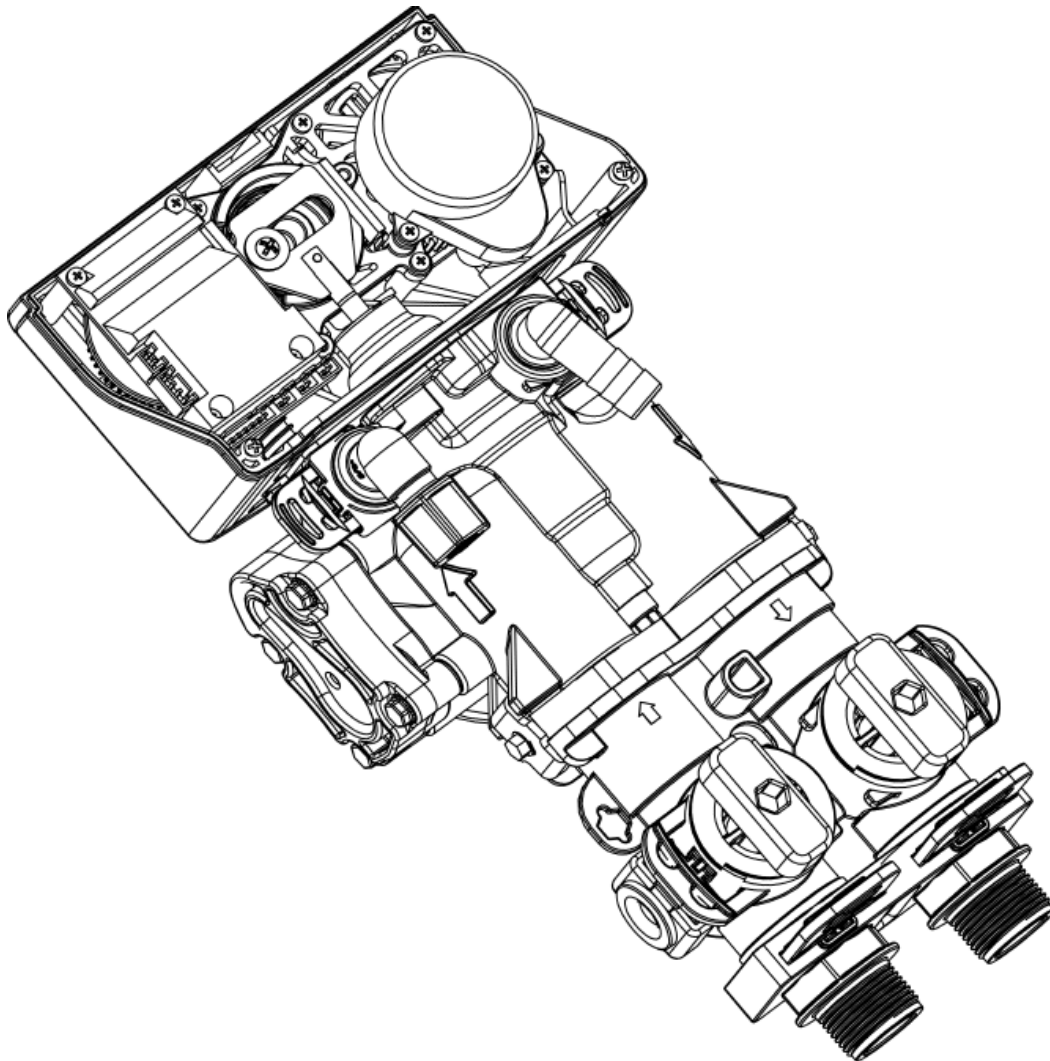




- 
1. Read all instructions carefully before operation.
  2. Avoid pinched O-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.
  3. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.





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# 1. READ THIS PAGE FIRST BEFORE STARTING INSTALLATION

---



- You must read and understand the contents of this manual before installing or operating your water softener.
- Personal injury or property damage could result if you fail to follow instructions in this manual.
- This system and its installation must comply with state and local regulations. Check with your local public works department for plumbing and sanitation codes. Local codes should be followed in the event the codes conflict with any content in this manual.
- This water softener must be operated at pressures between 30 psi to 125 psi (2.06-8.6 bar). If the water pressure is higher than 8.6 bar, use a pressure reducing valve in the water supply line to the softener.
- This unit must be operated at temperatures between 3°C -38°C ( 40°F and 110°F)
- 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.
- The appliance is only to be used with the power supply unit provided with the appliance.
- The appliance must only be supplied at safety extra low voltage corresponding to the marking on the appliance.
- Apply provided NSF certified lubricant to all o-rings during installation. Do not use pinched or damaged O-rings during installation.
- If softeners are exposed to high levels of iron, manganese, sulfur and sediments, damage to pistons, seals, and/or spacers within the control valve are not covered in this warranty due to harsh environments.
- It is recommended to annually inspect and service the control valve. Frequent cleaning and/or replacement of piston, seals, and/or spacers may be necessary depending on how harsh the conditions are.
- Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- This manual is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children should not play with the appliance.
- Cleaning and user maintenance should only be undertaken by those familiar with its operation.
- SPECTRUM guarantees that your new water softener is built of quality materials and workmanship. When properly installed and maintained, it will give years of trouble free service.
- SPECTRUM reserves the right to change the specifications referred to in this literature at any time, without prior notice.

## Install Notes and Safety Messages

---

**Watch out for the following messages in this manual:**

**CAUTION**

EXAMPLE

**NOTE**

EXAMPLE



## 2. WATER SOFTENER BASICS



### WHAT IS HARD WATER AND HOW IT IS SOFTENED

---

The majority of water comes from groundwater sources. Rain water permeates layers of soil, clay, sand and rock and in the process picks up a number of minerals along the way.

Hardness is defined by the content of calcium and magnesium that is found in water. The harder the water the more calcium and magnesium it contains. Although it is not toxic, hardness can cause a number of problems.

Hard water leaves traces of calcium and magnesium on glassware, surfaces, within pipework and appliances.

Which causes:

- Shorter equipment life span
- Higher energy costs
- Reduced flow rates
- Under-performing appliances

Excess deposits create a drop in efficiency, increased chemical cleaning costs and maintenance schedules and in the worse cases equipment failure.

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. 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. This type of iron can be removed from the water by the same ion exchange principle that removes the hardness elements, calcium and magnesium.
2. Particulate Iron - Also called ferric or colloidal iron. This type of iron is an undissolved particle of iron. A filtering treatment will be required to remove this type of iron. A softener will remove larger particles, but the particles may not be washed out in regeneration effectively and will eventually foul the ion exchange resin.
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 bond down 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.

It's important that when a softener is removing both hardness and dissolved iron, it must regenerate more frequently than it normally would for just hardness. 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 capacity. This will minimise the potential for bed fouling.

When operating a softener on water with less than the maximum of dissolved iron, regular cleaning 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 WATER THAT IS MICROBIOLOGICALLY UNSAFE OR THE WATER IS OF UNKNOWN QUALITY. THE WATER MUST BE DISINFECTED BEFORE OR AFTER THE UNIT.

### 3. SPECTRUM SOFTENER SPECIFICATIONS



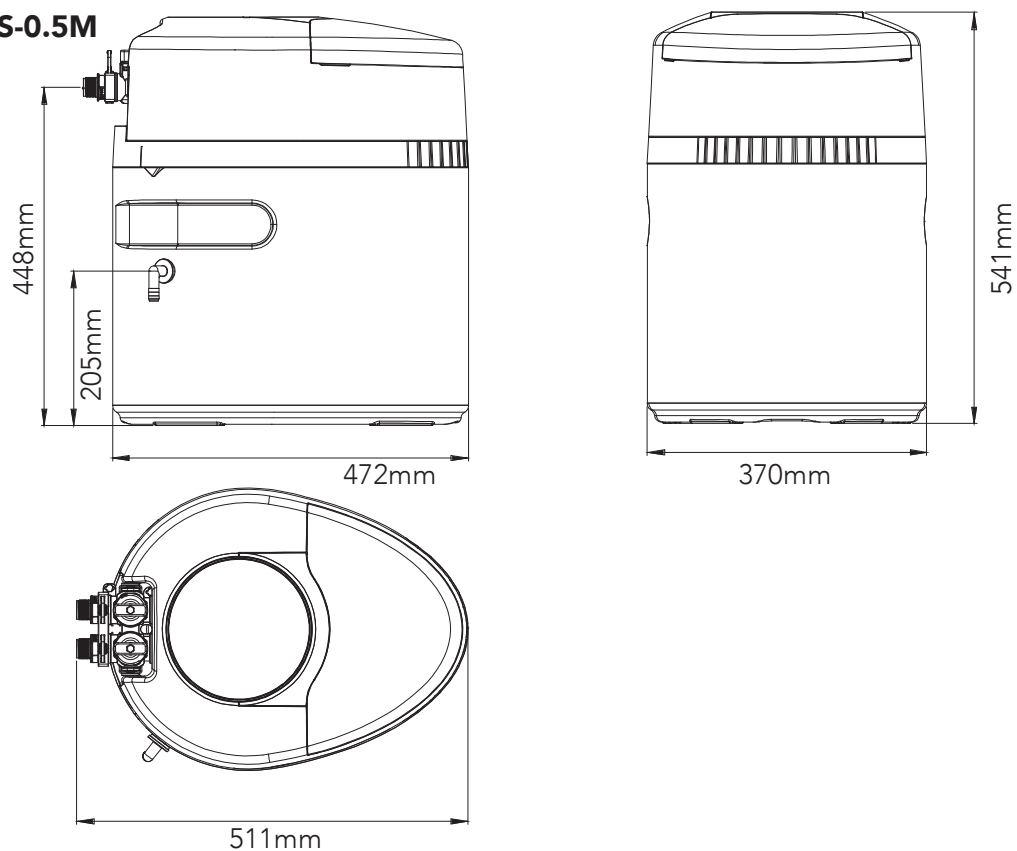
#### Performance Data Sheet & Specifications

