

**SCALEMASTER®**

**SL TWIN E**

Twin Tank Electric Water Softener with Remote Control

**Installation & Operation Manual Effective: 2021**

**PLEASE READ FULLY BEFORE INSTALLATION**



**Contents**

The Basics	2
Planning Your Installation	2
Before You Start	3
<b>Installation</b>	
Positioning your Water Softener	4
Typical Water Softener installation	5
Connecting the Water Softener	6
Softener Controller - Quick Start	7
Commissioning the Softener	8 - 9
Trouble Shooting	10 - 11

**IMPORTANT INFORMATION - PLEASE NOTE:**

Before you start installing your Softline Water Softener, ensure that you have all the correct parts and tools required to install your Water Softener.

**YOUR SOFTLINE WATER SOFTENER IS COVERED BY A 5 YEAR PARTS & 2 YEARS LABOUR WARRANTY. TO ENSURE YOUR WATER SOFTENER IS COVERED IT MUST BE INSTALLED IN ACCORDANCE WITH THESE INSTRUCTIONS & REGISTERED ONCE INSTALLED.**

YOUR WARRANTY DOES NOT COVER RESIN DAMAGE OR DAMAGE TO YOUR WATER SOFTENER THROUGH INGRESS OF DEBRIS OR CHEMICALS FROM EXTERNAL SOURCES, INCORRECT INSTALLATION, ON-SITE DAMAGE OR INCORRECT SETTING UP OF THE UNIT.

In the interests of continuing product development, we reserve the right to make modifications to the specification of the unit without notice.

**DID YOU KNOW?**

The salt used in a water softener is **not** used to soften the water, it's used as part of the cleaning process (regeneration) that the softener will go through periodically.



**Salt Tablets are readily available through your local Plumbers Merchant**

## Thank you for choosing the SL Twin E Water Softener.

It is important that you take the time to read this installation guide. It will tell you in a simple format how to install your Water Softener and how to start enjoying the benefits of softened water.

**NOTE:** This instruction manual applies to the **SL TWIN E** model only.

### **The Basics**

**The Water Softening Process** - Hard water enters the water softener, as it passes through the resin inside the tank the hard water minerals are attracted to the resin and the water is softened to service the home.

**The Regeneration Process** - This is the process that the water softener goes through to cleanse itself. When the resin becomes saturated with the hard water minerals the softener will automatically enter the regeneration cycle. The brine solution is drawn into the resin vessel and rinses the hard water minerals off the resin and goes down the drain. Once the resin is free of hard water minerals, soft water rinses the remaining brine water out of the system leaving the system ready for service.

**The Advantages of a Twin-Tank System** - A twin tank system assures that there is always soft water available. Hard water flows down through the resin in both tanks and the hardness minerals are trapped. The SL Twin E water softener tracks how much water is treated and displays the amount of water each tank can still treat.

For example: Left Hand Tank 1m<sup>3</sup> Right Hand Tank 0.4m<sup>3</sup>

When one tank has reached it's capacity the brine solution is used to flush (regenerate) the tank out whilst the other tank continues to supply soft water.

### **Planning Your Installation**

Please observe any regulations concerning the installation of your water softener. For guidance check out the water regulations advisory service web site ([www.wras.co.uk](http://www.wras.co.uk)). Check that you have only one rising main, that you have allowed space for access to the unit for possible future maintenance, servicing and salt replenishment. Check the water pressure, the ambient temperature, locate the rising main (stop cock), a drain facility and a power supply.

Unless you are replacing an existing water softener, this installation will require you to carry out plumbing work and may require an electrical outlet to be fitted near your softener. You should only attempt this if you have the necessary skills.

## **Before You start**

- Make sure you have all necessary parts and tools required before starting the installation.
- Follow all regulations regarding drainage. If in doubt see the relevant WRAS guidance notes which can be found at [www.wras.co.uk](http://www.wras.co.uk).
- **Read this manual carefully.** If you have any questions please contact the **Technical Helpline on 07990 064096.**
- Check incoming water pressure: minimum 1.4 bar (20 psi), maximum 5 bar (70 psi). If necessary fit a pressure reducing valve to reduce the incoming water pressure.
- Do not install the water softener close to a heat source. (environment ambient temperature must be below 40°C ).
- Protect the water softener drain hose and all fittings against frost.
- Make sure you have tested the water for Total Hardness for the area. If in doubt telephone the **Technical helpline on 07990 064096** to obtain this information.
- Remember, if you are not sure **ASK!**

**It is recommended that any water softener is installed by a professional. Although Soffline water softeners are probably the easiest and safest softener on the market, it is imperative that all necessary precautions are taken.**

This installation guide is written to help the professional installer and assumes that this person has a working knowledge of water softeners and domestic plumbing.

