

SCALEMASTER[®]

SL100, SL200, SL100Plus & SL200Plus Electric Metered Water Softeners

Installation Procedures & Operating Manual

NOTE: These instructions apply to all 4 of the above water softeners.

PLEASE READ FULLY BEFORE INSTALLATION



Contents	Page
Introduction	3
Installation	4 & 5
Control Operation & Layout	6 & 7
3 Step Programming	8
Commissioning Your Water Softener	9 & 10
Technical Information & Specification	10 & 11

IMPORTANT - 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.
- Ensure you have the correct installation kit to complete your installation.
- **Failure to install your water softener in accordance with these installation instructions may invalidate your warranty cover.**
- **Warranty is only valid if the water softener is registered once installed.**
- **Warranty exclusions include chemical damage to resin, chemical or debris damage from external sources, site damage or incorrect installation.**
- In the interests of continuing product development, Scalemaster reserves the right to make modifications to the specification, design and appearance of the unit without notice.

Before installing your Scalemaster Water Softener please make a note here of the water hardness. This can be done with the Water Hardness Test Strips supplied with your softener. If you are unsure you can contact your local Water Authority or contact the Scalemaster Sales office with your postcode.

DATE SOFTENER INSTALLED

WATER HARDNESS (PPM)

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We suggest you keep this manual for future reference.

Thank you for choosing a Scalemaster Water Softener

Please take the time to read this installation guide. It will tell you in simple terms how to install and commission your new Scalemaster Water Softener to begin enjoying the benefits of softened water.

Before You Start

- Before starting installation, inspect the Water Softener for shipping damage or shortages. Make sure you have all the necessary tools on hand before starting the installation.
- Follow all applicable Plumbing and Electrical regulations when installing the Water Softener. If in doubt, refer to the relevant WRAS Information and Guidance note at: www.wras.co.uk/PDF_Files/ign9-07-01.pdf
- This Water Softener is not intended for the treatment of water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the Water Softener and is to be used only for potable water.
- Use caution when installing soldered metal piping near the Water Softener. Heat can adversely affect the plastic control valve or bypass valve system. Be sure all soldered pipes are fully cooled before attaching plastic plumbing fittings.
- Take care not to strip the threads when tightening plastic pipe fittings. PTFE tape may be used on connections that do not use an 'O' ring seal. Do not allow pipe jointing compound or sealant to come into contact with any plastic parts.
- There should be a minimum runoff at least 3 meters of pipe between a softener and a water heater to prevent the possibility of hot water entering the softener unit.
- Use only the power transformer supplied with the Water Softener unit. The mains power adapter supplied is double-insulated and does not require earthing. Earth bonding should be applied across metal inlet and outlet pipework of the Water Softener to maintain earth continuity.
- Observe drain line requirements. The drain line must be a minimum of 12.5mm diameter. The unit should be above, and not more than 6 metres from a drain.
- Do not support the weight of the Water Softener on the control valve connections or plumbing.
- Protect the softener, softener drain and all other components from the effects of frost. Evidence of damage due to freezing will invalidate your Water Softener warranty.
- Keep the media vessel in the upright position. Do not turn upside down or drop. Turning the vessel upside down or laying the vessel on it's side can cause treatment media to enter the valve.

If in doubt contact the Technical Helpline on 07990 064096

Installation

It is recommended that your water softener is installed by a professional plumber. This installation guide is written with the professional plumber in mind and assumes that this person has a working knowledge of hydraulic water softeners and domestic plumbing systems. Any electrical work required should be carried out by a fully qualified electrician.

Positioning the Water Softener.

- Measure your Water Softener and the space where it will be installed. **Remember allow extra space for connecting pipework and access for future servicing and topping up of salt.**
- Keep the distance of the incoming main and drainage to a minimum. 2 metres is usually more than adequate but this can be longer in circumstances where the water pressure allows.
- The weight of a Water Softener is greatly increased when fully operational and filled with salt so this must be taken into account when choosing where to site the softener.
- Your Scalemaster Water Softener is designed to operate effectively with an incoming water pressure of between 1.0 bar and 6 bar. If your water supply is likely to fall outside these parameters we recommend that 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 or in an airing cupboard where the ambient temperature will exceed 40°C.

Water Line & Bypass Connections

- An external bypass loop should be installed on all Scalemaster electrically operated water softeners. The external bypass valve loop isolates the Water Softener from the water system and provides unsoftened water to the water system during routine maintenance and servicing procedures.

IF YOU ARE CONSIDERING INSTALLING YOUR WATER SOFTENER IN A LOFT. THE FOLLOWING INSTRUCTIONS SHOULD BE STRICTLY ADHERED TO:

Loft Installation

- The water softener may be installed in a loft or roof cavity **but must be located within a safety bund 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 22mm diameter. This tank should also be mounted on a board strong enough to spread the weight over a load-bearing wall/joists.

