US Water Flexx inFusion Iron and Sulfur Removal System

081-FIF-XXX

inFUSION
IRON & SULFUR ERADICATION

Table of Contents

Unpacking and Inspection

Be sure to check the entire unit for any shipping damage or lost parts. 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 unit, will be 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 system. Do not turn upside down, drop, drag, or set on sharp protrusions
- The backwashing filter uses 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 does not remove biological contaminants. US Water Systems recommends that bacteria levels be checked periodically to ensure there is no bacteria present. Coliform and E.coli most importantly.

Before Starting Installation

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 100 psi. If daytime pressure is over 80 psi, night time pressure may exceed the maximum. Use a pressure reducing valve (PRV) 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.

Tools, Pipe, Fittings, and Other Materials

- Channel Locks
- Screwdriver
- Teflon Tape
- Razor Knife
- Two adjustable wrenches
- Additional tools may be required if modification to home plumbing is required.
- To maintain full valve flow, be sure the plumbing size matches the size of the valve. The outlet pipe should be the same size or larger than the water supply pipe.
- Use copper, brass, or PEX pipe and fittings. Some codes may also allow PVC Plastic pipe.
- **ALWAYS** install the included bypass valve or install a 3 shut-off valve hard piped bypass. Bypass valves allow the water to be turned off to the system but can still provide water to the house for water use during repairs or service.
- 5/8" OD, 1/2" ID drain line is needed for the valve drain.

inFusion Equipment Introduction

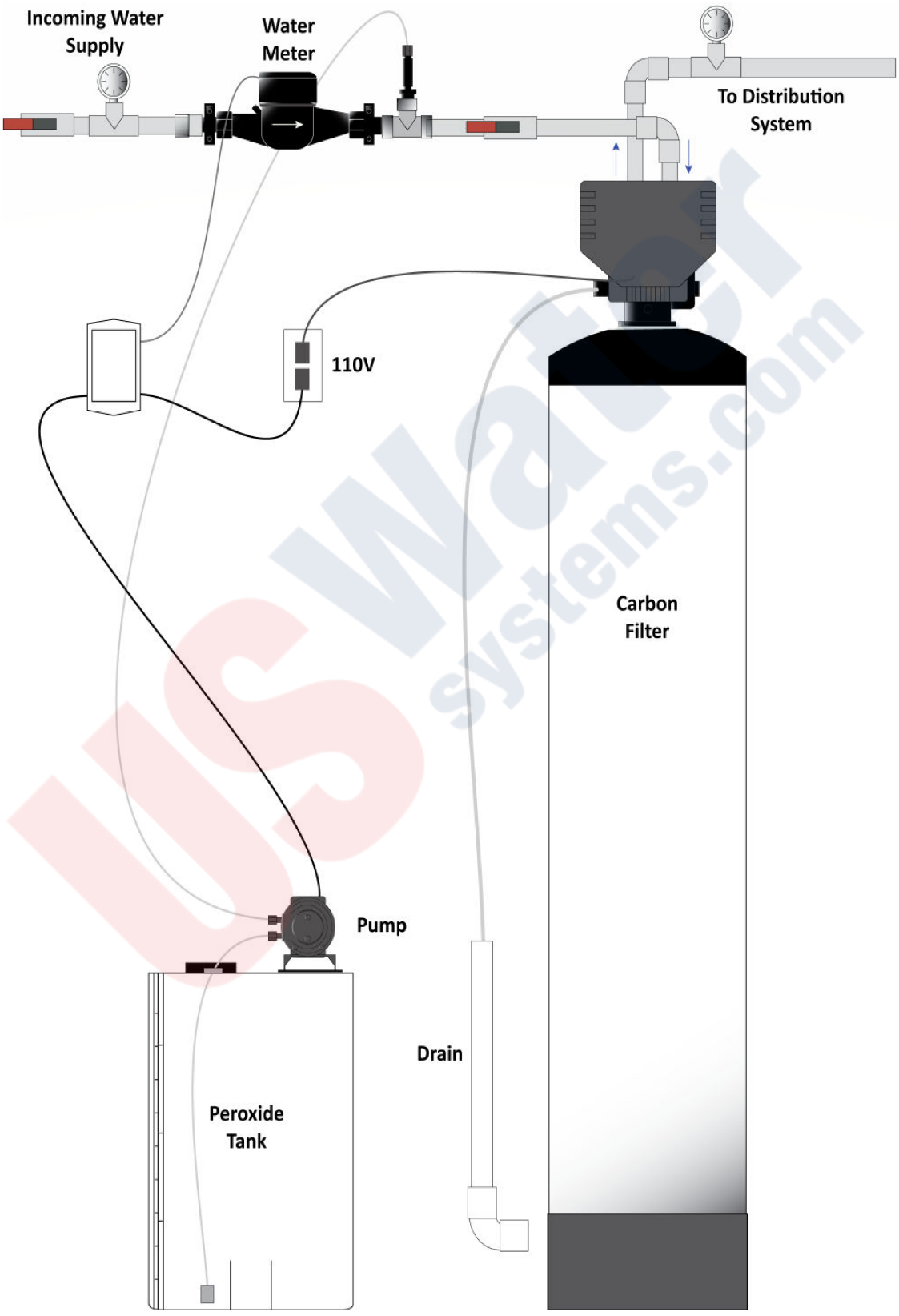
The Flexx inFusion system provides iron and sulfur removal throughout the home. The Flexx inFusion system should be installed at the point of entry to treat the entire home, both hot and cold water.

The Flexx inFusion systems backwashing tank removes iron and sulfur using oxidation. When water is used in the home, hydrogen peroxide is injected in the Flexx inFusion feed to create super oxidation during operation. The catalytic carbon media in the Flexx inFusion 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.

Benefits

- Iron & 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

System Overview



Specifications

Please review operating pressures and temperatures to ensure compatibility.

