

USWater[™]
systems.com

Matrixx Drop Smart WiFi Controlled Water Softener

080-MXD-XXX-34 | 080-MXD-XXX-10



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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 and salt sensor works on 12 volt-60 Hz electrical power only. Be sure to use only the included transformers.
- Transformers 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

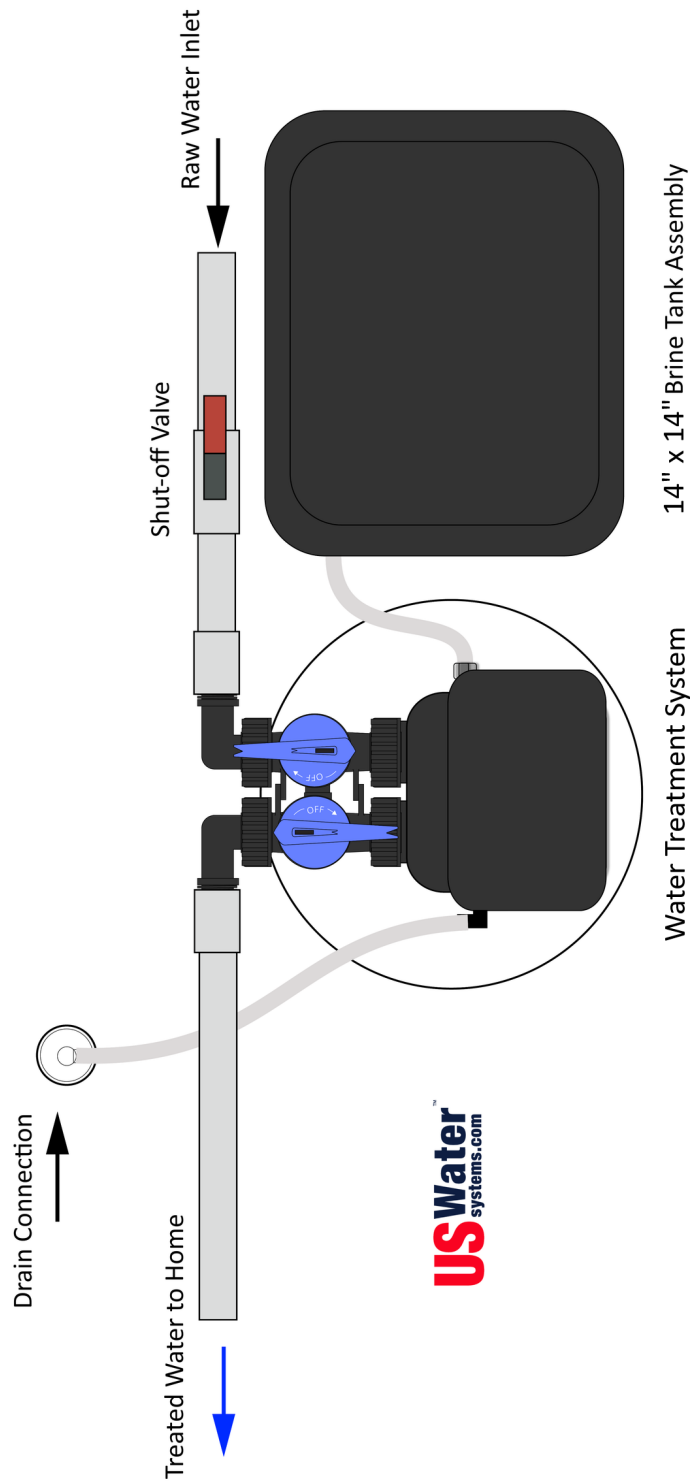
This water softening system must be properly installed and located in accordance with the Installation Instructions before it is used or the warranty will be void.