Model	SWS-0.5M	SWS-1.7M
Regeneration Type	UP Flow	
Inegrated Meter in Bypass	Yes	
Hardness Removal	480,000mg	1,680,000mg
Media Loaded	Yes	
Resin Quantity (L)	10	35
Tank Size	10x15	10x44
Salt Storage Capacity (kg)	15	75
Recommended Service Flow Rate (lpm)	6.7	17
<b>Recommended Cycle Settings</b>		
Backwash Duration Settings (min)	1	4
Brine Duration Setting (min)	30	110
Rinse Duration Setting (min)	2	7
Refill Duration Setting (min)	3.5	11.3
Salt Used - Per Regeneration (6lb/cf salt dosage)	0.96 kg	3.08 kg
Water Used - Regeneration (L)	48	175
<b>Flow Rate (Only Valve)</b>		
Continuous Flow Rate @ 15 psi Pressure Drop (lpm)	78	
Peak Flow Rate @ 25 psi Pressure Drop (lpm)	101	
Backwash Flow Rate @ 25 psi Pressure Drop (lpm)	30	
Pipe Size	3/4" or 1"	
Plumbing Connections	Includes 3/4" and 1" Straight Fittings	
Electrical Requirements	Input 110V-120V/220-240V AC 50/60Hz	
	Output 12V AC 650mA	
Carton Size (mm)	576x434x655	576x434x1,400
Shipping Weight (kg)	21	47
Water Supply	Municipal	
Water Temperature (°C)	3-38	
Water Pressure (bar)	2.06-8.6	

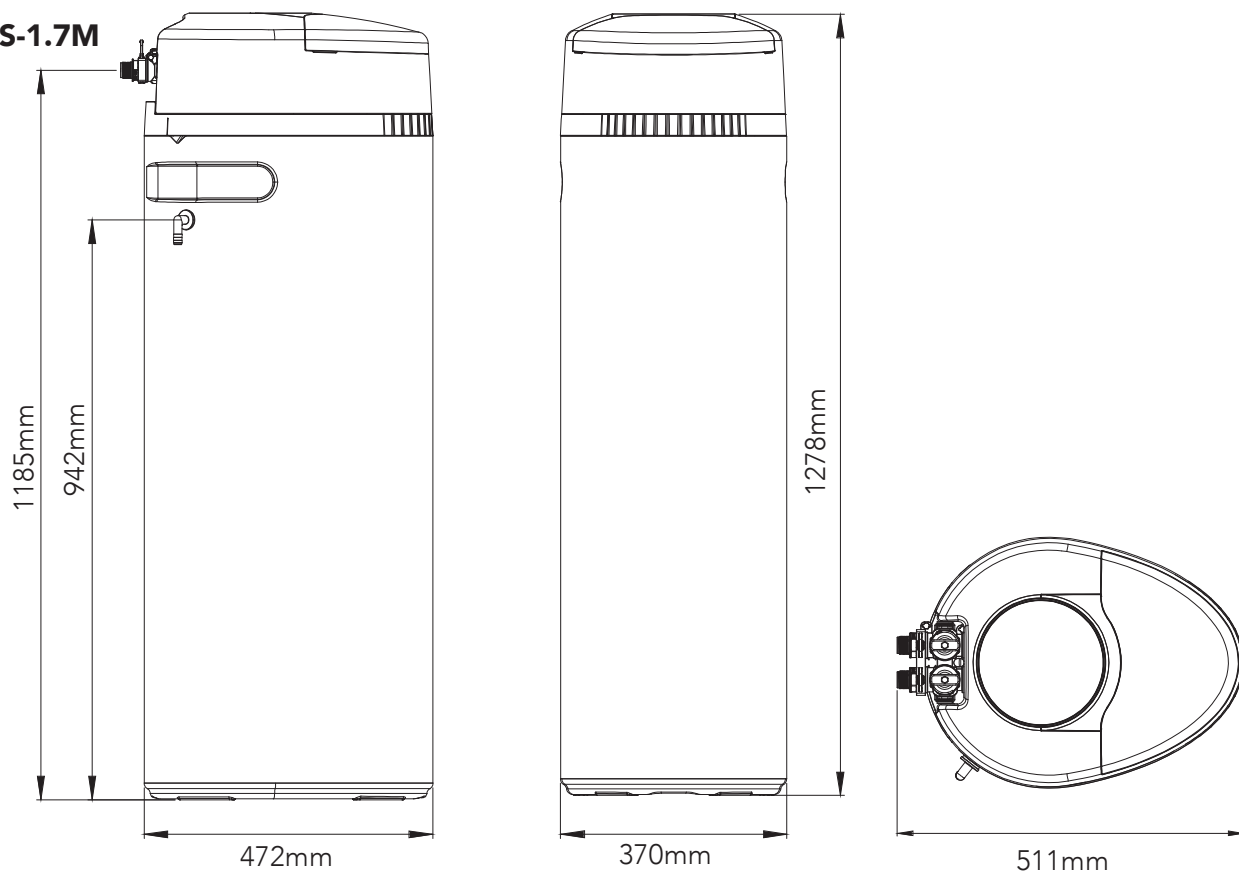
- Capacities of softeners may deviate from the chart above depending on flow rates and raw water conditions.
- Changing salt settings from factory setting may require changing injector sizes to achieve stated capacities.
- Hardness removal is based on standard salt setting (96kg/m<sup>3</sup>).
- Iron content must not exceed 1 ppm. Beyond 1 ppm an iron softener must be used.
- Do not subject the unit to freezing temperatures.
- Do not use water that is microbiologically unsafe without adequate disinfection before or after the system.
- 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.

## 4. SOFTENER SYSTEM DIMENSIONS

**SWS-0.5M**



**SWS-1.7M**



## 5. UNPACK & INSPECT YOUR WATER SOFTENER

Inspect the water softener for any shipping damage. If damage is found, notify the transportation company and request a damage inspection. Damage to cartons should also be noted.

