

What to expect from your water softener

All water softeners work on the same basic principal. Hard water flows through a bed of resin and the calcium and magnesium, the minerals that are responsible for hard water are removed. The resin cannot perform this process indefinitely and will require regenerating. Most machines perform this process automatically after a set period of time, or water has passed.

Salt/Brine Tank

The water softener that you have purchased is supplied with a brine tank, most models have the brine tank integrated into the softener cabinet (the cabinet space under the lid where the internal tank or tanks are) However on some units this is a separate cabinet. When filling the tank with salt make sure not to over fill, the tank is fitted with an external overflow, never fill above this level. Salt levels should be checked on a regular basis and topped up when required. There is no right or wrong amount of salt to store in the tank. Most customers will eventually develop a routine and automatically top up after a set period of time either weekly or monthly etc. If you notice the tank is completely empty it may be advisable to perform a manual regeneration a few hours after refilling.

Regeneration Process

The regeneration process is basically a resin clean, if you think of it like a washing machine cycle, it will perform a number of different processes to clean, most units will have a fast rinse, slow rinse and pause cycle. During the process water is drawn from the brine tank and flushed through the system, at the end of the cycle water is normally put back into the brine tank in order for the salt to dissolve ready for the next time the machine needs to regenerate. On some units this is delayed until a few hours before regeneration. The level of water that is in the tank will depend on the type, size and water pressure feeding the softener. Dependent upon the amount of salt in the softener you may not even see the water level. Once the regeneration is complete the resin will be able to supply soft water to your property.

How quickly will it start to work ?

The water softener will produce soft water as soon as water passes through it. The size of your property, water usage and water system will determine how quickly you will notice the results. If for example one person lives in a very large property with water feed from storage tanks (gravity feed system) they may not see a benefit for several months, until all the water that was present in the property has been replaced with softened. A large family in a small property with a direct feed system will find the results appear very quickly.

The water softener does not show any visible signs or make any noise during the water softening process. Water will only enter or leave the salt/brine tank during regeneration. Salt is not used in the water softening process it is only used during regeneration. The only time you will see or hear the softener working is during the regeneration process.

If you require any additional information regarding your particular water softener please contact our technical support team on 0871 890 3334 or email tech@emwc.uk

Regards
East Midlands Water. Com

EMWC Water Softener Installation Guide

Effective for all Softeners from the EMWC Range

Planning Your Installation

Always observe the water byelaws. Ensure there is only one rising main, that you have allowed space for access to the unit for salt filling and possible maintenance in the future. Check the water pressure, locate the rising main (stop cock), a drain facility and a power supply.

Siting the Softener

Where possible, this should be close to the rising main. Take care to allow hard water take off points for a drinking water facility and /or an outside tap. For easy DIY installation we recommend the fitting of an EMWC hard or filtered water kit. If the stopcock is located in an inconvenient position to create a hard water supply we recommend the fitting of an EMWC reverse osmosis system.

The distance between the drain and the softener should be as short as possible. Ensure that both the drain and overflow are not subject to freezing or over 120°F. If siting 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 25-gallon tank and insulate well. The overflow on the tank should be below the softener overflow and be a minimum of ¾" in size.

Non Return Valve

In single dwellings a single check valve should be fitted. This is supplied with our 15mm installation kits that can be ordered separately.