- **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

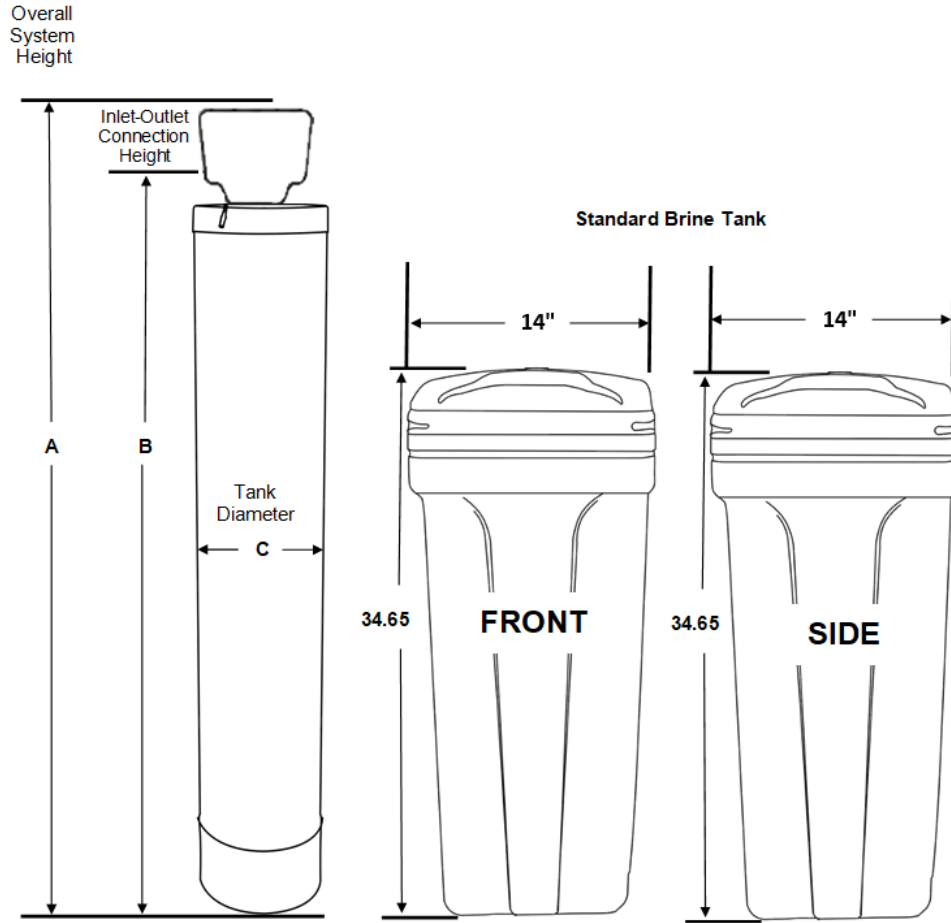
- Channel Locks
- Screwdriver
- Teflon Tape
- Razor Knife
- Two adjustable wrenches
- Additional tools may be required if modification to home plumbing is required.
- To maintain full valve flow, be sure the plumbing size matches the size of the valve. The outlet pipe should be the same size or larger 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
MXD-100	9" x 48"	54.375"	50.875"	9"
MXD-150	10" x 54"	60.375"	57"	10"
MXD-200	12" x 52"	58.625"	55.25"	12"



Specifications

Model Number	MXD-100	MXD-150	MXD-200
Tank Size	9" x 48"	10" x 54"	12" x 52"
Capacity (cu/ft)	1	1.5	2
Maximum Capacity*	35,000 Grains	53,000 Grains	70,000 Grains
High Efficiency Settings**	15,000 Grains	22,500 Grains	30,000 Grains
Salt Setting	3 lbs	4.5 lbs	6 lbs
Water Usage	33 Gallons	41 Gallons	62 Gallons
Backwash	2 Minutes	3 Minutes	4 minutes
Brine/Rinse	40 Minutes	40 Minutes	50 Minutes
Fast Rinse	4 Minutes	5 Minutes	6 Minutes
Brine Refill	2 Minutes	3 Minutes	4 Minutes
Optimal Settings	24,000 Grains	36,000 Grains	48,000 Grains
Salt Setting	6 lbs	9 lbs	12 lbs
Water Usage	72 Gallons	81 Gallons	104 Gallons
Backwash	10 Minutes	10 Minutes	10 Minutes
Brine/Rinse	60 Minutes	60 Minutes	60 Minutes
Fast Rinse	10 Minutes	10 Minutes	10 Minutes
Brine Refill	4 Minutes	6 Minutes	8 Minutes
Maximum Settings	32,000 Grains	48,000 Grains	64,000 Grains
Salt Setting	15 lbs	23 lbs	30 lbs
Water Usage	67 Gallons	89 Gallons	120 Gallons
Backwash	8 Minutes	10 Minutes	10 Minutes
Brine/Rinse	60 Minutes	70 Minutes	80 Minutes
Fast Rinse	8 Minutes	9 Minutes	10 Minutes
Brine Refill	10 Minutes	16 Minutes	20 Minutes
Backwash Flow Control (GPM)	2.0	2.4	3.5
Brine Flow Control (GPM)	0.5		
Service Flow Rates	10 GPM	15 GPM	20 GPM
Peak Flow Rates	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	1" or 3/4" MPT		
Electrical Requirements	100-240V, 50/60 Hz, 0.3 A / Output 12V, 500mA		
Brine Tank Size	14" 14" x 36"		
Salt Storage Capacity	220 lbs		

- 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:

