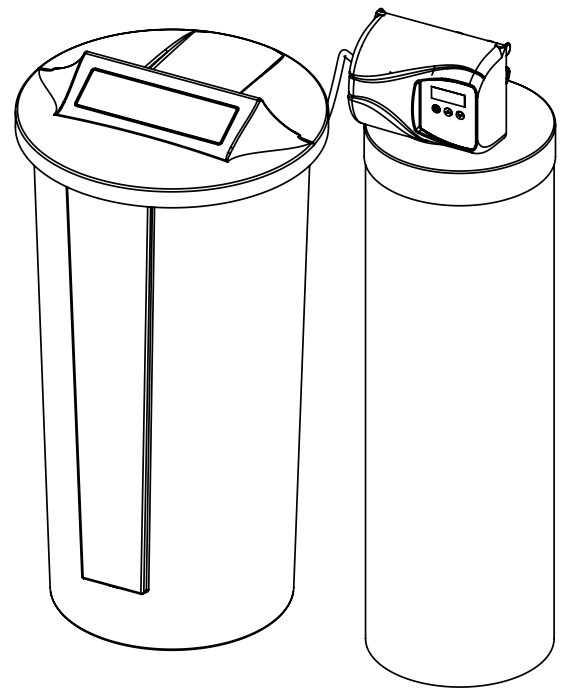
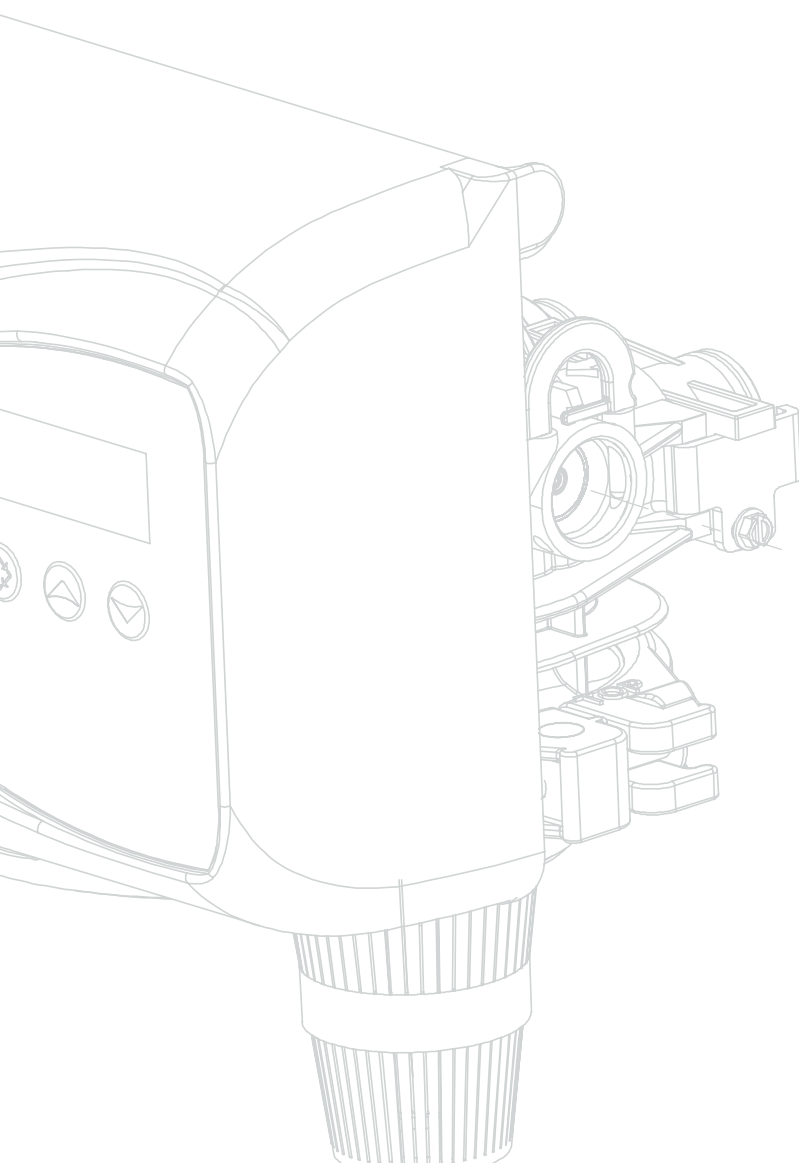


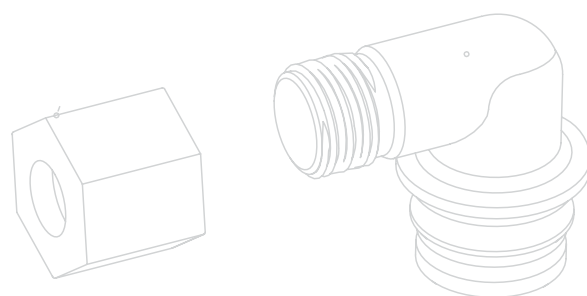
**6200 SXT Iron Guard and Iron Guard Plus
Automatic Meter Initiated Iron Softener**



REMINDER: HAVE YOU ALSO PURCHASED WITH YOUR IRON GUARD OR IRON GUARD PLUS SOFTENER THE FOLLOWING ITEMS?

1. ITEM # 33010 RES-UP FEEDER
2. ITEM # 45148 PRO-RESCARE SOLUTION, 1 QUART OR ITEM # 45147 PRO-RESCARE SOLUTION, 1 GALLON

THESE ITEMS ARE CRITICAL TO THE PERFORMANCE OF THE SOFTENER FOR ITS INTENDED APPLICATION.



Introduction

Read this Manual First

- Read this manual thoroughly to become familiar with the device and its capabilities before installing or operating your Water Softener. Failure to follow instructions in this manual could result in personal injury or property damage. This manual will also help you to get the most out of your softener.
- This system and its installation must comply with state and local regulations. Check with your local public works department for plumbing and sanitation codes. In the event the codes conflict with any content in this manual the local codes should be followed. For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system.
- This water softener is designed to operate on pressures of 20 psig 125 psig. If the water pressure is higher than the maximum use a pressure reducing valve in the water supply line to the softener.
- This unit is capable of operating at temperatures between 40°F and 110°F (4°C - 43°C). Do not use this water softener on hot water supplies.
- Do not install this unit where it may be exposed to wet weather, direct sunlight, or temperatures outside of the range specified above.
- Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication. WaterGroup reserves the right to change the specifications referred to in this literature at any time, without prior notice.

Safety Messages

Watch for the following safety messages in this manual:

NOTE: used to emphasize installation, operation or maintenance information which is important but does not present a hazard.

Example: NOTE: Check and comply with you state and local codes. You must follow these guidelines.

CAUTION: used when failure to follow directions could result in damage to equipment or property.

Example:



CAUTION! Disassembly while under pressure can result in flooding.

WARNING: used to indicate a hazard which could cause injury or death if ignored.

Example:



WARNING! ELECTRICAL SHOCK HAZARD! UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS

NOTE: Do not remove or destroy the serial number. It must be referenced on request for warranty repair or replacement

Iron in your Water

Iron is a common water problem. The chemical/physical nature of iron found in natural water supplies is exhibited in four general types:

1. **Dissolved Iron**—Also called ferrous or “clear water” iron. This type of iron can be removed from the water by the same ion exchange principle that removes the hardness elements, calcium and magnesium. Dissolved iron is soluble in water and is detected by taking a sample of the water to be treated in a clear glass. The water in the glass is initially clear, but on standing exposed to the air, it may gradually turn cloudy or colored as it oxidizes.
2. **Particulate Iron**—Also called ferric or colloidal iron. This type of iron is an undissolved particle of iron. A softener will remove larger particles, but they may not be washed out in regeneration effectively and will eventually foul the ion exchange resin. A filtering treatment will be required to remove this type of iron.
3. **Organic Bound Iron**—This type of iron is strongly attached to an organic compound in the water. The ion exchange process alone cannot break this attachment and the softener will not remove this type of iron.
4. **Bacterial Iron**—This type of iron is protected inside a bacteria cell. Like the organic bound iron, it is not removed by a water softener.

When using a softener to remove both hardness and dissolved iron it is important that it regenerates more frequently than ordinarily would be calculated for hardness removal alone. Although many factors and formulas have been used to determine this frequency, it is recommended that the softener be regenerated when it has reached 50–75% of the calculated hardness alone capacity. This will minimize the potential for bed fouling.

If you are operating a water softener on clear water iron, regular resin bed cleaning is needed to keep the bed from coating with iron. Even when operating a softener on water with less than the maximum of dissolved iron, regular cleanings should be performed. Clean every six months or more often if iron appears in your conditioned water supply. Use resin bed cleaning compounds carefully following the directions on the container.



CAUTION! Do not use where the water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit.

Performance Data Sheet

Iron Guard and Iron Guard Plus - Iron Softeners*					
Unit Item #	4901	4902	4903	4904	4905
Model #	FE30SXT	FE45SXT	FE60MISXT	STFE30SXT	STFE30SXT-DH
Tank Size	10 x 47	12 X 52	14 X 50	10 X 54	10 X 54 (DH)
Media (CF)	1	1.5	2	1	1
15 lbs of Salt/CF of Resin	32000	48000	64000	32000	32000
10 lbs of Salt/CF of Resin	30,000	45,000	60,000	30,000	30,000
6 lbs of Salt/CF of Resin	18000	27000	36000	18000	18000
3 lbs of Salt/CF of Resin	9000	13500	18000	9000	9000
Max Iron Conc (ppm)	10	10	10	10	10
Service Flow Rate (gpm)	8	10	12	8	8
Backwash Flow Rate (gpm)	1.5	2.4	3.5	1.5	1.5
Injector	#00	#00	#00	#00	#00
BLFC	0.25	0.25	0.5	0.25	0.25
BF Time (15 lbs/CF dosage)	20	30	20	20	20
Slow Rinse Flow Rate (gpm)	0.254	0.254	0.254	0.254	0.254
For 3 lbs of Salt/CF of Resin					
Brine Draw Slow Rinse Time (minutes)	60	60	60	60	60
Backwash Time (minutes)	10	10	10	10	10
Rapid Rinse (minutes)	10	10	10	10	10
Brine Refill (minutes)	4	6	4	4	4
Total Minutes	84	86	84	84	84
For 6 lbs of Salt/CF of Resin					
Brine Draw Slow Rinse Time (minutes)	60	60	60	60	60
Backwash Time (minutes)	10	10	10	10	10
Rapid Rinse (minutes)	10	10	10	10	10
Brine Refill (minutes)	8	12	8	8	8
Total Minutes	88	92	88	88	88
For 10 lbs of Salt/CF of Resin					
Brine Draw Slow Rinse Time (minutes)	60	60	60	60	60
Backwash Time (minutes)	10	10	10	10	10
Rapid Rinse (minutes)	10	10	10	10	10
Brine Refill (minutes)	13	20	13	13	13
Total Minutes	93	100	93	93	93
For 15 lbs of Salt/CF of Resin					
Brine Draw Slow Rinse Time (minutes)	60	60	60	60	60
Backwash Time (minutes)	10	10	10	10	10
Rapid Rinse (minutes)	10	10	10	10	10
Brine Refill (minutes)	20	30	20	20	20
Total Minutes	100	110	100	100	100
Total Water Consumption during Regeneration					
For 3 lbs of Salt/CF of Resin (gallons)	46.24	64.74	87.24	46.24	46.24
For 6 lbs of Salt/CF of Resin (gallons)	47.24	66.24	89.24	47.24	47.24
For 10 lbs of Salt/CF of Resin (gallons)	49	68	92	49	49
For 15 lbs of Salt/CF of Resin (gallons)	50.24	70.74	95.24	50.24	50.24

Specification

Unit † Item #	Model #	Tank Size	Media (CF)	10 lbs of Salt/CF of Resin	6 lbs of Salt/CF of Resin	3 lbs of Salt/CF of Resin	Service Flow Rate (gpm)	Backwash Flow Rate (gpm)	Brine Tank Di- mension (W X D X H) Inches	Salt Capacity (lbs)	Shipping Weight (lbs)
Iron Guard and Iron Guard Plus - Iron Softeners*											
4901	FE30SXT	10 x 47	1	30,000	18000	9000	8	1.5	22 X 38	400	145
4902	FE45SXT	12 X 52	1.5	45,000	27000	13500	10	2.4	22 X 38	400	185
4903	FE60MISXT	14 X 50	2	60,000	36000	18000	12	3.5	22 X 38	400	230
4904	STFE30SXT**	10 X 54	1	30,000	18000	9000	8	1.5	22 X 38	400	145
4905	STFE30SXT-DH**	10 X 54 (DH)	1	30,000	18000	9000	8	1.5	22 X 38	400	145

* Pro-Rescare Solution Dose is required to clean the media bed periodically. Unit can be applied to 0.75 ppm manganese providing regular use of resin cleaner

** Should not be applied unless pH is less than 6.8

- Application must be based on analysis by an authorized representative or distributor.
- Not recommended for iron bacteria or organically bound iron. Iron Guard Plus (STFE30SXT) should not be applied unless pH is 6.8 or lower.
- Iron Guard Plus may require the addition of media over a period of time.
- Inlet/outlet pipe size 3/4", drain 1/2".

Working Temperature = 34-110°F (1-43°C)
(Do not subject the unit to freezing temperatures)
Working Pressure = 20-125 PSIG (137-861 kPa)
Voltage = 120V / 60 Hz
Pipe Size = 3/4"

- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- Changing salt settings from factory setting may require changing injector sizes to achieve stated capacities
- 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.
- Do not use water that is microbiologically unsafe without adequate disinfection before or after the system.
- Iron content must not exceed 1 ppm. Beyond 1 ppm an iron softener must be used. Periodic media cleaning is required by Pro-Res Cleaner is iron level exceed 0.3 ppm

† USA customers will need to add "-4" to the item numbers for ordering.

NOTE: (gpg) refers to Grains per USGallon measurement of Total Hardness

Not recommended for iron bacteria or organically bound iron. Iron Guard Plus (STFE30MI) should not be applied unless pH is 6.8 or lower. Unit can be applied up to a maximum .75 mg/l manganese providing regular use of resin cleaner.

Regular use of resin cleaner is essential to the proper functioning of the combination water softener and iron removal system.

† Iron Guard Plus may require the addition of media over a period of time.

STFE30SXT-DH comes with dome hole tank for easy media replenishment

How a WaterGroup Iron Softener Works

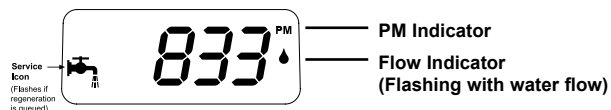
Water softeners remove hardness and iron in the water by exchanging particles in the water, or ions. They remove hard ions the calcium and magnesium in the water by trading it for sodium ions producing soft water. Unlike the calcium and magnesium, sodium stays dissolved in water and does not form a scale. Sodium also does not interfere with the cleaning action of soaps. The sodium is released by a charged resin contained in the softener, this resin also traps the calcium and magnesium ions. Eventually this resin releases all of its sodium and has filled up with other ions, so it then must be regenerated. Regeneration is accomplished by washing the resin with a salt saturated brine solution that removes the calcium and magnesium while replenishing the sodium. This is why the softener requires a brine tank and salt.

Hard water contains dissolved calcium and magnesium which build up inside your water heater, plumbing fixtures and appliances. The minerals also react with soap to form a scum which appears as bathtub ring, greys your laundry and leaves your hair dull and your skin itchy. Iron water leaves yellow, orange or brown stains on your laundry, sinks, tubs and toilets.

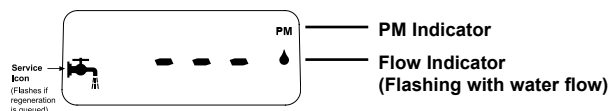
Iron Guard contains a bed of special ion exchange resin beads. As water passes through the bed, calcium and magnesium, the hardness minerals, and any clear or red water iron are removed and held by the resin. The Iron Guard Plus bed contains calcium carbonate in addition to the fine mesh ion exchange resin. This media combines to raise low pH water to enable the resin to remove hardness and red water iron. The water softener can run for days before running out of sodium, and when it does, the sodium is replenished in only a matter of a few hours.

In normal operation, the Time of Day display will alternate being viewed with the Volume Remaining display. This display will be in gallons or liters. As treated water is used, the Volume Remaining display will count down from a maximum value to zero or (---). Once this occurs, a regeneration cycle will be initiated at the Set Regeneration Time. Water flow through the valve is indicated by the Flow Indicator that will flash in direct relationship to flow rate.

Example 833 Gallons of Treated Water Remaining



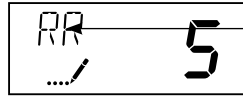
0 Gallons of Treated Water Remaining



Timer Behavior During Regeneration

In regeneration, the control will display a special regeneration display. In this display, the control will show the current regeneration step abbreviation the valve is advancing to or has reached and the time remaining in that step. The step abbreviation displayed will flash until the valve has completed driving into this regeneration step position. Once all regeneration steps have been completed, the valve will return to Service and resume normal operation.

Example Less than 6 minutes remaining in Regeneration Step Rapid Rinse



Regeneration Step Abbreviation

Pushing the  during a regeneration cycle will immediately advance the valve to the next cycle step position and resume normal step timing.

Please see the control valve manual for different regeneration step abbreviations.

IMPORTANT REMINDER: For the proper operation of your Iron Guard or Iron Guard Plus Water Softener, a Res-Up Feeder and a supply of PRO-ResCare solution is essential to extend the life of the resin media bed. If you have not purchased the following items along with your softener, please contact your supplier or installer to obtain them. The PRO-ResCare in combination with the Res-Up Automatic Feeder delivers the appropriate amount of the solution to the brine tank. The PRO-ResCare solution added is used in the regeneration cycle to chemically clean the resin bed of iron and other contaminants. Without the PRO-ResCare solution, iron will foul the media over time causing loss of performance, increased pressure drops and leakage of hardness and iron. PLEASE TAKE THE TIME READ THE LABEL AND WARNINGS BEFORE USING THIS PRODUCT WITH YOUR WATER SOFTENER. USE ALL SUGGESTED CAUTIONS WHEN USING AND STORING THE "PRO-ResCare" PRODUCT.

