

**USWater**<sup>™</sup>  
systems.com

# US Water Systems FlexxHD Series Water Softener

080-FXHD-XXX



# Table of Contents

Unpacking and Inspection .....	3
Safety Guide .....	3
Before Starting Installation .....	4
Proper Installation .....	4
Tools, Pipe, Fittings, and Other Materials .....	4
System Overview .....	5
System Dimensions .....	6
Specifications .....	7
How the Water Softener Works .....	9
Where to Install the Softener .....	11
Softener Preparation .....	12
Softener Tank Preparation .....	12
Resin Installation .....	12
Installation Instructions .....	16
System Regeneration .....	23
Normal Operation .....	23
Starting a Regeneration Cycle .....	23
Programming Using Onboard Buttons .....	24
System Start-Up .....	28
About The System .....	29
Maintenance .....	30
Sanitizing Procedure .....	31
Warranty .....	32

## 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

*For your safety, the information in this manual must be followed to minimize the risk of electric shock, property damage or personal injury.*

- Check and comply with provincial / state and local codes. These codes must be followed.
- Use care when handling the system. Do not turn upside down, drop, drag or set on sharp protrusions.
- The water softening 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.
- Keep the salt lid in place on the brine tank unless servicing the unit or refilling with salt.
- **WARNING:** This system is not intended for treating water that is micro biologically unsafe or of unknown quality without adequate disinfection before or after the system. Contact US Water Systems for disinfection treatment equipment.

## Before Starting Installation

### Proper Installation

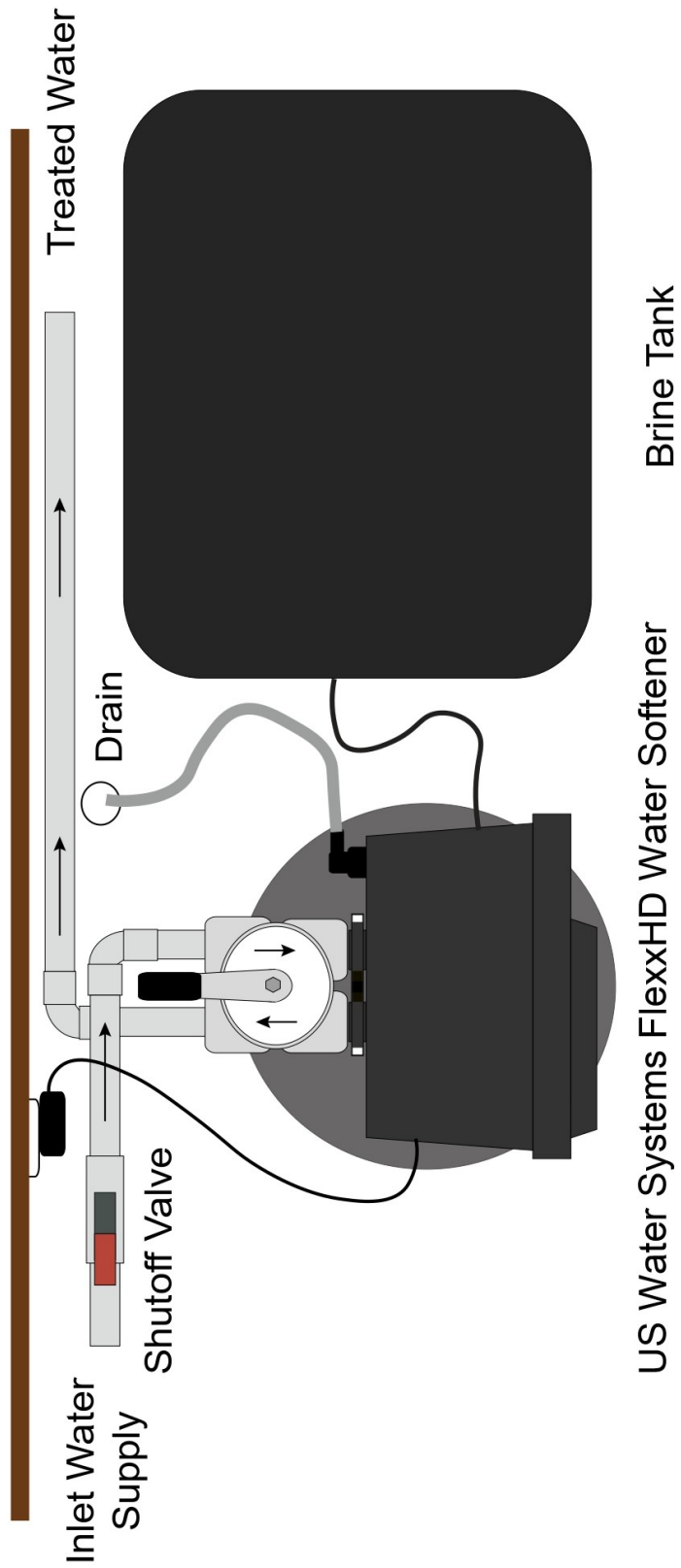
*This water softening system must be properly installed and located in accordance with the Installation Instructions before it is used or the warranty will be void.*

- **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.
- Softener resins may degrade in the presence of chlorine or chloramines above 2 ppm. If the feed water has chlorine or chloramines in excess of this amount, it could reduce the life of the resin. In these conditions, a whole house carbon filter system with a chlorine reducing media is recommended. Contact US Water Systems for chlorine and chloramine removal equipment.
- **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 softener 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.
- A length of 5/8" OD drain line tubing is needed for the brine tank over flow fitting (optional).
- Extra Course Grade or Crystal Solar Salt (99.8% pure) water softener salt is needed to fill the brine tank.