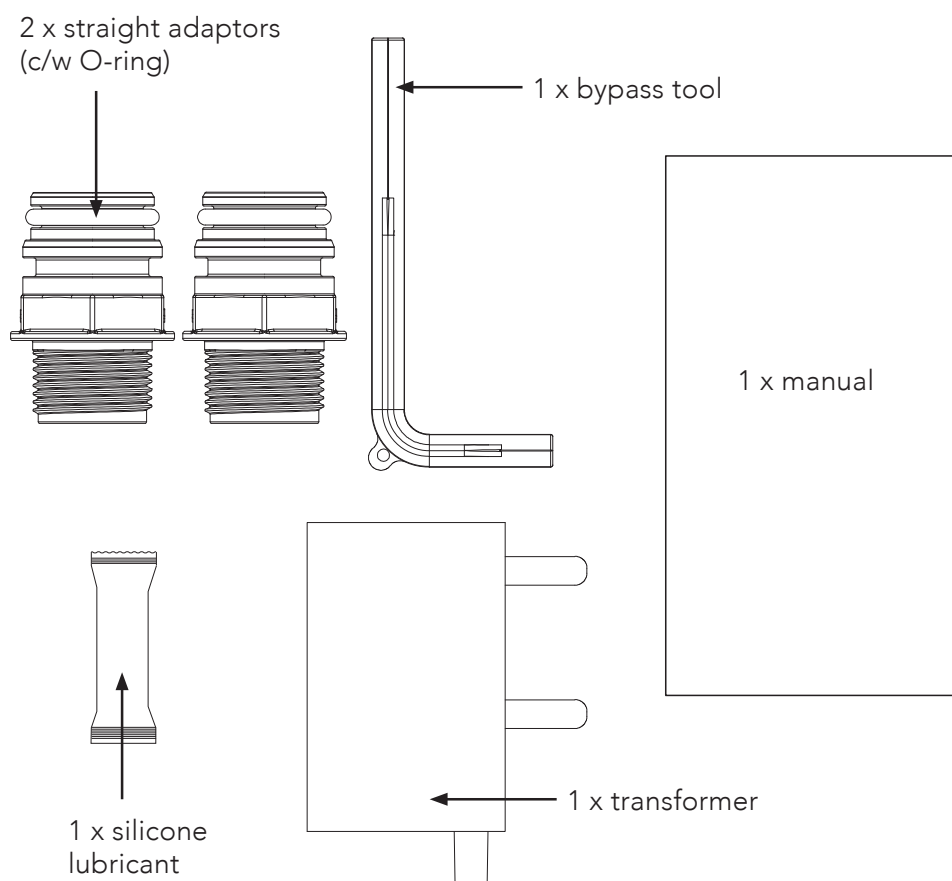
Handle the softener unit with care. Do not drop the unit or set on sharp, uneven projections on the floor. Do not turn the softener unit upside down.

### NOTE

IF THERE IS A LOSS IN WATER PRESSURE WHEN THE SOFTENER UNIT IS INITIALLY PLACED IN SERVICE, THE SOFTENER TANK MAY HAVE BEEN LAID ON ITS SIDE DURING TRANSIT. IF THIS OCCURS, BACKWASH THE SOFTENER TO 'RECLASSIFY' THE MEDIA.

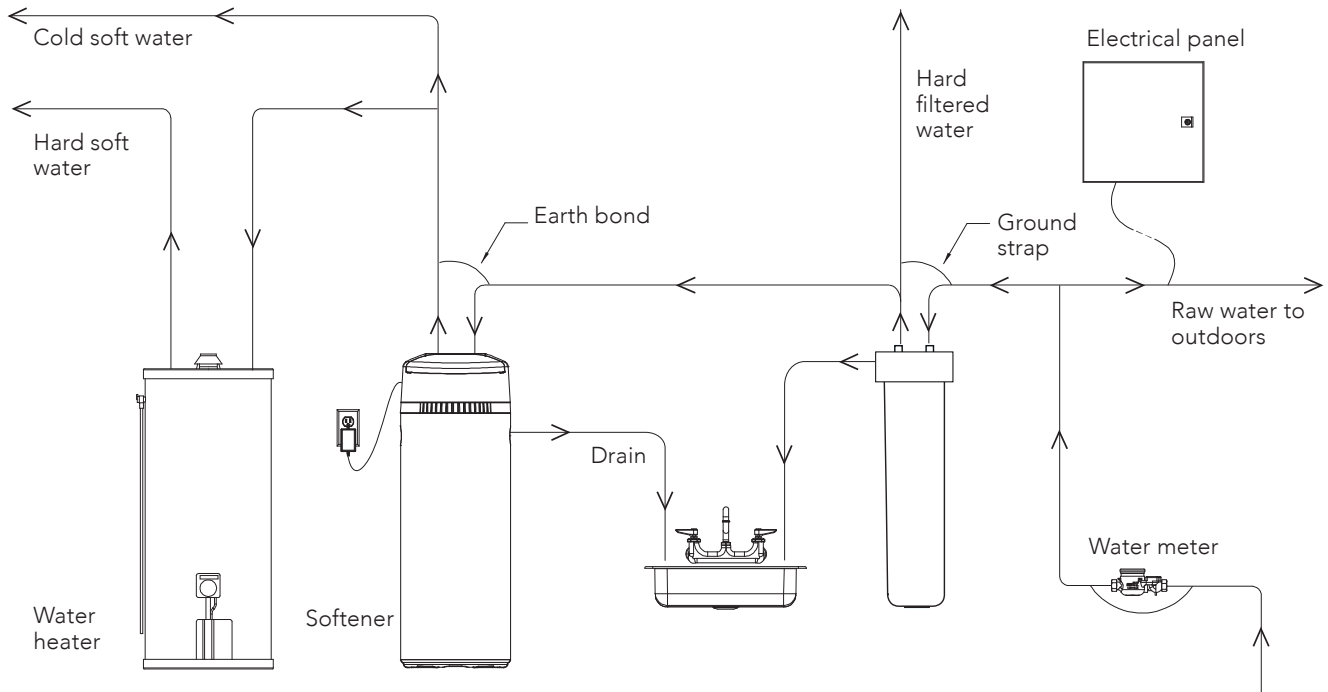
The manufacturer is not responsible for damages in transit. Small parts, needed to install the softener, are in a parts bag. To avoid loss of the small parts, keep them in the parts bag until you are ready to install.

### Accessories Contents



## 6. PRE-INSTALLATION INSTRUCTIONS

Contact your local distributor to have a complete water analysis and check your water hardness from the water supplier, this will keep your softener in proper working order.



### NOTE

YOU MUST FOLLOW ALL NATIONAL AND LOCAL AUTHORITY CODES AND REGULATIONS GOVERNING THE INSTALLATION OF THESE DEVICES.

## Installation Instructions

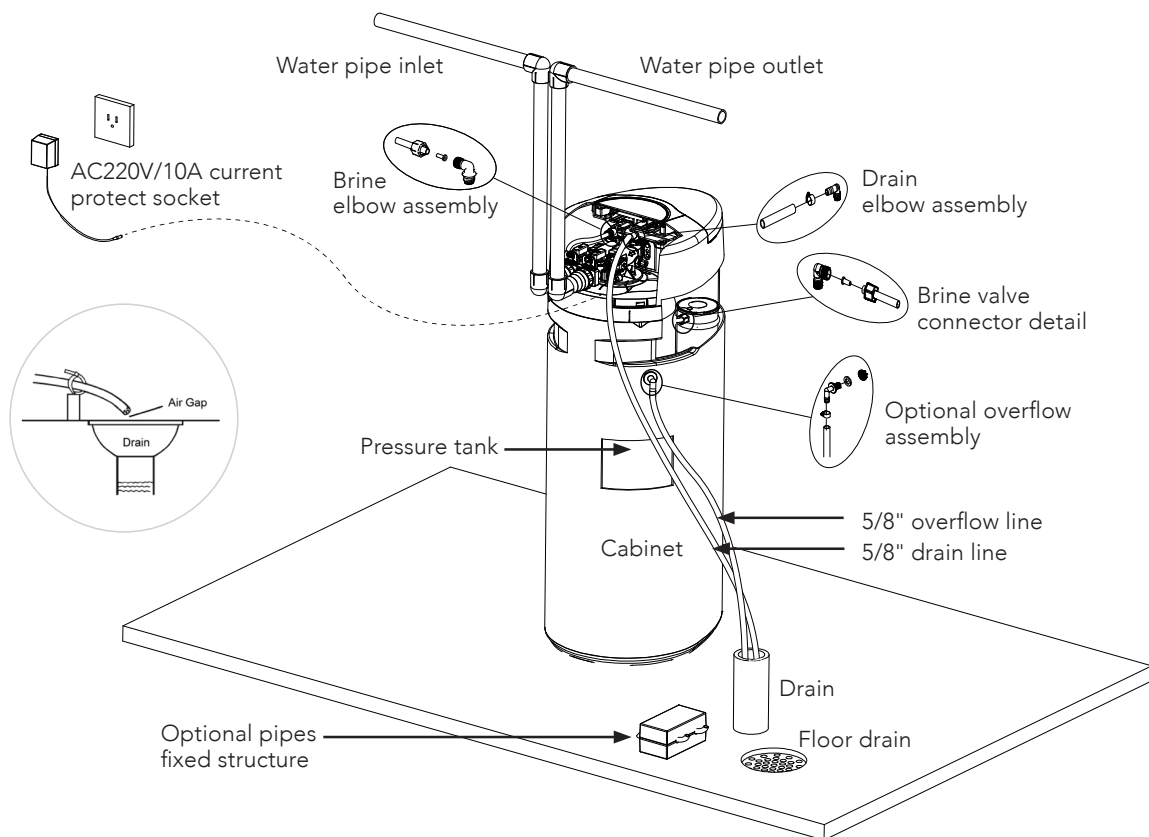
### Determine the correct location of the water conditioning equipment

Select the location of your softener with care. Review the various conditions below to determine a proper location:

1. Locate as close as possible to the water supply source.
2. Locate on a flat stable surface.
3. Locate in correct relationship to other water conditioning equipment. (See diagram above).
4. Softener should be located in the supply line before the water heater. Temperatures above 38°C damage softeners.
5. Do not install a softener in a location where freezing temperatures occur. Freezing may cause permanent damage to this type of equipment and will void the factory warranty.
6. Allow sufficient space around the unit for easy servicing.
7. Determine if additional plumbing is required if your water source is a community water supply, a public water supply or you wish to bypass water used for a geothermal heat pump, lawn sprinkling, out-buildings or other high demand applications, refer to Fig. 1).
8. Keep the softener out of direct sunlight. Heat build up from direct sunlight may soften and distort plastic parts.