**Proper operation of the softener depends on correct installation, commissioning, maintenance and maintaining the salt level with suitable salt manufactured for use in water softeners.**

### **What's in the box:**



SL Twin E (Main Unit)

### **You will need:**

Water Softener Installation Kit  
such as a Scalemaster Combi Kit  
(Product Code 900827)



SL Twin E (Remote Control) with wall bracket

**Plus:** Installation Manual (you're reading it!) and Hardness Test Strips.

## Positioning the water softener

- Remember to measure your water softener and the space where it will be installed.
- Remember to allow extra space for connecting pipework when you do your calculations along with adequate space to allow for future servicing, maintenance and topping up of salt.
- Where possible the softener should be placed close to the rising main.
- Keep the distance of the incoming main and drainage to a minimum.
- The weight of the water softener is greatly increased when fully operational and filled with both salt and water so this must be taken into account when choosing where to site the water softener.
- If putting the softener in a cupboard ensure that the base is adequately supported.
- It is important to carry out a pressure test. High and low water pressure can result in either damage to or failure of the softener. Your water softener is designed to operate effectively with an incoming water pressure of between 1.4 bar (20psi) and 5 bar (70psi). If your water supply is likely to fall outside of these parameters we recommend that either a booster pump or pressure reducing valve should be fitted accordingly.
- Do not install your water softener next to a boiler or other heat source that will exceed ambient temperature of 40°C.
- If positioning outside, the softener and any pipework must be protected against frost and freezing.

**IF YOU ARE CONSIDERING INSTALLING YOUR WATER SOFTENER IN A LOFT, THE FOLLOWING INSTRUCTIONS MUST BE STRICTLY ADHERED TO.**

### Loft Installation

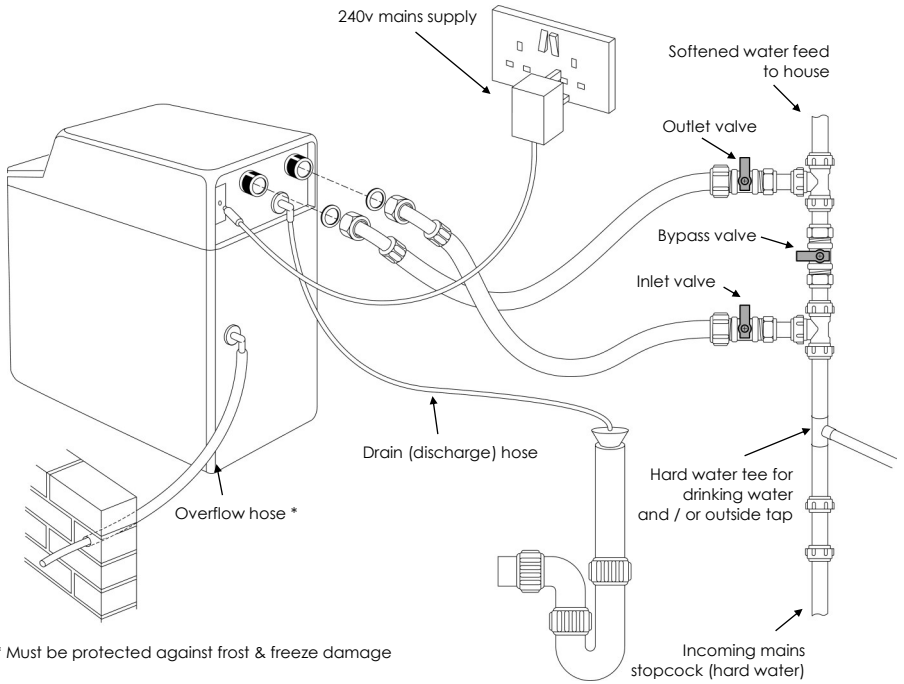
- The water softener may be installed in a loft or roof cavity but must be situated within a safety tank of not less than 100 litre capacity. A suitable tank would be a plastic roof storage tank with an overflow pipe of not less than 20mm diameter. This tank should be mounted on a board strong enough to spread the weight over a load bearing wall. The overflow on the tank must be below the softener overflow and be a minimum of 3/4" in size.