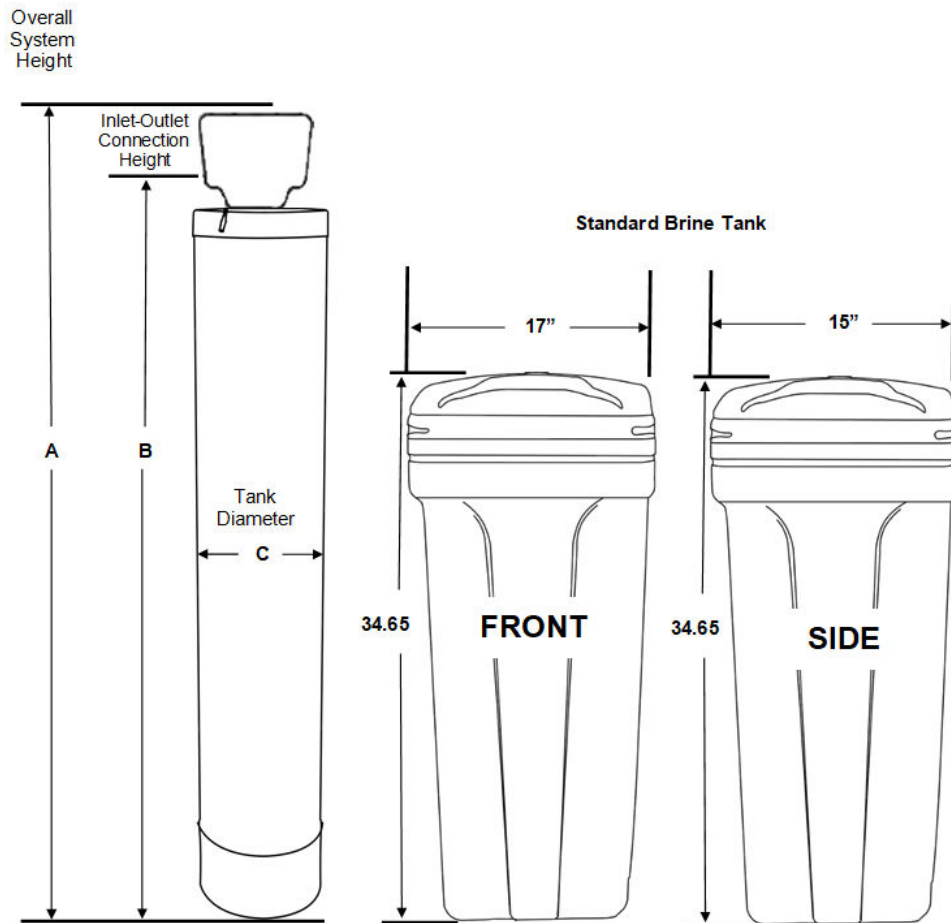
## System Overview



# System Dimensions

Model	Tank Size	A	B	C
FXHD-075	8" x 44"	50.375"	46.375"	8"
FXHD-100	9" x 48"	54.375"	50.875"	9"
FXHD-150	10" x 54"	60.375"	57"	10"
FXHD-200	12" x 52"	58.625"	55.25"	12"