Model Number	FIF-150	FIF-200	FIF-250	FIF-300
Tank Size	10" x 54"	12" x 54"	13" x 54"	14" x 65"
Catalytic Carbon - Cubic Feet	1.5	2	2.5	3
Gravel Quantity - Pounds	15	20	25	50
Water Temperature	39°F Min - 100°F Max			
Water Pressure	Min 20 psi - Max 100			
Plumbing Connections	3/4" or 1" MPT			
Electrical Requirements	100-240V, 50/60Hz, 0.3A / Output 12V, 500mA			

How The inFusion Water Treatment Systems Works

The Flexx inFusion iron and sulfur eradication system uses hydrogen peroxide (H2O2) to oxidize contaminants in the water source. The chemical name for hydrogen peroxide is H2O2. It is very similar to water (H2O) 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 20 seconds, at 50%, the pump will stay engaged for 10 seconds. In some applications with high flow rates or high contaminant levels, this setting may need to be changed if a residual H2O2 can not 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).The pump settings can be changed to increase and decrease the amount of peroxide. 60% of the setting will be the 20 sec 50%. To increase or decrease, go to Hydrogen Peroxide injection Rate Adjustment Instructions.

When hydrogen peroxide is injected into the water stream, it oxidizes the iron and sulfur precipitating it from solution. This reaction is immediate. When these contaminants are oxidized with hydrogen peroxide (H2O2), the extra oxygen molecule oxidizes the contaminants and the by product is H2O (water). This is much safer than using chlorine in that chlorine can cause other problems in the water stream such as chloramines and trihalomethanes (THMs).

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 the 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 and sulfur free! Some manganese can be removed with the Flexx inFusion system but extreme levels of manganese may require a water softener in addition to the Flexx inFusion 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.

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

Preparation

System Tank Preparation

Water Pressure: A minimum of 20 pounds of water pressure is required for the control valve to operate effectively.

Electrical Facilities: An uninterrupted alternating current (AC) 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 Tank and Drain: The media tank should be located close to a drain to prevent air breaks and back flow.

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.

Media Installation

1. Remove the tank from the carton.
2. Verify the riser tube is centered in the bottom of the tank. There is an indentation in the bottom of the tank that will allow the distributor tube to be centered. A flashlight may be needed to verify the tube is in the center of the tank.

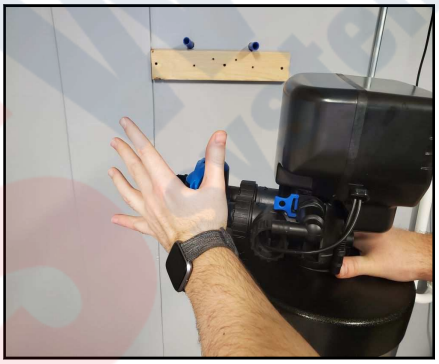
3. Install the clear, plastic cap that is provided in the install kit onto the distributor tube.

4. Use the funnel provided to pour the media into the tank. The order the media is poured in is important. Begin by pouring the Quartz Gravel into the bottom of the tank. Pour it evenly around the hole to ensure it is well distributed in the tank and pour slow enough to keep from plugging the hole. Then proceed to pour the Catalytic Carbon. A helper may be needed to hold the funnel during the filling process.
   NOTE: It is recommended that a dust mask and safety goggles be worn to prevent possible injury.
5. When the media is installed, move the tank side to side to settle the media. Remove the funnel and cap from the distributor tube.

6. Lubricate the distributor O-ring and the outer tank O-ring.

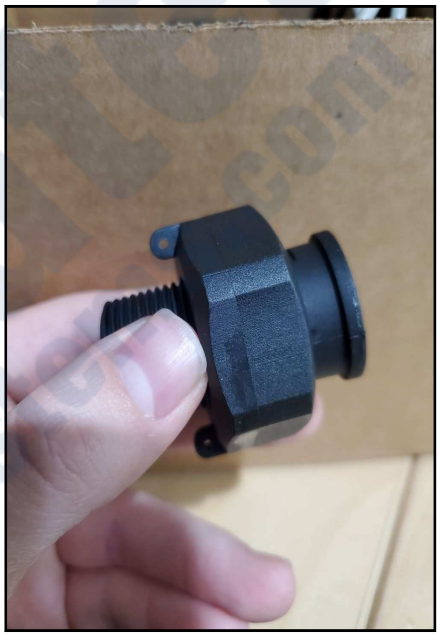
7. Install the upper basket on the bottom of the valve by lining up the tabs then turning the basket clockwise to lock it in place. Place the upper basket over the distributor tube and push the valve onto the tank. Thread the valve on the tank by turning it clockwise. Be sure not to cross thread the valve on the tank.

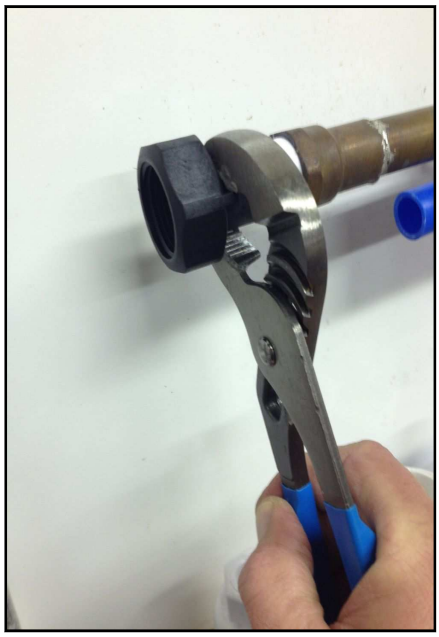
8. Tighten the valve hand tight then snug it further by tapping it with the palm of the hand. **DO NOT** use tools to tighten the valve or damage could occur.



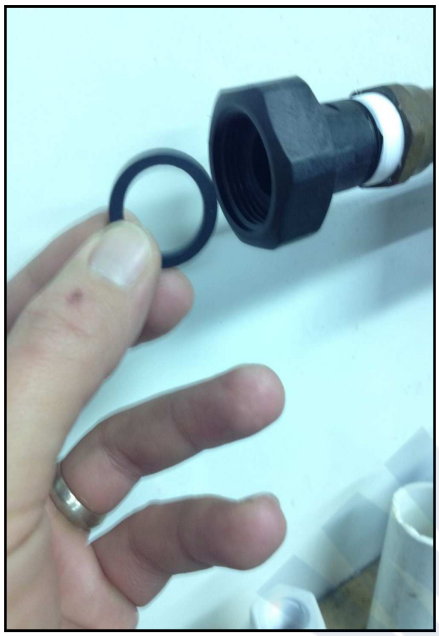
Water Meter Installation Instructions

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.
   NOTE: A 3/4" meter is used to detect flow rates as low as 0.25 GPM. Undersink RO systems and humidifiers can go undected while using a 1" meter. Flow rates will not be decreased while using this in conjunction with 1" plumbing.
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. An adjustable wrench 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.



