INSTALLATION MANUAL

Water Softeners

Models: 2000m^3 + 3000m^3

Requirements For 2000m³ + 3000m³ Water Softeners

1. Introduction & Product Characteristics

Thank you for choosing our Water Softener machine. Apart from our range of Softeners' slimline design and structure, it offers optimal Water Softening, reliable performance and easy maintenance. Our range of 2000m³ & 3000m³ Water Softeners, meets the demands of all-sized homes, coffee shops & restaurants. Offering Softened water, free of Limescale in all areas throughout the home from your Boiler for heating your water, to your Central Heating system, Bathrooms, Toilets, Kitchen and your Utility appliances from washing machine, dishwasher, and last but not least your under-sink RO Hydrogen Water Filter machine. Our product is intelligently integrated and fully automated. It uses food-grade cation resin to soften water, efficiently reducing the calcium & magnesium ion content from your mains water supply. After the resin process is complete, the Regeneration function will automatically commence to regenerate resin by producing a Brine solution, culminating in the softening function of the resin. The machine has six fully automated phases that requires no manual intervention, namely the Softening, Brine Refill, Salt-Dissolving, Backwash, and the Slow-Rinse, and Fast-Rinse cycles.

IMPORTANT: Softened Water is NOT intended for drinking, but as a preliminary filtration process plumbed in directly after your Mains water supply enters your home, before any other water treatment devices such as Hot Water Heaters, Radiators and under-sink RO Hydrogen Water Filter Machine.

2. Step-by-Step Installation Of Water Softener

Step 1: Prepare plumbing connections as illustrated in Images 1 & 2 below
Step 2: Connect the Inlet & Outlet Valves as illustrated in Image 3 below
Step 3: Connect Waste Outlet, & Overflow Pipes
Step 4: Ensure Piston is in 'Bypass' position
Step 5: Perform an Initial Test Run to check connections are water-tight, as described in Section 8
Step 6: Open all faucets to flush trapped air pockets
Step 7: Carefully plug in Sensor
Step 8: Carefully connect Data Cable & tighten
Step 9: Connect AC Power Adaptor
Step 10: Fill the Salt Reservoir with 5-7L with cold water
Step 11: Input Personal Parameters Settings as described in Section 9 below
Step 12: Add approx. 10kg Salt
Step 13: Open Piston into 'In-Service' Mode
Step 14: Open all faucets to flush residual Resin for 2-3mins
Step 15: Your Softener is now ready for permanent use

3. Preliminary Plumbing & Electrical Specifications Required

This short video below clearly illustrates the plumbing and electrical specifications required. If your home does not have a Softener Loop, and/or adequate drainage, then it will be necessary for your plumbing professional to install these before continuing with the installation of your Water Softener Machine.

https://www.youtube.com/watch?v=OFnTzTyNs_k

Softener Loop with Isolator Valve at the Inlet
Image 1

Inlet & Outlet Pipes Connected to the Softener Loop
Image 2

Inlet & Outlet Pipes Connected to the Bypass Valve on Softener
Image 3

4. Accessory Pack

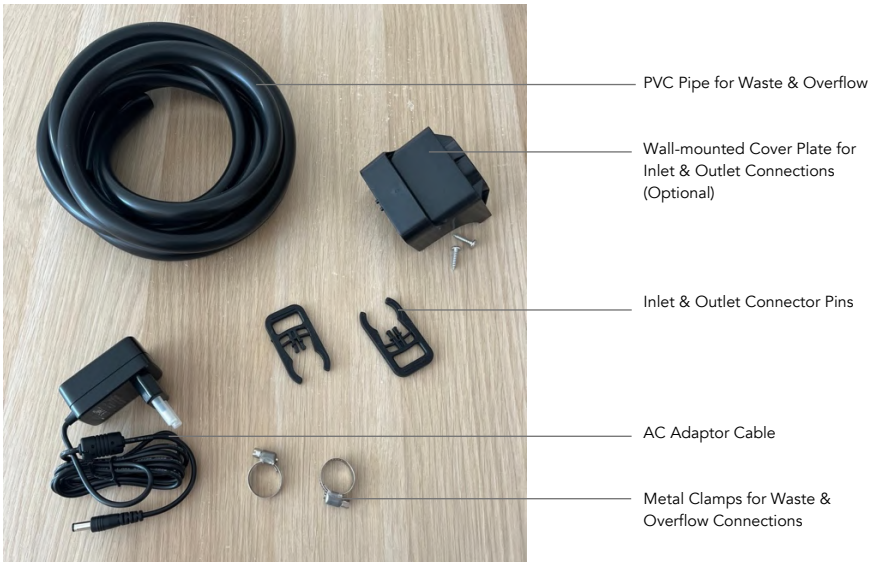


Image 4

5. Cross-Section of Machine

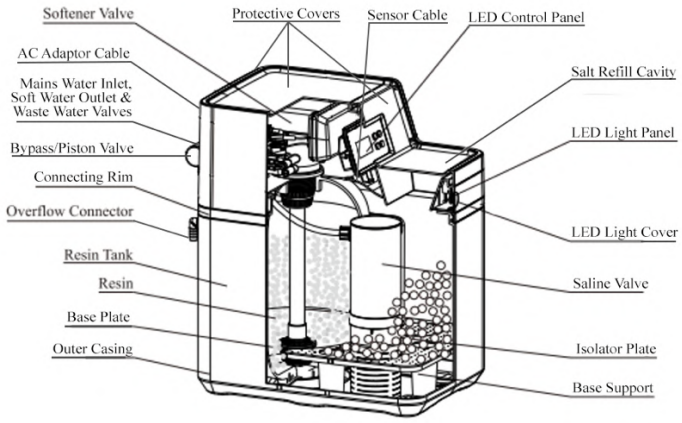
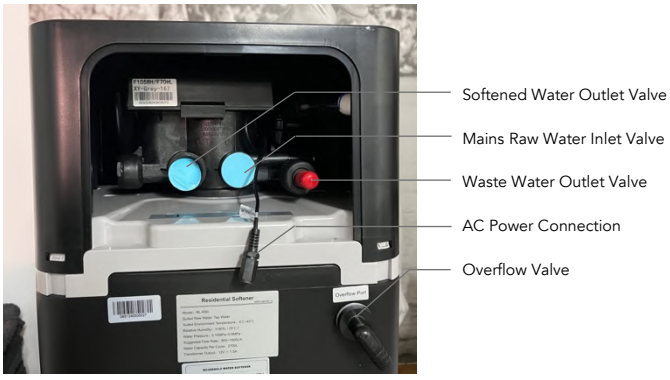