## Tools Required for Installation:

1. Two adjustable wrenches.
2. Additional tools may be required if modifications to home plumbing are required.
3. Use copper, brass, or PEX pipe and fittings.
4. Some codes may also allow PVC plastic pipe. Refer to local codes.
5. Always install the included bypass valve, or 3 shut-off valves. Bypass valves let you turn off water to the softener for repairs.
6. 5/8" OD drain line is needed for the drain.



### CAUTION

THE WASTE CONNECTION OR DRAIN OUTLET SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE AN AIR-GAP TO THE SANITARY WASTE SYSTEM OF 2 PIPE DIAMETERS OR 1 INCH(25MM). (WHICHEVER IS LARGER)

NEVER INSERT THE DRAIN LINE DIRECTLY INTO A DRAIN, SEWER LINE, OR TRAP. ALWAYS ALLOW AN AIR GAP BETWEEN THE DRAIN LINE AND THE WASTE WATER. THIS WILL PREVENT THE POSSIBILITY OF SEWAGE BEING BACK-SIPHONED INTO THE SOFTENER.

### NOTE

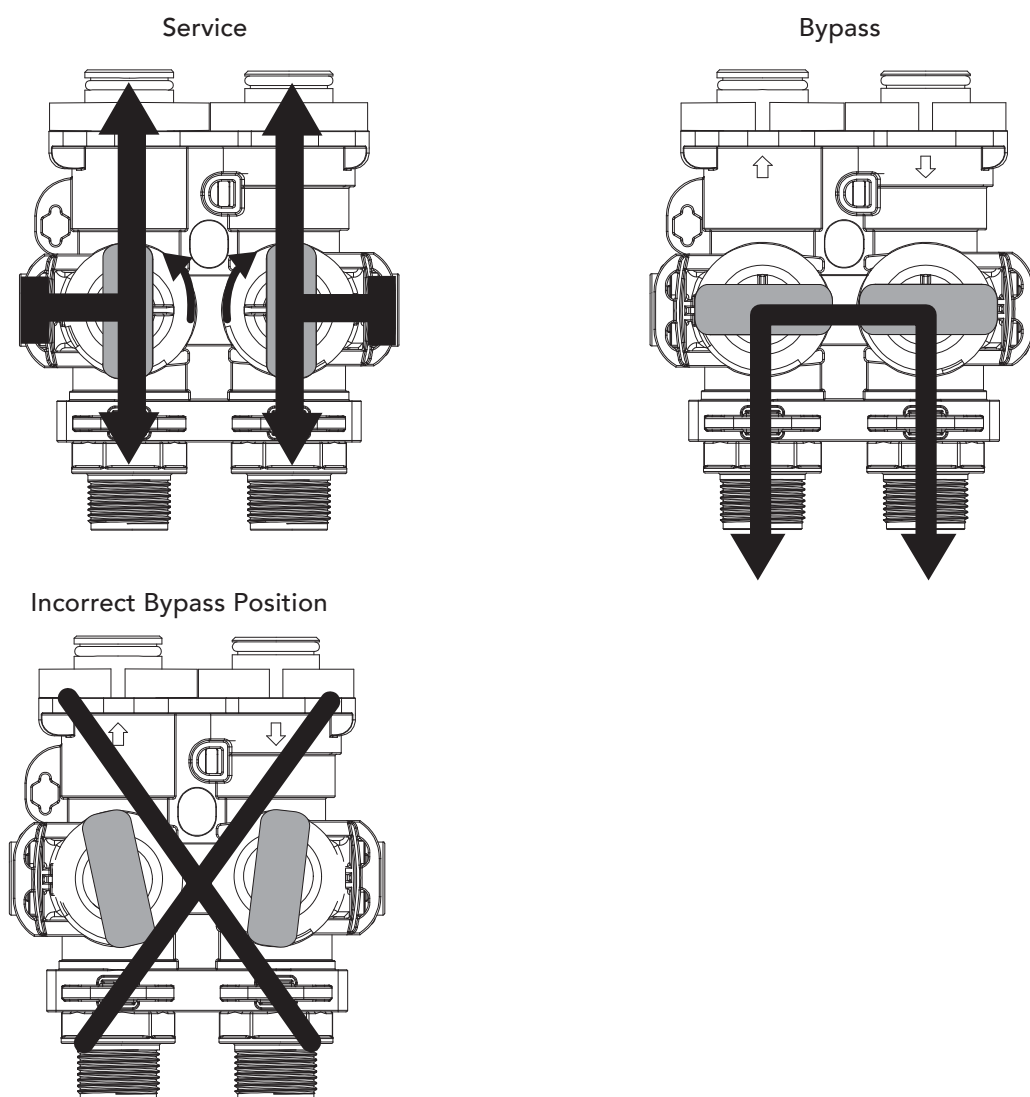
YOU MUST FOLLOW ALL NATIONAL AND LOCAL AUTHORITY CODES AND REGULATIONS GOVERNING THE INSTALLATION OF THESE DEVICES.

## 7. WATER BYPASS

For softener maintenance, 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 to the BYPASS position.

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 treated service, open the bypass valve by rotating the knobs to SERVICE position.

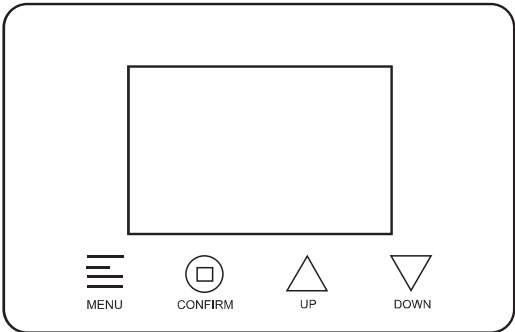
Please make sure bypass knobs are completely open otherwise the untreated water could bypass through the valve.







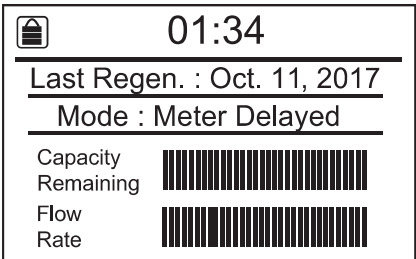
### NOTE

Please make sure bypass knobs are completely open otherwise untreated raw water could bypass through the valve.

Familiarise with Display Screen



-   
MENU
- This function enters the basic set up information required at the time of installation.
-   
CONFIRM
- This function is to press and select one item to change and accepts the values if changed.
-   
UP
-   
DOWN
- This function is to scroll up or down the programming items and increase or decrease the values of the settings while in the programming mode.



System Standby Display:  
Current Time, Last Regen. Time, Regen. Mode will be displayed on the screen.