4. 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 an adjustable wrench. Do not over tighten the nipple in the outlet plumbing connection or damage could occur.

5. 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 an adjustable wrench. Do not over tighten or damage could occur.

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 a faucet or spigot (preferably on the lowest floor of the house) and turn on the cold water until all pressure is relieved and the flow of water stops.
3. Locate the backwashing tank close to a drain where the system will be installed. The surface should be clean and level.

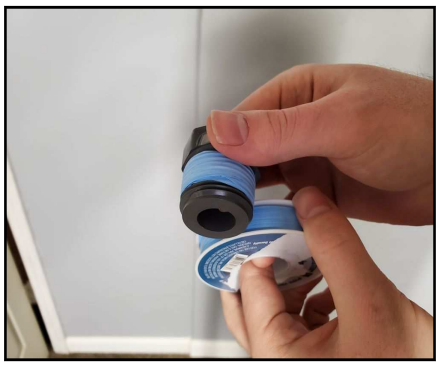
   NOTE: Any solder joints being soldered near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the control valve and joints being soldered when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.

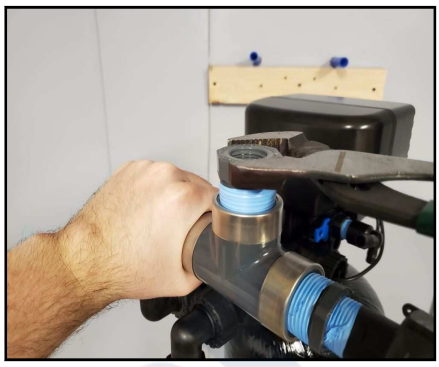
   The system is equipped with male pipe threaded ports on the control valve bypass. The bypass is marked with arrows to show proper flow direction. The arrow pointing toward the valve indicates the inlet. The arrow pointing away from the valve is the outlet.

4. Insert the provided plumbing fittings into the bypass. 3/4" and 1" male pipe thread fittings are supplied so ensure you pick the correct one for your plumbing. Tighten the retaining nuts hand tight, ensuring that the fittings are not cross threaded.
5. Be sure to use Teflon tape or other pipe sealant on the plumbing fitting threads and install them on the bypass accordingly. Use an adjustable wrench to ensure they are tight.

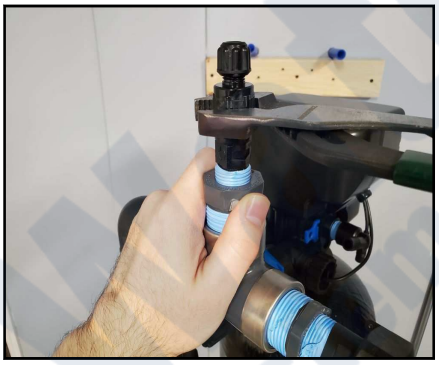
   NOTE: All piping should be secured to prevent stress on the bypass valve and connectors.

6. Install the reducing bushing in the tee fitting.



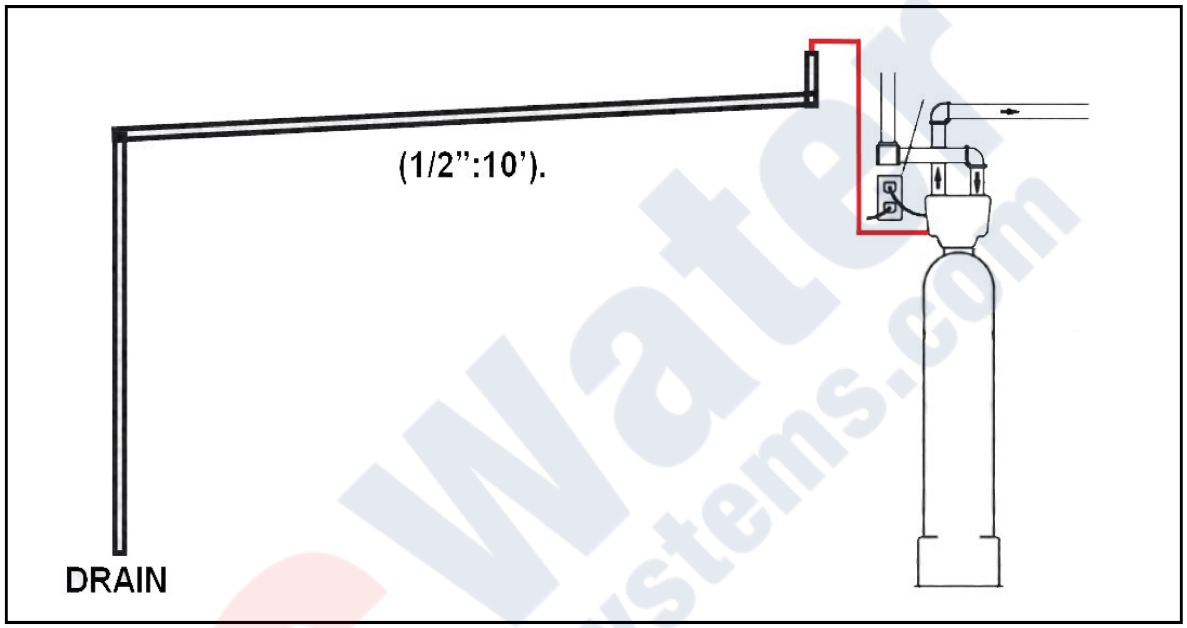


7. Install the tee fitting on the inlet port of the bypass and install the injection check valve from the peroxide system in the open 1/2" hole in the reducing bushing.