Application of Iron Guard & Iron Guard Plus Water Softeners



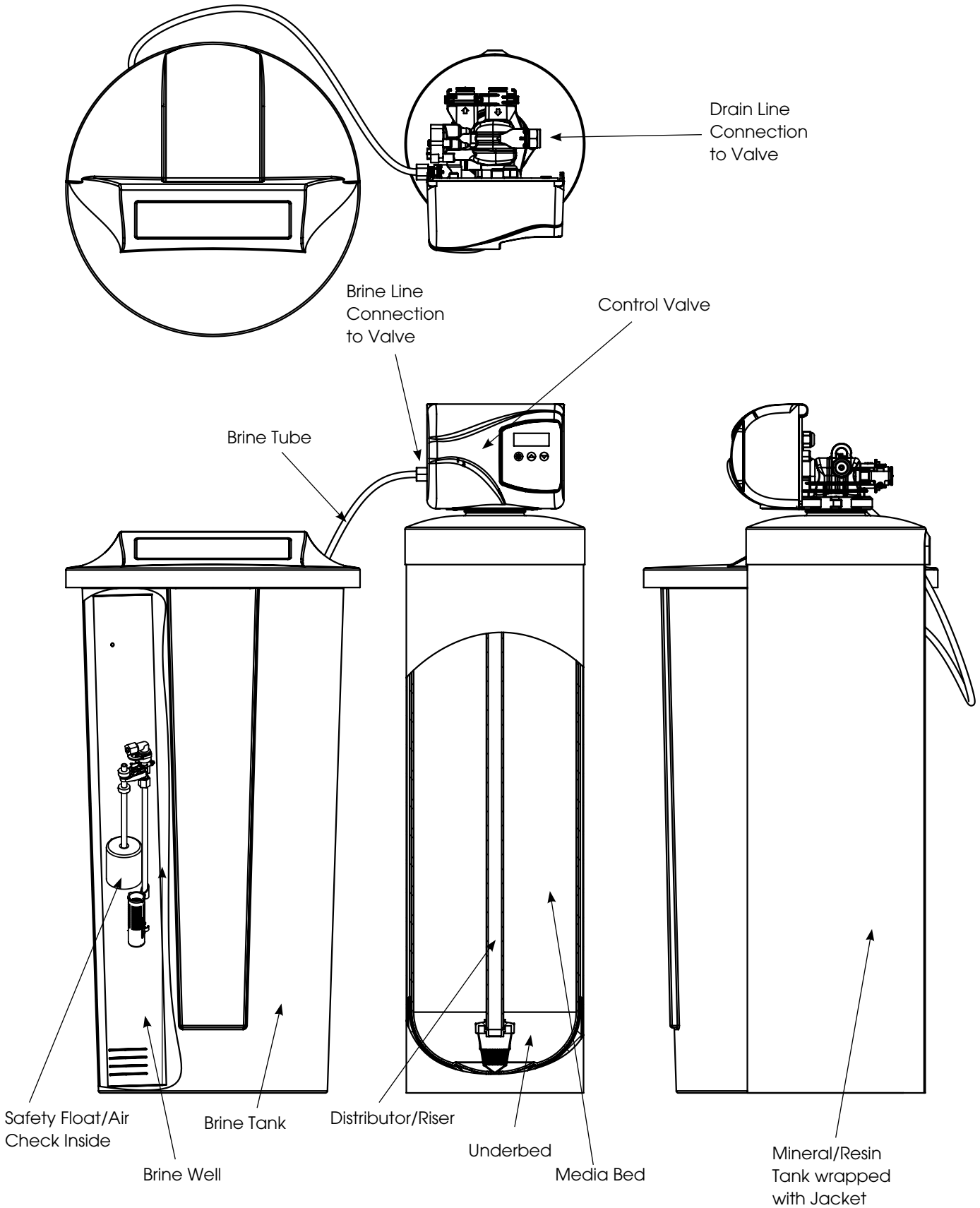
The Iron Guard or Iron Guard Plus Water softener is designed to soften water through an ion exchange process as described previously. In addition, the ion exchange resin used in the mineral tank is a special, fine mesh resin, which is less likely to be prone to iron fouling than standard softener resin. A resin cleaner solution should still be added to the brine tank with the use of an automatic feeder. Our recommended automatic feeder and resin cleaner solution is available through your distributor or installer. The unit has been factory preset to regenerate the resin with a higher salt setting than regular water softeners. We recommend that you DO NOT ADJUST this salt setting of 15lb-salt/cf-resin. The higher dosage is another important factor in the softeners' ability to regenerate the resin

that removed iron during the last service cycle. Iron Guard Plus Softeners will require topping up of the calcium carbonate media occasionally. The frequency of adding media is highly dependent on the chemistry of the water being treated and is difficult to predict, however, it is unlikely it will need to be topped up more than once per year.

Some additional guidelines about the application of Iron Guard and Iron Guard Plus water softeners are as follows:

- The Iron Guard & Iron Guard Plus water softeners are not recommended for removal of iron that is organically bound.
- The Iron Guard & Iron Guard Plus water softeners are not recommended for removal of iron with iron bacteria combinations.
- The Iron Guard & Iron Guard Plus water softeners are not recommended as the primary method of water treatment for iron when found in combination with significant amounts of manganese. An Iron and Sulfur filter (Greensand) is recommended as pretreatment. The Iron Guard softeners can still be used as a polisher or backup treatment for iron.
- Regular use of a resin cleaner with an automatic feeder is essential to the proper functioning of the Iron Guard & Iron Guard Plus water softeners when applied on water supplies containing iron.
- Iron Guard Plus water softeners only should not be applied unless the pH of the water is 6.8 or lower. The calcium carbonate in the mineral tank raises the pH of the water allowing iron in the ferrous state (i.e. in solution) to be more easily removed.
- When calculating the capacity of the Iron Guard or Iron Guard Plus water softener in gallons, remember to add the converted Iron to the Total Hardness tested in the water. See page 5.
- Only use this product on water that is potable. DO NOT apply this product on water that is unsafe to drink without proper disinfection.

Familiarize yourself with the unit and components



Installation Instructions

Contact your local distributor to use WaterGroup laboratory for complete water analysis free of cost and no obligation to you.



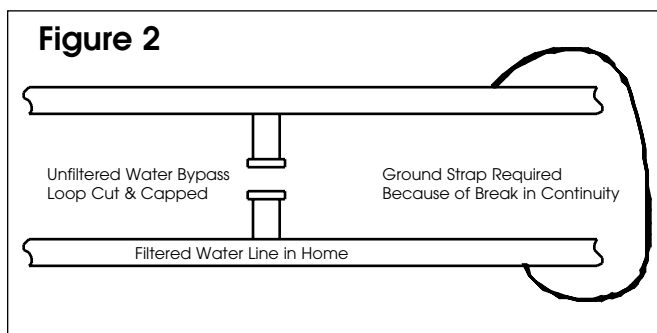
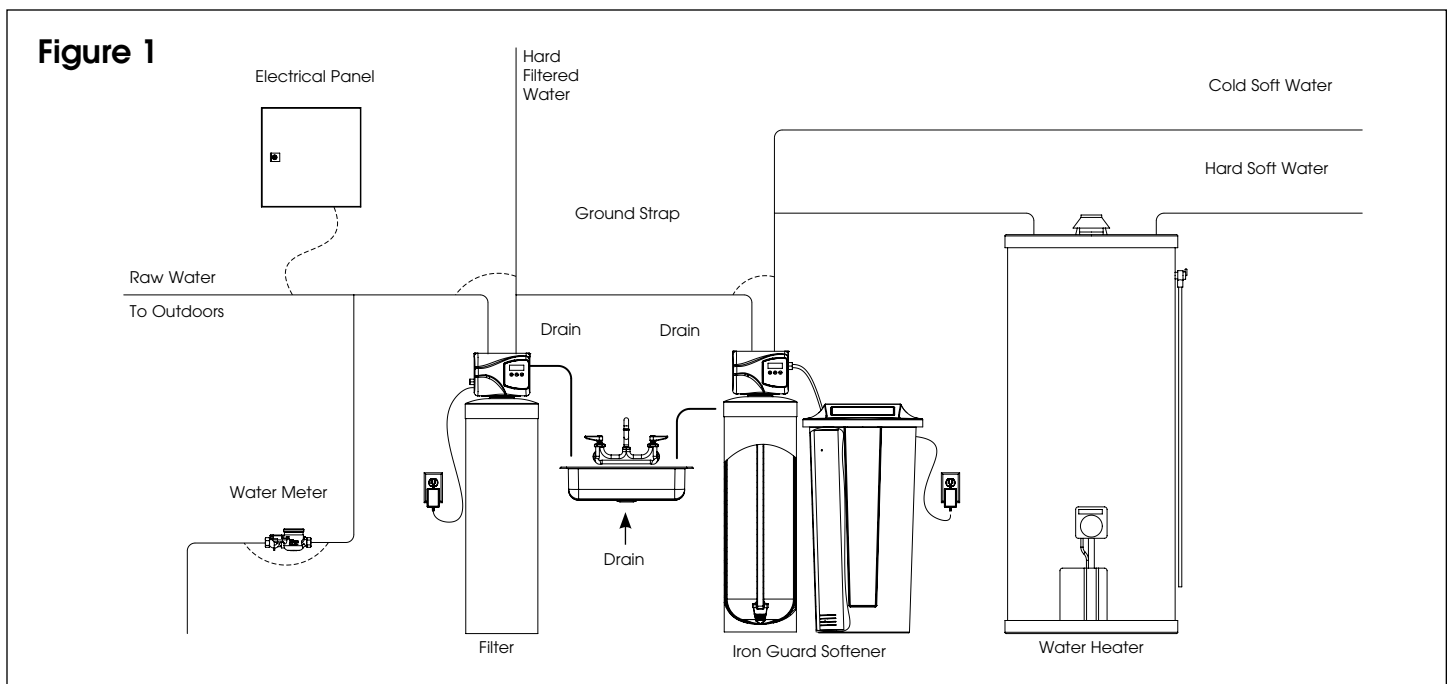
All government codes and regulations governing the installation of these devices must be observed.



If the ground from the electrical panel or breaker box to the water meter or underground copper pipe is tied to the copper water lines and these lines are cut during installation of the Noryl bypass valve and/or poly pipe, an approved grounding strap must be used between the two lines that have been cut in order to maintain continuity. The length of the grounding strap will depend upon the number of units being installed and/or the amount of copper pipe being replaced with plastic pipe. See Figure 1.

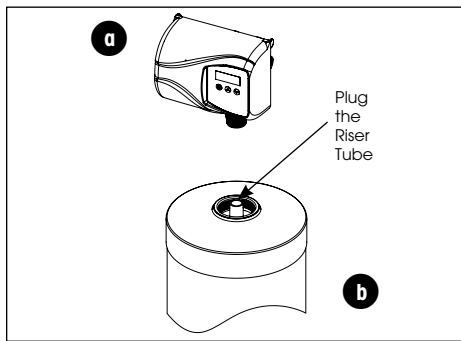
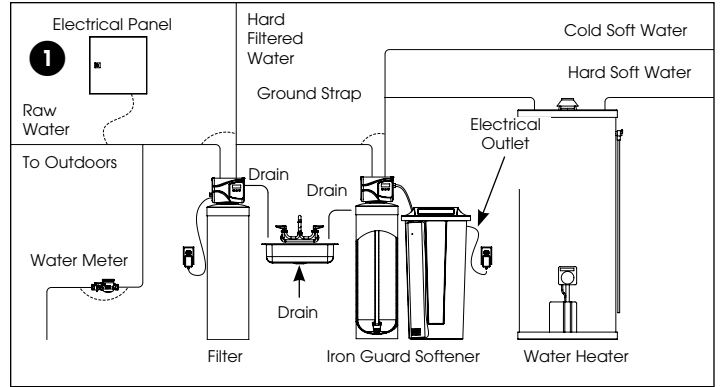
In all cases where metal pipe was originally used and is later interrupted by poly pipe or the Noryl bypass valve as in Figure 1 or by physical separation as in Figure 2, an approved ground clamp with no less than #6 copper conductor must be used for continuity, to maintain proper metallic pipe bonding.

NOTE: Check your local electrical code for the correct clamp.

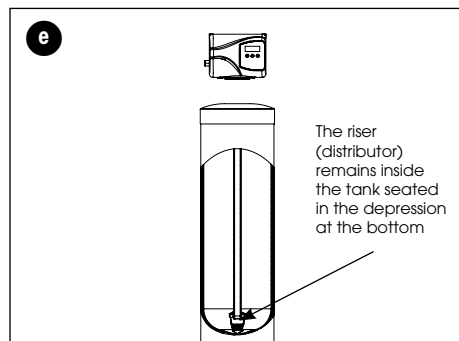


Preparations

- Determine the best location** for your water softener, bearing in mind the location of your water supply lines, drain line and 120 volt AC electrical outlet. Subjecting the softener to freezing or temperatures above 43°C (110°F) will void the warranty.
- Media Installation (When Necessary).** Models including and higher than 1.5 CF of media are shipped with separate media in pails or boxes. Models lower than 1.5 CF of media come loaded with media and this step can be skipped for new installation.



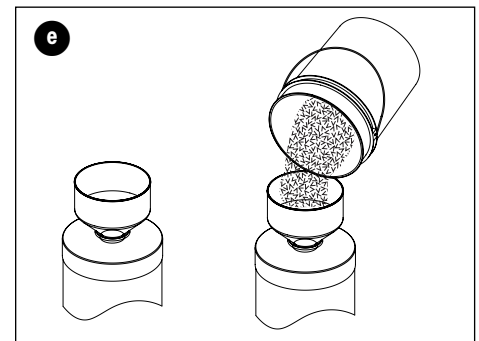
a) Remove the valve from the mineral tank.



b) Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution.

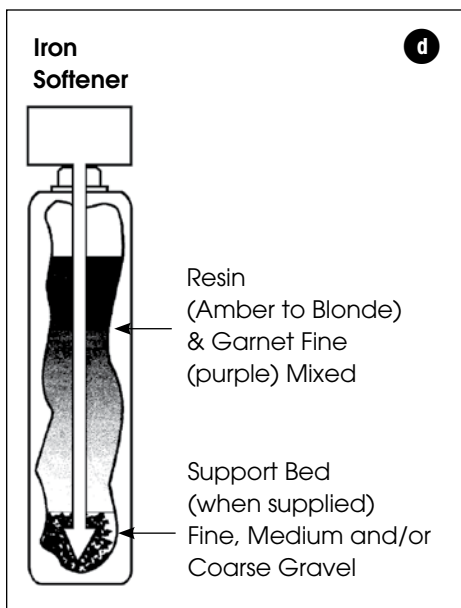
The riser (distributor) remains inside the tank seated in the depression at the bottom

Plug tube with a tape.
Remove after media is loaded



Fill support bed first (if supplied)

The media will not always spill down inside the tank and may need to be swept inside.

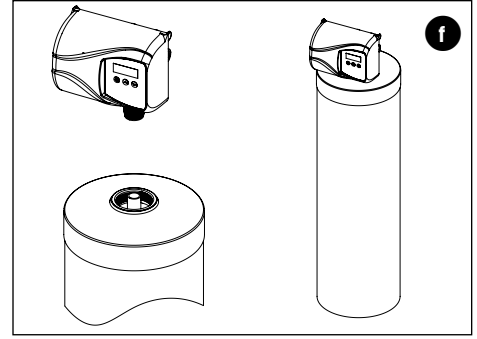
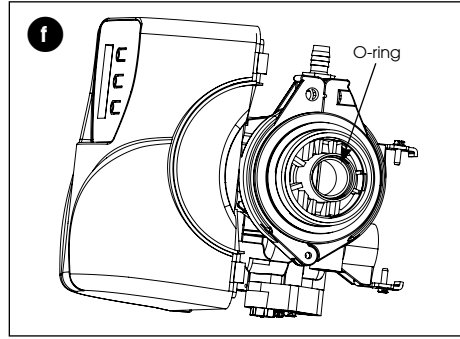


c. Fill mineral tank one quarter full of water to protect distribution during gravel installation.

d. Place the media into the tank in the order indicated above. Slowly and carefully add the gravel support bed and the softener or filtration media leveling each layer as it is placed into the tank.

e. Fill support bed (if supplied) first. During the filling process, ensure the distributor tube stays on the bottom of the tank, reasonably centered. Remove the tape from the distributor once media is loaded. Whenever possible, fill the tank outdoors to avoid problems with dust. If filling indoors, a dust mask should be worn.

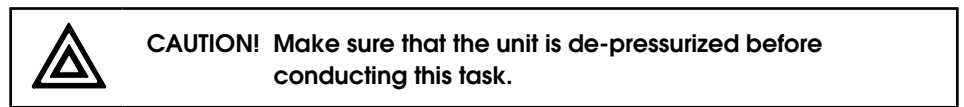
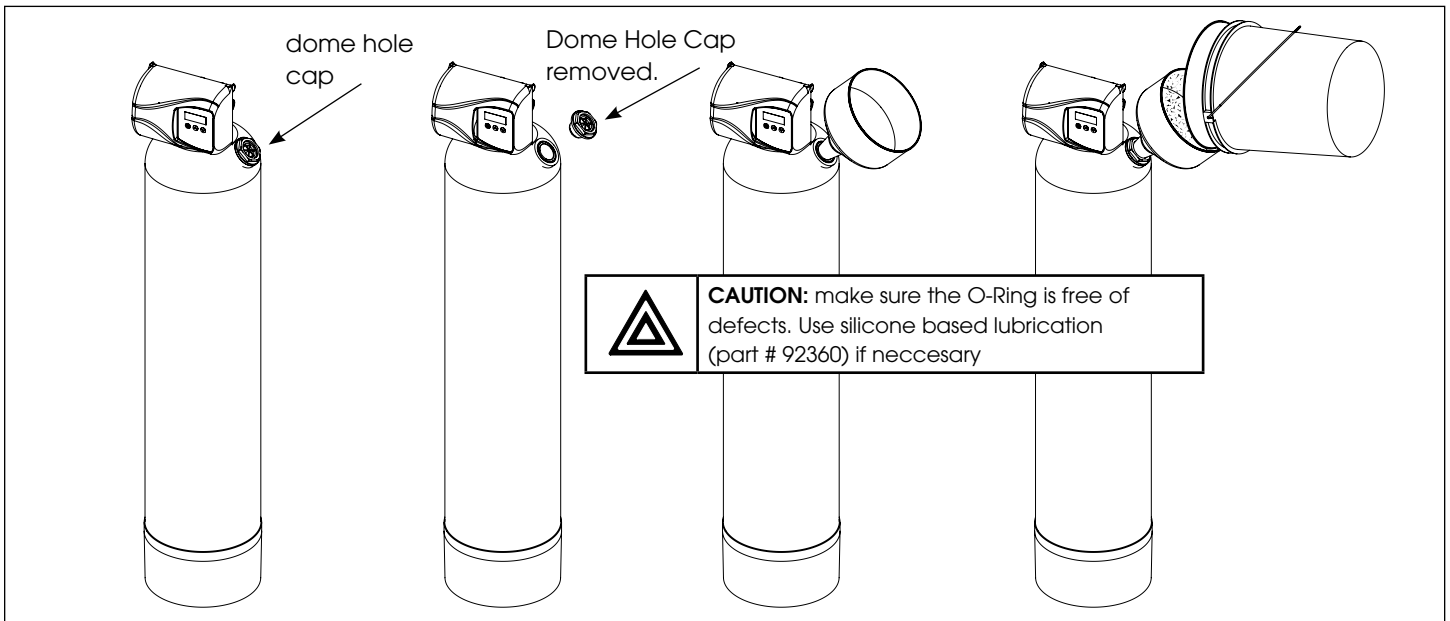
The large funnel (sold separately part # 43000) makes filling the tank easier and neater. (Or an empty 1 gallon or 4 liter container with the bottom cut out makes a good funnel.)



f. Unplug the riser tube, carefully position the valve over it and turn the valve into the threads in the fiberglass tank, tightening securely into tank. Note: Ensure that the internal O-ring in the valve fits securely over the riser tube. Silicone grease (part # 92360) or other food grade lubricant may be applied to the O-ring to ease installation of the riser tube.

NOTE: Note: Some medias like used in Calcite are sacrificial and deplete faster depending on inlet water conditions and usage. The media replenishment is more frequent in high water usage and more acidic water cases.

A dome hole models are available and supplied in which the dome hole is available for a quick addition or replenishment of media in the tank

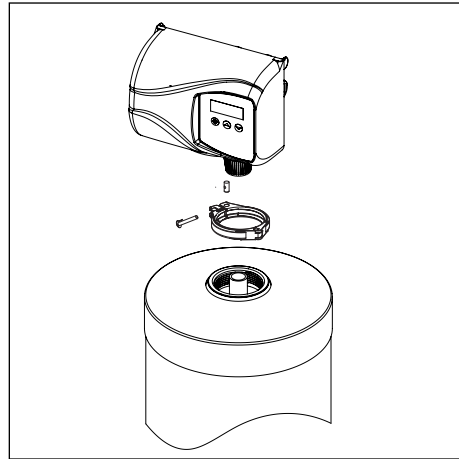
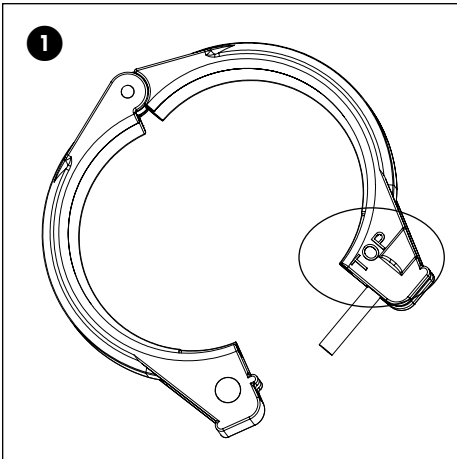


The softener is now charged with resin.


- g. It is recommended that the softener or filter tank now be completely filled with water (SLOWLY) to soak the resin or filtration media before startup. This will allow the media to absorb water as well as help displace any trapped air. This will reduce the chance of backwashing resin or filter media out of the tank during the initial backwash on startup.
- 3. Outside faucets used to water lawns and gardens should not supply softened water. A new water line is often required to be connected to supply hard water to the inlet of the water softener and to the outside faucets.