**NOTE:** The 080-FXHD-075 uses an 11"x11"x34" brine tank



## Specifications

Model Number	FXHD-075	FXHD-100	FXHD-150	FXHD-200
Tank Size	8" x 44"	9" x 48"	10" x 54"	12" x 52"
Capacity (cu/ft)	0.75	1	1.5	2
Maximum Capacity*	27,000 Grains	35,000 Grains	53,000 Grains	70,000 Grains
<b>High Efficiency Settings**</b>	<b>11,250 Grains</b>	<b>15,000 Grains</b>	<b>22,500 Grains</b>	<b>30,000 Grains</b>
Salt Setting	2 lbs	3 lbs	4.5 lbs	6 lbs
Water Usage	30 Gallons	33 Gallons	41 Gallons	62 Gallons
Backwash	2 Minutes	2 Minutes	3 Minutes	4 minutes
Brine/Rinse	40 Minutes	40 Minutes	40 Minutes	50 Minutes
Fast Rinse	4 Minutes	4 Minutes	5 Minutes	6 Minutes
Brine Refill	1 Minutes	2 Minutes	3 Minutes	4 Minutes
<b>Optimal Settings</b>	<b>18,000 Grains</b>	<b>24,000 Grains</b>	<b>36,000 Grains</b>	<b>48,000 Grains</b>
Salt Setting	4.5 lbs	6 lbs	9 lbs	12 lbs
Water Usage	51 Gallons	72 Gallons	81 Gallons	104 Gallons
Backwash	8 Minutes	10 Minutes	10 Minutes	10 Minutes
Brine/Rinse	50 Minutes	60 Minutes	60 Minutes	60 Minutes
Fast Rinse	8 Minutes	10 Minutes	10 Minutes	10 Minutes
Brine Refill	3 Minutes	4 Minutes	6 Minutes	8 Minutes
<b>Maximum Settings</b>	<b>24,000 Grains</b>	<b>32,000 Grains</b>	<b>48,000 Grains</b>	<b>64,000 Grains</b>
Salt Setting	11 lbs	15 lbs	23 lbs	30 lbs
Water Usage	53 Gallons	67 Gallons	89 Gallons	120 Gallons
Backwash	8 Minutes	8 Minutes	10 Minutes	10 Minutes
Brine/Rinse	50 Minutes	60 Minutes	70 Minutes	80 Minutes
Fast Rinse	8 Minutes	8 Minutes	9 Minutes	10 Minutes
Brine Refill	7 Minutes	10 Minutes	16 Minutes	20 Minutes
Backwash Flow Control (GPM)	1.5	2.0	2.4	3.5
Brine Flow Control (GPM)	0.5			
Service Flow Rates	7 GPM	10 GPM	15 GPM	20 GPM
Peak Flow Rates	10 GPM	12 GPM	17 GPM	22 GPM
Pressure Drop @ Service Flow	5-7 PSI			
Pressure Drop @ Peak Flow	15-20 PSI			
Water Pressure	20 PSI Min / 100 PSI Max			
Water Temperature	39°F Min / 100°F Max			
Plumbing Connections	3/4" FNPT			
Electrical Requirements	100-240V, 50/60 Hz, 0.3 A / Output 12V, 500mA			
Brine Tank Size	15" x 17" x 36"			
Salt Storage Capacity	275 lbs			

**\* Capacity when new ; \*\* Treating Moderate Hardness only**

- Continuous operation at flow rates greater than the service flow rate may affect capacity and efficiency performance.
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.
- The above capacity and flow rate specifications have not been validated by the WQA.

## How the Water Softener Works

Water hardness is derived from Calcium and Magnesium minerals that have been dissolved into the water under the earth's surface. These minerals are found in limestone deposits and are the source of hard water. The amount of hardness in a given water supply is dependent upon the quantity of Calcium and Magnesium present and the length of time water has been in contact with them. This can vary dramatically from source to source and, for this reason, a water analysis is imperative in order to determine the proper treatment method. The degree of hardness increases as the concentration of Calcium and Magnesium "ions" increases and is measured in **Grains Per Gallon (gpg)**.

The problem of hard water in the home/business comes to light in many facets of daily use. Water spots and scum left behind on bathtubs, fixtures, and showers; wear and tear on appliances; calcium build-up in hot water heaters and piping; and, greater amounts of soap and detergents being used are just a few examples.

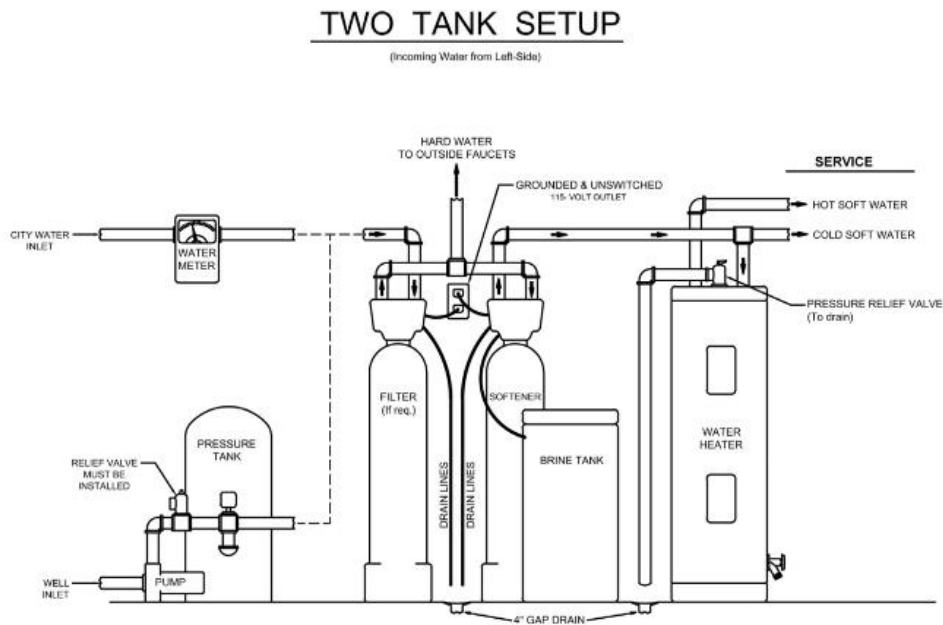
The modern water softener is designed to reduce hardness ions and their unpleasant side effects. Special resin beads in the softener mineral tank are used to change hard water into soft water. The surfaces of these beads are covered with sodium ions. As hard water enters the mineral tank and comes into contact with the resin, an exchange of ions takes place as dissolved Calcium and Magnesium ions cling to the resin surface and sodium ions take their place, thus softening the water. This process is called **Ion Exchange**. Over time, the sodium ions used for the exchange process become depleted and must be replenished.

