Water Softener Installation & Operating Guide

Manual 058

Thank you for purchasing this Softener. We are sure that it will provide you with trouble free service for many years to come. Please use the following pages to assist you in the installation and set up of your new Softener.

Planning Your Installation.

Please observe the regulations concerning the installation of your water softener. For guidance check out the water regulations advisory service web site (www.wras.co.uk) Check that you only have one rising main, that you have allowed space for access to the unit for possible future maintenance and salt replenishment. Check the water pressure; 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 the softener. You should only attempt this if you have the necessary skills.

Positioning the Softener.

Where possible the softener should be placed close to the rising main. Take care to allow hard water take off points for a drinking water facility and /or an outside tap. The distance between the drain and the Softener should be as short as possible. Ensure that both the drain and overflow will not freeze or reach a temperature above 40°C. If putting the Softener within a cupboard ensure that the base is adequately supported. If the Softener is being installed within your loft etc it is recommended to house the Softener within a tank capable of storing at least 100 Litres with an overflow fitted. The overflow on the tank should be below the Softener overflow and be a minimum of ¾" in size.

A single Check Valve.

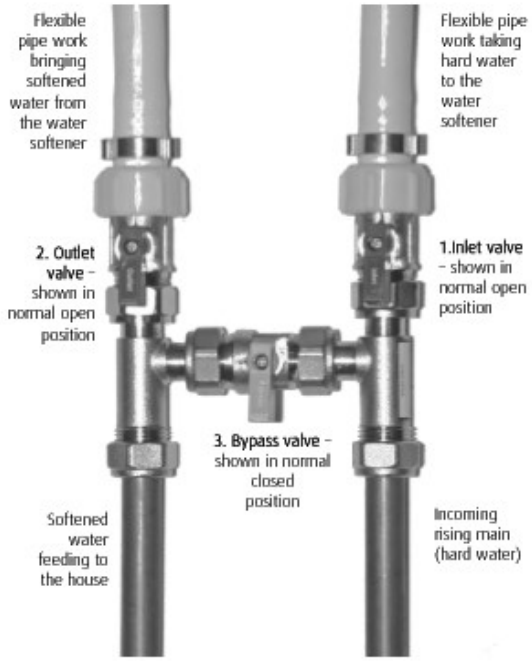
A suitable check valve should be fitted. This will usually be in the installation kit that can be ordered separately.

Check List.

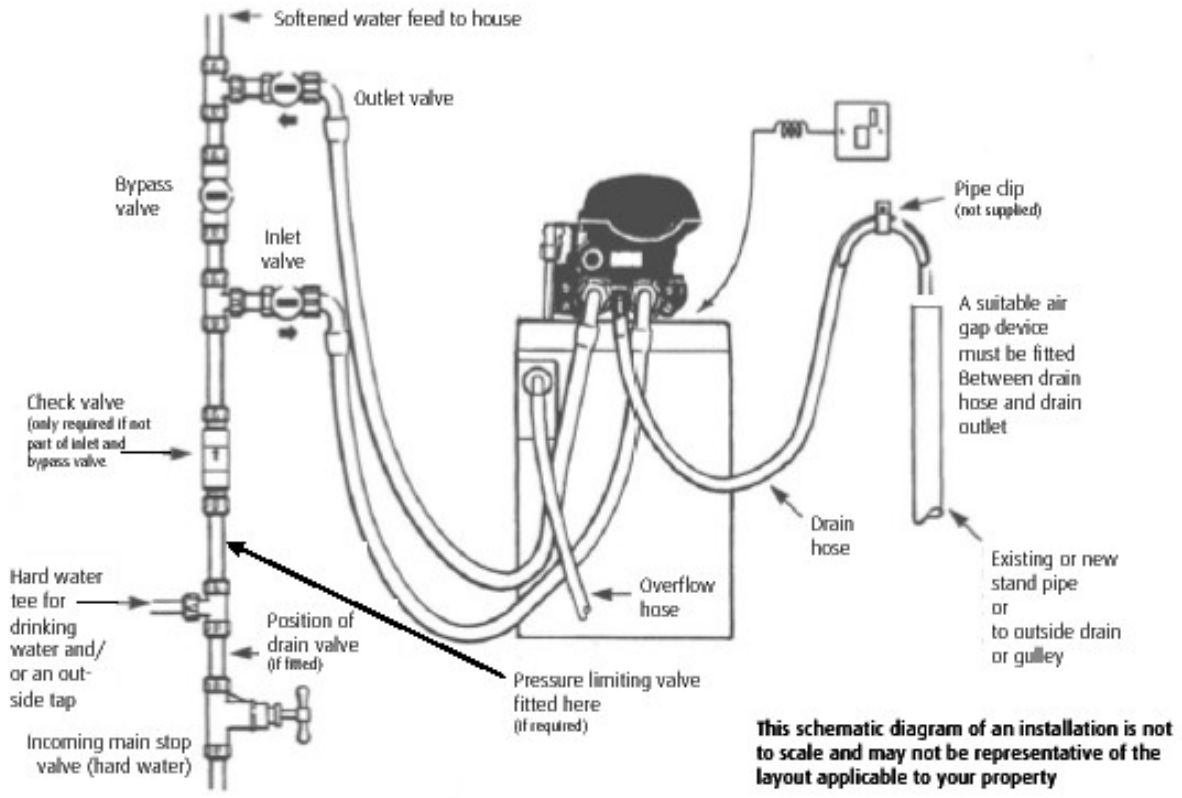
Before you start the installation make sure that you have all the necessary fittings. The purchase of one of our standard installation kits will normally ensure that you have everything that you need for a typical installation