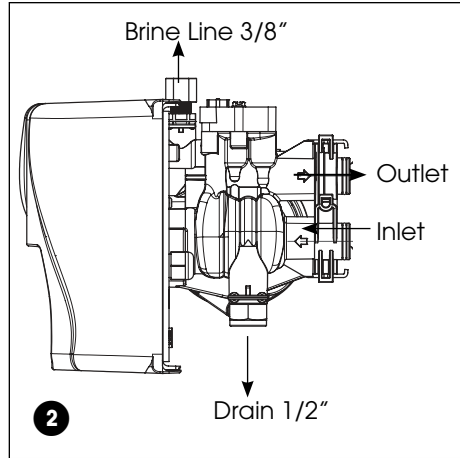
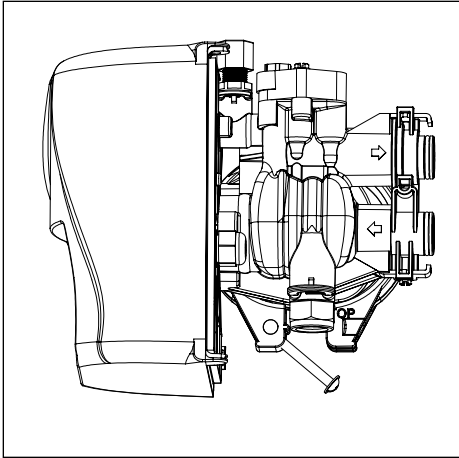
Cut the water line between where it enters the house and before any lines that branch off to feed the hot water heater or other fixtures in the house and as near the desired location of the water softener as possible. Install a tee fitting on the feed end of the cut pipe, and an elbow fitting on the other end. Install piping from the tee to the inlet of the water softener and from the elbow to the outlet of the softener. To sever the water lines which branch off to feed any outside faucets, cut the branch lines approximately two inches from the fitting on the main water line. Install an elbow on the end of the pipe nearest the outside faucet and a cap on the end connected to the existing water line. Install piping from the tee installed on the inlet line to the water softener to the elbow installed on the pipe to the outside faucet. Following this procedure will result in all lines in the house, with the exception of the outside faucets, but including the water heater and therefore the hot water lines, being supplied with soft water.

Installation Steps:

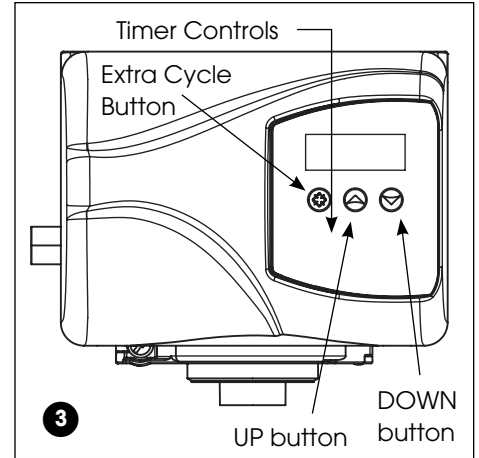


- 1. Clamp Ring – The clamp ring connects the control valve to the tank and provide an easy way to disconnect tank during control valve servicing. Make sure that the clamp ring screw is tightened

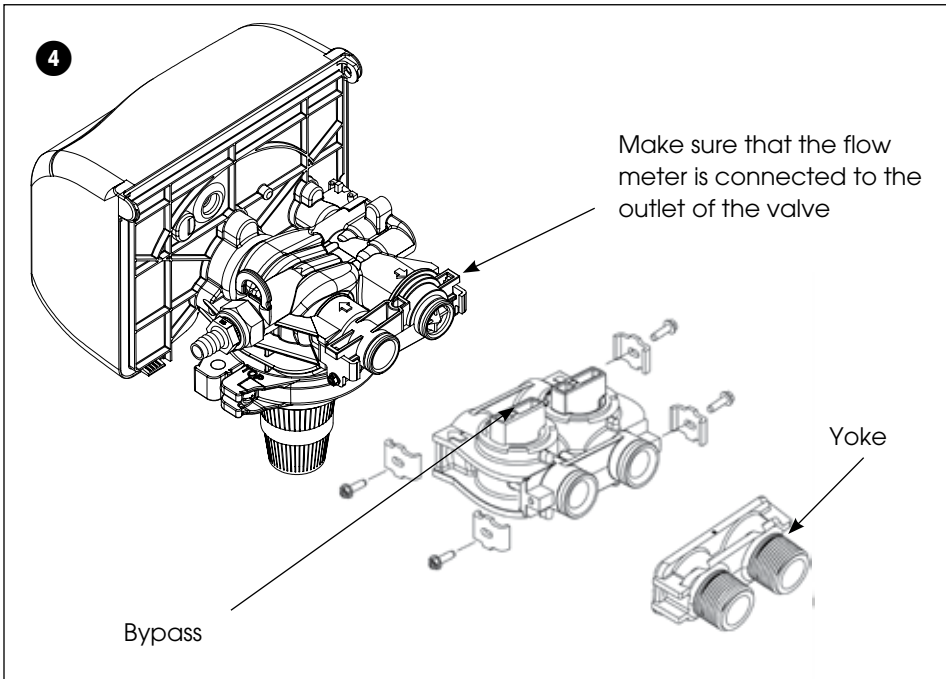
 The "Clamp Ring" should secure the valve with the top of the flange facing up. Please note "top" on the clamp ring.



2. Familiarize yourself with the location of the inlet, outlet and drain on the control valve. Be very careful not to get the controls wet.

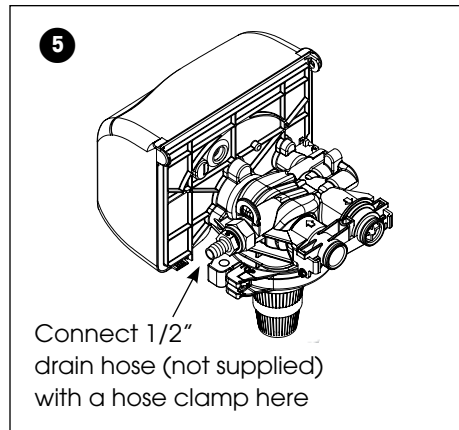
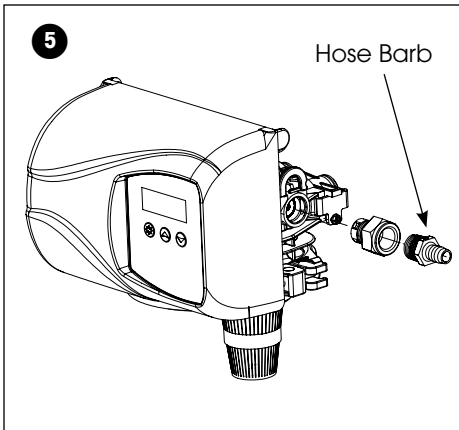


3. Familiarize yourself with the buttons on the timer control.



4. Attach the bypass valve to the control valve (and yoke if plastic bypass is used). Connect the inlet and outlet of the water softener to the plumbing in the house. The control valve must not be submitted to temperatures above 43°C (110°F). When sweat fittings are used, to avoid damaging the control valve, solder the threaded copper adapters to the copper pipe and then, using Teflon tape, screw the assembly into the bypass valve.

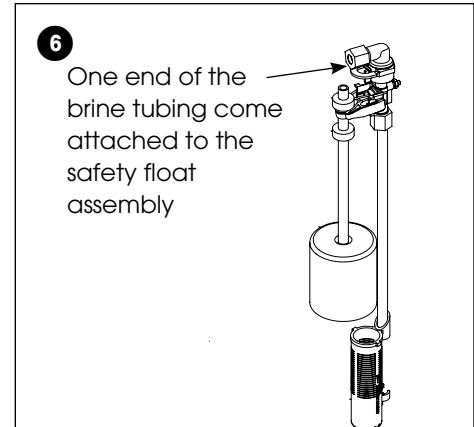
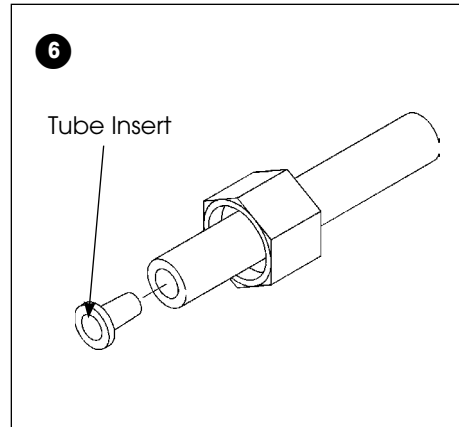
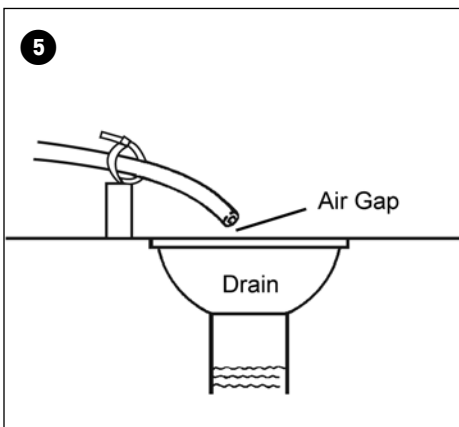
 Do not use pipe thread compound as it may attack the material in the valve body



5. Drain Line Connection: Using teflon tape, screw the 1/2" hose barb into the drain port in the valve. Attach 1/2" drain hose to the hose barb and tighten securely with a hose clamp. Run the drain line to a floor drain or a laundry drain. Complete any necessary plumbing.

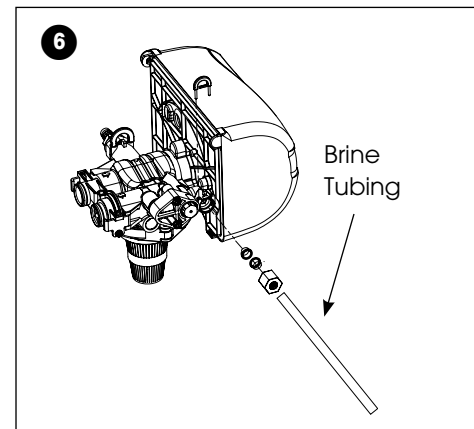
! Waste connections or drain outlet shall be designed and constructed to provide for connection to the sanitary waste system through an air-gap of 2 pipe diameters or 1 inch (22 mm) whichever is larger.

! Never insert drain line directly into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.

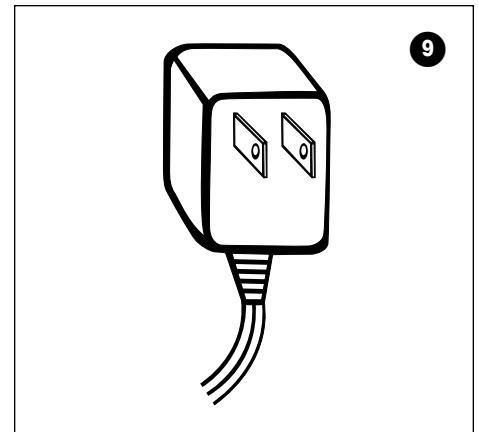
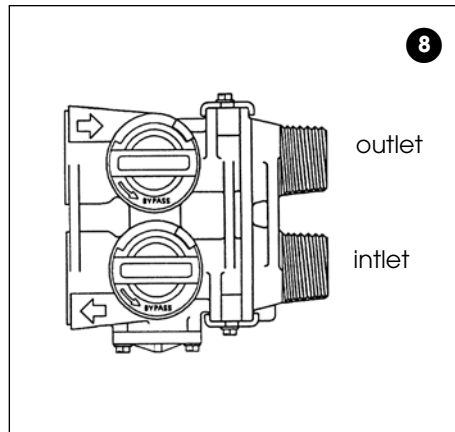
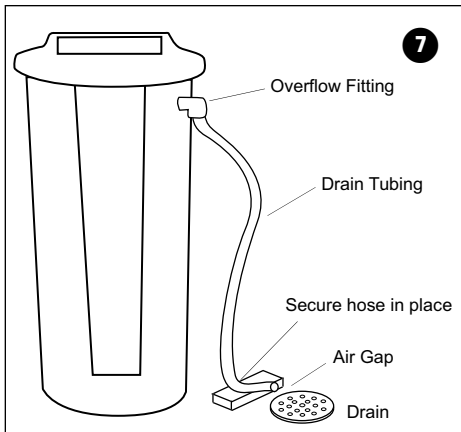


6. The brine line is connected to the safety float assembly of the brine tank. Pull the 3/8" brine line through the hole in the back of the brine tank. Connect the brine line to the fitting on the side of the valve using the nut and ferrule. Tighten snugly. Remove the nut from the brine line of the valve and push the other end of the brine tube inside it. Make sure that the brass insert is snugged inside the brine tubing. The brine tubing should pass through both plastic inserts of the black nut.

7. Overflow Connection (Optional): In the event of a malfunction, the brine TANK OVERFLOW will direct "overflow" to the drain instead of spilling on the floor. This fitting should be installed at the side of the cabinet or brine tank. To connect the overflow line, drill the hole on the side of the tank, 2 to 3 inches below from the top of the brine tank. Insert overflow fitting (sold separately part # 33006) into tank and tighten with plastic thumb nut and gasket as shown. Attach length of 1/2-inch (1.3-cm) I.D. tubing (not supplied) to fitting and run to drain. Do not elevate overflow line higher than overflow fitting.

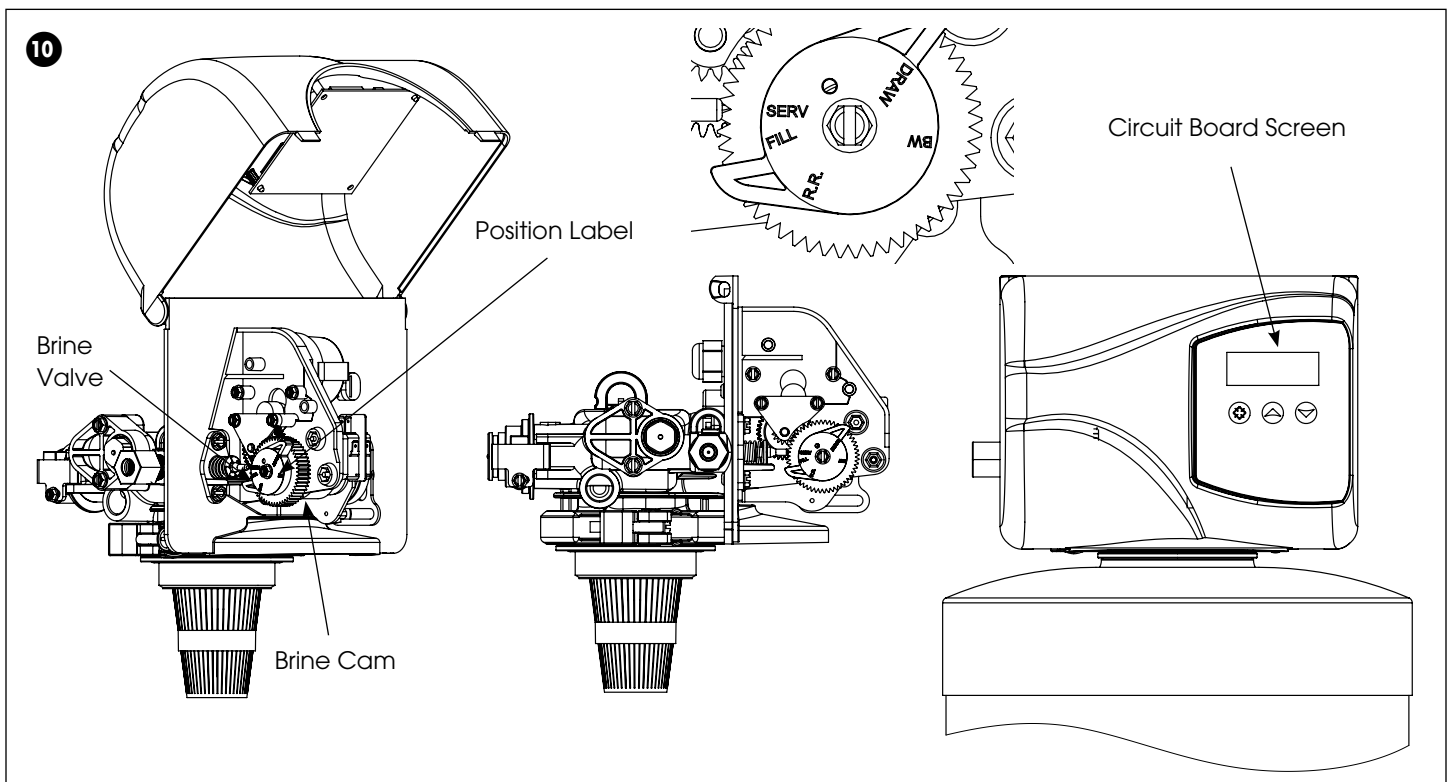


Do not tie into drain line of control unit. Overflow line must be a direct, separate line from overflow fitting to drain, sewer or tub. Allow an air gap as per drain line instructions



8. Make sure the bypass valve is in the service position.

9. Plug the 24-volt transformer into a 120 VAC 60 Hz outlet.



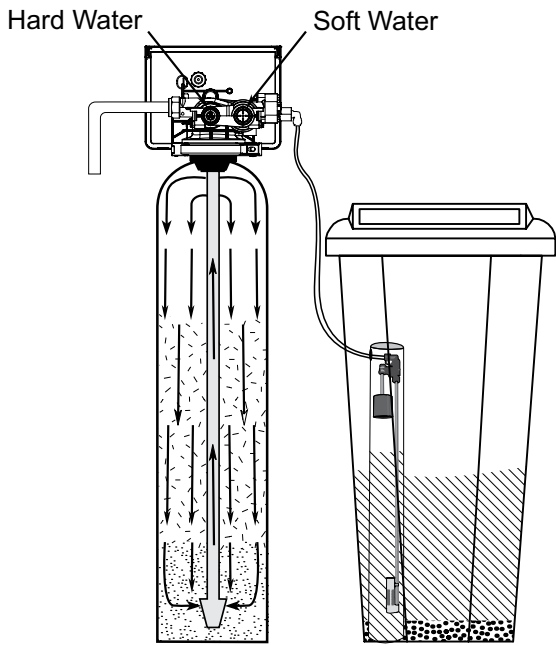
10. This valve has four positions: 1) Brine/Rinse 2) Backwash 3) Rapid Rinse and 4) Brine Refill. When the valve is in the Service position (⊗) must be pressed and held for 5 seconds before it activates. Press and hold the (⊗) pic for 5 seconds to advance the valve into the "1" Brine/Rinse position. Press once more to advance to the "2" position.

The valve position during regeneration and servicing can be checked in the circuit board screen as well as the the position label on the cam.