Familiarise with Display Icon

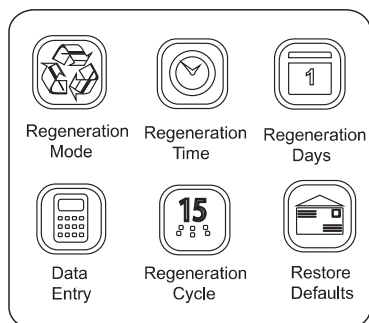
Main Menu Display



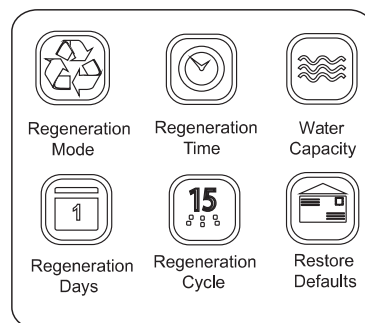


## Advanced Settings Display

System regeneration based on automatic calculation




System regeneration based on manual settings





Parameter		Description
Time		Current Time setting
Region		Unit of measure used, METRIC (litre) and US (gallon) options are available
Language		System language used on the valve display, 10 different language options in total for your choice English, Spanish, French, Russian, Turkish, German, Polish, Italian, Dutch and Chinese.
Water Hardness		This value is water hardness of the raw water supply. It is used to calculate the system capacity.
People Number		Number of people in the household and the calculated reserve capacity. When remaining reaches reserve capacity a regeneration will be scheduled.
Holiday Mode		When set to ON, the system will perform a Backwash and a Rinse if there is no water flow detected after 7 days. The Backwash and Rinse duration can be set in the Regeneration Cycle.
Regen. Mode	Calendar Clock	The unit will initiate a regeneration at the next pre-set regeneration time based on the interval of days between regeneration days.
	Meter Immediately	The unit will initiate a regeneration immediately after the system capacity remaining reaches zero.
	Meter Delayed	When the system capacity reaches zero, the system will initiate a regeneration at the next pre-set regeneration time.
	Meter Override	When the volume remaining goes below the system capacity, the system will regenerate at the regen time or when REGEN. DAYS present has passed. Whatever occurs first.
Regen. Time		This setting controls the time of day when a regeneration will start
Water Usage		This setting is the water average usage
Water Capacity		This setting is the total water volume the system can treat after one complete regeneration
Resin Volume		This setting is the amount of ion exchange media used in the system. The value is used to calculate system capacity and refill time.
Salt Amount		This setting will determine the salt dosage used per regeneration.
Salt Efficiency		This setting is the amount of capacity which a certain amount of salt can restore. The value is used to calculate system capacity and refill time.
Reserve Capacity		This value is used to calculate the reserve capacity. Reserve Capacity = No. People x Daily Reserve.
Regen. Cycle	Backwash	Control the backwash duration during regeneration cycle
	Brine	Control the brine duration during regeneration cycle.
	Rinse	Control the rinse duration during regeneration cycle.
	Refill	Control the refill duration during regeneration cycle.
Restore Defaults		Restore settings to the factory default.
Pre-Fill		If the brine Pre-Fill is ON, the percentage of water pre-set that will be added to the brine tank after a regeneration. The default is 70%. The remaining amount of water will be added just prior to the regeneration and will be proportional to the amount of capacity left in the system.
Salt Check		Softener will check the salt level in the brine tank automatically, in the event of system short of salt, display will beep to remind you to add salt.


## System Information Page

When you enter system information setting, system key information can be viewed in this page.



 System Information


Total Regenerations  
0 Times





 System Information


Total Treated Water  
0 Gallons





 System Information


Regeneration Time  
02:00 AM





 System Information


Water Capacity  
01050 Gallons





 System Information


Capacity Remaining  
01050 Gallons





 System Information


Backwash Time  
15 Minutes





 System Information


Brine Time  
50 Minutes





 System Information


Rinse Time  
10 Minutes





 System Information


Refill Time  
02.7 Minutes





 System Information


Current Flow Rate  
00.00 GPM





 System Information

Peak Flow Rate  
00.00 GPM



 System Information

Software Version  
V1.0



### NOTE

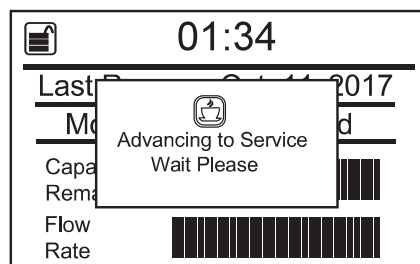
In 'Total Regenerations: 'Total Treated Water' and 'Peak Flow Rate' page, pressing and holding the 'CONFIRM' button for 3 seconds will reset the value to zero.

## Operation During a Power Failure

In the event of a power failure, the valve will keep track of the time and day. The programmed settings are stored in a non-volatile memory and will not be lost during a power failure. If power fails while the unit is in regeneration, the valve will finish regeneration from the point it is at once power is restored. If the valve misses a scheduled regeneration due to a power failure, it will queue a regeneration at the next regeneration time once power is restored.

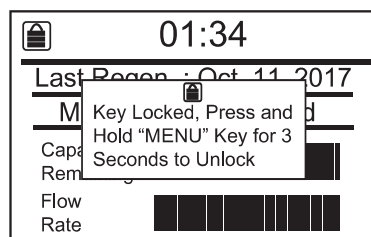
## 9. START-UP INSTRUCTIONS

1. Add two litres of water into the cabinet at the time of installation. This is for the unit to achieve proper capacity in the first time of regeneration.
2. Plug the power transformer into an approved power source. Connect the power cord to the valve.
3. When power is supplied to the control, the screen may display 'Advancing to Service Wait Please' while it finds the service position.

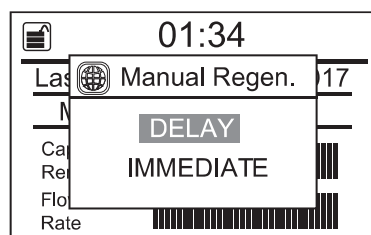


4. Manually step the valve to the BACKWASH position. If screen is locked, the screen will display "Key Locked, Press and Hold "MENU" key for 3 Seconds to Unlock" . Follow the instructions below to step the valve to BACKWASH position. As the valve arrives at BACKWASH position, unplug the power and let valve stay at BACKWASH position.

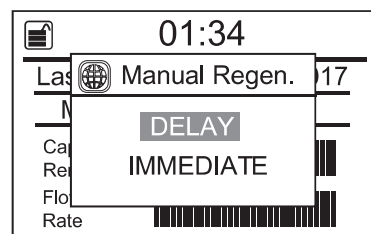
- Press and hold MENU key for 3s to unlock



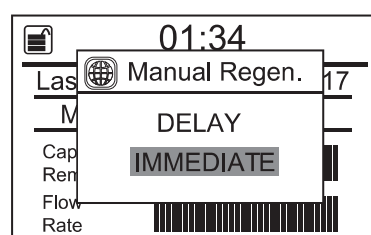
- Press and hold CONFIRM key for 3s to advance to MANUAL REGEN menu



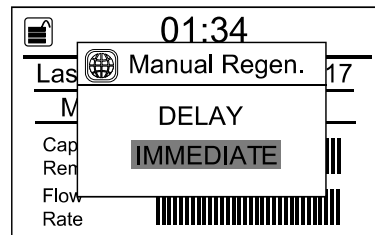
- Press CONFIRM key again to let the option flash



- Press DOWN key to advance to IMMEDIATE option



- Press CONFIRM key to confirm and press MENU key to have a manual regeneration



## NOTE

If you select 'DELAY' option, the valve will start to regenerate at the closest day's REGEN. TIME (default is 02:00)

5. Slowly open the inlet knob on the bypass valve with the bypass tool supplied and allow water to enter the unit. Allow all air to escape from the unit before turning the bypass fully open. Then allow water to run to drain for 3-4 minutes or until all media fines are washed out of the softener indicated by clear water in the drain hose. Open a cold soft water tap nearby and let water run a few minutes or until the system is free of foreign material resulting from plumbing work. Close the water tap when water runs clean.
6. Press any button to advance to the BRINE position, when it arrives, press any key to skip the BRINE cycle. Press any button to advance to the RINSE position. Check the drain line flow. Allow the water to run for 3-4 minutes or until the water is clear.
7. Press any button to advance to the REFILL position. Check that the valve is filling water into the brine tank. Allow the valve to refill for the full amount of time as displayed on the screen to insure a proper brine solution for the next regeneration.
8. The valve will automatically advance to the SERVICE position. Open the outlet knob on the bypass with the bypass tool supplied. With the bypass open, open the nearest treated water faucet and allow the water to run until clear.
9. Add salt into the cabinet. Put 40 kgs of crystal water softener salt in the SWS-1.7 cabinet or 15kgs of crystal water softener salt in the SWS-0.5. The unit will automatically fill the water to the correct level when it regenerates.
10. Program unit.

## CAUTION

LIQUID BRINE WILL IRRITATE EYES, SKIN AND OPEN WOUNDS - GENTLY WASH EXPOSED AREA WITH FRESH WATER.

### Automatic Raw Water Bypass During Regeneration

The regeneration cycle can last 60 minutes after which softened water service will be restored. During regeneration, raw water is automatically bypassed. Hot water should be used as little as possible during this time to prevent raw water from filling the water heater. This is why automatic regeneration is set for a convenient during the night and manual regenerations should be performed when little or no water will be required.