Figure 1

Front
Image 5

Back with Protective Cover
Image 6

Protective Cover
Image 7



Back without Protective Cover
Image 8

Main Lid with LCD Screen Data Pin Connector
Image 9

Main Lid Top View
Image 10

LED Control Panel
Image 11

Bypass/In-Service Piston
Image 12

6. Precautionary Guidelines For Installation

- Do not initiate your Water Softener Machine before you have fully read & understood this User Manual.
- CAUTION: Ensure the Components Kit & Filler material (see Figure 2) below, is removed from where it is stored in the Salt Reservoir cavity PRIOR to commencing the Installation, or the initial Test run on the Machine

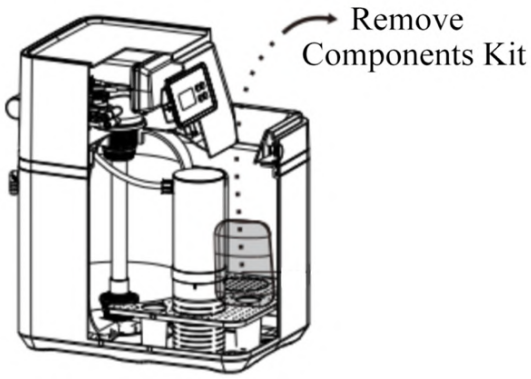


Figure 2

- Important: This Whole-House Water Softener must be installed by a qualified Plumbing Professional & Installations must conform with the local Plumbing Installation Regulations.
- Ensure your plumbing professional tests the parameters listed below BEFORE commencing installation. Use reagent to test the raw water hardness, as it is directly related to the Softening efficacy and Water Treatment capacity.
  (i) Water temperature ranging between 05° - 45°C
  (ii) Water pressure ranging between 1.5 - 6bars / 0.15 - 0.6MPa
  (iii) Raw water hardness >450mg/L [Soft Water = 80–120mg/L, Hard Water = 150–400mg/L]
- Should the raw water quality fail to meet the standards of local tap water, such as excessive
  (i) Sediment, Turbidity or Organic/Inorganic matter concentration, or
  (ii) Residual Chlorine content
  exceed the limit, then a Primary Water Filter pretreatment device should be installed directly before this Water Softener Machine. View our Whole House, & Primary Filters Products here
- We recommend that
  (i) All Connectors/Connections and Valves should be 304 stainless steel, alloy steel or Quick-connect fittings. The use of Iron alloy fittings is prohibited.
  (ii) All pipe connections for Water Inlet, Outlet, Drainage and Overflow connections are PE tubing
  (iii) This Machine is not installed near any heat sources/appliances/boilers. Should this be unavoidable, then appropriate Heat-Protective cladding must be used to protect the Water Softener
- The Water Softener Machine is specifically designed for use with Municipal Mains (cold water) Supply within a temperature range of 05-38°C. The temperature of the Water Inlet must not be below >1°C, as this may crack the resin block resulting in the machine to malfunction.

6. Precautionary Guidelines For Installation *continued*

- If the Water Softener Machine is installed ahead of your **Boiler/Hot water cylinder** or **Central Heating/radiator** system, a stop valve must be installed, to prevent hot water back-flow and causing damage.
- Ensure no Corrosive liquids or Wastewater enters the Water Inlet pipe
- This Water Softener machine is designed for indoor installation and should be protected to the greatest extent possible from **Exposure to high Humidity/damp**; **Ultraviolet rays, Heating Appliances/Heat sources, Fuel,** and various other **Corrosive Chemicals**
- The Water Overflow/Outlet Pipe must be (i) smooth & unobstructed, and (ii) have a downward / vertical flow-direction and (iii) be independent – for the sole purpose of this machine - and must not be T'd in to any other outlet pipes from surrounding appliances to prevent the backwash of wastewater entering, and/or damaging the Water Softener Machine.
- To avoid backflow of wastewater from the drain back into the Brine tank of the machine via the water outlet / drainage pipe, the wastewater outlet / drain trap must be significantly lower, preferably vertically beneath the overflow connector pipe of the machine. As illustrated in Figure 3 below
- IMPORTANT: Municipal tap water pressure fluctuates (e.g. Water Pressure is usually higher at night than during the day). To ensure there are no leaks after installation, check each connection carefully for the first couple days.

6.1 Guideline Do's & Don'ts

- It is generally recommended to install Water Softener Machines directly after the Mains Water Supply enters the property, usually in the Basement, Garage or Utility room close to a waste water drainage trap. In household and commercial kitchens, the machine may be placed against the side or back of the under-sink cabinet on a straight solid surface, ensuring that the water Inlet/Outlet pipes are unobstructed.

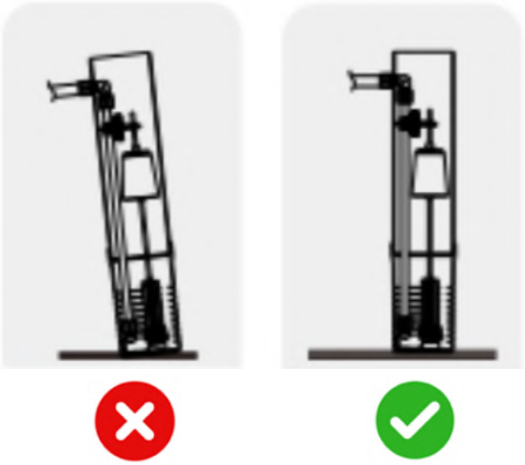


Figure 3

6.2 Guidelines on Drainage Configuration for Water Outlet & Overflow Pipes

- As a safety precaution, the Water Softener Machine must be plumbed into the drainage outlet 'overflow' trap that leads outside.