### Drinking Water

- When fitting your water softener allowance should be made for at least one drinking water tap that is not fed by the water softener. Where practical this should be at the kitchen sink but a utility room or other suitable alternative will suffice.
- It is recommended that people on a low sodium diet should not drink artificially softened water. Water used for mixing infant powder for babies must only be taken from unsoftened water as artificially softened water contains an increased level of sodium to which young babies have a limited tolerance.

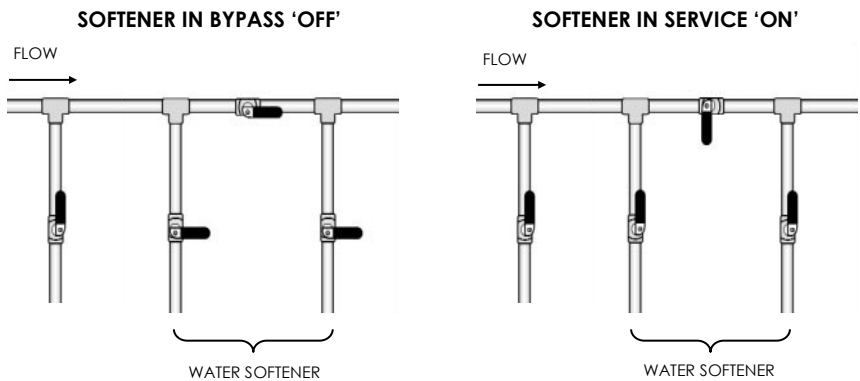
## Typical water softener installation

This schematic diagram of an installation is not to scale and may not be representative of the layout applicable to your property.



\* Must be protected against frost & freeze damage

## External bypass schematic



**STOP!** Before starting the installation of the valves ensure that the stop cock is in the closed position.

## Connecting the water softener:

Once you have completed the installation of the Inlet, Outlet and Bypass valves set the valves as follows:

- Softener Inlet and Outlet Valves **CLOSED**
- Bypass Valve **OPEN**

You can now safely return the stop cock to the open position. Using the hoses provided within the installation kit connect the straight end of the hose, having first inserted the fibre washer, to the softener inlet and outlet valves. Connect the angled end to the softener. The softener inlets and outlets should be marked with the words **INLET** or **OUTLET** or with directional arrows on the softener tails. Normally the softener tails are in a configuration of three with the centre normally being the waste outlet.

## Waster pipe installation.

Connect the waste pipe to the waste outlet on the softener and run the hose to either an upstand or outside drain. A minimum air gap of 20mm must exist at the end of the drain line. **Softened water will have no adverse effect on a septic tank.** Should you need to extend the drain hose this can be done by connecting to a 15mm copper tube for a maximum run of 8 meters with a minimum daytime pressure of 40 psi. Ensure that the drain hose is not kinked or obstructed in any way as this will lead to an overflow of the softener. The drain hose can run uphill to a maximum of 1 meter with a minimum water pressure of 40 psi. If running the drain hose outside ensure hose is adequately protected against frost and freeze damage.

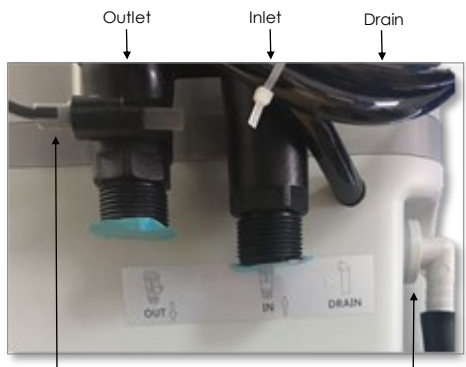
## Overflow connection.

