation. Settings are the final options chosen when the unit is installed to a specific location.

PROGRAM LEVEL	USER ACCESS
USER SETTINGS(I)	These settings are programmed when the unit is installed. The settings should only be adjusted by a qualified person.
MAIN MENU (II)	These settings are programmed when the unit is installed. The settings should only be adjusted by a qualified person.
ADVANCED MENU (II)	These settings are programmed by the factory and should be adjusted when the valve is assembled into a unit or system. It contains important settings so the valve will operate properly for the type of system it is intended for. The settings should only be changed by qualified person.
HISTORY MENU (IV)	This menu contains key diagnostics for trouble shooting the system.
FACTORY MENU (V)	These settings are programmed by the factory. The settings are important for the operation of the valve that should only be changed by a qualified person.

Main Display Options

The main display page shows the Flow Rate, Date, Time Of Day, Remaining Volume, and Total Volume. The display will alternate between the main page and the dealer information page.

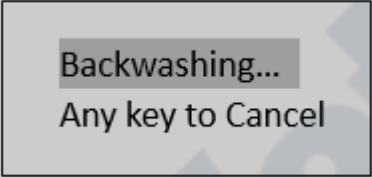


1. Press MENU key.
2. Make sure the cursor is on "Set the Date and Time" and push the set button. The day, month, year and time can be changed to the current time and date of the location where it is being installed.
3. Press + or - to change menu option. Press SET to enter.
4. Press + or - to change value. Press SET to accept.
5. Now Press the Menu button to save the change
6. Push the - button and go to "Main Menu". Press and HOLD the set button until the screen changes. This may take 5 seconds or more.
7. Go to "Regen. Time Setting" and press the "Set" button.
8. (The default time is 2 am. This setting should be adjusted to a time that is 2 hours after everyone is in bed)
9. Press + or - to change menu option. Press SET to enter.
10. Press + or - to change value. Press SET to accept.
11. Now Press the Menu button to save the change
12. Push the - button and go to "Regen Days Setting" and push the "Set" button
13. (The default days will be set at 3. This can be adjusted but typically not more than 5 days between regens. Some system will need to backwash nightly and would be set to 1 day. Contact US Water Systems for help choosing the regen days duration).
14. Press + or - to change menu option. Press SET to enter.
15. Press + or - to change value. Press SET to accept.
16. Now Press the Menu button to save the change.
17. Push the - button and go to "Advanced Menu" and push the "Set" button.
18. Push the - button and go to "Regen Cycles" and push the "Set" button.
19. Go to the "Backwash Duration" and push the "Set" button
20. (This should be set to 10 minutes and should not be changed)
21. Press + or - to change menu option. Press SET to enter.
22. Press + or - to change value. Press SET to accept.
23. Now Press the Menu button to save the change.
24. Go to the "Rinse Duration" and push the "Set" button
25. (This should be set to 10 minutes and should not be changed)
26. Press + or - to change menu option. Press SET to enter.
27. Press + or - to change value. Press SET to accept.
28. Now Press the Menu button to save the change.
29. Press the Menu button until the valve returns to the home screen. Programming is complete.

Manual Regeneration

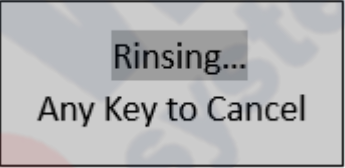
1. Push the “Menu” button and use the - button to go to “Manual Regen”.
2. Now push the “Set” button
3. Choose “Regen Now?” (Immediate) or “Regen Tonight?” (Delayed) and push the “Set” button.