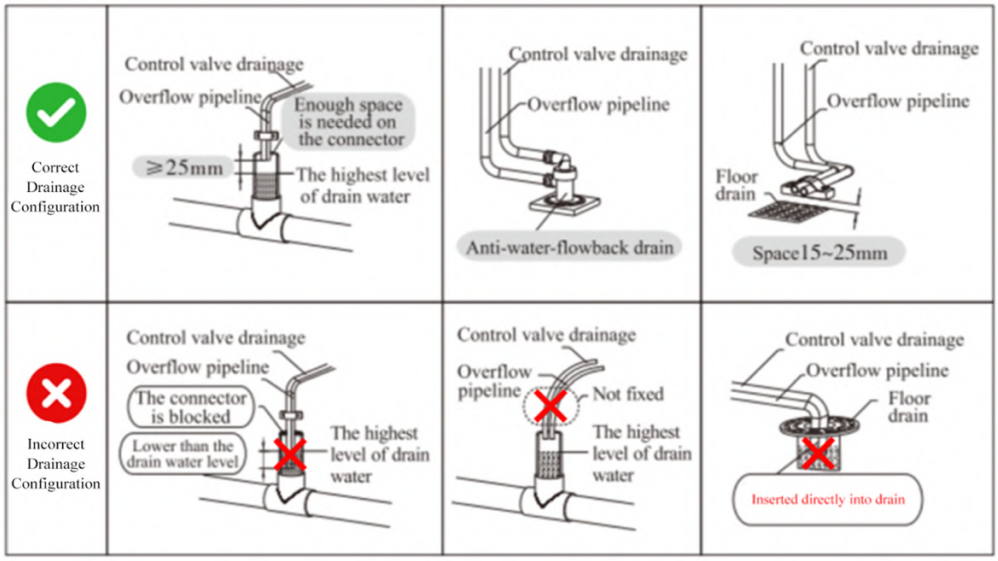


Figure 4

A couple of illustrations of suitable configurations for Double & Triple Waste Drainage System, as illustrated in Images 13 & 14 below.

Waste & Overflow Pipes in Floor Drainage
Image 13

Double-Waste Outlet for Washing Machine + Waste & Overflow for Softener
Image 14

Caution: Failure to comply with the Correct Drainage Configuration above will void Your Warranty

7. Bypass Valve Assembly & Function

- Figure 5: The valve has a 'Bypass' function which enables quick & convenient Testing. 'Bypass' modes connect the 'Valve' with the 'Bypass Valve', thereby creating a sealed bypass channel, as illustrated in Image 15 below.

- Image 15: Closing the Piston inwards towards the 'Inlet' and 'Outlet' Valves, will place the Valve into 'Bypass' mode, ready for Testing/Maintenance.

- Image 16: Opening the Piston outwards away from the 'Inlet' and 'Outlet' Valves, will place the Valve into 'In-Service' mode.

7. Bypass Valve Assembly & Function *continued*

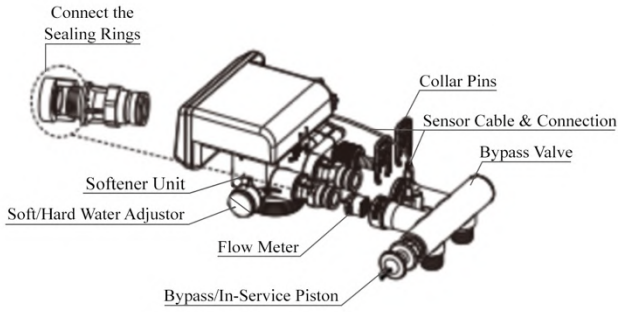
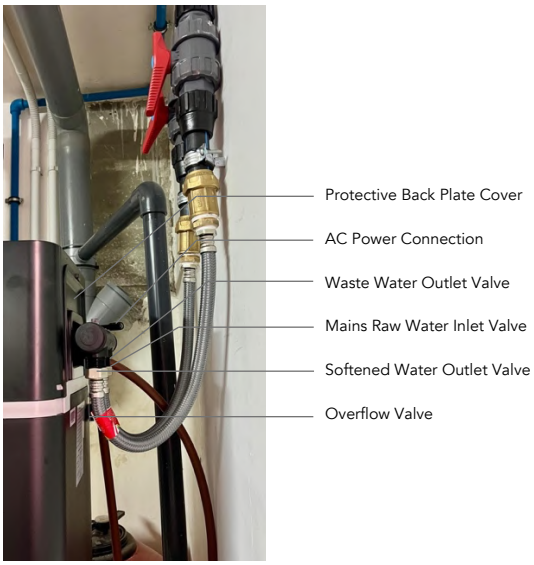


Figure 5

Bypass Mode: Piston Closed
Image 15

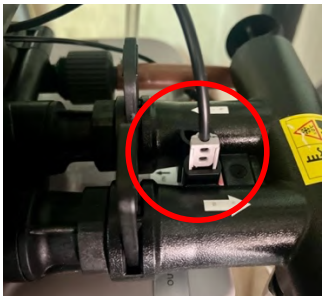
In-Service Mode: Piston Open
Image 16

Mains Inlet, Outlet & Bypass Valve Connected
Image 17



All Water Connections Completed
Image 18

7. Bypass Valve Assembly & Function *continued*



Sensor Plugged In
Image 19

Image 20

Congratulations your installation is now complete!

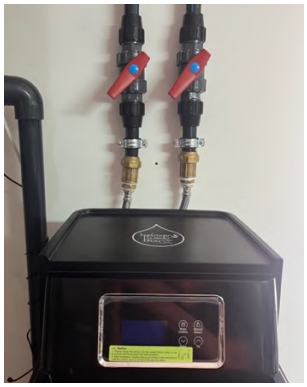
8. Testing Your Machine Before Use

Step 1: Ensure The Piston is in 'Bypass' mode & the Power Adaptor is not connected
Step 2: Slowly open Mains Inlet & Outlet Valves to a maximum of 1/3 for 2-3 minutes, as seen in Image 21 below
Step 3: Check all connections are water-tight
Step 4: Open all faucets slightly & allow to run (2-3min) to flush air pockets in the water pipes
Step 5: Gently open the Inlet, & Outlet Valves in stages until completely open, as seen in Image 23 below
Step 6: Check Water Pressure gauge to ensure it is within the appropriate range, see Tech Specs below
Step 7: The test is now complete and both Inlet & Outlet Valves can be closed prior to initiating the Machine

IMPORTANT: When re-initiating the Softener Machine
(i) for the first Test, or
(ii) when exiting 'Vacation' Mode, or
(iii) after being unused for an extended period
The water from the Outlet Valve will appear discoloured for a couple of minutes from the residual Resin build up. Open the faucets throughout your house until the water runs clear.

TOP TIP: To Flush the system quickly, the program can be overridden and manually placing the machine into 'Fast-Rinse' mode for 2-3 minutes until the discoloured water runs clear.

Inlet & Outlet Valves 1/3 Open
Image 21



Inlet & Outlet Valves 1/2 Open
Image 22

Inlet & Outlet Valves Fully Open
Image 23

Congratulations your initial test has been successfully completed!

9. Control Panel Settings & Parameters

Top Tip: We recommend you ask your plumbing professional or dealership for the most appropriate parameter settings based on your own personal household requirements - – for the various cycles as described above in Section 7.2 above, namely (i) Brine refill, (ii) Brine Dissolve, (iii) Softening, (iv) Backwash, (v) Brine & Slow- Rinse, (vi) Fast-Rinse. These parameters may fluctuate from time to time depending on water usage.