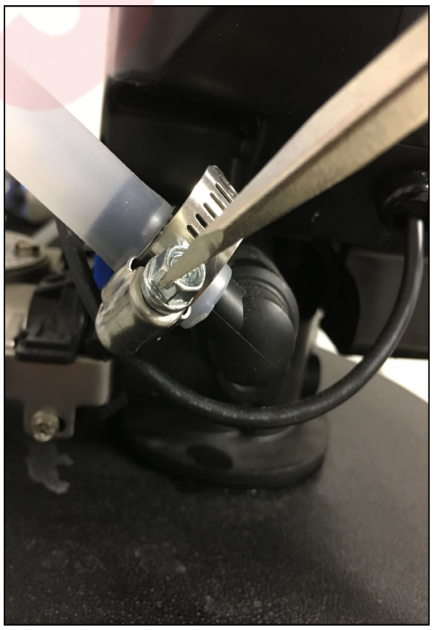


8. Connect the outlet plumbing from the water meter to the open port on the inlet tee.
9. Now install the outlet plumbing for the bypass outlet port to the next piece of treatment equipment or out to the home.

10. Connect the drain hose to the valve and secure it with a hose clamp. Run the drain hose to the nearest laundry tub, floor drain or approved air gap fitting. The drain can be ran overhead or down along the floor. Drain tubing should be a minimum of 1/2" ID. When running the drain overhead, it is important that the tubing has no dips or kinks. If the drain is ran overhead and must run linearly to the available drain, it is recommended that a hard pipe is used of larger diameter than the drain line. This linear pipe should have a physical "drop" toward the drain (1/2" : 10'). The goal is to have a gravity drain without much back pressure when traveling long distances.



NOTE: A direct connection into a waste drain is not recommended. A physical air gap of at least 1.5" should be used to avoid bacteria and wastewater travelling back through the drain line into the system.



NOTE: Be sure to secure the drain line. The system will drain with force and it should be secured to prevent a leak. Hose clamps should be used to secure the drain line at the connection points.

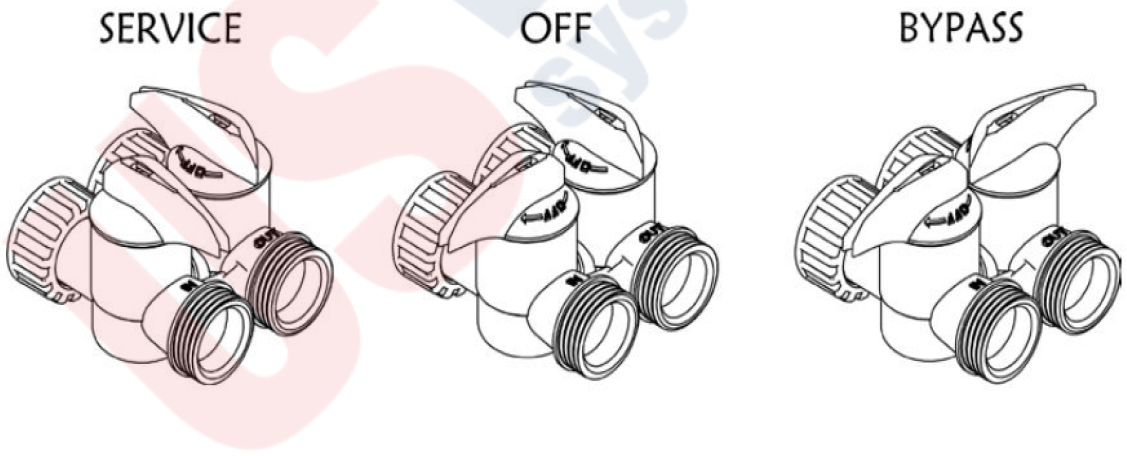
Automatic Bypass During Regeneration

The regeneration cycle can last 25 to 30 minutes, after which treated water service will be restored. During regeneration, untreated water is automatically bypassed for use in the household. This is why automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

Manual Bypass

In the case of emergency, you can isolate your water system from the water supply using the bypass valve located at the back of the control. In normal operation, the bypass is open with the handles in line with the inlet and outlet pipes.

To isolate the system, simply rotate the handles clockwise (as indicated by the word OFF and arrow pointer on the handles) until they stop. Water can be used at related fixtures and appliances as the water supply is bypassing the system. The water used, however, will be untreated. To resume treated water service, open the bypass valve by rotating the handles counter clockwise.



About The System

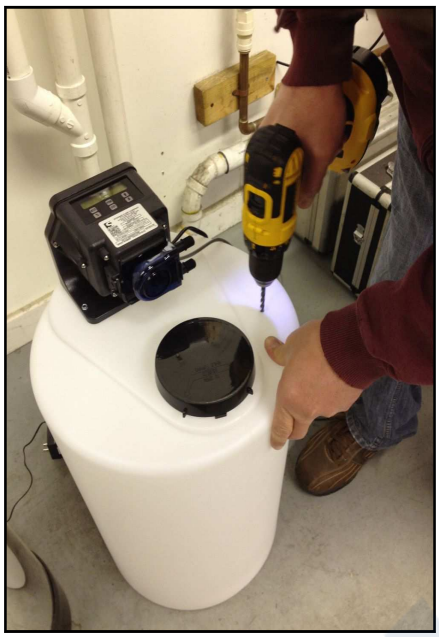
You may notice new sounds as your water system operates. The backwash cycle lasts up to 25 minutes. During this time, you may hear water running intermittently to the drain.

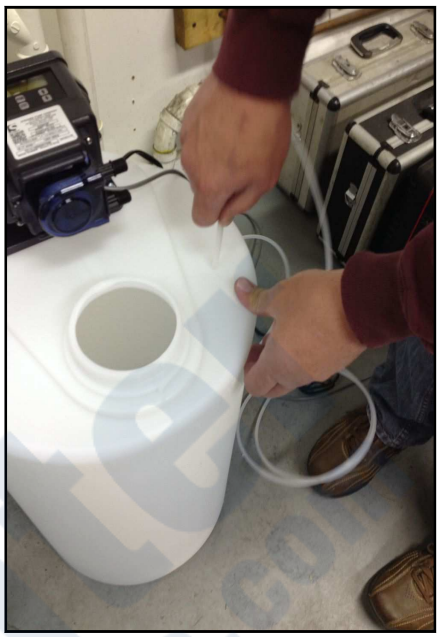
Chemical Solution Tank (With Pump) Installation Instructions

1. Install the chemical pump mounting bracket on the solution tank. Center the bracket on the back side of the tank. Install two #10 x 3/4" screws in the outer holes. Tighten all screws.