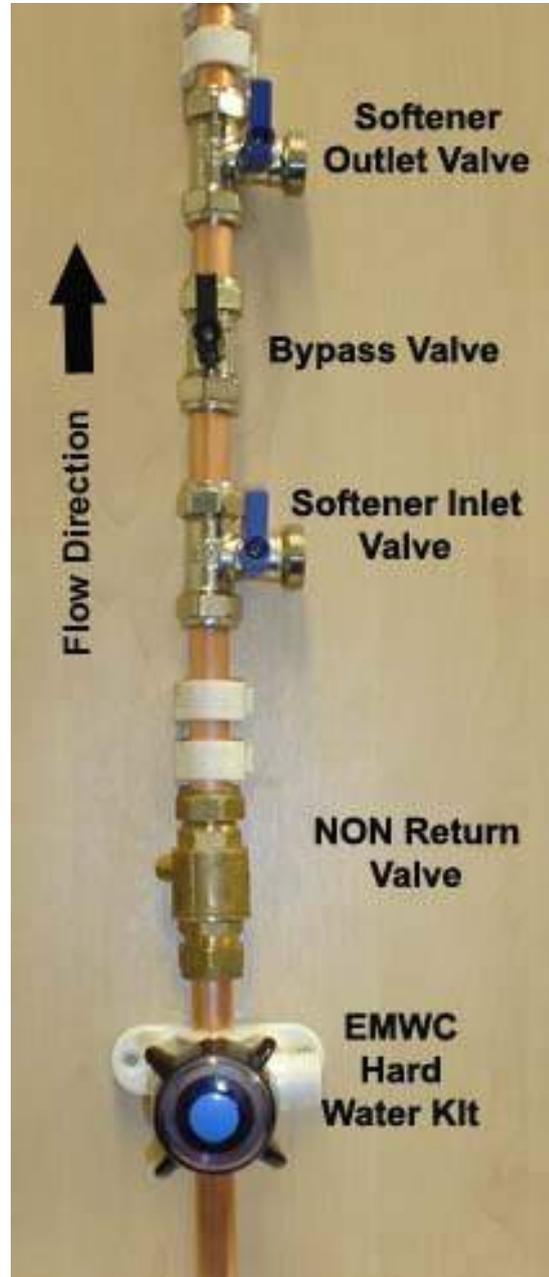
Check list

Dependant upon your installation you may need to purchase 2 T valves, if you purchased an EMWC fitting kit all other valves required would be included. Check that you have ordered the correct fitting kit for your installation. Combi boilers require an EMWC Combi Kit, Pressurised systems require an EMWC 22mm Fitting Kit.

Water Pressure Test

It is important that a pressure check is carried out. Low and high water pressure can result in either damage to, or failure of, the softener. Although the softener is tested to a pressure of 8 bar we recommend the fitting of a pressure limiter should your pressure exceed 5 bar (70 psi) We also recommend that any water appliance should be fitted with a leak controller.

Typical Softener installation Valve configuration

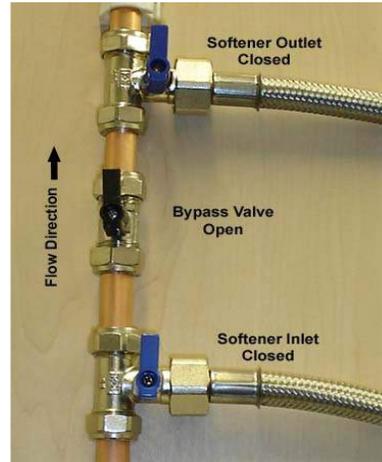


Before starting installation of the valves ensure that the stopcock is in the closed position.

Connecting to the softener

Once you have completed the installation of the valves put the valves into the positions as shown, softener inlet and outlet closed bypass valve open (if you have also installed an EMWC hard water supply kit and have only so far installed the valve also make sure that this is closed) You can now safely return the stop cock to the open position.

Using the hoses provided (if you purchased an EMWC fitting kit) connect the straight end of the hoses, having first inserted the washer provided to the softener inlet and outlet valves. Before you connect the angled end to the softener run off a quantity of water to ensure any debris from the installation does not enter the machine. 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

All EMWC softeners are provided with a waste hose, on some of our units this is preinstalled to the softener. Should this not be the case on your machine use the connection fitting at the end of the supplied flexible pipe to connect to the softener drain connection. Run the drain hose to either an up stand or an 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. If 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 40psi. Ensure that the drain hose is not kinked in any way as this will lead to an overflow of the machine.

The drain hose can run up hill to a maximum of 3 feet with a minimum pressure of 40psi.

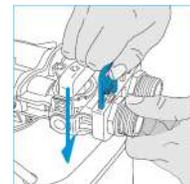
Overflow Connection

The hose from the overflow should be cut from the drain hose provided. The overflow connection is the white 1/2" hose spigot on the rear or side of the cabinet. No clip is required for this connection. The overflow must be run downhill through an outside wall without kinks or restriction. It is recommended the overflow hose be visible when it exits the outside wall.

Electrical connection

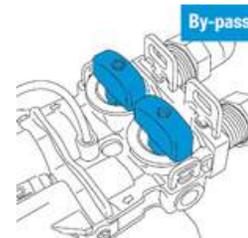
Connect the transformer provided to a continuous electrical connection supply with the power off. Plug the flying lead from the transformer into the electrical connection on the controller (see programming instructions for location of individual units). Ensure the flying lead cannot get caught on the camshaft or any moving parts on the machine

The softener is supplied with detachable connection ports. In order to connect the softener ensure that each of the ports is fitted with the 2 o-rings. Remove the red lock key as shown opposite and push the connection port firmly into the inlet/outlet of the softener. Reinsert the red locking key. Repeat this process for the remaining port.