If an immediate regeneration is initiated the valve will immediately move to the backwash position the screen will display:



Backwashing...
Any key to Cancel

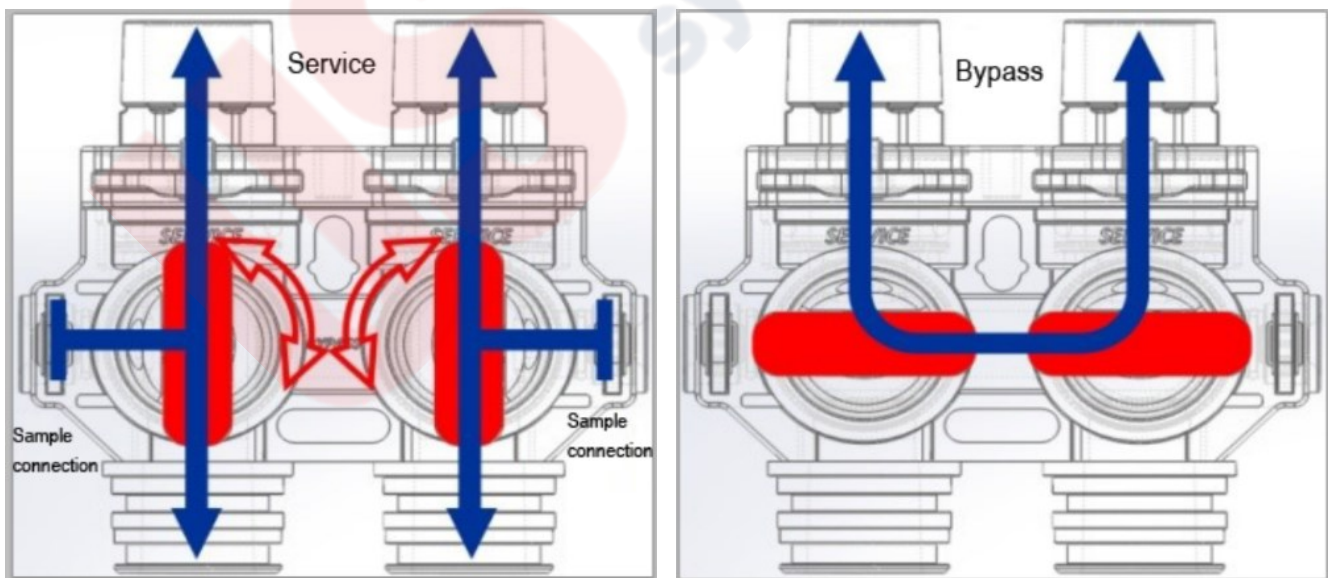
Press any key will backwash, and the valve will advance to the next regeneration process, Fast Rinse, the screen will display:



Rinsing...
Any Key to Cancel

System Start-up Instructions

1. Once all the plumbing has been connected, open the main water shutoff valve. If the injection panel is used, open both ball valves on the panel.
2. Plug the Superfilter valve into an approved power source that is constantly energized.
3. When power is supplied to the control valve, the screen will display "INITIALIZING WAIT PLEASE" while it finds the service position.
4. Once the valve has settled on the home screen, start an Immediate Manual Regeneration (See page 31). The valve will immediately start moving to the BACKWASH position.
5. Open the inlet on the bypass valve slowly and allow water to enter the unit. Allow all air to escape from the unit before turning the water on fully then allow water to run to drain for the entire backwash cycle or until all media fines are washed out of the filter indicated by clear water coming from the drain hose. The peroxide should be injecting during this procedure.
6. Press any button to advance to the RINSE position. Check the drain line flow. Allow the water to run for the entire RINSE cycle until the water is clear.
7. The valve will automatically advance to the SERVICE position after the RINSE cycle is complete. Open the outlet valve on the control valve bypass, then open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.
8. If not previously completed; program time, date, and number of days between regenerations into controller using Programming Instructions (Page 30).



Hydrogen Peroxide Injection Rate Adjustment Instructions

US Water Systems uses the “bubble method”. This is a visual method that works best for quick and reliable H₂O₂ injection rates.