Water Pressure Test.

It is important that a pressure test is carried out. High and low water pressure can result in either damage to or failure of the Softener. Although the Softener is tested to a pressure of 8 bar (120psi), we recommend the fitting of a pressure limiter should your pressure exceed 5 bar (70 psi). The minimum working pressure is 1.4 bar (20 psi)



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



Connecting the Softener.

Once you have completed the installation of the valves set the valves as follows:
Softener Inlet and Outlet valve CLOSED
Bypass valve OPEN
You can now safely return the stop cock to the open position. Using the hoses provided (if installation kit ordered) connect the straight end of the hose having first inserted the washer provided to the softener inlet and outlet valves. Connect the angled end to the Softener. The Softener inlets and outlets should be indicated either with the words inlet or outlet or with an embossed directional arrow on the Softener tails. Normally the Softener tails are in a configuration of three with the centre normally being the waste outlet.

Waste Pipe Installation.

Connect the waste pipe to the waste outlet on the Softener and run the hose to either an up stand 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 pipe can run uphill to a maximum of 1 Meter with a minimum water pressure of 40 psi.

Overflow Connection.

The overflow connection is the white ½" 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.

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. The amount of salt used will depend on the type and model of Softener you have, you should keep the salt level above the water level and check the salt level on a regular basis until a usage pattern has been established.

Programming.

Quick Start

Programming the Valve.

The valve is pre programmed with the exception of the time of day.

When plugging the softener in initially, the screen will display the valve model 'F79'. After 10 seconds the valve will automatically show the set time of day screen.

Set Time of Day.

Adjust the hours by pressing the ▲ & ▼ buttons, press ↵, then adjust the minutes by pressing ▲ & ▼ buttons, press ↵ and this will return you to the main screen.

Capacity setting.

The capacity will have a default setting based on 300ppm hardness. If you wish to change this, please follow these instructions.

Using the ▲ & ▼ buttons, scroll to 'Advanced Settings'. Press ↵, scroll down to 'Set residual water' and press ↵**.** This will show you the total amount of treated water the softener can achieve before regeneration.

If you need to change this amount, you will need to follow this calculation –

$$\frac{\text{Softener resin capacity} \times 50}{\text{Hardness}} \qquad \textit{For example} \qquad \frac{10 \times 50}{300} = 1.66\text{m}^3$$

Press ↵ when finished.

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 will happen at the pre-set time (see programming the valve section below).

To initiate an immediate regeneration press and hold the 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 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 and then up through the 'riser' tube in the middle of the vessel. As the water travels through the resin the ion exchange 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.

Routine Maintainance.

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.
Check there is no sign of damage or leaks.

Trouble shooting

Following the below as a guide you can find the most common problems that may arise; please consult this section before contacting you supplying dealer as most problems are easily cured by following this information.