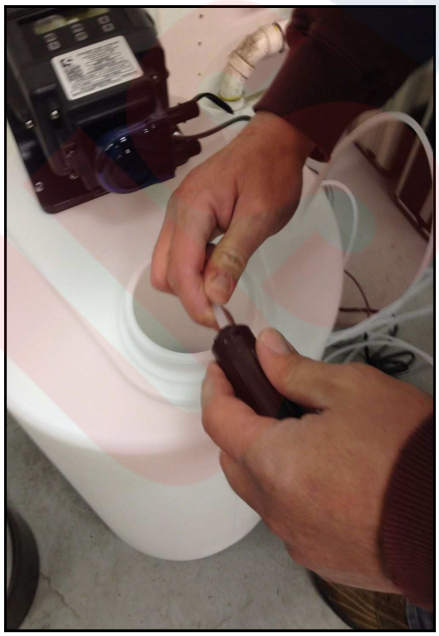
2. Install the chemical injection pump on the bracket that was installed on the tank using the screws taped to the bracket.

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

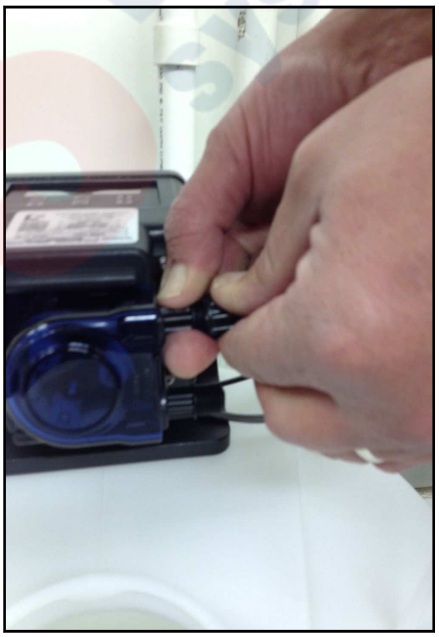




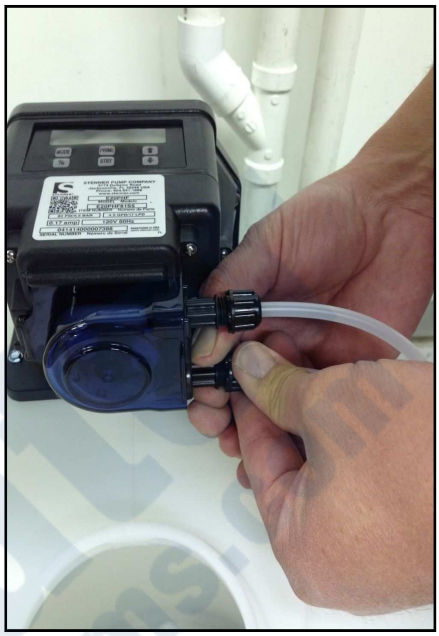
4. Install the weighted suction screen on the tubing that was inserted in the tank. Push the tubing down in the tank until the weighted suction screen is around 1" from the bottom of the tank.



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



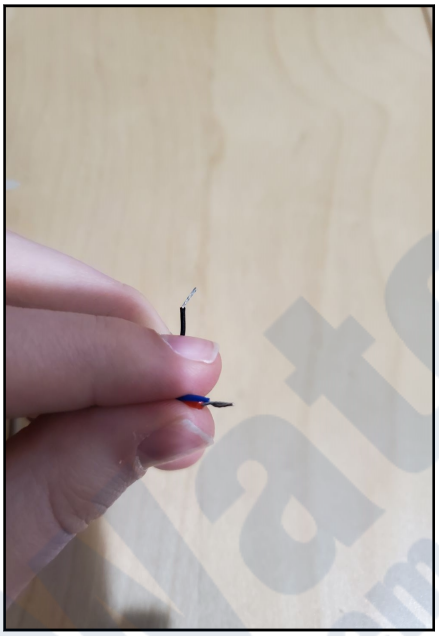
6. Install a piece of tubing on the outlet of the pump. Be sure to orient the sleeve properly and hand tighten the nut. The outlet is identified by an arrow that is pointing away from the pump.



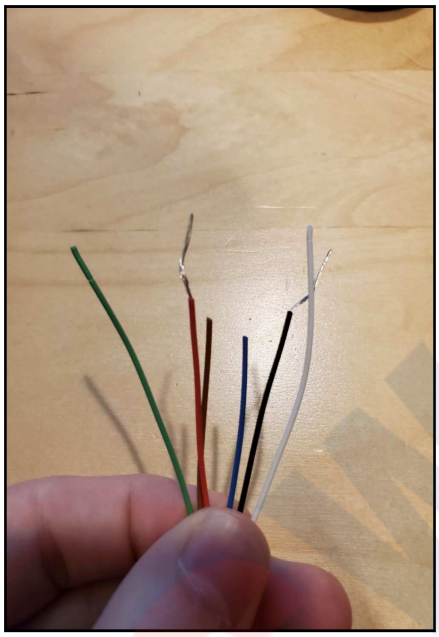
7. Install the other end of the chemical pump outlet tubing to the previously installed injection check valve. Be sure to orient the sleeve properly and hand tighten.

Chemical Pump Wiring Installation Instructions

1. The wire coming from the previously installed water meter should have three wires: red, black, and blue. The red and blue wires each transfer half the rated pulse of the meter. Tape these two together and twist the wires together into one.



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 red wire from the pump and the single red/blue wire from the meter using the same method. There is no voltage on these wires. An enclosure is recommended to house the wiring.



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 "20 SECONDS" and the percentage should be set on 50%.

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 "20 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" under Hydrogen Peroxide Injection Rate Adjustment Instructions 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 as well as the "MODE" 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" button and push the "STBY" button to take the pump out of the standby mode. The display will not show "STANDBY" if it is in 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 "%" buttons at the same time for 3-5 seconds to unlock.

System Regeneration

Normal Operation

Home Display - The home display will alternate between the time of day and gallons left until the next regeneration. The meter will count down to zero (0000) and then regenerate at the scheduled time set.

