

# ELECTRONIC SE



## SERVICE MANUAL

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# 1 - VALVE SPECIFICATIONS

Installation N°	<input type="text"/>	System capacity	<input type="text"/>	m <sup>3</sup> °TH
Valve serial N°	<input type="text"/>	Inlet water hardness	<input type="text"/>	°TH
Tank(s) size	<input type="text"/>	Water hardness after mixing valve	<input type="text"/>	°TH
Resin type	<input type="text"/>	Brine tank size	<input type="text"/>	L
Resin volume	<input type="text"/>	Quantity of salt per regeneration	<input type="text"/>	Kg

## VALVE TECHNICAL CHARACTERISTIC

<b>INITIATION</b>		<b>REGENERATION SET AT</b>	
Time clock	<input type="checkbox"/>	Days <input type="text"/> / <input type="text"/>	m <sup>3</sup> or l
Meter delayed	<input type="checkbox"/>	<b>REGENERATION TIME</b>	
Meter immediate	<input type="checkbox"/>	2 o'clock A.M.	<input type="checkbox"/>
		or <input type="text"/> Hour	

## REGENERATION CYCLES SETTING

Cycle 1	<input type="text"/>	min
Cycle 2	<input type="text"/>	min
Cycle 3	<input type="text"/>	min
Cycle 4	<input type="text"/>	min

## HYDRAULIC SETTING

Injector size	<input type="text"/>	<b>Pressure regulator</b>		
Drain line flow control (DLFC)	<input type="text"/>	GPM	2,1 bar (30 PSI) <input type="checkbox"/>	1,4 bar (20 PSI) <input type="checkbox"/>
Brine line flow control (BLFC)	<input type="text"/>	GPM	Without <input type="checkbox"/>	

## VOLTAGE

24V / 50Hz	<input type="checkbox"/>
24V / 60Hz without transformer	<input type="checkbox"/>

### NOTES



## 2 - VALVE INSTALLATION

### 2.1 WATER PRESSURE

A minimum of 1,8 bar of water pressure is required for regeneration valve to operate effectively. Do not exceed 8,5 bar ; if you face this case, you should install a pressure regulator upstream the system.

### 2.2 ELECTRICAL CONNECTION

An uninterrupted alternating current supply is required. Please make sure your voltage supply is compatible with your unit before installation. If the electrical cable is damaged, it must imperatively be replaced by a qualified personal.

### 2.3 EXISTING PLUMBING

Existing plumbing should be in a good shape and free from lime. The installation of a pre-filter is always advised.

### 2.4 BY-PASS

Always provide a by-pass valve for the installation, if unit is not equipped with one.

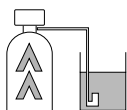
### 2.5 WATER TEMPERATURE

Water temperature is not to exceed 43°C, and the unit cannot be subjected to freezing conditions.

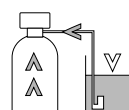
### 2.6 PRESENTATION



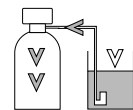
Depending on the type of valve, the pictogram order can be different



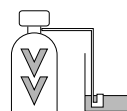
Backwash



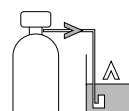
Brine draw & slow rinse  
Up flow



Brine draw & slow rinse  
Down flow



Rapid rinse



Brine refill



Symbol means cycle not used on  
Filter valve

Note: depending on the type of valve, some of these symbols will be used.