Drain Line Connection

- The unit should be higher than, and not more than 6 metres from the drain. Use an appropriate adapter fitting to connect 1/2" (12.4mm) plastic tubing to the drain (discharge) hose connection of the control valve.
- The drain (discharge) hose may be elevated up to 1 meter providing the run does not exceed 4.6 meters and water pressure at the softener is not less than 2.7 bar.
- Where the drain (discharge) hose is elevated but empties into a drain below the level of the control valve, form an 18cm loop at the far end of the line so that the bottom of the loop is level with the drain hose connection. This will provide an adequate siphon tap.
- Where the drain (discharge) empties into an overhead sewer line, a sink-type U-bend trap must be used.
- Secure the end of the drain (discharge) hose to prevent it from moving.

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 softened water contains an increased level of sodium which will not be accounted for in the infant formula.

Brine Line Connections

Check the connections taking care not to over-tighten. Be sure that the regeneration line is secure and free from air leaks.

Electrical Connection

- For added safety Scalemaster Electric Water Softeners operate on low voltage via a plug in transformer. Use only the transformer supplied with the softener.

ANY ELECTRICAL WORK REQUIRED TO INSTALL A MAINS POWER SUPPLY FOR THE WATER SOFTENER SHOULD ONLY BE CARRIED OUT BY A FULLY QUALIFIED ELECTRICIAN.

Controls: Layout & Operation.

- **Large LED Display:** A 2 digit LED readout is highly visible for easy reading.
- **Easy 3 - Step Programming:** Only 3 buttons are required to fully control the softener.
- **Camshaft Indicator:** A column of windows located on the left of the LED readout display provides a visual indicator of the camshaft operation.
- **Manual Regeneration Button:** Initiates either a delayed regeneration or immediate regeneration depending upon long or short pressing.
- **Power Loss Memory Retention:** The controller features battery-free Time of Day retention during loss of power. The time will remain in memory for 6 to 24 hours depending on the installation. If the memory's power source becomes exhausted, the Time of Day will reset to '0' immediately after power is resumed. The Time of Day must be reset to ensure time of regeneration occurs at 02.00am.

NOTE: All other programmed parameters are stored in the flash memory and are retained during power outages. Flash memory retention is 100 years.

Valve Layout (Front)

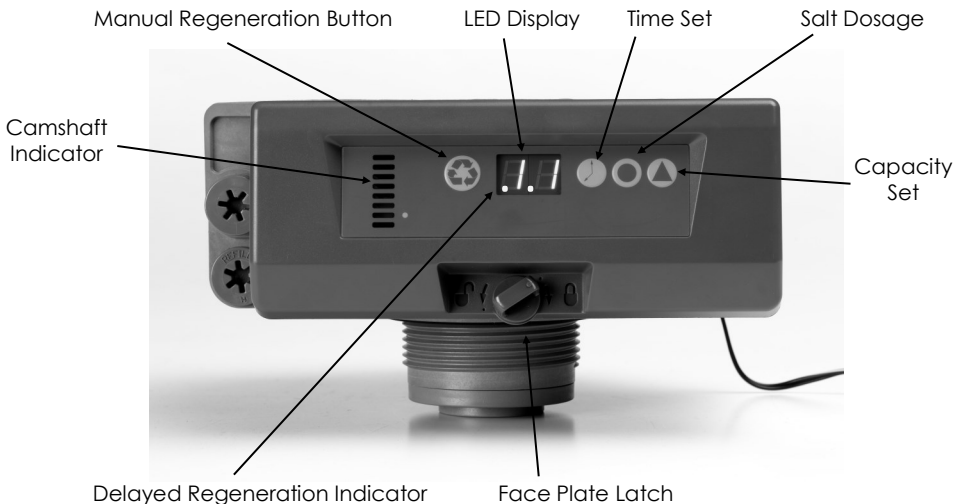
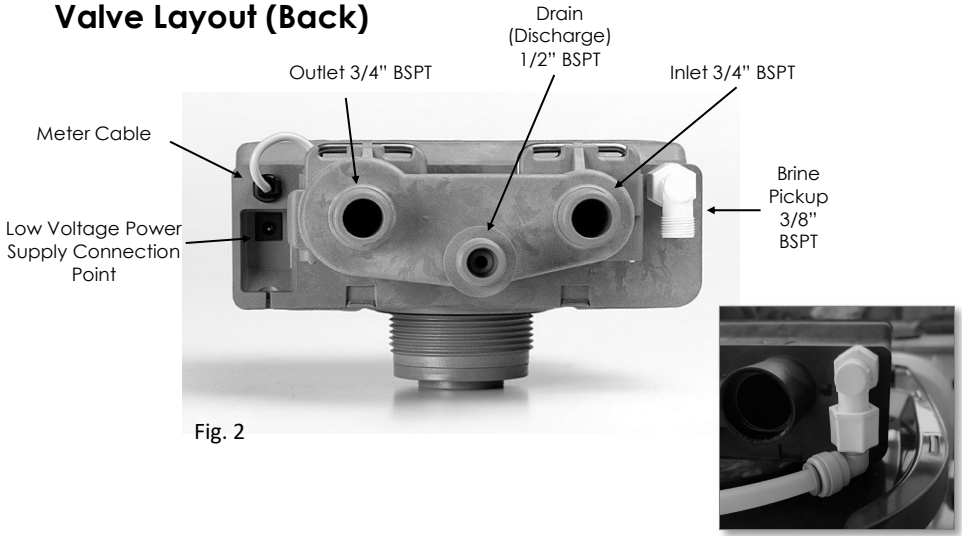