9.1 Control Panel Setup

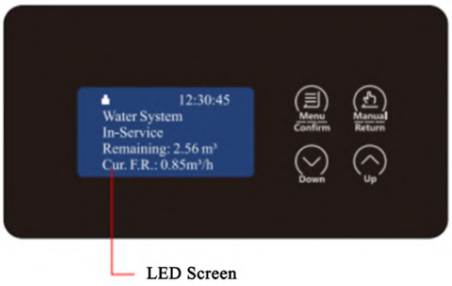


Image 24

9.2 Touch Screen Control Panel Settings & Functions

1. **Locked** icon
   - Indicates the toggle keys are locked. If no changes are effected for 60 seconds, the system will automatically return to 'Locked' mode & the will illuminate.
   - To 'Unlock': Press and hold both Down and Up arrows simultaneously for 5 seconds, & the light turn off.

2. **Menu/Confirm** key
   - To effect any changes to Program Settings, Tap the Menu icon to enter Program Setting mode any time the machine is in 'In-Service' mode, using the Up and Down arrows to navigate through the various Programs.
   - To view the current preset values, Tap the Menu icon.
   - Once all Program Parameters have been set, Tap the Menu/Confirm key,
   - When you hear the tone, this indicates all Parameters were successfully saved.
   - The LCD screen will return to display 'In-Service' and automatically continue as normal

3. **Manual/Return** button
   - To proceed to the next step and/or Program at any time, Tap the 'In-Service' icon.
   - The Machine return will return to 'Menu/Confirm' mode When Tapping the key in 'Enquiry' mode and/or 'Program Set' mode,
   - When pressing while adjusting the value, it will return to Program Display mode directly without saving the value
   - (Example: when the hardness of treated water is unqualified, press the Unlock mode to complete service, and this will enter Regeneration mode instantly. When in Regeneration mode, press to skip to next step)

4. **Down Arrow** and **Up Arrow**
   - In Menu mode, press the or arrows to view all values
   - In Setting mode, press the or arrows to adjust the parameters
   - Press and hold both the and arrows for 5 seconds to lift the Button Lock mode

9.3 Factory Default Settings

Item	Parameters Range	Factory Default	Personal Settings
Time Of Day	00:00 - 23:59	12:12	Set to real time
Regeneration Time	00:00 - 23:59	00:00	Set to middle of night
Water Hardness	50 - 999mh/L	150mg/L	Optimal range = 80mg/L – 120mg/L
Continuous Water Time	00 - 120min (This function is invalid when set to '0')	00	If the Cont. Water Time exceeds the 120min max., the Control Valve automatically shuts off & displays 'Close Mode'. Ideal parameter setting is 80min
Current / Peak Flow-Rate	00 - 10.00m³/h (This function is invalid when set to '0')	0.00	If the Flow-Rate exceeds the 10.00m³/h max., the Control Valve automatically shuts off & displays 'Close Mode'. Ideal parameter setting is 2.00m³/h

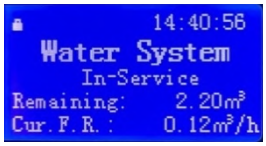
9.3.1 Guidelines For Personal Parameter Settings

Set Time of Day	»	Time of Day 12:12
Set Regeneration Time	»	Regeneration Time 01:30
Set Water Hardness	»	Water Hardness 80mg/L - 120mg/L
Cont. Water Time	»	Cont. Water Time 00 min
Peak F.R. for Close	»	Peak F.R. for Close 0.00m³/h

9.4 Personal Parameter Settings Procedure

Use Menu Key to navigate between the various settings.

Unlocking

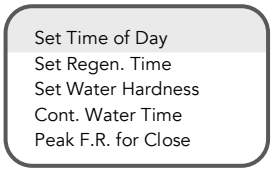


Locked Mode

To unlock, press and hold "Down" and "Up" arrows until the "🔒" light goes off

Setting Time Of Day

To enter your personal parameters, press "Menu Confirm" button



Next, 'Set Time of Day'

To Set Time of Day, press "Menu Confirm" button

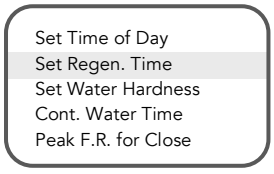
When Setting the Time of Day, use the "Down" or "Up" arrows to adjust the **hour** values when flashing

When Setting the Time of Day, use the "Down" or "Up" arrows to adjust the **minute** values when flashing

When the hour and minute values are accurate, press "Menu Confirm" button. Hearing the beep indicates the Time setting is successful

Setting Regeneration Time

To enter your personal parameters, press "Menu Confirm" button



Next, to 'Set Regeneration Time' values, press the "Down" arrow

To set Regeneration Time, press "Menu Confirm" button

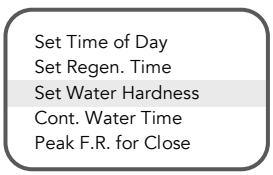
When setting the Regeneration Time values, use the "Down" or "Up" arrows to adjust the **hour** values when flashing

When setting the Regeneration Time values, use the "Down" or "Up" arrows to adjust the **minute** values when flashing

When the hour and minute values are accurate, press "Menu Confirm" button. Hearing the beep indicates the Time setting is successful

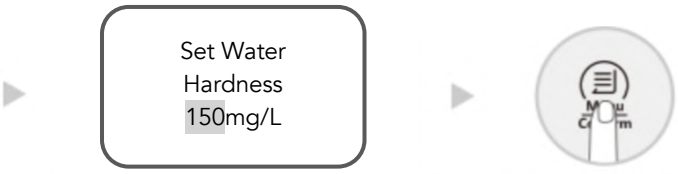
Setting Water Hardness

To enter your personal parameters, press "Menu Confirm" button



Next, to 'Set Water Hardness' values, press the "Down" arrow

To save Water Hardness setting, press "Menu Confirm" button

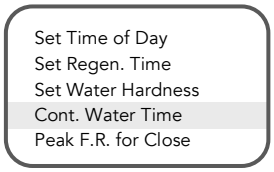


When values of '150' flashes, toggle "Down" or "Up" arrows to select the required value of Untreated/Water Hardness

When pressing "Menu Confirm" button and hearing the beep, means Water Hardness value has successfully been saved

Setting Continuous Water Time

To enter your personal parameters, press "Menu Confirm" button



Next, to select 'Cont. Water Time' values, press the "Down" arrow

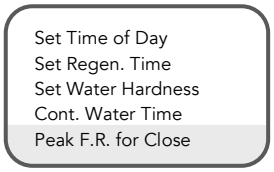
To set 'Cont. Water Time', press "Menu Confirm" button