## 3 - INSTALLATION INSTRUCTIONS

- 3.1 Install the unit making sure the tanks are level and on a firm base.
- 3.2 During cold weather it is recommended that the installer warms the valve up to the room temperature before operating.
- 3.3 All plumbing should be done in accordance with local plumbing code. The pipe size for the drain line should be a minimum of 13 mm (1/2"). For length exceeding 6 m and backwash flow above 7 gpm, the drain line should be a minimum of 19 mm (3/4").  
*For the 2850 SE and 9500 SE the pipe size for the drain line should be a minimum of 19 mm.*
- 3.4 Solder joints on the principal plumbing and near the drain must be done prior to connecting the valve. Failure to do this could cause irreversible damage to the valve.
- 3.5 Teflon® tape is the only sealant to be used on the drain fitting.
- 3.6 Make sure that the floor is clean beneath the salt storage tank and that it is level.
- 3.7 On units with a by-pass, place in by-pass position. Turn on the main water supply. Open a cold soft water tap nearby and let run a few minutes or until the system is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.
- 3.8 Place the by-pass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let run until the air is purged from the unit.
- 3.9 Plug the valve into an approved power source. Once powered, it is possible that the valve drives itself to the service position.
- 3.10 Set the time of day (see chapter 4.1.2)
- 3.11 Fill approximately 25 mm of water above the grid plate (if used). Otherwise, fill to the top of the air check in the brine tank. Do not add salt to the brine tank at this time.
- 3.12 Start a manual regeneration (see chapter 4.2.2). Bring the valve in the brine draw and slow rinse position and let it draw the water contents in the brine tank until it stops. The water level will approximately be in the middle of the air check cage.  
*For twin valves (8500, 9000 and 9500) : during this position, the second tank fills up with water. When the flow stops, open a cold water tap and let run to purge the air inside the tank.*
- 3.13 Now bring the valve in brine refill position and let it get back to service position automatically.
- 3.14 Now you can add salt to the brine tank, the valve will operate automatically.



# 4 - VALVE OPERATION

## Timeclock regeneration

The valve will operate normally until the number of days since last regeneration reaches the regeneration day override setting. Once this occurs, a regeneration cycle will be initiated at the pre-set regeneration time.

## Meter delayed or immediate regeneration

As treated water is used, the volume remaining display will count down from a maximum value to zero. Once this occurs, a regeneration will be initiated immediately or delayed to the set regeneration time.

For example :



530 litres of treated water remaining



0 litre of treated water remaining

## Meter delayed or immediate regeneration with regeneration days override set

When the valve reaches its set of days since regeneration override value, a regeneration will be initiated immediately or at the pre-set regeneration time. This event occurs regardless of the volume remaining display having reached zero litre.

## 4.1 SERVICE

### 4.1.1 Service displays

In service the time of day will alternatively be viewed with the volume remaining, (except for the timeclock version : only the time of day will be viewed), for twin valves (8500, 9000 and 9500) the tank in service will be shown.



Time of day







Volume remaining



Tank in service

### 4.1.2 time of day setting

Push either the button  or  to adjust the time of day. Push and hold the button  or  to adjust faster the time of day.

## 4.2 REGENERATION

### 4.2.1 Regeneration displays

During the regeneration, the display will show the current regeneration step number the valve is advancing to (flashing display) or has reached and the time remaining in that step (fixed display). Once all regeneration steps have been completed, the valve will return to service and resume normal operation.

For example :





27 minutes remaining in step #2




## 4 - VALVE OPERATION

### 4.2.2 Start a manual regeneration

There are two options to initiate a manual regeneration :

- 1- Press and release the button  :
  - With an immediate regeneration, the valve will start immediately a regeneration.
  - With a delayed regeneration, the service diode will begin to flash immediately and the regeneration occurs at the preset regeneration time.
- 2- Press and hold for 5 seconds the button  :
  - In any case the valve will go into regeneration immediately.



### 4.2.3 Advance to the next regeneration cycle

To advance to the next regeneration cycle position, push the button  . This action won't have any effect if the valve is advancing the next cycle.

## 4.3 PROGRAMMING

**Caution : the programming has to be done only by the installer for the valve setting of parameters. The modification of one of these parameters could prevent the good functioning of the device.**

To enter the program mode the valve has to be in service. While in the program mode, the valve will continue to operate normally monitoring all information. The programming is stored in permanent memory.

To enter in the program mode, push and hold for 5 seconds both buttons   .

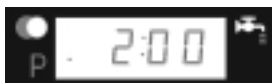
Push the button  once per display.

Change the option setting by pushing either the buttons  or  .

*Note: You must pass through all the programming steps and come back in service position to save the modifications that have been done during programming mode.*



System capacity : the capacity is in litres or m3.  
For ex. : 6500 litres



Regeneration time.  
For ex. : 02.00 o'clock A.M.



Regeneration day override (maximum number of day before a regeneration cycle must occur).  
For ex. : 7 Days.