The water softener provides a Regeneration process whereby brine solution enters the mineral tank, driving-off the collected hardness ions and replenishes the surface of the resin beads with more sodium ions. This process is automatically initiated by the control valve on the mineral tank. The regeneration process has five basic cycles as follows:

1. **Backwash** - The control valve directs the water flow in a reverse direction through the mineral tank, separating the resin beads and flushing any accumulated particles to a waste drain.
2. **Brine & Rinse** - In the first part of this cycle, the control valve directs brine solution downward through the mineral tank, driving-off collected hardness ions and replenishing the resin beads with sodium ions. The second part of the cycle rinses hardness ions and excess brine from the mineral tank to the waste drain.
3. **Rapid Rinse** - The control valve directs the water flow downward, settling and re compacting the resin bed.
4. **Brine Refill** - The control valve directs fresh water into the salt compartment to create new brine solution for the next scheduled regeneration.
5. **Service** - This is the normal “operating” cycle where hard water enters the mineral tank, comes into contact with the resin beads, and exchanges hardness ions for sodium ions - the water then becomes “soft” and ready for use.

## Where to Install the Softener

- Place the softener as close as possible to the pressure tank (well system) or water meter (city water).
- Place the softener as close as possible to a floor drain or other acceptable drain point (laundry tub, sump, standpipe, etc)
- Connect the softener to the main water supply pipe BEFORE the water heater (10' or more). **DO NOT RUN HOT WATER THROUGH THE SOFTENER.** Temperature of water passing through the softener must be less than 100°F.
- **Outside faucets and irrigation systems should be supplied with hard water prior to the water softener.**
- Do not install the softener in a place where it could freeze. **Damage caused by freezing is not covered by the warranty.**
- Put the softener in a place where water damage is least likely to occur if a leak develops. **The manufacturer will not repair or pay for water damage.**
- A 120 volt electric outlet is needed within 6 ft of the softener. The transformer has an attached 6 foot power cable. **Be sure the electrical outlet and transformer are in an inside location so they are protected from wet weather.**
- If installing in an outside location, you must take the steps necessary to ensure the softener, installation plumbing, wiring, etc are protected from the elements and contamination sources.
- **Keep the softener out of direct sunlight.** The sun's heat may soften and distort plastic parts.



## Softener Preparation

### Softener Tank Preparation

**Water Pressure:** A minimum of 20 pounds of water pressure is required for the regeneration 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 resin 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.

### Resin 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 blue funnel provided to pour the media into 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. 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.



## 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 softener tank and brine 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 softener system is equipped with female 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.

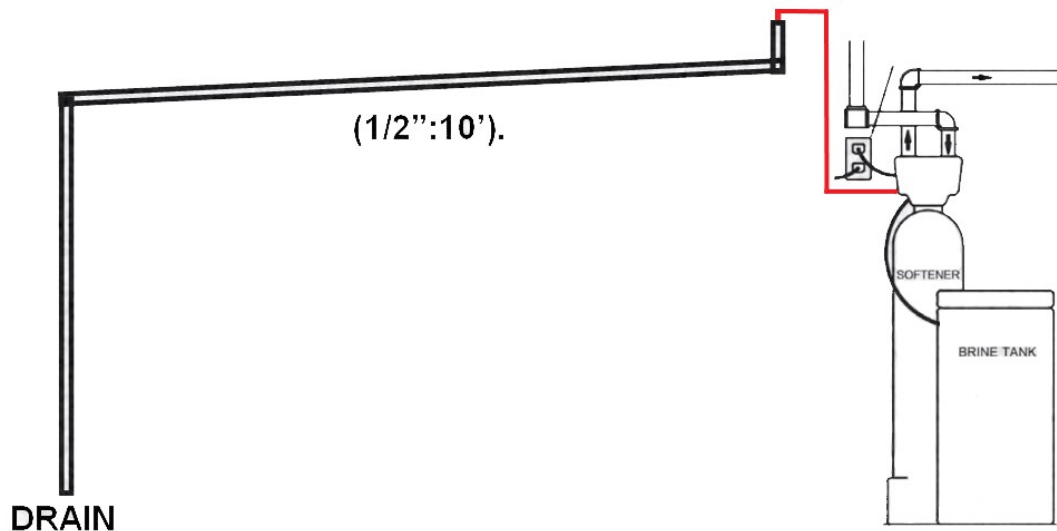


4. Be sure to use Teflon tape or other pipe sealant on the plumbing fitting threads and install them on the bypass accordingly. Use an adjustable wrench to ensure they are tight.