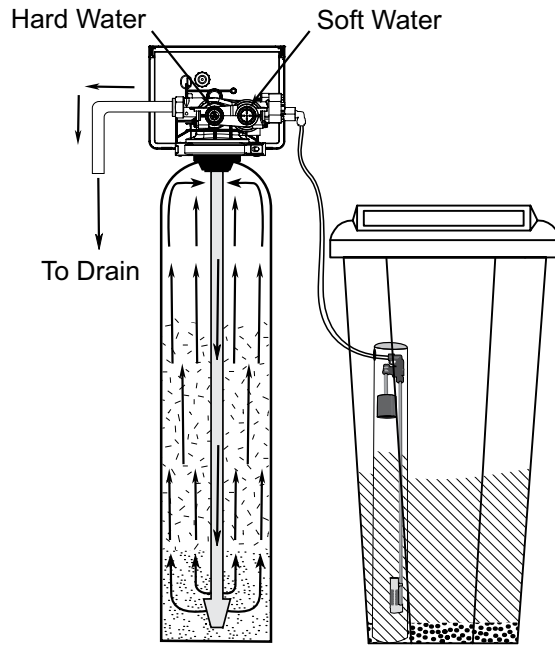
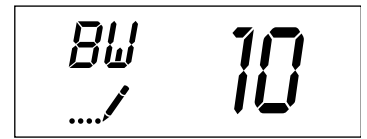
Cycle Step	Abbreviation
BD	Brine Draw
BW	Backwash
RR	Rapid Rinse
BF	Brine Refill
SV	Service

Water Conditioner Flow Diagrams

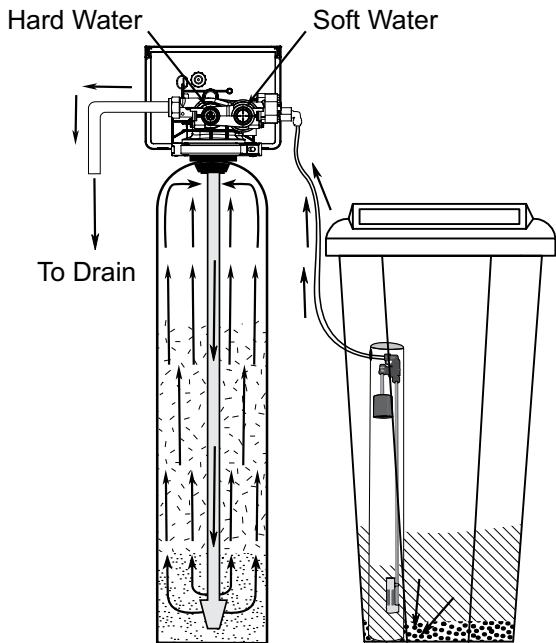
Service Position



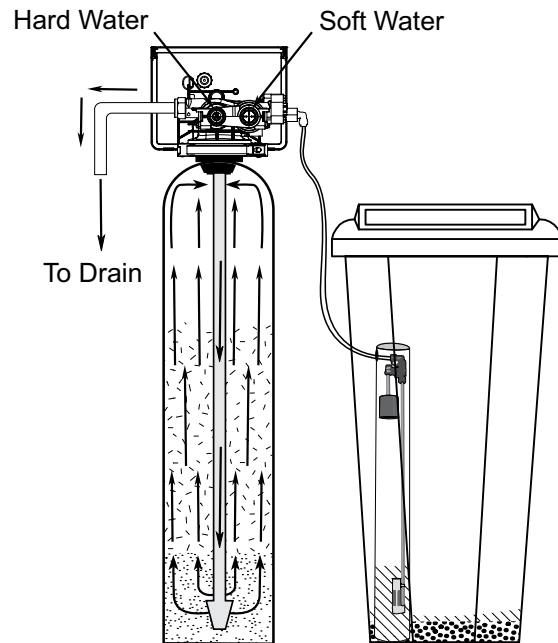
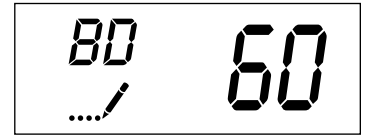
Backwash Position



Brine Rinse Position



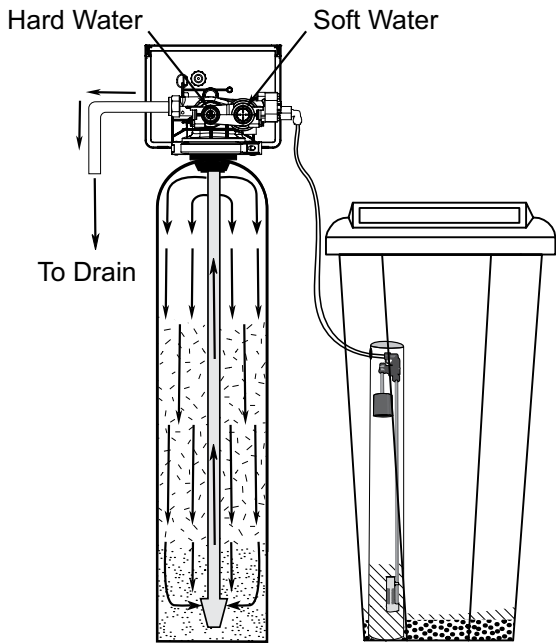
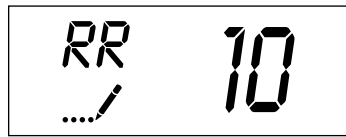
Slow Rinse Position



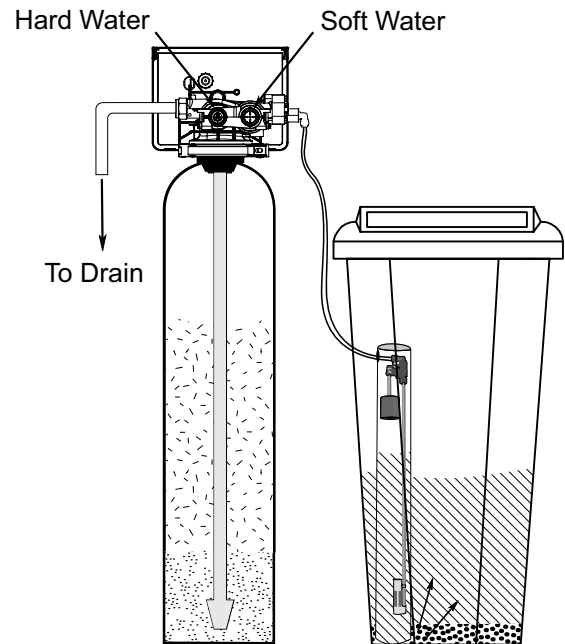
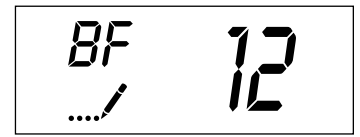
11. Press the extra cycle button to advance the valve to the "2" Backwash position. Slowly turn on the water supply and allow the unit to backwash until the air purges out of the tank and clears the system.

12. Press once more to advance to the "3" Rapid Rinse position and allow water to run to drain for 2 Minutes.


Rapid Rinse Position



Brine Refill Position





13. Press once more to advance to the "4" Brine refill position. Wait until the water level reaches 6" in the brine tank. Water can be added to the tank to speed up the filling but the valve should be in the Brine Refill position for a minimum of two minutes to purge the air out of the injector set.

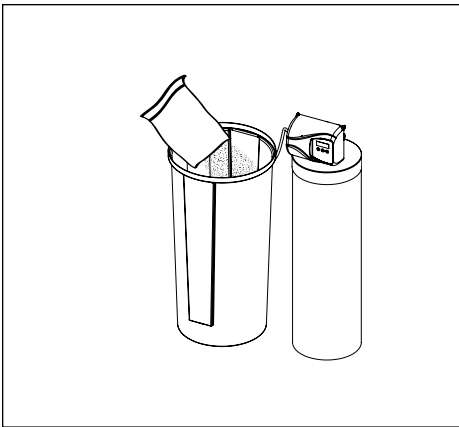
14. Press  to advance the valve from the Brine Fill position through service to the "1" position Brine/Rinse position. Verify that water is being drawn from the tank. If not, repeat step 9.

15. Press  button to advance the valve to the "2" Backwash position

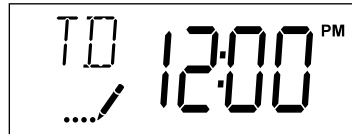
16. Press  to advance the valve to the "3" Rapid Rinse position

17. Press  to advance the valve to the "4" Brine Fill position until there is 6" of water in the brine tank.

Press  to advance the valve back into the service position indicated by the  in upper left corner of the display.



18. Put 40 kgs of crystal water softener salt in the brine tank. The unit will automatically fill the water to the correct level when it regenerates.



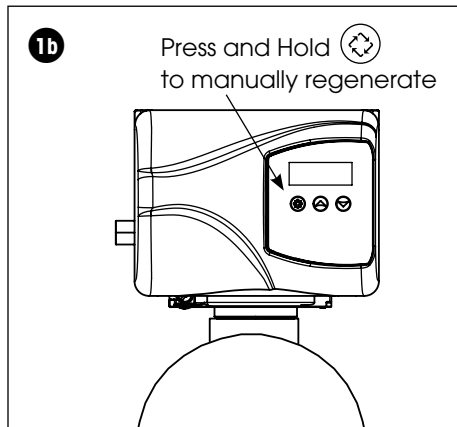
19. Set time of the day in the control valve and program the user section of the control. Refer to control valve programming section in this manual.

Optional Sanitization Procedure: We recommend that all new water conditioners be disinfected as part of the startup.

Water Softener Sanitization



1a. Pour entire packet of Sani-System Liquid Concentrate – Part # 50032 (24 packets) into the brine well. If no brine well is present, pour entire packet into bottom of brine tank when salt is nearly empty.



1b. Manually regenerate the softener according to the manufacturer's specifications.

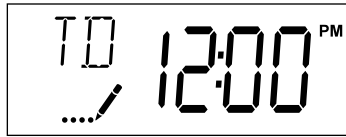
Sanitization can also be achieved by the application of chlorine in the regeneration cycle of the conditioner. A liquid solution of 5.25% sodium hypochlorite (commonly referred to as household bleach) is recommended as a suitable disinfectant. Use only unscented products. For every cubic foot of resin in the softener, pour approximately two (2) tablespoons of sodium hypochlorite into the brine well tube. The brine tank refill step of regeneration should add the correct amount of water to the brine tank. If not, the water can be added manually now. Press and hold the [icon] to begin a manual regeneration. Allow softener to complete the Brine/Rinse cycle, then let the manual regeneration continue until the brine tank is refilled again with the correct amount of water.

NOTE: ALL STATE AND LOCAL GOVERNMENT CODES GOVERNING INSTALLATION OF THESE DEVICES MUST BE OBSERVED.

Programming Instructions

Set Time of Day

Press and hold or buttons until display reads TD



Adjust the displayed time with or buttons. Press to resume normal operation

Queuing a Regeneration

1. Press the button. The service icon will flash to indicate that a regeneration is queued.
2. To cancel a queued regeneration, press the button.

Regenerating Immediately

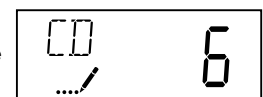
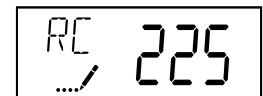
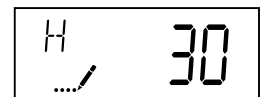
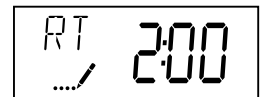
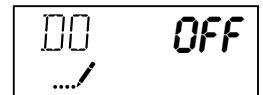
Press and hold the button for five seconds.

User Programming Mode Options		
Abbreviation	Parameter	Description
DO	Day Override	The timer's day override setting THIS IS AN OPTION ONLY. PLEASE DO NOT ADJUST BEFORE CONSULTING AN AUTHORIZED DEALER.
RT	Regeneration Time	The time of day that the system will regenerate (meter delayed, timeclock, and day-of-week systems)
H	Feed Water Hardness	The hardness of the inlet water - used to calculate system capacity for metered systems
RC	Reserve Capacity	The fixed reserve capacity
CD	Current Day	The current day of week

User Programming Mode Steps

Note: Use and Down button to adjust values for parameters

1. Press the and buttons for five seconds while in service, and the time of day is NOT set to 12:01 PM.
2. Use this display to adjust the Day Override. Adjust this to OFF parameter for softeners.
3. Press the button. Use this display to adjust the Regeneration Time.
4. Press the button. Use this display to adjust the Compensated* Feed Water Hardness in grains per gallon (gpg).



***Hardness Compensation**
 1 mg/l of iron = 4 gpg
 1 mg/l of manganese = 8 gpg
 Maximum iron is not to exceed 10 mg/l total iron
 Recommend the addition of a Res-up feeder when the total iron exceeds 0.5 mg/l

5. Press the button. Use this display to adjust the Fixed Reserve Capacity. This option setting is identified by "RC" in the upper left-hand corner of the screen. 75 gallons X # of people in the house = RC
6. Press the button. Use this display to set the Current Day of the Week. This option setting is identified by "CD" in the upper left hand corner of the screen. This option is only available after the Day of the Week control is set to 'ON' in the Master Programming. Refer to the valve manual for details.
7. Press the button to end User Programming Mode.

*Compensated

In the second level mode, the control valve has been programmed as per the following main parameters related to regeneration. For more information on master programming manual, read control valve manual part # 54802

The valve has been pre-programmed with factory settings as shown in the following chart:

Regeneration Cycle Step Programming		
1. Brine Rinse	60 minutes	
2. Backwash	10 minutes	
3. Rapid Rinse	10 minutes	
4. Brine Refill	20 minutes	FE30SXT
	30 minutes	FE45SXT
	20 minutes	FE60MISXT
	20 minutes	STFE30SXT
	20 minutes	STFE30SXT-DH

Diagnostic Programming Mode

Diagnostic Programming Mode Options		
Abbreviation	Parameter	Description
FR	Flow Rate	Displays the current outlet flow rate
PF	Peak Flow Rate	Displays the highest flow rate measured since the last regeneration
HR	Hours in Service	Displays the total hours that the unit has been in service
VU	Volume Used	Displays the total volume of water treated by the unit
RC	Reserve Capacity	Displays the system's reserve capacity calculated from the system capacity, feed water hardness, and safety factor
SV	Software Version	Displays the software version installed on the controller

NOTES:

Some items may not be shown depending on timer configuration.
 The timer will exit Diagnostic Mode after 60 seconds if no buttons are pressed.
 Press the Extra Cycle button to exit Diagnostic Mode at any time.

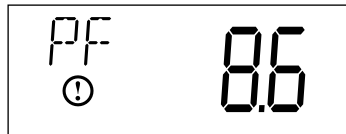
Diagnostic Programming Mode Steps

1. Press the and buttons for five seconds while in service.

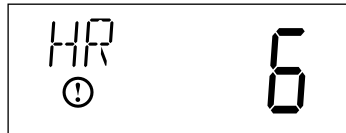
2. Use this display to view the current Flow Rate. This option setting is identified by "FR" in the upper left hand corner of the screen.



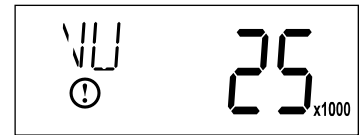
3. Press . Use this display to view the Peak Flow Rate since the last regeneration cycle. This option setting is identified by "PF" in the upper left hand corner of the screen.



4. Press . Use this display to view the Hours in Service since the last regeneration cycle. This option setting is identified by "HR" in the upper left hand corner of the screen.



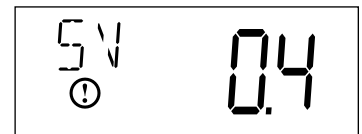
5. Press . Use this display to view the Volume Used since the last regeneration cycle. This option setting is identified by "VU" in the upper left hand corner of the screen.



6. Press . Use this display to view the Reserve Capacity. This option setting is identified by "RC" in the upper left hand corner of the screen.



7. Press . Use this display to view the Software Version. This option setting is identified by "SV" in the upper left hand corner of the screen.



8. Press to end Diagnostic Programming Mode.

Controller Behavior

Control Operation During Programming

The control will only enter the Program Mode with the valve in Service. While in the Program Mode, the control will continue to operate normally, monitoring water usage and keeping all displays up to date. Control programming is stored in memory permanently, eliminating the need for battery back-up power.

Meter Immediate Control

A meter immediate control measures water usage and regenerates the system as soon as the calculated system capacity is depleted. The control calculates the system capacity by dividing the unit capacity (typically expressed in grains/unit volume) by the feedwater hardness and subtracting the reserve. Meter Immediate systems generally do not use a reserve volume. However, in twin tank systems with soft-water regeneration, the reserve capacity should be set to the volume of water used during regeneration to prevent hard water break-through. A Meter Immediate control will also start a regeneration cycle at the programmed regeneration time if a number of days equal to the regeneration day override pass before water usage depletes the calculated system capacity.

Meter Delayed Control

A Meter Delayed Control measures water usage and regenerates the system at the programmed regeneration time after the calculated system capacity is depleted. As with Meter Immediate systems, the control calculates the system capacity by dividing the unit capacity by the feedwater hardness and subtracting the reserve. The reserve should be set to insure that the system delivers treated water between the time the system capacity is depleted and the actual regeneration time. A Meter Delayed control will also start a regeneration cycle at the programmed regeneration time if a number of days equal to the regeneration day override pass before water usage depletes the calculated system capacity.

Time Clock Delayed Control

A Time Clock Delayed Control regenerates the system on a timed interval. The control will initiate a regeneration cycle at the programmed regeneration time when the number of days since the last regeneration equals the regeneration day override value.

Day of the Week Control

This control regenerates the system on a weekly schedule. The schedule is defined in Master Programming by setting each day to either "off" or "on." The control will initiate a regeneration cycle on days that have been set to "on" at the specified regeneration time.

Control Operation During a Power Failure

The SXT includes integral power backup. In the event of power failure, the control shifts into a power-saving mode. The control stops monitoring water usage, and the display and motor shut down, but it continues to keep track of the time and day for a minimum of 48 hours.

The system configuration settings are stored in a non-volatile memory and are stored indefinitely with or without line power. The Time of Day flashes when there has been a power failure. Press any button to stop the Time of Day from flashing.

If power fails while the unit is in regeneration, the control will save the current valve position before it shuts down. When power is restored, the control will resume the regeneration cycle from the point where power failed. Note that if power fails during a regeneration cycle, the valve will remain in its current position until power is restored. The valve system should include all required safety components to prevent overflows resulting from a power failure during regeneration.

The control will not start a new regeneration cycle without line power. If the valve misses a scheduled regeneration due to a power failure, it will queue a regeneration. Once power is restored, the control will initiate a regeneration cycle the next time that the Time of Day equals the programmed regeneration time. Typically, this means that the valve will regenerate one day after it was originally scheduled. If the treated water output is important and power interruptions are expected, the system should be setup with a sufficient reserve capacity to compensate for regeneration delays.

During Regeneration

Automatic Bypass

The regeneration cycle lasts approximately 2 hours, 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.

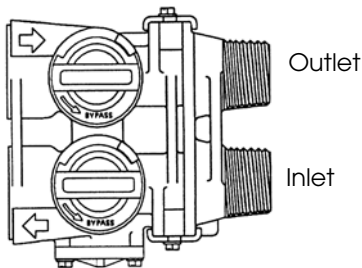
IMPORTANT: This is why the automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts approximately 2-1/2 hours. During this time, you may hear water running intermittently to the drain.

Water Bypass

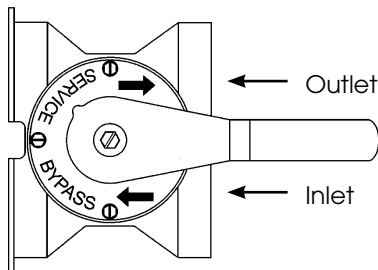
Figure 5A



Manual Bypass (Figure 5A)

In case of an 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 ON/OFF knobs in line with the INLET and OUTLET pipes. To isolate the softener, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the softener. However, the water you use will be hard. To resume soft water service, open the bypass valve by rotating the knobs counter-clockwise.

Figure 5B



Stainless Steel Bypass (Figure 5B)

In normal operation the bypass lever is aligned with the inlet/outlet with the pointer on SERVICE. To isolate the softener or filter, rotate lever counter clockwise until it stops and pointer indicates unit is in bypass.

You can use your water related fixtures and appliances as the water supply is bypassing the softener and filter. However, the water you use will be hard or untreated. To resume treated water service, open the bypass valve by reversing the rotation of the lever.

Maintenance Instructions

Checking the Salt Level

Check the salt level monthly. Remove the lid from the cabinet or brine tank, make sure salt level is always above the brine level

NOTE: You should not be able to see water

Adding Salt

Use only clean salt labeled for water conditioner use, such as crystal, pellet, nugget, button or solar.

The use of rock salt is discouraged because it contains insoluble silt and sand which build up in the brine tank and can cause problems with the system's operation.

Add the salt directly to the tank, filling no higher than the top of the brine well.

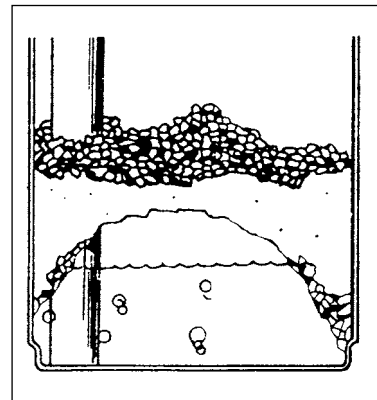
Resin Cleaner

An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water. (consult your local representative or follow the directions on the resin cleaner package)

Bridging

Humidity or the 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 your water supply being hard.

If you suspect salt bridging, carefully pound on the outside of the plastic 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 four hours to produce a brine solution, then manually regenerate the softener.



CAUTION! Liquid brine will irritate eyes, skin and open wounds - gently wash exposed area with fresh water. Keep children away from your water conditioner.

Care of Your Softener

To retain the attractive appearance of your new water softener, clean occasionally with a mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 43°C (110°F).

Servicing Components.

- The injector assembly should be cleaned or replaced every year depending on the inlet water quality and water usage.
- The seals and spacer cartridge should be inspected/cleaned or replaced every year depending on the inlet water quality and water usage.