### 4.4 VALVE OPERATION DURING A POWER FAILURE

During a power failure all control displays and programming will be stored for use upon power re-application. The control will retain these values for years, if necessary, without loss. The control will be fully inoperative and any calls for regeneration will be delayed. The control will, upon power re-application, resume normal operation from the point where it has been interrupted. An inaccurate time of day display means that a power outage has occurred.



## 5 - trouble shooting

PROBLEM	CAUSE	CORRECTION
1. Softener fails to regenerate.	<ul style="list-style-type: none"> <li>A. Electrical service to unit has been interrupted.</li> <li>B. Timer is not operating properly.</li> <li>C. Meter cable disconnected.</li> <li>D. Meter jammed.</li> <li>E. Defective valve drive motor.</li> <li>F. Improper programming.</li> </ul>	<ul style="list-style-type: none"> <li>A. Assure permanent electrical service (check fuse, pull chain or switch).</li> <li>B. Replace the timer.</li> <li>C. Check the meter connection to the timer and the meter cover.</li> <li>D. Clean or replace the meter.</li> <li>E. Replace the drive motor.</li> <li>F. Check the programming and reset as needed.</li> </ul>
2. Softener delivers hard water.	<ul style="list-style-type: none"> <li>A. By-pass is open.</li> <li>B. No salt in the brine tank.</li> <li>C. Injector and/or screen are plugged.</li> <li>D. Insufficient water flowing into the brine tank.</li> <li>E. Hardness from the hot water tank.</li> <li>F. Leak at the distributor tube.</li> <li>G. Internal valve leak.</li> <li>H. Flow meter is jammed.</li> <li>I. Flow meter cable is disconnected or not plugged into the meter cap.</li> <li>J. Improper programming.</li> </ul>	<ul style="list-style-type: none"> <li>A. Close the by-pass valve.</li> <li>B. Add salt to the brine tank and maintain the salt level above the water level.</li> <li>C. Replace or clean the injector and screen.</li> <li>D. Check the brine tank fill time and clean the brine line flow control if it's plugged.</li> <li>E. Repeated flushing of the hot water tank is required.</li> <li>F. Make sure distributor tube is not cracked Check the O' ring.</li> <li>G. Replace seals and spacers and/or piston.</li> <li>H. Remove the obstruction from meter.</li> <li>I. Check the meter connection to the timer and the meter cap.</li> <li>J. Check the programming and reset as needed.</li> </ul>
3. Unit uses too much salt.	<ul style="list-style-type: none"> <li>A. Improper brine refill setting.</li> <li>B. Excessive water in the brine tank.</li> <li>C. Improper programming.</li> </ul>	<ul style="list-style-type: none"> <li>A. Check salt usage and salt setting.</li> <li>B. See the problem n°6.</li> <li>C. Check the programming and reset as needed.</li> </ul>
4. Loss of water pressure.	<ul style="list-style-type: none"> <li>A. Iron build up in line to softener.</li> <li>B. Iron build up in the softener.</li> <li>C. Inlet of the valve plugged due to foreign material.</li> </ul>	<ul style="list-style-type: none"> <li>A. Clean the line to the softener.</li> <li>B. Clean the valve and the resin bed.</li> <li>C. Remove the piston and clean the valve.</li> </ul>
5. Loss of resin through drain line.	<ul style="list-style-type: none"> <li>A. Top distributor missing or broken.</li> <li>B. Air in water system.</li> <li>C. Drain line flow control (DLFC) is too large.</li> </ul>	<ul style="list-style-type: none"> <li>A. Add or replace the top distributor.</li> <li>B. Assure the presence of air check system in the brine tank</li> <li>C. Ensure drain line flow control size is correct.</li> </ul>