1. Set the proportional control on the Stenner injection panel to 50% using the knob on the PCM (hold the “%” button while using the “UP” or “DOWN” arrows to adjust the % output on the tank mounted injection pump).
2. Run water for 10-15 minutes.
3. Take a sample after the Catalytic Carbon Superfilter tank (or at a sink). The water in the sample container (preferably glass) should be full of bubbles immediately after the sample is taken (looks similar to an Alka-Seltzer dissolving in a glass). If not the installer will adjust the pump to 60%, run the water for 10-15 minutes and check again.
4. Continue adjusting the knob “up” in increments of 10% and allow the water to run for 10-15 minutes between samples until the sample container is full of bubbles. Once the container is full of bubbles, it is an indicator that there is plenty of H₂O₂ in the water. BE SURE to allow 10-15 minutes between adjustments.
5. Now continue the same sampling process but decrease the knob setting in 5% increments allowing the water to run for 10-15 minutes between adjustments until there are just a few bubbles in the sample container (20-30 defined air bubbles in the center of the solution in the glass) that come to the top of the water level and dissipate immediately. This should be the optimal H₂O₂ injection setting. The bubbles should be in the center of the glass and rise to the top immediately. Bubbles on the outside of the glass are not considered in the visual inspection. Bubbles in the solution is what to look for. This is an indicator that there is a small amount of residual H₂O₂ in the treated water and the contaminant is being oxidized. Once this setting is determined the system will operate automatically.

Over the first 1-3 months it is important to monitor the H₂O₂ level in the storage/solution tank and start to gain usage data that will help you determine the H₂O₂ usage and allow you to plan/order replenishment H₂O₂ accordingly. This setting should be periodically checked and adjusted due to changes in the aquifer (well) and loss of H₂O₂ concentration by degradation. After 6-8 months the H₂O₂ can lose concentration, so only replenish the tank to a level that can be used in 6-8 months to ensure the H₂O₂ concentration strength is consistent.

There is a tamper proof screw that can be tightened when the H₂O₂ injection rate is set. This screw will prevent the pump rate control knob from being moved. If this screw is used be sure to loosen the screw before trying to adjust the pump rate control knob.



What to Expect

1. The Fusion Superfilter Oxi-Gen system will produce iron, sulfur, manganese free water immediately after installation. Depending on the raw water quality there may be contaminants built up in the water heater, plumbing system and other devices. Over the first few weeks as water is used there could be traces of this build up that are being removed by the newly installed system. This typically clears up after a couple weeks.
2. Depending on the contaminants being removed there may be iron bacteria or sulfur reducing bacteria in the plumbing system prior to the Fusion Oxi-Gen install. This bacteria can potentially survive after the Fusion Oxi-Gen installation. This is usually indicated by a sulfur smell that will appear after a few weeks of initial usage. If this is the case, the well and entire plumbing system will need to be chlorinated to remove any existing bacteria. If the bacteria is not removed, it will begin to “grow” backwards toward the treatment system and the sulfur smell will not go away. If this does occur, it is easily eradicated with a chlorination well “shock” procedure. Ask a US Water Systems representative about our well sanitizing kits.
3. There may be “bubbles” in the water for a few weeks after installation. A few bubbles are fine, but if there is “fizz” that remains for several seconds, it is an indication that the system is being overfed with H₂O₂. This occurs because after installation the water will become cleaner after the plumbing system has been flushed and the initial dosage of H₂O₂ may need to be adjusted to compensate for the lower contaminant level.

Routine Maintenance

Pressure Tank

If your plumbing system uses a bladder pressure tank it will be in the system prior to the Fusion Superfilter Oxi-Gen system. This tank should be drained periodically to remove any build up of contaminants. Typically once a quarter is sufficient but that frequency may need to be increased on systems with high contaminant levels.

Sediment Filter

Clean or replace the sediment filter every 6-12 months.

Injection Pump

The internal pump tube and injection duck bill check valve may need to be replaced periodically. They typically last 1-5 years depending on the usage. There is a spare tube shipped with the system and instructional videos explaining how to change the tube at www.USWaterSystems.com. Replacement duck bill check valves can be purchased at www.USWaterSystems.com as well.