When setting the Cont. Water Time values, use the "Down" or "Up" arrows to adjust the **minute** values when flashing

When pressing "Menu Confirm" button and hearing the beep, Cont. Water Time value has successfully been saved

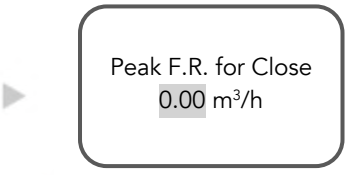
Setting Peak Flow-Rate (F.R.) For Close

To enter your personal parameters, press "Menu Confirm" button



Next, to select 'Peak F.R. for Close' values, press the "Down" arrows

To set 'Peak F.R. for Close', press "Menu Confirm" button



When setting the Peak F.R. for Close values, use the "Down" or "Up" arrows to adjust the flow values when flashing

When pressing "Menu Confirm" button and hearing the beep, Peak F.R. for Close value has successfully been saved

Example:
After selecting & setting your preferred Water Hardness blend, the LED screen will display the total Water Treatment Capacity or remaining water. If you feel the water treatment capacity is too low to meet your household requirements, you can adjust the capacity by altering the Water Hardness blend. To maintain the Softened Water quality, lowering the value of Water Hardness will increase the Water Treatment Capacity.

10. The Six Automated Phases of Softening Explained

The softener process takes place by an Ion-exchange technique. It achieves this by removing limescale (calcium carbonate & magnesium carbonate) by replacing the calcium ion and magnesium ion via the sodium ion in the resin. Depending on the pre-determined program, the opening and closing of each valve is automated, thereby softening, dissolving the salt into a concentrated Brine solution, Refilling, Backwash, followed by Brine and Slow-, & Fast-rinse cycling.
IMPORTANT: Softened Water is NOT intended for drinking, but as a preliminary filtration process prior to your under-sink RO Water Filter Machine

'Backwash' phase: Once the resin becomes saturated it loses its softening efficacy, and the machine will start the 'Backwash' phase prior to the next 'Regeneration' phase. This not only flushes the broken resin and impurities from the surface layers of the resin, but in addition, the reversed direction-of-flow also loosens the trapped resin particles thus benefitting from the exchange between resin particles and Regenerated liquid

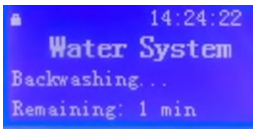


Image 25

'Softening' phase: Under a certain pressure and flowrate, the raw/untreated Municipal hard water flows through the machine, simultaneously replacing, the calcium-, and magnesium ions of raw water with the sodium ions in the resin, thus reducing the content of calcium-, and magnesium ions thereby resulting in softening the water

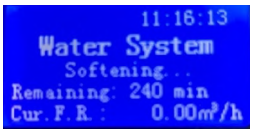


Image 26

'Brine & Slow-Rinse' phase: A certain concentration of Brine Solution flows through the resin while, the calcium-, and magnesium ions on the resin surface layer is replaced by sodium ions, creating the ability for resin regeneration and its renewed softening capacity. Once the control valve turns to 'In-Service' mode, the 'Brine-Dissolving' phase will commence and last 4 hours

Image 27

'Fast-Rinse' phase: During this phase, the machine discharges the residual Brine which compacts the resin particles resulting in the optimal softening effect. Once complete, this concludes the final stage of one full cycle

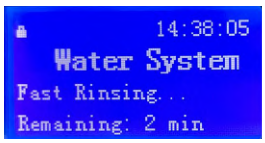


Image 28

'Brine Refill' phase: The Salt Reservoir is filled with Softened water which dissolves the salt to provide the saturated Brine Solution ready for the next 'Regeneration' phase, with softened water ready to exit at the Water Outlet Valve

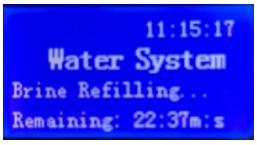


Image 29

10.1 Miscellaneous Messages Explained

'Motor Running':
This message appears for 1 – 2 seconds when toggling between programs

Image 31

'System Error **EX'**

Figure 6

11. For Initiating New Machines ONLY

TOP TIP: Open the Mains Water Inlet only one-third of the way, to slowly ease the water through the machine – this will avoid damaging the Resin block and machine valves.

Step 1: Open Piston outwards into 'In-Service' mode by pulling away from the Outlet Valve
Step 2: Slowly open Mains Water Inlet & Outlet Valves to 1/3 of the flow rate for 2-3 minutes
Step 3: Open all faucets throughout your house and flush toilets until water runs clear
Step 4: Slowly open increase the Mains Water Valve flow rate to halfway open for another 2-3 minutes
Step 5: Connect the AC Adaptor to the Power socket, the LED screen will light up and the model number will appear for 6 seconds, as seen in Image 32 below, before automatically entering 'In-Service' mode.

Image 32

12. Re-Initiating Your Machine For Permanent Use

During regular use the Softener will automatically refill with water. When the 'Brine Refill' time is reached, or the water level reaches the height set by the Brine Valve, the 'Brine Refill' process will stop, and Saturated Brine Solution is produced for the next 'Regeneration' phase.

Step 1: Fill the Salt Reservoir with 3-7L water from cold water faucet.

Step 2: Switch the Power to 'ON'

- Press " " 'motor running' and will proceed into 'Backwash' mode.
- Slowly open the inlet valve to ¼ position
- IMPORTANT: DO NOT open the valve fully and/or too quickly as this may damage the machine causing unnecessary resin leakage).
- You will hear the air being expelled from the Water Outlet/drainage pipe.
- Once all air is out of pipe, open the Water Inlet Valve completely
- Select 'Backwash' cycle and allow to run for 2-3 minutes, to clean any foreign material in the resin **tank** until the water runs clear.

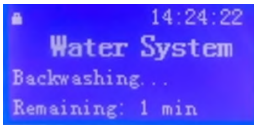


Image 33

12. Re-Initiating Your Machine For Permanent Use *continued*

Step 3: Press " " 'motor running' and will proceed from 'Backwash' to 'Brine & Slow-Rinse'

- During this cycle, the Brine Solution will be absorbed from the Brine Reservoir into the resin, regenerating the resin is regenerated.
- After absorption, the Brine valve will automatically close.
- The system will continue for approx. 15 minutes in 'Slow-Rinse' mode, to cleanse away the residual brine.
- The entire process takes approx. 40 minutes to complete.

IMPORTANT: To test the function and water connections this test run can be conducted with the use of raw tap water only, without adding Salt.