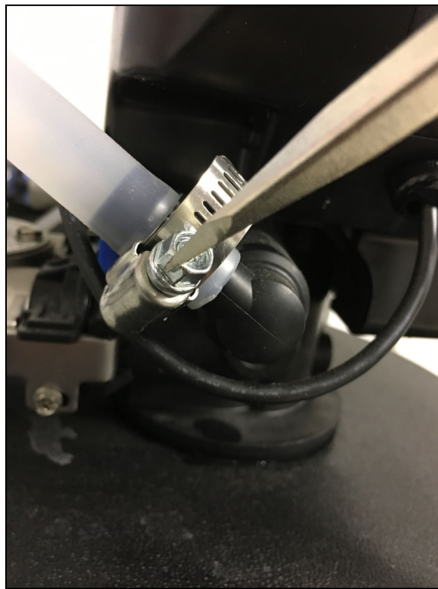


**NOTE: All piping should be secured to prevent stress on the bypass valve and connectors.**

5. 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.

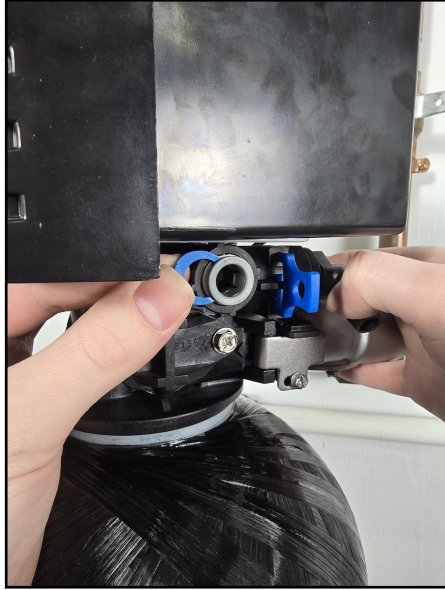


**NOTE: A direct connection into a waste drain is not recommended. A physical air gap of at least 1.5" should be used to avoid bacteria and wastewater traveling back through the drain line into the softener.**

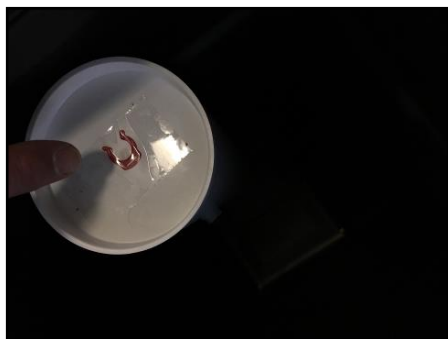


**NOTE: Be sure to secure the drain line. The softener will drain with force and it should be secured to prevent a leak. Hose clamps should be used to secure the drain line at the connection points.**

6. Connect the brine line to the control valve by removing the blue retaining clip from the brine connection on the control valve. Slide the brine line into the brine tubing port until it is fully seated. Lightly tug on the tubing to ensure it is connected properly then reinstall the blue retaining clip. There is a brass stiffener pre-installed in the line.



7. Now connect the brine line to the brine tank safety float assembly. Remove the brine tank lid and the brine well cap. There is a red clip on the cap that will be used to hold the brine line in place. Remove it, and the tape holding it, and put it to the side. Then push the brine line through the brine tank and brine well. REMOVE the brass insert for this connection. Push the brine line into the brine safety valve. Make sure it is completely pushed in. Then install the red locking clip around the brine fitting between the gray collar and the brine elbow. Install the white cap on the tube.



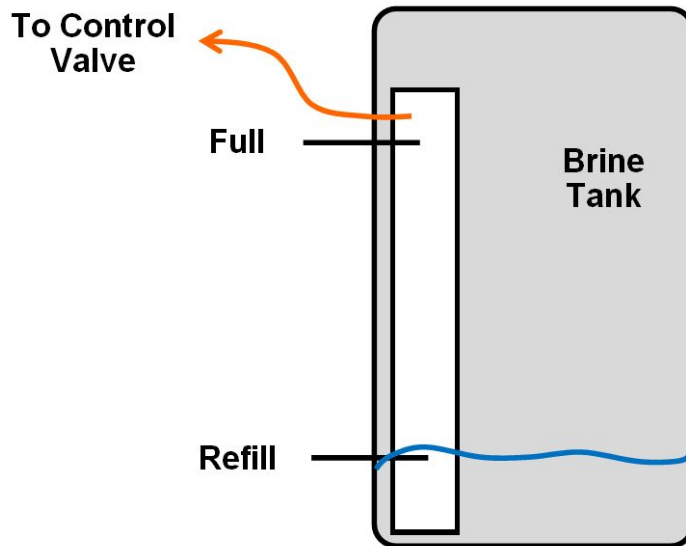
8. Turn the bypass handle so it is perpendicular to the bypass to place the unit in the bypass position. Slowly turn on the main water supply. At the nearest cold treated faucet or spigot, open the faucet and let water run a few minutes or until the system is free of any air or foreign material resulting from the plumbing work. If a faucet is used, make sure the screen is removed first.



9. Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean. Check for leaks again.

10. Open the brine tank lid and add 1-2 gallons of water to the brine tank. Add a minimum of 80 lbs of salt to the brine tank.