### **Check the Salt Level**

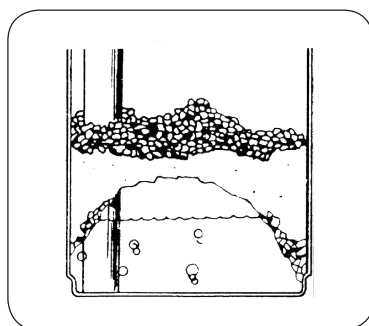
Check the salt level monthly. Remove the lid from the cabinet or brine tank, make sure salt level is always above the brine level.

### **Adding Salt**

Use only clean salt labeled for water softener use, such as crystal, pellet or nugget. The use of rock salt is discouraged because it contains insoluble silt and sand which builds up in the brine tank and can cause problems with the system operation. Add the salt directly to the tank, filling no higher than the top of the brine well.

### **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 knock on the outside of the plastic cabinet 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 cabinet. Allow four hours to produce a brine solution, then manually regenerate the softener.

### **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).

### **Care of Your Water 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.

## Service the Control Valve

### CAUTION

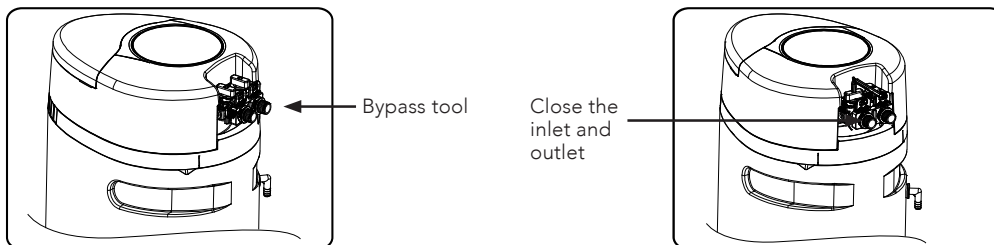
DISASSEMBLY WHILE UNDER PRESSURE CAN RESULT IN FLOODING. ALWAYS FOLLOW THESE STEPS PRIOR TO SERVICING THE VALVE.

### WARNING

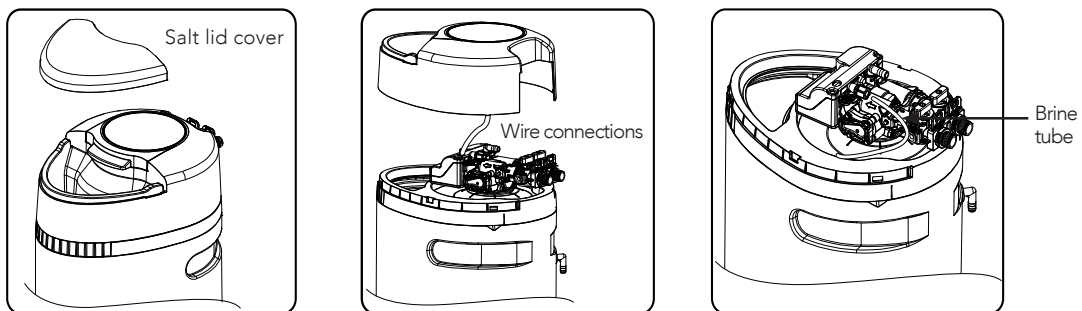
ELECTRIC SHOCK HAZARD.  
UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS

## Before Servicing

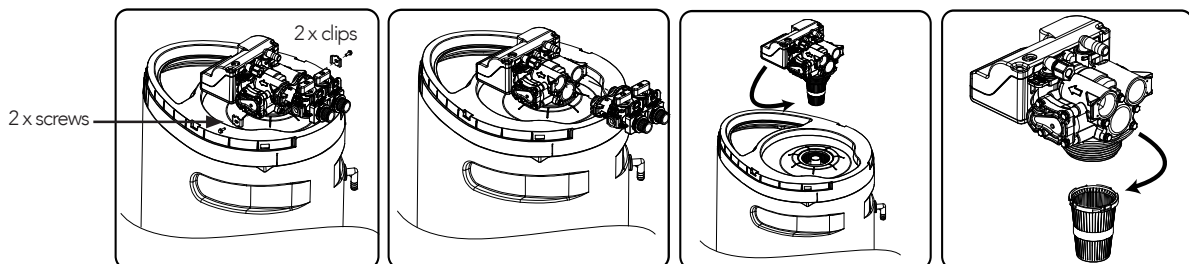
1. Turn off water supply to softener using the bypass tool attached on the bypass



2. Relieve water pressure in the softener by stepping the control into the backwash position momentarily. Return the control to the In Service position.
3. Unplug electrical cord from outlet.
4. Disconnect drain line connection.

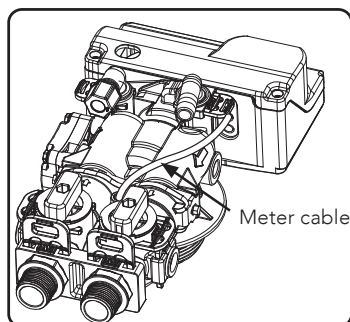


5. Remove the salt lid
6. Remove the cover, disconnect the wire connection
7. Disconnect the brine line

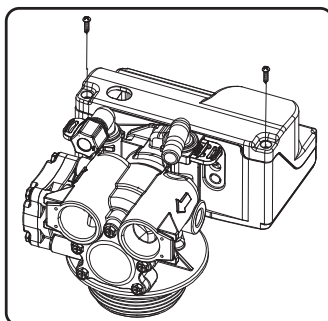


8. Remove the clips that connect control valve and bypass
9. Disconnect the softener from the bypass
10. Remove the valve from the softener
11. Remove the top cone from the valve

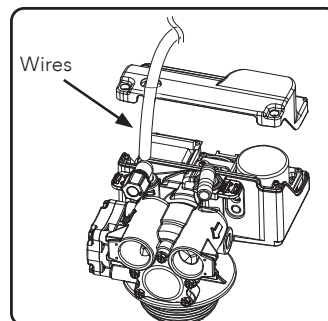
## Replace Timer



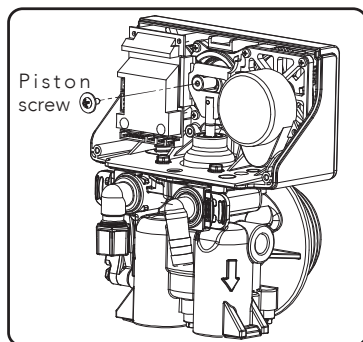
1. If attached, disconnect the meter cable from the meter



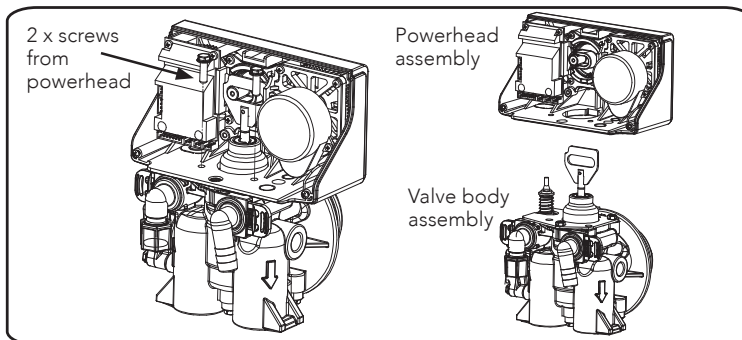
2. Remove the two screws from the valve cover



3. Remove the cover of the valve and disconnect the wires attached on PCB

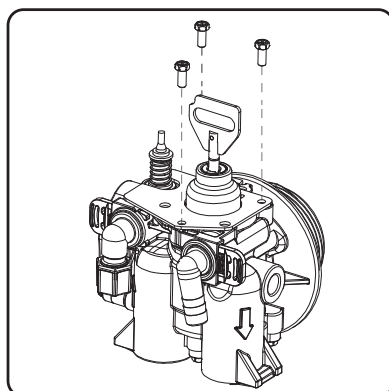


4. Remove the piston screw, with washer, from the piston rod

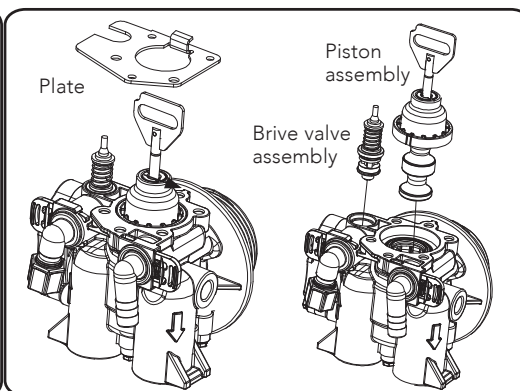


5. Remove the two screws from the powerhead as shown
6. Lift the powerhead from the valve body assembly
7. Replace the powerhead by reversing the steps in this section

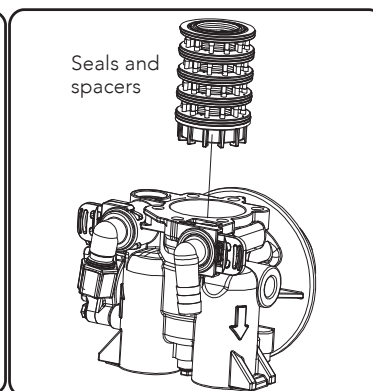
## Replace Piston and/or Brine Valve; Replace Seal and/or Spacer



1. Follow steps 1 to 6 of Time/Powerhead replacement
2. Remove three screws from the plate on the valve body



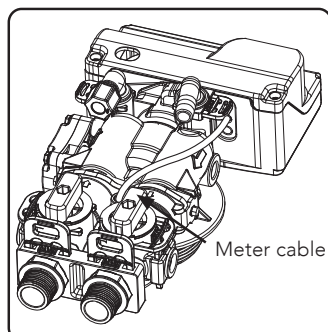
3. Remove the plate from the valve body and pull the piston assembly from the valve. The brine valve assembly can also be removed in this stage.