You should now connect your water supply to the softener, the water inlet valve is on the right if you are looking at the softener from front to back.

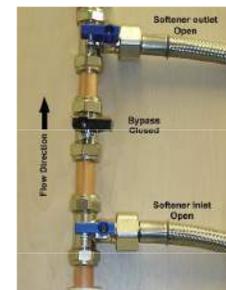
The waste connection should also be fitted to the softener. This is a spigot connection located on the head of the machine. The connection on the softener casing is an overflow connection.



The softener has been fitted with a bypass option, it is advisable to loosen the valve before turning on the water supply, the valves turn in a clockwise direction and a key is provided to assist in this operation.

To set the machine to service simply alter the position of the valves connected to your pipe work, not those on the softener. Open the inlet and outlet valve and turn the bypass valve to the off position. It is recommended that this procedure is completed in the following order.

- 1, Turn the softener inlet valve to the on position
- 2, Turn the bypass valve to the off position. Allow approximately five minutes to allow the incoming water to build a level of pressure before completing step 3.
- 3, Turn the softener outlet valve to the on position, as shown opposite.



Set Up and programming Guide

Start Up Programming

Connect the power adapter to a suitable power supply. Once the power supply has been connected the following may appear on the display.



This indicates that the softener is placing itself into service position.



Once the softener has finished the initialising stage (this may take several minutes from initial power up) The softener will display as above, you can begin the softener programming.

Programming the softener



Press the menu button

Once the display is showing as opposite

(1) press & hold the menu button for 3 Seconds



*The System will automatically lock the keypad if no buttons are pressed for approx 30 seconds, this may also occur during the programme procedure.

(2) Once the display is showing as opposite press the MENU button again to enter the **PROGRAMMING MODE SECTION 1**

You can advance to different points of the programme by repeatedly pressing the down arrow until you reach the desired section.



PROGRAMME MODE SECTION 1

Having completed (2) the display will now change to show system language.



ENG (English) should be highlighted with a black cursor as shown in the screen opposite.

If correct advance to **PROGRAMMING MODE SECTION 2** by pressing the down arrow

If ENG is not highlighted.



(3) Press REGEN button

the black cursor will flash behind the country selected. Use the up or down arrow until the cursor is behind the correct country then press REGEN button, press the down arrow to advance to **PROGRAMMING MODE SECTION 2**

PROGRAMME MODE SECTION 2

Having completed **PROGRAMMING MODE SECTION 1**

the display will show as opposite

METRIC should be highlighted with a black cursor as shown,

If correct advance to **PROGRAMMING MODE SECTION 3** by pressing the down arrow.



(4) If the cursor is not behind the word METRIC press regen button

the black cursor will flash. Use the down arrow until the cursor is behind METRIC then press menu button.

Press the down arrow to advance to **PROGRAMMING MODE SECTION 3**

PROGRAMME MODE SECTION 3

Having completed **PROGRAMMING MODE SECTION 2** the display will show as opposite. **MIX REGEN (MR)** this is the preferred setting for the softener.

In this mode the softener will perform regeneration based upon its consumption of water or on a preset number of days which ever is the sooner.

The regeneration is also delayed until 2 am.

Press the down arrow to advance to **PROGRAMMING MODE SECTION 4**



(5) To alter this setting press the REGEN button until the cursor flashes, then using the up or down arrows select the regeneration type required and press the REGEN button. Press the down arrow to advance to **PROGRAMMING MODE SECTION 4**

Regen Modes

Timer Regeneration based upon a set time interval e.g daily, 3 days weekly etc

Meter Immediate (MI) counts your water usage and performs an immediate regeneration once the final litre of water has passed through the softener.

Meter Delayed (MD) counts your water usage and performs a regeneration at 2am

PROGRAMME MODE SECTION 4

Having completed **PROGRAMMING MODE SECTION 3** the display will show as

opposite. If the correct date is shown press down arrow to advance to

PROGRAMMING MODE SECTION 5, if the date is not correct it can be adjusted as follows;

Year will be highlighted, to alter press REGEN and the year will flash, use the up or down button until the correct year is displayed press REGEN button.

Month will now flash, use up or down to set correct Month press REGEN button.

Day will now flash, use up or down button to set correct day, Press REGEN Button.

Press down arrow to advance to **PROGRAMMING MODE SECTION 5**.