## 5 - trouble shooting

INCIDENT	CAUSE	REMEDE
6. Iron in the softener.	<p>A. Fouled resin bed.</p> <p>B. Iron content exceeds the recommended parameter.</p>	<p>A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration and backwash time.</p> <p>B. Contact the dealer.</p>
7. Excessive water in brine tank.	<p>A. Plugged drain line flow control (DLFC).</p> <p>B. Brine valve failure.</p> <p>C. Improper programming.</p>	<p>A. Clean flow control (DLFC).</p> <p>B. Replace brine valve.</p> <p>C. Check programming and reset as needed.</p>
8. Salted water in service line.	<p>A. Plugged injector and/or screen.</p> <p>B. Timer not operating properly.</p> <p>C. Foreign material in brine valve.</p> <p>D. Foreign material in brine line flow control (BLFC).</p> <p>E. Low water pressure.</p> <p>F. Improper programming.</p>	<p>A. Clean injector and replace screen.</p> <p>B. Replace timer.</p> <p>C. Clean or replace brine valve.</p> <p>D. Clean brine line flow control (BLFC).</p> <p>E. Raise water pressure to 1,8 bar at least.</p> <p>F. Check programming and reset as needed.</p>
9. Softener fails to draw brine.	<p>A. Plugged drain line flow control.</p> <p>B. Plugged injector and/or screen.</p> <p>C. Low water pressure.</p> <p>D. Internal valve leak.</p> <p>E. Improper programming.</p> <p>F. Timer not operating properly.</p>	<p>A. Clean flow control.</p> <p>B. Clean injector and replace screen.</p> <p>C. Increase water pressure to 1,8 bar at least.</p> <p>D. Change seals and spacers and/or piston assembly.</p> <p>E. Check programming and reset as needed.</p> <p>F. Replace timer.</p>
10. The valve regenerates continuously.	<p>A. Timer not operating properly.</p> <p>B. Faulty microswitches and/or harness.</p> <p>C. Faulty cycle cam operation.</p>	<p>A. Replace timer.</p> <p>B. Replace faulty microswitches or harness.</p> <p>C. Replace cycle cam or reinstall.</p>
11. Drain flows continuously.	<p>A. Foreign material in the valve.</p> <p>B. Internal valve leak.</p> <p>C. Valve jammed in brine or backwash position.</p> <p>D. Timer motor stopped or jammed.</p> <p>E. Timer not operating properly.</p>	<p>A. Remove piston assembly and inspect bore, remove foreign material and check the valve in various regeneration positions.</p> <p>B. Replace seals and spacers and/or piston assembly.</p> <p>C. Replace piston assembly and seals and spacers.</p> <p>D. Replace timer motor and check all gears for missing teeth.</p> <p>E. Replace timer.</p>





# MASTER PROGRAMMING MODE

2510SE, 2750SE, 2850SE, 2900SE, 4600SE, 5000SE, 5600SE, 8500SE, 9000SE AND 9500SE

1 Push this button  once per display.  

2 Use these buttons to set the programming.

12:01  
U--2

MWith time of day display set to 12:01 PM, push and hold these buttons   for 5 seconds

### 1. Display format : litre or cubic meter

- U- -1 Gallon (g) - not used
- U- -2 Litre (l)
- U- -4 Cubic meter (m<sup>3</sup>)

Note: For 8500SE, 9000SE, 9500SE, set 7- -2

7--2

### 2. Regeneration type

- 7- -1 Timeclock regeneration
- 7- -2 Meter immediate
- 7- -3 Meter delayed

If 7- -1 is programmed, this display will not be viewed.

2800

### 3. Treated water capacity

in Litre or Meter cube following the choice of unit  
Ex: 2800 2800 litres

If 7- -2 is programmed, this display will not be viewed

2:00

### 4. Regeneration time

Ex: 2:00 AM

If 7- -1 is programmed, imperatively set a number of day

AOFF

### 5. Regeneration day override

- AOFF Cancel setting
- A--4 Override every 4 days.