**NOTE:** Salt should be filled, used completely and refilled. Salt should not be "topped off" each month. It is better to completely fill the tank with salt (full is 2" below the top of the white safety float tube in the tank) then use the salt until water can be seen on top of the salt. Then refill the salt.



11. Proceed to start up instructions

**NOTE:** The unit is not ready for service until you complete the start up instructions

# System Regeneration

## Normal Operation

**Home Display** - The home display will show the time of day set, gallons left until regeneration, as well as the Regeneration Mode set. The meter will count down to zero and then regenerate at the scheduled time set **if the valve is set to Meter Delayed (TM)**. This is how the valve will come programmed from the factory.

## Starting a Regeneration Cycle

1. To start **Delayed Extra Cycle**
  - If Gallons Remaining Until Next Regeneration does not read ---, press the Regen button. Display will show --- and hours remaining before designated regeneration time.
  - Press the Regen button again to go back to previous gallons remaining.
2. To start **Immediate Extra Cycle**
  - Press and hold the Regen button.
  - After 5 seconds, the regeneration cycle will begin.
3. To **Fast Cycle** thru regeneration, first complete above step.
  - Press the regen button while the display is lit 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 the home display)

Softener Cycles		Default (Min)
Step 1	Backwash	10 (8 for -075 systems)
Step 2	Brine & Rinse	60 (50 for -075 systems)
Step 3	Rapid Rinse	10 (8 minutes for -075 systems)
Step 4	Brine Refill	Size Specific

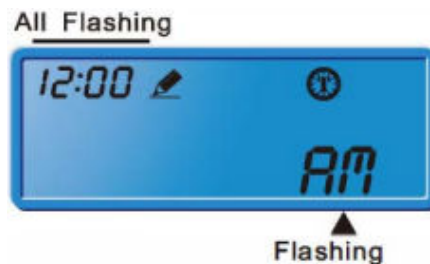
## Programming Using Onboard Buttons

### Programming Time of Day / Hardness / Regeneration Day Override

If the valve screen is not currently lit up, pressing the Menu button once will activate it. Press the Menu button again while the valve screen is lit to access programming steps. All steps are done in sequential order I.E. you can not access the Hardness setting without cycling through Time

1. **Time** - Press the Menu button once and the time of day will start flashing. While time of day is flashing, press the Regen button once to cycle to the hour field. Press the up and down buttons to set the hour and once done, press Menu to save. The minutes field will begin flashing. Press up and down to set the minute field and once done, press menu again to save the time.

**NOTE:** The AM/PM field is set by adjusting the hour field to the appropriate time. It can not be manually adjusted otherwise.



2. **Hardness** - Press the Menu button until HArd displays and is flashing. Press the Regen button and the number value will begin flashing. Set the hardness, in GPG, of the water being treated. This info can be found by performing a water test or by contacting the municipality. If the water hardness is expressed as ppm or mg/L, it should be converted to GPG (grains per gallon). This can be done by dividing the value given in ppm or mg/L by 17.1. This will give GPG. Once the GPG is known, add 5 GPG to the value and input that as the water hardness. After the hardness has been set, press the Menu button to save the setting.



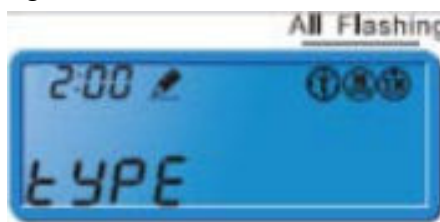
3. **Regeneration Day Override** - Press the Menu button until dAY displays and has a value flashing. Press the Regen button and the final number value will begin flashing. Adjust this parameter to every 14 days. If the system will be down more than two weeks at times, set the unit to 10 days. After the value has been set, press the Menu button to save the setting.



### Advanced Programming Steps

To access the Advanced Programming Steps, make sure the valve screen is lit up and press the Menu and Regen buttons at the same time.

1. **Regeneration Mode** - After entering into Advanced Programming, the screen will display tYPE and have three flashing symbols in the upper right hand corner. To adjust this value, press the Regen button and only one symbol will begin flashing. Press the Up and Down buttons to adjust the flashing symbol to the desired Regeneration Method. Once the desired method is flashing, press the Menu button to save the setting.
  - T - Time Clock Regeneration
  - M - Metered Immediate Regeneration
  - TM - Metered Delayed Regeneration



**NOTE:** The recommended setting for this is TM or Metered Delayed Regeneration. This is the default setting from the factory. If a different regeneration method is desired, please call 1-800-608-8792 and a service technician will ensure it is applicable for the situation.

2. **Regeneration Time** - Press the Menu button until rEGE displays and is flashing. Press the Regen button and the number will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired regeneration time for normal operation is shown. This is typically two hours after everyone in the house is asleep or the business is closed for the day. After the value has been set, press the Menu button to save the setting.



3. **Backwash** - Press the Menu button until BW is displayed in a black box and is flashing. Press the Regen button and the number next to P1 will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired Backwash time (in minutes) is shown. Press the Menu button to save the setting.