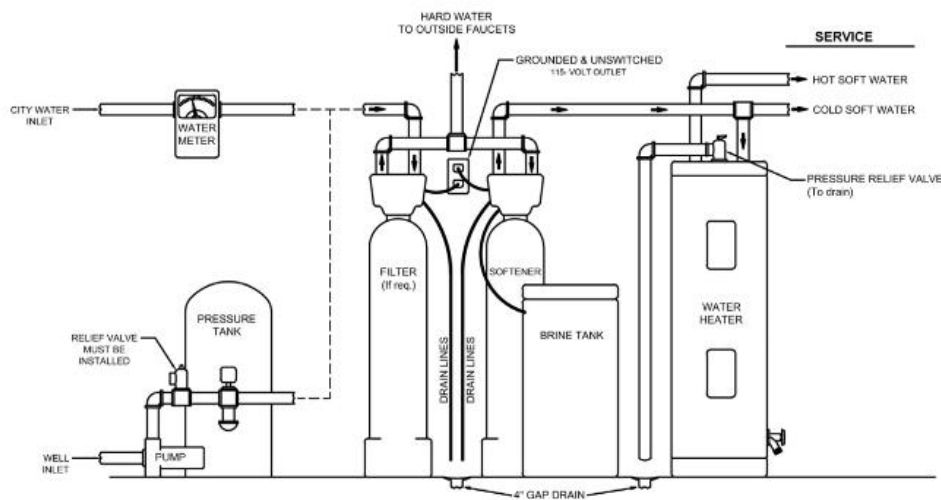
1. **Backwash** - The control valve directs the water flow in a reverse direction through the mineral tank, separating the resin beads and flushing any accumulated particles to a waste drain.
2. **Brine & Rinse** - In the first part of this cycle, the control valve directs brine solution downward through 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 and brine tank. 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.

TWO TANK SETUP

(Incoming Water from Left-Side)



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.

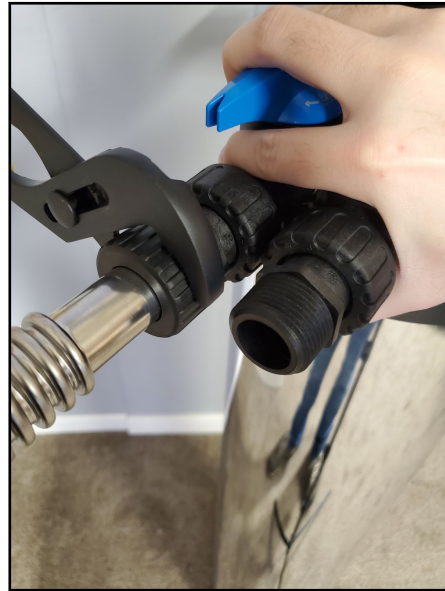
The softener system is equipped with male pipe threaded ports on the control valve bypass. The bypass is marked with arrows to show proper flow direction. The arrow pointing toward the valve indicates the inlet. The arrow pointing away from the valve is the outlet.



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.



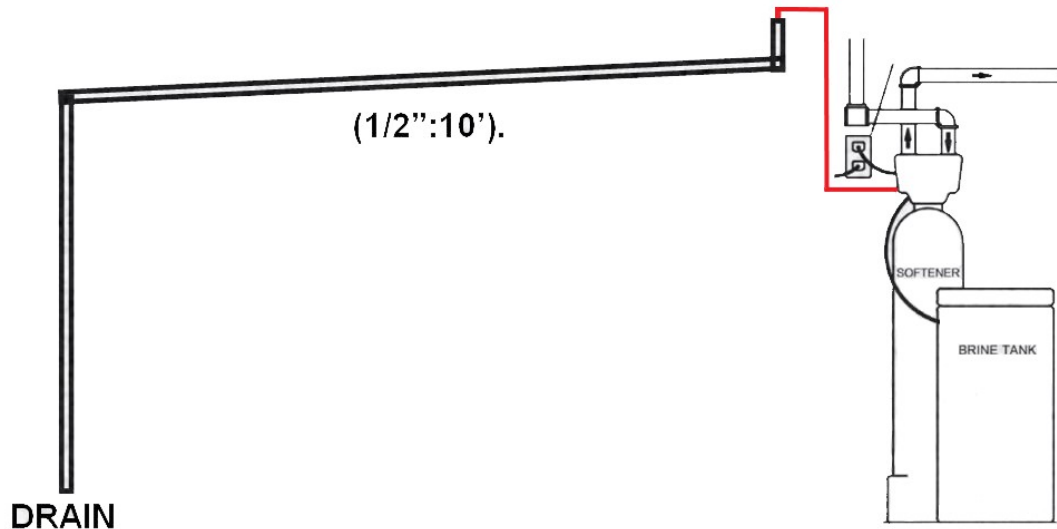
5. Be sure to use Teflon tape or other pipe sealant on the plumbing fitting threads and install them on the bypass accordingly. Use an adjustable wrench to ensure they are tight.