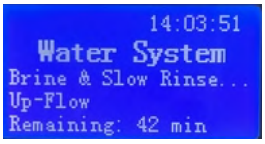


Image 34

Step 4: Press " " – 'motor running' and will proceed to 'Fast Rinse' mode.

- Within approx. 6 minutes 'Fast-Rinse' will discharge the residual brine and compact the resin particles resulting in the best Softening effect.

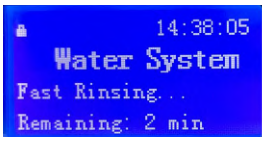


Image 35

Step 5: When the Outlet Water is clear, press " " 'motor running' and will proceed to this will complete the 'Fast-Rinse' cycle.

- The program will automatically turn to 'In-Service' mode and commence functioning normally.

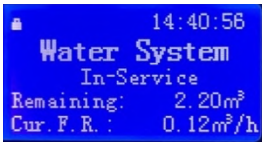


Image 36

or

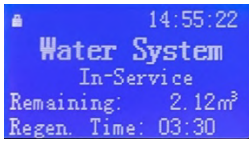


Image 37

IMPORTANT:

- In 'Regeneration' cycle, the softened water will stop flowing from the Water Outlet Valve and each cycle will be completed automatically according to the set parameters.
- To end/override one cycle to skip to the next program ahead of time, press " "

13. The Three 'In-Service' Display Features

When your Softener is in 'In-Service' Mode, three alternating data sets will be displayed at 5 second intervals, namely:

Image 38: Cur. F.R. 0.00m³/h – Zero Flow-Rate. This reading will be displayed when there is no water running anywhere throughout the home

Image 39: Cur. F.R. 0.12m³/h – This is the actual Flow-Rate will be displayed whenever there is water running anywhere in the home

Image 40: Regeneration Time 03:30 – The Regeneration Time display will alternate with the Cur. Flow-Rates

'In-Service Current F.R.

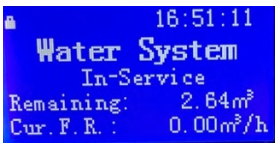


Image 38

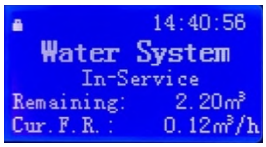


Image 39

'In-Service Regen. Time'

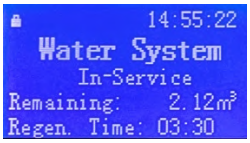


Image 40

Congratulations your Setup has been successfully completed!

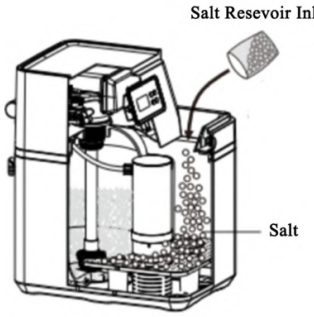
GOING FORWARD

14. Regular Maintenance Checks

IMPORTANT:

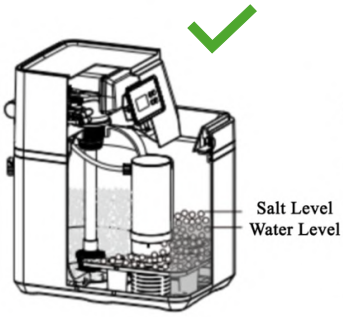
- Under normal circumstances, no specific procedures are required except topping up the Salt Reservoir with salt as detailed in below.
- We recommend you check the Salt Reservoir regularly to ensure there is Brine in the tank. When adding Salt, ensure that Salt levels are higher than the Water level, see Figure 7, below.
- Figure 8: Ensure the Salt levels remain at least one third (1/3) above the Water level.
- Figure 9: Ensure you add Salt well before the level is below one-third (1/3) of the water level
- Caution: Use Salt that is 99% pure, intended for water treatment machines and has NO Additives
- Ensure the 'Salt Dissolving' time exceeds 4 hours to allow for adequate Brine saturate production.
- Occasionally the Brine in the Salt Reservoir may crystalise, Meaning, there is a space under the salt preventing the salt from dissolving, thus hindering the Resin Regeneration. Should you encounter this during your regular checks, simply crush the salt crystals to aid the dissolving.

14. Regular Maintenance Checks *continued*



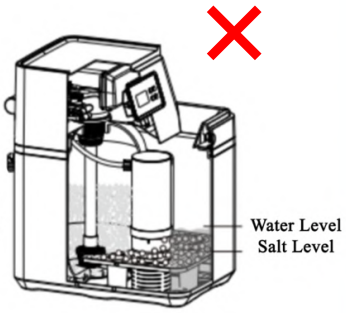
Adding Salt

Figure 7



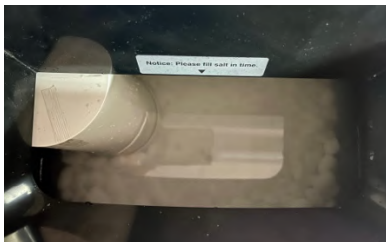
Salt Level Exceeds Water

Figure 8



Salt Level 1/3 Lower Than Water Level

Figure 9



Brine Tank with water level 1/3 higher

Image 41

15. Functions & Characteristics

Automatic Regeneration

The 'Regeneration' cycle will automatically commence, based on your preselected settings for

(i) the Water quality/hardness, and
(ii) Regeneration time

Manual Regeneration

When the machine is in 'unlock' mode, pressing the "@" button will immediately commence the 'Regeneration' cycle.

Automatic Water Treatment Capacity

Once the Water Quality/Hardness value is entered, the Water Treatment Capacity will automatically be calculated by the Control Valve and displayed on the LCD screen.

Brine 'Dry Mode' & Regeneration With Softened Water

During 'Brine Dry' mode, brine refill will commence 4 hours earlier prior to completion of this phase. The Salt Reservoir is then filled with Softened water, which is conducive to enhancing the effect of the Regeneration process. During the 'Brine Refill and Dissolving' phase, the Softened water exits via the Water Outlet Valve. This reduces Regeneration time and improves efficiency.

1) In 'Brine Refill-', 'Salt-Dissolving' and 'Backwash' phases, the Water Reservoir is full of water
2) In the 'Brine-Extraction' phase, the Water Reservoir is emptied out
3) In 'Salt-', 'Dry-', 'Fast-Rinse', 'Slow-Rinse' and 'Service' modes: the Salt is dry in water reservoir

15. Functions & Characteristics *continued*

Proportionate Brine Extraction

The 'Brine Extraction', & 'Brine Refill' phases are directly proportionate to each other, based on the ratio of the Extracted Water Volume used and the Water-Treatment Capacity of the system. Should the Peak Flow-Rate (F.R.) used be less than the Cont. Water Time (System Water-Treatment Capacity), but the 'Regeneration' phase has ended, the softener will be on stand-by. This reduces salt and water consumption.