Please refer to the servicing section of this manual for step by step procedure.

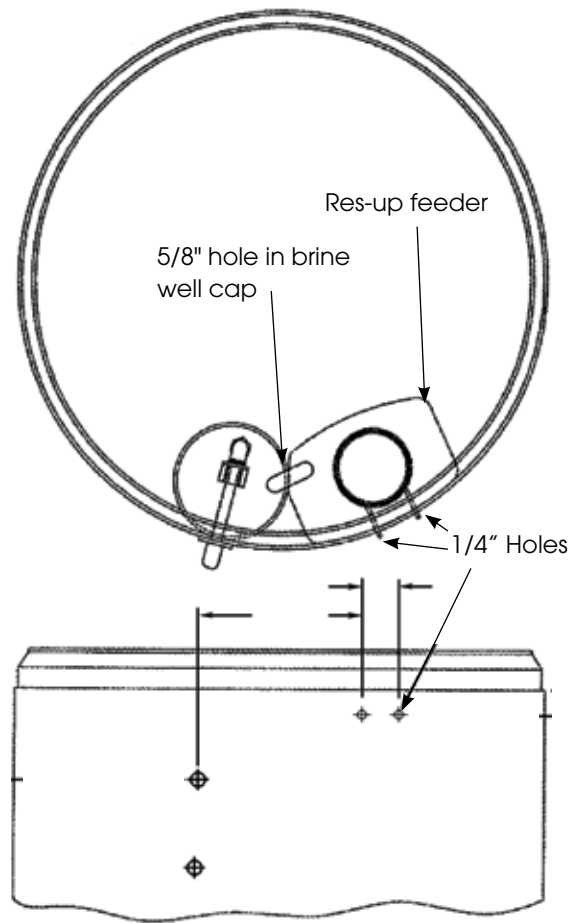
Not following the above will void all warranty on the control valve.

Resin Cleaner

An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water. (consult your local representative or follow the directions on the resin cleaner package).

Res-Up[®] Feeder Installation Instructions

1. Remove top cover, fill the Res-Up[®] Feeder (plastic container) to the top with water so that the wick retaining clip, tube and wick are wetted, allow to soak for 15 minutes or more.
2. Empty water and pull tube and wick through Feeder until slack is removed from inside. The outlet end tube and wick must be below the bottom level of the Res-Up[®] Feeder.
3. Drill two 1/4" holes in brine tank as shown.
4. Drill a 5/8" hole in the brine well cap.
5. Clip mounting bracket over feeder with "hooks" pointed up. Insert end of tube in the brine well cap and mounting bracket with the 1/4" holes in the brine tank, rotating feeder downward into position as shown in Figure 1.
6. Fill Feeder with Res-Up[®] Cleaner to "Fill Line" on label.
7. Replace cover on Feeder and automatic feeding will occur in a few hours.



Res-Up Feeders attach to your brine tank and automatically dispense the Res-Up cleaner into the brine solution where it cleans the resin during the regeneration cycle.

The feeder hooks onto the tube inside your brine tank and you just pour some chemical in it and your water softener should last significantly longer. A res-up feeder is essential if your raw water contains measurable amounts of iron.

Res-up Feeder Bottle (Chemical sold Separately)
The 12 cc feeder (Part # 33010) is for softeners up to 64,000 grains (2 ft3 of resin) .
The 30 cc feeder (Part # 33018) is for larger softeners over 64,000 grains.
Pro-Res Care Chemicals
Item #45147 Pro-ResCare - Gallon
Item #45148 Pro-ResCare - Quart

Servicing 6200 Valve

Before Servicing

1. Turn off water supply to conditioner :
 - a. If the conditioner installation has a 3 valve bypass system first open the valve in the bypass line, then close the valves at the conditioner inlet & outlet.
 - b. If the conditioner has an integral bypass valve, put it in the bypass position.
 - c. If there is only a shut-off valve near the conditioner inlet, close it.
2. Relieve water pressure in the conditioner by stepping the control into the backwash position momentarily. Return the control to the In Service position. (Refer to programming instructions)
3. Unplug Electrical Cord from outlet.
4. Disconnect brine tube and drain line connections.

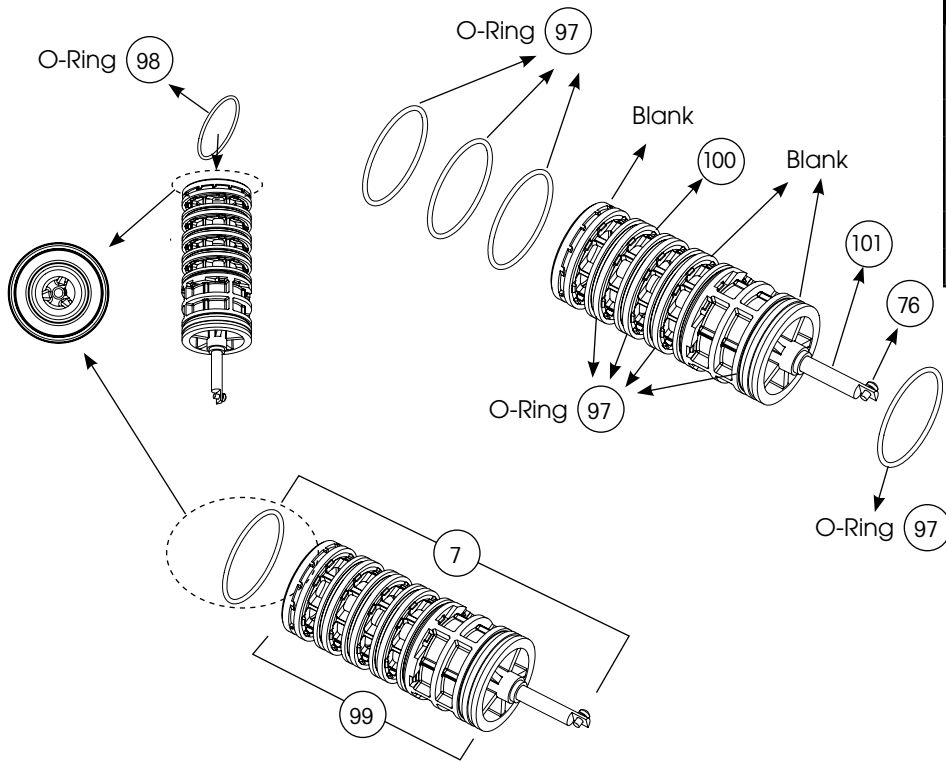


WARNING! ELECTRICAL SHOCK HAZARD! UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS.



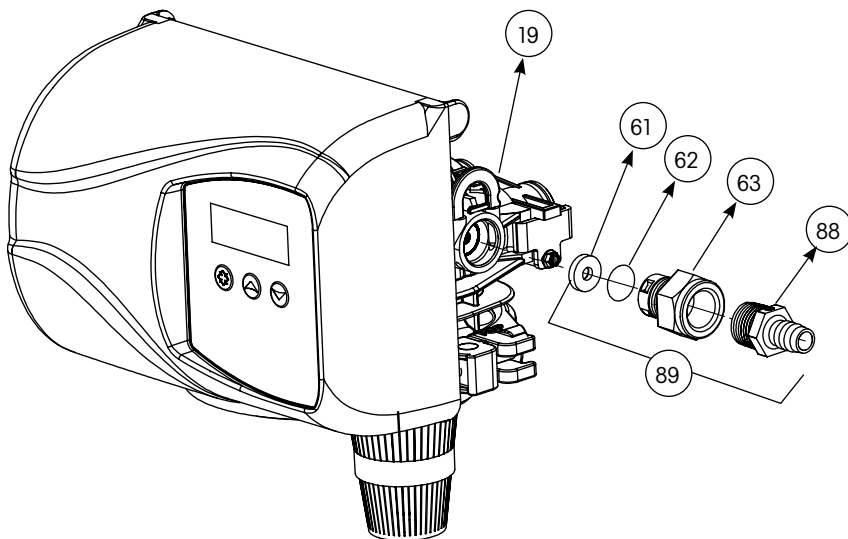
CAUTION! Disassembly while under pressure can result in flooding. Always follow these steps prior to servicing the valve.

6200 Service Kits – Piston and Cartridge Assembly



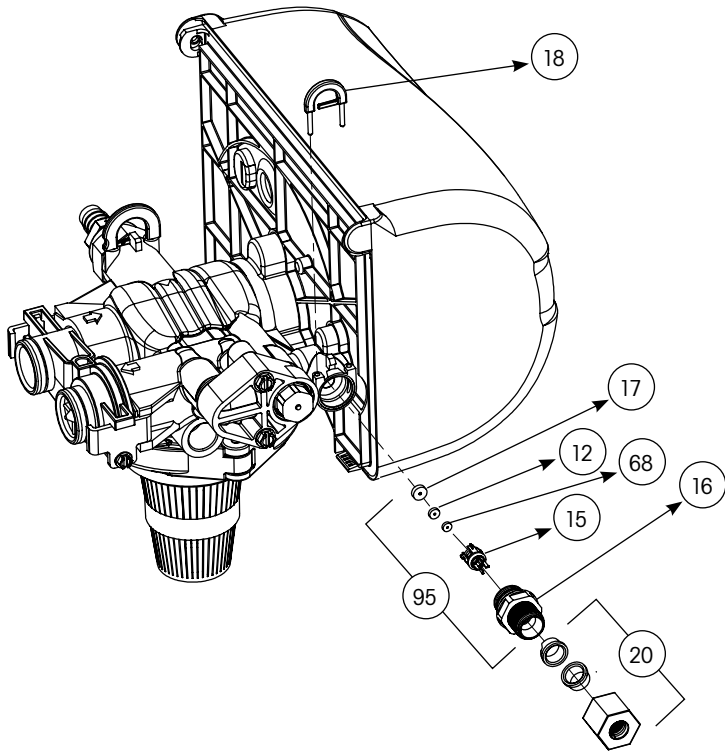
Dwg #	Part #	Part Description
7	61799-01	Cartridge Assembly with Piston
76	11335	Screw, 4-40X3/16
97	16394	O-Ring, 029
98	13287	O-Ring, 123
99	61799	Seal and Spacer Cartridge
100	42920	Piston
101	19984	Piston Rod

6200 Service Kits – Drain Line Flow Control Kits



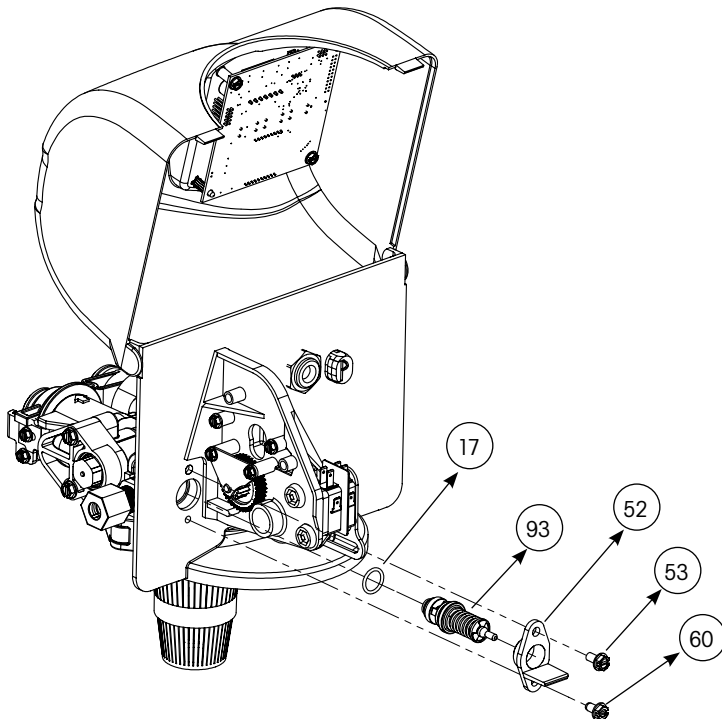
Dwg #	Part #	Part Description
61	12085	Washer, Flow, 1.2 GPM
	12086	Washer, Flow, 1.50 GPM
	12087	Washer, Flow, 2.0 GPM
	12088	Washer, Flow, 2.4 GPM
	12089	Washer, Flow, 3.0 GPM
	12090	Washer, Flow, 3.5 GPM
	12091	Washer, Flow, 4.0 GPM
	12092	Washer, Flow, 5.0 GPM
62	11183	O-Ring, 017
63	11385-01	Adapter, Fitting, DLFC
88	13308	Hose Barb, Straight, DLFC, 1/2"
	12388	Hose Barb, 90 Deg, DLFC, 1/2"
89	60705-XX	DLFC Assembly, XX GPM For < 7 GPM
	60706-XX	DLFC Assembly, XX GPM For > 7 GPM
19	18312	Retainer, Drain

6200 Service Kits – Brine Line Flow Control Kits



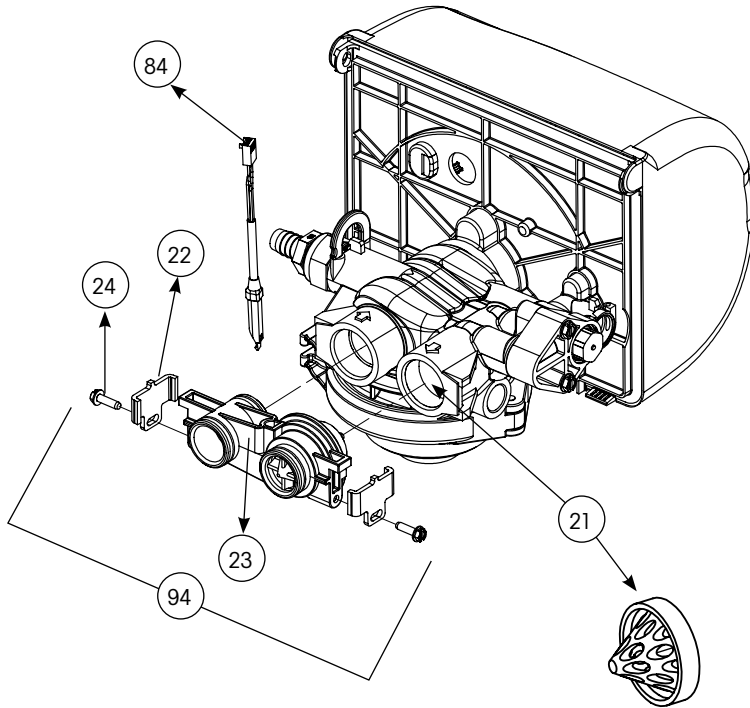
Dwg #	Part #	Part Description
17	13302	O-Ring, 014
12	10141	O-Ring, 010
68	17307	Washer, Flow, 0.125 GPM
	12094	Washer, Flow, 0.25 GPM
	12095	Washer, Flow, 0.5 GPM
	12097	Washer, Flow, 1.0 GPM
15	19334	Retainer, Flow Washer, BLFC
16	19335	Fitting, BLFC, 3/8"
20	19625	Nut, Assembly, 3/8" Plastic
95	60422-XX	BLFC Assembly, Specify XX=GPM

6200 Service Kits – Brine Valve

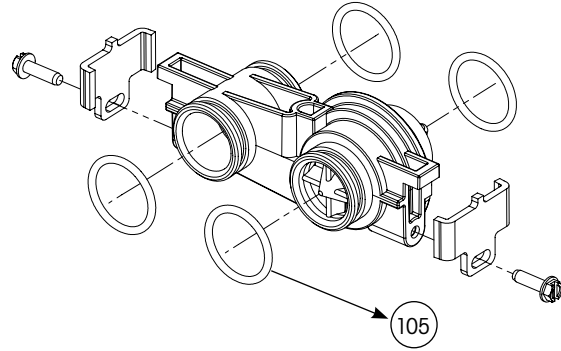


Dwg #	Part #	Part Description
17	13302	O-Ring, 014
93	60032	Brine Valve Assembly
52	40055-06	Bracket, Plastic
53	15137	Screw, Hex Washer Head
60	40134	Screw, Self Tap

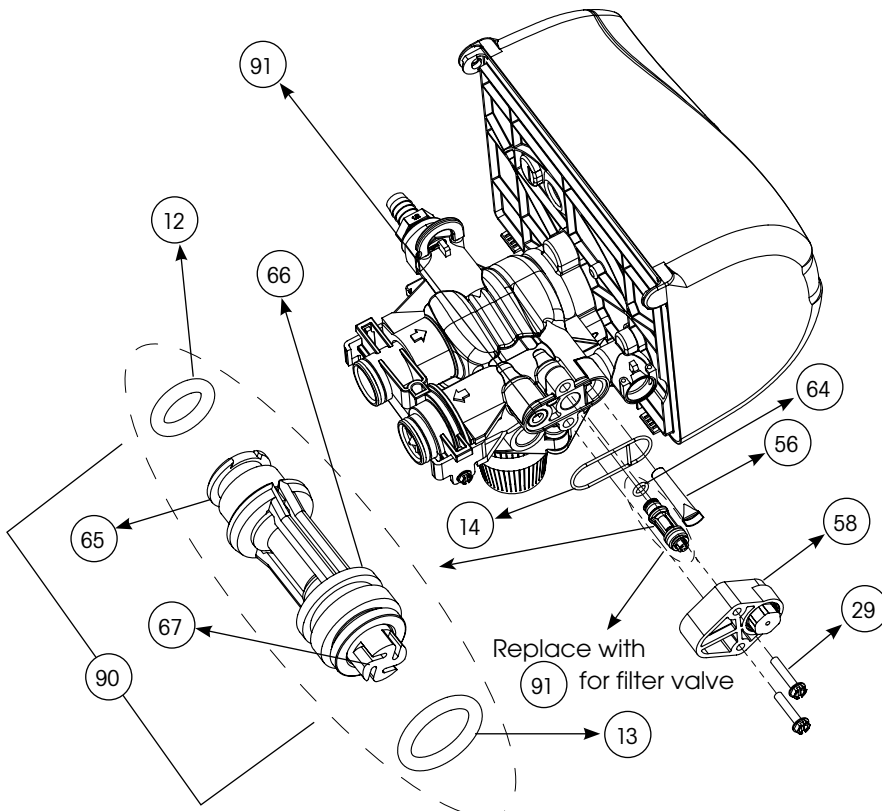
6200 Service Kits – Flow Meter



Dwg #	Part #	Part Description
84	19791-01	Cable, Meter
22	19569	Clip, Flow Meter
24	13314	Screw, Slot Hex, 8-18 X0.6
23	19797	Meter, Assy, 3/4" Dual Port
105	13305	O-Ring, -119
21	14613	Flow Straightener
94	60626	Meter Only, Electronic Turbine