**NOTE:** The default value for this out of the factory is 10 minutes (8 minutes for -075 systems) and should be not adjusted without consulting a service technician.

4. **Brine Draw** - Press the Menu button until BD is displayed in a black box and is flashing. Press the Regen button and the number next to P2 will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired Brine Draw time (in minutes) is shown. Press the Menu button to save the setting.



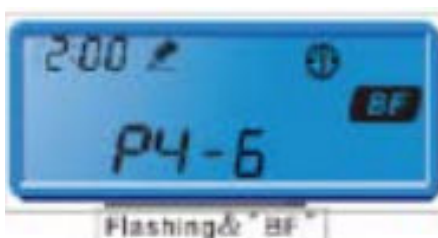
**NOTE:** The default value for this out of the factory is 60 minutes (50 minutes for -075 systems) and should be not adjusted without consulting a service technician.

- Rapid Rinse** - Press the Menu button until RR is displayed in a black box and is flashing. Press the Regen button and the number next to P3 will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired Rapid Rinse time (in minutes) is shown. Press the Menu button to save the setting.



**NOTE:** The default value for this out of the factory is 10 minutes (8 minutes for -075 systems) and should be not adjusted without consulting a service technician.

- Brine Fill** - Press the Menu button until BF is displayed in a black box and is flashing. Press the Regen button and the number next to P4 will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired Brine Fill time (in minutes) is shown. Press the Menu button to save the setting.



This setting is dependent on the system size. See the below table for Brine Fill setting times.

Model	Grains Cap	Brine Fill
080-FXHD-075	18,000	3 mins
080-FXHD-100	24,000	4 mins.
080-FXHD-150	36,000	6 mins.
080-FXHD-200	48,000	8 mins

- Unit Capacity** - Press the Menu button until CAP is displayed and is flashing. Press the Regen button and the number will begin flashing. Adjust the value by pressing the Up and Down buttons until the desired capacity is shown. See the above table for capacity settings. Press the Menu button to save the setting and exit Advanced Programming



## System Start-Up

1. With the bypass handle 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 handle about 1/8th turn. Water should slowly enter the tank.  
**NOTE:** If there is a loud knocking sound, simply turn the bypass handle back a bit 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.
4. Allow the system to backwash and push all the air out through the drain.
5. The valve will automatically move to the Brine Draw cycle when the backwash cycle is complete. Skip this cycle by pressing the Regen button while the display is lit.
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 the Refill cycle. Allow the system to refill for the entire cycle. This will ensure there is no air in the brine line and that it is primed for the system's first regeneration.
8. Once the system has returned to the Service position after the Refill cycle, the system is installed and ready for use. Just make sure to check the salt and don't allow it to run out.  
**NOTE:** If the water is not running clear by the end of the Rapid Rinse cycle, initiate an immediate regeneration again and repeat Steps 4 - 8. Repeat this process for as long as the water is not clear.

## **About The System**

### **Safety Float**

The brine tank is equipped with a safety float which prevents your brine tank from overflowing as a result of a malfunction such as a power failure.

### **New Sounds**

You may notice new sounds as your water softener operates. The regeneration cycle lasts up to 120 minutes. During this time, you may hear water running intermittently to the drain.

### **Automatic Hard Water Bypass During Regeneration**

The regeneration cycle can last 30 to 180 minutes, after which soft water service will be restored. During regeneration, hard water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent hard water from filling the water heater. This is why automatic regeneration is set for sometime during the night and manual regeneration's should be performed when little or no water will be used in the household. Normal regeneration time is 2:00 AM.

### **Manual Bypass**

In the case of emergency, such as an overflowing brine tank, you can isolate your water softener from the water supply using the bypass valve located at the back of the control. In normal operation, the bypass is open with the handle in line with the inlet and outlet pipes.

To isolate the softener, simply rotate the handle counterclockwise until it stops. Water can be used at related fixtures and appliances as the water supply is bypassing the softener. However, the water used will be hard. To resume soft water service, open the bypass valve by rotating the handle clockwise.

## **Maintenance**

### **Adding Salt**

Use only Extra Course Grade or Crystal Solar Salt (99.8% Pure) water softener salt. Check the salt level monthly. It is important to maintain the salt level above the water level. Salt should be filled, used completely, and refilled. Salt should not be “topped off” each month. It is better to completely fill the tank with salt (full is 2” below the top of the white safety float tube in the tank”) then use the salt until water can be seen on top of the salt. Then refill the salt.

### **Salt Bridging**

Humidity or wrong type of salt may create a cavity between the water and the salt. This action, known as “bridging”, prevents the brine solution from being made, leading to the water supply being hard.

If salt bridging is suspected, carefully pound on the outside of the brine tank or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the brine tank. Allow two hours to produce a brine solution, then manually regenerate the softener.

### **Running Out of Salt**

In the event that the system runs out of salt, refill the system with salt and remove the lid on the white brine safety tube in the salt tank. Then pour 5 gallons of warm water in the white brine safety tube and put the lid back in place. Allow the water to sit in the tank for about 4 hours. Then manually regenerate the system. Once the system is done regenerating, repeat the process allowing 4 hours between manual regenerations. This will bring the resin back to full charge and ready to work automatically again.