Adjusting the Water Quality

The final 'hard/soft' ratio of water quality can be adapted to your personal preference by turning the at the Water Outlet Valve to create your desired ratio of Untreated/Municipal Water with Treated/Softened Water.

Adjusting the Hard/Soft Water Mixing Valve

To adjust the Hard/Soft ratio of the Water, the dial must be rotated in an anticlockwise direction, as illustrated in Figure 10 below. To increase water hardness, continue turning the dial anti-clockwise, to increase water softness turn the dial clockwise.

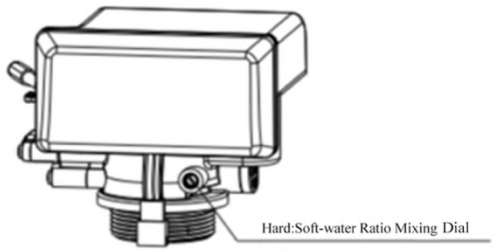


Figure 10

Automatic Memory Function

These parameters can be selected by the owner, such as 'Regeneration time', 'Brine Refill time', 'Backwash Time', 'Brine', 'Slow-Rinse', and 'Fast-Rinse Time' etc., and will be permanently stored in the 'Automatic Memory Function', irrespective of how long the Power remains 'Off'. Should the Power interruption exceed more than 3 days, the LED Screen will display this message as seen in Figure 28 below, as a reminder to reset the Time Clock.

Image 42

Lock Function

To prevent your preferred Program Settings being changed and/or lost, the system will 'lock' one minute after inputting your selection of settings. To Unlock, simultaneously press and hold the "0" and ":" buttons for five seconds.

15. Functions & Characteristics *continued*

'Regeneration' Mode Is Meter-delayed Type

To avoid a shortage of water, 'Regeneration' will take place daily even though the available volume of treated water has dropped to zero "0". The 'Regeneration' phase will recommence at the preset time for the next 'Regeneration' phase.

- However, under these circumstances, no Softened Water will be available for use during that 'Regeneration' phase.
- CAUTION: We DO NOT recommend you force a 'Bypass' of Untreated/Hard Water as this may adversely affect the efficiency of the 'Regeneration' process.
- Should your household requirements for Softened Water be temporarily increased, compared to the usual requirements; or if the hardness of the Mains Untreated/Raw Water is raised, then an increase of the duration of (i) the 'Regeneration' phase and, (ii) the 'Regeneration Time' will be required, to ensure the desired yield of Softened Water is achieved.
- Should there be a Power outage during the 'Regeneration' phase, the water will continuously drain, therefore be sure to check that the machine is in fact 'Regenerating' whilst the power is off.

16. Vacation Mode

Before travelling, set the Softener to 'Vacation' mode. In this mode, the machine will firstly be in 'Brine Refill' mode, and then in 'Salt Dissolve' and 'Brine Extraction' mode. When in 'Vacation' mode The 'Brine Extraction' time is only 25% of normal 'Brine Extraction' time, meaning, the resin remains completely soaked in Brine Solution to avoid the resin's loss of efficacy. Once 'Brine Extraction' is completed, the valve will go to the closed position; or manually close the Water Inlet valve.
Upon return from vacation, you will perform an override to exit 'Vacation' mode, as described below in 12.3 'Exiting Vacation mode'. This will effectively flush stagnant water built up during periods of dormancy.

Setting 'Vacation Mode'

In 'Vacation Mode', displays as "VAC. MODE" as seen in Figures 10 - 13 below

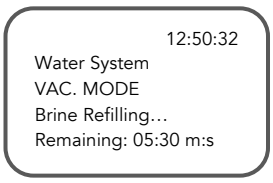


Figure 11

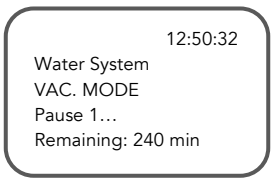


Figure 12

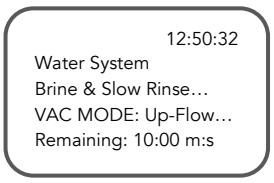


Figure 13

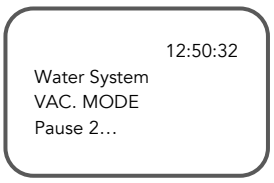


Figure 14

To initiate 'Vacation Mode' press and hold the "0" for 6 seconds whilst in 'Service Mode' and 'Unlocked', this will trigger a beeping sound. The automated cycles will commence in the following sequence:-

(i) 'Brine Refilling' mode for 5mins 30sec, followed by 'Pause 1' mode for 4hrs (240min), followed by
(ii) 'Brine Refill' & 'Brine Dissolve' modes, followed by
(iii) 'Brine & Slow Rinse' mode for 10mins
(iv) 'Brine Dissolve' (takes 25% of the time shown), lastly followed by
(v) Pause 2

16. Vacation Mode *continued*

Override 'Vacation Mode'

To override/end 'Vacation Mode' Press and hold "0" for 6 seconds, whilst 'Unlocked' & in 'Pause 2' program; this will trigger a beeping sound. The LED Control Panel will show 'Fast Rinse' mode, thereafter the program will return to 'In Service' mode.

Reminder To Reset 'Time Of Day'

If the LED screen displays a flashing '12:12', it means the Power has been 'Off' (more than 3 days) & this is a reminder to reset 'The Time Of Day'. However, If power off within a short time, the system has memory function, do not need to reset the time.

- Before using again, please firstly conduct a regeneration cycle through manual operation so as to ensure the quality of soften water.

17. Maintenance Alert Messages

'Salt Top-up' alert

When the machine is initially filled with the total salt quantity required, the machine will automatically calculate the regenerated salt consumption versus to the resin volume. When the remaining salt in the reservoir is less than the required amount for a full Regeneration cycle, the machine will go into 'Service' mode and the LED screen will flash 'Check Remaining Salt' in red. Once salt is added and quantity is reset to '0' the machine will continue to function as normal.

'Maintenance Required' alert for Resin replacement

The resin block will slowly degenerate over a period of approximately six years. The machine automatically calculates the Regeneration times. When the resin has nearly degenerated, the LED screen will display a message will show a 'Maintenance Required' message.