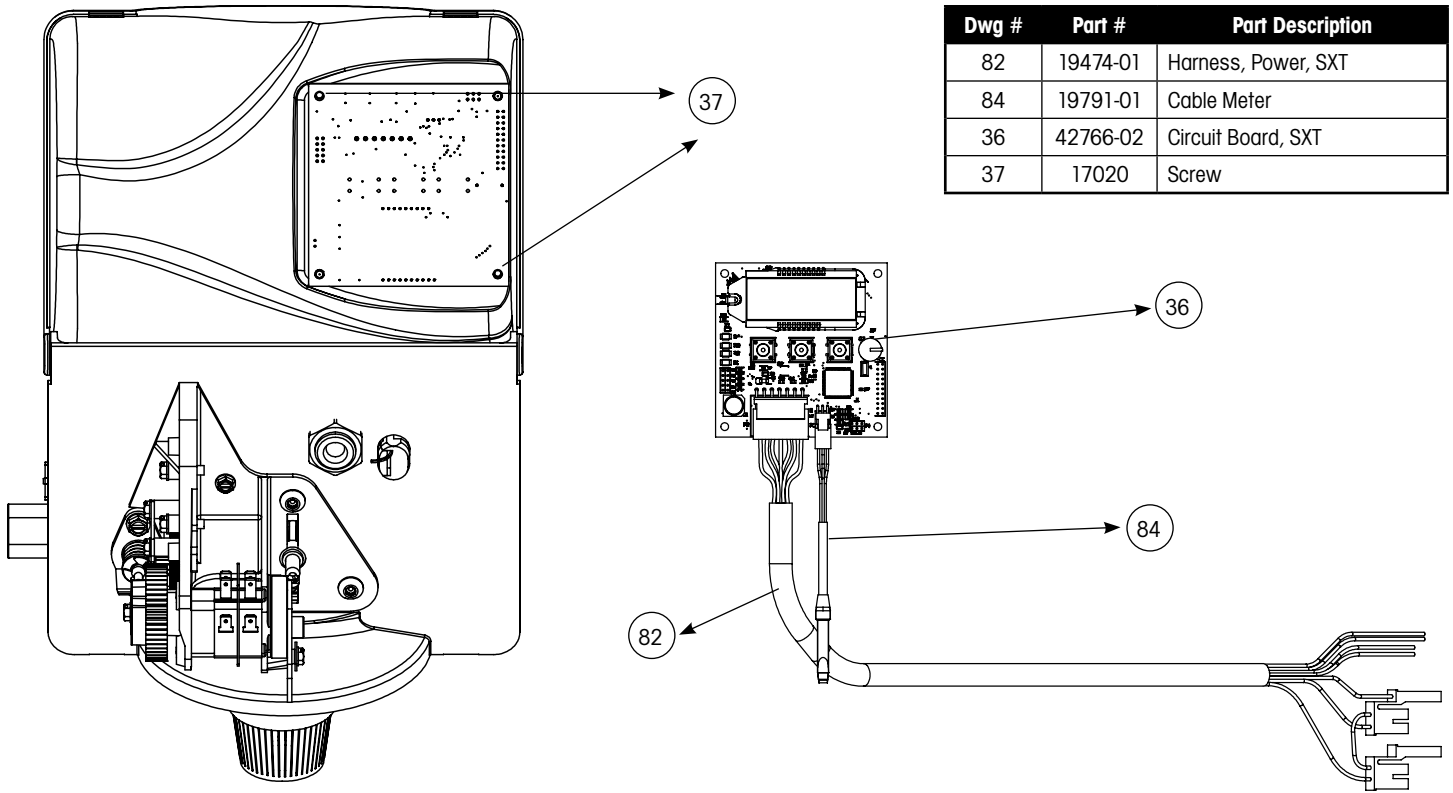


6200 Service Kits – Injector Assembly

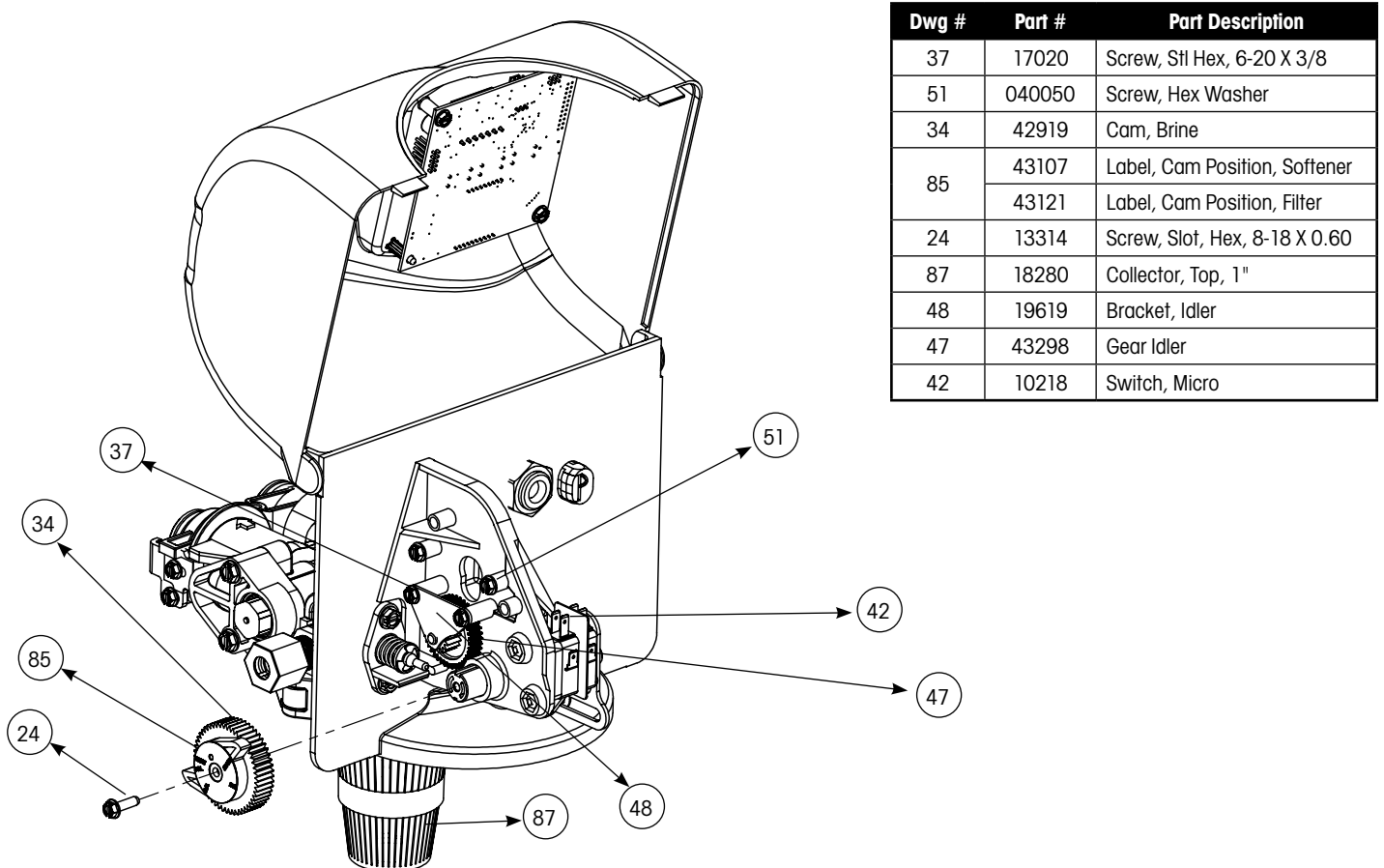


Dwg #	Part #	Part Description
91	18276-01	Plug, Injector, Assembly
64	040095	Flow Dispensor
56	40058	Screen, Injector
58	40079-20	Cap, Injector, Regulated, Softener
	18277	Cap, Injector Filter
29	18262	Screw, #10-24 X 1
14	040064	Seal, Injector, Softener
	18301	Seal, Injector, Filter
66	18275-X	Throat, Injector, Specify Size X
65	18274-X	Nozzle, Injector, Specify Size X
12	10141	O-Ring, -010
67	18273	Generator, Vortex
13	13771	O-Ring, -012
90	61514-XX	Injector Assembly, Specify Size XX

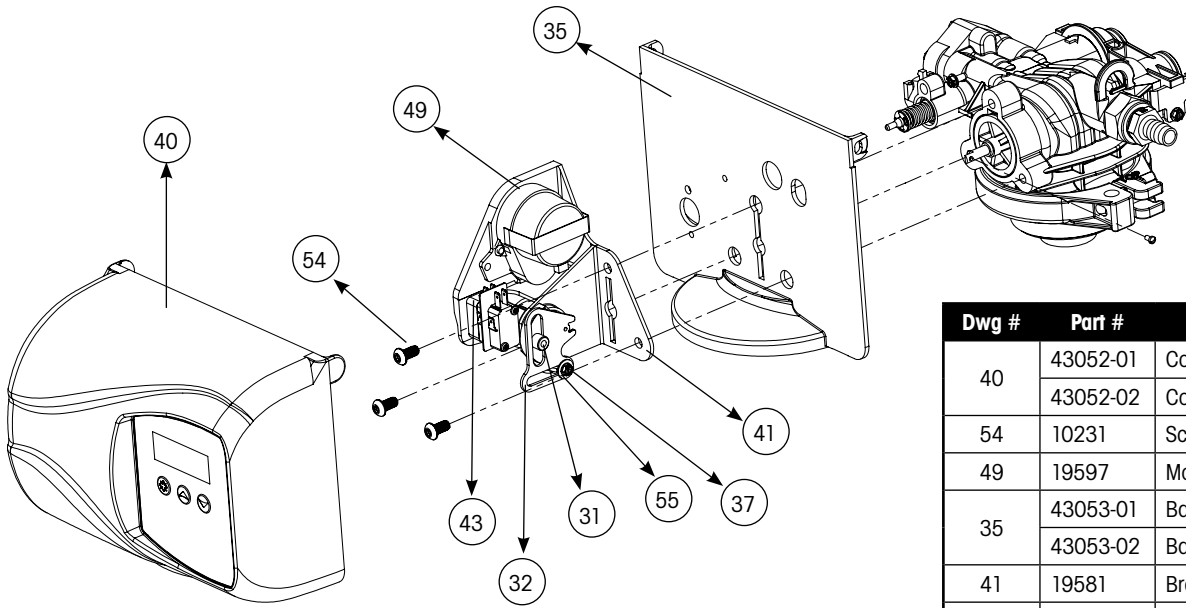
6200 Service Kits – Circuit Board



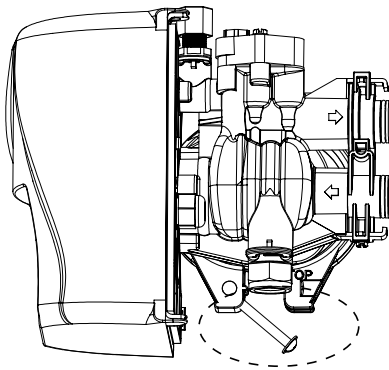
6200 Service Kits – Other Parts



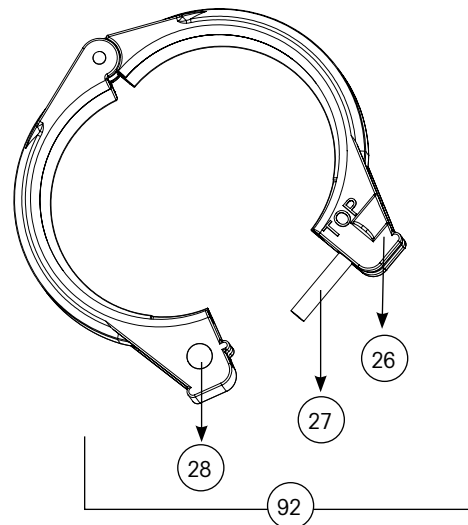
6200 Service Kits – Other Parts Continued



Dwg #	Part #	Part Description
40	43052-01	Cover, Black
	43052-02	Cover, Cream
54	10231	Screw, Slot Hex, 1/4-20 X 1/2
49	19597	Motor, 24V, 50/60 Hz
35	43053-01	Backplate, Black
	43053-02	Backplate, Cream
41	19581	Bracket, Drive
43	10302	Insulator, Limit Switch
32	019688	Link, Piston Rod
31	019493	Shaft, Drive
55	13363	Washer
37	17020	Screw, Hex, 6-20 X 3/8

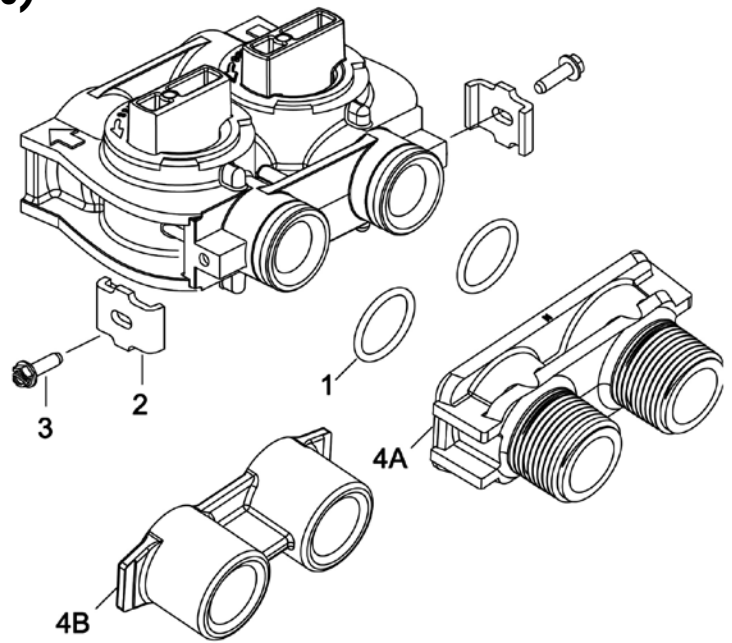


Dwg #	Part #	Part Description
28	19998	Shaft, Drive
27	40057	Screw, Hex Washer Head
26	40254	Clamp, Ring
92	60503	Clamp Ring Assembly



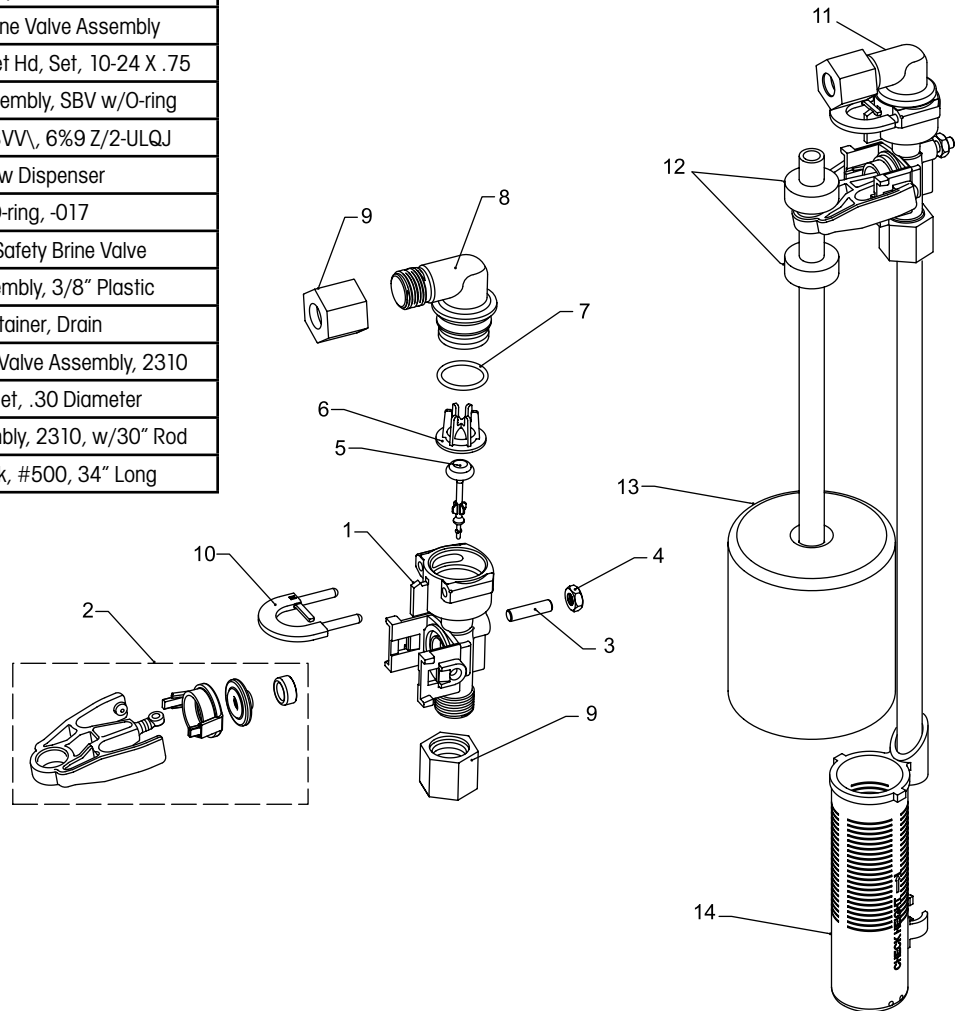
Bypass Valve Assembly & Yokes (Plastic)

Item No.	Quantity	Part No.	Description
1	2	13305	O-ring, -119
2	2	13255	Clip, Mounting
3	2	13314	Screw, Hex Washer Head, 8-18 x 5/8
4A	1	18706	Yoke, Plastic, 1" NPT
		18706-02	Yoke, Plastic, 3/4" NPT
4B	1	13708	Yoke, Brass, 3/4" NPT
		13708NP	Yoke, 3/4" NPT Nickel Plated
		13398	Yoke, Brass, 1" NPT
		13398NP	Yoke, 1" NPT Nickel Plated
		40636	Yoke, 1 1/4" NPT
		40636-49	Yoke, 1 1/4" Sweat



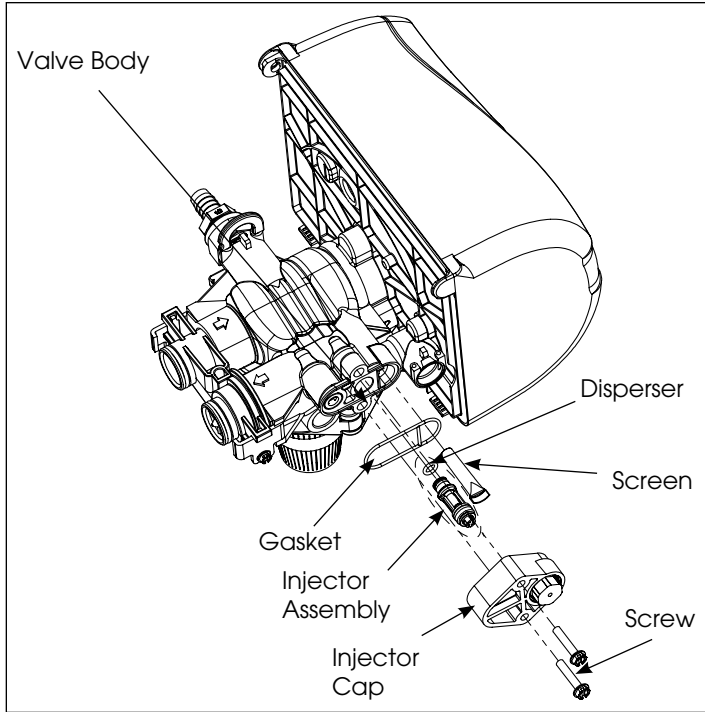
2310 Safety Brine Valve

Item No.	Quantity	Part No.	Description
1	1	19645	Body, Safety Brine Valve, 2310
2	1	19803	Safety Brine Valve Assembly
3	1	19804	Screw, Socket Hd, Set, 10-24 X .75
4	1	19805	Poppet Assembly, SBV w/O-ring
5	1	19652-01	3RSSHW \$V\\$, 6%9 Z/2-ULQJ
6	1	19649	Flow Dispenser
7	1	11183	O-ring, -017
8	1	19647	Elbow, Safety Brine Valve
9	2	19625	Nut Assembly, 3/8" Plastic
10	1	18312	Retainer, Drain
11	1	60014	Safety Brine Valve Assembly, 2310
12	2	10150	Grommet, .30 Diameter
13	1	60068-30	Float Assembly, 2310, w/30" Rod
14	1	60002-34	Air Check, #500, 34" Long

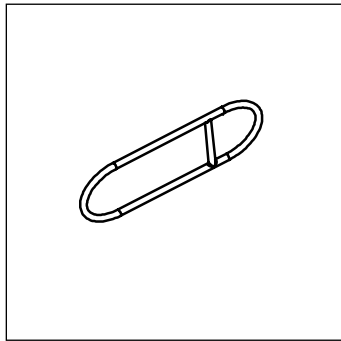


42112_REVA

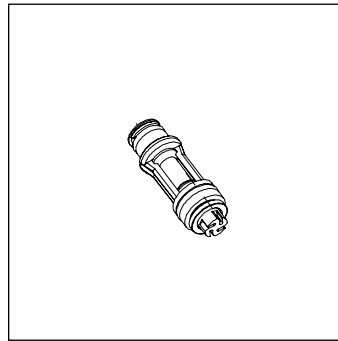
Servicing 6200 SXT Upflow Control Valve – Replacing Injectors and Screen



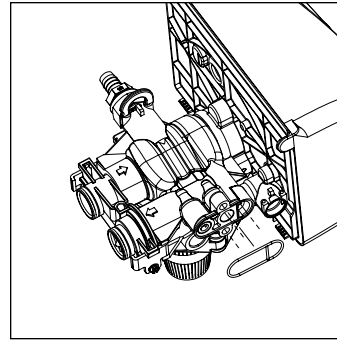
1. Unscrew the injector cap from the valve body



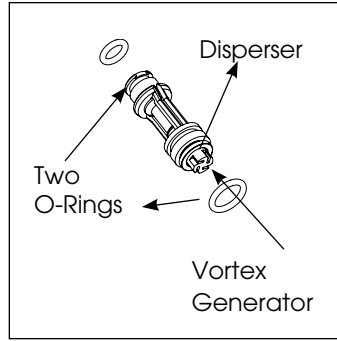
2. Discard gasket



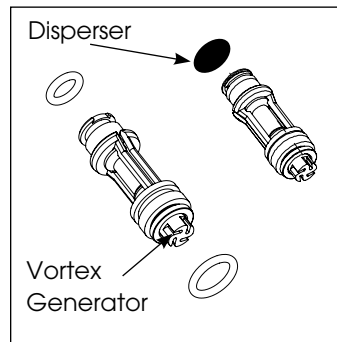
3. Remove injector assembly from the valve body and discard it.