The overflow connection is the white 1/2" hose spigot on the rear or side of the cabinet. The overflow must be run downhill through an outside wall without kinks or restrictions. It is recommended the overflow hose be visible when it exits the outside wall.

## Preparing the Softener to go into service.

Ensure the turbine cable is clipped into the outlet pipework.

Put approximately 5 litres of water into the brine tank. You may also at this point put a quantity of salt into the tank. Do not allow the salt level in the brine tank to exceed the height of the overflow. You should keep the salt level above the water level and check the salt on a regular basis until a usage pattern has been established.



Turbine connector

Overflow hose

## Softener Controller.

The controller provided with the softener allows for remote control over your softener.

The display shows information on the remaining capacity of the left and right tanks, the current flow rate from the softener and the time.

You can use the controller to begin a manual regeneration or to adjust the time and hardness settings.

You can set up the softener using either the main screen or the remote, you **do not** need to do both.

\* To unlock either controller press the **Up** and **DOWN** buttons together for 5 seconds.

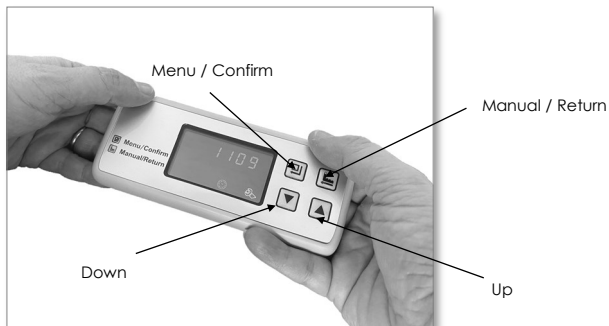
### Either Program the valve using the main display.

When plugging in the softener initially it will display the valve model information - **F126**

- From the softener home screen press **CONFIRM** to enter the general settings menu.
- Select '**Set Time of Day**'. Use the **UP** and **DOWN** buttons to select the hour (24 hour time format) press **CONFIRM** select the minutes again using the **UP** and **DOWN** buttons to set minutes, press **CONFIRM** the display will now return to the general settings menu.
- Using the **DOWN** arrow, move to '**SET REGEN TIME**'. This is a factory pre-set at 02:00 and does not need changing.
- Finally, select '**Set water hardness**'. Using the **UP** and **DOWN** buttons set the hardness for the local area. (See Water hardness conversion chart on Page 13) Press **CONFIRM** to return to the general settings menu.
- Press **MANUAL/RETURN** button to exit the general settings menu.

### Or Program the valve using the remote control.

- Setting the Time - Press the **CONFIRM** button to enter the settings menu, To set the time press the **CONFIRM** button again and set the hours using the **UP** and **DOWN** buttons. Press the **CONFIRM** button again to set the minutes using the **UP** and **DOWN** buttons.
- Once the time is set press the **DOWN** button to enter the '**SET REG TIME**' which is a factory pre-set to 02:00 and should not be changed.
- To set the Water Hardness, press the **DOWN** arrow again and then the **CONFIRM** button, set the water hardness for the local area using the conversion chart on page 13.





## Commissioning the Softener.

### Introduction.

With the softener fully plumbed and the valve programmed, commissioning can start

### Regeneration.

When the softener is fully functional the regeneration cycle will happen automatically.

To initiate an immediate regeneration press the **RETURN** button until the valve motor starts to turn.

If, during a regeneration cycle you need to skip through the cycle, this can be done in the following way. To skip to the next stage quickly press the **RETURN** button and this will take it to the next stage of the regeneration, this can be repeated to get to the end of the regeneration cycle.

### Service.

Water flows into the valve at the top, down through the resin then up through the 'riser' tube in the middle of the vessel. As the water travels through the resin the ion exchange process takes place. The controllers are set to automatically regenerate on capacity. The display on the control will show the following; In service and the remaining capacity.

### Householder Routine Maintenance.

- Check the salt level (this may need to be done more regularly dependant on consumption) **The salt level should always be above the water level.**
- When refilling with salt, fill the salt cabinet to 3/4 full.
- Your softener will use either tablet or granular salt. Ensure this salt is designed for use with water softeners.
- Check there is no sign of damage or leaks.
- Once the softener is fully functioning you do not top up the water in the salt tank, the softener will do this automatically.