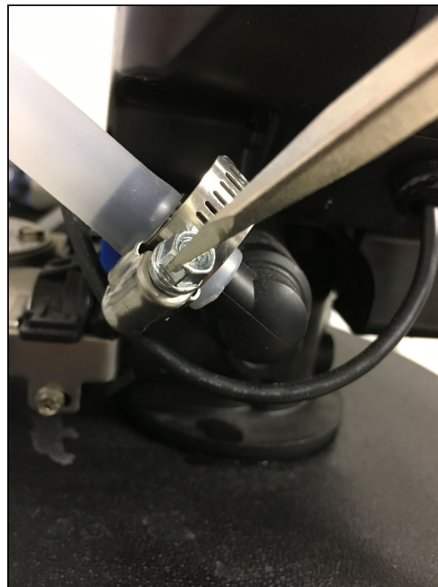
NOTE: All piping should be secured to prevent stress on the bypass valve and connectors.

NOTE: Connections above are made using a stainless steel flex connector with a rubber gasket and do not require Teflon tape.

6. 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.



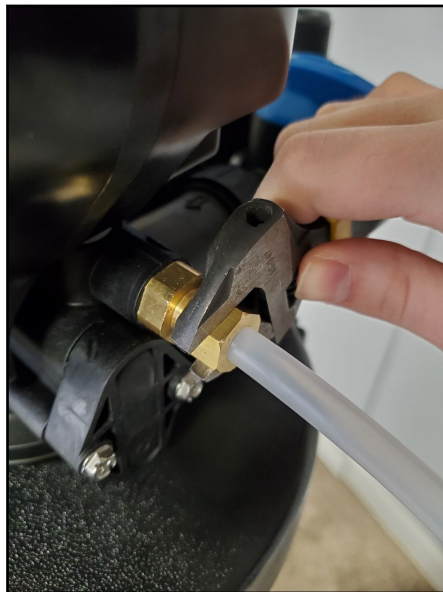
NOTE: Be sure to secure the drain line. The softener will drain with force and it should be secured to prevent a leak. Hose clamps should be used to secure the drain line at the connection points.

7. Connect the brine line to the control valve by removing the nut and sleeve from the control valve. Slide the nut and sleeve over the brine line. There is a brass stiffener pre-installed in the line.

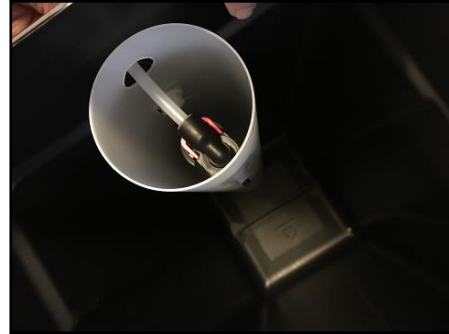


8. Push the brine line in the control valve until it stops. Then push the nut down on the fitting and tighten it hand tight. Use an adjustable wrench to tighten the nut an additional 1/2 turn.

CAUTION: Use two wrenches to tighten the brass nut. The brass fitting must be held while tightening the brass nut. If not, damage may occur to the valve body.



9. Now connect the brine line to the brine tank safety float assembly. Remove the brine tank lid and the salt sensor sitting on the brine well. Then proceed to remove 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.



10. Reinstall the salt sensor by sitting it on top of the brine well while ensuring the paddle is facing towards the middle of the tank. Remove the rubber band at the top of the sensor. Proceed to running the power cable through the pre-drilled hole in the brine tank.



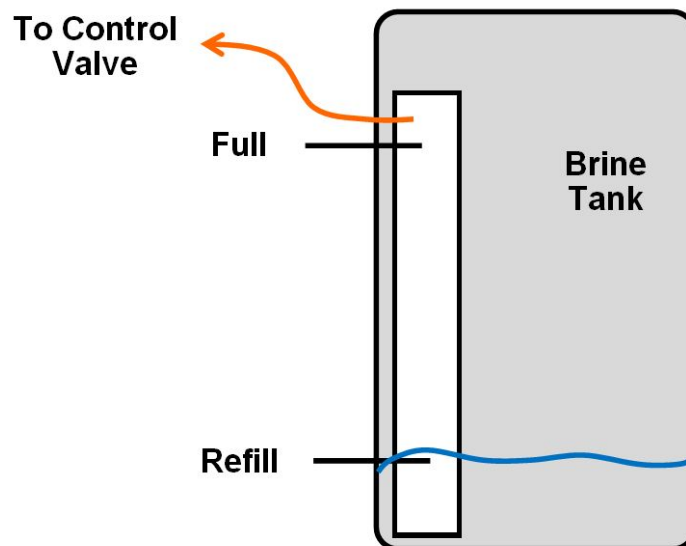
11. Proceed to add the salt sensor to the DROP system. Refer to the included DROP System manual if needed.