4. Apply silicone lubricant to the gasket and install around oval extension on injector cap.

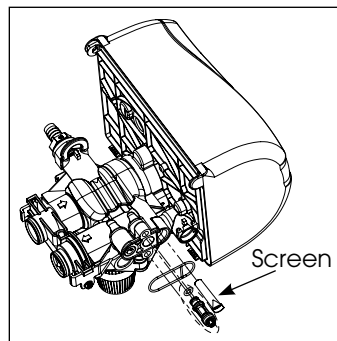


5. Apply silicone lubricant to two new o-rings and install over 2 bosses of the new injector assembly.



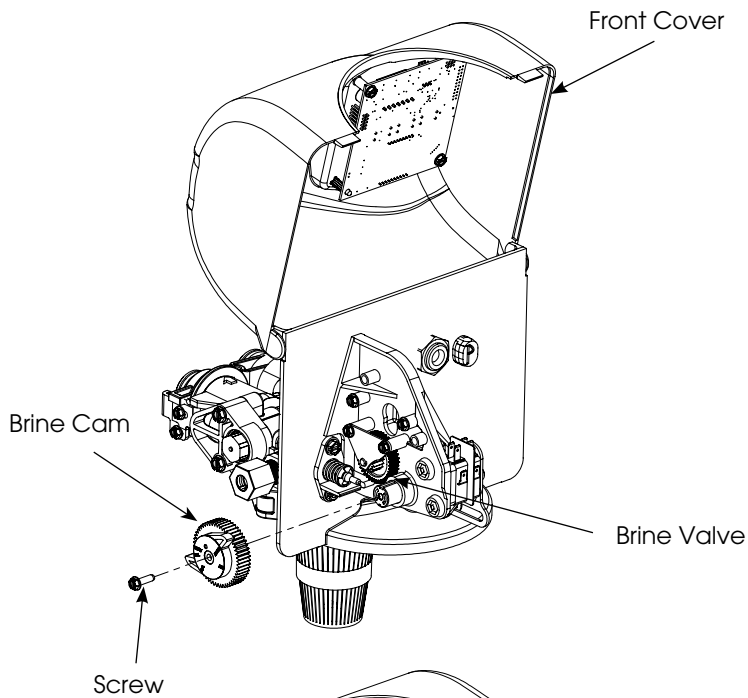
6. Apply silicone grease to the dispenser and press it on the surface of the injector assembly.

7. Screw in new injector throat and nozzle (make sure that vortex generator is installed in the injector body), be sure they are seated tightly.

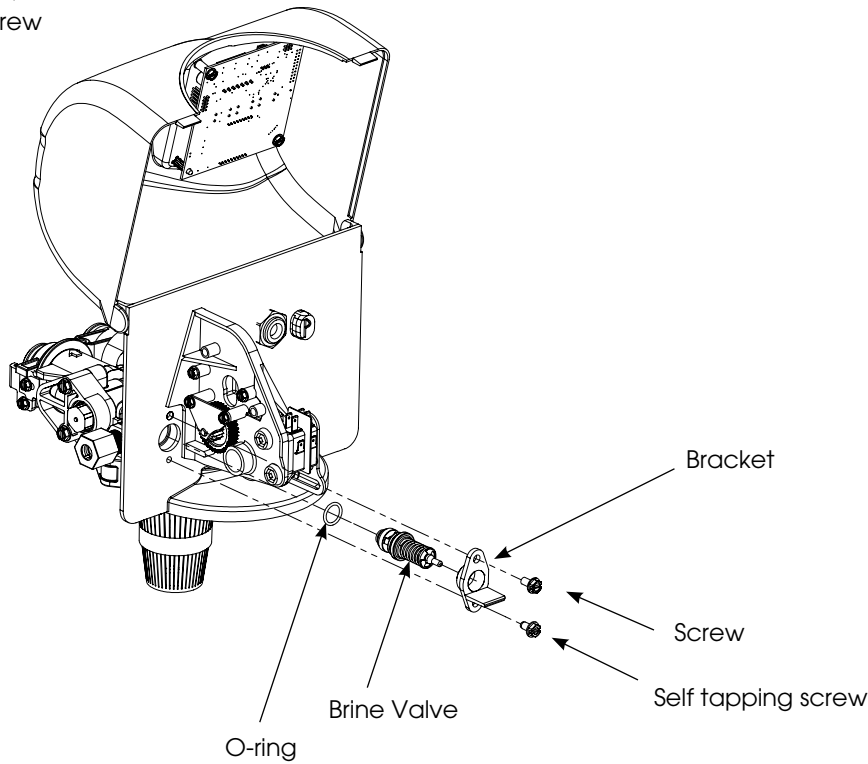


8. Install a new screen.
9. Tighten injector cap on to the valve body.

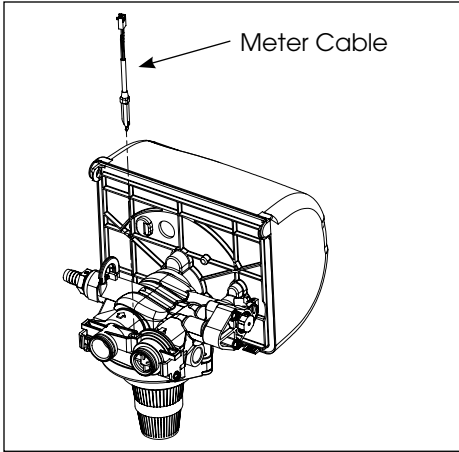
Replacing Brine Valve



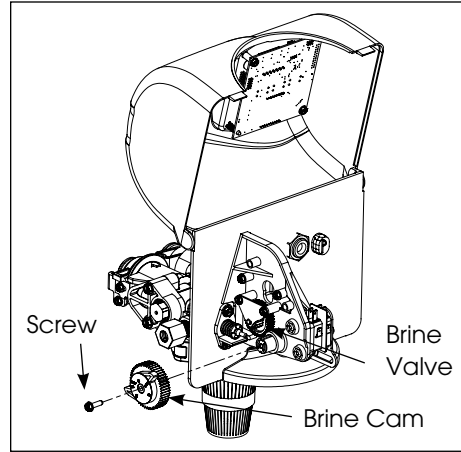
1. Open the front cover of the powerhead, unscrew the brine cam and push the brine valve in order to remove the cam.
2. Remove the two screws from the grey brine valve bracket and remove it from the valve back plate.
3. Pull brine valve from injector body. Also remove and discard o-ring at bottom of brine valve hole.
4. Apply silicone lubricant to new o-ring and install at bottom of brine valve hole.
5. Apply silicone lubricant to o-ring on new valve assembly and press into brine valve hole. Be sure shoulder on bushing is flush with injector body.
6. Reinstall the brine valve bracket. Make sure to use self tapping screw at the bottom of the bracket. Reinstall brine cam. Close the front cover of the control valve.



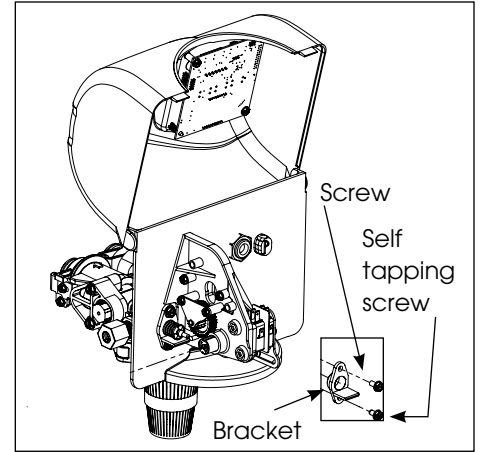
Timer Replacement



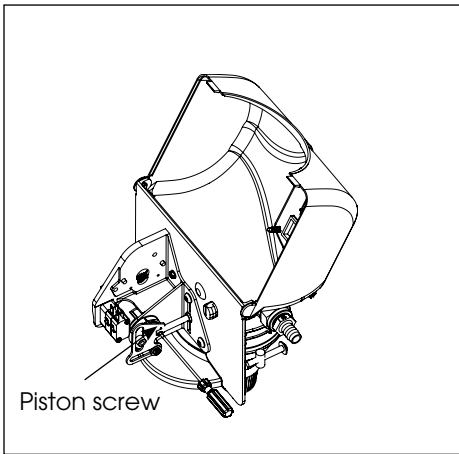
1. Disconnect the meter cable from the meter.



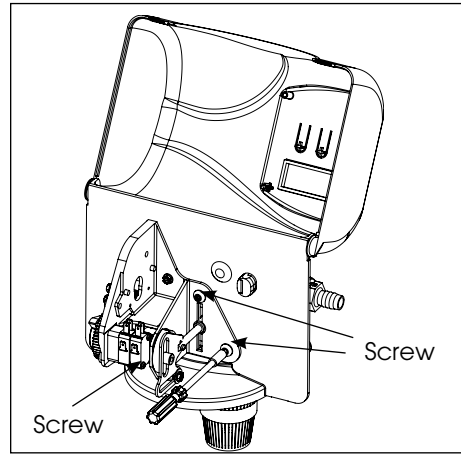
2. Open the front cover of the control valve, unscrew the brine cam and push the brine valve in order to remove the cam.



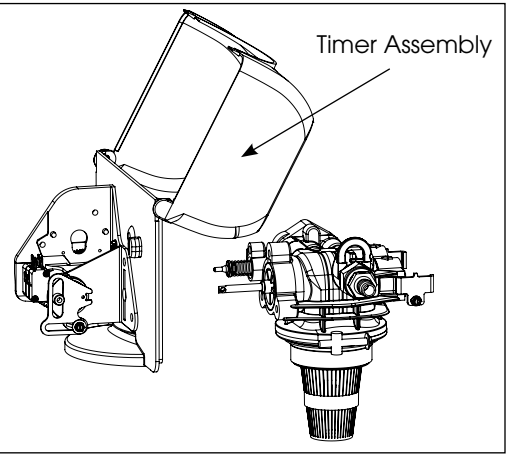
3. Remove the two screws from the grey brine valve bracket and remove it from the valve back plate.



4. Remove the piston screw from the piston rod.



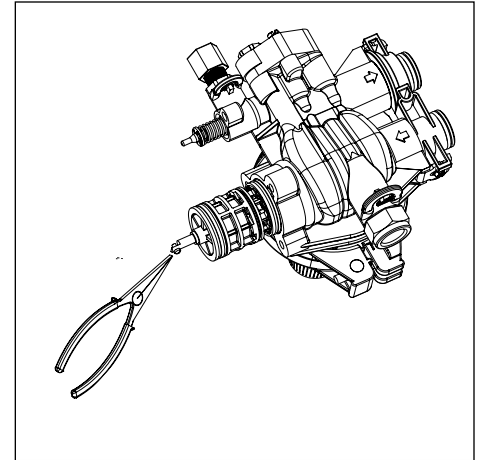
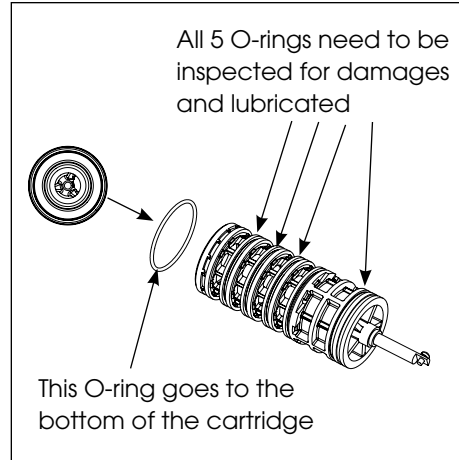
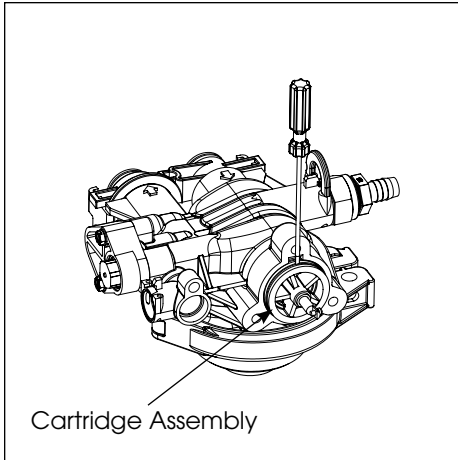
5. Remove the three screws from the front bracket. The entire timer assembly will disconnect from the valve body.



6. Replace the timer with a new one. Attach the three screws to the front bracket and piston screw to the piston rod. Reinstall the brine valve bracket. Reinstall brine cam. Close the front cover of the control valve.

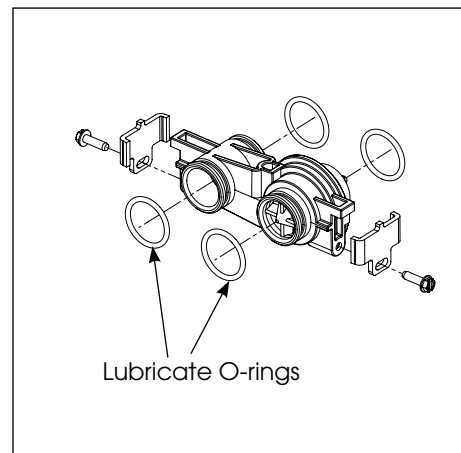
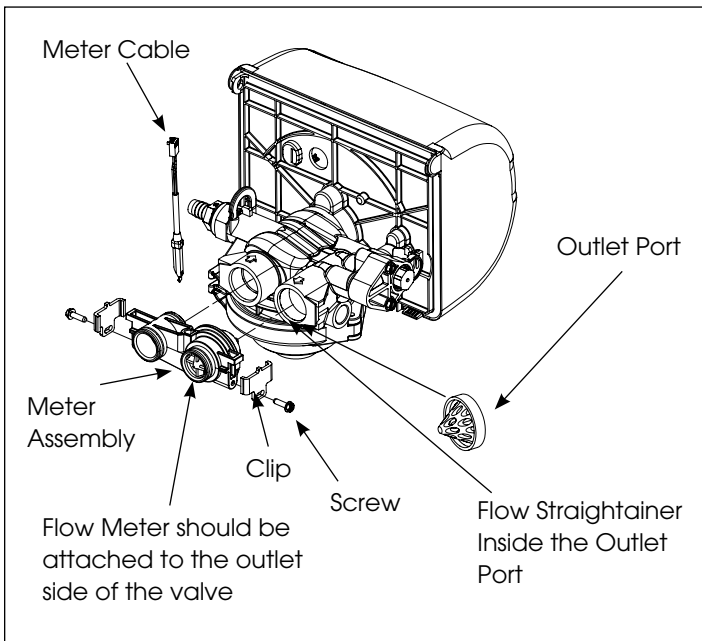
7. Reconnect meter cable

Piston Cartridge Assembly Replacement



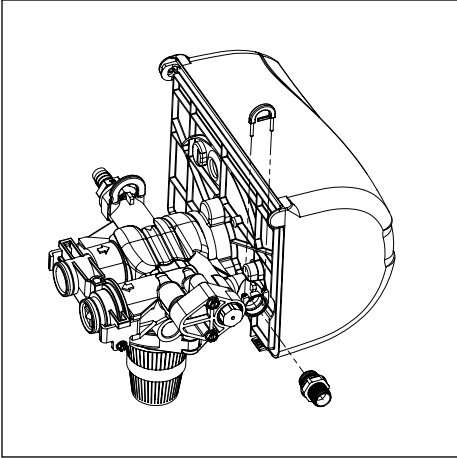
1. Follow steps 1 to 5 of timer replacement.
2. Use a flat head screw drive on the notch of the valve body as shown to loosen the piston cartridge, pull the cartridge out of the body using pliers.
3. Inspect the inside of the valve to make sure that there is no foreign matter that would interfere with the valve operation.
4. Put food grade silicone grease on the o-rings of the new piston cartridge assembly and install it inside the valve body.
5. Reinstall the timer assembly, brine valve bracket and meter cable.

Meter Replacement and Service

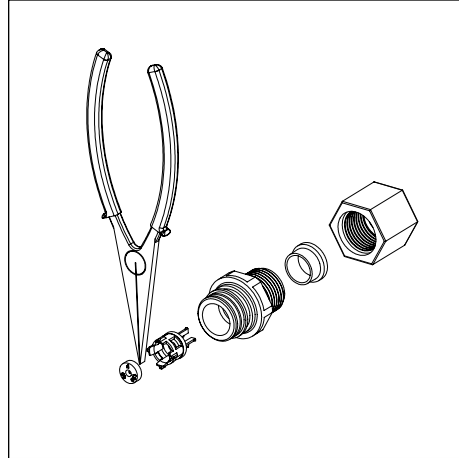


1. Disconnect the meter cable from the meter.
2. Remove two screws and clips at bypass valve or yoke. Pull resin tank away from plumbing connections.
3. Pull meter module out from control valve.
4. Apply silicone lubricant to four new o-rings and assemble to four ports on new meter module.
5. Assemble meter to control valve. Note, meter portion of module must be assembled at valve outlet.
6. Push resin tank back to the plumbing connections and engage meter ports with bypass valve or yoke.
7. Attach two clips and screws at bypass valve or yoke. Be sure clip legs are firmly engaged with lugs.

Servicing and Replacing Brine Line Flow Control (BLFC)



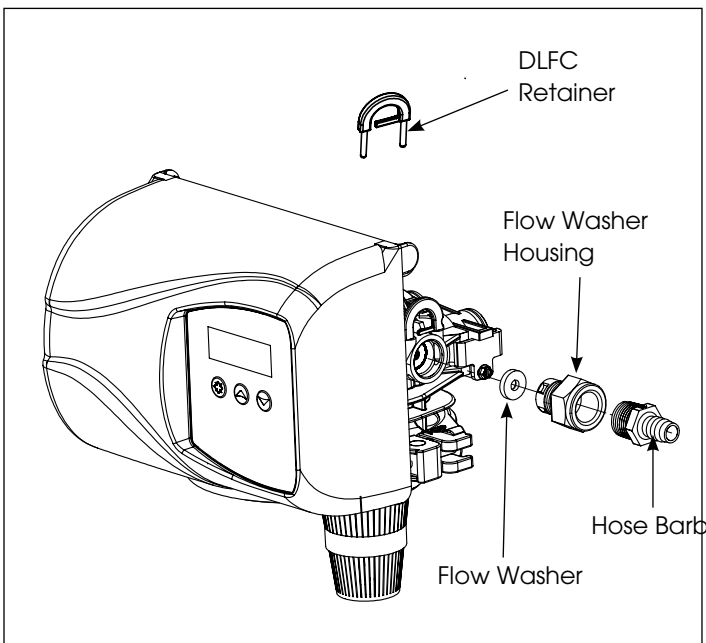
1. Disconnect the brine line retainer clip.



2. Remove the BLFC assembly and pull the flow washer retainer out of the BLFC housing with the help of plier.

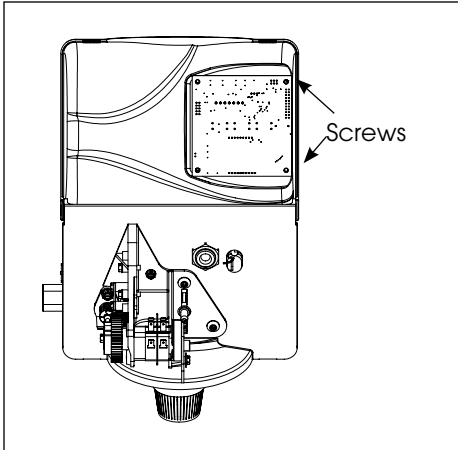
3. Remove the flow washer from the retainer and clean it with water to remove any debris. Replace it with a new washer if necessary.
4. Re-install the BLFC housing and retainer.