Fig.1

Valve Layout (Back)



Typical Softener Installation

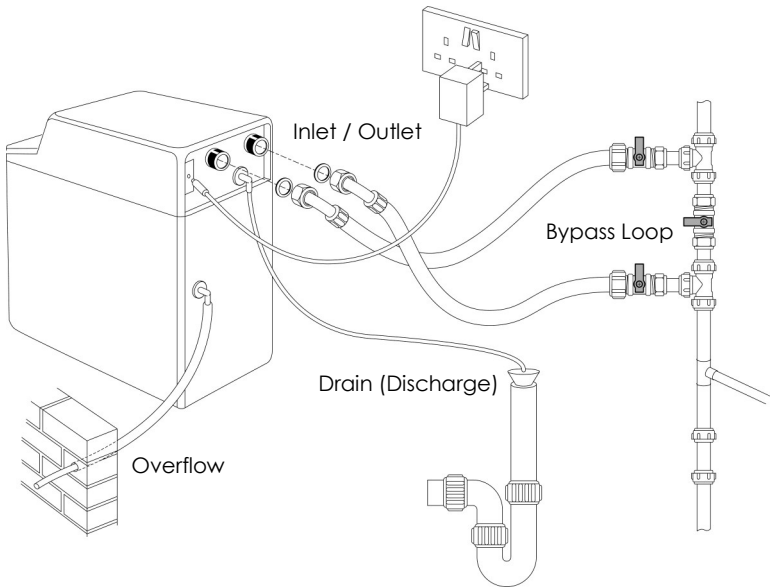
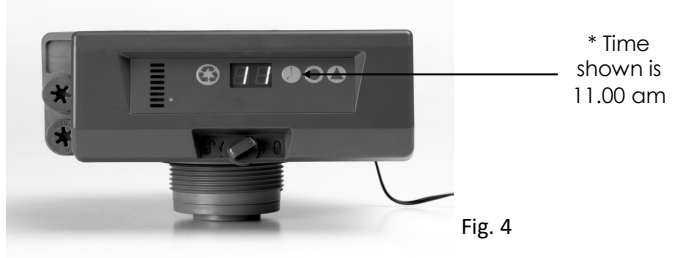


Fig. 3

Simple 3 - Step Programming

STEP 1

Time of Day: Press the Time Set button (see Fig.1)until desired hour appears (see fig.4*). Time should be set to the nearest hour to the present time. *For example, if you are setting up the water softener at 10.15am the timer would be set to 10.* **Note:** The elapsed minutes will reset to zero when the hours are changed.



STEP 2

Salt Dosage: Dosage is already pre-set before leaving the factory. Press ● to check the correct setting (see Fig. 5). If you have a 10 litre unit (Softline 100 & 100Plus) the setting will be 1.5 (see Fig. 5) if you have a 15 litre unit (Softline 200 & 200Plus) the setting will be 2.2. (If the setting is not correct, press the ● button until the correct setting is shown.



STEP 3

Consult the table on page 9 for cubic capacity settings, decide on appropriate setting. Press ▲ until desired setting appears (see Fig. 6).



Programming is now complete


	SL100 & SL100Plus Metered						
Local Area Hardness	200	250	300	350	400	450	500
Cu Meters Capacity ▲	2.5	2.0	1.7	1.4	1.3	1.1	1.0

	SL200 & SL200Plus Metered						
Local Area Hardness	200	250	300	350	400	450	500
Cu Meters Capacity ▲	3.8	3.0	2.5	2.1	1.9	1.7	1.5

NOTE: During programming, if a button is not pushed for 5 seconds, the control returns to the normal operation mode and displays the time of Day.