- Turn both bypass handles so they are 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.



- Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean. Check for leaks again.
- 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. Ensure the salt sensor paddle is flush with the base. Once the tank is filled, replace the rubber band on top of the salt sensor.

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



- Proceed to start up instructions

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

Valve Operation

Valve Overview

All DROP treatment valves use the same DROP valve control board. They are used to control the various DROP water treatment valves. All DROP treatment valves have one or more motors, have a water meter to monitor flow of treated water and have four lights used to communicate general status of the unit. During normal use, the DROP valves direct water through the treatment media. This normal flow state is referred to as the service position. All DROP treatment valves have the capability to shut off water to the house and to bypass water around the treatment tank.

Valve Settings

ATTENTION! Softener systems come paired with the hub from the factory. The softener valve is programmed as well, but hardness and reserve capacity will need reviewed based on the parameters of the install location.

System Settings

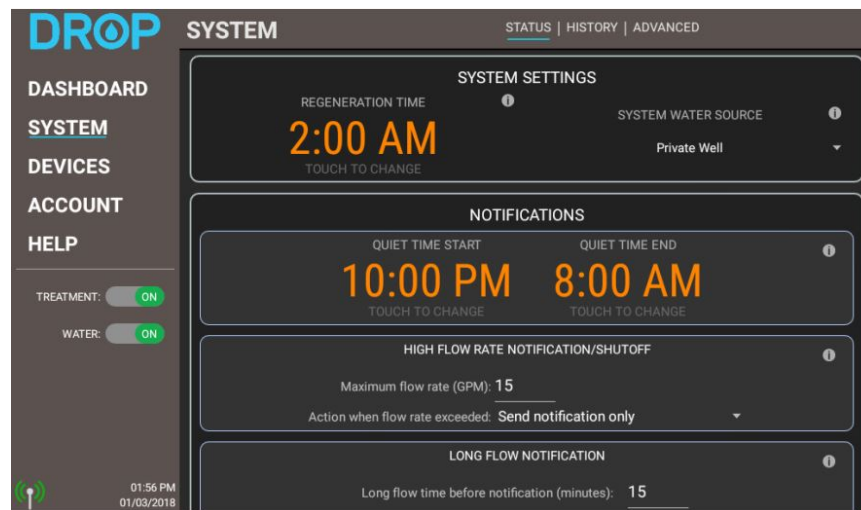
The first settings that need to be reviewed are in the System settings. Choose “System” on the left navigation menu and then “Settings” at the top of the page. The items in the “System Settings” section need to be reviewed; these are Regeneration Time and System Water Source.

Regeneration Time

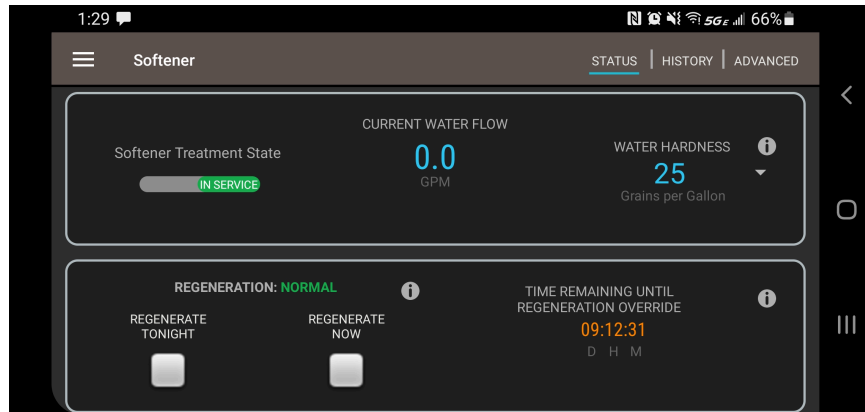
The Regeneration Time applies to valve devices that contain treatment media that requires regeneration and/or backwashing. This includes softeners and all various forms of backwashing filters. This setting controls the time of day when the system will begin to regenerate those devices. While a device is in its regeneration cycles, any water used in the house or system will not be treated. Therefore, it is important to choose a time of day where water use is least likely. Some DROP installations will require multiple stages of treatment (for example, a backwashing filter and a softener may be installed). These stages can require regeneration on the same day and would occur one after the other starting at the regeneration time. You should select a regeneration start time that would take these times into consideration along with your water usage schedule.