## Programming the Valve (in case of memory loss).

Should the programming be lost in transit the following instructions in conjunction with the setting instructions will allow you to re-set it. For time, date and hardness settings see the quick start guide on page 7. The settings below should not be altered without good reason.

When the power has been connected the valve will show the valve model and initialise itself. During the initialisation press and hold the **RETURN** and **DOWN** buttons until the settings menu appears.

Set Regeneration Mode	A-02 Intelligent Immediate
Set Flow Rate	m <sup>3</sup>
Set Resin Volume	3.5 L
Set Brine D. Type	Downflow
Set Backwash Time	02:00 minutes
Set B.S.R.T	35:00 minutes
Set F.R Time	03:00 minutes
Set B.R Time	01:30 minutes
Interval Regen. D.	30 Days
Replace Resin	No
Set Regen Times	0300 times
Salt Adding Volume	000kg

Selections are made using the **UP** and **DOWN** buttons until the required setting is displayed. After each setting, press **CONFIRM** to continue.

Once finished press **RETURN** until the main display shows.

## Trouble Shooting

Following the below as a guide you can find the most common problems that may arise; In the first instance, if you have a problem, you should contact your installer. Most problems are easily cured by following this information.

Problem	Cause	Resolution
1. Softener fails to regenerate	<ul style="list-style-type: none"> <li>A. Electrical service to softener has been interrupted.</li> <li>B. Regeneration cycles set incorrectly.</li> <li>C. Controller is defective.</li> <li>D. Motor fails to work.</li> </ul>	<ul style="list-style-type: none"> <li>A. Assure permanent electrical service (check fuse, plug and switch).</li> <li>B. Reset regeneration cycles.</li> <li>C. Replace controller</li> <li>D. Replace Motor</li> </ul>
2. Regeneration time is not correct	<ul style="list-style-type: none"> <li>A. Time of day is not correct</li> <li>B. Power failure more than 3 days</li> </ul>	<p style="text-align: center;">Check programme and reset time of day</p>
3. Softener supplies hard water	<ul style="list-style-type: none"> <li>A. Bypass valve is open or leaking (if present).</li> <li>B. No salt in brine tank.</li> <li>C. Insufficient water flowing into brine tank.</li> <li>D. Internal valve leak.</li> <li>E. Regeneration cycles not correct.</li> <li>F. Bad quality of feed water or turbine blocked.</li> <li>G. Adjusting bolt open.</li> </ul>	<ul style="list-style-type: none"> <li>A. Close or repair bypass valve.</li> <li>B. Add salt to brine tank and maintain salt level above water level.</li> <li>C. Check brine tank refill time.</li> <li>D. Change valve body.</li> <li>E. Set correct regeneration cycles in program.</li> <li>F. Reduce the inlet turbidity, clean or replace the turbine.</li> <li>G. Close the adjustment bolt.</li> </ul>
4. Softener fails to draw brine.	<ul style="list-style-type: none"> <li>A. Line pressure is too low.</li> <li>B. Brine line is blocked.</li> <li>C. Brine line is leaking.</li> <li>D. Internal control leak.</li> <li>E. Drain line is blocked.</li> </ul>	<ul style="list-style-type: none"> <li>A. Increase line pressure</li> <li>B. Clean brine line.</li> <li>C. Replace brine line.</li> <li>D. Replace valve body.</li> <li>E. Clean drain line flow control.</li> </ul>
5. Softener uses too much salt.	<ul style="list-style-type: none"> <li>A. Incorrect salt setting.</li> <li>B. Excessive water in salt tank.</li> </ul>	<ul style="list-style-type: none"> <li>A. Check salt usage &amp; salt setting.</li> <li>B. See problem No.6</li> </ul>
6. Excessive water in brine tank	<ul style="list-style-type: none"> <li>A. Overlong refilling time.</li> <li>B. Water remaining after brine draw.</li> <li>C. Foreign material / debris in brine valve and plug drain line flow control.</li> <li>D. Not installed safety brine valve and power failure while salting.</li> <li>E. Safety brine valve breakdown.</li> </ul>	<ul style="list-style-type: none"> <li>A. Reset correct refilling time.</li> <li>B. Check the injector &amp; remove debris from brine pipe.</li> <li>C. Clean brine valve &amp; brine line.</li> <li>D. Stop water supply &amp; restart programme install with safety brine valve in salt tank.</li> <li>E. Repair or replace safety brine valve.</li> </ul>