To set the cycle time, see the next page

1-5.0

### 6. Regeneration cycle time step #1

Ex: 5 min. Adjustable

230.0

### 7. Regeneration cycle time step # 2

Ex: 30 min. Adjustable

3-5.0

### 8. Regeneration cycle time # 3

Ex: 5 min. Adjustable

4-5.0

### 9. Regeneration cycle time # 4

Ex: 5 min. Adjustable

5OFF

### 10. Regeneration cycle time # 5

Not used

If 7- -1 is programmed, this display will not be viewed

F35.1

### 11. Meter type

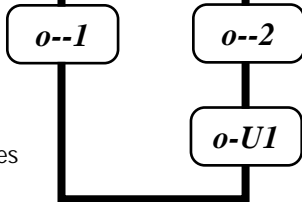
see the opposite chart

### Meter size pulse setting

2510SE	3/4"	F35.1
2750SE	1"	F-2.1
2850SE	1"1/2	F-1.0
2900SE	2"	F--.5
4600SE	3/4"	F35.1
5000SE	3/4"	F34.6
5600SE	3/4"	F35.1
8500SE	3/4"	F34.9
9000SE	3/4"	F35.1
9500SE	1"1/2	F-1.0

### 11.a Valve type

- o- -1 2510SE, 2750SE, 2850SE, 2900SE, 4600SE, 5000SE and 5600SE valves



### 11.b Valve type

- o- -2 8500SE, 9000SE, and 9500SE valves

### 12. Tank in service

- o-U1 Tank 1 in service
- o-U2 Tank 2 in service

### 13. Line frequency

- LF50 Frequency : 50 Hz
- LF60 Frequency : 60 Hz

LF50

Master programming mode exit  
Return to normal operation

12:05



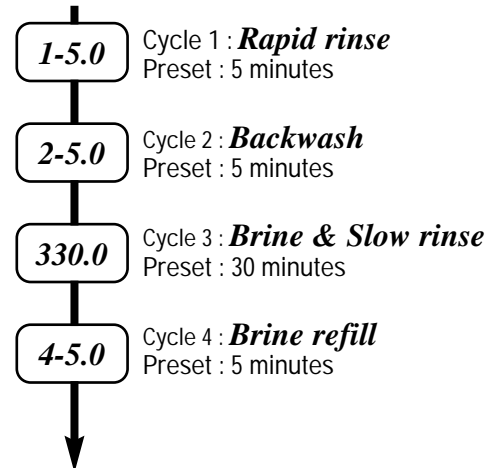
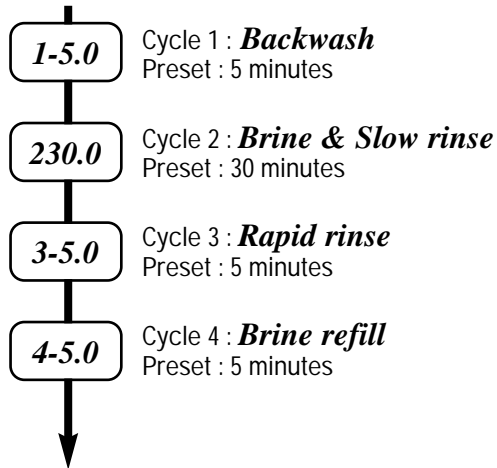
# MASTER PROGRAMMING MODE

2510SE, 2750SE, 2850SE, 2900SE, 4600SE, 5000SE, 5600SE, 8500SE, 9000SE AND 9500SE

## Valves with down flow regeneration (Down flow)

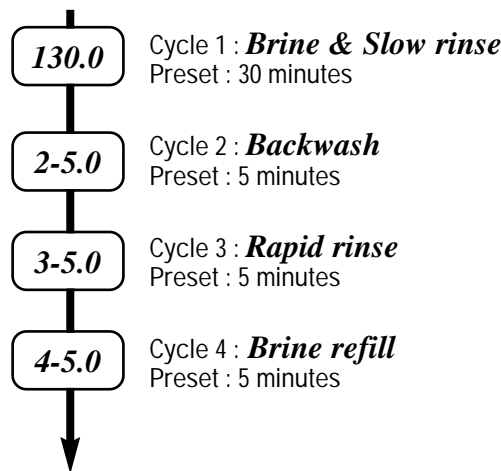
2510SE, 2750SE, 2850SE, 2900SE, 4600SE, 5000SE, 5600SE, 9000SE, 9500SE

8500 SE



## Valves with up flow regeneration (Up flow)

2750SE, 4600SE, 5000SE, 5600SE



## filter valves

2510SE, 2750SE, 2850SE, 2900SE, 4600SE, 5600SE

5000SE