System Water Source

The system water source setting is used by the DROP system to know how to respond to power outages. It can be set to Private Well or Municipal Supply. If the water supply is not one of these choices and is dependent on power to be available (i.e. it is supplied by an electric pump) set it to Private Well, Otherwise, set it to Municipal Supply.



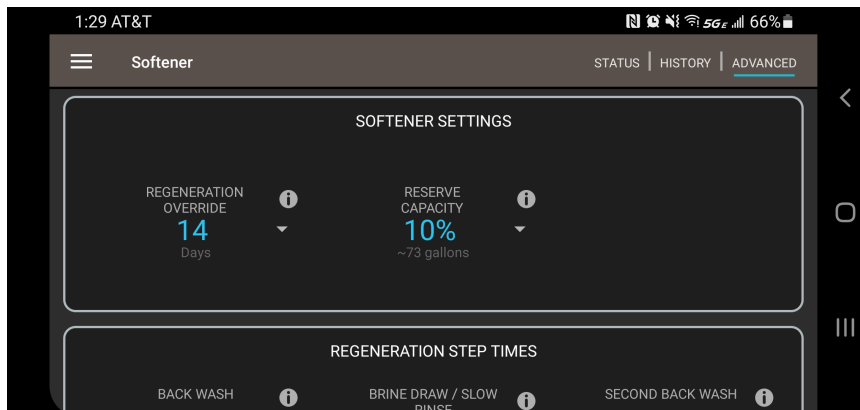
Valve Programming



To begin programming the valve itself, navigate to Devices and select the softener to be programmed. On the main Status screen, tap on the "Water Hardness" box and input the water hardness 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.

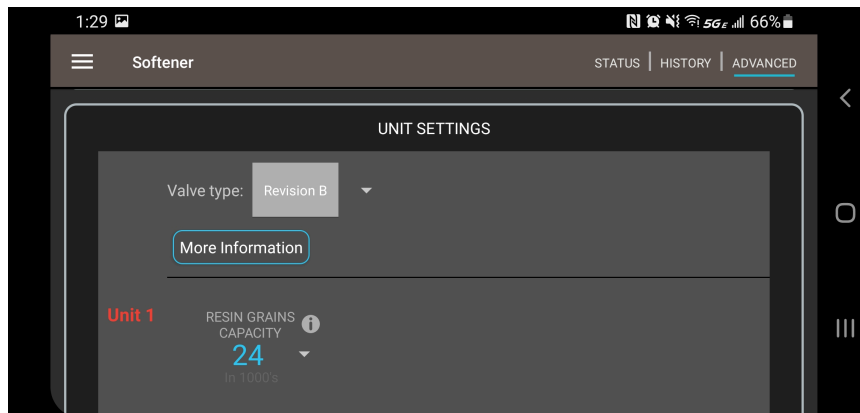
While the device is selected, select the Advanced option in the top right of the app. The following values will need to be adjusted.

1. **Regeneration Override:** 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.
2. **Reserve Capacity:** Adjust the reserve capacity to 10% for 1 - 3 people in the home. Set to 25% for 4+ people in the home.

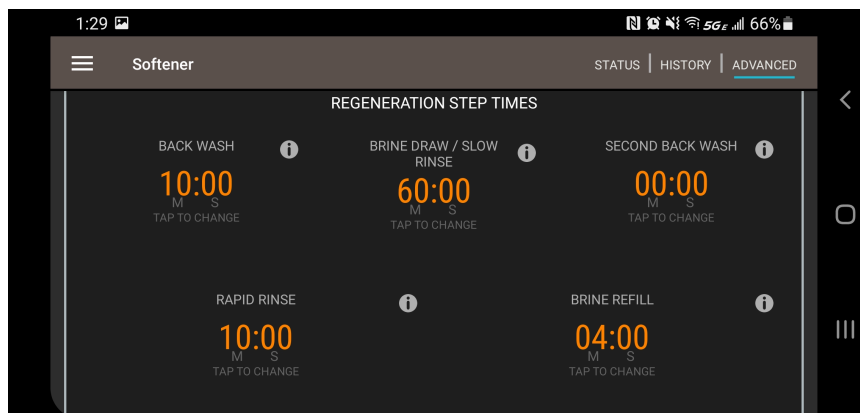


3. **Resin Grains Capacity:** Adjust this as follows:

Model	Grains Cap	Brine Fill
080-MXD-100	24,000	4 Mins.
080-MXD-150	36,000	6 Mins.
080-MXD-200	48,000	8 Mins.



4. **Backwash:** This should be set to "10" mins and should not be changed.
5. **Brine Draw/Slow Rinse:** This should be set to "60" mins and should not be changed.
6. **Second Backwash:** This should be set to "0" mins and should not be changed.
7. **Rapid Rinse:** This should be set to "10" mins and should not be changed.
8. **Brine Refill:** See table above for proper brine refill mins.