Problem	Cause	Correction
1. Softener fails to regenerate	A. Electrical service t unit has been interrupted B. Regeneration cycles set incorrectly C. Controller is defective D. Motor fails to work	A. Assure permanent electrical service (Check fuse, plug, pull chain or switch) B. Reset regeneration cycles C. Replace Controller D. Replace Motor
2. Regeneration time is not correct	A. Time of day is not correct. B. Power failure more than three days	Check program and reset time of day
3. Softener supplies hard water	A. Bypass valve is open or leaking B. No salt in brine tank C. Injector plugged D. Insuffcient water flowing into brine tank E. Leak at oring on riser F. Internal valve leak G. Regeneration cycles not correct H. Shortage of resin I. Bad quality of feed water or turbine blocked J. Adjusting bolt open	A. Close or repair bypass valve B. Add salt to brine tank and maintain salt level above water level C. Change or clean injector D. Check brine tank refill time E. Make sure riser is not cracked. Check oring and tube pilot F. Change valve body G. Set correct regeneration cycles in program H. Add resin to mineral tank and check resin leaks I. Reduce the inlet turbidity, clean or replace turbine J. Close the adjustment bolt
4. Softener fails to draw brine	A. Line pressure is too low B. Brine line is plugged C. Brine line is leaking D. Injector is plugged E. Internal control leak F. Drain line is plugged G. Sizes of injector and DLFC do not match with tank.	A. Increase line pressure B. Clean brine line C. Replace brine line D. Clean or replace injector E. Replace valve body F. Clean drain line flow control G. Select correct injector and DLFC size.
5. Unit used too much salt	A. Improper salt setting B. Excessive water in brine tank	A. Check salt usage and salt setting B. See problem No.6

6. Excessive water in brine tank	A. Overlong refilling time B. Water remaining after brine draw C. Foreign material in brine valve and plug drain line flow control D. Not installed safety brine valve and power failure while salting. E. Safety brine valve breakdown	A. Reset correct refilling time B. Check the injector and remove foreign matter from brine pipe C. Clean brine valve and brine line D. Stop water supply and restart program install with safety brine valve in salt tank E. Repair or replace safety brine valve.
7. Pressure loss or rust in pipe	A. Iron in water supply pipe B. Iron mass in the softener C. Fouled resin bed D. Too much iron in raw water	A. Clean water supply pipe. B. Clean valve and add resin cleaning agent C. Check backwash, brine draw and brine tank refill. Increase frequency of regeneration and backwash time D. Iron removal equipment is required to install before softening
8. Loss of resin though drain	A. Air in water system B. Bottom screen broken C. Improperly sized 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. Foreign material stuck in driving gear D. Time of regeneration steps set to zero	A. Check and connect locating signal wiring B. Replace controller C. Take out foreign material D. Check program setting and reset
10. Drain flows continuously	A. Internal valve leak B. Power off when in backwash 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
11. Interrupted or irregular brine	A. Water pressure too low or not stable B. Injector is plugged or faulty C. Air in resin tank D. Floccules in resin tank during backwash	A. Increase water pressure B. Clean or replace injector C. Check and find reason D. Clean the floccules in resin tank
12. Water flow out from drain or brine pipe after regeneration	A. Foreign material in valve which stops valve closing completely B. Hard water mixed in valve body C. Water pressure too high which results in valve in wrong position	A. Clean foreign material in valve body B. Change valve core or sealing ring C. Reduce water pressure or use pressure relief connector function

13. Salt water going to service	A. Foreign material in injector or injector fails to work B. Brine valve cannot be shut-off C. Time of fast rinse too short	A. Clean and repair injector B. Repair bribe valve and clean it C. Extend fast rinse time
14. Circle water treatment capacity decreases	A. Not regenerating properly B. Fouled resin bed C. Salt setting not correct D. Softener setting not correct E. Raw water quality deterioration F. Turbine has stuck	A. Regenerate according to manual B. Increase backwash flow rate and time, clean or change resin C. Readjust brine drawing time D. According to the test of outlet water, recount and reset E. Regenerate unit by manual temporary then reset regeneration cycle F. Disassemble flow meter and clean it or replace the turbine.