Commissioning

The Water Softener will now need to be placed into operation. **Do not put salt into the brine tank yet.**




1. With the supply water for the system still turned off, position the bypass valve to the 'not in bypass' (normal operation) position.
2. Press and hold the  button on the controller for 3 seconds. This will initiate a manual regeneration, and cycle to the backwash position.
3. Filling the resin vessel with water.
 - A. With the water Softener in backwash, open the water supply valve very slowly to approximately the 1/4 open position. Water will begin to enter the resin vessel. Air will begin to be purged to drain as the resin vessel fills with water.
 - B. When all of the air has been purged from the resin vessel (water begins to flow steadily from the drain line), open the main supply valve all the way. This will purge the final air from the tank.
 - C. Allow water to run to drain until the water runs clear from the drain line. This purges any debris from the media bed. Within the vessel.
 - D. Turn off the water supply and let the system stand for about five minutes to allow any trapped air to escape from the resin vessel.
4. Adding water to the salt tank.

Pour 6 litres of water into the Brine (Salt) Tank

Continued on Page 10

Commissioning - Continued.

5. Checking Brine Draw

- A. From the service position press the  button to initiate a manual regeneration and allow the control to move to the backwash position (C1). (to display the C number, quickly press the  button after the cascading lines have started).
 - B. As the lines start to cascade slowly turn on the water to the softener and allow the air to purge from the softener.(C1 will last approximately 1 minute).
 - C. When the control moves to C2 check that the water is being drawn from the brine (salt) tank.
 - D. If the water level does not recede, check all brine line connections.
6. If the water level is receding from the brine (salt) tank press the  and the clock buttons together for 3 seconds, the softener will go to C3, repeat this until you return to the service position (after C7).
 7. Turn on a tap plumbed after the Water Softener. Run the tap until the water runs clear.
 8. Fill the brine (salt) tank with either granular or tablet salt (approximately 2/3 full is sufficient), Salt should be specifically formulated for Water Softeners.

Congratulations your Water Softener is now fully operational.

Technical Information - Approximate Cycle Times

CYCLE	ACTION	SALT USED		TIME
C1	BACK WASH			1 MINUTES
C2	BRINE DRAW	1.5kg	SL100 & SL100Plus	9 MINUTES
C2	BRINE DRAW	2.2kg	SL200 & SL200Plus	15 MINUTES
C2	SLOW RINSE			25 MINUTES
C3	REPRESSURIZE			3 MINUTES
C4	FAST RINSE			1 MINUTES
C5	2nd BACKWASH			1 MINUTES
C6	2nd FAST RINSE			1 MINUTES
C7	BRINE REFILL		SL100 & SL100Plus	8 MINUTES
C7	BRINE REFILL		SL200 & SL200Plus	12 MINUTES

Technical Information - Product Specification

SPECIFICATION	SOFTLINE 100	SOFTLINE 100PLUS	SOFTLINE 200	SOFTLINE 200PLUS
Height	545mm	570mm	600mm	570mm
Depth	460mm	475mm	460mm	475mm
Depth Incl Connector	485mm	500mm	485mm	500mm
Width	275mm	320mm	275mm	320mm
Resin Volume	10 litre	10 litre	15 litre	15 litre
Salt used per regen cycle	1500 grams	1500 grams	2200 grams	2200 grams
Water used per regen cycle	53 litre	53 litre	59 litre	59 litre
Maximum working pressure	8.0 bar	8.0 bar	8.0 bar	8.0 bar
Minimum Working Pressure	1.5 bar	1.5 bar	1.5 bar	1.5 bar
Max ambient temp (C°)	45°	45°	45°	45°
Max water temp (C°)	38°	38°	38°	38°
Electrical Supply	12v 50 Hz	12v 50 Hz	12v 50 Hz	12v 50 Hz
Max (peak) flow rate	42 litres per minute	42 litres per minute	42 litres per minute	42 litres per minute
Max flow rate (1 bar pressure drop)	33 litres per minute	33 litres per minute	33 litres per minute	33 litres per minute
Inlet & outlet connections	3/4" male	3/4" male	3/4" male	3/4" male
Drain & overflow connections	1/2"	1/2"	1/2"	1/2"
Regeneration time	42 mins	42 mins	46 mins	46 mins
Max softened water capacity @ 200ppm (water efficiency*)	2500 litres (2.1%)	2500 litres (2.1%)	3750 litres (1.6%)	3750 litres (1.6%)
Max softened water capacity @ 300ppm (water efficiency*)	1667 litres (3.2%)	1667 litres (3.2%)	2500 litres (2.4%)	2500 litres (2.4%)
Sizing recommendation*	Up to 5 person	Up to 5 person	Up to 7 person	Up to 7 person
Carbon Neutral	YES	YES	YES	YES
Scalemaster product code	900216	900247	900230	900254

* Based on standard household use assuming average domestic use of 150 litres of water per person per day.

SCALEMASTER®

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