*If High Efficiency or Maximum settings are needed, please call 1-800-390-5936 and a service technician will ensure they are applicable for the situation.

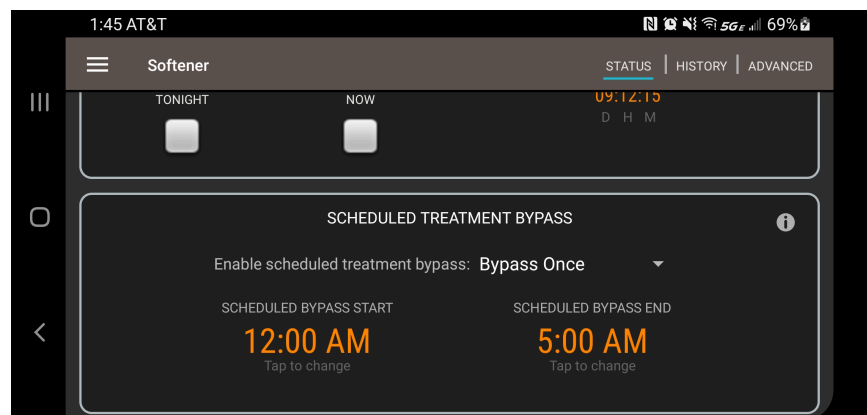
The following settings should not be modified without consulting a service technician:

- **Brine Tank Fill** - Determines when to create the brine solution needed for the regeneration process. This setting can be set to before or after regeneration. If set to before, a designated time before regeneration will need to be set to allow enough time to create the brine solution

NOTE: It is not recommended to set this to before regen. The factory default is set to "After Regen" and should be left as such unless a service technician is consulted.

- **Valve Type** - In order for the valve to meter water accurately, this setting must match the valve body revision in use. The factory default is Revision B and this is the valve type in use by US Water Systems. To verify, the "More Information" button can be pressed and a visual will appear on screen to guide the user through identifying the valve.

An additional value can be found on the main "Status" screen of the system as well. The "Scheduled Treatment Bypass" option allows the user to bypass the system at a designated time. This can be set to "Bypass Once" or "Bypass Every Day". Once an option is chosen, the user can designate the time range at which point the valve will automatically move to the bypass position.



NOTE: If "Bypass Once" is chosen, the schedule will automatically be disabled after one use.

DROP Lights - Normal Operation

The softener and / or filter will normally be in the service position. This is the normal position that treats the incoming water supply. The different treatment valve types have different colors when they are in their service position, so they can easily be identified by the color of their lights.



While observing the device, there will be periodic purple flashes on the back lights. These indicate that it is wirelessly communicating to the Hub during that time. Also, when the water meter on the unit senses water flow, the front lights on the device will alternate. The rate of alternation of the lights will give a general idea of the current flow rate. The highest frequency of the lights alternating is determined based on the highest flow seen by the system.

The lights will change color when the device or devices are put into Bypass mode or Water Off. If the water is off, the lights on the valves will be orange. The water can be turned back on using the app or by shortly pressing the button on the Hub. If one of the valves is bypassed, its lights will be bright yellow.

DROP Lights - During Regeneration

When a treatment valve is in regeneration, the lights will change color for each step in the regeneration process. While the valve is sitting in a step of the regeneration process, the lights will be slowly fading from side to side. If the valve is moving to a position, the light will rotate according to the direction of the motor movement to get to that position.

Softener

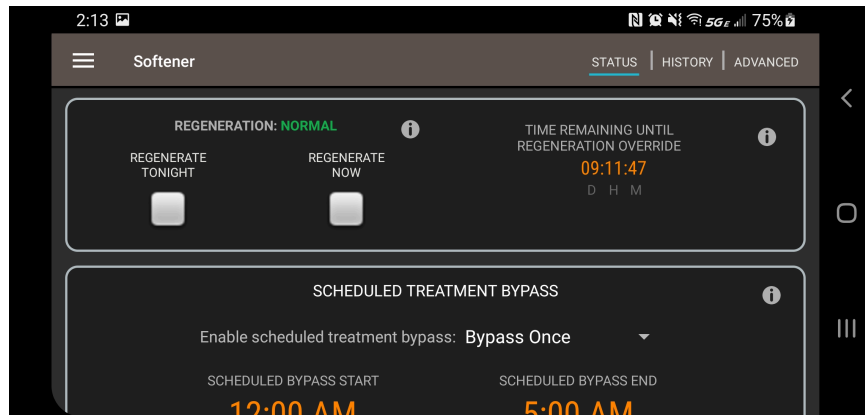
Position	Color
Backwash	Purple
Brine Draw	Light Pink
Rapid Rinse	Light Blue
Brine Fill	Spring Green