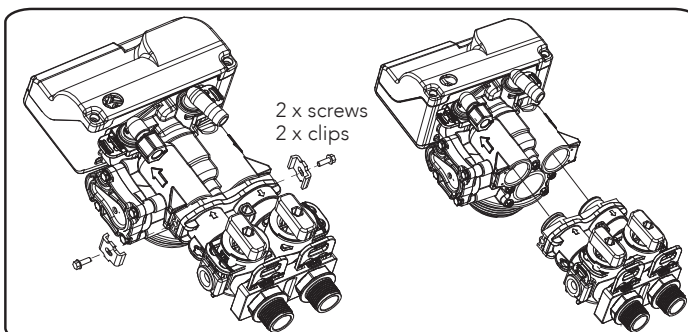
4. Remove the seals and spacers assembly, grease lightly with silicone lubricant and reinsert.
5. After servicing, reverse steps in this section



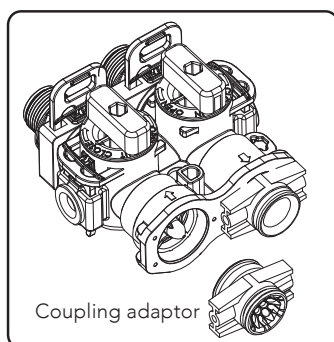
## Replace Meter



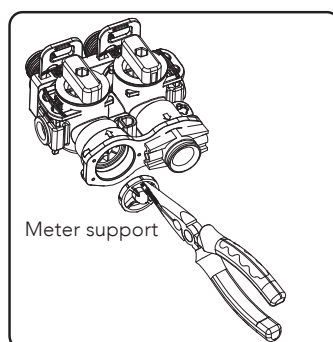
1. If attached, disconnect the meter cable from the meter



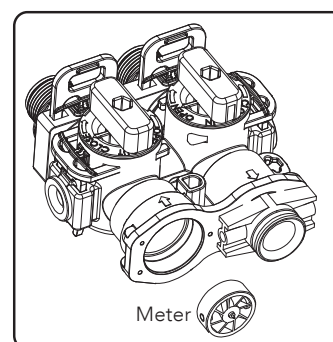
2. Disconnect the bypass from the valve by removing clips



3. Remove the coupling adaptor from the bypass

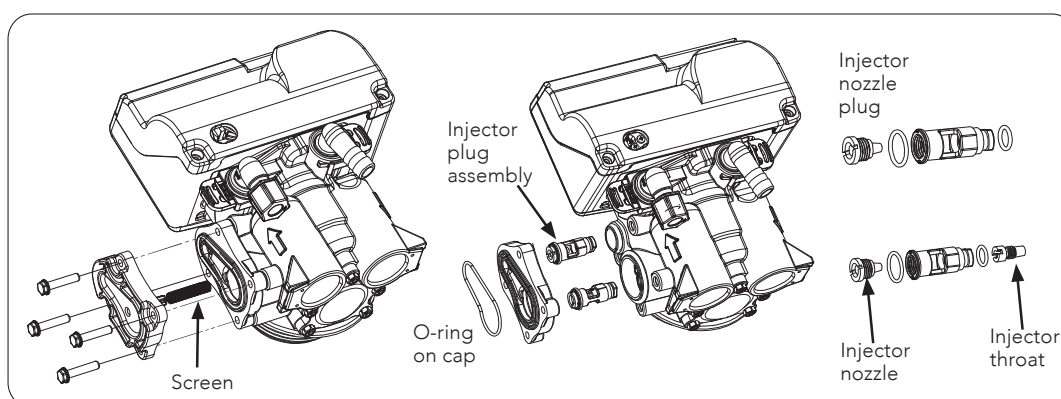


4. Remove the meter support from the bypass



5. Remove the impeller and replace

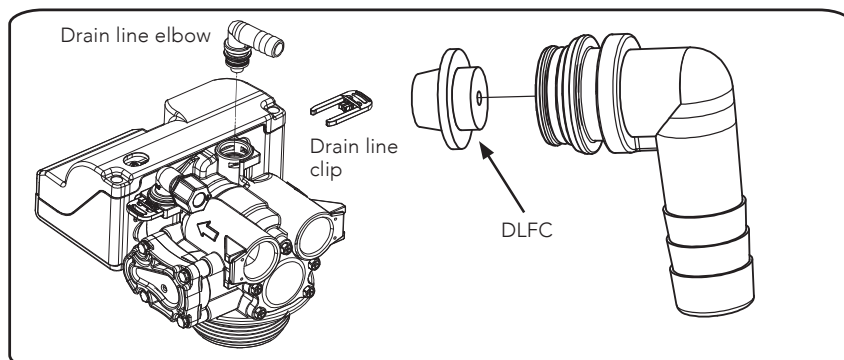
## Clean Injector Assembly



1. Remove the four screws on the injector cover.
2. Pull the injector cover out, watch for the screen and O-ring.
3. Pull the injector cap out, pull the injector assembly and injector plug assembly out.
4. Screw the injector nozzle and injector throat out, clean and replace.
5. After servicing, reverse the steps in this section.



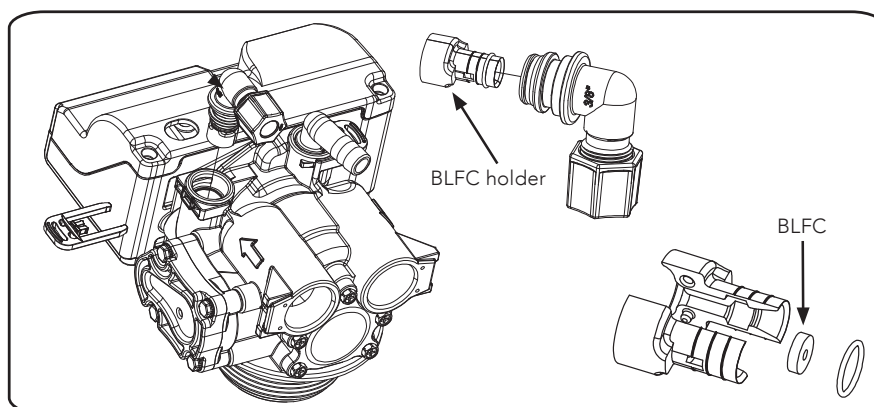
## Replace Drain Line Flow Control



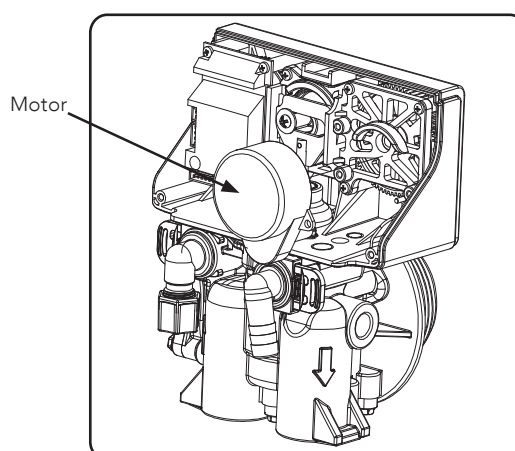
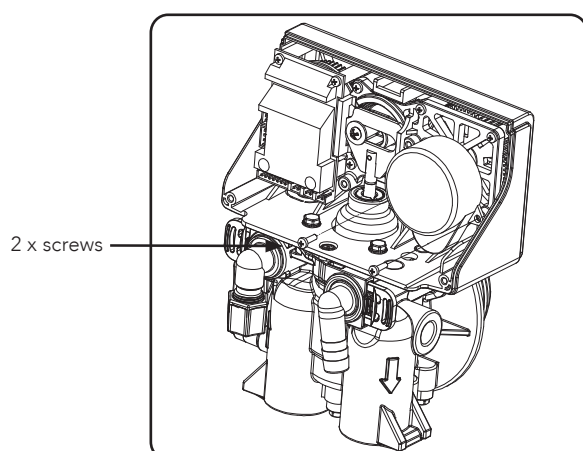
1. Pull the drain line clip and remove the drain line elbow washer
2. Clean/replace drain line flow control (DLFC)