Starting a Regeneration Cycle

1. To Start **Delayed Extra Cycle**
   - If Days Remaining Until Next Regeneration does not read '0000', press and hold the Set/Change button for 3 seconds until the display reads '0000'
   - Regeneration cycle will initiate at the next designated regeneration time.
2. To start **Immediate Extra Cycle**, first complete above step.
   - With Gallons Remaining Until Next Regeneration at '0000', press and hold the **Set/Change** button.
   - After 3 seconds, the regeneration cycle will begin.
3. To **Fast Cycle** thru regeneration, first complete above 2 steps.
   - Press and hold the Set/Change button for 3 seconds to advance to the next cycle step. Fast Cycle is not necessary unless desired to manually step through each cycle step. (Repeat until valve returns to home display)

Filter Cycles		Default (Min)
Step 1	Backwash	10
Step 2	Rest	2
Step 3	Rinse	10

Programming Using Onboard Buttons

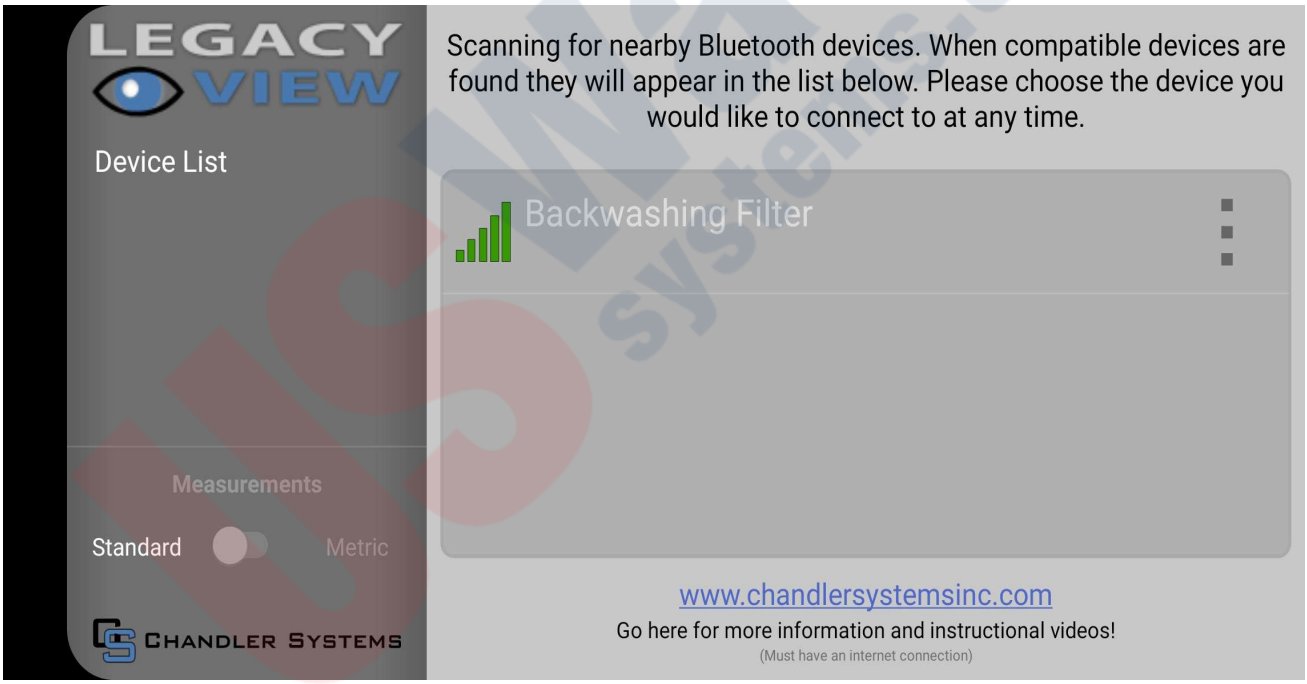
1. To enter the Main Menu, press the **Menu/Enter** button. (Time of Day will flash)
2. To set the **Time of Day**, press the **Set/Change** button. (First digit will flash)
   - To change digit value, press the Set/Change button.
   - To accept the digit value, press the Menu/Enter button.
   - Next digit will flash to begin setting.
   - Once the last digit display is accepted, all digits will flash.
3. To set **A.M. or P.M.**, press the **Menu/Enter** button.
   - To change digit value, press the Set/Change button.
   - To accept the digit value, press the Menu/Enter button.
   - Once A.M. or P.M. is accepted, the next menu item will flash.
4. To set the number of days between backwash cycles (A), press the **Set/Change** button. Repeat instructions from Step 2
   - Maximum value is 29
   - If value is set to 0, automatic backwash will never occur
   - Default setting is 7 days for filters
5. To Exit Main Menu, press the **Menu/Enter** button.
   NOTE: If no buttons are pressed for 60 seconds, the Main Menu will be exited automatically.

Programming Using Legacy View App

The Legacy View app allows the user to control every aspect of the water system from the convenience of a smart phone. The Legacy View app will allow the user to monitor usage history, change cycle times, start a regeneration and advance through a regeneration.