Backwashing Filter

Position	Color
Backwash	Purple
Rest	Light Yellow
Rapid Rinse	Light Blue

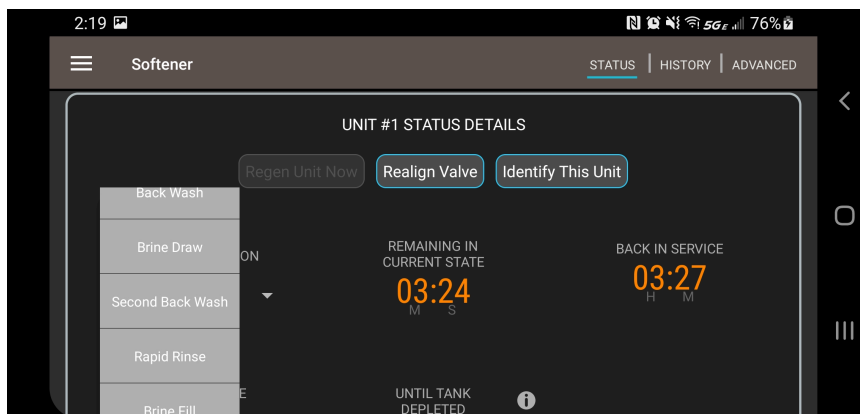
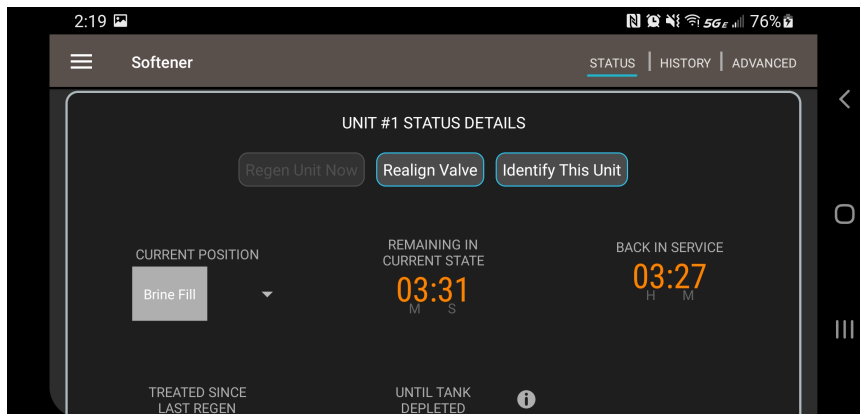
System Regeneration

Starting a Regeneration Cycle



1. To Start **Delayed Extra Cycle**
 - Go to the Navigation menu in the DROP app and select the Devices tab. From there, select the system to be regenerated.
 - Select the checkbox with "Regenerate Tonight" above it. Regeneration cycle will initiate at the next designated regeneration time.
2. To start **Immediate Extra Cycle**
 - Go to the Navigation menu in the DROP app and select the Devices tab. From there, select the system to be regenerated.
 - Select the checkbox with "Regenerate Now" above it. Regeneration cycle will initiate immediately.

3. To **Fast Cycle** thru regeneration, complete step 2 and do the following
- Move up to the "Status Details" portion of the screen and select the "Current Position" drop down selection. Choose a step in the regeneration process to immediately move to that step.



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 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 selecting the "Rapid Rinse" option from the "Current Position" drop down menu in the DROP 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.
NOTE: If the water is not running clear by the end of the Rapid Rinse cycle, select the "Back Wash" option from the "Current Position" drop down menu in the DROP app and allow the system to backwash and rinse fully. Repeat till water running to drain is clear by the end of Rapid Rinse.
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.

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 handles in line with the inlet and outlet pipes.

To isolate the softener, 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 softener. However, the water used will be hard. To resume soft water service, open the bypass valve by rotating the handles counter 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.

Resin Cleaning

Included with your US Water Systems softener is 1 - 16oz bottle of ResKleen Resin Cleaner. This does not need to be added at the time of install but every month thereafter for city water and every 2 weeks thereafter for well water. This is a specially formulated water softener cleaner that is NSF Certified as safe. It protects your investment and helps your water softener to operate more efficiently and longer. On city water, pour a bottle in the brine well every month. On well water, pour a bottle every two weeks. If water quality is subpar, you can add more often to maintain optimum efficiency.

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

MATRIX WATER SOFTENER 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 Matrixx 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, Main Control Valve incorporated into the System, or polystyrene resin used as part of 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.

Ten 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 ten (10) 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.

Lifetime Warranty on Resin, Media Tank and Brine Tank - US Water Systems will replace the resin, 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 obligation 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.