<b>Problem</b>	<b>Cause</b>	<b>Resolution</b>
7. Pressure loss or rust in pipe.	A. Iron in water supply pipe. B. Iron mass in the softener. C. Contaminated resin bed.  D. Too much iron in raw water.	A. Clean water supply pipe. B. Clean valve & add resin cleaner. C. Check back, brine draw & brine tank refill. Increase frequency of regeneration & backwash time. D. Iron removal equipment is required to install before softening.
8. Loss of resin through drain	A. Air in water system B. Bottom screen broken C. Improperly used DLFC	A. Assure that well system has proper air eliminator control. B. Replace new screen. C. Check for proper drain rate.
9. Control valve cycles continuously	A. Locating signal wiring breakdown. B. Controller is faulty. C. Debris stuck in driving gear. D. Time of regeneration steps set to zero.	A. Check & connect locating signal wiring. B. Replace controller. C. Clean out debris. D. Check programme setting and reset.
10. Drain flows continuously.	A. Internal valve leak. B. Power off when in back-wash or fast rinse.	A. Check and repair valve body or replace it. B. Adjust valve to service position or turn off bypass valve and restart when electricity supply is restored.
11. Interrupted or irregular brine.	A. Water pressure too low or not stable. B. Air in resin tank.	A. Increase water pressure. B. Check & find reason.
12. Water flow out from drain or brine pipe after re-generation	A. Foreign material / debris in valve which stops valve closing completely. B. Water pressure too high which results in valve in wrong position.	A. Clean foreign material / debris in valve body B. Reduce water pressure or use a pressure reducing valve.
13. Salt water going to service	A. Brine valve cannot be shut off. B. Time of fast rinse too short.	A. Repair / clean brine valve. B. Extend fast rinse time.
13. Circle water treatment capacity decreases	A. Not regenerating correctly. B. Fouled resin bed.  C. Salt setting not correct. D. Softener setting not correct.  E. Turbine has stuck.	A. Regenerate according to manual. B. Increase backwash flow rate and time, change resin. C. Readjust brine drawing time. D. Do a manual regeneration and then reset regeneration cycle. E. Disassemble flow meter & clean it or replace turbine.

## USEFUL INFORMATION:

### Water Hardness Conversion Table.

PPM	Equal to	Mmol/l	mg/l	French Degrees	German Degrees	Grains per Gallon	Degrees Clark
200		1.98	200	20	11.24	11.7	14
250		2.48	250	25	14.05	14.62	17.5
300		2.97	300	30	16.85	17.54	21
350		3.47	350	35	19.66	20.47	24.5
400		3.96	400	40	22.47	23.39	28
450		4.46	450	45	25.28	26.32	31.5

**SCALEMASTER®**



**IMPORTANT NOTES**

YOUR SOFTLINE WATER SOFTENER BENEFITS FROM A 5 YEAR PARTS & 2 YEARS LABOUR WARRANTY.  
FAILURE TO ENSURE THE FOLLOWING POINTS WILL INVALIDATE YOUR WARRANTY AND MAY INCUR EXTRA COST FOR CALLS MADE BY SCALEMASTER ENGINEERS TO RECTIFY.

		✓
1	Has the Water Softener been registered ?	
2	Has the customer been shown fully how to operate the Water Softener?	
3	Has the customer been shown how to isolate the unit in an emergency ?	

**IMPORTANT INFORMATION TO THE OWNER:**

- Always use water softener grade salt.
- Do not overfill the water softener with salt.
- Do not fill the salt cabinet higher than the overflow.
- Do not let the softener run out of salt.
- The water softener does not make a noise when operating normally (not regenerating).
- **Do make sure you know how to bypass the water softener in an emergency. In an emergency put the softener on bypass and contact your installer.**

**THIS INSTRUCTION MANUAL SHOULD BE LEFT WITH THE CUSTOMER FOR FUTURE REFERENCE**

**DATE INSTALLED**

.....