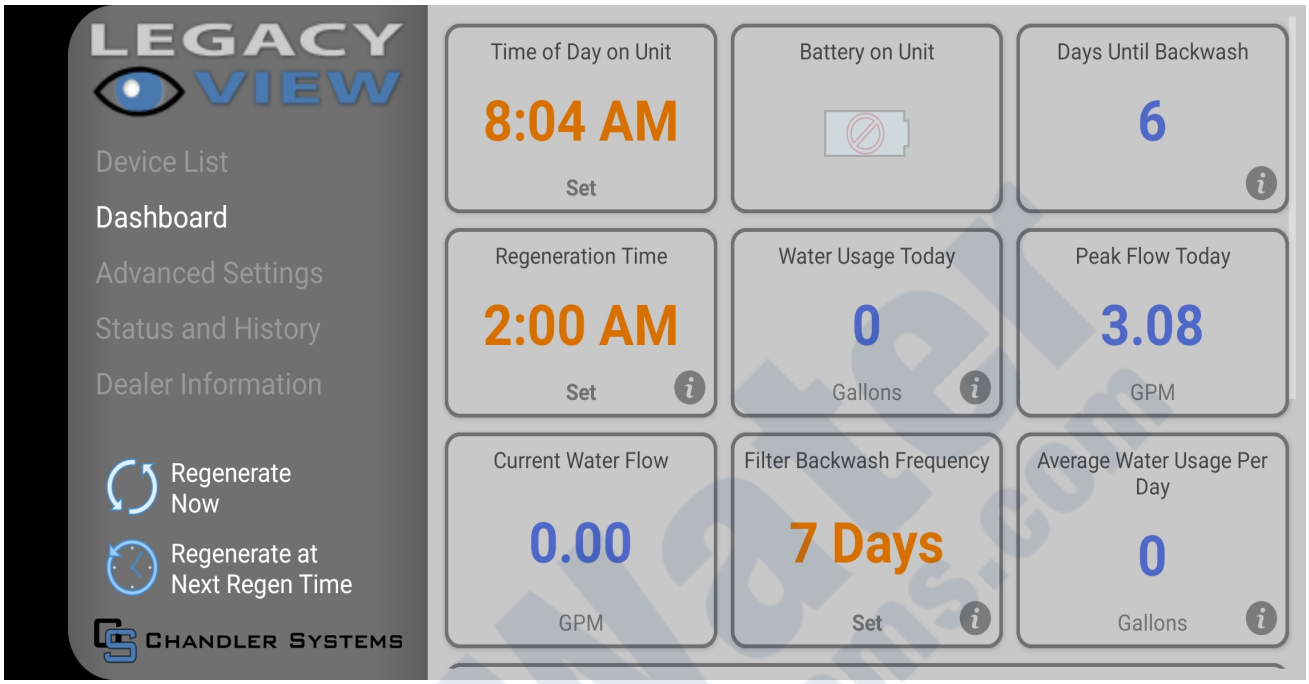
To use the Legacy View Bluetooth App:

1. Go to the App store on the phone to be used and search for "Legacy View".
2. Download the free Legacy View app.
3. Open the app to begin programming.
4. Once the app is open, it will begin scanning for control valves in the Bluetooth vicinity.



5. Once the app connects to the control valve or valves, they will appear on the screen. Each valve can be renamed by tapping on the three vertical dots on the valve listed on the screen. Choose "Label Device" and a lettered keyboard will appear. The user can name the valve using the keyboard then save it by pushing "OK".
6. Choose the valve to be programmed by tapping on the name. A "Dashboard" will show up for the control valve.

Dashboard



Parameters that can be changed are indicated with orange font. To change a parameter, tap on the orange font then use the keyboard that appears to change the value.

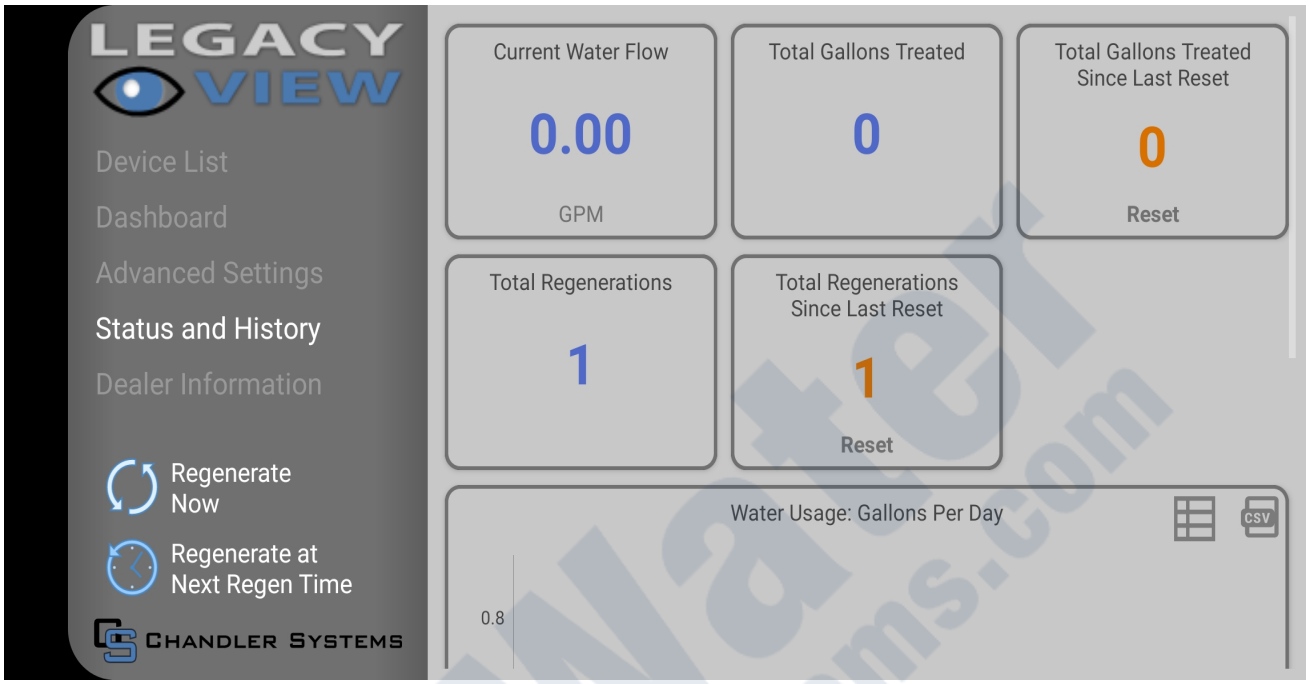
1. **Time of Day:** Tap on the "Time of Day" box. A box will appear that allows you to set the unit to the time that matches the device being used to program the unit. Press "OK" and the time will change to the current time of the device.
2. **Backwash Frequency:** Tap on the "Filter Backwash Frequency" box and input the desired days between backwashing. Most applications will set this to 3 days. If iron or sulfur is extreme, it may need to be set to 1 or 2. Please call US Water at 1-800-608-8972 for help with setting the frequency, if necessary.
3. **Regeneration Time:** Tap on the "Regeneration Time" box. Input the desired regeneration time for normal operation. This is typically two hours after everyone in the house is asleep or the business is closed for the day.

Advanced Settings

Parameters that can be changed are indicated with orange font. To change a parameter, tap on the orange font then use the keyboard that appears to change the value.

1. **Backwash:** This should be set to "10" min and should not be changed.
2. **Rest:** This should be set to "2" min and should not be changed.
3. **Rapid Rinse:** This should be set to "10" min and should not be changed.