Catalytic Carbon Superfilter

The Catalytic Carbon Superfilter is virtually maintenance free. However, if there is a power outage the clock and other settings need to be checked to ensure the filter will backwash properly at the proper time of day. It is crucial that the Catalytic Carbon Superfilter backwashes at a time when there is no water being used in the house or contamination of the plumbing system can occur. This media typically lasts 3-5 years in most applications before it is exhausted.



Maintenance Schedule

Component	Action	Frequency
Existing Well Pressure Tank	Drain tank until the water runs clear.	1-6 Months
Panel Sediment Filter	Drain the filter at the dump valve periodically to flush any solids that may accumulate.	Monthly
Big Blue Sediment Filter	Clean or replace (This filter can cause odors in the water if not replaced or cleaned regularly. The filter should be changed if the filter media is discolored).	6-12 Months
Injection Pump Tube	Inspect pump tube and replace as needed.	1-5 Years
Injection Pump Duck Bill Check Valve	Replace injection check valve as needed.	1-5 Years
H2O2 Solution Tank	Periodically check the solution level and refill as needed.	Varies by water usage.
Fusion Superfilter Tank	Check the clock and settings periodically or after a power outage.	Monthly
Fusion Superfilter Tank	Replace the Catalytic Carbon media.	1-10 Years (dependent on the water usage and contaminant level being treated)



Warranty

For the lifetime of the original purchaser, at the original residential place of installation of this *Fusion Superfilter Oxi-Gen* Water Conditioning System, *US WATER SYSTEMS, INC.* warrants the following:

LIFETIME COVERAGE

Media Tanks

Free of all costs to you except transportation and labor charges, we warrant that we will replace or repair the fiberglass media tank, if for any reason it is found to be defective, because of faulty materials or workmanship.

SEVEN YEAR COVERAGE

Valve Assembly & Electronics

We warrant that for seven (7) years from the date of purchase, we will replace the valve assemblies or electronic components at no charge to you except for transportation and standard labor charges. Electronics damaged due to environmental issues or improper installation are not covered.

TWO YEAR COVERAGE

Stenner Injection System (meter and pump and injection panels)

We warrant that for two (2) years from the date of purchase, we will replace the Stenner Injection System (meter and pump and injection panels) components at no charge to you except for transportation and standard labor charges. Stenner Injection Systems damaged due to environmental issues or improper installation are not covered.

Sediment Filter Housing & Chemical Solution Tank

We warrant that for two (2) years from the date of purchase, we will replace the Sediment Filter Housing or Chemical Solution Tank at no charge to you except for transportation and standard labor charges. Sediment Filter Housings or Chemical Solution Tanks damaged due to environmental issues or improper installation are not covered.

GENERAL PROVISIONS

This warranty does not apply to any commercial or industrial installations or to any part of the water conditioner which has been subjected to misuse, neglect, alteration or accident; or to any damage caused by fire, flood, freezing, Acts of God, or any other casualty, or if the original serial numbers have been removed.

These warranties are in lieu of all other warranties expressed or implied, and we do not authorize any person to assume for us any other obligation on the sale of this water conditioner. No responsibility is assumed for delays or failure to meet these warranties caused by strike, government regulations or other circumstances beyond the control of *US WATER SYSTEMS, INC.*

TO OBTAIN WARRANTY SERVICE, CALL OR WRITE: *US WATER SYSTEMS, INC. 1209 COUNTRY CLUB ROAD INDIANAPOLIS, IN 46234 (800) 608-USWA.*

ANY IMPLIED WARRANTIES OF FITNESS OR MERCHANTABILITY ARE LIMITED TO THE TERMS OF THIS EXPRESSED WARRANTY AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THOSE HEREIN. *US WATER* SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

THIS WARRANTY MAY BE TRANSFERRED TO A SUBSEQUENT OWNER WITH WRITTEN APPROVAL OF *US WATER* AND PAYMENT OF STANDARD TRANSFER FEE.