PROGRAMME MODE SECTION 5

Having completed **PROGRAMMING MODE SECTION 4** the display will show as Opposite. If the correct time is displayed press the down arrow to advance to **PROGRAMMING MODE SECTION 6**

To alter the time press **REGEN** button, the hour will flash, using the up or down buttons select the correct hour, press **REGEN** button, minutes will now flash, using the up or down buttons select the correct minute, press **REGEN** button. Press down arrow to advance to **PROGRAMMING MODE SECTION 6**



PROGRAMME MODE SECTION 6

Having completed **PROGRAMMING MODE SECTION 5** the display will show as opposite. If correct press down arrow to advance to **PROGRAMMING MODE SECTION 6**

(Meter Delay, Timer or Mixed regeneration setting only)

The factory set time for the regeneration is 2 am, this is the least likely time that a household will use water. If water is required during regeneration the softener will supply untreated hard water. To alter this press **REGEN** button, the hour will flash, using the up or down buttons select the required hour, press **REGEN** button minutes will now flash, using the up or down buttons select the required minute, press **REGEN** Button. Press down arrow to advance to **PROGRAMMING MODE SECTION 7**



PROGRAMME MODE SECTION 7

Having completed **PROGRAMMING MODE SECTION 6** the display will show as opposite. If correct press down arrow to advance to **PROGRAMMING MODE SECTION 8**



The display shows the number of days between regeneration (Timer or Mixed regeneration setting only) on mixed regeneration setting the softener will regenerate on either water consumption or **REGEN** days which ever is the sooner. This figure can be set from 0 to 99 days.

To alter the setting press **REGEN** button, the cursor will flash, use the up or down buttons to alter the figure. Press **REGEN** button again. Press down arrow to advance to **PROGRAMMING MODE SECTION 8**

PROGRAMME MODE SECTION 8

Regen Capacity

Regen capacity is the amount of soft water, based on the hardness of your water and the amount of resin, that the softener can produce before regeneration.

To work out the capacity figure you will need the following information, your water hardness in PPM & the size of your softener.

Take the capacity figure from the table opposite and divide by your hardness figure. The hardness figure is water hardness in PPM divided by 10

Example

You have a 6 litre softener with a water hardness of 300ppm

Capacity figure = 24

Divide by

Hardness Figure = 30

Regen Capacity = 0.8m³

Resin Amount	Capacity Figure
6 Litres	24
12.5 Litres	75
15 Litres	90
30 Litres	180

Water hardness in PPM divided by 10
e.g 300 ppm / 10 = 30 Hardness Figure

Setting Regen Capacity.

Press the down arrow, press **REGEN** button, the capacity figure will flash, use the up or down button to select the correct figure.

Press the **REGEN** button the second part of the number will flash, use the up or down button to select the correct figure.

Press the **REGEN** button again e.g. 0.8 would be displayed as 00.80



The Softener Programming is now complete. All other settings are factory set and should not be adjusted unless you are advised to do so by a member of our technical department.

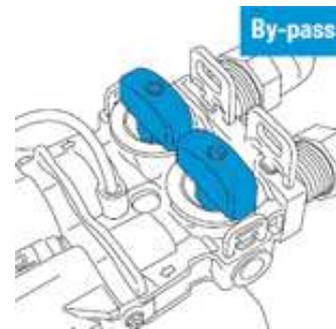
Start up process

With the key pad unlocked and the softener in bypass mode press and hold the REGEN button for approx 5 seconds. The display will now show BACKWASHING as in the picture opposite.

Open the red inlet valve to 25%,
Water will now start to enter the unit,
water will also run to waste.



It is normal for the water to splutter and spurt during this stage, and also to have some yellowish discolouration. When the water is running continually to drain for approximately 2 minutes fully close the inlet valve, leave in the closed position for approximately 5 minutes then fully reopen.



The regeneration process can be skipped forward by pressing the menu button. After pressing menu allow 20 seconds or so before skipping to the next function. Skip the Regeneration cycle to REFILL and allow this process to complete automatically.

On 6Ltr softeners the brine draw tube has a brine fill level indicator, please make sure that the water level is approximately at this level. If the water level is higher or lower than the brine fill level indicator please move to **Adjusting the brine fill level** on the next page.

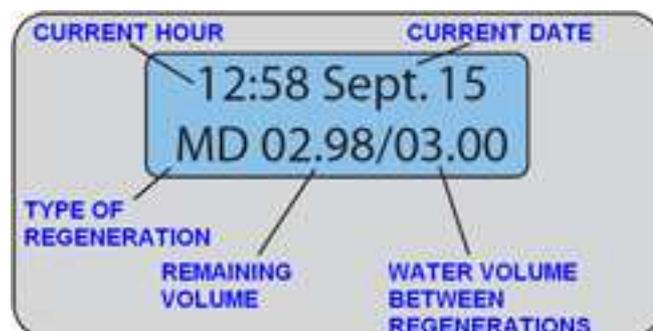


Once this process has completed start another regeneration by pressing the REGEN button, press the menu button to skip to the BRINING cycle of the regeneration.