Status and History



The Status and History screen shows current conditions of the system as well as flow rate and usage history. There are two parameters that can be reset.

1. **Total Regenerations:** This parameter shows how many times the system has regenerated since it was put in service or since the last time the value was reset.
2. **Total Water Treated:** This parameter shows the total amount of water that has been treated since the system was put in service or since the last time the value was reset.

Regenerating Using the Legacy View App

There are two options for regenerating the system. Tap on the desired option and press "OK".

1. **Regenerate Now:** Regenerate Now will queue an immediate regeneration and will start instantly.
2. **Regenerate at Next Regen Time:** Regenerate at Next Regen Time will queue the system to regenerate at the specified regeneration time chosen in the programming.

System Start Up

1. With the bypass handles in the bypass position, initiate an immediate regeneration. This will advance the valve to the backwash position.
2. Once the valve has stopped moving and is in the backwash position, slowly open the bypass handles about 1/8th turn. Water should slowly enter the tank.
   NOTE: If there is a loud knocking sound, simply turn the bypass handle back slightly as the system is filling too quickly.
3. During the backwash cycle, slowly open the bypass valve until there is water coming out of the drain hose. Then open the bypass valve fully. During this process, peroxide should be injecting into the system.
4. Allow the system to backwash and push all the air out through the drain.
5. The valve will automatically move to the rest cycle when the backwash cycle is complete. Skip this cycle by pressing and holding the "Set/Change" button on the control valve or by pressing "Go to Next Regen Step" on the Legacy View App.
6. This will move the valve to Rapid Rinse. Allow the unit to rinse for the entire cycle. The water in the drain should be running clear by the end of the Rapid Rinse Cycle.
7. The valve will then advance to Service.
8. Once the system has returned to the Service position, the system is installed and ready for use.

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. To set the proportional control on the Stenner Injection pump, you must first unlock the Stenner display. See Chemical Injection Pump Start-up Instructions for reference. The proportional control should be set at 20% seconds 50 % , give this a couple days, After the installation there will be more oxygen in the system than will be there later. The carbon gives off a lot of air, usually in the next 48 hours or longer. If the air is so much that when you open the faucet, and if it spits air out, then the peroxide can be adjusted down temporarily till it diminishes.
2. After the install run water for 5 minutes.
3. Take a sample of water after the catalytic carbon tank (or at a sink). The water in the sample container (preferably clear glass) should be full of bubbles, immediately after the sample is taken. The target of air in the glass you should have 5 seconds of intense bubbles, then they will lift out in those 5 seconds. Then you will see a lot of smaller bubbles rising in the glass, not enough to obscure the view thru it. This is where you want the peroxide to be set. If it is more or less, then you need to adjust it up or down, to match the 5 secs of oxygen in the glass. **IF YOU DO NOT SEE AIR BUBBLES IN THE WATER RIGHT AWAY AFTER INSTALLATION, THEN YOU MUST INCREASE THE SETTING ON THE STENNER PUMP UP, TILL YOU START TO SEE THE OXYGEN BUBBLES. FAILURE TO DO THIS WILL RESULT IN THE CARBON LOSING ITS ABILITY TO TAKE OUT THE IRON, SULFUR, MANGANESE FOR VERY LONG. THIS WILL VOID THE WARRANTY.**
4. To change the SECONDS, hold the mode button down while using the up or down arrows to change the setting. To change the percentage, press and hold the "%" button while using the up or down arrows to change the percentage to the desired rate.
5. 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. Testing the water perodically over the life of the unit will guarantee a longer life.

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 determine the H2O2 usage and when to 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 installed in the cover when the H2O2 injection rate is set. This screw will fix the cover in place and prevent the pump rate control from being moved.

System Features

Battery Back-Up (Uses a standard 9-volt alkaline battery.)

- During power failures, the battery will maintain the time of day as long as the battery has power. The display is turned off to conserve battery power during this time. To confirm that the battery is working, press either button and the display will turn on for five (5) seconds.
- If power failure occurs while the system is regenerating, the control valve will motor to a shut off position to prevent constant flow to drain. Depending upon the system pressure and other factors, it is possible to observe a reduced flow to drain during this step. After power is restored, the control valve will return and finish the cycle where it left off prior to the power interruption.
- When used without battery back-up, during a power failure, the unit stops at its current point in the regeneration position and then restarts at that point when the power is restored. The time will be offset by the increment of time the unit was without power so it is necessary to reset the time of day on the unit. No other system will be affected.

WARNING: DO NOT INSTALL THE BATTERY BACKUP UNTIL THE SYSTEM HAS BEEN PROGRAMMED AND START UP IS COMPLETE!

1. Remove the two screws on the back of the valve.

2. Pull out the 9V battery connector, remove the battery cover, and attach the battery to the connector.

3. Push the battery back in the holder on the valve and replace the cover and screws.

What to Expect

The Flexx inFusion 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.

Depending on the contaminants being removed, there may be iron bacteria or sulfur reducing bacteria in the plumbing system prior to the Flexx inFusion install. This bacteria can potentially survive after the Flexx inFusion 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. A well sanitizing kit is included, if necessary.

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 the plumbing system uses a bladder pressure tank, it will be in the system prior to the Flexx inFusion 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.
- **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** - The catalytic carbon 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 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	Replacement Part
Existing Well Pressure Tank	Drain tank until the water runs clear	1 - 6 Months	N/A
Injection Pump Tube	Inspect pump tube and replace as needed	1 - 5 Years	411-EC30F-2
Injection Pump Duck Bill Check Valve	Replace injection check valve as needed	1 - 5 Years	411-UCDBINJ
H2O2 Solution Tank	Periodically check the solution level and refill as needed	Varies by water usage	710-OXYPRO-7
Control Valve	Check the clock and settings periodically or after a power outage	Monthly	N/A
Media Tank	Replace the catalytic carbon media	3 - 5 Years (Dependent on the water usage and contaminant level being treated)	600-USW-CARB-CAT

Warranty

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

TEN YEAR 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 - Carbon Filter 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 or valves damaged due to environmental issues or improper installation are not covered.

TWO YEAR COVERAGE - Stenner Injection System: We warrant that for two (2) years from the date of purchase, we will replace the Stenner Injection System 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.

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.