## Sanitizing Procedure

Care is taken at the factory to keep your water softener clean and sanitary. Materials used to make the softener will not infect or contaminate your water supply and will not cause bacteria to form or grow. However, during shipping, storage, installing and operating, bacteria could get into the softener. For this reason, sanitizing as follows is suggested when installing.

### Sani-System Liquid Sanitizer Concentrate



*Item# 710-SS-96WS—Softener Sanitizer 0.25 fl.oz*

**Be sure to complete all installation steps including programming.**

1. For effective and complete sanitization, Sani-System Liquid Sanitizer Concentrate is recommended. Pour one 0.25 fl. Oz. package into the brine well located in the cabinet or brine tank.
2. Start an immediate regeneration.
3. The Softener Sanitizer Solution is drawn into and through the water softener to sanitize it. This sanitizing regeneration is over in about two hours. Then, **soft water** is available for your use.

**NOTE:** Sanitizing is recommended by the Water Quality Association for disinfecting. On some water supplies, they suggest periodic sanitizing.

## Warranty

### LIMITED WARRANTY

US Water Systems, Inc. (“US Water Systems”) warrants that your new water treatment system is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble-free service. TO PLACE THIS EQUIPMENT UNDER WARRANTY, THE WARRANTY REGISTRATION MUST BE COMPLETED AND RETURNED BY THE ORIGINAL OWNER TO US WATER SYSTEMS, INC. WITHIN 30 DAYS OF INSTALLATION.

Coverage - This limited warranty covers the FlexxHD Water Softener (the “System” hereafter) delivered to the original owner when the appliance is purchased for personal, family, or household use. It is intended to cover defects occurring in workmanship or materials or both. US Water Systems warrants that upon receipt from the owner of any Media Tank, Brine Tank, or Main Control Valve incorporated into the System found to be defective in material or workmanship, US Water Systems will repair or replace the defective item, at no charge for that item, under the procedures and limitations outlined below.

Five Year System Parts Warranty - US Water Systems will replace any valve, electronics or miscellaneous part of the System, to any original purchaser of the System in possession of the System, which fails within five (5) years from date of purchase, as indicated by the serial number, provided the failure is due to a defect in material or workmanship. THE DURATION OF THE IMPLIED WARRANTIES OF FITNESS OR

MERCHANTABILITY AS THEY APPLY TO THE PARTS OF THE SYSTEM COVERED BY THIS PARAGRAPH OF THE LIMITED WARRANTY ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTY SET FORTH IN THIS PARAGRAPH.

5 Year Warranty on Media Tank and Brine Tank - US Water Systems will replace the mineral tank or brine tank of the System, to any original purchaser of the System in possession of the System, which fails if the System was at all times operated in accordance with specifications set forth in the System’s handbook and not subject to freezing and other general limitations about the System. THE DURATION OF THE IMPLIED WARRANTIES OF FITNESS OR MERCHANTABILITY AS THEY APPLY TO THE PARTS OF THE SYSTEM COVERED BY THIS PARAGRAPH OF THE LIMITED WARRANTY ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTY SET FORTH IN THIS PARAGRAPH.

General Provisions - US Water Systems assumes no responsibility for subsequent or consequential damage, labor or expense incurred as a result of a defect or for failure to meet the terms of this limited warranty because of circumstances beyond its control. Installation workmanship failure is not covered under this limited warranty. Damage caused by environmental conditions such as, fire, freezing, accidents, unreasonable use, abuse, neglect, lightning strikes, humidity or heat is not covered under this limited warranty. It is the responsibility of the customer to pay any and all shipping charges for the return or replacement of

any part covered under this limited warranty. In the event the water supply being processed through the System contains sand, bacterial iron, algae, sulfur, tannins, organic matter, high levels of chlorine or chloramine, methane, or other unusual substances, then unless the owner's manual or appliance specifications for the System provides that the System is capable of handling these substances, other special treatment of the water supply must be used to remove these substances before they enter the System. Otherwise, US Water Systems shall have no obligations under this limited warranty. This limited warranty does not cover damage to a part or parts of the System resulting from improper installation. All plumbing and electrical connections should be made in accordance with all local codes and the installation instructions provided with the System. The limited warranty does not cover damage resulting from use with inadequate or defective plumbing; inadequate or defective water supply or high or low pressure; inadequate or defective house wiring; improper voltage, electrical service, or electrical connections; or violation of applicable building, plumbing, or electrical codes, laws, ordinances, or regulations.

US Water Systems does not authorize any person to assume for us any other obliga-

tion on the sale of this water system. No responsibility is assumed for delays or failure to meet this limited warranty 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 (800-608-8792). THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ANY IMPLIED WARRANTIES OF FITNESS OR MERCHANTABILITY ARE LIMITED TO THE TERMS OF THIS LIMITED WARRANTY, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THOSE HEREIN. US WATER SYSTEMS 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 limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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