Servicing and Replacing Drain Line Flow Control (DLFC)

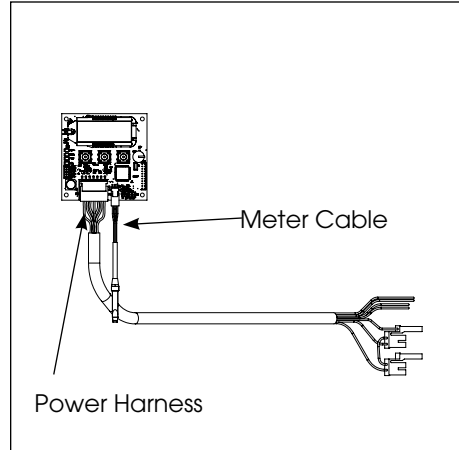


1. Disconnect the drain line retainer clip.
2. Remove the DLFC assembly and pull the flow washer out of the DLFC housing with the help of plier.
3. Remove the flow washer from the housing and clean it with water to remove any debris. Replace it with a new washer if necessary.
4. Re-install the DLFC housing and retainer.

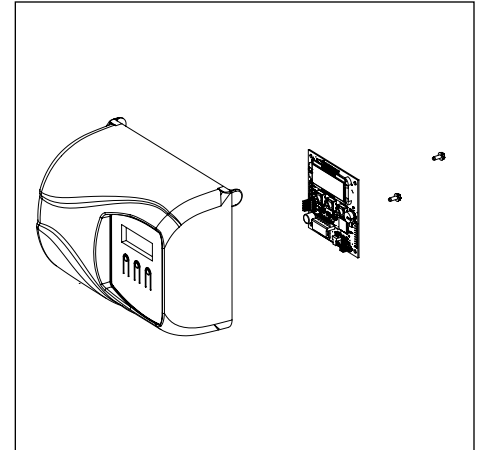
Circuit Board Replacement



1. Detach the circuit board from valve front cover by removing two screws.



2. Disconnect the meter cable and power head harness from the circuit board.



3. Replace and connect the new circuit board on the front cover.

After Servicing

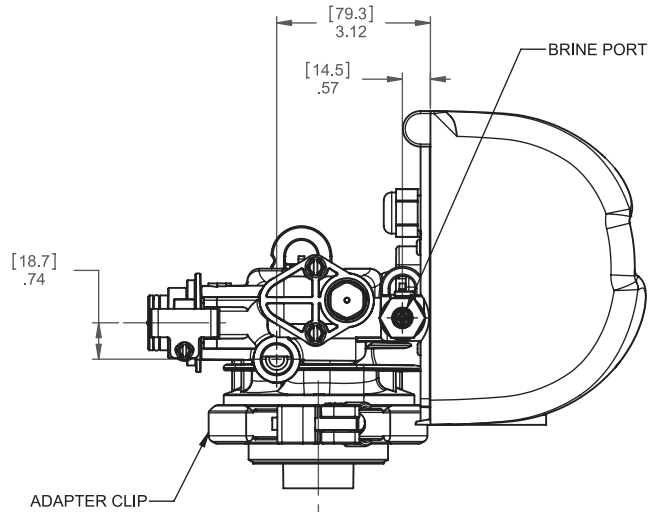
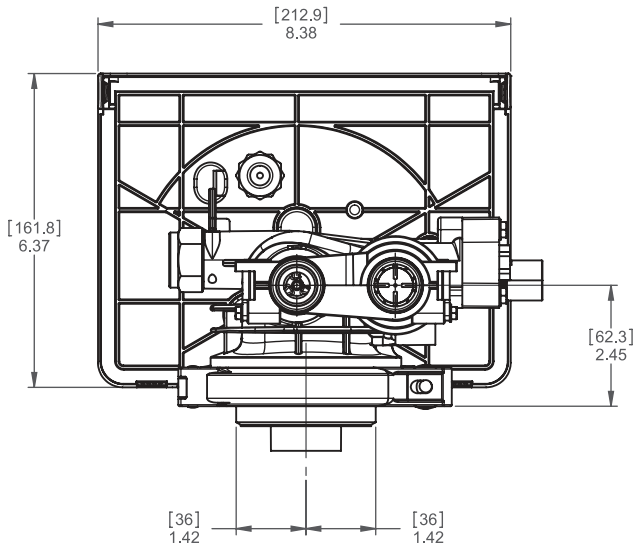
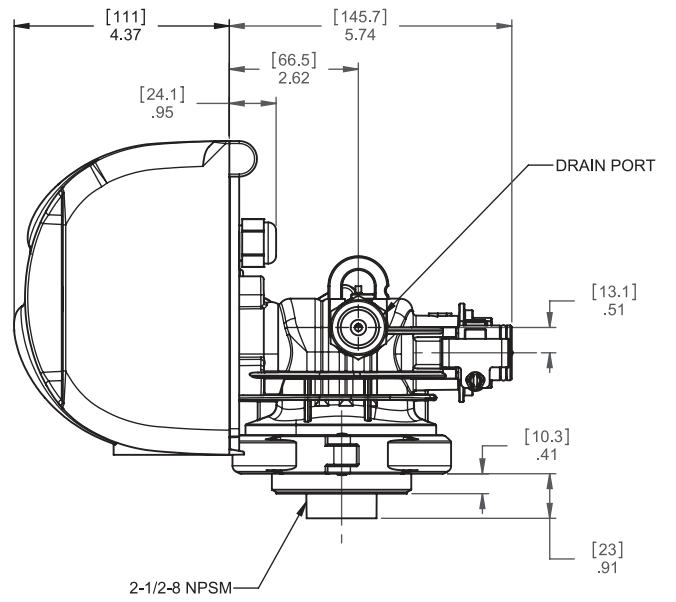
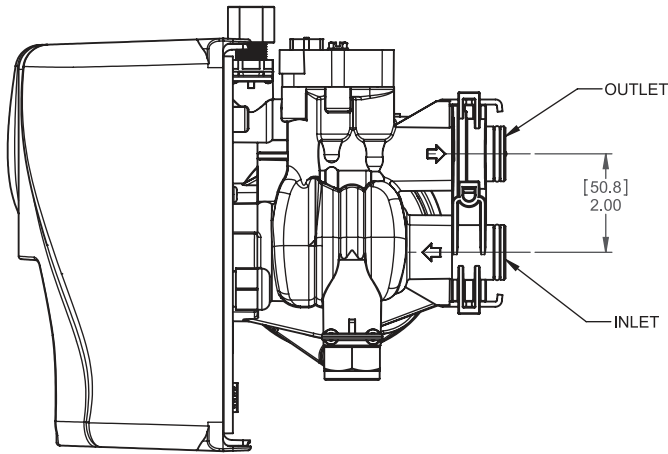
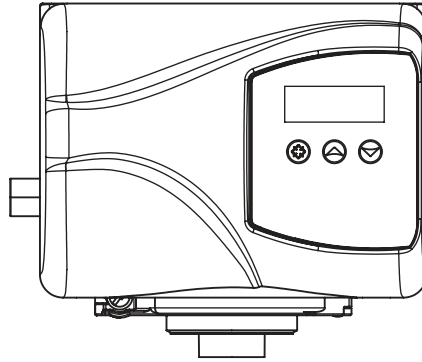
1. Reconnect brine tube and drain line.
2. Return bypass or inlet valve to normal in service position. Water Pressure will automatically build in the softener.

NOTE: Be sure to shut off any bypass line.

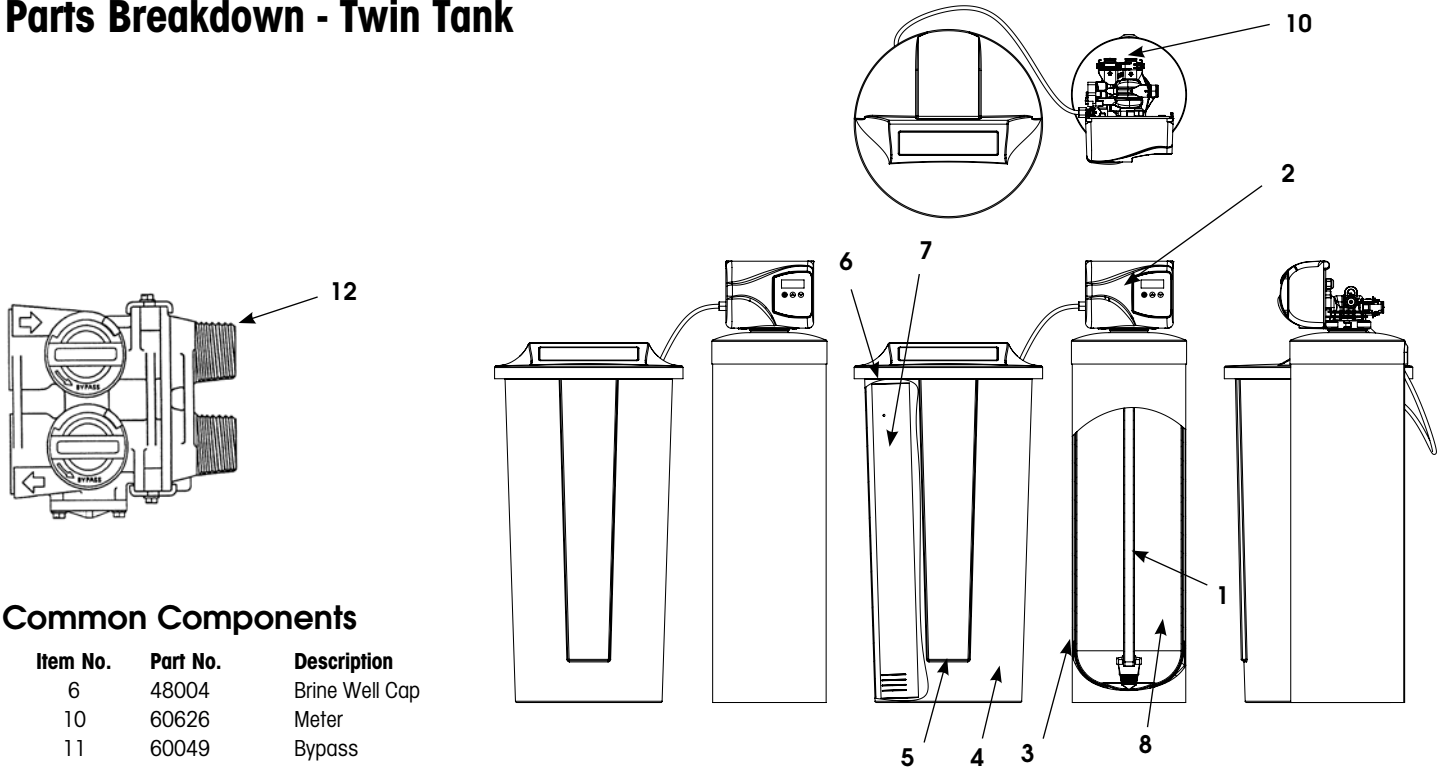
3. Check for leaks at all sealed areas. Check Drain seal with the control in the backwash position.
4. Plug electrical cord into outlet.
5. Set Time of Day and cycle the control valve manually to assure proper function. Make sure control valve is returned to the In Service position.
6. Verify the salt level in the brine tank is sufficient. Start regeneration cycle manually if water is hard.

6200 SXT Valve Dimensional Drawings

All dimensions are in Inches (mm).



Parts Breakdown - Twin Tank

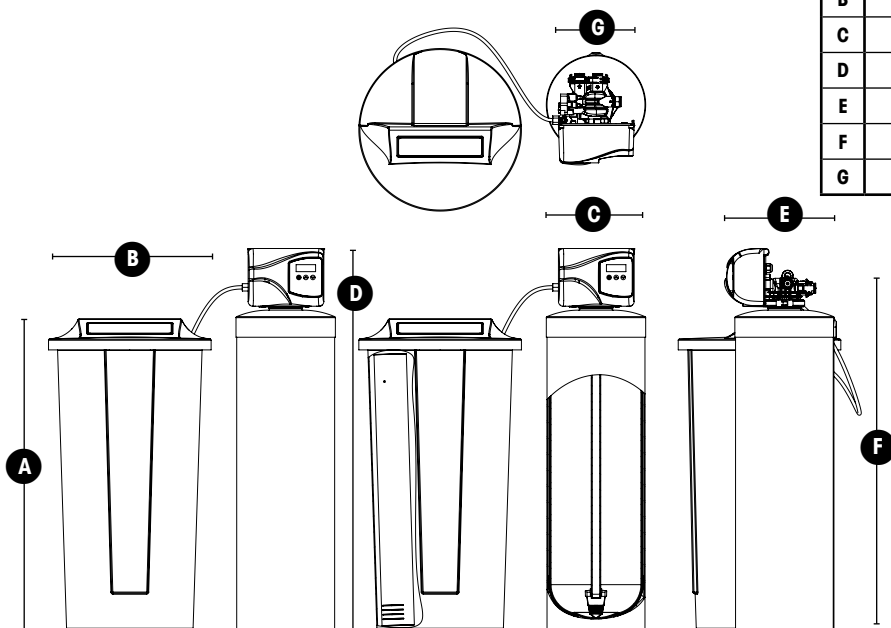


Common Components

Item No.	Part No.	Description
6	48004	Brine Well Cap
10	60626	Meter
11	60049	Bypass

Part Number	Model Description	Distributor (1)	Valve (2)	Tank (3)	Brine Tank (4)	Grid (5)	Safety Float (7)	Media Bed (8)
4901	FE30SXT	19807	6200301	110474	100192	19709	13624	95405
4902	FE45SXT	19806	6200302	112524	100192	95009-21	13624	94507
4903	FE60MISXT	19806	6200303	114506	100192	19706	13624	Call
4904	STFE30SXT	19806	6200301	110544	100192	19709	13624	Call
4905	STFE30SXT-DH	19806	6200301	81150	100192	19709	13624	Call

Dimesions (inches)					
	FE30SXT	FE45SXT	FE60MISXT	STFE30SXT	STFE30SXT-DH
A	38	38	38	48	48
B	22	22	22	22	22
C	10	12	14	10	10
D	54	59	57	61	61
E	19	19	19	19	19
F	49	54	52	56	56
G	2	2	2	2	2



Error Codes

Note: Error codes appear on the In Service display

Error Code	Probable Cause	Recover and Resetting
[Err 0]	Drive motor is stalled	Unplug the unit from the power source
[Err 1]	Drive motor is running continuously	When power is restored to the unit, the Err _ display code clears. If the condition causing the error has not been resolved the Err _ code reappears in the four digit display. Do not attempt to troubleshoot this problem any further.
[Err 2]	There have been more than 99 days since the last Regeneration. If the Day of the Week mode of regeneration is selected and days since last regeneration exceeds 7 days. [7 - - 5]: There have been more than 7 days since the last regeneration. All individual settings (d1, d2, d3, d4, d5, d6, d7) are set to 0.	Regeneration must occur for the unit to recover, the display to clear and the valve to function normally. [7 - - 5]: To recover from [Err2], the user must initiate a regeneration or set at least one individual day to 1.
[Err 3]	Control board memory failure.	Perform a Master Reset. If the error returns, do not attempt to troubleshoot this problem any further.

Error Display Example



NOTE: Unit will flash when an error exists.

Trouble Shooting Guide

<p>1. Softener delivers hard water</p> <p>A. Bypass valve is open. B. No salt in brine tank. C. Injector or screen plugged. D. Insufficient water flowing into brine tank.</p> <p>E. Electrical service to unit has been interrupted. F. Salt bridged. G. Loose brine line. H. Plugged injector assembly. I. Reserve capacity has been exceeded - demand regeneration models only. J. Program wheel is not rotating with meter output - demand regeneration models only.</p> <p>K. Meter is not measuring flow - demand regeneration models only.</p>	<p>A. Close bypass valve B. Add salt to brine tank and maintain salt level above water level C. Replace injectors and screen. D. Check brine tank fill time and clean brine line flow control if plugged. E. Assure permanent electrical service (check fuse, plug, or switch). F. Break salt bridging following instructions on page 5. G. Tighten connections at control valve and at brine valve. H. Clean assembly following instructions on page 6. I. Check salt dosage requirements and reset program wheel to provide additional reserve. J. Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive "clicks" when program wheel strikes regeneration stop. If it does not, replace timer. K. Check output by observing rotation of small gear on front of timer program wheel must not be against regeneration stop for this check). Each tooth to tooth is approximately 30 gallons. If not performing properly, replace meter.</p>
<p>2. Intermittent soft water</p> <p>A. Control will not draw brine properly</p> <p>B. Using hot water during regeneration cycle</p> <p>C. Loose wiring or connections D. Leaky faucet</p> <p>E. Water hardness increased</p> <p>F. Softener capacity too small</p>	<p>A. Maintain water pressure at 20 psi minimum. Check for restrictions in drain line. Clean or replace injector assembly. Check for air leaks between control valve and air check valve and tighten connections. B. Avoid using hot water at this time as water heater will fill with hard water. C. Unplug softener and check that all wires are securely connected. D. Check and repair plumbing leaks that can cause you to run out of soft water. E. Have samples of your water analyzed to determine any change in hardness. F. Increase capacity by replacing with larger unit.</p>
<p>3. Softener fails to regenerate or regenerates at wrong time</p> <p>A. Electrical service to unit has been interrupted</p> <p>B. Timer is defective C. Power failure</p>	<p>A. Assure permanent electrical service (check fuse, plug, pull chain or switch). Reset time of day. B. Replace timer. C. Reset time of day.</p>
<p>4. Unit uses too much salt</p> <p>A. Improper salt setting B. Excessive water in brine tank</p>	<p>A. Check salt usage and salt setting. B. See Problem No. 8</p>
<p>5. Loss of Water Pressure</p> <p>A. Inlet to control blocked with iron buildup or foreign matter B. Iron buildup in water conditioner</p>	<p>A. Clean line to water conditioner. Remove piston and clean control. B. Clean control and add resin cleaner to resin bed.</p>
<p>6. Loss of resin through drain line</p> <p>A. Air in water system B. Drain line flow control is too large.</p>	<p>A. Assure that well system has proper air eliminated control. Check for dry well condition. B. Ensure drain line flow control is sized correct.</p>

Trouble Shooting Guide

<p>7. Iron in conditioned water</p> <p>A. Fouled resin bed</p>	<p>A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration.</p> <p>Iron Guard Plus Only: if symptom occurs after a year or so of service, the calcium carbonate may be depleted. Replace with calcium carbonate media.</p>
<p>8. Excessive water in brine tank</p> <p>A. Plugged drain line flow control</p> <p>B. Plugged injector system</p> <p>C. Foreign material in brine valve</p> <p>D. Foreign material in brine line flow control</p>	<p>A. Clean flow control.</p> <p>B. Clean injector and replace screen.</p> <p>C. Clean or replace brine valve.</p> <p>D. Clean brine flow control.</p>
<p>9. Softener fails to draw brine</p> <p>A. Drain line flow control is plugged</p> <p>B. Injector is plugged</p> <p>C. Injector screen is plugged</p> <p>D. Line pressure is too low</p> <p>E. Internal control leak</p>	<p>A. Clean drain line flow control.</p> <p>B. Clean or replace injectors.</p> <p>C. Replace screen.</p> <p>D. Increase line pressure. Line pressure must be at least 20 psi (139.9 KPa) at all times.</p> <p>E. Change seals and spacers and/or piston assembly.</p>
<p>10. control cycles continuously</p> <p>A. Faulty timer mechanism</p>	<p>A. Replace timer.</p>
<p>11. Drain flows continuously</p> <p>A. Foreign material in control</p> <p>B. Internal control leak</p> <p>C. Control valve jammed in brine or backwash position</p> <p>D. Timer motor stopped or jammed</p>	<p>A. Remove piston assembly and inspect bore, remove foreign material. Check control in various regeneration positions.</p> <p>B. Replace seals and/or piston assembly.</p> <p>C. Replace piston and seals and spacers.</p> <p>D. Replace timer motor.</p>

WaterGroup Guarantee

WaterGroup Inc. guarantees that your new water conditioner is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble free service.

Seven Year Complete Parts Guarantee:

WaterGroup Inc. will replace any part which fails within 60 months from date of manufacture, as indicated by the serial number provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

Ten Year Guarantee on Mineral Tanks and Brine Tanks:

WaterGroup Inc. will provide a replacement mineral tank or brine tank to any original equipment purchaser in possession of a tank that fails within 120 months, provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing.

General Provisions:

WaterGroup Inc. assumes no responsibility for consequential damage, labor or expense incurred as a result of a defect or for failure to meet the terms of these guarantees because of circumstances beyond its control.

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