## Replace Brine Line Flow Control

1. Pull the brine line clip and remove the brine line elbow assembly
2. Remove the BLFC holder
3. Take out the BLFC, clean/replace the BLFC button

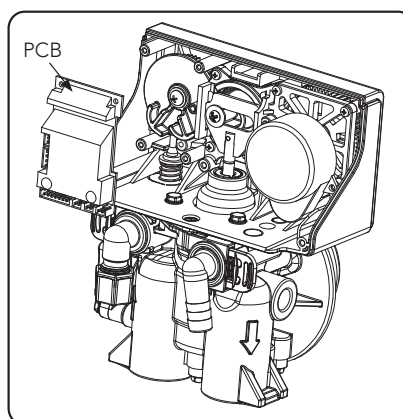
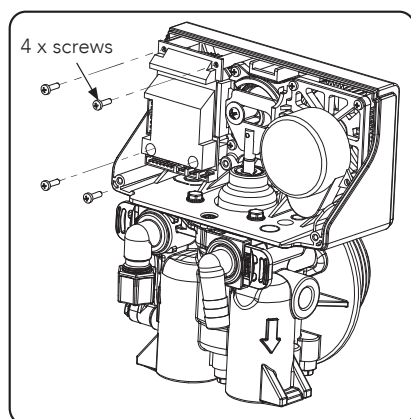


## Replace Motor



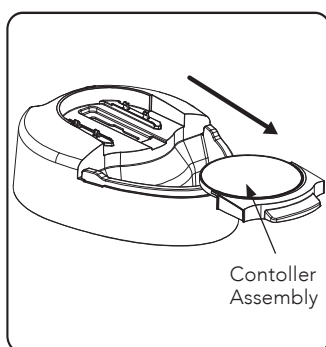
1. Follow steps 1 to 3 of Timer/Powerhead replacement
2. Remove the two screws from the motor. Remove motor (disconnect the wire attached on PCB if any). Watch for the pin under the motor
3. Replace the motor

## Replace Circuit Board

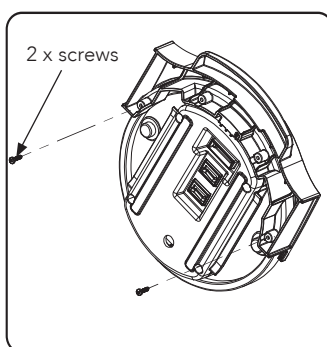


1. Follow steps 1 to 3 of Timer/Powerhead replacement
2. Remove all the connections of PCB
3. Remove the four screws from the PCB
4. Replace the PCB

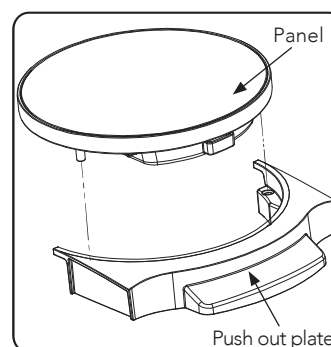
## Replace Display



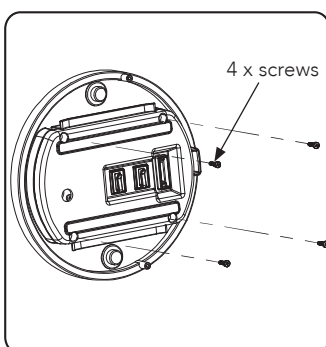
1. Follow steps 1 to 6 before servicing
2. Remove the salt lid and pull out the controller assembly



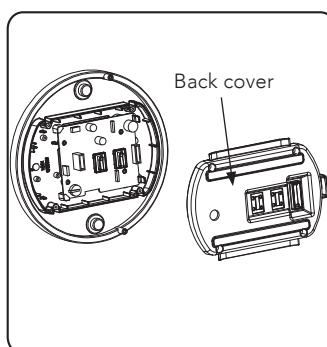
3. Remove the two screws attached on push-pull plate



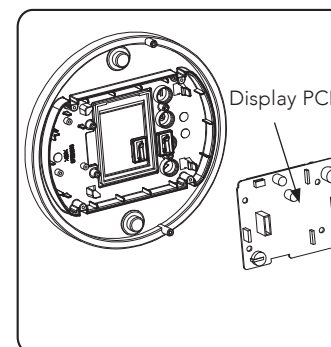
4. Separate the panel and plate



5. Remove the four screws attached on the back cover



6. Remove the back cover



7. Remove the display PCB

Problem	Possible Solutions
<b>Softener Delivers Hard Water</b> A. Bypass valve is open B. No salt in brine tank C. Injector or screen plugged D. Insufficient water flowing into brine tank E. Leak at distributor tube F. Internal valve leak G. Flow meter jammed H. Flow meter cable disconnected or not plugged into meter cap I. Improper programming	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 refill time and clean brine line flow control if plugged E. Make sure distributor tube is not cracked. Check O ring and tube pilot F. Replace seals and spacers and/or piston G. Remove obstruction from flow meter H. Check meter cable connection to timer and meter cap I. Reprogram the control to the proper regeneration type, inlet water hardness, capacity or flow meter size.
<b>Softener Fails to Draw Brine</b> A. Drain line flow control is plugged B. Injector is plugged C. Injector screen is plugged D. Line pressure is too low E. Internal control leak F. Improper programming G. Timer not operating properly	A. Clean drain line flow control B. Clean or replace injectors C. Replace screen D. Increase line pressure (line pressure must be at least 2.06 bar at all times) E. Change seals and spacers and/or piston assembly F. Check programming and reset as needed G. Replace timer
<b>Softener Fails to Regenerate</b> A. Electrical service to unit has been interrupted B. Timer is not operating properly C. Defective valve drive motor D. Improper programming	A. Assure permanent electrical service (check fuse, plug) B. Replace timer C. Replace drive motor D. Check programming and reset as needed
<b>Unit Uses Too Much Salt</b> A. Improper salt setting B. Excessive water in brine tank C. Improper programming	A. Check salt usage and salt setting B. See ' <b>Excessive Water in Brine Tank</b> ' C. Check programming and reset as needed
<b>Loss of Water Pressure</b> A. Iron build-up in line to water softener B. Iron build-up in water softener C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	A. Clean line to water softener B. Clean control and add resin cleaner to resin bed. Increase frequency of regeneration C. Remove piston and clean control
<b>Loss of Resin Through Drain Line</b> A. Air in water system B. Drain line flow control is too large	A. Assure that system has proper air eliminator control. B. Ensure drain line flow control is sized
<b>Iron in Conditioned Water</b> A. Fouled resin bed B. Iron content exceeds recommended parameters	A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration. Increase backwash time. B. Add iron removal filter system
<b>Excessive Water in Brine Tank</b> A. Plugged drain line flow control B. Brine valve failure C. Improper programming	A. Clean flow control B. Replace brine valve C. Check programming and reset as needed
<b>Salt Water in Service Line</b> A. Plugged injector system B. Timer not operating properly C. Foreign material in brine valve D. Foreign material in brine line flow control E. Low water pressure F. Improper programming	A. Clean injector and replace screen B. Replace timer C. Clean or replace brine valve D. Clean brine line flow control E. Increase pressure to at least 2.06 bar F. Check programming and reset as needed
<b>Control Cycles Continuously</b> A. Timer not operating properly B. Faulty microswitches and/or harness C. Faulty cycle cam operation	A. Replace timer B. Replace faulty microswitch or harness C. Replace cycle cam or reinstall
<b>Drain Flows Continuously</b> A. Foreign material in control B. Internal control leak C. Control valve jammed in backwash, brine or rinse position D. Timer motor stopped or jammed teeth E. Timer not operating properly	A. Remove piston assembly and inspect bore. Remove foreign material and check control in various regeneration positions B. Replace seals and/or piston assembly C. Replace piston and seals and spacers D. Replace timer motor and check all gears for missing teeth E. Replace timer