Leakage Protection Function

The machine has a built-in auto shut-off valve (non-standard parts) containing induction sponge or set the continuous water outlet time and the maximum instantaneous flowrate to close the water Inlet Control Valve, which can reduce the loss caused by water leakage in the back-end piping system of the machine under abnormal circumstances. This machine has been designed for effectively treating municipal tap water and borehole and well water.

Exit Leakage Protection Mode

Release Leakage Protection message in 'In-Service' Mode	**Release Leakage Protection message in Vacation Mode**
When the valve shows Figure 14, it indicates that leakage has occurred in normal status and the valve is in the closed protection position. After solving the leakage problem, press and hold the DOWN button for 5 seconds **in** the unlocked state, it will exit the water leakage protection and enter the service status to supply water.	When the valve shows Figure 15, it indicates that leakage has occurred in vacation mode and the valve is in the closed protection position. After solving the leakage problem, press and hold the DOWN button for 5 seconds in the unlocked state, it will exit the water leakage protection and enter the fast rinse status, after fast rinse, the valve will enter the service status to supply water.

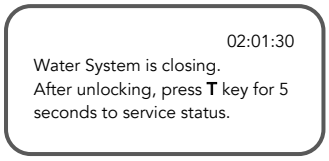
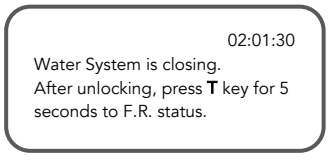

	

Figure 15	Figure 16

17. Maintenance Alert Messages *continued*

Exit Low-Salt Alarm Message

When the valve shows Figure 16, it indicates that brine tank maybe lack salt. After adding salt, press and hold "V" key for 3 seconds and the program will automatically return to 'In-Service' mode and continue to produce Softened Water as normal.

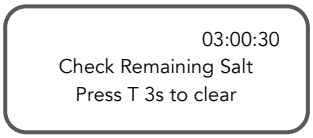


Figure 17

Brine Valve Function

1) Under the brine and slow rinse status, with the floating ball, the brine valve can prevent the air from being inhaled which may affected the regeneration and usability. That is, the brine valve has the function of air check.

2) Under the brine refill status, the brine valve can control the volume of refilling water by controlling the position of floater and control salt consumption.

18. Technical Specifications

Water Capacity	Rated Flow Rate (L/hr)	Suggested Flow Rate (L/hr)	Water Capacity/Cycle (L)	Rated Treated Water Quantity (m^3)	Brine Reservoir (")	FRP Reservoir Internal Dimensions (mm)	Cation Resin Volume (L)
5.5L	1600L/h	800-1600 L/h	2700L	9500m^3	1015"	258 X 381	11.5L
11.5L	3000 L/h	1000-3000 L/h	7000L	22500m^3	1035"	258 X 891	28L

OPTIMAL RANGES:

- Water temperature: 25°C
- Water Hardness Range: (mg/L): Soft = >20mg/L, Hard = <121 - 180mg/L (CaCO)
- Transformer-Input: AC100 - 240V / 50Hz - 60Hz
- Output: DC12V / 1.5A
- Water Pressure Range: 1.5 - 6bars [0.15 - 0.6MPa]
- Power: AC100 - 240V / 50Hz - 60Hz
- Water Temp. Range: 05 - 38°C
- Outdoor Temp. Range: 04 - 40°C
- Humidity: 90% (25°C)
- Cation Resin Lifespan: Approx. 6years
- Water Treatment Capacity per cycle varies depending on your local water quality
- The Softened/Treated water conforms with the Regulations (2001) of Safety and Function Assessment for Drinking Water Treatment Device/General Treatment Device.

19. Fault Analysis & Trouble-Shooting

IMPORTANT: Prior to any investigating any Fault Analysis/Troubleshooting on your Water Softener always

(i) Close Water Inlet & Outlet Valves to the Softener machine
(ii) Place the Piston into 'Bypass' mode
(iii) Should any of the water connections require disconnection, ensure you have a basin to catch up residual water spills

Fault / Issue	Checklist of Possible Reasons	Options & Solutions
Spluttering Faucets or 'Water Hammer' in water pipes	(i) Air trapped in Water Pipes during Installation (ii) Trapped air not expelled during Initial Test Run (iii) Inlet & Outlet Valves opened too fast	(i) Close Inlet & Outlet Valves, (ii) Put into Bypass mode, (iii) Open all faucets & allow to run until air pockets are expelled.
Blockages on Waste and/or Overflow Outlet Pipes	(i) General Waste water drain debris backing up into Waste and/or Overflow pipes	(ii) Ensure these outlet pipes sit higher and/or before other appliances' waste pipes, (iii) Unscrew clamp & disconnect waste / overflow pipe, (iv) Flush pipe to clear any blockages, (v) Replace & firmly resecure clamp
Leaking at Water Connections and/or Machine Connectors	(i) Close Mains Water Inlet Valve to Property & Softener	(i) Retighten all water connections on Mains Inlet & Machine Inlet & Outlet Pipes (ii) Reopen all ball valves slowly to check connections are water-tight
Softener Not using Salt	(i) Check Settings for Brine phase	(ii) Amend parameters for Brine phase (iii) Recheck in a couple of days to ensure issue has repaired itself
Can Softeners lower Water Pressure throughout the home	(i) Municipal Water Pressure fluctuates at various times of the day. E.g. it is higher during the night than it is during the day	(ii) Take Water Pressure Reading (iii) Place Piston into Bypass mode & (iv) Recheck Water Pressure gauge to compare
Water in Faucets is Saltier than usual	(i) Water Softener has a leak (ii) Brine Tank is too full (iii) Waste Pipe is clogged or frozen	(ii) Check all connections are water tight (iii) Manually run a 'Regeneration' Phase see, Section 15 'Manual Regeneration' on pg 19 (iii) Unscrew clamp & disconnect waste / overflow pipe, Flush pipe to clear any blockages, Replace & firmly resecure clamp
Softener is not as effective as it was when first installed	(i) Water Softener parameters may require resetting	(i) Manually reset all parameters, see Section 15, Manual Regeneration on pg 19
How to assess when Softener needs Replacing	(i) Cation Resin Tank may be depleted	(i) Resin Reservoir may require refurbishing/replacing
Should any of the above issue(s) persist	(i) You have gone through the above process of elimination (ii) Call your Plumbing Professional to access	In the event you or your Plumbing Professional could not solve the issue(s) contact our Technical Support Team

Wishing You Many Years of enjoying Clean, Clear, Silky Soft Water Throughout Your Home!

For any issues requiring assistance during the installation process, please contact our Technical Support Team for our Trouble-shooting Installation Video clips. If issues persist, contact your plumbing professional or our Customer Service team and provide a detailed description of the issue for better assistance.