Check that water is being drawn from the brine tank, if water is being drawn you can now skip the remaining regeneration cycles, open the softener outlet valve and put a quantity of salt in the tank. When filling the salt, please ensure that the salt level is at maximum 1 or 2 inches below the height of the overflow connection on the outside of the softener brine tank. Now set the softener to BACKWASHING and allow the full regen cycle to complete.



The Start up process is now complete.



Over view of display

Adjusting the brine fill level 6Ltr Softener only

The brine refill is a function whereby the softener refills the brine tank with water. The brine refill is operated by allowing water to enter the brine tank for a set period of time.

Due to the compact nature of the 6 ltr Softener, pressure, pipe size and flow rates can effect the brine refill causing incorrect regeneration, an initial manual adjustment of the time the water is allowed to enter the tank may be required.

If an adjustment is required please follow the instructions below.



Press the menu button

Once the display is showing as opposite

(1) press & hold the menu button for 3 Seconds.



*The System will automatically lock the keypad if no buttons are pressed for approx 30 seconds, this may also occur during the programme procedure.

(2) Once the display is showing as opposite press the MENU button again to enter the **PROGRAMMING MODE SECTION 1**



You can advance to different points of the programme by repeatedly pressing the down arrow until you reach the desired section.

REFILL DURATION Section, as shown opposite

REFILL DURATION is the length of time in minutes the refill process will take to complete.



To alter this setting press the REGEN button until the cursor flashes, then use the up or down arrows to select the new value. If the water level was lower than the refill indicator, increase the duration of the refill using the up arrow. If the water level was higher than the refill indicator decrease the time using the down arrow. We suggest initially only altering the REFILL DURATION in one-minute intervals. Once the desired setting has been achieved press the REGEN button and return to the **Start up process** section.



IMPORTANT

DO NOT ADJUST ANY OTHER SETTINGS UNLESS REQUESTED TO BY A MEMBER OF OUR TECHNICAL SUPPORT TEAM

Regeneration Cycle

The regeneration process is a cleaning cycle that the softener performs to refresh the resin in order to continue to supply your property with soft water, it is similar to a washing machine cycle and comprises of;

BACKWASH- The machine takes in mains water that it flushes to waste, this process removes any debris that may be in the softener and agitates the resin.

BRINE- The softener draws salt water from the brine tank, this process is used to remove the hardness minerals trapped by the resin and also reactivates the media.

RINSE- The rinse process is the final cleaning stage for the resin. Water is flushed through the system and any excess brine is removed. The resin is now ready to produce soft water.

REFILL- Water is diverted to refill the brine tank in order to dissolve salt creating a fresh brine solution for the next regeneration cycle

Care Of Your Water Softener

We recommend regular inspections of your water softener in order to ensure that it is operating to its full potential.

With all water softeners we recommend the fitting of a pre sediment filter, this is to prevent damage to your water softener which can occur if debris enters your water supply. The filter should be checked every 6-12 months. A selection of filter housings and sediment filters are available from our online store.



We recommend the use of NeatWork Water Softener cleaning solution with all of our water softeners.

During the softening process the resin can become clogged with metals such as iron that are often found in our water supply. Adding NeatWork cleaning solution on a monthly basis will help to remove any metal deposits that can cause the softener resin to become inefficient in its ability to produce soft water. The solution is simply added to the brine tank with the salt and will help the softener to continue to operate correctly for years to come. Neat Work can be obtained from our online store



We suggest that the hardness level is checked every 1-2 Months. In coming water hardness can fluctuate depending on the time of year and your provider may use alternative sources from time to time if local levels are low. Adjustments can be made to most of our water softeners so that they perform at maximum efficiency. Additional hardness test kits can be obtained from our online store.



Salt levels should be checked on a regular basis. It is important that the softener never runs out of salt as this can cause internal damage to the softener and also effect the performance of the resin.

We offer a range of water treatment products and accessories on our web site, all of the above products are available to order from www.EastMidlandsWater.com

As well as products to keep your water softener in tip top condition we also provide Water filters, Reverse osmosis, Ultra Violet Systems, Water coolers and a range of Single Filter and Three Way taps.

We also offer a large range of commercial filters and systems from off the shelf items to bespoke design equipment to provide solutions for a variety of different applications.

Whatever your water treatment requirements you will find a product that meets your needs at www.EastMidlandsWater.com